BMC Minerals (No. 1) Ltd.

2015 GEOLOGICAL, GEOPHYSICAL, DIAMOND DRILLING AND ENVIRONMENTAL REPORT ON THE KUDZ ZE KAYAH PROPERTY

Field Work Completed Between May 27th, 2015 and December 7th, 2015

Located in the Watson Lake Mining District, Yukon
NTS 105G/7, 8, 9 and 10
61˚ 31' N Latitude; 130˚ 33' W Longitude

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EQUITY

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SUMMARY

In January 2015, BMC Minerals Ltd ("BMC") purchased the Kudz Ze Kayah ("KZK") Property from Teck Mining Worldwide Holdings Ltd ("Teck"). The KZK Property consists of 879 quartz claims that cover 16005 hectares (160 km^2) of south-central Yukon, and is centred at 61° 31' N latitude and 130° 33' W longitude on NTS map sheets 105G/7-10, within the Watson Lake Mining District. It is notable for containing the ABM and GP4F volcanogenic massive sulphide (VMS) deposits, which are located 5 km apart. Following the 2015 exploration work, BMC announced resources of 20.1 Mt at 0.9% Cu, 2.0% Pb, 6.4% Zn, 1.4 g/t Au and 151 g/t Ag (Indicated and Inferred) for the ABM deposit (Green et al., 2016) and 1.7 Mt at 0.2% Cu, 2.6% Pb, 6.1% Zn, 1.4 g/t Au and 145 g/t Ag (Inferred) for the GP4F deposit (Green, 2015).

Following its purchase of the project, BMC embarked on an aggressive exploration program that included upgrading and building new exploration infrastructure, compiling historical data, re-logging historical drill core, LiDAR surveying, differential global positioning system (DGPS) surveying of the tote road and historical and 2015 drill collars, geophysical surveying (airborne, ground-based, downhole), resource and exploration drilling, metallurgical drilling and sampling, petrographic studies, geotechnical drilling and engineering, hydrogeological drilling and environmental baseline studies (Table 1).

The 2015 historical core re-logging program logged 174 out of the 201 historical DDHs (87%) drilled on the KZK Property, for a total of 24952.8 m, and collected 1656 samples for geochemical assay. The re-logging program used the same lithological, mineralization, alteration and veining coding system as the 2015 core logging program in order to incorporate the historical data into the current drill hole database and facilitate geological interpretation and resource estimation. Samples sent for assay include 998 half-core shoulder samples, 449 half-core grade confirmation samples and 209 samples for QA/QC. Shoulder samples were taken to further characterize ABM waste rock and assay previously un-sampled mineralization, with 17% of shoulder samples returning at least one precious (Ag, Au) or base (Cu, Pb, Zn) metal assay exceeding the "mineralized" threshold. Results of the grade confirmation assays indicate a strong correlation between historical and 2015 results, although a detailed comparison is beyond the scope of this report.

Geophysical surveys for the 2015 KZK Project included airborne magnetic and VTEM, ground-based gravity and downhole EM. The airborne survey comprised 304 line-km that covered 37 km^2 of two survey blocks on the KZK Property. A 1623 station ground-based gravity survey focussed on the prospective stratigraphy that extends from GP4F through ABM to the Rhyolite Peak area. Downhole EM surveys were undertaken on seven of the 10 DDHs drilled in the GP4F area, and one of the ABM DDHs. Results from all three geophysical surveys were integrated to identify single- and multi-parameter targets including Tarawera (VTEM, gravity), Tambora (VTEM), Tarumae (magnetic, gravity) and Lakagigar (VTEM, magnetic).

The exploration, infill and expansion drill program on the KZK Property comprised 99 DDHs for 21279.7 m of diamond drilling, with work focussed on the ABM lens (59 DDHs, 10334 m), the Santorini target also within the ABM Zone (2 DDHs, 457 m), the newly discovered Krakatoa Zone immediately east of the ABM Zone (26 holes, 6816 m), the nearby Fault Creek target (2 holes, 382 m) and the GP4F deposit (10 holes, 3291 m). A total of 3513 half-core samples were collected and submitted for assay (Cu, Fe, Pb, Zn, Au, Ag ± Ba, S, As, Bi, Hg, Sb, Se), along with 443 QA/QC samples and the previously mentioned 1656 samples from the re-logging program for a grand total of 5603 samples. In addition, 4990 bulk density measurements were taken using the water immersion method. The additional drilling and more accurate bulk density measurements than used historically added 1.3 Mt to the Indicated and Inferred resource total on the ABM Zone. Several areas were also identified for future expansion drilling including the western, northern (down-dip) and eastern margins of the ABM lens.

ABM Zone targets include Santorini and the ABM deep horizon inferred to lie stratigraphically beneath the ABM lens. The two holes drilled into the Santorini target intersected thin intervals of sulphide mineralization that could be stratigraphically equivalent to the Krakatoa Main lens and this remains open to the north-northeast. Work on the ABM deep target, which comprised a review of historical intercepts and drill testing with one hole piggy-backed onto an ABM resource hole, suggests some potential for small mineralized pods along this horizon, and follow-up work is recommended for several untested areas.

The discovery of the Krakatoa Zone was the highlight of the 2015 KZK field season, with the most recent resource estimate (Green et al., 2016) showing that it adds 5.1 Mt of combined Indicated and Inferred resources at 0.6% Cu, 3.2% Pb, 7.5% Zn, 1.7 g/t Au and 213 g/t Ag. The Krakatoa Zone lies east of the East Fault which separates it from the ABM Zone, principally within a mafic sill that occurs immediately below the ABM lens stratigraphic horizon. Collectively the ABM and Krakatoa zones comprise the ABM deposit. The 2015 program defined the Krakatoa Zone from its discovery depth (~300 m) to the surface and to the east and west, where it is bound by the late-stage Sunda fault and East faults respectively. However, the Krakatoa Main lens remains open down-dip and additional expansion drilling is recommended.

The two holes drilled at the nearby Fault Creek target were less successful, although they did support the structural re-interpretation of the area.

Resource and exploration drilling in the GP4F area expanded the GP4F lens, identified two related lenses (Upper and Lower targets) and possibly intersected the northern strike extension of the R-15 deposit, located off the Property 600 m to the southeast, within KZK claims. Further work in this area is recommended to focus on expanding the GP4F lens to the north-northeast and testing the ground between the GP4F and R-15 deposits.

The metallurgical (29 holes, 3406 m), geotechnical (9 holes, 955.4 m) and hydrogeological (11 holes, 325 m) drilling programs were successfully completed as part of the 2015 KZK field season although no additional results were available at the time of this report.

Table 1: Summary of work done and filed for the 2015 KZK Project

Program	Work Type	Description	Filed?
Pre-work program construction	Tote road rehabilitation	Repair of bridge platform and culverts, rehab along 24 km length	Yes
	Camp construction	49 person exploration camp, septic field, bulk fuel storage	Yes
Re-logging and compilation	Historical core re-logging	Re-logged 174 out of 201 historical holes (87%) for 24952.8 m	Yes
	Data compilation	Scanned and digitized numerous boxes of Cominco data, constructed database of historical drilling and sampling data	No
Terrain surveys	LiDAR survey	33 km² survey over the ABM deposit and mine infrastructure locations	Yes
	Drill hole collar survey	Surveyed most 2015 and historical drill collars	Yes
	Tote road survey	Surveyed full 24 km length of tote road	Yes
Geophysics	Airborne magnetics and EM	304 line-km VTEM and magnetic survey	Yes
	Ground-based gravity	1792 gravity stations on three targets	Yes
	Downhole EM	8 holes	Yes
Resource and exploration drilling	ABM lens	59 holes for 10333.6 m	Yes
	ABM-proximal (Krakatoa., Santorini, Fault Creek)	30 holes for 7655.1 m	Yes
	GP4F	10 holes for 3291 m	Yes
Metallurgical drilling and sampling	Drilling and sampling	29 holes for 3406 m plus 27 piggy-backed holes, 1012 samples collected	Yes
	EDTA	312 sample pulps	Yes
Petrographic studies	Polished thin section analysis	96 thin sections analyzed, some microprobe and LA-ICP-MS analysis	Yes
Geotechnical drilling and engineering	Drilling and down hole test work	9 holes for 955.4 m; geotechnical characterisation reporting for waste infrastructure sites in progress at time of report writing	Yes
Hydrogeological drilling and environmental	Hydrogeological drilling	11 holes for 325 m plus seven piggy-backed holes; data analysis in progress at time of report writing	Yes
	ARD kinetic testing	236, 3 kg samples collected for static tests + 123 samples collected for field barrel kinetic tests; geochemical testing and data analysis ongoing at time of report writing	Yes
	Baseline environmental studies	Water quality, wetland, vegetation and wildlife surveys	Yes

1.0 INTRODUCTION

This report has been prepared for BMC Minerals (No. 1) Ltd ("BMC") in order to document the procedures and results of the 2015 exploration work undertaken on the KZK Property and to satisfy assessment reporting requirements for the Yukon Department of Energy, Mines and Resources ("EMR"). Equity Exploration Consultants Ltd. ("Equity") was engaged by BMC to undertake the 2015 KZK fieldwork and to prepare this assessment report. The report has been prepared on the basis of personal observations, assessment reports filed with EMR, data and reports supplied by BMC, regional geological publications by the EMR, and on the 2015 fieldwork undertaken by Equity under the direct supervision of the authors. A complete list of references is provided in Appendix A.

Units and abbreviations used in this report are as follows:

Units:

cm	centimetre
C$	Canadian dollar
g	gram
g/t	grams/tonne
km	kilometre
kg	kilogram
Koz	thousand troy ounces
Kt	thousand tonnes
kW	kilowatt
m	metre
mGal	milligal
mm	millimetre
Mt	million tonnes
Moz	million troy ounces
nT	nanotesla
ppm	part per million
psi	pounds per square inch
"	inch

Abbreviations:

AAS	atomic absorption spectroscopy (an analytical technique)
AES	atomic emission spectroscopy (an analytical technique)
Ag	silver
APS	azimuth pointing system (a DDH orientation system)
ARD	acid rock drainage
As	arsenic
Au	gold
Ba	barium
Bi	bismuth
CRM	certified reference material (QA/QC standard)
CV_{AVR}	average coefficient of variation
Cu	copper
DDH	diamond drill hole
DGPS	differential global positioning system
DO	dissolved oxygen
E	east
EM	electromagnetic
EDTA	ethylenediaminetetraacetic acid (a metallurgical test)
EMR	Yukon Department of Energy, Mines and Resources
Fe	iron

GNSS	global navigation satellite system
GPS	global positioning system (a location method)
Hg	mercury
HLEM	horizontal loop EM
HQ	drill core measuring 63.6 mm in diameter
HQ3	drill core measuring 61.2 mm in diameter
ICP	inductively coupled plasma (an analytical technique)
ID	identification
KZK	Kudz Ze Kayah
LiDAR	Light Detection And Ranging (a remote topographical surveying method)
MS	mass spectrometry (an analytical technique)
Ma	million years ago
N	north
NAD83	North American Datum (1983)
NNE	north-northeast
NQ3	drill core measuring 45.2 mm in diameter
ODEX	overburden drilling excentric (a drilling technique)
ORP	oxidation-reduction potential
Pb	lead
pH	measure of hydrogen ion concentration (acidity)
PVC	polyvinyl chloride (a plastic)
QA	quality assurance
QC	quality control
RQD	rock quality designation
RTK	real-time kinetic (a GPS enhancement)
S	sulphur
Sb	antimony
Se	selenium
SEPA	2004 Socio-Economic Participation Agreement between BMC and Ross River Dena Council
SEM	scanning electron microscope
SPC	specific conductivity
SPT	Standard Penetration Test
SW	southwest
TSF	tailings storage facility
UTEM	University of Toronto electromagnetic (a geophysical technique)
UTM	Universal Transverse Mercator
UV	ultraviolet
VMS	volcanogenic massive sulphide
VTEM	versatile time-domain electromagnetic (a geophysical survey system)
VWP	vibrating wire piezometer
WAAS	wide area augmentation system (a GPS enhancement)
WAD	weak acid dissociable
wt%	weight per cent
X	a horizontal axis
XRF	X-ray diffraction (an analytical technique)
Z	vertical axis
Zn	zinc

2.0 RELIANCE ON OTHER EXPERTS

In Section 3.0, the authors have relied entirely upon information provided by BMC concerning their purchase agreement with Teck and the extent of any underlying interests and royalties. Also in Section 3.0, the authors have relied entirely on the Geomatics Yukon website for downloaded shapefile tenure data. Also in Section 3.0, the authors have relied entirely upon information provided by BMC regarding their Socio-Economic Participation Agreement ("SEPA") with the Ross River Dena Council. The authors have not relied upon a report, opinion or statement of another expert concerning legal, political, environmental or tax matters relevant to this assessment report.

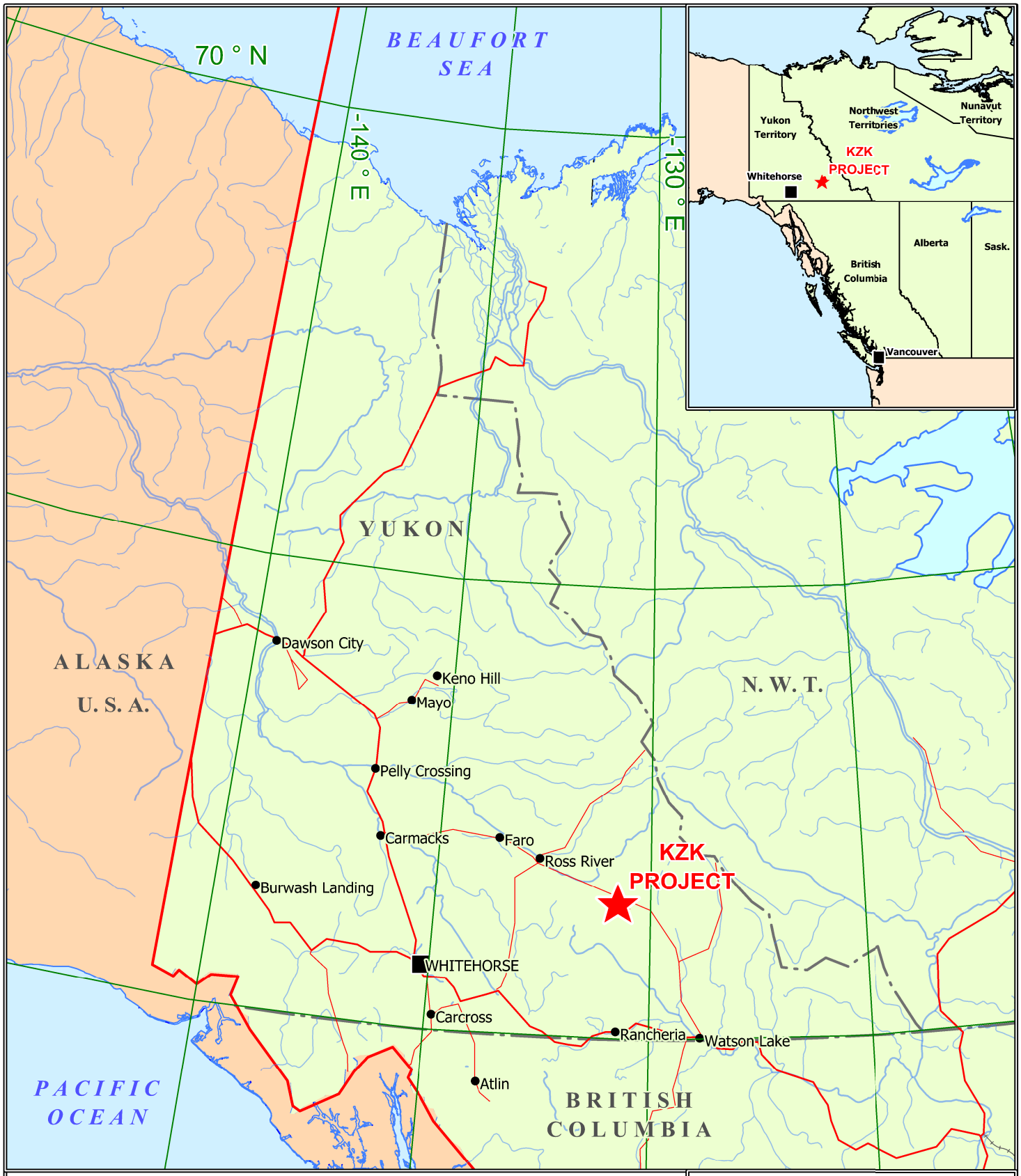
3.0 PROPERTY DESCRIPTION AND LOCATION

Two properties (KZK and Pelly) are controlled by BMC in the Finlayson Lake area of Yukon, but this report covers only the KZK Property. The KZK Property consists of 879 quartz claims that cover an area of approximately 16005 hectares (160 km^2) of south-central Yukon (Figure 1). It is centred at 61˚ 31' N latitude and 130˚ 33' W longitude (NAD83 UTM Zone 9: 416000E 6817000N) on NTS map sheets 105G/7–10, within the Watson Lake Mining District.

The KZK Property consists of three separate claim blocks. The main claim block, with 864 contiguous claims, covers an area of about 11 km x 20 km and hosts the ABM and GP4F deposits. A single line of claims extends north-easterly from the main claim block for 14 km to Finlayson Lake in proximity to the tote road. The EL 1–8 and Limy 1–9 claim blocks are not contiguous with the other claim blocks, lying a few kilometres to the west and east of the tote road respectively (Figure 2). Mineral claim data is summarized in Appendix C. All claims were acquired through staking on the ground. The area covered by each claim is determined by the location of the two claim posts on the ground. A professional surveyor surveyed the key claims in the vicinity of the ABM deposit (Schultze, 2001) in 1994 but the survey was never filed with the government and there is some discrepancy between the location of claims from the 1994 survey and the shapefile tenure data obtained from the Geomatics Yukon website and used in this report.

All claims are registered in the name of BMC Minerals (No. 1) Ltd. ("BMC"). BMC purchased the KZK Property 100% from Teck on 24th January, 2015 and there are no residual royalties across the known mineral resources. The KZK Property area is covered by a 2004 SEPA between BMC and the Ross River Dena Council on behalf of the Kaska First Nation. No significant environmental liabilities were noted by the authors on the KZK Property other than the tote road.

The claims confer title to hard rock mineral tenure only. Surface rights are held by the Crown, as administered by the Yukon Territory. Trapping rights over the western portion of the KZK Property are held by the Ross River Dena Council under Group Trapline #405, while Ted and Franklin Charlie hold trapping rights over the rest of the Property under Single Holder Trapline #250. KZK overlaps with part of Outfitter Concession #20, held by Yukon Big Game Outfitters. There are several parcels of land in the vicinity of the KZK Property which have been reserved for a future land claim settlement with the Ross River Dena Council. Most importantly, a parcel of Interim Protected Land (RRDC-R15A) adjoins the southern boundary of the KZK Property and covers the along-strike continuation of host stratigraphy for the GP4F deposit. Teck explored the RRDC-R15A parcel in 2004, successfully identifying the R-15 VMS prospect (MacRobbie and Holroyd, 2005a). Currently, staking is not permitted within a large area surrounding the KZK Property due to a government moratorium.



0 200,000

metres

Scale: 1:6,500,000

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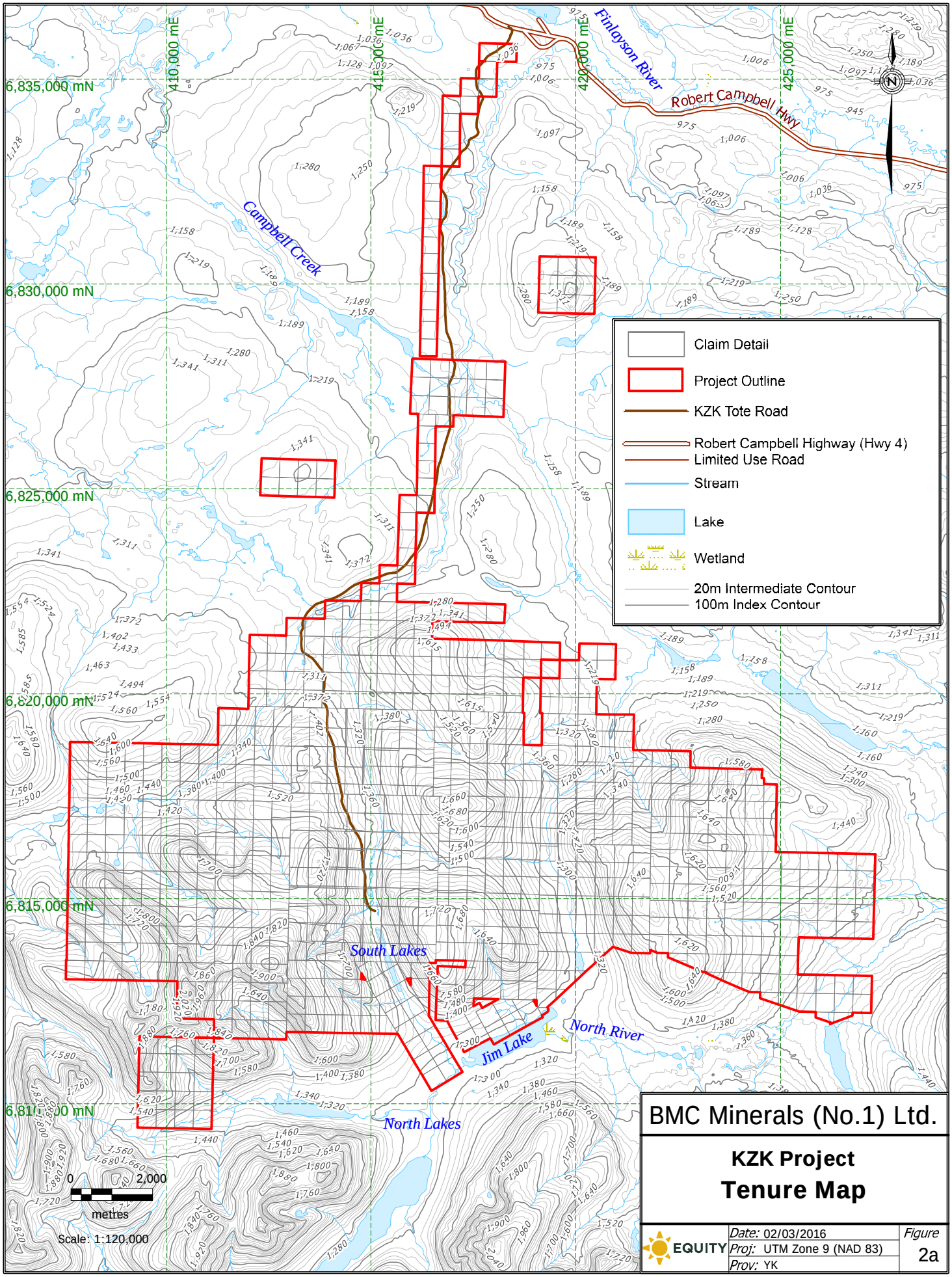
KZK Project

Location Map

EQUITY

Date: 02/03/2016	Map 1
Proj: UTM Zone 9 (NAD 83)	
Prov: YUKON	



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KZK Project

Tenure Map

EQUITY

Date: 02/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK

Figure 2a

Campbell Creek

Finlayson Creek

Finlayson River

Robert Campbell Highway (Hwy 4)

North Lakes

0 2,000

metres

Scale: 1:25,000

- Claim Detail
- Project Outline
- KZK Tote Road
- Robert Campbell Highway (Hwy 4)
- Limited Use Road
- Stream
- Lake
- Wetland
- 20m Intermediate Contour
- 100m Index Contour

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KZK Project

Detailed Tenure Map

EQUITY

Date:	02/03/2016	Map
Proj:	UTM Zone 9 (NAD 83)	2b
Prov:	YK	

Yukon law requires eligible assessment expenditures of C$100/claim/year on the KZK Property to extend tenure ownership past the current expiry dates. Five claim groupings, containing a maximum of 750 contiguous claims, making up the KZK Property were filed with EMR to allow the representation of work done on one or more claims to be distributed to other claims where work was not done.

Exploration programs in Yukon are divided into Class 1 (grassroots) through Class 4 (advanced), depending on threshold levels of camp man-days, fuel storage and extent of exploration activities. In the KZK area, notification of EMR is required for Classes 1 and 2, but submittal of a plan of operations and granting of a Quartz Mining Land Use Permit by EMR is necessary prior to undertaking Class 3 and 4 programs. The 2015 KZK exploration work was carried out under Class 3 Quartz Mining Land Use Permit LQ00424, which is valid from June, 2015 to June, 2020.

The KZK Property lies within the traditional territory of the Ross River Dena Council. Land claims have not been settled in this part of Yukon and their future impact on the Property's access, title or the right and ability to perform work remain unknown. However, the SEPA provides assurances that the Ross River Dena Council will support exploration and mining of the Property, subject to certain terms and conditions.

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY

4.1 Accessibility

Access to the KZK Property is via a 24 km long, gated, single-lane gravel tote road that connects to the Robert Campbell Highway (Highway 4) near Finlayson Lake, at a point 135 road-km east of Ross River and 237 road-km northwest of Watson Lake. Fixed wing aircraft can land on Finlayson Lake or at an airstrip located at its northwestern end.

The mainly gravel Robert Campbell Highway connects the Property to Watson Lake on the paved Alaska Highway and Carmacks on the paved Klondike Highway, giving access to Whitehorse and points south (Figure 1). All highways are maintained by the government for use year-round but maintenance of the tote road is the responsibility of the KZK Project operator. The ABM deposit on the KZK Property is accessible by the tote road for tractor-supported drilling, but helicopters are still necessary for access to most of the remainder of the Property, including the GP4F deposit.

4.2 Local Resources and infrastructure

Ross River, the nearest settlement to the KZK Property, has a population of about 300 and provides basic services (groceries, fuel, accommodation and meals). Whitehorse (population 25000), which is located 260 km west of KZK, offers a full range of services and supplies for mineral exploration and mining, including skilled and unskilled labour, bulk fuel, freight, heavy equipment, groceries, hardware and daily jet service to Vancouver (Figure 1).

The Yukon electrical grid supplies 138 kV electrical power to Faro, located 170 km northwest of the KZK Property but only 25–34 kV electricity to Ross River. Concentrates from the Wolverine Mine, located 25 kilometres to the east of KZK, were trucked 900 kilometres south to port facilities at Stewart, BC prior to Wolverine's temporary shutdown in early 2015.

4.3 Physiography and climate

The KZK Property, which lies in the Pelly Mountains, covers portions of several creeks which ultimately drain north-easterly into the Finlayson River. The ABM deposit lies near the head of Geona Creek and the tote road and the north-easterly trending "tail" of claims follows the Geona Creek valley northeast towards Finlayson Lake. The topography is fairly rugged, and typical of mountainous terrain. Elevations range from 1000 m ASL near Finlayson Lake to over 2000 m ASL on the peaks southwest of the ABM deposit. The surface elevations in the vicinity of the ABM and GP4F deposits are between 1300 and 1500 m ASL.

Below the tree line (1350–1500 m), white and black spruce are the most common tree types. Black spruce is usually dominant in wetter areas; white spruce predominates in drier areas. Paper birch, aspen,

balsam and lodgepole pine are also present. Alpine fir grows near the tree line. In dense coniferous stands, feather moss dominates the understory, but in more open areas willows and heath-like shrubs become prevalent.

Sedge or sphagnum tussocks are common in wetlands and under black spruce. Shrub birch and willow occur in the sub-alpine and extend well above the tree line.

The climate is cold continental with a mean daily summer temperature of 15˚C and a mean daily winter temperature of -25˚C. Precipitation falls fairly evenly throughout the year, predominantly as rain from May through September, and snow for the balance of the year. The mean annual precipitation is 655 mm. Groundwork on the property is possible from June until October, while snow may cover parts of higher elevations late into the summer. Drilling can be conducted year round by using heated water for drilling.

During the last glacial period, ice moved across the eastern part of the area in a northwesterly to westerly direction and extended to heights of about 1525 m (Ritson, 2000).

5.0 HISTORY

The following description of pre-2004 exploration history of the KZK Property has been adapted from MacRobbie and Holroyd (2005a).

No work had been reported in the KZK area prior to 1992, when Cominco Ltd. (“Cominco”), which merged with Teck Corp. in 2001 to form Teck Cominco Ltd. (and ultimately Teck Resources Ltd., both of which are referred to as “Teck” in this report), collected soil and silt geochemical samples along Geona Creek. This work confirmed an anomalous regional silt sample from earlier work (Hornbrook and Friske, 1988) and expanded the extent of geochemical anomalism. In the following year prospector A. B. Mawer discovered a well-mineralized, layered sulphide cobble in the anomalous drainage area. This was immediately followed by a reconnaissance UTEM geophysical survey over the projected trace of the suspected host stratigraphy, thereby outlining an EM conductor. Staking of the first TAG claims over the conductor was accompanied by a ground magnetic survey. Further magnetic and horizontal loop EM and soil surveys were completed later that fall, defining a compelling drill target (Schultze, 1993).

The target was drilled in April 1994, with the first hole intersecting 22.5 m of massive sulphide in two sections (Schultze, 1995). Three additional holes were drilled in April, and each of them intersected sulphide mineralization over significant widths. The weighted average grade of sulphides in the discovery hole was 0.5% Cu, 2.8% Pb, 10.0% Zn, 278 g/t Ag and 2.9 g/t Au. The sulphide body was named ABM after A. B. Mawer, the long-time Cominco prospector who made the initial float discovery.

In total, 52 diamond drill holes (DDHs) (8485 m) were drilled in 1994 along with ground and airborne geophysical surveys, detailed mapping in the vicinity of the deposit, regional and detailed exploration geochemistry and baseline environmental sampling (Schultze, 1996).

In 1995 an additional 133 DDHs (16178 m), were completed at the ABM deposit and on regional targets. Additional exploration soil sampling, minor geological mapping and ground geophysical surveys were completed (Schultze, 1996). Geotechnical investigations (Stacey, 1996), detailed engineering/mine planning, bulk metallurgical sampling, environmental monitoring and archaeological studies were well underway or completed, as well as the construction of a 24 km all-weather tote road from the Robert Campbell Highway. A pre-feasibility engineering study was completed by Cominco in July 1995 (Brown, 1995).

The 1996 program involved regional, 1:20,000 scale geological mapping outside the immediate ABM deposit area, minor line cutting, ground geophysical surveys and soil geochemistry over the northeastern part of the TAG Property. Diamond drilling of a DDH (99 m) was completed in the southwest corner of the current KZK Property. Minor structural mapping and core logging were completed at the ABM deposit.

The 1997 program consisted of 2 main components: line cutting/ground geophysical surveys and diamond drilling. Extensive ground geophysical surveys (UTEM/magnetics) were conducted over the newly cut extension of the Main Grid to the east of the ABM deposit. Minor HLEM/magnetics and gravity surveys were conducted over existing EM/magnetics targets proximal to ABM. A total of 17 DDHs (K97-172 to 187; 3566 m)

were completed; 7 DDHs tested the down dip/plunge and fault offset margins of the ABM deposit, 2 DDHs tested regional targets and 8 DDHs were completed in the Fault Creek area. Discovery of the Fault Creek target (DDH K97-181; 6.4 m at 5.2% Cu, 1.0% Pb, 5.6% Zn, 141 g/t Ag and 2.4 g/t Au), a poorly defined occurrence of massive to semi-massive sulphide mineralization, was significant as it represented the first discovery of significant sulphides south of the Fault Creek Fault (MacRobbie and Bannister, 1998).

To the end of 1997 a total of 168 exploration DDHs and 15 metallurgical DDHs had been completed in the immediate ABM deposit area and another 20 DDHs were completed elsewhere on the property, including 8 DDHs in the Fault Creek target area. Environmental studies, metallurgical testing and permitting activities were ongoing.

In 1998 additional line cutting, soil sampling and limited ground geophysical surveys were completed in several areas. A further 11 DDHs (K98-188 to 198; 1755 m) were completed; 9 DDHs tested the immediate GP4F area and 2 DDHs tested a UTEM/HLEM/magnetics feature northeast of the GP4F deposit (MacRobbie and Holroyd, 1999). The most significant result was the discovery of the GP4F deposit (with a non-compliant estimate by Cominco comprising 1.5 Mt grading 0.1% Cu, 3.1% Pb, 6.4% Zn, 89.7 g/t Ag and 2.0 g/t Au) located 5 km southeast of ABM. Additional airborne EM and magnetic surveys over the eastern half of the R-15 block south of the KZK Property indicated several excellent airborne EM/magnetic targets in the GP4F area (MacRobbie and Holroyd, 2000).

In 1999 a small geophysical program was completed, including an In-Loop UTEM survey over the GP4F deposit and minor HLEM/magnetics in the GP4F deposit area (MacRobbie and Holroyd, 2000).

In 2000 the KZK Property and properties in the Wolverine Lake area were optioned to Expatriate Resources Ltd. (“Expatriate”), a predecessor company to Yukon Zinc Corporation, which currently owns the Wolverine VMS deposit located 23 km east of ABM (Schultze, 2001). Expatriate carried out ground geophysical surveys (UTEM/magnetics) in the area south of the ABM deposit and extending south of the Fault Creek target (Klein, 2000). Expatriate allowed the option to lapse in late 2001.

In 2004 Teck optioned the R-15 block, immediately south of the KZK Property, from Kaska Minerals Corporation, an entity controlled by the Kaska First Nation in Ross River. That summer, Teck carried out mapping, ground geophysical (UTEM and magnetic) surveying and drilled 7 DDHs (1481 m) on the R-15 block, discovering the R-15 deposit. The program extended north into the area of the GP4F deposit on the KZK Property, which received 6.8 line-km of UTEM, 0.4 line-km of magnetics and one DDH (K-199; 246 m) (MacRobbie and Holroyd, 2005a).

The R-15 option was subsequently terminated and no further exploration was done on the KZK Property until January, 2015, when BMC purchased it from Teck.

Several mineral resource estimates have been completed for the ABM and GP4F deposits both historically by Cominco and Teck and more recently by CSA Global Pty Ltd (“CSA”) for BMC when they acquired the project in 2015. Table 2 shows the mineral resource estimates reported for the two deposits.

Table 2: Historical mineral resource estimates for the ABM and GP4F deposits

Deposit	Year	Category	Mt	Cu (wt%)	Pb (wt%)	Zn (wt%)	Au (g/t)	Ag (g/t)	Reference
ABM	Nov 1994	pre-NI43-101	14.04	0.88	1.33	5.61	1.17	125.0	(Green et al., 2016)
	Nov 1994	pre-NI43-101	13.85	0.97	1.30	5.45	1.19	126.9	(Green et al., 2016)
	Apr 1995	pre-NI43-101	13.7	0.98	1.3	5.5	1.24	128	Cominco, 1995
	Jun 1995	pre-NI43-101	11.4	1.01	1.64	6.4	1.46	143	Cominco, 1995
	Dec 2007	Inferred	12.8	0.81	1.7	5.9	1.38	N/A	(Teck-Cominco, 2007)
	2015	Inferred	13.7	0.9	1.6	6.1	1.4	140	Green, 2015a
	2016	Indicated & Inferred	20.1	0.9	2.0	6.4	1.4	151	(Green et al., 2016)
GP4F	1999	pre-NI43-101	1.5	0.1	3.1	6.4	2	90	Schultze, 2001b
	2015	Inferred	1.7	0.2	2.6	6.1	1	76	Green, 2015b

6.0 2015 WORK PROGRAM DESIGN

Work at KZK during 2015 comprised a multi-faceted exploration and development program that included maintenance of historical and construction of new exploration trails, compilation of historical data, re-logging of historical drill core, LiDAR survey, differential global positioning system survey of the tote road and historical drill collars, geophysical surveys (airborne, ground-based, downhole), resource and exploration drilling, metallurgical drilling and sampling, petrographic studies, geotechnical drilling and engineering, hydrogeological drilling and environmental baseline studies.

6.1 Pre-work program construction

Pre-work program construction work included rehabilitation of the 24 km gated tote road that connects the Robert Campbell highway to the former Cominco exploration camp near the ABM deposit and the construction of a new temporary exploration camp for the 2015 work program away from the principal work area

An assessment of the tote road was completed by Onsite Engineering Ltd. (“Onsite”) on 27th May, 2015 to ensure that the exploration activities, including heavy machinery (drill rigs, earthworks equipment and transport trucks) and light vehicles, would have safe access to the project site without degrading the existing road conditions. An engineer’s report detailing the tote road assessment is attached in Appendix D. Rehabilitation earthworks involved repairing two wash outs with new and additional culverts and the road was re-ballasted as needed. The road surface was also re-established to an appropriate profile and cross drain culvert sumps were all cleaned out. The bridge that crosses Finlayson Creek at the 17 km marker was also repaired due to failed abutments and inappropriate decking for heavy loads. Work was undertaken by Moon contracting from Ross River, Yukon, between 30th June and 9th July, 2015 using 250 and 290 excavators. Ongoing road maintenance continued throughout the season using a grader to maintain the road surface as required.

No established camp facilities were present on the KZK Property prior to commencing the 2015 work program so facilities had to be constructed appropriate for the magnitude and scale of the project. A relatively flat site was selected just off the tote road at kilometre 19.5 (from the gatehouse) that was centrally located away from the immediate ABM work area and a relatively short helicopter flight to GP4F. Camp construction was completed by Equity with a 15 person team between 8th July and 31st July, 2015 using numerous contractors from both Whitehorse and Ross River, Yukon. For a detailed description of camp facilities that have been established on the KZK Property refer to section 8.1.

6.2 Data compilation and re-logging

Data compilation and re-logging work programs were initiated prior to the start of the 2015 field season. Much of this work continued through the duration of the field program and for up to several weeks afterwards.

Data compilation work included scanning of all paper documents obtained from Teck, digitizing of selected maps and sections and the aggregation of geological and geochemical data into digital databases. ScanHouse Canada, of Burnaby, BC was sub-contracted to complete the scanning. All documents scanned by ScanHouse have been catalogued into an Excel spreadsheet that is indexed with searchable keywords.

Digital compilation work was completed in MapInfo, MicroMine and Microsoft Access. A database of historical drilling and surface sample campaigns conducted by Cominco and Teck between 1994 and 2004 was developed by OMI Pty Ltd of Hobart, Tasmania, Australia using data supplied by BMC after validation against scanned hard copy documents and drill logs. As neither the data nor digital compilation work will be filed for assessment credits there will be no further mention of this work in this report.

Re-logging of historical drill core was completed to bring historical logs into context, confirm historical assays, understand and improve the ABM geological model, as well as establish consistent logging procedures and protocols for the 2015 drill program. The re-logging program was undertaken by Equity personnel from July 2nd to October 6th 2015, based out of a tent camp established near Cominco's historical core archive. This archive was found to be in generally good shape and required only minimal restorative work (e.g. replacing worn out core boxes, metal tags). Core was re-logged outdoors, generally at ground level by a team of up to six geologists. Information was collected on ruggedized computers using GeoSpark core logging software. Hard copy sections were updated and working geological interpretations were used to elucidate the larger deposit features. A total of 174 DDHs were re-logged for a total of 24953 m, comprising most of the historical ABM and Fault Creek drilling as well as two DDHs from GP4F. To establish the quality of historical assay results, the remaining half-core was sampled from all of the mineralized intervals on sections 414750E, 414850E and 415050E. Historically un-sampled intervals of weakly mineralized to barren, wall rock lying 4.5–6.0 m outward from the massive sulphide contacts were also sampled as part of the 2015 core re-logging program. These samples were submitted to the SGS laboratory in Burnaby, BC for geochemical analysis using the same procedures as core samples collected as part of the 2015 resource and exploration drilling program (see section 6.1.5). Historical core was also re-photographed after logging and prior to sampling.

6.3 Terrain surveys

Terrain surveys included an airborne LiDAR survey and differential GPS (DGPS) surveys of both historical and 2015 DDH collar locations as well as the tote road. Procedures and methods used for these programs are summarized below.

A 33 km² airborne LiDAR survey was completed over the ABM deposit and potential mine infrastructure locations to provide a high resolution topographic surface that can be used for detailed mine design work. The survey was completed by Airborne Imaging from Calgary, Alberta, on the 27th September, 2015 using a fixed wing aircraft equipped with a Leica ALS70 LiDAR system. The survey was flown at a height of 1300 m and a speed of 160 knots with a scan angle of 50° below the aircraft. Nine-and-a-half points per square meter were recorded during the survey providing a horizontal and vertical accuracy of approximately 35 cm and 15 cm respectively. To statistically quantify the accuracy of the survey, LiDAR elevations were compared with ground points independently surveyed by Challenger Geomatics Ltd. ("Challenger") of Whitehorse, Yukon from a base station positioned in the survey area between 24th September and 28th September, 2015. A report detailing the LiDAR survey methodology is attached as Appendix F.

Both the drill collar and tote road surveys were completed by Challenger with the historic collar survey and tote road survey occurring between 14th July and 6th August, 2015 followed by surveying of completed 2015 drill collars from 6th October to 9th October, 2015. Both surveys were completed in NAD83 UTM Zone 9 with Leica Geomatics Ltd. Real Time Kinematic (RTK) DGPS survey equipment and Leica Viva Global Navigation Satellite Systems (GNSS). Radio base stations were set up in proximity to the survey sites providing RTK corrections for most of the KZK survey measurements when radio contact was possible. For the GP4F drill collar survey radio contact with base stations was not possible so the GNSS vectors were post-processed

to provide the final survey location. Due to time constraints several 2015 DDHs were not surveyed by Challenger therefore the final collar location presented in the drill logs is derived by integrating eastings and northings derived from an azimuth positioning system (APS) with elevations corrected to the LiDAR topographic surface. Metallurgical wedge DDHs drilled from the same collar location as the parent DDH were given the same finalized collar locations as the parent.

The tote road survey mapped out its full length at 20 m-spaced points along the centre line between the Robert Campbell Highway and the ABM exploration site. A survey methodology letter provided by Challenger is attached as Appendix G, and coordinates for all surveyed 2015 and historical drill collars on the KZK Property are presented in Appendix H.

6.4 Geophysical surveys

Geophysical surveys completed as part of the 2015 work program included an airborne electromagnetic (EM) and magnetic survey, ground-based gravity and downhole EM. The procedures and methods used for each of these surveys is summarized below and described in more detail within the attached logistical reports (Appendices I, J and K respectively).

A 304 line-km airborne EM and magnetic survey was flown over the KZK Property to follow up on several historical ground-based EM and magnetic targets, as well as to identify anomalous areas that could reflect additional VMS targets. Work was undertaken by Geotech Ltd. from North Aurora, Ontario, between 22nd August and 7th September, 2015 with helicopter service provided by Access Helicopters of Red Deer, Alberta, using an Astar 350 B3. The survey was flown as part of a larger survey on all of BMC's property holdings in the area. Only the KZK and Limy airborne survey blocks will be mentioned in this report.

The KZK airborne geophysical survey covered an area of approximately 35 km² and was flown in a northeast to southwest direction (azimuth 15° east of north). The Limy survey covered an area of 2 km² and was flown in a north-south direction. Both survey blocks consisted of a traverse line spacing of 150 m. Tie lines were flown perpendicular to the traverse lines at a spacing of 1500 m (KZK) and 2000 m (Limy) respectively. Navigation was achieved using a NovAtel WAAS enabled GPS receiver and screen display for the pilot and a NovAtel GPS antenna mounted on the helicopter tail. During the survey an average altitude of 77 m above ground surface was maintained using a Terra TRA 3000/TRI 40 radar mounted beneath the bubble of the helicopter cockpit. The survey was flown at an average speed of 80 km/hr.

Data acquisition was made with a Geotech VTEMplus system with receiver and transmitter coils in a concentric-coplanar and Z direction oriented configuration. The receiver system also included a coincident-coaxial X direction coil. The transmitter-receiver loop was towed at a mean distance of 31 meters below the helicopter with measurements consisting of the vertical (Z) and In-line horizontal (X) components of the EM fields. The aeromagnetic total field was measured using a horizontal magnetic gradiometer with two caesium sensors. The sensors are mounted 12.5 meters apart on a separate loop, 10 meters above the transmitter-receiver loop. A GPS and gyro inclinometer are also installed on this loop to accurately record the tilt and position of the magnetic bird. A magnetometer/GPS base station was also utilised for the survey and set up away from all infrastructure. Base station data was used during the post-processing of survey data at the end of each day. A logistics report provided by Geotech is attached as Appendix I.

A ground-based gravity survey was completed over a 6 km x 2 km area, covering Rhyolite Peak as well as the ABM and GP4F deposits, with the aim of identifying positive gravity anomalies that might reflect additional VMS targets. Work was undertaken by Aurora Geosciences Ltd. ("Aurora") from Whitehorse, Yukon, between 9th August and 16th October, 2015. Gravity crews accessed the survey grid by either truck or side-by-side ATV, and at times required helicopter support provided by Trans North Helicopters ("Trans North") from Whitehorse, Yukon, depending on the proximity of the survey grid to the tote road.

The gravity survey over the ABM deposit consisted of a single line (line 7) that runs north up the Geona valley. The survey in the GP4F area comprised 25 NNE-trending lines spaced 200 m apart (lines 8–32) as well as two short lines (lines 37 and 38) running ESE over the GP4F deposit and the area to the west of the deposit. The Rhyolite Peak survey area was split into two blocks. Lines 1–6 covered a plateau area and have a line

spacing of 300 m whereas lines 33–36 were spaced at 200 m and covered a VTEM anomaly west of the ABM deposit (the “Tarawera target”).

Each survey station was located in the field with a handheld GPS at 50 m separations, with the station preferentially located on rock outcrop. If no outcrop was found the site was cleared of vegetation prior to surveying. The gravity meters were levelled on the site and allowed to settle for a minimum of 90 seconds (instrument 1368) or five minutes (instrument 349) prior to survey. A total of 1792 gravity stations were surveyed with a Scintrex CG-5 Gravimeter comprising 1602 planned stations, 21 unplanned stations and 169 repeat stations. A minimum of two readings were stacked for a minimum of 20 seconds at each station with repeat readings kept to less than 0.03 mGal if possible. If this was not possible then three readings were taken to ensure that data was repeatable to within 0.03 mGal. Filters were used to remove seismic and wind noise, and physical wind blocks were used to reduce wind noise as necessary. Prior to, and following, daily surveying, readings were taken at control stations established within the project area. These readings were repeated until they fell within 0.01 mGal.

Each gravity station was surveyed with an RTK DGPS to provide vertical control for the gravity reductions when processing the data. DGPS readings were taken in the same location as the gravity readings using a Leica GS15 RTK DGPS system. Survey base stations were established in conjunction with the gravity control stations providing RTK corrections via a radio link as well as recording the data to disk. A logistics report describing the 2015 gravity survey and processing procedures used by Aurora is attached as Appendix J.

A downhole EM survey was completed on seven exploration DDHs in the GP4F area and one exploration DDH at Krakatoa in an attempt to detect off-hole EM conductors that could represent sulphide mineralization and provide additional drill targets. Work was undertaken by Aurora between August 21st and October 16th, 2015. Downhole EM measurements were made using a Digi-Atlantis downhole EM probe with a Geonics TEM-67 transmitter and SMARTem24 Receiver with power supplied by a Honda 5 kW generator. Surveyed DDHs were located inside the transmitter loop with the loop positioned to have good coupling with the expected conductor geometry. Three loops were utilised at GP4F during the course of the program that were expanded to incorporate all surveyed DDHs. A single 400 m² loop was used at Krakatoa. Survey stations were located via a winch counter usually at 5 m intervals with the EM probe set to zero at the top of the drill collar. Some survey stations were completed at 2.5 m intervals where anomalous areas were noticed by the operator. Measurements were made for three components at each survey station: (downhole, cross-hole parallel to dip and cross hole perpendicular to dip) utilising 27 channels (channel 1 = early time, channel 27 = late time). A logistics report provided by Aurora is attached as Appendix K.

6.5 Geological resource and exploration drilling

The 2015 resource and exploration drilling program included confirmation, infill and expansion drilling at the ABM lens, infill and exploration drilling on several ABM-proximal targets (Santorini, Krakatoa, Fault Creek) as well as infill and exploration drilling at the GP4F deposit, located about 5 km to the southeast of ABM. A total of 99 DDHs, for 21279.7 m, were completed, 59 of which were on the ABM lens, 30 on ABM-proximal targets (with 26 on the Krakatoa Zone) and 10 on the GP4F deposit (Table 3). Thirty-two of the ABM resource DDHs also met objectives for the metallurgical and hydrogeological work programs (see sections 6.6 and 6.9).

At the ABM lens, confirmation DDHs were designed to twin mineralized intersections to confirm the existence and tenor of massive sulphide mineralization in historical DDHs on sections 414750E, 414850E and 415050E, and to permit resampling of historic DDH intercepts on these sections for analytical quality assurance purposes in relation to the historic assay data. In this process these sections were completely re-drilled. The remaining ABM infill drilling was designed to reduce the drill spacing to nominal 25–30 m pierce points and to infill between widely spaced historical DDHs. An extension program was designed to expand the ABM lens to the east, west and down-dip of the historically-defined resource, in an effort to add to the mineral inventory. Exploration drilling at Krakatoa and Fault Creek were designed to follow up on geological targets and at Santorini was designed to follow up on geophysical targets identified from the 2015 airborne VTEM survey. A resource definition program was also completed at Krakatoa to follow up on the discovery DDH K15-282, which hit three 2 m to 9 m thick massive sulphide lenses between 243 m and 315 m down hole. Widely spaced infill

drilling at GP4F was completed on sections 419400E and 419500E, and step-out exploration drilling was completed up to 200 m east and northwest of the GP4F deposit.

All diamond drilling was completed by Geotech Drilling Ltd. ("Geotech") of Prince George, BC, from 30th July to 28th November, 2015. Drilling on the ABM lens and ABM-proximal targets was completed with three skid-mounted diamond drill rigs (one Zinex A5 and two Hydracore 2000 machines). Drilling at GP4F was completed with one Hydracore 2000 helicopter-portable rig, with helicopter support provided by Trans North. Surveyed drill collar locations are presented in Appendix H and drill logs are attached as Appendix L. Sectional interpretation of all drilling is attached as Appendix M.

Table 3: Summary of the 2015 KZK Project exploration and resource drilling program

Deposit	Zone	Target	Type	N.o. DDHs	Metres	Comments
ABM	ABM	ABM lens	Resource*	26	4466.6	Includes 1 abandoned DDH for 47 m
			Resource*/hydrogeological	5	1161.0	
			Resource*/metallurgical	25	4112.0	Includes 1 abandoned DDH for 72.7 m
			Resource*/metallurgical/hydrogeological	2	232.0	
			Exploration	1	362.0	
		Santorini	Exploration	2	457.0	
	Krakatoa		Resource*	15	3254.4	
			Exploration	11	3561.7	
		Fault Creek	Exploration	2	382.0	
GP4F	GP4F		Resource*	5	1506.0	
			Exploration	5	1785.0	
		2015 Total		**99**	**21279.7**	

Notes: * includes resource confirmation and resource definition DDHs

DDH collars were spotted with either handheld GPS, DGPS or the GPS attached to the Reflex APS. The majority of collar coordinates were also measured with an RTK DGPS as part of the post-drilling collar survey (see Section 6.3 and 8.3.1). All collar coordinates, including re-surveyed historical DDHs, as well as hole orientations are presented in Appendix H. Prior to drilling, the drill rig was aligned to the planned azimuth using an APS provided by Reflex Instruments. The APS is a GPS based compass that is not affected by local magnetic interference and produces true north azimuth measurements to within 0.5° with good GPS integrity.

Downhole surveys were completed using a Reflex EZ-Shot system, a 'single-shot' high precision magnetic instrument that measures the drill hole azimuth relative to magnetic north as well as the drill hole dip and magnetic field strength. Magnetic north azimuth readings were corrected to grid north azimuths by adding 22.5°. The first downhole survey was done once the drill hole had penetrated several meters into bedrock, followed by 25 m intervals for the rest of the hole. In general, magnetic field strengths of 5600–6000 nT were accepted whereas those below 5600 nT and above 6000 nT indicated magnetic interference and were rejected.

Drill core was oriented for most drill holes with the exception of metallurgical twin, metallurgical wedge and 11 shallow hydrogeological monitoring well holes (see sections 6.6 and 6.9). At ABM, core orientation was completed from approximately 20 m above the lens until end of hole using Reflex ACTII RD core orientation systems. Alpha and beta angles of structural features were recorded during logging along with a confidence level estimated by the core logging geologist. Percentage of total recovered core ("core recovery") and length of recovered core with pieces >10 cm ("rock quality designation" or RQD) measurements were recorded for each drill run.

Geological drill hole data was captured using GeoSpark software, an Access-based relational database system that stores drill hole and geological data in individual data tables. Attention was paid to identifying mineralization style, deposit alteration types, hanging wall and footwall lithology as well as sulphide minerals,

carbonate content and oxidation intensity. All drill core was photographed prior to sampling and is stored at the KZK exploration camp. The historic core remains at the Cominco storage area.

A total of 3513 HQ3 and NQ3 half-core samples from 96 resource and exploration DDHs were collected during the 2015 program. Geologists identified all core samples with a unique sample ID number and marked all sample intervals with sample tags in the core box. All mineralized intersections were sampled, including approximately 10 m of the immediate hanging wall and footwall host rock in an effort to characterize waste rock dilution that could be encountered during mining. Primary core samples conformed to lithological boundaries where possible, with core loggers making an attempt to constrain alteration and mineralization features within the sample boundaries as well. Mineralized samples had a nominal sample length of 1.0 m and a minimum length of 0.3 m with barren or poorly mineralized host rock samples typically having maximum and minimum sample lengths of 1.5 m and 0.5 m respectively.

Drill core samples were cut using an open circulation rock saw. Split core was consistently sampled from the same side and placed into labelled plastic sample bags that were sealed with a plastic zip tie and shipped in labelled rice bags sealed with individually numbered security tags. A list of required quartz washes was submitted to the analysis lab that would follow suspected high-grade samples in order to avoid contaminating adjacent lower grade samples. These quartz washes were completed at the crush and pulveriser stage of sample preparation.

A total of 4990 bulk density measurements were completed on resource, exploration, geotechnical and metallurgical parent drill DDHs. Individual measurements were completed on the entire half-core sample submitted for analysis and on representative 10–15 cm long whole core samples of various hanging wall and footwall lithologies. Each sample was weighed in air on a metric balance and then suspended from the balance and weighed whilst immersed in water (i.e. the “water immersion method”). When half-core samples were either too friable or broken, bulk density measurements were not completed as material could be lost and would not be representative. Calibration readings were taken on a 20 cm long piece of metal rebar at approximately every 10th reading and as the last bulk density measurement for each drill hole. Additional bulk density measurements were completed on 50 sample pulps using a pycnometer at SGS Labs of Burnaby, BC, (SGS) as an independent confirmation of the accuracy of field measurements obtained via the water immersion method.

Drill core samples were sent to SGS laboratory in Burnaby, BC for geochemical analysis of base (Cu, Fe, Pb, Zn) and precious (Ag, Au) metals for use in the resource calculation and various trace elements (As, Ba, Bi, Hg, S, Sb, Se). All certificates of analysis are attached in Appendix N. Quality assurance and quality control (QA/QC) of these analyses was monitored through the insertion of Certified Reference Materials (CRM) and blanks into the sample sequence and through various duplicate analyses. A QA/QC analysis based on the assay results for these CRMs and blanks is attached as Appendix O.

A total of 4960 half-core samples – split between 3513 samples of new core and 1447 historical core samples – in addition to 289 blank and 363 CRM samples for QA/QC (12% of total) were submitted for precious, base metal and Fe analysis. These samples were weighed, dried and crushed to 75% passing 2 mm, with a 250 g split pulverized to 85% passing 75 microns. Gold was analysed by 30 g fire assay with an Atomic Absorption Spectroscopy (AAS) finish and silver analysed by Inductively Coupled Plasma (ICP) with an AAS finish on a two gram 2-acid digest aliquot. Gold and silver over limits were triggered at Au >5 g/t and Ag >150 g/t respectively, resulting in re-analysis using a 30 g fire assay with gravimetric finish. Over limits for Ag were subsequently adjusted to 200 g/t when it was clear that acceptable precision was achievable up to 200 g/t using ICP-AAS. Assay results for copper, lead, zinc and iron were completed using a Na peroxide fusion and ICP-AES analysis. This fusion was chosen as it results in the complete digestion of the sample providing a near total chemical analysis. Detection limits for each analytical method used during the 2015 program are shown in Table 4.

Table 4: Analytical methods and range for precious and base metals of interest

Element	SGS code	Analytical method	Analytical range
Cu	GO_ICP90Q	Na peroxide fusion/ICP-AES	0.01–30%
Fe	GO_ICP90Q	Na peroxide fusion/ICP-AES	0.05–30%
Pb	GO_ICP90Q	Na peroxide fusion/ICP-AES	0.01–30%
Zn	GO_ICP90Q	Na peroxide fusion/ICP-AES	0.01–30%
Au	GE_FAA313	30 g fire assay/AAS finish	0.005–10 ppm
	GO_FAG303	Au over limit (>5 g/t): 30 g fire assay/gravimetric finish	0.5–3000 ppm
Ag	GE_AAS12E	2 g 2-acid digest/ICP-AAS	0.3–300 ppm
	GO_FAG313	Ag over limit (>150 ppm): 30 g fire assay/gravimetric finish	10–5000 ppm

Out of the 4951 core samples submitted for precious and base metal analysis, 3337 were also analysed for Ba, 3286 for sulphur, and 1129 for As, Bi, Hg, Sb and Se. The preparation methods were the same as those used for the base and precious metal assays, with analysis completed by ICP-MS on a two-acid aqua regia digest of 3:1 $HCl:HNO_3$. For samples with relatively high Ba and S, a lower weight was used in order to prevent the precipitation of Pb along with $BaSO_4$. Samples with >5% Ba and low base metals were fused with pyrosulphate and analysed by XRF.

CRM and blank samples were inserted at alternating 20th sample intervals within the drill core sample sequence. All CRMs were manufactured from sulphide ores with a similar mineralogy to ABM (i.e. containing pyrite, pyrrhotite, chalcopyrite, sphalerite, galena, minor sulpho-salts) and are generally certified for Cu, Pb, Zn and Fe at the percentile level and Au and Ag at the ppm level. CRMs were picked to match low, medium and high cut-off grades for the elements of economic interest. A minimum weight of 100 g was used for CRM samples so that reanalysis could be completed on the CRM if required. Blank material used for QA/QC consisted of barren landscaping stone acquired from Premier Horticulture Ltd. in 18 kg bags.

One-hundred and sixty-five coarse reject samples, including 5 blanks and 10 CRMs, from both 2015 DDHs and historical DDHs were submitted to ALS Minerals in North Vancouver, BC, for a check analysis program on the results received from SGS. Analyses were completed for Au, Ag, Cu, Pb, Zn and Fe using essentially the same analytical methods as SGS, and the resulting data was analysed by CSA as part of their updated resource estimate for the ABM deposit.

6.6 Metallurgical drilling and sampling

The 2015 metallurgical drilling program consisted of 29 dedicated diamond DDHs, for a total of 3406 m, aimed at providing representative sample material from an initial seven geodomains based on visual logging and Cu:Pb grade ratios (Hughes et al., 2015). Twenty seven parent DDHs were also completed in conjunction with this program to help guide metallurgical drilling and sampling, although their principal purpose was to meet resource definition and hydrogeological work program objectives at ABM (Table 5).

The metallurgical drill program consisted of a combination of twinned and wedge DDHs spread across the ABM deposit with a plan to collect samples in both the potentially oxidized and deeper non-oxidized zones. All DDHs were of HQ3 size core to ensure enough material for metallurgical testing, including comminution and flotation test work. Triple tube coring with inner split tubes was used to maximize core recovery. Due to cost consideration, wedge holes were completed where the target zone was located at >130 m depth down hole, typically at the down dip extent of the deposit. These wedge holes comprise an initial HQ3-sized “parent” hole for resource definition work followed by HQ3 “daughter” holes deflected by a wedge to collect the metallurgical sample. Standard procedure was to allow the daughter holes to deflect in any direction around the parent hole but with minimal separation (one to several metres was acceptable). For mineralization <130 m, twin holes were completed with an NQ3 “parent” for resource definition followed by an adjacent HQ3 “twin” hole for metallurgical sampling.

Drilling was completed by Geotech Drilling of Prince George, BC, utilising three skid-mounted diamond drill rigs (one Zinex A5 and two Hydracore 2000 machines). Drilling alignment, down hole and collar survey procedures as well as core logging procedures were the same as those used for the "resource and exploration drilling program" described in section 6.5, although in this case the drill core was generally not oriented. Collar coordinates and DDH orientations are presented in Appendix H.

Table 5: Summary of the 2015 KZK Project metallurgical drilling program

Target	Type	N.o. DDHs	Metres	Comments
ABM lens	Metallurgical*	29	3406.0	Includes 1 abandoned DDH for 34 m
	Resource/metallurgical	25**	4112.0**	Includes 1 abandoned DDH for 72.7 m
	Resource/metallurgical/hydrogeological	2**	232.0**	
2015 Total		**29**	**3406**	

Notes: * includes dedicated, twinned and wedged holes; ** previously counted as part of "resource and exploration drilling" (Table 3)

One-thousand and twelve HQ3 whole core samples were collected from metallurgical twin and wedge DDHs. All metallurgical samples were identified with a unique sample ID number and marked with a wax coated sample tag in the core box. Samples were collected from mineralized zones, hanging wall and footwall waste rock as well as between mineralized lenses that correlate to the same, or similar, zones and intervals in resource parent holes. The same sampling constraints, including nominal 1.0 m length and respecting lithological contacts and mineralized boundaries, were applied. Metallurgical samples are full core samples, the start and end of which were cut with an open circulation rock saw oriented perpendicular to the core axis. Core samples were placed into labelled plastic sample bags that were left open during the summer months to prevent moisture buildup. Prior to transport and storage the plastic sample bags were sealed with a plastic zip tie and stored in a cool place. A list of metallurgical samples collected during 2015 is presented in Appendix P.

To gain an understanding of possible near-surface oxidation of the sulfide ores at ABM prior to metallurgical studies three hundred and twelve sample pulps of shallow (<50 m) sulphide mineralization from the 2015 resource drill program were submitted to SGS for ethylenediaminetetraacetic acid (EDTA) leach analysis. EDTA provides a quantitative measure of the potential degree of oxidation by forming complexes with the oxidation products of sulphide minerals (Bicak and Ekmekci, 2012). The EDTA test work will be primarily used for assessing the presence of water soluble oxide minerals that might otherwise not be visible in hand specimen, and the effect that such minerals may have on flotation during metallurgical testing. No comprehensive review of the analytical results was completed during this work program and there will be no further mention of it in this report. Certificates of analysis for the EDTA test work are attached in Appendix N.

6.7 Petrography

Four petrographic studies (Table 6) were commissioned in an effort to confirm and/or determine, among other things, the ore mineralogy, gangue minerals, host rock mineralogy, typical grain sizes and textures of samples from the ABM, Krakatoa and GP4F zones (Leitch, 2015, 2016a, b; Townend and Townend, 2015). Townend and Townend (2015) examined polished thin sections in transmitted and reflected light, and used a scanning electron microscope (SEM) to obtain semi-quantitative and quantitative mineral analyses to understand metal deportment among the sulphide minerals. Quantitative analyses were obtained by energy dispersive X-ray spectroscopy (EDS). Most of the samples examined by Townend and Townend (2015) consist of massive (>60% sulphide) to semi-massive (20–60%) sulphide from the ABM lens.

Leitch (2015, 2016a, b) also examined polished thin sections in transmitted and reflected light with a particular focus on the Krakatoa Main lens and GP4F lens to confirm the occurrence of similar ore types to that of the ABM lens. Additional petrographic descriptions were included for unmineralized rocks in support of whole rock geochemical analyses. All four petrographic reports are attached as Appendix Q.

Table 6: Summary of petrographic reports commissioned for 2015 KZK Property

Report	Methods	Samples	Zone			% sulphide in samples		
			ABM	*Krakatoa*	*GP4F*	*>60%*	*20–60%*	*<20%*
Townend and Townend 2015	Petrography*, SEM analysis	37	37			25	8	4
Leitch 2015	Petrography*	17		13	4	10	6	1
Leitch 2016a	Petrography*	11	7	4		7	4	
Leitch 2016b	Petrography*	31		16	15	4	10	17
Totals		**96**	**44**	**33**	**19**	**46**	**28**	**22**

Notes:* includes transmitted light and reflected light microscopy on polished thin sections

6.8 Geotechnical drilling

The 2015 geotechnical drilling program comprised nine DDHs for 955 m (Table 7) that focussed on gaining a better understanding of the location of the East Fault and the competency of the surrounding rock mass (3 DDHs), as well as characterising and confirming historical geotechnical information in the area of Cominco's designed surface infrastructure (6 DDHs). The tested infrastructure sites included the waste dumps and tailings storage facility ("TSF") proposed in a prefeasibility study undertaken by Cominco in 1995, including two alternative sites for the TSF located 200 m south and 200 m north of the original facility, in the Geona Creek valley.

East Fault drilling was undertaken by Geotech of Prince George, BC, between 11th September and 20th October, 2015, using a single Hydracore 2000 machine. Geotechnical drilling at surface infrastructure sites was also completed by Geotech between 25th November and 7th December, 2015 using two Hydracore 2000 machines retrofitted with Standard Penetration Test (SPT) hammers.

Drilling alignment, downhole survey and collar survey procedures were the same as those used for the resource and exploration drilling program described in section 6.5. The three DDHs drilled on the East Fault were oriented at an azimuth of 125° to intersect the fault as perpendicularly as possible and all drill core was oriented from the base of the overburden to end of hole. Geotechnical logging of DDH K15-300 was undertaken at the drill site, with recovery, RQD, metre marks, fractures and fracture frequency, structures and gouge zones logged whilst the core was still in the splits. The primary objective of the waste infrastructure DDHs was to drill through the overburden into competent bedrock to characterize the geotechnical conditions of the subsurface and assist with structural design work. SPTs were done to determine the geotechnical engineering properties of the overburden and packer tests were undertaken, in overburden, transition and bedrock to measure the hydraulic conductivity of these materials. Piezometers were installed for ongoing monitoring of seasonal water levels and thermistors will be installed at a later date in several of the DDHs to evaluate the presence (or not) of permafrost.

Table 7: Summary of the 2015 KZK Project geotechnical drilling program

Target	Type	N.o. DDHs	Metres	Comments
ABM	Geotechnical – East Fault	3	668.1	Includes 1 abandoned DDH for 120.0 m
Infrastructure	Geotechnical – waste infrastructure	6	287.3	
2015 Total		**9**	**955.4**	

6.9 Hydrogeological drilling and environmental studies

The 2015 hydrogeology and environmental work program included hydrogeological drilling, identification of waste rock geodomains to characterize their acid generating potential, construction of acid rock drainage (ARD) kinetic testing facility and collection of baseline environmental data. Procedures and methods used to carry out these program elements are described in more detail below.

The 2015 hydrogeological drill program was designed by Tetra Tech EBA Inc. ("Tetra Tech") and consisted of 11 shallow monitoring well holes for a total of 325 m (Table 8) to characterize the hydrogeological baseline conditions at proposed mine infrastructure locations and within the proposed ABM open pit. Seven additional hydrogeology holes, located within the proposed open pit, "piggy-backed" on resource definition DDHs. The 2015 DDHs were located where gaps were identified in the existing coverage of a network of monitoring wells emplaced by Cominco. Two large 8" diameter pumping wells for a total of 53.3 m were also drilled as part of the hydrogeology program serving a dual purpose for both long-term constant rate pumping tests and future dewatering of the ABM open pit.

Drilling of all hydrogeological DDHs was completed by Geotech of Prince George, BC, between 30th July and 7th November 2015, using one Zinex A5 and two Hydracore 2000 machines. The two large 8" diameter pumping wells were drilled by Midnight Sun Drilling Inc. ("Midnight Sun") of Whitehorse, Yukon, between 30th July and 2nd August, 2015 using one truck-mounted Sandvik Marlin M5 air rotary machine fitted with an ODEX casing system.

Shallow monitoring wells were drilled with HQ size rods and fitted with 1.25" PVC piezometers in either the shallow bedrock or overburden. Packer testing was conducted in each borehole as the hole advanced to infer subsurface hydraulic conductivities. Steel casing was installed at surface to protect the piezometers. Two resource DDHs within the limits of the proposed ABM open pit (K15-200, K15-248) were completed with vibrating wire piezometers (VWP) to determine *in situ* pore pressure and temperature as well as test vertical hydraulic gradients. Packer testing was also completed in an additional 5 DDHs within the proposed ABM pit in an effort to determine the hydraulic conductivity of the fractured bedrock aquifer. Collar coordinates and elevation for the shallow monitoring well holes were acquired with a handheld GPS and LiDAR surface respectively. Subsurface material classification and screen selection for the piezometers was determined by the onsite Tetra Tech hydrogeologist.

Table 8: Summary of the 2015 KZK Project hydrogeological drilling program

Target	Type	N.o. DDHs	Metres	Comments
Infrastructure/engineering	Hydrogeological	10	290.0	Shallow monitoring wells
Krakatoa	Hydrogeological	1	35.0	Shallow monitoring well
ABM	Resource/hydrogeological	5*	1161*	"Piggy-backed" DDHs
	Resource/metallurgical/hydrogeological	2*	232*	"Piggy-backed" DDHs
2015 Total		**11**	**325**	

Notes: * previously counted in "resource and exploration drilling" (Table 3)

Nine waste rock geodomains were defined in 2015 in order to support a geochemical characterization sampling program at the ABM deposit (Baker, 2015a). The main geological features considered in the geodomain interpretation include lithology and mineralogy, the latter focussed mostly on the abundance of carbonate, disseminated pyrite, disseminated pyrrhotite, muscovite and chlorite (± cordierite).

A geochemical characterization program was implemented to support mine plan design and environmental management work at ABM based upon the aforementioned waste rock and metallurgical geodomains. More specifically; the program was designed to understand and evaluate any potential environmental impacts from a future mining operation including the acid generation and/or metal leaching behaviour and management of waste rock, exposed pit wall rock, ore stockpiles, construction rock and tailings. The program involved collection of various waste rock and ore samples as well as construction of a field barrel test stand between 11th November and 19th November, 2015 for static and kinetic laboratory testing as well as field based kinetic testing.

Static tests are intended to characterize the chemical, mineralogical and physical properties of the rock at the time of sampling. Laboratory kinetic tests, including humidity cell sub-aerial leach columns and flooded column tests, are longer term experiments that typically run for a minimum of 40 weeks with sampling events taking place weekly. Field barrel kinetic tests (Figure 3) are used to reflect variable conditions present on site and upscale lab based kinetic tests. Furthermore they can be sampled for the life of the project to anticipate future changes in drainage water chemistry.

Drill core from both historical and 2015 ABM DDHs was sampled for laboratory static and kinetic tests. In total 236 samples, each weighing around 3 kg, were collected from the different waste rock geodomains and ore types. In addition one-hundred and twenty-three 25 kg samples from 2015 ABM drill core only, representing nine waste rock geo-domains and three replicate geodomains, were collected and placed into separate natural rain water filter bins for long term kinetic testing. The field barrel test stand is located on drill pad MW15-01 for shallow monitoring well K15-211, with water from each bin intended to be sampled every two weeks for the duration of the project. Sample tags were placed into the core box where samples were taken and the weights and length of all samples were measured. Photographs of all core samples were also taken. This work will be primarily used as part of a pre-feasibility study on the KZK Project to be completed by BMC in 2016.



Figure 3: Field barrel test stand positioned on drill pad MW15-01 for kinetic testing of the 9 recognized waste rock geodomains.

Several environmental and social studies were initiated as part of the 2015 work program in an effort to characterize the baseline conditions of the project area. These studies include on-going monitoring of surface and groundwater water quality and quantity, wildlife and wildlife habitat surveys (caribou, moose, bears, beavers, collared pikas, hoary marmots, bats, raptors, breeding birds, and waterfowl), aquatic ecosystems, wetland surveys, vegetation and soil surveys, as well as climate and heritage surveys. The majority of the wildlife, vegetation aquatic and water quality studies in 2015 were conducted by Alexco Environmental of Whitehorse, Yukon with parts of the Caribou and Moose surveys also completed by EDI Dynamics Inc. of Whitehorse, Yukon. A summary of the 2015 field activities is provided below.

Surface water quality and quantity monitoring was reinitiated in April 2015 and will continue monthly over the next year. Samples are collected from ten stations on the property and analyzed for pH, specific conductivity, colour, total suspended solids, anions, alkalinity and acidity, ammonia, dissolved organic carbon, total and dissolved metals, total and weak acid dissociable (WAD) cyanide. Field measurements at each station included pH, specific conductivity, temperature, oxidation-reduction potential, and dissolved oxygen. Eight continuous data collection hydrometric stations were also installed on the property (six at historical locations and two at new locations that correspond to historical sampling locations) and water seeps/artesian conditions were evaluated in the ABM deposit area.

Several caribou and moose surveys were conducted to assess the distribution of the Finlayson Caribou Herd. Three surveys were completed at different seasonal periods including a winter aerial survey from March 25–27 as well as post-calving and post-rut surveys in July and October respectively. Moose surveys comprised a late winter survey from March 25–27 and a post-rut survey from November 18–21.

Aerial bear surveys were conducted on April 24, May 4 and May 15, 2015, in areas perceived as moderate to high quality denning habitat.

A beaver habitat and sign survey was completed for the upper Geona Creek Valley on 7th July 2015. As part of the aerial survey, several passes were flown over the creek and all beaver signs (dams, lodges, caches) were marked by GPS and photographed from the air. Signs of beaver activity were also recorded

during a vegetation cover and rare plant survey within the riparian corridor on the 8th July and 15th July, 2015, as well as during a vegetation baseline study completed between 30th July and 2nd August, 2015.

Fish and aquatic surveys were completed on the Geona Creek from June 22-24, August 26-28 and October 14-15. All work was conducted in accordance with Fisheries and Oceans Canada (DFO) Licence to Fish for Scientific Purposes XR 141 2015. Captured fish were identified and enumerated, measured for length (± 1 mm), observed for abnormalities, and released at the location of capture. Additional supporting information collected included: physical description and photo documentation of sampling locations and in situ water parameters (temperature, dissolved oxygen, conductivity). Benthic invertebrates and Periphyton samples were collected from September 9-11 and sent to Cordillera Consulting in Summerland, BC and G3 Consulting Ltd. in Surrey BC respectively for taxonomic identification.

A survey for collared pika and marmots was undertaken in four pre-identified locations (based on habitat suitability) in July, 2015. The survey included cataloguing pika sightings and calls, as well as noting hay piles and searching for burrows or signs of burrows.

A desktop study, which included searching Environment Yukon databases and contacting a small mammal biologist with the Yukon Government, revealed that it would be unlikely for the little brown bat to be present at the elevation of the ABM/GP4F area (≥1350 m). If bats were present they would most likely be concentrated near wetland areas due to the presence of insect food sources. To survey for the presence of bats, an AnaBat remote acoustic recorder unit was set up in a wetland. The unit was installed on the 14th August and retrieved one week later on the 21st August, 2015. The recorder was timed to operate over a six hour period between dusk and dawn, for a total of 42 hours.

A breeding bird survey was completed at 16 sites within the mine infrastructure footprint on 23rd June, 2015. Birds detected by sight and sound were documented by two qualified observers in a five minute standardized point count survey. Wetland areas were assessed the next day (June 24), and include Jim lake (the most eastern lake of the North lakes), the north and south ends of the South lakes, and a beaver dam area at the headwaters of Geona Creek. These surveys comprised a comprehensive scan of the wetland or lake using a spotting scope as well as a standard five minute point count.

A raptor survey was completed from June 23–24 in elevated areas that may provide suitable habitat for cliff nesting. These areas were examined from afar with binoculars and spotting scope, and flyovers were completed to confirm the habitat type for raptor usage. The sky was also scanned for raptors at various times during the day.

A wetlands site assessment was conducted by Contango Strategies Ltd. (“Contango”) of Saskatoon, Saskatchewan, between the 25th and 28th of August, 2015. Eleven locations were sampled *in situ*, resulting in the collection of 10 water, five soil, nine vegetation, and 15 microbiological samples for off-site analytical testing. Above-ground biomass was sampled as it is considered indicative of plant uptake and the cycling of elements and nutrients through decomposition. The below-ground biomass was sampled to assess associated microbial populations and to determine which plants host beneficial microbes. Collected microbial samples consisting of plant roots, soils/sediments, mosses and biofilms were analyzed for beneficial microbes in the context of water remediation and to identify latent potential for treatment. Field measurements were completed at the sampling sites using a YSI ProPlus meter that measures temperature, dissolved oxygen (DO), conductivity (and specific conductivity; SPC), pH, and oxidation-reduction potential (ORP). Additionally, relative soil redox potential measurements were taken using platinum tip probes and Calomel electrodes to measure the flux of electrons between the sediment/soil/pore water and overlying water column.

A weather station was installed on the property in September, 2015, that includes a data logger, satellite communication base station, total precipitation gauge, wind sensor, temperature and relative humidity sensor and a barometric pressure sensor. A manual evaporation pan was also installed but removed at the end of September due to the onset of night time freezing conditions. The evaporation pan required regular maintenance and measurements by Equity camp personnel.

A heritage survey was completed by Ecofor Consulting Ltd. (“Ecofor”) of Whitehorse, Yukon, in August, 2015, at sites considered to have high heritage potential, both within the footprint of the proposed mine

infrastructure as well as the larger property area. An archaeological assessment of alpine localities, particularly in or near ice patch features, was also completed.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional geology

The KZK Property is underlain by polydeformed metamorphosed sedimentary, volcanic and plutonic rocks assigned to the Yukon - Tanana terrane which extends from central British Columbia to eastern Alaska. These rocks are interpreted as the product of middle Palaeozoic continental arc magmatism in a peri-cratonic setting that was separated from Ancestral North America by a back-arc rift basin occupied by the Slide Mountain Ocean. In central Yukon the Finlayson Lake belt is comprised of lithologies assigned to both the Yukon Tanana and Slide Mountain terranes (Nelson et al., 2013). Syngenetic volcanogenic massive sulphide (VMS) mineralization occurs in both terranes hosted in multiple settings in this belt.

The Finlayson Lake belt is a crescent-shaped area, approximately 300 km long and 50 km wide, extending from Ross River in the north to Watson Lake in the south, and is composed of Devonian to Mississippian volcanic, intrusive and sedimentary rocks. It is juxtaposed with Proterozoic and Palaeozoic strata of the ancient North American continental margin along the Tintina Fault Zone to the southwest and with Carboniferous rocks of the Slide Mountain Terrane to the northeast (Figure 4). The main part of the Yukon-Tanana terrane, which underlies most of west-central Yukon, is contiguous with the Finlayson Lake district, after restoration of 456 km of Late Cretaceous right lateral strike-slip movement along the Tintina Fault (Layton-Matthews et al., 2008).

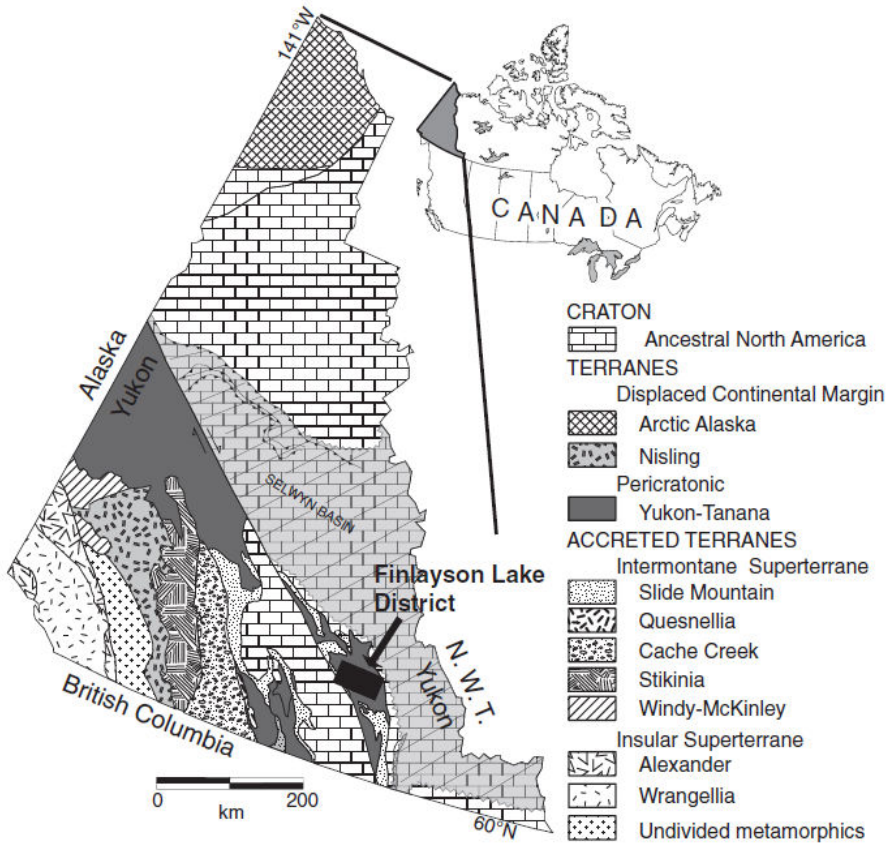
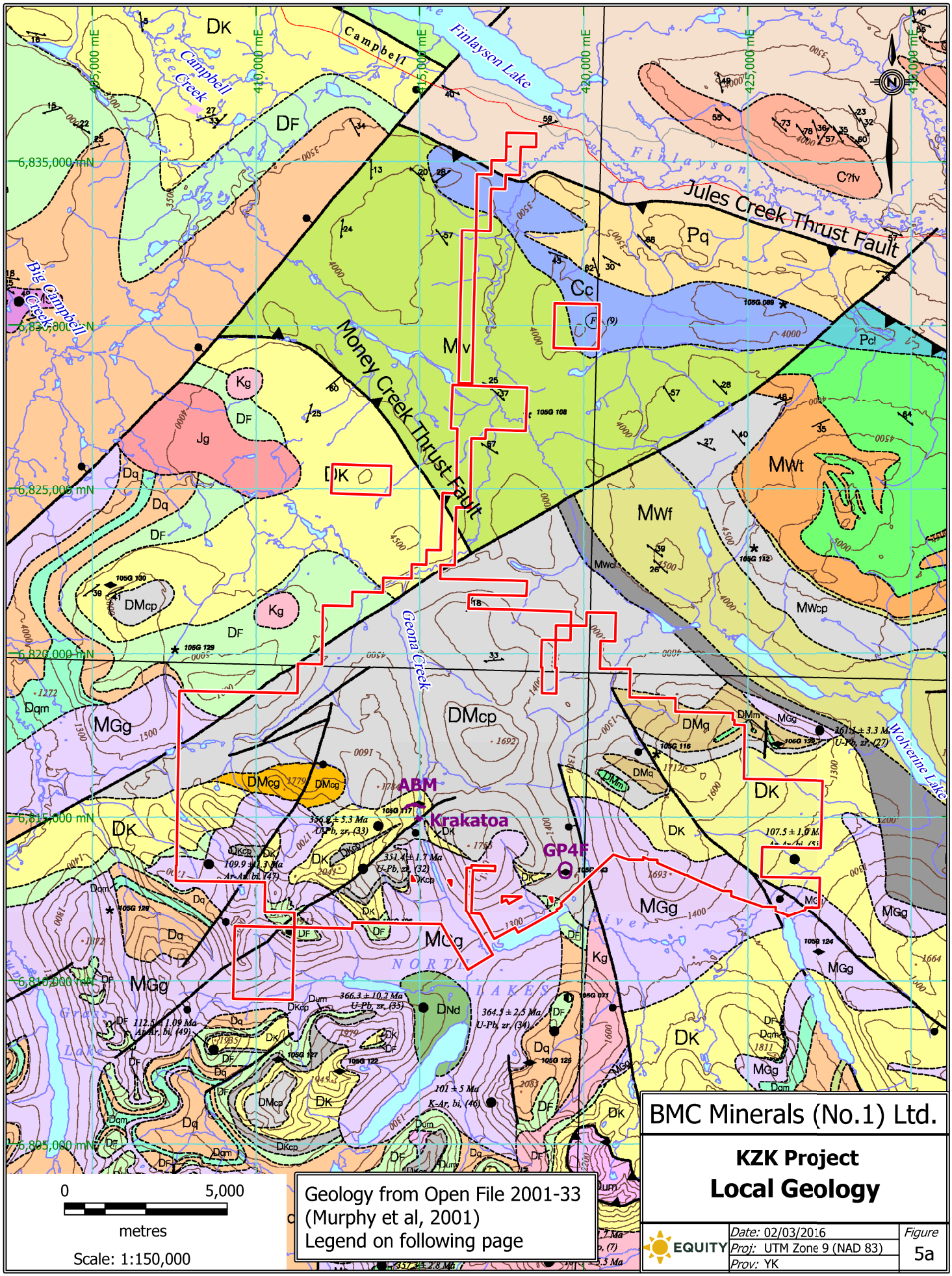


Figure 4: Regional geology of the Finlayson Lake District, taken from Layton-Matthews et al (2008)

7.2 Local geology

The Yukon-Tanana terrane in the Finlayson Lake belt is composed of foliated and lineated greenschist- to lower amphibolite-grade metasedimentary, metavolcanic and metaplutonic rocks (Figure 5). This part of the Yukon-Tanana terrane was imbricated by Permian thrust faulting into the Cleaver Lake, Money and Big Campbell thrust sheets. The final stage of thrusting placed this rock package onto North America and occurred along the Big Campbell and Inconnu thrusts in Late Triassic to Early Jurassic time (MacRobbie and Holroyd, 2005a). With the exception of the Limy 1–9 claim block and the line of claims along the tote road to the Robert Campbell Highway, the KZK Property lies entirely within the Big Campbell thrust sheet in what is the structurally deepest part of the Yukon-Tanana terrane. The Big Campbell thrust sheet lies below the Early Permian Money Creek thrust, which has greater than 35 km of northeast-directed displacement (Murphy, 2004). Two middle Palaeozoic unconformity-bounded groups (Grass Lake and Wolverine) are exposed within the Big Campbell thrust sheet.



Geology from Open File 2001-33
(Murphy et al, 2001)
Legend on following page

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KZK Project

Local Geology

EQUITY

Date: 02/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK

Figure 5a

LEGEND FOR KZK LOCAL GEOLOGY (OPEN FILE 2001-33)

POST-THRUST INTRUSIVE ROCKS

CRETACEOUS

Kg — Equigranular biotite-muscovite granite

JURASSIC

Jg — Equigranular hornblende-biotite granite

YUKON-TANANA TERRANE

Footwall of Jules Creek Thrust

CARBONIFEROUS?

C?cs — Phyllite, ribbon chert, sandstone, grit, conglomerate

C?iv — Chlorite-feldspar-quartz phyllite (intermediate metavolcanic rocks)

Hanging wall of Jules Creek Thrust

PENNSYLVANIAN

Pcl — Phyllite, chert, conglomerate, greywacke, diamictite, limestone

Hanging wall of Money Creek Thrust

PENNSYLVANIAN

Pq — Quartz sandstone/quartzite

UPPER MISSISSIPPIANTO MID-PENSYLVANIAN

Cc — Bioclastic crinoidal limestone

EARLY MISSISSIPPIAN

SIMPSON RANGE PLUTONIC SUITE

MSg — Granite, quartz monzonite

LOWER MISSISSIPPIAN

Miv — Chlorite-muscovite-quartz phyllite (intermediate composition)

UPPER DEVONIAN

DF — Chloritic phyllite with lesser clastic rocks, marble

Footwall of Money Creek Thrust

EARLY MISSISSIPPIAN

WOLVERINE SUCCESSION

MWb — Chloritic phyllite

MWt — Thinly interbedded siliceous rock and phyllite (metatuff and exhalites)

MWf — Muscovite-quartz phyllite

MWcp — Carbonaceous phyllite and quartz sandstone

MWcl — Feldspathic meta-sandstone, grit and carbonaceous phyllite

EARLY MISSISSIPPIAN

GRASS LAKES PLUTONIC SUITE

MGg/ MGag — Granitic to monzonitic equigranular meta-plutonic rocks/Augen-textured granitic to monzonitic meta-plutonic rocks

LATE DEVONIAN

NORTH LAKES META-DIORITE

DNd — Foliated hornblende-biotite meta-diorite

UPPER DEVONIAN (TO LOWER MISSISSIPPIAN?)

GRASS LAKES SUCCESSION

DMq — Quartzite

DMm — Chloritic phyllite

DMcp — Carbonaceous phyllite and quartzite

DMcg — Meta-conglomerate

Kudz Ze Kayah felsic metavolcanic unit

DK — Undifferentiated feldspar-muscovite-quartz schist/ phyllite, siliceous muscovite-quartz schist/phyllite, augen schist/phyllite (meta-porphyry)

DKcp — Carbonaceous phyllite and quartzite

DKcs — Calcareous meta-sandstone and grit

Fire Lake metavolcanic unit

DF — Plagioclase-chlorite phyllite/schist, carbonaceous phyllite, muscovite-quartz phyllite

UPPER DEVONIAN AND OLDER?

Dq — Psammitic and meta-pelitic schist

Dqm — Marble, calcareous schist and lesser carbonaceous phyllite

Dm — Biotite-plagioclase-actinolite-chlorite schist

Dfv — Feldspar-muscovite-quartz schist (felsic metavolcanic rock)

Reference: Murphy et al (2001)

BMC Minerals (No.1) Ltd.

KZK Project
Local Geology
Legend

EQUITY

Date: 02/03/2016
Proj:
Prov: YK

Figure 5b

The lowermost part of the Grass Lakes Group (North River Formation) consists of pre-Early Mississippian (pre-365 Ma) quartz-rich, non-carbonaceous metaclastic rocks (**Dm**, **Dfv**, **Dqm** and **Dq**) dominated by quartzite psammite and metapelite with minor felsic metavolcanic schist, calcareous schist/metapelite and marble members. The North River Formation is conformably overlain by 30 to >200 metres of the *c.* 365 to 360 Ma mafic-dominated arc- and back-arc-related Fire Lake Formation (**DF**), which consists of mafic metavolcanic schist and phyllite with very minor carbonaceous phyllite and quartzite, rare marble and felsic metavolcanic muscovite-quartz schist, and locally significant meta-gabbro, meta-pyroxenite and meta-ultramafic bodies. The Besshi-style Fyre Lake Cu-Co-Au VMS deposit is hosted in boninite at the top of the Fire Lake Formation. Conformably overlying the Fire Lake Formation is the felsic volcanic and sedimentary rock-dominated Kudz Ze Kayah ("KZK") Formation (**DK**, **DKcp** and **DKcs**), whose lower parts consist predominantly of Devono-Mississippian (*c.* 360–356 Ma) felsic volcanic and variably carbonaceous sedimentary rocks. The thickest accumulation of felsic metavolcanic rocks within the KZK Formation occur on the KZK Property. Rocks within the KZK Formation are interpreted to have formed within a continental back-arc rift to back-arc basin (Layton-Matthews et al., 2008). The ABM and GP4F VMS deposits are hosted by different stratigraphic levels of this Formation. The KZK Formation grades conformably upwards into a thick sequence of carbonaceous to locally calcareous phyllite and lesser siltstone and mafic metavolcanic phyllite/schist with minor blue quartz-bearing grits, conglomerate, psammite and quartzite (**DMq**, **DMm**, **DMcp**, and **DMcg**) of the Wind Lake Formation. Coeval with the KZK and Wind Lake formations are Devonian-Mississippian (360±1 Ma) peraluminous K-feldspar porphyritic to megacrystic granites of the Grass Lakes suite of intrusions (**MGg** and **MGag**), which are inferred to be subvolcanic feeders to the volcanic rocks (MacRobbie and Holroyd, 2005b; Murphy et al., 2001; Piercey et al., 2001).

The Wolverine Group unconformably overlies the Grass Lakes Group and consists predominantly of Early Mississippian (*c.* 356–346 Ma) felsic volcanic and carbonaceous sedimentary rocks (**MWb**, **MWt**, **MWf**, **MWcp** and **MWcl**). The succession contains, from bottom to top, a lower conglomerate unit, a lower felsic volcanic-dominated unit, a regional carbonaceous argillite unit, the immediate footwall felsic volcanic and subvolcanic rocks to the Wolverine VMS deposit, and a hanging wall consisting of aphyric rhyolite and carbonaceous sedimentary rocks that, near their top, host basalt flows. Rocks of the Wolverine succession are interpreted to have formed within an ensialic back-arc rift basin that evolved to sea-floor spreading (Layton-Matthews et al., 2008). The Wolverine Kuroko-style VMS deposit occurs at the contact between footwall felsic volcaniclastic rocks and either hanging wall carbonaceous argillite or exhalative rocks (Murphy et al., 2001; Piercey et al., 2001).

A sub-horizontal to moderately steep north to northeast dipping, penetrative ductile deformation fabric and locally preserved isoclinal folding with associated middle greenschist facies (chlorite-biotite grade) metamorphism affects all Grass Lakes Group lithologies. It is less prominent or absent in the Wolverine Group. These fabrics and the metamorphism may reflect two phases of deformation: an early Mississippian event; and, an event related to continent arc collision during the Late Permian to early Triassic time (Schultze, 2001).

7.3 Property geology

The KZK Property was fully mapped in 1996 at 1:20,000 scale by Cominco geologists (Schultze and Hall, 1997). Since then, no property-wide geological mapping has been reported, although more detailed mapping has been done locally. The following discussion is modified from Schultze and Hall (1997). Lithologic codes used on the 2015 KZK Project are summarized in Table 9.

Stratigraphy within the Grass Lakes Group on the KZK Property is divided into three main components: the Kudz Ze Kayah Formation felsic volcanic package, which hosts all significant VMS mineralization on the Property; the overlying "Upper Sedimentary and Mafic Volcanic Sequence" metasedimentary package (equivalent to Wind Lake Formation of Murphy et al . (2001)); and the underlying "Lower Sedimentary Sequence" metasediment package (MacRobbie and Holroyd, 2000) that also forms part of the KZK Formation and is equivalent to the **DKcp** unit in Murphy et al (2001) (Figure 6). VMS mineralization occurs at various levels within the KZK Formation with, for example, the GP4F lens occurring at a lower stratigraphic level than the ABM lens. In a gross sense, stratigraphy trends easterly, dips moderately to the north and is right way up.

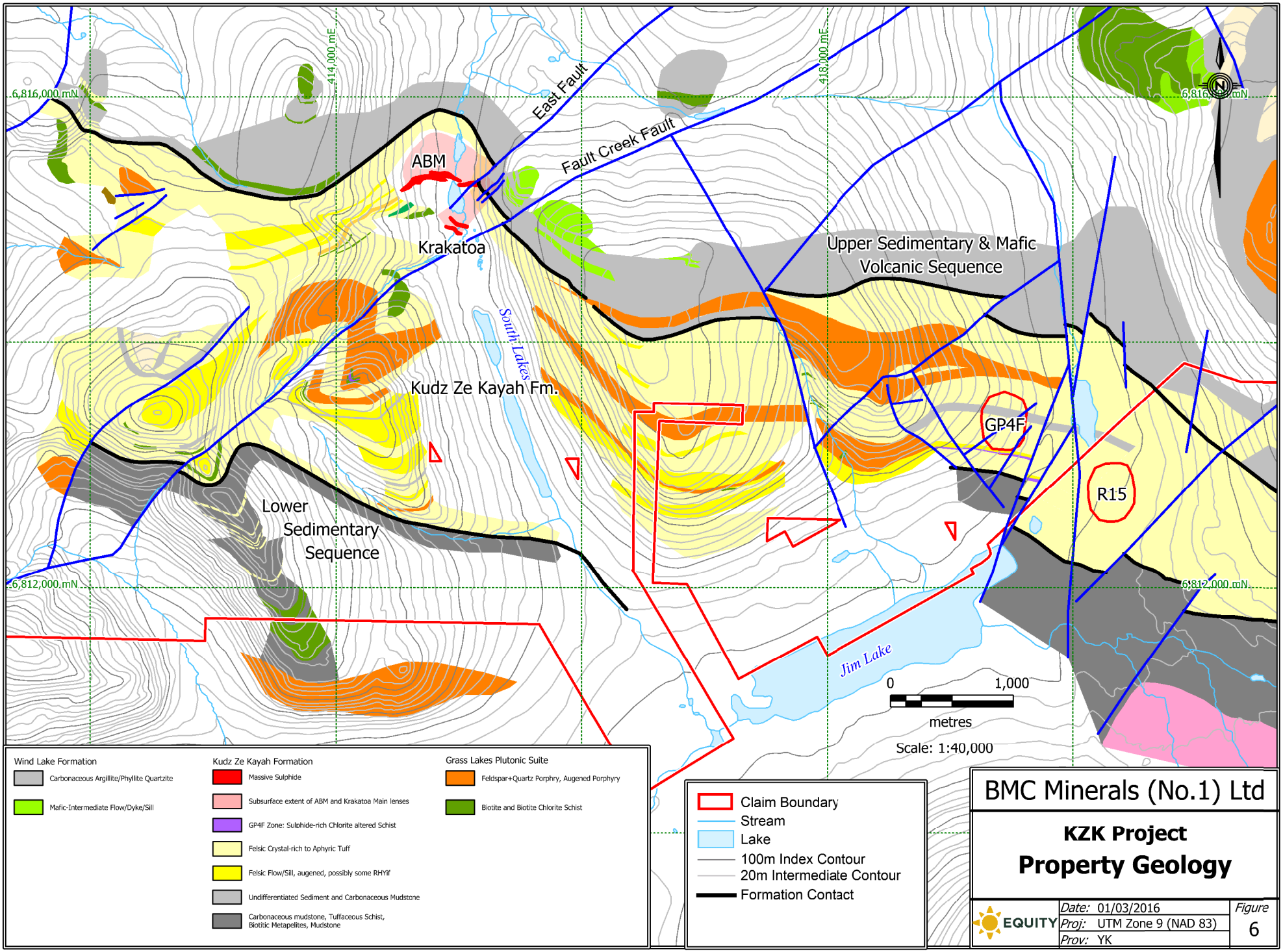
414,000 mE
418,000 mE
6,816,000 mN
6,812,000 mN
East Fault
Fault Creek Fault
ABM
Krakatoa
South Lakes
Kudz Ze Kayah Fm.
Upper Sedimentary & Mafic Volcanic Sequence
Lower Sedimentary Sequence
GP4F
R15
Jim Lake
0
1,000
metres
Scale: 1:40,000
Wind Lake Formation
Carbonaceous Argillite/Phyllite Quartzite
Mafic-Intermediate Flow/Dyke/Sill
Kudz Ze Kayah Formation
Massive Sulphide
Subsurface extent of ABM and Krakatoa Main lenses
GP4F Zone: Sulphide-rich Chlorite altered Schist
Felsic Crystal-rich to Aphyric Tuff
Felsic Flow/Sill, augened, possibly some RHYif
Undifferentiated Sediment and Carbonaceous Mudstone
Carbonaceous mudstone, Tuffaceous Schist, Biotitic Metapelites, Mudstone
Grass Lakes Plutonic Suite
Feldspar+Quartz Porphry, Augened Porphyry
Biotite and Biotite Chlorite Schist
Claim Boundary
Stream
Lake
100m Index Contour
20m Intermediate Contour
Formation Contact
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Figure
6

The Lower Sedimentary Sequence (**CLS**) comprises mainly siltstone, phyllitic schist, light grey quartzite and more massive tuffaceous wacke that is interfingered with feldspar porphyry. Non-carbonaceous to carbonaceous mudstone occurs locally as does thin felsic tuff. Mafic sills and dykes (flows?) (**MAFi**) are common and locally associated with thinly banded cherty layers. The thickness and extent of these units are undetermined.

The KZK Formation, as defined on the Property, is a thick felsic epiclastic and intrusive/flow (dome) complex with minor mafic sills and flows and rare interbedded sediments. The sediments comprise tuffaceous and carbonaceous mudstone, wacke and orthoquartzite.

The KZK Formation can be subdivided into mappable units, namely: felsic tuff (**RHYv**), coherent felsic flows/intrusives (**RHYc**), feldspar-quartz porphyry intrusive (**RHYi**), mudstone (**MDS**) and undifferentiated mafic volcanic (**MAFi**). Felsic tuff (**RHYv**) is the most abundant. Thin-bedded tuffs are present near the top of this package and at stratigraphic levels where argillaceous pelitic sediments are present as thin intercalations. Thinly banded (bedded?) siliceous felsic ash tuffs are generally rare in outcrop. With increasing grain size the fine felsic tuffs grade into crystal-rich ash tuffs containing up to 35% light grey to white feldspar and clear grey quartz crystals. Feldspar-augen crystal tuffs are well exposed along ridges southeast of ABM. The fissile character and internal variations of feldspar augen content and lateral extent suggest that this unit may be a crystal rich tuff rather than an intrusive.

Rhyolite flows and associated intrusives (**RHYc**) are thickest, most abundant and best exposed on Rhyolite Peak, west of the ABM deposit. These units are typically very dense, siliceous, and aphanitic. Some outcrops along Fault Creek contain up to 70%, 5–25 mm spherulites.

Feldspar-quartz porphyry intrusions (**RHYi**), likely cogenetic with the epiclastic units, contains 15 to 30%, 3 to 18 mm euhedral light grey feldspar phenocrysts and 5 to 20% 2 to 4 mm clear grey, subhedral quartz phenocrysts set in very fine-grained quartz-sericite-feldspar-chlorite-ankerite matrix.

Mafic components (**MAFi**) are mapped throughout the KZK Formation. Two distinct units are present low on the slopes and in the footwall of the ABM deposit. A strongly foliated porphyroblastic chlorite-biotite-calcite schist occurs beneath the ABM ore body and is likely to be the remnant of a mafic sill. Outcrop of porphyroblastic chlorite-biotite-calcite schist exposed to the west along strike from the ABM deposit are interpreted to be equivalent to similar rocks in the footwall. The second unit is a coarse-grained mafic schist with less deformed enclaves exhibiting a presumably relict gabbroic texture. Both these units trend westward into thinner, fine-grained schists. Felsic tuffs and intrusives are cut by numerous dark brown-grey, biotite-clinopyroxene-hornblende schists. Mafic tuffs are volumetrically minor in the KZK Formation, generally forming fine-grained, chlorite-calcite phyllitic schist.

The base of the Upper Sedimentary and Mafic Volcanic Sequence lies about 200 m above the ABM deposit. It is finer-grained than the Lower Sedimentary Sequence and comprises variably carbonaceous and calcareous mudstones (**MDU**) with minor quartzite, siltstone and limestone(?), intercalated with mafic volcanic (**MAFt**) and minor felsic volcanic units. The package is regionally extensive and very thick.

The Yukon-Tanana rocks on the KZK Property are strongly structurally transposed, polydeformed, and overprinted by mid-greenschist and higher grade metamorphism. Cominco noted evidence of five distinct phases of deformation. The first three phases (D1, D2. D3) were regionally penetrative and involved ductile simple-shearing, faulting and folding. Early-stage fabrics (S1), represented by weak, bedding-parallel schistosity to a well-developed mylonitic fabric, have been transposed into a strong, shallowly dipping, axial plane crenulation cleavage (S2) which was formed during the development of south- to southeast-verging F2 folds. North- to northeast dipping S3 cleavage and shear bands commonly offset S2 fabrics in a top-to-the-south/southeast shear sense.

The last two phases of deformation (D4, D5) were relatively minor and involved non-penetrative compression and extension. D4 deformation is characterized by broad open folds whereas D5 deformation is characterized by late-stage, commonly north- and northeast-striking, brittle-style normal faults. In addition, early thrust faults commonly display late-stage (D5) extensional reactivation.

Table 9: Lithological legend for KZK Project

Formation	Code	Sub-code	Lithology	Description
	OVBN		Overburden	Unconsolidated overburden.
Wind Lake	MAFt		Mafic volcaniclastic	Confined to Upper Sedimentary and Mafic Volcanic Sequence
	MDU		Mudstone and tuffaceous mudstone	Calcareous carbonaceous and mafic tuffaceous mudstones of the Upper Sedimentary and Mafic Volcanic Sequence
KZK	RHYi		Aphanitic rhyolite	Aphyric massive to semi-massive siliceous rhyolite interpreted as intrusive dykes and sills
	RHYc		Coherent rhyolite	Undifferentiated coherent rhyolite
		RHYcw	Curdy-textured and/or flow-banded	Flows or sub-volcanic intrusions with definitive siliceous flow banding or relict flow banding textures
		RHYcf	Feldspar ± quartz porphyry	Medium to coarse-grained feldspar and quartz porphyritic texture rhyolite
		RHYcq	Quartz porphyry	Medium to coarse-grained quartz-phyric texture
	MAFi		Mafic intrusions	Chlorite-altered mafic intrusion, primarily in the footwall but also occurs as narrow dykes or sills within the felsic sequence
	RHYv		Volcaniclastic rhyolite	Undifferentiated fine to medium-grained volcaniclastic
		RHYvl	Lapilli tuff	Heterolithic tuff with >15% lapilli typically in an ash-dominated groundmass
		RHYva	Coarse-grained to ash tuff	Phaneritic ash tuff with >10% of crystals occurring as >1–<2mm typically in an ash-dominated groundmass
		RHYvx	Quartz ± feldspar crystal tuff	Quartz, ± feldspar-phyric (>10%) in an ash-dominated groundmass
	RHY		Undifferentiated rhyolite	Typically altered and difficult to identify
	MDS		Mudstone, tuff and rhyolite	Undifferentiated carbonaceous mudstone, tuffaceous mudstone and carbonaceous coherent rhyolite
		MDSt	Rhyolite tuff-dominant mudstone	<15% carbonaceous component, heterolithic appearance with rare mudstone laminae
		MDSc	Carbonaceous mudstone	>15% carbonaceous component, weakly heterolithic to semi massive mudstone with slaty cleavage
		MDSw	Coherent rhyolite with minor carbonaceous mudstone	<15% carbonaceous component, laminae of mudstone intercalated with coherent rhyolite
	SED		Undifferentiated sedimentary rock	Variable; includes locally calcareous sandstone, wacke, recrystallized limestone
		SEDc	Calc-silicate sedimentary rock	
	CLS		Lower Sedimentary Sequence	Carbonaceous mudstone, siltstone, tuffaceous schist, biotite metapelite, calc-silicate, mafic dykes

7.3.1 ABM deposit

The 2015 work program has expanded on Cominco's work and now recognizes that the ABM deposit comprises two major zones: the ABM Zone and the Krakatoa Zone, which are separated by the north-northeast striking East Fault (Figures 7, 8). The ABM Zone consists of the resource-stage ABM lens and the less-explored Santorini and ABM deep targets. The ABM lens is defined as massive sulphide and stringer-style sulphide mineralization primarily hosted within a package of felsic volcanic rocks that occurs in the immediate hanging wall to a chlorite altered mafic schist (MAFi) while the Krakatoa Zone is primarily hosted at or near the lower contact of the MAFi unit (Baker, 2015b). West of the East Fault only the ABM lens has been well-explored and, although scattered occurrences of mineralized mafic footwall have been intersected, a lens of coherent massive sulphide (the ABM Deep target) stratigraphically analogous to the Krakatoa Main lens has yet to be identified. To the east of the East Fault the predominant mineralization of the Krakatoa Zone is in the MAFi, however several occurrences of much thinner mineralization are also hosted in the felsic volcanic rocks in the hanging wall to the MAFi (the Krakatoa Upper lens) in a stratigraphic position analogous to the ABM lens west of the fault (Duncan and Baker, 2015). Krakatoa Zone mineralization is bound to the west by the East fault and to the east by the Sunda Fault (likely a splay off the Fault Creek Fault), and is interpreted to lie within an obliquely down-faulted block of KZK Formation (Duncan and Baker, 2015).

The ABM lens is larger than Krakatoa and consists of polymetallic (Cu-Pb-Zn-Au-Ag-rich) massive and stringer-style sulphide mineralization that is up to 39 m in true thickness, strikes at approximately 290° and has a minimum strike length of 700 m (Hughes and Baknes, 2015). The mineralized zone is coherent from section 414550E in the west to section 415225E in the east (Appendix M), forming a series of stacked lenses that coalesce into a single mineralized horizon at 415025E. The ABM lens dips ~35° to the north with a 400 m down dip extent, with a flexure occurring around 200 m down dip that flattens the dip to 10–15°.

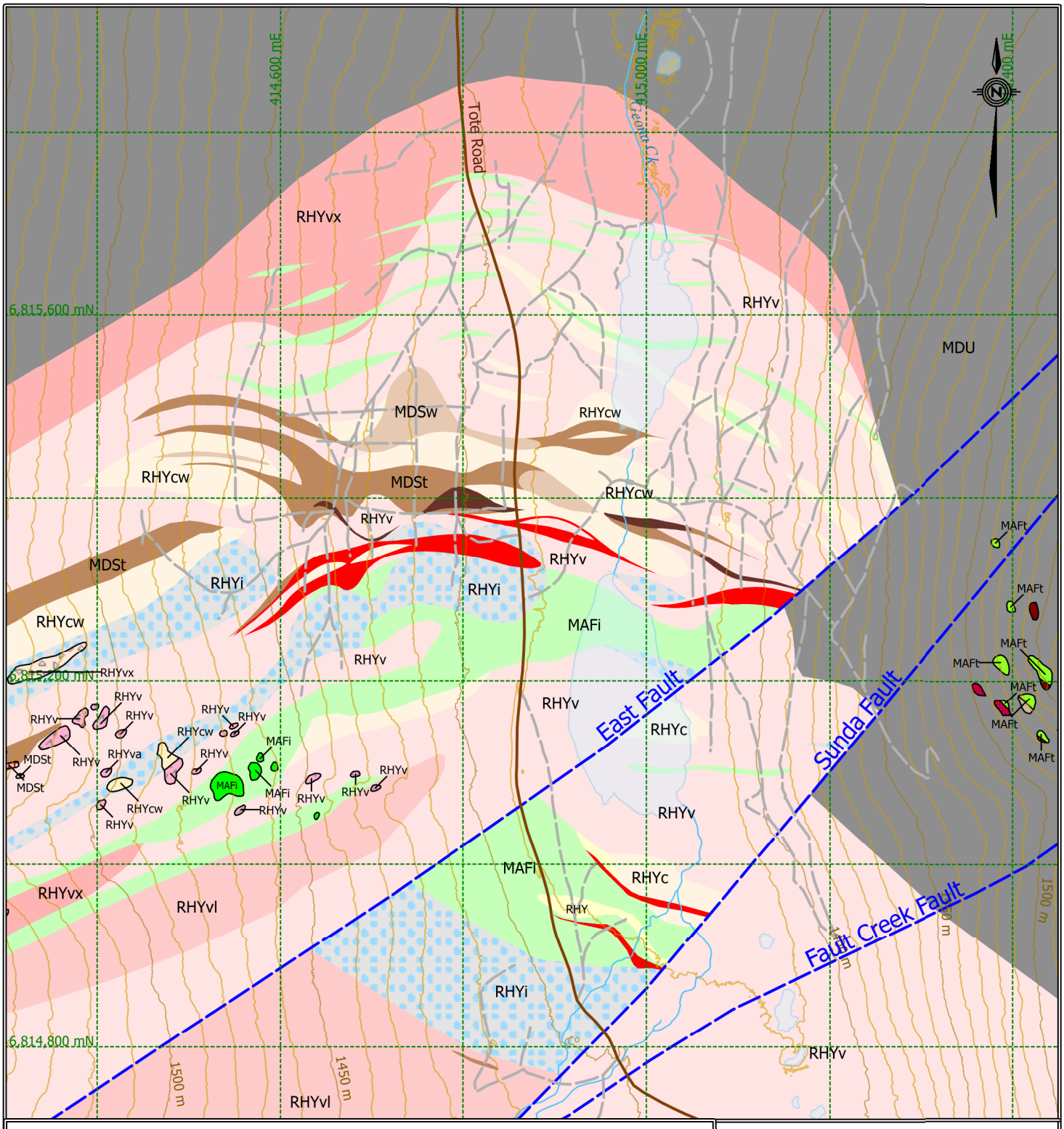
Krakatoa Main lens mineralization is generally concordant to stratigraphy within the faulted block with a similar strike and dip to the ABM lens (~300º/35º NNE) and a true thickness of up to 22 m. Mineralization extends to the top of bedrock where it is buried under 2–30 m of glacial overburden.

The down dip margin of the ABM lens appears to transition into a mixed volcanic-sedimentary package, whereas the Krakatoa Main lens remains open down dip. The most recent mineral resource estimate for the ABM deposit was completed in January, 2016 by CSA (Green et al., 2016) in accordance with the JORC Code 2012 and is reported in Table 10.

Table 10: Updated mineral resource estimate for the ABM deposit

Resource category	Mt	Cu (wt%)	Pb (wt%)	Zn (wt%)	Au (g/t)	Ag (g/t)	Cu metal (Kt)	Pb metal (Kt)	Zn metal (Kt)	Au (Koz)	Ag (Moz)
ABM Zone											
Total	**15.0**	**0.6**	**2.9**	**7.4**	**1.6**	**202**	**143.8**	**232.7**	**895.4**	**623.0**	**62.9**
Krakatoa Zone											
Total	**5.1**	**0.9**	**1.8**	**6.2**	**1.4**	**144**	**29.4**	**164.6**	**381.2**	**282.2**	**34.9**
ABM deposit (total)											
Indicated	16.7	0.9	1.8	6.2	1.4	144	150.2	304.0	1037.2	743.4	77.1
Inferred	3.4	0.7	2.8	7.1	1.5	191	23.0	93.3	239.5	161.8	20.6
Total	**20.1**	**0.9**	**2.0**	**6.4**	**1.4**	**151**	**173.2**	**397.3**	**1276.7**	**905.2**	**97.8**

ABM lens sulphide mineralization is dominated by pyrite, sphalerite, pyrrhotite, galena and chalcopyrite, with gangue minerals consisting of chlorite, magnetite, quartz, Fe-carbonate, calcite, sericite, cordierite, albite, celsian and barite. Mineralized lenses typically occur within an envelope of chlorite and muscovite alteration and are subdivided into massive and stringer/disseminated sulphide styles. These two mineralization styles are further sub-divided into nine end member "ore" types based on observable mineralogical and textural characteristics (Schultze, 1995), with massive sulphide consisting mostly of OA, OB and OH types and the stringer/disseminated style including the OC, OF, OG, OI, and OJ types. Characteristics of each of these end-members are summarized in Table 11.



- MAFi: mafic intrusions
- MDU: mudstone and tuffaceous mudstone
- MDSc: carbonaceous mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: massive sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYi: aphanitic rhyolite
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Tote Road
- Limited Use Roads/Trails
- Faults
- Outcrops

0 250

meters

Scale: 1:6,000

BMC Minerals (No.1) Ltd.

KZK Project

ABM Deposit Geology

EQUITY

Date: 01/03/2016
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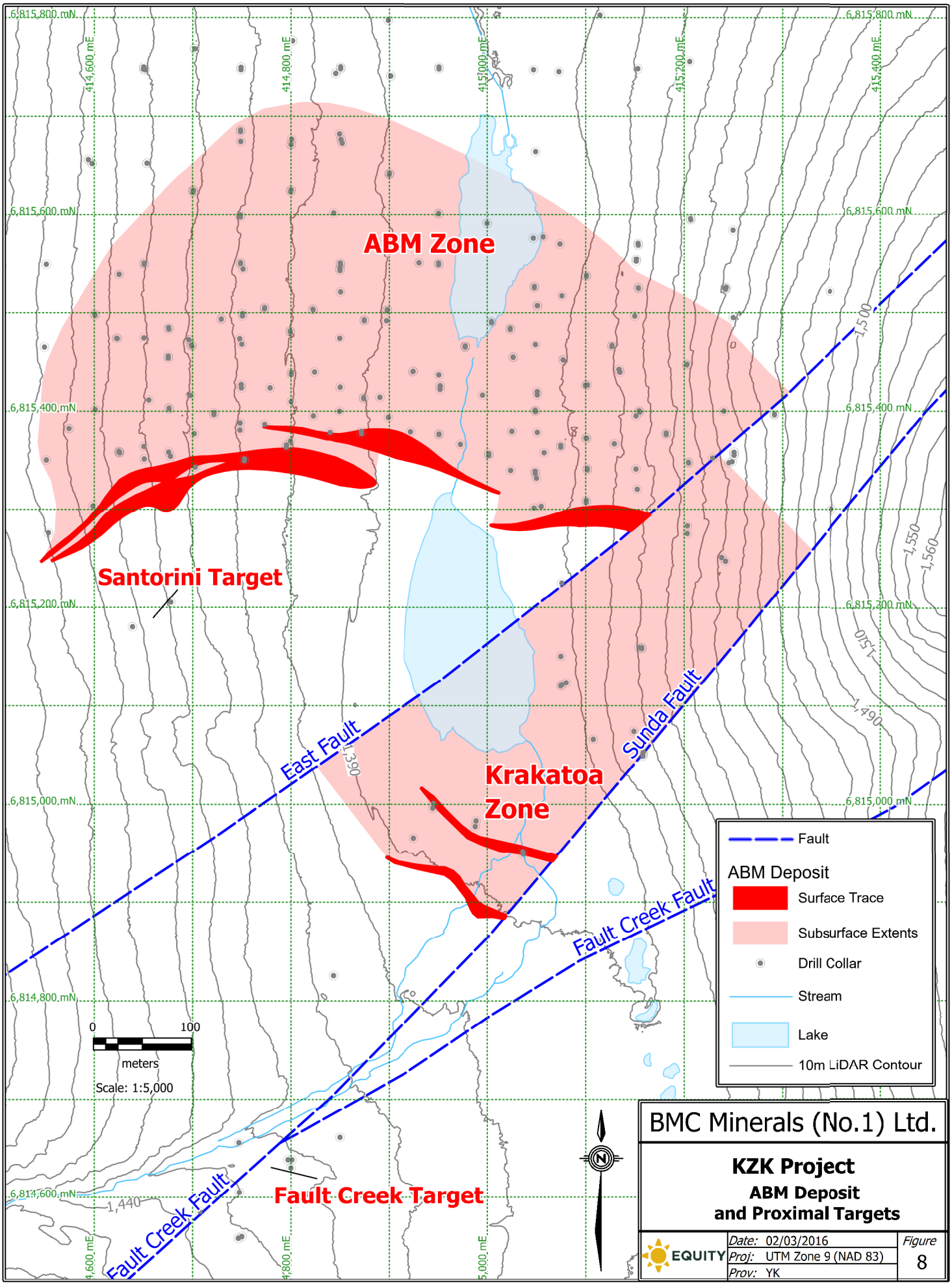
Prov: YK

Figure 7


ABM Zone
Santorini Target
Krakatoa Zone
Fault Creek Target
East Fault
Sunda Fault
Fault Creek Fault
Fault Creek Fault
6,815,800 mN
6,815,600 mN
6,815,400 mN
6,815,200 mN
6,815,000 mN
6,814,800 mN
6,814,600 mN
414,600 mE
414,800 mE
415,000 mE
415,200 mE
415,400 mE
1,500
1,550
1,560
1,510
1,490
1,390
1,440
0
100
meters
Scale: 1:5,000
Fault
ABM Deposit
Surface Trace
Subsurface Extents
Drill Collar
Stream
Lake
10m LiDAR Contour
N
BMC Minerals (No.1) Ltd.
KZK Project
ABM Deposit
and Proximal Targets
EQUITY
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Prov: YK
Figure
8

Table 11: Summary of key ore types

Ore type	Key feature(s)	Sulphide type	Texture	Mineralogy (%)						
				Py	*Sp*	*Gn*	*Ccp*	*Po*	*Mag*	*Gangue*
OA	High Mag, Py	Massive	Laminar	70	10	<5	5	<5	10	
OB	Sp-rich, texture	Massive	Fine buckshot	60	10–30	5–8	1–2	?	<5	Qtz-Brt-Cb
OC	High Ccp, Po	Massive	Net	10–20	<5	<5	>50		<5	Chl-Crd
OF	Po-rich	Massive	Buckshot				Var.	>50	Var.	
OG	Ccp-rich	Massive		<15	<5	<5	>30–50	<15	<5	Chl-Crd
OH	High Py, no Mag	Massive	Fine buckshot	>80	<5	Low	Low			
OI	Disseminated in schist	Semi-massive	Disseminated	20–60						Schist
OJ	20-60% sulphide	Semi-massive	Disseminated, stringer	Maj.	<5	<5	Maj.	Maj.		Chl-Crd
OD	Brecciated	Brecciated	Brecciated	Variable						

Note: all mineral abbreviations are after Kretz (1983); Brt = barite, Cb = carbonate, Ccp = chalcopyrite, Chl = chlorite, Crd = cordierite, Gn = galena, Mag = magnetite, Py = pyrite, Po = pyrrhotite, Qtz = quartz, Sp = sphalerite, Maj = dominant sulphide component ranging from 5-30%.

Massive sulphide mineralization comprises approximately 85% of the ABM lens by volume. Pyrite is the predominant sulphide mineral, comprising 60–70% of the mode, and is fine to coarse-grained while mostly showing a buckshot texture. The upper parts of the ABM lens are strongly magnetic, containing up to 10% fine to coarse-grained magnetite as laminar bands and heavily disseminated pods. Magnetite also occurs throughout the Krakatoa Zone but, in contrast to ABM, typically only occurs within the MAFi-hosted Main lens or the ABM lens-equivalent Upper lens. Sphalerite forms two distinct types: (1) dark brown sphalerite inter-grown with magnetite in the upper parts of the ABM lens and (2) red-brown sphalerite occurring as wispy laminations and/or disseminations within pyrite. Galena is difficult to identify but occurs throughout the ABM and Krakatoa zones as fine- to medium-sized grains. Chalcopyrite is generally minor and occurs as coarse-grained clots, blebs and disseminations. Silica, barite and carbonate gangue are most abundant within the lower portions of the massive sulphide lenses in both zones, with Krakatoa containing more barite than ABM. Portions of Krakatoa massive sulphide appear similar to the up dip 50m of the ABM lens in terms of base and precious metal grades. However deleterious trace element concentration of Sb, Se, Hg and As appear to be higher in Krakatoa than ABM (Duncan, 2015b).

Stringer/disseminated style mineralization is present at both the ABM and Krakatoa zones but is more restricted and less abundant at Krakatoa. In the ABM lens, stringer/disseminated style mineralization occurs as a 1–10 m thick horizon localized at the hanging wall and footwall contacts of the massive sulphide lens. Additional zones of stringer/disseminated style mineralization also occur between lenses where they are stacked, as they are on sections 414625E, 414825E, 414900E and 414925E. At both ABM and Krakatoa this mineralization style has the appearance of a deformed stockwork-style zone and almost always has strong to intense chlorite ± cordierite alteration. The sulphide mineral assemblage consists of chalcopyrite + pyrrhotite + pyrite ± sphalerite ± galena with trace magnetite, and occurs as a combination of deformed sulphide stringers, massive chalcopyrite-pyrrhotite and heavily disseminated sulphide. In the ABM lens, Cu grades are generally relatively high at >2% but can range anywhere from 0.1–14% Cu. This variability in grade appears to correlate with the textural diversity seen in mineralization styles, which ranges from thick chalcopyrite-rich stringers to Cu-poor disseminated sulphide. Cu, Au and Ag grades can be lower in stringer/disseminated style mineralization at Krakatoa than ABM (Duncan and Baker, 2015).

In some localized Krakatoa Main lens drill intercepts an incomplete sulphide replacement of the MAFi host occurs but, more commonly, partial replacement of felsic (ash) tuffs sandwiched between MAFi can be observed in core. These occurrences typically comprise a combination of OB-type ore with higher gangue content than at the ABM lens, and OI-type with relic lapilli or felsic ash groundmass. This appears to provide direct evidence that Krakatoa is a replacement-style deposit and the observation that the ABM lens transitions down-dip into sedimentary/epiclastic lithologies adds support to the hypothesis that ABM is as well (Duncan and Baker, 2015) (Hughes and Baknes, 2015).

Our current understanding of alteration at the ABM deposit extends from the alteration definitions established by Cominco as summarized by Schultze (2001). This work recognized five superimposed silicate alteration zones within the structural hanging wall of the deposit. Of these five alteration assemblages, only the weak pyrrhotite assemblage (Type 1) was not systematically logged during 2015, as this alteration is pervasive and did not appear to display any obvious variability. The other four main alteration types that were identified and logged during 2015 are summarized in Table 12.

Table 12: Summary of ABM deposit alteration types

Alteration type	Description
Type 1 ("Weak Pyrrhotite")	Disseminated weak pyrrhotite (~1%) as elongated, foliation-parallel wisps in a compact felsic groundmass with vague sericitic partings
Type 2 ("Greenish-Grey Alteration")	Greenish-grey, chloritic-streaked, sericitic, that is spatially – and we believe genetically – related to bodies of aphanitic rhyolite (RHYi). This association is particularly evident where RHYi intrudes MAFi manifest as strongly developed green-grey alteration and locally bright green Cr-mica (fuchsite) indicating a mafic protolith. Locally type 2 alteration obliterates the contact area between massive sulphides and MAFi where it is intruded by RHYi, making it impossible to distinguish from pervasive muscovite alteration. This style of alteration has not been interpreted on the accompanying cross sections in Appendix M.
Type 3 ("Pervasive Muscovite/sericite/ankerite")	Distinctive pervasive silvery grey to waxy greyish-yellow-green well developed muscovite/sericite with associated disseminated sulphide occurring peripheral to massive sulphide mineralization. Best developed examples are manifest as muscovite/sericite well-foliated schists with disseminated grains of pyrite or pyrrhotite with minor galena, sphalerite and chalcopyrite. Gauging the intensity of alteration is subjective, but there is a clear and continuous outward dissipation of intensity so that it rarely extends 50 m beyond the edge of the massive sulphide. Most of the pervasive muscovite alteration appears to be in the hanging wall of the deposit although it is likely that similar alteration in the footwall has been obliterated by strong Type 2 alteration. The intensity of pervasive muscovite alteration exhibits an inverse relationship with ankerite abundance in the hanging wall, possibly because the muscovite alteration stripped the components necessary for the formation of carbonate or, conversely, dissolved any pre-existing carbonate.
Type 4 ("Proximal Chlorite Alteration")	Dark green chlorite restricted to narrow (typically <5 m) intense alteration envelopes marginal to the massive sulphide body, primarily in the hanging wall and within the massive sulphide itself. Associated minerals include biotite, feldspar, quartz, ankerite, magnetite and sulphide, the latter typically pyrrhotite + chalcopyrite as disseminated grains, clots or wisps. Broader zones of weak to moderate chlorite also occur as strata-bound zones marginal and distal to massive sulphide lenses particularly down dip. Cominco did not recognize that proximal chlorite alters the footwall MAFi, indicating that MAFi pre-dates massive sulphide deposition. Proximal alteration rarely extends far into the MAFi, likely because it is impermeable relative to the host felsic volcaniclastic.
Type 5 ("Restricted Cordierite Alteration")	Is less widespread than the other alteration types and is spatially associated with proximal chlorite. Cordierite typically occurs as grey glassy porphyroblastic crystals up to 2 centimeters across within a chlorite matrix that are often partially or completely retrograde altered to chlorite and quartz and rarely tourmaline. It is frequently associated with coarse ferroan dolomite and silicification. Two distinctive styles of this restricted cordierite have been identified: (1) in association with proximal chlorite alteration as thin zones marginal to, and extending into, the massive sulphide, and (2) as relatively distal strata-bound zones extending beyond the massive sulphide where porphyroblastic type growth occurs in fine-grained carbonaceous and tuffaceous mudstones and ash tuffs with or without chlorite. It is thought the strata-bound occurrence of this alteration type may represent more of a distal halo, signifying the outer limits of fluid penetration.

Most host rocks of the ABM deposit show a penetrative schistosity (foliation or fabric are used synonymously for schistosity), the intensity of which is dependent on host rock type. For example, the coherent facies rhyolite unit (e.g. RHYc) typically lacks tightly-spaced penetrative schistosity whereas the volcaniclastic facies rhyolite units (e.g. RHYv), which were presumably ash-rich, generally exhibit an intense, tightly-spaced, penetrative foliation. Most foliation is broadly concordant to the main lithological layering of rocks hosting the ABM deposit.

Schistosity is folded about tight to isoclinal parasitic folds that are widespread. In drill core, these folds are common and are typically centimetre-scale. Similar but larger (e.g. metre-scale) folds are more difficult to see in drill core but are present in outcrops west of the ABM (Szybinski, 1996). Within fold hinges, an earlier foliation that is concordant to probable primary layering (bedding) is preserved and both the primary layering and early foliation define the folds. Along fold limbs, however, the folded fabrics and later axial-planar foliation are transposed together and are co planar. This composite fabric is the dominant tectonic foliation throughout the ABM deposit.

Brittle faulting along both the East and Sunda faults truncate early ductile foliation. Although no direct age of this faulting exists, it is likely these faults formed during the ~425 km of Eocene dextral slip along the Tintina Fault, located about 30 km southwest of the ABM deposit (Baker, 2015b). The East Fault is taken as the boundary between the ABM and Krakatoa zones of the ABM deposit.

7.3.2 GP4F deposit

The GP4F deposit is located about 5 km southeast of the ABM deposit and is interpreted to occur within an interval of KZK felsic metavolcanic that lies stratigraphically below the ABM deposit (Jones, 2016) (Figure 9). An inferred resource calculated by CSA (Green, 2015) in July, 2015, and reported in accordance with the JORC code, is summarized in Table 13. The resource estimate is based on data obtained from 10 historical DDHs that were drilled in 1998 and the resource has as yet not been updated with the 2015 diamond drilling results.

Table 13: Inferred mineral resource estimate for the GP4F deposit

Resource category	Mt	Cu (wt%)	Pb (wt%)	Zn (wt%)	Au (g/t)	Ag (g/t)	Cu metal (Kt)	Pb metal (Kt)	Zn metal (Kt)	Au (Koz)	Ag (Moz)
Inferred	1.7	0.2	2.6	6.1	1.0	76	2.6	44.7	104.5	54.3	4.2

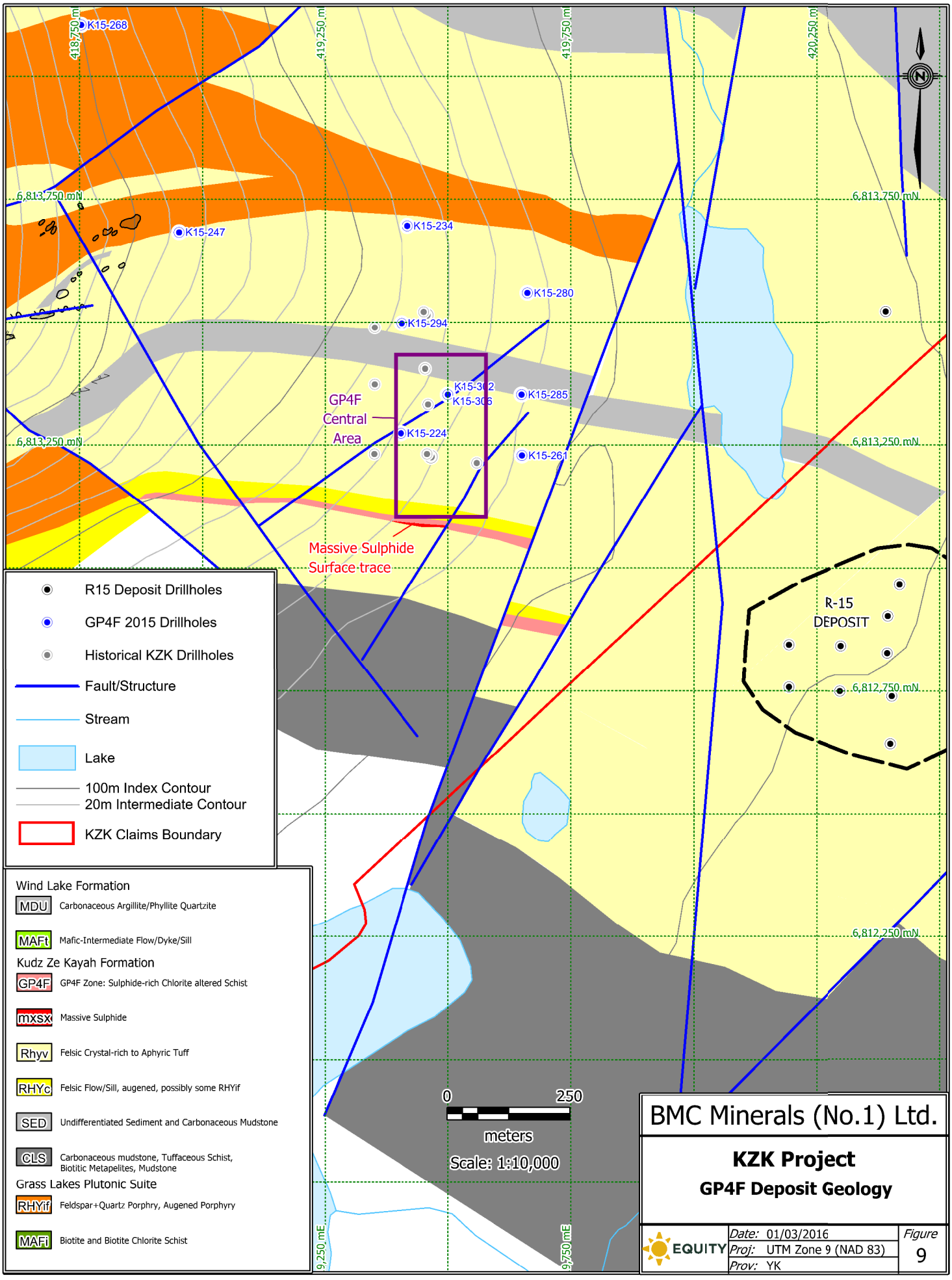
The most-explored portion of the GP4F deposit (the “GP4F lens”) comprises thin lenses of massive sulphide hosted within a much larger, tabular body of disseminated mineralization and alteration; resources reported for the GP4F deposit are contained entirely within the GP4F lens. The GP4F lens is typically 5–10 m thick and is best-developed in a “central area” (where most drilling has been completed) that measures 500 m in a north-south direction, 300 m from east to west and strikes ~300° with a dip to the north ranging from 20-30°. It also appears to be present within DDH K15-247 located 400 m to the west of the central area (Jones, 2016). A second mineralized zone, recognized during 2015, occurs structurally below the GP4F deposit and is termed the Lower target (Jones, 2016).

Mineralization in the GP4F lens consists of narrow, high-grade, lenses of massive sulphide (pyrite + pyrrhotite + sphalerite + galena) within an envelope of stringers and blebby to disseminated bands of sphalerite + pyrite ± pyrrhotite + galena + chalcopyrite concentrated between sections 419400E and 491560E (Jones, 2016). These massive sulphide lenses are similar to the OB ore type at the ABM deposit (as defined in Table 11), with 50–70% massive to buckshot textured pyrite along with semi-massive to massive bands of sphalerite and/or pyrrhotite. Sphalerite also occurs as larger blebs and small masses whereas galena and chalcopyrite occur mostly as interstitial fillings and disseminated blebs. Massive sulphide mineralization typically contains relatively high zinc and silver grades with some of the best grades returned from historical DDH K98-188, where mineralization comprises several stacked 0.1–0.4 m thick massive sulphide bands (OB type) within an interval of heavily disseminated and stringer sulphide (OJ type) associated with strong chlorite + biotite + cordierite + garnet alteration. This interval returned 9.7% Zn, 4.1% Pb, 0.2% Cu, 117 g/t Ag and 1.7 g/t Au over 8.9 m. Similar mineralization was intersected in DDH K15-306, which returned 7.4% Zn, 2.8% Pb, 0.15% Cu, 123 g/t Ag, and 1.0 g/t Au over 4.65 m (Jones, 2016).

More typically, the GP4F lens consists of stringer/disseminated-style sulphide mineralization hosted by strongly chlorite + biotite altered host rocks (Jones, 2016). This mineralization style typically consists of 0.1 to 1 cm wide sulphide stringers and 1–4 cm wide bands of 5–40% blebby to disseminated sulphides ranging from sphalerite to sphalerite + galena to pyrrhotite + pyrite + chalcopyrite and various combinations in between. Chalcopyrite also occurs in fractures, commonly with pyrrhotite or pyrite (Jones, 2016). There is some evidence of the sulphides overprinting the altered groundmass (Boulton, 2002), suggesting a replacement-style of sulphide mineralization. Alternatively, the lack of banding and preferred orientations for sulphide minerals could also be the result of recrystallization through regional metamorphism.

The Lower target consists of thin semi-massive to massive sulphide (pyrrhotite + sphalerite + pyrite) associated with deformed quartz veins and more widespread stringer/disseminated sulphide mineralization similar to the GP4F lens (Jones, 2016). In some places the Lower target only comprises stringer to disseminated sulphide mineralization. The Lower target is also characterized by variable weak to strong

alteration, variable thicknesses ranging from 1.5 to 20 m and varying stratigraphic position from 15–40 m below the GP4F lens (Jones, 2016). The best results for the Lower target come from DDH K15-306 on Section 419500E that returned 6.25% Zn, 1.03% Pb, 0.16% Cu, 18.7 g/t Ag, and 0.023 g/t Au over 5 m true thickness.


K15-268
K15-247
K15-234
K15-280
K15-294
K15-302
K15-306
K15-285
K15-224
K15-261
GP4F
Central
Area
Massive Sulphide
Surface trace
R-15
DEPOSIT
418,750 mE
419,250 mE
419,750 mE
420,250 mE
6,813,750 mN
6,813,250 mN
6,812,750 mN
6,812,250 mN
9,250 mE
9,750 mE
N
R15 Deposit Drillholes
GP4F 2015 Drillholes
Historical KZK Drillholes
Fault/Structure
Stream
Lake
100m Index Contour
20m Intermediate Contour
KZK Claims Boundary
Wind Lake Formation
MDU Carbonaceous Argillite/Phyllite Quartzite
MAFt Mafic-Intermediate Flow/Dyke/Sill
Kudz Ze Kayah Formation
GP4F GP4F Zone: Sulphide-rich Chlorite altered Schist
mxsx Massive Sulphide
Rhyv Felsic Crystal-rich to Aphyric Tuff
RHYc Felsic Flow/Sill, augened, possibly some RHYif
SED Undifferentiated Sediment and Carbonaceous Mudstone
CLS Carbonaceous mudstone, Tuffaceous Schist, Biotitic Metapelites, Mudstone
Grass Lakes Plutonic Suite
RHYif Feldspar+Quartz Porphry, Augened Porphyry
MAFi Biotite and Biotite Chlorite Schist
0
250
meters
Scale: 1:10,000
BMC Minerals (No.1) Ltd.
KZK Project
GP4F Deposit Geology
EQUITY
Date: 01/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
9

The dominant alteration type in the GP4F deposit is considered equivalent to the “Proximal Chlorite Alteration” (see Table 11) at the ABM deposit (Hughes and Baknes, 2015), characterized by chlorite, cordierite and minor biotite although slightly modified by the presence of (in places zinc-rich) garnet porphyroblasts, modal biotite that is greater than or equal to chlorite, and gahnite (Boulton, 2002). Alteration is typically strongest above the massive sulphide lenses of the GP4F lens but is ubiquitous throughout and below the GP4F lens as well.

Cordierite is present in the alteration assemblage although it was not noted by Cominco and only described in one thin section by Boulton (2002). Cominco make numerous references to albite alteration, commonly where cordierite has been seen in re-logging of 1998 DDHs. This “albite” is described as whitish porphyroblasts and vitreous masses, which is similar to cordierite habits seen at the ABM and GP4F deposits.

Muscovite is an important part of the alteration assemblage and commonly occurs peripherally to the strongest alteration and mineralization, just like it does at ABM although in somewhat lower abundance. It generally occurs as strong bands and patches in felsic rocks and tuff immediately adjoining and within the GP4F lens.

8.0 RESULTS OF THE 2015 WORK PROGRAM

The 2015 KZK Project comprised a multifaceted exploration and development program primarily geared towards completion of a new mineral resource estimate for the ABM deposit that is compliant with modern reporting standards. In addition, the program aimed to collect data to allow various end users to advance engineering, mine and environmental designs for completion of a pre-feasibility study and eventual mining operations. The following sections describe significant results from the 2015 program available at the time of reporting.

8.1 Road rehabilitation and camp construction

Pre-work program construction involved rehabilitation of the tote road, which connects the Robert Campbell Highway to the project area, and building of a temporary exploration camp. Only the camp construction is described here.

The KZK exploration camp was constructed to accommodate up to 49 people (Figure 10). Camp facilities consist of 15 sleeper tents (each capable of sleeping up to 4 people), one Level III first aid tent, two dry tents containing shower and facilities for washing and drying clothes, four pit privy ablution facilities, a septic system and dispersal field for grey water, a mess tent and kitchen facility, an 8” diameter water well with UV water filter system to provide potable water, three dedicated office tents, a core logging and processing facility, Jet A1 and diesel bulk fuel storage and a helicopter landing area.

A



B



C



D





Figure 10: Photos of the 2015 camp construction program that show (A) several of the 15 sleeper tents, (B) the grey water septic system and dispersal field, (C) the core logging facility (D) bulk fuel storage area and tanker truck, and (E) aerial view of completed KZK camp.

8.2 Historical core re-logging

A re-logging program of archived drill core from all historical DDHs at the ABM deposit was undertaken ahead of and during the 2015 drilling program. The aim of this program was to design and implement a system of standardized logging for historical and 2015 drilling, improve the geological model for the deposit and confirm historical assay data. The major categories of data collected through core logging include lithology, oxidation, mineralization, structure, veins and carbonate content, as shown in the drill logs included as Appendix E. Other elements of this program included logging the footage blocks, re-labelling boxes with aluminium tags, completing an inventory of boxes and creating a map of the core storage area. The re-logging program was completed in October.

The core archive was found to be in good shape with core boxes stored in metal racks and generally in order. No inventory or core shack map was available, however, so a box-by-box inventory was completed during the 2015 program with notes included on labelling or missing core issues. The vast majority of original Dymo-style metal tags are intact and only about 10 boxes were damaged to the point of needing to be replaced. Minor damage to boxes, mostly due to chewing by rodents, resulted in some minor core spillage to the ground. In addition, numerous specialized studies requiring core samples resulted in a lack of core for several DDHs as well as short wall rock intervals throughout the deposit, with the broader of these intervals recorded as “no core” during core re-logging.

A total of 174 DDHs were re-logged for a total of 24953 m (Table 14), comprising most of the historical ABM and Fault Creek drilling as well as two DDHs from GP4F. Six ABM DDHs were not re-logged, including three DDHs that could not be located (K94-001, K94-002, K95-169), one DDH abandoned at 10 m depth (K97-183A), one with too much missing core (K95-168) and one that was found but inadvertently not logged (K97-176). An additional nineteen historical DDHs fell outside of the ABM and GP4F deposit areas and were also not re-logged.

Table 14: Summary of historical drilling and 2015 re-logging program

DDH Series	DDH IDs	Historical database		2015 re-logging		DDHs not re-logged
		#DDH	*m*	*#DDH*	*m*	
K94	K94-001 to 052	52	8518.1	49	8258.1	001, 002 were not found; 017 lies N of ABM
K95	K95-053 to 170 + 116A	119	14984	110	13717.7	162-167 lie SW of ABM; 168 too much lost core; 169 not found; 170 lies E of GP4F
K96	K96-171	1	99.2	0	0.0	SW of ABM
K97	K97-172 to 187	17	3566.2	13	2478.9	176 not logged; 179 lies E of ABM; 180 lies N of GP4F; 183A abandoned at 10 m depth
K98	K98-188 to 198	11	1753.5	2	498.1	All DDHs GP4F or NNE of GP4F
K04	K04-199	1	246	0	0.0	East of ABM
Total		**201**	**29167**	**174**	**24952.8**	

The historical core re-logging program began on July 2nd, nearly four weeks before the 2015 resource and infill drilling program began. As such, the re-logging program served as a testing ground for the newly implemented set of lithological and ore-type codes that were produced prior to fieldwork and which are shown in Tables 9 and 11.

A total of 1656 samples were submitted for geochemical assay to SGS in Burnaby, BC, comprising 1447 half-core samples, 120 CRMs (or standards) and 89 blanks. A QA/QC analysis for these CRMs and blanks is presented in Appendix N, together with the QA/QC data returned for newly drilled core samples (see Section 8.5). The 1447 core samples taken from historical drill core can be split into shoulder samples (N = 998) and grade confirmation samples (N = 449).

Shoulder sampling targeted the historically unsampled intervals of weakly mineralized to barren wall rock lying 4.5–6.0 m outward from the massive sulphide contacts. Out of the 998 shoulder samples that were taken, 170 returned at least one precious (Ag, Au) or base (Cu, Pb, Zn) metal assay exceeding the “mineralized” threshold, which was set at 20 g/t Ag, 0.1 g/t Au, 0.1% Cu, 0.5% Pb and 0.5% Zn. Ten of the best assays returned from the shoulder sampling program are shown in Table 15.

An important aspect of the re-logging program was to establish the quality of historical assay results for the 2016 resource estimate. Some of the historical assay data will be superseded by new assay results from 2015, but where this is not possible due to missing core or where re-sampling was not completed, the historical assay data will be the only data available. The remaining half-core was sampled from all of the mineralized intervals on sections 414750E, 414850E and 415050E (Appendix M), which were considered to be representative of mineralization over the breadth of the deposit. These sections include historical DDH K94-007, 008, 009, 010, 013, 014, 020, 021, 022, 023, 039, 047, 049, 052, K95-070, 071, 075, 081, 087, 088, 092, 149, 150, 156 and 157.

The historical assay results and 2015 re-assays were compared for 417 samples using traditional scatter plots and quantile-quantile (Q-Q) plots (Arne, 2015). Pearson correlation coefficients (ρ) for historical assays and 2015 re-assays are 0.852 for Ag, 0.701 for Au, 0.948 for Cu, 0.909 for Pb and 0.897 for Zn. Further comparison of 2015 re-assays to historical assay results indicates no analytical bias for Cu up to 3%, a slight positive bias for Pb in the re-assays worsening above 2%, a positive bias for Zn in the re-assays >2.6%, good agreement for Ag up to 250 ppm and a good agreement for Au up to 3 ppm followed by a negative bias in the re-assays >3ppm (i.e. historical results were higher than re-assays) (Arne, 2015).

Historical core was also re-photographed since the Cominco pictures were of inconsistent quality. Re-taking of these photographs was especially important for those intervals where the remaining half-core was sampled as part of the re-sampling program.

Table 15: Assay highlights for 2015 shoulder sampling of historical drill core

DDH	Sample ID	From (m)	To (m)	Length (m)	Cu (%)	Pb (%)	Zn (%)	Au (ppm)	Ag (ppm)
K95-137	B00267115	110.1	111.6	1.5	2.43	0.05	0.18	1.16	86.8
K95-099	B00267329	13.0	14.0	1.0	2.44	0.04	2.31	2.18	63.2
K94-005	B00267048	146.6	148.1	1.5	1.62	0.15	0.19	0.64	82.8
K95-141	B00232517	114.8	116.3	1.5	0.29	1.09	4.98	0.19	36.8
K95-149	Q930825	194.5	196.0	1.5	2.15	0.09	0.30	0.47	37.4
K95-085	B00233028	85.0	86.5	1.5	1.77	0.02	1.18	0.07	36.8
K95-149	Q930807	169.6	171.0	1.4	1.52	0.06	0.22	0.70	55.9
K94-048	B00267502	54.9	56.3	1.4	1.04	0.48	1.65	0.31	57.5
K94-041	B00267605	85.9	87.4	1.5	0.11	0.77	1.60	0.59	90.4
K95-149	Q930811	180.2	180.3	0.1	6.32	0.88	4.83	5.43	250

8.3 Terrain surveys

Terrain surveys include an airborne LiDAR survey and DGPS survey of both historical and 2015 DDH collar locations as well as the tote road.

8.3.1 DGPS collar survey

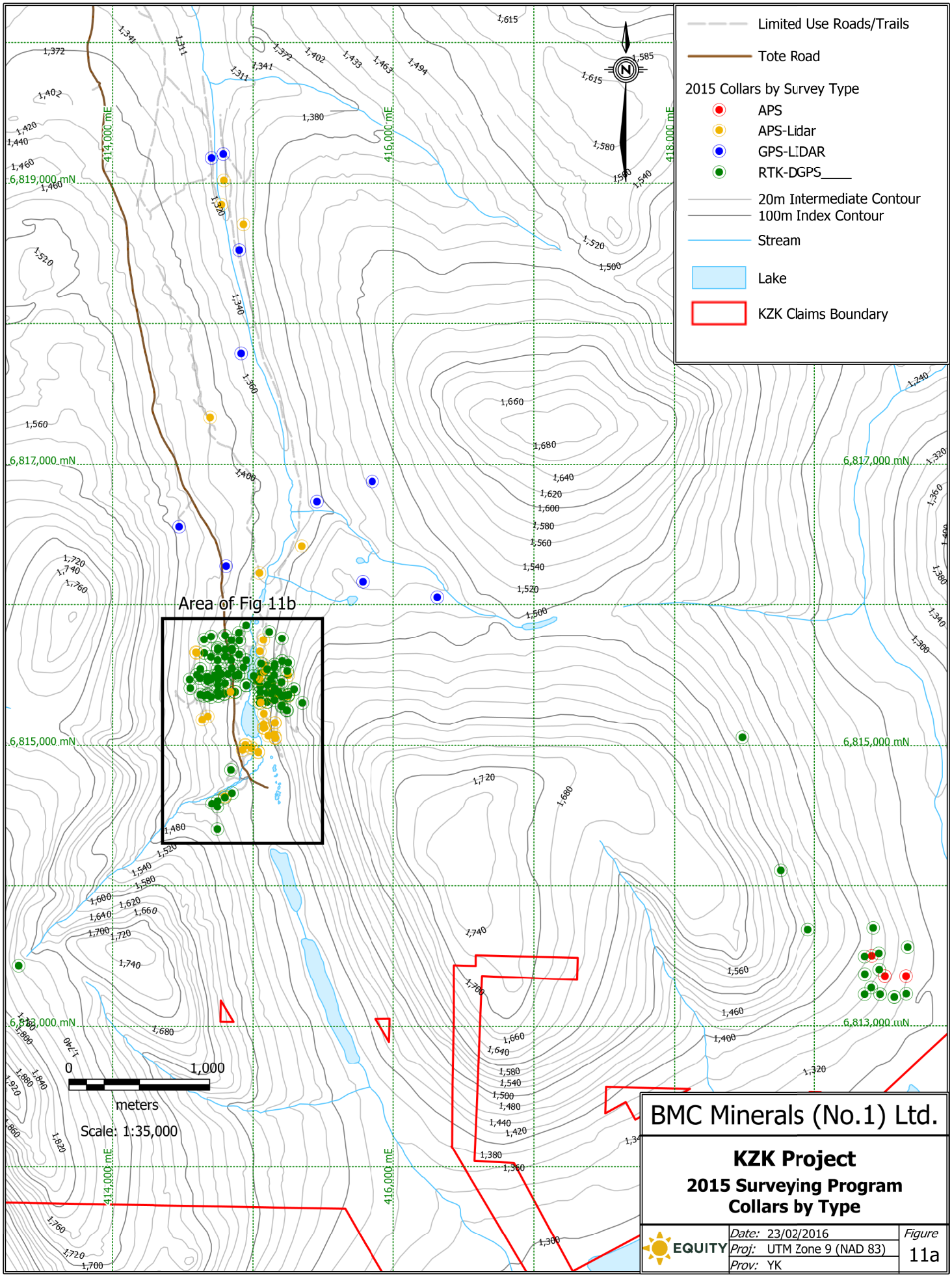
The drill collar survey located 87 2015 DDHs including 81 ABM and Krakatoa Zone DDH collars and 6 GP4F collars. Eight of the ABM DDHs comprise metallurgical wedge holes and therefore have the same collar location as their parent hole. Ninety-one historical DDH casings were also surveyed, most of which fall within the KZK Property boundary (Figures 11a, 11b). Two historical DDH collars (R12-09, R12-12) are located outside the KZK Property and were surveyed by mistake. Coordinates for all DGPS surveyed 2015 and historical DDH collars on the KZK Property are presented in Appendix G.

8.3.2 DGPS tote road survey

The tote road was surveyed along the centre line at 20 m-spaced points for its full 24 km length from the intersection with the Robert Campbell Highway to the terminus at the historical Cominco exploration camp that lies just to the south of the ABM deposit.

8.3.3 LiDAR survey

A 33 km² airborne LiDAR survey was completed over the ABM deposit and potential mine infrastructure locations to provide a high resolution topographic surface that can be used for detailed mine design work.



BMC Minerals (No.1) Ltd.

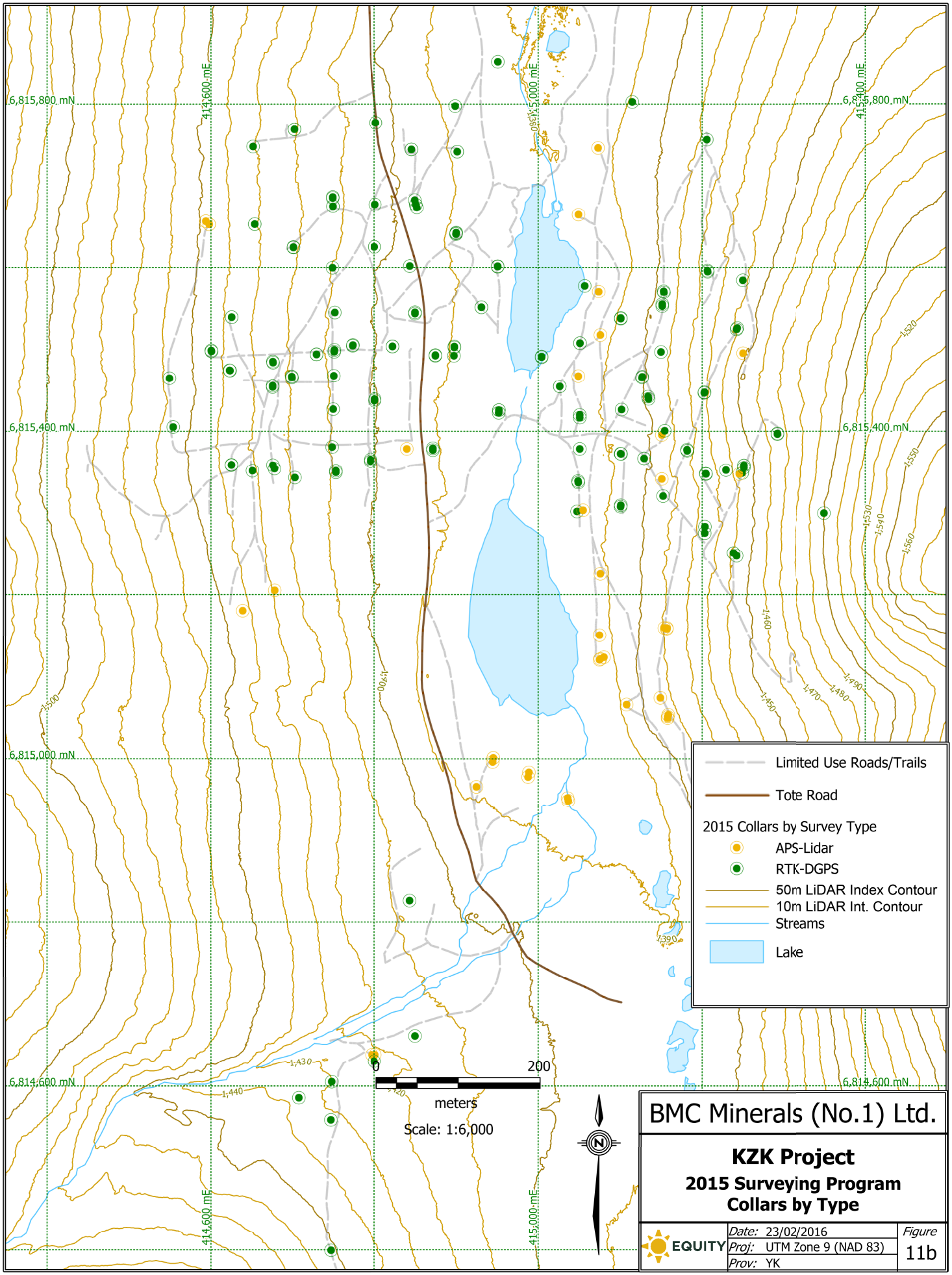
KZK Project

2015 Surveying Program
Collars by Type

EQUITY

Date:	23/02/2016
Proj:	UTM Zone 9 (NAD 83)
Prov:	YK

Figure 11a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6,815,400 mN
6,815,000 mN
6,814,600 mN
414,600 mE
415,000 mE
415,400 mE
Limited Use Roads/Trails
Tote Road
2015 Collars by Survey Type
APS-Lidar
RTK-DGPS
50m LiDAR Index Contour
10m LiDAR Int. Contour
Streams
Lake
0
200
meters
Scale: 1:6,000
N
BMC Minerals (No.1) Ltd.
KZK Project
2015 Surveying Program
Collars by Type
EQUITY
Date: 23/02/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
11b

8.4 Geophysics

Geophysical work done as part of the 2015 work program include airborne VTEM and magnetic, ground-based gravity and downhole EM surveys. Most of the following results are taken from reviews by Lajoie (2015a, b) of both the 2015 and historical geophysical surveys.

8.4.1 Airborne magnetics and EM

An airborne magnetic and VTEM survey was flown in 2015 targeting primarily the KZK Formation from several kilometres west of the ABM deposit to east of the GP4F deposit (Figures 12a, 12b). Several stratigraphic units were outlined by the airborne geophysical survey. In particular, the Wind Lakes Formation, which lies in the northern part of the survey area and stratigraphically above the KZK Formation, shows relatively high magnetic and reduced resistivity responses that reflect its constituent mafic sills, mafic volcanic and carbonaceous sedimentary rocks. In the central part of the survey area, the felsic volcanic-dominated KZK Formation shows relatively subdued magnetic and resistivity response except where cut by large sills(?) of the Grass Lakes Suite, which have enhanced magnetic susceptibility.

The ABM Zone is a strong, well-defined conductive and magnetic target. The airborne survey shows untested areas of enhanced conductivity at the edges of the deposit opening the possibility of incremental extensions to the known mineralization.

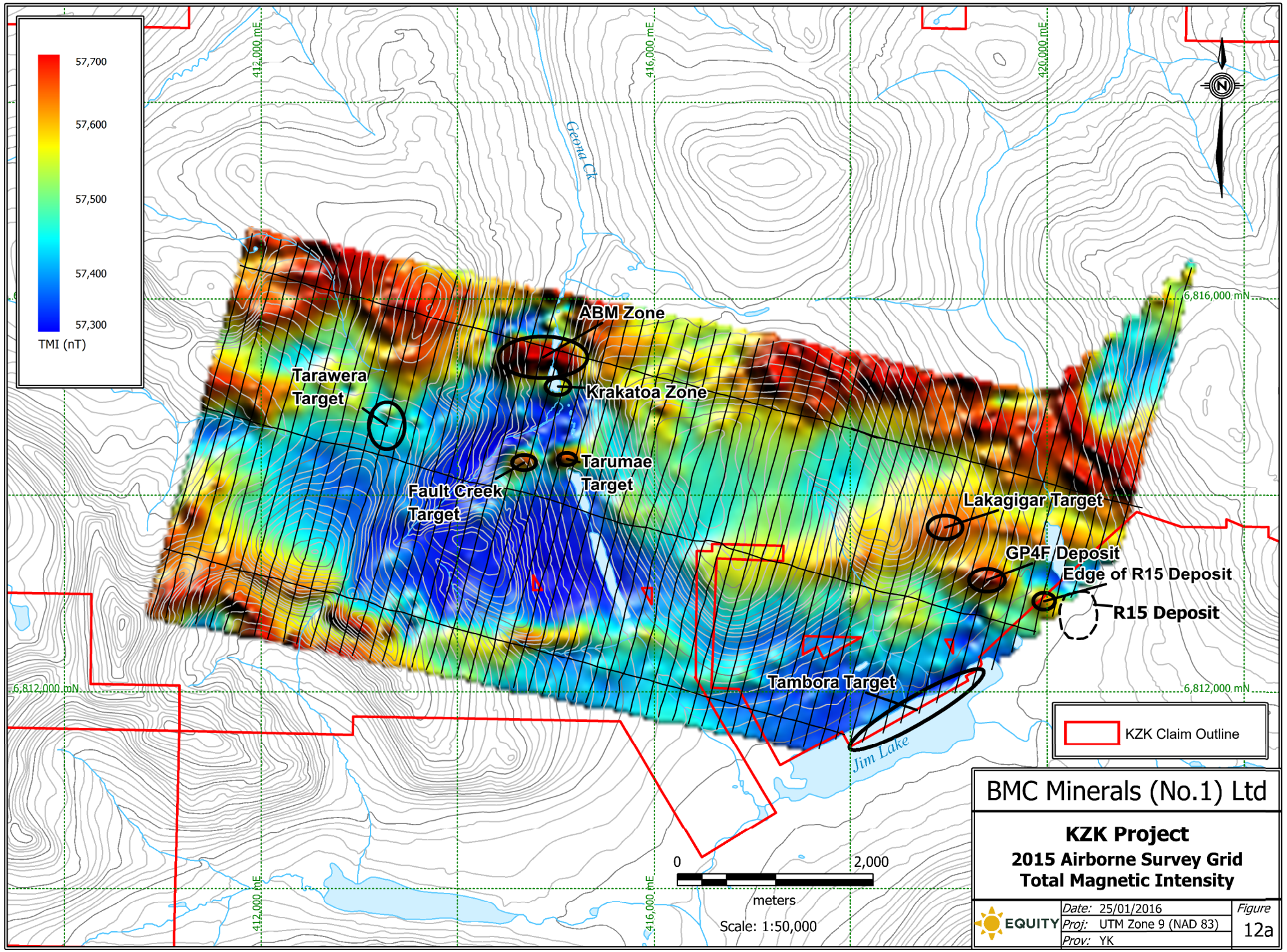
More significantly, the VTEM survey highlighted an area of conductivity and magnetic response on the southeast edge of the ABM Zone. The VTEM response matches well with earlier UTEM surveys conducted in the area (Lajoie, 2015). Testing of a geologically defined target in 2015 in the same area as this anomaly resulted in the discovery of the Krakatoa Zone, which added significantly to the ABM deposit resource (see section 8.5.2). The geophysical response was subsequently recognised as being linked to the up-dip extent of Main lens sulphide mineralization where it came into range of the geophysical survey technique.

Another mineralized zone, the Fault Creek target, occurs about 800 m south of the ABM deposit and was detected on one of the VTEM lines. Results are consistent with a flat lying zone and seem to limit the extent of the Fault Creek target to an area of about 100 m by 100 m, centred about 45 m southeast of DDH K97-181. This is corroborated by results of a HLEM survey in the area (Lajoie, 2015b). A separate, smaller anomaly occurs about 100 metres south of the Fault Creek target. This anomaly lies north of the collar for DDH K97-182, which apparently missed the south edge of the anomaly. However, there is simply not enough resolution at a VTEM line spacing of 150 metres to define these smaller targets properly and they are too small to be of much economic interest (Lajoie, personal communication).

There is a small but prominent EM response about 1.5 kilometres southwest of the ABM deposit at 413300E, 6814850N, which is also associated with a gravity high but only a weak magnetic response. This anomaly, which is referred to as the Tarawera target (Figures 12a, 12b), is a potential drill target as it lies roughly on strike from the ABM deposit and is hosted by similar lithologies.

Located about 5 km southeast of the ABM deposit, the GP4F deposit is marked by an EM and magnetic bulls-eye anomaly that is centred on the so-called “central area”. However, there is not an obvious extension of the anomaly outside of this central area of mineralization, which is corroborated by the downhole EM surveys discussed below. As well, there is no clear connection to conductors lying northeast of the GP4F deposit towards DDH K04-199 (Lajoie, 2015b).

Southeast of the GP4F deposit, the airborne survey detected the north edge of the R-15 deposit. The response suggests that the R-15 extends down dip in a northwest direction. The geophysical results also suggest that R-15 is not on the same horizon as the GP4F deposit and may match a conductor trend passing about 200 metres south of GP4F and extending southwest. Beyond that, the VTEM trend shifts northwest (faulted?) where it correlates along its south side with EM contacts detected in earlier UTEM surveys (Lajoie, 2015b).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416,000 mE
420,000 mE
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6,812,000 mN
Geona Ck
ABM Zone
Krakatoa Zone
Tarawera Target
Tarumae Target
Fault Creek Target
Lakagigar Target
GP4F Deposit
Edge of R15 Deposit
R15 Deposit
Tambora Target
Jim Lake
KZK Claim Outline
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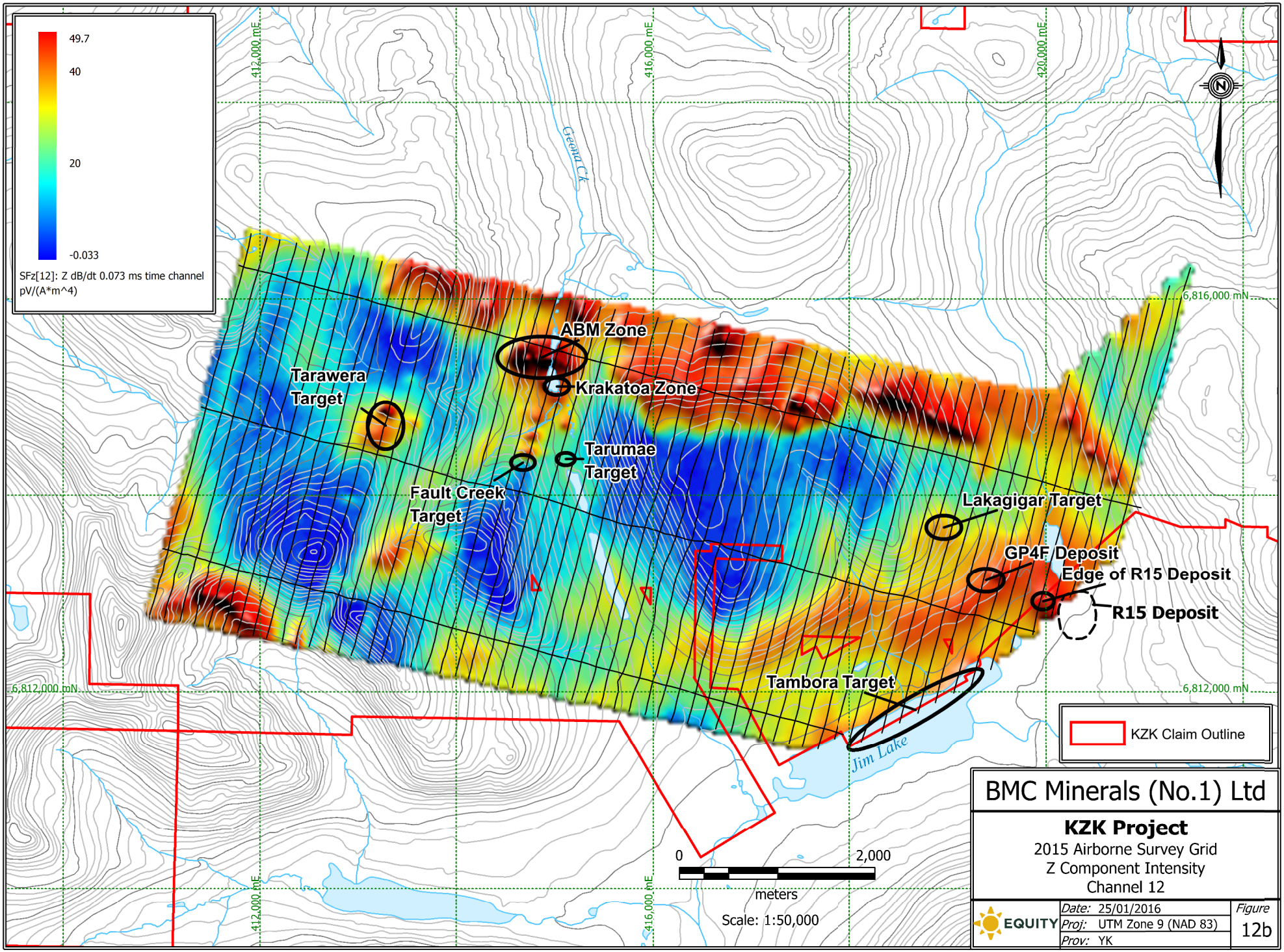
meters
Scale: 1:50,000
BMC Minerals (No.1) Ltd
KZK Project
2015 Airborne Survey Grid
Total Magnetic Intensity
EQUITY
Date: 25/01/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
12a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6,816,000 mN
6,812,000 mN
Greena Ck
ABM Zone
Krakatoa Zone
Tarawera
Target
Tarumae
Target
Fault Creek
Target
Lakagigar Target
GP4F Deposit
Edge of R15 Deposit
R15 Deposit
Tambora Target
Jim Lake
KZK Claim Outline
0
2,000
meters
Scale: 1:50,000
BMC Minerals (No.1) Ltd
KZK Project
2015 Airborne Survey Grid
Z Component Intensity
Channel 12
EQUITY
Date: 25/01/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
12b

There is a combined VTEM and magnetic response about 750 m northwest of the GP4F deposit that roughly correlates with a broad gravity high (the “Lakagigar target”). Progressing to later times (deeper source?), the VTEM response migrates further northwest. Drilling showed this anomaly to be caused by shallowly north to northeast dipping, carbonaceous sedimentary rocks with slightly elevated bulk density (Jones, 2016).

There is a strong conductor (the “Tambora target”) below Jim Lake at the south edge of the airborne survey. There is no obvious connection between the Jim Lake conductor and the R-15 or GP4F deposits.

8.4.2 Ground-based gravity

A ground-based gravity survey was completed over a 6 km x 2 km area extending from Rhyolite Peak over the ABM and GP4F deposits to identify positive gravity anomalies that could represent additional VMS mineralization. Processed results of this survey (Lebel, 2015b) show a strong positive gradient trending to the north half of the grid (Figure 13a). With the trend removed by processing, more detail is apparent. In particular, the third order trend-removed map (Figure 13b) shows a small residual gravity high at GP4F deposit subcrop, corresponding with the airborne EM and magnetic response. The north edge of the R-15 deposit is apparent at the south-eastern limit of the gravity survey in this area.

The ABM Deposit has a strong gravity response and this was demonstrated by the one 2015 gravity survey line that crossed it. The Krakatoa Zone was not surveyed in 2015. Southwest of the ABM deposit, there is a roughly east-west gravity high on the north slope of Rhyolite Peak. This gravity response correlates with the Tarawera target, a single line VTEM response and weak magnetic high at 413300E, 6814850N (see section 8.4.1).

The Fault Creek target is crossed by a single gravity survey line and does show a weakly elevated response. To the east across the valley, another small residual gravity high appears on Line 8E, roughly coincident with a magnetic high response (the “Tarumae target”). There is not any obvious EM signature associated with this gravity anomaly. However, the anomaly merits consideration given the proximity of the Fault Creek target and the possibility that this area could represent fault offset stratigraphy equivalent to the Krakatoa Zone.

8.4.3 Downhole EM

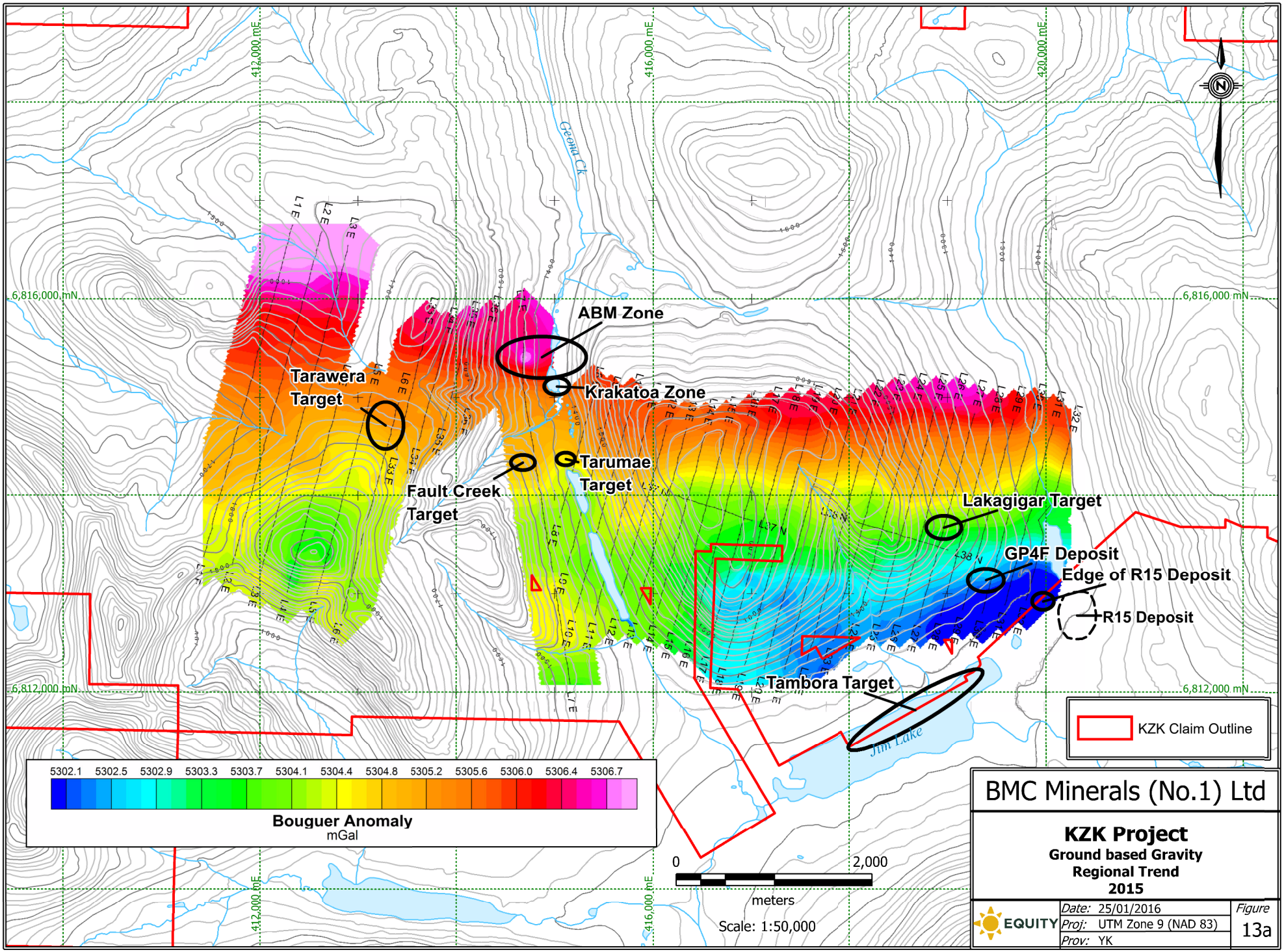
Downhole EM surveys were completed in seven of the ten 2015 DDHs drilled in the GP4F area and one of the ABM DDHs (Lebel, 2015a). Under ideal conditions this type of survey can detect a conductor up to 150 m away from the drill hole. However, it is more likely that the survey will recognize conductors within about 100 m of the drill hole.

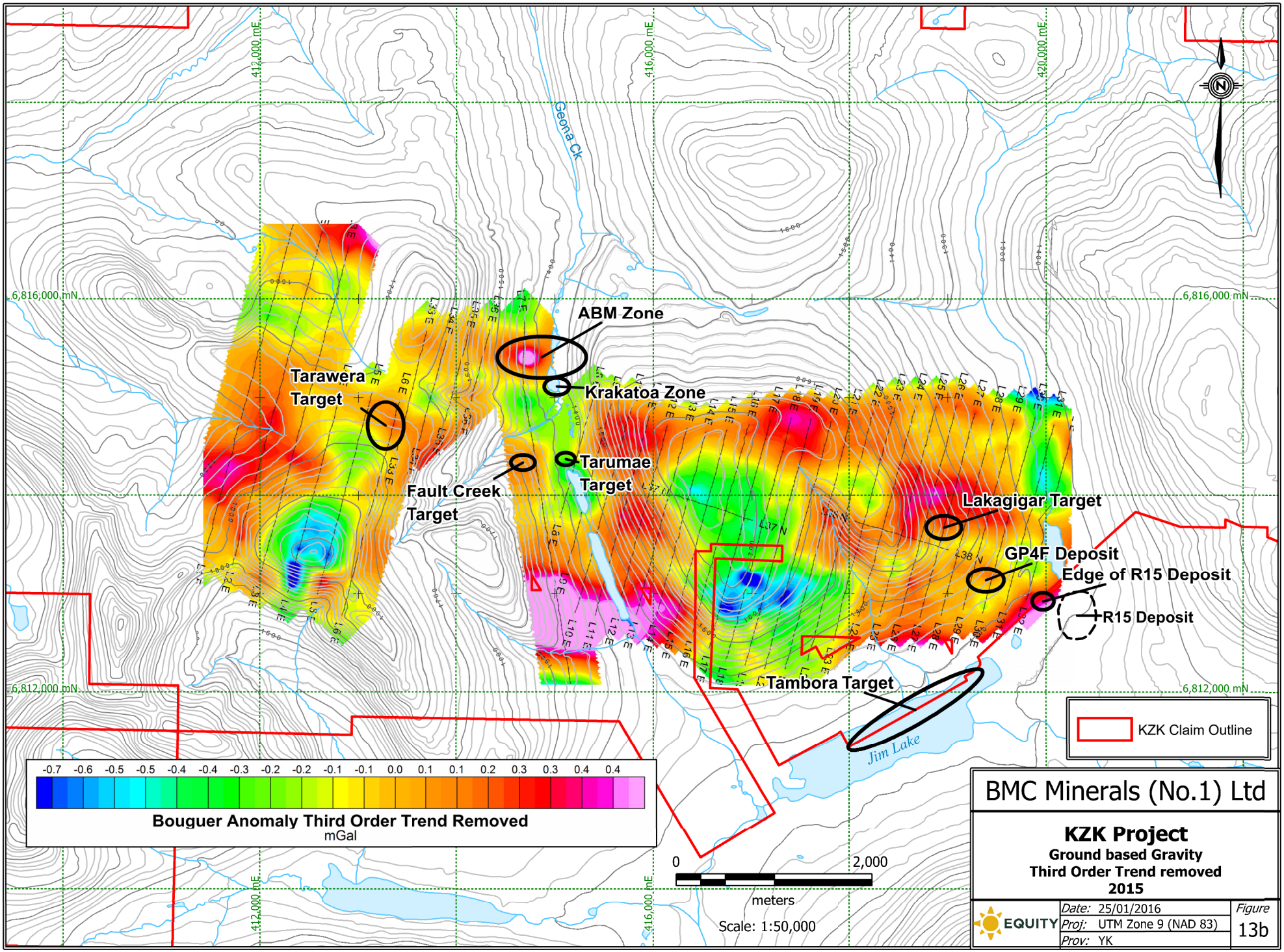
The surveys generally confirmed targets within the central area of the GP4F deposit (Figure 14), representing GP4F lens mineralization. No strong conductors were identified outside of the central GP4F area. Intriguingly, a possible conductor response was detected down dip from DDH K15-247, which currently marks the western-most extent of the GP4F deposit. Another weak off-hole conductor was detected to the north and west of K15-234, probably corresponding to a narrow interval of massive pyrrhotite that was intersected in this hole. However, there is no alteration or other indications of a significant mineralized horizon in K15-234 to suggest this off-hole anomaly is significant.

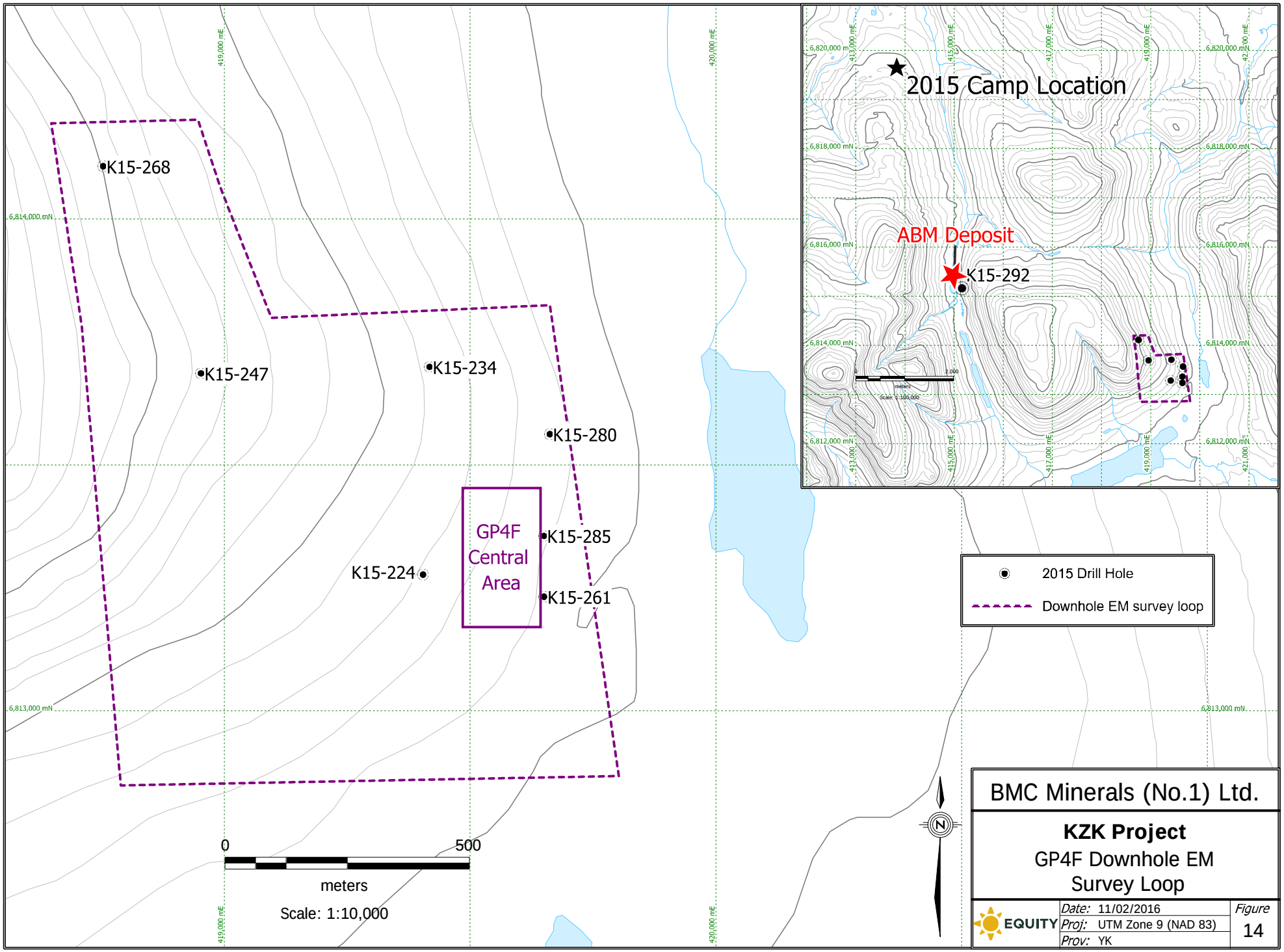
Carbonaceous sediment units showed up well in the downhole EM surveys. In particular, the sediment unit at the base of the Upper Sequence, intersected in DDHs K15-247 and 268, was highlighted. Also, there is a good conductor off-hole to the east and north of K15-261, around 280 m depth, that correlates with the carbonaceous mudstone occurring at the top of the Lower Sediment Sequence. This conductor lies well below the mineralized horizon intersected in K15-261 but there is some possibility that this conductor represents the northwest fringe of the R-15 deposit.

DDH K15-292 in the area just southeast of the main ABM deposit was also surveyed. This DDH cut the Krakatoa Zone and the extremely strong response from this mineralization obscured detailed interpretation at that level. Nonetheless, there were indications of the conductor continuing to the north, and down dip, results

that were borne out by further drilling in the area. Further up-hole, a smaller EM anomaly was detected that likely corresponds to the Upper lens that overlies the Krakatoa Main lens.


412,000 mE
416,000 mE
420,000 mE
6,816,000 mN
6,812,000 mN
Geona Ck
ABM Zone
Krakatoa Zone
Tarawera Target
Tarumae Target
Fault Creek Target
Lakagigar Target
GP4F Deposit
Edge of R15 Deposit
R15 Deposit
Tambora Target
Jim Lake
KZK Claim Outline
5302.1 5302.5 5302.9 5303.3 5303.7 5304.1 5304.4 5304.8 5305.2 5305.6 5306.0 5306.4 5306.7
Bouguer Anomaly
mGal
0
2,000
meters
Scale: 1:50,000
BMC Minerals (No.1) Ltd
KZK Project
Ground based Gravity
Regional Trend
2015
EQUITY
Date: 25/01/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
13a


412,000 mE
416,000 mE
420,000 mE
6,816,000 mN
6,812,000 mN
Geona Ck
ABM Zone
Krakatoa Zone
Tarawera Target
Tarumae Target
Fault Creek Target
Lakagigar Target
GP4F Deposit
Edge of R15 Deposit
R15 Deposit
Tambora Target
Jim Lake
KZK Claim Outline
-0.7 -0.6 -0.5 -0.5 -0.4 -0.4 -0.3 -0.2 -0.2 -0.1 -0.1 0.0 0.1 0.1 0.2 0.3 0.3 0.4 0.4
Bouguer Anomaly Third Order Trend Removed
mGal
0
2,000
meters
Scale: 1:50,000
BMC Minerals (No.1) Ltd
KZK Project
Ground based Gravity
Third Order Trend removed
2015
EQUITY
Date: 25/01/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
13b


2015 Camp Location
ABM Deposit
K15-292
K15-268
K15-247
K15-234
K15-280
K15-224
K15-285
K15-261
GP4F Central Area
2015 Drill Hole
Downhole EM survey loop
0
500
meters
Scale: 1:10,000
BMC Minerals (No.1) Ltd.
KZK Project
GP4F Downhole EM Survey Loop
EQUITY
Date: 11/02/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure 14

8.5 Resource and exploration drilling

The 2015 resource and exploration drilling program included confirmation, infill and expansion drilling of the ABM lens of the ABM Zone, exploration followed by infill drilling on the Krakatoa Zone, exploration drilling on two ABM-proximal targets (Santorini and Fault Creek) as well as infill and exploration drilling at the GP4F deposit. The following sections describe significant results from these drill programs.

8.5.1 ABM Zone

The majority of the 2015 drilling on the ABM Zone was directed at the resource-stage ABM lens (59 holes), with the other two holes directed at the Santorini target. Several of the historical and 2015 holes targeting the ABM lens were long enough to also test the ABM deep target.

8.5.1.1 ABM lens

The 2015 ABM lens resource confirmation, infill and exploration drilling program consisted of 59 DDHs for a total of 10333.6 m (Table 3, Figure 15), including two DDHs (for 119.7 m) stopped and re-drilled due to excessive deviation (K15-235) and intersection of a historical DDH (K15-269). Interpretive cross sections through the ABM lens are listed in Table 16 and shown in Appendix M. The interpretations presented below are derived from drill logs generated as part of the 2015 drilling and historical re-logging programs.

Table 16: List of sections through the ABM lens

Section	Orientation	Looking	Width	Figure reference	2015 DDH
414550E	000°	270°	±12.5 m	Appendix M - Figure 1	K15-204, 207
414600E	000°	270°	±12.5 m	Appendix M - Figure 2	K15-281, 289, 293
414625E	000°	270°	±12.5 m	Appendix M - Figure 3	K15-209, 213, 278, 327
414650E	000°	270°	±12.5 m	Appendix M - Figure 4	K15-206, 284, 327
414675E	000°	270°	±12.5 m	Appendix M - Figure 5	K15-218, 221, 274, 276, 328
414700E	000°	270°	±12.5 m	Appendix M - Figure 6	K15-250, 253, 257, 266, 269, 272
414750E	000°	270°	±12.5 m	Appendix M - Figure 7	K15-200, 223, 225, 228, 229, 231, 236, 237, 239, 260
414800E	000°	270°	±12.5 m	Appendix M - Figure 8	K15-201, 202, 243, 264, 287, 288
414850E	000°	270°	±12.5 m	Appendix M - Figure 9	K15-203, 205, 216, 226, 232, 296
414900E	000°	270°	±12.5 m	Appendix M - Figure 10	K15-233, 238
414950E	000°	270°	±12.5 m	Appendix M - Figure 11	K15-235, 240, 241
415000E	000°	270°	±12.5 m	Appendix M - Figure 12	K15-279, 283, 291
415050E	000°	270°	±12.5 m	Appendix M - Figure 13	K15-244, 245, 249, 251, 252, 254, 273, 275, 291, 295, 297, 299, 301
415100E	000°	270°	±12.5 m	Appendix M - Figure 14	K15-255, 256, 259, 262, 297
415150E	000°	270°	±12.5 m	Appendix M - Figure 15	K15-242, 246, 259, 262, 267, 270, 286, 290, 298
415200E	000°	270°	±12.5 m	Appendix M - Figure 16	K15-263, 265
415250E	000°	270°	±12.5 m	Appendix M - Figure 17	K15-271

Resource confirmation DDHs were designed to twin mineralized intersections in historical DDHs on sections 414750E, 414850E and 415050E, with the aim of confirming the existence and tenor of massive sulphide mineralization in the historical resource. The program was successful in corroborating massive sulphide mineralization intersected by Cominco and in reproducing the assay results (see Section 8.2).

Resource infill drilling was designed to reduce the drill spacing to nominal 25–30 m pierce points and was also intended to expand the ABM lens to the east, west and down dip of the historically-defined resource. Infill drilling demonstrated that intersections of mineralization are predictable based on the historical pierce point distribution and density, and no significant departures existed except where mineralization was closed off. DDH intercepts of the ABM lens drill program are displayed in Table 17.

The resource expansion program intersected additional massive sulphide mineralization in DDHs K15-204 and K15-207 on section 414550E, providing confidence that the ABM lens continues along strike 25 m further west from DDH K95-102 (section 414575E). The intersections are located close to surface and contain appreciable Cu and Zn grades associated with OI-, OD-, OJ- and OA-style mineralization in association with a strong chlorite and locally cordierite-bearing alteration envelope (i.e. Proximal and Restricted alteration types in Table 12). However, precious metal grades are negligible. These intersections suggest that the ABM lens is still open to the west and further exploration drilling at this western extent is warranted.

Infill drilling was also successful in expanding the ABM lens to the north at its down dip extents from section 414800E to 415000E, with significant sulphide mineralization intersected in DDHs K15-233, K15-243 and K15-291 (Table 17). In K15-233, OJ-, OI- and OA-style sulphide mineralization was intersected from 175.20–181.36 m, immediately above the MAFi footwall unit and in an envelope of strong chlorite and cordierite alteration. K15-243 intersected OI-, OG-, OJ-, OA-, OB- and OC-style mineralization from 165.20–185.52 m in association with well-developed Proximal and locally-developed Restricted alteration. K15-291 extended mineralization a further 50 m down dip from K95-077, with OI- and OB-style mineralization intersected from 218.34–221.24 m and in association with moderate Proximal Alteration. The intersection of new mineralization in DDHs K15-233, K15-243 and K15-291 as well as the intersection in K94-027 shows that the ABM lens is still open for ~200 m of down dip extent from section 414800E to 415000E. The northern-most limits of ABM lens mineralization appear to be constrained by drill DDH K97-172 on section 414950E but there is room to extend and close of the ABM lens mineralization.

Table 17: Notable assay composites from 2015 drilling on the ABM lens

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-200	211.5	140.6	3.4	3.3	0.4	0.8	3.0	84	0.6	Disseminated
K15-200	211.5	144.0	14.9	14.6	1.1	1.4	6.9	114	0.9	Massive
K15-200	211.5	158.9	0.6	0.6	0.3	1.9	4.6	74	0.7	Disseminated
K15-202	71.0	8.0	0.9	0.7	0.6	4.4	16.9	303	3.1	Massive
K15-202	71.0	9.5	13.5	10.3	0.6	2.1	7.8	138	0.9	Massive with minor rhyolite bands
K15-203	173.0	100.9	8.4	6.9	3.1	1.7	9.8	163	1.4	Massive
K15-203	***includes***	101.9	2.8	2.3	4.9	0.6	19.2	124	1.3	Massive
K15-203	173.0	112.3	1.5	1.2	0.7	0.3	4.1	114	0.6	Disseminated
K15-203	173.0	119.2	8.1	6.6	0.2	1.5	7.6	69	0.6	Massive
K15-203	173.0	134.3	5.4	4.4	0.1	1.7	5.0	120	0.8	Massive
K15-203	173.0	164.5	0.4	0.3	0.3	0.9	8.7	37	0.3	Massive
K15-204	149.0	111.9	6.2	5.6	2.2	0.0	2.0	18	0.3	Disseminated with massive bands
K15-206	237.0	**No significant results**								
K15-207	112.0	76.3	1.6	1.4	1.6	0.1	0.2	25	0.2	Disseminated
K15-207	112.0	77.9	7.5	6.7	0.8	0.5	7.3	18	0.3	Massive
K15-209	54.0	21.4	8.0	6.3	0.5	2.8	9.7	160	1.7	Massive
K15-209	54.0	30.9	6.5	5.1	1.4	0.4	2.1	89	1.6	Massive
K15-209	54.0	39.6	12.2	9.6	0.6	3.0	8.1	288	2.5	Massive
K15-209	***includes***	39.6	3.8	3.0	0.4	4.6	12.6	456	3.3	Massive
K15-216	233.0	147.3	3.2	3.2	3.7	0.4	3.1	131	1.5	Brecciated and disseminated suphide with chalcopyrite rich zone
K15-216	***includes***	148.6	0.4	0.4	11.6	0.2	4.2	309	3.1	Massive chalcopyrite
K15-216	233.0	154.8	3.1	3.1	1.3	0.8	6.6	60	0.7	Massive
K15-216	233.0	163.9	10.9	10.8	0.6	1.8	7.0	131	1.1	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-216	233.0	174.8	1.6	1.6	2.1	0.3	1.8	65	1.2	Disseminated
K15-216	233.0	203.8	0.5	0.5	0.3	1.1	2.6	60	0.2	Disseminated
K15-218	81.0	9.4	25.6	20.7	0.8	1.8	6.1	148	1.6	Massive
K15-218	***includes***	17.6	0.6	0.5	14.0	0.3	1.5	364	3.9	Massive chalcopyrite
K15-223	71.0	9.0	7.3	6.1	0.2	2.3	7.9	120	0.9	Massive
K15-226	230.0	143.7	32.0	31.8	1.1	1.1	4.5	86	1.1	Massive
K15-226	***includes***	163.2	4.8	4.8	0.2	1.9	9.0	61	0.5	Massive
K15-227	86.0	11.5	5.3	4.3	0.7	2.4	10.1	184	2.0	Massive
K15-227	86.0	16.7	1.5	1.2	1.1	0.3	0.9	46	0.5	Disseminated
K15-227	86.0	33.9	1.1	0.9	0.8	4.7	11.0	402	2.8	Massive
K15-228	95.0	21.4	12.1	10.0	0.3	2.5	7.3	162	1.7	Massive with bands of rhyolite
K15-229	110.0	43.4	20.8	17.2	0.4	2.4	8.0	185	1.6	Massive
K15-229	110.0	73.7	2.6	2.1	0.4	0.8	1.7	102	0.3	Disseminated
K15-229	110.0	76.3	0.8	0.7	0.3	5.1	11.9	143	0.2	Massive
K15-231	179.0	52.9	20.1	16.7	0.6	1.9	6.7	166	1.7	Massive
K15-231	179.0	82.5	15.0	12.5	0.4	2.2	6.2	173	1.9	Massive with bands of rhyolite
K15-232	210.0	135.5	0.3	0.2	0.4	0.2	3.8	16	0.1	Disseminated
K15-232	210.0	139.1	0.3	0.3	4.1	0.2	0.3	108	1.3	Disseminated
K15-232	210.0	142.5	2.4	2.0	7.9	0.2	0.9	183	2.3	Massive chalcopyrite
K15-232	210.0	148.0	4.6	3.8	0.1	0.9	4.2	73	0.6	Massive
K15-232	210.0	152.6	2.2	1.8	0.6	1.7	4.3	389	2.1	Disseminated
K15-232	210.0	154.8	8.5	7.0	0.4	3.0	7.0	184	1.6	Massive with interbedded bands of disseminated sulphide
K15-233	224.0	175.2	6.2	6.1	1.4	0.4	3.0	49	0.3	Disseminated sulphide with interbedded massive sulphide
K15-235R	176.0	130.9	2.9	2.8	0.3	0.7	1.6	92	1.5	Disseminated
K15-235R	176.0	133.8	1.7	1.7	0.2	3.4	9.6	172	1.0	Massive
K15-235R	176.0	135.5	2.9	2.8	0.3	0.4	1.2	25	0.2	Disseminated
K15-235R	176.0	159.5	0.9	0.9	0.7	0.6	3.9	50	0.2	Massive
K15-236	149.0	76.0	13.6	11.3	1.2	1.3	7.3	110	1.3	Massive
K15-236	***includes***	82.0	2.0	1.7	4.7	0.6	5.1	159	2.4	Massive chalcopyrite
K15-236	149.0	98.9	5.7	4.7	0.5	1.8	6.6	117	1.3	Massive
K15-236	149.0	104.6	1.1	0.9	0.3	0.8	2.3	103	0.7	Disseminated
K15-236	149.0	105.6	5.2	4.3	0.4	2.4	6.9	196	1.7	Massive
K15-238	245.0	171.1	8.8	8.7	0.2	0.4	0.8	13	0.1	Disseminated
K15-238	245.0	179.8	2.0	2.0	0.3	2.2	5.8	80	0.8	Massive
K15-239	192.0	92.5	1.5	1.5	0.2	0.4	3.1	9	0.0	Disseminated
K15-239	192.0	98.2	3.7	3.6	0.4	0.4	4.9	27	0.3	Disseminated
K15-239	192.0	101.9	2.1	2.0	0.4	3.8	9.5	264	5.1	Massive
K15-239	192.0	104.0	0.8	0.8	0.2	1.2	2.5	76	0.0	Disseminated
K15-239	192.0	122.1	4.0	3.9	1.0	0.1	1.5	40	0.4	Disseminated
K15-239	192.0	126.1	10.5	10.3	2.1	2.0	7.1	121	1.4	Massive
K15-239	***includes***	126.1	1.6	1.6	10.6	0.2	1.0	321	5.3	Massive chalcopyrite
K15-240	110.0	45.3	8.5	7.0	0.5	1.6	8.2	185	2.8	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-240	110.0	62.3	1.8	1.5	0.8	0.3	0.9	47	1.1	Disseminated
K15-240	110.0	64.1	1.4	1.2	0.9	5.7	12.5	448	2.9	Massive
K15-240	110.0	68.8	5.7	4.8	0.7	0.4	2.8	53	0.3	Interbanded disseminated sulphide and massive sulphide
K15-242	161.0	92.1	2.2	2.0	3.2	0.2	2.0	99	1.2	Disseminated
K15-242	161.0	94.3	22.9	20.9	0.5	2.5	8.9	137	1.2	Massive
K15-242	***includes***	105.8	6.5	5.9	0.6	2.2	12.2	130	1.0	Massive
K15-243	221.0	165.2	8.7	8.6	1.0	0.2	0.9	48	0.7	Disseminated
K15-243	221.0	173.9	11.7	11.6	2.2	2.2	4.8	158	2.0	
K15-244	119.0	60.4	8.7	8.0	0.4	2.4	8.3	179	1.4	Massive
K15-244	119.0	74.0	7.5	6.8	0.5	0.6	2.3	42	0.3	Disseminated
K15-248	278.5	**No significant results**								
K15-249	68.0	11.0	3.3	3.0	2.0	3.7	12.1	177	1.4	Massive
K15-249	68.0	17.9	3.5	3.2	0.2	0.9	2.2	50	0.2	Massive with bands of rhyolite
K15-250	251.0	178.0	5.5	5.1	2.7	0.1	0.3	61	0.3	Disseminated
K15-250	251.0	183.5	4.3	4.0	0.4	1.9	7.5	59	0.3	Massive
K15-250	251.0	187.8	2.2	2.0	2.1	0.1	0.2	44	0.4	Disseminated
K15-250	251.0	201.7	0.6	0.6	2.3	0.1	0.3	52	0.3	Disseminated
K15-251	86.0	17.0	13.8	12.6	1.2	2.1	5.9	146	1.1	Massive with minor disseminated bands
K15-251	86.0	30.8	2.2	2.0	0.2	0.6	2.5	38	0.2	Disseminated
K15-253	230.0	182.0	1.5	1.4	1.4	0.1	0.4	21	0.1	Disseminated
K15-254	100.0	39.3	12.4	11.3	1.3	1.7	6.9	157	1.2	Massive with minor disseminated bands
K15-255	80.0	12.0	9.7	7.9	0.5	3.5	9.9	294	2.5	Massive
K15-257	218.0	**No significant results**								
K15-259	120.0	49.1	2.1	1.7	4.1	0.6	1.2	132	0.9	Disseminated
K15-259	120.0	51.2	12.4	10.2	0.5	2.7	8.1	206	1.8	Massive
K15-260	227.0	153.7	3.0	2.9	0.9	0.0	0.2	20	0.1	Disseminated
K15-260	227.0	156.7	15.5	15.1	0.5	1.5	7.1	83	0.8	Massive
K15-260	227.0	172.1	10.2	9.9	1.8	0.2	0.4	72	0.7	Disseminated
K15-262	348.0	**No significant results**								
K15-263	254.0	**No significant results**								
K15-264	218.0	146.9	1.7	1.6	1.6	0.0	0.1	38	0.2	Disseminated
K15-264	218.0	148.5	1.4	1.4	11.0	0.1	0.7	245	3.2	Massive chalcopyrite
K15-264	218.0	149.9	1.8	1.8	3.4	0.1	0.3	86	1.1	Disseminated
K15-264	218.0	151.8	12.6	12.5	0.3	1.9	7.6	109	0.8	Massive
K15-264	218.0	164.3	3.0	3.0	1.3	0.9	1.8	66	0.9	Disseminated
K15-265	285.0	172.2	0.7	0.7	0.3	0.8	3.4	55	0.1	Disseminated
K15-265	285.0	184.2	3.4	3.3	0.3	4.7	8.7	184	0.9	Massive
K15-265	285.0	187.6	6.6	6.5	0.8	0.3	1.1	42	0.3	Disseminated
K15-265	285.0	194.2	5.3	5.1	0.4	3.3	9.6	233	1.9	Massive
K15-267	218.0	137.6	23.5	21.5	0.7	2.0	7.0	155	1.3	Massive with minor bands of disseminated sulphide
K15-267	***includes***	138.3	2.8	2.6	0.4	4.9	11.3	318	2.3	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-267	***includes***	157.8	2.8	2.6	0.4	3.6	12.5	216	1.8	Massive
K15-268	355.0	**No significant mineralization, not sampled**								
K15-271	258.0	**No significant results**								
K15-272	128.0	33.2	2.4	1.9	2.6	0.0	0.2	33	0.1	Disseminated
K15-272	128.0	39.2	6.8	5.5	0.4	0.9	6.9	22	0.1	Massive
K15-272	128.0	53.5	1.1	0.8	0.8	4.9	9.6	330	1.4	Disseminated
K15-272	128.0	62.3	18.0	14.5	0.2	1.7	5.4	178	1.7	Massive
K15-272	128.0	86.6	11.4	9.2	0.4	2.3	8.9	135	1.3	Massive
K15-273	149.0	91.2	18.7	17.1	2.6	0.9	4.1	138	1.6	Massive
K15-273	***includes***	91.2	1.8	1.6	11.5	0.1	2.3	251	3.6	Massive chalcopyrite
K15-273	***includes***	106.4	3.5	3.2	0.5	3.0	9.6	222	1.9	Massive with minor bands of disseminated sulphide
K15-273	149.0	109.9	1.5	1.4	0.1	0.5	2.6	19	0.0	Disseminated
K15-274	128.0	42.4	1.4	1.1	1.5	0.2	0.5	37	0.1	Disseminated
K15-274	128.0	59.0	7.0	5.7	0.7	1.6	8.6	155	1.5	Massive
K15-274	128.0	84.4	14.4	11.6	0.5	3.3	10.0	156	1.7	Massive
K15-278	197.3	128.5	1.2	1.1	0.4	0.1	3.5	9	0.0	Disseminated
K15-278	197.3	132.0	3.1	2.8	1.4	0.0	0.2	18	0.4	Disseminated
K15-278	197.3	135.0	10.0	9.3	0.5	0.2	6.6	22	0.2	Massive
K15-279	275.0	121.5	1.5	1.4	1.9	0.2	0.8	66	0.3	Disseminated
K15-279	275.0	123.0	4.8	4.3	17.1	0.1	1.5	333	4.1	Disseminated
K15-279	275.0	127.8	47.3	43.2	1.3	0.8	4.1	105	1.0	Massive
K15-279	***includes***	127.8	4.0	3.6	0.9	1.8	16.3	103	0.4	Massive
K15-281	260.0	179.3	4.0	3.4	2.5	0.1	2.2	28	0.5	Interbanded massive and disseminated sulphide bands
K15-281	***includes***	180.8	1.1	0.9	0.9	0.1	6.1	18	0.2	Massive
K15-284	224.0	167.3	3.6	3.4	0.4	1.1	2.6	29	0.1	Disseminated
K15-284	224.0	170.9	11.1	10.4	0.6	0.4	6.2	23	0.1	Massive
K15-286	200.0	122.2	6.8	6.8	4.7	0.1	0.4	120	1.5	Disseminated with bands of massive chalcopyrite
K15-286	200.0	129.0	18.5	18.5	0.9	1.5	5.4	135	1.4	Massive
K15-287	131.0	38.8	1.8	1.6	0.7	2.5	5.2	199	0.9	Massive
K15-287	131.0	47.1	9.0	8.1	2.0	2.0	9.4	163	1.6	Massive
K15-287	131.0	63.9	3.5	3.1	0.2	2.4	6.3	103	0.8	Massive
K15-287	131.0	76.1	4.0	3.6	0.2	1.0	3.2	46	0.4	Disseminated
K15-287	131.0	109.3	0.4	0.3	1.6	0.0	0.1	22	0.1	Disseminated
K15-289	236.0	**No significant results**								
K15-290	142.0	75.0	14.9	13.0	0.5	2.7	7.8	243	2.1	Massive with disseminated bands throughout
K15-291	242.0	202.4	0.6	0.5	0.0	0.4	5.8	10	0.0	Disseminated
K15-291	242.0	218.3	2.9	2.6	0.5	4.1	8.9	127	0.7	Massive
K15-293	239.0	147.1	5.8	5.0	0.1	0.0	2.3	6	0.0	Disseminated
K15-295	201.5	142.3	1.0	0.9	0.1	0.7	7.6	25	0.1	Disseminated
K15-295	201.5	186.3	2.1	1.9	0.5	0.4	2.2	30	0.1	Massive
K15-296	62.0	3.7	3.1	3.0	0.4	1.8	5.9	94	0.8	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-296	62.0	17.1	8.1	7.9	0.6	1.6	6.1	150	2.0	Massive with disseminated bands
K15-298	114.0	54.4	12.8	11.7	0.5	3.0	8.7	233	1.6	Massive
K15-299	170.0	101.1	2.0	1.8	2.6	1.7	7.1	112	1.9	Disseminated
K15-299	170.0	104.2	20.8	19.0	1.1	1.7	6.1	154	1.4	Massive
K15-299	***includes***	113.2	1.3	1.2	8.7	0.4	1.5	289	4.8	Massive chalcopyrite
K15-299	170.0	140.3	0.2	0.2	0.6	1.4	5.2	96	0.3	Massive
K15-301	141.0	78.9	12.0	11.0	0.4	1.8	7.1	173	1.4	Massive
K15-301	141.0	99.6	5.2	4.8	0.1	1.8	3.1	19	0.2	Disseminated
K15-324	350.0	84.1	5.9	5.4	3.6	0.5	2.8	180	1.8	Copper Rich Stockwork Zone
K15-324	350.0	100.7	15.9	14.4	0.6	1.5	5.6	150	1.7	Massive

Intercepts: length-weighted average with maximum 3m internal waste (true thickness). When assay value is below the detection limit, half the detection limit is used. Assay value composited if Cu>1%, Pb>2%, Zn>2%.

8.5.1.2 Other ABM Zone targets (Santorini, ABM deep)

The Santorini target is located immediately south-southwest of the ABM lens (Figure 16). The target is largely defined by favourable stratigraphy of the KZK Formation and a moderately well-developed VTEM conductor recognized from the 2015 airborne geophysical survey (Duncan and Rabb, 2015). Exploration work in 2015 comprised drilling of two DDHs (K15-327, K15-328) for 457 m (see Table 3, Figure 16) that tested the VTEM anomaly in the optimum location of a modeled EM plate conductor. Interpretive cross sections of the Santorini target drilling, depicting lithology and alteration, are listed in Table 18 and shown in Appendix M.

Table 18: List of sections through the Santorini target

Section	Target	Orientation	Looking	Width	Figure reference	2015 DDH
414625E	Santorini	000°	270°	+14/-16.5 m	Appendix M - Figure 25	K15-327
414675E	Santorini	000°	270°	+12.5/-30.0 m	Appendix M - Figure 26	K15-328

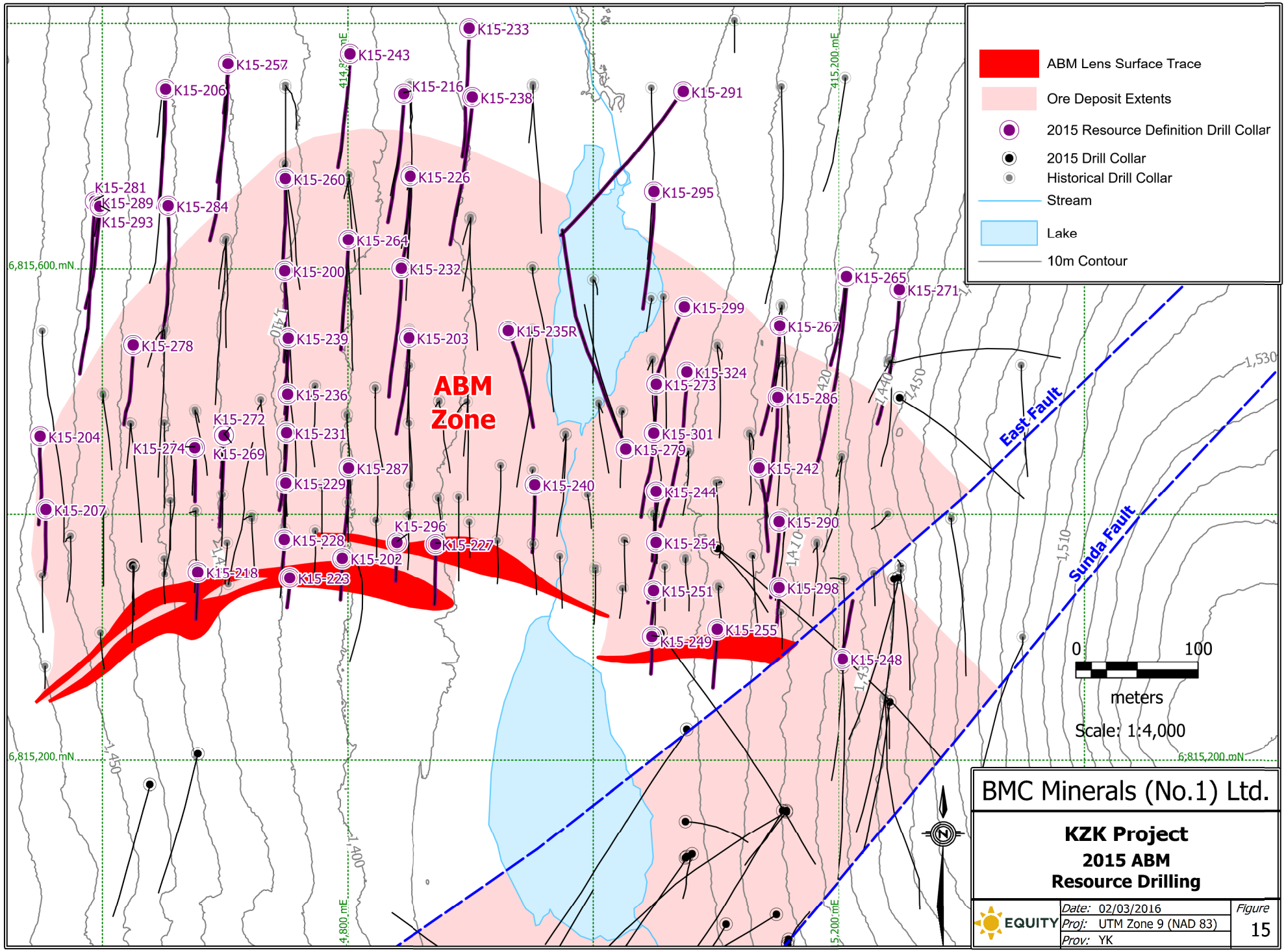
Both Santorini DDHs intersected rhyolite units (RHYva) cut by a mafic intrusive (MAFi) that is interpreted as the equivalent of the MAFi unit in the ABM lens footwall and the host to the Krakatoa Main lens (Duncan and Baker, 2015). No significant mineralization was present at this equivalent horizon at Santorini. However, several narrow intersections of OJ-style stringer mineralization associated with moderate to strong chlorite alteration occur at a stratigraphic position below, but near to, that of the Krakatoa Main lens, and which could be equivalent to the Krakatoa Lower lens. The best-developed mineralization was encountered in K15-327 and is coincident with the position of a modelled EM plate (Duncan and Rabb, 2015). A summary of Santorini assay results is presented in Table 19. The Santorini target remains open to the north-northeast where it coalesces with the VTEM anomaly produced by ABM. Further exploration drilling in this direction is warranted if the target size is thought to be significant.

Table 19: Notable assay composites from 2015 drilling on the Santorini target

DDH ID	From (m)	To (m)	Length (m)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Lens	Comments
K15-327	64.45	67.90	3.45	0.48	1.20	2.60	0.02	24.8	Lower Krakatoa?	RHY- and OJ-hosted below MAFi
including	65.25	65.75	0.50	1.64	3.46	7.46	0.12	84.2		OJ-hosted
	81.87	84.05	2.18	0.32	0.11	3.22	0.04	28.5	Lower Krakatoa?	RHYvl- and OJ-hosted
including	83.70	84.05	0.35	1.58	0.10	7.18	0.15	53.1		OJ-hosted
	142.70	143.05	0.35	0.30	0.95	4.75	0.05	50.8	?	RHYva-hosted
K15-328	80.75	81.10	0.35	0.07	0.52	1.87	0.02	12.3	Lower Krakatoa?	OJ-hosted
	84.67	85.50	0.83	0.15	0.06	2.62	0.03	8.1	Lower Krakatoa?	OJ-hosted

The discovery of the Krakatoa Main lens (see Section 8.5.2) within the mafic footwall unit (MAFi) on the east side of the East Fault raised the possibility that the MAFi unit immediately west of the East Fault, where it occurs directly beneath the ABM lens, might also be mineralized ("ABM deep target") even though it was seen to be only weakly mineralised further west. To investigate this possibility, historical drilling throughout the ABM Zone was reviewed for evidence of mineralization and/or alteration within underlying MAFi and the felsic-MAFi contact zone (Duncan, 2015a). The review identified 13 historical DDHs that had mineralization associated with the MAFi unit. Several other DDHs also intersected muscovite-altered tuffaceous rhyolite units intercalated with the MAFi, and these were interpreted as distal-altered examples of the same favourable replacement unit that hosts the Krakatoa Main lens (Duncan, 2015a).

To test the Krakatoa Main lens stratigraphic position west of the East Fault (i.e. the ABM deep target), DDH K15-324 was drilled on section 415075E at the eastern extent of ABM, close to the East Fault and proximal to the Krakatoa Main lens itself. This section also contained a mostly untested and thick MAFi unit, as well as potentially porous tuffaceous rhyolite units preserved within MAFi considered favourable for replacement-style mineralization (Duncan, 2015a). K15-324 also occurs 100–300 m east of relatively narrow, and possibly distal, mineralized Krakatoa Main lens equivalent intercepts between sections 414950E and 414750E. K15-324 intersected 15.85 m of ABM lens massive sulphide from 100.65–116.50 m followed by 31.65 m of MAFi-hosted RHYi, from 136.15–167.8 m core depth, on what is now interpreted as the Krakatoa Main lens equivalent horizon. The base of the mafic footwall occurs 7 m below this 31.65 m interval of rhyolite, and is marked by strong muscovite alteration as well as minor stringer-style sulphide mineralization that includes 1–3% sphalerite, 1% galena and 1% pyrite. No samples were submitted for assay analysis.


ABM Lens Surface Trace
Ore Deposit Extents
2015 Resource Definition Drill Collar
2015 Drill Collar
Historical Drill Collar
Stream
Lake
10m Contour
ABM Zone
East Fault
Sunda Fault
K15-233
K15-257
K15-243
K15-206
K15-216
K15-238
K15-291
K15-281
K15-289
K15-293
K15-284
K15-260
K15-226
K15-295
K15-264
K15-200
K15-232
K15-265
K15-271
K15-299
K15-278
K15-239
K15-203
K15-235R
K15-267
K15-324
K15-273
K15-236
K15-286
K15-272
K15-231
K15-301
K15-204
K15-274
K15-269
K15-279
K15-287
K15-242
K15-229
K15-240
K15-244
K15-207
K15-290
K15-296
K15-254
K15-228
K15-227
K15-202
K15-218
K15-223
K15-298
K15-251
K15-255
K15-249
K15-248
6,815,600.mN
6,815,200.mN
414,800.mE
415,200.mE
4,800.mE
5,200.mE
1,400
1,410
1,420
1,430
1,440
1,450
1,470
1,510
1,530
0
100
meters
Scale: 1:4,000
BMC Minerals (No.1) Ltd.
KZK Project
2015 ABM
Resource Drilling
EQUITY
Date: 02/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
15

8.5.2 Krakatoa Zone

Cominco originally intersected the “KZK-Offset” (now Upper lens) east of East Fault in DDHs K95-124 and K97-173 and considered the narrow intercepts in these DDHs to represent the up dip edge of the ABM lens (Schultze, 2001). BMC recognized this faulted part of ABM as a high-priority near-deposit exploration target and drilling in 2015 resulted in the discovery of the Krakatoa Main lens.

The Krakatoa Main lens discovery was made on the basis of geological targeting that identified an area potentially hosting the obliquely down-thrown portion of the ABM lens. This resulted in the discovery intersection in DDH K15-282 in what was only the second DDH drilled in 2015 east of the East Fault (the first DDH failed to penetrate deep enough to intersect mineralization in the MAFi unit). Follow-up drilling and refinement of drill targeting at shallower depths was made possible with the 2015 airborne VTEM data, which was delivered after the initial discovery intersection. Continued exploration success on the Krakatoa Main lens led to a resource definition program comprising 26 DDHs for a total of 6816.1 m (see Table 3, Figure 16). A series of geological sections through the Krakatoa Zone, depicting lithology and alteration, are listed in Table 20 and shown in Appendix M. DDH intercepts from Krakatoa Zone drilling are displayed in Table 21.

Table 20: List of sections through the Krakatoa Zone

Section	Orientation	Looking	Width	Figure reference	2015 DDH
K-B	060°	300°	±25 m	Appendix M - Figure 18	K15-323
K-D	060°	300°	±25 m	Appendix M - Figure 19	K15-323
K-F	060°	300°	±25 m	Appendix M - Figure 20	K15-313, 314, 319, 321, 323
K-H	060°	300°	±25 m	Appendix M - Figure 21	K15-297, 303, 305, 307, 316, 318, 320, 322
K-J	060°	300°	±25 m	Appendix M - Figure 22	K15-277, 292, 297, 303, 304, 309, 313, 315, 317
K-L	060°	300°	±25 m	Appendix M - Figure 23	K15-258, 282, 297, 308, 310, 311, 326
K-N	060°	300°	±25 m	Appendix M - Figure 24	K15-282, 325

Step-out drilling has demonstrated that the Krakatoa Zone is generally concordant to stratigraphic layering, oriented at 300º/35º NNE, within a faulted block of KZK Formation that is bound by the East and Sunda faults (Duncan and Baker, 2015). Massive sulphide mineralization continues to the top of bedrock, where it is truncated and buried under 20–30 m of glacial overburden, and remains open down-dip.

The Krakatoa Zone consists of three massive sulphide lenses: (1) the “Upper lens” interpreted as the stratigraphic equivalent to the ABM lens; (2) the MAFi-hosted “Main” lens with a true thickness up to 22 m; and (3) the “Lower lens” hosted at or near the contact between the base of the MAFi and underlying felsic rocks (Duncan and Baker, 2015). The Krakatoa Upper lens is hosted in felsic rocks and was originally intersected by Cominco in DDHs K95-124 and K97-173. The Krakatoa Main lens sits below this and is hosted both directly within the mafic footwall sill (i.e. MAFi) or within its intercalated felsic ash tuff units (RHYva) (Duncan and Baker, 2015).

The host rock types and alteration styles of the Krakatoa Main lens are mostly similar to those characterizing the ABM lens but with a few important differences. Firstly, the dominant host rocks for the Krakatoa Main lens are either felsic ash tuff sandwiched by mafic footwall or the MAFi itself (Duncan and Baker, 2015), in contrast to the ABM lens which is typically hosted in felsic rocks overlying MAFi. Mineralization styles in the Krakatoa Main lens typically comprise a combination of OB-style mineralization with higher gangue content than ABM, and OI-style associated with relic lapilli or felsic ash groundmass. It is thought that this characteristic provides direct evidence that the Krakatoa Main lens is a replacement style deposit and, by extension, adds support to the hypothesis that the ABM lens is also replacement (Duncan and Baker, 2015). Portions of Krakatoa appear similar to the up dip 50m of the ABM lens in terms of base and precious metal grades but Krakatoa also contains significantly higher barite content than ABM mineralization. Krakatoa also appears to have higher trace element concentrations of Sb, Se, Hg and As. Ongoing petrographic and metallurgical work will aid in the understanding and nature of these important differences (Duncan, 2015b).

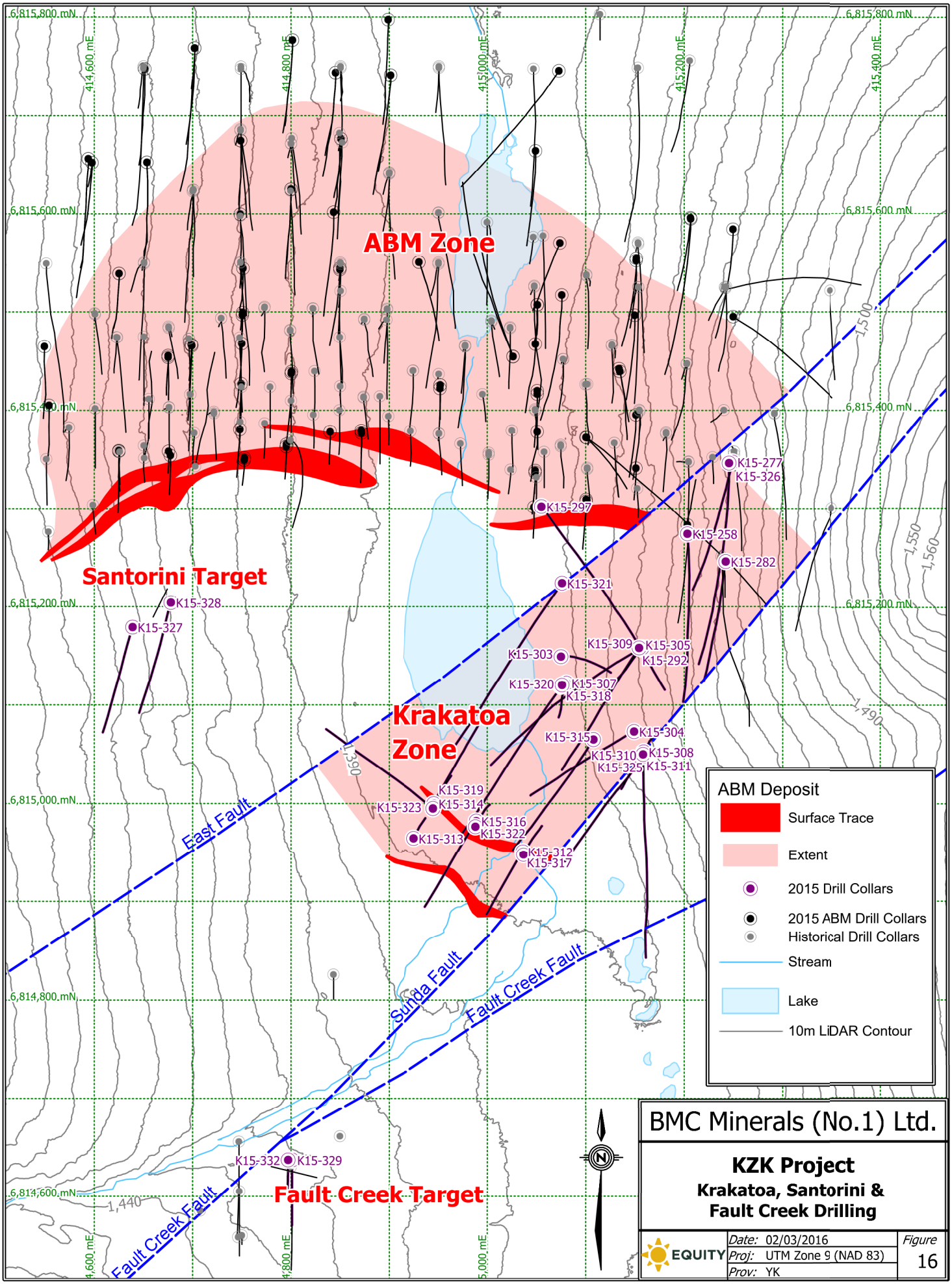

ABM Zone
Santorini Target
Krakatoa Zone
Fault Creek Target
East Fault
Sunda Fault
Fault Creek Fault
Fault Creek Fault
K15-277
K15-326
K15-297
K15-258
K15-282
K15-321
K15-328
K15-327
K15-309
K15-305
K15-303
K15-292
K15-320
K15-307
K15-318
K15-315
K15-304
K15-310
K15-308
K15-325
K15-311
K15-319
K15-323
K15-314
K15-316
K15-313
K15-322
K15-312
K15-317
K15-332
K15-329
6,815,800 mN
6,815,600 mN
6,815,400 mN
6,815,200 mN
6,815,000 mN
6,814,800 mN
6,814,600 mN
414,600 mE
414,800 mE
415,000 mE
415,200 mE
415,400 mE
1,500
1,550
1,560
1,490
1,390
1,440
ABM Deposit
Surface Trace
Extent
2015 Drill Collars
2015 ABM Drill Collars
Historical Drill Collars
Stream
Lake
10m LiDAR Contour
N
BMC Minerals (No.1) Ltd.
KZK Project
Krakatoa, Santorini & Fault Creek Drilling
EQUITY
Date: 02/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure 16

Table 21: Notable assay composites from 2015 drilling on the Krakatoa Zone.

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-258	299.0	228.6	2.6	2.5	0.4	3.2	9.4	143	0.9	Massive
K15-277	357.8	303.7	10.1	9.8	0.5	2.4	6.0	220	1.6	Massive
K15-277	357.8	326.0	6.9	6.7	0.2	1.9	4.4	153	1.0	Massive
K15-277	357.8	341.8	0.9	0.9	0.7	1.4	4.3	194	3.1	Disseminated
K15-282	340.0	243.7	2.2	1.9	0.7	2.8	9.8	146	1.7	Massive
K15-282	340.0	256.0	1.0	0.9	0.5	2.3	6.4	150	0.8	Massive
K15-282	340.0	299.3	15.1	13.1	0.4	2.0	7.4	132	1.1	Massive
K15-282	***includes***	299.3	4.4	3.9	0.6	2.3	13.0	228	2.1	Massive
K15-292	312.0	170.5	1.0	0.9	0.2	4.9	8.7	317	1.3	Massive
K15-292	312.0	174.6	1.9	1.6	0.8	3.9	7.6	284	1.7	Massive
K15-292	312.0	217.2	25.9	22.4	1.0	4.9	9.5	292	1.8	Massive
K15-292	***includes***	232.0	7.6	6.6	1.8	4.4	12.7	311	2.4	Massive
K15-292	312.0	247.3	1.2	1.0	0.6	0.5	5.2	55	0.2	Massive
K15-297	350.0	14.0	3.3	2.9	2.1	1.2	5.0	115	1.2	Massive
K15-297	350.0	220.6	1.1	1.0	0.1	1.1	3.5	146	1.1	Disseminated
K15-297	350.0	227.3	1.8	1.6	0.1	1.3	4.0	152	1.4	Massive
K15-297	350.0	285.1	17.6	15.2	0.9	3.4	7.9	272	2.2	Massive
K15-297	***includes***	288.9	7.4	6.4	1.3	3.9	9.9	261	2.3	Massive
K15-297	350.0	309.7	2.0	1.7	0.6	1.3	5.6	81	0.3	Massive
K15-303	247.8	134.0	0.8	0.7	0.6	2.1	7.8	197	2.2	Massive
K15-303	247.8	135.4	7.3	6.3	0.1	1.8	6.2	124	0.8	Disseminated
K15-303	247.8	148.7	1.1	1.0	1.0	0.7	3.2	113	0.4	Massive
K15-303	247.8	154.9	3.2	2.8	0.1	1.2	3.8	115	1.2	Massive
K15-303	247.8	198.0	21.3	18.4	1.0	3.6	10.7	234	2.1	Massive
K15-303	***includes***	210.2	7.4	6.5	1.3	4.2	14.4	236	1.9	Massive
K15-303	247.8	232.3	1.8	1.5	4.9	0.6	4.1	140	2.6	Massive chalcopyrite
K15-304	254.0	125.0	2.8	2.4	0.4	1.9	9.6	92	0.4	Massive
K15-304	254.0	161.8	9.8	8.5	0.4	4.7	6.8	148	2.3	Massive
K15-304	254.0	206.3	0.6	0.5	0.2	0.5	2.4	20	0.1	Disseminated
K15-305	300.0	182.7	14.7	12.7	0.6	2.8	8.4	249	2.1	Massive
K15-305	300.0	193.2	2.6	2.2	0.2	5.5	14.8	273	1.5	Massive
K15-305	300.0	205.2	0.6	0.5	0.2	0.4	8.6	45	0.3	Massive
K15-305	300.0	228.8	18.2	15.7	0.2	3.8	6.5	307	2.4	Massive
K15-305	***includes***	228.8	4.7	4.1	0.2	5.6	9.6	181	1.0	Massive
K15-305	300.0	255.5	9.0	7.8	1.5	3.5	6.2	811	5.9	Massive
K15-305	***includes***	255.5	1.5	1.3	5.6	0.5	0.7	3347	26.9	Massive
K15-307	277.0	131.3	2.0	1.7	0.6	3.0	8.9	127	0.8	Massive
K15-307	277.0	136.5	2.4	2.0	0.1	4.0	11.9	187	1.2	Massive
K15-307	277.0	181.8	21.3	18.2	0.4	2.9	7.2	182	1.9	Massive
K15-307	***includes***	186.9	4.2	3.6	0.3	3.9	6.4	338	4.8	Massive
K15-308	194.0	**No significant mineralization, not sampled**								
K15-309	306.0	166.3	1.6	1.6	0.6	1.7	11.0	112	0.4	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-309	306.0	216.5	17.0	17.0	0.3	3.3	7.1	116	0.9	Massive
K15-310	191.0	159.5	1.3	1.3	1.1	3.1	10.7	195	1.7	Massive
K15-311	263.0	**Not Sampled**								
K15-312	110.0	48.5	4.6	4.5	0.6	0.3	1.2	60	0.1	Disseminated
K15-312	110.0	61.6	2.5	2.4	0.3	4.9	6.5	577	3.5	Massive
K15-313	153.0	**No significant results**								
K15-314	195.0	26.0	3.9	2.6	0.3	1.8	5.6	302	2.2	Massive w/ 50 cm of mafic intrusive
K15-314	195.0	67.6	7.4	5.0	0.2	2.9	8.7	259	1.8	Massive
K15-314	195.0	126.8	3.7	2.4	0.3	1.4	2.3	166	3.2	~1 m massive w/ ~1 m disseminated envelope
K15-314	195.0	134.2	1.8	1.2	0.1	1.9	4.0	139	0.6	Disseminated
K15-314	195.0	143.7	5.9	4.0	0.4	2.4	6.3	264	2.0	Disseminated
K15-314	195.0	154.0	2.8	1.8	0.6	0.4	1.7	44	1.0	Disseminated w/ chalcopyrite band in mafic intrusive
K15-315	210.0	98.8	6.7	6.6	0.5	5.0	7.8	260	2.4	Massive
K15-315	210.0	133.9	10.5	10.3	0.3	4.3	7.6	139	1.5	Massive
K15-315	210.0	177.6	5.5	5.4	2.5	0.7	6.6	88	0.6	Disseminated w/ ~1 m chalcopyrite rich band
K15-316	181.0	52.5	2.7	2.7	0.3	2.2	7.3	203	1.5	Massive
K15-316	181.0	119.3	1.2	1.2	0.3	1.5	7.7	207	2.1	Massive
K15-317	170.6	32.0	4.0	2.8	0.2	4.3	8.0	372	2.4	Massive
K15-317	170.6	76.8	15.3	10.7	0.4	4.6	6.7	155	1.9	Massive
K15-317	170.6	135.5	3.4	2.4	0.8	0.4	4.6	45	0.2	Stockwork
K15-319	130.0	106.7	6.0	3.0	0.6	1.4	7.4	148	1.0	Massive
K15-319	130.0	167.2	29.6	14.8	1.2	5.2	10.2	274	2.0	Massive, with intervals of heavily disseminated sulphides in breccia
K15-319	***includes***	185.3	5.8	2.9	1.8	6.2	16.0	345	2.1	Massive
K15-319	130.0	200.0	2.9	1.5	0.3	0.2	2.4	25	0.1	Disseminated
K15-320	175.0	119.0	4.2	4.1	0.3	1.1	3.5	83	0.7	Disseminated
K15-320	175.0	150.0	13.7	13.4	0.2	4.1	6.0	275	2.2	Massive
K15-320	175.0	206.4	3.8	3.7	1.7	0.5	5.3	78	1.1	Massive
K15-321	265.0	195.2	4.3	4.2	0.1	1.6	4.2	309	1.1	Massive
K15-321	265.0	225.2	21.4	21.0	1.1	3.7	8.9	244	1.6	Massive
K15-321	265.0	248.3	1.2	1.2	1.2	0.2	1.1	47	0.3	Disseminated
K15-322	100.0	39.4	1.9	1.6	0.3	2.3	5.5	167	0.8	Massive
K15-322	100.0	68.3	5.9	0.9	0.2	2.4	8.6	270	1.5	Massive
K15-322	100.0	74.2	2.8	0.9	0.1	0.1	1.0	55	0.5	Disseminated
K15-322	100.0	84.3	6.9	0.9	0.2	3.2	4.8	456	3.5	Massive
K15-322	100.0	153.0	2.0	0.9	1.4	1.0	9.1	111	1.1	Massive
K15-323	200.0	108.6	4.4	0.6	0.2	3.2	5.0	148	0.6	Massive
K15-323	200.0	147.4	3.4	0.5	0.3	2.3	6.0	122	0.6	Heavily Disseminated Sulphides
K15-325	300.0	**No Significant Results**								
K15-326	440.0	295.4	2.6	2.3	0.4	1.8	5.3	119	0.7	Heavily Disseminated Sulphides
K15-326	440.0	308.6	4.9	4.4	0.2	4.1	8.0	271	3.4	Massive

DDH ID	Total Depth (m)	Depth From (m)	Interval (m)	True width (m)	Cu (wt%)	Pb (wt%)	Zn (wt%)	Ag (g/t)	Au (g/t)	Mineralization style
K15-326	440.0	379.9	2.5	2.3	0.5	0.7	5.9	39	0.2	Massive

Intercepts: length-weighted average with maximum 3m internal waste (true thickness). When assay value is below the detection limit, half the detection limit is used. Assay value composited if Cu>1%, Pb>2%, Zn>2%.

8.5.3 Other targets proximal to the ABM Deposit (Fault Creek)

The Fault Creek target is located approximately 400 m southwest of the Krakatoa Zone on the south side of the Sunda Fault (Figure 16). The target is marked by a coincident magnetic high and UTEM conductor that was first drilled in 1997. DDH K97-181 discovered massive sulphide mineralization just below the overburden surface that returned an assay composite of 6.4 m averaging 5.15% Cu, 1.02% Pb, 5.59% Zn, 140.5 g/t Ag and 2.4 g/t Au. Additional drilling failed to intersect more mineralization and led to the interpretation that mineralization was east-west striking and north dipping. Re-logging of historical Fault Creek DDHs, along with new 2015 VTEM geophysical data, provided an alternative interpretation for the orientation of mineralization as northwest striking and northeast dipping, thereby re-opening the target for additional drilling (Duncan, 2016). Interpretive cross sections of the Fault Creek target drilling, depicting lithology and alteration, are listed in Table 22 and shown in Appendix M.

Table 22: List of sections through the Fault Creek target

Section	Target	Orientation	Looking	Width	Figure reference	2015 DDHs
414800E	Fault Creek	000°	270°	±15 m	Appendix M - Figure 27	K15-329, 332
414750E	Fault Creek	000°	270°	±15 m	Appendix M - Figure 28	None

Two DDHs (K15-329, K15-332) for 382 m were drilled 50 m east of K97-181, on section 414800E, to test the alternative orientation of Fault Creek mineralization. Both DDHs intersected felsic and minor mafic volcanic rocks of the KZK Formation, but neither DDH intersected massive or stringer-style sulphide mineralization equivalent to the Fault Creek target intersected in K97-181 (Duncan, 2016). Weakly developed OJ-style mineralization was intersected in K15-329 at 158.00 m, hosted within RHYv units, while weakly disseminated sulphide was intersected in K15-332, at 174.15 m depth, within a SED unit just below its contact with overlying RHYv. Mineralization in both DDHs occurs within an envelope of moderate chlorite alteration and correlates well with similar OJ and disseminated stringer-style mineralization observed in DDH K97-182, located 160 m to the south. The 2015 drilling corroborates the new interpretation that stratigraphy strikes northwest and dips northeast. Key assay results are summarized in Table 23.

Table 23: Notable assay composites from 2015 drilling on the FCZ target

DDH ID	From (m)	To (m)	Length (m)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Stratigraphic position	Comments
K15-329	158.00	160.00	2.00	0.19	0.07	0.71	0.02	6.0	Lower Krakatoa or Santorini equivalent?	Hosted in OJ
K15-332	174.15	174.83	0.68	0.68	0.06	0.64	0.04	12.5	Lower Krakatoa or Santorini equivalent?	Hosted in chlorite altered SED

8.5.4 GP4F deposit

The 2015 work program on the GP4F deposit included exploration and infill drilling as well as borehole EM surveys (Section 8.4.3), a ground gravity survey between ABM and GP4F (Section 8.4.2) and an airborne VTEM survey (Section 8.4.1). The aim of these surveys was to assess both the resource expansion and exploration potential of the GP4F deposit and surrounding area. Significant results from the 2015 drilling program are described below. Interpretive cross-sections through the GP4F deposit, showing both lithology and alteration, are listed in Table 24 and shown in Appendix M. Significant assay composites from the 2015 work program are displayed in Table 25.

Table 24: List of sections through GP4F deposit

Section	Orientation	Looking	Width	Figure reference	2015 DDH
418850E	000°	270°	+110 m/-125 m	Appendix M - Figure 29	K15-247, 268
419350E	000°	270°	±25 m	Appendix M - Figure 30	None
419406E	000°	270°	±25 m	Appendix M - Figure 31	K15-224, 234, 294
419460E	000°	270°	±25 m	Appendix M - Figure 32	None
419500E	000°	270°	±25 m	Appendix M - Figure 33	K15-302, 306
419560E	000°	270°	±25 m	Appendix M - Figure 34	None
419650E	000°	270°	±25 m	Appendix M - Figure 35	K15-261, 280, 285

Drilling consisted of 10 DDHs for a total of 3291 m (Figure 17) with borehole EM surveys completed in seven of those holes. Drilling was completed on three sections within the central area at GP4F on sections 419400E, 419500E and 419650E. The three DDHs on section 419400E were designed to infill between historical drilling (K15-224, K15-294) and test the GP4F deposit 200 m further down dip to the north (K15-234), Drilling on section 419500E (K15-302, K15-306) was done as 50 m step-outs from historical drilling in an attempt to expand the resource. The three DDHs drilled on 419650E were designed to expand the deposit to the east and northeast with 100–200 m step-outs. Additionally, two widely spaced DDHs (K15-247, K15-268) on sections 418750E and 418950E tested geophysical targets outside the deposit area and are shown together on one section (Figure 29 in Appendix M).

The 2015 drill program intersected the GP4F lens in all but one DDH and showed that it remains open to the northeast, southeast and southwest. The GP4F lens is tabular and marked by zinc-lead-copper sulphide mineralization as well as strong chlorite + biotite ± garnet ± cordierite alteration. The core of the GP4F lens forms the so-called “central area”, which extends 500 m down dip from surface and 300 m east to west. Within the central area massive sulphide mineralization is volumetrically subordinate to stringer and disseminated mineralization styles and consists of narrow lenses (thickest being 3.3 m true thickness) concentrated between sections 419400E and 491560E, and up dip from DDHs K98-193 and K15-306 (Jones, 2016). Assays returned from massive sulphide in K15-306 form a composite of 4.65 m grading 7.43% Zn, 2.83% Pb, 0.15% Cu, 122.6 g/t Ag, and 1.04 g/t Au.

A second, similar but less intense, altered and mineralized zone occurs underneath the GP4F lens and is referred to as the “Lower target”. This Lower target is present in most DDHs that were drilled deep enough (mostly the 2015 DDHs) but is quite variable in appearance and location, ranging from 1.5-20 m in thickness, occurring 15-40 m below the GP4F lens and associated with weak to strong alteration. The Lower target consists of either thin, massive to semi-massive sulphide lenses within a more widespread stringer/disseminated sulphide mineralization zone similar to the GP4F lens or stringer and disseminated sulphide mineralization only. The best assay composite for the Lower target was from K15-306, which ran 5 m of 6.25% Zn, 1.03% Pb, 0.16% Cu, 18.7 g/t Ag, and 0.023 g/t Au.

There is some evidence for a weakly-defined Upper target above the GP4F lens, especially on section 419650E, but more work is needed to determine if it has any continuity (Jones, 2016).

DDH K15-261, collared 100 m east-southeast of the GP4F central area on Section 419650E, intersected mineralization that may be equivalent in stratigraphic position to the R-15 deposit, located 600 m to the

southeast off the KZK Property. The R-15 deposit is still considered open in this direction with geophysics suggesting that there is additional potential for the GP4F deposit to continue along strike towards the R-15 deposit (Jones, 2016).

The 2015 drilling has shown that there is still additional exploration potential for expanding the GP4F lens. It remains open to the north-northeast from K15-306 and although the intensity of alteration does wane in this direction, as it does to the west and north-northwest of the central area as well, the GP4F lens is still identifiable in DDH K15-247 several hundred metres beyond the central area (Jones, 2016).

Table 25: Notable assay composites from 2015 drilling on the GP4F deposit

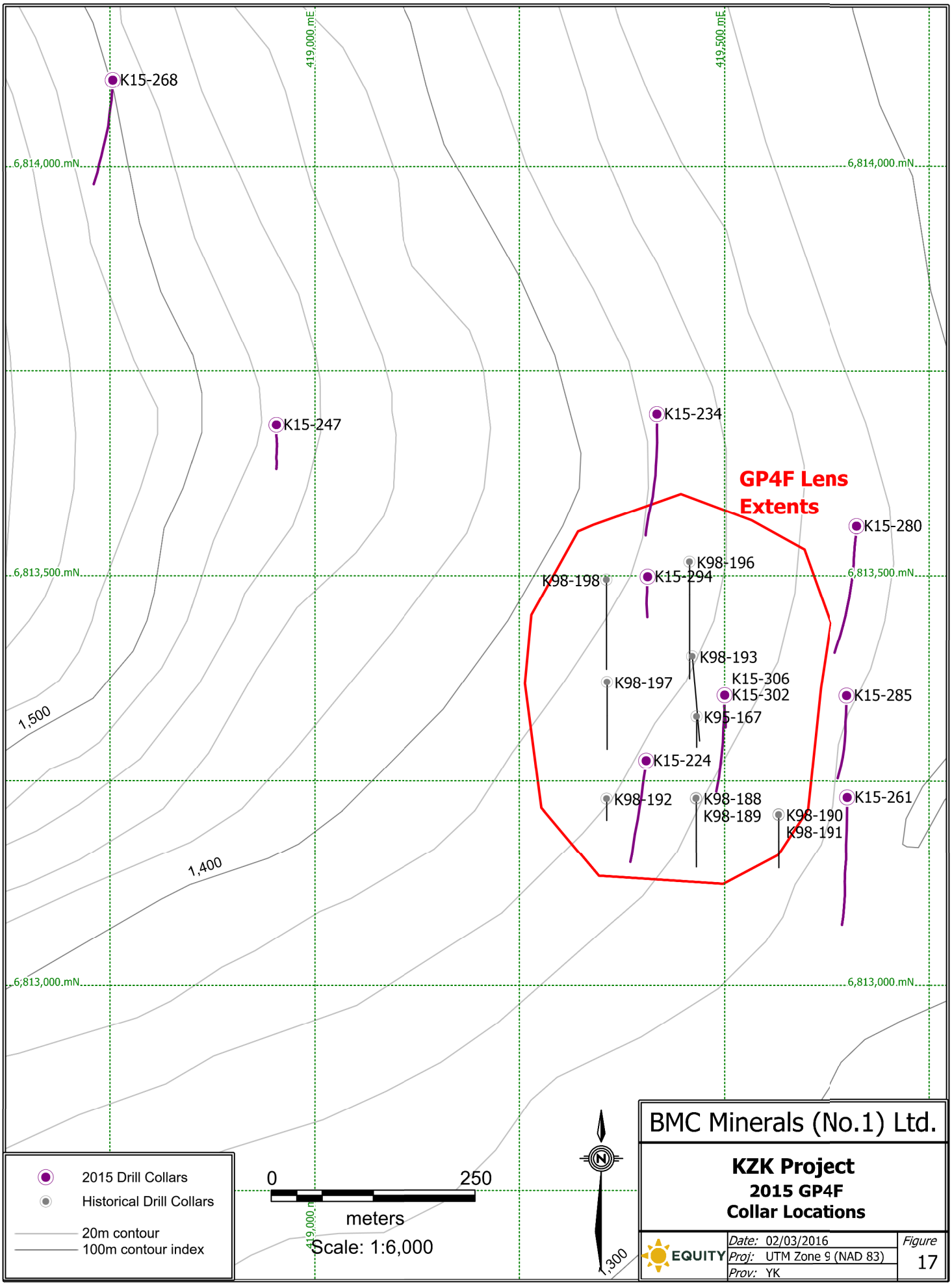
DDH ID	Lens/Target	From (m)	To (m)	Length (m)	Cu (%)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Comments
K15-224	GP4F	91.3	100.6	9.3	0.09	1.26	2.95	0.21	41	1.8 m lost from 96–99 m
	Lower	153.1	154.8	1.7	0.05	0.63	1.06	0.08	34	Dyke splits zone
K15-234	GP4F	318.4	319.5	1.2	0.05	1.50	4.71	0.02	17	Dyke splits zone
		322.8	327.6	4.8	0.07	1.48	3.53	0.02	16	
	Lower	343.4	344.1	0.7	0.03	0.02	2.15	0.00	1	
K15-247	GP4F	368.4	374.1	5.8	0.03	0.01	0.18	0.00	1	Continuous alteration from 361 m to EOH
	Lower	383.8	387.8	4.0	0.01	0.03	0.53	0.00	2	
K15-261	GP4F	177.2	187.1	9.9	0.08	0.78	3.19	0.02	6	
	Lower	214.5	215.9	1.5	0.08	1.05	1.57	0.04	44	
K15-280	GP4F	276.7	283.8	7.0	0.01	0.55	1.69	0.01	6	
	Lower	364.3	365.8	1.5	0.27	3.45	6.80	0.80	492	0.3 m lost core
K15-285	GP4F	225.5	236.0	10.5	0.07	0.65	1.74	0.20	23	1.15 m lost in last 2.9 m
	Lower	280.9	282.2	1.3	0.08	1.43	2.53	0.01	36	
K15-294	GP4F	227.8	235.1	7.3	0.18	0.65	2.70	0.06	10	
	Lower	267.0	268.0	1.0	0.20	0.29	1.41	<0.005	10	
K15-302	GP4F	145.6	155.2	9.5	0.10	1.98	2.91	0.33	36	
	Lower	189.0	195.0	6.0	0.02	0.70	1.41	0.08	24	2.5 m lost core, DDH possibly too short?
K15-306	GP4F	162.1	171.0	8.9	0.14	2.25	5.51	0.68	106	
	Lower	205.0	225.3	20.3	0.14	0.52	3.46	0.02	11	
including	Lower	218.7	223.8	5.1	0.16	1.03	6.25	0.02	19	High grade core

8.6 Drill site rehabilitation

All DDHs that intersected sulphide mineralization were plugged and grouted 20m below and 20m above the sulphide intersection and completed with a concrete cap at surface. In cases where the DDH were shallow it was more practical to grout the entire hole to surface.

Drill cuttings management was used for all DDHs that intersected massive sulphide mineralization. Whilst drilling through horizons of massive sulphide mineralization the drill return water was filtered and sulphide drill cuttings were removed and stored in bags. Upon completion of the DDH the drill return water was pumped from the sumps and the filtered drill cuttings were buried in the sump during drill site rehabilitation.

During the course of field work 7 historic Cominco DDHs (K94-013, 034, 041, 042, 049, K95-160, K97-182) were found to have flowing artesian conditions. The DDHs were plugged with a combination of neat cement and bentonite slurry grouts, depending on the flow pressure, and sealed with a casing cap.


K15-268
K15-247
K15-234
GP4F Lens Extents
K15-280
K98-196
K98-198
K15-294
K98-193
K98-197
K15-306
K15-302
K15-285
K95-167
K15-224
K98-192
K98-188
K98-189
K98-190
K98-191
K15-261
419,000 mE
419,500 mE
6,814,000 mN
6,813,500 mN
6,813,000 mN
1,500
1,400
1,300
2015 Drill Collars
Historical Drill Collars
20m contour
100m contour index
0
250
meters
Scale: 1:6,000
N
BMC Minerals (No.1) Ltd.
KZK Project
2015 GP4F
Collar Locations
EQUITY
Date: 02/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
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8.7 Metallurgical sampling

Diamond drilling to collect whole core samples was the first step in a comprehensive metallurgical testing program for the ABM deposit that also included the definition of four major metallurgical geodomains, EDTA analysis and metallurgical test work (Black, 2015). Only the drilling and sampling is described here, however, as it is the only element of this work program that will be filed for assessment credit.

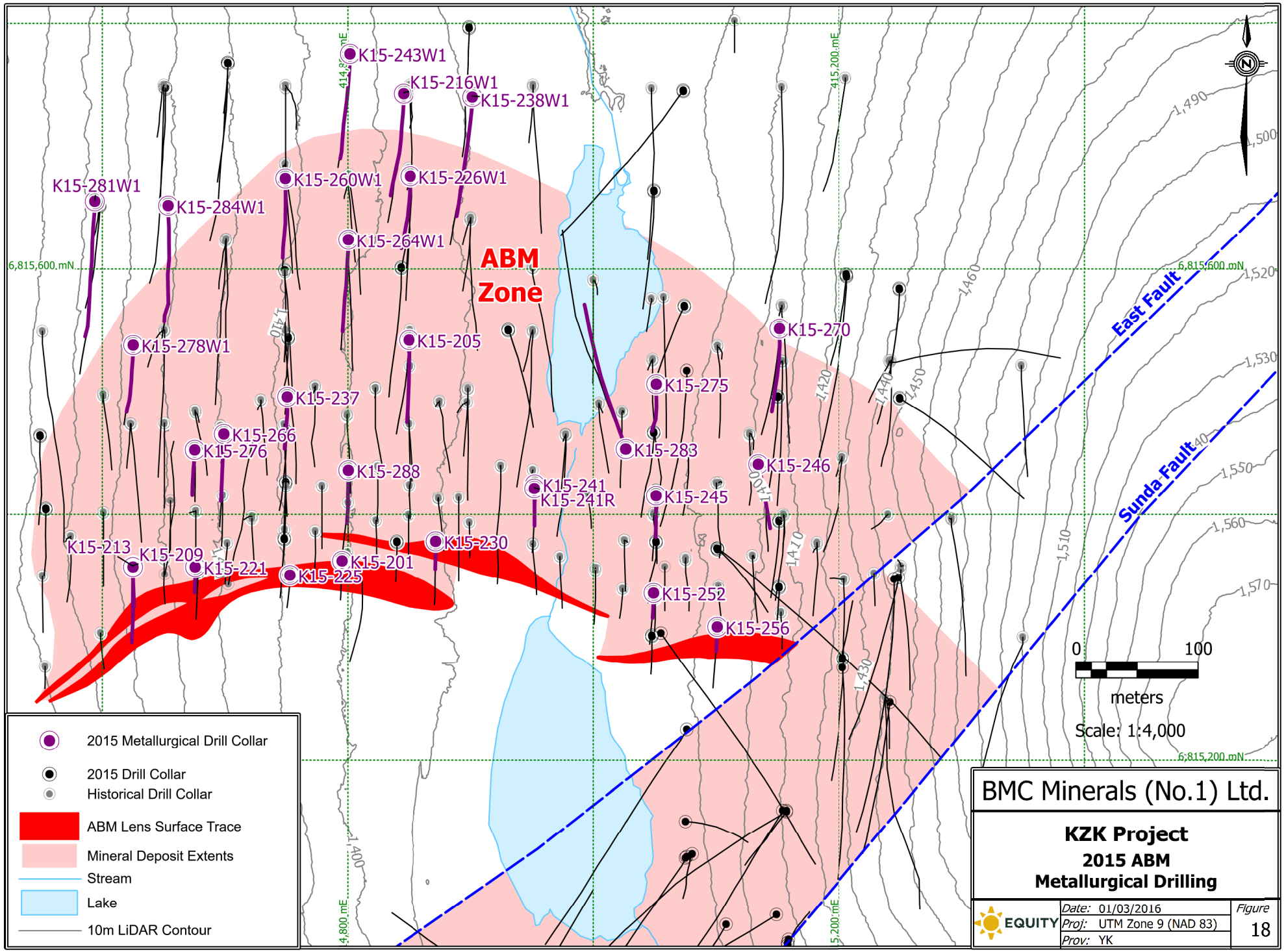
The 2015 metallurgical drilling program collected representative HQ3 whole core samples of seven geological subdomains based on observable mineralogy, texture and Cu:Pb grades that were interpreted from a desktop study prior to the field program commencing (Hughes et al., 2015). Drilling consisted of 29 DDHs for 3406.0 m (see Table 5, Figure 18) and comprised a combination of twin and wedge holes spread across the ABM lens to collect samples of both potentially oxidized and deeper non-oxidized geodomains.

A total of 1012 samples of HQ3 whole core were collected during the program that will be used to prepare representative composites of the four major metallurgical geodomains for test work. A list of the samples collected is presented in Appendix P.

8.8 Petrographic work

Petrographic analysis for the 2015 KZK Project was done on 96 polished thin sections (see Table 6), with 44 of these taken from the ABM Zone, 33 from Krakatoa Zone and 19 from GP4F deposit. Results are summarized below in terms of ore and gangue mineralogy for each zone/deposit, split into samples of massive sulphide (>60% sulphide), semi-massive sulphide (20–60% sulphide) and siliceous/carbonate rocks with <20% sulphide. Significantly more detail on the petrographic work, including descriptions and photos for each of the 96 polished thin sections, is presented in the reports attached in Appendix Q.

A total of 46 samples of massive sulphide (>60% sulphide) were sent for petrographic analysis, with modal abundances estimated for 42 of these (Table 25). Mineral abundances for the remaining four samples were qualified instead of quantified. The 42 samples with quantified modes include 26 from the ABM Zone, 11 from the Krakatoa Zone and four from GP4F. All three have massive sulphide assemblages that are dominated by pyrite (50–65% of sulphide) and sphalerite (15–30% of sulphide). The ABM and Krakatoa samples have higher magnetite and chalcopyrite contents whereas GP4F samples contain more pyrrhotite and galena. Trace amounts of sulphosalts occur in all three sulphide deposits, with SEM analysis (Townend and Townend, 2015) indicating that mineral species include freibergite ($Cu_{12}Sb_4S_{13}$), bournonite ($PbCuSbS_3$), tetrahedrite ($(Cu,Fe)_{12}Sb_4S_{13}$), stannite (Cu_2FeSnS_4), tennantite ($Cu_{12}As_4S_{13}$) and an unnamed PbSbS species. Native gold, electrum and argentite (Ag_2S) were also found (Townend and Townend, 2015). Gangue mineralogy in all three deposits is dominated by carbonate minerals (50–75%) along with minor abundances of quartz (10–15%) and chlorite (5%). GP4F gangue is characterized by higher sericite/muscovite (15%) and biotite (20%) whereas the ABM and Krakatoa samples contain an average of around 10% barite.


K15-243W1
K15-216W1
K15-238W1
K15-281W1
K15-284W1
K15-260W1
K15-226W1
K15-264W1
ABM
Zone
K15-278W1
K15-205
K15-270
K15-275
K15-237
K15-266
K15-276
K15-283
K15-246
K15-288
K15-241
K15-241R
K15-245
K15-213
K15-209
K15-221
K15-225
K15-230
K15-201
K15-252
K15-256
East Fault
Sunda Fault
6,815,600.mN
6,815,200.mN
414,800.mE
415,200.mE
4,800.mE
5,200.mE
1,490
1,500
1,520
1,530
1,550
1,560
1,570
1,510
1,460
1,440
1,450
1,420
1,430
1,410
1,400
0
100
meters
Scale: 1:4,000
2015 Metallurgical Drill Collar
2015 Drill Collar
Historical Drill Collar
ABM Lens Surface Trace
Mineral Deposit Extents
Stream
Lake
10m LiDAR Contour
BMC Minerals (No.1) Ltd.
KZK Project
2015 ABM
Metallurgical Drilling
EQUITY
Date: 01/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
18

Samples of semi-massive sulphide (N = 28) appear to mirror the main mineralogical differences shown by the three groups of massive sulphide samples. Sulphide assemblages for the ABM and Krakatoa zones are dominated by pyrite (50–70%) and sphalerite (20%) with minor abundances of magnetite, chalcopyrite and sulphosalts in ABM as well as galena and arsenopyrite at Krakatoa (Table 26). Samples from the GP4F deposit, however, have a sulphide assemblage dominated by sphalerite (35%) and pyrrhotite (40%) with only minor pyrite, galena and chalcopyrite (Table 25). Gangue mineralogy for ABM and Krakatoa samples is dominated by carbonate with minor to major abundances of quartz, sericite/muscovite and barite, in addition to minor albite and chlorite at ABM. GP4F gangue mineralogy, on the other hand, comprises subequal amounts (10–20%) of carbonate, quartz, chlorite, sericite/muscovite, biotite, cordierite and amphibole, and also includes higher proportions of accessory minerals like apatite, tourmaline, allanite/monazite and spinel (gahnite?).

Unmineralized samples, which can still contain up to 20% sulphide, associated with the ABM Zone consist mostly of sericite/muscovite (60%) and quartz (25%) with minor chlorite. Samples from the Krakatoa Zone and GP4F deposit, on the other hand, generally comprise subequal (10–20%) amounts of carbonate, quartz, chlorite, sericite/muscovite and biotite, with Krakatoa also containing significant (10–15%) K-feldspar and plagioclase from the MAFi. Unmineralized GP4F samples are, again, also notable for their diverse accessory mineral assemblage that includes sphene, tourmaline, spinel (gahnite?), allanite/monazite and apatite. The sulphide assemblages are pyrite- and pyrrhotite-rich (each 30–40%) for ABM and GP4F whereas they are pyrite dominant (85%) for Krakatoa. ABM samples also contain significant (10–15%) proportions of chalcopyrite, sphalerite and marcasite whereas GP4F samples contain between 5–15% sphalerite, galena and magnetite. Krakatoa samples contain between 5–10% chalcopyrite and pyrrhotite.

Table 26: Average modal mineralogy of petrographic samples

Zone	Rock type	N	Gangue assemblage							Sulphide assemblage						
			Cb (%)	*Qtz (%)*	*Chl (%)*	*Ms* (%)*	*Brt* (%)*	*Bt (%)*	*Oth. (%)*	*Py (%)*	*Sp (%)*	*Ccp (%)*	*Gn (%)*	*Po (%)*	*S-slt (%)*	*Oth. (%)*
ABM	Massive sulph	26	61.8	13.8	4.6	8.5	8.5	0.8	2.0	58.4	17.1	10.4	1.5	6.5	0.2	6.0
Krakatoa	Massive sulph	11	73.2	8.3	3.2	5.5	9.3	0.0	0.5	63.3	22.6	2.0	4.4	2.5	0.4	4.8
GP4F	Massive sulph	4	47.8	8.8	4.1	15.5	0.8	21.3	1.8	48.5	29.9	0.6	9.5	10.7	0.2	0.5
ABM	Semi-mass sulph	9	56.6	5.5	3.9	12.9	11.7	1.4	8.0	47.6	18.0	9.0	0.5	12.3	5.0	7.6
Krakatoa	Semi-mass sulph	10	60.9	15.7	0.7	12.1	10.4	0.0	0.0	67.3	20.8	2.5	5.6	0.2	0.5	3.0
GP4F	Semi-mass sulph	9	10.7	19.6	17.8	9.1	0.0	20.0	22.7	12.0	33.3	3.8	6.7	41.7	0.1	2.5
ABM	Unmineralized	3	1.5	26.9	7.6	61.9	0.0	0.0	2.0	29.0	9.3	15.7	3.4	33.6	0.0	9.0
Krakatoa	Unmineralized	12	15.9	14.2	15.0	19.3	0.0	7.0	28.6	82.7	0.5	9.5	0.1	5.8	0.0	1.4
GP4F	Unmineralized	6	7.1	13.4	13.5	21.6	0.0	26.0	18.5	37.9	15.9	0.7	4.9	36.9	0.0	3.8

Bt = biotite, Brt = barite, Cb = carbonate, Ccp = chalcopyrite, Chl = chlorite, Crd = cordierite, Gn = galena, Mag = magnetite, Ms = muscovite, Oth. = other, Po = pyrrhotite, Py = pyrite, Qtz = quartz, Sp = sphalerite, S-slt = sulphosalt.

*= muscovite modes include sericite; barite modes include celsian

8.9 Hydrogeological and geotechnical

The 2015 hydrogeological drilling program was designed to characterize the hydrogeological baseline conditions within the proposed ABM open pit area and mine infrastructure locations. The DDHs were located to tie into a network of re-developed historical monitoring wells and “piggyback” on ABM resource DDHs. At the time of writing this report no results characterizing the hydrogeological conditions of the project area had been received from Tetra Tech. A summary of the 2015 hydrogeological drilling program is provided below.

Eleven shallow monitoring wells were drilled for a total of 325.00 m (Table 8, Figure 19) at locations of proposed mine infrastructure and above the Krakatoa Zone mineralization. The DDHs were fitted with 1.25” PVC piezometers, in either the shallow bedrock or overburden, and packer testing was conducted in each borehole during advancement to infer subsurface hydraulic conductivities. A summary of the monitoring well completion details provided by Tetra Tech as of November 2015 is shown in Table 27.

Packer testing was also completed in seven of the ABM resource DDHs as they were being drilled, in an effort to determine the hydraulic conductivity of the fractured bedrock aquifer. Vibrating wire piezometers (VWP) were installed in two DDHs (K15-200, K15-248) to determine *in situ* pore water pressure and temperature, as well as test vertical hydraulic gradients.

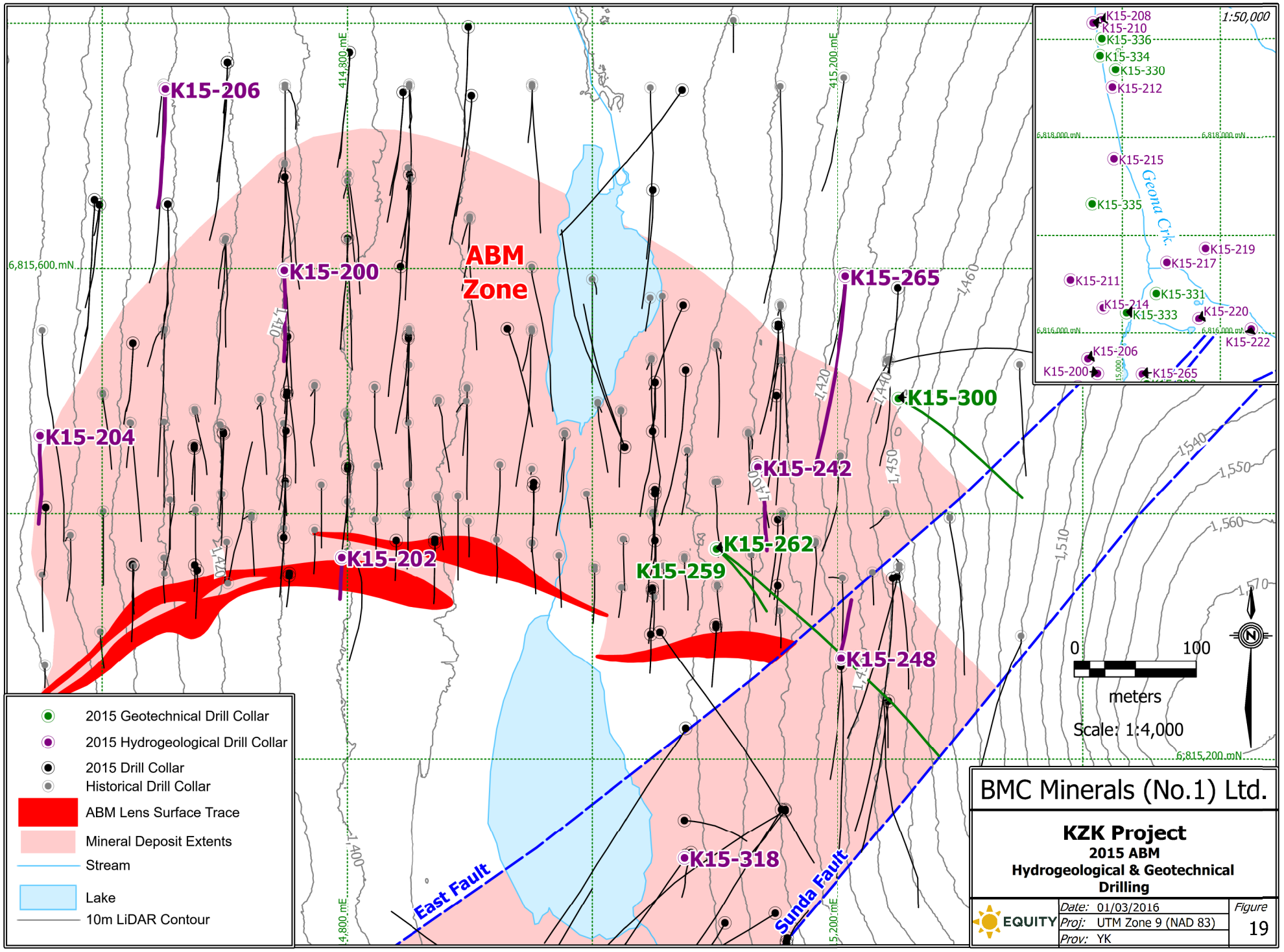
Table 27: Summary of groundwater monitoring well completion details

Well ID	DDH ID	Aquifer Monitored	Well Depth (m)	Screen Interval		Depth to Water (m) (Early Nov 2015)	Well Status as of November 2015
				From (m)	*To (m)*		
MW15-01	K15-211	Bedrock	20.03	10.0	18.8	12.88	Functional*
MW15-02	K15-214	Bedrock	32.97	23.0	31.7	Flowing (7 psi)	Freeze protection packer frozen/stuck
MW15-03S	K15-222	Overburden	8.42	4.1	7.1	5.42	Functional*
MW15-03D		Bedrock	16.94	10.1	16.0	3.27	Functional*
MW15-04S	K15-220	Overburden	15.1	11.2	14.1	7.89	Functional*
MW15-04D		Bedrock	32.3	27.1	32.9	7.88	Functional*
MW15-05S	K15-219	Overburden	8.09	4.6	7.6	dry	Functional*
MW15-05D		Overburden	28.56	22.4	29.8	12.23	Functional*
MW15-06	K15-217	Overburden	10.02	6.5	9.4	0	Freeze protection packer frozen/stuck
MW15-07S	K15-215	Overburden	11.01	8.1	11.0	1.63	Functional*
MW15-07D		Bedrock	33.14	26.3	32.1	Flowing (0 psi)	Freeze protection packer frozen/stuck
MW15-08S	K15-212	Overburden	12.66	8.7	11.6	Flowing (0 psi)	Freeze protection packer frozen/stuck
MW15-08D		Bedrock	36.89	29.8	35.6	1.9	Functional*
MW15-09S	K15-210	Overburden	18.98	11.4	17.3	0.43	Frozen
MW15-09D		Bedrock	41.32	35.1	40.9	0.02	Freeze protection packer frozen/stuck
MW15-10S	K15-208	Overburden	10.45	6.6	9.6	0.63	Frozen
MW15-10D		Bedrock	32.35	25.7	31.5	Flowing (10.5 psi)	Functional*
MW15-11S	K15-318	Overburden	8.14	4.2	7.1	2.13	Functional*
MW15-11D		Bedrock	36.36	20.6	35.2	0.17	Frozen

Notes: * "Functional" means that representative groundwater elevation or sample can be obtained from the well.

The 2015 geotechnical drilling program comprised nine DDHs for a total of 955 m (Table 7, Figure 19). The program focussed on gaining a better understanding of the location of the East Fault and surrounding rock mass competency (3 DDHs) as well as characterising and confirming historical geotechnical information in the area of Cominco's designed surface infrastructure and at two alternative sites for the tailings storage facility (6 DDHs). Results from the surface infrastructure DDHs will assist with structural design work and will be used as part of a pre-feasibility study on the KZK Project to be completed by BMC during 2016. At the time of writing this report no results had been received from Knight Piesold characterising the geotechnical conditions of the proposed infrastructure sites.

Drilling that targeted the East Fault plus re-logging of historical Cominco drill core has provided valuable information on the location, nature and orientation of the fault structure. The current interpretation shows that the fault trends at ~50°, dips steeply (~85°) to the south east and is located slightly further north than Cominco's historic interpretation (Baker, 2015b). The fault is characterised by a zone of several-meter thick fault gouge and breccia often with milled and rounded sulphide clasts indicative of low temperature, late, brittle shear planes. The East Fault postdates massive sulphide mineralization, associated alteration and penetrative schistosity that affects the host rocks and it is likely that it formed in relation to slip along the Tintina Fault (Baker, 2015b).


K15-206
K15-200
ABM
Zone
K15-265
K15-204
K15-300
K15-242
K15-262
K15-202
K15-259
K15-248
K15-318
East Fault
Sunda Fault
414,800 mE
415,200 mE
4,800 mE
5,200 mE
6,815,600 mN
6,815,200 mN
1,400
1,410
1,420
1,430
1,440
1,450
1,460
1,510
1,540
1,550
1,560
1,570
K15-208
K15-210
K15-336
K15-334
K15-330
K15-212
K15-215
K15-335
Geona Crk.
K15-219
K15-217
K15-211
K15-331
K15-214
K15-333
K15-220
K15-222
K15-206
K15-200
K15-265
1:50,000
6,818,000 mN
6,816,000 mN
0
100
meters
Scale: 1:4,000
N
2015 Geotechnical Drill Collar
2015 Hydrogeological Drill Collar
2015 Drill Collar
Historical Drill Collar
ABM Lens Surface Trace
Mineral Deposit Extents
Stream
Lake
10m LiDAR Contour
BMC Minerals (No.1) Ltd.
KZK Project
2015 ABM
Hydrogeological & Geotechnical
Drilling
EQUITY
Date: 01/03/2016
Proj: UTM Zone 9 (NAD 83)
Prov: YK
Figure
19

9.0 DISCUSSION

The following sections provide some discussion on the results of the 2015 KZK work program, presented in the same order that they were described in Section 6.0 and Section 8.0. Highlights of the 2015 program were undoubtedly the discovery of the Krakatoa Zone and expansion of the ABM Zone, which together substantially increased the mineral resources of the ABM deposit. The discussion below for each element of the work program includes a brief overview of what was done and potential for future work.

9.1 Historical core re-logging program

The 2015 historical core re-logging program re-logged 87% of the historical DDHs from the KZK Property, for a total of 24952.8 m. The re-logging program was successful in developing a working interpretation of the deposit geology and simplifying the >300 lithological codes present in the Cominco database. This provided a framework for the 2015 data collection and allowed application of the same lithological, mineralization, alteration and veining codes to new and historic core and so provide a uniform core logging database.

Shoulder samples were collected from the historical core to characterize the waste rock adjacent to the ABM lens. In addition, 17% of these samples returned at least one precious (Ag, Au) or base (Cu, Pb, Zn) metal assay exceeding the “mineralized” threshold. The shoulder sampling program was therefore successful in expanding the database for ABM waste rock and adding to the mineral resource inventory.

Another important aspect of the re-logging program was to enable a direct comparison between the historical analytical results and the 2015 results for incorporation into the new resource estimate. This was done by sampling the remaining half-core from all of the mineralized intervals on sections 414750E, 414850E and 415050E and re-drilling each of these sections in their entirety. Comparison of 2015 re-assays to historical assays for Cu, Pb, Zn, Ag and Au indicates generally strong Pearson correlation coefficients (ρ = 0.851–0.972) and a good agreement in Cu up to 3%, positive bias for Pb in the re-assays, positive bias for Zn in the re-assays >2.6%, good agreement for Ag up to 250 ppm and a good agreement for Au up to 3 ppm with a negative bias in the re-assays >3ppm (Arne, 2015).

It is likely that small differences between the historical and 2015 re-assays are at least partly, if not mostly, related to differences and improvements in analytical techniques and detection limits during the 20 year time gap between these two assay programs. Ag results are in good agreement up to 250 ppm when both the historic and re-assay data was obtained using aqua-regia digestion. This agreement breaks down above 250 ppm Ag which is close to the upper detection limit for this method at SGS. The poor agreement and positive bias in historic data for Au above 3 ppm, rather than random scatter, suggests a major difference in the preparation and analysis of samples by fire assay (Arne, 2015). The re-assay program therefore appears to agree well with the historical assay data within the defined grade ranges but the combined dataset should be treated with caution outside of these ranges (Arne, 2015).

There is not much work that remains to be done on the historic core re-logging. The remaining GP4F DDHs that have been archived but were not re-logged in 2015 could be re-logged to further improve modelling and understanding of the GP4F deposit, as could those DDHs falling outside of the ABM and GP4F deposits.

9.2 Geophysical targets

Geophysical surveys carried out during 2015 included 304 line-km of airborne magnetic and VTEM, ground-based gravity and downhole EM. Targets generated from each of these surveys are listed below.

Results of the airborne VTEM survey helped define the geophysical characteristics of several formations in the KZK Property area, delineated the ABM Zone as a well-defined conductive and magnetic anomaly, and identified several anomalies that could be related to massive sulphide mineralization. One of these anomalies, comprising an area of conductivity and magnetic response on the southeast edge of the ABM Zone, is coincident with the newly-discovered Krakatoa Zone which points to the effectiveness of the VTEM data as an exploration tool on the Property. Other untested targets should be modelled using an integrated dataset, these include:

- Tarawera target: a small coincident EM and gravity anomaly with a weak magnetic response located 1.5 km southwest of the ABM deposit that appears to lie along strike of, and within similar host rocks to, ABM;
- The northern edge of the R-15 deposit occurring to the southeast of the GP4F deposit. Here the down dip extension of R-15 appears to extend northwest onto the KZK Property;
- Tambora target: a strong conductor below Jim Lake at the southern edge of the airborne survey. There is no obvious connection between the Tambora conductor and the R-15 or GP4F deposits;
- Lakagigar target: coincident VTEM, magnetic and gravity response located 750 m northwest of the GP4F deposit. Drilling in 2015 (DDH K15-268) intersected gently north to northeast dipping, carbonaceous sedimentary rocks which does not explain the gravity or magnetic response.

Targets identified by the ground-based gravity survey include:

- Tarawera target: a broadly east-west trending gravity high on the north slope of Rhyolite Peak, which coincides with a single-line VTEM response and weak magnetic high;
- Tarumae target: a small coincident magnetic high and residual gravity high occurring just east of the Fault Creek target.

Lastly, targets derived from the downhole EM survey include:

- A possible conductor detected down dip from K15-247, which defines the western-most extent of the GP4F deposit and may correlate with the Lakagigar target;
- A good conductor off-hole to the east and north of K15-261 that could represent the northwest fringe of the R-15 deposit.

9.3 Resource and exploration drilling on the ABM Zone

9.3.1 ABM lens

The 2015 resource confirmation drilling program on the ABM lens of the ABM Zone was successful in corroborating massive sulphide mineralization intersected by Cominco and in supporting the veracity of the historical analytical data. Resource drilling was designed to infill and extend the previous drilling coverage so that a revised resource estimate could be undertaken in accordance with JORC 2012 requirements.

The resource expansion program intersected additional massive sulphide mineralization that indicates the ABM lens remains open to the west, which is also corroborated by the continuation of the EM conductor. However, a thicker zone of proximal and restricted alteration intersected here may represent the beginning of a more distal alteration halo and the bleeding of hydrothermal fluids into the hanging wall, limiting mineralization potential. Nonetheless, further exploration drilling at this western extent is warranted to add any additional easily exploitable mineralization that may be present to the resource inventory, or to test for a new ore lens along the strike trend.

Infill drilling was also successful in expanding the ABM lens to the north at its down dip extents, from section 414800E to 415000E. The intersection of new mineralization in DDHs K15-233, K15-243 and K15-291, as well as a historical intersection in K94-027, also shows that the ABM lens is still open for ~200 m between sections 414800E and 415000E down dip. The down dip limits of the ABM lens are likely constrained by DDH K97-172 on section 414950E but there is some room to close of the ABM lens as suggested by the limits of the EM conductor. In this area the proximal and restricted alteration assemblages occur over a broader zone which could suggest that this down dip area is more distal to mineralization. Additional drilling is recommended here to close off the down dip limits of the ABM lens although this is a lower priority target.

Additional potential to expand the ABM lens east of section 415225E exists in a small triangular shaped panel of un-tested KZK Formation rocks situated between the last ABM lens intersections on section 415225E (K94-029 and K95-114) and the interpreted position of the East Fault now that it is better defined (Baker, 2015b). Drilling is recommended on sections 415250 and 415275E to test the eastern extent although extension in this direction will be limited by the East Fault. This area also shows a strong VTEM response.

Mineralization has been closed off down dip in the northwest area of ABM between sections 414575E and 414750E. No further drilling is recommended here unless required for mine planning purposes or upgrading the resource to indicated or measured category.

9.3.2 Santorini and ABM deep

The Santorini target was tested with two DDHs (K15-327, K15-328), both of which intersected narrow intervals of stringer-style sulphide mineralization within the so-called “Krakatoa Main lens” stratigraphic horizon. This target remains open to the north-northeast where it coalesces with the VTEM anomaly produced by the ABM lens, so further exploration drilling in this direction is warranted if the target size is deemed to be significant for the immediate project development.

The ABM deep target was developed in the ABM Zone west of the East Fault from comparisons to the Krakatoa Main lens, which occurs east of the East Fault within rocks that stratigraphically underlie the ABM lens. As a result, historic drill intercepts piercing the mafic footwall of the ABM lens were reviewed for their potential to host Krakatoa Main lens-style mineralization (Duncan, 2015a). This review identified 13 historical DDHs that may have intersected Krakatoa Main lens-style mineralization west of the East Fault, in addition to several other DDHs that hit muscovite-altered tuffaceous rhyolite on the Main lens horizon (Duncan, 2015a). DDH K15-324 was drilled to test the ABM deep target but did not intersect significant sulphide mineralization. Instead, it hit a thick package of rhyolite (RHYi) that, together with results of the historical DDH review, suggests a crude inverse relationship between the thickness of RHYi and the presence of sulphide mineralization. Hence, the best areas for hosting ABM deep target mineralization are those where RHYi is either absent, thin or located along a different stratigraphic horizon (e.g. sections 414750E to 414950E). This supports the hypothesis that RHYi is peri-contemporaneous with mineralization and not only occupies favourable host stratigraphy within MAFi, but could destroy and remobilize existing ABM deep target mineralization.

It is believed that there is significant potential for the discovery of additional pods of mineralization on the ABM deep horizon. Additional work is recommended around historical DDH K95-053, on section 415000E, and around the four historical drill intersections on section 414950E. Another compelling target is the relatively thick MAFi package between section 415075E and the East Fault.

9.4 Resource and exploration drilling on the Krakatoa Zone

The discovery of the Krakatoa Zone was the highlight of the 2015 KZK Project, with the most recent resource estimate (BMC, 2016) showing that it adds 5.1 Mt of combined Indicated and Inferred resources to the ABM deposit. This discussion provides a brief background on the discovery of the Krakatoa Zone, its features and remaining exploration potential.

The Upper lens of the Krakatoa Zone was intersected by Cominco in DDHs K95-124 and K97-173, which interpreted these narrow intercepts as the up dip edge of the ABM Zone and referred to it as the “KZK-Offset” (Schultze, 2001). BMC recognized this faulted-off part of ABM as a high-priority near-deposit exploration target with subsequent 2015 drilling resulting in the discovery of three stacked massive sulphide lenses; (1) the Upper lens interpreted as the equivalent to the ABM lens, (2) the MAFi-hosted Main lens with a true thickness up to 22 m, and (3) the Lower lens hosted at or near the contact between the MAFi base and underlying felsic rocks (Duncan and Baker, 2015). The Upper lens is hosted in felsic rocks and is the “KZK-Offset” intersected by Cominco. The Main lens sits below this and is hosted either directly within the mafic footwall sill (i.e. MAFi) or within felsic ash tuff units (RHYva) intercalated within MAFi (Duncan and Baker, 2015). Step-out drilling from the discovery DDH demonstrated that Krakatoa Zone mineralization is generally concordant to stratigraphic layering, comprising a dominant ~20 m thick Main lens with areal extends of about 200 by 300 m (Duncan and Baker, 2015) and hosts 5.1 Mt grading 0.6% Cu, 3.2% Pb, 7.5% Zn, 1.7 g/t Au and 213 g/t Ag (Green et al., 2016).

The host rock types and alteration styles of the Krakatoa Zone share similarities with the ABM Zone but also show some important differences. The first of these differences is its relation to the upper contact of the mafic (MAFi) footwall unit, with the Krakatoa Main lens occurring mostly below this horizon and the ABM lens occurring above it (Duncan and Baker, 2015). Mineralization styles are also somewhat different, with the Krakatoa Main lens comprising a combination of OB-style mineralization with higher gangue content than ABM, and OI-style associated with relic lapilli or felsic ash groundmass. This latter feature supports the interpretation that the Krakatoa Zone is a replacement-style deposit and, by extension, adds support to the hypothesis that the ABM Zone is as well (Duncan and Baker, 2015). The Krakatoa Main lens also contains higher grades of

Pb, Zn, Au and Ag than the ABM lens, although the ore mineralogy is broadly similar (Duncan, 2015b), and appears to contain more barite.

The Krakatoa Main lens remains open at depth but is closed off in most other directions. The 2015 work program defined the Main lens from >300 m depth to within 50 m of surface, where it is truncated and buried under 20–30 m of glacial overburden. It's eastern and western extents are truncated by the Sunda and East faults respectively. There is potential that continuations of the Krakatoa Zone are offset by the Sunda and Fault Creek faults and this is a high priority exploration target for future work programs.

9.5 Exploration drilling on ABM-proximal target (Fault Creek)

The Fault Creek target is centered on a geophysical anomaly and a 6.4 m historical intercept of massive sulphide that assayed 5.2% Cu, 1.0% Pb, 5.6% Zn, 141 g/t Ag and 2.4 g/t Au (K97-181). Re-logging of drill core and integration with 2015 VTEM data led to a revision of the stratigraphic interpretation in the area to northwest striking and northeast dipping (Duncan, 2016), as opposed to the east-west striking and north-dipping orientation interpreted by Cominco. Nonetheless, this revised structural interpretation did not meet with exploration success as neither of the 2015 DDHs (K15-329, K15-332) intercepted significant mineralization. Coincident intervals of weakly developed mineralization and moderate chlorite alteration in both DDHs correlate with mineralization in K97-182, located 160 m to the south, which corroborates the newly interpreted strike and dip of the stratigraphy.

9.6 GP4F deposit

Nine of 10 DDHs in the GP4F area intersected the GP4F lens. Drilling has demonstrated that the GP4F lens remains open to the northeast, southeast and southwest. One of the best assay composites from the 2015 program was returned from a massive sulphide interval in K15-306 comprising 4.65 m that grades 7.43% Zn, 2.83% Pb, 0.15% Cu, 122.6 g/t Ag, and 1.04 g/t Au.

The 2015 program also identified thin zones of mineralization and alteration above and below the GP4F lens, referred to as the Upper and Lower targets respectively. The Lower target is the better-developed of these two and returned an assay composite of 5 m grading 6.25% Zn, 1.03% Pb, 0.16% Cu, 18.7 g/t Ag, and 0.023 g/t Au from K15-306. The Upper target is less well-defined and needs more work to determine whether it has any continuity (Jones, 2016).

DDH K15-261 was collared 100 m east-southeast of the GP4F central area and intersected mineralization that may be equivalent in stratigraphic position to the R-15 deposit, located off the KZK property 600 m to the southeast. The R-15 deposit is still considered open in this direction with geophysics suggesting additional potential for the GP4F deposit to continue along strike towards the R-15 deposit (Jones, 2016).

The 2015 drilling has shown that there is still additional exploration potential for expanding the GP4F lens to the northeast, southeast and southwest. The best target direction is to the north-northeast from the well mineralized intersections K15-306. Although the intensity of alteration does wane in this direction, as it does to the west and north-northwest of the central area as well, the GP4F lens can still be identified in DDH K15-247 several hundred metres beyond the central area (Jones, 2016).

9.7 Metallurgical, geotechnical and hydrogeological drill programs

The 2015 metallurgical drilling and sampling program was successful in completing 29 DDHs and collecting 1012 samples that will be split among several composites. No other results for this program were finalized at the time of writing of this report.

The geotechnical drilling and sampling program was successful in completing nine DDHs for 955.4 m and refining the position and nature of the East Fault. No other results for this program were finalized at the time of writing of this report.

The 2015 hydrogeological drilling program was successful in completing 11 shallow monitoring wells at locations of proposed mine infrastructure and above the Krakatoa Zone mineralization as well as completing VWP installations and bore hole packer testing within the area of the proposed open pit. At the time of writing

this report no results characterizing the hydrogeological conditions of the project area had been received from Tetra Tech.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Additional core re-logging should be carried out on the 22 DDHs that are archived but were not re-logged in 2015, especially for improving interpretations of the GP4F deposit and examining additional exploration targets on the Property.

Follow-up work on geophysical surveys should include additional airborne VTEM/magnetic surveys to cover untested ground on the Property, as well as further interpretation/modelling on the 2015 results. Additional work is also recommended for targets identified through the 2015 surveys that include (1) mapping, and if warranted, drilling the EM-gravity Tarawera target, (2) drilling the ground between the R-15 and GP4F deposits, (3) additional gravity to cover the EM Tambora target, and (4) additional modelling of the coincident VTEM-magnetic-gravity Lakagigar target, located 750 m northwest of the GP4F deposit in light of the results from DDH K15-268.

Future work on the ABM lens should include expansion drilling to the west, north (down dip) and the eastern small triangular shaped panel of un-tested KZK Formation between section 415225E and the East Fault. Additional infill drilling could be done on certain sections to further define the local variations in thickness and grade of the ore bodies, and/or to upgrade inferred and/or indicated resources to the indicated and measured categories respectively.

Drill testing of other ABM Zone targets (Santorini, ABM deep) met with limited success in 2015. Perhaps the most promising intercepts were returned from the Santorini target, which remains open to the north-northeast where it appears to underlie the ABM lens so that further exploration drilling is warranted. Similarly, the narrow sulphide intercepts and alteration styles uncovered as part of the ABM deep re-logging and 2015 drilling program suggest there is some potential for discovering small pods of mineralization on this horizon. Additional drilling is recommended around historical DDH K95-053, on section 415000E, around the four historical drill intersections on 414950E and on the relatively thick MAFi package between section 415075E and the East Fault. Further investigation with downhole geophysical techniques (e.g. EM, IP, gravity) is also recommended, although such methods may be limited due to the strong response expected from the overlying ABM lens.

The discovery of the Krakatoa Main lens was the highlight of the 2015 KZK Project. It remains open downdip, although it is closed off towards the surface, by the Sunda Fault to the east and by the East Fault to the west. Down dip extension drilling is recommended and infill drilling should be done to upgrade resource categories and/or further define the spatial and grade variability for this part of the ABM deposit. Additionally there is potential that continuations of the Krakatoa Zone could be offset by the Sunda Fault and/or Fault Creek Fault and this should be a high priority exploration concept.

Further work on the Fault Creek target is not recommended at this time.

The 2015 work program in the GP4F area expanded the GP4F lens and its related alteration and weak mineralization, identified two related lenses (Upper and Lower targets) and possibly intersected the northern margin of the R-15 deposit, which is located 600 m to the southeast. Further work in this area should focus on expanding the GP4F deposit to the north-northeast and drill testing the ground between the GP4F and R-15 deposits.

Respectfully submitted,

Signed "Chris Hughes"

Chris Hughes

Signed "Ronald Voordouw"

Ron Voordouw

Signed "Murray Jones"

Murray Jones

Signed "Henry Awmack"

Henry Awmack

EQUITY EXPLORATION CONSULTANTS LTD.
Vancouver, British Columbia
Date: April 4th, 2016

Appendix A: References

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Appendix B: Statement of Expenditures

STATEMENT OF EXPENDITURES
KZK Project
January 01, 2015 - January 31, 2016

PROFESSIONAL FEES AND WAGES:

Douglas Allen, Sr. Sampler		
15.00 days @ $325/day	$	4,875.00
Henry Awmack, P.Geo.		
3.88 days @ $700/day		2,716.00
Darcy Baker, P. Geo.		
97.15 days @ $700/day		68,005.00
Mark Baknes, P.Geo.		
135.50 days @ $700/day		94,850.00
Thomas Branson, P.Geo.		
0.19 days @ $700/day		133.00
Chad Bustin, Sr. Sampler		
78.00 days @ $325/day		25,350.00
Cooper Campbell, Geologist		
118.50 days @ $575/day		68,137.50
Maclean Campbell, Sr. Sampler		
31.00 days @ $325/day		10,075.00
Darrin Dawson, Sr. Sampler		
48.35 days @ $325/day		15,712.50
Jerome de pasquale, Geologist		
116.00 days @ $575/day		66,700.00
Gilles Dessureau, P.Geo.		
25.00 days @ $700/day		17,500.00
Dorothy Dick, Gatehouse		
		7,136.81
James Dick, Camp Manager		
3.83 days @ $450/day		1,725.00
Michael Dick, Sr. Sampler		
32.50 days @ $325/day		10,562.50
Robert Dick, Site Services		
25.00 days @ $325/day		8,125.00
Jerry Dickson, Camp Builder		
12.83 days @ $450/day		5,775.00
Danya Dickson, Sr. Sampler		
2.50 days @ $325/day		812.50
Gerald Dickson, First Aid Attendant		
14.50 days @ $400/day		5,800.00
Richard DoranSherlock, Sr. Sampler		
19.50 days @ $325/day		6,337.50
Robert Duncan, P.Geo.		
112.50 days @ $700/day		78,750.00
Nicole Etzel, Sr. Sampler		
30.00 days @ $325/day		9,750.00
Charlie Franklin, Camp Builder		
11.08 days @ $450/day		4,987.50
Annette Giesbrecht, Cook		
25.00 days @ $475/day		11,875.00
Imran Haque, Geologist		
92.50 days @ $575/day		53,187.50
Rory Heaney, Sr. Sampler		
113.00 days @ $325/day		36,725.00

STATEMENT OF EXPENDITURES

Brian Hegarty, Project Manager	
153.38 days @ $625/day	95,862.50
Daniel Heon, P. Geo.	
26.50 days @ $700/day	18,550.00
Chris Hughes, Project Geologist	
155.76 days @ $700/day	109,032.00
Roger Hulstein, P. Geo.	
77.63 days @ $700/day	54,341.00
Dillon Hume, Geologist	
96.39 days @ $575/day	55,425.00
Doris John, Environmental Services	
6.00 days @ $400/day	2,400.00
Grace Johnny, Sr. Sampler	
66.00 days @ $325/day	21,450.00
Sheila Johnny, Cook	
30.50 days @ $475/day	14,487.50
Murray Jones, P. Geo.	
145.92 days @ $700/day	102,144.00
Joseph Keating, Sr. Sampler	
23.50 days @ $325/day	7,637.50
Travis Kinakin, Cook	
64.50 days @ $475/day	30,637.50
Doris Koe, Sr. Sampler	
85.50 days @ $325/day	27,787.50
Jim Lehtinen, P.Geo	
48.50 days @ $700/day	33,950.00
Michael Leidl, Exploration Assistant	
82.00 days @ $400/day	32,800.00
Laura McIntyre, Sr. Sampler	
60.50 days @ $325/day	19,662.50
Gary McLaughlin, Gatehouse	
	18,725.50
Michael Medcalfe, Camp Builder	
19.17 days @ $575/day	11,025.00
Tom Michaluk, Sr. Sampler	
44.50 days @ $325/day	14,462.50
Heiko Mueller, Sr. Sampler	
4.00 days @ $325/day	1,300.00
Trent Newkirk, Project Geologist	
151.00 days @ $700/day	105,700.00
Richard Ney, Sr. Sampler	
68.00 days @ $325/day	22,100.00
Verna Nukon, First Aid Attendant/Environmental Monitor	
53.13 days @ $400/day	21,252.00
Dave Nuttal, Geologist	
123.04 days @ $575/day	70,750.00
Tara Ollie, Sr. Sampler	
17.00 days @ $325/day	5,525.00
Terry Ollie, Sr. Sampler	
73.50 days @ $325/day	23,887.50
Pamen Parker, GIS	
24.50 hours @ $75/hour	1,837.50
Scott Parker, GIS / Logistics	
510 hours @ $75/hour	38,212.50

STATEMENT OF EXPENDITURES

Neil Perk, P.Geo.			
4.63 days @ $700/day	3,241.00		
Florent Pons, Geologist			
56.00 days @ $575/day	32,200.00		
Trevor Rabb, P. Geo.			
91.51 days @ $700/day	64,057.00		
Andrea Rennie, Cook			
40.00 days @ $475/day	19,000.00		
Irene Sarson, Cook			
101.00 days @ $475/day	47,975.00		
Dorian Schjelderup, Sr. Sampler			
14.00 days @ $325/day	4,550.00		
Will Shawcross, Sr. Sampler			
93.62 days @ $325/day	30,425.00		
Colin Slauenwhite, Project Manager			
153.78 days @ $625/day	96,112.50		
Kiefer Sterriah, Sr. Sampler			
26.50 days @ $325/day	8,612.50		
Jason Stone-Smith, Sr. Sampler			
40.00 days @ $325/day	13,000.00		
Sean Suttie, Geologist			
137.00 days @ $575/day	78,775.00		
David Swanton, P.Geo.			
8.64 days @ $700/day	6,048.00		
Dwyane Tom, Sr. Sampler			
1.92 days @ $325/day	625.00		
Jennifer Tom, Assistant Cook			
28.58 days @ $325/day	9,287.50		
Abraham Tutcho, Camp Builder Helper			
11.00 days @ $325/day	3,575.00		
Christina Vandentillaart, First Aid Attendant			
76.50 days @ $400/day	30,600.00		
Ronald, Voordouw, P.Geo.			
19.01 days @ $700/day	13,307.00		
Norman Winters, Camp Manager			
7.00 days @ $450/day	3,150.00		
Agata Zurek, GIS			
716.25 hours @ $75/hour	53,718.75		
Clerical			
216.00 hours @ $35/hour	7,560.00	$	2,102,367.06

EQUIPMENT RENTALS:

Field Camp			
6,142.50 days @ $40/manday	$ 245,700.00		
Core Saw (Gas)			
183.00 days @ $60/day	10,980.00		
Field Computers			
1,556.00 days @ $40/day	62,240.00		
First Aid (Level III)			
159.00 days @ $30/day	4,770.00		
Micromine Software			
858.50 hours @ $50/hour	42,925.00		
Magnetic Susceptibility Meter			
86.00 days @ $15/day	1,290.00		

STATEMENT OF EXPENDITURES

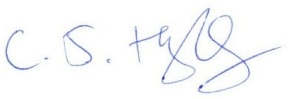
Incinerator			
276.00 days @ $25/day	6,900.00		
Chainsaw			
15.00 days @ $30/day	450.00		
Power Soil Auger			
20.00 days @ $30/day	600.00		
Generator	24,915.00	$	400,770.00

EXPENSES:

Licenses	$ 515.62
Customs and Brokerage Fees	160.86
Recording Fees	250.00
Chemical Analyses	312,709.93
Chemical Analyses - Environmental	35,471.50
Field Consumables	7,678.15
Material and Supplies	339,026.42
Plot Charges	2,159.76
Camp Food	195,458.84
Meals	5,823.14
Accommodation	12,168.68
Taxis and Airporters	3,328.71
Parking	69.99
ATV Rental (Non-Equity)	84,330.00
Truck Rental (Non-Equity)	77,280.34
Automotive Fuel	7,538.15
Automotive Expenses	1,449.87
Aircraft Charters	136,337.24
Helicopter Charters	781,941.42
Busfare	5.24
Ferries	216.66
Airfare	101,567.29
Telephone Distance Charges	600.21
Courier	1,003.48
Freight	252,369.15
Bulk Fuel + Tank Rental	473,706.12
Drum Deposit	3,960.00
Airborne Geophysics: Field Work	78,632.44
Ground Geophysics: Field Work	274,368.24
Geophysical Consulting	21,475.00
Pre-Access Drug Testing	36,070.45
Camp Maintenance	53,872.16
Padbuilding	91,107.61
Dump Disposal Fees	31.90
Road Rehabilitation + Maintenance	299,236.46
Contract Camp Construction	68,583.29
Satellite Phone Rental (Non-Equity)	3,578.65
Radio Rental (Non-Equity)	28,926.90
Downhole Survey Tool Rental (Non-Equity)	96,187.17
Generator Rental (Non-Equity)	850.00
Other Equipment Rental (Non-Equity)	4,473.05
Earthworks	400,440.00

STATEMENT OF EXPENDITURES

Excavator	48,010.00	
Drilling: Footage	3,418,751.29	
Drilling: Materials	38,696.03	
Drilling: Coreboxes	128,932.40	
Surveying: Field Work	166,537.25	
Engineering	304,783.11	
Geological Consulting	187,024.61	
Environmental - Baseline and Geochemical Study	1,052,238.20	
Environmental - Hydrogeology	281,652.85	
Petrography	38,886.00	
Expediting	88,245.73	
Contract First Aid	10,763.00	
Other Contract Workers	61,159.02	
Storage Rental	2,000.00	
Internet Charges	59,868.52	
Report (estimated)	30,000.00	10,212,508.10
SUB-TOTAL:		$ 12,715,645.16
PROJECT SUPERVISION CHARGES:		709,746.09
TOTAL:		$ 13,425,391.25



Chris Hughes

EQUITY

Appendix C: Claim Data

Table C-1: Tenure details for KZK claims

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB46227	Quartz	TAG	TAG 1	August 18, 1993	August 20, 1993	April 15, 2018
YB46228	Quartz	TAG	TAG 2	August 18, 1993	August 20, 1993	April 15, 2018
YB46229	Quartz	TAG	TAG 3	August 18, 1993	August 20, 1993	April 15, 2018
YB46230	Quartz	TAG	TAG 4	August 18, 1993	August 20, 1993	April 15, 2018
YB46231	Quartz	TAG	TAG 5	August 18, 1993	August 20, 1993	April 15, 2018
YB46232	Quartz	TAG	TAG 6	August 18, 1993	August 20, 1993	April 15, 2018
YB46233	Quartz	TAG	TAG 7	August 18, 1993	August 20, 1993	April 15, 2018
YB46234	Quartz	TAG	TAG 8	August 18, 1993	August 20, 1993	April 15, 2018
YB46235	Quartz	TAG	TAG 9	August 18, 1993	August 20, 1993	April 15, 2018
YB46236	Quartz	TAG	TAG 10	August 18, 1993	August 20, 1993	April 15, 2018
YB46237	Quartz	TAG	TAG 11	August 18, 1993	August 20, 1993	April 15, 2018
YB46238	Quartz	TAG	TAG 12	August 18, 1993	August 20, 1993	April 15, 2018
YB46239	Quartz	TAG	TAG 13	August 18, 1993	August 20, 1993	April 15, 2018
YB46240	Quartz	TAG	TAG 14	August 18, 1993	August 20, 1993	April 15, 2018
YB46241	Quartz	TAG	TAG 15	August 18, 1993	August 20, 1993	April 15, 2018
YB46242	Quartz	TAG	TAG 16	August 18, 1993	August 20, 1993	April 15, 2018
YB46243	Quartz	TAG	TAG 17	August 18, 1993	August 20, 1993	April 15, 2018
YB46244	Quartz	TAG	TAG 18	August 18, 1993	August 20, 1993	April 15, 2018
YB46245	Quartz	TAG	TAG 19	August 18, 1993	August 20, 1993	April 15, 2018
YB46246	Quartz	TAG	TAG 20	August 18, 1993	August 20, 1993	April 15, 2018
YB46247	Quartz	TAG	TAG 21	August 18, 1993	August 20, 1993	April 15, 2018
YB46248	Quartz	TAG	TAG 22	August 18, 1993	August 20, 1993	April 15, 2018
YB46249	Quartz	TAG	TAG 23	August 18, 1993	August 20, 1993	April 15, 2018
YB46250	Quartz	TAG	TAG 24	August 18, 1993	August 20, 1993	April 15, 2018
YB46251	Quartz	TAG	TAG 25	August 18, 1993	August 20, 1993	April 15, 2018
YB46252	Quartz	TAG	TAG 26	August 18, 1993	August 20, 1993	April 15, 2018
YB46253	Quartz	TAG	TAG 27	August 18, 1993	August 20, 1993	April 15, 2018
YB46254	Quartz	TAG	TAG 28	August 18, 1993	August 20, 1993	April 15, 2018
YB46255	Quartz	TAG	TAG 29	August 18, 1993	August 20, 1993	April 15, 2018
YB46256	Quartz	TAG	TAG 30	August 18, 1993	August 20, 1993	April 15, 2018
YB46325	Quartz	PLATE	PLATE 1	September 15, 1993	September 29, 1993	April 15, 2018
YB46326	Quartz	PLATE	PLATE 2	September 15, 1993	September 29, 1993	April 15, 2018
YB46327	Quartz	PLATE	PLATE 3	September 15, 1993	September 29, 1993	April 15, 2018
YB46328	Quartz	PLATE	PLATE 4	September 15, 1993	September 29, 1993	April 15, 2018
YB46329	Quartz	PLATE	PLATE 5	September 15, 1993	September 29, 1993	April 15, 2018
YB46330	Quartz	PLATE	PLATE 6	September 15, 1993	September 29, 1993	April 15, 2018

[1] Expiry dates listed are those on record prior to filing and acceptance of the work described in this report

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB46331	Quartz	PLATE	PLATE 7	September 15, 1993	September 29, 1993	April 15, 2018
YB46332	Quartz	PLATE	PLATE 8	September 15, 1993	September 29, 1993	April 15, 2018
YB46333	Quartz	PLATE	PLATE 9	September 15, 1993	September 29, 1993	April 15, 2018
YB46334	Quartz	PLATE	PLATE 10	September 15, 1993	September 29, 1993	April 15, 2018
YB46335	Quartz	PLATE	PLATE 11	September 15, 1993	September 29, 1993	April 15, 2018
YB46336	Quartz	PLATE	PLATE 12	September 15, 1993	September 29, 1993	April 15, 2018
YB46337	Quartz	PLATE	PLATE 13	September 15, 1993	September 29, 1993	April 15, 2018
YB46338	Quartz	PLATE	PLATE 14	September 15, 1993	September 29, 1993	April 15, 2018
YB46339	Quartz	PLATE	PLATE 15	September 15, 1993	September 29, 1993	April 15, 2018
YB46340	Quartz	PLATE	PLATE 16	September 15, 1993	September 29, 1993	April 15, 2018
YB46341	Quartz	PLATE	PLATE 17	September 15, 1993	September 29, 1993	April 15, 2018
YB46342	Quartz	PLATE	PLATE 18	September 15, 1993	September 29, 1993	April 15, 2018
YB46343	Quartz	PLATE	PLATE 19	September 15, 1993	September 29, 1993	April 15, 2018
YB46344	Quartz	PLATE	PLATE 20	September 15, 1993	September 29, 1993	April 15, 2018
YB46345	Quartz	PLATE	PLATE 21	September 15, 1993	September 29, 1993	April 15, 2018
YB46346	Quartz	PLATE	PLATE 22	September 15, 1993	September 29, 1993	April 15, 2018
YB46347	Quartz	PLATE	PLATE 23	September 15, 1993	September 29, 1993	April 15, 2018
YB46348	Quartz	PLATE	PLATE 24	September 15, 1993	September 29, 1993	April 15, 2018
YB46349	Quartz	PLATE	PLATE 25	September 15, 1993	September 29, 1993	April 15, 2018
YB46350	Quartz	HOME	HOME 1	September 15, 1993	September 29, 1993	April 15, 2018
YB46351	Quartz	HOME	HOME 2	September 15, 1993	September 29, 1993	April 15, 2018
YB46352	Quartz	HOME	HOME 3	September 15, 1993	September 29, 1993	April 15, 2018
YB46353	Quartz	HOME	HOME 4	September 15, 1993	September 29, 1993	April 15, 2018
YB46354	Quartz	HOME	HOME 5	September 15, 1993	September 29, 1993	April 15, 2018
YB46355	Quartz	HOME	HOME 6	September 15, 1993	September 29, 1993	April 15, 2018
YB46356	Quartz	HOME	HOME 7	September 15, 1993	September 29, 1993	April 15, 2018
YB46357	Quartz	HOME	HOME 8	September 15, 1993	September 29, 1993	April 15, 2018
YB46358	Quartz	HOME	HOME 9	September 15, 1993	September 29, 1993	April 15, 2018
YB46359	Quartz	HOME	HOME 10	September 15, 1993	September 29, 1993	April 15, 2018
YB46360	Quartz	HOME	HOME 11	September 15, 1993	September 29, 1993	April 15, 2018
YB46361	Quartz	HOME	HOME 12	September 15, 1993	September 29, 1993	April 15, 2018
YB46362	Quartz	HOME	HOME 13	September 15, 1993	September 29, 1993	April 15, 2018
YB46363	Quartz	HOME	HOME 14	September 15, 1993	September 29, 1993	April 15, 2018
YB46364	Quartz	HOME	HOME 15	September 15, 1993	September 29, 1993	April 15, 2018
YB46365	Quartz	HOME	HOME 16	September 15, 1993	September 29, 1993	April 15, 2018
YB46366	Quartz	HOME	HOME 17	September 15, 1993	September 29, 1993	April 15, 2018
YB47461	Quartz	TAG	TAG 31	April 9, 1994	April 15, 1994	April 15, 2016
YB47462	Quartz	TAG	TAG 32	April 9, 1994	April 15, 1994	April 15, 2016
YB47463	Quartz	TAG	TAG 33	April 9, 1994	April 15, 1994	April 15, 2016
YB47464	Quartz	TAG	TAG 34	April 9, 1994	April 15, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47465	Quartz	TAG	TAG 35	April 9, 1994	April 15, 1994	April 15, 2016
YB47466	Quartz	TAG	TAG 36	April 9, 1994	April 15, 1994	April 15, 2016
YB47467	Quartz	TAG	TAG 37	April 9, 1994	April 15, 1994	April 15, 2016
YB47468	Quartz	TAG	TAG 38	April 9, 1994	April 15, 1994	April 15, 2016
YB47469	Quartz	TAG	TAG 39	April 9, 1994	April 15, 1994	April 15, 2016
YB47470	Quartz	TAG	TAG 40	April 9, 1994	April 15, 1994	April 15, 2016
YB47471	Quartz	TAG	TAG 41	April 9, 1994	April 15, 1994	April 15, 2016
YB47472	Quartz	TAG	TAG 42	April 9, 1994	April 15, 1994	April 15, 2016
YB47473	Quartz	TAG	TAG 43	April 9, 1994	April 15, 1994	April 15, 2016
YB47474	Quartz	TAG	TAG 44	April 9, 1994	April 15, 1994	April 15, 2016
YB47475	Quartz	TAG	TAG 45	April 9, 1994	April 15, 1994	April 15, 2016
YB47476	Quartz	TAG	TAG 46	April 9, 1994	April 15, 1994	April 15, 2016
YB47477	Quartz	TAG	TAG 47	April 9, 1994	April 15, 1994	April 15, 2016
YB47478	Quartz	TAG	TAG 48	April 9, 1994	April 15, 1994	April 15, 2016
YB47479	Quartz	TAG	TAG 49	April 9, 1994	April 15, 1994	April 15, 2016
YB47480	Quartz	TAG	TAG 50	April 9, 1994	April 15, 1994	April 15, 2016
YB47481	Quartz	TAG	TAG 51	April 9, 1994	April 15, 1994	April 15, 2016
YB47482	Quartz	TAG	TAG 52	April 9, 1994	April 15, 1994	April 15, 2016
YB47483	Quartz	TAG	TAG 53	April 9, 1994	April 15, 1994	April 15, 2016
YB47484	Quartz	TAG	TAG 54	April 9, 1994	April 15, 1994	April 15, 2016
YB47485	Quartz	TAG	TAG 55	April 9, 1994	April 15, 1994	April 15, 2016
YB47486	Quartz	TAG	TAG 56	April 9, 1994	April 15, 1994	April 15, 2016
YB47487	Quartz	TAG	TAG 57	April 9, 1994	April 15, 1994	April 15, 2016
YB47488	Quartz	TAG	TAG 58	April 9, 1994	April 15, 1994	April 15, 2016
YB47489	Quartz	TAG	TAG 59	April 9, 1994	April 15, 1994	April 15, 2016
YB47490	Quartz	TAG	TAG 60	April 9, 1994	April 15, 1994	April 15, 2016
YB47491	Quartz	TAG	TAG 61	April 9, 1994	April 15, 1994	April 15, 2016
YB47492	Quartz	TAG	TAG 62	April 9, 1994	April 15, 1994	April 15, 2016
YB47493	Quartz	TAG	TAG 63	April 9, 1994	April 15, 1994	April 15, 2016
YB47494	Quartz	TAG	TAG 64	April 9, 1994	April 15, 1994	April 15, 2016
YB47495	Quartz	TAG	TAG 65	April 9, 1994	April 15, 1994	April 15, 2016
YB47496	Quartz	TAG	TAG 66	April 9, 1994	April 15, 1994	April 15, 2016
YB47497	Quartz	TAG	TAG 67	April 9, 1994	April 15, 1994	April 15, 2016
YB47498	Quartz	TAG	TAG 68	April 9, 1994	April 15, 1994	April 15, 2016
YB47499	Quartz	TAG	TAG 69	April 9, 1994	April 15, 1994	April 15, 2016
YB47500	Quartz	TAG	TAG 70	April 9, 1994	April 15, 1994	April 15, 2016
YB47501	Quartz	TAG	TAG 71	April 9, 1994	April 15, 1994	April 15, 2016
YB47502	Quartz	TAG	TAG 72	April 9, 1994	April 15, 1994	April 15, 2016
YB47503	Quartz	TAG	TAG 73	April 9, 1994	April 15, 1994	April 15, 2016
YB47504	Quartz	TAG	TAG 74	April 9, 1994	April 15, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47505	Quartz	TAG	TAG 75	April 9, 1994	April 15, 1994	April 15, 2016
YB47506	Quartz	TAG	TAG 76	April 9, 1994	April 15, 1994	April 15, 2016
YB47507	Quartz	TAG	TAG 77	April 9, 1994	April 15, 1994	April 15, 2016
YB47508	Quartz	TAG	TAG 78	April 9, 1994	April 15, 1994	April 15, 2016
YB47509	Quartz	TAG	TAG 79	April 9, 1994	April 15, 1994	April 15, 2016
YB47510	Quartz	TAG	TAG 80	April 9, 1994	April 15, 1994	April 15, 2016
YB47511	Quartz	TAG	TAG 81	April 9, 1994	April 15, 1994	April 15, 2016
YB47512	Quartz	TAG	TAG 82	April 9, 1994	April 15, 1994	April 15, 2016
YB47513	Quartz	TAG	TAG 83	April 9, 1994	April 15, 1994	April 15, 2016
YB47514	Quartz	TAG	TAG 84	April 9, 1994	April 15, 1994	April 15, 2016
YB47515	Quartz	TAG	TAG 85	April 9, 1994	April 15, 1994	April 15, 2016
YB47516	Quartz	TAG	TAG 86	April 9, 1994	April 15, 1994	April 15, 2016
YB47517	Quartz	TAG	TAG 87	April 9, 1994	April 15, 1994	April 15, 2016
YB47518	Quartz	TAG	TAG 88	April 9, 1994	April 15, 1994	April 15, 2016
YB47519	Quartz	TAG	TAG 89	April 9, 1994	April 15, 1994	April 15, 2016
YB47520	Quartz	TAG	TAG 90	April 9, 1994	April 15, 1994	April 15, 2016
YB47521	Quartz	TAG	TAG 91	April 9, 1994	April 15, 1994	April 15, 2016
YB47522	Quartz	TAG	TAG 92	April 9, 1994	April 15, 1994	April 15, 2016
YB47523	Quartz	TAG	TAG 93	April 9, 1994	April 15, 1994	April 15, 2016
YB47524	Quartz	TAG	TAG 94	April 9, 1994	April 15, 1994	April 15, 2016
YB47525	Quartz	TAG	TAG 95	April 9, 1994	April 15, 1994	April 15, 2016
YB47526	Quartz	TAG	TAG 96	April 9, 1994	April 15, 1994	April 15, 2016
YB47527	Quartz	TAG	TAG 97	April 9, 1994	April 15, 1994	April 15, 2016
YB47528	Quartz	TAG	TAG 98	April 9, 1994	April 15, 1994	April 15, 2016
YB47529	Quartz	TAG	TAG 99	April 9, 1994	April 15, 1994	April 15, 2016
YB47530	Quartz	TAG	TAG 100	April 9, 1994	April 15, 1994	April 15, 2016
YB47531	Quartz	TAG	TAG 101	April 9, 1994	April 15, 1994	April 15, 2016
YB47532	Quartz	TAG	TAG 102	April 9, 1994	April 15, 1994	April 15, 2016
YB47533	Quartz	TAG	TAG 103	April 9, 1994	April 15, 1994	April 15, 2016
YB47534	Quartz	TAG	TAG 104	April 9, 1994	April 15, 1994	April 15, 2016
YB47535	Quartz	TAG	TAG 105	April 9, 1994	April 15, 1994	April 15, 2016
YB47536	Quartz	TAG	TAG 106	April 9, 1994	April 15, 1994	April 15, 2016
YB47537	Quartz	TAG	TAG 107	April 9, 1994	April 15, 1994	April 15, 2016
YB47538	Quartz	TAG	TAG 108	April 9, 1994	April 15, 1994	April 15, 2016
YB47539	Quartz	TAG	TAG 109	April 9, 1994	April 15, 1994	April 15, 2016
YB47540	Quartz	TAG	TAG 110	April 9, 1994	April 15, 1994	April 15, 2016
YB47541	Quartz	TAG	TAG 111	April 9, 1994	April 15, 1994	April 15, 2016
YB47542	Quartz	TAG	TAG 112	April 9, 1994	April 15, 1994	April 15, 2016
YB47543	Quartz	TAG	TAG 113	April 9, 1994	April 15, 1994	April 15, 2016
YB47544	Quartz	TAG	TAG 158	April 10, 1994	April 15, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47545	Quartz	TAG	TAG 159	April 10, 1994	April 15, 1994	April 15, 2016
YB47546	Quartz	TAG	TAG 160	April 10, 1994	April 15, 1994	April 15, 2016
YB47547	Quartz	TAG	TAG 161	April 10, 1994	April 15, 1994	April 15, 2016
YB47548	Quartz	TAG	TAG 162	April 10, 1994	April 15, 1994	April 15, 2016
YB47549	Quartz	TAG	TAG 163	April 10, 1994	April 15, 1994	April 15, 2016
YB47550	Quartz	TAG	TAG 164	April 10, 1994	April 15, 1994	April 15, 2016
YB47551	Quartz	TAG	TAG 165	April 10, 1994	April 15, 1994	April 15, 2016
YB47552	Quartz	TAG	TAG 166	April 10, 1994	April 15, 1994	April 15, 2016
YB47553	Quartz	TAG	TAG 167	April 10, 1994	April 15, 1994	April 15, 2016
YB47554	Quartz	TAG	TAG 168	April 10, 1994	April 15, 1994	April 15, 2016
YB47555	Quartz	TAG	TAG 169	April 10, 1994	April 15, 1994	April 15, 2016
YB47556	Quartz	TAG	TAG 170	April 10, 1994	April 15, 1994	April 15, 2016
YB47557	Quartz	TAG	TAG 171	April 10, 1994	April 15, 1994	April 15, 2016
YB47558	Quartz	TAG	TAG 172	April 10, 1994	April 15, 1994	April 15, 2016
YB47559	Quartz	TAG	TAG 173	April 10, 1994	April 15, 1994	April 15, 2016
YB47560	Quartz	TAG	TAG 174	April 10, 1994	April 15, 1994	April 15, 2016
YB47561	Quartz	TAG	TAG 175	April 10, 1994	April 15, 1994	April 15, 2016
YB47562	Quartz	TAG	TAG 176	April 10, 1994	April 15, 1994	April 15, 2016
YB47563	Quartz	TAG	TAG 177	April 10, 1994	April 15, 1994	April 15, 2016
YB47564	Quartz	TAG	TAG 178	April 10, 1994	April 15, 1994	April 15, 2016
YB47565	Quartz	TAG	TAG 179	April 10, 1994	April 15, 1994	April 15, 2016
YB47566	Quartz	TAG	TAG 180	April 10, 1994	April 15, 1994	April 15, 2016
YB47567	Quartz	TAG	TAG 181	April 10, 1994	April 15, 1994	April 15, 2016
YB47568	Quartz	TAG	TAG 182	April 10, 1994	April 15, 1994	April 15, 2016
YB47569	Quartz	TAG	TAG 183	April 10, 1994	April 15, 1994	April 15, 2016
YB47570	Quartz	TAG	TAG 184	April 10, 1994	April 15, 1994	April 15, 2016
YB47571	Quartz	TAG	TAG 185	April 10, 1994	April 15, 1994	April 15, 2016
YB47572	Quartz	TAG	TAG 186	April 10, 1994	April 15, 1994	April 15, 2016
YB47573	Quartz	TAG	TAG 187	April 10, 1994	April 15, 1994	April 15, 2016
YB47574	Quartz	TAG	TAG 188	April 10, 1994	April 15, 1994	April 15, 2016
YB47575	Quartz	TAG	TAG 189	April 10, 1994	April 15, 1994	April 15, 2016
YB47576	Quartz	TAG	TAG 190	April 10, 1994	April 15, 1994	April 15, 2016
YB47577	Quartz	TAG	TAG 191	April 10, 1994	April 15, 1994	April 15, 2016
YB47578	Quartz	TAG	TAG 192	April 10, 1994	April 15, 1994	April 15, 2016
YB47579	Quartz	TAG	TAG 193	April 10, 1994	April 15, 1994	April 15, 2016
YB47580	Quartz	TAG	TAG 194	April 10, 1994	April 15, 1994	April 15, 2016
YB47581	Quartz	TAG	TAG 195	April 10, 1994	April 15, 1994	April 15, 2016
YB47582	Quartz	TAG	TAG 196	April 10, 1994	April 15, 1994	April 15, 2016
YB47583	Quartz	TAG	TAG 197	April 10, 1994	April 15, 1994	April 15, 2016
YB47584	Quartz	TAG	TAG 198	April 10, 1994	April 15, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47585	Quartz	TAG	TAG 199	April 10, 1994	April 15, 1994	April 15, 2016
YB47586	Quartz	TAG	TAG 200	April 10, 1994	April 15, 1994	April 15, 2016
YB47587	Quartz	TAG	TAG 201	April 10, 1994	April 15, 1994	April 15, 2016
YB47588	Quartz	TAG	TAG 202	April 10, 1994	April 15, 1994	April 15, 2016
YB47590	Quartz	TAG	TAG 204	April 10, 1994	April 15, 1994	April 15, 2016
YB47592	Quartz	TAG	TAG 206	April 10, 1994	April 15, 1994	April 15, 2016
YB47593	Quartz	TAG	TAG 207	April 10, 1994	April 15, 1994	April 15, 2016
YB47594	Quartz	TAG	TAG 208	April 10, 1994	April 15, 1994	April 15, 2016
YB47595	Quartz	TAG	TAG 209	April 10, 1994	April 15, 1994	April 15, 2016
YB47596	Quartz	TAG	TAG 210	April 10, 1994	April 15, 1994	April 15, 2016
YB47597	Quartz	TAG	TAG 211	April 10, 1994	April 15, 1994	April 15, 2016
YB47598	Quartz	TAG	TAG 212	April 10, 1994	April 15, 1994	April 15, 2016
YB47599	Quartz	TAG	TAG 213	April 10, 1994	April 15, 1994	April 15, 2016
YB47600	Quartz	TAG	TAG 214	April 10, 1994	April 15, 1994	April 15, 2016
YB47601	Quartz	TAG	TAG 215	April 10, 1994	April 15, 1994	April 15, 2016
YB47602	Quartz	TAG	TAG 216	April 10, 1994	April 15, 1994	April 15, 2016
YB47603	Quartz	TAG	TAG 217	April 10, 1994	April 15, 1994	April 15, 2016
YB47604	Quartz	TAG	TAG 218	April 10, 1994	April 15, 1994	April 15, 2016
YB47605	Quartz	TAG	TAG 219	April 10, 1994	April 15, 1994	April 15, 2016
YB47606	Quartz	TAG	TAG 220	April 10, 1994	April 15, 1994	April 15, 2016
YB47607	Quartz	TAG	TAG 221	April 10, 1994	April 15, 1994	April 15, 2016
YB47608	Quartz	TAG	TAG 222	April 10, 1994	April 15, 1994	April 15, 2016
YB47609	Quartz	TAG	TAG 223	April 10, 1994	April 15, 1994	April 15, 2016
YB47610	Quartz	TAG	TAG 224	April 10, 1994	April 15, 1994	April 15, 2016
YB47611	Quartz	TAG	TAG 225	April 10, 1994	April 15, 1994	April 15, 2016
YB47612	Quartz	TAG	TAG 226	April 10, 1994	April 15, 1994	April 15, 2016
YB47613	Quartz	TAG	TAG 227	April 10, 1994	April 15, 1994	April 15, 2016
YB47614	Quartz	TAG	TAG 228	April 10, 1994	April 15, 1994	April 15, 2016
YB47615	Quartz	TAG	TAG 229	April 10, 1994	April 15, 1994	April 15, 2016
YB47616	Quartz	TAG	TAG 230	April 10, 1994	April 15, 1994	April 15, 2016
YB47617	Quartz	TAG	TAG 231	April 10, 1994	April 15, 1994	April 15, 2016
YB47618	Quartz	TAG	TAG 232	April 10, 1994	April 15, 1994	April 15, 2016
YB47619	Quartz	TAG	TAG 233	April 11, 1994	April 15, 1994	April 15, 2016
YB47620	Quartz	TAG	TAG 234	April 11, 1994	April 15, 1994	April 15, 2016
YB47621	Quartz	TAG	TAG 235	April 11, 1994	April 15, 1994	April 15, 2016
YB47622	Quartz	TAG	TAG 236	April 11, 1994	April 15, 1994	April 15, 2016
YB47623	Quartz	TAG	TAG 237	April 11, 1994	April 15, 1994	April 15, 2016
YB47624	Quartz	TAG	TAG 238	April 11, 1994	April 15, 1994	April 15, 2016
YB47625	Quartz	TAG	TAG 239	April 11, 1994	April 15, 1994	April 15, 2016
YB47626	Quartz	TAG	TAG 240	April 11, 1994	April 15, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47627	Quartz	TAG	TAG 241	April 11, 1994	April 15, 1994	April 15, 2016
YB47628	Quartz	TAG	TAG 242	April 11, 1994	April 15, 1994	April 15, 2016
YB47629	Quartz	TAG	TAG 243	April 11, 1994	April 15, 1994	April 15, 2016
YB47630	Quartz	TAG	TAG 244	April 11, 1994	April 15, 1994	April 15, 2016
YB47631	Quartz	TAG	TAG 245	April 11, 1994	April 15, 1994	April 15, 2016
YB47632	Quartz	TAG	TAG 246	April 11, 1994	April 15, 1994	April 15, 2016
YB47633	Quartz	TAG	TAG 247	April 11, 1994	April 15, 1994	April 15, 2016
YB47634	Quartz	TAG	TAG 248	April 11, 1994	April 15, 1994	April 15, 2016
YB47635	Quartz	TAG	TAG 249	April 11, 1994	April 15, 1994	April 15, 2016
YB47636	Quartz	TAG	TAG 250	April 11, 1994	April 15, 1994	April 15, 2016
YB47637	Quartz	TAG	TAG 251	April 11, 1994	April 15, 1994	April 15, 2016
YB47638	Quartz	TAG	TAG 252	April 11, 1994	April 15, 1994	April 15, 2016
YB47639	Quartz	TAG	TAG 253	April 11, 1994	April 15, 1994	April 15, 2016
YB47640	Quartz	TAG	TAG 254	April 14, 1994	April 15, 1994	April 15, 2016
YB47641	Quartz	TAG	TAG 255	April 14, 1994	April 15, 1994	April 15, 2016
YB47642	Quartz	TAG	TAG 256	April 14, 1994	April 15, 1994	April 15, 2016
YB47643	Quartz	TAG	TAG 257	April 14, 1994	April 15, 1994	April 15, 2016
YB47644	Quartz	TAG	TAG 258	April 14, 1994	April 15, 1994	April 15, 2016
YB47645	Quartz	TAG	TAG 259	April 14, 1994	April 15, 1994	April 15, 2016
YB47646	Quartz	TAG	TAG 260	April 14, 1994	April 15, 1994	April 15, 2016
YB47647	Quartz	TAG	TAG 261	April 14, 1994	April 15, 1994	April 15, 2016
YB47648	Quartz	TAG	TAG 262	April 14, 1994	April 15, 1994	April 15, 2016
YB47649	Quartz	TAG	TAG 263	April 14, 1994	April 15, 1994	April 15, 2016
YB47668	Quartz	TAG	TAG 114	April 9, 1994	April 26, 1994	April 15, 2016
YB47669	Quartz	TAG	TAG 115	April 9, 1994	April 26, 1994	April 15, 2016
YB47670	Quartz	TAG	TAG 116	April 9, 1994	April 26, 1994	April 15, 2016
YB47671	Quartz	TAG	TAG 117	April 9, 1994	April 26, 1994	April 15, 2016
YB47672	Quartz	TAG	TAG 118	April 9, 1994	April 26, 1994	April 15, 2016
YB47673	Quartz	TAG	TAG 119	April 9, 1994	April 26, 1994	April 15, 2016
YB47674	Quartz	TAG	TAG 120	April 9, 1994	April 26, 1994	April 15, 2016
YB47675	Quartz	TAG	TAG 121	April 9, 1994	April 26, 1994	April 15, 2016
YB47676	Quartz	TAG	TAG 122	April 9, 1994	April 26, 1994	April 15, 2016
YB47677	Quartz	TAG	TAG 123	April 9, 1994	April 26, 1994	April 15, 2016
YB47678	Quartz	TAG	TAG 124	April 9, 1994	April 26, 1994	April 15, 2016
YB47679	Quartz	TAG	TAG 125	April 9, 1994	April 26, 1994	April 15, 2016
YB47680	Quartz	TAG	TAG 126	April 9, 1994	April 26, 1994	April 15, 2016
YB47681	Quartz	TAG	TAG 127	April 9, 1994	April 26, 1994	April 15, 2016
YB47682	Quartz	TAG	TAG 128	April 9, 1994	April 26, 1994	April 15, 2016
YB47683	Quartz	TAG	TAG 129	April 9, 1994	April 26, 1994	April 15, 2016
YB47684	Quartz	TAG	TAG 130	April 9, 1994	April 26, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB47685	Quartz	TAG	TAG 131	April 9, 1994	April 26, 1994	April 15, 2016
YB47686	Quartz	TAG	TAG 132	April 9, 1994	April 26, 1994	April 15, 2016
YB47687	Quartz	TAG	TAG 133	April 9, 1994	April 26, 1994	April 15, 2016
YB47688	Quartz	TAG	TAG 134	April 10, 1994	April 26, 1994	April 15, 2016
YB47689	Quartz	TAG	TAG 135	April 10, 1994	April 26, 1994	April 15, 2016
YB47690	Quartz	TAG	TAG 136	April 10, 1994	April 26, 1994	April 15, 2016
YB47691	Quartz	TAG	TAG 137	April 10, 1994	April 26, 1994	April 15, 2016
YB47692	Quartz	TAG	TAG 138	April 10, 1994	April 26, 1994	April 15, 2016
YB47693	Quartz	TAG	TAG 139	April 10, 1994	April 26, 1994	April 15, 2016
YB47694	Quartz	TAG	TAG 140	April 10, 1994	April 26, 1994	April 15, 2016
YB47695	Quartz	TAG	TAG 141	April 10, 1994	April 26, 1994	April 15, 2016
YB47696	Quartz	TAG	TAG 142	April 10, 1994	April 26, 1994	April 15, 2016
YB47697	Quartz	TAG	TAG 143	April 10, 1994	April 26, 1994	April 15, 2016
YB47698	Quartz	TAG	TAG 144	April 10, 1994	April 26, 1994	April 15, 2016
YB47699	Quartz	TAG	TAG 145	April 10, 1994	April 26, 1994	April 15, 2016
YB47700	Quartz	TAG	TAG 146	April 10, 1994	April 26, 1994	April 15, 2016
YB47701	Quartz	TAG	TAG 147	April 10, 1994	April 26, 1994	April 15, 2016
YB47702	Quartz	TAG	TAG 148	April 10, 1994	April 26, 1994	April 15, 2016
YB47703	Quartz	TAG	TAG 149	April 10, 1994	April 26, 1994	April 15, 2016
YB47704	Quartz	TAG	TAG 150	April 10, 1994	April 26, 1994	April 15, 2016
YB47705	Quartz	TAG	TAG 151	April 10, 1994	April 26, 1994	April 15, 2016
YB47706	Quartz	TAG	TAG 152	April 10, 1994	April 26, 1994	April 15, 2016
YB47707	Quartz	TAG	TAG 153	April 10, 1994	April 26, 1994	April 15, 2016
YB47708	Quartz	TAG	TAG 154	April 10, 1994	April 26, 1994	April 15, 2016
YB47709	Quartz	TAG	TAG 155	April 10, 1994	April 26, 1994	April 15, 2016
YB47710	Quartz	TAG	TAG 156	April 10, 1994	April 26, 1994	April 15, 2016
YB47711	Quartz	TAG	TAG 157	April 10, 1994	April 26, 1994	April 15, 2016
YB48413	Quartz	TAG	TAG 264	April 26, 1994	May 2, 1994	April 15, 2016
YB48414	Quartz	TAG	TAG 265	April 26, 1994	May 2, 1994	April 15, 2016
YB48415	Quartz	TAG	TAG 266	April 26, 1994	May 2, 1994	April 15, 2018
YB48416	Quartz	TAG	TAG 267	April 26, 1994	May 2, 1994	April 15, 2018
YB48417	Quartz	TAG	TAG 268	April 26, 1994	May 2, 1994	April 15, 2018
YB48418	Quartz	TAG	TAG 269	April 26, 1994	May 2, 1994	April 15, 2018
YB48419	Quartz	TAG	TAG 270	April 26, 1994	May 2, 1994	April 15, 2016
YB48420	Quartz	TAG	TAG 271	April 26, 1994	May 2, 1994	April 15, 2016
YB48421	Quartz	TAG	TAG 272	April 26, 1994	May 2, 1994	April 15, 2016
YB48422	Quartz	TAG	TAG 273	April 26, 1994	May 2, 1994	April 15, 2016
YB48423	Quartz	TAG	TAG 274	April 26, 1994	May 2, 1994	April 15, 2016
YB48424	Quartz	TAG	TAG 275	April 26, 1994	May 2, 1994	April 15, 2016
YB48425	Quartz	TAG	TAG 276	April 26, 1994	May 2, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB48426	Quartz	TAG	TAG 277	April 26, 1994	May 2, 1994	April 15, 2016
YB48427	Quartz	TAG	TAG 278	April 26, 1994	May 2, 1994	April 15, 2016
YB48428	Quartz	TAG	TAG 279	April 26, 1994	May 2, 1994	April 15, 2016
YB48429	Quartz	TAG	TAG 280	April 26, 1994	May 2, 1994	April 15, 2016
YB48430	Quartz	TAG	TAG 281	April 26, 1994	May 2, 1994	April 15, 2016
YB48431	Quartz	TAG	TAG 282	April 26, 1994	May 2, 1994	April 15, 2016
YB48432	Quartz	TAG	TAG 283	April 26, 1994	May 2, 1994	April 15, 2016
YB48433	Quartz	TAG	TAG 284	April 26, 1994	May 2, 1994	April 15, 2016
YB48434	Quartz	TAG	TAG 285	April 26, 1994	May 2, 1994	April 15, 2016
YB48435	Quartz	TAG	TAG 286	April 26, 1994	May 2, 1994	April 15, 2016
YB48436	Quartz	TAG	TAG 287	April 26, 1994	May 2, 1994	April 15, 2016
YB48437	Quartz	TAG	TAG 288	April 26, 1994	May 2, 1994	April 15, 2016
YB48438	Quartz	TAG	TAG 289	April 26, 1994	May 2, 1994	April 15, 2016
YB48439	Quartz	TAG	TAG 290	April 26, 1994	May 2, 1994	April 15, 2016
YB48440	Quartz	TAG	TAG 291	April 26, 1994	May 2, 1994	April 15, 2016
YB48441	Quartz	TAG	TAG 292	April 26, 1994	May 2, 1994	April 15, 2016
YB48442	Quartz	TAG	TAG 293	April 26, 1994	May 2, 1994	April 15, 2016
YB48443	Quartz	TAG	TAG 294	April 26, 1994	May 2, 1994	April 15, 2016
YB48444	Quartz	TAG	TAG 295	April 26, 1994	May 2, 1994	April 15, 2016
YB48445	Quartz	TAG	TAG 296	April 26, 1994	May 2, 1994	April 15, 2016
YB48446	Quartz	TAG	TAG 297	April 26, 1994	May 2, 1994	April 15, 2016
YB48447	Quartz	TAG	TAG 298	April 26, 1994	May 2, 1994	April 15, 2016
YB48448	Quartz	TAG	TAG 299	April 26, 1994	May 2, 1994	April 15, 2016
YB48449	Quartz	TAG	TAG 300	April 26, 1994	May 2, 1994	April 15, 2016
YB48450	Quartz	TAG	TAG 301	April 26, 1994	May 2, 1994	April 15, 2016
YB48451	Quartz	TAG	TAG 302	April 26, 1994	May 2, 1994	April 15, 2016
YB48452	Quartz	TAG	TAG 303	April 26, 1994	May 2, 1994	April 15, 2016
YB48455	Quartz	TAG	TAG 306	April 26, 1994	May 2, 1994	April 15, 2016
YB48456	Quartz	TAG	TAG 307	April 26, 1994	May 2, 1994	April 15, 2016
YB48457	Quartz	TAG	TAG 308	April 26, 1994	May 2, 1994	April 15, 2016
YB48458	Quartz	TAG	TAG 309	April 26, 1994	May 2, 1994	April 15, 2016
YB48459	Quartz	TAG	TAG 310	April 26, 1994	May 2, 1994	April 15, 2016
YB48460	Quartz	TAG	TAG 311	April 26, 1994	May 2, 1994	April 15, 2016
YB48461	Quartz	TAG	TAG 312	April 27, 1994	May 2, 1994	April 15, 2016
YB48464	Quartz	TAG	TAG 315	April 27, 1994	May 2, 1994	April 15, 2016
YB48465	Quartz	TAG	TAG 316	April 27, 1994	May 2, 1994	April 15, 2016
YB48466	Quartz	TAG	TAG 317	April 27, 1994	May 2, 1994	April 15, 2016
YB48467	Quartz	TAG	TAG 318	April 27, 1994	May 2, 1994	April 15, 2016
YB48468	Quartz	TAG	TAG 319	April 27, 1994	May 2, 1994	April 15, 2016
YB48477	Quartz	TAG	TAG 328	April 26, 1994	May 2, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB48478	Quartz	TAG	TAG 329	April 26, 1994	May 2, 1994	April 15, 2016
YB48479	Quartz	TAG	TAG 330	April 26, 1994	May 2, 1994	April 15, 2016
YB48480	Quartz	TAG	TAG 331	April 26, 1994	May 2, 1994	April 15, 2016
YB48481	Quartz	TAG	TAG 332	April 26, 1994	May 2, 1994	April 15, 2016
YB48482	Quartz	TAG	TAG 333	April 26, 1994	May 2, 1994	April 15, 2016
YB48483	Quartz	TAG	TAG 334	April 26, 1994	May 2, 1994	April 15, 2016
YB48484	Quartz	TAG	TAG 335	April 26, 1994	May 2, 1994	April 15, 2016
YB48485	Quartz	TAG	TAG 336	April 26, 1994	May 2, 1994	April 15, 2016
YB48486	Quartz	TAG	TAG 337	April 26, 1994	May 2, 1994	April 15, 2016
YB48507	Quartz	TAG	TAG 358	April 26, 1994	May 2, 1994	April 15, 2016
YB48508	Quartz	TAG	TAG 359	April 26, 1994	May 2, 1994	April 15, 2016
YB48509	Quartz	TAG	TAG 360	April 26, 1994	May 2, 1994	April 15, 2016
YB48510	Quartz	TAG	TAG 361	April 26, 1994	May 2, 1994	April 15, 2016
YB48511	Quartz	TAG	TAG 362	April 26, 1994	May 2, 1994	April 15, 2016
YB48512	Quartz	TAG	TAG 363	April 26, 1994	May 2, 1994	April 15, 2016
YB48513	Quartz	TAG	TAG 364	April 26, 1994	May 2, 1994	April 15, 2016
YB48514	Quartz	TAG	TAG 365	April 26, 1994	May 2, 1994	April 15, 2016
YB48515	Quartz	TAG	TAG 366	April 26, 1994	May 2, 1994	April 15, 2016
YB48516	Quartz	TAG	TAG 367	April 26, 1994	May 2, 1994	April 15, 2016
YB48517	Quartz	TAG	TAG 368	April 27, 1994	May 2, 1994	April 15, 2016
YB48518	Quartz	TAG	TAG 369	April 27, 1994	May 2, 1994	April 15, 2016
YB48519	Quartz	TAG	TAG 370	April 27, 1994	May 2, 1994	April 15, 2016
YB48520	Quartz	TAG	TAG 371	April 27, 1994	May 2, 1994	April 15, 2016
YB48521	Quartz	TAG	TAG 372	April 27, 1994	May 2, 1994	April 15, 2016
YB48522	Quartz	TAG	TAG 373	April 27, 1994	May 2, 1994	April 15, 2016
YB48523	Quartz	TAG	TAG 374	April 27, 1994	May 2, 1994	April 15, 2016
YB48524	Quartz	TAG	TAG 375	April 27, 1994	May 2, 1994	April 15, 2016
YB48525	Quartz	TAG	TAG 376	April 27, 1994	May 2, 1994	April 15, 2016
YB48526	Quartz	TAG	TAG 377	April 27, 1994	May 2, 1994	April 15, 2016
YB48532	Quartz	TAG	TAG 383	April 27, 1994	May 2, 1994	April 15, 2016
YB48534	Quartz	TAG	TAG 385	April 27, 1994	May 2, 1994	April 15, 2016
YB48535	Quartz	TAG	TAG 386	April 27, 1994	May 2, 1994	April 15, 2016
YB48536	Quartz	TAG	TAG 387	April 27, 1994	May 2, 1994	April 15, 2016
YB48917	Quartz	EL	EL 1	May 17, 1994	May 27, 1994	April 7, 2016
YB48918	Quartz	EL	EL 2	May 17, 1994	May 27, 1994	April 7, 2016
YB48919	Quartz	EL	EL 3	May 17, 1994	May 27, 1994	April 7, 2016
YB48920	Quartz	EL	EL 4	May 17, 1994	May 27, 1994	April 7, 2016
YB48921	Quartz	EL	EL 5	May 17, 1994	May 27, 1994	April 7, 2016
YB48922	Quartz	EL	EL 6	May 17, 1994	May 27, 1994	April 7, 2016
YB48923	Quartz	EL	EL 7	May 17, 1994	May 27, 1994	April 7, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB48924	Quartz	EL	EL 8	May 17, 1994	May 27, 1994	April 7, 2016
YB48925	Quartz	LY	LY 1	May 17, 1994	May 27, 1994	April 7, 2016
YB48926	Quartz	LY	LY 2	May 17, 1994	May 27, 1994	April 7, 2016
YB48927	Quartz	LY	LY 3	May 17, 1994	May 27, 1994	April 7, 2016
YB48928	Quartz	LY	LY 4	May 17, 1994	May 27, 1994	April 7, 2016
YB48929	Quartz	LY	LY 5	May 17, 1994	May 27, 1994	April 7, 2016
YB48930	Quartz	LY	LY 6	May 17, 1994	May 27, 1994	April 7, 2016
YB48931	Quartz	LY	LY 7	May 17, 1994	May 27, 1994	April 7, 2016
YB48932	Quartz	LY	LY 8	May 17, 1994	May 27, 1994	April 7, 2016
YB48933	Quartz	LY	LY 9	May 17, 1994	May 27, 1994	April 7, 2016
YB48934	Quartz	LY	LY 10	May 17, 1994	May 27, 1994	April 7, 2016
YB48935	Quartz	LY	LY 11	May 17, 1994	May 27, 1994	April 7, 2016
YB48936	Quartz	LY	LY 12	May 17, 1994	May 27, 1994	April 7, 2016
YB48937	Quartz	LY	LY 13	May 17, 1994	May 27, 1994	April 7, 2016
YB48938	Quartz	LY	LY 14	May 17, 1994	May 27, 1994	April 7, 2016
YB48939	Quartz	LY	LY 15	May 17, 1994	May 27, 1994	April 7, 2016
YB48940	Quartz	TAG	TAG 398	May 16, 1994	May 27, 1994	April 15, 2016
YB48941	Quartz	TAG	TAG 399	May 16, 1994	May 27, 1994	April 15, 2016
YB48942	Quartz	TAG	TAG 400	May 16, 1994	May 27, 1994	April 15, 2016
YB48943	Quartz	TAG	TAG 401	May 16, 1994	May 27, 1994	April 15, 2016
YB48944	Quartz	TAG	TAG 402	May 16, 1994	May 27, 1994	April 15, 2016
YB48945	Quartz	TAG	TAG 403	May 16, 1994	May 27, 1994	April 15, 2016
YB48946	Quartz	TAG	TAG 404	May 16, 1994	May 27, 1994	April 15, 2016
YB48947	Quartz	TAG	TAG 405	May 16, 1994	May 27, 1994	April 15, 2016
YB48948	Quartz	TAG	TAG 406	May 16, 1994	May 27, 1994	April 15, 2016
YB48949	Quartz	TAG	TAG 407	May 16, 1994	May 27, 1994	April 15, 2016
YB48950	Quartz	TAG	TAG 408	May 16, 1994	May 27, 1994	April 15, 2016
YB48951	Quartz	TAG	TAG 409	May 16, 1994	May 27, 1994	April 15, 2016
YB48952	Quartz	TAG	TAG 410	May 16, 1994	May 27, 1994	April 15, 2016
YB48953	Quartz	TAG	TAG 411	May 16, 1994	May 27, 1994	April 15, 2016
YB48954	Quartz	TAG	TAG 412	May 16, 1994	May 27, 1994	April 15, 2016
YB48955	Quartz	TAG	TAG 413	May 16, 1994	May 27, 1994	April 15, 2016
YB48956	Quartz	TAG	TAG 414	May 16, 1994	May 27, 1994	April 15, 2016
YB48957	Quartz	TAG	TAG 415	May 16, 1994	May 27, 1994	April 15, 2016
YB48958	Quartz	TAG	TAG 416	May 16, 1994	May 27, 1994	April 15, 2016
YB48959	Quartz	TAG	TAG 417	May 16, 1994	May 27, 1994	April 15, 2016
YB48960	Quartz	TAG	TAG 418	May 16, 1994	May 27, 1994	April 15, 2016
YB48961	Quartz	TAG	TAG 419	May 16, 1994	May 27, 1994	April 15, 2016
YB48962	Quartz	TAG	TAG 420	May 16, 1994	May 27, 1994	April 15, 2016
YB48963	Quartz	TAG	TAG 421	May 16, 1994	May 27, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB48964	Quartz	TAG	TAG 422	May 16, 1994	May 27, 1994	April 15, 2016
YB48965	Quartz	TAG	TAG 423	May 16, 1994	May 27, 1994	April 15, 2016
YB48966	Quartz	TAG	TAG 424	May 16, 1994	May 27, 1994	April 15, 2016
YB48967	Quartz	TAG	TAG 425	May 16, 1994	May 27, 1994	April 15, 2016
YB48968	Quartz	TAG	TAG 426	May 16, 1994	May 27, 1994	April 15, 2016
YB48969	Quartz	TAG	TAG 427	May 16, 1994	May 27, 1994	April 15, 2016
YB48970	Quartz	TAG	TAG 428	May 16, 1994	May 27, 1994	April 15, 2016
YB48971	Quartz	TAG	TAG 429	May 16, 1994	May 27, 1994	April 15, 2016
YB48972	Quartz	TAG	TAG 430	May 16, 1994	May 27, 1994	April 15, 2016
YB48973	Quartz	TAG	TAG 431	May 16, 1994	May 27, 1994	April 15, 2016
YB48974	Quartz	TAG	TAG 432	May 16, 1994	May 27, 1994	April 15, 2016
YB48975	Quartz	TAG	TAG 433	May 16, 1994	May 27, 1994	April 15, 2016
YB48976	Quartz	TAG	TAG 434	May 16, 1994	May 27, 1994	April 15, 2016
YB48977	Quartz	TAG	TAG 435	May 16, 1994	May 27, 1994	April 15, 2016
YB48978	Quartz	TAG	TAG 436	May 16, 1994	May 27, 1994	April 15, 2016
YB48979	Quartz	TAG	TAG 437	May 16, 1994	May 27, 1994	April 15, 2016
YB48980	Quartz	TAG	TAG 438	May 16, 1994	May 27, 1994	April 15, 2016
YB48981	Quartz	TAG	TAG 439	May 16, 1994	May 27, 1994	April 15, 2016
YB48982	Quartz	TAG	TAG 440	May 16, 1994	May 27, 1994	April 15, 2016
YB48983	Quartz	TAG	TAG 441	May 16, 1994	May 27, 1994	April 15, 2016
YB48984	Quartz	TAG	TAG 442	May 16, 1994	May 27, 1994	April 15, 2016
YB48985	Quartz	TAG	TAG 443	May 16, 1994	May 27, 1994	April 15, 2016
YB48986	Quartz	TAG	TAG 444	May 16, 1994	May 27, 1994	April 15, 2016
YB48987	Quartz	TAG	TAG 445	May 16, 1994	May 27, 1994	April 15, 2016
YB48988	Quartz	TAG	TAG 446	May 16, 1994	May 27, 1994	April 15, 2016
YB48989	Quartz	TAG	TAG 447	May 16, 1994	May 27, 1994	April 15, 2016
YB48990	Quartz	TAG	TAG 448	May 16, 1994	May 27, 1994	April 15, 2016
YB48991	Quartz	TAG	TAG 449	May 16, 1994	May 27, 1994	April 15, 2016
YB48992	Quartz	TAG	TAG 450	May 16, 1994	May 27, 1994	April 15, 2016
YB48993	Quartz	TAG	TAG 451	May 16, 1994	May 27, 1994	April 15, 2016
YB48994	Quartz	TAG	TAG 452	May 16, 1994	May 27, 1994	April 15, 2016
YB48995	Quartz	TAG	TAG 453	May 16, 1994	May 27, 1994	April 15, 2016
YB48996	Quartz	TAG	TAG 454	May 16, 1994	May 27, 1994	April 15, 2016
YB48997	Quartz	TAG	TAG 455	May 16, 1994	May 27, 1994	April 15, 2016
YB48998	Quartz	TAG	TAG 456	May 16, 1994	May 27, 1994	April 15, 2016
YB48999	Quartz	TAG	TAG 457	May 16, 1994	May 27, 1994	April 15, 2016
YB49000	Quartz	TAG	TAG 458	May 16, 1994	May 27, 1994	April 15, 2016
YB49001	Quartz	TAG	TAG 459	May 16, 1994	May 27, 1994	April 15, 2016
YB49002	Quartz	TAG	TAG 460	May 16, 1994	May 27, 1994	April 15, 2016
YB49003	Quartz	TAG	TAG 461	May 16, 1994	May 27, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB49565	Quartz	TAG	TAG 489	June 1, 1994	June 22, 1994	April 15, 2016
YB49566	Quartz	TAG	TAG 490	June 1, 1994	June 22, 1994	April 15, 2016
YB49567	Quartz	TAG	TAG 491	June 1, 1994	June 22, 1994	April 15, 2016
YB49568	Quartz	TAG	TAG 492	June 1, 1994	June 22, 1994	April 15, 2016
YB49569	Quartz	TAG	TAG 493	June 1, 1994	June 22, 1994	April 15, 2016
YB49570	Quartz	TAG	TAG 494	June 1, 1994	June 22, 1994	April 15, 2016
YB49571	Quartz	TAG	TAG 495	June 1, 1994	June 22, 1994	April 15, 2016
YB49572	Quartz	TAG	TAG 496	June 1, 1994	June 22, 1994	April 15, 2016
YB49573	Quartz	TAG	TAG 497	June 1, 1994	June 22, 1994	April 15, 2016
YB49574	Quartz	TAG	TAG 498	June 1, 1994	June 22, 1994	April 15, 2016
YB49575	Quartz	TAG	TAG 499	June 1, 1994	June 22, 1994	April 15, 2016
YB49576	Quartz	TAG	TAG 500	June 1, 1994	June 22, 1994	April 15, 2016
YB49577	Quartz	TAG	TAG 501	June 1, 1994	June 22, 1994	April 15, 2016
YB49578	Quartz	TAG	TAG 502	June 1, 1994	June 22, 1994	April 15, 2016
YB49579	Quartz	TAG	TAG 503	June 1, 1994	June 22, 1994	April 15, 2016
YB49580	Quartz	TAG	TAG 504	June 1, 1994	June 22, 1994	April 15, 2016
YB49581	Quartz	TAG	TAG 505	June 1, 1994	June 22, 1994	April 15, 2016
YB49582	Quartz	TAG	TAG 506	June 1, 1994	June 22, 1994	April 15, 2016
YB49583	Quartz	TAG	TAG 507	June 1, 1994	June 22, 1994	April 15, 2016
YB49584	Quartz	TAG	TAG 508	June 1, 1994	June 22, 1994	April 15, 2016
YB49585	Quartz	TAG	TAG 509	June 1, 1994	June 22, 1994	April 15, 2016
YB49586	Quartz	TAG	TAG 510	June 1, 1994	June 22, 1994	April 15, 2016
YB49587	Quartz	TAG	TAG 511	June 1, 1994	June 22, 1994	April 15, 2016
YB49588	Quartz	TAG	TAG 512	June 1, 1994	June 22, 1994	April 15, 2016
YB49589	Quartz	TAG	TAG 513	June 1, 1994	June 22, 1994	April 15, 2016
YB49590	Quartz	TAG	TAG 514	June 1, 1994	June 22, 1994	April 15, 2016
YB49591	Quartz	TAG	TAG 515	June 1, 1994	June 22, 1994	April 15, 2016
YB49592	Quartz	TAG	TAG 516	June 1, 1994	June 22, 1994	April 15, 2016
YB49654	Quartz	LIMY	LIMY 1	June 10, 1994	June 22, 1994	April 7, 2016
YB49655	Quartz	LIMY	LIMY 2	June 10, 1994	June 22, 1994	April 7, 2016
YB49656	Quartz	LIMY	LIMY 3	June 10, 1994	June 22, 1994	April 7, 2016
YB49657	Quartz	LIMY	LIMY 4	June 10, 1994	June 22, 1994	April 7, 2016
YB49658	Quartz	LIMY	LIMY 5	June 10, 1994	June 22, 1994	April 7, 2016
YB49659	Quartz	LIMY	LIMY 6	June 10, 1994	June 22, 1994	April 7, 2016
YB49660	Quartz	LIMY	LIMY 7	June 10, 1994	June 22, 1994	April 7, 2016
YB49661	Quartz	LIMY	LIMY 8	June 10, 1994	June 22, 1994	April 7, 2016
YB49662	Quartz	LIMY	LIMY 9	June 10, 1994	June 22, 1994	April 7, 2016
YB50436	Quartz	TAG	TAG 559	June 23, 1994	July 7, 1994	April 15, 2016
YB50437	Quartz	TAG	TAG 560	June 23, 1994	July 7, 1994	April 15, 2016
YB50438	Quartz	TAG	TAG 561	June 23, 1994	July 7, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB50439	Quartz	TAG	TAG 562	June 23, 1994	July 7, 1994	April 15, 2016
YB50510	Quartz	TAG	TAG 633	June 23, 1994	July 7, 1994	April 15, 2016
YB50511	Quartz	TAG	TAG 634	June 23, 1994	July 7, 1994	April 15, 2016
YB50512	Quartz	TAG	TAG 635	June 23, 1994	July 7, 1994	April 15, 2016
YB50513	Quartz	TAG	TAG 636	June 23, 1994	July 7, 1994	April 15, 2016
YB50514	Quartz	TAG	TAG 637	June 23, 1994	July 7, 1994	April 15, 2016
YB50515	Quartz	TAG	TAG 638	June 23, 1994	July 7, 1994	April 15, 2016
YB50516	Quartz	TAG	TAG 639	June 23, 1994	July 7, 1994	April 15, 2016
YB50517	Quartz	TAG	TAG 640	June 23, 1994	July 7, 1994	April 15, 2016
YB50518	Quartz	TAG	TAG 641	June 23, 1994	July 7, 1994	April 7, 2016
YB50519	Quartz	TAG	TAG 642	June 23, 1994	July 7, 1994	April 7, 2016
YB50521	Quartz	TAG	TAG 644	June 23, 1994	July 7, 1994	April 7, 2016
YB50589	Quartz	TAG	TAG 712	June 23, 1994	July 7, 1994	April 15, 2016
YB50590	Quartz	TAG	TAG 713	June 23, 1994	July 7, 1994	April 15, 2016
YB50591	Quartz	TAG	TAG 714	June 23, 1994	July 7, 1994	April 15, 2016
YB50592	Quartz	TAG	TAG 715	June 23, 1994	July 7, 1994	April 15, 2016
YB50593	Quartz	TAG	TAG 716	June 23, 1994	July 7, 1994	April 15, 2016
YB50594	Quartz	TAG	TAG 717	June 23, 1994	July 7, 1994	April 15, 2016
YB50595	Quartz	TAG	TAG 718	June 23, 1994	July 7, 1994	April 15, 2016
YB50596	Quartz	TAG	TAG 719	June 23, 1994	July 7, 1994	April 15, 2016
YB50600	Quartz	TAG	TAG 723	June 23, 1994	July 7, 1994	April 7, 2016
YB50602	Quartz	TAG	TAG 725	June 23, 1994	July 7, 1994	April 7, 2016
YB50604	Quartz	TAG	TAG 727	June 23, 1994	July 7, 1994	April 7, 2016
YB50606	Quartz	TAG	TAG 729	June 23, 1994	July 7, 1994	April 7, 2016
YB50607	Quartz	TAG	TAG 730	June 23, 1994	July 7, 1994	April 7, 2016
YB50608	Quartz	TAG	TAG 731	June 23, 1994	July 7, 1994	April 7, 2016
YB50609	Quartz	TAG	TAG 732	June 23, 1994	July 7, 1994	April 7, 2016
YB50611	Quartz	TAG	TAG 734	June 23, 1994	July 7, 1994	April 7, 2016
YB50613	Quartz	TAG	TAG 736	June 24, 1994	July 7, 1994	April 7, 2016
YB50615	Quartz	TAG	TAG 738	June 24, 1994	July 7, 1994	April 7, 2016
YB50617	Quartz	TAG	TAG 740	June 24, 1994	July 7, 1994	April 7, 2016
YB50623	Quartz	TAG	TAG 746	June 24, 1994	July 7, 1994	April 7, 2016
YB50625	Quartz	TAG	TAG 748	June 24, 1994	July 7, 1994	April 7, 2016
YB50627	Quartz	TAG	TAG 750	June 24, 1994	July 7, 1994	April 7, 2016
YB50629	Quartz	TAG	TAG 752	June 24, 1994	July 7, 1994	April 7, 2016
YB50631	Quartz	TAG	TAG 754	June 25, 1994	July 7, 1994	April 7, 2016
YB50633	Quartz	TAG	TAG 756	June 25, 1994	July 7, 1994	April 7, 2016
YB50635	Quartz	TAG	TAG 758	June 25, 1994	July 7, 1994	April 7, 2016
YB50637	Quartz	TAG	TAG 760	June 26, 1994	July 7, 1994	April 7, 2016
YB50639	Quartz	TAG	TAG 762	June 26, 1994	July 7, 1994	April 7, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB50641	Quartz	TAG	TAG 764	June 26, 1994	July 7, 1994	April 7, 2016
YB50643	Quartz	TAG	TAG 766	June 26, 1994	July 7, 1994	April 7, 2016
YB50664	Quartz	TAG	TAG 787	June 23, 1994	July 7, 1994	April 15, 2016
YB50665	Quartz	TAG	TAG 788	June 23, 1994	July 7, 1994	April 15, 2016
YB50666	Quartz	TAG	TAG 789	June 23, 1994	July 7, 1994	April 15, 2016
YB50667	Quartz	TAG	TAG 790	June 23, 1994	July 7, 1994	April 15, 2016
YB50670	Quartz	TAG	TAG 793	June 23, 1994	July 7, 1994	April 15, 2016
YB50671	Quartz	TAG	TAG 794	June 23, 1994	July 7, 1994	April 15, 2016
YB50692	Quartz	TAG	TAG 815	June 24, 1994	July 7, 1994	April 7, 2016
YB50716	Quartz	TAG	TAG 839	June 26, 1994	July 7, 1994	April 7, 2016
YB50718	Quartz	TAG	TAG 841	June 26, 1994	July 7, 1994	April 7, 2016
YB50720	Quartz	TAG	TAG 843	June 26, 1994	July 7, 1994	April 7, 2016
YB50722	Quartz	TAG	TAG 845	June 26, 1994	July 7, 1994	April 7, 2016
YB50723	Quartz	TAG	TAG 846	June 26, 1994	July 7, 1994	April 7, 2016
YB50725	Quartz	TAG	TAG 848	June 26, 1994	July 7, 1994	April 7, 2016
YB50734	Quartz	TAG	TAG 857	June 23, 1994	July 7, 1994	April 15, 2016
YB50735	Quartz	TAG	TAG 858	June 23, 1994	July 7, 1994	April 15, 2016
YB50736	Quartz	TAG	TAG 859	June 23, 1994	July 7, 1994	April 15, 2016
YB50737	Quartz	TAG	TAG 860	June 23, 1994	July 7, 1994	April 15, 2016
YB50740	Quartz	TAG	TAG 863	June 23, 1994	July 7, 1994	April 15, 2016
YB50741	Quartz	TAG	TAG 864	June 23, 1994	July 7, 1994	April 15, 2016
YB50798	Quartz	TAG	TAG 921	June 26, 1994	July 7, 1994	April 7, 2016
YB50800	Quartz	TAG	TAG 923	June 26, 1994	July 7, 1994	April 7, 2016
YB50801	Quartz	TAG	TAG 924	June 26, 1994	July 7, 1994	April 7, 2016
YB50802	Quartz	TAG	TAG 925	June 26, 1994	July 7, 1994	April 7, 2016
YB50805	Quartz	TAG	TAG 928	June 23, 1994	July 7, 1994	April 15, 2016
YB50806	Quartz	TAG	TAG 929	June 23, 1994	July 7, 1994	April 15, 2016
YB50807	Quartz	TAG	TAG 930	June 23, 1994	July 7, 1994	April 15, 2016
YB50808	Quartz	TAG	TAG 931	June 23, 1994	July 7, 1994	April 15, 2016
YB51214	Quartz	TAG	TAG 1057	June 27, 1994	July 19, 1994	April 15, 2016
YB51215	Quartz	TAG	TAG 1058	June 27, 1994	July 19, 1994	April 15, 2016
YB51216	Quartz	TAG	TAG 1059	June 27, 1994	July 19, 1994	April 15, 2016
YB51217	Quartz	TAG	TAG 1060	June 27, 1994	July 19, 1994	April 15, 2016
YB51218	Quartz	TAG	TAG 1061	June 27, 1994	July 19, 1994	April 15, 2016
YB51219	Quartz	TAG	TAG 1062	June 27, 1994	July 19, 1994	April 15, 2016
YB51220	Quartz	TAG	TAG 1063	June 27, 1994	July 19, 1994	April 15, 2016
YB51221	Quartz	TAG	TAG 1064	June 27, 1994	July 19, 1994	April 15, 2016
YB51222	Quartz	TAG	TAG 1065	June 27, 1994	July 19, 1994	April 15, 2016
YB51223	Quartz	TAG	TAG 1066	June 27, 1994	July 19, 1994	April 15, 2016
YB51224	Quartz	TAG	TAG 1067	June 27, 1994	July 19, 1994	April 15, 2016

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YB51225	Quartz	TAG	TAG 1068	June 27, 1994	July 19, 1994	April 15, 2016
YB51226	Quartz	TAG	TAG 1069	June 27, 1994	July 19, 1994	April 15, 2016
YB51227	Quartz	TAG	TAG 1070	June 27, 1994	July 19, 1994	April 15, 2016
YB51228	Quartz	TAG	TAG 1071	June 27, 1994	July 19, 1994	April 15, 2016
YB51229	Quartz	TAG	TAG 1072	June 27, 1994	July 19, 1994	April 15, 2016
YB51230	Quartz	TAG	TAG 1073	June 27, 1994	July 19, 1994	April 15, 2016
YB51231	Quartz	TAG	TAG 1074	June 27, 1994	July 19, 1994	April 15, 2016
YB51232	Quartz	TAG	TAG 1075	June 27, 1994	July 19, 1994	April 15, 2016
YB51233	Quartz	TAG	TAG 1076	June 27, 1994	July 19, 1994	April 15, 2016
YB51234	Quartz	TAG	TAG 1077	June 27, 1994	July 19, 1994	April 15, 2016
YB51235	Quartz	TAG	TAG 1078	June 27, 1994	July 19, 1994	April 15, 2016
YB51236	Quartz	TAG	TAG 1079	June 27, 1994	July 19, 1994	April 15, 2016
YB51237	Quartz	TAG	TAG 1080	June 27, 1994	July 19, 1994	April 15, 2016
YB51238	Quartz	TAG	TAG 1081	June 27, 1994	July 19, 1994	April 15, 2016
YB51239	Quartz	TAG	TAG 1082	June 27, 1994	July 19, 1994	April 15, 2016
YB51240	Quartz	TAG	TAG 1083	June 27, 1994	July 19, 1994	April 15, 2016
YB51241	Quartz	TAG	TAG 1084	June 27, 1994	July 19, 1994	April 15, 2016
YB51242	Quartz	TAG	TAG 1085	June 27, 1994	July 19, 1994	April 15, 2016
YB51243	Quartz	TAG	TAG 1086	June 27, 1994	July 19, 1994	April 15, 2016
YB51244	Quartz	TAG	TAG 1087	June 27, 1994	July 19, 1994	April 15, 2016
YB51245	Quartz	TAG	TAG 1088	June 27, 1994	July 19, 1994	April 15, 2016
YB51246	Quartz	TAG	TAG 1089	June 27, 1994	July 19, 1994	April 15, 2016
YB51247	Quartz	TAG	TAG 1090	June 27, 1994	July 19, 1994	April 15, 2016
YB51248	Quartz	TAG	TAG 1091	June 27, 1994	July 19, 1994	April 15, 2016
YB51249	Quartz	TAG	TAG 1092	June 27, 1994	July 19, 1994	April 15, 2016
YB51250	Quartz	TAG	TAG 1093	June 27, 1994	July 19, 1994	April 15, 2016
YB51251	Quartz	TAG	TAG 1094	June 27, 1994	July 19, 1994	April 15, 2016
YB51252	Quartz	TAG	TAG 1095	June 27, 1994	July 19, 1994	April 15, 2016
YB51253	Quartz	TAG	TAG 1096	June 27, 1994	July 19, 1994	April 15, 2018
YB51254	Quartz	TAG	TAG 1097	June 27, 1994	July 19, 1994	April 15, 2016
YB51255	Quartz	TAG	TAG 1098	June 27, 1994	July 19, 1994	April 15, 2018
YB51256	Quartz	TAG	TAG 1099	June 27, 1994	July 19, 1994	April 15, 2016
YB51257	Quartz	TAG	TAG 1100	June 27, 1994	July 19, 1994	April 15, 2018
YB51258	Quartz	TAG	TAG 1101	June 27, 1994	July 19, 1994	April 15, 2016
YB51259	Quartz	TAG	TAG 1102	June 27, 1994	July 19, 1994	April 15, 2018
YB51260	Quartz	TAG	TAG 1103	June 27, 1994	July 19, 1994	April 15, 2016
YB51261	Quartz	TAG	TAG 1104	June 27, 1994	July 19, 1994	April 15, 2016
YB51262	Quartz	TAG	TAG 1105	June 27, 1994	July 19, 1994	April 15, 2018
YB51263	Quartz	TAG	TAG 1106	June 27, 1994	July 19, 1994	April 15, 2018
YB51264	Quartz	TAG	TAG 1107	June 27, 1994	July 19, 1994	April 15, 2018

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB51265	Quartz	TAG	TAG 1108	June 27, 1994	July 19, 1994	April 15, 2018
YB51266	Quartz	TAG	TAG 1109	June 27, 1994	July 19, 1994	April 15, 2018
YB51267	Quartz	TAG	TAG 1110	June 27, 1994	July 19, 1994	April 15, 2018
YB51268	Quartz	TAG	TAG 1111	June 27, 1994	July 19, 1994	April 15, 2018
YB51269	Quartz	TAG	TAG 1112	June 27, 1994	July 19, 1994	April 15, 2018
YB51270	Quartz	TAG	TAG 1113	June 27, 1994	July 19, 1994	April 15, 2016
YB51271	Quartz	TAG	TAG 1114	June 27, 1994	July 19, 1994	April 15, 2016
YB55325	Quartz	TAG	TAG 1449	August 18, 1994	August 31, 1994	April 15, 2016
YB55326	Quartz	TAG	TAG 1450	August 18, 1994	August 31, 1994	April 15, 2016
YB55327	Quartz	TAG	TAG 1451	August 18, 1994	August 31, 1994	April 15, 2016
YB55328	Quartz	TAG	TAG 1452	August 18, 1994	August 31, 1994	April 15, 2016
YB55329	Quartz	TAG	TAG 1453	August 18, 1994	August 31, 1994	April 15, 2016
YB55330	Quartz	TAG	TAG 1454	August 18, 1994	August 31, 1994	April 15, 2016
YB55331	Quartz	TAG	TAG 1455	August 18, 1994	August 31, 1994	April 15, 2016
YB55332	Quartz	TAG	TAG 1456	August 18, 1994	August 31, 1994	April 15, 2016
YB55333	Quartz	TAG	TAG 1457	August 18, 1994	August 31, 1994	April 15, 2016
YB55334	Quartz	TAG	TAG 1458	August 18, 1994	August 31, 1994	April 15, 2016
YB55335	Quartz	TAG	TAG 1459	August 18, 1994	August 31, 1994	April 15, 2016
YB55336	Quartz	TAG	TAG 1460	August 18, 1994	August 31, 1994	April 15, 2016
YB55337	Quartz	TAG	TAG 1461	August 18, 1994	August 31, 1994	April 15, 2016
YB55338	Quartz	TAG	TAG 1462	August 18, 1994	August 31, 1994	April 15, 2016
YB55339	Quartz	TAG	TAG 1463	August 18, 1994	August 31, 1994	April 15, 2016
YB55340	Quartz	TAG	TAG 1464	August 18, 1994	August 31, 1994	April 15, 2016
YB55341	Quartz	TAG	TAG 1465	August 18, 1994	August 31, 1994	April 15, 2016
YB55342	Quartz	TAG	TAG 1466	August 18, 1994	August 31, 1994	April 15, 2016
YB55343	Quartz	TAG	TAG 1467	August 18, 1994	August 31, 1994	April 15, 2016
YB55344	Quartz	TAG	TAG 1468	August 18, 1994	August 31, 1994	April 15, 2016
YB55346	Quartz	TAG	TAG 1505	August 23, 1994	August 31, 1994	April 15, 2016
YB55348	Quartz	TAG	TAG 1507	August 23, 1994	August 31, 1994	April 15, 2016
YB55350	Quartz	TAG	TAG 1509	August 23, 1994	August 31, 1994	April 15, 2016
YB55377	Quartz	TAG	TAG 1538	August 23, 1994	August 31, 1994	April 15, 2016
YB55899	Quartz	TAG	TAG 1469	August 18, 1994	September 6, 1994	April 15, 2016
YB55900	Quartz	TAG	TAG 1470	August 18, 1994	September 6, 1994	April 15, 2016
YB55901	Quartz	TAG	TAG 1471	August 18, 1994	September 6, 1994	April 15, 2016
YB55902	Quartz	TAG	TAG 1472	August 18, 1994	September 6, 1994	April 15, 2016
YB55903	Quartz	TAG	TAG 1473	August 18, 1994	September 6, 1994	April 15, 2016
YB55904	Quartz	TAG	TAG 1474	August 18, 1994	September 6, 1994	April 15, 2016
YB55905	Quartz	TAG	TAG 1475	August 18, 1994	September 6, 1994	April 15, 2016
YB55906	Quartz	TAG	TAG 1476	August 18, 1994	September 6, 1994	April 15, 2016
YB55907	Quartz	TAG	TAG 1477	August 18, 1994	September 6, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB55908	Quartz	TAG	TAG 1478	August 18, 1994	September 6, 1994	April 15, 2016
YB55909	Quartz	TAG	TAG 1479	August 18, 1994	September 6, 1994	April 15, 2016
YB55910	Quartz	TAG	TAG 1480	August 18, 1994	September 6, 1994	April 15, 2016
YB55911	Quartz	TAG	TAG 1481	August 18, 1994	September 6, 1994	April 15, 2016
YB55912	Quartz	TAG	TAG 1482	August 18, 1994	September 6, 1994	April 15, 2016
YB55913	Quartz	TAG	TAG 1483	August 18, 1994	September 6, 1994	April 15, 2016
YB55914	Quartz	TAG	TAG 1484	August 18, 1994	September 6, 1994	April 15, 2016
YB55915	Quartz	TAG	TAG 1485	August 18, 1994	September 6, 1994	April 15, 2016
YB55916	Quartz	TAG	TAG 1486	August 18, 1994	September 6, 1994	April 15, 2016
YB55917	Quartz	TAG	TAG 1487	August 18, 1994	September 6, 1994	April 15, 2016
YB55918	Quartz	TAG	TAG 1488	August 18, 1994	September 6, 1994	April 15, 2016
YB55919	Quartz	TAG	TAG 1489	August 18, 1994	September 6, 1994	April 15, 2016
YB55920	Quartz	TAG	TAG 1490	August 18, 1994	September 6, 1994	April 15, 2016
YB55921	Quartz	TAG	TAG 1491	August 18, 1994	September 6, 1994	April 15, 2016
YB55922	Quartz	TAG	TAG 1492	August 18, 1994	September 6, 1994	April 15, 2016
YB55923	Quartz	TAG	TAG 1493	August 18, 1994	September 6, 1994	April 15, 2016
YB55924	Quartz	TAG	TAG 1494	August 18, 1994	September 6, 1994	April 15, 2016
YB55925	Quartz	TAG	TAG 1495	August 18, 1994	September 6, 1994	April 15, 2016
YB55926	Quartz	TAG	TAG 1496	August 22, 1994	September 6, 1994	April 15, 2016
YB55927	Quartz	TAG	TAG 1497	August 22, 1994	September 6, 1994	April 15, 2016
YB55928	Quartz	TAG	TAG 1498	August 22, 1994	September 6, 1994	April 15, 2016
YB55929	Quartz	TAG	TAG 1499	August 22, 1994	September 6, 1994	April 15, 2016
YB55930	Quartz	TAG	TAG 1500	August 22, 1994	September 6, 1994	April 15, 2016
YB55931	Quartz	TAG	TAG 1501	August 22, 1994	September 6, 1994	April 15, 2016
YB55934	Quartz	TAG	TAG 1536	August 22, 1994	September 6, 1994	April 15, 2016
YB55935	Quartz	TAG	TAG 1537	August 22, 1994	September 6, 1994	April 15, 2016
YB55936	Quartz	TAG	TAG 1539	August 22, 1994	September 6, 1994	April 15, 2016
YB55937	Quartz	TAG	TAG 1540	August 22, 1994	September 6, 1994	April 15, 2016
YB55938	Quartz	TAG	TAG 1541	August 22, 1994	September 6, 1994	April 15, 2016
YB56713	Quartz	TAG	TAG 1544	November 16, 1994	November 30, 1994	April 15, 2016
YB56714	Quartz	TAG	TAG 1545	November 16, 1994	November 30, 1994	April 15, 2016
YB56715	Quartz	TAG	TAG 1546	November 16, 1994	November 30, 1994	April 15, 2016
YB56716	Quartz	TAG	TAG 1547	November 16, 1994	November 30, 1994	April 15, 2016
YB56717	Quartz	TAG	TAG 1548	November 16, 1994	November 30, 1994	April 15, 2016
YB56718	Quartz	TAG	TAG 1549	November 16, 1994	November 30, 1994	April 15, 2016
YB56719	Quartz	TAG	TAG 1550	November 16, 1994	November 30, 1994	April 15, 2016
YB56720	Quartz	TAG	TAG 1551	November 16, 1994	November 30, 1994	April 15, 2016
YB56721	Quartz	TAG	TAG 1552	November 16, 1994	November 30, 1994	April 15, 2016
YB56722	Quartz	TAG	TAG 1553	November 16, 1994	November 30, 1994	April 15, 2016
YB56729	Quartz	TAG	TAG 1560	November 16, 1994	November 30, 1994	April 15, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB56730	Quartz	TAG	TAG 1561	November 16, 1994	November 30, 1994	April 15, 2016
YB56731	Quartz	TAG	TAG 1562	November 16, 1994	November 30, 1994	April 15, 2016
YB56732	Quartz	TAG	TAG 1563	November 16, 1994	November 30, 1994	April 15, 2016
YB56733	Quartz	TAG	TAG 1564	November 16, 1994	November 30, 1994	April 15, 2016
YB56734	Quartz	TAG	TAG 1565	November 16, 1994	November 30, 1994	April 15, 2016
YB56735	Quartz	TAG	TAG 1566	November 16, 1994	November 30, 1994	April 15, 2016
YB56736	Quartz	TAG	TAG 1567	November 16, 1994	November 30, 1994	April 15, 2016
YB56737	Quartz	TAG	TAG 1568	November 16, 1994	November 30, 1994	April 15, 2016
YB56738	Quartz	TAG	TAG 1569	November 16, 1994	November 30, 1994	April 15, 2016
YB62677	Quartz	ON	ON 21	September 14, 1995	October 2, 1995	April 2, 2016
YB62678	Quartz	ON	ON 22	September 14, 1995	October 2, 1995	April 2, 2016
YB62679	Quartz	ON	ON 23	September 14, 1995	October 2, 1995	April 2, 2016
YB62680	Quartz	ON	ON 24	September 14, 1995	October 2, 1995	April 2, 2016
YB62681	Quartz	ON	ON 25	September 14, 1995	October 2, 1995	April 2, 2016
YB62682	Quartz	ON	ON 26	September 14, 1995	October 2, 1995	April 2, 2016
YB62683	Quartz	ON	ON 27	September 14, 1995	October 2, 1995	April 2, 2016
YB62684	Quartz	ON	ON 28	September 14, 1995	October 2, 1995	April 2, 2016
YB62685	Quartz	ON	ON 29	September 14, 1995	October 2, 1995	April 2, 2016
YB62686	Quartz	ON	ON 30	September 14, 1995	October 2, 1995	April 2, 2016
YB62687	Quartz	ON	ON 31	September 14, 1995	October 2, 1995	April 2, 2016
YB62688	Quartz	ON	ON 32	September 14, 1995	October 2, 1995	April 2, 2016
YB62689	Quartz	ON	ON 33	September 14, 1995	October 2, 1995	April 2, 2016
YB62690	Quartz	ON	ON 34	September 14, 1995	October 2, 1995	April 2, 2016
YB62691	Quartz	ON	ON 35	September 14, 1995	October 2, 1995	April 2, 2016
YB62692	Quartz	ON	ON 36	September 14, 1995	October 2, 1995	April 2, 2016
YB62693	Quartz	ON	ON 37	September 14, 1995	October 2, 1995	April 2, 2016
YB62694	Quartz	ON	ON 38	September 14, 1995	October 2, 1995	April 2, 2016
YB62695	Quartz	ON	ON 39	September 17, 1995	October 2, 1995	April 2, 2016
YB62696	Quartz	ON	ON 40	September 17, 1995	October 2, 1995	April 2, 2016
YB62697	Quartz	ON	ON 41	September 17, 1995	October 2, 1995	April 2, 2016
YB62698	Quartz	ON	ON 42	September 14, 1995	October 2, 1995	April 2, 2016
YB62699	Quartz	ON	ON 43	September 14, 1995	October 2, 1995	April 2, 2016
YB62700	Quartz	ON	ON 44	September 14, 1995	October 2, 1995	April 2, 2016
YB62701	Quartz	ON	ON 45	September 14, 1995	October 2, 1995	April 2, 2016
YB62702	Quartz	ON	ON 46	September 14, 1995	October 2, 1995	April 2, 2016
YB62703	Quartz	ON	ON 47	September 14, 1995	October 2, 1995	April 2, 2016
YB62704	Quartz	ON	ON 48	September 14, 1995	October 2, 1995	April 2, 2016
YB62705	Quartz	ON	ON 49	September 14, 1995	October 2, 1995	April 2, 2016
YB62706	Quartz	ON	ON 50	September 14, 1995	October 2, 1995	April 2, 2016
YB62707	Quartz	ON	ON 51	September 14, 1995	October 2, 1995	April 2, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB62708	Quartz	ON	ON 52	September 14, 1995	October 2, 1995	April 2, 2016
YB62709	Quartz	ON	ON 53	September 14, 1995	October 2, 1995	April 2, 2016
YB62710	Quartz	ON	ON 54	September 14, 1995	October 2, 1995	April 2, 2016
YB62711	Quartz	ON	ON 55	September 14, 1995	October 2, 1995	April 2, 2016
YB62712	Quartz	ON	ON 56	September 14, 1995	October 2, 1995	April 2, 2016
YB62713	Quartz	ON	ON 57	September 14, 1995	October 2, 1995	April 2, 2016
YB62714	Quartz	ON	ON 58	September 14, 1995	October 2, 1995	April 2, 2016
YB62715	Quartz	ON	ON 59	September 14, 1995	October 2, 1995	April 2, 2016
YB62716	Quartz	ON	ON 60	September 14, 1995	October 2, 1995	April 2, 2016
YB62717	Quartz	ON	ON 61	September 14, 1995	October 2, 1995	April 2, 2016
YB62718	Quartz	ON	ON 62	September 14, 1995	October 2, 1995	April 2, 2016
YB62719	Quartz	ON	ON 63	September 14, 1995	October 2, 1995	April 2, 2016
YB62720	Quartz	ON	ON 64	September 14, 1995	October 2, 1995	April 2, 2016
YB62721	Quartz	ON	ON 65	September 14, 1995	October 2, 1995	April 2, 2016
YB62722	Quartz	ON	ON 66	September 14, 1995	October 2, 1995	April 2, 2016
YB62723	Quartz	ON	ON 67	September 14, 1995	October 2, 1995	April 2, 2016
YB62724	Quartz	ON	ON 68	September 14, 1995	October 2, 1995	April 2, 2016
YB62725	Quartz	ON	ON 69	September 14, 1995	October 2, 1995	April 2, 2016
YB62726	Quartz	ON	ON 70	September 14, 1995	October 2, 1995	April 2, 2016
YB62727	Quartz	ON	ON 71	September 14, 1995	October 2, 1995	April 2, 2016
YB62728	Quartz	ON	ON 72	September 14, 1995	October 2, 1995	April 2, 2016
YB62729	Quartz	ON	ON 73	September 14, 1995	October 2, 1995	April 2, 2016
YB62730	Quartz	ON	ON 74	September 14, 1995	October 2, 1995	April 2, 2016
YB62731	Quartz	ON	ON 75	September 14, 1995	October 2, 1995	April 2, 2016
YB62732	Quartz	ON	ON 76	September 14, 1995	October 2, 1995	April 2, 2016
YB62733	Quartz	ON	ON 77	September 14, 1995	October 2, 1995	April 2, 2016
YB62734	Quartz	ON	ON 78	September 14, 1995	October 2, 1995	April 2, 2016
YB62735	Quartz	ON	ON 79	September 14, 1995	October 2, 1995	April 2, 2016
YB62736	Quartz	ON	ON 80	September 14, 1995	October 2, 1995	April 2, 2016
YB62737	Quartz	ON	ON 81	September 14, 1995	October 2, 1995	April 2, 2016
YB62738	Quartz	ON	ON 82	September 14, 1995	October 2, 1995	April 2, 2016
YB62739	Quartz	ON	ON 83	September 14, 1995	October 2, 1995	April 2, 2016
YB62740	Quartz	ON	ON 84	September 14, 1995	October 2, 1995	April 2, 2016
YB62741	Quartz	ON	ON 85	September 14, 1995	October 2, 1995	April 2, 2016
YB62742	Quartz	ON	ON 86	September 14, 1995	October 2, 1995	April 2, 2016
YB62743	Quartz	ON	ON 87	September 14, 1995	October 2, 1995	April 2, 2016
YB62744	Quartz	ON	ON 88	September 14, 1995	October 2, 1995	April 2, 2016
YB62745	Quartz	ON	ON 89	September 14, 1995	October 2, 1995	April 2, 2016
YB62746	Quartz	ON	ON 90	September 14, 1995	October 2, 1995	April 2, 2016
YB62747	Quartz	ON	ON 91	September 14, 1995	October 2, 1995	April 2, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB62748	Quartz	ON	ON 92	September 14, 1995	October 2, 1995	April 2, 2016
YB62749	Quartz	ON	ON 93	September 14, 1995	October 2, 1995	April 2, 2016
YB62750	Quartz	ON	ON 94	September 14, 1995	October 2, 1995	April 2, 2016
YB62751	Quartz	ON	ON 95	September 14, 1995	October 2, 1995	April 2, 2016
YB62752	Quartz	ON	ON 96	September 14, 1995	October 2, 1995	April 2, 2016
YB62753	Quartz	ON	ON 97	September 14, 1995	October 2, 1995	April 2, 2016
YB62754	Quartz	ON	ON 98	September 14, 1995	October 2, 1995	April 2, 2016
YB62755	Quartz	ON	ON 99	September 14, 1995	October 2, 1995	April 2, 2016
YB62756	Quartz	ON	ON 100	September 14, 1995	October 2, 1995	April 2, 2016
YB62757	Quartz	ON	ON 101	September 14, 1995	October 2, 1995	April 2, 2016
YB62760	Quartz	ON	ON 104	September 14, 1995	October 2, 1995	April 2, 2016
YB62761	Quartz	ON	ON 105	September 14, 1995	October 2, 1995	April 2, 2016
YB62762	Quartz	ON	ON 106	September 14, 1995	October 2, 1995	April 2, 2016
YB62763	Quartz	ON	ON 107	September 14, 1995	October 2, 1995	April 2, 2016
YB62764	Quartz	ON	ON 108	September 14, 1995	October 2, 1995	April 2, 2016
YB62765	Quartz	ON	ON 109	September 14, 1995	October 2, 1995	April 2, 2016
YB62766	Quartz	ON	ON 110	September 14, 1995	October 2, 1995	April 2, 2016
YB62767	Quartz	ON	ON 111	September 14, 1995	October 2, 1995	April 2, 2016
YB62768	Quartz	ON	ON 112	September 14, 1995	October 2, 1995	April 2, 2016
YB62769	Quartz	ON	ON 113	September 14, 1995	October 2, 1995	April 2, 2016
YB62772	Quartz	ON	ON 116	September 14, 1995	October 2, 1995	April 2, 2016
YB62773	Quartz	ON	ON 117	September 14, 1995	October 2, 1995	April 2, 2016
YB62774	Quartz	ON	ON 118	September 14, 1995	October 2, 1995	April 2, 2016
YB62775	Quartz	ON	ON 119	September 14, 1995	October 2, 1995	April 2, 2016
YB62776	Quartz	ON	ON 120	September 14, 1995	October 2, 1995	April 2, 2016
YB62777	Quartz	ON	ON 121	September 14, 1995	October 2, 1995	April 2, 2016
YB62778	Quartz	ON	ON 122	September 14, 1995	October 2, 1995	April 2, 2016
YB62779	Quartz	ON	ON 123	September 14, 1995	October 2, 1995	April 2, 2016
YB62780	Quartz	ON	ON 124	September 14, 1995	October 2, 1995	April 2, 2016
YB62781	Quartz	ON	ON 125	September 14, 1995	October 2, 1995	April 2, 2016
YB62816	Quartz	ON	ON 162	September 16, 1995	October 2, 1995	April 2, 2016
YB62817	Quartz	ON	ON 163	September 16, 1995	October 2, 1995	April 2, 2016
YB62818	Quartz	ON	ON 164	September 16, 1995	October 2, 1995	April 2, 2016
YB62819	Quartz	ON	ON 165	September 16, 1995	October 2, 1995	April 2, 2016
YB62820	Quartz	ON	ON 166	September 16, 1995	October 2, 1995	April 2, 2016
YB62821	Quartz	ON	ON 167	September 16, 1995	October 2, 1995	April 2, 2016
YB62822	Quartz	ON	ON 168	September 16, 1995	October 2, 1995	April 2, 2016
YB62823	Quartz	ON	ON 169	September 16, 1995	October 2, 1995	April 2, 2016
YB62824	Quartz	ON	ON 170	September 16, 1995	October 2, 1995	April 2, 2016
YB62825	Quartz	ON	ON 171	September 16, 1995	October 2, 1995	April 2, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB62826	Quartz	ON	ON 172	September 16, 1995	October 2, 1995	April 2, 2016
YB62827	Quartz	ON	ON 173	September 16, 1995	October 2, 1995	April 2, 2016
YB62828	Quartz	ON	ON 174	September 16, 1995	October 2, 1995	April 2, 2016
YB62830	Quartz	ON	ON 176	September 16, 1995	October 2, 1995	April 2, 2016
YB62832	Quartz	ON	ON 178	September 16, 1995	October 2, 1995	April 2, 2016
YB62834	Quartz	ON	ON 180	September 16, 1995	October 2, 1995	April 2, 2016
YB62851	Quartz	ON	ON 197	September 16, 1995	October 2, 1995	April 2, 2016
YB62852	Quartz	ON	ON 198	September 16, 1995	October 2, 1995	April 2, 2016
YB62853	Quartz	ON	ON 199	September 16, 1995	October 2, 1995	April 2, 2016
YB62854	Quartz	ON	ON 200	September 16, 1995	October 2, 1995	April 2, 2016
YB62855	Quartz	ON	ON 201	September 16, 1995	October 2, 1995	April 2, 2016
YB62856	Quartz	ON	ON 202	September 16, 1995	October 2, 1995	April 2, 2016
YB62857	Quartz	ON	ON 203	September 16, 1995	October 2, 1995	April 2, 2016
YB62859	Quartz	ON	ON 205	September 17, 1995	October 2, 1995	April 2, 2016
YB85276	Quartz	KZK	KZK 1	July 1, 1996	July 12, 1996	April 12, 2016
YB85277	Quartz	KZK	KZK 2	July 1, 1996	July 12, 1996	April 12, 2016
YB85278	Quartz	KZK	KZK 3	July 1, 1996	July 12, 1996	April 12, 2016
YB85279	Quartz	KZK	KZK 4	July 1, 1996	July 12, 1996	April 12, 2016
YB85280	Quartz	KZK	KZK 5	July 1, 1996	July 12, 1996	April 12, 2016
YB85281	Quartz	KZK	KZK 6	July 1, 1996	July 12, 1996	April 12, 2016
YB85282	Quartz	KZK	KZK 7	July 1, 1996	July 12, 1996	April 12, 2016
YB85283	Quartz	KZK	KZK 8	July 1, 1996	July 12, 1996	April 12, 2016
YB85284	Quartz	KZK	KZK 9	July 1, 1996	July 12, 1996	April 12, 2016
YB85285	Quartz	KZK	KZK 10	July 1, 1996	July 12, 1996	April 12, 2016
YB85286	Quartz	KZK	KZK 11	July 1, 1996	July 12, 1996	April 12, 2016
YB85287	Quartz	KZK	KZK 12	July 1, 1996	July 12, 1996	April 12, 2016
YB85288	Quartz	KZK	KZK 13	July 1, 1996	July 12, 1996	April 12, 2016
YB85289	Quartz	KZK	KZK 14	July 1, 1996	July 12, 1996	April 12, 2016
YB85290	Quartz	KZK	KZK 15	July 1, 1996	July 12, 1996	April 12, 2016
YB85291	Quartz	KZK	KZK 16	July 1, 1996	July 12, 1996	April 12, 2016
YB85292	Quartz	KZK	KZK 17	July 1, 1996	July 12, 1996	April 12, 2016
YB85293	Quartz	KZK	KZK 18	July 1, 1996	July 12, 1996	April 12, 2016
YB85294	Quartz	KZK	KZK 19	July 1, 1996	July 12, 1996	April 12, 2016
YB85295	Quartz	KZK	KZK 20	July 1, 1996	July 12, 1996	April 12, 2016
YB85296	Quartz	KZK	KZK 21	July 1, 1996	July 12, 1996	April 12, 2016
YB85297	Quartz	KZK	KZK 22	July 1, 1996	July 12, 1996	April 12, 2016
YB85298	Quartz	KZK	KZK 23	July 1, 1996	July 12, 1996	April 12, 2016
YB85299	Quartz	KZK	KZK 24	July 1, 1996	July 12, 1996	April 12, 2016
YB85300	Quartz	KZK	KZK 25	July 1, 1996	July 12, 1996	April 12, 2016
YB85301	Quartz	KZK	KZK 26	July 1, 1996	July 12, 1996	April 12, 2016

Grant Number	Tenure Type	Claim Name	Claim Label	Staking Date	Recording Date	Expiry Date[1]
YB85302	Quartz	KZK	KZK 27	July 1, 1996	July 12, 1996	April 12, 2016
YB85303	Quartz	KZK	KZK 28	July 1, 1996	July 12, 1996	April 12, 2016
YB85304	Quartz	KZK	KZK 29	July 1, 1996	July 12, 1996	April 12, 2016

Appendix D: Road rehabilitation report

ONSITE
Engineering Ltd.

Road Maintenance Assessment
for

Kudz Ze Kayah
Access Road Maintenance

Prepared for:

BMC Minerals (No 1) Ltd.
Suite 2000 – 1066 West Hastings St.
Vancouver, BC
V6E 3X2

Attention: Mr. Scott Donaldson

June 11, 2015
File: 1356-1

Interior Operations

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1.0 Introduction and Proposed Development

This report presents the results of an investigation completed by Onsite Engineering Ltd. (OEL) for the Access Road to the Kudz Ze Kayah Project northwest of Watson Lake in Yukon Territory, Canada. The Access road is approximately 25 kilometres in length and extends from the Robert Campbell Highway to the project site. See figure 1 for an overview map. The assessment was carried out at the request of Mr. Robin Black on behalf of BMC Minerals (No 1) Ltd.

The access road is an existing, older, unused, single lane gravel road.

2.0 Rationale for the Assessment

The assessment was carried out to ensure that the proposed exploration activities at the Kudz Ze Kayah project site have adequate access and that the use of the road for these purposes would not adversely affect the overall road stability and subgrade integrity. Adequate access, in this case, is defined as safe industrial access for all equipment and personnel without degrading the current condition of the road.



Figure 1 – Location map for the Kudz Ze Kayah Access Road

3.0 Limitations of the Assessment

This report has been prepared in accordance with generally accepted engineering and geotechnical practises in British Columbia and the Yukon Territory. No other warranty, expressed or implied, is made. General observations are made on the existing road prism, slope gradients, shape, morphology and the general stability. Information on the subsurface soil, groundwater and bedrock conditions are gathered from bedrock outcrops and the cutslopes along the road corridor. No subsurface information from deep test pits or drill holes was available.

The classification and identification of the type and condition of the geological units present are judgemental in nature. Variations (even over short distances) are inherent and are a function of natural processes. OEL does not represent or warrant that the conditions listed in the report are exact and the user should recognise that variations may exist. Sub-surface conditions, other than those identified, may be encountered requiring a review of the recommendations contained in this report, with amendments made as needed.

4.0 Background Data and Fieldwork

Prior to fieldwork, Google Earth Imagery was reviewed and the approximate road route was tracked. No other information regarding the site was available prior to the site assessment.

Fieldwork was completed on May 27th by Jeremy Araki, P.Eng of OEL, accompanied by Tim Moon of T. Moon Construction (11808 Yukon Inc.) and Ted Danyluk from Castle Rock Enterprises. Field work involved, vehicle, AVT, and foot traverses of the road alignment and adjacent areas of concern.

5.0 General Site Description

5.1 Terrain Description

The access road generally follows the gentle benches and ridges above the valley bottom leading to the project site. Slopes are gentle with many flat swampy areas dissected by low winding ridges. There is one large bridge crossing in a broad gentle draw. There are a large number of small streams and low, wet swales across the entire project area. The alignment climbs slowly from approximately 1040m asl to 1400m asl at the project site.

Soils are predominantly sand and gravel deposits intersected by areas of silty soils with a large component of gravel to boulder sized material derived from the local Schist outcrops. Areas of low slope and or poor drainage have a heavy organic layer over shallow permafrost. No natural instability was noted in the area near the road or on similar terrain.

5.2 Bedrock and Surficial Materials

Bedrock outcrops noted during field assessment were composed of heavily weathered Schist. Surficial material overlying bedrock in these areas consists of variable thickness silt with some sand and a high component of gravel to small boulder sized material from the local bedrock.

Away from the areas of shallow or exposed bedrock, the sand and gravel deposits are 1 to 3m thick (as observed in the gravel pits) and are generally found on the low gentle ridges between the flat swampy areas.

Materials under the swampy overland construction areas were not visible but can be assumed to be frozen and incompetent if exposed and reworked.

6.0 Access Road - Discussion, Results and Recommendations

The Kudz Ze Kayah Access Road is an existing road that has not been utilized in a number of years and now has two major crossing failures. Further, most of the road shoulders and ditches are grown in with local vegetation.

Table 6.1 contains site descriptions, and maintenance prescriptions for the access road.

6.1 Anticipated Soil and bedrock Conditions

Observations made during the field assessment suggest that the following subsurface conditions are present along the alignment:

1. The majority of the road traverses sand and gravel deposits over gentle terrain. These areas are generally well drained except where flat or near flat.

2. Much of the remaining road alignment rests on the shallow silty soils with high gravel to boulder content derived from the local Schist bedrock. No blasting is expected to be required for the maintenance work.

3. The remaining portions of the alignment fall on the flat swampy terrain likely underlain with shallow permafrost. These areas have been overlanded with either the adjacent sand and gravels or the blocky weathered silt dominated soils from the schist.

Ground types expected to be found at the following chainages: 0+000 – 12+136, sand and gravels. 12+136 – 14+539, schist. 14+539 – 18+490, sand and gravels. 18+490 – 19+993, transition from sand and gravel to schist. 19+993 – 22+497, schist. 22+497 – 24+898, sand and gravels.

6.2 Seepage Conditions

Surficial materials within the study area appear to be generally well to moderately well drained in the sands and gravels, moderately to imperfect drainage in the silts, and poor drainage in the swampy flats. Many of the low areas in the cut slopes have shallow sub surface flows.

6.3 Cutslope Excavation Recommendations

The existing cutslopes are relatively stable and are all low given the gentle gradients surrounding the alignment. Any new excavations along the road or in borrow sites should be sloped similarly to avoid sloughing. Only one area of instability was noted in an overburden pile that had a recently active face. It did not appear to affect the road or the surrounding terrain measurably.

6.4 Road Prism Recommendations

Road maintenance recommendations along the alignment are generally required to reshape the existing prism to crown the road and deepen the ditches to properly drain the road prism. Most of this work is to be completed with a grader. There are a few areas where the ditching may require an excavator. Further, at least half of the cross drain culverts will require their sumps cleaned with an excavator. The two crossings that have washed out will require full road prism rehabilition and re-installation of existing culverts.

6.5 Road Drainage Recommendations

Cross drain culverts are installed in all low seepage areas and in crossings. Only three additional cross drain culverts are prescribed near the end of the alignment. These culverts can be installed when the road is opened for mining activities and need not be installed for the planned exploration activities. One of the failed crossings is dramatically undersized and will require the installation of

an addition culvert. This culvert should be added during the current maintenance work.

6.6 Bridge Crossing Condition and Recommendations

The existing structure is a pair of riveted rails cars with a timber deck resting on sill logs on a bin wall abutment. The riveted rail cars are not the standard Hawker Siddeley type cars that are approved for this type of application. Further, the timber deck is not adequate to spread the loads, without eccentricity, to the two rail cars. There are no guard rails on the structure. The bin walls under the abutments have yielded. This is likely due to inadequate compaction during construction and the subsequent surcharge loading of the bridge and road fill.

This existing structure may be re-used. To re-use the existing structure the superstructure must be removed and the binwalls excavated and backfilled with geosynthetic reinforced soil (GRS). Then, the failed bin walls are only to act as a form for the GRS. However, due to the close proximity of the bridge bearing to the bin wall face, a concrete strip footing must be added as well. The rail cars may be replaced and properly bolted together with a minimum 14' wide timber deck as per BC MoF Standard Drawings for a BCFS L-75 timber deck. Due to the rail cars not being the standard Hawker Siddeley welded type, a reduced load rating would still be applied. This reduction is somewhat judgemental in nature but would likely be half the full load rating, or a 34 tonne GVW five axle truck and trailer.

A second option for the structure repair is to install a portable all steel two piece bridge over the existing structure that would span the rail cars and the bin abutments. This would require a 60' long bridge. The existing rail cars can either be removed or left in place. If left in place the approach roads would need to be built up to accommodate the higher bridge height.

A permanent solution can be GRS abutments rebuilt with similar forms to the bins and either the portable superstructure or a cheaper dual steel I-beam bridge with a timber or concrete deck. In this case the rail car is to be removed and placed outside the confines of the stream draw. The top few forms from the binwall under the bridge are to be removed to a point where the superstructure can be installed with the deck elevation to match the existing deck elevations (the number of forms to be removed will depend on the type of superstructure supplied but will be between one and three). The two middle bins under the bridge will be excavated down to original ground or at least 2m. The fill will be replaced with sand and gravel compacted to 95% SPMDD in layers no thicker than 8" placed loose. Between each layer of fill non-woven Armtec 855 geotextile or approved equivalent. Sills are to be minimum 8"x16"x20' long treated douglas fir timbers. The wing wall bins are to be left in place to help retain fill. Treated 4x12"x20' long ballast timbers are required; minimum 4 per side.

6.7 Bridge to Other Side of Valley at the Project Site

There is an old structure just off the assessed road at 24+315 that is in very poor condition. The structure accesses the exploration trails on that side of the valley. It is an older rail bulkhead type structure on lock blocks. It is not serviceable and will require a new crossing structure if this road is required.

Table 6.1: Kudz Ze Kayah Access Road: Summary of Observations, Risk Analysis, and Construction Recommendations

Road Section		Terrain Characteristics			Existing Structure	Recommendations	Required Equipment	Estimated Effort
Start Δ[1]	End Δ	Surficial Materials and Slope Morphology	Est. depth to bedrock	Drainage				
0+000		Silty Sands and gravels visible, highly disturbed from development, no issues noted	5+	Well	Intersection with Robert Campbell Highway	None	N/A	N/A
0+281		Sand and Gravel	5+	Well	Security shack and gate	None	N/A	N/A
0+728		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
0+830		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
1+255		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
1+326		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
1+678		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
1+770		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
3+386		Sand and Gravel	5+	Well	Functioning CSP in a stream	None	N/A	N/A
3+713		Sand and Gravel on ridges surrounding. Swampy area with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
3+975		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
4+458		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
5+024		Sand and Gravel on ridges surrounding. Swampy area with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Functioning CSP in a stream	Approximately 70m of road just before the crossing in the swamp will require an additional 0.3m of ballasting. Borrow material from sand and gravel ridge just before swamp. Approximately 15 loads of ballast required.	Pit Excavator Gravel Truck Site Excavator	7hrs 7hrs 7hrs
5+386		Sand and Gravel	5+	Well	Gravel pit, would also function as lay down area	None	N/A	N/A
5+741		Sand and Gravel on ridges surrounding. Wet draw with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Two CSP culverts with eroded road fill	Rebuild fill slope. 5 loads required. Borrow pit just before crossing. Re-install the higher culvert at a lower elevation	Pit Excavator Gravel Truck Site Excavator	3hrs 3hrs 6hrs
6+191		Sand and Gravel on ridges surrounding. Wet draw with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Stream crossing in large draw.	Build up road alignment for permanent mine access road. No work required for exploration activities	N/A	N/A
6+339		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
6+456		Swampy area	5+	Poor	Functioning CSP cross drain culvert	Insufficient fill over culvert, frost pushing it up out of the road, add and grade 4 loads of fill from previous pit	Pit Excavator Gravel Truck Site Excavator	2hrs 2hrs 2hrs
6+785		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
6+884		Sand and Gravel	5+	Well	Functioning CSP in a stream	None	N/A	N/A
7+018		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
7+433		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
7+633		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
7+829		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
7+909		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
8+214		Sand and Gravel on ridges surrounding. Swampy area with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A

[1] Road stations are referenced as P-Line stations from the digital Roadeng survey notes which may or may not represent marked field locations

Table 6.1: Kudz Ze Kayah Access Road: Summary of Observations, Risk Analysis, and Construction Recommendations

Road Section		Terrain Characteristics			Existing Structure	Recommendations	Required Equipment	Estimated Effort
Start Δ[1]	End Δ	Surficial Materials and Slope Morphology	Est. depth to bedrock	Drainage				
8+263		Sand and Gravel on ridges surrounding. Swampy area with likely overland construction. Underlying materials unknown but assume incompetent	2+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
8+921		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
9+065		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert with erosion over road and on fill slope	Fix with Grader.	N/A	N/A
9+329		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
9+728		Silty Sand and Gravel, flat with moderate to poor drainage	2+	Mod	Eroded stream crossing with two main culverts and one small overflow culvert	Requires 9 loads of fill. Re-install the small overflow culvert as well. Suggest upgrading the crossing with riprap but that is not necessary for exploration activities, although it will help avoid future washouts. Do not use material form the pit just before this site, it has too many fines, dig from the bank near the culvert previous to that. Add 10 more hours of excavator and 5 more for the truck if armouring is completed. Existing rock can be found at roadside further up the road.	Pit Excavator Gravel Truck Site Excavator	5hrs 5hrs 8hrs
10+065		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
10+455		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
10+576		Sand and Gravel, flat with moderate to poor drainage	2+	Mod	Eroded stream crossing with undersized culvert	Requires 8 loads of fill. Repair fill and add another 600mm diameter X 12m long CSP.	Pit Excavator Gravel Truck Site Excavator	4hrs 4hrs 8hrs
10+796		Sand and Gravel, flat with moderate to poor drainage	2+	Mod	Road settled and leaning	For temporary exploration use, grade to level slightly, for long term mining use add 10 loads of fill	Grader	1hr over regular grading time
11+244		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
11+291		Sand and Gravel	5+	Well	CSP wth Crushed end	Pull up on end of culvert to reshape when cleaning the sump	Excavator	Time included in sump cleaning item
12+136		Silty soils derived from schist	1+	Mod	Schist borrow pit. Sand and gravel section ends, bedrock closer to surface.	None	N/A	N/A
12+330		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
12+516		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
12+857		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
13+048		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
13+276		Silty soils derived from schist	1+	Mod	Functioning CSP (2) cross drain culverts	None	N/A	N/A
13+637		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
13+778		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
13+933		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
14+108		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
14+524		Silty soils derived from schist. After this the soils transition back to Sand and Gravels	1+	Mod	Functioning CSP cross drain culvert.	None	N/A	N/A
15+089		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
15+211		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
16+220		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
16+895		Sand and Gravel on ridges surrounding. Wet draw with likely overland construction. Underlying materials unknown but assume incompetent	5+	Mod	Functioning CSP in a stream	None	N/A	N/A
17+056		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
17+476		Sand and Gravel ridges and broad draw with large stream, well drained on the sidewalls	5+	Well	Rail Car Bridge	See Section 6.6 for discussion on repair and replacement options	N/A	N/A
17+978		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
18+105		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A

Table 6.1: Kudz Ze Kayah Access Road: Summary of Observations, Risk Analysis, and Construction Recommendations

Road Section		Terrain Characteristics			Existing Structure	Recommendations	Required Equipment	Estimated Effort
Start Δ[1]	End Δ	Surficial Materials and Slope Morphology	Est. depth to bedrock	Drainage				
18+686		Silty Sand and Gravel on ridges surrounding. Wet draw with likely overland construction. Underlying materials unknown but assume incompetent	5+	Mod	Functioning CSP in a stream	None	N/A	N/A
19+204		Some sand and gravel with Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
19+642		Some sand and gravel with Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
20+133		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
20+371		Silty soils derived from schist	0-1	Mod	Riprap source	None	N/A	N/A
20+809		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
21+023		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
22+290		Silty soils derived from schist	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
22+663		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
22+833		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
23+079		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
23+130		Sand and Gravel	5+	Well	Gravel Pit	None	N/A	N/A
23+423		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
23+724		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
24+017		Sand and Gravel	5+	Well	Functioning CSP cross drain culvert	None	N/A	N/A
24+192		Overland area in permafrost	1+	Poor	Overland road that require does not have adequate fill for a stable road prism	200m long section requires fill and reshaping. 20 loads for temporary use. 40 loads for permanent access	Pit Excavator Gravel Truck Site Excavator	10hrs 10hrs 10hrs
24+304		Overland area in permafrost	1+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
24+447		Overland area in permafrost	1+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
24+522		Overland area in permafrost	1+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
24+600		Overland area in permafrost	1+	Poor	Functioning CSP cross drain culvert	None	N/A	N/A
24+761		Sand and Gravel	1+	Mod	Functioning CSP cross drain culvert	None	N/A	N/A
24+898		Sand and Gravel	3+	Well	End of access road	None	N/A	N/A
General Road Recommendations for Maintenance								
0+000	25+000					Entire road requires grading to clear road shoulders, clean ditches, and reshape the road prism. Assume 4 pass grading required. Grade off shoulders and into ditches first. Then cut crown back onto road.	Grader	60 hrs
0+000	25+000				All Functioning CSP cross drain culverts	Assume 50% of these will require sump cleaning or other minor works, assume 0.5 hours per site	Pit Excavator	15 hrs
0+000	25+000					Pit excavator walking between sites along the alignment	Pit Excavator	16 hrs
0+000	25+000					Site excavator walking between sites along the alignment	Site Excavator	16 hrs

8.0 Closure

This report contains information relating to the road stability following the proposed exploration and/or road building activities. Should the proposed development change and/or the soil/bedrock conditions encountered differ from those outlined in this report, OEL should be contacted so that the recommendations contained in this report can be reviewed.

Factual data and interpretation contained within this report were prepared specifically for BMC Minerals (No 1) Ltd. with whom Onsite has entered into a contract. No other party may rely upon this report without the express written permission of Onsite.

We trust that this report satisfies your present requirements. Should you have any questions or comments, please contact our office at your convenience.

Sincerely,

Onsite Engineering Ltd.

Prepared by:

PROFESSIONAL ENGINEER
YUKON TERRITORY
J.C.P. ARAKI
JUN 19 2015

PERMIT TO PRACTICE
ONSITE ENGINEERING LTD.
SIGNATURE
Date JUN 19 2015
PERMIT NUMBER PP289
Association of Professional Engineers of Yukon

Jeremy Araki, P.Eng.
Supervising Engineer

Appendix E: Drill logs for re-logged historical core

This appendix contains all of the drill logs generated from the 2015 historical core re-logging program. Drill logs are placed in alpha-numeric order with the first page of each log starting on the page number indicated below in Table E-1.

Table E-1: Table of contents for re-logged historical drill holes in this appendix

Hole Number	Length (m)	Prospect	Page Number
K94-003	136.7	ABM	1
K94-004	102.5	ABM	6
K94-005	213.3	ABM	10
K94-006	169.5	ABM	15
K94-007	193.9	ABM	18
K94-008	185	ABM	23
K94-009	200	ABM	28
K94-010	179	ABM	35
K94-011	190.8	ABM	42
K94-012	270.4	ABM	49
K94-013	200	ABM	57
K94-014	150.9	ABM	61
K94-015	184.8	ABM	67
K94-016	179	ABM	74
K94-018	309.6	ABM	80
K94-019	306.7	ABM	84
K94-020	242.7	ABM	90
K94-021	264.3	ABM	95
K94-022	239.6	ABM	101
K94-023	258.2	ABM	108
K94-024	239.6	ABM	115
K94-025	242.9	ABM	120
K94-026	222.5	ABM	123
K94-027	215.5	ABM	127
K94-028	107.9	ABM	132
K94-029	188.3	ABM	137
K94-030	93.6	ABM	143
K94-031	239.6	ABM	146
K94-032	132.6	ABM	153
K94-033	230.4	ABM	157
K94-034	195.4	ABM	162
K94-035	133.3	ABM	166
K94-036	111.6	ABM	169
K94-037	81.1	ABM	173
K94-038	71.3	ABM	176
K94-039	111.6	ABM	179

Hole Number	Length (m)	Prospect	Page Number
K94-040	172.5	ABM	183
K94-041	118.3	ABM	187
K94-042	130.2	ABM	191
K94-043	85	ABM	195
K94-044	106.7	ABM	199
K94-045	59.8	ABM	203
K94-046	121.3	ABM	206
K94-047	145.4	ABM	209
K94-048	66.1	ABM	215
K94-049	57.6	ABM	218
K94-050	179.8	ABM	222
K94-051	136.6	FCZ	226
K94-052	84.7	ABM	229
K95-053	59.7	ABM	233
K95-054	53.9	ABM	236
K95-055	120.7	ABM	240
K95-056	127.1	ABM	245
K95-057	50.9	ABM	250
K95-058	122	ABM	253
K95-059	113.1	ABM	258
K95-060	121	ABM	263
K95-061	59.7	ABM	268
K95-062	61.9	ABM	272
K95-063	59.7	ABM	275
K95-064	74.7	ABM	279
K95-065	105.7	ABM	283
K95-066	84.7	ABM	287
K95-067	105.5	ABM	291
K95-068	93.7	ABM	296
K95-069	56.3	ABM	300
K95-070	166.1	ABM	303
K95-071	172.8	ABM	308
K95-072	49.9	ABM	315
K95-073	68.2	ABM	319
K95-074	84.4	ABM	324
K95-075	81.1	ABM	329
K95-076	169.5	ABM	333
K95-077	169.7	ABM	339
K95-078	90.2	ABM	344
K95-079	68.8	ABM	349

Hole Number	Length (m)	Prospect	Page Number
K95-080	62.8	ABM	353
K95-081	87.4	ABM	356
K95-082	68.9	ABM	359
K95-083	93.6	ABM	362
K95-084	109.7	ABM	366
K95-085	121	ABM	371
K95-086	59.7	ABM	377
K95-087	78	ABM	380
K95-088	93.6	ABM	384
K95-089	75	ABM	389
K95-090	96.6	ABM	392
K95-091	58.7	ABM	395
K95-092	50.6	ABM	398
K95-093	59.7	ABM	401
K95-094	79.3	ABM	405
K95-095	59.7	ABM	410
K95-096	69.2	ABM	414
K95-097	53.6	ABM	418
K95-098	65.8	ABM	421
K95-099	47.9	ABM	426
K95-100	41.5	ABM	429
K95-101	81.1	ABM	431
K95-102	94	ABM	433
K95-103	110.2	ABM	436
K95-104	127.1	ABM	442
K95-105	154.2	ABM	449
K95-106	157.6	ABM	457
K95-107	135.9	ABM	466
K95-108	153.3	ABM	473
K95-109	212.1	ABM	480
K95-110	84.4	ABM	486
K95-111	111.6	ABM	489
K95-112	116.7	ABM	495
K95-113	221.3	ABM	501
K95-114	217.3	ABM	508
K95-115	148.1	ABM	513
K95-116	46.3	ABM	516
K95-116A	129.5	ABM	518
K95-117	172.5	ABM	522
K95-118	169.8	ABM	529

Hole Number	Length (m)	Prospect	Page Number
K95-119	79.6	ABM	536
K95-120	114.9	ABM	539
K95-121	62.5	ABM	544
K95-122	78	ABM	546
K95-123	96.3	ABM	550
K95-124	290.8	Krakatoa	555
K95-125	142.3	ABM	564
K95-126	142.3	ABM	569
K95-127	129.5	ABM	574
K95-128	142	ABM	579
K95-129	151.5	ABM	582
K95-130	123.7	ABM	586
K95-131	128	ABM	590
K95-132	123.4	ABM	596
K95-133	145.4	ABM	599
K95-134	191.4	ABM	603
K95-135	194.2	ABM	612
K95-136	125.8	ABM	619
K95-137	138.9	ABM	625
K95-138	126.8	ABM	630
K95-139	132.6	ABM	637
K95-140	125.9	ABM	643
K95-141	133.2	ABM	651
K95-142	132.6	ABM	658
K95-143	148.4	ABM	665
K95-144	132.9	ABM	672
K95-145	132.9	ABM	680
K95-146	139.9	ABM	687
K95-147	181.7	ABM	695
K95-148	210	ABM	703
K95-149	206	ABM	710
K95-150	178.9	ABM	717
K95-151	187.8	ABM	722
K95-152	172.5	ABM	729
K95-153	172.8	ABM	733
K95-154	187.8	ABM	740
K95-155	178.6	ABM	745
K95-156	199.9	ABM	752
K95-157	172.8	ABM	757
K95-158	196.9	ABM	762

Hole Number	Length (m)	Prospect	Page Number
K95-159	189.9	ABM	767
K95-160	170	ABM	773
K95-161	540.1	ABM	778
K97-172	349.6	ABM	793
K97-173	291.4	Krakatoa	801
K97-174	377	ABM	810
K97-175	482.5	ABM	821
K97-177	68.9	ABM	831
K97-178	359.7	Krakatoa	836
K97-181	130.1	FCZ	845
K97-182	135.9	FCZ	849
K97-183	84.1	FCZ	853
K97-184	29.6	FCZ	856
K97-185	55.2	FCZ	857
K97-186	49.1	FCZ	858
K97-187	65.8	FCZ	860
K98-188	182	GP4F	862
K98-196	316.1	GP4F	864
Total: 174 Holes	24952.8		

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-003

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414890.5	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815414	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1388.01	Casing Depth (m):		Length (m):	136.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
136	-60	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**6.00**	**OVBN** **Overburden**
6.00	**14.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Min: 12 - 27 1% Min: Pyrite>>		
<<Min: 12 - 27 3% Min: Ankerite>>		
<<Alt: 12 - 19 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 12 - 70 Moderate (Alt) Silicification>>		
14.70	**17.50**	**MDSc** **Carbonaceous dominant mudstone**
17.50	**19.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
19.00	**27.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 19 - 27 Moderate-Strong (Alt) Muscovite>>		
<<Vein: 24 - 30 15% Quartz>> 30.0-31.5; cm-10's cm scale sulphide jigsaw breccia		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
27.00	**29.30**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
<<Min: 27 - 28 75% Min: Pyrite>>		
<<Min: 27 - 28 0.5% Min: Galena>>		
<<Min: 27 - 31.2 15% Min: Calcite>> and as diss		
<<Min: 28 - 31.2 50% Min: Pyrite>> py bands and as clasats in secondary qtz-py jigsaw brx.		
<<Min: 28 - 31.2 0.1% Min: Galena>>		
<<Min: 28 - 31.2 0.1% Min: Chalcopyrite>>		
29.30	**30.50**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
30.50	**31.20**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
31.20	**36.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 31.2 - 53.4 1% Min: Pyrite>>		
<<Min: 31.5 - 36.5 20% Min: Ankerite>>		
<<Alt: 31.2 - 53 Weak-Moderate (Alt) Muscovite>>		
<<Struc: 31.2 - 31.4 Moderate (Alt) Fault>> broken core in qtz vein, muscovite- clay.		
36.10	**36.20**	**OI** **Heavilly disseminated sulphides in host schist**
36.1 - 36.2: Not too thick but it sure is skinny		
36.20	**53.40**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 36.5 - 45.4 5% Min: Ankerite>>		
<<Min: 41.5 - 70 5% Min: Calcite>> and as wisps - thin bands		
<<Min: 45.4 - 51 10% Min: Ankerite>>		
<<Min: 51 - 54.6 5% Min: Ankerite>>		
53.40	**58.00**	**OI** **Heavilly disseminated sulphides in host schist**
<<Min: 53.4 - 58 2% Min: Sphalerite>> dis in py bands		
<<Min: 53.4 - 58 10% Min: Pyrite>> and as d\is and bands		
<<Min: 54.6 - 57.5 15% Min: Ankerite>>		
<<Min: 57.5 - 66 5% Min: Ankerite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
48.50	50.00	1.50	B00267196	-0.3	-0.005	-0.01	-0.01	-0.01
50.00	51.30	1.30	B00267197	-0.3	0.006	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
58.00	**68.30**	**RHYv** **Rhyolite volcaniclastic**
58 - 68.3: 66.0-70.1; strong proximal chl alt		
<<Min: 58 - 66 1% Min: Pyrite>>		
<<Min: 66 - 70 5% Min: Pyrite>> and in bands		
<<Min: 66 - 70 3% Min: Pyrrhotite>>		
<<Min: 66 - 70 0.5% Min: Chalcopyrite>>		
<<Alt: 58 - 69.5 Moderate (Alt) Muscovite>>		
<<Alt: 66 - 70 Strong (Alt) Chlorite>> proximal alt		
68.30	**70.10**	**OI** **Heavilly disseminated sulphides in host schist**
68.3 - 70.1: 66-70.1: strong proximal chlorite alteration: OI type mineralization 68.4-69.8m		
<<Min: 70 - 76 0.5% Min: Pyrite>>		
<<Min: 70 - 76 15% Min: Calcite>>		
<<Struc: 69.8 - 70 Moderate (Alt) Fault>> broken core, qtz vein, gouge or drill grindings?		
70.10	**86.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
70.1 - 86.2: could also be MAFi. Has a 4 m bleached siliceous section - could be a RHYv unit with gradational contacts. Leucoxene and bleached at lower contact.		
<<Min: 76 - 82.5 1% Min: Pyrite>>		
<<Min: 76 - 82.5 1% Min: Pyrrhotite>>		
<<Min: 76 - 86.2 5% Min: Calcite>>		
<<Min: 76.3 - 83 5% Min: Ankerite>>		
<<Min: 82.5 - 90.3 3% Min: Pyrite>>		
<<Alt: 76 - 82 Weak-Moderate (Alt) Silicification>>		
<<Alt: 76 - 82 Weak-Moderate (Alt) Muscovite>> bleached and weakly silicified section ion MAFt		
<<Struc: 79.8 - 79.9 Moderate (Alt) Fault>> broken core, minor gouge		
86.20	**89.50**	**RHY** **undifferentiated rhyolite**
86.2 - 89.5: banded, could be RHYcw or a flow banded dyke		
<<Alt: 86.2 - 90.2 Weak (Alt) Muscovite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
59.40	60.90	1.50	B00267198	0.4	-0.005	-0.01	-0.01	-0.01
60.90	62.40	1.50	B00267199	-0.3	-0.005	-0.01	0.01	0.02
62.40	63.20	0.80	B00267201	0.5	-0.005	-0.01	0.03	0.04
71.70	73.20	1.50	B00267202	-0.3	-0.005	-0.01	-0.01	0.01
73.20	74.70	1.50	B00267203	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
89.50	**104.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

89.5 - 104.3: could be MAFi. Leucoxene and bleached at upper contact

<<Min: 89.5 - 104.3 15% Min: Calcite>>

<<Min: 90.3 - 92 1% Min: Pyrite>>

<<Min: 90.3 - 92 3% Min: Pyrrhotite>>

<<Min: 90.3 - 92 0.5% Min: Chalcopyrite>>

<<Min: 92 - 104.3 0.1% Min: Pyrite>>

<<Min: 92 - 104.3 0.1% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description
104.30	**105.30**	**OI**	**Heavilly disseminated sulphides in host schist**

<<Min: 104.3 - 105.3 3% Min: Pyrite>>

<<Min: 104.3 - 105.3 5% Min: Pyrrhotite>>

<<Min: 104.3 - 105.3 1% Min: Chalcopyrite>>

<<Alt: 104.3 - 105.3 Moderate-Strong (Alt) Chlorite>>

<<Alt: 104.3 - 105.3 Weak-Moderate (Alt) Cordierite>>

From (m)	To (m)		Rocktype & Description
105.30	**112.50**	**RHYvl**	**Lapilli tuff**

<<Min: 105.3 - 122.7 1% Min: Pyrrhotite>>

<<Min: 107.7 - 122.7 10% Min: Ankerite>>

<<Alt: 105.4 - 122.7 Moderate (Alt) Muscovite>> mostly fine grained

From (m)	To (m)		Rocktype & Description
112.50	**114.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
114.60	**115.00**	**MDSc**	**Carbonaceous dominant mudstone**
115.00	**118.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
118.60	**122.70**	**RHYv**	**Rhyolite volcaniclastic**
122.70	**128.90**	**RHYva**	**Coarse grained to ash tuff**

122.7 - 128.9: Could easily be epiclastic or volcaniclastic

<<Min: 122.7 - 136.5 0.5% Min: Pyrite>>

<<Min: 122.7 - 136.5 10% Min: Ankerite>>

<<Min: 122.7 - 136.7 10% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.60	95.10	1.50	B00267204	-0.3	-0.005	-0.01	-0.01	0.01
95.10	96.30	1.20	B00267205	-0.3	-0.005	-0.01	-0.01	0.01
100.90	102.40	1.50	B00267206	-0.3	-0.005	-0.01	-0.01	0.01
107.00	108.50	1.50	B00267207	-0.3	-0.005	-0.01	-0.01	0.01
108.50	110.00	1.50	B00267208	0.4	-0.005	-0.01	-0.01	0.08

From (m)	To (m)	Rocktype & Description

<<Alt: 122.7 - 136.5 Weak (Alt) Muscovite>> fine grained - sericite?

<<Alt: 122.7 - 136.5 Weak-Moderate (Alt) Chlorite>>

<<Alt: 122.7 - 136.5 Weak (Alt) Biotite>> fine grained

128.90 129.80 RHYva Coarse grained to ash tuff

128.9 - 129.8: fine grained dense version of unit above and below.

129.80 136.50 RHYva Coarse grained to ash tuff

129.8 - 136.5: as 122.7-128.9m

End of Hole @ 136.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-004

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414778.78125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815423.5	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1404.49	Casing Depth (m):		Length (m):	102.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
102	-60	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.50 OVBN Overburden

7.50 26.80 MDSt Rhyolite tuff dominant mudstone

7.5 - 26.8: Narrow intervals of coherent RHY possibly blocks

<<Min: 7.5 - 29.6 2% Min: Pyrite>>

<<Min: 7.5 - 43.7 4% Min: Ankerite>> Also selective replacement

<<Alt: 14 - 26.2 Weak (Alt) Silicification>> Net textured microfractures, dark grey SI with fg PY

<<Alt: 14 - 28 Weak (Alt) Muscovite>>

<<Vein: 25 - 26.2 10% Quartz>>

26.80 29.60 RHYv Rhyolite volcaniclastic

<<Alt: 28 - 32.6 Moderate-Strong (Alt) Muscovite>>

29.60 30.00 OI Heavilly disseminated sulphides in host schist

30.00 30.40 RHYv Rhyolite volcaniclastic

From (m)	To (m)	Rocktype & Description
30.40	**31.00**	**OI** **Heavilly disseminated sulphides in host schist**
31.00	**31.90**	**RHYv** **Rhyolite volcaniclastic**
31.90	**34.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
34.50	**42.80**	**RHYc** **Rhyolite coherant volcanics**
34.5 - 42.8: Flow bands? Strong alteration.		
<<Alt: 34.5 - 42.8 Strong (Alt) Muscovite>>		
42.80	**43.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
43.70	**45.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 43.7 - 63.7 3% Min: Ankerite>>		
45.30	**48.10**	**OA** **Magnetite bearing sulphides**
48.10	**52.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
52.30	**55.80**	**RHY** **undifferentiated rhyolite**
52.3 - 55.8: Altered some flow features, some RHYv		
<<Min: 53 - 55.8 1% Min: Calcite>>		
<<Alt: 52.3 - 55.8 Moderate-Strong (Alt) Silicification>>		
<<Vein: 54.8 - 56.8 20% Quartz>> fracture fill SP, PY in vein.		
55.80	**60.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Struc: 57 - 57.4 Weak-Moderate (Alt) Fault>> with quartz vein		
<<Struc: 60.1 - 60.2 Weak (Alt) Fault>>		
60.40	**60.60**	**OA** **Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

60.60 61.20 OD Brecciated sulphides

61.20 63.70 OA Magnetite bearing sulphides

63.70 75.00 RHY undifferentiated rhyolite

63.7 - 75: Some curdy texture, strongly altered

<<Min: 63.7 - 75 1% Min: Pyrite>>

<<Min: 63.7 - 75 1% Min: Calcite>>

<<Min: 72 - 75.4 3% Min: Ankerite>>

<<Alt: 63.7 - 75 Strong (Alt) Silicification>> pale green-grey, fine grained, homogeneous texture in part, Possibly weak remnant curdey texture. This could posssibly be a strongly altered MAFt.

<<Struc: 64.9 - 65.7 Weak (Alt) Fault>> gouge and calcite veining

75.00 76.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

76.60 102.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

76.6 - 102.1: Highly variable altered from BI-CL to light grey-green MS-SI and light green mariposite altered.

<<Min: 76.6 - 83.5 1% Min: Calcite>>

<<Min: 76.6 - 85.8 1% Min: Pyrite>>

<<Min: 83.5 - 85.8 3% Min: Calcite>>

<<Min: 85.8 - 89.5 15% Min: Calcite>> also porphyroblasts,

<<Min: 85.8 - 97.5 0.5% Min: Pyrite>> Also narrow intervals with euhedral PY to 3mm

<<Min: 89.5 - 99.2 3% Min: Calcite>> and veinlets

<<Alt: 76.6 - 85.8 Moderate-Strong (Alt) Silicification>> Similar to interval above sulphide. Some leucoxene, calcite.

<<Alt: 85.8 - 89.5 Moderate (Alt) Chlorite>> Bands of CL dominant alteration alternating with bands of BI dominant alteration calcite porphyroblasts

<<Alt: 85.8 - 89.5 Strong (Alt) Biotite>> Variable fom weak to intense bands +/- CL. CA porphyroblasts

<<Alt: 89.5 - 96.6 Moderate-Strong (Alt) Muscovite>> Sericite altered, light grey. Homogeneous grainy texture, possibly MAFt. CA

<<Alt: 96.6 - 99.2 Intense (Alt) Muscovite>> Green Mariposite? coloured sericite

<<Alt: 99.2 - 101.1 Moderate (Alt) Silicification>> Possibly primary banding.

<<Alt: 99.2 - 101.1 Moderate (Alt) Muscovite>> sericite

<<Alt: 101.1 - 102.1 Moderate (Alt) Silicification>>

<<Alt: 101.1 - 102.1 Moderate (Alt) Muscovite>> sericte

From (m)	To (m)	Rocktype & Description
		<<Vein: 79.3 - 83.8 10% Quartz>>
		<<Vein: 87.5 - 90 10% Calcite>> sub-parallel to fol'n
102.10	**102.40**	**RHYv** **Rhyolite volcaniclastic**
		End of Hole @ 102.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-005

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.78125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815549	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1430.93	Casing Depth (m):		Length (m):	213.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
6	-52	180		180	SS				☑	
21	-51	181		181	SS				☑	
45	-55	181		181	SS				☑	
76	-57	183		183	SS				☑	
106	-56	184		184	SS				☑	
152	-57	183		183	SS				☑	
197	-60	183		183	SS				☑	
212	-60	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 5.60 OVBN Overburden

5.60 39.80 RHYvl Lapilli tuff

<<Min: 7 - 40 8% Min: Ankerite>>

<<Min: 8.3 - 35.1 1% Min: Pyrrhotite>>

<<Min: 8.3 - 62 1% Min: Pyrite>>

<<Alt: 17.2 - 169.4 Weak (Alt) Silicification>>

39.80 44.50 MDSt Rhyolite tuff dominant mudstone

<<Min: 40 - 55 2% Min: Ankerite>> SEL in patches

From (m)	To (m)		Rocktype & Description
<<Alt: 43 - 48.5 Weak (Alt) Silicification>>			
44.50	**49.70**	**RHYvl**	**Lapilli tuff**
49.70	**53.25**	**MDSt**	**Rhyolite tuff dominant mudstone**
53.25	**58.70**	**RHYvl**	**Lapilli tuff**
<<Min: 53.6 - 55.5 1% Min: Pyrrhotite>>			
<<Min: 55 - 103 5% Min: Ankerite>> SEL in patches			
58.70	**60.40**	**MDSt**	**Rhyolite tuff dominant mudstone**
60.40	**85.80**	**RHY**	**undifferentiated rhyolite**
60.4 - 85.8: mod to strong faulting text destroyed			
<<Min: 62 - 72 4% Min: Pyrite>>			
<<Min: 72 - 102.5 1% Min: Pyrite>>			
85.80	**92.30**	**MDSt**	**Rhyolite tuff dominant mudstone**
92.30	**102.40**	**RHYvl**	**Lapilli tuff**
102.40	**116.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 102.5 - 119.8 3% Min: Pyrite>> qtz - py alt			
<<Min: 103 - 114.6 2% Min: Ankerite>>			
<<Alt: 102.4 - 117 Weak (Alt) Muscovite>>			
<<Alt: 109 - 135.5 Moderate-Strong (Alt) Silicification>>			
116.60	**117.20**	**MDSc**	**Carbonaceous dominant mudstone**
<<Alt: 117 - 123 Weak-Moderate (Alt) Muscovite>>			
117.20	**121.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Alt: 120.7 - 123.7 Moderate (Alt) Biotite>>			
<<Alt: 121 - 123.7 Weak (Alt) Cordierite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
116.60	118.20	1.60	B00267042	2	0.026	-0.01	0.03	0.03
118.20	119.70	1.50	B00267043	0.3	0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
121.20	**122.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
121.2 - 122.8: Mostly Rhy, two 20cm bands of cpy-py-sph plus dis and network texture sulfides												
<<Alt: 121.5 - 123.7 Weak-Moderate (Alt) Chlorite>>												
122.80	**137.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	**MG**	124.00	125.50	1.50	B00267044	2.9	0.044	0.06	0.05	0.27
122.8 - 137.7: has sections with lapilli textures ie, 126m												
<<Min: 122.8 - 135.9 0.25% Min: Pyrite>>				125.50	127.00	1.50	B00267045	0.6	0.019	-0.01	0.01	0.01
<<Min: 122.8 - 135.9 3% Min: Pyrrhotite>>				133.00	134.50	1.50	B00267046	1.2	-0.005	-0.01	0.02	0.09
<<Min: 124.5 - 129.8 5% Min: Ankerite>>				134.50	136.00	1.50	B00267047	3.7	-0.005	0.02	0.05	0.64
<<Min: 137.6 - 138.1 2% Min: Magnetite>> with cord-biot-chl alt												
<<Alt: 123 - 137.5 Moderate (Alt) Muscovite>>												
<<Alt: 123.7 - 132.5 Weak (Alt) Biotite>>												
<<Alt: 129 - 135 Weak-Moderate (Alt) Chlorite>>												
<<Alt: 132.5 - 138 Moderate-Strong (Alt) Biotite>>												
<<Alt: 135 - 139 Moderate-Strong (Alt) Chlorite>> and banded												
<<Alt: 135.5 - 138.4 Weak-Moderate (Alt) Silicification>>												
<<Alt: 136.5 - 137.8 Weak-Moderate (Alt) Cordierite>>												
<<Alt: 137.5 - 158.5 Trace (Alt) Muscovite>>												
<<Vein: 131.4 - 135.1 25% Quartz>>												
137.70	**138.00**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**	**MG**									
138.00	**138.40**	**OD** **Brecciated sulphides**	**MG**									
138.40	**144.00**	**OA** **Magnetite bearing sulphides**	**MG**									
<<Alt: 138.4 - 145.1 Moderate-Strong (Alt) Silicification>>												
144.00	**144.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**										
144.70	**145.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									

From (m)	To (m)	Rocktype & Description
145.10	**159.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
145.1 - 159.9: altered unit, middle looks like RHYcw		
<<Min: 145.1 - 149.2 2% Min: Pyrite>>		
<<Min: 145.1 - 149.2 0.5% Min: Chalcopyrite>>		
<<Min: 145.9 - 150.1 10% Min: Ankerite>>		
<<Min: 149.2 - 156 2% Min: Pyrite>>		
<<Min: 156 - 157.2 5% Min: Ankerite>>		
<<Min: 156 - 170 0.1% Min: Pyrite>>		
<<Alt: 145.1 - 149 Moderate (Alt) Silicification>>		
<<Alt: 149 - 157.2 Weak-Moderate (Alt) Silicification>>		
<<Vein: 157.2 - 160.4 30% Quartz>>		
159.90	**175.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 160 - 163.5 5% Min: Calcite>>		
<<Min: 163.5 - 170 15% Min: Calcite>> bands and dis		
<<Min: 170 - 175 5% Min: Calcite>>		
<<Min: 170 - 207 1% Min: Pyrite>>		
<<Alt: 160 - 175 Moderate-Strong (Alt) Chlorite>> patchy going down hole. Leucoxene on margins of stronger, central, chl-bio alt		
<<Alt: 160 - 175 Moderate (Alt) Biotite>>		
<<Alt: 169.4 - 175 Weak-Moderate (Alt) Silicification>> RHYi dyke related		
<<Alt: 175 - 193 Strong (Alt) Silicification>> RHYi dyke related		
<<Vein: 173 - 181.5 12% Quartz>>		
<<Struc: 160 - 187.1 Moderate-Strong (Alt) Fault>> wide fault zone, shreared with clay and sericite, local narrow gouge zones and low angle to CA.		
175.20	**177.70**	**RHYi** **Aphanitic Rhyolite (intrusion)**
177.70	**194.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 184 - 194.5 5% Min: Ankerite>>		
<<Min: 185 - 197.5 1% Min: Pyrrhotite>>		
<<Min: 194.5 - 206.8 2% Min: Ankerite>> SEL in patches		
<<Alt: 178 - 194 Weak (Alt) Muscovite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
146.60	148.10	1.50	B00267048	82.8	0.637	1.62	0.15	0.19
148.10	149.60	1.50	B00267049	68.6	0.155	1.35	0.08	0.67
149.60	151.10	1.50	B00267051	2.6	0.014	0.04	0.01	0.03
151.10	152.60	1.50	B00267052	2	0.021	-0.01	0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 193 - 213.3 Weak (Alt) Silicification>>

194.60 213.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 195 - 207 0.1% Min: Calcite>> trace Ca

<<Min: 202 - 213.3 0.5% Min: Pyrrhotite>>

<<Min: 206.8 - 213.3 12% Min: Ankerite>>

<<Min: 207 - 213.3 2% Min: Pyrite>>

<<Alt: 195 - 207 Weak (Alt) Chlorite>> and patchy

<<Vein: 197.8 - 202 20% Quartz-Tourmaline>>

End of Hole @ 213.3

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-006

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.75	Core Size:		Azimuth:	248	Date Logging Complete:	
UTM Northing:	6815550	Casing Pulled?:		Dip:	-86	Drill Company:	
UTM Elev. (m):	1430.91	Casing Depth (m):		Length (m):	169.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-86	248		248	SS				☑	
11	-85	248		248	SS				☑	
32	-84	233		233	SS				☑	
62	-81	214		214	SS				☑	
93	-77	201		201	SS				☑	
123	-74	194		194	SS				☑	
154	-73	197		197	SS				☑	
169	-71	197		197	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 4.10 OVBN Overburden

4.10 27.30 RHYvl Lapilli tuff

4.1 - 27.3: mottled ankerite altered lapilli

<<Min: 4.1 - 96 3% Min: Pyrrhotite>>

<<Min: 4.1 - 99.5 10% Min: Ankerite>>

<<Min: 4.1 - 132.7 1% Min: Pyrite>> minor foliation parallel wisps

<<Struc: 15.9 - 16.2 Trace (Alt) Fault>> weak gouge

27.30 33.10 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)		Rocktype & Description
33.10	**36.70**	**RHYvl**	**Lapilli tuff**
36.70	**41.30**	**MDSt**	**Rhyolite tuff dominant mudstone**
41.30	**67.90**	**RHYvl**	**Lapilli tuff**
67.90	**68.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

67.9 - 68.6: weak CL strongAKalt

68.60	**91.50**	**RHYvl**	**Lapilli tuff**

<<Vein: 74.3 - 77.5 40% Quartz>> Large patchy ankerite andquartz patches. Weak chlorite-biotite

91.50	**99.50**	**MDSt**	**Rhyolite tuff dominant mudstone**

<<Min: 96 - 112.5 1% Min: Pyrrhotite>>

<<Vein: 97.5 - 99.1 95% Quartz>>

99.50	**101.80**	**RHYc**	**Rhyolite coherant volcanics**

99.5 - 101.8: well banded

<<Min: 99.5 - 127 5% Min: Ankerite>>

101.80	**112.50**	**RHYvl**	**Lapilli tuff**

101.8 - 112.5: appears strongly tectonized

<<Alt: 112.4 - 132.7 Moderate (Alt) Muscovite>> variable intensity up to 5

112.50	**113.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

<<Vein: 112.6 - 117.7 15% Quartz>>

113.30	**126.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

113.3 - 126.1: Strong alteration and weak carbonaceous content Producing light-med grey coloured core. 5cm MDSc at base of interval

126.10	**132.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 127 - 132.5 7% Min: Ankerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
128.40	129.90	1.50	B00267528	0.3	0.008	-0.01	-0.01	0.01
129.90	131.40	1.50	B00267529	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
132.70	**134.70**	**RHY** **undifferentiated rhyolite**

132.7 - 134.7: 133.0-133.8 qz-to vein with cp

<<Alt: 132.7 - 134.7 Moderate-Strong (Alt) Chlorite>> Quartz vein excludes a large portion

<<Alt: 132.7 - 134.7 Weak (Alt) Cordierite>> above and below QZ vein. 133.7-134.7 Magnetite as blebs and within stringers of CH-BI

<<Alt: 132.7 - 134.7 Moderate-Strong (Alt) Biotite>> Quartz vein excludes a large portion

<<Vein: 132.9 - 134 Quartz>> Biotite chlorite as masses up to cm size,

134.70	**135.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
135.90	**138.10**	**OD**	**Brecciated sulphides**
138.10	**147.70**	**OA**	**Magnetite bearing sulphides**
147.70	**159.90**	**RHYc**	**Rhyolite coherant volcanics**

<<Min: 147.7 - 159.9 3% Min: Pyrite>>

<<Min: 147.7 - 159.9 1% Min: Pyrrhotite>>

<<Min: 148 - 159.1 7% Min: Ankerite>>

<<Min: 154.9 - 169.5 10% Min: Calcite>>

<<Alt: 147.7 - 159.9 Weak-Moderate (Alt) Muscovite>>

159.90	**169.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

159.9 - 169.3: Minor BI throughout, calcite banding.

<<Min: 159.9 - 169.5 1% Min: Pyrite>>

<<Min: 159.9 - 169.5 0.5% Min: Pyrrhotite>>

<<Alt: 159.9 - 169.5 Strong (Alt) Chlorite>> banded with white calcite paralleling foliation

<<Alt: 159.9 - 169.5 Weak (Alt) Biotite>> Also banded form.

End of Hole @ 169.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
149.20	150.70	1.50	B00267531	1.3	0.013	-0.01	-0.01	0.08
150.70	152.20	1.50	B00267532	1	0.006	-0.01	0.02	0.04

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-007

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414748.84375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815549.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1409.2	Casing Depth (m):		Length (m):	193.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
30	-47	175		175	SS				☑	
61	-49	175		175	SS				☑	
91	-50	173		173	SS				☑	
122	-51	173		173	SS				☑	
154	-53	178		178	SS				☑	
184	-53	181		181	SS				☑	
193	-53	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 4.50 CASN Casing

<<Min: 3.6 - 48.6 10% Min: Ankerite>>

4.50 7.50 RHYvl Lapilli tuff

<<Min: 4.5 - 73 1% Min: Pyrrhotite>>

<<Min: 4.5 - 97.5 0.5% Min: Calcite>>

7.50 8.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

8.20 11.00 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)		Rocktype & Description
11.00	**18.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
18.90	**21.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
21.60	**23.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 22 - 34.5 0.5% Min: Sphalerite>>			
23.00	**27.80**	**MDSt**	**Rhyolite tuff dominant mudstone**
27.80	**31.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
31.00	**34.00**	**MDSt**	**Rhyolite tuff dominant mudstone**
34.00	**40.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
40.50	**48.30**	**MDSt**	**Rhyolite tuff dominant mudstone**
48.30	**59.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
48.3 - 59: curdy flow banded			
<<Min: 48.6 - 97.4 5% Min: Ankerite>>			
<<Min: 50 - 99.5 2% Min: Pyrite>>			
59.00	**62.10**	**RHYva**	**Coarse grained to ash tuff**
62.10	**73.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 62.7 - 95.1 Weak (Alt) Muscovite>>			
73.90	**90.40**	**MDSt**	**Rhyolite tuff dominant mudstone**
73.9 - 90.4: quartz eyes and minor component of Fe-carbonate on fractures			
<<Min: 90 - 99.5 5% Min: Pyrrhotite>>			
<<Min: 90 - 99.5 1% Min: Chalcopyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
90.40	**96.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
90.4 - 96.3: Sericite present with muscovite. Rock texture is complex (microfolds, laminations and deformed clasts/porphyroblasts.			
<<Alt: 95.1 - 97.5 Moderate (Alt) Chlorite>>			
96.30	**97.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
96.3 - 97.5: Muscovite present in thin bands.			
<<Min: 97.4 - 145 3% Min: Ankerite>>			
97.50	**99.50**	**OI**	**Heavilly disseminated sulphides in host schist**
97.5 - 99.5: Quartz, sericite, chlorite			
99.50	**100.40**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
99.5 - 100.4: chlorite			
100.40	**101.90**	**OA**	**Magnetite bearing sulphides**
101.90	**103.10**	**OD**	**Brecciated sulphides**
103.10	**113.60**	**OA**	**Magnetite bearing sulphides**
113.60	**116.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
116.90	**118.70**	**OI**	**Heavilly disseminated sulphides in host schist**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
94.70	96.20	1.50	Q311751	0.4	-0.005	-0.01	-0.01	0.01
96.20	97.70	1.50	Q311752	7.5	0.044	0.18	0.03	0.05
97.70	99.20	1.50	Q311753	29.7	0.371	1.13	0.13	0.26
99.20	100.40	1.20	Q311754	49.8	0.563	3.15	0.05	0.35
100.40	101.90	1.50	Q311755	86.1	0.443	0.4	2.31	12.5
101.90	103.10	1.20	Q311756	46.8	0.809	2.01	0.11	3.27
103.10	104.90	1.80	Q311757	25.8	0.423	0.82	0.09	3.62
104.90	106.40	1.50	Q311758	94.3	0.28	0.28	3.25	15.8
106.40	107.90	1.50	Q311759	86.4	0.368	0.52	2.47	13.8
107.90	109.40	1.50	Q311762	100	0.702	1.23	1.36	6.94
109.40	110.90	1.50	Q311763	71.5	1.33	2.58	0.23	7.57
110.90	112.40	1.50	Q311764	70	0.522	0.67	0.89	5.91
112.40	113.90	1.50	Q311765	77.8	0.57	0.57	1.46	6.2
113.90	115.40	1.50	Q311766	143	1.47	0.64	1.86	9.54
115.40	116.90	1.50	Q311767	133	0.883	0.51	1.67	7.68
116.90	117.80	0.90	Q311768	65.6	0.215	0.44	0.61	2.37

From (m)	To (m)		Rocktype & Description
<<Alt: 116.9 - 128.3 Moderate (Alt) Cordierite>>			
118.70	**119.10**	**RHYv**	**Rhyolite volcaniclastic**
119.10	**122.80**	**OI**	**Heavilly disseminated sulphides in host schist**
122.80	**123.70**	**RHYv**	**Rhyolite volcaniclastic**
123.70	**128.30**	**OI**	**Heavilly disseminated sulphides in host schist**
128.30	**133.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 128.3 - 142 1% Min: Calcite>> Calcite occurs in fractures non-parallel to foliation as well as bands/veins sub-parallel to foliation.			
133.10	**133.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
133.50	**134.60**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
134.60	**134.80**	**RHYv**	**Rhyolite volcaniclastic**
134.80	**140.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
140.20	**142.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 140.2 - 142.5 2% Min: Pyrite>>			
<<Min: 140.2 - 150 1% Min: Pyrrhotite>>			
<<Alt: 140.2 - 142 Weak-Moderate (Alt) Cordierite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
117.80	119.30	1.50	Q311769	33.9	0.24	0.06	0.23	0.65
119.30	120.80	1.50	Q311771	13.1	0.094	0.01	0.11	0.3
120.80	122.30	1.50	Q311772	87.7	0.571	0.05	0.71	1.91
122.30	123.90	1.60	Q311773	73.9	-0.005	0.02	1.56	1.23
123.90	125.40	1.50	Q311774	216	0.583	0.32	3.15	6.5
125.40	126.90	1.50	Q311775	219	1.1	0.2	1.81	3.5
126.90	127.60	0.70	Q311776	2.4	0.029	0.04	0.01	0.03
127.60	129.10	1.50	Q311777	105	1.36	1.5	0.63	2.49
129.10	130.60	1.50	Q311778	199	1.98	0.66	2.06	9.35
130.60	132.70	2.10	Q311779	129	1.49	0.52	2.17	9.03
132.70	133.60	0.90	Q311782	86.9	0.601	0.1	3.27	8.01
133.60	135.10	1.50	Q311783	132	1.66	0.33	2.22	7.23
135.10	136.60	1.50	Q311784	213	1.88	0.44	2.06	5.82
136.60	138.10	1.50	Q311785	200	1.85	0.43	1.85	6.93
138.10	139.60	1.50	Q311786	212	2.02	0.53	3.02	6.27
139.60	142.00	2.40	Q311787	65.7	0.371	0.08	1.39	3.82

From (m)	To (m)		Rocktype & Description
142.00	**143.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 142 - 145 10% Min: Calcite>>			
<<Alt: 142 - 157.6 Moderate (Alt) Silicification>>			
<<Alt: 142 - 157.6 Moderate (Alt) Muscovite>>			
143.80	**155.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 145 - 185.5 5% Min: Ankerite>>			
<<Min: 152.1 - 158 15% Min: Calcite>>			
<<Min: 152.4 - 192 1% Min: Pyrite>>			
155.90	**158.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 156.5 - 193.9 2% Min: Pyrrhotite>>			
158.00	**166.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 158 - 166.2 1% Min: Calcite>>			
166.20	**173.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 166.2 - 177 20% Min: Calcite>>			
173.30	**186.50**	**RHYva**	**Coarse grained to ash tuff**
<<Min: 177 - 193.9 0.5% Min: Calcite>>			
<<Min: 185.5 - 193.9 15% Min: Ankerite>>			
186.50	**193.90**	**RHYvl**	**Lapilli tuff**

End of Hole @ 193.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
142.00	143.50	1.50	Q311788	1.6	0.013	-0.01	0.02	0.05
143.50	145.00	1.50	Q311789	0.8	0.015	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-008

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414748.8125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815550.5	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1409.24	Casing Depth (m):		Length (m):	185	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
32	-87	180		180	SS				☑	
62	-86	179		179	SS				☑	
91	-84	174		174	SS				☑	
122	-83	174		174	SS				☑	
154	-83	176		176	SS				☑	
185	-79	175		175	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.60 CASN Casing

3.60 6.30 RHYva Coarse grained to ash tuff

3.6 - 6.3: Ankerite commonly banded along quartz MS bands as well as disseminated and patchy throughout.

<<Min: 3.6 - 23 6% Min: Ankerite>>

<<Min: 4.1 - 99.2 1% Min: Pyrrhotite>> Spotty and commonly elongated paralleling schistosity. Minor PY.

6.30 8.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

6.3 - 8.2: flow banded

8.20 11.00 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

11.00 20.30 RHYva Coarse grained to ash tuff

<<Min: 12 - 14.5 1% Min: Calcite>>

20.30 23.00 MDSt Rhyolite tuff dominant mudstone

20.3 - 23: Ankerite is present throughout interval as bands and patches. Biotite present in trace amounts, not consistant throughout interval.

23.00 24.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

23 - 24.3: Thin flow? Weak mottled FS.

<<Min: 23 - 38.3 15% Min: Ankerite>>

24.30 34.00 RHYvl Lapilli tuff

24.3 - 34: Mottled texture predominantly due to appearance of ankerite altered lapilli. Interval contains minor chlorite.

34.00 36.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 34.5 - 38.4 5% Min: Calcite>>

36.40 40.80 RHYva Coarse grained to ash tuff

36.4 - 40.8: more Mafic tuff, in part banded.

<<Min: 38.3 - 42.5 1% Min: Ankerite>>

<<Min: 38.4 - 42.5 2% Min: Calcite>>

40.80 50.70 RHYvl Lapilli tuff

40.8 - 50.7: Interval contains minor chlorite. Base of interval has pervasive healed fracturing and contact is marked by presence of massive bull quartz.

<<Min: 42.5 - 66 20% Min: Ankerite>>

<<Min: 44.7 - 47.3 3% Min: Calcite>>

50.70 72.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

50.7 - 72.1: "Curdy" rhyolite. Distinct FS porphyroblasts up to 3mm also FS aggregates as "curds" in pale grey matrix. Minor fragmental sections.

<<Min: 53 - 57 1% Min: Calcite>>

<<Min: 66 - 92.6 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description
72.10	**73.90**	**RHYv** **Rhyolite volcaniclastic**
73.90	**88.10**	**RHYvl** **Lapilli tuff**

<<Min: 83.6 - 85 3% Min: Calcite>>

88.10	**99.20**	**MDSt** **Rhyolite tuff dominant mudstone**

88.1 - 99.2: tuff dominant

<<Min: 92.6 - 119.7 1% Min: Ankerite>>

99.20	**113.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

99.2 - 113.3: Weak banding with zones of contorted banding. Minor interval with thin bands of chlorite. Structural zone with contorted bands. Basal contact gradational into stronger hydrothermal alteration.

<<Alt: 99.2 - 113.3 Weak (Alt) Muscovite>>

113.30	**122.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

113.3 - 122.3: Quartz and sericite mineralization dominates this interval and exhibit strong hydrothermal alteration. Bands of quartz and sericite are accompanied by minor muscovite and are usually textured by appearing broken or contorted.

<<Min: 113.7 - 119.6 1% Min: Pyrite>> Commonly fracture controlled and small patchy clusters. Minor 2cm fracture with CP at 119.1m

<<Min: 113.7 - 119.6 1% Min: Pyrrhotite>>

<<Min: 119.6 - 132 1% Min: Pyrrhotite>> isolated mm scale patches of galena, sphalerite, chalcopyrite. Cordierite commonly contain rims associated with chalcopyrite.

<<Min: 119.7 - 130.6 10% Min: Ankerite>>

<<Alt: 113.3 - 122.3 Strong (Alt) Muscovite>>

122.30	**132.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

122.3 - 132: Strongly altered and contorted. Dominantly MS at top with strong QZ or possibly albite near base with minor TO noted. Cordierite commonly along bands and as widely spaced porrphyroblasts up to 5mm. Chlorite after biotite, weak.

<<Min: 129.7 - 130.5 3% Min: Chalcopyrite>> Minor sphalerite.

<<Min: 131.6 - 135.2 3% Min: Ankerite>>

<<Alt: 123.3 - 132 Strong (Alt) Chlorite>> minor cordierite porphyroblasts up to 5mm

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
124.50	126.00	1.50	Q311301	2	0.007	-0.01	0.1	0.15
126.00	127.50	1.50	Q311302	13.2	0.017	-0.01	0.8	0.55
127.50	129.00	1.50	Q311303	1.8	0.009	0.01	0.11	0.23
129.00	130.50	1.50	Q311304	9	0.032	0.05	0.13	0.33
130.50	132.00	1.50	Q311305	6.9	0.108	0.2	0.02	0.07

From (m)	To (m)		Rocktype & Description
132.00	**136.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
132 - 136.2: Cordierite porphyroblasts present			
<<Alt: 132 - 144 Weak (Alt) Cordierite>> zones of intense cordierite with porphyroblasts to 2cm.			
136.20	**138.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
136.2 - 138.2: Cordierite present as masses and porphyroblasts (>1cm)			
138.20	**143.00**	**OA**	**Magnetite bearing sulphides**
138.2 - 143: Cordierite present			
143.00	**144.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
143 - 144: Cordierite present.			
144.00	**146.00**	**OA**	**Magnetite bearing sulphides**
146.00	**146.80**	**MXSX**	**Massive Sulphide**
146.80	**147.30**	**MXSX**	**Massive Sulphide**
147.30	**149.10**	**MXSX**	**Massive Sulphide**
149.10	**152.90**	**RHYva**	**Coarse grained to ash tuff**
149.1 - 152.9: Fine white porphyroblasts mm scale heavily spotted in areas. Upper contact marked with quartz vein and disseminated PY up to 20%over upper 15 cm			
<<Min: 149.5 - 151.3 10% Min: Ankerite>>			
<<Min: 152 - 157.5 5% Min: Calcite>> mixed, barren and 10% Ak			
152.90	**159.20**	**RHYv**	**Rhyolite volcaniclastic**
152.9 - 159.2: mm size pale orange AK or leucoxene porphyroblasts. Limey green sericite.			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
132.00	133.50	1.50	Q311306	122	0.82	0.22	4	9.02
133.50	135.00	1.50	Q311307	120	1.74	0.34	2.88	6.76
135.00	136.50	1.50	Q311308	95.3	0.614	0.65	2.99	8.5
136.50	138.00	1.50	Q311309	86.4	0.821	3.18	0.08	0.36
138.00	139.50	1.50	Q311311	65.4	0.557	1.31	0.26	10.9
139.50	141.00	1.50	Q311312	73.7	0.513	0.46	0.94	16.2
141.00	142.50	1.50	Q311313	60.7	0.248	0.1	3.42	9.57
142.50	144.00	1.50	Q311314	139	0.721	0.38	3.54	9.53
144.00	145.00	1.00	Q311315	130	0.903	1.19	1.53	11.4
145.00	147.00	2.00	Q311316	243	2.42	4.08	0.77	4.21
147.00	148.80	1.80	Q311317	159	0.594	0.92	2.19	8.04
148.80	149.40	0.60	Q311318	67.8	0.455	0.24	1.6	4.74
149.40	150.90	1.50	Q311319	15	0.14	0.13	0.19	0.69
150.90	152.40	1.50	Q311321	0.6	-0.005	-0.01	-0.01	0.02
152.40	154.50	2.10	Q311322	0.5	-0.005	-0.01	-0.01	0.02
154.50	156.00	1.50	Q311323	0.5	-0.005	-0.01	-0.01	0.03

From (m)	To (m)	Rocktype & Description
		<<Min: 158.9 - 176.8 25% Min: Calcite>>
		<<Alt: 152.9 - 159.2 Moderate (Alt) Silicification>> pale limy green distinct colour
		<<Alt: 152.9 - 159.2 Moderate (Alt) Muscovite>> pale limy green distinct colour
159.20	**178.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 175.2 - 185 5% Min: Ankerite>>
178.60	**185.00**	**RHYva** **Coarse grained to ash tuff**

End of Hole @ 185

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
156.00	157.10	1.10	Q311324	0.5	0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-009

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.5	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815548.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1395.7	Casing Depth (m):		Length (m):	200	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-46	182		182	SS				☑	
62	-47	181		181	SS				☑	
93	-48	179		179	SS				☑	
123	-49	179		179	SS				☑	
154	-49	178		178	SS				☑	
200	-52	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.60 OVBN Overburden

3.60 8.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

3.6 - 8.9: Component input of argillaceous mud/seduiment; contains biotite and convoluted banding that disrupts foliation parallel lapilli

<<Min: 3.6 - 28 2% Min: Calcite>>

<<Min: 3.6 - 28.5 1% Min: Pyrrhotite>>

<<Min: 3.6 - 36 12% Min: Ankerite>>

<<Alt: 3.6 - 35.7 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

8.90 13.90 RHYvl Lapilli tuff

8.9 - 13.9: Component input of argillaceous mud/seduiment; contains biotite and convoluted banding that disrupts foliation parallel lapilli

13.90 15.00 MDSt Rhyolite tuff dominant mudstone

13.9 - 15: argillaceous component + random lapilli present

15.00 18.20 RHYvl Lapilli tuff

18.20 20.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 18.4 - 35.6 1% Min: Pyrite>>

20.80 23.00 RHYvl Lapilli tuff

23.00 25.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

23 - 25.2: flow is interlayered/disrupted with crystal rich tuff

25.20 29.20 RHYvl Lapilli tuff

<<Min: 28 - 34.5 0.5% Min: Calcite>>

29.20 35.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 34.5 - 41.1 2% Min: Calcite>>

35.50 36.10 RHYvl Lapilli tuff

35.5 - 36.1: 2-3 cm vein cuts discordantly through foliation at base of section; contains massive biotite and calcite stringers with pyrite

<<Min: 36 - 39.1 4% Min: Ankerite>>

<<Alt: 35.7 - 39.7 Trace (Alt) Muscovite>>

36.10 39.10 RHYvl Lapilli tuff

36.1 - 39.1: Ankerite is present but calcite is dominant carbonate and pervasive. Lapilli are biotite/chlorite rich

<<Min: 38 - 46 1% Min: Pyrrhotite>>

39.10 56.10 RHYvl Lapilli tuff

<<Min: 39.1 - 53.1 20% Min: Ankerite>>

<<Min: 41 - 56 1% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description
			<<Min: 53.1 - 105.8 7% Min: Ankerite>>
			<<Min: 55.5 - 105.8 1% Min: Pyrrhotite>>
			<<Alt: 39.7 - 96.3 Weak-Moderate (Alt) Muscovite>>
56.10	**61.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
			<<Min: 56.7 - 62.9 1% Min: Calcite>>
61.50	**67.50**	**RHYvl**	**Lapilli tuff**
67.50	**68.80**	**MDSt**	**Rhyolite tuff dominant mudstone**
			<<Struc: 68.7 - 82.7 Fault>> 7 small faults less than 15 cm
68.80	**88.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 72 - 105.8 1% Min: Pyrite>>
88.80	**98.00**	**MDSc**	**Carbonaceous dominant mudstone**
			88.8 - 98: thisthe most crb MDS ive seen so far
			<<Alt: 96.3 - 102.4 Moderate-Strong (Alt) Muscovite>>
98.00	**99.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
99.20	**101.20**	**RHYva**	**Coarse grained to ash tuff**
			99.2 - 101.2: peculiar tan and orange carbonate-laminated bands, could be exhalite
101.20	**105.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			101.2 - 105.8: fine grained biotite rich band at 103.5
105.80	**106.60**	**OD**	**Brecciated sulphides**
106.60	**108.80**	**OG**	**Chalcopyrite rich sulphides**
			<<Min: 108.4 - 115 0.5% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.20	102.70	1.50	Q311791	5.6	0.026	-0.01	0.01	0.03
102.70	104.20	1.50	Q311792	10.3	0.025	-0.01	0.05	0.1
104.20	105.80	1.60	Q311793	2.3	0.023	-0.01	0.02	0.05
105.80	107.20	1.40	Q311794	177	1.55	8.29	0.36	1.11
107.20	108.70	1.50	Q311795	303	3.08	15.2	0.51	2.04
108.70	110.20	1.50	Q311796	113	1.28	4.7	0.6	12.1

From (m)	To (m)		Rocktype & Description
108.80	**111.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
111.80	**112.80**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
112.80	**114.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
114.90	**117.50**	**RHY**	**undifferentiated rhyolite**
<<Min: 114.9 - 127.3 1% Min: Sphalerite>>			
<<Min: 114.9 - 127.3 1% Min: Pyrite>>			
<<Min: 114.9 - 127.3 3% Min: Pyrrhotite>>			
<<Min: 114.9 - 127.3 2% Min: Chalcopyrite>>			
<<Min: 114.9 - 147.8 5% Min: Ankerite>>			
<<Min: 115 - 119 3% Min: Calcite>>			
117.50	**127.30**	**RHY**	**undifferentiated rhyolite**
<<Min: 121 - 136.5 0.5% Min: Calcite>>			
<<Alt: 117.9 - 127.3 Moderate-Strong (Alt) Cordierite>>			
127.30	**131.70**	**OA**	**Magnetite bearing sulphides**
131.70	**133.60**	**RHY**	**undifferentiated rhyolite**
131.7 - 133.6: Altered and contains calcite			
<<Min: 131.7 - 133 1% Min: Pyrrhotite>>			
<<Min: 131.7 - 133.6 2% Min: Pyrite>>			
133.60	**135.10**	**MXSX**	**Massive Sulphide**
135.10	**140.10**	**RHYv**	**Rhyolite volcaniclastic**
135.1 - 140.1: quartz sericite alteration; high silica content (glassy)			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
110.20	111.70	1.50	Q311797	114	0.625	2.69	1.07	16.6
111.70	113.20	1.50	Q311798	306	2.04	8.33	1.15	6.08
113.20	114.90	1.70	Q311799	475	1.62	1.46	4.16	10.3
114.90	116.40	1.50	Q311801	4.5	0.024	0.03	0.03	0.04
116.40	117.90	1.50	Q311802	14	0.054	0.05	0.13	0.28
117.90	119.40	1.50	Q311803	106	0.741	1.89	0.24	0.66
119.40	120.90	1.50	Q311804	9.6	0.033	0.16	0.11	0.17
120.90	122.40	1.50	Q311805	6.2	0.048	0.09	0.1	0.38
122.40	123.90	1.50	Q311806	5.1	0.049	0.09	0.04	0.26
123.90	125.40	1.50	Q311807	20.2	0.105	0.25	0.23	0.61
125.40	127.30	1.90	Q311808	9.9	0.034	0.1	0.18	0.42
127.30	128.80	1.50	Q311809	105	2.53	1.17	1.72	12.3
128.80	130.30	1.50	Q311811	67.5	0.902	0.15	1.8	7.48
130.30	131.70	1.40	Q311812	112	0.614	0.42	3.02	12.3
131.70	133.20	1.50	Q311813	36.9	0.497	0.47	0.36	1.76
133.20	134.40	1.20	Q311814	95.6	0.364	0.22	2.78	11.4
134.40	135.90	1.50	Q311815	52.6	0.404	1.06	0.26	2.85
135.90	137.40	1.50	Q311816	1.1	0.01	-0.01	0.01	0.02

From (m)	To (m)		Rocktype & Description
			<<Min: 135.1 - 140.1 2% Min: Pyrite>>
			<<Min: 135.1 - 140.1 0.5% Min: Pyrrhotite>>
			<<Min: 135.4 - 140.1 0.5% Min: Galena>>
			<<Min: 135.4 - 140.1 1% Min: Chalcopyrite>>
			<<Min: 136 - 141.3 3% Min: Calcite>>
140.10	**142.80**	**RHYvl**	**Lapilli tuff**
140.1 - 142.8: siliceous, sericitic alteration overprinting high			
142.80	**143.40**	**MXSX**	**Massive Sulphide**
<<Alt: 143.3 - 144.9 Moderate-Strong (Alt) Cordierite>>			
143.40	**144.60**	**RHYv**	**Rhyolite volcaniclastic**
143.4 - 144.6: contains semi-massive sulphide lens 10cm at base of interval			
144.60	**148.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 146.1 - 151 2% Min: Pyrrhotite>>			
<<Min: 146.5 - 165 18% Min: Calcite>>			
<<Alt: 144.9 - 157.6 Weak-Moderate (Alt) Muscovite>>			
148.00	**149.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
149.10	**150.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
149.1 - 150.6: looks like mafic tuff texture, chlorite/biotite replaced by sericite			
150.60	**157.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 151 - 200 2% Min: Pyrrhotite>>			
<<Struc: 152.3 - 156.3 Fault>> 4 fault intervals 30-50cm each containing broken coherent rock and clay			
157.60	**162.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
157.6 - 162.4: Sericite alteration			
<<Alt: 157.6 - 166.4 Moderate (Alt) Silicification>>			
<<Alt: 157.6 - 166.4 Moderate (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
137.40	138.90	1.50	Q311817	29.7	0.061	0.04	0.27	0.67
138.90	140.30	1.40	Q311818	21.4	0.193	0.07	0.11	0.27
140.30	141.30	1.00	Q311819	163	1.23	0.2	2.38	9
141.30	142.80	1.50	Q311821	30	0.429	0.52	0.26	0.87
142.80	143.40	0.60	Q311822	107	0.266	0.25	2.92	9.83
143.40	144.90	1.50	Q311823	45.1	0.069	0.63	0.48	1.17
144.90	146.40	1.50	Q311824	1.7	-0.005	-0.01	0.04	0.08
146.40	147.90	1.50	Q311825	-0.3	-0.005	0.01	-0.01	0.16

From (m)	To (m)		Rocktype & Description
162.40	**162.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
162.70	**163.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
163.60	**165.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 165 - 176 10% Min: Calcite>>			
165.60	**166.40**	**RHYva**	**Coarse grained to ash tuff**
166.40	**173.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 169.4 - 177.2 2% Min: Pyrite>>			
173.80	**175.80**	**MXSX**	**Massive Sulphide**
173.8 - 175.8: cordierite present			
<<Min: 175.5 - 200 5% Min: Ankerite>>			
<<Alt: 173.8 - 189.1 Moderate (Alt) Muscovite>>			
175.80	**177.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 176 - 195 0.5% Min: Calcite>>			
177.20	**189.10**	**RHYva**	**Coarse grained to ash tuff**
177.2 - 189.1: quartz eyes present. Some clasts are lapilli sized			
<<Min: 187.6 - 195.3 1% Min: Pyrite>>			
<<Alt: 179 - 189.1 Weak-Moderate (Alt) Chlorite>>			
189.10	**194.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 189.1 - 195.3 Weak (Alt) Muscovite>>			
194.30	**200.00**	**RHYv**	**Rhyolite volcaniclastic**
194.3 - 200: Chloritic alteration of rhyolitic lapilli tuff?			
<<Min: 195 - 200 3% Min: Calcite>>			
<<Alt: 195.3 - 200 Moderate (Alt) Chlorite>>			
<<Alt: 195.3 - 200 Weak-Moderate (Alt) Biotite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			FG					

Project: **KZK** **Hole Number:** **K94-009**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 200									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-010

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.4375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815550	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1395.65	Casing Depth (m):		Length (m):	179	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
32	-89	180		180	SS				☑	
63	-83	185		185	SS				☑	
93	-82	183		183	SS				☑	
124	-85	185		185	SS				☑	
154	-80	188		188	SS				☑	
178	-80	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.70 OVBN Overburden

3.70 8.00 RHYva Coarse grained to ash tuff grey-green

3.7 - 8: strongly oxidized, heterogeneous, minor contorted massive bands(flow?)

<<Min: 3.7 - 11.8 0.2% Min: Sphalerite>> in aggregates of PY

<<Min: 3.7 - 11.8 3% Min: Pyrite>> Po locally

<<Min: 3.7 - 11.8 5% Min: Ankerite>> bands, too, aggregates form lenses, not really in fracs

<<Alt: 3.7 - 45.5 Weak (Alt) Muscovite>> pretty consistent, chlorite not breally present, minor biotite locally

8.00 11.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) green-brown FG

8 - 11.8: contorted flow bands common, darker green-blackmatrix (BI-CL?afetr flowbands? Minor curdy and bx texture

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

11.80 14.30 RHYvl Lapilli tuff grey-green

11.8 - 14.3: ankeritic, FP? Augens and siliceous lapilli, QZ lapilli,

<<Min: 11.8 - 14.3 10% Min: Ankerite>> more conc'd than above

<<Min: 11.8 - 25.9 0.1% Min: Pyrite>> locl conc'ns along fol'n

<<Min: 11.8 - 25.9 0.1% Min: Pyrrhotite>>

14.30 15.30 MDSw Coherent rhyolite flow with carbonaceous content grey-green

14.3 - 15.3: ankeritic, FP? Augens and siliceous lapilli, QZ lapilli,

<<Min: 14.3 - 26.2 5% Min: Ankerite>> as 1st iterval for the most part

15.30 20.20 RHYvl Lapilli tuff

20.20 21.30 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

20.2 - 21.3: ankeritic, FP? Augens and siliceous lapilli, QZ lapilli,

21.30 26.20 RHYvl Lapilli tuff

<<Min: 25.9 - 28.2 2% Min: Pyrite>> mostly frac controlled to vein, stronlgly deformed, mixed with PO

<<Min: 25.9 - 28.2 2% Min: Pyrrhotite>> as PY

<<Min: 25.9 - 28.2 0.01% Min: Galena>> with PY/PO

26.20 27.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) cream

26.2 - 27.4: massive, glassy, bx'd, sx in fractures,

<<Min: 26.2 - 28.5 0.5% Min: Ankerite>>

27.40 34.10 RHYvl Lapilli tuff grey FMG

27.4 - 34.1: fine lapilli, relatively homogeneous, narrow bands with xtals are darker colour, intermediate?, QZ masses locally minor veins

<<Min: 28.2 - 51.1 0.1% Min: Pyrite>> scatered, mx PY up to 3 mm wide, not common

<<Min: 28.2 - 54.4 0.25% Min: Pyrrhotite>> scattered, wispy,locally conc'd along fol'n

<<Min: 28.5 - 38.6 5% Min: Ankerite>>

34.10 46.00 MDSw Coherent rhyolite flow with carbonaceous content grey-brown

34.1 - 46: weakly carbonaceous, BI gives darker colour, replacing flowbanding?, massive to contorted, strongly sheared

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 38.6 - 46 5% Min: Ankerite>> similar conc'n, different habit, because it is in a flow?

<<Alt: 45.5 - 85.3 Weak-Moderate (Alt) Muscovite>> gradually increases especially towards the bottom

46.00 54.40 RHYvl Lapilli tuff grey-green

46 - 54.4: minor ash tuff, possible flow blocks?

<<Min: 46 - 54.4 5% Min: Ankerite>> strongly on fol'n

<<Min: 51.1 - 54.4 1% Min: Pyrite>> spaced veinlets and diss'd blebs

54.40 62.50 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

54.4 - 62.5: abdt sx t/o section, as veins, bx matrix

<<Min: 54.4 - 60.6 5% Min: Pyrite>> some patchyand frac filling

<<Min: 54.4 - 60.6 2% Min: Pyrrhotite>> and patchy, mostly in upper portion of int?

<<Min: 54.4 - 60.6 0.25% Min: Galena>> lensy with PY

<<Min: 54.4 - 60.6 0.1% Min: Chalcopyrite>> scattered in sx veins/patches

<<Min: 54.4 - 61.9 8% Min: Ankerite>> to aggregates, strong contnet in veins, associated with sx

<<Min: 60.6 - 79 0.5% Min: Pyrrhotite>> wispy diss'ns, scattered along fol'n, locally blebs, in veins

<<Min: 61.9 - 75.9 3% Min: Ankerite>> more sparse, poss pblasts, scattered pods,

62.50 79.00 RHYvl Lapilli tuff grey-green

62.5 - 79: minor ash tuff, possible flow blocks?

<<Min: 63.5 - 72.2 1% Min: Pyrite>> highlydeformed, transposed, SI-PY stringers, fairly conc'd, look like lenses when dragged out

<<Min: 72.2 - 79 0.25% Min: Pyrite>> scattered blebs, some veining

<<Min: 75.9 - 79 5% Min: Ankerite>>

79.00 97.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

79 - 97.8: flow banded flow with tuffaceous intervls, qtz eyes present locally, thin flow bands, contorted, alt'n increases dramatically towards bottom of setion. Tuff abovecontains frags of this kind of flow - tops up?

<<Min: 79 - 89 0.5% Min: Pyrite>> scattered blebs but also minor disaggregated siliceous stringers

<<Min: 79 - 95.7 3% Min: Ankerite>> lensy, veins

<<Min: 89 - 97.8 1% Min: Pyrite>> some in veins

<<Min: 89 - 97.8 1% Min: Pyrrhotite>> blebs, aggregates in vein

<<Min: 95.7 - 102.2 1% Min: Ankerite>> local lenses, veins, patches

<<Alt: 85.3 - 92 Moderate (Alt) Muscovite>> MU becoming stronger on foliation surfaces

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 92 - 109.7 Strong (Alt) Muscovite>> strong AK stain, bright shiny surfaces,													
97.80	**101.40**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-brown**									
97.8 - 101.4: heterogeneoublack to grey brown, well fol'd tuff?, might be crb rhy flw													
<<Min: 97.8 - 109.7 0.5% Min: Pyrite>> shear hosted, lensy diss'ns tomx lenses, local conc'ns													
101.40	**106.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 102.2 - 107.2 8% Min: Ankerite>> abdt stain, conc'd sections, locally almost pervasive													
106.20	**108.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**green-brown**									
106.2 - 108.8: very messed up rock, variable alt'n-reflects original rocK?, bands andveins,brxlocallyand schistose locally,													
<<Min: 107.2 - 118.6 5% Min: Ankerite>> bands and masses, some low concentrations													
108.80	**118.60**	**RHY**	**undifferentiated rhyolite**		111.10	112.60	1.50	Q930916	10	0.021	0.19	0.11	0.56
<<Min: 109.7 - 118.6 0.5% Min: Sphalerite>> in PY veins, lenses, localswirls in bx matrix					112.60	114.10	1.50	Q930917	12	0.029	0.07	0.24	1.55
<<Min: 109.7 - 118.6 3% Min: Pyrite>> mx veins to 3cm wide, lensy aggregates					114.10	115.60	1.50	Q930918	3.4	0.007	0.01	0.06	0.09
<<Min: 109.7 - 118.6 1% Min: Pyrrhotite>> similar to PY					115.60	117.10	1.50	Q930919	11.4	0.05	0.1	0.19	1.9
<<Min: 109.7 - 118.6 0.01% Min: Galena>> in sx masses					117.10	118.60	1.50	Q930921	24	0.014	0.04	0.41	0.22
<<Min: 109.7 - 118.6 0.1% Min: Chalcopyrite>> with PO/PY													
<<Alt: 109.7 - 111.1 Moderate-Strong (Alt) Chlorite>> Still MS present, QZ-AK-PY veins,													
<<Alt: 111.1 - 118.6 Strong (Alt) Muscovite>> MU-QZ primarily, QZ veining prominent, some broken ground adjacent to the mxsx													
118.60	**120.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**		118.60	120.20	1.60	Q930922	56.5	0.471	1.53	0.15	1.7
<<Min: 118.6 - 120.3 80% Min: Pyrite>> weal laminations locally					120.20	121.70	1.50	Q930923	2.8	0.02	0.02	0.02	0.11
<<Min: 118.6 - 120.3 3% Min: Chalcopyrite>> commonly with QV or Clvein													
<<Alt: 120.2 - 122.6 Moderate-Strong (Alt) Muscovite>> Clclots as well, cross over to proximalCL?													
120.30	**130.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**	121.70	123.20	1.50	Q930924	1	0.005	0.01	-0.01	0.04
120.3 - 130: very alt'd, deformed rock,small sections recognizable as tuff													
<<Min: 120.3 - 123.2 3% Min: Pyrite>> swirls,fra fillings					123.20	124.70	1.50	Q930925	22.2	0.086	0.26	0.14	4.15
<<Min: 120.3 - 130 3% Min: Ankerite>>					124.70	126.20	1.50	Q930926	2.1	0.006	-0.01	0.02	0.05
<<Min: 123.2 - 124.2 5% Min: Sphalerite>> net tx SP in Py masses					126.20	127.70	1.50	Q930927	0.8	0.005	-0.01	-0.01	0.03
<<Min: 123.2 - 124.2 25% Min: Pyrite>> bands of granular (Buckshot?) Py					127.70	129.90	2.20	Q930928	2.2	0.018	0.03	0.01	0.04

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 124.2 - 130 0.25% Min: Pyrrhotite>> dyke?	129.90	131.30	1.40	Q930929	81.7	0.776	0.31	1.07	7.37
			<<Alt: 122.6 - 124.2 Strong (Alt) Chlorite>> QZ veins(?), BI clots.after CD									
			<<Alt: 124.2 - 130 Moderate (Alt) Chlorite>> to banded									
130.00	**131.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
			<<Min: 130 - 131.3 10% Min: Sphalerite>> conc'd in bands within PY									
			<<Min: 130 - 131.3 90% Min: Pyrite>> laminated, buckshot									
			<<Min: 130 - 131.3 2% Min: Galena>> alongfol'n									
			<<Alt: 130.3 - 133.8 Moderate-Strong (Alt) Cordierite>> BI? Replaces CD,spotty texture in bands									
131.30	**132.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	131.30	132.40	1.10	Q930931	5.3	0.024	0.02	0.13	0.32
			<<Min: 131.3 - 132.4 0.5% Min: Sphalerite>>									
			<<Min: 131.3 - 132.4 2% Min: Pyrite>> along fol'n									
			<<Min: 131.3 - 133.8 8% Min: Ankerite>>									
132.40	**132.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	132.40	132.80	0.40	Q930932	140	1.81	2.22	2.05	2.08
			<<Min: 132.4 - 132.8 3% Min: Sphalerite>> fracs									
			<<Min: 132.4 - 132.8 95% Min: Pyrite>>									
132.70	**133.80**	**RHYv**	**Rhyolite volcaniclastic**	132.80	133.80	1.00	Q930933	26.3	0.166	0.05	0.55	1.47
			<<Min: 132.8 - 133.8 2% Min: Sphalerite>> around veins, pods AK									
			<<Min: 132.8 - 133.8 5% Min: Pyrite>> narrow bandsear bottom									
133.80	**136.90**	**OA**	**Magnetite bearing sulphides**	133.80	135.30	1.50	Q930934	275	2.13	0.22	2.84	10
			<<Min: 133.8 - 136.8 20% Min: Sphalerite>> bands	135.30	136.80	1.50	Q930935	859	5.83	0.72	3.81	8.37
			<<Min: 133.8 - 136.8 75% Min: Pyrite>>	136.80	139.10	2.30	Q930936	103	0.748	0.08	0.44	0.89
			<<Min: 133.8 - 136.8 5% Min: Galena>> bands									
			<<Min: 136.8 - 140.3 1% Min: Sphalerite>> primarily in sx sections									
			<<Min: 136.8 - 140.3 15% Min: Pyrite>> small sections of smsx to mxsx, lam'd PY									
136.90	**140.30**	**RHYv**	**Rhyolite volcaniclastic**	139.10	140.60	1.50	Q930937	155	1.52	0.33	3.03	7.8
140.30	**142.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	140.60	142.10	1.50	Q930938	59.1	0.571	0.15	1.15	5.24
			<<Min: 140.3 - 142.1 10% Min: Sphalerite>> thin fg bands									

From (m)	To (m)		Rocktype & Description		
<<Min: 140.3 - 142.1 85% Min: Pyrite>>					
142.10	**144.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**		
144.40	**145.50**	**RHYv**	**Rhyolite volcaniclastic**		
<<Min: 144.4 - 145.5 1% Min: Pyrite>>					
<<Min: 144.4 - 145.5 0.5% Min: Chalcopyrite>> stringers at base of interval					
<<Min: 144.4 - 147 0.5% Min: Calcite>> veinlets					
<<Alt: 144.4 - 145.5 Moderate (Alt) Muscovite>> noFe CB, PY included					
145.50	**163.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	
145.5 - 163.3: patchy CA after FP?					
<<Min: 145.5 - 154.4 0.1% Min: Pyrrhotite>>					
<<Min: 147 - 150.7 0.5% Min: Ankerite>>					
<<Min: 150.7 - 154.4 8% Min: Calcite>> lensy along fol'n					
<<Min: 154.4 - 156.7 1% Min: Calcite>> local					
<<Min: 154.4 - 158.6 0.1% Min: Sphalerite>> narrow silicified zones					
<<Min: 154.4 - 174 0.1% Min: Pyrite>> fracture fillings, diss'd blebs in veins					
<<Min: 156.7 - 157.8 5% Min: Calcite>> pervasive					
<<Min: 157.8 - 158.6 10% Min: Calcite>>					
<<Min: 158.6 - 159.7 8% Min: Sphalerite>> multiple venlets					
<<Min: 159.7 - 161.6 10% Min: Calcite>> pervasive fizz					
<<Min: 159.7 - 165.9 1% Min: Sphalerite>> scattered veins through section					
<<Alt: 145.5 - 179 Moderate-Strong (Alt) Silicification>> alt'n of MAFC, CP stringers at top of interval, fault at bottom.					
<<Alt: 145.5 - 179 Weak (Alt) Muscovite>> to pervasive, related to fault?					
163.30	**165.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**green**	**FG**
165.10	**168.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FG**
165.1 - 168.2: characterized by 2-5% 1 mm, tan, leucoxene(?) porphyroblasts, bright green colour due to Ba or V mica					
168.20	**174.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**green**	**FG**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.40	145.90	1.50	Q930939	10.5	2.78	0.25	0.03	0.21
145.90	147.40	1.50	Q930942	25.4	0.156	0.25	0.2	1
147.40	148.50	1.10	Q930943	0.9	0.007	-0.01	-0.01	0.03
148.50	150.00	1.50	Q930944	5.7	0.183	0.12	0.03	0.05

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
174.00	**178.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**									
174 - 178.2: usual spotty, green schist, mafic tuff? Or sill? BI bands common													
<<Min: 177.8 - 179 1% Min: Pyrite>> seams, frac filling													
178.20	**179.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										

End of Hole @ 179

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-011

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414950.78125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815548.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1382.15	Casing Depth (m):		Length (m):	190.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
10	-46	186		186	SS				☑	
32	-46	180		180	SS				☑	
62	-48	182		182	SS				☑	
73	-48	184		184	SS				☑	
123	-49	190		190	SS				☑	
184	-51	189		189	SS				☑	
190	-51	189		189	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.80**	**OVBN**	**Overburden**								
4.80	**9.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**								

4.8 - 9: light grey, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, " curdy" texture. Weakly/moderately MU and AK altered.1-3% of Po (wisps/bands) and Py diss.

<<Min: 4.8 - 10 2% Min: Pyrrhotite>> Small aggregates disseminated, also occuring as thin veinlets/bands.

<<Min: 4.8 - 34 3% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.00 24.00 RHYvl Lapilli tuff

9 - 24: light grey, fine to medium grained, comprinsing silica fragments, milky, locally AK altered, deformed and stretched/dismembered, lapillis? Possibly RHYcw. Weakly/moderately MU and AK altered.2-3% of Po (wisps/bands) and < 1% Py diss.

<<Min: 10 - 19 3% Min: Pyrrhotite>> Small aggregate disseminated, also occuring as thin veinlets/bands.

<<Min: 19 - 27 1% Min: Pyrite>>

<<Min: 19 - 27 4% Min: Pyrrhotite>> Mainly occuring as thin veinlets/bands, subconcordant.

<<Min: 21 - 33.5 3% Min: Calcite>> Mainly associated with Qtz-+/-Ak veins/veinlets

24.00 34.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

24 - 34: light grey, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly MU and AK altered.2-4% of Po (wisps/bands) and Py diss.

<<Min: 27 - 36 1% Min: Pyrite>> small aggregate.

<<Min: 27 - 36 2% Min: Pyrrhotite>> Small aggregate disseminated, also occuring as thin veinlets/bands.

34.00 34.80 RHYvl Lapilli tuff

34 - 34.8: Bands desappear, trace of leucocratic crystals (0.5 cm), comprinsing stretched fragments, silicified, milky.

<<Min: 34 - 65.5 6% Min: Ankerite>>

34.80 45.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34.8 - 45.3: light grey, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, '' curdy'' texture but not strong. Weakly MU and moderate AK altered.1-3% of Po/Sp (wisps/bands) and Py diss.

<<Min: 36 - 40.5 3% Min: Pyrite>> Coarse grained, diss within matrix.

<<Min: 36 - 40.5 0.5% Min: Pyrrhotite>>

<<Min: 40.5 - 66.6 2% Min: Pyrrhotite>> Diss as small aggregats.

<<Vein: 36 - 37.8 20% Quartz>> Interval comprinsing milky qtz veins, strongly deformed, 2-15 cm wide.

<<Struc: 36 - 37.8 Strong (Alt) Foliation>> Irregular foliation, folded interval.

45.30 50.40 MDSt Rhyolite tuff dominant mudstone

45.3 - 50.4: Thin concordant carbonacious mudstone bands within probably tuff.

<<Struc: 45.3 - 46 Moderate (Alt) Fault>> moderately fractured with short gauge interval.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

50.40 53.40 RHYvl Lapilli tuff

50.4 - 53.4: Interval comprinsing leucocratic fragments, cm, heterogeneous, silicified. Locally occuring as bands.

53.40 54.10 MDSt Rhyolite tuff dominant mudstone

53.4 - 54.1: Thin concordant carbonacious mudstone bands within probably tuff.

54.10 56.70 RHYvl Lapilli tuff

54.1 - 56.7: Interval comprinsing leucocratic fragments, cm, heterogeneous, silicified. Locally occuring as bands. Trace of crystals (Fsp?)

56.70 57.50 MDSc Carbonaceous dominant mudstone

56.7 - 57.5: Dominantly carbonaceous mudstone.

57.50 61.10 MDSt Rhyolite tuff dominant mudstone

57.5 - 61.1: Thin concordant carbonacious mudstone bands within probably tuff.

61.10 62.00 MDSc Carbonaceous dominant mudstone

62.00 63.30 RHYvl Lapilli tuff

62 - 63.3: Interval comprinsing leucocratic fragments, cm, heterogeneous, silicified. Locally occuring as bands. RHYcw?

63.30 66.60 MDSt Rhyolite tuff dominant mudstone

63.3 - 66.6: Thin concordant carbonacious mudstone bands within probably tuff.

<<Min: 65.5 - 75.6 10% Min: Ankerite>>

66.60 75.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

66.6 - 75.6: light grey, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, '' curdy'' texture. Moderately MU altered and AK altered (weak).

<<Min: 66.6 - 83.6 0.5% Min: Pyrrhotite>>

<<Alt: 67 - 103.3 Moderate-Strong (Alt) Muscovite>> Also occuring as bands (foliation).

<<Struc: 68.9 - 69.5 Strong (Alt) Fault>> gauge fault, strongly fractured and Ser/Mu filling.

From (m)	To (m)	Rocktype & Description

<<Struc: 75 - 79.8 Moderate-Strong (Alt) Fault>> Large interval fractured, regular fracture surface. Comprinsing short gauge interval.

75.60 80.50 MDSt Rhyolite tuff dominant mudstone

75.6 - 80.5: Thin concordant carbonacious mudstone bands within probably tuff.

<<Min: 75.6 - 116.7 3% Min: Ankerite>>

80.50 91.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 83.6 - 91.1 0.01% Min: Pyrite>>

<<Min: 83.6 - 91.1 2% Min: Pyrrhotite>> Small aggregate disseminated, also occuring as thin veinlets/bands.

<<Vein: 81 - 83.6 15% Quartz>> Group of milky qtz veins, cm, deformed (boudinage), irregular oriented. Trace of Sp within the veins.

91.10 92.50 MDSc Carbonaceous dominant mudstone

91.1 - 92.5: Dominantly carbonaceous mudstone.

<<Min: 91.1 - 100.5 2% Min: Pyrite>>

<<Min: 91.1 - 100.5 0.5% Min: Pyrrhotite>>

92.50 99.30 MDSt Rhyolite tuff dominant mudstone

92.5 - 99.3: Thin concordant carbonacious mudstone bands within probably tuff.

99.30 100.50 MDS Carbonaceous Mudstone & Tuffaceous Mudstone

99.3 - 100.5: Sharp lower contact with RHYcw.

100.50 103.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

100.5 - 103.5: beige to greenish, strong MU altered. Sharp contact with RHYva

<<Min: 100.5 - 103.5 3% Min: Pyrrhotite>> small aggregates

<<Alt: 103.3 - 116 Weak-Moderate (Alt) Muscovite>>

<<Alt: 103.3 - 119.8 Moderate (Alt) Cordierite>> the crystal size increase close to the MS, locally associated with Cl at the edges.

103.50 119.70 RHY undifferentiated rhyolite

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.20	113.70	1.50	B00233005	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 103.5 - 116.7 0.5% Min: Pyrite>>	113.70	115.20	1.50	B00233006	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 103.5 - 116.7 2% Min: Pyrrhotite>>	115.20	116.70	1.50	B00233007	3	0.007	0.12	-0.01	0.03
		<<Min: 111.5 - 116.3 3% Min: Calcite>> Mainly associated with Qtz-+/-Ak veins/veinlets. Also patchy.									
		<<Min: 116.3 - 118.2 10% Min: Calcite>> Also occuring as fine veinlets.									
		<<Min: 116.7 - 117 3% Min: Sphalerite>>									
		<<Min: 116.7 - 117 8% Min: Pyrrhotite>>									
		<<Min: 116.7 - 117 5% Min: Chalcopyrite>> Aggregates									
		<<Min: 116.7 - 119.6 5% Min: Ankerite>>									
		<<Min: 117 - 117.6 4% Min: Sphalerite>> Occuring as small aggregates.									
		<<Min: 117 - 117.6 1% Min: Chalcopyrite>>									
		<<Min: 117.6 - 119.3 0.5% Min: Sphalerite>>									
		<<Min: 117.6 - 119.3 1% Min: Pyrrhotite>> Diss within the matrix, coarse grained									
		<<Min: 119.3 - 119.7 4% Min: Sphalerite>>									
		<<Min: 119.3 - 119.7 1% Min: Pyrite>>									
		<<Min: 119.3 - 119.7 2% Min: Pyrrhotite>>									
		<<Alt: 116 - 116.7 Intense (Alt) Chlorite>> Associated with mineralisation.									
		<<Alt: 116.7 - 119.8 Moderate (Alt) Chlorite>>									
119.70	**121.30**	**OA** **Magnetite bearing sulphides**									
		119.7 - 121.3: Magnetite (medium).									
		<<Min: 119.7 - 120 3% Min: Sphalerite>>									
		<<Min: 119.7 - 120 4% Min: Pyrite>>									
		<<Min: 119.7 - 120 4% Min: Chalcopyrite>>									
		<<Min: 120 - 127.2 6% Min: Sphalerite>> Occuring as bands.									
		<<Min: 120 - 127.2 80% Min: Pyrite>>									
		<<Min: 120 - 127.2 2% Min: Galena>>									
		<<Min: 120 - 127.2 2% Min: Chalcopyrite>>									
121.30	**127.20**	**OH** **Fine grained, megascopically homogeneous pyrite rock**									
127.20	**130.40**	**RHY** **undifferentiated rhyolite**	128.70	129.80	1.10	B00233008	0.7	0.006	-0.01	-0.01	-0.01
		127.2 - 130.4: Beige, moderately Si (Occuring as concordant bands) and moderately Ser/MU altered (bands). No evidence of flow.									
		<<Min: 127.2 - 128.7 1% Min: Sphalerite>>	129.90	131.40	1.50	B00233009	0.5	-0.005	-0.01	-0.01	-0.01
		<<Min: 127.2 - 128.7 3% Min: Pyrite>> At the margins of qtz vein									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 127.2 - 128.7 0.5% Min: Galena>> At the margins of qtz vein									
		<<Min: 127.2 - 142 4% Min: Calcite>> Occuring as small clots disseminated.									
		<<Min: 128.7 - 136.1 3% Min: Pyrite>> thin veinlets/stringers									
		<<Min: 128.7 - 136.1 0.5% Min: Galena>> Associated with py									
		<<Alt: 127.2 - 142 Moderate (Alt) Muscovite>>									
		<<Vein: 127.5 - 128.7 50% Quartz-Carbonate>> Group of qtz-+/-Cal veins, cm, deformed, discordant and irregular oriented.									
130.40	**137.70**	**RHY** **undifferentiated rhyolite**	131.40	132.90	1.50	B00233011	0.4	-0.005	-0.01	-0.01	-0.01
		130.4 - 137.7: Beige, medium grained, +/- homogeneous, weak Ca (veinlets). 5% of concordant siliceous bands,deformed. Moderate to strongly MU altered. RHY or MAFI Mu/Ser altered?									
		<<Min: 135 - 139.5 3% Min: Ankerite>>	133.00	134.50	1.50	B00233012	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 136.1 - 138.2 5% Min: Pyrite>> locally occuring as massive band, associated with Cp.	134.50	136.00	1.50	B00233013	16.7	0.107	0.02	0.13	0.37
		<<Min: 136.1 - 138.2 0.1% Min: Chalcopyrite>> Associated with py	136.00	136.70	0.70	B00233014	19.8	0.136	0.52	0.03	0.05
		<<Vein: 136.2 - 146.5 30% Quartz>> Interval comprinsing Qtz veins,milky, cm to metric, discordant and irregular oriented. Deformed (boudinage). 2-5% of Po associated with trace of py.									
137.70	**139.10**	**OI** **Heavilly disseminated sulphides in host schist**									
		137.7 - 139.1: Interval comprinsing 40% of massive Py (bands), associated with Sp (bands/veins).									
		<<Min: 138.2 - 138.7 3% Min: Sphalerite>> Thin bands									
		<<Min: 138.2 - 138.7 60% Min: Pyrite>> Massive, associated with Sp and Gl.									
		<<Min: 138.2 - 138.7 1% Min: Galena>>									
		<<Min: 138.7 - 142 2% Min: Pyrite>>									
139.10	**142.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	140.20	141.70	1.50	B00233015	2.8	0.006	0.04	0.02	0.07
		139.1 - 142: Beige, medium grained, +/- homogeneous, weak Ca (veinlets). 5% of concordant siliceous bands,deformed. Moderate to strongly MU altered. RHY or MAFI Mu/Ser altered?									
			141.70	143.20	1.50	B00233016	5.4	0.03	0.07	0.04	0.14
142.00	**172.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**	143.20	144.70	1.50	B00233017	-0.3	-0.005	-0.01	-0.01	0.06
		142 - 172.9: Green to beige, fine to medium grained, large interval of mafic intrusive, strongly sheared/foliated. Mainly chlorite altered (pervasive), locally comprinsing some metric Mu/Ser interval. ~ 10% of Qtz-Cal +/- Ak veinlets/bands, concordant. 3-10% of small									
		<<Min: 142 - 142.2 15% Min: Pyrite>> Band	144.70	146.20	1.50	B00233018	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 142 - 142.2 2% Min: Chalcopyrite>>

<<Min: 142 - 146.7 15% Min: Calcite>> Mainly associated with veins/veinlets

<<Min: 142.2 - 161.7 1% Min: Pyrite>> subheudral

<<Min: 146.7 - 175.3 10% Min: Calcite>> Mainly associated with veins/veinlets, concordant. Also pervasive.

<<Min: 161.7 - 164.8 4% Min: Pyrite>> thin stringers.

<<Min: 164.8 - 172.9 0.5% Min: Pyrite>>

<<Alt: 142 - 142.2 Intense (Alt) Chlorite>> Associated with Cp and Py.

<<Alt: 142.2 - 146.7 Moderate-Strong (Alt) Chlorite>>

<<Alt: 142.2 - 146.7 Moderate (Alt) Biotite>> Small clots disseminated.

<<Alt: 146.7 - 153.9 Moderate (Alt) Muscovite>>

<<Alt: 153.9 - 160.9 Moderate (Alt) Chlorite>>

<<Alt: 153.9 - 160.9 Moderate (Alt) Biotite>>

<<Alt: 160.9 - 164.8 Moderate (Alt) Muscovite>>

<<Alt: 164.8 - 172.9 Moderate (Alt) Chlorite>>

<<Vein: 172.2 - 172.4 70% Quartz-Tourmaline 45 deg. >> Regular qtz-TL veins, discordant.

172.90 190.80 RHYvl Lapilli tuff grey

172.9 - 190.8: Light grey, moderately to strongly sheared, > 15% of mafic (strongly Chl altered) and siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered. Matrix Mu/Chl altered. Probably lapilli tuff.

<<Min: 172.9 - 175.3 2% Min: Sphalerite>> thin stringers

<<Min: 172.9 - 175.3 0.5% Min: Pyrite>>

<<Min: 172.9 - 175.3 0.1% Min: Chalcopyrite>>

<<Min: 175.3 - 190.8 1% Min: Pyrite>>

<<Min: 175.3 - 190.8 3% Min: Pyrrhotite>>

<<Min: 176.5 - 190.8 8% Min: Ankerite>>

<<Alt: 172.9 - 175.3 Strong (Alt) Chlorite>> Associated with mineralisation.

End of Hole @ 190.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-012

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414950.71875	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815550	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.21	Casing Depth (m):		Length (m):	270.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
32	-88	201		201	SS				☑	
73	-86	201		201	SS				☑	
93	-84	193		193	SS				☑	
124	-82	190		190	SS				☑	
154	-81	188		188	SS				☑	
185	-80	190		190	SS				☑	
215	-80	193		193	SS				☑	
246	-78	196		196	SS				☑	
251	-78	196		196	SS				☑	
262	-77	195		195	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.50**	**OVBN** **Overburden**									
3.50	**12.30**	**RHYvl** **Lapilli tuff**									
<<Min: 7 - 34.7 1% Min: Pyrrhotite>>											
<<Min: 7 - 55.5 5% Min: Ankerite>>											
<<Alt: 5 - 45 Weak (Alt) Muscovite>>											
12.30	**18.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 15.1 - 16 50% Quartz-Carbonate-Sulphide>> cross cutting 2 cm qtz vein with ankerite and po.

18.60 30.20 RHYvl Lapilli tuff

30.20 34.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34.70 38.70 RHYcf Feldspar & feldspar quartz porphyry

<<Min: 34.7 - 39 3% Min: Pyrrhotite>>

<<Min: 34.7 - 55.5 0.5% Min: Pyrite>>

38.70 43.80 RHYvl Lapilli tuff

<<Min: 39 - 55.5 1% Min: Pyrrhotite>>

43.80 44.30 MDSt Rhyolite tuff dominant mudstone

44.30 48.10 RHYvl Lapilli tuff

<<Alt: 45 - 55.5 Weak-Moderate (Alt) Muscovite>>

48.10 56.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 55.5 - 61.4 1% Min: Pyrrhotite>>

<<Min: 55.5 - 73 10% Min: Ankerite>>

<<Alt: 55.5 - 61.4 Weak-Moderate (Alt) Muscovite>>

56.50 61.40 RHYvl Lapilli tuff

<<Min: 59 - 61 0.5% Min: Pyrite>>

<<Min: 60.6 - 173.3 8% Min: Calcite>>

61.40 69.20 MDSt Rhyolite tuff dominant mudstone

<<Min: 61.4 - 73 0.5% Min: Pyrrhotite>>

<<Alt: 61.4 - 69.2 Weak (Alt) Muscovite>>

<<Vein: 64.1 - 64.4 100% Quartz>> faulted lower contact

69.20 74.40 RHYvl Lapilli tuff

69.2 - 74.4: one minor 10cm band of mdst

<<Min: 73 - 90.3 15% Min: Ankerite>>

<<Min: 73 - 97.3 0.5% Min: Pyrrhotite>>

<<Alt: 69.2 - 74.4 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
74.40	**77.00**	**MDSt** **Rhyolite tuff dominant mudstone**									
74.4 - 77: increasingly carbonaceous											
<<Alt: 74.4 - 87 Weak (Alt) Muscovite>>											
<<Struc: 75 - 78 Moderate (Alt) Fault>> broken core poker chips in graphitic partings of mudstone											
77.00	**78.10**	**MDSc** **Carbonaceous dominant mudstone**									
77 - 78.1: minor felsic component remains											
78.10	**97.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
78.1 - 97.3: m bands of rhycw with miunor carbonaceous material within											
<<Min: 90.3 - 100 7% Min: Ankerite>>											
<<Alt: 87 - 97.3 Weak-Moderate (Alt) Muscovite>>											
97.30	**114.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	102.80	104.30	1.50	B00232553	0.5	-0.005	-0.01	0.01	0.02
97.3 - 114.7: intense mu alt from 102.5m then stg chl mu texture destructive alteration with ak from 109m to 113. however cw either side with some evidence of cw between											
<<Min: 97.3 - 102.1 0.5% Min: Pyrite>>			104.30	105.80	1.50	B00232554	0.5	-0.005	-0.01	0.02	0.05
<<Min: 97.3 - 102.1 2% Min: Pyrrhotite>>											
<<Min: 100 - 111.6 15% Min: Ankerite>>											
<<Min: 102.1 - 108 1% Min: Pyrrhotite>>											
<<Min: 108 - 108.5 10% Min: Pyrrhotite>>											
<<Min: 108 - 108.5 1% Min: Chalcopyrite>>											
<<Min: 108 - 111.5 2% Min: Pyrite>>											
<<Min: 108 - 115 2% Min: Sphalerite>>											
<<Min: 108.5 - 111.5 1% Min: Pyrrhotite>>											
<<Min: 111.5 - 113.1 3% Min: Pyrite>>											
<<Min: 111.5 - 113.1 10% Min: Pyrrhotite>>											
<<Min: 111.5 - 113.1 1% Min: Chalcopyrite>>											
<<Min: 111.6 - 124.2 5% Min: Ankerite>>											
<<Min: 113.1 - 121.9 1% Min: Pyrrhotite>>											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 97.3 - 102.5 Moderate (Alt) Muscovite>>									
			<<Alt: 102.5 - 111.6 Strong (Alt) Muscovite>>									
			<<Alt: 111.5 - 113 Strong (Alt) Chlorite>>									
			<<Alt: 111.6 - 113 Weak-Moderate (Alt) Muscovite>>									
			<<Alt: 112 - 112.5 Moderate-Strong (Alt) Cordierite>>									
			<<Alt: 113 - 120.6 Moderate (Alt) Muscovite>>									
			<<Vein: 110 - 111.3 100% Quartz>>									
114.70	**115.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	114.80	116.30	1.50	B00232555	1.4	0.012	-0.01	0.07	0.07
115.80	**137.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	116.30	117.80	1.50	B00232556	1	0.005	0.02	0.01	0.41
			<<Min: 121.9 - 124.2 2% Min: Pyrite>>	117.80	119.50	1.70	B00232557	1.9	0.013	0.02	-0.01	0.02
			<<Min: 121.9 - 124.2 10% Min: Pyrrhotite>>	119.50	121.00	1.50	B00232558	0.9	-0.005	-0.01	0.01	0.02
			<<Min: 121.9 - 124.2 1% Min: Chalcopyrite>>	125.50	127.00	1.50	B00232559	1.5	0.015	0.02	0.02	0.14
			<<Min: 124.2 - 137.1 1% Min: Pyrrhotite>>	127.00	128.50	1.50	B00232561	0.8	0.01	-0.01	-0.01	-0.01
			<<Min: 124.2 - 137.1 10% Min: Ankerite>>	132.60	134.10	1.50	B00232562	0.7	0.006	-0.01	-0.01	0.03
			<<Alt: 120.6 - 124.2 Moderate-Strong (Alt) Muscovite>>	134.10	135.60	1.50	B00232563	1.9	0.009	-0.01	-0.01	0.01
			<<Alt: 122.5 - 124.2 Intense (Alt) Chlorite>>									
			<<Alt: 124.2 - 133.2 Moderate (Alt) Muscovite>>									
			<<Alt: 133.2 - 136.9 Moderate-Strong (Alt) Muscovite>>									
			<<Alt: 136.1 - 136.9 Weak-Moderate (Alt) Chlorite>>									
			<<Alt: 136.9 - 137.1 Weak-Moderate (Alt) Muscovite>>									
			<<Vein: 116.7 - 119.7 50% Quartz>>									
137.10	**139.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
			137.1 - 139.3: MET 7 however fine grading into very fine py originally OH									
			<<Min: 137.1 - 139.3 10% Min: Sphalerite>>									
			<<Min: 137.1 - 139.3 70% Min: Pyrite>>									
139.30	**144.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	140.80	142.30	1.50	B00232564	0.7	0.009	-0.01	-0.01	0.06
			139.3 - 144.5: MET 8 143.7-144.5 in chl stringer zone									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 139.3 - 143.7 1% Min: Pyrrhotite>>	142.30	143.70	1.40	B00232565	0.5	0.006	0.01	-0.01	0.02
			<<Min: 139.3 - 145.5 3% Min: Pyrite>>									
			<<Min: 139.3 - 145.5 5% Min: Pyrrhotite>>									
			<<Min: 139.3 - 145.5 1% Min: Chalcopyrite>>									
			<<Min: 144.3 - 154.7 15% Min: Calcite>>									
			<<Alt: 139.3 - 144.1 Weak-Moderate (Alt) Muscovite>>									
			<<Alt: 143 - 145.5 Strong (Alt) Chlorite>> chl cp po py sp stringers									
144.50	**154.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	145.70	147.20	1.50	B00232566	1	-0.005	-0.01	0.01	0.03
			144.5 - 154.7: MET 8 144.5-145.7 in chl cp stringer zone only 0.3% Cu though									
			<<Min: 145.5 - 148.1 1% Min: Pyrrhotite>>	147.20	148.70	1.50	B00232569	-0.3	-0.005	-0.01	-0.01	0.01
			<<Min: 153 - 172.5 2% Min: Pyrite>>	148.70	150.20	1.50	B00232571	-0.3	-0.005	-0.01	-0.01	0.01
			<<Min: 153 - 172.5 0.5% Min: Pyrrhotite>>									
			<<Min: 153.9 - 159.6 0.5% Min: Sphalerite>>									
			<<Alt: 145.5 - 147.5 Moderate (Alt) Silicification>>									
			<<Alt: 153 - 154.7 Moderate (Alt) Muscovite>> bleaching and mu alt of mafic									
154.70	**158.80**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
			154.7 - 158.8: grey aphanitic, some mu and foliation developed towards upper contact. Bleaches and mu alters surrounding mafics over 5m on either side									
			<<Alt: 154.7 - 160.6 Weak (Alt) Silicification>>									
			<<Alt: 154.7 - 160.6 Weak-Moderate (Alt) Muscovite>>									
158.80	**160.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
160.30	**160.60**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
160.60	**173.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	168.10	169.60	1.50	B00232567	0.4	-0.005	-0.01	-0.01	0.03
			<<Min: 173.1 - 174.1 5% Min: Calcite>>	169.60	171.10	1.50	B00232568	0.4	-0.005	-0.01	-0.01	0.03
			<<Alt: 160.6 - 170.3 Moderate (Alt) Muscovite>> bleaching and mu alt of mafic									
			<<Alt: 170.3 - 173.3 Intense (Alt) Chlorite>> chlorite py, cp, sp stringer to mx alteration.									
			<<Alt: 172.7 - 172.9 Moderate-Strong (Alt) Cordierite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
173.30	**174.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
173.3 - 174.1: MET 7											
<<Min: 173.3 - 174.1 20% Min: Sphalerite>>											
<<Min: 173.3 - 174.1 70% Min: Pyrite>>											
<<Min: 173.3 - 174.1 9% Min: Magnetite>>											
<<Min: 173.3 - 174.1 1% Min: Chalcopyrite>>											
174.10	**181.90**	**RHYc** **Rhyolite coherant volcanics**	175.60	177.10	1.50	B00232572	-0.3	-0.005	-0.01	-0.01	0.02
174.1 - 181.9: fottwall to sx, chl alt, some flow textures.											
<<Min: 174.1 - 178 3% Min: Pyrite>>			177.10	178.60	1.50	B00232573	1.4	0.019	0.01	0.06	0.08
<<Min: 178 - 200 0.5% Min: Pyrite>>											
<<Min: 178 - 200 0.5% Min: Pyrrhotite>>											
<<Alt: 174.1 - 174.2 Moderate-Strong (Alt) Cordierite>>											
<<Alt: 174.1 - 175.7 Strong (Alt) Chlorite>>											
<<Alt: 174.1 - 182 Moderate-Strong (Alt) Muscovite>>											
<<Vein: 176.2 - 176.6 100% Quartz>>											
<<Vein: 181.5 - 181.9 100% Quartz>>											
<<Struc: 180.5 - 184 Moderate (Alt) Fault>> broken poker core two 10cm wide strong gouge zones											
181.90	**200.00**	**RHYvl** **Lapilli tuff**									
181.9 - 200: sections with weak mu alteration of primary bt so partial sed input??											
<<Min: 187 - 200 10% Min: Ankerite>>											
<<Alt: 182 - 187 Weak-Moderate (Alt) Muscovite>>											
<<Alt: 186 - 187 Weak-Moderate (Alt) Chlorite>>											
<<Alt: 187 - 200 Moderate (Alt) Muscovite>>											
200.00	**205.80**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
<<Min: 200 - 215.8 10% Min: Ankerite>>											
<<Min: 200 - 216 0.5% Min: Pyrite>>											
<<Min: 200 - 216 0.5% Min: Pyrrhotite>>											
<<Alt: 200 - 205.8 Weak-Moderate (Alt) Muscovite>> overprint											

From (m)	To (m)	Rocktype & Description
205.80	**206.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

205.8 - 206.8: dyke

<<Min: 205.8 - 206.8 30% Min: Calcite>>

<<Alt: 205.8 - 206.8 Trace (Alt) Chlorite>>

206.80	**215.80**	**RHYvl**	**Lapilli tuff**

<<Alt: 206.8 - 215.8 Moderate (Alt) Muscovite>>

<<Struc: 213 - 215.8 Strong (Alt) Fault>> over 80% gouge zone . Major fault.

215.80	**216.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

215.8 - 216.2: dyke

<<Min: 215.8 - 216.2 30% Min: Calcite>>

216.20	**223.60**	**RHYvl**	**Lapilli tuff**

<<Min: 216.2 - 223.6 0.5% Min: Pyrrhotite>>

<<Min: 216.2 - 223.6 5% Min: Ankerite>>

<<Alt: 216.2 - 227.5 Weak (Alt) Muscovite>> overprint

223.60	**224.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 223.6 - 224.4 30% Min: Calcite>>

224.40	**227.50**	**RHYvl**	**Lapilli tuff**

<<Min: 224.4 - 228 0.5% Min: Pyrrhotite>>

<<Struc: 226 - 231.8 Strong (Alt) Fault>> over 50% cataclasis gouge zones

227.50	**227.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 227.5 - 227.9 30% Min: Calcite>>

227.90	**233.10**	**RHYvl**	**Lapilli tuff**

<<Min: 228 - 233.3 5% Min: Ankerite>>

<<Alt: 227.9 - 260 Weak (Alt) Muscovite>> weak overprint

<<Vein: 232 - 232.5 100% Quartz>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
233.10	**270.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**									

233.1 - 270.4: sparse 2-3mm feldspar remnants, calcareous matrix

<<Min: 233.3 - 260 10% Min: Calcite>>

<<Min: 255 - 264 0.5% Min: Pyrite>>

<<Min: 260 - 270.4 7% Min: Ankerite>>

<<Alt: 260 - 270.4 Moderate (Alt) Muscovite>>

<<Vein: 259.7 - 261.2 60% Tourmaline>> low angle tourmaline vein from cretaceous intrusions that bleaches the xtal tuff

<<Struc: 265 - 269 Strong (Alt) Fault>> over 50% gouge, fault

End of Hole @ 270.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-013

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415048.069	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815525.121	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1381.856	Casing Depth (m):		Length (m):	200	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-45	180		180	SS				☑	
62	-48	176		176	SS				☑	
123	-47	171		171	SS				☑	
154	-49	186		186	SS				☑	
184	-49	189		189	SS				☑	
200	-49	189		189	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.10 CASN Casing

12.10 21.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

12.1 - 21.8: Weakly developed curdy texture

<<Min: 12.1 - 35.3 1% Min: Tetrahedrite>>

<<Min: 12.1 - 35.3 2% Min: Pyrrhotite>>

<<Min: 12.1 - 74.1 10% Min: Ankerite>>

<<Min: 12.1 - 103 Min: Calcite>> No detectable calcite

21.80 50.90 RHYvl Lapilli tuff

<<Min: 35.3 - 100.5 1% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description
			<<Min: 35.3 - 100.5 2% Min: Pyrrhotite>>
50.90	**51.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
			50.9 - 51.6: tuffacous mudstone
51.60	**67.50**	**RHYvl**	**Lapilli tuff**
67.50	**85.80**	**RHY**	**undifferentiated rhyolite**
			<<Min: 74.1 - 103 3% Min: Ankerite>>
			<<Alt: 85.2 - 95 Trace (Alt) Muscovite>>
85.80	**95.00**	**MDSc**	**Carbonaceous dominant mudstone**
			85.8 - 95: See some M folds, fold closures, contourted.
95.00	**106.90**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
			95 - 106.9: Dominantly tuff w/ some carbonaceous intervals
			<<Min: 100.5 - 106.9 4% Min: Pyrite>>
			<<Min: 100.5 - 106.9 1% Min: Pyrrhotite>>
			<<Min: 103 - 106.6 2% Min: Calcite>>
			<<Min: 103 - 106.6 20% Min: Ankerite>>
			<<Min: 106.6 - 122.4 1% Min: Calcite>>
			<<Alt: 95 - 100.9 Moderate (Alt) Muscovite>>
			<<Alt: 100.9 - 106.6 Strong (Alt) Muscovite>>
			<<Alt: 106.6 - 107.5 Intense (Alt) Cordierite>>
106.90	**107.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
			<<Min: 106.9 - 107.5 5% Min: Magnetite>>
107.50	**113.40**	**OA**	**Magnetite bearing sulphides**
			<<Min: 107.5 - 113.4 25% Min: Magnetite>>
113.40	**114.50**	**OD**	**Brecciated sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.70	103.20	1.50	Q930945	7.9	0.064	0.02	0.03	0.03
103.20	105.70	2.50	Q930946	3.3	0.008	-0.01	0.02	0.04
105.70	107.20	1.50	Q930947	12.5	0.055	0.38	0.02	0.08
107.20	108.70	1.50	Q930948	79.9	0.893	3.11	0.08	1.26
108.70	110.20	1.50	Q930949	47.9	0.53	1.27	0.11	4.47
110.20	111.70	1.50	Q930951	47.3	0.461	0.83	0.16	6.01
111.70	113.20	1.50	Q930952	63.6	0.525	0.47	1.01	3.19
113.20	114.70	1.50	Q930953	43.4	0.432	0.94	0.17	0.42

From (m)	To (m)		Rocktype & Description
			<<Min: 113.4 - 114.5 2% Min: Magnetite>>
114.50	**116.20**	**OA**	**Magnetite bearing sulphides**
			<<Min: 114.5 - 116.2 12% Min: Magnetite>>
116.20	**119.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 116.2 - 119.9 1% Min: Magnetite>>
119.90	**121.00**	**RHYva**	**Coarse grained to ash tuff**
			<<Alt: 119.9 - 121 Strong (Alt) Muscovite>>
121.00	**122.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 121 - 122.4 3% Min: Magnetite>>
			<<Min: 122.4 - 134 2% Min: Pyrite>>
			<<Min: 122.4 - 139 Min: Calcite>> No detectable calcite
			<<Alt: 122.3 - 123.6 Strong (Alt) Cordierite>>
122.50	**133.80**	**RHYva**	**Coarse grained to ash tuff**
			122.5 - 133.8: Complex alteration zone. Abundant and intense carb-alt within proximal alteration zone
			<<Min: 123.2 - 130 25% Min: Ankerite>>
			<<Min: 130 - 150.1 5% Min: Ankerite>>
			<<Alt: 123.6 - 133.8 Strong (Alt) Chlorite>> Heavy Qz-carb overprint from 123.6-129.8
133.80	**135.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 134 - 148.5 4% Min: Pyrite>>
			<<Min: 134 - 148.5 1% Min: Pyrrhotite>>
135.00	**150.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			135 - 150.1: very uncertain might not be mafic
			<<Min: 139 - 150.1 2% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
114.70	116.20	1.50	Q930954	49.8	0.38	0.47	0.41	5.17
116.20	117.70	1.50	Q930955	228	2.5	0.3	2.21	7.07
117.70	119.20	1.50	Q930956	303	1.69	0.24	2.66	6.69
119.20	119.90	0.70	Q930957	304	1.23	0.3	4.58	10.2
119.90	121.00	1.10	Q930958	69.5	0.069	0.39	0.78	1.19
121.00	122.40	1.40	Q930959	76.6	0.694	0.48	1.74	6.64
122.40	123.90	1.50	Q930961	41.3	0.326	0.68	0.43	3.78
123.90	125.40	1.50	Q930962	3.7	0.016	0.02	0.22	0.65
125.40	126.90	1.50	Q930963	1.1	0.008	-0.01	0.09	0.09
126.90	128.40	1.50	Q930964	18.7	0.055	0.1	0.61	1.5
128.40	129.90	1.50	Q930965	18.5	0.048	0.23	1.13	1.83
129.90	131.40	1.50	Q930966	8.8	0.012	0.04	0.2	1.75
131.40	132.10	0.70	Q930967	1.9	0.006	0.07	-0.01	0.51

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 148.5 - 164.2 3% Min: Pyrite>>

<<Min: 148.5 - 164.2 1% Min: Pyrrhotite>>

150.10 164.20 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 150.1 - 171.6 1% Min: Calcite>>

<<Min: 150.1 - 176.6 2% Min: Ankerite>>

164.20 180.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 164.2 - 171.6 4% Min: Pyrite>>

<<Min: 171.6 - 177 15% Min: Calcite>>

<<Min: 176.6 - 192.3 2% Min: Ankerite>>

<<Min: 177 - 192.3 Min: Calcite>> No detectable calcite

<<Min: 178 - 192.3 4% Min: Pyrite>>

<<Alt: 164.2 - 171.6 Weak (Alt) Chlorite>>

<<Alt: 171.6 - 178.5 Strong (Alt) Chlorite>>

<<Alt: 171.6 - 178.5 Strong (Alt) Biotite>>

<<Alt: 178.5 - 192.3 Moderate (Alt) Muscovite>>

180.20 192.30 RHYvl Lapilli tuff

192.30 200.00 RHYvl Lapilli tuff

192.3 - 200: pervassive moderate Chlorite alteration. Associated PO+CP

<<Min: 192.3 - 200 4% Min: Pyrrhotite>>

<<Min: 192.3 - 200 1% Min: Calcite>>

<<Min: 192.3 - 200 5% Min: Ankerite>>

<<Alt: 192.3 - 200 Moderate (Alt) Chlorite>>

End of Hole @ 200

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-014

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415048.112	Core Size:		Azimuth:	215	Date Logging Complete:	
UTM Northing:	6815526.325	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.022	Casing Depth (m):		Length (m):	150.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	215		215	SS				☑	
32	-88	213		213	SS				☑	
63	-84	206		206	SS				☑	
93	-85	205		205	SS				☑	
124	-86	203		203	SS				☑	
150	-88	192		192	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.00 CASN Casing

12.00 12.50 RHYvl Lapilli tuff

12 - 12.5: overburden-core loss

12.50 16.90 RHYvl Lapilli tuff grey-brown

12.5 - 16.9: weak shistosity locally

<<Min: 12.5 - 15 20% Min: Ankerite>> foliation oriented and dissiminated

<<Min: 12.5 - 29 1% Min: Pyrite>> locally patchy

<<Min: 12.5 - 29 1% Min: Pyrrhotite>> locally patchy

<<Min: 15 - 20.4 10% Min: Ankerite>> in foliation when marked.

<<Alt: 12.5 - 66.3 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

16.90 17.46 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

16.9 - 17.46: close to curdy texture

17.46 29.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

17.46 - 29: weak schistosity, almost curdy teture

<<Min: 20.4 - 29 15% Min: Ankerite>> related tocurdy type texture

29.00 30.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) black FMG

29 - 30.6: Sharpe upper and lower contact,could be a dyke. Few muscovite, QZ-Ca irregular veins, shistosity at contact as well as oxidation.

<<Min: 29 - 30.6 1% Min: Pyrite>> and disseminated.

<<Min: 29 - 30.6 2% Min: Pyrrhotite>>

30.60 38.70 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

30.6 - 38.7: blury schistosity, deux phase of deformation. Vein QZ-To at lower contact.

<<Min: 30.6 - 34.7 0.5% Min: Sphalerite>> associated with py.

<<Min: 30.6 - 34.7 2% Min: Pyrite>> and vein.

<<Min: 30.6 - 34.7 5% Min: Pyrrhotite>> or pod

<<Min: 30.6 - 63.2 5% Min: Ankerite>> when foliation marked.

<<Min: 34.7 - 69.8 0.5% Min: Pyrite>>

<<Min: 34.7 - 69.8 1% Min: Pyrrhotite>>

38.70 44.70 RHYvl Lapilli tuff grey-brown FMG

38.7 - 44.7: QZ eyes from 43.5 to 44.2m, bxx sized frags

44.70 48.10 RHYvl Lapilli tuff green-brown

44.7 - 48.1: mixed with RHYic tuffaceous schist.

48.10 61.10 RHYvl Lapilli tuff grey-brown

48.1 - 61.1: Weak schistosity locally. Few biotite.

<<Struc: 54.8 - 59 Fault>>

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
61.10	**61.90**	**MDSc**	**Carbonaceous dominant mudstone**	**dark grey**	**FG**									
61.1 - 61.9: Sheared.														
61.90	**66.30**	**RHYv**	**Rhyolite volcaniclastic**	**grey-brown**										
61.9 - 66.3: Blury schistosity from 62.3 to 63. 2m. Presence of CL/BI from 63.2 to 64.1m														
<<Min: 63.2 - 86.5 2% Min: Ankerite>>														
<<Struc: 62.1 - 62.4 Fault>>														
66.30	**69.80**	**MDSt**	**Rhyolite tuff dominant mudstone**	**black**	**FG**									
<<Alt: 66.3 - 69.8 Moderate (Alt) Muscovite>>														
69.80	**74.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	**FG**									
69.8 - 74.5: Texture bleached, locally carbonaceous mudstone visible, diificult to deternine. Peculiar tan bands, possible siderite bands +msv PY, could be exhalite?														
<<Min: 69.8 - 86.5 0.1% Min: Pyrite>>														
<<Min: 69.8 - 86.5 0.5% Min: Pyrrhotite>>														
<<Min: 70.5 - 74 2% Min: Sphalerite>>														
<<Min: 70.5 - 74 2% Min: Pyrite>> Stringer(?). Folded.														
<<Min: 70.5 - 74 2% Min: Pyrrhotite>>														
<<Alt: 69.8 - 86.5 Strong (Alt) Muscovite>>														
<<Struc: 70.9 - 71.5 Fault>> Sheared zone, fault gouge, oxidized.														
74.50	**78.60**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey-green**	**FG**									
74.5 - 78.6: Texture bleached, locally carbonaceous mudstone visible, diificult to deternine.														
78.60	**86.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	**FG**	80.80	82.30	1.50	Q311429	0.6	0.021	-0.01	0.02	0.02
78.6 - 86: Texture bleached, locally carbonaceous mudstone visible, diificult to deternine.														
<<Min: 81 - 81.4 5% Min: Pyrite>> folded stringer(?), few cp.						82.30	83.80	1.50	Q311431	0.4	0.005	-0.01	-0.01	0.03
						83.80	84.80	1.00	Q311432	1	0.007	-0.01	0.05	0.11
						84.80	86.30	1.50	Q311433	2.2	0.008	-0.01	0.13	0.2

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
86.00	**86.30**	**OI**	**Heavilly disseminated sulphides in host schist**									
86.30	**87.40**	**OF**	**Pyrrhotite rich sulphides**	86.30	87.40	1.10	Q311434	103	0.628	1.74	0.53	1.66
<<Min: 86.5 - 87.5 20% Min: Pyrite>>												
<<Min: 86.5 - 87.5 70% Min: Pyrrhotite>>												
<<Min: 86.5 - 87.5 3% Min: Magnetite>>												
<<Min: 86.5 - 87.5 1% Min: Chalcopyrite>>												
87.40	**88.30**	**OG**	**Chalcopyrite rich sulphides**	87.40	88.90	1.50	Q311435	132	2.32	4.39	0.22	2.11
<<Min: 87.5 - 106.5 10% Min: Sphalerite>> associated with buckshot texture												
<<Min: 87.5 - 106.5 70% Min: Pyrite>>												
<<Min: 87.5 - 106.5 0.2% Min: Pyrrhotite>>												
<<Min: 87.5 - 106.5 10% Min: Magnetite>> lamination and clot												
<<Min: 87.5 - 106.5 0.5% Min: Galena>>												
<<Min: 87.5 - 106.5 1% Min: Chalcopyrite>>												
88.30	**94.40**	**OA**	**Magnetite bearing sulphides**	88.90	90.40	1.50	Q311436	17.4	0.245	0.19	0.09	4.81
				90.40	91.90	1.50	Q311437	66	0.275	0.19	1.15	8.17
				91.90	93.40	1.50	Q311438	102	0.957	0.19	1.77	8.68
				93.40	94.60	1.20	Q311439	118	1.09	0.4	1.04	10.2
94.40	**97.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	94.60	95.90	1.30	Q311441	148	1.87	0.46	1.32	6.2
				95.90	96.40	0.50	Q311442	194	2.31	0.5	1.58	5.63
				96.40	97.90	1.50	Q311443	194	1.95	0.84	1.11	4.59
97.90	**102.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	97.90	99.40	1.50	Q311444	37.1	0.606	0.34	0.49	5.6
				99.40	100.30	0.90	Q311445	156	0.865	3.69	0.8	4.07
				100.30	101.10	0.80	Q311446	48.6	0.553	1.36	0.08	0.55
				101.10	102.40	1.30	Q311447	70.4	0.977	1.11	0.55	3.16
102.40	**106.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	102.40	103.90	1.50	Q311448	236	1.38	0.34	3.62	9.38
<<Min: 106.5 - 107.9 3% Min: Galena>> In QZ vein, maybe chalcocite.				103.90	105.40	1.50	Q311449	497	3.08	0.44	5.66	11.9

From (m)	To (m)		Rocktype & Description		
106.70	**109.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	

106.7 - 109.5: Large QZ vein, few AK.

<<Min: 107.9 - 121.6 10% Min: Ankerite>> foliation oriented

From (m)	To (m)		Rocktype & Description		
109.50	**110.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		
110.60	**121.60**	**RHYvl**	**Lapilli tuff**	**green-brown**	**FMG**

110.6 - 121.6: Fault zone from 109.5 to 111.9m, quarzt vein, rare bxx clastsof RHYcw

<<Min: 111 - 111.9 3% Min: Pyrite>> In fault gouge.

<<Min: 111 - 111.9 1% Min: Galena>> In fault gouge, might be chalcocite.

<<Min: 115.2 - 115.3 5% Min: Arsenopyrite>>

<<Alt: 113.1 - 121.6 Moderate (Alt) Chlorite>>

<<Struc: 111 - 111.9 Fault>>

From (m)	To (m)		Rocktype & Description		
121.60	**126.10**	**MDSc**	**Carbonaceous dominant mudstone**	**black**	**FG**

121.6 - 126.1: Probably two folations.

<<Min: 121.6 - 129.5 0.1% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description		
126.10	**129.50**	**MDSc**	**Carbonaceous dominant mudstone**	**green**	**FG**

<<Alt: 126.1 - 129 Moderate (Alt) Chlorite>>

<<Alt: 129 - 129.5 Strong (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description		
129.50	**130.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		

<<Min: 129.5 - 130.1 2% Min: Sphalerite>>

<<Min: 129.5 - 130.1 95% Min: Pyrite>>

<<Min: 129.5 - 130.1 0.1% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		
130.10	**137.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FMG**

130.1 - 137: Leucoxene-BI concentration increasing from top to bottom until MS alteration.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
105.40	106.70	1.30	Q311451	316	1.73	0.32	3.38	8.65
106.70	108.20	1.50	Q311452	266	2.1	0.5	0.73	1.39
108.20	109.70	1.50	Q311453	1.5	0.007	-0.01	-0.01	0.04
109.70	111.30	1.60	Q311454	37.8	0.598	0.67	0.29	1.44
111.30	112.70	1.40	Q311455	61	0.304	2.13	0.13	1.06
112.70	114.20	1.50	Q311456	1.9	0.022	-0.01	-0.01	0.03
114.20	115.70	1.50	Q311457	1.4	-0.005	-0.01	-0.01	0.02
115.70	117.20	1.50	Q311458	0.6	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 130.2 - 136 25% Min: Calcite>> foliation oriented

<<Min: 136 - 141.2 2% Min: Calcite>> foliation oriented

<<Alt: 136 - 141.2 Moderate (Alt) Silicification>>

<<Alt: 136 - 141.2 Moderate (Alt) Muscovite>>

137.00 150.90 RHYi Aphanitic Rhyolite (intrusion) grey-green FMG

137 - 150.9: Glassy texture. Qz vein fron 149.7 to 150.9m. Leucoxene-the protolith could be the same but highly altered, large amygdules or possible spheroidal qz

<<Min: 142.2 - 149.7 1% Min: Sphalerite>>

<<Min: 142.2 - 149.7 2% Min: Pyrite>> and veinlets.

<<Min: 142.2 - 149.7 1% Min: Pyrrhotite>>

<<Min: 142.2 - 149.7 3% Min: Galena>> associated with PY

End of Hole @ 150.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-015

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415153.573	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815524.548	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1407.278	Casing Depth (m):		Length (m):	184.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
35	-47	181		181	SS				☑	
62	-50	181		181	SS				☑	
93	-52	182		182	SS				☑	
123	-53	183		183	SS				☑	
184	-52	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**17.10**	**OVBN** **Overburden**									
17.10	**18.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 17.7 - 18.2 10% Min: Calcite>>											
18.20	**19.90**	**RHYvl** **Lapilli tuff**									
<<Min: 18.2 - 19.9 5% Min: Ankerite>>											
<<Min: 18.2 - 21.6 2% Min: Pyrite>>											
<<Min: 18.2 - 23.2 5% Min: Calcite>> and in fractures											
19.90	**20.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
20.10	**21.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

21.60 22.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

22.80 29.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

22.8 - 29.3: flow banding, possble pepperite breccia texture increasing in intensity towards upper contact which would make upper mafic dyke a tuff…

<<Min: 22.8 - 36.1 1% Min: Pyrite>>

29.30 31.70 RHYc Rhyolite coherant volcanics

31.70 33.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31.7 - 33.2: Iincludes a 20cm section of RHYc

<<Min: 31.7 - 33.2 5% Min: Calcite>>

<<Struc: 31.7 - 37.1 Moderate-Strong (Alt) Fault>> broken core, minor gouge

33.20 36.10 RHYcq Quartz porphyry

36.10 36.70 RHYva Coarse grained to ash tuff

<<Min: 36.1 - 53.7 1% Min: Pyrrhotite>>

<<Min: 36.1 - 53.7 5% Min: Ankerite>>

36.70 39.70 RHYvl Lapilli tuff

36.7 - 39.7: minor silic bands. Diss tourmaline

39.70 40.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 39.7 - 44.2 2% Min: Calcite>>

40.00 44.20 RHYvl Lapilli tuff

40 - 44.2: minor silic bands. Diss tourmaline.

44.20 45.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 44.2 - 45.6 5% Min: Calcite>>

45.60 49.70 RHYvl Lapilli tuff

45.6 - 49.7: includes 15cm altered fine grained mafic dyke. Diss tourmaline

<<Min: 45.6 - 53.7 2% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
49.70	**50.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
50.20	**52.10**	**RHYvl** **Lapilli tuff**
50.2 - 52.1: diss tourmaline		
52.10	**53.00**	**RHYif** **feldspar and quartz porphyry intrusions**
52.1 - 53: diss tormaline		
53.00	**53.70**	**RHYvl** **Lapilli tuff**
53.70	**57.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 53.7 - 57.2 0.1% Min: Pyrite>> and as fracture filling		
<<Min: 53.7 - 57.2 10% Min: Calcite>> and as blebs and fracture filling		
<<Min: 55 - 65.4 7% Min: Ankerite>>		
57.20	**60.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
57.2 - 60.3: includes ash rich and lapilli sections		
<<Min: 57.2 - 60.3 2% Min: Calcite>> diss in patches		
<<Min: 57.2 - 65.7 0.1% Min: Pyrite>>		
<<Min: 57.2 - 65.7 1% Min: Pyrrhotite>>		
60.30	**67.70**	**RHYvl** **Lapilli tuff**
<<Min: 60.3 - 65.9 5% Min: Calcite>>		
<<Min: 65.4 - 70.5 2% Min: Ankerite>>		
<<Min: 65.7 - 66.4 5% Min: Pyrite>>		
<<Min: 65.9 - 67.7 5% Min: Calcite>>		
<<Min: 66.4 - 70.5 1% Min: Pyrite>>		
<<Min: 66.4 - 70.5 1% Min: Pyrrhotite>>		
<<Alt: 66.8 - 70.5 Weak-Moderate (Alt) Chlorite>> mafic dyke and remnant chlorite in Rhy		
67.70	**70.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 67.7 - 70.5 25% Min: Calcite>> bands of calcitealong foliation		
70.50	**75.50**	**RHYvl** **Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
			<<Min: 70.5 - 73.5 5% Min: Ankerite>>
			<<Min: 70.5 - 74.5 5% Min: Calcite>>
			<<Min: 70.5 - 78.6 1% Min: Pyrite>>
			<<Min: 73.5 - 77 2% Min: Ankerite>>
			<<Vein: 74.6 - 77 60% Quartz>>
75.50	**79.70**	**RHYva**	**Coarse grained to ash tuff**
			<<Min: 77 - 81.8 5% Min: Ankerite>>
			<<Min: 78.6 - 84.4 2% Min: Pyrite>>
			<<Min: 78.6 - 84.4 1% Min: Pyrrhotite>>
79.70	**87.50**	**RHYvl**	**Lapilli tuff**
			<<Min: 81.8 - 114 15% Min: Ankerite>>
			<<Min: 84.4 - 87.5 1% Min: Pyrite>>
			<<Min: 86 - 103.5 1% Min: Calcite>>
87.50	**93.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 87.5 - 103 1% Min: Pyrite>>
			<<Min: 87.5 - 103 2% Min: Pyrrhotite>>
93.60	**95.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			93.6 - 95: includes 20cm section RHYcw
95.00	**98.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Alt: 98 - 116 Weak-Moderate (Alt) Muscovite>>
98.80	**101.60**	**RHYvl**	**Lapilli tuff**
101.60	**101.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
101.80	**102.30**	**RHYvl**	**Lapilli tuff**
102.30	**102.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
102.60	**106.10**	**RHYvl**	**Lapilli tuff**
			<<Min: 103 - 111 0.5% Min: Pyrite>>
			<<Min: 103 - 111 3% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
106.10	**112.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 111 - 120 3% Min: Pyrite>>		
<<Min: 111 - 120 0.5% Min: Pyrrhotite>>		
112.80	**119.20**	**RHYvl** **Lapilli tuff**
112.8 - 119.2: Rare silic bands		
<<Min: 114 - 134.5 10% Min: Ankerite>>		
<<Alt: 116 - 125.8 Moderate-Strong (Alt) Muscovite>>		
<<Alt: 119 - 124.5 Weak-Moderate (Alt) Silicification>>		
<<Vein: 112.9 - 175.6 7% Quartz>>		
<<Struc: 116 - 116.1 Moderate-Strong (Alt) Fault>> broken core, minor gouge		
119.20	**125.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 120 - 122.2 5% Min: Pyrite>>		
<<Min: 120 - 122.2 3% Min: Pyrrhotite>>		
<<Min: 122.2 - 134.5 0.5% Min: Pyrite>>		
<<Alt: 124.5 - 134 Weak (Alt) Cordierite>> mostly altered to chloritre		
125.80	**130.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Alt: 125.8 - 134.5 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 128.3 - 134.5 Weak (Alt) Chlorite>>		
130.50	**134.50**	**MDSt** **Rhyolite tuff dominant mudstone**
134.50	**138.00**	**No Core** **No Core**
138.00	**140.20**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
138 - 140.2: 130.5-170.5: no core, Lith codes from Cominco. 138.3-140.2m not mineralized as per analytical results		
140.20	**141.70**	**OG** **Chalcopyrite rich sulphides**
141.70	**145.00**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
131.40	132.90	1.50	B00267279	0.8	0.008	-0.01	-0.01	0.01
133.00	134.50	1.50	B00267281	0.8	0.007	-0.01	-0.01	0.02

From (m)	To (m)		Rocktype & Description
145.00	**146.70**	**OA**	**Magnetite bearing sulphides**
146.70	**147.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
147.70	**159.50**	**OA**	**Magnetite bearing sulphides**
159.50	**166.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
166.70	**167.20**	**OA**	**Magnetite bearing sulphides**
167.20	**170.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
167.2 - 170.5: 130.5-170.5: no core, Lith codes from Cominco			
170.50	**173.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 170.5 - 171.5 3% Min: Pyrite>>			
<<Min: 170.5 - 175.6 5% Min: Calcite>>			
<<Min: 170.5 - 176.2 5% Min: Ankerite>>			
<<Min: 171.5 - 184.7 0.5% Min: Pyrite>>			
<<Alt: 170.5 - 175.6 Moderate (Alt) Muscovite>>			
173.50	**175.60**	**RHYv**	**Rhyolite volcaniclastic**
175.60	**178.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 175.6 - 177.6 10% Min: Calcite>>			
<<Min: 175.6 - 179.5 0.5% Min: Sphalerite>>			
<<Min: 176.2 - 184.7 3% Min: Ankerite>>			
<<Min: 177.6 - 181.7 5% Min: Calcite>>			
<<Alt: 176.2 - 184.7 Weak (Alt) Biotite>>			
178.10	**178.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
178.1 - 178.3: flow banded dyke			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
172.00	173.50	1.50	B00267282	0.9	0.012	-0.01	0.02	0.05
173.50	175.00	1.50	B00267283	1.1	0.006	-0.01	0.02	0.05
175.00	175.60	0.60	B00267284	2.2	0.01	0.02	0.04	0.04
175.60	176.20	0.60	B00267285	0.5	-0.005	0.02	-0.01	0.06
176.20	177.30	1.10	B00267286	-0.3	0.007	-0.01	-0.01	0.05

From (m)	To (m)	Rocktype & Description
178.30	**178.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
178.80	**179.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
178.8 - 179: flow banded dyke		
179.00	**180.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 179.5 - 180 3% Min: Sphalerite>>		
<<Min: 180 - 184.7 0.5% Min: Sphalerite>>		
180.70	**181.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
180.7 - 181.4: flow banded dyke		
181.40	**181.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
181.70	**181.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
181.7 - 181.8: flow banded dyke		
<<Min: 181.7 - 184.7 2% Min: Calcite>>		
181.80	**184.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

End of Hole @ 184.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-016

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415153.468	Core Size:		Azimuth:	220	Date Logging Complete:	
UTM Northing:	6815525.028	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1406.956	Casing Depth (m):		Length (m):	179	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	220		220	SS				☑	
32	-86	226		226	SS				☑	
63	-87	201		201	SS				☑	
93	-84	196		196	SS				☑	
124	-81	198		198	SS				☑	
154	-78	200		200	SS				☑	
178	-80	199		199	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 15.90 OVBN Overburden

15.90 21.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

15.9 - 21.8: central portion of unit chloritic, margins are sericite altered. Calcareous

<<Min: 15.9 - 18.9 10% Min: Ankerite>>

<<Min: 15.9 - 21.8 0.1% Min: Pyrite>>

<<Min: 15.9 - 21.8 10% Min: Calcite>>

<<Min: 21 - 28.7 2% Min: Ankerite>>

21.80 28.70 RHYvl Lapilli tuff

21.8 - 28.7: not a good lapilli tuff

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 21.8 - 37.6 0.5% Min: Pyrite>>

<<Struc: 28.3 - 28.4 Moderate-Strong (Alt) Fault>> minor gouge

28.70 29.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

28.7 - 29.2: feldspar phyric, calcareous

<<Min: 28.7 - 39 10% Min: Ankerite>>

29.20 30.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

29.2 - 30.9: not great curdy rhyolite

30.90 31.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31.50 37.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

31.5 - 37.6: upper part of unit is mixture of lapilli and curdy rhyolite

37.60 38.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

37.6 - 38.5: dyke, likely intermediate, sharp contacts

<<Min: 37.6 - 39.4 2% Min: Pyrite>> py bands and dis

<<Min: 37.6 - 47.6 5% Min: Calcite>>

38.50 40.10 RHYvl Lapilli tuff

38.5 - 40.1: chlorite altered lapilli - lenses

<<Min: 39 - 83 5% Min: Ankerite>>

<<Min: 39.4 - 40.7 4% Min: Pyrrhotite>> thin bands and dis

<<Struc: 38.5 - 38.7 Moderate-Strong (Alt) Fault>> minor gouge

40.10 40.70 RHYc Rhyolite coherant volcanics

40.1 - 40.7: Dyke; banded, well foliated with muscovite partings. Sharp contacts.

<<Min: 40.1 - 40.7 0.2% Min: Arsenopyrite>>

40.70 42.50 RHYvl Lapilli tuff

40.7 - 42.5: as 38.5-40.1m

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 40.7 - 76.3 1% Min: Pyrite>>

<<Min: 40.7 - 76.3 1% Min: Pyrrhotite>>

42.50 43.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

43.60 45.90 RHYvl Lapilli tuff

43.6 - 45.9: silic bands,

45.90 47.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

45.9 - 47.5: calcite replacing feldspar

47.50 55.00 RHYvl Lapilli tuff

47.5 - 55: 'islands' of chlorite altered tuff surrounded by sericite alteration

<<Min: 47.6 - 59 10% Min: Calcite>>

<<Vein: 52.6 - 52.9 80% Quartz-Tourmaline>>

55.00 56.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

56.40 57.90 RHYvl Lapilli tuff

57.90 61.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 57.9 - 61.2 0.1% Min: Magnetite>>

<<Min: 59 - 65 1% Min: Calcite>>

61.20 64.20 RHYv Rhyolite volcaniclastic

61.2 - 64.2: silic bands

64.20 64.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

64.2 - 64.7: feldspar phenocrysts

64.70 69.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

64.7 - 69.9: mix of RHYcw and RHYvl

From (m)	To (m)	Rocktype & Description
69.90	**77.10**	**RHYvl Lapilli tuff**

69.9 - 77.1: islands of chlorite alteration surrounded by sericite

<<Min: 76.3 - 77.7 0.5% Min: Sphalerite>>

<<Min: 76.3 - 77.7 5% Min: Pyrite>> dis and in bands

<<Min: 76.3 - 77.7 5% Min: Pyrrhotite>> dis and in bands

<<Min: 76.3 - 77.7 10% Min: Calcite>>

77.10	**77.70**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

77.1 - 77.7: local pyriyte and almost exhalative (fine grained, soft -clay rich, laminated) bands.

77.70	**83.10**	**RHYv Rhyolite volcaniclastic**

77.7 - 83.1: silic bands, islands of chlorite altewration surrounded by sericite throughout.

<<Min: 77.7 - 95.6 0.5% Min: Pyrite>>

<<Min: 77.7 - 95.6 0.5% Min: Pyrrhotite>>

<<Min: 83 - 125 10% Min: Ankerite>>

83.10	**93.60**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**

<<Alt: 88 - 112 Weak (Alt) Muscovite>>

<<Struc: 87.4 - 87.5 Moderate-Strong (Alt) Fault>> minor gouge

93.60	**106.60**	**RHYvl Lapilli tuff**

<<Min: 95.6 - 97.6 5% Min: Pyrite>>

<<Min: 97.6 - 102.7 0.5% Min: Pyrite>>

<<Min: 97.6 - 102.7 0.5% Min: Pyrrhotite>>

<<Min: 102.7 - 125.5 0.5% Min: Pyrite>>

<<Min: 102.7 - 125.5 2% Min: Pyrrhotite>>

<<Vein: 103 - 107.7 5% Quartz>>

<<Struc: 95.1 - 95.2 Moderate-Strong (Alt) Fault>> minor gouge

<<Struc: 98 - 98.3 Moderate-Strong (Alt) Fault>> minor gouge

<<Struc: 104 - 104.1 Moderate-Strong (Alt) Fault>> minor gouge

106.60	**115.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**

<<Alt: 112 - 136.3 Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.30	77.70	1.40	B00267266	1.4	-0.005	0.02	0.02	0.29

From (m)	To (m)	Rocktype & Description
115.00	**126.30**	**RHYv** **Rhyolite volcaniclastic**
115 - 126.3: Silic-banbds, strongly foliated		
<<Min: 125 - 136.3 5% Min: Ankerite>> Patchy zones		
<<Min: 125.1 - 131.7 0.5% Min: Arsenopyrite>>		
<<Min: 125.5 - 136.3 0.1% Min: Pyrite>>		
<<Min: 125.5 - 136.3 0.5% Min: Pyrrhotite>>		
<<Vein: 125.1 - 127.1 10% Quartz>>		
<<Struc: 118 - 124 Moderate-Strong (Alt) Fault>> broken core, minor gouge		
126.30	**136.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
126.3 - 136.3: very minor weak carbonaceous zones. 126.3-127.8m Cr mica.		
136.30	**136.50**	**OF** **Pyrrhotite rich sulphides**
136.3 - 136.5: pyrrhotite rich, no magnetite, trace nagnetite		
<<Min: 136.3 - 136.6 50% Min: Pyrrhotite>>		
136.50	**137.50**	**OA** **Magnetite bearing sulphides**
136.5 - 137.5: approx </=5% magnetite		
<<Min: 136.6 - 137.5 3% Min: Magnetite>>		
137.50	**138.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
138.40	**143.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
138.4 - 143.8: calcite-ankerite veined, met 7, very low grade. 139.4-139.6m: RHYc		
<<Min: 138.4 - 143.7 15% Min: Pyrite>> diss and in bands, local coarse clots		
<<Min: 138.4 - 143.7 2% Min: Magnetite>> and patchy		
<<Min: 138.4 - 143.7 2% Min: Chalcopyrite>> and patchy in coarse clots		
<<Alt: 138.6 - 140 Weak (Alt) Muscovite>>		
<<Alt: 138.6 - 143.7 Weak (Alt) Chlorite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
122.60	124.10	1.50	B00267267	-0.3	-0.005	-0.01	-0.01	-0.01
124.10	125.10	1.00	B00267268	-0.3	-0.005	-0.01	-0.01	-0.01
125.10	126.10	1.00	B00267269	-0.3	-0.005	-0.01	-0.01	0.05
130.60	131.80	1.20	B00267271	-0.3	-0.005	-0.01	-0.01	0.07
131.80	133.20	1.40	B00267272	1.3	0.025	-0.01	0.02	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 138.6 - 143.7 Weak-Moderate (Alt) Cordierite>>									
		<<Vein: 139.9 - 140.7 80% Quartz-Feldspar-Sulphide-Tourmaline>> In OJ unit, <5% sulfide, with cordierite (20%)..									
143.80	**146.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		143.8 - 146.5: trace magnetite									
146.50	**146.80**	**RHY** **undifferentiated rhyolite**									
146.80	**151.40**	**OA** **Magnetite bearing sulphides**									
		<<Alt: 150 - 151 Weak-Moderate (Alt) Cordierite>>									
151.40	**154.60**	**OA** **Magnetite bearing sulphides**									
154.60	**157.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
157.30	**164.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	161.60	163.10	1.50	B00267273	0.8	0.005	0.01	-0.01	-0.01
		157.3 - 164.6: a couple good RHYcw sections, remainder is sheared, chlorite altered or highly 'poker chip' foliated.									
		<<Min: 157.3 - 159.8 0.5% Min: Pyrite>>	163.10	164.60	1.50	B00267274	4.9	0.02	0.05	0.03	0.73
		<<Min: 159.8 - 160.1 5% Min: Sphalerite>>									
		<<Min: 159.8 - 160.1 5% Min: Pyrite>>									
		<<Min: 159.8 - 160.1 1% Min: Chalcopyrite>>									
		<<Min: 160.1 - 164.4 3% Min: Pyrite>>									
		<<Min: 164.4 - 179 0.1% Min: Pyrite>>									
		<<Alt: 157.3 - 164.6 Moderate-Strong (Alt) Muscovite>>									
		<<Alt: 159.8 - 160.4 Strong (Alt) Chlorite>>									
		<<Struc: 164 - 164.6 Moderate-Strong (Alt) Fault>> broken core, gouge									
164.60	**179.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
		<<Min: 164.6 - 169.8 15% Min: Calcite>> and dis									
		<<Min: 169.8 - 179 10% Min: Calcite>> and dis									

End of Hole @ 179

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-018

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414551.375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815549	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1458.36	Casing Depth (m):		Length (m):	309.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Stratigraphic test along strike of geophysical response

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
28.9	-46.8	174		174	SS				☑	
62.5	-50	174		174	SS				☑	
93	-54.5	168		168	SS				☑	
126.5	-56.4	174		174	SS				☑	
150.9	-56.1	170		170	SS				☑	
184.4	-58	172		172	SS				☑	
214.9	-59.7	174		174	SS				☑	
275.8	-62.1	180		180	SS				☑	
306.3	-63.4	181.5		181.5	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.90**	**OVBN Overburden**									
9.90	**13.90**	**RHYv Rhyolite volcaniclastic**									
13.90	**16.50**	**MAFt Mafic Volcaniclastics**									
16.50	**29.90**	**RHYv Rhyolite volcaniclastic**									
29.90	**33.60**	**MDSt Rhyolite tuff dominant mudstone**									
33.60	**35.80**	**RHYv Rhyolite volcaniclastic**									

From (m)	To (m)	Rocktype & Description	
35.80	36.60	RHYc	Rhyolite coherant volcanics
36.60	45.00	RHYv	Rhyolite volcaniclastic
45.00	45.30	MDSt	Rhyolite tuff dominant mudstone
45.30	46.00	MDSc	Carbonaceous dominant mudstone
46.00	53.10	MDSw	Coherent rhyolite flow with carbonaceous content
53.10	88.10	RHYv	Rhyolite volcaniclastic
88.10	90.10	RHYvx	Quartz and/or feldspar crystal tuff
90.10	91.20	RHYv	Rhyolite volcaniclastic
91.20	92.40	MAFi	Mafic Intrusions (primarily footwall mafic intrusion)
92.40	111.50	RHYv	Rhyolite volcaniclastic
111.50	114.70	MDSt	Rhyolite tuff dominant mudstone
114.70	115.00	MDSc	Carbonaceous dominant mudstone
115.00	116.50	MDSt	Rhyolite tuff dominant mudstone
116.50	116.70	MDSc	Carbonaceous dominant mudstone
116.70	118.20	MDSt	Rhyolite tuff dominant mudstone
118.20	136.80	RHYv	Rhyolite volcaniclastic
136.80	137.00	MDSt	Rhyolite tuff dominant mudstone
137.00	138.00	MDSc	Carbonaceous dominant mudstone

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
138.00	**138.50**	**MDSt**	**Rhyolite tuff dominant mudstone**
138.50	**143.10**	**RHYv**	**Rhyolite volcaniclastic**
138.5 - 143.1: Increased chlorite			
143.10	**144.80**	**MAFt**	**Mafic Volcaniclastics**
143.1 - 144.8: thin banding			
144.80	**151.20**	**RHYv**	**Rhyolite volcaniclastic**
144.8 - 151.2: stronger chlorite. Strong sulfide "burn" intervals.			
151.20	**154.60**	**RHYv**	**Rhyolite volcaniclastic**
151.2 - 154.6: PY CP inchlorite rich zone.			
154.60	**181.70**	**RHYc**	**Rhyolite coherant volcanics**
181.70	**192.80**	**MAFt**	**Mafic Volcaniclastics**
192.80	**205.60**	**RHYv**	**Rhyolite volcaniclastic**
205.60	**219.60**	**RHYc**	**Rhyolite coherant volcanics**
219.60	**221.30**	**RHYv**	**Rhyolite volcaniclastic**
219.6 - 221.3: sulphide burn intervals			
221.30	**222.90**	**MDSt**	**Rhyolite tuff dominant mudstone**
222.90	**231.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
231.30	**244.40**	**RHYvl**	**Lapilli tuff**
244.40	**244.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
244.70	**293.00**	**RHYvl**	**Lapilli tuff**
<<Alt: 244.7 - 293 Weak-Moderate (Alt) Chlorite>>			
293.00	**294.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
294.00	**309.60**	**RHYvl**	**Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Min: 294 - 309.6 5% Min: Pyrite>>
		<<Alt: 294 - 309.6 Moderate-Strong (Alt) Chlorite>>
		End of Hole @ 309.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-019

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	18-Sep-15
UTM Easting	415152.90625	Core Size:		Azimuth:	180	Date Logging Complete:	20-Sep-15
UTM Northing:	6815748.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1401.2	Casing Depth (m):		Length (m):	306.7	Drill Rig:	
Local Easting:	5152.9	Stored?:		Claims Title		Drill Started:	
Local Northing:	5749.3	Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180	0	180	SS				☑	
29	-47	178	0	178	SS				☑	
62	-49	178	0	178	SS				☑	
93	-50	180	0	180	SS				☑	
123	-52	181	0	181	SS				☑	
154	-54	186	0	186	SS				☑	
184	-58	185	0	185	SS				☑	
245	-60	193	0	193	SS				☑	
276	-61	195	0	195	SS				☑	
306	-62	191	0	191	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**15.80**	**CASN Casing**									
15.80	**16.00**	**OVBN Overburden**									
<<Min: 15.8 - 29.3 0.5% Min: Pyrite>>											
<<Min: 15.8 - 29.7 10% Min: Calcite>>											
<<Min: 15.8 - 51.4 3% Min: Ankerite>>											

From (m)	To (m)	Rocktype & Description
16.00	**22.50**	**MDU carbonaceous mudstone upper sequence**
16 - 22.5: limy with minor MAFi interbnds		
<<Vein: 18.9 - 25.3 15% Quartz-Carbonate>>		
22.50	**24.00**	**MAFt Mafic Volcaniclastics**
22.5 - 24: mafic tuff with interbnds MDS		
24.00	**24.50**	**MDU carbonaceous mudstone upper sequence**
24 - 24.5: limy		
24.50	**25.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
24.5 - 25: peculiar interval sharp cnt with MDS poss dyke or accidental clast??		
25.00	**29.70**	**MDU carbonaceous mudstone upper sequence**
25 - 29.7: limy		
<<Min: 29.3 - 132.6 0.5% Min: Pyrite>>		
<<Min: 29.3 - 132.6 1% Min: Pyrrhotite>>		
29.70	**30.80**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
29.7 - 30.8: flow banded dyke, with quenced contact with QE		
<<Min: 29.7 - 90 1% Min: Calcite>>		
30.80	**35.60**	**RHYvx Quartz and/or feldspar crystal tuff**
30.8 - 35.6: good fining up sequence, down hole, tops down		
35.60	**37.70**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
37.70	**49.40**	**RHYvl Lapilli tuff**
37.7 - 49.4: two examples fining down hole, tops down		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

49.40 51.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

49.4 - 51.4: strong flow foliation on strat top side, possible tops down indicator

51.40 58.00 RHYvx Quartz and/or feldspar crystal tuff

51.4 - 58: QE crystal tuff with lapilli size lithics

<<Min: 51.4 - 85.2 10% Min: Ankerite>>

58.00 58.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

58.80 61.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

61.00 73.60 RHYvl Lapilli tuff

<<Alt: 65.8 - 119 Weak (Alt) Chlorite>> possible original composition of rock, flesic tuffs are weakly chloritic and overprinted with weak MU forming CL patches, Possible that CL dykes are causing CL alt or perhaps hyaloclastie that is mixed with tuffs???

73.60 74.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

74.40 85.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 85.2 - 147 5% Min: Ankerite>>

85.30 91.50 RHYvl Lapilli tuff

85.3 - 91.5: moderate CL OP alteration

<<Min: 90 - 112 5% Min: Calcite>>

91.50 92.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

92.80 98.50 RHYvl Lapilli tuff

92.8 - 98.5: pervassive CL alteration??

98.50 102.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

102.00 104.70 RHYvl Lapilli tuff

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

104.70 105.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

105.10 108.30 RHYvl Lapilli tuff

108.30 110.20 RHYva Coarse grained to ash tuff

108.3 - 110.2: narrow intervals of RHYc

110.20 112.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

112.40 115.80 RHYc Rhyolite coherant volcanics

112.4 - 115.8: aphanitic Rhy adjacent to MAFi, possible that this bleached zone adj to mafic dyke

115.80 132.60 RHYvl Lapilli tuff

<<Struc: 129.4 - 130.4 Intense (Alt) Fault>> gouge

132.60 175.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

132.6 - 175.6: good flow banding and curdy texture with 20% of interval comprised of lappilli tuff sections

<<Min: 132.6 - 185 2% Min: Pyrite>>

<<Min: 132.6 - 185 0.5% Min: Pyrrhotite>>

<<Min: 147 - 166 10% Min: Ankerite>>

<<Min: 166 - 203 15% Min: Ankerite>>

175.60 179.70 RHYvl Lapilli tuff

179.70 181.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

181.80 198.20 RHYvl Lapilli tuff

<<Min: 185 - 188.5 5% Min: Pyrite>>

<<Min: 188.5 - 203 3% Min: Pyrrhotite>>

<<Alt: 188 - 221 Moderate (Alt) Muscovite>>

<<Vein: 188.2 - 188.6 20% Quartz-Carbonate>>

198.20 203.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
200.20	201.70	1.50	B00264166	0.4	-0.005	-0.01	-0.01	0.05

<<Min: 203 - 206 0.5% Min: Sphalerite>>

<<Min: 203 - 206 3% Min: Pyrrhotite>>

<<Min: 203 - 206 2% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
203.20	**207.60**	**RHYva** **Coarse grained to ash tuff**
203.2 - 207.6: ash layer beteen RHYcw units that's CL alt.		
<<Min: 206 - 222 3% Min: Calcite>>		
<<Min: 207 - 221 15% Min: Ankerite>> ALSO doLOMITE		
<<Alt: 203.3 - 204.6 Strong (Alt) Chlorite>> 209-221.8 strong CB talc-like alt		
207.60	**221.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
207.6 - 221.8: strong CB and talc-like alt of cw		
<<Min: 221 - 249 2% Min: Ankerite>>		
<<Alt: 216.4 - 228.3 Weak (Alt) Cordierite>>		
<<Vein: 218.4 - 221.3 60% Quartz-Carbonate>>		
221.80	**238.50**	**MDSc** **Carbonaceous dominant mudstone**
221.8 - 238.5: interesting section of MDS between intervals of alterd RHYcw. Alt ranges fromweak to strong CI and CL with minor sx minz. Likely distal equivalent to massive sx up dip and could indicate that mxsx unit replaces MDS in the bulk of the deposit		
<<Min: 222 - 238 2% Min: Sphalerite>>		
<<Min: 222 - 238 0.5% Min: Chalcopyrite>>		
<<Min: 238 - 251 0.5% Min: Sphalerite>>		
<<Min: 238 - 251 2% Min: Pyrite>>		
<<Alt: 225.6 - 251.5 Moderate (Alt) Chlorite>>		
<<Alt: 228.3 - 238.3 Strong (Alt) Cordierite>>		
238.50	**249.10**	**RHYvl** **Lapilli tuff**
238.5 - 249.1: green perv CLm alt of felsic		
<<Vein: 242.6 - 250 60% Quartz>>		
249.10	**297.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 250 - 297.8 15% Min: Calcite>>		
297.80	**299.50**	**RHYvl** **Lapilli tuff**
<<Min: 297.8 - 306.7 2% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
206.20	207.60	1.40	B00264167	1.2	-0.005	0.03	0.01	-0.01
220.50	222.00	1.50	B00264168	2.4	-0.005	0.03	0.07	0.19
238.50	240.00	1.50	B00264169	0.5	-0.005	-0.01	0.01	0.04
240.00	241.50	1.50	B00264171	1.5	0.008	0.01	0.08	0.14
241.50	243.00	1.50	B00264172	0.5	0.006	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 297.8 - 306.7 3% Min: Pyrrhotite>>

299.50 305.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 299.5 - 306.7 2% Min: Ankerite>>

<<Alt: 302 - 306.5 Moderate (Alt) Muscovite>>

305.70 306.70 RHYvl Lapilli tuff

End of Hole @ 306.7

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-020

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414749.1875	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815747.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1412.11	Casing Depth (m):		Length (m):	242.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
29	-44	180		180	SS				☑	
62	-48	180		180	SS				☑	
93	-52	179		179	SS				☑	
123	-53	177		177	SS				☑	
154	-54	176		176	SS				☑	
184	-54	175		175	SS				☑	
242	-57	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**CASN**	**Casing**								
9.80	**14.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**								

9.8 - 14: msv-curdy rhyolite, abundant quartz eyes

<<Min: 9.8 - 30 3% Min: Calcite>>

<<Min: 9.8 - 32.3 1% Min: Pyrrhotite>>

<<Min: 9.8 - 34 4% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description
14.00	**29.70**	**RHYvx** **Quartz and/or feldspar crystal tuff**
14 - 29.7: abundant QZ eyes		
29.70	**30.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 30 - 54.2 1% Min: Calcite>>		
30.70	**32.30**	**RHYvx** **Quartz and/or feldspar crystal tuff**
30.7 - 32.3: abundant quartz eyes		
32.30	**54.20**	**RHYvl** **Lapilli tuff**
<<Min: 32.3 - 48 1% Min: Pyrite>>		
<<Min: 32.3 - 48 2% Min: Pyrrhotite>>		
<<Min: 34 - 56 15% Min: Ankerite>>		
<<Min: 48 - 61 0.5% Min: Pyrrhotite>>		
54.20	**60.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 54.2 - 69.9 10% Min: Calcite>>		
<<Min: 56 - 69 3% Min: Ankerite>>		
60.80	**63.10**	**RHYvl** **Lapilli tuff**
<<Min: 61 - 96 5% Min: Pyrite>>		
<<Min: 61 - 96 0.5% Min: Pyrrhotite>>		
63.10	**69.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 69 - 124 20% Min: Ankerite>>		
69.90	**109.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 69.9 - 108.5 0.5% Min: Calcite>>		
<<Min: 96 - 120 1% Min: Pyrite>>		
<<Min: 96 - 120 1% Min: Pyrrhotite>>		
<<Min: 108.5 - 118 3% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
109.80	**131.40**	**RHYva** **Coarse grained to ash tuff**
109.8 - 131.4: numerous minor folds + quartz sweats. Sub-horizontal axial planes.		
<<Min: 118 - 146 2% Min: Calcite>>		
<<Min: 120 - 176 2% Min: Pyrite>>		
<<Min: 120 - 176 3% Min: Pyrrhotite>>		
<<Min: 124 - 165 7% Min: Ankerite>>		
131.40	**136.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
131.4 - 136.3: weakly developed curdy texture		
136.30	**148.90**	**RHYva** **Coarse grained to ash tuff**
<<Min: 146 - 174 0.5% Min: Calcite>>		
148.90	**158.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
158.10	**178.00**	**MDSc** **Carbonaceous dominant mudstone**
158.1 - 178: strongly carbonaceous		
<<Min: 165 - 213 3% Min: Ankerite>>		
<<Min: 174 - 178 4% Min: Calcite>>		
<<Min: 176 - 192.3 3% Min: Pyrite>>		
178.00	**184.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
178 - 184.7: Rhyolite tuff, silicified mudstone.		
<<Min: 178 - 222 0.5% Min: Calcite>>		
<<Alt: 178 - 192.6 Moderate (Alt) Muscovite>>		
184.70	**186.00**	**MDSt** **Rhyolite tuff dominant mudstone**
186.00	**192.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
186 - 192.6: very weakly carbonacious rhyolite tuff, maybe mudstone.		
<<Min: 192.3 - 215.6 Min: Pyrite>> mxsx and smsx interval		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
186.50	188.00	1.50	Q930831	-0.3	0.007	-0.01	-0.01	-0.01
188.00	189.50	1.50	Q930832	0.4	0.011	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
192.60	**195.90**	**RHYv**	**Rhyolite volcaniclastic**
192.6 - 195.9: Uncertain protolith; trong structural and alteration overprint. Milled texture, porphyroblastic inclusions - continues into massive sulphide. Structural zone at massive sulphide contact.			
<<Alt: 192.6 - 195.9 Moderate (Alt) Cordierite>>			
195.90	**196.60**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
196.60	**205.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
196.6 - 205.6: durch.fabric development. Ragged suphide and magnetite + cordierite inclusions. Abrupt transition to unit OB below. Deformation zone.			
205.60	**213.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 213 - 222 10% Min: Ankerite>>			
213.50	**215.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
215.60	**219.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 215.6 - 219.6 3% Min: Chalcopyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
189.50	191.00	1.50	Q930833	0.6	0.006	-0.01	-0.01	-0.01
191.00	192.50	1.50	Q930834	0.7	-0.005	-0.01	-0.01	-0.01
192.50	194.00	1.50	Q930835	7.6	0.02	0.25	0.03	0.21
194.00	195.50	1.50	Q930836	39.6	0.293	1.11	0.19	0.45
195.50	197.00	1.50	Q930837	102	0.875	5.81	0.1	3.2
197.00	198.50	1.50	Q930838	33.3	0.318	1.09	0.15	4.25
198.50	200.00	1.50	Q930839	33.4	0.269	0.4	0.37	4.4
200.00	201.50	1.50	Q930842	59.6	0.306	0.82	0.83	4.4
201.50	203.00	1.50	Q930843	59.2	0.473	0.85	0.83	4.61
203.00	204.50	1.50	Q930844	51.1	0.277	0.58	1.97	5.58
204.50	206.00	1.50	Q930845	75.9	0.487	0.23	1.71	7.54
206.00	207.50	1.50	Q930846	84.7	0.881	0.27	1.52	8.36
207.50	209.00	1.50	Q930847	123	1.21	0.33	2.34	12.4
209.00	210.50	1.50	Q930848	186	2.17	0.68	1.59	11
210.50	212.00	1.50	Q930849	137	1.42	0.36	2.48	11.6
212.00	213.50	1.50	Q930851	211	1.22	0.27	4.46	9.45
213.50	215.00	1.50	Q930852	84.2	0.333	-0.01	1.61	5.7
215.00	215.60	0.60	Q930853	78.9	0.73	1.02	0.92	5.07
215.60	217.10	1.50	Q930854	21.7	0.229	0.41	0.06	0.21
217.10	218.60	1.50	Q930855	16.9	0.066	0.41	0.04	0.17

From (m)	To (m)	Rocktype & Description
		<<Alt: 215.6 - 221.9 Moderate (Alt) Chlorite>> laminated semi-massive sulfphides,215.6 to 219.6 intense chlorite sericite alteration.
219.60	**221.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		219.6 - 221.9: Gradational with above alteration zone. Local bands/layers massive to semi-massive sulphide.
221.90	**242.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 222 - 228 15% Min: Calcite>>
		<<Min: 222 - 242.6 0% Min: Ankerite>>
		<<Min: 228 - 242.6 4% Min: Calcite>>
		End of Hole @ 242.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
218.60	220.10	1.50	Q930856	25.9	0.398	0.64	0.08	0.35
220.10	220.60	0.50	Q930857	38.4	0.669	1.98	0.08	0.59
220.60	221.40	0.80	Q930858	56.5	1.17	2.67	0.12	0.54
221.40	222.90	1.50	Q930859	1.8	-0.005	0.01	0.02	0.05
222.90	224.30	1.40	Q930861	-0.3	-0.005	-0.01	-0.01	0.01
224.30	226.00	1.70	Q930862	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-021

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414749.282	Core Size:		Azimuth:	150	Date Logging Complete:	
UTM Northing:	6815749.65	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1412.703	Casing Depth (m):		Length (m):	264.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	150		150	SS				☑	
29	-83	150		150	SS				☑	
63	-82	139		139	SS				☑	
93	-81	166		166	SS				☑	
124	-83	156		156	SS				☑	
154	-80	169		169	SS				☑	
185	-84	181		181	SS				☑	
215	-79	176		176	SS				☑	
249	-79	183		183	SS				☑	
264	-77	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.10**	**CASN** **Casing**									
<<Min: 4.1 - 22.2 1% Min: Pyrrhotite>> strings of blebs along fol"n											
<<Min: 4.1 - 28.3 3% Min: Calcite>> CA in bandsand blebs in SCHS											
9.10	**15.80**	**RHYva** **Coarse grained to ash tuff**									
15.80	**35.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
15.8 - 35.4: Abundant quartz eyes											

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 17.2 - 17.4 2% Min: Sphalerite>> lensy diss"ns ofblebs

<<Min: 22.2 - 39.05 0.1% Min: Pyrrhotite>>

<<Min: 28.3 - 30 8% Min: Ankerite>> large pblasts in host

<<Min: 30 - 33.4 1% Min: Calcite>>

<<Min: 33.4 - 35.4 1% Min: Calcite>>

<<Min: 33.4 - 35.4 3% Min: Ankerite>>

35.40 49.40 RHYvx Quartz and/or feldspar crystal tuff

35.4 - 49.4: Feldspar crystals

<<Min: 35.4 - 39.05 5% Min: Ankerite>>

<<Min: 39.05 - 44.1 2% Min: Calcite>>

<<Min: 39.05 - 44.1 2% Min: Ankerite>>

<<Min: 39.05 - 47.8 0.5% Min: Pyrrhotite>> blabs and diss'ns

<<Min: 44.1 - 45.8 8% Min: Ankerite>>

<<Min: 45.8 - 47.8 3% Min: Calcite>>

<<Min: 45.8 - 47.8 5% Min: Ankerite>>

<<Min: 47.8 - 50.9 8% Min: Ankerite>>

<<Min: 47.8 - 57 0.25% Min: Pyrite>> local zones, minor vein selvedges

<<Min: 47.8 - 57 0.5% Min: Pyrrhotite>>

<<Alt: 46.9 - 59 Trace (Alt) Muscovite>> MU difficult to see.

49.40 57.00 RHYvl Lapilli tuff

49.4 - 57: FD crystals

<<Min: 50.9 - 57 1% Min: Calcite>>

<<Min: 50.9 - 57 1% Min: Ankerite>>

57.00 62.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

57 - 62: Interlayers rhyolite

<<Min: 57 - 63 8% Min: Ankerite>>

<<Min: 57 - 93.4 0.1% Min: Pyrrhotite>> locally narrow bands

62.00 68.80 RHYva Coarse grained to ash tuff

<<Min: 63 - 68.8 1% Min: Calcite>> and frac filling

From (m)	To (m)	Rocktype & Description
68.80	**86.10**	**RHYvl** **Lapilli tuff**
<<Min: 68.8 - 92.6 5% Min: Ankerite>>		
86.10	**93.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 92.6 - 127 3% Min: Ankerite>>		
93.40	**131.20**	**RHYva** **Coarse grained to ash tuff**
<<Min: 93.4 - 109 0.25% Min: Pyrrhotite>>		
<<Min: 103.3 - 105.1 0.25% Min: Pyrite>>		
<<Min: 109 - 137.1 0.1% Min: Pyrrhotite>>		
<<Min: 124.8 - 126.6 0.25% Min: Pyrite>>		
<<Min: 127 - 136.1 8% Min: Ankerite>>		
131.20	**137.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 136.1 - 160.7 0.5% Min: Ankerite>> trace fracs		
<<Min: 137.1 - 160.7 0.1% Min: Pyrrhotite>> locally fol'n		
137.80	**155.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
137.8 - 155.6: Possibly flowbanded		
<<Alt: 137.8 - 143.4 Weak (Alt) Muscovite>>		
<<Alt: 143.4 - 166.8 Moderate (Alt) Muscovite>>		
155.60	**157.60**	**MDSt** **Rhyolite tuff dominant mudstone**
157.60	**166.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
157.6 - 166.7: Weak flow banding. Whispy sphalerite.		
<<Min: 160.7 - 165 0.5% Min: Sphalerite>> in sx lenses		
<<Min: 160.7 - 165 1% Min: Pyrrhotite>>		
<<Min: 160.7 - 165 0.1% Min: Chalcopyrite>>		
<<Min: 160.7 - 184.4 3% Min: Ankerite>> and patchy		
<<Min: 165 - 167.8 2% Min: Sphalerite>>		
<<Min: 165 - 167.8 2% Min: Pyrite>>		
<<Min: 165 - 167.8 1% Min: Chalcopyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
166.70	**167.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
166.7 - 167.8: Flow banded.											
<<Alt: 166.8 - 167.8 Moderate (Alt) Chlorite>>											
167.80	**172.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 167.8 - 180.9 0.25% Min: Pyrrhotite>>											
<<Alt: 167.8 - 170 Weak (Alt) Muscovite>>											
172.80	**183.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 180.9 - 184.4 0.5% Min: Sphalerite>> lensy occurrence											
<<Min: 180.9 - 184.4 0.5% Min: Pyrite>> along fol'n											
<<Min: 180.9 - 184.4 0.01% Min: Chalcopyrite>>											
<<Alt: 176.2 - 183.2 Weak (Alt) Chlorite>> minor SP											
183.20	**194.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	188.90	190.40	1.50	Q930882	0.4	0.01	-0.01	-0.01	-0.01
<<Min: 184.4 - 190.9 0.25% Min: Pyrrhotite>>			190.40	191.90	1.50	Q930883	0.5	0.011	-0.01	-0.01	0.06
<<Min: 184.4 - 195.5 0.1% Min: Ankerite>>			191.90	193.40	1.50	Q930884	1.4	0.016	0.02	0.02	0.29
<<Min: 190.9 - 194.8 0.01% Min: Sphalerite>>			193.40	194.90	1.50	Q930885	0.6	0.008	-0.01	-0.01	0.02
<<Min: 190.9 - 194.8 0.5% Min: Pyrite>>											
<<Min: 194.8 - 195.5 5% Min: Sphalerite>> bands and blebs											
<<Min: 194.8 - 195.5 30% Min: Pyrite>>											
<<Alt: 190.9 - 194.9 Weak (Alt) Muscovite>> PY + SP											
194.90	**195.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	194.90	195.50	0.60	Q930886	11.7	0.085	0.15	0.13	7.03
195.50	**197.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	195.50	197.00	1.50	Q930887	1.5	0.011	0.05	0.02	0.15
195.5 - 197.1: Flow banded											
<<Min: 195.5 - 197.1 3% Min: Ankerite>> lensy			197.00	198.50	1.50	Q930888	0.4	-0.005	-0.01	-0.01	-0.01
<<Min: 195.5 - 204.8 0.25% Min: Pyrrhotite>>											
<<Alt: 195.5 - 197.1 Moderate (Alt) Chlorite>>											

From (m)	To (m)		Rocktype & Description
197.10	**201.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

197.1 - 201.4: Flow banded. Interstitial sphalerite.

<<Min: 197.1 - 201.4 1% Min: Ankerite>> lensy

<<Min: 197.1 - 207.3 3% Min: Calcite>> lenses and bands

<<Min: 200.3 - 204.8 0.5% Min: Sphalerite>> bands

<<Alt: 197.1 - 201.4 Weak (Alt) Muscovite>> interstitial SP

From (m)	To (m)		Rocktype & Description
201.40	**203.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 201.4 - 207.3 2% Min: Ankerite>>

<<Alt: 201.4 - 203.3 Strong (Alt) Chlorite>> this could be mafic tuff rather than alt, note minor AS

From (m)	To (m)		Rocktype & Description
203.30	**204.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

203.3 - 204.8: Flow banded.

From (m)	To (m)		Rocktype & Description
204.80	**210.30**	**RHYv**	**Rhyolite volcaniclastic**

204.8 - 210.3: Local intervals laminated sphalerite and trace chalcopyrite.

<<Min: 204.8 - 205.3 8% Min: Sphalerite>>

<<Min: 204.8 - 205.3 5% Min: Pyrrhotite>>

<<Min: 205.3 - 207.5 2% Min: Magnetite>>

<<Min: 205.3 - 207.5 0.5% Min: Chalcopyrite>>

<<Min: 207.3 - 212 0.1% Min: Sphalerite>> along fol'n

<<Min: 207.3 - 218.8 1% Min: Pyrite>>

<<Min: 207.3 - 218.8 1% Min: Ankerite>> lensy

<<Alt: 204.8 - 210.3 Strong (Alt) Chlorite>> top of interval 20-30% SP+PY

From (m)	To (m)		Rocktype & Description
210.30	**223.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

210.3 - 223.3: Trace whispy sp-po

<<Min: 218.8 - 234.1 3% Min: Ankerite>> lensy

<<Alt: 210.3 - 219 Weak (Alt) Chlorite>> weak cl but local bnds sp and py suggest alt.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
198.50	200.00	1.50	Q930889	0.5	0.008	-0.01	-0.01	0.08
200.00	201.40	1.40	Q930891	0.5	0.007	-0.01	0.01	0.63
201.40	202.80	1.40	Q930892	0.3	0.006	-0.01	-0.01	0.03
202.80	203.80	1.00	Q930893	0.4	-0.005	-0.01	-0.01	0.1
203.80	204.80	1.00	Q930894	0.8	0.014	-0.01	0.02	0.02
204.80	205.30	0.50	Q930895	18.6	0.038	0.1	1.07	4.74
205.30	206.30	1.00	Q930896	7.3	0.03	0.04	0.09	0.9
206.30	207.30	1.00	Q930897	17.1	0.058	0.18	0.78	1.41
207.30	208.80	1.50	Q930898	0.3	0.006	-0.01	-0.01	0.05
208.80	210.30	1.50	Q930899	4.1	0.013	0.01	0.05	0.29
210.30	211.80	1.50	Q930901	1.8	0.009	0.01	0.03	0.2
211.80	213.30	1.50	Q930902	0.9	0.005	-0.01	0.02	0.05

From (m)	To (m)	Rocktype & Description
223.30	**234.10**	**RHYvx** **Quartz and/or feldspar crystal tuff**

223.3 - 234.1: may have mafic tuff component or weak prox. Alt.

<<Alt: 224.7 - 247.5 Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
234.10	**236.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 234.1 - 264.3 5% Min: Ankerite>> lenses, pods

<<Min: 236.7 - 248.1 0.25% Min: Pyrrhotite>> along fol"n

From (m)	To (m)	Rocktype & Description
236.80	**264.30**	**RHYvx** **Quartz and/or feldspar crystal tuff**

236.8 - 264.3: peculiar interval lapilli tuff with difuse feldspar xtals, rock is moderately altered by CL MG PO MS, could be pervassive weak prox-style alteration

<<Min: 248.1 - 264.3 0.01% Min: Pyrrhotite>>

<<Alt: 247.5 - 264.3 Moderate (Alt) Chlorite>> assoc with dissem mg po

End of Hole @ 264.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-022

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815748.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1394.86	Casing Depth (m):		Length (m):	239.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
29	-46	178		178	SS				☑	
62	-50	178		178	SS				☑	
93	-53	181		181	SS				☑	
123	-54	180		180	SS				☑	
157	-55	184		184	SS				☑	
184	-53	184		184	SS				☑	
215	-54	184		184	SS				☑	
239	-54	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.70 OVBN Overburden

6.70 13.00 RHYvl Lapilli tuff

6.7 - 13: Interval contains 1.0m QZ eyes. CL-MS-CA Akppo CA tnbnd MAFC dyke.

<<Min: 6.7 - 7.7 5% Min: Calcite>>

<<Min: 6.7 - 22.5 0.25% Min: Pyrite>>

<<Min: 6.7 - 22.5 0.25% Min: Pyrrhotite>> WIS and FD

<<Min: 6.7 - 44.9 5% Min: Ankerite>>

<<Min: 7.7 - 13 0.01% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 6.7 - 17.9 Weak-Moderate (Alt) Muscovite>>

<<Alt: 12.1 - 14 Weak-Moderate (Alt) Muscovite>> Thermal overprint. +CLBI

13.00 17.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

13 - 17.9: Interval contains 0.35m QZPO and mtld QZ-MU-CB FELS lpl tuf that has been thermally alterered by the MAFC dykes along contacts to include CL-BI.

<<Min: 13 - 17.9 0.25% Min: Calcite>>

<<Alt: 15.7 - 17.9 Weak-Moderate (Alt) Muscovite>> Thermal overprint. +CLBI

17.90 22.50 RHYvl Lapilli tuff

17.9 - 22.5: QZ eyes.

<<Alt: 17.9 - 18.4 Moderate (Alt) Muscovite>> Thermal overprint. +CLBI

<<Alt: 17.9 - 47.6 Moderate (Alt) Muscovite>>

<<Alt: 22.2 - 32.5 Moderate (Alt) Muscovite>> Thermal overprint. +CLBI

22.50 25.50 RHYvl Lapilli tuff

22.5 - 25.5: QZ eyes. QZMSBI+CB. Looks to be thermally altered wall rock around MAFC dykes. Interval contains 0.20 cm MAFC dyke.

<<Min: 22.5 - 26.2 0.01% Min: Pyrrhotite>>

<<Min: 22.5 - 26.2 0.25% Min: Calcite>>

<<Min: 22.5 - 39.5 0.01% Min: Pyrite>>

25.50 30.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FG

25.5 - 30.4: Heterogeneous package of MAFC dykes up to 0.70m and QZMUCB FELS lpl tuf. QZ eyes in tuff.

<<Min: 26.2 - 35.4 0.25% Min: Pyrrhotite>>

<<Min: 26.2 - 39.5 0.01% Min: Calcite>>

30.40 36.50 RHYvx Quartz and/or feldspar crystal tuff

30.4 - 36.5: QZ eyes. Also lpl. Margins of tuff thermally altered by dykes.

<<Min: 35.4 - 39.5 0.01% Min: Pyrrhotite>>

<<Alt: 34.3 - 40.4 Moderate (Alt) Muscovite>> Thermal overprint. +CLBI

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
36.50	**39.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									

36.5 - 39.5: CLQZCB+BI. Fine grained chilled margins. Cbppo up to 1cm.

39.50	**44.90**	**RHYvl**	**Lapilli tuff**									

<<Min: 39.5 - 48.5 0.25% Min: Pyrite>>

<<Min: 39.5 - 48.5 0.25% Min: Pyrrhotite>> FD, DIS, and trace stringers

44.90	**47.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**				**FG**					

44.9 - 47.6: Trace Cbppo. Interval contains mtld QZMUCB FELS lpl tuf.

<<Min: 44.9 - 64.9 7% Min: Ankerite>>

47.60	**59.40**	**RHYvl**	**Lapilli tuff**									

<<Min: 48.5 - 62.6 0.5% Min: Pyrite>> disseminations in lens shaped lpl

<<Min: 48.5 - 62.6 0.5% Min: Pyrrhotite>> disseminations in lens shaped lpl

<<Alt: 47.6 - 160.9 Moderate-Strong (Alt) Muscovite>>

<<Struc: 54.9 - 56.7 Weak (Alt) Fault>>

59.40	**62.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
62.60	**64.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									

62.6 - 64.9: QZMUCL+CB+BI.

<<Min: 62.6 - 64.9 0.01% Min: Chalcopyrite>>

<<Min: 62.6 - 68.5 0.25% Min: Pyrite>> lenses also

<<Min: 62.6 - 68.5 0.25% Min: Pyrrhotite>> lenses also

64.90	**68.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									

<<Min: 64.9 - 68.5 15% Min: Ankerite>>

68.50	**75.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									

68.5 - 75.8: QMUBI+CL. Interval contains ctrt tnbnd MSCLCA+BI MAFC dyke with 5-10cm chilled margins. Contact at 68.5 is gradational. This interval looks like a thermally altered version of the RHYL flw between 64.9-68.5m.

<<Min: 68.5 - 75.5 7% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 68.5 - 75.5 0.5% Min: Ankerite>>

<<Min: 68.5 - 78.6 0.01% Min: Pyrite>> wisps also

<<Min: 68.5 - 78.6 0.01% Min: Pyrrhotite>> wisps also

<<Min: 75.5 - 96.5 7% Min: Ankerite>>

<<Alt: 68.5 - 75.8 Moderate-Strong (Alt) Muscovite>> Thermal overprint. +CLBI

75.80 78.60 RHYvx Quartz and/or feldspar crystal tuff

75.8 - 78.6: lpl also

<<Struc: 78.2 - 84.1 Weak (Alt) Fault>>

78.60 102.40 RHYvl Lapilli tuff

<<Min: 78.6 - 85.1 0.25% Min: Pyrite>>

<<Min: 78.6 - 85.1 0.25% Min: Pyrrhotite>>

<<Min: 84.1 - 88.8 0.01% Min: Calcite>>

<<Min: 85.1 - 96.5 0.5% Min: Pyrite>>

<<Min: 85.1 - 96.5 0.5% Min: Pyrrhotite>>

<<Min: 96.5 - 123.8 0.25% Min: Pyrite>>

<<Min: 96.5 - 123.8 0.25% Min: Pyrrhotite>>

<<Min: 96.5 - 124.6 2% Min: Ankerite>>

<<Alt: 96.5 - 115.2 Moderate-Strong (Alt) Muscovite>> Thermal overprint. +CLBI

<<Struc: 91.7 - 92.5 Weak-Moderate (Alt) Fault>>

102.40 106.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 102.4 - 105.5 0.5% Min: Calcite>>

106.00 111.90 RHYvl Lapilli tuff

<<Min: 108.1 - 113.7 0.01% Min: Sphalerite>>

<<Min: 108.1 - 113.7 0.01% Min: Galena>>

111.90 113.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

113.20 115.20 RHYvl Lapilli tuff

113.2 - 115.2: top of interval has small mafic dyke intersections (<15cm ea.)

115.20 120.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Rocktype & Description
120.00	**124.60**	**RHYvl** **Lapilli tuff**
120 - 124.6: xtl also.QZMUCL+BI.		
<<Min: 120 - 124.6 1% Min: Calcite>>		
<<Min: 123.8 - 140.3 1% Min: Pyrite>> lenses, DIS, blebs		
<<Min: 123.8 - 140.3 1% Min: Pyrrhotite>> lenses, DIS, blebs		
<<Alt: 120 - 124.6 Moderate-Strong (Alt) Muscovite>> Thermal overprint. +CLBI		
124.60	**130.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
124.6 - 130.4: xtl also. Trace crb.		
<<Min: 124.6 - 140.9 7% Min: Ankerite>>		
130.40	**138.70**	**RHYvl** **Lapilli tuff**
138.70	**147.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 140.3 - 145.3 0.5% Min: Calcite>>		
<<Min: 140.3 - 166.2 0.5% Min: Pyrite>> DIS, blebs, and stringers		
<<Min: 140.3 - 166.2 0.5% Min: Pyrrhotite>> DIS, blebs, and stringers		
<<Min: 140.9 - 147.3 15% Min: Ankerite>>		
147.30	**159.60**	**RHYvl** **Lapilli tuff**
<<Min: 147.3 - 179.3 2% Min: Ankerite>>		
159.60	**162.50**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Alt: 160.9 - 170.9 Strong (Alt) Muscovite>>		
<<Struc: 161.3 - 164.5 Weak (Alt) Fault>>		
162.50	**166.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
166.20	**176.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Min: 166.2 - 179.3 0.01% Min: Sphalerite>> DIS and VN		
<<Min: 166.2 - 179.3 0.25% Min: Pyrite>> FD aand vein mineralization.		
<<Min: 166.2 - 179.3 0.25% Min: Pyrrhotite>> FD aand vein mineralization.		
<<Min: 166.2 - 179.3 0.01% Min: Galena>> DIS and VN		
<<Alt: 170.9 - 179.3 Intense (Alt) Muscovite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
174.90	176.40	1.50	R080151	0.4	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
176.00	**179.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
179.30	**180.40**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 179.3 - 213 1% Min: Ankerite>>			
180.40	**182.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
180.4 - 182.1: Bippo			
<<Alt: 180.4 - 182.1 Strong (Alt) Chlorite>>			
182.10	**191.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
191.00	**193.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
193.00	**195.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
193 - 195.7: MSCB+BI. Very coarse grained AK.			
195.70	**197.30**	**OA**	**Magnetite bearing sulphides**
197.30	**201.10**	**OA**	**Magnetite bearing sulphides**
201.10	**211.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
211.70	**213.40**	**OG**	**Chalcopyrite rich sulphides**
213.40	**215.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
176.40	177.90	1.50	R080152	0.3	0.007	-0.01	-0.01	-0.01
177.90	179.40	1.50	R080153	5.6	0.052	0.11	0.02	0.04
180.90	182.40	1.50	R080154	40.7	0.268	0.64	0.53	1.04
189.90	191.40	1.50	R080155	87.8	1.13	0.84	1.29	4.45
191.40	192.90	1.50	R080156	212	1.29	0.48	1.94	8.49
192.90	194.40	1.50	R080157	48.8	0.649	0.69	0.6	3.54
194.40	195.90	1.50	R080158	129	1.52	1.93	0.35	0.7
195.90	197.40	1.50	R080159	149	1.23	2.4	0.32	2.45
206.40	207.90	1.50	R080162	62.5	0.76	0.84	1.21	4.7
207.90	209.40	1.50	R080163	63.3	0.967	1.09	0.59	3.41
209.40	210.90	1.50	R080164	121	0.987	0.6	2.38	5.94
210.90	212.40	1.50	R080165	157	2.25	2.52	1.6	9.46
212.40	213.90	1.50	R080166	178	2.82	4.67	1.45	9.43
213.90	215.40	1.50	R080167	103	0.64	0.52	2.07	7.65

From (m)	To (m)	Rocktype & Description
215.40	**216.50**	**RHYc** **Rhyolite coherant volcanics**
215.4 - 216.5: Proximal alteration		
<<Min: 215.4 - 216.5 0.01% Min: Pyrite>>		
<<Alt: 215.4 - 216.5 Strong (Alt) Chlorite>>		
216.50	**220.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 216.5 - 220.5 0.25% Min: Pyrite>>		
<<Min: 216.5 - 239.6 7% Min: Calcite>>		
<<Alt: 216.5 - 220.5 Moderate-Strong (Alt) Muscovite>>		
220.50	**224.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 220.5 - 224 0.01% Min: Pyrite>>		
<<Min: 220.5 - 224 0.01% Min: Pyrrhotite>>		
<<Alt: 220.5 - 224 Moderate (Alt) Chlorite>> CLCABIMS		
224.00	**227.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 224 - 227.6 0.25% Min: Pyrite>>		
<<Alt: 224 - 227.6 Moderate-Strong (Alt) Muscovite>>		
227.60	**235.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 227.6 - 235.6 0.01% Min: Pyrite>>		
<<Alt: 227.6 - 235.6 Moderate-Strong (Alt) Chlorite>> CLCABIMS		
235.60	**239.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 235.6 - 239.6 0.01% Min: Sphalerite>>		
<<Min: 235.6 - 239.6 0.25% Min: Pyrite>>		
<<Min: 235.6 - 239.6 0.25% Min: Pyrrhotite>>		
<<Alt: 235.6 - 239.6 Moderate-Strong (Alt) Muscovite>>		

End of Hole @ 239.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
215.40	216.90	1.50	R080168	7.5	0.028	0.02	0.19	0.36
216.90	218.40	1.50	R080169	2	0.014	-0.01	0.03	0.09
218.40	219.90	1.50	R080171	0.6	0.005	-0.01	-0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-023

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815750	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1394.75	Casing Depth (m):		Length (m):	258.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
32	-84	176		176	SS				☑	
63	-83	175		175	SS				☑	
93	-81	173		173	SS				☑	
124	-81	181		181	SS				☑	
154	-81	179		179	SS				☑	
185	-81	171		171	SS				☑	
215	-81	193		193	SS				☑	
246	-81	193		193	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.40**	**CASN Casing**									
6.40	**7.00**	**RHYvl Lapilli tuff grey-green**									

6.4 - 7: heterogeneous section, with dominantly lapilli and minor flow textured intervals, also several green to brown, CL-BI rich dykes?, with AK pblasts (retro to CA)

<<Min: 6.4 - 7 3% Min: Ankerite>>

<<Alt: 6.4 - 41.7 Weak (Alt) Muscovite>> interrupted by dykes

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

7.00 9.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

7 - 9.1: well fol'd dyke?, AK plus CA pblasts, CA-QZ veinng

<<Min: 7 - 9.1 5% Min: Calcite>> minor diss'd, along fol'n

<<Min: 7 - 9.1 10% Min: Ankerite>> pblasts

<<Alt: 7 - 9.1 Moderate (Alt) Chlorite>>

9.10 11.70 RHYvl Lapilli tuff grey-green

<<Min: 9.1 - 11.7 1% Min: Pyrite>> foliation oriented

<<Min: 9.1 - 11.7 1% Min: Pyrrhotite>> foliation centric and few disseminated.

<<Min: 9.1 - 11.7 5% Min: Ankerite>> foliation centric

11.70 17.50 RHYvx Quartz and/or feldspar crystal tuff grey-green

11.7 - 17.5: as above

<<Min: 14 - 15.5 1% Min: Calcite>> foliation centric

<<Min: 16.4 - 17.5 1% Min: Pyrrhotite>>

<<Alt: 14 - 15.5 Moderate (Alt) Biotite>>

17.50 19.20 RHYvl Lapilli tuff grey-green

17.5 - 19.2: as above

<<Min: 17.5 - 19.2 3% Min: Ankerite>> foliation centric

19.20 20.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

19.2 - 20.8: SCHSITOSE, BI-QZ rich dyke

<<Min: 19.2 - 20.8 15% Min: Calcite>> pblasts

<<Alt: 19.2 - 20.8 Moderate-Strong (Alt) Biotite>>

20.80 29.00 RHYvl Lapilli tuff

<<Min: 20.8 - 38 1% Min: Pyrite>> foliation oriented

<<Min: 20.8 - 38 1% Min: Pyrrhotite>> foliation oriented

<<Min: 20.8 - 38 15% Min: Ankerite>> foliation centric. Interuptedby felsic flow from 29.35 to 30.41 m

29.00 30.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

30.20 38.00 RHYvl Lapilli tuff grey-green

30.2 - 38: dominanlty lapilli tuff, minor flow banded intervls, quite siliceous

38.00 40.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown MG

38 - 40: possible BI pblasts as well as ground mass, strong CA

<<Min: 38 - 40 10% Min: Ankerite>> also foliation oriented

<<Alt: 38 - 40 Moderate (Alt) Chlorite>>

40.00 53.60 RHYvl Lapilli tuff grey-green

40 - 53.6: dominanlty lapilli tuff, minor flow banded intervls, quite siliceous

<<Min: 40 - 53.6 1% Min: Pyrite>> foliation oriented

<<Min: 40 - 53.6 1% Min: Pyrrhotite>> foliation oriented

<<Min: 40 - 53.6 5% Min: Ankerite>> foliation centric

<<Alt: 41.7 - 130.56 Weak-Moderate (Alt) Muscovite>>

53.60 58.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

53.6 - 58.2: calcareous-ankeritic altered dyke, wide fg chill

<<Min: 53.6 - 58.2 3% Min: Ankerite>> pblasts

<<Min: 53.6 - 58.6 5% Min: Calcite>> pblasts

<<Alt: 53.6 - 58.2 Moderate-Strong (Alt) Chlorite>>

<<Alt: 53.6 - 58.2 Moderate (Alt) Biotite>>

58.20 66.15 RHYvl Lapilli tuff light grey FG

58.2 - 66.15: silic-bnds, locally mixed with felsic thick bedded flow

<<Min: 58.2 - 66.15 1% Min: Pyrite>> foliation oriented

<<Min: 58.2 - 66.15 1% Min: Pyrrhotite>> foliation oriented

<<Min: 58.2 - 75.8 1% Min: Pyrite>> foliation oriented

<<Min: 58.2 - 75.8 1% Min: Pyrrhotite>> foliation oriented,locally patchy.

<<Min: 58.2 - 75.8 5% Min: Ankerite>> foliation oriented

66.15 67.60 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

66.15 - 67.6: progressive transition wit lapili

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.60	**68.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown** **FG**									
67.6 - 68.8: dyke													
68.80	**75.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
68.8 - 75.8: locally felsic flow thick bedded													
<<Min: 70 - 75.8 1% Min: Pyrite>> and disseminated, sphalerite trace													
75.80	**86.40**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**grey-green**									
75.8 - 86.4: probably dyke associated with fault zone. Quartz vein 5 to 10 cm, tourmaline. Feldspar phenocrysts													
<<Min: 78.8 - 87.5 2% Min: Ankerite>> pblasts													
<<Struc: 75.8 - 86.4 Strong (Alt) Fault>>													
86.40	**93.90**	**RHYvl**	**Lapilli tuff**	**grey-green**									
86.4 - 93.9: few biotite, pyrite disseminated													
<<Min: 86.4 - 121 1% Min: Pyrite>> and disseminated. Po trace.													
<<Min: 87.5 - 93.9 5% Min: Ankerite>> foliation oriented													
93.90	**97.90**	**RHYcf**	**Feldspar & feldspar quartz porphyry**	**grey-green**									
93.9 - 97.9: associated with quart veins or pods, probably two phase of foliation													
<<Min: 93.9 - 97.9 2% Min: Ankerite>> pblasts													
97.90	**100.70**	**RHYvl**	**Lapilli tuff**	**grey-green**									
<<Min: 97.9 - 111.9 15% Min: Ankerite>> and pblasts. Foliation oriented.													
100.70	**112.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
100.7 - 112.9: weak schstosity													
<<Min: 111.9 - 112.9 2% Min: Ankerite>> pblasts													
112.90	**126.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
112.9 - 126.8: silic-bnds, lapilli (domnant) and flow textures, locally strong fol"n, PY increasing towards argillaceous unit													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 112.9 - 122.5 10% Min: Ankerite>> foliation oriented										
		<<Min: 121 - 126.8 3% Min: Pyrrhotite>>										
126.80	**127.40**	**MDSc** **Carbonaceous dominant mudstone**	**black**									
		126.8 - 127.4: dark colour due to argillaceous content, PY as diss'd along fol'n,										
127.40	**130.60**	**RHYvl** **Lapilli tuff**	**grey**									
		127.4 - 130.6: sulphidic, PY in seams and along foliation, JA stan common over narrow bands, 146-149.5-stronger fol'n, darker colour below 158 due to CL alt'n										
		<<Min: 128.1 - 132 10% Min: Ankerite>> foliation oriented										
130.60	**135.90**	**MDSt** **Rhyolite tuff dominant mudstone**										
		<<Alt: 130.6 - 155.6 Strong (Alt) Muscovite>>										
		<<Struc: 131.9 - 135.9 Moderate (Alt) Fault>> oxidized commonly										
135.90	**145.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**										
		<<Min: 135.9 - 155.2 2% Min: Pyrite>> stinger, sheared										
145.50	**151.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**										
151.50	**167.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		159.60	161.10	1.50	Q311385	0.7	0.008	0.03	0.01	0.03
		151.5 - 167.1: difficult toident in strong alt.										
		<<Min: 164 - 167.7 2% Min: Sphalerite>>		161.10	162.60	1.50	Q311386	1.6	0.008	0.05	0.02	0.07
		<<Min: 164 - 167.7 3% Min: Pyrite>> discontinuous veins		162.60	164.10	1.50	Q311387	3.7	0.034	0.1	0.02	0.26
		<<Min: 164 - 167.7 2% Min: Pyrrhotite>> foliation oriented		164.10	165.60	1.50	Q311388	15.1	0.13	0.38	0.09	0.84
		<<Min: 164 - 167.7 Min: Chalcopyrite>> trace		165.60	167.10	1.50	Q311389	83.4	0.642	2.79	0.11	0.42
		<<Alt: 155.6 - 159 Moderate (Alt) Muscovite>>										
		<<Alt: 157.8 - 159 Weak (Alt) Chlorite>>										
		<<Alt: 159 - 163.8 Strong (Alt) Chlorite>>										
		<<Alt: 163.8 - 167.1 Strong (Alt) Cordierite>> texturally destructive, CD pblasts coommon in bands										
167.10	**168.20**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FG**	167.10	168.20	1.10	Q311391	113	0.501	0.48	1.82	7.56
		<<Min: 167.7 - 168.2 15% Min: Sphalerite>>										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 167.7 - 168.2 80% Min: Pyrite>> fine grained													
<<Min: 167.7 - 168.2 1% Min: Chalcopyrite>>													
168.20	**176.40**	**RHYvl**	**Lapilli tuff**	**grey-green**	168.20	169.70	1.50	Q311392	9.7	0.026	0.12	0.22	0.74
168.2 - 176.4: variably altered, QV's, inter-sx layer, small shears sub-parallel tca													
<<Min: 170 - 179.5 3% Min: Ankerite>>					169.70	171.20	1.50	Q311393	1.2	-0.005	0.01	0.03	0.18
<<Alt: 168.2 - 170.5 Moderate-Strong (Alt) Chlorite>>					171.20	172.50	1.30	Q311394	0.3	0.006	-0.01	-0.01	0.1
<<Alt: 170.5 - 174.5 Moderate (Alt) Muscovite>> not greasy					172.50	174.00	1.50	Q311395	4.7	0.014	0.07	0.08	0.54
<<Alt: 174.5 - 180.8 Strong (Alt) Cordierite>> through mxsx minlzn					174.00	174.90	0.90	Q311396	1.8	0.005	-0.01	0.06	0.1
					174.90	176.40	1.50	Q311397	2	0.008	0.01	0.05	0.1
176.40	**180.80**	**OD**	**Brecciated sulphides**	**green-brown**	176.40	177.90	1.50	Q311398	44.5	0.215	1.56	0.46	2.45
176.4 - 180.8: Lge QV below zone													
<<Min: 176.4 - 179.3 20% Min: Pyrite>> breccia					177.90	179.00	1.10	Q311399	35	0.216	1.67	0.2	1.37
<<Min: 176.4 - 179.3 5% Min: Pyrrhotite>> breccia					179.00	180.50	1.50	Q311401	7.2	0.017	0.28	0.05	0.08
<<Min: 176.4 - 179.3 5% Min: Chalcopyrite>> breccia					180.50	182.00	1.50	Q311402	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 180.6 - 206 25% Min: Calcite>> foliation oriented													
180.80	**207.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	182.00	183.50	1.50	Q311403	-0.3	-0.005	-0.01	-0.01	-0.01
180.8 - 207.3: biotite from 186.4 to 207.7m, quartz patch													
<<Alt: 180.8 - 186.4 Strong (Alt) Chlorite>> heavybmassive CL, strong CA					183.50	185.10	1.60	Q311404	-0.3	-0.005	-0.01	-0.01	-0.01
207.30	**211.70**	**RHYva**	**Coarse grained to ash tuff**	**grey-green**									
207.3 - 211.7: Pyrite stringer wavy and micro faulted. Few jaerosite. Maybe exhalite.													
<<Min: 207.3 - 219 1% Min: Ankerite>> foliation oriented													
<<Alt: 207.3 - 211.7 Weak (Alt) Muscovite>> related to chlorite decreasing													
<<Alt: 207.3 - 211.7 Weak-Moderate (Alt) Chlorite>> related to chlorite decreasing													
211.70	**226.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 211.7 - 226.2 2% Min: Pyrite>> stinger, sheared-micro fractured. Density of vei increase from 222 to224													
<<Min: 224 - 258.2 1% Min: Pyrite>>													
<<Alt: 211.7 - 246.1 Weak (Alt) Muscovite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
226.20	**258.20**	**RHYvl** **Lapilli tuff** **grey-green**									

226.2 - 258.2: rare QE,Chlorite-quartz carbonte veins alond the core axis created breaccia texture locally. E.O.H

<<Min: 246.1 - 258.2 10% Min: Ankerite>> foliation oriented, associated with black mineral vein, maybe tormalinebut relatively soft

<<Alt: 246.1 - 258.2 Weak (Alt) Muscovite>>

<<Struc: 236 - 236.5 Weak (Alt) Fault>> fault gouge in schistosity

End of Hole @ 258.2

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-024

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.25	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815748	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1431.59	Casing Depth (m):		Length (m):	239.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
29	-45	182		182	SS				☑	
62	-48	182		182	SS				☑	
93	-47	182		182	SS				☑	
123	-48	182		182	SS				☑	
154	-48	184		184	SS				☑	
184	-49	185		185	SS				☑	
239	-52	196		196	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**14.00**	**CASN**	**Casing**									
14.00	**69.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									

14 - 69.3: Massive homogenous unit of quartz eye tuffs - volcaniclastics. Some variation between beds due to differing grain sizes. Coarsing upwards (uphole) observed at 59.4 with sharp lower contact. Sections of unit could be RHYcf (ie. 14-23.2m). Alteration due to

<<Min: 14 - 25.5 2% Min: Pyrite>>

<<Min: 25.5 - 32 2% Min: Pyrrhotite>>

<<Min: 25.5 - 39 5% Min: Ankerite>>

<<Min: 29.5 - 73.5 1% Min: Calcite>> local sections (ie.MAF) up to 5%

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 32 - 68 1% Min: Pyrite>>

<<Min: 51.6 - 68 2% Min: Ankerite>>

<<Min: 68 - 74 7% Min: Ankerite>>

<<Min: 68 - 82 1% Min: Pyrrhotite>>

<<Alt: 14 - 163 Trace (Alt) Muscovite>>

<<Alt: 37.7 - 51.3 Moderate (Alt) Silicification>>

<<Alt: 63 - 94 Weak (Alt) Silicification>>

69.30 73.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

69.3 - 73.7: Mixed unit of RHYv and likely MAFia.. Overprint of biotite alt likely due to mafic dykes. 80.7- 93.9 contains section of pseudo RHYcw.

<<Min: 73.5 - 82 10% Min: Calcite>>

73.70 79.50 RHYva Coarse grained to ash tuff

73.7 - 79.5: Mixed unit of RHYv and likely MAFia.. Overprint of biotite alt likely due to mafic dykes. 80.7- 93.9 contains section of pseudo RHYcw.

<<Min: 74 - 85 2% Min: Ankerite>>

<<Alt: 74 - 127 Weak (Alt) Biotite>> biotite -chlorite alteration strongest in more mafic tuff and crosscutting mafic dykes (also cause of alteration?).

79.50 89.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

79.5 - 89.8: Mixed unit of RHYv and likely MAFia.. Overprint of biotite alt likely due to mafic dykes. 80.7- 93.9 contains section of pseudo RHYcw.

<<Min: 82 - 88.7 3% Min: Calcite>>

<<Min: 82 - 141.5 1% Min: Pyrite>>

<<Min: 85 - 129 4% Min: Ankerite>>

<<Min: 88.7 - 100.5 5% Min: Calcite>>

89.80 90.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

89.8 - 90.9: Mixed unit of RHYv and likely MAFia.. Overprint of biotite alt likely due to mafic dykes. 80.7- 93.9 contains section of pseudo RHYcw.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

90.90 93.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

90.9 - 93.9: Mixed unit of RHYv and likely MAFia.. Overprint of biotite alt likely due to mafic dykes. 80.7- 93.9 contains section of pseudo RHYcw.

93.90 97.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Alt: 96 - 115 Weak-Moderate (Alt) Silicification>>

97.30 105.60 RHYvl Lapilli tuff

<<Min: 105.5 - 121 5% Min: Calcite>>

105.60 106.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

106.50 116.10 RHYvl Lapilli tuff

106.5 - 116.1: lower contact very gradational…

<<Alt: 115 - 127 Moderate (Alt) Silicification>>

116.10 124.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

116.1 - 124.2: lower contact very gradational…

124.20 130.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 129 - 173 8% Min: Ankerite>>

<<Min: 130 - 131.5 15% Min: Calcite>>

<<Alt: 127 - 140 Trace (Alt) Silicification>>

<<Alt: 127 - 172.6 Trace (Alt) Biotite>>

130.20 132.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

130.2 - 132: possibly MAFi

132.00 134.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

134.80 146.90 RHYvl Lapilli tuff

<<Min: 140 - 147 5% Min: Calcite>>

<<Min: 141.5 - 172.6 3% Min: Pyrrhotite>> + veinlets and diss

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 140 - 187 Weak (Alt) Silicification>>													
146.90	**168.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Alt: 163 - 178.7 Weak (Alt) Muscovite>>													
168.00	**181.70**	**MDS**	**Carbonaceous Mudstone & Tuffaceous Mudstone**										
168 - 181.7: Weak but persistant carbonaceous partings.													
<<Min: 172.6 - 178.7 1% Min: Pyrite>>													
<<Min: 173 - 176.6 3% Min: Calcite>>													
<<Min: 178.7 - 197 3% Min: Pyrite>> + diss and veinlets													
<<Alt: 172.6 - 178 Weak-Moderate (Alt) Biotite>>													
<<Alt: 178.7 - 201 Weak-Moderate (Alt) Muscovite>>													
181.70	**206.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		203.00	203.70	0.70	B00267024	-0.3	-0.005	-0.01	-0.01	-0.01
181.7 - 206.2: poor recovery and fault zone fron 203m													
<<Min: 197 - 206 1% Min: Pyrite>>					203.70	205.20	1.50	B00267025	-0.3	0.006	-0.01	-0.01	0.03
<<Alt: 187 - 201.7 Moderate-Strong (Alt) Silicification>>					205.20	206.20	1.00	B00267026	8.8	0.006	0.3	0.05	1.96
<<Alt: 201 - 205.5 Moderate (Alt) Muscovite>>													
<<Struc: 201.5 - 208.9 Strong (Alt) Fault>> missing core, ground core and minor gouge; anastomosing fault- shear zone													
206.20	**207.30**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**									
207.30	**211.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		207.30	208.50	1.20	B00267027	7.9	0.01	0.18	0.09	1.22
207.3 - 211.9: pseudo RHYcw													
<<Alt: 207.3 - 211.9 Moderate (Alt) Muscovite>>					208.50	209.10	0.60	B00267028	7	-0.005	0.03	0.16	0.74
					209.10	210.90	1.80	B00267029	0.6	0.012	-0.01	0.04	0.15
211.90	**212.70**	**OA**	**Magnetite bearing sulphides**	**FG**									
212.70	**213.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-024

From (m)	To (m)	Rocktype & Description
213.40	**220.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 215 - 218.5 2% Min: Ankerite>>		
<<Min: 215.5 - 220 2% Min: Pyrite>> +wisps and rare stringers		
<<Min: 220 - 233 15% Min: Calcite>>		
<<Alt: 215.5 - 220.5 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 216.8 - 220.4 Weak (Alt) Silicification>>		
220.50	**239.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 233 - 239 5% Min: Calcite>>		
<<Alt: 220.5 - 232 Moderate-Strong (Alt) Biotite>>		
<<Alt: 232 - 237 Trace (Alt) Silicification>>		

End of Hole @ 239.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
213.40	215.20	1.80	B00267031	4	-0.005	-0.01	0.11	0.19
215.20	216.80	1.60	B00267032	3.1	-0.005	0.02	0.04	0.43
216.80	218.20	1.40	B00267033	0.3	-0.005	0.01	-0.01	0.14

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-025

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.40625	Core Size:		Azimuth:	215	Date Logging Complete:	
UTM Northing:	6815750	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1431.63	Casing Depth (m):		Length (m):	242.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	215		215	SS				☑	
29	-86	212		212	SS				☑	
63	-82	187		187	SS				☑	
93	-80	184		184	SS				☑	
124	-79	187		187	SS				☑	
154	-78	187		187	SS				☑	
185	-76	183		183	SS				☑	
212	-75	188		188	SS				☑	
242.9	-74	190		190	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**OVBN** **Overburden**									
9.80	**52.70**	**RHYvx** **Quartz and/or feldspar crystal tuff**									

9.8 - 52.7: Minor mafic tuffs 10.2-10.4, 17.4-19.2, 30.2-30.6

<<Min: 9.8 - 19.2 7% Min: Ankerite>>
<<Min: 9.8 - 28 0.1% Min: Calcite>>
<<Min: 9.8 - 113 0.1% Min: Pyrite>>
<<Min: 28 - 45 5% Min: Calcite>> also veining
<<Min: 30.2 - 68.3 5% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 45 - 53 0.1% Min: Calcite>>

<<Struc: 13.8 - 14 Moderate (Alt) Fault>> gouge and breccia. Sulphides in gouge.

52.70 58.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

52.7 - 58.1: Mafic tuff interbedded with felsic tuff. Sharp and gradational contacts

<<Min: 53 - 74.5 6% Min: Calcite>>

58.10 61.60 RHYvx Quartz and/or feldspar crystal tuff

61.60 63.50 MDSt Rhyolite tuff dominant mudstone

63.50 68.30 RHYvx Quartz and/or feldspar crystal tuff

68.30 71.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

68.3 - 71.7: Dyke complex with RHY inclusions.

<<Min: 68.3 - 118.4 20% Min: Ankerite>>

71.70 82.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 74.5 - 135 0.1% Min: Calcite>>

<<Struc: 74.9 - 81.1 Moderate (Alt) Fault>> Gouge and breccia at top, with strongly broken core for balance of interval.

82.30 118.40 RHYvl Lapilli tuff

<<Min: 113 - 118.4 3% Min: Pyrite>>

<<Struc: 104.7 - 104.8 Weak (Alt) Fault>> minor gouge 2 small intervals

118.40 132.70 MDSt Rhyolite tuff dominant mudstone

<<Min: 118.4 - 136 5% Min: Ankerite>>

<<Min: 118.4 - 137 0.1% Min: Pyrite>>

132.70 164.80 RHYc Rhyolite coherant volcanics

<<Min: 135 - 143.4 1% Min: Calcite>>

<<Min: 137 - 153.1 3% Min: Pyrite>>

<<Min: 153.1 - 208 0.1% Min: Pyrite>>

<<Alt: 132.7 - 164.8 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
164.80	**167.00**	**MDSc** **Carbonaceous dominant mudstone**
167.00	**224.90**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 170.5 - 203.4 3% Min: Ankerite>>		
<<Min: 208 - 209.7 5% Min: Pyrite>>		
<<Min: 212 - 242.9 5% Min: Ankerite>>		
<<Alt: 167 - 208.5 Moderate-Strong (Alt) Muscovite>> Prdominantly banded		
<<Alt: 208.5 - 224.6 Weak (Alt) Muscovite>>		
224.90	**242.90**	**RHYvl** **Lapilli tuff**
<<Min: 240 - 242.9 3% Min: Pyrite>>		
<<Struc: 239.1 - 240.1 Weak (Alt) Fault>> broken core and gougy slips		

End of Hole @ 242.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-026

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414951.09375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815748.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1382.74	Casing Depth (m):		Length (m):	222.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-51	177		177	SS				☑	
62	-55	175		175	SS				☑	
93	-59	175		175	SS				☑	
123	-60	174		174	SS				☑	
154	-60	180		180	SS				☑	
184	-61	178		178	SS				☑	
215	-64	176		176	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.20 OVBN Overburden

0 - 9.2: Variable crystal density. Flattened crystals up to 1cm, white.

9.20 22.20 RHYvx Quartz and/or feldspar crystal tuff

9.2 - 22.2: Variable crystal density. Flattened FS crystals up to 1cm, white.

<<Min: 9.2 - 30.8 15% Min: Ankerite>>

<<Min: 9.2 - 46 5% Min: Pyrite>> and disseminated

<<Vein: 13.7 - 14.3 100% Quartz>>

From (m)	To (m)	Rocktype & Description
22.20	**23.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
22.2 - 23.6: Porhyroblast AK up to 5mm, afterFS?		
<<Min: 22.2 - 23.6 10% Min: Calcite>>		
23.60	**25.50**	**RHYvx** **Quartz and/or feldspar crystal tuff**
25.50	**30.60**	**RHYva** **Coarse grained to ash tuff**
25.5 - 30.6: Fine grained homogeneous texture.coarsening downwards		
30.60	**35.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
30.6 - 35.3: strong AK alt'n		
<<Min: 30.8 - 35 25% Min: Calcite>>		
<<Min: 30.8 - 35 25% Min: Ankerite>>		
<<Min: 35 - 53.5 15% Min: Ankerite>>		
35.30	**46.00**	**RHYc** **Rhyolite coherant volcanics**
35.3 - 46: Minor curdey texture		
46.00	**57.00**	**RHYvl** **Lapilli tuff**
46 - 57: Bottom of interval is fin grained and strong AK aktered. Possibly ash tuff.		
<<Min: 46 - 77 7% Min: Pyrite>> narrow QZ, also diss.		
<<Min: 53.3 - 57 10% Min: Calcite>>		
<<Min: 53.5 - 57 40% Min: Ankerite>>		
57.00	**84.00**	**RHYv** **Rhyolite volcaniclastic**
57 - 84: Minor curdey intervals		
<<Min: 57 - 112 15% Min: Ankerite>>		
<<Min: 77 - 174.2 5% Min: Pyrite>> also diss and with narrow QZ strgrs		
<<Min: 77 - 174.2 0.01% Min: Pyrrhotite>>		
84.00	**103.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
84 - 103.6: widely spaaced FS phenos, AK altered/replaced phenos		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 93.6 - 94.6 85% Quartz>>

103.60 106.00 RHYva Coarse grained to ash tuff

106.00 108.80 MDSt Rhyolite tuff dominant mudstone

106 - 108.8: weak mudstone/carbonaceous

108.80 114.90 RHYc Rhyolite coherant volcanics

<<Min: 112 - 166 10% Min: Ankerite>>

114.90 120.00 RHYvl Lapilli tuff

120.00 125.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

125.00 158.80 RHYvl Lapilli tuff

<<Alt: 148 - 164 Weak-Moderate (Alt) Muscovite>>

158.80 161.40 MDSt Rhyolite tuff dominant mudstone

161.40 167.90 RHYc Rhyolite coherant volcanics

<<Min: 166 - 191 5% Min: Ankerite>>

<<Alt: 164 - 183 Moderate-Strong (Alt) Muscovite>>

167.90 172.10 MDSt Rhyolite tuff dominant mudstone

172.10 183.00 RHYv Rhyolite volcaniclastic

<<Min: 174.8 - 175.1 5% Min: Sphalerite>>

<<Min: 174.8 - 175.1 5% Min: Pyrite>>

<<Min: 174.8 - 175.1 5% Min: Pyrrhotite>>

<<Min: 175.1 - 184.3 3% Min: Sphalerite>>

<<Min: 175.1 - 184.3 3% Min: Pyrrhotite>> As bands and wisps, some net textured intervals

<<Alt: 174.2 - 191 Moderate-Strong (Alt) Chlorite>> Variable alteration.

183.00 192.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 184.3 - 184.9 5% Min: Sphalerite>> Net texture

<<Min: 184.3 - 184.9 3% Min: Pyrrhotite>>

<<Min: 184.3 - 184.9 1% Min: Chalcopyrite>>

<<Min: 185.8 - 186.1 5% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 185.8 - 186.1 0.5% Min: Galena>> with SP, CP
		<<Min: 185.8 - 186.1 10% Min: Chalcopyrite>> In veining surrounding fragments
		<<Min: 186.1 - 192.7 0.5% Min: Sphalerite>> Wide spaced QZ stringers
		<<Min: 186.1 - 192.7 2% Min: Chalcopyrite>> Concentrated above SX below
		<<Min: 191 - 192.7 25% Min: Ankerite>>
		<<Alt: 183 - 192.7 Weak (Alt) Muscovite>>
		<<Alt: 191 - 192.7 Weak-Moderate (Alt) Chlorite>>
192.70	**200.90**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
		<<Min: 197 - 200.9 1% Min: Calcite>>
200.90	**222.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 200.9 - 220 10% Min: Calcite>>
		<<Alt: 200.9 - 202.4 Moderate-Strong (Alt) Muscovite>> As MS
		<<Alt: 202.4 - 216.1 Moderate (Alt) Chlorite>> Regional
		<<Alt: 202.4 - 216.1 Moderate (Alt) Biotite>> Regional
		<<Alt: 216.1 - 222.5 Intense (Alt) Muscovite>> Proximal to fault.
		<<Vein: 220.8 - 221.6 80% Quartz>>
		<<Struc: 216.4 - 221.3 Moderate-Strong (Alt) Fault>> Large gouge zone, brecciated vein in footwall

End of Hole @ 222.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
202.40	203.90	1.50	B00267712	-0.3	-0.005	-0.01	-0.01	-0.01
203.90	205.40	1.50	B00267713	-0.3	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-027

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414951.0625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815750	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.8	Casing Depth (m):		Length (m):	215.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
29	-85	182		182	SS				☑	
60	-80	182		182	SS				☑	
93	-75	182		182	SS				☑	
124	-74	183		183	SS				☑	
154	-73	186		186	SS				☑	
185	-73	187		187	SS				☑	
215	-74	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.70 OVBN Overburden

<<Alt: 6.6 - 135.5 Weak (Alt) Muscovite>> background - regional musc but it is a sunny day so it stands out!

6.70 14.30 RHYvl Lapilli tuff

6.7 - 14.3: has silic bands

<<Min: 6.7 - 15.8 8% Min: Ankerite>>

<<Min: 6.7 - 40 1% Min: Pyrrhotite>>

<<Min: 6.7 - 57 1% Min: Calcite>>

14.30 15.90 RHYv Rhyolite volcaniclastic

14.3 - 15.9: has good silic bands between chl Alt bands, sharp contacts

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 15.8 - 22.9 3% Min: Ankerite>>

<<Alt: 14.3 - 15.8 Moderate (Alt) Chlorite>> in bands

<<Alt: 14.3 - 15.8 Strong (Alt) Cordierite>> ank after cord?

15.90 22.90 RHYvl Lapilli tuff

15.9 - 22.9: has silic bands

22.90 24.30 RHYv Rhyolite volcaniclastic

22.9 - 24.3: has silicic bands, sharp contacts

<<Min: 22.9 - 57 8% Min: Ankerite>>

<<Alt: 22.9 - 24.3 Moderate (Alt) Chlorite>> in bands

<<Alt: 22.9 - 24.3 Strong (Alt) Cordierite>> ank after cord

24.30 30.60 RHYvl Lapilli tuff

30.60 31.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31.20 34.70 RHYvl Lapilli tuff

31.2 - 34.7: 20cm white aphanitic rhy at 34.5m

34.70 35.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

35.60 57.10 RHYvl Lapilli tuff

<<Min: 40 - 90.4 0.5% Min: Pyrite>>

<<Min: 40 - 90.4 1% Min: Pyrrhotite>>

<<Min: 57 - 63.1 15% Min: Calcite>>

57.10 58.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

57.1 - 58.5: 20cm white aphanitic rhy qtz at 58.5 (reverse of above)

58.50 109.50 RHYvl Lapilli tuff

58.5 - 109.5: 79-90.5; remnant chl alt

<<Min: 63.1 - 79.4 0.5% Min: Calcite>> patchy

<<Min: 63.1 - 79.4 5% Min: Ankerite>>

<<Min: 79.4 - 90.5 5% Min: Calcite>>

<<Min: 79.4 - 90.5 1% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 90.4 - 128.3 1% Min: Pyrite>>

<<Min: 90.4 - 128.3 0.5% Min: Pyrrhotite>>

<<Min: 90.5 - 96 1% Min: Calcite>>

<<Min: 90.5 - 134.4 10% Min: Ankerite>>

<<Alt: 79 - 90.5 Weak (Alt) Chlorite>> remnant chl cut by and surrounded by sericite alt

<<Vein: 62.5 - 63.1 10% Quartz-Tourmaline>>

<<Vein: 72.3 - 96.7 3% Quartz-Tourmaline>> several small but intense qtz-tour veins

<<Struc: 97.8 - 121.9 Strong (Alt) Fault>> wide zone with multiple zones of broken cre, fractured and minor gouge

109.50 128.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

109.5 - 128.3: Not great example of RHYcw, volcaniclastic mixture

<<Struc: 121.9 - 134.6 Moderate (Alt) Fault>> local zones of brken core and minor gouge

128.30 130.20 MDSt Rhyolite tuff dominant mudstone

<<Min: 128.3 - 130.2 0.5% Min: Pyrite>>

130.20 134.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 130.2 - 140 2% Min: Pyrrhotite>>

134.40 135.50 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 134.4 - 148 3% Min: Ankerite>>

<<Alt: 134.4 - 151.5 Weak (Alt) Silicification>> prbably mre due to rock type

135.50 147.90 RHYc Rhyolite coherant volcanics

<<Min: 140 - 151.5 1% Min: Pyrite>>

<<Alt: 135.5 - 151.5 Strong (Alt) Muscovite>>

147.90 151.50 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 148 - 159.6 5% Min: Ankerite>>

<<Vein: 148.2 - 150.8 30% Quartz>>

151.50 159.60 RHYv Rhyolite volcaniclastic

151.5 - 159.6: cord porph from 159.1m

<<Min: 151.5 - 156.6 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 151.5 - 156.6 1% Min: Chalcopyrite>> dis and in bands										
		<<Min: 156.6 - 159.6 0.5% Min: Pyrite>>										
		<<Alt: 151.5 - 159.4 Weak-Moderate (Alt) Muscovite>>										
		<<Alt: 152.2 - 159.6 Strong (Alt) Chlorite>> proximal chl alt										
		<<Struc: 156.7 - 157 Moderate (Alt) Fault>> Broken core, minor gouge										
159.60	**161.80**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FG**									
		<<Min: 159.6 - 161.8 80% Min: Pyrite>>										
161.80	**168.10**	**RHYvl** **Lapilli tuff**										
		161.8 - 168.1: musc alt and bleached										
		<<Min: 161.8 - 163.1 1% Min: Pyrrhotite>>										
		<<Min: 161.8 - 169.3 5% Min: Ankerite>>										
		<<Min: 163.1 - 190.7 0.5% Min: Pyrite>>										
		<<Min: 167.5 - 190.7 15% Min: Calcite>>										
		<<Alt: 161.8 - 169.7 Moderate (Alt) Muscovite>>										
168.10	**190.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		186.20	187.70	1.50	B00267233	-0.3	-0.005	-0.01	-0.01	0.01
		<<Alt: 170.8 - 190.7 Strong (Alt) Chlorite>> mafic unit		187.70	189.20	1.50	B00267234	-0.3	-0.005	-0.01	-0.01	0.02
190.70	**192.90**	**OD** **Brecciated sulphides**	**MG**									
		<<Min: 190.7 - 192.9 20% Min: Sphalerite>> assay is higher!										
		<<Min: 190.7 - 192.9 75% Min: Pyrite>>										
		<<Min: 190.7 - 192.9 3% Min: Calcite>>										
		<<Min: 192.4 - 205 3% Min: Ankerite>>										
		<<Alt: 192.4 - 195.7 Moderate (Alt) Chlorite>> below sulfide unit in mafic unit										
192.90	**196.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		194.40	195.90	1.50	B00267235	-0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 192.9 - 195.9 20% Min: Calcite>> AND IN BANDS		195.90	197.40	1.50	B00267236	1.4	-0.005	-0.01	0.02	0.27
		<<Min: 192.9 - 198.1 0.1% Min: Sphalerite>>										
		<<Min: 192.9 - 198.1 1% Min: Pyrite>>										
		<<Alt: 195 - 195.6 Strong (Alt) Cordierite>>										
196.10	**215.50**	**RHYvl** **Lapilli tuff**		197.40	198.90	1.50	B00267237	14.6	0.035	0.06	0.13	5.94
		196.1 - 215.5: proximal chl alt from 192.2-205.4. minor calcite and chl from 211.8 to eoh - could be MAF unit?										

Project: KZK **Hole Number:** K94-027

From (m)	To (m)	Rocktype & Description
		<<Min: 198.1 - 201.1 3% Min: Sphalerite>> dis and in bands
		<<Min: 198.1 - 201.1 1% Min: Pyrite>>
		<<Min: 198.1 - 201.1 0.1% Min: Galena>>
		<<Min: 198.1 - 201.1 0.1% Min: Chalcopyrite>>
		<<Min: 201.1 - 206.4 1% Min: Pyrite>>
		<<Min: 205 - 215.5 10% Min: Ankerite>>
		<<Min: 206.4 - 215.5 2% Min: Pyrrhotite>>
		<<Min: 212.5 - 215.5 2% Min: Calcite>>
		<<Alt: 197 - 205 Weak-Moderate (Alt) Chlorite>> weak proximal alt
		<<Alt: 206 - 215.5 Moderate (Alt) Muscovite>>
		<<Alt: 212 - 215.5 Weak (Alt) Chlorite>>

End of Hole @ 215.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
198.90	200.40	1.50	B00267238	11.5	0.012	0.01	0.13	0.59
200.40	201.90	1.50	B00267239	9.2	0.009	0.02	0.19	1.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-028

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415154.9375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815399	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1405.95	Casing Depth (m):		Length (m):	107.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-49	183		183	SS				☑	
62	-51	189		189	SS				☑	
93	-52	189		189	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**17.10**	**OVBN Overburden**									
17.10	**24.95**	**RHYvl Lapilli tuff**									
<<Min: 17.1 - 28.5 0.5% Min: Pyrite>>											
<<Min: 17.1 - 28.5 0.5% Min: Pyrrhotite>>											
<<Min: 17.1 - 28.8 5% Min: Ankerite>>											
<<Min: 23 - 28.8 5% Lith: Chlorite>>											
<<Alt: 17.1 - 28.8 Weak (Alt) Muscovite>> overprints early chlorite											
<<Alt: 17.1 - 28.8 Weak (Alt) Chlorite>> overprinted by late sericite											
24.95	**25.70**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
25.70	**26.20**	**RHYvl Lapilli tuff**									
25.7 - 26.2: fg xtal. Tuff											
26.20	**33.30**	**RHYvl Lapilli tuff**									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 28.5 - 30.5 3% Min: Pyrite>>
<<Min: 28.5 - 30.5 2% Min: Pyrrhotite>>
<<Min: 28.8 - 33 15% Min: Ankerite>>
<<Min: 30.5 - 33.5 0.5% Min: Pyrite>>
<<Min: 33 - 37.8 2% Lith: Chlorite>>
<<Min: 33 - 37.8 5% Min: Ankerite>>
<<Alt: 28.8 - 33.3 Weak-Moderate (Alt) Muscovite>>
<<Vein: 28.3 - 31.3 Quartz>>
<<Struc: 29.3 - 31 Weak-Moderate (Alt) Fault>> healed gouge, qtz veining.

33.30 33.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 33.5 - 34.8 3% Min: Pyrite>>
<<Min: 33.5 - 34.8 2% Min: Pyrrhotite>>
<<Alt: 33.3 - 39.8 Weak (Alt) Muscovite>> overprints early chlorite
<<Alt: 33.3 - 39.8 Weak (Alt) Chlorite>> overprinted by late sericite
<<Vein: 33.5 - 33.7 Quartz>>

33.70 34.20 RHYvl Lapilli tuff

33.7 - 34.2: +chl

34.20 35.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34.2 - 35.4: cl after mu

<<Min: 34.8 - 38.7 1% Min: Pyrite>>

35.40 41.90 RHYvl Lapilli tuff

35.4 - 41.9: wk patchy bi

<<Min: 37.8 - 40.5 10% Min: Ankerite>>
<<Min: 38.7 - 41 2% Min: Pyrite>>
<<Min: 38.7 - 41 2% Min: Pyrrhotite>>
<<Min: 40.5 - 55.4 15% Min: Ankerite>>
<<Min: 41 - 57 2% Min: Pyrite>>
<<Alt: 39.8 - 40.2 Weak-Moderate (Alt) Chlorite>>
<<Vein: 37.9 - 38.1 Quartz>>

From (m)	To (m)		Rocktype & Description
41.90	**43.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 41.9 - 58.1 Moderate (Alt) Muscovite>>			
43.40	**57.00**	**RHYvl**	**Lapilli tuff**
<<Min: 55.4 - 57 5% Lith: Chlorite>>			
<<Min: 55.4 - 59.3 10% Min: Ankerite>>			
<<Struc: 55 - 55.3 Fault>> unconsolidated gouge			
57.00	**58.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 57 - 72.5 3% Min: Pyrite>>			
<<Min: 57 - 72.5 2% Min: Pyrrhotite>>			
<<Alt: 58.1 - 65.8 Moderate-Strong (Alt) Muscovite>>			
58.90	**71.40**	**RHYvl**	**Lapilli tuff**
<<Min: 59.3 - 65.3 20% Min: Ankerite>>			
<<Min: 60 - 64 2% Min: Pyrite>>			
<<Min: 65.3 - 68.4 15% Min: Ankerite>>			
<<Min: 68.4 - 79 10% Min: Ankerite>>			
<<Alt: 65.8 - 72.5 Strong (Alt) Muscovite>>			
71.40	**72.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
72.50	**73.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 72.5 - 73 2% Min: Sphalerite>>			
<<Min: 72.5 - 73 3% Min: Pyrite>>			
<<Min: 72.5 - 73 2% Min: Pyrrhotite>>			
73.00	**79.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 73 - 79 5% Min: Pyrite>>			
<<Min: 73 - 79 5% Min: Pyrrhotite>>			
79.00	**80.35**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 79 - 80.35 5% Min: Pyrite>>			
<<Min: 79 - 80.35 5% Min: Chalcopyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
75.10	77.50	2.40	B00267747	0.6	0.007	-0.01	-0.01	-0.01
77.50	79.00	1.50	B00267748	0.5	0.011	-0.01	-0.01	0.04
79.00	80.35	1.35	B00267749	3.8	0.05	0.03	0.05	0.51

From (m)	To (m)	Rocktype & Description

<<Min: 79 - 80.35 5% Lith: Chlorite>> late stage calcite crack seal veins

80.35 84.20 RHYvl Lapilli tuff

<<Min: 80.35 - 81.1 5% Min: Pyrite>>

<<Min: 80.35 - 81.1 5% Min: Pyrrhotite>>

<<Min: 80.35 - 84.2 1% Lith: Chlorite>>

<<Min: 80.35 - 84.2 2% Min: Ankerite>>

<<Min: 81.1 - 84.2 2% Min: Pyrite>>

<<Alt: 80.35 - 84.2 Strong (Alt) Muscovite>>

84.20 85.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 84.2 - 89.9 5% Lith: Chlorite>> late stage crack seal veinlets, calcite aggregates

<<Min: 84.2 - 94.4 15% Min: Sphalerite>>

<<Min: 84.2 - 94.4 50% Min: Pyrite>>

<<Min: 84.2 - 94.4 5% Min: Galena>>

85.90 87.80 OA Magnetite bearing sulphides

87.80 89.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

87.8 - 89.9: incl. 20cm OA, gradational UCT and LCT within interval.

89.90 91.80 OA Magnetite bearing sulphides

<<Min: 89.9 - 91.8 3% Min: Pyrrhotite>> Po, locally 3% assoc. with c.g. blebby cpy with vein morphology. Po not recognized in disseminated MXSX.

91.80 94.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

91.8 - 94.4: incl. felsic volcanic rip-up clsts small cobble size (xtl-lithic tuff), laminated LCT (exhalative?).

<<Min: 93.4 - 95.9 1% Lith: Chlorite>>

94.40 96.30 RHYvl Lapilli tuff

<<Min: 94.4 - 95.9 2% Min: Pyrite>>

<<Min: 94.4 - 96.3 20% Min: Ankerite>>

<<Min: 95.9 - 107.9 0.5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
80.35	81.20	0.85	B00267751	0.8	0.011	-0.01	-0.01	0.02
81.20	82.70	1.50	B00267752	1	0.01	-0.01	-0.01	-0.01
95.90	97.40	1.50	B00267753	0.9	0.008	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 95.9 - 107.9 10% Lith: Chlorite>>
		<<Alt: 94.4 - 95.9 Strong (Alt) Muscovite>>
		<<Vein: 95.9 - 96.3 Quartz-Chalcopyrite>>
		<<Struc: 95.9 - 97.3 Strong (Alt) Fault>> unconsolidated gouge, rare pebble size fragments, qtz-cb veining pervasive.
96.30	**107.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Alt: 96.3 - 107.9 Strong (Alt) Chlorite>>
		<<Struc: 102.1 - 106.1 Weak (Alt) Shear>> variability in foliation from 20 deg to 50deg TCA, core weak to moderately broken throughout.

End of Hole @ 107.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
97.40	98.90	1.50	B00267754	0.7	0.011	-0.01	-0.01	-0.01
98.90	100.40	1.50	B00267755	0.6	0.006	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-029

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415240.375	Core Size:		Azimuth:	220	Date Logging Complete:	
UTM Northing:	6815400	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1445.46	Casing Depth (m):		Length (m):	188.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	220		220	SS				☑	
32	-86	228		228	SS				☑	
63	-85	218		218	SS				☑	
93	-84	220		220	SS				☑	
124	-84	225		225	SS				☑	
154	-82	238		238	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.30 OVBN Overburden

12.30 13.40 RHYv Rhyolite volcaniclastic

12.3 - 13.4: weak chl overprint from mafic dyke swarm?

<<Min: 13 - 23 0.01% Min: Pyrite>>

<<Min: 13 - 23 0.5% Min: Pyrrhotite>>

<<Min: 13 - 23.5 5% Min: Ankerite>>

<<Alt: 13 - 15 Weak (Alt) Chlorite>>

13.40 15.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

13.4 - 15: dyke

<<Min: 13.9 - 15 20% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
15.00	**16.70**	**RHYvx** **Quartz and/or feldspar crystal tuff**
15 - 16.7: lapilli tuff with feldspar and rare mm quartz eyes.		
16.70	**17.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
16.7 - 17: dyke		
17.00	**18.20**	**RHYvx** **Quartz and/or feldspar crystal tuff**
17 - 18.2: same as 15-16.7		
<<Alt: 17 - 18.2 Weak (Alt) Chlorite>>		
18.20	**22.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
18.2 - 22.4: flow rock but feldspar and qtz eyes		
22.40	**23.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
22.4 - 23: dyke		
<<Min: 22.4 - 23 18% Min: Calcite>>		
23.00	**30.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
23 - 30.4: same as 18.2 - 22.4m		
<<Min: 30.1 - 62 1% Min: Pyrrhotite>>		
<<Min: 30.1 - 66.4 13% Min: Ankerite>>		
<<Alt: 30 - 32 Weak (Alt) Muscovite>>		
<<Alt: 30 - 32 Weak (Alt) Chlorite>>		
<<Struc: 24 - 27.5 Weak-Moderate (Alt) Fault>> broken core		
<<Struc: 29.9 - 30.1 Weak-Moderate (Alt) Fault>> broken core		
30.40	**39.20**	**RHYvl** **Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

39.20 40.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

39.2 - 40.2: dyke

<<Min: 39.2 - 40.2 15% Min: Calcite>>

40.20 50.30 RHYvl Lapilli tuff

<<Alt: 42 - 59 Weak (Alt) Muscovite>>

50.30 54.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

54.70 61.00 RHYvl Lapilli tuff

<<Alt: 59 - 61 Weak (Alt) Chlorite>>

61.00 68.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

61 - 68.8: dyke, but centre is chlorite - biotite- ankerite porphyroblastic

<<Min: 61 - 66.4 20% Min: Calcite>>

<<Min: 66.4 - 80 15% Min: Calcite>> within mafi units

<<Alt: 68 - 80 Weak-Moderate (Alt) Silicification>> silicification of mafic and bleaching where intruded by rhyi

<<Alt: 68 - 80 Weak-Moderate (Alt) Muscovite>> same occurrence as above

68.80 69.40 RHYi Aphanitic Rhyolite (intrusion)

69.40 70.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

70.00 73.90 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 72.8 - 74 0.5% Min: Sphalerite>>

<<Min: 72.8 - 74 0.5% Min: Pyrite>>

73.90 76.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

76.50 76.70 RHYi Aphanitic Rhyolite (intrusion)

76.70 79.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 78 - 80 0.5% Min: Pyrrhotite>>

79.70 80.00 RHYi Aphanitic Rhyolite (intrusion)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

80.00 84.30 RHYvl Lapilli tuff

80 - 84.3: weak cl overprint from mafics?

<<Min: 80 - 130.1 10% Min: Ankerite>>

<<Min: 84 - 90.7 10% Min: Calcite>> within mafi units

84.30 85.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

85.80 87.00 RHYvl Lapilli tuff

85.8 - 87: weak cl overprint from mafics?

87.00 87.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

87.90 89.80 RHYvl Lapilli tuff

87.9 - 89.8: weak cl overprint from mafics?

<<Alt: 88 - 93 Weak (Alt) Muscovite>>

<<Alt: 88 - 93 Weak-Moderate (Alt) Chlorite>>

89.80 90.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 90 - 93 0.5% Min: Pyrrhotite>>

90.70 104.10 RHYvl Lapilli tuff

<<Alt: 93 - 103 Moderate-Strong (Alt) Muscovite>> due to major fault development

<<Struc: 94 - 120.5 Intense (Alt) Fault>> major fault zone with multiple gouge zones throughout and foliation bent into the orientation of faultinbg. East Fault?

104.10 106.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

104.1 - 106.4: major fault zone. Foliation bent into fault

<<Min: 106 - 130 0.5% Min: Pyrrhotite>>

<<Alt: 105 - 130.1 Weak-Moderate (Alt) Muscovite>>

106.40 110.70 RHYvl Lapilli tuff

110.70 112.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

110.7 - 112.7: fine grained biotite, calcareous

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.70	**113.40**	**RHYvl** **Lapilli tuff**									
113.40	**114.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
113.4 - 114.2: fine grained biotite, calcareous											
114.20	**115.00**	**RHYvl** **Lapilli tuff**									
115.00	**117.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
115 - 117.7: fine grained biotite, calcareous											
117.70	**138.00**	**RHYvl** **Lapilli tuff**									
<<Min: 130.1 - 157.6 10% Min: Ankerite>>											
<<Min: 132.3 - 135 1% Min: Pyrrhotite>>											
<<Alt: 130.1 - 146 Weak-Moderate (Alt) Muscovite>>											
<<Struc: 137.4 - 138 Weak-Moderate (Alt) Fault>> broken to weak gouge zone											
138.00	**145.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
138 - 145.7: weakly developed curdy texture and core is weathered difficult to determine											
<<Min: 143.5 - 145 2% Min: Pyrrhotite>>											
<<Struc: 143 - 157.6 Weak-Moderate (Alt) Fault>> broken core											
145.70	**157.60**	**RHYvl** **Lapilli tuff**	153.10	154.60	1.50	B00232611	-0.3	-0.005	-0.01	-0.01	-0.01
145.7 - 157.6: lapilli tuff, however, looks to be getting finer grained towards OJ perhaps RHYva near 157.6.											
<<Min: 153.8 - 157.3 2% Min: Pyrrhotite>>			154.60	156.10	1.50	B00232612	-0.3	-0.005	-0.01	-0.01	-0.01
<<Alt: 146 - 157.6 Moderate (Alt) Muscovite>> much weaker than usual above the sx											
157.60	**177.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **FMG**									
157.6 - 177.5: Met 8, but quite low grade. One patch of protolith observed @162.5m is RHYVa											
<<Min: 157.6 - 177.5 40% Min: Pyrite>>											
<<Alt: 157.6 - 177.5 Moderate (Alt) Muscovite>>											
<<Alt: 157.6 - 177.5 Strong (Alt) Chlorite>>											
<<Alt: 157.6 - 177.5 Strong (Alt) Cordierite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 164 - 164.3 Moderate-Strong (Alt) Fault>> gouge zone										
177.50	**179.40**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FG**									
		<<Min: 177.5 - 179.4 80% Min: Pyrite>>										
179.40	**188.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		179.40	180.90	1.50	B00232613	8.1	-0.005	-0.01	0.17	0.61
		179.4 - 188.3: large qv right at top contact. Leopard rock from 187. strongly faulted										
		<<Min: 181.3 - 187.4 10% Min: Calcite>>		180.90	182.40	1.50	B00232614	-0.3	-0.005	-0.01	-0.01	0.02
		<<Vein: 179.5 - 181.3 100% Quartz-Chlorite>>										
		<<Struc: 180.5 - 188.3 Strong (Alt) Fault>> almost 100% broken with stronger gouge zones throughout interval										
End of Hole @ 188.3												

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-030

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414995.368	Core Size:		Azimuth:	170	Date Logging Complete:	
UTM Northing:	6815415.976	Casing Pulled?:		Dip:	-75	Drill Company:	
UTM Elev. (m):	1383.289	Casing Depth (m):		Length (m):	93.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
						Parent Hole:	

Comments:

HOLE STOPPED TOO SOON. UPDIP HOLE HAS ADDITIONAL MASSIVE SULPHIDE INTERSECTION BENEATH RHYI APPROXIMATELY 5M DEEPER!!!!

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	170		170	SS				☑	
29	-74	172		172	SS				☑	
60	-72	174		174	SS				☑	
93	-71	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 17.40 OVBN Overburden

<<Alt: 17.3 - 35 Weak-Moderate (Alt) Muscovite>>

17.40 29.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 18 - 70 10% Min: Ankerite>>

<<Min: 21 - 47.7 2% Min: Pyrite>>

<<Vein: 22 - 23.1 80% Quartz>>

<<Struc: 27 - 28 Weak-Moderate (Alt) Fault>> brooken poker chip core

29.50 34.70 MDSc Carbonaceous dominant mudstone

29.5 - 34.7: well developed but with two 1/2 metre bands of rhyc-mdsw within.

34.70 36.80 RHYc Rhyolite coherant volcanics

From (m)	To (m)		Rocktype & Description
<<Alt: 35 - 45.6 Weak-Moderate (Alt) Muscovite>>			
36.80	**45.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
45.60	**48.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 47.7 - 50.3 5% Min: Pyrite>>			
<<Min: 47.7 - 50.3 5% Min: Chalcopyrite>>			
<<Alt: 45.6 - 48.1 Moderate-Strong (Alt) Muscovite>>			
<<Alt: 47.5 - 48.1 Moderate-Strong (Alt) Chlorite>>			
48.10	**48.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
48.1 - 48.9: chl, cp, but with a bit of po.			
48.90	**55.70**	**OA**	**Magnetite bearing sulphides**
55.70	**57.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
57.00	**57.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
57.20	**58.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
58.50	**58.80**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
58.80	**59.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
59.80	**70.00**	**RHYvl**	**Lapilli tuff**
59.8 - 70: questionable lapilli			
<<Min: 59.8 - 64.5 2% Min: Pyrite>>			
<<Min: 64.5 - 70 0.5% Min: Pyrrhotite>>			
<<Alt: 59.8 - 70 Moderate (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
42.60	44.10	1.50	B00232581	1.1	-0.005	-0.01	0.03	0.05
44.10	45.60	1.50	B00232582	1.3	0.018	-0.01	0.05	0.06
61.30	62.80	1.50	B00232583	-0.3	-0.005	-0.01	-0.01	-0.01
62.80	64.30	1.50	B00232584	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
70.00	**78.50**	**RHYv** **Rhyolite volcaniclastic**
70 - 78.5: 20cm of minor muddy material at upper contact. Texturally destructive chlorite alteration present.		
<<Min: 74 - 74.2 2% Min: Sphalerite>>		
<<Min: 74 - 74.2 0.5% Min: Galena>>		
<<Alt: 70 - 78.5 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 71 - 78.5 Moderate (Alt) Chlorite>>		
<<Struc: 77.1 - 77.7 Moderate-Strong (Alt) Fault>> broken rubbled and 50% missing core		
78.50	**86.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
78.5 - 86.7: chl cp stringer mineralization present. MET8 @ 77.9-79.4 and 80.9 to 82.4		
<<Min: 78.5 - 86.7 10% Min: Calcite>>		
<<Min: 78.6 - 78.9 10% Min: Pyrite>>		
<<Min: 78.6 - 78.9 9% Min: Chalcopyrite>>		
<<Min: 81.2 - 82.3 6% Min: Pyrite>>		
<<Min: 81.2 - 82.3 4% Min: Chalcopyrite>>		
<<Alt: 78.5 - 82.6 Strong (Alt) Chlorite>>		
<<Alt: 84.7 - 86.7 Weak-Moderate (Alt) Muscovite>>		
<<Vein: 82.2 - 84.5 95% Quartz-Chlorite>>		
86.70	**93.60**	**RHYi** **Aphanitic Rhyolite (intrusion)**
86.7 - 93.6: HOLE STOPPED TOO SHORT. UP DIP HOLE HAS ANOTHER MX LENSE LOWER		
<<Min: 86.8 - 88 1% Min: Sphalerite>>		
<<Min: 86.8 - 93 5% Min: Pyrite>>		
<<Min: 92 - 93 0.5% Min: Pyrrhotite>>		
<<Alt: 92 - 93.4 Weak-Moderate (Alt) Silicification>> in rhyi		
<<Vein: 88.8 - 89.1 100% Quartz>>		

End of Hole @ 93.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
74.90	76.40	1.50	B00232585	10.2	0.145	0.19	0.66	1.6
76.40	77.90	1.50	B00232586	12.4	0.011	0.2	0.32	0.78
79.40	80.90	1.50	B00232587	1.5	-0.005	-0.01	0.03	0.07
82.40	83.90	1.50	B00232588	-0.3	0.005	-0.01	-0.01	0.04
83.90	85.40	1.50	B00232589	0.6	-0.005	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-031

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415241.383	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815524.891	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1440.882	Casing Depth (m):		Length (m):	239.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
32	-87	180		180	SS				☑	
62	-83	209		209	SS				☑	
93	-82	211		211	SS				☑	
123	-80	210		210	SS				☑	
154	-80	213		213	SS				☑	
184	-78	204		204	SS				☑	
215	-75	206		206	SS				☑	
239	-72	203		203	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**14.10**	**OVBN** **Overburden**									
14.10	**21.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

14.1 - 21.2: Beige to light grey, comprinsing siliceous bands/fragments, deformed, foliated and locally dismembered. Caracterised by small qtz eyes (mm) distributed within matrix. There aren't really strong evidence of flow structure due to the strong foliation and oxidation.

<<Min: 14.1 - 21.2 3% Min: Pyrite>>

<<Min: 14.1 - 33 3% Min: Ankerite>> Associated with siliceous bands and qtz veinlets.

<<Alt: 14.1 - 21.2 Weak-Moderate (Alt) Muscovite>> pervasive and fracture surface.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

21.20 26.80 MAFi Mafic Intrusions (primarily brown footwall mafic intrusion)

21.2 - 26.8: Interval of RHYcw (caracterised by small qtz eyes), comprinsing 50-60% of mafic dyke, decimetric, concordant, fine to medium grained, brown, biotite altered, with sharp contacts.

<<Min: 21.2 - 26.8 2% Min: Pyrite>>

<<Min: 21.2 - 26.8 0.5% Min: Pyrrhotite>>

<<Min: 21.2 - 26.8 5% Min: Calcite>> Associated with MAFi, pervasive and qtz veinlets associated.

<<Alt: 21.2 - 26.8 Moderate (Alt) Biotite>> Associated with MAFi.

26.80 33.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

26.8 - 33: Beige to light grey, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly/moderately MU and AK altered.

<<Min: 26.8 - 30.2 0.5% Min: Sphalerite>>

<<Min: 26.8 - 30.2 3% Min: Pyrite>>

<<Min: 30.2 - 40 0.5% Min: Pyrite>>

<<Min: 30.2 - 40 2% Min: Pyrrhotite>>

<<Alt: 26.8 - 47.2 Weak-Moderate (Alt) Muscovite>> pervasive and fracture surface

33.00 47.20 RHYvl Lapilli tuff

33 - 47.2: Light grey, moderately to strongly sheared, > 15% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu altered). Probably lapilli tuff.

<<Min: 33 - 60 6% Min: Ankerite>> Associated with siliceous bands/fragments and qtz veinlets.

<<Min: 40 - 49 1% Min: Pyrite>>

<<Min: 40 - 49 3% Min: Pyrrhotite>>

47.20 48.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

47.2 - 48.5: Mafic dyke, foliated, metric, concordant, fine to medium grained, brown, biotite altered, with sharp contacts.

<<Min: 47.2 - 48.5 5% Min: Calcite>> Associated with MAFi, pervasive and qtz veinlets associated.

<<Alt: 47.2 - 48.5 Weak-Moderate (Alt) Biotite>> Associated with MAFi.

48.50 60.00 RHYvl Lapilli tuff

48.5 - 60: Light grey, moderately to strongly sheared, > 15% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu altered). CA porphyroblasts disseminated. Probably lapilli tuff.

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 48.5 - 66.7 2% Min: Calcite>> Also associated withshort MAFi.

<<Min: 49 - 59.7 1% Min: Pyrite>>

<<Min: 49 - 59.7 2% Min: Pyrrhotite>>

<<Min: 59.7 - 66.7 2% Min: Pyrite>>

<<Min: 59.7 - 66.7 1% Min: Pyrrhotite>>

<<Alt: 48.5 - 66.7 Weak-Moderate (Alt) Muscovite>> pervasive and fracture surface. Biotite interval associated with MAFi.

<<Struc: 50.9 - 51.2 Strong (Alt) Fault>> Gauge fault

60.00 62.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

60 - 62.1: Milky to light grey, aphanitic to fine grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, banded structure. Weakly MU and moderate to strongly Si (pervasive). Felsic intrusive.

62.10 62.50 MAFi Mafic Intrusions (primarily brown footwall mafic intrusion)

62.1 - 62.5: Mafic dyke, foliated, metric, concordant, fine to medium grained, brown, biotite altered, with sharp contacts.

62.50 66.70 RHYi Aphanitic Rhyolite (intrusion)

62.5 - 66.7: Milky to light grey, aphanitic to fine grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, banded structure. Weakly MU and moderate to strongly Si (pervasive). Felsic intrusive.

66.70 67.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

66.7 - 67.8: Mafic dyke, foliated, metric, concordant, fine to medium grained, brown, biotite altered, with sharp contacts.

<<Min: 66.7 - 67.8 10% Min: Calcite>> Associated with MAFi, pervasive and qtz veinlets associated.

<<Min: 66.7 - 85.4 1% Min: Pyrite>>

<<Min: 66.7 - 85.4 1% Min: Pyrrhotite>>

<<Alt: 66.7 - 67.5 Moderate (Alt) Biotite>> Associated with Mafic dyke.

<<Alt: 67.5 - 79 Weak-Moderate (Alt) Muscovite>> pervasive and fracture surface

<<Alt: 67.5 - 79 Weak (Alt) Chlorite>>

67.80 88.50 RHYvl Lapilli tuff

67.8 - 88.5: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu and Cl altered). Cal porphyroblasts distributed within the matrix. Probably lapilli tuff.

<<Min: 67.8 - 88.5 1% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 67.8 - 90 3% Min: Ankerite>> Associated with siliceous bands/fragments and qtz veinlets.

<<Min: 85.4 - 85.8 1% Min: Pyrite>>

<<Min: 85.4 - 85.8 3% Min: Pyrrhotite>>

<<Min: 85.8 - 93.7 1% Min: Pyrrhotite>>

<<Alt: 79 - 88.5 Moderate (Alt) Chlorite>>

<<Struc: 74.3 - 74.5 Strong (Alt) Fault>> Gauge fault

88.50 90.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

88.5 - 90: Green, fine to medium grained, interval of mafic intrusive, moderately sheared/foliated. Chlorite altered (pervasive, moderate/strong). Margins strongly CL altered. ~5-10%% of Qtz-Cal veinlets/bands, deformed, subconcordant.

<<Min: 88.5 - 90 6% Min: Calcite>> Associated with MAFi, pervasive and qtz veinlets associated.

<<Alt: 88.5 - 90 Strong (Alt) Chlorite>> Associated with MAFi.

<<Struc: 88.5 - 89 Moderate (Alt) Fault>>

90.00 93.70 RHYvl Lapilli tuff

90 - 93.7: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu and CL altered). CA porphyroblasts disseminated. Probably lapilli tuff. Unit locally crosscut by decimetric MAFi (strongly CL altered).

<<Min: 90 - 95 2% Min: Ankerite>>

<<Alt: 90 - 93.7 Moderate (Alt) Chlorite>>

93.70 94.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

93.7 - 94.5: Green, fine grained, interval of mafic intrusive, homogeneous, weakly sheared/foliated. Chlorite altered (pervasive, moderate/strong).

<<Min: 93.7 - 100 0.5% Min: Pyrite>>

<<Alt: 93.7 - 94.5 Moderate-Strong (Alt) Chlorite>>

94.50 96.00 RHYvl Lapilli tuff

94.5 - 96: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu and CL altered). CA porphyroblasts disseminated. Probably lapilli tuff.

<<Alt: 94.5 - 96 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

96.00 96.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

96 - 96.6: Green, fine to medium grained, interval of mafic intrusive, moderately sheared/foliated. Chlorite altered (pervasive, moderate/strong). Margins strongly CL altered. ~10-15%% of Qtz-Cal veinlets/bands, deformed, subconcordant.

<<Min: 96 - 100 4% Min: Calcite>>

<<Alt: 96 - 96.6 Moderate (Alt) Chlorite>>

96.60 98.30 RHYvl Lapilli tuff

96.6 - 98.3: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu and CL altered). CA porphyroblasts disseminated. Probably lapilli tuff.

<<Alt: 96.6 - 98.3 Weak (Alt) Chlorite>>

98.30 99.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

98.3 - 99.8: Green, fine to medium grained, interval of mafic intrusive, moderately sheared/foliated. Chlorite altered (pervasive, moderate/strong). Margins strongly CL altered. ~10-15%% of Qtz-Cal veinlets/bands, deformed, subconcordant.

<<Alt: 98.3 - 99.8 Moderate-Strong (Alt) Chlorite>>

<<Alt: 99.6 - 106 Weak (Alt) Chlorite>>

99.80 106.00 RHYvl Lapilli tuff

99.8 - 106: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu and CL altered). CA porphyroblasts disseminated. Probably lapilli tuff.

<<Min: 100 - 106 2% Min: Calcite>>

<<Min: 100 - 116.5 1% Min: Pyrrhotite>>

106.00 108.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

106 - 108.5: Green, fine to medium grained, interval of mafic intrusive, moderately sheared/foliated. Chlorite altered (pervasive, moderate/strong). Margins strongly CL altered. ~5-10%% of Qtz-Cal veinlets/bands, deformed, subconcordant. > 5% Cal porphyroblasts (strongly AK), subheudral, distributed within the matrix.

<<Min: 106 - 108.5 6% Min: Calcite>>

<<Min: 106 - 171 10% Min: Ankerite>>

<<Alt: 106 - 108.5 Moderate-Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

108.50 173.80 RHYvl Lapilli tuff

108.5 - 173.8: Light grey to greenish, moderately to strongly sheared, < 10% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered, within fine/medium matrix (Mu altered). Probably lapilli tuff. Comprinsing some fault intervals (gauge, intense fracturation).

<<Min: 116.5 - 117.3 2% Min: Sphalerite>>

<<Min: 117.3 - 123.7 1% Min: Pyrrhotite>>

<<Min: 123.7 - 129 2% Min: Pyrrhotite>>

<<Min: 123.7 - 129 1% Min: Pyrite>>

<<Min: 129 - 133.3 2% Min: Pyrrhotite>>

<<Min: 129 - 133.3 3% Min: Pyrite>>

<<Min: 133.3 - 134 5% Min: Pyrite>>

<<Min: 134 - 138.5 4% Min: Pyrite>>

<<Min: 134 - 138.5 1% Min: Pyrrhotite>>

<<Min: 138.5 - 151.2 2% Min: Pyrite>>

<<Min: 138.5 - 151.2 2% Min: Pyrrhotite>>

<<Min: 151.2 - 159 2% Min: Pyrrhotite>>

<<Min: 151.2 - 159 3% Min: Pyrite>>

<<Min: 159 - 172.2 2% Min: Pyrrhotite>>

<<Min: 159 - 172.2 0.5% Min: Pyrite>>

<<Min: 171 - 184 8% Min: Ankerite>>

<<Min: 172.2 - 178.7 2% Min: Pyrite>>

<<Min: 172.2 - 178.7 4% Min: Pyrrhotite>>

<<Alt: 165.5 - 221.1 Moderate-Strong (Alt) Muscovite>> MU pervasive and associated with strong fracturation and fault intervals.

<<Vein: 116.5 - 117.3 60% Quartz>> Interval of qtz veins, decimetric, milky, deformed and irregular, associated with Sp at the selvages.

<<Struc: 164.6 - 168.5 Moderate-Strong (Alt) Fault>> Interval strongly fractured comprinsing gauge faults.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
218.60	220.10	1.50	B00233042	1	-0.005	-0.01	0.03	0.07

173.80 224.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

173.8 - 224.1: light grey to beige, fine to medium grained, moderate to strongly foliated (fault intervals). Comprinsing silica bands, milky, deformed,folded and locally dismembered, '' curdy'' texture locally well conserved. Weakly/moderately MU and weakly AK altered.

172-200m: Traces of fine carbonaceous bands within RHYcw.

<<Min: 178.7 - 179.5 5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
220.10	221.60	1.50	B00233043	0.9	-0.005	-0.01	0.03	0.11

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 178.7 - 179.5 3% Min: Pyrrhotite>>									
		<<Min: 179.5 - 190.8 2% Min: Pyrrhotite>>									
		<<Min: 184 - 215 5% Min: Ankerite>>									
		<<Min: 190.8 - 196.9 3% Min: Pyrrhotite>>									
		<<Min: 196.9 - 207 0.5% Min: Pyrite>>									
		<<Min: 196.9 - 207 1% Min: Pyrrhotite>>									
		<<Min: 207 - 213.1 1% Min: Pyrite>>									
		<<Min: 207 - 213.1 3% Min: Pyrrhotite>>									
		<<Min: 213.1 - 223 2% Min: Pyrrhotite>>									
		<<Min: 213.1 - 223 2% Min: Pyrite>>									
		<<Min: 223 - 223.5 2% Min: Chalcopyrite>>									
		<<Min: 223 - 223.5 6% Min: Pyrrhotite>>									
		<<Min: 223 - 223.5 4% Min: Pyrite>>									
		<<Min: 223 - 223.5 2% Min: Sphalerite>>									
		<<Min: 223.5 - 239.6 1% Min: Pyrrhotite>>									
		<<Alt: 221.1 - 224.1 Moderate (Alt) Chlorite>> Associated with interval brecciated and mineralised.									
		<<Vein: 213.8 - 214 90% Quartz 80 deg. >> qtz vein,regular, white qtz, subconcordant.									
		<<Struc: 182 - 186.4 Strong (Alt) Fault>> Interval strongly fractured comprinsing gauge faults.									
		<<Struc: 190.9 - 191.4 Intense (Alt) Fault>> Gauge fault									
		<<Struc: 201 - 202.2 Strong (Alt) Fault>> Interval strongly fractured comprinsing gauge faults.									
		<<Struc: 220.8 - 221.1 Intense (Alt) Fault>> Gauge fault									
224.10	**239.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	225.60	227.10	1.50	B00233044	-0.3	-0.005	-0.01	-0.01	-0.01
		224.1 - 239.6: Green, fine to medium grained, large interval of mafic intrusive, moderate to strongly sheared/foliated. Chlorite altered (pervasive, moderate/strong). Centimetric chlorite clots, flattered, mafic crystals altered? > 15% of Qtz-Cal veinlets/bands, dismembered, concordant.									
		<<Min: 224.1 - 228.6 10% Min: Calcite>>	227.10	228.60	1.50	B00233045	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 228.6 - 239.6 2% Min: Calcite>>									
		<<Alt: 224.1 - 239.6 Moderate-Strong (Alt) Chlorite>> Associated with MAFi.									

End of Hole @ 239.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-032

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415348.8125	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815521.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1483.48	Casing Depth (m):		Length (m):	132.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Summary: Drill hole mixed metasediments, volcaniclastics cut by intermediate dykes. Fault zone cutting above package with strong shearing, local brecciation and minor gouge from 72m to 132.6m (EOH).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-45	176		176	SS				☑	
62	-47	177		177	SS				☑	
93	-48	177		177	SS				☑	
123	-49	174		174	SS				☑	
132	-50	178		178	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.50 OVBN Overburden

12.50 29.30 SED undifferentiated Sediment grey-green

12.5 - 29.3: mixed package of sediments (dark grey mudstone, tan siltstone, green tuffaceous or dyke rocks), locally calcareous.

<<Min: 13.4 - 14 15% Min: Calcite>>

<<Min: 14 - 15.5 10% Min: Calcite>>

<<Min: 15.5 - 34.5 5% Min: Calcite>>

<<Min: 16.1 - 18.2 2% Min: Pyrite>>

<<Min: 18.2 - 20.5 1% Min: Pyrite>>

<<Min: 20.5 - 26.2 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 20.5 - 44 5% Min: Ankerite>>

<<Struc: 13 - 72 Strong (Alt) Foliation>> very consistant foliation throughout section.

29.30 33.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

29.3 - 33.1: banded to blebby qtz-feld-sericite intermediate porphyry dyke.

33.10 37.80 SED undifferentiated Sediment grey-green

33.1 - 37.8: mixed unit of green to tan tuffaceous siltstones (epiclastics?), very minor mudstone component

<<Min: 33.5 - 37.7 1% Min: Pyrite>>

<<Min: 34.5 - 41.9 15% Min: Calcite>>

37.80 41.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

37.8 - 41.9: could justas easily be MAFt

<<Min: 41.1 - 43.5 1% Min: Pyrite>>

41.90 54.50 SED undifferentiated Sediment grey

41.9 - 54.5: see secondary Lith for cross cutting dykes. Unit could br MDSta. Thin <1-2mm calcite bands, local sections of SEDc.

<<Min: 41.9 - 42.8 10% Min: Calcite>>

<<Min: 42.8 - 55.9 5% Min: Calcite>>

<<Min: 43.5 - 72 0.5% Min: Pyrrhotite>>

54.50 61.40 SED undifferentiated Sediment grey-brown

<<Min: 55.9 - 61.4 15% Min: Calcite>>

61.40 62.00 MDSc Carbonaceous dominant mudstone black

62.00 65.40 SEDc calcareous Sediment grey

62 - 65.4: Could be MDSta?

<<Min: 62 - 67.7 15% Min: Calcite>>

65.40 67.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 67.7 - 72 5% Min: Calcite>>

67.80 69.10 SED undifferentiated Sediment grey-brown

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

69.10 69.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) pink

69.1 - 69.8: siltstone

69.80 72.00 SED undifferentiated Sediment grey

72.00 74.70 FBX Fault Breccia grey

72 - 74.7: ground up SED

<<Struc: 72 - 74.7 Intense (Alt) Fault>> fault gouge, ground core and missing core.

74.70 86.00 SED undifferentiated Sediment grey

74.7 - 86: could be MDSta?

<<Min: 74.7 - 89 0.3% Min: Pyrite>>

<<Min: 74.7 - 89 0.3% Min: Pyrrhotite>>

<<Min: 74.7 - 100.3 5% Min: Ankerite>>

<<Struc: 74.7 - 89 Moderate (Alt) Shear>> shear planes along foliation, increasing intensity downhole.

<<Struc: 74.7 - 89 Strong (Alt) Foliation>> foliation at 45-20 to CA, locally crosses banded folded seds at 90 degrees.

86.00 100.00 FBX Fault Breccia grey

86 - 100: Sheared and brecciated MDS, SED and minor MAFi. Fault breccia clasts of above in matrix of crushed rock, rock flour and minor gouge. Local zones of calcite cementing clasts.

<<Struc: 89 - 100.3 Intense (Alt) Fault>> fault breccia clasts of SED, minor MAFi, matrix of rock flour and minor clay gouge.

100.00 105.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey pink

100 - 105.4: sheared, unit within fault zone, foliation parallel to core axis.

<<Min: 100.3 - 107.3 20% Min: Ankerite>>

<<Vein: 102.4 - 107.3 5% Quartz-Carbonate>>

<<Struc: 100.3 - 107.3 Strong (Alt) Foliation>> foliation and shearing near parallel to CA

105.40 107.30 RHY undifferentiated rhyolite buff

107.30 111.30 FBX Fault Breccia grey

107.3 - 111.3: sheared gougy MDSt

<<Min: 107.3 - 128 5% Min: Ankerite>>

<<Struc: 107.3 - 110.1 Intense (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 110.1 - 120.8 Strong (Alt) Shear>> shear and attendant foliation 10-35 degrees to foliation as are minor qtz-carb veins and naarow zones of rock flour - gouge.

111.30 113.10 RHY undifferentiated rhyolite buff

111.3 - 113.1: foliated qtz-sericite schist, looks like RHYv

<<Vein: 111.3 - 132.6 5% Quartz-Carbonate>>

113.10 123.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

113.1 - 123.8: sheared, foliation near core axis, minor MDS included within unit.

<<Min: 113.1 - 126.8 1% Min: Pyrrhotite>>

<<Min: 122.6 - 126.8 0.3% Min: Pyrite>>

<<Struc: 120.8 - 132.6 Strong (Alt) Fault>> foliation and shear planes in core rubble near parallel to core axis, rubble in rock flour and gouge.

123.80 132.60 SED undifferentiated Sediment grey

123.8 - 132.6: Sheared and brecciated.

End of Hole @ 132.6

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-033

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415047.09375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815747.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1383.92	Casing Depth (m):		Length (m):	230.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-46	177		177	SS				☑	
62	-48	177		177	SS				☑	
93	-51	183		183	SS				☑	
123	-53	182		182	SS				☑	
154	-56	184		184	SS				☑	
184	-58	183		183	SS				☑	
215	-59	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**17.00**	**OVBN** **Overburden**									
17.00	**20.60**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 17 - 46 0.25% Min: Calcite>> ~5% CA within mafic dykes.											
<<Min: 17 - 46.5 0.5% Min: Pyrite>>											
<<Min: 17 - 54 0.5% Min: Pyrrhotite>>											
<<Min: 17 - 57 5% Min: Ankerite>>											
20.60	**21.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **FG**									
20.6 - 21.6: mafic dyke											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

21.60 24.40 RHYva Coarse grained to ash tuff

21.6 - 24.4: high angle, small diameter quartz vein with tracepyrite and galena.

24.40 30.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

24.4 - 30.2: Interval has small sections of lapili tuff. High PO wiith flows

30.20 33.90 RHYvl Lapilli tuff

30.2 - 33.9: +/- crg textures. 2 mafic dykes near top of interval <40cm eac

33.90 36.90 MAFt Mafic Volcaniclastics FG

33.9 - 36.9: Speckled appearance due to Fe-bearing phenocrysts (ankerite?). Calcite is pervasive but also as thin bands.

36.90 46.50 RHYva Coarse grained to ash tuff

36.9 - 46.5: +/- crg textures. 2 mafic dykes near top of interval <40cm eac

<<Min: 37 - 56.8 0.1% Min: Galena>>

<<Min: 46 - 51.1 5% Min: Calcite>> mafic sill?

46.50 51.10 MAFt Mafic Volcaniclastics FG

46.5 - 51.1: Speckled appearance due to Fe-bearing phenocrysts (ankerite?). Calcite is pervasive but also as thin bands.

51.10 64.60 RHYvl Lapilli tuff

51.1 - 64.6: Speckled texture with biotite/chlorite in and out

<<Min: 51.1 - 178 0.1% Min: Calcite>> trace/localized occurances

<<Min: 54 - 68.2 0.25% Min: Pyrrhotite>>

<<Min: 57 - 71 15% Min: Ankerite>>

<<Min: 57 - 115 0.5% Min: Pyrite>>

64.60 68.10 RHYvl Lapilli tuff

64.6 - 68.1: Anomalous high abundance of Fe-carbonate (Ankerite)

68.10 97.80 RHYvl Lapilli tuff

68.1 - 97.8: trace fine grained biotite/chlorite in selective lapilli

<<Min: 68.2 - 105 0.5% Min: Pyrrhotite>>

<<Min: 71 - 156.8 12% Min: Ankerite>>

<<Min: 89.9 - 90.4 0.1% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
97.80	**106.20**	**RHYvl Lapilli tuff**
97.8 - 106.2: Interval has pervasive fine grained biotite/chlorite		
<<Min: 105 - 116 1% Min: Pyrrhotite>>		
106.20	**112.50**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
106.2 - 112.5: Interval has pervasive fine grained biotite/chlorite		
<<Alt: 108.5 - 160 Weak (Alt) Muscovite>>		
112.50	**134.60**	**RHYvl Lapilli tuff**
112.5 - 134.6: Interval has pervasive fine grained biotite/chlorite		
<<Min: 115 - 132 0.25% Min: Pyrite>>		
<<Min: 116 - 194 0.25% Min: Pyrrhotite>>		
134.60	**135.90**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
134.6 - 135.9: possible flow may be bxx tuff		
135.90	**147.80**	**RHYvl Lapilli tuff**
135.9 - 147.8: Interval has pervasive fine grained biotite/chlorite		
<<Min: 145 - 152 0.5% Min: Pyrite>>		
147.80	**149.20**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
147.8 - 149.2: Interval has pervasive fine grained biotite/chlorite		
149.20	**152.10**	**RHYvl Lapilli tuff**
149.2 - 152.1: Interval has pervasive fine grained biotite/chlorite		
152.10	**161.90**	**RHYvl Lapilli tuff**
152.1 - 161.9: lapilli are dark and contain biotite, chlorite +/- Fe-carbonate		
<<Min: 156.8 - 203 5% Min: Ankerite>>		
<<Alt: 160 - 211 Weak-Moderate (Alt) Muscovite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

161.90 171.90 MDSt Rhyolite tuff dominant mudstone

161.9 - 171.9: +/- coarse grained tuff, very weakly carbonaceous

<<Min: 164.7 - 181 0.25% Min: Pyrite>>

171.90 177.60 MDSw Coherent rhyolite flow with carbonaceous content

177.60 211.10 MDSt Rhyolite tuff dominant mudstone

177.6 - 211.1: Interval mixed with crg. and lapilli tuff. Zne has been co-altered by sericite/muscovite and chloritic alteration, CL strong as CL bands, could this be an attenuated stocwork CL footwall alt. zone? Proportion of MDS increases down hole

<<Min: 178 - 213.9 0.25% Min: Calcite>>

<<Alt: 177.6 - 209 Moderate (Alt) Chlorite>>

<<Alt: 209 - 211 Moderate-Strong (Alt) Chlorite>>

<<Alt: 211 - 215 Intense (Alt) Chlorite>>

211.10 213.90 MDSt Rhyolite tuff dominant mudstone **FG**

211.1 - 213.9: adjacent to CP stringer zone

213.90 215.00 OJ Heavilly disseminated sulphides in proximal altered rock

213.9 - 215: ~15% CP net textured +/- foliation parallel

<<Min: 213.9 - 215 2% Min: Sphalerite>>

<<Min: 213.9 - 215 2% Min: Pyrrhotite>>

<<Min: 213.9 - 215 15% Min: Chalcopyrite>>

<<Min: 213.9 - 215 1% Min: Calcite>> CP/PO rich zone

215.00 219.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

215 - 219.6: cacite is significant ~20% and occurs speckled and in thin - thick bands. +/- leucosite?

<<Min: 215 - 230.4 8% Min: Calcite>>

<<Alt: 215 - 229.7 Moderate (Alt) Chlorite>> not really proximal alteration. Chloritized

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

219.60 229.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

219.6 - 229.7: pseudo lapilli texture (biotite clusters rimmed with chlorite) in sericite quartz groundmass. Calcite pesent in bands and isolated custers as well as peppering. Alteration at base of zone grades int RHYic

<<Min: 224 - 230.4 0.25% Min: Pyrite>>

<<Min: 224 - 230.4 0.25% Min: Pyrrhotite>>

<<Struc: 223.4 - 224.2 Fault>> 3 small fault gouge intervals <10cm each

229.70 230.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 229.7 - 230.4 0.25% Min: Ankerite>>

<<Alt: 229.7 - 230.4 Weak (Alt) Silicification>>

<<Alt: 229.7 - 230.4 Weak-Moderate (Alt) Muscovite>>

End of Hole @ 230.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-034

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414700.263	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815622.641	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1421.305	Casing Depth (m):		Length (m):	195.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-46	182		182	SS				☑	
62	-46	188		188	SS				☑	
93	-47	181		181	SS				☑	
123	-48	186		186	SS				☑	
154	-48	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.70 OVBN Overburden

9.70 26.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

9.7 - 26: Not great example of RHYcw - Likely RHYvl in part

<<Min: 11 - 25.2 5% Min: Ankerite>>

<<Min: 13 - 114.6 1% Min: Pyrrhotite>> <1-2mm pyrrhotite dis, locally minor <0.5% dis with Pyrrhotite,

<<Min: 22 - 28 3% Min: Calcite>>

<<Min: 25.2 - 58.1 1% Min: Ankerite>>

26.00 62.70 RHYvl Lapilli tuff

26 - 62.7: Minor biotite throughout, likely caused at least iin part by qtz-tour vein at 45.9m where biot +/- chl alt is more intense. 39,2-48op] possible MAFt or only biot alt overprint?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 42 - 45 5% Min: Calcite>> more mafic looking section

<<Min: 45 - 57 0.5% Min: Calcite>>

<<Min: 58.1 - 93.3 8% Min: Ankerite>> average of section…

<<Alt: 26 - 50 Moderate (Alt) Biotite>> halo to qtz-tou veins

<<Alt: 35 - 45 Weak (Alt) Chlorite>> diss Chl in patches - surrounds Qtz-tou veining

62.70 66.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

62.7 - 66: 10's cm sections of RHYcw but also RHYvl as seen above and below unit.

66.00 74.20 RHYvl Lapilli tuff

66 - 74.2: unit contains sections of RHYcw, unit similar to unit above and below (downhole), difference being amount of RHYcw present.

74.20 78.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

78.60 132.00 RHYvl Lapilli tuff

78.6 - 132: weakly bit alt, dis pyrrhotite, locally ash and coarse ash sections (ie. 103-113m)

<<Min: 93 - 103 0.5% Min: Calcite>>

<<Min: 93.1 - 126.8 3% Min: Ankerite>>

<<Min: 103 - 108 1% Min: Calcite>>

<<Min: 108 - 149 0.25% Min: Calcite>> trace to 0.5 %

<<Min: 114.6 - 120 2% Min: Pyrrhotite>>

<<Min: 120 - 164 1% Min: Pyrrhotite>> includes local zonesof minor dis py, <0.5% with the Pyrrhotite.

<<Min: 126.8 - 132 10% Min: Ankerite>>

<<Alt: 103.3 - 105.5 Weak (Alt) Biotite>>

<<Alt: 120 - 125 Weak (Alt) Biotite>>

132.00 134.40 MDSt Rhyolite tuff dominant mudstone

<<Min: 132 - 154.7 3% Min: Ankerite>>

134.40 135.50 MDSc Carbonaceous dominant mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

135.50 138.20 MDSt Rhyolite tuff dominant mudstone

135.5 - 138.2: bands RHYcw at base of unit

138.20 145.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 139 - 167 Weak-Moderate (Alt) Silicification>>

<<Alt: 140 - 172 Moderate (Alt) Muscovite>> cloudy day! Amount of Mu varies according to rock type.

145.10 149.30 MDSt Rhyolite tuff dominant mudstone

149.30 173.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

149.3 - 173.3: not classic RHYcw, especially below 163.5 where unit loses good curdy texture plus alteration and dissiminated mineralization increases. 172-173.3m; Missing core.

<<Min: 154.7 - 164.5 8% Min: Ankerite>>

<<Min: 164 - 168 1% Min: Pyrite>> and wisps

<<Min: 164 - 168 4% Min: Pyrrhotite>>

<<Min: 165 - 172 0.25% Min: Chalcopyrite>>

<<Min: 165 - 172 0.5% Min: Arsenopyrite>>

<<Min: 168 - 172 Min: Pyrrhotite>>

<<Alt: 163 - 167 Weak (Alt) Cordierite>> Remnant Cord porphyroblasts, Cord mostly all or completely replaced by qtz-chl.

<<Alt: 169 - 172 Weak (Alt) Chlorite>> Chl porphyroblasts, locally replacing cord.

173.30 176.30 OJ Heavilly disseminated sulphides in proximal altered rock

173.3 - 176.3: 172-186.7m:core missing: whole core previously sampled.

176.30 178.10 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

178.10 178.80 OA Magnetite bearing sulphides

178.80 181.10 OC Chalcopyrite-pyrrhotite net textured sulphides

From (m)	To (m)		Rocktype & Description
181.10	**184.00**	**OA**	**Magnetite bearing sulphides**
184.00	**185.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
185.30	**195.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

185.3 - 195.4: 185.3-186.7: missing core:whole core previously sampled.

<<Min: 187 - 195.4 10% Min: Calcite>>

<<Alt: 186.5 - 190.5 Weak-Moderate (Alt) Silicification>>

<<Alt: 188 - 195.4 Moderate (Alt) Biotite>> biotite gone where MAFi is bleached +/- silicified+/- leucoxene, locall cut by qtz veins (with ble envelope).

End of Hole @ 195.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-035

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Robin Black
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414696.25	Core Size:		Azimuth:	80	Date Logging Complete:	
UTM Northing:	6815472.5	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1419.98	Casing Depth (m):		Length (m):	133.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	80		80	SS				☑	
32	-89	60		60	SS				☑	
63	-89	315		315	SS				☑	
93	-88	260		260	SS				☑	
124	-87	245		245	SS				☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.00**	**OVBN**	**Overburden**									
8.00	**14.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey**								
14.50	**27.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey**								
<<Min: 18.5 - 25.6 5% Min: Ankerite>> replacing cordierite												
27.50	**31.10**	**RHYvl**	**Lapilli tuff**	**grey**								
31.10	**39.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
39.10	**39.40**	**MDSc**	**Carbonaceous dominant mudstone**									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.40	**42.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
<<Alt: 40 - 42.1 Moderate (Alt) Muscovite>>												
42.50	**50.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
50.90	**55.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
<<Struc: 50.9 - 51.4 Moderate (Alt) Fault>> gouge												
55.30	**59.90**	**RHYvl**	**Lapilli tuff**									
59.90	**74.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	68.90	70.10	1.20	B00267572	1.4	0.01	-0.01	-0.01	0.01
<<Min: 63 - 66 1% Min: Calcite>>				70.10	71.30	1.20	B00267573	0.9	0.015	-0.01	-0.01	0.01
<<Alt: 60.5 - 73 Weak-Moderate (Alt) Muscovite>>												
<<Struc: 63.7 - 63.72 Fault>> narrow fault w/ 10 cm of limonite hematite stain on either side												
74.30	**74.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**									
74.70	**80.40**	**OD**	**Brecciated sulphides**									
<<Min: 80.3 - 82 1% Min: Calcite>>												
80.40	**80.70**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**									
80.70	**81.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**									
81.50	**85.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
85.70	**86.70**	**OI**	**Heavilly disseminated sulphides in host schist**									
86.70	**103.90**	**RHYc**	**Rhyolite coherant volcanics**	88.70	90.20	1.50	B00267574	0.8	-0.005	-0.01	-0.01	0.02
<<Min: 92.5 - 95 1% Min: Calcite>>				90.20	91.70	1.50	B00267575	0.5	0.008	-0.01	-0.01	-0.01
<<Alt: 87 - 103 Moderate (Alt) Muscovite>>				91.70	93.20	1.50	B00267576	2.5	0.01	0.02	0.03	0.06
<<Alt: 87 - 103 Moderate (Alt) Chlorite>>				93.20	94.70	1.50	B00267577	0.7	-0.005	-0.01	-0.01	-0.01
<<Alt: 93.4 - 93.9 Strong (Alt) Chlorite>>				94.70	96.20	1.50	B00267578	0.6	0.008	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
103.90	**104.30**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
104.30	**104.70**	**OG**	**Chalcopyrite rich sulphides**
104.70	**107.40**	**OA**	**Magnetite bearing sulphides**
107.40	**107.60**	**OI**	**Heavilly disseminated sulphides in host schist**
107.60	**109.30**	**OA**	**Magnetite bearing sulphides**
109.30	**110.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
110.20	**111.90**	**OI**	**Heavilly disseminated sulphides in host schist**
111.90	**114.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
114.50	**116.40**	**OA**	**Magnetite bearing sulphides**
116.40	**119.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
119.80	**133.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 121 - 133.2 7% Min: Calcite>> stronger in BI-CL zones

<<Alt: 128.6 - 129.7 Strong (Alt) Silicification>>

<<Struc: 127 - 127.3 Fault>> gouge

End of Hole @ 133.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
96.20	97.70	1.50	B00267579	-0.3	-0.005	-0.01	-0.01	0.02
97.70	99.20	1.50	B00267581	0.5	0.01	-0.01	-0.01	0.01
99.20	100.40	1.20	B00267582	4.6	0.054	0.01	0.2	0.27
100.40	101.50	1.10	B00267583	3.4	0.025	0.02	0.1	0.39
121.30	122.80	1.50	B00267584	25.7	1.13	-0.01	-0.01	0.02
122.80	124.30	1.50	B00267585	0.3	0.108	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-036

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414696.5	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815472	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1420.08	Casing Depth (m):		Length (m):	111.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
32	-57	177		177	SS				☑	
62	-57	180		180	SS				☑	
111	-58	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.30**	**OVBN** **Overburden**									
9.30	**12.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 9.3 - 43 0.5% Min: Ankerite>>											
<<Alt: 9.3 - 27.3 Weak-Moderate (Alt) Muscovite>>											
12.70	**15.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
12.7 - 15.5: numerous iron oxide bands and pyrite. Strongly tectonized											
15.50	**18.10**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
15.5 - 18.1: inclusions carbonaceous sediment											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
18.10	**26.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
18.1 - 26.2: pyritic near bottom of interval												
26.20	**28.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
28.10	**35.40**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
28.1 - 35.4: Strongly folded and tectonized												
<<Alt: 35 - 49.6 Moderate (Alt) Muscovite>>												
35.40	**36.30**	**MDSc**	**Carbonaceous dominant mudstone**									
36.30	**39.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	38.90	40.40	1.50	B00267548	1.1	0.011	-0.01	0.01	0.12
39.20	**43.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	40.40	41.90	1.50	B00267549	0.7	0.01	-0.01	-0.01	0.04
<<Min: 43 - 53 35% Min: Ankerite>> Some selective and complete replacement.												
43.40	**44.70**	**OI**	**Heavilly disseminated sulphides in host schist**									
<<Alt: 43.5 - 50.8 Moderate (Alt) Cordierite>>												
44.70	**49.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	46.20	47.20	1.00	B00267551	3.2	0.018	0.23	0.03	0.06
44.7 - 49.6: strongly AK alt'd												
				47.20	48.10	0.90	B00267552	1.3	0.013	0.02	0.02	0.17
49.60	**50.50**	**OI**	**Heavilly disseminated sulphides in host schist**									
<<Min: 49.6 - 50.5 7% Min: Calcite>>												
50.50	**57.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	52.10	53.60	1.50	B00267553	3.1	0.014	0.02	0.05	0.1
<<Min: 53 - 65.8 3% Min: Ankerite>>				53.60	54.60	1.00	B00267554	1.1	0.005	-0.01	0.01	0.02
<<Alt: 50.5 - 57 Strong (Alt) Muscovite>>				54.60	55.60	1.00	B00267555	0.5	0.009	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
57.00	**58.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 57 - 58.6 5% Min: Calcite>>			
58.80	**62.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 58.8 - 65.8 Strong (Alt) Muscovite>>			
62.40	**65.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
65.80	**75.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 65.8 - 105.3 0.5% Min: Ankerite>> Vein hosted and irregular patches			
<<Min: 68 - 77 2% Min: Calcite>>			
75.00	**79.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
79.50	**80.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
80.30	**81.70**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
81.70	**83.80**	**RHYv**	**Rhyolite volcaniclastic**
83.80	**86.30**	**OA**	**Magnetite bearing sulphides**
86.30	**88.20**	**RHYv**	**Rhyolite volcaniclastic**
86.3 - 88.2: 50% of interval is vein QZ with patchy PY,PO,CP			
88.20	**90.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
90.80	**93.80**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
93.80	**95.40**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
60.30	61.80	1.50	B00267556	1.1	0.018	-0.01	-0.01	0.01
61.80	63.30	1.50	B00267557	2.3	0.024	-0.01	-0.01	0.03
63.30	64.30	1.00	B00267558	0.8	0.007	-0.01	-0.01	0.06

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
95.40	**105.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 101 - 105.3 4% Min: Calcite>>									
105.30	**110.00**	**RHY** **undifferentiated rhyolite**	106.80	108.30	1.50	B00267559	0.7	0.009	-0.01	-0.01	0.01
		105.3 - 110: Possibly MAFt. Thin banding and granular, possibly clasts/frags.Variably altered. Strongly bleached silicified interval.									
		<<Min: 105.3 - 110.6 6% Min: Calcite>> Lenses and replacement	108.30	109.80	1.50	B00267561	0.5	0.01	-0.01	-0.01	-0.01
		<<Alt: 105.3 - 110.6 Weak-Moderate (Alt) Muscovite>>									
		<<Struc: 105.4 - 105.7 Weak (Alt) Fault>> Weak clay, minor hematite									
110.00	**111.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
		110 - 111.6: Possibly MAFt. Thin banding and granular, possibly clasts/frags.Variably altered. Strongly bleached silicified interval.									
		<<Alt: 110.6 - 111.4 Intense (Alt) Silicification>> adjacent to QV									
End of Hole @ 111.6											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-037

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414697.894	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815415.847	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1419.9	Casing Depth (m):		Length (m):	81.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-45	181		181	SS				☑	
61	-46	183		183	SS				☑	
81	-46	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 13.30 OVBN Overburden

13.30 24.70 RHYvl Lapilli tuff

13.3 - 24.7: not great RHYvl, MDSw in upper part, minor RHYcw sections.

<<Min: 13.3 - 19.5 5% Min: Ankerite>>

<<Min: 13.3 - 43 1% Min: Pyrite>> local pyrrohite zones with <1%

<<Min: 21.6 - 26.3 5% Min: Ankerite>>

<<Min: 21.7 - 39.2 5% Min: Calcite>> thin bands and diss

<<Alt: 13.3 - 38.5 Weak (Alt) Silicification>>

24.70 26.00 MDSc Carbonaceous dominant mudstone

26.00 30.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)		Rocktype & Description	
30.80	**39.20**	**RHYvl**	**Lapilli tuff**	

30.8 - 39.2: rare Cbppo

<<Min: 31.8 - 41.7 3% Min: Ankerite>>

<<Alt: 35 - 38.4 Weak-Moderate (Alt) Muscovite>>

<<Alt: 38.4 - 43 Moderate (Alt) Muscovite>>

<<Alt: 38.5 - 43 Moderate-Strong (Alt) Silicification>>

39.20	**43.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	

<<Min: 41.7 - 43 8% Min: Ankerite>>

43.00	**44.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**

43 - 44.2: sulphides and mudstone, is sx replacing MDS??

<<Min: 43 - 56.1 0.5% Min: Calcite>> diss and as Fra filling

44.20	**50.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**
50.30	**52.40**	**RHYvl**	**Lapilli tuff**	

<<Min: 50.3 - 52.4 0.5% Min: Pyrite>>

<<Min: 50.9 - 52.7 8% Min: Ankerite>>

<<Struc: 50.3 - 50.9 Strong (Alt) Fault>> crushed, sheared, argillic alt, 0.3 m missing core.

52.40	**52.80**	**OA**	**Magnetite bearing sulphides**	**MCG**
52.80	**54.60**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**
54.60	**55.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**
55.60	**55.90**	**OA**	**Magnetite bearing sulphides**	**MCG**
55.90	**56.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
37.20	38.70	1.50	B00267088	2.5	0.014	-0.01	-0.01	0.02
38.70	40.20	1.50	B00267089	0.8	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
56.10	**58.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
56.1 - 58.2: RHYcw section repeated by fault at 50.6 and 50.7m													
<<Min: 56.1 - 58.2 2% Min: Pyrite>>													
<<Alt: 56.1 - 58.2 Weak (Alt) Muscovite>>													
<<Struc: 57 - 57.1 Strong (Alt) Fault>>													
58.20	**62.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**									
<<Min: 60 - 63 3% Min: Calcite>> also as fra filling and thin bands													
62.80	**69.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		64.30	65.80	1.50	B00267091	0.5	0.015	-0.01	-0.01	0.05
62.8 - 69: contains narrow intervals of siliceous RHYi													
<<Min: 62.8 - 77.5 5% Min: Ankerite>> in bands,amygdules?, porphyroblasts					65.80	67.30	1.50	B00267092	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 63 - 65.7 0.5% Min: Pyrite>>													
<<Min: 63 - 81.1 5% Min: Calcite>> and as diss and thin bands													
<<Min: 65.7 - 81.1 2% Min: Pyrite>>													
<<Alt: 63 - 69 Moderate (Alt) Silicification>>													
<<Alt: 63 - 81.1 Trace (Alt) Muscovite>>													
69.00	**81.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										
69 - 81.1: contains narrow intervals of MAFi													
<<Alt: 69 - 81.1 Strong (Alt) Silicification>>													
End of Hole @ 81.1													

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-038

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414749.59375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815423.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1409.73	Casing Depth (m):		Length (m):	71.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
35	-45	182		182	SS				☑	
71	-46	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**9.70**	**CASN** **Casing**
9.70	**14.00**	**RHYva** **Coarse grained to ash tuff**
<<Min: 9.7 - 45.8 0.5% Min: Pyrite>> Locally 1% mm scale thin bands of disseminated PY.		
<<Alt: 9.7 - 26.2 Strong (Alt) Muscovite>> MU Strong pervasive MU alteration. No CB.		
14.00	**26.20**	**MDSt** **Rhyolite tuff dominant mudstone**
26.20	**39.10**	**RHYva** **Coarse grained to ash tuff**
<<Min: 26.7 - 36.6 0.05% Min: Calcite>> Trace AK		
<<Min: 36.6 - 45.8 1% Min: Calcite>>		
<<Alt: 26.2 - 49.2 Strong (Alt) Muscovite>> MU Trace AK.		
39.10	**45.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
40.00	41.50	1.50	R080101	3.4	0.027	-0.01	0.01	0.04
41.50	43.00	1.50	R080102	0.4	0.009	-0.01	-0.01	-0.01
43.00	44.50	1.50	R080103	0.4	0.018	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
45.80	**46.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
46.30	**49.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 46.3 - 49.5 1% Min: Pyrite>>			Trace CP-GL-SP occurring locally as disseminations and whispy laminations.										
49.50	**52.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
52.30	**53.30**	**OA**	**Magnetite bearing sulphides**										
53.30	**59.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
59.40	**60.30**	**OA**	**Magnetite bearing sulphides**										
60.30	**62.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
62.40	**63.90**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		62.40	63.90	1.50	R080104	0.9	0.017	-0.01	0.02	0.03
<<Min: 62.4 - 71.3 0.5% Min: Pyrite>>													
<<Min: 62.4 - 71.3 1% Min: Calcite>>			Trace AK-DO										
<<Alt: 63 - 71.3 Moderate (Alt) Silicification>>			Trace AK and DO										
<<Alt: 63 - 71.3 Moderate (Alt) Muscovite>>			Trace AK and DO										
<<Struc: 62.4 - 66.7 Moderate (Alt) Fault>>													
63.90	**65.80**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		63.90	65.40	1.50	R080105	0.7	0.012	-0.01	-0.01	-0.01
63.9 - 65.8: RHYi													
					65.40	66.90	1.50	R080106	0.6	-0.005	-0.01	-0.01	-0.01
65.80	**68.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										
68.10	**69.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**FG**									
68.1 - 69.1: QZ eyes, RHYi													
69.10	**71.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 71.3									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-039

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414748.03125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815473.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1408.81	Casing Depth (m):		Length (m):	111.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-46	177		177	SS				☑	
62	-48	179		179	SS				☑	
111	-51	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.00 CASN Casing

7.00 15.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

7 - 15.2: Weak banding. Minor graphitic bands

<<Min: 7 - 40.7 5% Min: Ankerite>>

<<Min: 7 - 47.2 15% Min: Pyrite>>

<<Min: 9.5 - 11 1% Min: Calcite>>

15.20 31.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

15.2 - 31.1: siliceous bands, in part possibly flow? Strongly brittle fractured and faulted

From (m)	To (m)		Rocktype & Description
31.10	**38.20**	**MDSt**	**Rhyolite tuff dominant mudstone**
31.1 - 38.2: Flow? Very strongly broken, gradational into intense MS, CB zone below.			
38.20	**44.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 40.7 - 47.2 35% Min: Ankerite>> Intervals with massive MS			
<<Alt: 40.7 - 47.2 Strong (Alt) Muscovite>>			
44.30	**47.10**	**RHYv**	**Rhyolite volcaniclastic**
44.3 - 47.1: Very strongly altered zone with complete replacement intervals of MS and CB.			
47.10	**50.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
47.1 - 50.4: weak banding with strong CB.			
<<Alt: 47.2 - 50.2 Moderate (Alt) Chlorite>>			
50.40	**54.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
54.10	**57.40**	**RHYv**	**Rhyolite volcaniclastic**
54.1 - 57.4: Disseminated and banding parallel sx.			
<<Min: 56.1 - 57.5 5% Min: Ankerite>>			
57.40	**60.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
57.4 - 60.7: irregular banding			
60.70	**62.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
62.20	**62.80**	**RHYv**	**Rhyolite volcaniclastic**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
41.10	42.60	1.50	Q311332	4.7	0.012	0.03	0.02	0.07
42.60	44.10	1.50	Q311333	1.1	0.02	-0.01	0.02	0.04
44.10	45.60	1.50	Q311334	0.4	0.007	-0.01	-0.01	0.02
45.60	47.20	1.60	Q311335	12.9	0.128	0.26	0.04	0.3
47.20	48.70	1.50	Q311336	84.7	1.34	0.7	0.7	2.45
48.70	50.20	1.50	Q311337	97.6	1.21	0.26	1.26	4.21
50.20	51.70	1.50	Q311338	389	3.95	1.11	4.84	15.7
51.70	53.20	1.50	Q311339	376	3.98	0.86	4.19	12.9
53.20	54.70	1.50	Q311343	310	3.11	1	4.65	11.4
54.70	56.10	1.40	Q311344	415	3.8	0.7	3.65	9.23
56.10	57.40	1.30	Q311345	13.7	0.095	0.01	0.18	0.34
57.40	59.20	1.80	Q311346	306	1.56	0.22	3.06	6.01
62.20	63.70	1.50	Q311347	377	2.54	0.65	1.92	3.72

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
62.80	**63.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
63.40	**68.50**	**RHYva**	**Coarse grained to ash tuff**	63.70	65.20	1.50	Q311348	136	1.11	0.27	0.85	1.66
63.4 - 68.5: Thin massive sx OB up to 5cm												
<<Min: 65.8 - 68.5 7% Min: Ankerite>>				65.20	66.70	1.50	Q311349	122	1.31	0.33	1.18	3.41
<<Alt: 63.9 - 68.5 Moderate (Alt) Muscovite>>				66.70	68.50	1.80	Q311351	84	0.693	0.18	0.7	1.97
68.50	**71.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	68.50	70.00	1.50	Q311352	2.7	0.024	-0.01	0.01	0.02
				70.00	71.50	1.50	Q311353	403	3.77	0.85	2.88	10.9
71.00	**79.00**	**OA**	**Magnetite bearing sulphides**	71.50	73.00	1.50	Q311354	154	1.69	0.59	1.72	8.21
				73.00	74.50	1.50	Q311355	273	2.93	1.06	1.38	5.07
				74.50	76.00	1.50	Q311356	145	1.55	0.71	1.87	7.9
				77.50	78.80	1.30	Q311357	54.8	0.719	0.86	0.53	8.95
				78.80	81.20	2.40	Q311358	148	0.885	0.27	2.94	6.33
79.00	**81.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
81.20	**81.70**	**RHYv**	**Rhyolite volcaniclastic**	81.20	82.80	1.60	Q311359	218	2.4	0.41	2.41	9.21
81.2 - 81.7: proximal chlorite												
<<Alt: 81.2 - 81.7 Moderate (Alt) Chlorite>>												
81.70	**87.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	82.80	84.30	1.50	Q311361	4.6	0.032	0.02	0.02	0.25
<<Min: 84.3 - 86.5 0.01% Min: Sphalerite>>				84.30	85.80	1.50	Q311362	7.4	0.058	-0.01	0.04	0.14
<<Min: 84.3 - 86.5 Min: Pyrite>>				85.80	87.30	1.50	Q311363	5.3	0.103	-0.01	0.03	0.19
<<Min: 84.3 - 86.5 0.1% Min: Galena>>												
<<Alt: 81.9 - 87.1 Moderate (Alt) Muscovite>>												
87.10	**88.00**	**RHYv**	**Rhyolite volcaniclastic**	87.30	88.00	0.70	Q311364	111	0.528	0.11	1.63	3.7
87.1 - 88: Durchbewegan texture near contact												
<<Alt: 87.1 - 88 Strong (Alt) Chlorite>> Banded and brecciated minor Derch texture												

From (m)	To (m)		Rocktype & Description
88.00	**92.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
92.90	**94.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
94.50	**99.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 94.5 - 97.6 1% Min: Ankerite>>			
<<Min: 96.5 - 111.6 1% Min: Calcite>>			
<<Alt: 94.5 - 99.5 Moderate (Alt) Muscovite>>			
99.50	**100.00**	**OF**	**Pyrrhotite rich sulphides**
100.00	**104.50**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 100 - 104.5 1% Min: Ankerite>> Along select tuff bands			
<<Alt: 100 - 111.6 Weak (Alt) Silicification>>			
<<Alt: 100 - 111.6 Weak (Alt) Muscovite>>			
104.50	**105.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
105.60	**111.60**	**RHYva**	**Coarse grained to ash tuff**
105.6 - 111.6: Stronger CL closer to sx			
<<Min: 105.6 - 111.6 3% Min: Ankerite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
88.00	89.50	1.50	Q311365	54.2	1.29	1.42	0.19	1.99
89.50	91.00	1.50	Q311366	122	1.43	0.51	1.91	8.45
91.00	92.50	1.50	Q311367	86.9	1.06	0.37	0.54	5.44
92.50	93.50	1.00	Q311368	70	0.851	0.21	0.99	4.64
93.50	94.50	1.00	Q311369	147	1.51	0.35	2.9	6.75
94.50	96.10	1.60	Q311371	175	1.84	0.42	1.88	7.58
96.10	97.60	1.50	Q311372	1.9	0.018	-0.01	0.02	0.05
97.60	99.50	1.90	Q311373	4.6	0.033	-0.01	0.04	0.07
99.50	100.00	0.50	Q311374	2.1	0.016	-0.01	0.02	0.06
100.00	101.60	1.60	Q311375	242	0.142	0.62	4.25	10.3
101.60	103.10	1.50	Q311376	0.4	-0.005	-0.01	-0.01	0.02
103.10	104.60	1.50	Q311377	-0.3	-0.005	-0.01	-0.01	-0.01
104.60	105.70	1.10	Q311378	1.9	0.017	-0.01	-0.01	0.02
105.70	107.20	1.50	Q311379	161	0.69	0.22	3.1	8.8
107.20	108.70	1.50	Q311381	1.4	0.023	-0.01	0.04	0.03
108.70	110.20	1.50	Q311382	1.9	0.011	-0.01	0.05	0.07
110.20	111.60	1.40	Q311383	0.9	-0.005	-0.01	0.05	0.04

End of Hole @ 111.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-040

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414748.625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815597.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1410.4	Casing Depth (m):		Length (m):	172.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
17	-48	172		172	SS				☑	
47	-54	177		177	SS				☑	
93	-55	177		177	SS				☑	
126	-56	177		177	SS				☑	
172	-57	178		178	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.40 CASN Casing

10.40 22.00 RHYvl Lapilli tuff

10.4 - 22: Minor lapilli frags.

<<Min: 10.4 - 37 15% Min: Ankerite>>

<<Min: 10.4 - 46 2% Min: Pyrrhotite>>

22.00 36.00 RHYvl Lapilli tuff

<<Min: 26 - 38 1% Min: Calcite>>

36.00 44.90 RHYva Coarse grained to ash tuff

36 - 44.9: Intervals of stronger BI

<<Min: 38 - 55 7% Min: Calcite>>

From (m)	To (m)		Rocktype & Description
44.90	**46.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

44.9 - 46.7: Dyke, sharp contacts

<<Min: 46 - 102 2% Min: Pyrite>>

46.70	**47.50**	**RHYva**	**Coarse grained to ash tuff**
47.50	**66.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

47.5 - 66.7: poss FD porp

<<Min: 48 - 93 15% Min: Ankerite>>

<<Min: 55 - 110 0.5% Min: Calcite>>

<<Min: 59.7 - 65 2% Min: Pyrrhotite>>

66.70	**75.00**	**RHYva**	**Coarse grained to ash tuff**

<<Min: 72 - 93 1% Min: Pyrrhotite>>

75.00	**80.20**	**RHYvl**	**Lapilli tuff**
80.20	**92.20**	**RHYva**	**Coarse grained to ash tuff**
92.20	**120.70**	**MDSt**	**Rhyolite tuff dominant mudstone**

<<Min: 93 - 102 3% Min: Pyrrhotite>>

<<Min: 93 - 120.7 7% Min: Ankerite>>

<<Min: 120 - 151 1% Min: Pyrite>> Narrow intervals with fracture fill cp sp. Sulphosalt ?

120.70	**132.80**	**RHYva**	**Coarse grained to ash tuff**

120.7 - 132.8: moderate alteration overprint

<<Min: 120.7 - 133.5 5% Min: Ankerite>>

<<Min: 126.5 - 152 1% Min: Pyrrhotite>>

<<Alt: 120.7 - 133.5 Moderate (Alt) Muscovite>>

132.80	**133.50**	**MDSt**	**Rhyolite tuff dominant mudstone**
133.50	**139.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

133.5 - 139.7: Black graphitic throughout. Contorted interval. Cordierite as silica porphyroblasts up to 1cm.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 133.5 - 141 30% Min: Ankerite>>									
			<<Alt: 133.5 - 139.7 Moderate (Alt) Chlorite>> Narrrow intervals with SP, CP, PO, PY, rare sulphosalts.									
139.70	**146.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	146.50	148.00	1.50	Q311325	15.3	0.034	0.3	0.14	1.45
			139.7 - 146.6: strong hydrothermal alteration									
			<<Min: 141 - 151 1% Min: Ankerite>>									
			<<Alt: 139.7 - 146.6 Moderate (Alt) Muscovite>> Minor CP, SP									
146.60	**148.60**	**RHYva**	**Coarse grained to ash tuff**	148.00	149.50	1.50	Q311326	10.4	0.025	0.16	0.03	0.48
			146.6 - 148.6: Strong PY,CP. Contorted									
			<<Alt: 146.6 - 148.6 Weak (Alt) Chlorite>> Narrow intervalsof 2-3% CP,SP, PY,PO									
148.60	**149.40**	**RHYva**	**Coarse grained to ash tuff**									
			148.6 - 149.4: weak cordierite									
			<<Alt: 148.6 - 151 Moderate (Alt) Muscovite>>									
149.40	**149.60**	**RHYv**	**Rhyolite volcaniclastic**	149.50	151.00	1.50	Q311327	1.6	-0.005	0.04	-0.01	0.03
149.60	**152.10**	**RHYva**	**Coarse grained to ash tuff**									
152.10	**153.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**									
153.20	**158.90**	**OA**	**Magnetite bearing sulphides**									
158.90	**162.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
162.10	**162.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
162.50	**164.10**	**OF**	**Pyrrhotite rich sulphides**									
164.10	**168.80**	**RHYv**	**Rhyolite volcaniclastic**	165.60	167.10	1.50	Q311328	0.5	0.008	-0.01	-0.01	0.25
			164.1 - 168.8: no core									
			<<Min: 165.7 - 172.5 10% Min: Calcite>>	167.10	168.80	1.70	Q311329	0.7	0.013	-0.01	-0.01	0.11
			<<Alt: 165.6 - 166.3 Moderate (Alt) Chlorite>> strong BI									
			<<Alt: 166.3 - 172.5 Moderate (Alt) Silicification>>									

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-040

From (m)	To (m)	Rocktype & Description
		<<Alt: 166.3 - 172.5 Moderate (Alt) Muscovite>>
168.80	**172.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		168.8 - 172.5: aphanitic RHYi
		<<Min: 169 - 172.5 3% Min: Pyrite>>
		End of Hole @ 172.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
168.80	170.30	1.50	Q311331	1.4	0.032	-0.01	0.01	1.08

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-041

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414799.34375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815480.5	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1400.18	Casing Depth (m):		Length (m):	118.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
32	-58	175		175	SS				☑	
62	-58	177		177	SS				☑	
99	-58	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.90**	**OVBN** **Overburden**									
3.90	**8.70**	**MDSt** **Rhyolite tuff dominant mudstone**									
<<Min: 3.9 - 30 15% Min: Ankerite>>											
<<Min: 3.9 - 63.8 1% Min: Pyrite>> Concentrations as vein, wispy and disseminated, erratic distribution. Trace PO											
8.70	**32.10**	**RHYv** **Rhyolite volcaniclastic**									
8.7 - 32.1: healed breccia, minor QZ eyes											
<<Min: 30 - 34.8 7% Min: Ankerite>> some bands											
<<Struc: 19 - 19.1 Weak (Alt) Fault>> minor gouge											
32.10	**33.10**	**MDSt** **Rhyolite tuff dominant mudstone**									
33.10	**33.60**	**MDSc** **Carbonaceous dominant mudstone**									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
33.60	**34.80**	**MDSt**	**Rhyolite tuff dominant mudstone**									
34.80	**41.00**	**RHYv**	**Rhyolite volcaniclastic**									
<<Min: 34.8 - 63.8 15% Min: Ankerite>>												
41.00	**43.00**	**MDSt**	**Rhyolite tuff dominant mudstone**									
43.00	**52.00**	**RHYv**	**Rhyolite volcaniclastic**									
43 - 52: Healed breccia, some flow banded intervals												
<<Min: 46 - 51.5 1% Min: Calcite>>												
<<Struc: 45.4 - 51.8 Moderate-Strong (Alt) Fault>> numerous gouge-breccia bands,stronger near base of interval												
52.00	**63.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	60.30	61.80	1.50	B00267602	0.9	0.009	-0.01	0.02	0.02
52 - 63.7: MB replaced RHYv												
<<Min: 62.5 - 63.8 0.1% Min: Sphalerite>>				61.80	62.30	0.50	B00267603	3.5	0.022	-0.01	0.11	0.13
<<Alt: 58.3 - 63.8 Moderate-Strong (Alt) Muscovite>>												
<<Struc: 59.4 - 59.5 Weak (Alt) Fault>> gouge												
63.70	**64.90**	**OI**	**Heavilly disseminated sulphides in host schist**									
<<Min: 63.8 - 68.3 10% Min: Ankerite>> also disseminated												
64.90	**65.60**	**RHY**	**undifferentiated rhyolite**									
65.60	**67.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**									
67.00	**68.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
68.30	**69.70**	**RHY**	**undifferentiated rhyolite**									
<<Alt: 68.3 - 70.8 Moderate-Strong (Alt) Muscovite>>												
69.70	**70.80**	**OI**	**Heavilly disseminated sulphides in host schist**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.80	**72.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 70.8 - 79.9 5% Min: Ankerite>>											
72.30	**78.60**	**OA** **Magnetite bearing sulphides**									
78.60	**79.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 79.1 - 87.2 0.1% Min: Sphalerite>>											
<<Min: 79.1 - 87.2 5% Min: Pyrite>>		Narrow, < 5mm QZ with PY, SP									
79.90	**80.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
79.9 - 80: Strong altereration											
<<Alt: 79.9 - 87 Strong (Alt) Silicification>>											
80.00	**85.90**	**RHYi** **Aphanitic Rhyolite (intrusion)**	84.10	85.90	1.80	B00267604	17	0.193	0.01	0.16	0.57
80 - 85.9: Strongly broken Lots of core loss											
85.90	**88.70**	**RHY** **undifferentiated rhyolite**	85.90	87.40	1.50	B00267605	90.4	0.594	0.11	0.77	1.6
85.9 - 88.7: In strongly faulted zone											
<<Struc: 86.7 - 87.4 Moderate-Strong (Alt) Fault>>		Strongly broken core on both sides of gougey fault. Veining and intrusive below faulted interval	87.40	88.70	1.30	B00267606	10.2	0.108	-0.01	0.32	0.41
88.70	**89.60**	**RHYi** **Aphanitic Rhyolite (intrusion)**	88.70	89.50	0.80	B00267607	5.9	0.413	-0.01	0.15	0.85
<<Min: 88.7 - 89.6 10% Min: Pyrite>>											
<<Min: 88.7 - 89.6 10% Min: Calcite>>											
89.60	**91.00**	**RHY** **undifferentiated rhyolite**									
89.6 - 91: strong alt'n											
<<Min: 89.6 - 91 7% Min: Pyrite>>		Trace SP									
<<Min: 89.6 - 91.6 5% Min: Calcite>>											
<<Alt: 89.6 - 91 Strong (Alt) Silicification>>											
91.00	**92.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									

From (m)	To (m)		Rocktype & Description
<<Min: 91 - 96.7 3% Min: Ankerite>>			
92.00	**96.70**	**OA**	**Magnetite bearing sulphides**
<<Min: 96.3 - 100 5% Min: Calcite>>			
96.70	**100.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
96.7 - 100: strong SI alt'n			
<<Alt: 96.7 - 100 Strong (Alt) Silicification>>			
100.00	**104.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
104.20	**118.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
104.2 - 118.3: Wide range of alteration over entire unit producing highly variable appearance.			
<<Min: 106.1 - 107.5 1% Min: Pyrite>> PY in bands and as euhedral xtals			
<<Min: 107 - 110.6 15% Min: Calcite>>			
<<Min: 110.6 - 115.9 5% Min: Calcite>> also vein mineralisation			
<<Min: 115.9 - 118.3 15% Min: Calcite>> also vein			
<<Alt: 106.1 - 110.6 Moderate-Strong (Alt) Chlorite>> Variable over interval with pale green weaker CL to dark gren CL. Some intevals intense BI. Strong CA			
<<Alt: 106.1 - 110.6 Moderate-Strong (Alt) Biotite>> Also patchy,with strong CL Some intervals more dominant BI			
<<Alt: 110.6 - 115.9 Moderate (Alt) Silicification>>			
<<Alt: 110.6 - 115.9 Moderate-Strong (Alt) Muscovite>> Sericite. Light green-grey. Uniform texture,			
<<Alt: 115.9 - 118.3 Muscovite>> Sericite. As lime green mariposite.			
<<Struc: 108 - 109 Weak (Alt) Fault>> multiple minor gouge zones			
End of Hole @ 118.3			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
105.50	107.00	1.50	B00267608	1.2	0.007	0.02	-0.01	0.02
107.00	108.50	1.50	B00267609	1.4	0.014	0.03	0.02	0.12

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-042

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414799.375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815481.5	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1400.29	Casing Depth (m):		Length (m):	130.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
6	-89	180		180	SS				☑	
61	-89	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.40 OVBN Overburden

3.40 9.60 RHYv Rhyolite volcaniclastic

3.4 - 9.6: RHYcw in part, cut by strong 0.5 cm spaced foliations with well developed sericite on partings. Rare qtz phenos

<<Min: 3.4 - 56.3 7% Min: Ankerite>>

<<Min: 5.8 - 17.4 1% Min: Pyrrhotite>>

9.60 10.70 MDSw Coherent rhyolite flow with carbonaceous content

9.6 - 10.7: as above

10.70 51.40 RHYv Rhyolite volcaniclastic

10.7 - 51.4: cust by strongfoliation as above, Might be lapilli or RHYcw in part. Rare qtz phenos to at least 27m.

<<Min: 17.4 - 38.5 1% Min: Pyrite>>

<<Min: 38.5 - 48 2% Min: Pyrite>>

<<Min: 48 - 75.8 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Alt: 12 - 56 Moderate (Alt) Muscovite>>
51.40	**64.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 56.3 - 75 2% Min: Ankerite>>
		<<Alt: 56 - 74 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 57 - 74 Weak (Alt) Silicification>>
		<<Struc: 59.3 - 60.1 Moderate (Alt) Fault>> broken core minor gouge
64.70	**65.70**	**MDSc** **Carbonaceous dominant mudstone**
65.70	**71.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
71.60	**76.20**	**RHY** **undifferentiated rhyolite**
		<<Alt: 75.2 - 76 Weak (Alt) Biotite>> with chl-mag
		<<Alt: 75.4 - 76.2 Moderate (Alt) Chlorite>>
76.20	**78.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
78.80	**83.00**	**OA** **Magnetite bearing sulphides**
		78.8 - 83: 77.9-78.2; MDS
83.00	**85.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		83 - 85.5: ground core (missing core?), minor gouge
		<<Min: 83 - 85.5 20% Min: Pyrite>>
		<<Alt: 83 - 84.3 Trace (Alt) Cordierite>> replaced by qtz
		<<Alt: 83 - 88.4 Weak-Moderate (Alt) Chlorite>>
		<<Struc: 84.3 - 87.8 Strong (Alt) Fault>> Section of broken core, core rubble, missing core and minor gouge.
85.50	**87.80**	**OA** **Magnetite bearing sulphides**
		85.5 - 87.8: broken core,core rubble and missing core throughout unit
87.80	**89.90**	**OA** **Magnetite bearing sulphides**
		<<Alt: 87.8 - 96 Strong (Alt) Silicification>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
71.40	72.90	1.50	B00267132	1.9	0.017	-0.01	0.02	0.05
72.90	74.40	1.50	B00267133	0.9	0.01	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description
89.90	**91.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
91.70	**94.30**	**OA**	**Magnetite bearing sulphides**
94.30	**102.20**	**RHY**	**undifferentiated rhyolite**

94.3 - 102.2: 94.3- 99.2; pale grey geen alt banded MAFi. 00.2-102.2; heavily chlorite altered (MAFi?)..

<<Min: 94.3 - 99.2 5% Min: Calcite>>

<<Min: 94.3 - 102.2 3% Min: Pyrite>>

<<Min: 99.2 - 102.2 3% Min: Magnetite>>

<<Min: 99.2 - 102.2 2% Min: Calcite>>

<<Min: 99.2 - 103.6 7% Min: Ankerite>>

<<Alt: 94.5 - 99 Weak (Alt) Muscovite>>

<<Alt: 99.2 - 101.2 Moderate (Alt) Biotite>> with chl-mag

<<Alt: 99.2 - 102 Strong (Alt) Chlorite>>

<<Alt: 100.4 - 119.8 Strong (Alt) Silicification>>

From (m)	To (m)		Rocktype & Description
102.20	**103.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 102.9 - 103.6 5% Min: Pyrite>> with chl mg and po

<<Min: 102.9 - 103.6 1% Min: Chalcopyrite>>

<<Alt: 102.9 - 103.6 Trace (Alt) Cordierite>> replaced by qtz,

From (m)	To (m)		Rocktype & Description
103.00	**103.60**	**OI**	**Heavilly disseminated sulphides in host schist**

<<Alt: 103 - 103.6 Moderate (Alt) Biotite>>

From (m)	To (m)		Rocktype & Description
103.60	**109.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
109.30	**115.00**	**OA**	**Magnetite bearing sulphides**
115.00	**119.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
119.40	**119.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
96.10	97.40	1.30	B00267134	2.6	0.063	-0.01	-0.01	0.07
97.40	98.90	1.50	B00267135	11.6	0.119	-0.01	0.11	0.27
98.90	99.70	0.80	B00267136	33.7	0.2	0.15	0.32	1.11
99.70	100.80	1.10	B00267137	14.3	0.04	0.11	0.03	0.35

From (m)	To (m)	Rocktype & Description
<<Min: 119.4 - 119.8 5% Min: Pyrite>>		
119.80	**120.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
120.00	**130.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
120 - 130.1: Last 3 m with fuchsite, leucoxene		
<<Min: 120 - 130.1 0.5% Min: Pyrite>>		
<<Min: 120 - 130.1 5% Min: Calcite>>		
<<Alt: 120 - 122.4 Moderate-Strong (Alt) Biotite>>		
<<Alt: 122.4 - 130.1 Strong (Alt) Muscovite>>		sericite-fuchsite altered (pale green color) MAFi with leucoxene.
<<Alt: 122.5 - 130 Trace (Alt) Silicification>>		

End of Hole @ 130.2

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
122.10	123.60	1.50	B00267138	0.7	-0.005	-0.01	-0.01	0.06
123.60	125.10	1.50	B00267139	1.1	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-043

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414601.15625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815401.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1442.19	Casing Depth (m):		Length (m):	85	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
85	-45	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**9.10**	**OVBN** **Overburden**
9.10	**13.00**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 9.1 - 30.9 5% Min: Pyrite>>		
<<Min: 9.1 - 34.5 3% Min: Calcite>>		
13.00	**16.10**	**RHYi** **Aphanitic Rhyolite (intrusion)**
13 - 16.1: minor inclusions of RHYv		
16.10	**22.20**	**RHYv** **Rhyolite volcaniclastic**
<<Alt: 16.1 - 16.9 Moderate-Strong (Alt) Silicification>> parallel to felsic intrusive		
22.20	**25.00**	**RHYc** **Rhyolite coherent volcanics**
25.00	**30.70**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 30.2 - 37 4% Min: Ankerite>>		
<<Struc: 29.5 - 30 Weak-Moderate (Alt) Fault>> foliation parallelgouge and breccia		
30.70	**38.70**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 30.9 - 44.6 0.1% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
38.50	40.00	1.50	B00267513	0.4	0.006	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
<<Alt: 30.9 - 34.8 Weak-Moderate (Alt) Muscovite>>			
<<Alt: 34.8 - 41 Weak-Moderate (Alt) Muscovite>>			
38.70	**44.70**	**MDSt**	**Rhyolite tuff dominant mudstone**
38.7 - 44.7: QZ vein at bottom of interval, 15 cm.			
<<Min: 41 - 42 5% Min: Ankerite>>			
<<Alt: 41 - 44.6 Moderate-Strong (Alt) Muscovite>>			
44.70	**45.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 45.1 - 47.4 0.1% Min: Pyrite>>			
45.20	**47.40**	**RHYv**	**Rhyolite volcaniclastic**
<<Alt: 47 - 47.4 Moderate (Alt) Muscovite>>			
<<Alt: 47 - 47.4 Moderate (Alt) Chlorite>>			
<<Alt: 47 - 47.4 Weak-Moderate (Alt) Biotite>>			
47.40	**48.30**	**OA**	**Magnetite bearing sulphides**
48.30	**49.40**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 48.3 - 49.5 0.1% Min: Pyrite>>			
49.40	**50.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
<<Min: 49.5 - 73.4 10% Min: Ankerite>> Numerous forms. Veining, patchy and selective replacement			
50.10	**52.40**	**OF**	**Pyrrhotite rich sulphides**
52.40	**53.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
53.30	**53.80**	**OF**	**Pyrrhotite rich sulphides**
53.80	**54.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
54.10	**54.60**	**OI**	**Heavilly disseminated sulphides in host schist**
54.60	**55.40**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
40.00	41.50	1.50	B00267514	0.4	0.006	-0.01	-0.01	-0.01
41.50	43.00	1.50	B00267515	0.6	0.008	-0.01	-0.01	-0.01
43.00	44.60	1.60	B00267516	0.7	0.011	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description
55.40	**57.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
57.00	**57.90**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
57.90	**58.30**	**OA**	**Magnetite bearing sulphides**
58.30	**65.20**	**RHYv**	**Rhyolite volcaniclastic**

58.3 - 65.2: Strongly altered and veined interval. QZ,AK,CI,TO,BI vein mineralogy

<<Min: 58.3 - 65.2 0.1% Min: Pyrite>>

<<Alt: 58.3 - 59 Weak-Moderate (Alt) Cordierite>>

<<Alt: 58.3 - 59.9 Moderate-Strong (Alt) Chlorite>>

<<Alt: 59.9 - 61.6 Weak-Moderate (Alt) Chlorite>>

<<Alt: 61.3 - 61.6 Moderate (Alt) Cordierite>>

65.20	**65.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

65.2 - 65.7: Cominco code ATG

65.70	**65.90**	**RHYv**	**Rhyolite volcaniclastic**
65.90	**66.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
66.30	**66.50**	**RHYv**	**Rhyolite volcaniclastic**
66.50	**68.50**	**OA**	**Magnetite bearing sulphides**
68.50	**68.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
68.70	**81.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 68.7 - 85 0.1% Min: Pyrite>>

<<Min: 73.4 - 85 5% Min: Ankerite>>

<<Min: 76 - 85 5% Min: Calcite>> minor CA stringers

<<Alt: 68.7 - 78.3 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
59.80	61.30	1.50	B00267517	1.6	0.006	0.03	-0.01	0.03
61.30	62.80	1.50	B00267518	2.1	-0.005	-0.01	0.03	0.1
62.80	63.70	0.90	B00267519	-0.3	-0.005	-0.01	-0.01	-0.01
63.70	64.50	0.80	B00267521	0.9	0.008	-0.01	-0.01	0.05
70.20	71.70	1.50	B00267522	0.4	-0.005	-0.01	-0.01	0.01
71.70	73.20	1.50	B00267523	3.1	0.006	-0.01	0.08	0.12

From (m)	To (m)	Rocktype & Description
81.30	**83.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**
83.50	**85.00**	**RHYv** **Rhyolite volcaniclastic**
83.5 - 85: Weak lapilli?		
End of Hole @ 85		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-044

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414601.102	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815401.449	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1442.6	Casing Depth (m):		Length (m):	106.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
15	-89	180		180	SS				☑	
61	-88	180		180	SS				☑	
106	-88	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 15.60 RHYv Rhyolite volcaniclastic

9.1 - 15.6: could have sections of lapilli or blocks of cw

<<Min: 9.1 - 15.6 2% Min: Pyrite>>

<<Min: 9.1 - 15.6 2% Min: Pyrrhotite>>

<<Min: 9.1 - 29.5 1% Min: Ankerite>>

<<Alt: 9.1 - 15.6 Trace (Alt) Biotite>>

<<Alt: 15 - 19.5 Moderate-Strong (Alt) Silicification>> likely overprint due to RHYi

15.60 16.30 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 15.6 - 26.5 2% Min: Pyrite>>

16.30 29.00 RHYv Rhyolite volcaniclastic

16.3 - 29: 1% diss biotite,unit has sections of posibe vl?

<<Min: 20.7 - 31 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description

<<Min: 26.5 - 30.4 2% Min: Pyrrhotite>>

<<Alt: 21.3 - 27.4 Trace (Alt) Muscovite>>

<<Alt: 27.4 - 36.6 Weak (Alt) Muscovite>>

29.00 30.40 MDSt Rhyolite tuff dominant mudstone

<<Min: 29.5 - 54.4 7% Min: Ankerite>>

30.40 30.70 MDSc Carbonaceous dominant mudstone

30.4 - 30.7: 15cm section missing

<<Min: 30.4 - 39.6 2% Min: Pyrite>>

<<Min: 30.46 - 39.6 1% Min: Pyrrhotite>>

30.70 39.10 MDSt Rhyolite tuff dominant mudstone

30.7 - 39.1: has m+ sections RHYv

<<Alt: 36.6 - 54.4 Weak-Moderate (Alt) Muscovite>> average intensty increases downhole

39.10 39.60 MDSc Carbonaceous dominant mudstone

39.1 - 39.6: slip planes on foliation

39.60 54.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39.6 - 54.4: not great RHYcw, likely has sections of RHYv

<<Min: 39.6 - 54.4 4% Min: Pyrite>>

54.40 56.10 OA Magnetite bearing sulphides

54.4 - 56.1: foliated and banded, weakly schistose

<<Min: 54.4 - 65.6 15% Min: Ankerite>>

<<Alt: 54.8 - 65.6 Moderate-Strong (Alt) Cordierite>> cord with quartz and in qtz-tourmaline-biotite veins and in ankerite porphroblasts.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.90	51.40	1.50	B00267009	0.4	0.006	-0.01	-0.01	-0.01
51.40	52.90	1.50	B00267011	-0.3	0.009	-0.01	-0.01	-0.01
52.90	54.40	1.50	B00267012	0.7	0.014	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
56.10	**56.80**	**OI** **Heavilly disseminated sulphides in host schist**									
56.1 - 56.8: contains significant cordierite at top and bottom of unit.											
56.80	**62.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	62.50	64.00	1.50	B00267013	2.6	0.013	0.08	-0.01	0.04
<<Min: 57 - 59.8 2% Min: Pyrite>>											
<<Min: 61 - 65.7 4% Min: Pyrite>> and as dissem											
<<Alt: 57 - 59.8 Moderate (Alt) Chlorite>> chl - bitite clots and bands around qtz-cord-ankerite clots and bands, Coarse cm scale mottled texture.											
<<Alt: 57 - 64 Weak (Alt) Muscovite>> strong cordierite											
<<Alt: 58.1 - 65.7 Moderate (Alt) Biotite>> locally s thin mm wispy bands											
<<Alt: 60.5 - 65.5 Moderate (Alt) Chlorite>>											
62.80	**78.30**	**RHYv** **Rhyolite volcaniclastic**	64.00	65.50	1.50	B00267014	2.5	0.035	0.05	0.02	0.7
62.8 - 78.3: Musc - cord											
<<Min: 65.6 - 76.8 10% Min: Ankerite>>			73.80	75.30	1.50	B00267015	3.8	0.037	0.14	-0.01	0.03
<<Min: 65.7 - 78 2% Min: Pyrite>>			75.30	76.80	1.50	B00267016	-0.3	-0.005	-0.01	-0.01	0.01
<<Alt: 64 - 71.5 Moderate (Alt) Silicification>>											
<<Alt: 64 - 72.5 Moderate-Strong (Alt) Muscovite>> coincides with only minor cordierite											
<<Alt: 71.5 - 79.3 Moderate (Alt) Biotite>> locally as thin mm wispy bands and on margins of qtz-cord-ankerite-tourmaline veins.											
<<Alt: 71.6 - 79 Moderate (Alt) Chlorite>> chl bands as well. Chl with biot-qtz-cord-ankerite porphroblasts and bands											
<<Alt: 72.5 - 78 Weak-Moderate (Alt) Muscovite>>											
<<Alt: 73.2 - 78 Weak-Moderate (Alt) Cordierite>> found with qtz and in ankerite porphyroblasts - tough to see on cloudy wet day!											
<<Struc: 67.1 - 73.6 Strong (Alt) Foliation>>											
78.30	**82.10**	**OA** **Magnetite bearing sulphides**									
78.3 - 82.1: banded and foliated, weakly schistose. Core missing in interval 81.7-89.5m											
82.10	**89.20**	**OA** **Magnetite bearing sulphides**									
89.20	**90.10**	**OA** **Magnetite bearing sulphides**									
90.10	**90.60**	**OA** **Magnetite bearing sulphides**									
90.60	**91.30**	**OA** **Magnetite bearing sulphides**									

From (m)	To (m)		Rocktype & Description
91.30	**92.10**	**OA**	**Magnetite bearing sulphides**
92.10	**92.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
92.40	**94.40**	**OA**	**Magnetite bearing sulphides**
94.40	**94.50**	**OF**	**Pyrrhotite rich sulphides**
94.50	**102.70**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 94.5 - 102.7 2% Min: Pyrite>>

<<Min: 94.5 - 106.7 8% Min: Calcite>>

<<Min: 94.5 - 106.7 8% Min: Ankerite>>

<<Alt: 94.5 - 95.5 Weak (Alt) Chlorite>>

<<Alt: 94.5 - 95.5 Weak (Alt) Biotite>>

<<Alt: 94.5 - 102.7 Weak (Alt) Muscovite>> RHYi starts at 102.7.Musc could also be syngenetic as MSSX ends at 94.5.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
96.00	97.50	1.50	B00267017	1.4	-0.005	-0.01	0.01	0.09
97.50	99.00	1.50	B00267018	-0.3	0.009	-0.01	-0.01	-0.01

102.70	**106.70**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

102.7 - 106.7: contains <1% <1mm feldspar phenos, foliated near 106.7 EOH.

<<Min: 102.7 - 106.7 1% Min: Pyrite>>

End of Hole @ 106.7

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-045

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414800.111	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815409.507	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1400.341	Casing Depth (m):		Length (m):	59.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
6	-59	180		180	SS				☑	
29	-57	180		180	SS				☑	
59	-58	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.20**	**OVBN** **Overburden**									
5.20	**10.60**	**MDSc** **Carbonaceous dominant mudstone**									
10.60	**19.00**	**MDSt** **Rhyolite tuff dominant mudstone**	16.50	18.00	1.50	B00267611	2	0.017	-0.01	0.07	0.08
<<Min: 11.5 - 21 1% Min: Pyrite>>			18.00	19.50	1.50	B00267612	0.8	0.196	-0.01	-0.01	0.02
<<Min: 14 - 34 3% Min: Ankerite>>											
19.00	**21.00**	**RHYv** **Rhyolite volcaniclastic**									
19 - 21: Thin banding											
<<Min: 20.9 - 23 1% Min: Calcite>>											
<<Alt: 19 - 21 Moderate-Strong (Alt) Muscovite>>											
<<Struc: 19.1 - 19.2 Weak (Alt) Fault>> minor gouge											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
21.00	**23.00**	**OI**	**Heavilly disseminated sulphides in host schist**									
23.00	**25.00**	**RHYv**	**Rhyolite volcaniclastic**	24.50	26.00	1.50	B00267613	1.2	0.019	-0.01	-0.01	0.02
23 - 25: Fragmental to "pebbly" near base of interval												
<<Min: 23 - 29.5 1% Min: Pyrite>> disseminated												
<<Min: 23.5 - 30.6 3% Min: Calcite>>												
25.00	**29.50**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	26.00	27.80	1.80	B00267614	0.5	0.012	-0.01	-0.01	-0.01
25 - 29.5: Med grey siliceous with breccia to "pebbly" appearance.												
				27.80	29.30	1.50	B00267615	0.4	0.013	-0.01	-0.01	-0.01
29.50	**30.60**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**									
30.60	**35.60**	**RHYv**	**Rhyolite volcaniclastic**	30.60	32.10	1.50	B00267616	3.6	0.03	-0.01	0.08	0.14
<<Min: 30.6 - 34 1% Min: Calcite>>				32.10	33.10	1.00	B00267617	2.1	0.015	-0.01	0.03	0.05
<<Min: 30.6 - 35.6 1% Min: Pyrite>>				33.10	34.10	1.00	B00267618	9.7	0.055	0.06	0.35	0.93
<<Min: 34 - 35.6 10% Min: Ankerite>>												
<<Alt: 30.6 - 35.6 Moderate-Strong (Alt) Muscovite>>												
35.60	**36.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
36.90	**37.30**	**OG**	**Chalcopyrite rich sulphides**									
37.30	**38.10**	**OD**	**Brecciated sulphides**									
38.10	**42.30**	**OA**	**Magnetite bearing sulphides**									
42.30	**45.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 43 - 45.5 1% Min: Calcite>>												
<<Min: 44 - 57.7 5% Min: Ankerite>>												
45.20	**57.90**	**RHY**	**undifferentiated rhyolite**	46.30	47.80	1.50	B00267619	24.6	0.576	-0.01	0.12	0.3
45.2 - 57.9: MB changed to RHY.Possibly MAFi. Light grey-green strongly altered. Minor siliceous, banded area with minor aphanitic RHYi. Strongly broken, faulted and veined.												
<<Min: 45.2 - 50.9 0.1% Min: Sphalerite>> trace GL				47.80	49.30	1.50	B00267621	22.9	0.093	0.02	0.11	0.27

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 45.2 - 50.9 2% Min: Pyrite>>

<<Min: 45.5 - 47.5 1% Min: Calcite>>

<<Min: 48 - 57.9 1% Min: Calcite>>

<<Min: 52.4 - 59.8 1% Min: Pyrite>> wispy, trce SP, GL

<<Alt: 45.2 - 48.9 Moderate (Alt) Silicification>>

<<Alt: 48.9 - 50.9 Weak (Alt) Muscovite>> Moderate to strong MS.

<<Alt: 53.5 - 57.9 Weak (Alt) Chlorite>> Minor intervals of CL, BI

<<Alt: 53.5 - 57.9 Weak (Alt) Biotite>> In darker alt'n intervals

<<Struc: 53.4 - 57 Weak-Moderate (Alt) Fault>> Gouge zones, broken core, veining

57.90 58.90 RHYi Aphanitic Rhyolite (intrusion)

57.9 - 58.9: Faulted bottom contact.

58.90 59.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

58.9 - 59.8: Bleached and altered

<<Alt: 58.9 - 59.8 Weak (Alt) Muscovite>> Bleached, MS altered

<<Struc: 58.9 - 59.8 Weak-Moderate (Alt) Fault>> Gouge, broken core and veining

End of Hole @ 59.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-046

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.644	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815474.456	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1431.388	Casing Depth (m):		Length (m):	121.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
61	-55	180		180	SS				☑	
121	-56	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 11.80 MDSt Rhyolite tuff dominant mudstone

9.1 - 11.8: banded in part, possibly flow MDSTcw

<<Min: 9.1 - 25 3% Min: Pyrite>>

<<Min: 9.1 - 53.1 3% Min: Ankerite>>

<<Alt: 9.1 - 52.4 Weak-Moderate (Alt) Muscovite>> variable alt'n 2-3

11.80 29.20 RHYc Rhyolite coherant volcanics

<<Min: 25 - 39 1% Min: Pyrite>>

<<Min: 28 - 33.3 2% Min: Calcite>>

29.20 52.40 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 39 - 49 3% Min: Pyrite>>

<<Min: 43 - 48.5 0.5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description

<<Min: 49 - 51.8 3% Min: Pyrite>>

<<Min: 51.8 - 52.4 5% Min: Pyrite>>

<<Min: 51.8 - 52.4 0.3% Min: Chalcopyrite>>

<<Struc: 39.5 - 39.7 Weak (Alt) Fault>> Gouge zone

52.40	**58.40**	**RHYc**	**Rhyolite coherant volcanics**

52.4 - 58.4: Strongly altered.

<<Min: 52.4 - 69.5 1% Min: Pyrite>>

<<Min: 53.1 - 58.4 30% Min: Ankerite>>

<<Alt: 52.4 - 58.4 Moderate-Strong (Alt) Muscovite>> Variable up to intensity 6

<<Struc: 58.1 - 58.4 Weak-Moderate (Alt) Fault>> Fault gouge and breccia

58.40	**62.40**	**MDSc**	**Carbonaceous dominant mudstone**

58.4 - 62.4: strong QZ-AK alt'n and veining. Minor QZ eyes

<<Min: 58.4 - 69.5 5% Min: Ankerite>>

<<Alt: 58.4 - 61.5 Moderate (Alt) Muscovite>>

<<Alt: 61.5 - 69.5 Moderate-Strong (Alt) Muscovite>> Intensity up to 6

62.40	**66.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
66.50	**69.50**	**RHY**	**undifferentiated rhyolite**
69.50	**70.80**	**RHY**	**undifferentiated rhyolite**

69.5 - 70.8: No core in this interval. Assumption it is similar to rock above.

70.80	**72.10**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
72.10	**73.50**	**OA**	**Magnetite bearing sulphides**
73.50	**76.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
76.40	**101.70**	**RHY**	**undifferentiated rhyolite**

76.4 - 101.7: No core in boxes, unknown lithology.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.70	**103.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
103.00	**108.10**	**OH** **Fine grained, megascopically homogeneous pyrite rock**									
108.10	**110.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
110.00	**111.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

110 - 111.4: No core, assumption that it is the MAFi as below

111.40	**121.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

111.4 - 121.3: Variable alteration of mafic dyke. From weak to intense silica. Strong calcite banding.

<<Min: 111.4 - 121.3 0.5% Min: Pyrite>>

<<Min: 111.4 - 121.3 7% Min: Calcite>> selective replacement and bands

<<Alt: 111.4 - 116.6 Weak-Moderate (Alt) Chlorite>>

<<Alt: 116.6 - 117.1 Strong (Alt) Silicification>> weak bleaching of mafic rx

<<Alt: 117.1 - 118.6 Weak-Moderate (Alt) Chlorite>>

<<Alt: 118.6 - 121.3 Intense (Alt) Silicification>> Varible alteration intensity from 5-7 with strong bleaching.

<<Struc: 112.9 - 113.1 Weak (Alt) Fault>> minor fault gouge

End of Hole @ 121.3

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-047

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.5	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815521	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1395.68	Casing Depth (m):		Length (m):	145.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
6	-89	41		41	SS				☑	
26	-88	210		210	SS				☑	
57	-84	183		183	SS				☑	
87	-81	186		186	SS				☑	
118	-80	188		188	SS				☑	
145	-79	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 4.20 OVBN Overburden

4.20 9.80 RHYvl Lapilli tuff

<<Min: 4.2 - 15.8 1% Min: Pyrrhotite>> Fine wisps of PO also.

<<Min: 4.2 - 15.8 0.25% Min: Chalcopyrite>>

<<Min: 4.2 - 19.4 0.5% Min: Pyrite>>

<<Min: 4.2 - 25.2 5% Min: Ankerite>>

<<Alt: 4.2 - 14.4 Weak (Alt) Muscovite>> Trace PY+PO as disseminations, blebs, and thin bands throughout.

9.80 11.60 MDSw Coherent rhyolite flow with carbonaceous content

9.8 - 11.6: 11-12 very weakly carbonaceous

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

11.60 14.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

11.6 - 14.4: 11-12 very weakly carbonaceous

14.40 19.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 15.8 - 19.4 0.5% Min: Pyrrhotite>> Fine wisps of PO also.

<<Alt: 14.4 - 25.4 Weak (Alt) Muscovite>> Trace PY+PO as disseminations, blebs, and thin bands throughout.

19.40 25.40 RHYvl Lapilli tuff

19.4 - 25.4: this thin banded could be planar flow banding

<<Min: 19.4 - 25.2 1% Min: Pyrite>>

<<Min: 19.4 - 25.2 1% Min: Pyrrhotite>> Fine wisps of PO also.

<<Min: 23.2 - 31.8 2% Min: Calcite>>

<<Min: 25.2 - 32.3 0.5% Min: Pyrrhotite>> Fine wisps of PO also.

<<Min: 25.2 - 88.4 0.5% Min: Pyrite>>

25.40 30.30 RHYvl Lapilli tuff

25.4 - 30.3: 5% BI

<<Min: 28.2 - 41.7 5% Min: Ankerite>>

<<Alt: 25.4 - 30.3 Weak (Alt) Muscovite>> Only trace CB. Also 15% CL and 5% BI. Not part of the PRX alt package though. Trace PY+PO as disseminations, blebs, and thin bands throughout.

30.30 41.70 RHYvl Lapilli tuff

<<Min: 32.3 - 53.9 0.01% Min: Chalcopyrite>>

<<Min: 32.3 - 65.8 1% Min: Pyrrhotite>> Fine wisps and blebs of PO also.

<<Min: 38.2 - 54.7 0.01% Min: Sphalerite>>

<<Min: 41.6 - 54.7 0.01% Min: Galena>>

<<Alt: 30.3 - 84.2 Weak-Moderate (Alt) Muscovite>> Trace PY+PO as disseminations, blebs, and thin bands throughout.

41.70 54.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 41.7 - 72.8 2% Min: Ankerite>>

54.70 61.40 RHYvl Lapilli tuff

<<Min: 58.1 - 63.5 0.25% Min: Sphalerite>> Fine wisps and blebs of SP in veins also.

From (m)	To (m)		Rocktype & Description
61.40	**72.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 65.8 - 74.8 0.01% Min: Sphalerite>>			
<<Min: 65.8 - 88.4 0.5% Min: Pyrrhotite>> Fine wisps of PO also.			
<<Struc: 63.5 - 76 Moderate (Alt) Fault>> Mixed zone of broken rock and flg. Flg zones range from 10cm to 40cm.			
72.80	**82.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 72.8 - 88.4 5% Min: Ankerite>>			
82.10	**84.30**	**MDSc**	**Carbonaceous dominant mudstone**
<<Alt: 84.2 - 88.4 Strong (Alt) Muscovite>> Trace PY+PO as disseminations, blebs, and thin bands throughout.			
84.30	**88.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
88.40	**92.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Min: 88.4 - 98.7 7% Min: Ankerite>>			
<<Alt: 88.4 - 92.9 Intense (Alt) Chlorite>>			
92.90	**99.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
92.9 - 99.3: Retrograde Cippo.			
<<Min: 98.7 - 102.6 7% Min: Calcite>>			
<<Min: 98.7 - 102.6 2% Min: Ankerite>>			
<<Alt: 92.9 - 99.3 Intense (Alt) Cordierite>>			
99.30	**101.00**	**OG**	**Chalcopyrite rich sulphides**
99.3 - 101: 1-2 cm BI poikiloblasts.			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.90	85.40	1.50	R080107	1.5	0.014	-0.01	0.05	0.16
85.40	86.90	1.50	R080108	0.6	0.05	-0.01	0.03	0.06
86.90	88.40	1.50	R080109	1	-0.005	-0.01	0.04	0.09
88.40	89.90	1.50	R080111	7.4	0.047	0.06	0.35	6.76
89.90	91.40	1.50	R080112	29.9	0.158	0.53	1.07	3.81
91.40	92.90	1.50	R080113	83.1	2.02	4.7	1.06	3.24
92.90	94.40	1.50	R080114	107	2.83	5.49	0.29	0.84
94.40	95.90	1.50	R080115	29.6	0.339	2.22	0.03	0.21
95.90	97.40	1.50	R080116	2.3	0.028	0.15	-0.01	0.08
97.40	99.30	1.90	R080117	3	-0.005	0.01	0.05	0.22
99.30	101.00	1.70	R080118	226	3.19	13.3	0.27	1.18

From (m)	To (m)		Rocktype & Description
101.00	**103.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
101 - 103: Multi stage veins. Mineralized feeder zone.			
<<Min: 102.6 - 110.7 15% Min: Ankerite>>			
<<Alt: 101 - 103 Intense (Alt) Chlorite>>			
<<Struc: 101 - 102.6 Moderate (Alt) Fault>> Broken rock.			
103.00	**104.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
104.70	**110.00**	**RHY**	**undifferentiated rhyolite**
<<Min: 104.7 - 114.6 1% Min: Sphalerite>>			
<<Min: 104.7 - 114.6 2% Min: Pyrite>> Locally cm scale isolated lenses.			
<<Min: 104.7 - 114.6 3% Min: Pyrrhotite>> Locally cm sized isolated lenses.			
<<Min: 104.7 - 114.6 0.5% Min: Galena>>			
<<Min: 104.7 - 114.6 0.5% Min: Chalcopyrite>>			
<<Alt: 104.7 - 109.9 Strong (Alt) Muscovite>>			
110.00	**114.60**	**RHY**	**undifferentiated rhyolite**
110 - 114.6: Protolith obscured by altertion			
<<Min: 110.7 - 127.2 2% Min: Ankerite>>			
<<Min: 110.7 - 127.3 5% Min: Calcite>>			
<<Alt: 110 - 120.6 Intense (Alt) Chlorite>>			
114.60	**115.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
115.00	**120.60**	**RHY**	**undifferentiated rhyolite**
115 - 120.6: Protlith obscured by alteration.			
<<Min: 115 - 120.6 1.5% Min: Sphalerite>>			
<<Min: 115 - 120.6 0.5% Min: Pyrite>>			
<<Min: 115 - 120.6 1% Min: Pyrrhotite>>			
<<Min: 115 - 120.6 0.5% Min: Galena>>			
<<Min: 115 - 120.6 0.25% Min: Chalcopyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.00	103.00	2.00	R080119	50.1	0.843	2.78	0.1	0.5
103.00	104.70	1.70	R080123	344	2.99	0.5	3.3	9.14
104.70	106.10	1.40	R080124	5.3	0.052	0.1	0.03	0.1
106.10	107.30	1.20	R080125	1.3	0.015	0.04	-0.01	0.06
107.30	108.50	1.20	R080126	10.2	0.032	0.02	0.07	0.77
108.50	110.00	1.50	R080127	12.8	0.038	0.04	0.17	0.47
110.00	111.50	1.50	R080128	1.3	0.006	0.02	0.01	0.03
111.50	113.00	1.50	R080129	6.8	0.011	0.03	0.09	0.38
113.00	114.50	1.50	R080131	35.7	0.086	0.42	0.35	1.47
114.50	116.00	1.50	R080132	24.5	0.141	0.13	0.13	0.61
116.00	117.50	1.50	R080133	1.4	0.01	-0.01	-0.01	0.05
117.50	119.10	1.60	R080134	6.3	0.013	0.03	0.04	0.36
119.10	120.60	1.50	R080135	8.4	0.022	0.02	0.17	0.43

From (m)	To (m)		Rocktype & Description
120.60	**122.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
122.30	**123.10**	**RHY**	**undifferentiated rhyolite**

122.3 - 123.1: Protolith obscured by alteration.

<<Min: 122.3 - 123.1 1% Min: Sphalerite>>
<<Min: 122.3 - 123.1 0.01% Min: Pyrite>>
<<Min: 122.3 - 123.1 1% Min: Pyrrhotite>>
<<Min: 122.3 - 123.1 0.5% Min: Galena>>
<<Min: 122.3 - 123.1 0.5% Min: Chalcopyrite>>
<<Alt: 122.3 - 134.9 Moderate-Strong (Alt) Chlorite>>

123.10	**123.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
123.30	**123.90**	**RHY**	**undifferentiated rhyolite**

123.3 - 123.9: Protolith obscured by alteration.

<<Min: 123.3 - 123.9 1% Min: Sphalerite>>
<<Min: 123.3 - 123.9 0.5% Min: Pyrite>>
<<Min: 123.3 - 123.9 2% Min: Pyrrhotite>>
<<Min: 123.3 - 123.9 0.5% Min: Galena>>
<<Min: 123.3 - 123.9 0.5% Min: Chalcopyrite>>

123.90	**124.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
124.70	**130.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 124.7 - 130.2 1% Min: Sphalerite>>
<<Min: 124.7 - 130.2 1% Min: Pyrite>> One 10cm section of OB MXSX.
<<Min: 124.7 - 130.2 2% Min: Pyrrhotite>>
<<Min: 124.7 - 130.2 0.5% Min: Galena>>
<<Min: 124.7 - 130.2 0.5% Min: Chalcopyrite>>
<<Min: 127.2 - 141.2 1% Min: Ankerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
120.60	122.30	1.70	R080136	44.8	0.614	0.5	0.5	2.32
122.30	123.30	1.00	R080137	24.5	0.493	0.59	0.08	0.48
123.30	124.70	1.40	R080138	44.6	0.47	0.33	0.6	4.81
124.70	126.20	1.50	R080139	9.4	0.114	0.05	0.1	0.62
126.20	127.70	1.50	R080141	24	0.12	0.11	0.42	1.08
127.70	129.20	1.50	R080142	4.4	0.038	0.02	0.06	0.28
129.20	130.20	1.00	R080143	4.9	0.037	0.02	0.07	0.18

From (m)	To (m)	Rocktype & Description
130.20	**134.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
134.90	**141.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 134.9 - 137.1 1% Min: Sphalerite>>		
<<Min: 134.9 - 137.1 2% Min: Pyrite>>		
<<Min: 134.9 - 137.1 2% Min: Pyrrhotite>>		
<<Min: 134.9 - 137.1 0.5% Min: Galena>>		
<<Min: 134.9 - 137.1 0.25% Min: Chalcopyrite>>		
<<Min: 134.9 - 141.2 20% Min: Calcite>>		
<<Min: 137.1 - 145.4 0.01% Min: Pyrite>> Locally DIS		
<<Min: 137.1 - 145.4 0.01% Min: Pyrrhotite>> Locally DIS		
<<Alt: 139.6 - 145.4 Moderate-Strong (Alt) Silicification>>		
<<Alt: 139.6 - 145.4 Moderate-Strong (Alt) Muscovite>>		
141.20	**145.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
141.2 - 145.4: Fine grained tourqoise mica locally.		
<<Min: 141.2 - 145.4 0.5% Min: Calcite>>		
End of Hole @ 145.4		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
130.20	131.70	1.50	R080144	92	1.07	0.21	1.18	4.27
131.70	133.20	1.50	R080145	145	1.82	0.45	3.11	6.37
133.20	134.90	1.70	R080146	150	1.19	0.33	3.7	8.29
134.90	136.40	1.50	R080147	13.4	0.064	0.1	0.27	0.75
136.40	137.90	1.50	R080148	36.4	0.631	0.89	0.35	0.49
137.90	139.40	1.50	R080149	0.4	0.008	-0.01	-0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-048

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414551.357	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815349.894	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1455.418	Casing Depth (m):		Length (m):	66.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
14	-46	180		180	SS				☑	
32	-46	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.20**	**OVBN**	**Overburden**									
9.20	**27.90**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**VFG**	26.50	27.90	1.40	B00267501	24.7	0.05	0.23	0.19	2.52

9.2 - 27.9: aphanitic to 18m then weak qz eyes and weak foliation 18 to 27.9, possibly RHYva

<<Min: 9.2 - 20.5 4% Min: Pyrite>>
<<Min: 20.4 - 26.5 7% Min: Calcite>>
<<Min: 23.2 - 45.6 5% Min: Ankerite>>
<<Min: 26.5 - 27.7 5% Min: Sphalerite>> With Pyrite
<<Min: 26.5 - 27.7 15% Min: Pyrite>>
<<Alt: 18 - 43.6 Weak (Alt) Muscovite>>

27.90 30.70 RHYv Rhyolite volcaniclastic

27.9 - 30.7: weak banding

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
30.70	**32.90**	**MDSt** **Rhyolite tuff dominant mudstone**									
30.7 - 32.9: Slightly more carbonaceous toward bottom of interval											
32.90	**45.60**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 42.2 - 45.6 7% Min: Pyrite>>											
<<Min: 44.3 - 44.7 7% Min: Sphalerite>>											
<<Min: 44.3 - 44.7 0.5% Min: Chalcopyrite>> With PY, SP											
<<Alt: 43.6 - 45.6 Moderate (Alt) Muscovite>>											
45.60	**56.30**	**RHYv** **Rhyolite volcaniclastic**	54.90	56.30	1.40	B00267502	57.5	0.305	1.04	0.48	1.65
45.6 - 56.3: very strong alt'n. MS, CH, AK											
<<Min: 47 - 54.9 5% Min: Pyrite>> trace CP Patchy											
<<Min: 47 - 56.6 25% Min: Ankerite>>											
<<Min: 54.9 - 55.8 5% Min: Sphalerite>>											
<<Min: 54.9 - 55.8 20% Min: Pyrite>>											
<<Min: 54.9 - 55.8 0.5% Min: Galena>>											
<<Min: 54.9 - 55.8 4% Min: Chalcopyrite>>											
<<Alt: 45.6 - 47.5 Moderate (Alt) Chlorite>>											
<<Alt: 45.6 - 54.9 Strong (Alt) Muscovite>>											
<<Alt: 47.5 - 49.5 Strong (Alt) Chlorite>>											
<<Alt: 47.5 - 54.7 Strong (Alt) Cordierite>> Cordierite in part or wholley replaced by ankerite and commonly rimmed with chlorite. All in a chlorite sericite matrix.											
<<Alt: 49.5 - 52.5 Weak-Moderate (Alt) Biotite>>											
<<Alt: 52.5 - 54.9 Weak (Alt) Chlorite>>											
<<Alt: 54.9 - 57.1 Moderate (Alt) Muscovite>>											
56.30	**66.10**	**RHYva** **Coarse grained to ash tuff**	56.30	57.80	1.50	B00267503	0.3	-0.005	-0.01	-0.01	0.05
56.3 - 66.1: Weak banding. Minor lithic frags.											
<<Min: 56.6 - 63 5% Min: Ankerite>>			57.80	58.90	1.10	B00267504	-0.3	0.008	-0.01	-0.01	-0.01
<<Min: 57.8 - 58.9 5% Min: Pyrite>>			58.90	60.40	1.50	B00267505	0.5	0.011	-0.01	-0.01	0.02
<<Min: 58.8 - 60 3% Min: Calcite>>			60.40	61.40	1.00	B00267506	-0.3	0.008	-0.01	-0.01	0.01
<<Min: 58.9 - 60.4 2% Min: Sulphosalts>> bands of disseminated crystals, arseno tetrahedrite + ?											
<<Min: 60.4 - 66.1 2% Min: Pyrite>> lensey siliceous pyritic, rare SS											
<<Alt: 57.1 - 66.1 Weak (Alt) Muscovite>>											

Project: **KZK** **Hole Number:** **K94-048**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

End of Hole @ 66.1

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-049

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414850.15625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815424	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1393.85	Casing Depth (m):		Length (m):	57.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
11	-62	180		180	SS				☑	
33	-61	177		177	SS				☑	
54	-62	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 10.70 MDSw Coherent rhyolite flow with carbonaceous content

6.1 - 10.7: +/- lapilli altered by Fe-carbonate

<<Min: 6.1 - 18.9 10% Min: Ankerite>>

<<Min: 6.1 - 25.9 0.5% Min: Pyrite>>

<<Min: 6.1 - 25.9 0.25% Min: Pyrrhotite>>

<<Min: 6.1 - 31.4 0.25% Min: Calcite>> trace

<<Alt: 6.1 - 18 Moderate (Alt) Muscovite>>

10.70 16.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

10.7 - 16.3: Interval is heterogeneous in texture. Lapilli range in size from 2mm - 50mm. Large lapilli are flattened and have tails sub-parallel to foliation and are isolated as clasts within ash? Interval appears bleached (quartz/sericite rich) proximal to heavily o

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
16.30	**21.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	21.40	22.90	1.50	Q311867	0.8	0.008	-0.01	-0.01	0.03
16.3 - 21.7: Large lapilli present, though discontinous. Biotite gives rock dark colour and is considered argillaceous input.												
<<Min: 18.9 - 52.2 3% Min: Ankerite>>												
<<Alt: 18 - 25.9 Strong (Alt) Muscovite>>												
21.70	**25.90**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	22.90	24.40	1.50	Q311868	2	0.024	0.02	0.04	0.04
21.7 - 25.9: +/- small rhyolite flows and argillite.												
				24.40	25.90	1.50	Q311869	3.2	0.068	0.08	0.01	0.03
25.90	**29.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	25.90	27.40	1.50	Q311871	236	1.66	0.75	2.17	7.23
<<Alt: 25.9 - 48 Strong (Alt) Muscovite>>				27.40	28.90	1.50	Q311872	129	1.1	0.2	2.76	9.51
				28.90	29.90	1.00	Q311873	231	1.22	0.39	4.66	12.2
29.90	**36.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	29.90	31.40	1.50	Q311874	41.9	0.484	0.09	0.28	0.69
29.9 - 36: heavily altered section between mxsx. Some lapilli clasts present and replaced by Fe-carbonate/calcite												
<<Min: 29.9 - 36 2% Min: Pyrite>>				31.40	32.90	1.50	Q311875	1.8	0.015	-0.01	-0.01	-0.01
<<Min: 31.4 - 37.9 1% Min: Calcite>>				32.90	34.50	1.60	Q311876	1.6	0.016	-0.01	-0.01	0.02
				34.50	36.00	1.50	Q311877	0.9	0.007	-0.01	-0.01	-0.01
36.00	**36.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	36.00	36.50	0.50	Q311878	416	1.99	0.4	5.03	9.93
36.50	**37.90**	**RHYv**	**Rhyolite volcaniclastic**	36.50	37.90	1.40	Q311879	2.7	0.017	-0.01	0.04	0.16
37.90	**39.00**	**OG**	**Chalcopyrite rich sulphides**	37.90	39.40	1.50	Q311883	136	3.02	4.09	1.74	6.51
37.9 - 39: OAG												
39.00	**42.90**	**OA**	**Magnetite bearing sulphides**	39.40	40.90	1.50						
<<Min: 42.4 - 51.5 0.5% Min: Calcite>>				40.90	42.40	1.50	Q311885	94	1.07	0.99	1.32	8.57
				42.40	43.30	0.90	Q311886	213	2.68	0.97	2.86	10.8

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
42.90	**43.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
42.9 - 43.3: OBO3												
43.30	**44.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	43.30	44.10	0.80	Q311887	16.9	0.153	0.05	0.19	0.33
<<Alt: 43.3 - 44.9 Moderate (Alt) Cordierite>> chlorite matrix absent… spherical phenocrysts present, suspected to be codierite, but may be periitic rhyoite spherules. Fe-carbonate present				44.10	44.90	0.80	Q311888	283	2.3	0.96	4.28	8.23
44.90	**48.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	44.90	46.40	1.50	Q311889	8.3	0.533	0.02	0.06	0.11
44.9 - 48: +/- calcite/Fe-carbonate.Mixed lapilli/ash												
<<Min: 44.9 - 57.6 0.5% Min: Pyrite>> range from 0.5 to 1 %				46.40	47.90	1.50	Q311891	1.5	0.005	-0.01	-0.01	-0.01
<<Min: 44.9 - 57.6 0.25% Min: Pyrrhotite>>				47.90	49.40	1.50	Q311892	0.9	-0.005	-0.01	-0.01	0.02
<<Min: 44.9 - 57.6 0.25% Min: Galena>>												
48.00	**51.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
48 - 51.2: Brecciated flow?												
<<Alt: 48 - 57.6 Moderate (Alt) Muscovite>>												
51.20	**52.20**	**RHYv**	**Rhyolite volcaniclastic**									
51.2 - 52.2: Mixed quartz crystal, lapilli and ash tuff, ident very difficult												
<<Min: 51.5 - 57.6 3% Min: Calcite>>												
52.20	**53.20**	**RHYv**	**Rhyolite volcaniclastic**									
52.2 - 53.2: ident very uncertain												
<<Min: 52.2 - 53.3 40% Min: Ankerite>>												
53.20	**57.60**	**RHYv**	**Rhyolite volcaniclastic**									
53.2 - 57.6: Interval resembles texture of mafic sills in deposit's stratigraphic hanging walls; more or less massive/speckled mineralogy and thin calcite bands. This leads to interpretation of a mafic protolith, though the rock is dominated by quartz/sericite with py												
<<Min: 53.2 - 57.6 3% Min: Ankerite>>												

Project: **KZK** **Hole Number:** **K94-049**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

End of Hole @ 57.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-050

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414799.84375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815623	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1402	Casing Depth (m):		Length (m):	179.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
29	-49	176		176	SS				☑	
59	-54	177		177	SS				☑	
90	-56	178		178	SS				☑	
120	-56	178		178	SS				☑	
151	-57	180		180	SS				☑	
179.8	-57	175		175	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.90**	**OVBN Overburden**									
6.90	**11.40**	**RHYvl Lapilli tuff**									
<<Min: 6.9 - 21.2 3% Min: Pyrite>>											
<<Min: 6.9 - 71.5 10% Min: Ankerite>>											
11.40	**18.30**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
11.4 - 18.3: minor sections of lapilli tuff											
18.30	**20.00**	**RHYva Coarse grained to ash tuff**									
20.00	**21.20**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 21.1 - 23 3% Min: Pyrrhotite>>

21.20 23.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

21.2 - 23: fine grained, dark grey -black

<<Min: 21.2 - 23.8 10% Min: Calcite>>

23.00 29.00 RHYv Rhyolite volcaniclastic

23 - 29: lapilli and RHYcw; local pale grey banded sections with 5+% calcite - may be mafic volcaniclastic lamin - beds.

<<Min: 23 - 93.6 1% Min: Pyrite>>

<<Min: 23 - 93.6 1% Min: Pyrrhotite>>

29.00 67.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

29 - 67.6: gradational contacts; dominently RHYcw but some minor ash & lapilli sections

67.60 106.50 RHYvl Lapilli tuff

67.6 - 106.5: minor RHYcw sections (locally 10's of cm), 68-68.10m: MDS

<<Min: 71.5 - 106 15% Min: Ankerite>>

<<Min: 93.6 - 121.5 1% Min: Pyrite>>

<<Min: 106 - 145.1 5% Min: Ankerite>>

<<Alt: 78 - 94.1 Weak (Alt) Muscovite>>

<<Alt: 93 - 145.1 Moderate (Alt) Silicification>>

<<Alt: 94.1 - 137.6 Moderate (Alt) Muscovite>>

<<Struc: 87 - 89 Moderate (Alt) Fault>> broken core, 2 10cm zones with gouge, poker chips stg fol.

<<Struc: 103.7 - 104 Moderate (Alt) Fault>> missing and broken core, gouge zones, stg foliated musc schist

106.50 117.10 MDSt Rhyolite tuff dominant mudstone

106.5 - 117.1: good example of MDSt

<<Struc: 112.3 - 113.6 Moderate-Strong (Alt) Fault>> broken core, minor gouge zones

117.10 123.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

117.1 - 123.5: minor RHYvl at upper contact

<<Min: 121.5 - 138.7 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

123.50 125.40 MDSw Coherent rhyolite flow with carbonaceous content

123.5 - 125.4: good MDSc

125.40 137.80 MDSw Coherent rhyolite flow with carbonaceous content

125.4 - 137.8: gradtional muddy lower contact

<<Alt: 137.6 - 145.1 Strong (Alt) Muscovite>>

<<Struc: 127.8 - 131 Moderate (Alt) Fault>> minor gouge, missing core, broken rubble of core

137.80 145.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 138.7 - 145.1 3% Min: Pyrite>>

145.10 159.40 RHY undifferentiated rhyolite

145.1 - 159.4: 100% missing core

<<Alt: 151.5 - 159.6 Moderate-Strong (Alt) Chlorite>>

<<Alt: 151.5 - 159.6 Moderate-Strong (Alt) Cordierite>>

159.40 161.80 OC Chalcopyrite-pyrrhotite net textured sulphides

159.4 - 161.8: 100% missing core

161.80 162.90 OH Fine grained, megascopically homogeneous pyrite rock

161.8 - 162.9: 100% missing core

162.90 164.00 OH Fine grained, megascopically homogeneous pyrite rock

162.9 - 164: 100% missing core

164.00 166.80 OH Fine grained, megascopically homogeneous pyrite rock

164 - 166.8: 100% missing core

From (m)	To (m)	Rocktype & Description
166.80	**168.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
166.8 - 168: 100% missing core		
168.00	**168.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
168 - 168.4: 100% missing core		
168.40	**170.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
168.4 - 170.9: 100% missing core		
170.90	**172.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
170.9 - 172.4: 100% missing core		
172.40	**177.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
172.4 - 177: pale grey green, rare calcite bands and calcite on fractures.		
<<Min: 172.4 - 174.5 4% Min: Ankerite>>		
<<Min: 172.5 - 178.9 3% Min: Calcite>>		
<<Min: 172.5 - 179.8 1% Min: Pyrite>>		
<<Alt: 172.5 - 174 Weak-Moderate (Alt) Biotite>>		
<<Alt: 172.5 - 177 Moderate (Alt) Muscovite>>		
177.00	**179.80**	**RHYi** **Aphanitic Rhyolite (intrusion)**
177 - 179.8: last core block is 179.8m		
<<Alt: 177 - 179.8 Silicification>>		
End of Hole @ 179.8		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-051

Prospect:	FCZ	Hole Type:	DD	Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	03-Nov-15
UTM Easting	414747.125	Core Size:		Azimuth:	180	Date Logging Complete:	03-Nov-15
UTM Northing:	6814655.5	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1421.79	Casing Depth (m):		Length (m):	136.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

BOTTOM OF HOLE IN CHL ALTERED ASH TUFFS WITH WEAK PY CHL STRINGER MINERALIZATION. LOOKS LIKE THE DOWN DIP WEAKER EQUIVALENT OF HOLE K97-182

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
124	-48	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 63.60 RHYv Rhyolite volcaniclastic

9.1 - 63.6: entirely within the Fault C Fault. Islands of RHYv can be determined along with overall felsic appearance.
Possibly short intervals of MAFi within.

<<Vein: 57.3 - 57.9 90% Quartz>>

<<Struc: 10 - 65 Intense (Alt) Fault>> Fault Creek Fault. Intense gouge

63.60 82.50 RHYvl Lapilli tuff

<<Min: 64 - 110 1% Min: Pyrite>>

<<Alt: 64 - 98 Weak (Alt) Muscovite>>

82.50 82.90 MAFt Mafic Volcaniclastics

82.5 - 82.9: medbrown.

82.90 83.50 RHYva Coarse grained to ash tuff

83.50 83.80 MAFt Mafic Volcaniclastics

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.80	**91.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
91.90	**95.60**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
<<Vein: 94.3 - 95 85% Quartz-Chlorite>>												
95.60	**96.10**	**MAFt**	**Mafic Volcaniclastics**									
95.6 - 96.1: brown, gradational contacts												
96.10	**97.50**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
97.50	**98.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
97.5 - 98.1: chill margings, classic dyke												
<<Alt: 98 - 136.6 Weak-Moderate (Alt) Muscovite>>												
98.10	**101.60**	**RHYvl**	**Lapilli tuff**									
101.60	**103.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
103.00	**125.70**	**RHYvl**	**Lapilli tuff**	125.20	125.70	0.50	B00264193	1.2	0.01	0.01	0.03	0.44
103 - 125.7: somesections look a little coherant. Bottom contact with va has a concentration of py stringers and mod chl over 20cm												
<<Min: 110 - 125 5% Min: Pyrite>>												
<<Min: 125 - 125.6 10% Min: Pyrite>>												
<<Min: 125.6 - 132 1% Min: Pyrite>>												
125.70	**126.60**	**RHYva**	**Coarse grained to ash tuff**	**grey-brown**								
125.7 - 126.6: greybrown, dark porphyroblasts												
126.60	**127.30**	**RHYvl**	**Lapilli tuff**									
126.6 - 127.3: white grey distinct lapilli												
127.30	**128.80**	**RHYva**	**Coarse grained to ash tuff**	**brown**								
127.3 - 128.8: browner, possibly more mafic, could maybe be a MAFt												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
128.80	**131.90**	**RHYvl Lapilli tuff** 128.8 - 131.9: white grey, distinct, perhaps a thin flow with lots of auto bx top and bottom									
131.90	**136.60**	**RHYva Coarse grained to ash tuff green** 131.9 - 136.6: grey ash tuff unit green from mod-stg chl alt with wk mu. Couple of 10cm chl-py 100% stringers. Looks like the updip equivalent of K97-182 bit weaker	132.10	133.60	1.50	B00264194	2.6	0.008	0.02	0.02	0.04
		<<Min: 132 - 136.6 5% Min: Pyrite>>	133.60	135.10	1.50	B00264195	0.3	-0.005	-0.01	-0.01	0.07
		<<Alt: 131.9 - 136.6 Moderate-Strong (Alt) Chlorite>>	135.10	136.60	1.50	B00264196	1.6	-0.005	-0.01	-0.01	0.05
End of Hole @ 136.6											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K94-052

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414849.78125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815474	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1394.87	Casing Depth (m):		Length (m):	84.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
9	-56	175		175	SS				☑	
42	-57	176		176	SS				☑	
82	-57	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 CASN Casing

6.10 9.00 RHYvl Lapilli tuff grey-brown FMG

6.1 - 9: Two foliations at the contact with argilite.

<<Min: 6.1 - 9 0.5% Min: Pyrite>>

<<Min: 6.1 - 9 1% Min: Pyrrhotite>> elongated along the foliation

<<Min: 6.1 - 9 10% Min: Ankerite>> mainly in foliation

9.00 16.70 MDSw Coherent rhyolite flow with carbonaceous content grey-brown FMG

9 - 16.7: Locally rhyolitic texture as well as lapili. Folded-sheared. Secondary foliation.

<<Min: 9 - 16.7 0.5% Min: Pyrrhotite>> and py trace

<<Min: 9 - 16.7 3% Min: Ankerite>> foliation oriented

<<Alt: 9 - 37.4 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
16.70	**21.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-brown** **FMG**									

16.7 - 21.5: Local boudinage.

<<Min: 16.7 - 29 5% Min: Ankerite>> dicontinuous along the foliation

<<Min: 16.7 - 36.5 0.1% Min: Sphalerite>> assocition py/po/sp, few veinlets.Galena?

<<Min: 16.7 - 36.5 0.1% Min: Pyrite>> association py/po/sp, few veinlets

<<Min: 16.7 - 36.5 0.5% Min: Pyrrhotite>> association py/po/sp, few veinlets

<<Min: 16.7 - 36.5 0.1% Min: Arsenopyrite>> few patch

21.50	**33.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey-green** **FG**									

21.5 - 33.5: Argilitic schist with rhyolite flow from 25.2 to 26.7m and 29.0 to 30.4. Folded. Large sercite layer. Microfaulted, spectacular sequence, excellent flow texture with significant crb content.

<<Min: 29 - 37.4 3% Min: Ankerite>> foliation oriented

33.50	**36.50**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green** **FG**									

33.5 - 36.5: Argilitic schist with rhyolite flow from 25.2 to 26.7m and 29.0 to 30.4. Folded. Large sercite layer. Microfaulted, spectacular sequence, excellent flow texture with significant crb content.

<<Struc: 34 - 34.1 Fault>> sandy gouge

36.50	**48.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	47.20	48.20	1.00	Q311405	3.1	0.019	-0.01	0.06	0.11

<<Min: 37.4 - 48.2 1% Min: Ankerite>> discontinuous infoliation

<<Alt: 37.4 - 54.3 Strong (Alt) Muscovite>> interupted in the Bi banded formation from 50.7 to 52.3m.

<<Struc: 45.6 - 46 Fault>> few gouge

<<Struc: 47.5 - 47.53 Fault>>

48.10	**49.40**	**RHYvl**	**Lapilli tuff**	**yellow** **FMG**	48.20	49.70	1.50	Q311406	2.7	0.007	0.06	0.04	0.21

48.1 - 49.4: Oxydized maybe lapili, jaerosite, pyrite veinlet, tourmaline patch.

<<Min: 49.2 - 56.1 2% Min: Sphalerite>> assemblage py/po/sp/gl in local veining, trace of AS

<<Min: 49.2 - 56.1 1% Min: Pyrite>> assemblage py/po/sp/gl in local veining, trace of AS

<<Min: 49.2 - 56.1 0.5% Min: Pyrrhotite>> assemblage py/po/sp/gl in local veining, trace of AS

<<Min: 49.2 - 56.6 0.2% Min: Galena>> assemblage py/po/sp/gl in local veining, trace of AS.

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.40	**50.70**	**RHYvl**	**Lapilli tuff**	**grey-green**	**FMG**	49.70	50.80	1.10	Q311407	4.6	0.01	0.03	0.05	0.09
49.4 - 50.7: with muscovite.														
50.70	**52.30**	**RHYv**	**Rhyolite volcaniclastic**	**green-brown**	**FMG**	50.80	52.40	1.60	Q311408	71.8	0.812	2.09	0.03	1.4
50.7 - 52.3: Sulfide rich: mg/py/po/gl, few aspy. Oxidized,rusty. Folded foliation.														
<<Min: 50.7 - 52.3 10% Min: Magnetite>>														
52.30	**55.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	**FMG**	52.40	53.40	1.00	Q311409	3.7	0.038	0.04	0.04	0.18
52.3 - 55.5: few aspy, py/gl in QZ layer. Clots of black minreal, maybe tourmaline,														
<<Min: 54.6 - 55.1 0.2% Min: Magnetite>>						53.40	54.50	1.10	Q311411	1.3	0.008	0.02	0.01	0.04
<<Min: 55.1 - 72.1 15% Min: Sphalerite>> banded						54.50	55.50	1.00	Q311412	127	1.14	0.97	0.53	2.01
<<Min: 55.1 - 72.1 75% Min: Pyrite>> OB, locally OH with magnetite.														
<<Min: 55.1 - 72.1 3% Min: Pyrrhotite>>														
<<Min: 55.1 - 72.1 1% Min: Galena>>														
<<Min: 55.1 - 72.1 5% Min: Chalcopyrite>>														
55.50	**60.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**			55.50	57.00	1.50	Q311413	305	3.19	0.84	3.02	8.36
55.5 - 60.5: presence of magnetite-seemineralization														
<<Min: 58.2 - 58.7 0.3% Min: Magnetite>>						57.00	58.50	1.50	Q311414	238	2.03	0.89	2.68	8.56
						58.50	60.00	1.50	Q311415	235	1.38	0.76	3.27	9.9
						60.00	61.50	1.50	Q311416	206	1.66	2.23	2.25	5.24
60.50	**64.10**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**			61.50	63.00	1.50	Q311417	100	0.969	3.71	0.62	4.21
60.5 - 64.1: initially APO3. Cp rich and presence of magnetite														
<<Min: 61.7 - 63.7 0.3% Min: Magnetite>>						63.00	64.50	1.50	Q311418	137	1.1	1.71	1.19	3.23
64.10	**66.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**			64.50	66.00	1.50	Q311419	125	1.03	2.47	0.96	6.64
64.1 - 66.1: Magnetite-see mineralization														
<<Min: 65 - 67.9 0.3% Min: Magnetite>>						66.00	67.50	1.50	Q311421	144	2.36	7.64	0.44	2.23

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.10	**68.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**			67.50	69.00	1.50	Q311422	104	1.29	4.62	0.39	4.86
66.1 - 68.2: Magnetite-see minerlization														
68.20	**69.90**	**OA**	**Magnetite bearing sulphides**			69.00	70.50	1.50	Q311423	210	1.91	0.93	4.61	9.01
<<Min: 68.9 - 69.7 0.3% Min: Magnetite>>														
69.90	**71.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**			70.50	72.10	1.60	Q311424	178	0.564	0.35	4.48	14.2
69.9 - 71.9: Magnetite-see mineralization														
<<Min: 70.7 - 72.1 0.3% Min: Magnetite>>														
71.90	**72.10**	**OI**	**Heavilly disseminated sulphides in host schist**											
71.9 - 72.1: Magnetite-may be OA														
72.10	**79.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**beige**		72.10	73.60	1.50	Q311425	12	0.041	0.03	0.15	0.21
72.1 - 79.1: Bleach texture, could be highly modified from mafic formation of the hanging wall or exhalite.														
<<Min: 72.1 - 81.2 1% Min: Pyrite>> locally stringer in sericite rich zone						73.60	74.60	1.00	Q311426	1.9	0.006	-0.01	0.01	0.04
<<Min: 72.1 - 81.2 0.2% Min: Pyrrhotite>> discontinuous veinlets,associated with py						74.60	75.80	1.20	Q311427	1.9	0.006	-0.01	-0.01	0.03
<<Min: 72.1 - 81.2 0.5% Min: Calcite>>						75.80	76.80	1.00	Q311428	2.4	0.015	-0.01	-0.01	0.02
<<Min: 78.5 - 82 5% Min: Ankerite>> foliation oriented														
<<Alt: 72.1 - 79.1 Moderate (Alt) Muscovite>>														
<<Alt: 78.1 - 82.1 Moderate (Alt) Chlorite>>														
79.10	**84.70**	**RHYva**	**Coarse grained to ash tuff**	**dark grey**	**FMG**									
79.1 - 84.7: QZ vein. E.O.H.														
<<Min: 81.2 - 84.7 0.5% Min: Pyrite>>														
<<Min: 81.2 - 84.7 1% Min: Pyrrhotite>>														
<<Min: 81.2 - 84.7 2% Min: Calcite>> and patch														
<<Alt: 82.1 - 84.7 Weak-Moderate (Alt) Biotite>>														

End of Hole @ 84.7

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-053

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415001.747	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815354.473	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1384	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
17	-43	180		180	SS				☑	
46	-41	183		183	SS				☑	
59	-42	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**25.50**	**OVBN** **Overburden**									
25.50	**26.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**									
25.5 - 26.1: likely a boulder											
<<Min: 25.5 - 26.1 5% Min: Sphalerite>>											
<<Min: 25.5 - 26.1 70% Min: Pyrite>>											
26.10	**26.30**	**OVBN** **Overburden**									
26.1 - 26.3: fine grained non foliated intermediate intrusive boulder											
26.30	**27.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**									
<<Min: 26.3 - 27.8 5% Min: Sphalerite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 26.3 - 27.8 70% Min: Pyrite>>										
		<<Min: 26.3 - 27.8 1% Min: Galena>>										
27.80	**31.50**	**RHYv** **Rhyolite volcaniclastic**		29.60	31.10	1.50	B00267245	0.7	0.008	-0.01	-0.01	-0.01
27.8 - 31.5: originally MAFi, MEB changed												
		<<Min: 27.8 - 32.8 5% Min: Calcite>>		31.10	32.30	1.20	B00267246	0.5	0.007	-0.01	-0.01	-0.01
		<<Min: 27.8 - 41.9 1% Min: Pyrite>> some sthin bands on banded rhy										
		<<Alt: 27.8 - 37.5 Weak (Alt) Muscovite>> more sericite than muscovite										
31.50	**38.40**	**RHYif** **feldspar and quartz porphyry intrusions**		37.70	38.80	1.10	B00267247	12.2	0.213	0.1	0.09	0.25
		<<Min: 36 - 38.4 5% Min: Calcite>>										
		<<Alt: 31.5 - 38.4 Strong (Alt) Silicification>> associated with RHYi dyke										
		<<Alt: 37.5 - 41.8 Moderate (Alt) Muscovite>>										
		<<Vein: 33.9 - 36.5 10% Quartz>>										
38.40	**41.90**	**RHYv** **Rhyolite volcaniclastic**		38.80	40.30	1.50	B00267248	6.8	0.022	0.06	0.13	0.36
38.4 - 41.9: originally MAFi, MEB changed												
		<<Struc: 40.7 - 41 Strong (Alt) Fault>> gouge and broken core										
41.90	**43.20**	**OD** **Brecciated sulphides**	**FG**									
		<<Min: 41.9 - 43.2 70% Min: Pyrite>>										
		<<Min: 41.9 - 43.2 2% Min: Chalcopyrite>>										
		<<Alt: 41.9 - 43.2 Weak-Moderate (Alt) Cordierite>>										
43.20	**44.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**										
43.2 - 44: intensely altered; cord and chl, unknown originql protolith												
		<<Min: 43.2 - 44 2% Min: Pyrite>>										
		<<Min: 43.2 - 44 1% Min: Pyrrhotite>>										
		<<Min: 43.2 - 44 1% Min: Chalcopyrite>>										
		<<Alt: 43.2 - 44 Intense (Alt) Chlorite>>										
		<<Alt: 43.2 - 44 Intense (Alt) Cordierite>>										
44.00	**46.80**	**OA** **Magnetite bearing sulphides**	**FG**									
		<<Min: 44 - 46.8 1% Min: Sphalerite>>										
		<<Min: 44 - 46.8 90% Min: Pyrite>>										

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-053

From (m)	To (m)	Rocktype & Description
		<<Min: 44 - 46.8 1% Min: Chalcopyrite>>
46.80	**59.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		46.8 - 59.7: fresh, no sericite overprint
		<<Min: 46.8 - 59.7 0.1% Min: Pyrite>>
		<<Min: 46.8 - 59.7 15% Min: Calcite>>
		End of Hole @ 59.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
48.20	49.70	1.50	B00267249	0.4	0.006	-0.01	-0.01	0.02
49.70	50.60	0.90	B00267251	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-054

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415001.768	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815356.566	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1384.095	Casing Depth (m):		Length (m):	53.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
30	-90	180		180	SS				☑	
53	-88	207		207	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**14.40**	**OVBN** **Overburden**
14.40	**16.70**	**RHY** **undifferentiated rhyolite**

14.4 - 16.7: Beige to very light greenish color, strongly foliated and altered (Ser/MU). No evidence of flow structure or volcanoclastic texture. Probably RHY. Crosscut by Qtz-+/-Ca veins.

<<Min: 14.4 - 16.7 1% Min: Pyrite>>

<<Min: 14.4 - 16.7 2% Min: Ankerite>> Associated with siliceous fragments/veinlets, isolated clots distributed within matrix.

<<Alt: 14.4 - 16.7 Moderate-Strong (Alt) Muscovite>> associated with foliation.

16.70	**24.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 16.7 - 24.1 8% Min: Sphalerite>>

<<Min: 16.7 - 24.1 85% Min: Pyrite>>

<<Min: 16.7 - 24.1 1% Min: Galena>>

<<Min: 16.7 - 24.1 0.5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.40	15.20	0.80	B00233019	1.5	-0.005	-0.01	0.01	0.02

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
25.60	27.10	1.50	B00233021	0.6	0.017	-0.01	-0.01	-0.01
27.10	28.60	1.50	B00233022	0.4	-0.005	-0.01	-0.01	-0.01
38.70	40.20	1.50	B00233023	1.1	0.006	-0.01	0.02	0.12
40.20	41.70	1.50	B00233024	17.2	0.027	0.16	0.24	1.99

24.10 29.30 RHYva Coarse grained to ash tuff

24.1 - 29.3: Light green, medium to coarse grained, +/- homogeneous, moderate to strongly foliated. < 3 % of fine crystal of qtz/fsp partially Ak distributed within the matrix, ~1mm. Matrix weakly Cl.

<<Min: 24.1 - 35.6 0.5% Min: Pyrite>>

<<Min: 24.1 - 36.7 3% Min: Calcite>> Associated with qtz veins/veinlets and isolated clots.

<<Min: 24.1 - 41.7 3% Min: Ankerite>> Associated with siliceous fragments/veinlets, isolated clots distributed within matrix.

<<Alt: 24.1 - 29.3 Weak (Alt) Chlorite>>

29.30 31.70 RHYi Aphanitic Rhyolite (intrusion)

29.3 - 31.7: Interval comprinsing 40% of Rhy dykes, mostly decimetric, aphanitic to very fine grained, strongly Si, rare trace of very small qtz crystals. Hosted within RHYva or RHYvl, with trace of dismembered silliceous bands, strongly foliated and MU altered.

<<Alt: 29.3 - 31.7 Strong (Alt) Silicification>> Associated with RHYi.

<<Alt: 29.3 - 39.4 Moderate-Strong (Alt) Muscovite>>

31.70 36.70 RHYvl Lapilli tuff

31.7 - 36.7: Beige to light grey,medium to coarse grained, strongly foliated and MU altered. +/- homogeneous. Probably RHYva.

<<Min: 36.1 - 37.4 0.5% Min: Pyrite>>

36.70 39.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

36.7 - 39.4: beige to light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, " curdy" texture. moderately MU and weakly AK altered.

<<Min: 37.4 - 41.5 3% Min: Sphalerite>>

<<Min: 37.4 - 41.5 1% Min: Pyrite>>

39.40 41.50 RHYva Coarse grained to ash tuff

39.4 - 41.5: Light grey, medium to coarse grained, +/- homogeneous, moderate to strongly foliated. < 2 % of fine crystal of qtz/fsp partially Ak distributed within the matrix, ~1mm. Matrix weakly Cl at the bottom of unit.

<<Min: 41 - 41.7 5% Min: Calcite>> Associated with breccia.

<<Alt: 40.2 - 40.8 Intense (Alt) Chlorite>> Associated with mineralisation

<<Alt: 40.8 - 41.7 Weak-Moderate (Alt) Cordierite>> Ocuring as coarse disseminated crystals,

<<Struc: 40.2 - 40.8 Strong (Alt) Fault>> Comprinsing gauge interval and strong fracturation.

From (m)	To (m)	Rocktype & Description
41.50	**42.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
42.00	**42.60**	**OF** **Pyrrhotite rich sulphides**
<<Min: 42 - 42.6 5% Min: Sphalerite>>		
<<Min: 42 - 42.6 20% Min: Pyrite>>		
<<Min: 42 - 42.6 60% Min: Pyrrhotite>>		
<<Min: 42 - 42.6 5% Min: Chalcopyrite>>		
42.60	**43.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 42.6 - 43 10% Min: Sphalerite>>		
<<Min: 42.6 - 43 80% Min: Pyrite>>		
<<Min: 42.6 - 43 3% Min: Galena>>		
43.00	**43.10**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 43 - 43.1 5% Min: Pyrite>>		
<<Min: 43 - 43.1 25% Min: Pyrrhotite>>		
<<Min: 43 - 43.1 8% Min: Chalcopyrite>>		
43.10	**53.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
43.1 - 53.5: Green , fine to medium grained, large interval of mafic intrusive, strongly sheared/foliated. Mainly chlorite altered (pervasive). ~ 10-15% of Qtz-Cal +/- Ak veinlets/bands, concordant. Gabbro dyke?		
<<Min: 43.1 - 52.4 0.5% Min: Pyrrhotite>>		
<<Min: 43.2 - 53.9 15% Min: Calcite>> Associated with qtz veins/veinlets.		
<<Min: 52.4 - 53.9 0.5% Min: Pyrrhotite>>		
<<Alt: 43.2 - 53.9 Moderate (Alt) Chlorite>> Mafic dyke.		
53.50	**53.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
53.5 - 53.9: Green, massive mafic intrusive, comprinsing 10-20% of phenocrystals of pyroxene, subheudral, within fine grained matrix (Cl). Probably gabbro.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.70	46.20	1.50	B00233025	0.4	-0.005	-0.01	-0.01	0.01
46.20	47.70	1.50	B00233026	-0.3	-0.005	-0.01	-0.01	-0.01

Project: **KZK** **Hole Number:** **K95-054**

From (m)	To (m)	Rocktype & Description
		End of Hole @ 53.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-055

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415023.378	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815483.149	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1381.465	Casing Depth (m):		Length (m):	120.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
32	-59	180		180	SS				☑	
62	-60	183		183	SS				☑	
96	-60	182		182	SS				☑	
120	-59	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.70 OVBN Overburden

12.70 24.00 RHYvl Lapilli tuff

<<Min: 12.7 - 45.5 1.5% Min: Pyrrhotite>>

<<Min: 13 - 65 5% Min: Ankerite>>

<<Alt: 13 - 24 Weak (Alt) Muscovite>>

24.00 26.20 MDSt Rhyolite tuff dominant mudstone

24 - 26.2: 50% carbonaceous, no tops indicators

<<Alt: 26 - 29 Weak (Alt) Muscovite>>

<<Struc: 25.2 - 25.3 Moderate-Strong (Alt) Fault>> gouge zone

26.20 39.60 RHYvl Lapilli tuff

<<Alt: 29 - 58 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

39.60 51.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39.6 - 51.2: decimeter sections within that exhibit good silica banding and curdy texture.

<<Min: 45.6 - 45.9 1% Min: Sphalerite>>
<<Min: 45.6 - 45.9 60% Min: Pyrite>>
<<Min: 46.8 - 47.3 1% Min: Sphalerite>>
<<Min: 46.8 - 47.3 25% Min: Pyrite>>
<<Min: 47.5 - 59 1% Min: Pyrite>>
<<Min: 47.5 - 59 2% Min: Pyrrhotite>>
<<Struc: 51 - 51.2 Weak-Moderate (Alt) Fault>> broken weak cataclastic zone

51.20 52.10 MDSw Coherent rhyolite flow with carbonaceous content

51.2 - 52.1: minor mud component in rhy flow rock

52.10 59.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

52.1 - 59: porrly developed but present curdy textures

59.00 63.30 MDSw Coherent rhyolite flow with carbonaceous content

59 - 63.3: sharp contact on up hole ends suggesting stratigraphy is over turned here. 30cm of MDSC at 59m

<<Min: 60.4 - 68.7 1% Min: Pyrite>>
<<Struc: 59.4 - 59.5 Moderate (Alt) Fault>> gouge zone

63.30 69.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 68.7 - 73.4 1% Min: Pyrite>>
<<Min: 68.7 - 73.4 1% Min: Pyrrhotite>>
<<Alt: 63.3 - 65.1 Weak-Moderate (Alt) Muscovite>>
<<Alt: 65.1 - 77.5 Weak-Moderate (Alt) Muscovite>>

69.10 70.30 MDSw Coherent rhyolite flow with carbonaceous content

69.1 - 70.3: minor mud component concentrated in first 30cm

From (m)	To (m)	Rocktype & Description
70.30	**73.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
73.10	**75.90**	**MDSt** **Rhyolite tuff dominant mudstone**

73.1 - 75.9: central 40cm with ankerite porphyroblastic ash tuff

<<Min: 75 - 79.5 3% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description
75.90	**79.50**	**RHYv** **Rhyolite volcaniclastic**

75.9 - 79.5: becoming ashy towards 79.5

<<Min: 79.2 - 79.9 10% Min: Sphalerite>>

<<Min: 79.2 - 79.9 1% Min: Pyrite>>

<<Min: 79.2 - 79.9 3% Min: Pyrrhotite>>

<<Min: 79.2 - 79.9 2% Min: Chalcopyrite>>

<<Alt: 77.5 - 79.5 Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
79.50	**79.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

79.5 - 79.9: Missing core, cannot evaluate

From (m)	To (m)	Rocktype & Description
79.90	**81.20**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**

79.9 - 81.2: massive Sx magnetite bearing and high Cu. Therefore not Met8 but Met3

<<Min: 79.9 - 81.2 40% Min: Pyrrhotite>>

<<Min: 79.9 - 81.2 20% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
81.20	**82.10**	**OG** **Chalcopyrite rich sulphides**

81.2 - 82.1: massive Sx magnetite bearing and high Cu. Therefore not Met8 but Met3

<<Min: 81.2 - 82.1 25% Min: Pyrrhotite>>

<<Min: 81.2 - 82.1 70% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
82.10	**83.60**	**OA** **Magnetite bearing sulphides**

82.1 - 83.6: magnetite bearing, borderline high copper at 1.3%. Therefore Met4 not Met3

<<Min: 82.1 - 83.6 70% Min: Pyrite>>

<<Min: 82.1 - 83.6 5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
75.00	76.50	1.50	B00232595	1	-0.005	-0.01	-0.01	0.01
76.50	78.00	1.50	B00232596	11.2	0.022	-0.01	0.11	0.14

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.60	**88.90**	**OA Magnetite bearing sulphides**									
<<Min: 83.6 - 88.9 2% Min: Sphalerite>>											
<<Min: 83.6 - 88.9 70% Min: Pyrite>>											
88.90	**92.20**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 88.9 - 92.2 10% Min: Sphalerite>>											
<<Min: 88.9 - 92.2 80% Min: Pyrite>>											
<<Min: 88.9 - 92.2 1% Min: Galena>>											
<<Min: 88.9 - 92.2 1% Min: Chalcopyrite>>											
<<Min: 92 - 95 1% Min: Sphalerite>>											
92.20	**95.40**	**RHYva Coarse grained to ash tuff**	93.70	95.20	1.50	B00232597	34.8	0.315	0.09	0.12	0.38
92.2 - 95.4: localized development of ankerite porphyroblsats 1mm.											
<<Min: 92.2 - 95.6 1% Min: Pyrite>>			95.20	96.70	1.50	B00232598	0.4	-0.005	-0.01	-0.01	-0.01
<<Min: 92.2 - 111.1 10% Min: Ankerite>>											
<<Alt: 92.2 - 100 Moderate-Strong (Alt) Muscovite>>											
<<Struc: 93.5 - 94 Moderate (Alt) Fault>> broken core gouge zone											
95.40	**99.40**	**RHYvx Quartz and/or feldspar crystal tuff**	98.90	100.40	1.50	B00232599	0.7	0.006	-0.01	-0.01	0.01
95.4 - 99.4: some weak silica banding so possibly a flow rock. Contains 10% 2-3mm ankerite after feldspar? Blasts.											
<<Min: 95.6 - 99.3 1% Min: Pyrite>>											
<<Min: 99.3 - 101.9 1% Min: Pyrite>>											
<<Struc: 95.9 - 96 Moderate (Alt) Fault>> gouge											
<<Struc: 98.6 - 98.7 Weak-Moderate (Alt) Fault>> gouge											
99.40	**101.20**	**RHYc Rhyolite coherant volcanics**	100.40	101.90	1.50	B00232601	7	0.042	0.02	0.03	0.11
99.4 - 101.2: silica banding, but no good curdy texture											
<<Alt: 100 - 105 Strong (Alt) Muscovite>>											
101.20	**120.70**	**RHYva Coarse grained to ash tuff**	102.80	104.30	1.50	B00232602	4.5	0.006	0.04	0.08	0.1
101.2 - 120.7: fine grained homogeneous with mu cl development, possibly silicified											
<<Min: 101.9 - 102.5 10% Min: Pyrrhotite>>			104.30	105.80	1.50	B00232603	4.9	0.021	0.06	0.04	0.53
<<Min: 101.9 - 102.5 2% Min: Chalcopyrite>>			110.00	111.50	1.50	B00232604	21.5	0.019	-0.01	0.65	0.87

Project: **KZK** **Hole Number:** **K95-055**

From (m)	To (m)	Rocktype & Description
		<<Min: 102.5 - 111.6 1% Min: Pyrrhotite>>
		<<Min: 111.1 - 113.5 7% Min: Ankerite>>
		<<Min: 112.5 - 114.6 5% Min: Pyrrhotite>>
		<<Min: 112.5 - 114.6 2% Min: Chalcopyrite>>
		<<Min: 114.6 - 116.8 0.5% Min: Galena>>
		<<Alt: 101.2 - 113.3 Moderate (Alt) Silicification>>
		<<Alt: 104 - 113.3 Moderate (Alt) Chlorite>>
		<<Alt: 105 - 113.3 Moderate (Alt) Muscovite>>
		<<Alt: 113.3 - 114.8 Strong (Alt) Chlorite>> massive 10cm stringer bands with sx
		<<Alt: 116.7 - 120.7 Moderate (Alt) Muscovite>>
		<<Vein: 104.3 - 105 90% Quartz-Sericite/White mica>>
		<<Vein: 108.3 - 108.5 100% Quartz>>
		<<Vein: 114.6 - 120.7 96% Quartz>>
		<<Struc: 111 - 111.1 Weak-Moderate (Alt) Fault>> gouge and broken

End of Hole @ 120.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
111.50	113.00	1.50	B00232605	3.5	-0.005	-0.01	0.08	0.03
114.60	116.10	1.50	B00232606	1.1	-0.005	0.01	0.02	0.03
116.10	117.60	1.50	B00232607	0.8	0.006	-0.01	0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-056

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415023.509	Core Size:		Azimuth:	100	Date Logging Complete:	
UTM Northing:	6815484.193	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1381.508	Casing Depth (m):		Length (m):	127.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	100		100	SS				☑	
20	-89	102		102	SS				☑	
50	-89	77		77	SS				☑	
81	-89	167		167	SS				☑	
111	-89	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.10**	**CASN** **Casing**									
9.10	**15.00**	**RHYvl** **Lapilli tuff**									
<<Min: 9.1 - 28.6 2% Min: Ankerite>>											
<<Min: 9.3 - 26.2 1% Min: Pyrrhotite>>											
15.00	**17.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
17.00	**26.20**	**RHYva** **Coarse grained to ash tuff**									
26.20	**28.60**	**MDSt** **Rhyolite tuff dominant mudstone**									
<<Min: 28.5 - 47.4 1% Min: Pyrite>>											
<<Min: 28.5 - 47.4 1% Min: Pyrrhotite>>											
28.60	**32.30**	**RHYv** **Rhyolite volcaniclastic**									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 28.6 - 37 5% Min: Ankerite>>													
<<Alt: 28.6 - 42.9 Weak (Alt) Muscovite>>													
32.30	**37.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 37 - 46 15% Min: Ankerite>>													
37.10	**42.60**	**RHYvl**	**Lapilli tuff**										
42.60	**77.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		76.30	77.80	1.50	B00264142	1.6	-0.005	-0.01	0.01	0.01
<<Min: 46 - 58 5% Min: Ankerite>>													
<<Min: 47.4 - 47.8 10% Min: Pyrite>>													
<<Min: 47.8 - 81.3 3% Min: Pyrite>>													
<<Min: 58 - 73.5 2% Min: Ankerite>>													
<<Alt: 42.9 - 67 Moderate (Alt) Muscovite>>													
<<Alt: 67 - 81.9 Strong (Alt) Muscovite>>													
<<Struc: 49.2 - 49.5 Moderate (Alt) Fault>> gouge													
<<Struc: 61 - 72 Moderate (Alt) Foliation>> development of secondary spaced clvg across dominant s1 fol, possible hinge zone													
77.50	**81.90**	**RHYv**	**Rhyolite volcaniclastic**		77.80	79.30	1.50	B00264143	0.3	0.008	-0.01	-0.01	0.03
<<Min: 81.3 - 82.3 5% Min: Pyrite>>					79.30	80.80	1.50	B00264144	0.6	0.006	0.02	0.01	0.02
<<Min: 81.3 - 82.3 5% Min: Pyrrhotite>>													
<<Min: 81.3 - 82.3 10% Min: Chalcopyrite>>													
81.90	**82.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 81.9 - 82 10% Min: Ankerite>>													
<<Alt: 81.9 - 82 Strong (Alt) Cordierite>>													
<<Alt: 81.9 - 82.3 Moderate (Alt) Chlorite>>													
82.30	**82.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**									
<<Min: 82.3 - 82.7 80% Min: Pyrite>>													
<<Min: 82.3 - 82.7 5% Min: Pyrrhotite>>													
<<Min: 82.3 - 82.7 10% Min: Chalcopyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
82.70	**83.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									
<<Min: 82.7 - 83.3 10% Min: Sphalerite>>													
<<Min: 82.7 - 83.3 80% Min: Pyrite>>													
<<Min: 82.7 - 83.3 5% Min: Chalcopyrite>>													
83.30	**84.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**									
<<Min: 83.3 - 84.4 15% Min: Sphalerite>>													
<<Min: 83.3 - 84.4 5% Min: Chalcopyrite>>													
84.40	**86.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 84.4 - 86.8 10% Min: Sphalerite>>													
<<Min: 84.4 - 86.8 80% Min: Pyrite>>													
<<Min: 84.4 - 86.8 2% Min: Chalcopyrite>>													
86.80	**90.00**	**OA**	**Magnetite bearing sulphides**	**FG**									
<<Min: 86.8 - 90 3% Min: Sphalerite>>													
<<Min: 86.8 - 90 60% Min: Pyrite>>													
<<Min: 86.8 - 90 25% Min: Chalcopyrite>>													
90.00	**93.80**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 90 - 93.8 3% Min: Sphalerite>>													
<<Min: 90 - 93.8 80% Min: Pyrite>>													
<<Min: 90 - 93.8 10% Min: Chalcopyrite>>													
93.80	**96.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**									
<<Min: 93.8 - 96.2 90% Min: Pyrite>>													
<<Min: 93.8 - 96.2 3% Min: Chalcopyrite>>													
96.20	**98.20**	**OA**	**Magnetite bearing sulphides**	**FG**									
<<Min: 96.2 - 98.2 1% Min: Sphalerite>>													
<<Min: 96.2 - 98.2 90% Min: Pyrite>>													
<<Min: 96.2 - 98.2 3% Min: Chalcopyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
98.20	**101.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**									
<<Min: 98.2 - 101.4 4% Min: Sphalerite>>													
<<Min: 98.2 - 101.4 90% Min: Pyrite>>													
101.40	**107.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
<<Min: 101.4 - 107.2 10% Min: Sphalerite>>													
107.20	**117.60**	**RHYv**	**Rhyolite volcaniclastic**		108.70	110.20	1.50	B00264145	1	0.012	-0.01	-0.01	0.01
<<Min: 107.2 - 110 10% Min: Pyrite>>					110.20	111.80	1.60	B00264146	-0.3	0.008	-0.01	-0.01	0.01
<<Min: 110 - 117 2% Min: Pyrrhotite>>					114.40	115.90	1.50	B00264147	0.7	-0.005	-0.01	-0.01	0.04
<<Min: 112 - 113 5% Min: Ankerite>>													
<<Min: 117 - 117.6 2% Min: Pyrrhotite>>													
<<Min: 117 - 117.6 5% Min: Chalcopyrite>>													
<<Alt: 111.2 - 115.3 Moderate (Alt) Chlorite>>													
<<Alt: 115.3 - 117.2 Strong (Alt) Chlorite>>													
<<Alt: 117.2 - 117.5 Intense (Alt) Chlorite>>													
<<Vein: 112 - 113 30% Quartz-Carbonate>>													
117.60	**118.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 117.6 - 118 10% Min: Sphalerite>>													
<<Min: 117.6 - 118 90% Min: Pyrite>>													
118.00	**124.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		119.50	121.00	1.50	B00264148	-0.3	-0.005	-0.01	-0.01	0.03
<<Min: 118 - 118.8 5% Min: Pyrite>>													
<<Min: 118 - 119.5 5% Min: Calcite>>													
<<Min: 118.8 - 124.4 1% Min: Pyrite>>													
<<Min: 119.5 - 124.4 20% Min: Calcite>>													
<<Min: 124.4 - 127.1 2% Min: Pyrite>>													
<<Min: 124.4 - 127.1 5% Min: Calcite>>													
<<Alt: 118 - 118.3 Strong (Alt) Chlorite>> 15cm CL-CP alteration extends into MAFi													
<<Alt: 124.4 - 127.1 Moderate (Alt) Silicification>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 124.4 - 127.1 Moderate (Alt) Muscovite>>

124.60 127.10 RHYi Aphanitic Rhyolite (intrusion)

End of Hole @ 127.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-057

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415023.806	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815339.393	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1384.641	Casing Depth (m):		Length (m):	50.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
18	-62	186		186	SS				☑	
50	-62	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.80**	**OVBN** **Overburden**									
10.80	**15.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**									
<<Min: 10.8 - 16.6 70% Min: Pyrite>>											
<<Min: 10.8 - 16.6 2% Min: Galena>>											
<<Min: 10.8 - 16.6 2% Min: Chalcopyrite>>											
<<Min: 10.8 - 25 1% Min: Ankerite>>											
15.80	**16.60**	**OA** **Magnetite bearing sulphides** **FMG**									
15.8 - 16.6: Could be MET2. 1.3% Cu 4.4% Pb											
16.60	**17.80**	**RHYva** **Coarse grained to ash tuff**									
16.6 - 17.8: Beige, medium grained, strongly foliated and moderately Mu altered. No evidence of lapilli or flow texture, matrix +/- homogeneous. Comprising siliceous bands/veinlets (mainly qtz), concordant,deformed. Could be RHYcw strongly foliated.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 16.6 - 17.8 4% Min: Pyrite>>

<<Min: 16.6 - 17.8 1% Min: Pyrrhotite>>

<<Min: 16.6 - 21.4 2% Min: Calcite>>

17.80 18.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **MCG**

18.30 21.40 RHYva Coarse grained to ash tuff

18.3 - 21.4: Beige, medium grained, strongly foliated and moderately Mu altered. No evidence of lapilli or flow texture, matrix +/- homogeneous. Comprising siliceous bands/veinlets (mainly qtz), concordant,deformed. Could be RHYcw strongly foliated.

<<Min: 18.3 - 21.4 0.5% Min: Sphalerite>>

<<Min: 18.3 - 21.4 2% Min: Pyrite>>

<<Min: 18.3 - 21.4 0.5% Min: Chalcopyrite>>

21.40 22.10 OA Magnetite bearing sulphides **FMG**

<<Min: 21.4 - 22.1 5% Min: Galena>>

22.10 25.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

22.1 - 25.2: beige, fine to medium grained, comprinsing silica bands, milky, deformed,folded and locally dismembered, " curdy" texture. Weakly/moderately MU altered.

<<Min: 22.1 - 25 5% Min: Calcite>> Associated with siliceous bands and veinlets.

<<Min: 22.1 - 25.2 0.5% Min: Sphalerite>>

<<Min: 22.1 - 25.2 2% Min: Pyrite>>

<<Min: 25 - 28.9 2% Min: Calcite>>

<<Min: 25 - 30.1 10% Min: Ankerite>>

25.20 25.90 OI Heavilly disseminated sulphides in host schist **CG**

<<Min: 25.2 - 25.9 3% Min: Sphalerite>>

<<Min: 25.2 - 25.9 15% Min: Pyrite>>

<<Min: 25.2 - 25.9 0.5% Min: Galena>>

<<Min: 25.2 - 25.9 0.5% Min: Chalcopyrite>>

25.90 30.10 RHYvl Lapilli tuff

25.9 - 30.1: beige, moderately to strongly sheared, > 15% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered. Matrix Mu altered. Could be lapilli tuff.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 26.6 - 27 2% Min: Sphalerite>>									
		<<Min: 26.6 - 27 40% Min: Pyrite>>									
		<<Min: 26.6 - 27 0.5% Min: Chalcopyrite>>									
		<<Min: 27 - 29.6 0.5% Min: Sphalerite>>									
		<<Min: 27 - 29.6 2% Min: Pyrite>>									
		<<Min: 27 - 29.6 0.2% Min: Chalcopyrite>>									
		<<Min: 29.7 - 30.2 50% Min: Pyrite>>									
		<<Min: 29.7 - 30.2 0.5% Min: Chalcopyrite>>									
		<<Alt: 27.4 - 30.1 Moderate-Strong (Alt) Muscovite>>									
30.10	**50.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	31.90	33.40	1.50	B00233035	-0.3	-0.005	-0.01	-0.01	-0.01
		30.1 - 50.9: Green , fine to medium grained, large interval of mafic intrusive, moderate to strongly sheared/foliated. Mainly chlorite altered (pervasive), biotite alteration (small clots disseminated within matrix) at the bottom of the unit. ~ 15% of Qtz-Cal veinlets									
		<<Min: 30.1 - 50.9 15% Min: Calcite>> qtz-ca veinlets.	33.40	34.90	1.50	B00233036	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Alt: 30.1 - 50.9 Moderate (Alt) Chlorite>>									
		<<Alt: 45 - 50.9 Weak (Alt) Biotite>>									
		End of Hole @ 50.9									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-058

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414977.718	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815464.52	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1381.238	Casing Depth (m):		Length (m):	122	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
32	-46	183		183	SS				☑	
62	-48	183		183	SS				☑	
93	-48	191		191	SS				☑	
120	-49	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 11.00 CASN Casing

11.00 13.00 RHYvl Lapilli tuff

<<Min: 11 - 12.8 0.5% Min: Pyrite>>

<<Min: 11 - 12.8 0.2% Min: Pyrrhotite>>

<<Min: 11 - 48.6 3% Min: Ankerite>>

<<Min: 11 - 72.2 0.5% Min: Calcite>>

<<Min: 12.8 - 16.2 3% Min: Pyrrhotite>>

13.00 15.00 MDSt Rhyolite tuff dominant mudstone

15.00 16.40 MDSc Carbonaceous dominant mudstone

<<Struc: 16.2 - 16.3 Moderate (Alt) Fault>> gouge

From (m)	To (m)		Rocktype & Description
16.40	**27.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 16.4 - 23.2 2% Min: Pyrrhotite>>			
27.80	**29.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 27.8 - 29.4 2% Min: Pyrrhotite>>			
<<Min: 29.4 - 37.1 2% Min: Pyrrhotite>>			
29.50	**37.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
37.00	**39.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 37.1 - 39.2 3% Min: Pyrrhotite>>			
39.00	**49.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 41.5 - 46.5 1.5% Min: Pyrrhotite>>			
<<Min: 48.6 - 55.8 7% Min: Ankerite>>			
<<Alt: 39 - 72.2 Moderate (Alt) Muscovite>>			
<<Struc: 46.3 - 46.4 Moderate (Alt) Fault>>			gouge
49.10	**49.40**	**MDSc**	**Carbonaceous dominant mudstone**
49.40	**54.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 49.4 - 57.2 1% Min: Pyrite>>			
<<Min: 49.4 - 57.2 1% Min: Pyrrhotite>>			
<<Vein: 54 - 63.1 15% Quartz-Carbonate>>			
54.70	**56.40**	**RHYva**	**Coarse grained to ash tuff**
<<Min: 55.8 - 69.1 3% Min: Ankerite>>			
56.40	**69.10**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 57.2 - 69.1 2% Min: Pyrrhotite>>			
69.10	**72.20**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 69.1 - 71 0.2% Min: Sphalerite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.70	68.20	1.50	B00264126	0.8	-0.005	-0.01	0.05	0.08
68.20	69.70	1.50	B00264127	1.3	0.007	-0.01	0.04	0.17

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 69.1 - 71 2% Min: Pyrite>>									
			<<Min: 69.1 - 71 0.5% Min: Chalcopyrite>>									
			<<Min: 69.1 - 72.2 20% Min: Ankerite>>									
			<<Vein: 69.8 - 72.2 30% Quartz-Carbonate>>									
72.20	**78.30**	**OA**	**Magnetite bearing sulphides**									
			<<Min: 72.2 - 78.3 10% Min: Sphalerite>>									
			<<Min: 72.2 - 78.3 70% Min: Pyrite>>									
			<<Min: 72.2 - 78.3 7% Min: Pyrrhotite>>									
			<<Min: 72.2 - 78.3 4% Min: Chalcopyrite>>									
			<<Min: 75.2 - 76.7 1% Min: Calcite>>									
			<<Min: 75.2 - 76.7 20% Min: Ankerite>>									
			<<Alt: 75.2 - 76 Moderate (Alt) Chlorite>>									
			<<Alt: 76 - 76.7 Moderate (Alt) Cordierite>>									
			<<Vein: 75.2 - 76.7 30% Quartz-Carbonate>> top and btm sx bounded by vein QZCB likely fault bounded sx lens									
78.30	**81.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
			<<Min: 78.3 - 81.7 60% Min: Pyrite>>									
			<<Min: 78.3 - 81.7 5% Min: Chalcopyrite>>									
81.70	**93.60**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	83.20	84.70	1.50	B00264128	0.3	-0.005	-0.01	-0.01	-0.01
			<<Min: 81.7 - 93.5 5% Min: Ankerite>>	84.70	86.00	1.30	B00264129	-0.3	0.007	-0.01	-0.01	-0.01
			<<Min: 81.7 - 95 3% Min: Calcite>>									
			<<Min: 85.9 - 91.5 2% Min: Sphalerite>>									
			<<Min: 85.9 - 91.5 4% Min: Pyrite>>									
			<<Min: 85.9 - 91.5 0.4% Min: Chalcopyrite>>									
			<<Min: 91.5 - 93.6 0.5% Min: Pyrite>>									
			<<Min: 91.5 - 93.6 0.5% Min: Pyrrhotite>>									
			<<Alt: 81.7 - 93.5 Moderate (Alt) Muscovite>>									
			<<Alt: 93.5 - 95.5 Moderate (Alt) Cordierite>>									
93.60	**95.50**	**RHY**	**undifferentiated rhyolite**									
			<<Min: 93.6 - 95.5 7% Min: Sphalerite>>									
			<<Min: 93.6 - 95.5 3% Min: Pyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 93.6 - 95.5 3% Min: Pyrrhotite>>

<<Min: 93.6 - 95.5 2% Min: Chalcopyrite>>

95.50 96.30 OF Pyrrhotite rich sulphides

95.5 - 96.3: this heavy PO needs to be distinguished in met zones

<<Min: 95.5 - 96.3 15% Min: Sphalerite>>

<<Min: 95.5 - 96.3 10% Min: Pyrite>>

<<Min: 95.5 - 96.3 60% Min: Pyrrhotite>>

<<Min: 95.5 - 96.3 4% Min: Chalcopyrite>>

96.30 101.50 RHY undifferentiated rhyolite

96.3 - 101.5: is CL fw alt w CP

<<Min: 96.3 - 101.5 5% Min: Sphalerite>>

<<Min: 96.3 - 101.5 2% Min: Pyrite>>

<<Min: 96.3 - 101.5 10% Min: Chalcopyrite>>

<<Alt: 96.3 - 103.1 Strong (Alt) Chlorite>>

<<Vein: 99.3 - 105.6 10% Quartz-Carbonate>>

101.50 103.10 RHY undifferentiated rhyolite

102.30	103.70	1.40	B00264131	8.2	0.018	0.18	0.04	0.47

<<Min: 101.5 - 103.1 5% Min: Calcite>>

<<Min: 101.5 - 106.6 0.5% Min: Pyrite>>

103.10 107.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

103.70	105.20	1.50	B00264132	-0.3	0.008	-0.01	-0.01	0.02

<<Min: 103.1 - 112.5 15% Min: Calcite>>

<<Min: 106.6 - 114.3 0.5% Min: Pyrite>>

<<Alt: 106.5 - 122 Weak (Alt) Silicification>>

<<Alt: 106.5 - 122 Moderate (Alt) Muscovite>>

107.30 112.50 RHYi Aphanitic Rhyolite (intrusion)

<<Struc: 110.8 - 111.3 Strong (Alt) Fault>> gouge and qz

<<Struc: 112.2 - 112.5 Fault>> gouge

112.50 122.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 112.5 - 122 10% Min: Calcite>>

<<Min: 114.3 - 115.5 0.5% Min: Pyrite>>

Project: KZK **Hole Number:** K95-058

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 122									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-059

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414977.68	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815465.52	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1381.364	Casing Depth (m):		Length (m):	113.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
20	-65	185		185	SS				☑	
50	-65	185		185	SS				☑	
81	-65	185		185	SS				☑	
108	-64	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.00 OVBN Overburden

10.00 24.20 RHYvl Lapilli tuff

10 - 24.2: oxidized, fault zones, a little difficult to discern

<<Min: 10 - 17.1 1% Min: Pyrrhotite>>

<<Min: 10 - 67 7% Min: Ankerite>>

<<Min: 17.1 - 62.1 1% Min: Pyrrhotite>>

<<Alt: 10 - 36.3 Weak (Alt) Muscovite>>

<<Struc: 17 - 23 Moderate-Strong (Alt) Fault>> cataclastic and gouge zones over 50% of interval

24.20 46.80 RHYc Rhyolite coherant volcanics

24.2 - 46.8: narrow interbeds of MDSW @ 35.3-35.4 and 32-32.1

<<Alt: 36.3 - 62.1 Weak-Moderate (Alt) Muscovite>>

<<Struc: 38.9 - 40.7 Weak-Moderate (Alt) Fault>> narrow 5-10cm catclastic gouge zones over 10% of the core

From (m)	To (m)	Rocktype & Description
46.80	**47.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
47.80	**51.70**	**RHYcq** **Quartz porphyry**
51.70	**61.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
61.70	**67.00**	**RHYc** **Rhyolite coherant volcanics**

61.7 - 67: extremely weak carbonaceous component.

<<Min: 66.1 - 70.8 5% Min: Sphalerite>>

<<Min: 66.1 - 70.8 5% Min: Pyrite>>

<<Min: 66.1 - 70.8 5% Min: Pyrrhotite>>

<<Min: 66.1 - 70.8 3% Min: Galena>>

<<Min: 66.1 - 70.8 5% Min: Chalcopyrite>>

<<Alt: 62.1 - 67 Moderate (Alt) Muscovite>>

67.00	**67.90**	**SEDc** **calcareous Sediment**

67 - 67.9: calcite chlorite rock. Protolith difficult but…

<<Min: 67 - 67.9 50% Min: Calcite>>

<<Alt: 67 - 69.7 Weak (Alt) Muscovite>>

<<Alt: 67 - 69.7 Strong (Alt) Chlorite>>

67.90	**70.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
70.80	**71.70**	**OA** **Magnetite bearing sulphides**

<<Min: 70.8 - 71.7 8% Min: Sphalerite>>

<<Min: 70.8 - 71.7 70% Min: Pyrite>>

<<Min: 70.8 - 71.7 2% Min: Chalcopyrite>>

<<Min: 71 - 82.5 10% Min: Calcite>>

71.70	**75.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 71.7 - 75.1 15% Min: Sphalerite>>

<<Min: 71.7 - 75.1 70% Min: Pyrite>>

<<Min: 71.7 - 75.1 2% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
62.90	64.40	1.50	B00232574	0.3	-0.005	-0.01	0.01	0.01

From (m)	To (m)	Rocktype & Description
75.10	**77.20**	**OA** **Magnetite bearing sulphides**
<<Min: 75.1 - 77.2 25% Min: Sphalerite>>		
<<Min: 75.1 - 77.2 70% Min: Pyrite>>		
<<Min: 75.1 - 77.2 3% Min: Chalcopyrite>>		
77.20	**82.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 77.2 - 82.5 20% Min: Sphalerite>>		
<<Min: 77.2 - 82.5 70% Min: Pyrite>>		
<<Min: 77.2 - 82.5 3% Min: Chalcopyrite>>		
82.50	**83.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**
82.5 - 83.4: omogeneous with 3-5% 2-3mm ankerite after feldspar xtal tuff?		
<<Min: 82.5 - 95.1 7% Min: Ankerite>>		
<<Alt: 82.5 - 95.1 Moderate-Strong (Alt) Muscovite>>		
83.40	**84.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
83.4 - 84.2: very white siliceous narrow unit with py and black <1mm partings		
84.20	**89.60**	**RHYvx** **Quartz and/or feldspar crystal tuff**
84.2 - 89.6: omogeneous with 3-5% 2-3mm ankerite after feldspar xtal tuff?		
<<Min: 84.2 - 88.4 2% Min: Pyrite>>		
<<Min: 88.9 - 91.5 3% Min: Pyrite>>		
<<Min: 88.9 - 91.5 1% Min: Pyrrhotite>>		
<<Min: 88.9 - 91.5 1% Min: Chalcopyrite>>		
<<Vein: 88.3 - 88.8 100% Quartz-Carbonate>>		
89.60	**91.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
91.50	**91.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
85.50	87.00	1.50	B00232575	0.5	-0.005	-0.01	-0.01	-0.01
87.00	88.00	1.00	B00232576	0.4	0.005	-0.01	-0.01	-0.01
88.00	89.10	1.10	B00232577	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description

<<Min: 91.5 - 91.8 5% Min: Sphalerite>>

<<Min: 91.5 - 91.8 70% Min: Pyrite>>

91.80 95.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 91.8 - 95.1 5% Min: Pyrite>>

95.10 97.10 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 95.1 - 97.1 10% Min: Sphalerite>>

<<Min: 95.1 - 97.1 80% Min: Pyrite>>

<<Min: 95.1 - 97.1 2% Min: Chalcopyrite>>

97.10 98.50 OJ Heavilly disseminated sulphides in proximal altered rock

97.1 - 98.5: CHLORITE CP, SP, PB STRINGER ALTERATION ZONE IN MAFT! Continues below with no sx to 95.7m

<<Min: 97.1 - 98.5 2% Min: Sphalerite>>

<<Min: 97.1 - 98.5 3% Min: Pyrite>>

<<Min: 97.1 - 98.5 5% Min: Pyrrhotite>>

<<Min: 97.1 - 98.5 10% Min: Chalcopyrite>>

<<Min: 97.1 - 103.5 20% Min: Calcite>>

<<Alt: 97.1 - 99.7 Strong (Alt) Chlorite>> banded to massive as fw stringer zone

98.50 113.10 MAFt Mafic Volcaniclastics

98.5 - 113.1: short central section that is so bleache mu altered that it appears like a felsic unit.

<<Min: 102.8 - 106 1% Min: Pyrite>>

<<Min: 106 - 113 20% Min: Calcite>>

<<Min: 110.1 - 110.2 3% Min: Sphalerite>>

<<Min: 110.1 - 110.2 2% Min: Pyrite>>

<<Min: 110.1 - 110.2 5% Min: Pyrrhotite>>

<<Alt: 103.5 - 108.8 Weak-Moderate (Alt) Silicification>>

<<Alt: 103.5 - 108.8 Moderate (Alt) Muscovite>>

<<Vein: 100.2 - 100.6 100% Quartz-Chlorite>>

<<Struc: 108.5 - 110 Moderate-Strong (Alt) Fault>> 40% clay gouge zones

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
100.00	101.50	1.50	B00232578	-0.3	0.005	-0.01	-0.01	0.04
101.50	103.00	1.50	B00232579	0.4	-0.005	-0.01	-0.01	0.04

Project: KZK **Hole Number:** K95-059

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 113.1									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-060

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414977.53125	Core Size:		Azimuth:	200	Date Logging Complete:	
UTM Northing:	6815465	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1381.26	Casing Depth (m):		Length (m):	121	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Gap in sample analytical results from 92.8-98.5m. Nice chl alt in FW of nassive sulphide at 106.9-109.9m. Mineralized SEDc unit in hanging wall of massive sulphide lense.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	200		200	SS				☑	
17	-88	202		202	SS				☑	
48	-88	207		207	SS				☑	
78	-87	202		202	SS				☑	
121	-85	198		198	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 11.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

9.1 - 11.9: has RHYvl sections

<<Min: 9.1 - 38.5 0.5% Min: Pyrite>>

<<Min: 9.1 - 38.5 0.2% Min: Pyrrhotite>>

11.90 21.40 RHYvl Lapilli tuff

<<Alt: 17 - 61.3 Weak-Moderate (Alt) Muscovite>>

21.40 27.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Struc: 22.5 - 25.1 Weak-Moderate (Alt) Fault>> zone of broken - fractured core with minor gouge

From (m)	To (m)	Rocktype & Description
27.10	**29.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
29.00	**35.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 33.3 - 38 Weak-Moderate (Alt) Chlorite>> weak bands and dissim		
35.40	**38.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Struc: 36.6 - 36.7 Moderate (Alt) Fault>> fracture with 1 cm gouge		
38.50	**39.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
38.5 - 39.6: 9.0: massive py, sp band		
<<Min: 38.5 - 53.3 3% Min: Pyrrhotite>>		
39.60	**44.80**	**RHYv** **Rhyolite volcaniclastic**
39.6 - 44.8: mixed cw and vl		
44.80	**47.20**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Struc: 44.9 - 45.2 Moderate (Alt) Fault>> fracture zone, 2 cm gouge		
47.20	**53.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
53.30	**53.90**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 53.3 - 54 2% Min: Pyrite>>		
<<Min: 53.3 - 54 2% Min: Pyrrhotite>>		
53.90	**56.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 56 - 56.7 3% Min: Pyrrhotite>>		
56.20	**56.80**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 56.7 - 63.2 0.5% Min: Pyrite>>		
<<Min: 56.7 - 63.2 3% Min: Pyrrhotite>>		
56.80	**63.10**	**RHYc** **Rhyolite coherant volcanics**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 61.3 - 76 Moderate (Alt) Muscovite>>													
63.10	**66.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**										
<<Min: 63.2 - 69.5 4% Min: Pyrite>>													
<<Min: 63.2 - 69.5 0.5% Min: Pyrrhotite>>													
66.10	**67.00**	**MDSc**	**Carbonaceous dominant mudstone**										
67.00	**77.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		73.40	74.90	1.50	B00267241	0.4	-0.005	-0.01	-0.01	0.01
<<Min: 76 - 78.3 0.5% Min: Sphalerite>>					74.90	76.40	1.50	B00267242	0.3	-0.005	-0.01	0.01	0.01
<<Min: 76 - 78.3 5% Min: Pyrrhotite>>													
<<Alt: 76 - 81.5 Moderate-Strong (Alt) Cordierite>> replaced by chl, qtz, carb													
<<Alt: 76 - 82.5 Weak (Alt) Muscovite>>													
77.10	**86.90**	**SEDc**	**calcareous Sediment**	**CG**									
77.1 - 86.9: contains magnetite, met 3 from 77.3-85.4													
<<Min: 79.5 - 86.9 10% Min: Pyrite>>													
<<Min: 79.5 - 90.4 6% Min: Sphalerite>>													
<<Min: 79.5 - 90.4 5% Min: Pyrrhotite>>													
<<Min: 79.5 - 90.4 2% Min: Chalcopyrite>>													
<<Min: 81.5 - 85.3 5% Min: Magnetite>> in patches													
<<Min: 86.7 - 87.7 5% Min: Calcite>>													
<<Alt: 77.2 - 106.9 Weak (Alt) Silicification>>													
<<Vein: 78.2 - 86.9 15% Quartz>> breccia filling													
86.90	**90.40**	**OA**	**Magnetite bearing sulphides**	**MG**									
86.9 - 90.4: contains magnetite													
<<Min: 86.9 - 90.4 45% Min: Pyrite>>													
<<Min: 86.9 - 93.8 3% Min: Magnetite>> in patches and porphyoblasts													
90.40	**91.30**	**OA**	**Magnetite bearing sulphides**	**MG**									
90.4 - 91.3: contains magnetite													
<<Min: 90.4 - 91.3 10% Min: Sphalerite>>													
<<Min: 90.4 - 91.3 75% Min: Pyrite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 90.4 - 91.3 10% Min: Pyrrhotite>>

<<Min: 90.4 - 91.3 1% Min: Chalcopyrite>>

91.30 94.50 OJ Heavilly disseminated sulphides in proximal altered rock **MG**

91.3 - 94.5: low dis mag

<<Min: 91.3 - 94.5 6% Min: Sphalerite>>

<<Min: 91.3 - 94.5 30% Min: Pyrite>>

<<Min: 91.3 - 94.5 4% Min: Pyrrhotite>>

<<Min: 91.3 - 94.5 0.5% Min: Chalcopyrite>>

94.50 99.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **FG**

<<Min: 96.6 - 99.6 5% Min: Calcite>>

99.60 104.30 RHYvx Quartz and/or feldspar crystal tuff

99.6 - 104.3: feldspar phenos

<<Min: 99.6 - 104.3 1% Min: Calcite>>

<<Alt: 99.7 - 105 Moderate (Alt) Muscovite>>

104.30 106.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **FG**

<<Min: 104.3 - 106.9 15% Min: Sphalerite>>

<<Min: 104.3 - 106.9 60% Min: Pyrite>>

<<Min: 104.3 - 106.9 3% Min: Chalcopyrite>>

106.90 109.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) **CG**

<<Min: 106.9 - 111.6 2% Min: Pyrrhotite>>

<<Min: 106.9 - 111.6 2% Min: Chalcopyrite>>

<<Min: 106.9 - 116 20% Min: Calcite>> and calcite vein

<<Alt: 106.9 - 109.9 Moderate-Strong (Alt) Chlorite>> chl with cpy

<<Alt: 106.9 - 112 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
109.90	**121.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 111.6 - 114.3 0.5% Min: Pyrite>>

<<Min: 116.2 - 121 1% Min: Pyrite>>

<<Alt: 115.9 - 121 Weak (Alt) Muscovite>>

<<Vein: 114.3 - 115.3 60% Quartz-Carbonate>> \

End of Hole @ 121

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.90	114.40	1.50	B00267243	-0.3	-0.005	-0.01	-0.01	0.02
114.40	115.90	1.50	B00267244	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-061

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415025.262	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815378.964	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1385.306	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
35	-46	178		178	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**26.00**	**OVBN** **Overburden**
26.00	**30.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

26 - 30.8: Beige, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, " curdy" texture. Moderately MU and AK altered.

29.45-29.55m: Short interval of mudstone.

<<Min: 26 - 34.6 1% Min: Pyrite>>

<<Min: 26.2 - 34.6 6% Min: Ankerite>> Occuring as bands/fragments, associated with veinlets?

<<Alt: 27.7 - 34.6 Strong (Alt) Muscovite>>

30.80	**31.40**	**MDSt** **Rhyolite tuff dominant mudstone**

30.8 - 31.4: Interval intensively foliated (fault), Comprinsing thin carbonaceous bands.

<<Struc: 30.8 - 31.4 Strong (Alt) Fault>> Interval strongly fractured, comprising gauge interval (10cm).

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
30.70	32.20	1.50	B00233037	17.8	0.108	0.02	0.2	0.86

From (m)	To (m)	Rocktype & Description		
31.40	**33.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	

31.4 - 33.7: Beige, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy'' texture. Moderately MU and AK altered. Locally, short interval of Mdst (~5cm wide).

33.70	**34.60**	**RHYv**	**Rhyolite volcaniclastic**	

33.7 - 34.6: Sharp contact with RHYcw, no evidence of flow texture, +/- homogeneous. Probably volcanoclastic (felsic) sequence, medium to coarse grained, ash tuff?

<<Alt: 33.7 - 34.9 Moderate (Alt) Cordierite>> occuring as disseminated crystals.

34.60	**35.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**

<<Min: 34.6 - 34.9 15% Min: Ankerite>>

<<Min: 34.6 - 35.2 3% Min: Pyrite>>

<<Min: 34.6 - 35.2 2% Min: Pyrrhotite>>

<<Min: 34.6 - 35.2 1% Min: Chalcopyrite>>

<<Alt: 34.6 - 35.2 Weak-Moderate (Alt) Chlorite>>

35.20	**40.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

35.2 - 40.1: Comprinsing centimetric coarse grained (Py) bands

<<Min: 35.2 - 40.1 10% Min: Sphalerite>>

<<Min: 35.2 - 40.1 80% Min: Pyrite>>

<<Min: 35.2 - 40.1 2% Min: Pyrrhotite>>

<<Min: 35.2 - 40.1 3% Min: Chalcopyrite>>

40.10	**40.20**	**RHYv**	**Rhyolite volcaniclastic**	
40.20	**40.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**

<<Min: 40.2 - 40.3 10% Min: Sphalerite>>

<<Min: 40.2 - 40.3 80% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
32.20	33.70	1.50	B00233038	8.9	0.236	0.01	0.13	0.19

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

40.30 40.80 RHYv Rhyolite volcaniclastic

40.3 - 40.8: Beige, no evidence of flow texture, +/- homogeneous. Probably volcanoclastic (felsic) sequence, medium to coarse grained, ash tuff?

<<Min: 40.3 - 40.8 1% Min: Pyrite>>

40.80 40.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MCG

<<Min: 40.8 - 40.9 15% Min: Sphalerite>>

<<Min: 40.8 - 40.9 75% Min: Pyrite>>

<<Min: 40.8 - 40.9 1% Min: Chalcopyrite>>

<<Min: 40.8 - 46.9 3% Min: Calcite>>

<<Min: 40.8 - 49 2% Min: Ankerite>> Occuring as bands/fragments, associated with veinlets?

40.90 42.80 RHYv Rhyolite volcaniclastic

40.9 - 42.8: Beige, no evidence of flow texture, +/- homogeneous. Probably volcanoclastic (felsic) sequence, medium to coarse grained, ash tuff? After 42.8 m, Flow texture appears ("curdy" texture).

<<Alt: 41.3 - 43.9 Moderate-Strong (Alt) Muscovite>>

42.80 43.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

42.8 - 43.9: Beige, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, " curdy" texture. Moderately MU and weakly AK altered.

43.90 44.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FCG

43.9 - 44.3: Comprinsing centimetric coarse grained (Py) bands

<<Min: 43.9 - 44.3 10% Min: Sphalerite>>

<<Min: 43.9 - 44.3 80% Min: Pyrite>>

<<Min: 43.9 - 44.3 2% Min: Chalcopyrite>>

44.30 47.50 OJ Heavilly disseminated sulphides in proximal altered rock MCG

<<Min: 46.9 - 47.5 5% Min: Pyrite>>

<<Min: 46.9 - 47.5 5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 46.9 - 47.5 2% Min: Chalcopyrite>>
		<<Alt: 44.3 - 51.6 Strong (Alt) Muscovite>>
47.50	**51.60**	**RHYc** **Rhyolite coherant volcanics**
		47.5 - 51.6: Beige, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and mostly dismembered, no evidence of "curdy" texture. Moderately MU and AK altered.
		<<Min: 47.5 - 51.6 1% Min: Calcite>>
		<<Min: 47.5 - 51.7 1% Min: Pyrite>>
		<<Min: 49 - 51.6 4% Min: Ankerite>> Occuring as bands/fragments, associated with veinlets?
51.60	**59.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		51.6 - 59.7: Green, fine to medium grained, large interval of mafic intrusive, strongly sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong). Centimetric chlorite clots, flattered, mafic crystals altered? > 15% of Qtz-Cal veinlets/bands, concordant.
		<<Min: 51.6 - 59.7 18% Min: Calcite>> Associated with qtz veinlets, and also patchy/blebs.
		<<Alt: 51.6 - 59.7 Moderate-Strong (Alt) Chlorite>>
End of Hole @ 59.7		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.00	50.50	1.50	B00233039	0.4	-0.005	-0.01	-0.01	-0.01
50.50	52.00	1.50	B00233041	6.3	0.005	0.07	0.13	0.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-062

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415025.249	Core Size:		Azimuth:	115	Date Logging Complete:	
UTM Northing:	6815379.084	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1385.267	Casing Depth (m):		Length (m):	61.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	115		115	SS				☑	
29	-86	117		117	SS				☑	
61	-87	142		142	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**18.00**	**OVBN** **Overburden**									
18.00	**25.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 18 - 25 2% Min: Pyrite>>											
<<Min: 20 - 36.1 5% Min: Ankerite>>											
<<Alt: 21 - 36 Weak-Moderate (Alt) Muscovite>>											
25.80	**27.00**	**MDSt** **Rhyolite tuff dominant mudstone**									
<<Min: 26.5 - 32.9 2% Min: Pyrite>>											
27.00	**27.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
27.80	**29.90**	**MDSt** **Rhyolite tuff dominant mudstone**									
29.90	**33.10**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 32.9 - 33.1 Strong (Alt) Fault>> gouge									
33.10	**35.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
		<<Min: 33.1 - 40 0.3% Min: Sphalerite>>									
		<<Min: 33.1 - 40 20% Min: Pyrite>>									
		<<Min: 33.1 - 40 0.5% Min: Galena>>									
35.00	**36.10**	**MDSt Rhyolite tuff dominant mudstone**									
		35 - 36.1: missing core, empty boxes beyond through massive sulphide. No shoulder samples possible									
36.10	**40.00**	**RHYc Rhyolite coherant volcanics**									
		36.1 - 40: core missing, corellated from cominco log									
40.00	**50.80**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		40 - 50.8: core missing, assays and ob indicate met7 however top 1.5m might be met8									
		<<Min: 40 - 50.8 12% Min: Sphalerite>>									
		<<Min: 40 - 50.8 65% Min: Pyrite>>									
		<<Min: 40 - 50.8 5% Min: Galena>>									
		<<Min: 40 - 50.8 0.5% Min: Chalcopyrite>>									
50.80	**51.10**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
		<<Min: 50.8 - 58 5% Min: Ankerite>>									
		<<Min: 50.8 - 61.9 1% Min: Pyrite>> mm wavy bands as well									
		<<Min: 50.8 - 61.9 1% Min: Pyrrhotite>> same as py above									
		<<Alt: 50.8 - 55 Trace (Alt) Chlorite>>									
		<<Alt: 50.8 - 61.9 Weak-Moderate (Alt) Muscovite>>									
51.10	**55.80**	**RHYva Coarse grained to ash tuff**	52.30	53.80	1.50	B00232608	-0.3	-0.005	-0.01	-0.01	-0.01
		51.1 - 55.8: with ankerite porphyroblasts. Has been called rhyvx with ankerite after feldsapr. Same unit. Just not sure about the feldspar replacement									
		<<Vein: 52.9 - 53.1 100% Quartz>>	53.80	55.30	1.50	B00232609	-0.3	0.015	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
55.80	**61.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

55.8 - 61.9: 58-60m is caught in a major fault that turns the rock more schistose on its margins. RHYv looking

<<Vein: 61.2 - 61.9 20% Quartz>>

<<Struc: 58.3 - 59 Strong (Alt) Fault>> gouge and cataclastic over entire interval

End of Hole @ 61.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-063

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:		Date Logging Start:	06-Sep-15
UTM Easting	414951.042	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815375.715	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1382.957	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
20	-46	174		174	SS				☑	
59	-47	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.00**	**OVBN Overburden**									
11.00	**19.60**	**RHYc Rhyolite coherant volcanics**	14.10	15.60	1.50	B00264117	7.8	0.037	0.03	0.11	0.28
11 - 19.6: Moderate siliceous banding and ankerite-after-silica bands. Difficult to see through strong MU-alteration											
<<Min: 11 - 14.2 2% Min: Ankerite>>			15.60	17.10	1.50	B00264118	1.2	0.008	-0.01	0.03	0.05
<<Min: 11 - 19.6 3% Min: Pyrrhotite>>											
<<Min: 14.2 - 15.6 20% Min: Ankerite>>											
<<Min: 15.6 - 19.6 10% Min: Ankerite>>											
<<Min: 18.8 - 19.6 1% Min: Pyrrhotite>>											
<<Alt: 11 - 19.6 Strong (Alt) Muscovite>>											
<<Vein: 17.4 - 18.8 Quartz>>											
19.60	**21.10**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 19.6 - 21.1 5% Min: Sphalerite>>											

From (m)	To (m)	Rocktype & Description
		<<Min: 19.6 - 21.1 80% Min: Pyrite>>
		<<Min: 19.6 - 21.1 5% Min: Chalcopyrite>>
21.10	**22.20**	**OA** **Magnetite bearing sulphides**
		<<Min: 21.1 - 22.2 3% Min: Sphalerite>>
		<<Min: 21.1 - 22.2 80% Min: Pyrite>>
		<<Min: 21.1 - 22.2 3% Min: Chalcopyrite>>
22.20	**24.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 22.2 - 24.6 2% Min: Sphalerite>>
		<<Min: 22.2 - 24.6 80% Min: Pyrite>>
		<<Min: 22.2 - 24.6 5% Min: Chalcopyrite>>
24.60	**32.60**	**RHYvl** **Lapilli tuff**
		24.6 - 32.6: Well developed volcaniclastic texture with lpl
		<<Min: 24.6 - 32.6 10% Min: Ankerite>>
		<<Alt: 24.6 - 25.8 Strong (Alt) Muscovite>>
		<<Vein: 31 - 31.6 Quartz>>
		<<Struc: 29.1 - 29.3 Weak-Moderate (Alt) Fault>> fault gouge zone
32.60	**39.60**	**RHYc** **Rhyolite coherant volcanics**
		32.6 - 39.6: 32.6-33.3 shows good cw texture. The remainder of the unit has a moderately developed banding texure.
		<<Min: 32.6 - 40 2% Min: Pyrite>>
		<<Min: 32.6 - 40.3 5% Min: Ankerite>>
		<<Min: 34.9 - 40 2% Min: Pyrite>>
		<<Min: 34.9 - 40 1% Min: Pyrrhotite>>
		<<Min: 34.9 - 40 1% Min: Chalcopyrite>>
		<<Alt: 33.3 - 39.6 Moderate (Alt) Muscovite>>
		<<Vein: 34 - 35 Quartz>>
		<<Struc: 33.3 - 34 Weak-Moderate (Alt) Fault>> fault gouge
39.60	**40.00**	**OI** **Heavilly disseminated sulphides in host schist**
		39.6 - 40: Heavily disseminated sulphide in host schist (non-CL-altered)

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.10	27.60	1.50	B00264119	0.5	-0.005	-0.01	-0.01	-0.01
27.60	29.10	1.50	B00264121	-0.3	-0.005	-0.01	-0.01	-0.01
35.50	37.00	1.50	B00264122	0.7	0.006	-0.01	-0.01	-0.01
37.00	38.50	1.50	B00264123	4.4	0.027	0.03	0.03	0.14

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 39.6 - 40.3 Strong (Alt) Muscovite>> Within OI interval. Muscovite after chlorite?

40.00 40.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 40 - 40.8 10% Min: Sphalerite>>

<<Min: 40 - 40.8 80% Min: Pyrite>>

<<Min: 40 - 40.8 1% Min: Chalcopyrite>>

40.80 45.80 OJ Heavilly disseminated sulphides in proximal altered rock

40.8 - 45.8: Strong proximal altered rock with disseminated/stringers of sulphide

<<Min: 40.8 - 41.5 50% Min: Pyrite>>

<<Min: 40.8 - 41.5 20% Min: Pyrrhotite>>

<<Min: 40.8 - 41.5 15% Min: Chalcopyrite>>

<<Min: 40.8 - 45.5 20% Min: Ankerite>>

<<Alt: 40.8 - 41.6 Moderate (Alt) Cordierite>> Fine to v.c.g. cordierite porphyroblasts

<<Alt: 40.8 - 43.1 Moderate (Alt) Muscovite>>

<<Alt: 40.8 - 43.5 Weak (Alt) Biotite>>

<<Alt: 40.8 - 47 Strong (Alt) Chlorite>>

45.80 49.50 RHY undifferentiated rhyolite

45.8 - 49.5: Completely replaced by CL & MS so not possible to determine protolith.

<<Min: 45.8 - 50.3 3% Min: Pyrite>>

<<Min: 45.8 - 50.3 2% Min: Pyrrhotite>>

<<Min: 45.8 - 50.3 1% Min: Chalcopyrite>>

<<Alt: 47 - 48 Strong (Alt) Muscovite>>

<<Alt: 48 - 50.3 Strong (Alt) Chlorite>>

49.50 50.30 OJ Heavilly disseminated sulphides in proximal altered rock

49.5 - 50.3: Consistent with MET 8 (common CP stringers and bands of SP-CP)

From (m)	To (m)	Rocktype & Description
50.30	**59.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

50.3 - 59.7: Chlorite-calcite-biotite schist. Generally lacks bands of calcite that are more typical of this unit.

<<Min: 50.3 - 59.7 10% Min: Calcite>>

<<Alt: 50.3 - 59.7 Strong (Alt) Chlorite>>

<<Alt: 50.3 - 59.7 Strong (Alt) Biotite>>

End of Hole @ 59.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
51.80	53.30	1.50	B00264124	-0.3	-0.005	-0.01	-0.01	0.02
53.30	54.80	1.50	B00264125	-0.3	-0.005	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-064

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414951.088	Core Size:		Azimuth:	220	Date Logging Complete:	
UTM Northing:	6815376.2	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1383.029	Casing Depth (m):		Length (m):	74.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Metallurgy Domain for the massive sulphide lenses on this hole is MET3 all the way through. However, there are only 2 short sections of magnetite bearing massive sulphide. Mostly MET7, MET5, and magnetite bearing sulphide is MET2.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	220		220	SS				☑	
21	-88	219		219	SS				☑	
53	-89	322		322	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**OVBN Overburden**									
9.80	**11.30**	**MDSt Rhyolite tuff dominant mudstone grey**									
9.8 - 11.3: moderate to strong MDS content, anastomosing shistosity											
<<Min: 9.8 - 14.3 5% Min: Ankerite>>											
<<Min: 9.8 - 18.9 0.5% Min: Pyrrhotite>>											
<<Alt: 9.8 - 18.9 Moderate (Alt) Muscovite>> through MDS units											
11.30	**17.40**	**RHYv Rhyolite volcaniclastic light grey**									
11.3 - 17.4: contorted fol'n, PY along fol'n,											
<<Min: 14.3 - 23.3 1% Min: Ankerite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.40	**18.90**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey**									
17.4 - 18.9: possibly coherent RHY,moderate MDS content													
<<Min: 18.8 - 24.3 1% Min: Pyrite>>													
<<Min: 18.8 - 24.3 1% Min: Chalcopyrite>>													
18.90	**24.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**grey**	19.80	21.30	1.50	B00267718	2	-0.005	-0.01	0.14	0.13
<<Min: 23.3 - 24.3 15% Min: Ankerite>> lenses and bands in schist					21.30	22.80	1.50	B00267719	1.1	-0.005	-0.01	0.04	0.05
<<Alt: 18.9 - 24.6 Strong (Alt) Muscovite>> mixed with AK at bottom													
24.30	**26.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
<<Min: 24.3 - 26.5 10% Min: Sphalerite>>													
<<Min: 24.3 - 26.5 70% Min: Pyrite>>													
<<Min: 24.3 - 26.5 2% Min: Chalcopyrite>>													
26.50	**27.70**	**OA**	**Magnetite bearing sulphides**										
<<Min: 26.5 - 27.7 10% Min: Sphalerite>>													
<<Min: 26.5 - 27.7 60% Min: Pyrite>>													
<<Min: 26.5 - 27.7 10% Min: Magnetite>> bands													
<<Min: 26.5 - 27.7 5% Min: Chalcopyrite>>													
27.70	**30.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
<<Min: 27.7 - 30.3 15% Min: Sphalerite>>													
<<Min: 27.7 - 30.3 65% Min: Pyrite>>													
<<Min: 27.7 - 30.3 2% Min: Chalcopyrite>>													
30.30	**42.60**	**RHYc**	**Rhyolite coherant volcanics**	**green**	31.80	33.30	1.50	B00267721	0.3	-0.005	-0.01	-0.01	0.01
30.3 - 42.6: coherent, and volcaniclastic sections													
<<Min: 38.7 - 40.8 1% Min: Sphalerite>>					33.30	34.80	1.50	B00267722	0.4	-0.005	-0.01	-0.01	-0.01
<<Min: 38.7 - 40.8 20% Min: Pyrite>>					34.80	36.30	1.50	B00267723	0.5	0.006	-0.01	-0.01	-0.01
<<Min: 40.8 - 42.6 2% Min: Pyrite>>					36.30	38.10	1.80	B00267724	3.7	0.012	-0.01	-0.01	-0.01
<<Min: 40.8 - 42.6 2% Min: Chalcopyrite>>													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 30.3 - 42.6 Moderate (Alt) Muscovite>> possibly strong locally										
		<<Vein: 34.9 - 38.9 20% Quartz-Carbonate>> QZ-CB veining										
42.60	**44.60**	**OI** **Heavilly disseminated sulphides in host schist**										
		<<Min: 42.6 - 44.6 10% Min: Sphalerite>>										
		<<Min: 42.6 - 44.6 30% Min: Pyrite>>										
		<<Min: 42.6 - 44.6 3% Min: Magnetite>> lower part of section										
		<<Min: 42.6 - 44.6 1% Min: Galena>>										
		<<Min: 42.6 - 44.6 3% Min: Chalcopyrite>>										
44.60	**46.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
		<<Min: 44.6 - 46 15% Min: Sphalerite>>										
		<<Min: 44.6 - 46 70% Min: Pyrite>>										
		<<Min: 44.6 - 46 1% Min: Galena>>										
		<<Min: 44.6 - 46 3% Min: Chalcopyrite>>										
46.00	**50.00**	**RHYcq** **Quartz porphyry**	**green**	47.50	49.00	1.50	B00267725	6	0.053	0.14	0.04	0.46
		46 - 50: boudin coherent, siliceous clasts with CL-CP-AS in matrix, no MG										
		<<Min: 46 - 50.9 1% Min: Pyrrhotite>>		49.00	50.30	1.30	B00267726	13.3	0.139	0.44	0.06	0.77
		<<Min: 46 - 50.9 1% Min: Chalcopyrite>>										
		<<Alt: 46 - 55.6 Strong (Alt) Chlorite>> heavy dark CL, possible CI locally?										
50.00	**55.60**	**RHYv** **Rhyolite volcaniclastic**	**green**	50.90	52.40	1.50	B00267727	13.6	0.051	0.34	0.05	0.75
		<<Min: 50.9 - 55.6 1% Min: Pyrite>>		52.40	53.90	1.50	B00267728	1.6	-0.005	0.11	-0.01	0.03
		<<Min: 50.9 - 55.6 1% Min: Pyrrhotite>>										
		<<Min: 50.9 - 55.6 1% Min: Chalcopyrite>>										
		<<Alt: 53.4 - 55.6 Moderate (Alt) Muscovite>>										
55.60	**57.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
		<<Min: 55.6 - 57.6 15% Min: Sphalerite>>										
		<<Min: 55.6 - 57.6 70% Min: Pyrite>>										
		<<Min: 55.6 - 57.6 1% Min: Pyrrhotite>>										
		<<Min: 55.6 - 57.6 2% Min: Galena>>										

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 55.6 - 57.6 5% Min: Chalcopyrite>>												
57.60	**59.10**	**RHY**	**undifferentiated rhyolite** **green**									
<<Min: 57.6 - 59.1 0.5% Min: Pyrite>>												
<<Min: 57.6 - 59.1 1% Min: Chalcopyrite>> in bands, scattered												
<<Alt: 57.6 - 59.1 Moderate (Alt) Chlorite>> bands of heavy CL, generally slightly less altered												
59.10	**74.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **green-brown**	59.10	60.60	1.50	B00267729	-0.3	0.024	-0.01	-0.01	0.02
59.1 - 74.7: fairly typical,												
<<Min: 59.1 - 66.4 0.5% Min: Pyrite>> lge xtals or blebs, widely scattered				60.60	62.10	1.50	B00267731	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 66.4 - 74.7 0.5% Min: Pyrite>>												
<<Alt: 66.4 - 71.9 Moderate (Alt) Muscovite>> alt'n of glassy dyke												
<<Alt: 66.4 - 74.7 Weak (Alt) Silicification>> local zones of silic'n, in shear zone												
<<Alt: 71.9 - 73.9 Strong (Alt) Muscovite>> sheared section												
<<Alt: 73.9 - 74.7 Moderate (Alt) Muscovite>>												

End of Hole @ 74.7

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-065

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414950.892	Core Size:		Azimuth:	200	Date Logging Complete:	
UTM Northing:	6815436.376	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.66	Casing Depth (m):		Length (m):	105.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	200		200	SS				☑	
14	-89	202		202	SS				☑	
44	-88	194		194	SS				☑	
78	-87	197		197	SS				☑	
104	-85	192		192	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.30**	**OVBN** **Overburden**									
6.30	**16.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 7.7 - 12 2% Min: Pyrite>>											
<<Min: 12 - 12.5 2% Min: Pyrrhotite>>											
<<Min: 12.5 - 17.6 2% Min: Pyrite>>											
16.10	**17.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
17.00	**22.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 18 - 20.3 20% Min: Pyrite>>											
22.50	**22.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									

From (m)	To (m)	Rocktype & Description
22.80	**29.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
22.8 - 29.6: intervals strongly tectonized dissaggregated flow = breccia		
29.60	**31.10**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 29.9 - 31.2 2% Min: Pyrite>>		
31.10	**31.80**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 31.2 - 44 3% Min: Pyrite>>		
31.80	**41.30**	**RHYc** **Rhyolite coherant volcanics**
31.8 - 41.3: Py bands common, up to 5cm		
<<Alt: 37 - 47 Weak-Moderate (Alt) Muscovite>>		
41.30	**44.10**	**RHYva** **Coarse grained to ash tuff**
<<Min: 44 - 57 3% Min: Pyrite>>		
44.10	**55.80**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Alt: 47 - 59.6 Moderate (Alt) Muscovite>>		
<<Vein: 49.1 - 50.5 40% Quartz>>		
55.80	**59.70**	**RHYva** **Coarse grained to ash tuff**
<<Min: 57 - 60 1% Min: Pyrite>>		
<<Alt: 59.3 - 59.6 Weak (Alt) Cordierite>>		
59.70	**61.20**	**OA** **Magnetite bearing sulphides**
59.7 - 61.2: Cominco OJ		
61.20	**68.70**	**No Core** **No Core**
61.2 - 68.7: met zone from assays		
<<Min: 61.2 - 69.2 12% Min: Sphalerite>>		
<<Min: 61.2 - 69.2 70% Min: Pyrite>>		
<<Min: 61.2 - 69.2 4% Min: Pyrrhotite>>		
<<Min: 61.2 - 69.2 2% Min: Chalcopyrite>>		
68.70	**69.20**	**OA** **Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
55.50	57.00	1.50	B00267691	0.7	0.009	-0.01	-0.01	0.02
57.00	58.50	1.50	B00267692	-0.3	0.01	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
69.20	**73.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
69.2 - 73: Fine grained. Doesn't fit description											
<<Min: 69.2 - 73 60% Min: Pyrite>>											
<<Min: 69.2 - 73 4% Min: Chalcopyrite>>											
73.00	**82.00**	**RHY** **undifferentiated rhyolite**	76.00	77.50	1.50	B00267693	-0.3	-0.005	-0.01	-0.01	-0.01
73 - 82: Strong MS altered, light green-grey											
<<Min: 73 - 75.3 5% Min: Pyrite>>			77.50	79.00	1.50	B00267694	2.3	0.02	-0.01	0.02	0.02
<<Alt: 73 - 80.5 Moderate-Strong (Alt) Muscovite>>			79.00	80.50	1.50	B00267695	3.9	0.044	-0.01	0.04	0.04
<<Vein: 74.3 - 75.2 80% Quartz>>											
82.00	**86.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**									
<<Min: 82 - 86 1% Min: Sphalerite>>											
<<Min: 82 - 86 3% Min: Pyrite>>											
<<Min: 82 - 86 3% Min: Pyrrhotite>>											
<<Min: 82 - 86 0.5% Min: Chalcopyrite>>											
<<Alt: 82 - 86 Moderate (Alt) Chlorite>> With MG, PY,CP,SP,GN											
86.00	**90.30**	**RHYv** **Rhyolite volcaniclastic**	86.50	87.50	1.00	B00267696	24.8	0.285	1.27	0.03	0.1
86 - 90.3: Intense MS light green-grey											
<<Min: 86 - 89.2 4% Min: Pyrite>>			87.60	88.00	0.40	B00267697	2.4	0.033	0.08	-0.01	0.04
<<Alt: 86 - 90.3 Strong (Alt) Muscovite>> Also strong MS and AK											
<<Struc: 89.3 - 89.6 Weak-Moderate (Alt) Fault>> Gouge											
90.30	**91.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
90.3 - 91.3: Banded											

From (m)	To (m)	Rocktype & Description
91.30	**98.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
91.3 - 98: Strong CL alt		
<<Min: 92.9 - 96.6 1% Min: Sphalerite>>		
<<Min: 92.9 - 96.6 3% Min: Pyrite>>		
<<Min: 92.9 - 96.6 1% Min: Pyrrhotite>>		
<<Min: 92.9 - 96.6 2% Min: Chalcopyrite>>		
<<Alt: 91.3 - 92 Weak (Alt) Biotite>>		
<<Alt: 91.3 - 92.9 Strong (Alt) Chlorite>>		
<<Alt: 92 - 96 Intense (Alt) Chlorite>>		
<<Alt: 96 - 103.9 Moderate-Strong (Alt) Muscovite>> As MS Thin banded		
<<Vein: 93.4 - 98 70% Quartz>> Strongly broken core, veined		
<<Struc: 94.8 - 98.1 Weak-Moderate (Alt) Fault>> Intensity unknown, broken and veined core, minor gouge.		
98.00	**103.90**	**RHYva** **Coarse grained to ash tuff**
98 - 103.9: Thin banded		
103.90	**105.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 103.9 - 105.7 Moderate-Strong (Alt) Chlorite>> Regional		
<<Alt: 103.9 - 105.7 Moderate (Alt) Biotite>>		
End of Hole @ 105.7		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
95.90	96.60	0.70	B00267698	0.3	0.007	0.01	-0.01	-0.01
96.70	98.00	1.30	B00267699	0.7	-0.005	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-066

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414972.809	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815365.781	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1382.754	Casing Depth (m):		Length (m):	84.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
25	-60	177		177	SS				☑	
56	-60	176		176	SS				☑	
84	-60	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.30**	**OVBN Overburden**									
10.30	**15.60**	**RHYva Coarse grained to ash tuff**	12.60	14.10	1.50	B00267714	1.6	0.011	-0.01	0.06	0.1
10.3 - 15.6: Minor 10cm RHYva 12.4 - 12.5m											
<<Min: 10.3 - 15.2 1% Min: Pyrrhotite>>			14.10	15.60	1.50	B00267715	0.6	0.012	-0.01	-0.01	0.01
<<Min: 15.2 - 16.6 1% Min: Pyrrhotite>>											
<<Alt: 10.3 - 17.1 Moderate-Strong (Alt) Muscovite>>											
15.60	**16.60**	**MDSt Rhyolite tuff dominant mudstone**									
16.60	**17.10**	**RHYva Coarse grained to ash tuff**									
<<Min: 16.6 - 17.1 1% Min: Pyrrhotite>>											
17.10	**18.40**	**No Core No Core**									
17.1 - 18.4: Cominco code OC											
<<Min: 17.1 - 18.4 10% Min: Pyrrhotite>>											

From (m)	To (m)		Rocktype & Description
			<<Min: 17.1 - 18.4 10% Min: Chalcopyrite>>
18.40	**19.90**	**OA**	**Magnetite bearing sulphides**
			<<Min: 18.4 - 19.9 10% Min: Sphalerite>>
			<<Min: 18.4 - 19.9 80% Min: Pyrite>>
			<<Min: 18.4 - 19.9 5% Min: Pyrrhotite>>
			<<Min: 18.4 - 19.9 2% Min: Chalcopyrite>>
19.90	**21.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 19.9 - 21.1 15% Min: Sphalerite>>
			<<Min: 19.9 - 21.1 65% Min: Pyrite>>
			<<Min: 19.9 - 21.1 1% Min: Chalcopyrite>>
			<<Min: 19.9 - 21.1 1% Min: Calcite>>
21.10	**23.90**	**RHYc**	**Rhyolite coherant volcanics**
			<<Min: 21.1 - 46.3 3% Min: Calcite>>
			<<Alt: 21.1 - 29.6 Moderate (Alt) Muscovite>>
23.90	**26.20**	**RHYcf**	**Feldspar & feldspar quartz porphyry**
			<<Min: 23.9 - 26.2 5% Min: Ankerite>> AK altered phenos
			<<Min: 26.1 - 29.6 3% Min: Pyrite>>
26.20	**29.60**	**RHYc**	**Rhyolite coherant volcanics**
29.60	**44.60**	**RHY**	**undifferentiated rhyolite**
			29.6 - 44.6: Intense alteration varying from CL to MS,AK
			<<Min: 29.6 - 33.1 40% Min: Ankerite>> All MS and AK
			<<Min: 29.6 - 38.8 2% Min: Sphalerite>>
			<<Min: 29.6 - 38.8 4% Min: Pyrite>>
			<<Min: 29.6 - 38.8 0.5% Min: Chalcopyrite>>
			<<Min: 31 - 31.5 7% Min: Sphalerite>> Disseminated
			<<Min: 31 - 31.5 15% Min: Pyrite>> Disseminated
			<<Min: 33 - 33.1 10% Min: Pyrite>>
			<<Min: 33.1 - 36.2 20% Min: Ankerite>>
			<<Min: 38.8 - 44.7 4% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
22.60	24.10	1.50	B00267716	-0.3	-0.005	-0.01	-0.01	-0.01
24.10	25.60	1.50	B00267717	0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 38.8 - 44.7 1.5% Min: Pyrrhotite>>

<<Min: 38.8 - 44.7 0.3% Min: Chalcopyrite>>

<<Alt: 29.6 - 35.2 Intense (Alt) Muscovite>> As MS Strong to intense

<<Alt: 35.2 - 36.2 Moderate-Strong (Alt) Chlorite>>

<<Alt: 36.2 - 37.5 Moderate-Strong (Alt) Muscovite>>

<<Alt: 36.2 - 37.5 Moderate (Alt) Chlorite>>

<<Alt: 37.5 - 38.8 Intense (Alt) Muscovite>> As MS

<<Alt: 38.8 - 44.6 Strong (Alt) Chlorite>> Some intense altered intervals within main interval. At 40.1, dark black porphyroblasts over 5cm = TO after cordierite?

<<Vein: 33.1 - 33.4 100% Quartz>>

44.60 46.30 RHYc Rhyolite coherant volcanics

<<Min: 44.7 - 46.1 3% Min: Pyrite>>

<<Alt: 44.6 - 46.3 Moderate-Strong (Alt) Muscovite>>

46.30 57.10 MAFt Mafic Volcaniclastics

46.3 - 57.1: Or Mafic intrusion, Gabbro?

<<Min: 46.3 - 57.1 15% Min: Calcite>>

<<Alt: 46.3 - 57.1 Moderate (Alt) Chlorite>> Regional alt

<<Alt: 46.3 - 57.1 Weak-Moderate (Alt) Biotite>> regional alt

57.10 59.10 RHYva Coarse grained to ash tuff

<<Min: 57.1 - 67.6 3% Min: Calcite>>

59.10 59.60 RHYi Aphanitic Rhyolite (intrusion)

59.60 67.60 RHYva Coarse grained to ash tuff

<<Struc: 66 - 66.6 Weak-Moderate (Alt) Fault>> Weak gouge and breccia

67.60 71.40 MAFt Mafic Volcaniclastics

<<Min: 67.6 - 70 15% Min: Calcite>>

<<Min: 70.6 - 71.4 10% Min: Pyrite>> Pyrite bands and disseminated. Strong alteration

<<Alt: 67.6 - 70.6 Weak (Alt) Chlorite>> Leucoxene 70.0-70.5

<<Struc: 68.6 - 68.8 Weak (Alt) Fault>> weak gouge

<<Struc: 70.6 - 71.4 Weak (Alt) Fault>> Strongly broken, pyrite stringers and altered wall rock

71.40 76.00 RHYva Coarse grained to ash tuff

<<Min: 71.4 - 78 3% Min: Calcite>>

76.00 78.00 RHYc Rhyolite coherant volcanics

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

78.00 82.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

78 - 82.7: Possibly gabbro.

<<Min: 78 - 84.1 10% Min: Calcite>>

<<Min: 78 - 84.7 0.5% Min: Pyrrhotite>>

<<Alt: 78 - 84.1 Weak-Moderate (Alt) Chlorite>> Regional

<<Alt: 78 - 84.1 Moderate (Alt) Biotite>> Some strong areas. Regional alt.

82.70 83.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

82.7 - 83.2: Mafic crystals to 5mm. Elongated on fresh surface to 5mm, amphibole? Gabbro?

83.20 84.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

83.2 - 84.1: Minor intrusive at bottom of interval = gabbro?

84.10 84.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

End of Hole @ 84.7

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-067

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414924.82	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815439.969	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1384.047	Casing Depth (m):		Length (m):	105.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-57	180		180	SS				☑	
44	-57	183		183	SS				☑	
75	-56	186		186	SS				☑	
105	-57	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN** **Overburden**									
6.10	**16.30**	**RHYc** **Rhyolite coherent volcanics** **grey**									
<<Min: 6.1 - 14 8% Min: Ankerite>>											
<<Min: 14 - 24.9 1% Min: Ankerite>>											
16.30	**17.10**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 16.3 - 17 1% Min: Pyrite>>											
<<Min: 17 - 42.4 1% Min: Pyrite>>											
17.10	**24.90**	**MDSt** **Rhyolite tuff dominant mudstone**									
24.90	**33.10**	**RHYvl** **Lapilli tuff**									
<<Min: 24.9 - 36.6 5% Min: Ankerite>>											
<<Alt: 24.9 - 36.6 Moderate (Alt) Muscovite>> below MDS											

From (m)	To (m)		Rocktype & Description		
33.10	**42.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		
<<Min: 36.6 - 42.4 3% Min: Ankerite>>					
<<Alt: 36.6 - 42.2 Strong (Alt) Muscovite>> above mxsx contact					
42.40	**42.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**
<<Min: 42.4 - 42.7 70% Min: Pyrite>>					
42.70	**43.10**	**OI**	**Heavilly disseminated sulphides in host schist**		**MCG**
43.10	**43.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**
<<Min: 43.1 - 43.8 70% Min: Pyrite>>					
43.80	**45.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey**	
43.8 - 45: flow banding apparent					
<<Alt: 43.8 - 45 Strong (Alt) Muscovite>>					
45.00	**46.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FCG**
<<Min: 45 - 46 70% Min: Pyrite>>					
<<Min: 45 - 48.2 1% Min: Ankerite>>					
46.00	**48.20**	**RHY**	**undifferentiated rhyolite**	**grey**	
<<Min: 46 - 48.2 5% Min: Sphalerite>>					
<<Min: 46 - 48.2 70% Min: Pyrite>>					
<<Alt: 46.2 - 48.2 Strong (Alt) Muscovite>> within mxsx intervals					
48.20	**48.70**	**OF**	**Pyrrhotite rich sulphides**		**MCG**
<<Min: 48.2 - 48.7 5% Min: Sphalerite>>					
<<Min: 48.2 - 48.7 80% Min: Pyrrhotite>>					
<<Min: 48.2 - 48.7 2% Min: Galena>>					
<<Min: 48.2 - 48.7 15% Min: Chalcopyrite>>					

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
37.90	39.40	1.50	B00267701	2.1	0.009	-0.01	0.05	0.06
39.40	40.90	1.50	B00267702	2	0.025	-0.01	0.06	0.07

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
48.70	**50.50**	**RHY**	**undifferentiated rhyolite**	**brown**									
48.7 - 50.5: sx t/o, CL-MU schist, heavy AK													
<<Alt: 48.7 - 50.5 Moderate (Alt) Muscovite>>													
<<Alt: 48.7 - 50.5 Moderate (Alt) Chlorite>> with mu													
50.50	**51.50**	**OF**	**Pyrrhotite rich sulphides**	**MCG**									
<<Min: 50.5 - 51.5 2% Min: Sphalerite>>													
<<Min: 50.5 - 51.5 80% Min: Pyrrhotite>>													
<<Min: 50.5 - 51.5 1% Min: Galena>>													
<<Min: 50.5 - 51.5 15% Min: Chalcopyrite>>													
51.50	**51.90**	**OG**	**Chalcopyrite rich sulphides**	**CG**									
<<Min: 51.5 - 51.9 60% Min: Chalcopyrite>>													
51.90	**54.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FCG**									
<<Min: 51.9 - 54.5 15% Min: Sphalerite>>													
<<Min: 51.9 - 54.5 70% Min: Pyrite>>													
<<Min: 51.9 - 54.5 2% Min: Chalcopyrite>>													
54.50	**59.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	56.00	57.50	1.50	B00267703	9.5	0.095	-0.01	0.12	0.28
54.5 - 59.7: flow banded siliceous													
<<Min: 54.5 - 81.75 1% Min: Calcite>> and in veins					57.50	59.00	1.50	B00267704	-0.3	-0.005	-0.01	-0.01	-0.01
<<Alt: 54.5 - 66.6 Strong (Alt) Muscovite>> locally seems to be texturlly destuctive.													
59.70	**66.60**	**RHYc**	**Rhyolite coherant volcanics**	**grey**	62.10	63.60	1.50	B00267705	-0.3	-0.005	-0.01	-0.01	-0.01
59.7 - 66.6: strongly alt'd													
<<Min: 59.7 - 62.7 1% Min: Ankerite>>					63.60	65.10	1.50	B00267706	0.6	-0.005	-0.01	-0.01	-0.01
66.60	**67.30**	**OG**	**Chalcopyrite rich sulphides**	**CG**									
<<Min: 66.6 - 67.3 15% Min: Pyrite>>													
<<Min: 66.6 - 67.3 3% Min: Pyrrhotite>>													
<<Min: 66.6 - 67.3 5% Min: Chalcopyrite>>													
<<Alt: 66.6 - 71.2 Moderate (Alt) Muscovite>> mixed with CL													
<<Alt: 66.6 - 71.2 Strong (Alt) Chlorite>> strong CL													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.30	**81.75**	**RHYv** **Rhyolite volcaniclastic**	**green**	74.20	75.70	1.50	B00267707	2.7	0.007	-0.01	0.09	0.12

67.3 - 81.75: covers a couple alt'n zones

<<Min: 68.6 - 71.9 2% Min: Sphalerite>>				75.70	77.20	1.50	B00267708	0.5	-0.005	-0.01	0.01	0.03

<<Min: 68.6 - 71.9 5% Min: Pyrite>>
<<Min: 68.6 - 71.9 5% Min: Pyrrhotite>>
<<Min: 68.6 - 71.9 10% Min: Chalcopyrite>>
<<Min: 71.2 - 73 10% Min: Ankerite>>
<<Min: 71.9 - 72.4 2% Min: Sphalerite>>
<<Min: 71.9 - 72.4 1% Min: Galena>>
<<Min: 71.9 - 72.4 2% Min: Chalcopyrite>>
<<Min: 72.4 - 78.7 0.5% Min: Sphalerite>>
<<Min: 72.4 - 78.7 1% Min: Pyrite>>
<<Min: 72.4 - 78.7 0.01% Min: Galena>>
<<Min: 73 - 79 3% Min: Ankerite>>
<<Min: 78.7 - 81.9 1% Min: Sphalerite>>
<<Min: 78.7 - 81.9 2% Min: Pyrrhotite>>
<<Min: 78.7 - 81.9 5% Min: Chalcopyrite>>
<<Alt: 71.2 - 73 Moderate (Alt) Muscovite>>
<<Alt: 71.2 - 73 Moderate (Alt) Chlorite>>
<<Alt: 73 - 78.8 Strong (Alt) Muscovite>>
<<Alt: 78.8 - 81.75 Strong (Alt) Chlorite>>
<<Alt: 78.8 - 81.75 Moderate (Alt) Biotite>> cse flakes

81.75	**100.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	81.90	83.40	1.50	B00267709	-0.3	-0.005	-0.01	-0.01	0.02

81.75 - 100.1: typical MAFi, alt'n varies,

<<Min: 81.75 - 86.6 5% Min: Calcite>> and lenses				83.40	84.80	1.40	B00267711	-0.3	-0.005	-0.01	-0.01	-0.01

<<Min: 86.6 - 94.7 0.5% Min: Pyrite>> conc'd in bands locally
<<Min: 86.6 - 94.7 1% Min: Calcite>>
<<Min: 94.7 - 97 3% Min: Calcite>>
<<Min: 97 - 103.1 1% Min: Pyrite>> bands, along fol'n
<<Min: 97 - 104.1 1% Min: Calcite>>
<<Min: 97.2 - 100.1 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 86.6 - 94.7 Moderate (Alt) Muscovite>> grey-green
<<Alt: 94.1 - 94.5 Moderate (Alt) Silicification>>
<<Alt: 97 - 100.1 Moderate (Alt) Muscovite>>
<<Alt: 97.2 - 97.5 Moderate (Alt) Silicification>>
<<Vein: 87.4 - 90.7 60% Quartz-Carbonate>> QZ-CB veining
<<Struc: 82.1 - 82.4 Moderate (Alt) Fault>>

100.10 103.10 RHYi Aphanitic Rhyolite (intrusion) grey-green

100.1 - 103.1: glassy dyke, QZ bx at upper contact, 40 cm wide.

<<Min: 100.1 - 102.1 0.5% Min: Sphalerite>>
<<Min: 100.1 - 102.1 0.5% Min: Pyrite>>
<<Min: 100.1 - 102.1 0.5% Min: Galena>>
<<Min: 102.1 - 103.3 0.5% Min: Pyrite>>
<<Min: 102.1 - 103.3 0.5% Min: Galena>>

103.10 105.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 103.1 - 104.1 5% Min: Pyrite>> stringer style?
<<Min: 103.1 - 104.1 3% Min: Chalcopyrite>>
<<Min: 104.1 - 105.5 5% Min: Calcite>> pods. Lenses
<<Alt: 103.1 - 104.1 Weak (Alt) Muscovite>>

End of Hole @ 105.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-068

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414924.728	Core Size:		Azimuth:	300	Date Logging Complete:	
UTM Northing:	6815439.745	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1384.18	Casing Depth (m):		Length (m):	93.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	300		300	SS				☑	
14	-89	302		302	SS				☑	
44	-89	180		180	SS				☑	
78	-89	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.30 OVBN Overburden

6.30 13.50 RHYc Rhyolite coherant volcanics

<<Min: 6.3 - 27.5 10% Min: Ankerite>>

<<Min: 6.9 - 14.3 1% Min: Pyrrhotite>>

<<Alt: 6.3 - 41 Weak-Moderate (Alt) Muscovite>>

13.50 20.90 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 14.3 - 21 3% Min: Pyrite>>

<<Min: 14.3 - 21 0.5% Min: Chalcopyrite>>

20.90 24.40 RHYc Rhyolite coherant volcanics

<<Struc: 22.6 - 23 Weak-Moderate (Alt) Fault>> Narrow gouge with strong oxide envelope

24.40 27.20 MDSw Coherent rhyolite flow with carbonaceous content

From (m)	To (m)		Rocktype & Description
27.20	**28.20**	**MDSc**	**Carbonaceous dominant mudstone**
27.2 - 28.2: S1trong folding and brecciated			
<<Min: 27.5 - 44 5% Min: Ankerite>>			
28.20	**30.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
28.2 - 30.2: Distinct Strong sulphide "burn" oxide along PO-PY bands and patches			
<<Min: 29.1 - 47.7 3% Min: Pyrite>>			
30.20	**47.70**	**RHYc**	**Rhyolite coherant volcanics**
<<Min: 44 - 46.5 10% Min: Ankerite>>			
<<Alt: 41 - 47.7 Moderate-Strong (Alt) Muscovite>>			
47.70	**50.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
47.7 - 50.5: Met 5			
<<Min: 47.7 - 50.5 15% Min: Sphalerite>>			
<<Min: 47.7 - 50.5 70% Min: Pyrite>>			
<<Min: 47.7 - 50.5 4% Min: Galena>>			
<<Min: 47.7 - 50.5 1% Min: Chalcopyrite>>			
50.50	**56.10**	**RHYc**	**Rhyolite coherant volcanics**
50.5 - 56.1: Strong alt'n, oxide of PY-PO strong			
<<Min: 50.5 - 56.1 5% Min: Ankerite>>			
<<Alt: 50.5 - 56.1 Strong (Alt) Muscovite>>			
56.10	**56.60**	**OA**	**Magnetite bearing sulphides**
56.1 - 56.6: Met 5 or 2			
<<Min: 56.1 - 56.6 10% Min: Sphalerite>>			
<<Min: 56.1 - 56.6 80% Min: Pyrite>>			
<<Min: 56.1 - 57.6 3% Min: Galena>>			
56.60	**57.00**	**OF**	**Pyrrhotite rich sulphides**
56.6 - 57: Met 5			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
43.20	44.70	1.50	B00267675	1.5	0.032	-0.01	0.13	0.18
44.70	46.20	1.50	B00267676	1.4	0.038	-0.01	0.08	0.1
52.40	53.40	1.00	B00267677	7.2	0.192	0.04	0.23	0.55
53.40	54.10	0.70	B00267678	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description

<<Min: 56.6 - 56.7 2% Min: Galena>>
<<Min: 56.6 - 57 12% Min: Sphalerite>>
<<Min: 56.6 - 57 30% Min: Pyrite>>
<<Min: 56.6 - 57 50% Min: Pyrrhotite>>
<<Min: 56.6 - 57 2% Min: Chalcopyrite>>

57.00 65.20 RHY undifferentiated rhyolite

57 - 65.2: Very strong and variable alteration with faulting/veining

<<Min: 57 - 65.2 10% Min: Ankerite>>
<<Min: 58.5 - 61.1 10% Min: Calcite>>
<<Alt: 57 - 60 Weak-Moderate (Alt) Muscovite>> Strong MS
<<Alt: 60 - 65.2 Moderate (Alt) Chlorite>>
<<Alt: 62.2 - 65.2 Weak (Alt) Biotite>> 65.1-65.3 TO-QZ
<<Vein: 61.1 - 62.5 80% Quartz-Tourmaline>> Multi vein events, strongly broken core
<<Struc: 61.1 - 62.5 Weak-Moderate (Alt) Fault>> Rubbly, broken core withstrong TO-QZ veining

65.20 67.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

65.2 - 67.9: Met 5

<<Min: 65.2 - 67.9 15% Min: Sphalerite>>
<<Min: 65.2 - 67.9 75% Min: Pyrite>>
<<Min: 65.2 - 67.9 4% Min: Galena>>
<<Min: 65.2 - 67.9 1% Min: Chalcopyrite>>

67.90 69.80 RHYc Rhyolite coherant volcanics

67.9 - 69.8: Minor 2cm band of massive PY-CP

<<Alt: 67.9 - 69.8 Strong (Alt) Muscovite>>

69.80 74.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

69.8 - 74.2: Met 5

<<Min: 69.8 - 74.2 12% Min: Sphalerite>>
<<Min: 69.8 - 74.2 80% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
58.50	60.00	1.50	B00267679	-0.3	-0.005	-0.01	-0.01	-0.01
60.00	61.50	1.50	B00267681	3.8	-0.005	0.02	0.04	0.45
61.50	62.50	1.00	B00267682	1.1	-0.005	0.05	-0.01	0.02
62.50	63.70	1.20	B00267683	27.3	0.266	0.76	0.07	0.36

From (m)	To (m)	Rocktype & Description
		<<Min: 69.8 - 74.2 3% Min: Galena>>
		<<Min: 69.8 - 74.2 1% Min: Chalcopyrite>>
74.20	**88.70**	**RHYc** **Rhyolite coherant volcanics**
		<<Min: 74.2 - 75.4 1% Min: Pyrrhotite>>
		<<Min: 75 - 80 1% Min: Calcite>>
		<<Min: 84 - 90 5% Min: Ankerite>>
		<<Min: 88.3 - 89.4 15% Min: Sphalerite>>
		<<Min: 88.3 - 89.4 60% Min: Pyrite>>
		<<Min: 88.3 - 89.4 4% Min: Galena>>
		<<Min: 88.3 - 89.4 0.5% Min: Chalcopyrite>>
		<<Alt: 74.2 - 93.7 Weak (Alt) Muscovite>>
88.70	**89.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		88.7 - 89.3: Met 5
89.30	**93.70**	**RHYc** **Rhyolite coherant volcanics**
		<<Min: 89.4 - 93.7 1% Min: Pyrite>>
End of Hole @ 93.7		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
75.10	76.60	1.50	B00267684	0.5	0.011	-0.01	-0.01	0.02
76.60	78.10	1.50	B00267685	-0.3	0.006	-0.01	-0.01	-0.01
83.80	85.30	1.50	B00267686	-0.3	0.005	-0.01	-0.01	0.04
85.30	86.80	1.50	B00267687	19.2	0.133	0.4	0.24	0.61
90.90	92.40	1.50	B00267688	3.3	0.025	-0.01	0.05	0.11
92.40	93.70	1.30	B00267689	2.1	0.01	-0.01	0.05	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-069

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414922.112	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815378.535	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1385.308	Casing Depth (m):		Length (m):	56.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
20	-51	178		178	SS				☑	
50	-52	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**10.40**	**OVBN** **Overburden**
10.40	**13.40**	**RHYv** **Rhyolite volcaniclastic**
10.4 - 13.4: 2 bands 10cm wide of fg bt schist sed?		
<<Min: 11 - 22.3 10% Min: Ankerite>>		
<<Alt: 10.4 - 22.3 Moderate (Alt) Muscovite>>		
13.40	**15.70**	**RHYvl** **Lapilli tuff**
15.70	**22.30**	**RHYc** **Rhyolite coherant volcanics**
15.7 - 22.3: variably oxidized and altered, weak curdy textures rare		
22.30	**23.60**	**OA** **Magnetite bearing sulphides**
22.3 - 23.6: MET4? 6-8% Zn with high (1-4g/t Au) Pb low at circa 1.5%		
<<Min: 22.3 - 23.6 2% Min: Sphalerite>>		
<<Min: 22.3 - 23.6 50% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.80	19.30	1.50	B00232544	0.7	-0.005	-0.01	0.01	0.02
19.30	20.80	1.50	B00232545	0.8	0.014	-0.01	0.01	0.04

From (m)	To (m)	Rocktype & Description
		<<Min: 22.3 - 23.6 5% Min: Pyrrhotite>>
		<<Min: 22.3 - 23.6 10% Min: Chalcopyrite>>
23.60	**24.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		23.6 - 24.2: Met 7?
		<<Min: 23.6 - 24.2 15% Min: Sphalerite>>
		<<Min: 23.6 - 24.2 70% Min: Pyrite>>
		<<Min: 23.6 - 24.2 3% Min: Chalcopyrite>>
24.20	**32.10**	**RHYcf** **Feldspar & feldspar quartz porphyry**
		24.2 - 32.1: 5% 2-3mm ankerite after feldspar phenos
		<<Min: 24.2 - 33.3 5% Min: Ankerite>>
		<<Alt: 24.2 - 33.3 Weak-Moderate (Alt) Muscovite>>
32.10	**33.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
33.30	**34.00**	**OI** **Heavilly disseminated sulphides in host schist**
		33.3 - 34: MET5?
		<<Min: 33.3 - 34 15% Min: Sphalerite>>
		<<Min: 33.3 - 34 30% Min: Pyrite>>
34.00	**41.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		34 - 41.8: increasingly strong alteration below 40m texture destructive
		<<Min: 34 - 40.9 5% Min: Pyrite>>
		<<Min: 34 - 49.8 7% Min: Ankerite>>
		<<Min: 40.9 - 49.9 1% Min: Pyrite>>
		<<Min: 40.9 - 49.9 1% Min: Pyrrhotite>>
		<<Alt: 34 - 41.8 Moderate-Strong (Alt) Muscovite>>
		<<Alt: 41.1 - 41.8 Weak-Moderate (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
25.70	27.20	1.50	B00232546	-0.3	-0.005	-0.01	-0.01	-0.01
27.20	28.70	1.50	B00232547	-0.3	0.006	-0.01	-0.01	-0.01
28.70	30.30	1.60	B00232548	-0.3	-0.005	-0.01	-0.01	-0.01
30.30	31.80	1.50	B00232549	-0.3	-0.005	-0.01	-0.01	-0.01
35.50	37.00	1.50	B00232551	0.3	-0.005	-0.01	-0.01	-0.01
37.00	38.50	1.50	B00232552	1.8	0.02	-0.01	0.02	0.05

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

41.80 42.40 SEDc calcareous Sediment

41.8 - 42.4: tan grey, crenulated, dolomitic(?) muddy carbonate rock

42.40 49.80 RHYc Rhyolite coherant volcanics

42.4 - 49.8: strongly altered texturally destrucitve. Hard to determine felsic protolith

<<Alt: 42.4 - 44.4 Strong (Alt) Chlorite>> fw stringer chlorite, pyrite, po, +/- cp alteration

<<Alt: 42.4 - 49.8 Moderate (Alt) Muscovite>>

<<Alt: 44.4 - 49.8 Weak (Alt) Chlorite>>

<<Alt: 45 - 46 Weak-Moderate (Alt) Biotite>>

<<Struc: 46 - 46.5 Moderate-Strong (Alt) Fault>> 2 strong 10cm wide gouge zones

49.80 56.30 MAFt Mafic Volcaniclastics

49.8 - 56.3: 2 INTERVALS WHERE CHLORITE-PYRITE-CP-SP STRINGERS CROSS CUT. DENOTED IN ALTERATION AT INT7. VERY IMP FOR INTER OF MAFIC FOOTWALL

<<Min: 49.8 - 56.3 15% Min: Calcite>>

<<Min: 49.9 - 50.8 2% Min: Pyrite>>

<<Min: 49.9 - 50.8 1% Min: Chalcopyrite>>

<<Alt: 50.1 - 50.4 Intense (Alt) Chlorite>> fw stringer chlorite cutting mafics

<<Alt: 50.6 - 50.8 Intense (Alt) Chlorite>> fw stringer chl -cp-py alteration cutting mafics

End of Hole @ 56.3

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-070

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415057.008	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815577.227	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1380.344	Casing Depth (m):		Length (m):	166.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
22	-44	178		178	SS				☑	
54	-46	179		179	SS				☑	
84	-47	178		178	SS				☑	
114	-46	179		179	SS				☑	
164	-49	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**16.70**	**OVBN Overburden**									
16.70	**26.40**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**									
16.7 - 26.4: mafic dyke											
<<Min: 16.7 - 19 5% Min: Calcite>>											
<<Min: 16.7 - 20.9 0.25% Min: Pyrite>>											
<<Min: 16.7 - 20.9 0.5% Min: Pyrrhotite>>											
<<Min: 16.7 - 20.9 10% Min: Ankerite>>											
26.40	**51.00**	**RHYvl Lapilli tuff**									
<<Min: 50.1 - 83.1 10% Min: Ankerite>>											
<<Min: 50.1 - 113.7 0.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

51.00 68.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

51 - 68: +/- Muscovite. Argillite/ash schist interval at 74.6 - 75.6. Convoluted stringers obique to foliation carry PY, looks like broken up curdy texture

<<Min: 51 - 54 0.1% Min: Sphalerite>>

<<Min: 51 - 54 0.1% Min: Chalcopyrite>>

<<Min: 51 - 73 1% Min: Pyrite>>

<<Min: 51 - 84.1 0.1% Min: Calcite>>

<<Min: 67.6 - 72.5 0.1% Min: Chalcopyrite>>

<<Alt: 51 - 78.6 Weak (Alt) Muscovite>>

68.00 74.60 RHY undifferentiated rhyolite

68 - 74.6: +/- Muscovite. Argillite/ash schist interval at 74.6 - 75.6. Convoluted stringers obique to foliation carry PY, looks like broken up curdy texture

<<Min: 73 - 113.7 0.5% Min: Pyrite>>

74.60 75.30 MDSt Rhyolite tuff dominant mudstone

74.6 - 75.3: +/- Muscovite. Argillite/ash schist interval at 74.6 - 75.6. Convoluted stringers obique to foliation carry PY, looks like broken up curdy texture

75.30 78.60 RHYvl Lapilli tuff

75.3 - 78.6: +/- Muscovite. Argillite/ash schist interval at 74.6 - 75.6. Convoluted stringers obique to foliation carry PY, looks like broken up curdy texture

78.60 86.60 RHYvl Lapilli tuff

78.6 - 86.6: Lapilli alteration with biotite/chorite +/- PY,PO

<<Min: 81.4 - 87.4 1% Min: Calcite>>

<<Min: 83.4 - 97.1 5% Min: Ankerite>>

<<Alt: 78.6 - 85.6 Weak-Moderate (Alt) Muscovite>>

<<Alt: 85.6 - 90 Moderate (Alt) Muscovite>>

86.60 87.10 MDSw Coherent rhyolite flow with carbonaceous content

86.6 - 87.1: Argillaceous input

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
87.10	**113.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	109.70	110.60	0.90	Q311893	2.5	0.006	-0.01	0.03	0.07
87.1 - 113.7: Intercalated by lapilli, coarse grained tuff and ash. No dominant texture through interval. Heavily MU, MS, CB altered.												
<<Min: 87.4 - 150.3 0.25% Min: Calcite>>				110.60	112.20	1.60	Q311894	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 97.1 - 120 10% Min: Ankerite>>				112.20	113.70	1.50	Q311895	4.8	0.018	0.18	-0.01	0.03
<<Alt: 90 - 102.5 Moderate-Strong (Alt) Muscovite>>												
<<Alt: 102.5 - 111 Strong (Alt) Muscovite>>												
<<Alt: 111 - 112.3 Intense (Alt) Muscovite>>												
<<Alt: 112.3 - 117.1 Moderate (Alt) Cordierite>>												
113.70	**114.50**	**OG**	**Chalcopyrite rich sulphides**	113.70	114.50	0.80	Q311896	203	2.56	7.01	0.39	1.01
114.50	**117.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	114.50	116.00	1.50	Q311897	18.1	0.246	0.75	0.01	0.11
114.5 - 117.8: Intense alt. Interval is between Mxsx lenses												
<<Min: 115.1 - 126.1 0.25% Min: Pyrite>>				116.00	117.50	1.50	Q311898	3.1	0.01	-0.01	0.03	0.06
<<Min: 115.1 - 126.1 0.5% Min: Pyrrhotite>>				117.50	117.80	0.30	Q311899	1.9	-0.005	-0.01	0.02	0.01
<<Alt: 117.1 - 126.1 Strong (Alt) Muscovite>>												
117.80	**118.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
117.8 - 118.8: Intense alt. Interval is between Mxsx lenses												
118.80	**126.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	121.60	123.10	1.50	Q311901	0.3	0.005	-0.01	-0.01	-0.01
118.8 - 126.1: Intense alt. Interval is between Mxsx lenses												
<<Min: 120 - 126 2% Min: Ankerite>>				123.10	124.60	1.50	Q311902	0.5	0.007	-0.01	-0.01	-0.01
				124.60	126.10	1.50	Q311903	2.9	0.017	0.02	0.03	0.09
126.10	**126.50**	**OJ**	**Heavily disseminated sulphides in proximal altered rock**	126.10	127.60	1.50	Q311904	192	2.91	7.1	0.35	2.17
126.50	**131.50**	**OA**	**Magnetite bearing sulphides**	127.60	129.10	1.50	Q311905	121	1.02	2.85	0.44	1.04
126.5 - 131.5: OAG												
				129.10	130.60	1.50	Q311906	114	2.27	2.19	0.81	1.97

From (m)	To (m)		Rocktype & Description
131.50	**137.20**	**OA**	**Magnetite bearing sulphides**
137.20	**140.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
140.50	**141.60**	**OF**	**Pyrrhotite rich sulphides**
141.60	**145.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
145.40	**146.20**	**RHYv**	**Rhyolite volcaniclastic**
146.20	**147.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
147.10	**150.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 147.1 - 150.1 0.5% Min: Chalcopyrite>>

<<Min: 147.1 - 155.7 0.25% Min: Pyrite>>

<<Min: 147.1 - 166.1 0.5% Min: Pyrrhotite>>

<<Min: 147.1 - 166.1 0.5% Min: Ankerite>>

150.10	**160.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

150.1 - 160.8: Interval is progressively more biotite rich towards bottom end.

<<Min: 150.3 - 155.7 15% Min: Calcite>>

<<Min: 155.7 - 166.1 2% Min: Pyrite>>

<<Alt: 155.7 - 166.1 Weak-Moderate (Alt) Silicification>>

<<Alt: 155.7 - 166.1 Moderate (Alt) Muscovite>>

160.80	**166.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

160.8 - 166.1: Interval begins abruptly adjacent to mafic sill above. Texturally similar to the mafic sill, though rock is predominantly quartz with sericite rich foliations. Also present are pyrite rich stringers (up to 4%). This zone appears to be highly silicified an

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
130.60	132.10	1.50	Q311907	78.8	1.26	2.29	0.09	3.83
132.10	133.60	1.50	Q311908	128	1.83	3.72	0.15	2.07
133.60	135.10	1.50	Q311909	136	1.36	3.8	0.77	1.88
135.10	136.60	1.50	Q311911	98.6	1.46	2.36	0.78	1.04
136.60	138.10	1.50	Q311912	62.5	0.49	0.75	0.71	1.6
139.60	141.10	1.50	Q311913	68	0.455	0.61	0.8	1.42
141.10	142.60	1.50	Q311914	58.2	0.635	0.22	0.42	5.29
144.10	145.40	1.30	Q311915	197	1.4	0.26	1.94	8.12
145.40	146.20	0.80	Q311916	56.9	0.14	0.04	0.71	1.88
146.20	147.10	0.90	Q311917	171	1.07	0.32	3.08	8.45
147.10	148.60	1.50	Q311918	45.7	0.158	0.59	0.33	0.91
148.60	150.10	1.50	Q311919	38.9	0.082	0.49	0.77	3.62
150.10	151.60	1.50	Q311921	2.1	0.005	0.01	0.05	0.25
151.60	153.10	1.50	Q311922	0.4	-0.005	-0.01	-0.01	0.05
153.10	154.60	1.50	Q311923	-0.3	-0.005	-0.01	-0.01	0.03

Project: **KZK** **Hole Number:** **K95-070**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 166.1									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-071

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Sean Suttie
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415047	Core Size:		Azimuth:	150	Date Logging Complete:	
UTM Northing:	6815576	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1380.31	Casing Depth (m):		Length (m):	172.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	150		150	SS				☑	
14	-87	154		154	SS				☑	
50	-83	197		197	SS				☑	
81	-81	187		187	SS				☑	
143	-76	189		189	SS				☑	
172	-75	190		190	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.10**	**CASN Casing**									
11.10	**13.50**	**MAFt Mafic Volcaniclastics brown**									

11.1 - 13.5: two foliations apparent

<<Min: 11.3 - 13 0.1% Min: Pyrite>>
<<Min: 11.3 - 13 1% Min: Calcite>>
<<Min: 11.3 - 13 10% Min: Ankerite>>
<<Min: 13 - 20.9 0.5% Min: Pyrite>> fractures
<<Min: 13 - 24 5% Min: Ankerite>>
<<Alt: 11.3 - 13 Moderate (Alt) Biotite>>
<<Alt: 13 - 18.5 Weak (Alt) Muscovite>> foliated

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

13.50 24.00 RHYvl Lapilli tuff grey

13.5 - 24: heterogeneous,

<<Min: 20.9 - 24 2% Min: Pyrite>> fractures, seams

<<Alt: 18.5 - 19.5 Moderate (Alt) Biotite>> in lapilli tuff, why?

<<Alt: 19.5 - 36.5 Weak (Alt) Muscovite>>

24.00 28.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

<<Min: 24 - 28 0.5% Min: Pyrite>>

<<Min: 24 - 28 2% Min: Ankerite>>

28.00 36.50 RHYvl Lapilli tuff grey

<<Min: 28 - 36.5 0.5% Min: Pyrite>>

<<Min: 28 - 36.5 2% Min: Ankerite>>

36.50 43.50 RHYvl Lapilli tuff black

36.5 - 43.5: dark, banded dyke

<<Min: 36.5 - 42.1 0.5% Min: Pyrite>>

<<Min: 36.5 - 42.1 0.5% Min: Pyrrhotite>>

<<Min: 36.5 - 42.1 5% Min: Calcite>> to pervasive

<<Min: 42.1 - 43.5 3% Min: Pyrite>> patchy, in fault zone

<<Min: 42.1 - 43.5 1% Min: Ankerite>>

<<Alt: 36.5 - 42.1 Moderate-Strong (Alt) Biotite>>

<<Alt: 42.1 - 68 Weak (Alt) Muscovite>> grey green colour

<<Struc: 42.1 - 42.7 Moderate (Alt) Fault>> mineralized with PY

43.50 49.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

43.5 - 49.4: dominantly massive to brecciated flow textured rock

<<Min: 43.5 - 68 0.5% Min: Pyrite>> small blebs

<<Min: 43.5 - 68 1% Min: Pyrrhotite>> 0.25-2% locally

<<Min: 43.5 - 68 5% Min: Ankerite>> 2-8% locally, dissn's

49.40 68.00 RHYvl Lapilli tuff grey

49.4 - 68: well foliated, patchy sulphide/AK: local flow texture.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

68.00 74.50 RHYcw Curdy textured-flow banded (flows, subvolcanics) cream VFG

68 - 74.5: possibly local lapilli tuff inupper section

<<Min: 68 - 71.9 0.01% Min: Ankerite>>

<<Min: 68 - 74.5 0.1% Min: Sphalerite>> with PY

<<Min: 68 - 74.5 3% Min: Pyrite>> stringers throughout

<<Min: 68 - 74.5 0.5% Min: Pyrrhotite>>

<<Min: 71.9 - 74.5 1% Min: Ankerite>> weak diss'ns in groundmass

<<Alt: 68 - 74.5 Moderate-Strong (Alt) Muscovite>> greasy feel on fol'n

74.50 80.50 RHYvl Lapilli tuff grey

<<Min: 74.5 - 80.4 0.5% Min: Pyrite>>

<<Min: 74.5 - 80.4 0.5% Min: Pyrrhotite>>

<<Min: 74.5 - 80.4 3% Min: Ankerite>> small lenses

<<Min: 74.5 - 83.1 3% Min: Ankerite>>

<<Min: 80.4 - 83.1 3% Min: Pyrite>>

<<Min: 80.4 - 83.1 2% Min: Pyrrhotite>>

<<Min: 80.4 - 83.1 2% Min: Calcite>>

<<Alt: 74.5 - 80.4 Weak (Alt) Biotite>>

<<Alt: 74.5 - 88.7 Moderate (Alt) Muscovite>>

<<Alt: 80.4 - 83.1 Moderate (Alt) Biotite>>

80.50 81.50 MDSt Rhyolite tuff dominant mudstone dark grey

81.50 92.00 RHYvl Lapilli tuff grey

<<Min: 83.1 - 87 2% Min: Ankerite>>

<<Min: 83.1 - 88.7 1% Min: Pyrrhotite>> locally banded

<<Min: 87 - 98.5 8% Min: Ankerite>>

<<Min: 88.7 - 92 2% Min: Pyrrhotite>>

<<Alt: 88.7 - 97 Moderate (Alt) Muscovite>>

92.00 93.90 MDSt Rhyolite tuff dominant mudstone dark grey

<<Min: 92 - 93.9 2% Min: Pyrrhotite>>

<<Alt: 92 - 94 Moderate (Alt) Chlorite>>

<<Alt: 92 - 94 Weak-Moderate (Alt) Biotite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.90	**102.70**	**RHY**	**undifferentiated rhyolite**	**grey**	99.00	100.50	1.50	Q930968	-0.3	0.01	-0.01	-0.01	-0.01
<<Min: 93.9 - 97 1% Min: Pyrrhotite>>					100.50	102.00	1.50	Q930969	-0.3	0.009	-0.01	0.01	0.02
<<Min: 97 - 102.7 1% Min: Pyrite>> minor fracture filling					102.00	103.50	1.50	Q930971	5.7	0.024	0.02	0.22	0.66
<<Min: 98.5 - 103.9 1% Min: Ankerite>> Locally and in veins.													
<<Alt: 97 - 98.7 Strong (Alt) Muscovite>>													
<<Alt: 98.7 - 102.2 Intense (Alt) Muscovite>>													
<<Alt: 102.2 - 103.9 Strong (Alt) Chlorite>> Proximal alteration assemblage.													
102.70	**104.80**	**RHY**	**undifferentiated rhyolite**	**grey**	103.50	103.80	0.30	Q930972	12.3	0.144	0.18	0.05	0.11
<<Min: 102.7 - 103.9 0.5% Min: Chalcopyrite>>													
<<Min: 102.7 - 103.9 1% Min: Arsenopyrite>> Disseminated xtlas													
<<Alt: 102.7 - 103.9 Moderate (Alt) Biotite>>													
104.80	**106.60**	**OA**	**Magnetite bearing sulphides**										
106.60	**113.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		109.80	110.80	1.00	Q930973	148	1.86	0.45	1.44	6.43
<<Min: 109.8 - 113.1 8% Min: Sphalerite>>					110.80	112.30	1.50	Q930974	131	1.9	0.36	1.23	4.27
<<Min: 109.8 - 113.1 90% Min: Pyrite>>					112.30	113.80	1.50	Q930975	162	2.03	0.33	3.48	7.18
<<Min: 109.8 - 113.1 2% Min: Galena>>													
<<Min: 109.8 - 128.9 0.01% Min: Calcite>>													
113.10	**113.70**	**OA**	**Magnetite bearing sulphides**										
<<Min: 113.1 - 113.7 20% Min: Sphalerite>>													
<<Min: 113.1 - 113.7 65% Min: Pyrite>>													
<<Min: 113.1 - 113.7 5% Min: Galena>>													
<<Min: 113.1 - 113.8 10% Min: Magnetite>>													
113.70	**117.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		113.80	115.30	1.50	Q930976	198	3.58	0.52	1.48	4.66
<<Min: 113.7 - 117.5 15% Min: Sphalerite>>					115.30	116.80	1.50	Q930977	196	1.82	0.24	2.64	6.61
<<Min: 113.7 - 117.5 80% Min: Pyrite>>					116.80	118.30	1.50	Q930978	157	2.06	0.5	1.96	8.12
<<Min: 113.7 - 117.5 4% Min: Galena>>													
117.50	**118.00**	**OA**	**Magnetite bearing sulphides**										
<<Min: 117.5 - 118 15% Min: Sphalerite>>													
<<Min: 117.5 - 118 80% Min: Pyrite>>													

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 117.5 - 118 4% Min: Galena>>									
			<<Min: 117.5 - 118.6 4% Min: Magnetite>> local wisps and bands.									
118.00	**119.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	118.30	119.80	1.50	Q930979	218	3.24	0.5	3.71	11.7
			<<Min: 118 - 119.5 30% Min: Sphalerite>>									
			<<Min: 118 - 119.5 60% Min: Pyrite>>									
			<<Min: 118 - 119.5 8% Min: Galena>>									
119.50	**120.60**	**OA**	**Magnetite bearing sulphides**	119.80	121.30	1.50	Q930981	165	2.24	0.57	2.29	13.8
			<<Min: 119.5 - 120.6 30% Min: Sphalerite>>									
			<<Min: 119.5 - 120.6 50% Min: Pyrite>>									
			<<Min: 119.5 - 120.6 5% Min: Galena>>									
			<<Min: 120 - 120.7 15% Min: Magnetite>> locally laminated and banded.									
120.60	**121.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	121.30	122.80	1.50	Q930982	102	1.68	0.82	1.49	9.96
			<<Min: 120.6 - 121.9 20% Min: Sphalerite>>									
			<<Min: 120.6 - 121.9 60% Min: Pyrite>>									
			<<Min: 120.6 - 121.9 3% Min: Galena>>									
			<<Min: 121.4 - 123.8 15% Min: Magnetite>> locally laminated and banded.									
121.90	**123.60**	**OA**	**Magnetite bearing sulphides**	122.80	123.80	1.00	Q930983	123	1.43	1.2	1.17	6.88
			<<Min: 121.9 - 123.6 15% Min: Sphalerite>>									
			<<Min: 121.9 - 123.6 65% Min: Pyrite>>									
			<<Min: 121.9 - 123.6 2% Min: Galena>>									
			<<Min: 121.9 - 123.6 3% Min: Chalcopyrite>>									
			<<Alt: 123.5 - 123.9 Strong (Alt) Cordierite>>									
123.60	**124.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	123.80	124.80	1.00	Q930984	201	2.51	0.36	1.9	10.5
			<<Min: 123.6 - 124.8 20% Min: Sphalerite>>									
			<<Min: 123.6 - 124.8 70% Min: Pyrite>>									
			<<Min: 123.6 - 124.8 4% Min: Galena>>									
			<<Min: 123.6 - 124.8 1% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
124.80	**128.90**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	124.80	126.80	2.00	Q930985	17.6	0.218	0.04	0.15	0.58
124.8 - 128.9: Trace MG 0.25% in interval.											
<<Min: 124.8 - 126.8 2% Min: Pyrite>> bands			126.80	127.80	1.00	Q930986	271	3.59	0.63	1.86	11.5
<<Min: 126.8 - 128.9 20% Min: Sphalerite>>			127.80	128.90	1.10	Q930987	224	1.12	0.24	3.15	9.1
<<Min: 126.8 - 128.9 60% Min: Pyrite>>											
<<Min: 126.8 - 128.9 5% Min: Pyrrhotite>>											
<<Min: 126.8 - 128.9 5% Min: Galena>>											
<<Min: 126.8 - 128.9 1% Min: Chalcopyrite>>											
<<Alt: 124.8 - 126.7 Intense (Alt) Cordierite>>											
<<Alt: 128.8 - 129.7 Moderate (Alt) Cordierite>> trace py alteration in veinlets within rock unit.											
128.90	**129.70**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green**	128.90	130.40	1.50	Q930988	14	0.11	0.07	0.2	0.59
<<Min: 128.9 - 129.7 1% Min: Ankerite>>											
129.70	**141.40**	**MDSt Rhyolite tuff dominant mudstone grey-green**	130.40	131.90	1.50	Q930989	3.3	0.014	0.06	0.04	0.7
129.7 - 141.4: Bottom 15cm massive mudstone bed.											
<<Min: 129.7 - 133.3 0.25% Min: Sphalerite>>			131.90	133.40	1.50	Q930991	-0.3	0.006	-0.01	-0.01	0.03
<<Min: 129.7 - 133.3 2% Min: Pyrite>> with disseminated blebs											
<<Min: 129.7 - 133.3 0.25% Min: Chalcopyrite>>											
<<Min: 129.7 - 136.4 10% Min: Ankerite>>											
<<Min: 133.3 - 146.9 Min: Pyrite>>											
<<Min: 133.3 - 146.9 0.5% Min: Pyrrhotite>>											
<<Min: 136.4 - 154.4 2% Min: Ankerite>>											
<<Alt: 129.7 - 133.3 Intense (Alt) Chlorite>>											
<<Alt: 133.3 - 145.4 Strong (Alt) Chlorite>>											
141.40	**146.30**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green**									
141.4 - 146.3: what is nature of minz??is RHYi remobilizing Cu in addition to commonly seen Pb-Zn?											
<<Min: 145.9 - 154.7 5% Min: Calcite>>											
<<Alt: 145.4 - 146 Intense (Alt) Chlorite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 146 - 151.3 Strong (Alt) Chlorite>> Overprint alteration through mafic sill.

146.30 156.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

146.3 - 156.4: biotite porphyroblasts

<<Min: 146.9 - 156.4 1% Min: Pyrrhotite>>

<<Min: 154.4 - 162.1 0.01% Min: Ankerite>>

<<Min: 154.7 - 156.6 15% Min: Calcite>>

<<Alt: 151.3 - 156.4 Strong (Alt) Chlorite>>

<<Alt: 151.3 - 156.6 Strong (Alt) Biotite>>

156.40 162.10 RHYva Coarse grained to ash tuff grey-green

<<Min: 156.4 - 158.6 1% Min: Sphalerite>>

<<Min: 156.4 - 158.6 3% Min: Pyrite>>

<<Min: 156.4 - 158.6 3% Min: Pyrrhotite>>

<<Min: 156.4 - 158.6 0.01% Min: Chalcopyrite>>

<<Min: 156.4 - 162.1 2% Min: Calcite>>

<<Min: 158.6 - 160.6 3% Min: Sphalerite>>

<<Min: 158.6 - 160.6 4% Min: Pyrite>>

<<Min: 158.6 - 160.6 3% Min: Chalcopyrite>>

<<Min: 160.6 - 172.8 1% Min: Sphalerite>>

<<Min: 160.6 - 172.8 4% Min: Pyrite>>

162.10 172.80 RHYi Aphanitic Rhyolite (intrusion) light grey

162.1 - 172.8: "glassy dyke", aphanitic, to ery fine grained, tiny speckles after?, highly siliceous, brittle fractures, healed, QZ veinkets common, with PY, minor SP, GL

<<Min: 162.1 - 172.8 4% Min: Calcite>>

<<Alt: 162.1 - 172.8 Moderate-Strong (Alt) Silicification>>

<<Alt: 162.1 - 172.8 Moderate-Strong (Alt) Muscovite>>

End of Hole @ 172.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-072

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414899.181	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815393.526	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1387.5	Casing Depth (m):		Length (m):	49.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-55	178		178	SS				☑	
47	-55	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.40**	**OVBN Overburden**									
<<Alt: 10.1 - 14.5 Strong (Alt) Muscovite>> silvery grey, pervsive alt'n											
10.40	**14.70**	**RHYv Rhyolite volcaniclastic grey**	11.70	13.10	1.40	B00267658	0.8	0.011	-0.01	0.02	0.06
10.4 - 14.7: MU altered tuff, PY stringers t/o											
<<Min: 11.4 - 14.5 0.5% Min: Pyrite>>											
<<Min: 14.5 - 14.7 0.5% Min: Pyrite>>											
<<Alt: 14.5 - 19.3 Moderate (Alt) Muscovite>> grey-green alt'n											
14.70	**15.10**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 14.7 - 15.1 25% Min: Sphalerite>>											
<<Min: 14.7 - 15.1 65% Min: Pyrite>>											
<<Min: 14.7 - 15.1 4% Min: Galena>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

15.10 21.70 RHYv Rhyolite volcaniclastic grey-green

15.1 - 21.7: two mxsx intervals included, 16.2-16.6 (OB) and 19.3-19.8 (OB)

21.70 23.00 OA Magnetite bearing sulphides

<<Min: 21.7 - 23 14% Min: Sphalerite>>

<<Min: 21.7 - 23 70% Min: Pyrite>>

<<Min: 21.7 - 23 4% Min: Pyrrhotite>>

<<Min: 21.7 - 23 4% Min: Galena>>

<<Min: 21.7 - 23 2% Min: Chalcopyrite>>

23.00 24.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 23 - 24.4 12% Min: Sphalerite>>

<<Min: 23 - 24.4 70% Min: Pyrite>>

<<Min: 23 - 24.4 3% Min: Galena>>

<<Min: 23 - 24.4 0.5% Min: Chalcopyrite>>

24.40 25.90 RHYv Rhyolite volcaniclastic green

24.4 - 25.9: proximal footwall alt'n of schist

<<Min: 24.4 - 27.5 10% Min: Ankerite>>

<<Min: 24.8 - 25.9 3% Min: Pyrite>>

<<Alt: 24.4 - 26.1 Strong (Alt) Chlorite>> proximal alteration

25.90 26.20 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 26 - 26.2 3% Min: Pyrite>>

<<Min: 26 - 26.2 1% Min: Pyrrhotite>>

26.20 27.00 OG Chalcopyrite rich sulphides

<<Min: 26.2 - 27 7% Min: Sphalerite>>

<<Min: 26.2 - 27 40% Min: Pyrite>>

<<Min: 26.2 - 27 15% Min: Pyrrhotite>>

<<Min: 26.2 - 27 30% Min: Chalcopyrite>>

27.00 27.50 OJ Heavilly disseminated sulphides in proximal altered rock

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 27 - 27.5 8% Min: Sphalerite>>													
<<Min: 27 - 27.5 4% Min: Pyrite>>													
<<Min: 27 - 27.5 1% Min: Galena>>													
<<Min: 27 - 27.5 1% Min: Chalcopyrite>>													
<<Alt: 27 - 27.6 Strong (Alt) Chlorite>>													
27.50	**27.60**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**										
<<Min: 27.5 - 27.6 20% Min: Pyrrhotite>>													
<<Min: 27.5 - 27.6 8% Min: Chalcopyrite>>													
<<Min: 27.5 - 35.3 1% Min: Calcite>> minor veins, lenses													
<<Min: 27.5 - 35.3 5% Min: Ankerite>>													
27.60	**35.30**	**RHYvl**	**Lapilli tuff**	**grey-green**	29.10	30.60	1.50	B00267659	0.3	-0.005	-0.01	-0.01	-0.01
27.6 - 35.3: altered, PY stringers common													
<<Min: 27.6 - 30.1 2% Min: Pyrite>>					30.60	32.00	1.40	B00267661	0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 30.8 - 35.8 2% Min: Pyrite>>													
<<Alt: 27.6 - 35.3 Moderate (Alt) Muscovite>> grey-green													
35.30	**36.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey**									
35.3 - 36.3: siliceous, MU-MS partings													
<<Alt: 35.3 - 40.4 Moderate (Alt) Muscovite>> grey green													
36.30	**40.70**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**grey-green**									
36.3 - 40.7: scattered AK pblasts?													
<<Min: 36.3 - 40.7 3% Min: Ankerite>>													
<<Min: 36.5 - 39 2% Min: Pyrite>>													
<<Alt: 40.4 - 44.5 Strong (Alt) Muscovite>>													
40.70	**42.80**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	40.70	41.50	0.80	B00267662	18.6	0.142	0.04	0.11	0.47
40.7 - 42.8: sx stringers													
<<Min: 40.7 - 42.8 3% Min: Sphalerite>> bands, stringers					41.50	42.80	1.30	B00267663	17.1	0.096	0.04	0.15	0.75
<<Min: 40.7 - 42.8 5% Min: Pyrite>> bands, stringers													
<<Min: 40.7 - 44.5 5% Min: Ankerite>> sx rich section													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
42.80	**43.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		42.80	43.70	0.90	B00267664	117	0.399	1.41	0.52	2.14
<<Min: 42.8 - 43.6 6% Min: Sphalerite>>													
<<Min: 42.8 - 43.6 10% Min: Pyrite>>													
<<Min: 42.8 - 43.6 10% Min: Pyrrhotite>>													
<<Min: 42.8 - 43.6 1% Min: Chalcopyrite>>													
43.60	**44.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	43.70	44.20	0.50	B00267665	1.2	-0.005	0.01	0.01	0.03
43.6 - 44.5: sx stringers common													
<<Min: 43.6 - 44.5 3% Min: Pyrite>>													
44.50	**49.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**									
44.5 - 49.9: very homogeneous, fine grained, lt green, MU (or MS) altered t/o													
<<Min: 46.4 - 49.9 5% Min: Calcite>> veins, too													
<<Alt: 44.5 - 46.4 Moderate (Alt) Silicification>> grey-green?													
<<Alt: 44.5 - 49.9 Moderate (Alt) Muscovite>> grey-green													

End of Hole @ 49.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-073

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414874.152	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815412.709	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1390.141	Casing Depth (m):		Length (m):	68.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
14	-52	172		172	SS				☑	
44	-52	174		174	SS				☑	
67	-52	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN** **Overburden**									
6.10	**11.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 6.1 - 11.1 3% Min: Pyrite>>											
<<Min: 7 - 14 5% Min: Ankerite>>											
<<Alt: 7 - 24.7 Moderate-Strong (Alt) Muscovite>>											
11.10	**11.80**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 11.1 - 13.3 1% Min: Pyrite>>											
<<Min: 11.1 - 13.3 1% Min: Pyrrhotite>>											
11.80	**15.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 13.3 - 15.6 2% Min: Pyrite>>											

From (m)	To (m)		Rocktype & Description
15.50	**20.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

15.5 - 20.3: 95% missing core between 16.8-20.1m

<<Alt: 15.5 - 27 Weak (Alt) Silicification>>

<<Struc: 16.8 - 23.3 Trace (Alt) Fault>> possible fault but no evidence other than missing core

From (m)	To (m)		Rocktype & Description
20.30	**24.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 23.3 - 24.7 0.5% Min: Sphalerite>>

<<Min: 23.3 - 24.7 5% Min: Pyrite>>

<<Min: 23.3 - 24.7 0.5% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description
24.70	**27.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**

<<Min: 24.7 - 27 7% Min: Sphalerite>>

<<Min: 24.7 - 27 85% Min: Pyrite>>

<<Min: 24.7 - 27 1% Min: Chalcopyrite>>

<<Vein: 25 - 37.1 5% Quartz-Feldspar-Sulphide>>

From (m)	To (m)		Rocktype & Description
27.00	**28.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 27 - 28 10% Min: Sphalerite>>

<<Min: 27 - 28 75% Min: Pyrite>>

<<Min: 27 - 28 1% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description
28.00	**28.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

28 - 28.2: calcite bands

<<Min: 28 - 29.4 70% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description
28.20	**29.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
29.40	**31.10**	**OA**	**Magnetite bearing sulphides**

<<Min: 29.4 - 31.1 12% Min: Sphalerite>>

<<Min: 29.4 - 31.1 75% Min: Pyrite>>

<<Min: 29.4 - 31.1 8% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
20.30	21.80	1.50	B00267183	1.5	0.006	-0.01	0.05	0.05
21.80	23.20	1.40	B00267184	4.4	0.199	-0.01	0.1	0.25

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 29.4 - 31.1 4% Min: Chalcopyrite>>									
31.10	**32.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 31.1 - 32.8 14% Min: Sphalerite>>									
		<<Min: 31.1 - 32.8 70% Min: Pyrite>>									
		<<Min: 31.1 - 32.8 1% Min: Chalcopyrite>>									
32.80	**33.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**									
		<<Min: 32.8 - 33.8 20% Min: Sphalerite>>									
		<<Min: 32.8 - 33.8 15% Min: Pyrite>>									
		<<Min: 32.8 - 33.8 3% Min: Chalcopyrite>>									
		<<Min: 33.5 - 37.1 5% Min: Ankerite>>									
33.80	**37.10**	**RHYv** **Rhyolite volcaniclastic**									
		33.8 - 37.1: proximal altered									
		<<Min: 33.8 - 38.4 4% Min: Sphalerite>>									
		<<Min: 33.8 - 38.4 4% Min: Pyrite>>									
		<<Min: 33.8 - 38.4 1% Min: Chalcopyrite>>									
		<<Min: 35 - 37.1 3% Min: Calcite>>									
		<<Alt: 33.8 - 37.1 Weak (Alt) Cordierite>> not great example of cord - if it is cord!									
		<<Alt: 35 - 37.1 Weak (Alt) Chlorite>>									
		<<Alt: 35 - 37.1 Moderate (Alt) Biotite>>									
37.10	**53.50**	**RHYv** **Rhyolite volcaniclastic**	38.60	40.10	1.50	B00267185	1.5	-0.005	-0.01	-0.01	-0.01
		37.1 - 53.5: almost curdy texture at 39.2m. L units similar to this, wth samepale grey-green alt, have been called altered MAFi, especially as it has calcite bands.									
		<<Min: 37.1 - 52.8 5% Min: Calcite>> bands and diss	40.10	41.60	1.50	B00267186	0.6	-0.005	-0.01	-0.01	-0.01
		<<Min: 37.1 - 64 3% Min: Ankerite>>	50.30	51.80	1.50	B00267194	-0.3	0.009	-0.01	-0.01	-0.01
		<<Min: 38.4 - 53.5 3% Min: Sphalerite>>	51.80	53.30	1.50	B00267195	0.5	0.006	-0.01	0.02	0.04
		<<Min: 38.4 - 53.5 8% Min: Pyrite>>									
		<<Min: 38.4 - 53.5 0.5% Min: Chalcopyrite>>									
		<<Alt: 37.1 - 50.2 Weak (Alt) Muscovite>>									
		<<Alt: 50.2 - 53.5 Moderate (Alt) Muscovite>>									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
53.50	**54.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 53.5 - 54.8 15% Min: Sphalerite>>												
<<Min: 53.5 - 54.8 65% Min: Pyrite>>												
54.80	**55.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 54.8 - 55.8 10% Min: Sphalerite>>												
<<Min: 54.8 - 55.8 50% Min: Pyrite>>												
<<Min: 54.8 - 55.8 1% Min: Galena>>												
55.80	**59.50**	**RHYv**	**Rhyolite volcaniclastic**	56.70	58.20	1.50	B00267187	2.7	0.018	-0.01	0.03	0.24
<<Min: 55.8 - 56.8 0.5% Min: Sphalerite>>				58.20	59.70	1.50	B00267188	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 55.8 - 56.8 3% Min: Pyrite>>												
<<Min: 56.8 - 67.2 1% Min: Pyrite>>												
<<Min: 57.9 - 62 3% Min: Calcite>>												
<<Alt: 55.8 - 65.2 Weak (Alt) Muscovite>>												
59.50	**63.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
59.5 - 63.7: difficult to differentiate between units, lith based on silia-rhy bands, calcite and what looks like leucoxene.												
63.70	**66.60**	**RHYv**	**Rhyolite volcaniclastic**	64.20	65.70	1.50	B00267189	1.5	0.005	-0.01	0.13	0.07
63.7 - 66.6: 40cm gouge -fault zone to 65.2m.												
<<Min: 65.2 - 67.2 1% Min: Sphalerite>>				65.70	67.20	1.50	B00267191	8.1	0.023	0.09	0.26	0.51
<<Min: 65.2 - 67.2 0.2% Min: Pyrite>>												
<<Min: 65.2 - 67.2 0.5% Min: Chalcopyrite>>												
<<Alt: 65.2 - 67.2 Moderate (Alt) Muscovite>>												
<<Struc: 64.7 - 65.2 Intense (Alt) Fault>> gouge and crushed rock												
66.60	**67.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
67.20	**67.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	67.20	67.50	0.30	B00267192	93.3	0.145	0.22	3.57	7.61

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 67.2 - 67.5 10% Min: Sphalerite>>

<<Min: 67.2 - 67.5 60% Min: Pyrite>>

<<Min: 67.2 - 67.5 0.5% Min: Chalcopyrite>>

67.50 68.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.50	68.20	0.70	B00267193	34.1	0.349	1.24	0.11	0.47

67.5 - 68.2: Has calcite = MAFi. Good mineralized proximal alt. ddh did not go far enough…

<<Min: 67.5 - 68.2 3% Min: Sphalerite>>

<<Min: 67.5 - 68.2 10% Min: Pyrite>>

<<Min: 67.5 - 68.2 3% Min: Chalcopyrite>>

<<Min: 67.5 - 68.2 5% Min: Calcite>>

<<Alt: 67.5 - 68.2 Moderate-Strong (Alt) Chlorite>>

<<Alt: 67.5 - 68.2 Weak (Alt) Cordierite>> not great example of cord,if it iscord…

<<Alt: 67.5 - 68.2 Moderate (Alt) Biotite>>

End of Hole @ 68.2

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-074

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414873.996	Core Size:		Azimuth:	200	Date Logging Complete:	
UTM Northing:	6815413.556	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1389.915	Casing Depth (m):		Length (m):	84.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	200		200	SS				☑	
14	-89	202		202	SS				☑	
44	-88	187		187	SS				☑	
78	-86	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.20**	**OVBN Overburden**									
5.20	**17.40**	**RHYc Rhyolite coherant volcanics**									
5.2 - 17.4: Strongly banded in part, possibly ash tuff											
<<Min: 5.2 - 18.5 3% Min: Pyrite>>											
<<Min: 8.7 - 25.2 1% Min: Ankerite>>											
<<Alt: 5.2 - 25.2 Moderate-Strong (Alt) Muscovite>>											
<<Struc: 15.7 - 15.9 Weak-Moderate (Alt) Fault>> gouge and vein quartz rubble											
17.40	**20.80**	**MDSt Rhyolite tuff dominant mudstone**	20.70	22.20	1.50	B00267637	1.3	0.013	-0.01	0.05	0.07
17.4 - 20.8: Weak carbonaceous content											
<<Min: 18.5 - 19.2 3% Min: Pyrite>>											
<<Min: 19.2 - 25.2 3% Min: Pyrite>>											

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
22.20	23.70	1.50	B00267638	1.5	0.011	-0.01	0.11	0.14

From (m)	To (m)	Rocktype & Description
20.80	**25.20**	**RHYv Rhyolite volcaniclastic**

20.8 - 25.2: Strong banding and schistosity

<<Struc: 21.2 - 21.6 Weak-Moderate (Alt) Fault>> gouge

25.20	**26.70**	**No core No Core**

25.2 - 26.7: 15 cm left in box = CP in MU scihst with strong Limonite

26.70	**27.10**	**OH Fine grained, megascopically homogeneous pyrite rock**
27.10	**28.70**	**OA Magnetite bearing sulphides**

<<Min: 27.1 - 28.7 5% Min: Sphalerite>>

<<Min: 27.1 - 28.7 5% Min: Pyrite>>

<<Min: 27.1 - 28.7 2% Min: Chalcopyrite>>

28.70	**30.50**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 28.7 - 30.5 15% Min: Sphalerite>>

<<Min: 28.7 - 30.5 50% Min: Pyrite>>

<<Min: 28.7 - 30.5 3% Min: Chalcopyrite>>

<<Min: 28.7 - 35 2% Min: Galena>>

30.50	**31.20**	**RHYv Rhyolite volcaniclastic**

30.5 - 31.2: Med pistachio green minor lapilli?

<<Min: 30.5 - 31.2 10% Min: Pyrite>>

<<Alt: 30.5 - 31.2 Moderate (Alt) Muscovite>>

31.20	**32.10**	**OI Heavilly disseminated sulphides in host schist**

<<Min: 31.2 - 32.1 10% Min: Sphalerite>>

<<Min: 31.2 - 32.1 50% Min: Pyrite>>

<<Min: 31.2 - 32.1 5% Min: Galena>>

<<Min: 31.2 - 32.1 15% Min: Chalcopyrite>>

<<Min: 31.2 - 33.4 1% Min: Calcite>>

32.10	**32.70**	**OH Fine grained, megascopically homogeneous pyrite rock**

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 32.1 - 32.7 80% Min: Pyrite>>												
32.70	**33.40**	**RHY**	**undifferentiated rhyolite**									
<<Min: 32.7 - 33.4 10% Min: Pyrite>>												
<<Alt: 32.7 - 33.4 Weak-Moderate (Alt) Muscovite>> mod. MS												
33.40	**36.50**	**OA**	**Magnetite bearing sulphides**									
<<Min: 33.4 - 36.5 15% Min: Sphalerite>>												
<<Min: 33.4 - 36.5 40% Min: Pyrite>>												
<<Min: 33.4 - 36.5 2% Min: Chalcopyrite>>												
36.50	**37.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**									
<<Min: 36.5 - 37.5 2% Min: Sphalerite>>												
<<Min: 36.5 - 37.5 80% Min: Pyrite>>												
<<Min: 36.5 - 37.5 2% Min: Chalcopyrite>>												
37.50	**38.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 37.5 - 38.1 10% Min: Sphalerite>>												
<<Min: 37.5 - 38.1 70% Min: Pyrite>>												
<<Min: 37.5 - 38.1 5% Min: Chalcopyrite>>												
38.10	**65.80**	**RHYv**	**Rhyolite volcaniclastic**	39.60	41.50	1.90	B00267639	8.9	0.044	0.06	0.12	0.35
38.1 - 65.8: variable colour throughout due to CL and AK alteration. Spherulites? in srongly AK altered interval 57.1-57.8m												
<<Min: 38.1 - 39.2 10% Min: Pyrite>>				41.50	43.00	1.50	B00267641	1.2	0.006	-0.01	-0.01	-0.01
<<Min: 38.1 - 39.2 3% Min: Chalcopyrite>>				61.30	62.80	1.50	B00267642	0.5	-0.005	0.06	-0.01	0.03
<<Min: 38.1 - 47.2 3% Min: Ankerite>>				62.80	64.30	1.50	B00267643	4.3	0.032	0.16	-0.01	0.02
<<Min: 39.9 - 49.1 5% Min: Pyrite>>												
<<Min: 40 - 56 1% Min: Calcite>>												
<<Min: 47.2 - 51.7 30% Min: Ankerite>>												
<<Min: 51.7 - 57.1 1% Min: Ankerite>>												
<<Min: 57.1 - 58 80% Min: Ankerite>> In spherulite zone												
<<Min: 57.8 - 65 2% Min: Pyrite>>												
<<Min: 57.8 - 65 2% Min: Pyrrhotite>>												
<<Min: 57.8 - 65 1% Min: Chalcopyrite>>												
<<Min: 58 - 60 1% Min: Calcite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 58 - 65.8 10% Min: Ankerite>> Also vein									
		<<Alt: 38.1 - 42 Moderate-Strong (Alt) Muscovite>>									
		<<Alt: 42 - 57.2 Weak (Alt) Muscovite>>									
		<<Alt: 48.7 - 51.7 Weak-Moderate (Alt) Chlorite>> Chlorite stringers throughout with associated strong AK alteration.									
		<<Alt: 57.2 - 58 Trace (Alt) Muscovite>>									
		<<Alt: 58 - 62.6 Weak-Moderate (Alt) Biotite>>									
		<<Alt: 58 - 65.6 Strong (Alt) Chlorite>>									
		<<Alt: 62.6 - 63.3 Weak (Alt) Muscovite>> MS									
		<<Alt: 63.3 - 65.6 Moderate-Strong (Alt) Chlorite>>									
		<<Alt: 63.3 - 65.6 Weak (Alt) Biotite>>									
		<<Alt: 65.6 - 65.8 Weak-Moderate (Alt) Muscovite>>									
		<<Struc: 46.7 - 46.8 Weak (Alt) Fault>> gouge									
65.80	**68.10**	**OF Pyrrhotite rich sulphides**									
		<<Min: 65.8 - 68.1 10% Min: Sphalerite>>									
		<<Min: 65.8 - 68.1 70% Min: Pyrrhotite>>									
		<<Min: 65.8 - 68.1 2% Min: Chalcopyrite>>									
68.10	**77.80**	**RHYva Coarse grained to ash tuff**	69.60	71.10	1.50	B00267644	0.3	0.011	-0.01	-0.01	0.01
68.1 - 77.8: weak banding, fine grained, light grey											
		<<Min: 68.1 - 77.8 5% Min: Pyrite>>	71.10	72.60	1.50	B00267645	2	0.01	0.01	0.01	0.03
		<<Min: 68.1 - 77.8 1% Min: Ankerite>>	72.60	73.50	0.90	B00267646	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 69 - 77.8 5% Min: Calcite>>	73.50	74.90	1.40	B00267647	3.8	0.04	-0.01	0.11	0.11
		<<Alt: 68.1 - 77.8 Weak (Alt) Muscovite>>	74.90	76.40	1.50	B00267648	-0.3	-0.005	-0.01	0.01	0.01
77.80	**78.50**	**OF Pyrrhotite rich sulphides**									
		<<Min: 77.8 - 78.5 40% Min: Pyrrhotite>>									
		<<Min: 77.8 - 78.5 1% Min: Galena>>									
		<<Min: 77.8 - 78.5 2% Min: Chalcopyrite>>									
		<<Vein: 77.8 - 83.7 40% Quartz>> 2 vein events, CC &QZ. Strong BI with CA veining, minor CL									
78.50	**84.40**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**	80.00	81.50	1.50	B00267649	-0.3	-0.005	-0.01	-0.01	0.16
78.5 - 84.4: Strongly veined, and faulted. Variable between dark and light colour due to litho change from BI rich to ash rich MS altered.											
		<<Min: 78.5 - 80.8 2% Min: Pyrrhotite>>	81.50	83.00	1.50	B00267651	0.6	-0.005	-0.01	-0.01	0.04

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 78.5 - 84.4 40% Min: Calcite>>

<<Alt: 78.5 - 81.1 Moderate-Strong (Alt) Chlorite>> Strongly broken/veined and faulted

<<Alt: 78.5 - 81.1 Moderate (Alt) Biotite>> crude bands and coarse grained.

<<Alt: 81.1 - 84.4 Weak (Alt) Muscovite>> Finer mafic seds.

<<Struc: 80.8 - 81.9 Weak-Moderate (Alt) Fault>> Minor gouge, broken core, numerous veins. Slicks on fragments

End of Hole @ 84.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-075

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414849.463	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815399.674	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1393.79	Casing Depth (m):		Length (m):	81.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Samples intervals between 9.4-12.4 m, and 38.1-39.6 m are missing small sections of core due to prior sampling. The each interval is not missing more than 0.2 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-56	180		180	SS				☑	
47	-58	180		180	SS				☑	
78	-56	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN Overburden**									
6.10	**8.70**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 6.1 - 15.4 0.5% Min: Pyrite>> FD, WIS, and trace VEN.											
<<Min: 6.1 - 15.4 0.01% Min: Calcite>>											
<<Min: 6.1 - 15.4 2% Min: Ankerite>>											
<<Alt: 6.1 - 15.4 Strong (Alt) Muscovite>>											
8.70	**10.60**	**MDSw Coherent rhyolite flow with carbonaceous content**	9.40	10.90	1.50	R080172	2.6	0.018	0.07	-0.01	0.04
<<Min: 9.1 - 15.4 0.01% Min: Sphalerite>> FD, WIS, and VEN											
<<Struc: 9.1 - 12.6 Weak (Alt) Fault>>											
10.60	**15.40**	**RHYvl Lapilli tuff**	10.90	12.40	1.50	R080173	79.6	0.777	0.52	0.02	0.16
<<Min: 10.6 - 12.1 0.25% Min: Galena>>			12.40	13.90	1.50	R080174	5.7	0.024	0.05	0.05	0.1

From (m)	To (m)		Rocktype & Description
<<Min: 10.6 - 12.1 0.5% Min: Chalcopyrite>>			
15.40	**15.90**	**OD**	**Brecciated sulphides**
15.90	**17.10**	**OA**	**Magnetite bearing sulphides**
17.10	**18.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
18.60	**23.40**	**RHYi**	**Aphanitic Rhyolite (intrusion)**
<<Min: 18.6 - 19 0.01% Min: Chalcopyrite>>			
<<Min: 18.6 - 26.4 0.5% Min: Pyrite>> FD and WIS			
<<Min: 18.6 - 26.4 4% Min: Calcite>>			
<<Min: 18.6 - 26.4 0.5% Min: Ankerite>>			
<<Alt: 18.6 - 23.4 Moderate (Alt) Silicification>> grn-gy			
<<Alt: 18.6 - 23.4 Moderate (Alt) Muscovite>> grn-gy			
23.40	**26.40**	**RHYi**	**Aphanitic Rhyolite (intrusion)**
23.4 - 26.4: QZ eyes			
<<Min: 26.1 - 26.4 1% Min: Sphalerite>>			
<<Min: 26.1 - 26.4 0.01% Min: Chalcopyrite>>			
<<Alt: 23.4 - 27.8 Moderate-Strong (Alt) Muscovite>>			
26.40	**26.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 26.7 - 26.9 4% Min: Magnetite>>			
26.90	**27.80**	**RHYc**	**Rhyolite coherant volcanics**
<<Min: 26.9 - 27.8 0.25% Min: Pyrite>>			
<<Min: 26.9 - 27.8 0.5% Min: Ankerite>>			
27.80	**30.10**	**OA**	**Magnetite bearing sulphides**
30.10	**31.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 30.1 - 32.4 2% Min: Magnetite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
13.90	15.40	1.50	R080175	3.5	0.026	0.04	0.03	0.23
15.40	16.90	1.50	R080176	139	1.07	1.63	1.27	9.41
16.90	17.90	1.00	R080177	181	0.979	0.84	3.29	9.58
17.90	18.60	0.70	R080178	166	1.75	0.4	3.27	8.66
18.60	19.00	0.40	R080179	595	3.16	1.87	0.16	0.4
19.00	20.50	1.50	R080181	0.9	0.009	-0.01	-0.01	-0.01
20.50	22.00	1.50	R080182	0.8	0.012	-0.01	-0.01	-0.01
22.00	23.40	1.40	R080183	0.9	0.012	-0.01	-0.01	-0.01
23.40	24.90	1.50	R080184	0.6	0.01	-0.01	-0.01	-0.01
24.90	26.40	1.50	R080185	58.3	0.29	0.07	0.1	0.35
26.40	27.80	1.40	R080186	146	1.15	0.06	2.51	5.44
27.80	29.30	1.50	R080187	140	1.54	0.61	2.88	10.2
29.30	30.80	1.50	R080188	91.3	0.658	0.26	1.26	8.21
30.80	32.30	1.50	R080189	178	2.03	0.73	1.36	7.15

From (m)	To (m)		Rocktype & Description
31.20	**33.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
33.70	**34.30**	**RHYc**	**Rhyolite coherant volcanics**

33.7 - 34.3: Cippo?

<<Min: 33.7 - 34.3 0.01% Min: Pyrite>>
<<Min: 33.7 - 34.3 0.01% Min: Calcite>>
<<Min: 33.7 - 34.3 15% Min: Ankerite>>
<<Alt: 33.7 - 34.3 Weak-Moderate (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description
34.30	**35.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
35.60	**55.00**	**RHYvl**	**Lapilli tuff**

35.6 - 55: Trace flwb, QZ eyes, and Cbppo. Three narrow (up to 0.3 m) MAFC Cbppo dykes between 47.2-50.0 m.

<<Min: 35.6 - 54.1 1% Min: Ankerite>>
<<Min: 35.6 - 59.2 0.25% Min: Pyrite>> FD and WIS
<<Min: 35.6 - 65.8 5% Min: Calcite>>
<<Min: 42 - 49.2 0.01% Min: Sphalerite>>
<<Min: 46.1 - 49.2 0.01% Min: Galena>>
<<Min: 46.1 - 49.2 0.01% Min: Chalcopyrite>> VEN and FD
<<Min: 47.2 - 49.2 0.01% Min: Pyrrhotite>>
<<Min: 54.1 - 65.8 2% Min: Ankerite>>
<<Alt: 35.6 - 36.1 Weak (Alt) Chlorite>>
<<Alt: 36.1 - 50 Moderate (Alt) Muscovite>>
<<Alt: 50 - 81.1 Moderate (Alt) Silicification>>
<<Alt: 50 - 81.1 Moderate (Alt) Muscovite>>
<<Struc: 39.6 - 39.9 Weak (Alt) Fault>>

From (m)	To (m)		Rocktype & Description
55.00	**57.60**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

55 - 57.6: Rotated Cbppo up to 3 cm.

<<Min: 56.4 - 63.8 0.01% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
32.30	33.70	1.40	R080191	288	2.13	0.89	1.88	8.53
33.70	34.30	0.60	R080192	40.5	0.524	0.14	0.16	0.2
34.30	35.60	1.30	R080193	439	2.45	0.63	4.1	11.4
35.60	36.60	1.00	R080194	2.1	0.016	-0.01	-0.01	0.02
36.60	38.10	1.50	R080195	1.2	0.014	-0.01	-0.01	-0.01
38.10	39.60	1.50	R080196	1.7	0.02	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

57.60 63.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

57.6 - 63.6: QZ eyes. Weak mariposite colouration.

<<Min: 59.2 - 63.8 0.5% Min: Pyrite>> FD and WIS

<<Min: 59.2 - 63.8 0.01% Min: Galena>> FD in WIS

<<Struc: 57.6 - 65.1 Trace (Alt) Fault>>

63.60 74.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.6 - 74.3: +CA

<<Min: 63.8 - 69.3 0.01% Min: Pyrrhotite>>

<<Min: 63.8 - 74.3 0.25% Min: Pyrite>> FD and DIS

<<Min: 65.8 - 74.3 15% Min: Calcite>>

<<Min: 65.8 - 81 0.01% Min: Ankerite>>

<<Struc: 71.8 - 74.5 Weak (Alt) Fault>>

74.30 81.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) **FG**

74.3 - 81.1: +BI

<<Min: 74.3 - 78.8 0.01% Min: Sphalerite>>

<<Min: 74.3 - 81.1 0.01% Min: Pyrrhotite>>

<<Min: 74.3 - 81.1 1% Min: Calcite>>

<<Struc: 76.6 - 76.9 Weak (Alt) Fault>>

End of Hole @ 81.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-076

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415000	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815591	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1380.31	Casing Depth (m):		Length (m):	169.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
20	-58	180		180	SS				☑	
51	-60	180		180	SS				☑	
82	-60	180		180	SS				☑	
112	-61	180		180	SS				☑	
142	-62	181		181	SS				☑	
167	-62	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**13.30**	**OVBN Overburden**									
<<Min: 0 - 13.3 0.5% Min: Pyrrhotite>>											
<<Min: 0 - 13.3 2% Min: Pyrite>>											
13.30	**25.00**	**RHYv Rhyolite volcaniclastic**									
25.00	**29.30**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**									
29.30	**36.50**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 29.8 - 46.8 1% Min: Pyrite>>											
<<Min: 29.8 - 46.8 2% Min: Pyrrhotite>>											
36.50	**46.80**	**RHYvl Lapilli tuff**									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
46.80	47.50	0.70	B00267252	7.1	0.005	0.11	0.04	1.88

<<Min: 43.3 - 63.1 8% Min: Ankerite>>

46.80 47.50 RHYva Coarse grained to ash tuff

46.8 - 47.5: Bands of diss py, sphalerite, clastic - flow texture, syngenetic mineralization

<<Min: 46.8 - 47.5 10% Min: Sphalerite>>

<<Min: 46.8 - 47.5 20% Min: Pyrrhotite>>

<<Min: 46.8 - 47.5 15% Min: Calcite>>

47.50 54.70 RHYvl Lapilli tuff

<<Min: 48.2 - 72.7 2% Min: Pyrite>>

54.70 60.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

54.7 - 60.7: possibly brecciated, sectionsof lapilli

60.70 61.70 RHYva Coarse grained to ash tuff

60.7 - 61.7: locacally finely banded-laminated, diss py

61.70 75.30 RHYvl Lapilli tuff

61.7 - 75.3: A few thin py bands, 73.6-74.6m; siliceous clasts rimmed by py-chl.unit contains patches of remnant chkl alt

<<Min: 63.1 - 83.3 15% Min: Ankerite>>

<<Min: 72.7 - 77.8 2% Min: Pyrite>>

<<Alt: 67.2 - 87.2 Weak (Alt) Muscovite>>

<<Alt: 70.3 - 72.3 Weak (Alt) Chlorite>> remnants of original metamorphic chlorite

75.30 79.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

75.3 - 79.5: silicic bands, curdy texture and sections of lapilli tuff. 20cm mdst at 78m.

<<Min: 78.1 - 82 2% Min: Pyrite>>

79.50 82.00 RHYvl Lapilli tuff

79.5 - 82: silicic bands and curdy texture. 30cm section MDSt at 79.54.

82.00 85.60 MDSt Rhyolite tuff dominant mudstone

82 - 85.6: local silicic bands and curdy texture.82.4; 5cm finely banded ash And diss py

<<Min: 83.3 - 106.4 8% Min: Ankerite>>

From (m)	To (m)		Rocktype & Description
85.60	**91.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
85.6 - 91.1: very minor carb laamin present			
<<Min: 85.7 - 90.5 3% Min: Pyrite>>			
<<Min: 90.5 - 96.6 2% Min: Pyrite>>			
<<Alt: 87.2 - 106.4 Moderate-Strong (Alt) Muscovite>>			
91.10	**93.80**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Struc: 92.1 - 92.4 Moderate-Strong (Alt) Fault>> minor gouge			
93.80	**95.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
95.10	**96.00**	**MDSt**	**Rhyolite tuff dominant mudstone**
96.00	**96.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
96.50	**100.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 96.6 - 100.2 3% Min: Pyrite>>			
100.20	**100.40**	**RHYva**	**Coarse grained to ash tuff**
100.2 - 100.4: very finely banded - laminated ash			
100.40	**108.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 100.4 - 108 2% Min: Pyrite>>			
108.20	**112.90**	**OG**	**Chalcopyrite rich sulphides**
<<Min: 108.2 - 112.9 5% Min: Sphalerite>>			
<<Min: 108.2 - 112.9 20% Min: Pyrite>>			
<<Min: 108.2 - 112.9 20% Min: Pyrrhotite>>			
<<Min: 108.2 - 112.9 30% Min: Chalcopyrite>>			
<<Min: 112.2 - 112.9 50% Min: Chalcopyrite>>			
112.90	**119.70**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 112.9 - 119.7 3% Min: Ankerite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 113.4 - 119.2 1% Min: Sphalerite>>

<<Min: 113.4 - 119.2 20% Min: Pyrite>>

<<Min: 113.4 - 119.2 0.5% Min: Chalcopyrite>>

<<Alt: 112.9 - 119.7 Trace (Alt) Chlorite>>

<<Alt: 113.5 - 119.7 Moderate (Alt) Muscovite>>

119.70 122.20 No Core No Core

<<Min: 119.7 - 122.2 5% Min: Pyrite>>

<<Min: 119.7 - 122.2 10% Min: Pyrrhotite>>

<<Min: 119.7 - 122.2 10% Min: Chalcopyrite>>

122.20 123.00 OA Magnetite bearing sulphides

<<Min: 122.2 - 123 10% Min: Sphalerite>>

<<Min: 122.2 - 123 20% Min: Pyrite>>

<<Min: 122.2 - 123 45% Min: Pyrrhotite>>

<<Min: 122.2 - 123 12% Min: Chalcopyrite>>

123.00 125.20 OA Magnetite bearing sulphides

<<Min: 123 - 125.2 17% Min: Sphalerite>>

<<Min: 123 - 125.2 60% Min: Pyrite>>

<<Min: 123 - 125.2 4% Min: Pyrrhotite>>

<<Min: 123 - 125.2 2% Min: Chalcopyrite>>

125.20 129.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 125.2 - 129.7 20% Min: Sphalerite>>

<<Min: 125.2 - 129.7 60% Min: Pyrite>>

<<Min: 125.2 - 129.7 1% Min: Chalcopyrite>>

129.70 133.10 OJ Heavilly disseminated sulphides in proximal altered rock

129.7 - 133.1: net textured but no pyrrhotite or chllorite

<<Alt: 130.2 - 133.2 Intense (Alt) Albite>> some type of white coarse grained feldspar

<<Vein: 130.2 - 133.2 80% Quartz-Kspar-Sulphide>> syngenetic qtz-feldspar-sulphide

From (m)	To (m)	Rocktype & Description
133.10	**139.50**	**RHYv** **Rhyolite volcaniclastic**
133.1 - 139.5: 137.7-138.8: fine ash, almost talcose.		
<<Min: 134.7 - 146.6 5% Min: Ankerite>>		
<<Alt: 133.2 - 138 Moderate (Alt) Chlorite>>		
<<Alt: 133.4 - 143 Moderate (Alt) Muscovite>>		
139.50	**140.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 139.5 - 140.1 25% Min: Sphalerite>>		
<<Min: 139.5 - 140.1 55% Min: Pyrite>>		
140.10	**155.60**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 140.1 - 148.6 1% Min: Sphalerite>>		
<<Min: 140.1 - 148.6 3% Min: Pyrrhotite>>		
<<Min: 140.1 - 148.6 0.5% Min: Chalcopyrite>>		
<<Min: 148.6 - 154.2 0.5% Min: Chalcopyrite>>		
<<Min: 149.8 - 154.2 1% Min: Pyrrhotite>>		
<<Min: 149.8 - 154.2 0.2% Min: Chalcopyrite>>		
<<Min: 154.2 - 155.6 1% Min: Pyrite>>		
<<Min: 154.2 - 155.6 1% Min: Pyrrhotite>>		
<<Min: 154.2 - 155.6 1% Min: Chalcopyrite>>		
<<Alt: 143.2 - 144.6 Moderate (Alt) Chlorite>>		
<<Alt: 148.2 - 155.6 Strong (Alt) Chlorite>>		
155.60	**158.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 155.6 - 157.6 15% Min: Calcite>>		
<<Min: 158.3 - 169.5 30% Min: Pyrite>>		
<<Vein: 157.6 - 158.4 50% Quartz>>		
158.60	**159.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 158.6 - 169.5 Intense (Alt) Silicification>> associated with rhy dyke		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
134.70	135.90	1.20	B00267253	3.1	0.009	-0.01	0.02	0.04
136.00	136.70	0.70	B00267254	0.7	0.015	-0.01	-0.01	-0.01
136.70	138.00	1.30	B00267255	1.8	0.007	-0.01	0.02	0.08
144.60	145.60	1.00	B00267256	2.1	0.006	-0.01	-0.01	0.01
145.60	147.10	1.50	B00267257	-0.3	0.012	-0.01	-0.01	0.01
147.10	148.10	1.00	B00267258	-0.3	-0.005	-0.01	-0.01	-0.01
148.20	148.80	0.60	B00267259	-0.3	-0.005	-0.01	-0.01	0.02
149.60	151.00	1.40	B00267261	3.2	0.018	0.05	-0.01	0.06
151.30	152.80	1.50	B00267262	-0.3	-0.005	-0.01	-0.01	0.03
152.80	153.80	1.00	B00267263	2.9	0.017	0.18	-0.01	0.07
155.50	157.00	1.50	B00267264	1.8	0.012	0.03	-0.01	0.03
157.00	158.60	1.60	B00267265	12.4	0.017	0.02	0.27	0.23

From (m)	To (m)	Rocktype & Description
159.10	**169.50**	**RHYif** **feldspar and quartz porphyry intrusions**

159.1 - 169.5: very planer foliation

<<Min: 163.4 - 169.5 0.1% Min: Sphalerite>>

End of Hole @ 169.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-077

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415000	Core Size:		Azimuth:	115	Date Logging Complete:	
UTM Northing:	6815591	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1380.31	Casing Depth (m):		Length (m):	169.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	115		115	SS				☑	
17	-89	112		112	SS				☑	
47	-88	132		132	SS				☑	
79	-85	157		157	SS				☑	
114	-84	167		167	SS				☑	
145	-83	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.80 OVBN Overburden

9.80 22.00 RHYvl Lapilli tuff

<<Min: 9.8 - 21.8 2% Min: Pyrrhotite>>

<<Min: 10 - 22 15% Min: Ankerite>>

<<Alt: 9.8 - 45 Weak (Alt) Muscovite>> partial late overprint style?

<<Vein: 17.2 - 17.4 100% Quartz>>

22.00 24.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

22 - 24.8: well developed chill margins calcareous

<<Min: 22 - 24.8 15% Min: Calcite>>

<<Min: 24.7 - 36.6 3% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

24.80 38.70 RHYvl Lapilli tuff

<<Min: 24.8 - 54 15% Min: Ankerite>>

<<Min: 37.1 - 58.5 3% Min: Pyrite>>

38.70 43.40 RHYc Rhyolite coherant volcanics

38.7 - 43.4: some poorly developed silica bands, pseudo fragmental texture and rare curdy texture. Some parts still look like a tuff of some sort.

43.40 45.20 RHYvx Quartz and/or feldspar crystal tuff

43.4 - 45.2: banded concetrations of 4-10% 2-3mm ankerite and quartz after feldspar, some feldspar intact. Very rare folded and crenulated silica bands

45.20 53.20 RHYvl Lapilli tuff

45.2 - 53.2: different lapilli tuff unit from above as it has 10% biotite bands (dirty sed component)

53.20 65.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

53.2 - 65.8: metre scale zones with folded silica bands and curdy texture. However a lot of sericite inbetween. Patchy curdy rhyolite

<<Min: 54 - 62.2 10% Min: Ankerite>>

<<Min: 62.2 - 78 10% Min: Ankerite>>

<<Min: 64.5 - 66 2% Min: Pyrite>>

<<Alt: 53.5 - 66.2 Weak-Moderate (Alt) Muscovite>>

65.80 80.10 RHYvl Lapilli tuff

65.8 - 80.1: minor biotite component on partings giving a mdst cast, but not

<<Min: 66.1 - 75.2 2% Min: Pyrrhotite>>

<<Min: 75.2 - 78 2% Min: Pyrrhotite>>

<<Min: 78 - 80 2% Min: Pyrrhotite>>

<<Min: 78 - 89 15% Min: Ankerite>>

<<Min: 80 - 82.9 2% Min: Pyrrhotite>>

<<Alt: 66.2 - 81.2 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

80.10 82.80 MDSt Rhyolite tuff dominant mudstone

80.1 - 82.8: approx 30% carbonaceous component. Further to 85.2 looks the same but muscovite sericite partings instead of carbonaceous

82.80 85.20 RHYvl Lapilli tuff

<<Min: 82.9 - 95.1 3% Min: Pyrrhotite>>

<<Alt: 84.4 - 104.6 Weak (Alt) Muscovite>>

85.20 95.10 RHYvl Lapilli tuff

<<Min: 89 - 104.1 10% Min: Ankerite>>

95.10 104.10 MDSt Rhyolite tuff dominant mudstone

95.1 - 104.1: section from 96-99.6 is less well developed with possible x-tals so more volcanic input

<<Min: 95.1 - 104.2 4% Min: Pyrrhotite>>

<<Alt: 96.8 - 100.2 Weak (Alt) Chlorite>>

104.10 108.80 RHYcq Quartz porphyry

<<Min: 104.1 - 110 1% Min: Pyrrhotite>>

<<Min: 104.2 - 108.3 2% Min: Pyrite>>

<<Alt: 104.1 - 109 Moderate (Alt) Muscovite>>

108.80 109.60 MDSw Coherent rhyolite flow with carbonaceous content

108.8 - 109.6: poorly ddeveloped but marks the boundary between curdy vs non

<<Alt: 109 - 141 Strong (Alt) Muscovite>>

109.60 131.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 110 - 112 3% Min: Pyrrhotite>> dis in banded zones

<<Min: 111 - 112.2 4% Min: Sphalerite>>

<<Min: 111 - 112.2 1% Min: Pyrite>>

<<Min: 111 - 112.2 0.5% Min: Galena>>

<<Min: 112 - 134 1% Min: Pyrrhotite>>

<<Min: 112.2 - 113.8 2% Min: Pyrrhotite>>

<<Min: 114 - 133.3 15% Min: Ankerite>>

<<Min: 114.3 - 132.5 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Alt: 110 - 133 Moderate-Strong (Alt) Chlorite>>

<<Vein: 114 - 114.8 100% Quartz>>

<<Struc: 118.3 - 118.5 Moderate (Alt) Fault>> 10cm of clay gouge

131.80 135.80 RHYva Coarse grained to ash tuff

131.8 - 135.8: complketely altered to a fine muscovite - sericite - chlorite schist with po-al porphyroblasts

<<Min: 133.3 - 141 10% Min: Ankerite>>

<<Alt: 133 - 141 Moderate (Alt) Chlorite>>

<<Vein: 132 - 132.9 20% Quartz-Chlorite>>

<<Vein: 134.6 - 135 100% Quartz>>

135.80 141.00 RHYc Rhyolite coherant volcanics

141.00 141.30 MDSt Rhyolite tuff dominant mudstone

141 - 141.3: immediate hanging wall to massive sulphide

141.30 141.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

141.3 - 141.7: assay carried into barren rhycw for another 1.1m. This unit is high grade

<<Min: 141.3 - 141.7 30% Min: Sphalerite>>

<<Min: 141.3 - 141.7 55% Min: Pyrite>>

<<Min: 141.3 - 141.7 5% Min: Pyrrhotite>>

<<Min: 141.3 - 141.7 4% Min: Galena>>

<<Min: 141.3 - 141.7 1% Min: Chalcopyrite>>

141.70 142.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 141.7 - 142.8 1% Min: Pyrite>>

142.80 144.60 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 142.8 - 144.6 2% Min: Sphalerite>>

<<Min: 142.8 - 144.6 15% Min: Pyrite>>

<<Min: 142.8 - 144.6 5% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
136.80	138.30	1.50	B00232591	0.3	-0.005	-0.01	-0.01	0.01
138.30	139.80	1.50	B00232592	1	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description
144.60	**147.70**	**RHYv** **Rhyolite volcaniclastic**
144.6 - 147.7: felsic unit with strong clorite slteratiojn as decimetre bands		
<<Min: 144.6 - 147.7 0.5% Min: Sphalerite>>		
<<Min: 144.6 - 147.7 1% Min: Pyrite>>		
<<Min: 144.6 - 147.7 0.5% Min: Pyrrhotite>>		
<<Alt: 145 - 149 Strong (Alt) Chlorite>>		
147.70	**148.10**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
147.7 - 148.1: RHYv protolith		
<<Min: 147.7 - 148.6 2% Min: Sphalerite>>		
<<Min: 147.7 - 148.6 10% Min: Pyrrhotite>>		
<<Min: 147.7 - 148.6 8% Min: Chalcopyrite>>		
148.10	**148.60**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
148.1 - 148.6: RHYv protolith, cpy, chl,sp stringers		
148.60	**148.70**	**RHYv** **Rhyolite volcaniclastic**
148.70	**162.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
148.7 - 162.9: Some indication of a chill margin and then into chl after amphibole intrusion by 151m		
<<Min: 148.7 - 155.3 7% Min: Calcite>>		
<<Min: 151 - 162.4 1% Min: Pyrite>>		
<<Alt: 159 - 162.9 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 161.5 - 162.9 Moderate-Strong (Alt) Silicification>>		
162.90	**169.70**	**RHYi** **Aphanitic Rhyolite (intrusion)**
162.9 - 169.7: non foliated.		
<<Min: 162.9 - 169.7 1% Min: Sphalerite>>		
<<Min: 162.9 - 169.7 3% Min: Pyrite>>		
End of Hole @ 169.7		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
150.10	151.60	1.50	B00232593	-0.3	0.006	-0.01	-0.01	0.01
151.60	153.10	1.50	B00232594	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-078

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414824.209	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815439.223	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1397.264	Casing Depth (m):		Length (m):	90.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
14	-61	179		179	SS				☑	
47	-60	180		180	SS				☑	
78	-60	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.10**	**OVBN** **Overburden**									
5.10	**20.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**	17.60	19.10	1.50	B00267149	1.1	-0.005	-0.01	0.08	0.11
5.1 - 20.7: local 10 cm bands MDSc. Most of unit is sulphidized											
<<Min: 5.1 - 20.7 3% Min: Pyrite>>			19.10	20.60	1.50	B00267151	1.4	0.036	-0.01	0.07	0.08
<<Min: 7 - 20.7 5% Min: Ankerite>>			20.60	21.90	1.30	B00267152	7.4	0.102	0.04	0.26	1.82
<<Alt: 6.5 - 26.2 Weak (Alt) Muscovite>>											
<<Alt: 7.9 - 31 Weak (Alt) Silicification>>											
20.70	**21.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 20.7 - 21.4 5% Min: Sphalerite>>											
<<Min: 20.7 - 21.4 20% Min: Pyrite>>											

From (m)	To (m)		Rocktype & Description
			<<Struc: 21.2 - 21.9 Weak-Moderate (Alt) Fault>> 2 shear zones each with 2cm gouge
21.40	**25.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
			<<Min: 21.4 - 25.7 3% Min: Pyrite>>
25.20	**31.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 25.7 - 31 3% Min: Pyrite>>
			<<Alt: 26.2 - 31 Moderate (Alt) Muscovite>>
31.00	**32.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 31 - 32.3 3% Min: Sphalerite>>
			<<Min: 31 - 32.3 60% Min: Pyrite>>
32.30	**33.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 32.3 - 33.6 5% Min: Pyrite>>
			<<Min: 32.3 - 33.6 1% Min: Chalcopyrite>>
			<<Alt: 33.5 - 33.6 Moderate (Alt) Muscovite>>
33.60	**35.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 33.6 - 35.9 15% Min: Sphalerite>>
			<<Min: 33.6 - 35.9 60% Min: Pyrite>>
			<<Min: 33.6 - 35.9 5% Min: Chalcopyrite>>
35.90	**36.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
			<<Min: 35.9 - 36.5 1% Min: Sphalerite>>
			<<Min: 35.9 - 36.5 2% Min: Pyrite>>
36.50	**37.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 36.5 - 37 10% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
21.90	23.40	1.50	B00267153	1.8	0.016	-0.01	0.01	0.02
23.40	24.90	1.50	B00267154	2.1	0.02	-0.01	0.01	-0.01
24.90	26.40	1.50	B00267155	3	0.017	-0.01	0.08	0.12
26.40	27.40	1.00	B00267156	1.3	0.011	-0.01	0.03	0.06
27.40	28.40	1.00	B00267157	1.2	0.009	-0.01	0.03	0.03
28.40	29.50	1.10	B00267158	0.4	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 36.5 - 37 60% Min: Pyrite>>
37.00	**37.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 37 - 37.9 15% Min: Pyrite>>
37.90	**38.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 37.9 - 38.4 5% Min: Sphalerite>>
		<<Min: 37.9 - 38.4 70% Min: Pyrite>>
38.40	**49.20**	**RHYv** **Rhyolite volcaniclastic**
		38.4 - 49.2: pale green grey color, laminar banding 90 deg to CA, <5% calcite bands and diss.has an MAFt component?
		<<Min: 38.4 - 49.2 5% Min: Pyrite>>
		<<Min: 44 - 49.2 3% Min: Ankerite>>
		<<Alt: 38.4 - 49 Weak (Alt) Silicification>>
		<<Alt: 38.5 - 49 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 48.7 - 49.2 Weak (Alt) Chlorite>>
49.20	**53.10**	**OA** **Magnetite bearing sulphides**
		<<Min: 49.2 - 53.1 50% Min: Pyrite>>
		<<Min: 49.2 - 53.1 10% Min: Chalcopyrite>>
		<<Min: 49.2 - 56 1% Min: Calcite>>
53.10	**53.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 53.1 - 53.6 15% Min: Sphalerite>>
		<<Min: 53.1 - 53.6 60% Min: Pyrite>>
		<<Min: 53.1 - 53.6 2% Min: Chalcopyrite>>
53.60	**54.60**	**OA** **Magnetite bearing sulphides**
		<<Min: 53.6 - 54.6 10% Min: Sphalerite>>
		<<Min: 53.6 - 54.6 40% Min: Pyrite>>
		<<Min: 53.6 - 54.6 2% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.90	41.40	1.50	B00267159	0.7	0.008	-0.01	-0.01	-0.01
41.40	42.90	1.50	B00267161	0.7	-0.005	-0.01	-0.01	-0.01
42.90	44.40	1.50	B00267162	0.7	-0.005	-0.01	-0.01	-0.01
44.40	45.40	1.00	B00267163	0.5	0.008	-0.01	-0.01	-0.01
45.40	46.90	1.50	B00267164	1.1	0.018	-0.01	0.02	0.05
46.90	47.70	0.80	B00267165	10.1	0.045	-0.01	0.18	0.26

From (m)	To (m)		Rocktype & Description
54.60	**56.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 54.6 - 56 5% Min: Sphalerite>>			
<<Min: 54.6 - 56 70% Min: Pyrite>>			
<<Min: 54.6 - 56 1% Min: Chalcopyrite>>			
56.00	**65.70**	**RHYv**	**Rhyolite volcaniclastic**
56 - 65.7: similar to 38.4-49.2. possible v MAFt component., bio-chl alt from 64.3m			
<<Min: 56 - 65.7 1% Min: Sphalerite>>			
<<Min: 56 - 65.7 5% Min: Pyrite>>			
<<Min: 56 - 65.7 1% Min: Chalcopyrite>>			
<<Min: 56 - 65.7 3% Min: Calcite>>			
<<Min: 56.2 - 62.5 3% Min: Ankerite>>			
<<Min: 62.5 - 65.7 10% Min: Ankerite>>			
<<Alt: 56.2 - 64.3 Weak-Moderate (Alt) Muscovite>>			
<<Alt: 64.3 - 70.3 Moderate-Strong (Alt) Biotite>>			
65.70	**65.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 65.7 - 65.9 10% Min: Sphalerite>>			
<<Min: 65.7 - 65.9 60% Min: Pyrite>>			
65.90	**83.20**	**RHYvx**	**Quartz and/or feldspar crystal tuff**
65.9 - 83.2: strong bio-chl alt from 67.3-70.3 around qtz-tou vein			
<<Min: 65.9 - 70.3 15% Min: Sphalerite>>			
<<Min: 65.9 - 70.3 20% Min: Pyrite>>			
<<Min: 65.9 - 70.3 5% Min: Chalcopyrite>>			
<<Min: 70 - 86.5 3% Min: Ankerite>>			
<<Min: 70.3 - 78.9 5% Min: Pyrite>>			
<<Min: 70.3 - 83.4 2% Min: Sphalerite>>			
<<Min: 78.9 - 79.1 5% Min: Sphalerite>>			
<<Min: 78.9 - 79.1 60% Min: Pyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
57.50	59.00	1.50	B00267166	1.3	0.009	-0.01	-0.01	0.02
59.00	60.00	1.00	B00267167	1.8	0.013	-0.01	-0.01	0.03
60.00	61.30	1.30	B00267168	5.6	0.044	-0.01	-0.01	0.08
61.30	62.70	1.40	B00267169	26.3	0.272	0.01	0.25	0.84
71.70	73.20	1.50	B00267171	1	0.011	-0.01	-0.01	0.01
73.20	74.70	1.50	B00267172	9.8	0.018	-0.01	0.15	0.32
74.70	76.20	1.50	B00267173	1.7	0.013	-0.01	0.02	0.1
76.20	77.70	1.50	B00267174	1.6	-0.005	0.01	0.05	0.1
77.70	79.20	1.50	B00267175	58.9	0.486	0.21	0.58	1.94
79.20	80.00	0.80	B00267176	34.2	0.099	0.35	0.71	1.7
80.00	81.30	1.30	B00267177	1.8	0.008	-0.01	0.05	0.31
81.30	82.00	0.70	B00267178	86.3	0.185	0.12	2.92	5.55
82.00	83.40	1.40	B00267179	17	0.031	0.03	0.55	1.43

From (m)	To (m)	Rocktype & Description
		<<Min: 79.1 - 81.6 3% Min: Pyrite>>
		<<Min: 81 - 83.4 3% Min: Calcite>>
		<<Min: 81.6 - 81.8 10% Min: Sphalerite>>
		<<Min: 81.6 - 81.8 40% Min: Pyrite>>
		<<Min: 81.8 - 90.2 1% Min: Pyrite>> 10 cm py band at 83.5m
		<<Alt: 65.9 - 75 Weak-Moderate (Alt) Silicification>>
		<<Alt: 70.2 - 79 Weak (Alt) Muscovite>>
		<<Vein: 68.5 - 69 100% Quartz-Tourmaline>>
		<<Struc: 82.7 - 83.2 Strong (Alt) Fault>> gouge zone, missing core between core blocks
83.20	**90.20**	**MAFta Coarse grained to ash tuff**
		<<Min: 83.4 - 88.5 5% Min: Calcite>>
		<<Alt: 84.2 - 86.8 Moderate-Strong (Alt) Chlorite>>
		<<Struc: 85.2 - 85.3 Strong (Alt) Fault>> gouge zone

End of Hole @ 90.2

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.40	84.90	1.50	B00267181	-0.3	-0.005	-0.01	-0.01	0.04
84.90	86.40	1.50	B00267182	-0.3	-0.005	-0.01	-0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-079

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414822.84	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815395.163	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1397.688	Casing Depth (m):		Length (m):	68.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
14	-60	177		177	SS				☑	
44	-61	180		180	SS				☑	
67	-61	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**CASN Casing**									
6.10	**12.80**	**MDSt Rhyolite tuff dominant mudstone grey**	8.30	9.80	1.50	B00267652	9.3	0.008	-0.01	0.03	0.03
6.1 - 12.8: mudstone component is scattered throughout, strong MU alteration											
<<Min: 6.1 - 7.3 1% Min: Pyrite>>			9.80	11.30	1.50	B00267653	1.1	0.033	0.01	0.04	0.17
<<Min: 6.1 - 7.3 1.5% Min: Pyrrhotite>>											
<<Min: 7.3 - 11.7 0.5% Min: Pyrrhotite>>											
<<Min: 11.7 - 12.8 1.5% Min: Pyrrhotite>>											
<<Alt: 6.1 - 12.8 Strong (Alt) Muscovite>> strong pervasive alt'n											
12.80	**12.90**	**OF Pyrrhotite rich sulphides**									
<<Min: 12.8 - 12.9 2% Min: Sphalerite>>											
<<Min: 12.8 - 12.9 90% Min: Pyrrhotite>>											
<<Min: 12.8 - 12.9 6% Min: Chalcopyrite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
12.90	**15.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 12.9 - 15.9 6.5% Min: Sphalerite>>												
<<Min: 12.9 - 15.9 90% Min: Pyrite>>												
<<Min: 12.9 - 15.9 0.5% Min: Galena>>												
<<Min: 12.9 - 15.9 0.5% Min: Chalcopyrite>>												
15.90	**23.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)** **grey-green**	17.40	18.90	1.50	B00267654	0.9	0.01	-0.01	-0.01	-0.01
<<Min: 15.9 - 16.9 2% Min: Pyrite>>				18.90	20.40	1.50	B00267655	0.5	0.008	-0.01	-0.01	-0.01
<<Min: 16.9 - 22 0.5% Min: Pyrite>>				20.40	21.50	1.10	B00267656	0.7	0.01	-0.01	-0.01	-0.01
<<Min: 22 - 23 1% Min: Pyrite>> narrow bands												
<<Min: 22 - 23 0.5% Min: Arsenopyrite>>												
<<Alt: 15.9 - 23 Weak (Alt) Muscovite>> related to glassy dyke												
23.00	**24.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 23 - 24.5 7.5% Min: Sphalerite>>												
<<Min: 23 - 24.5 75% Min: Pyrite>>												
<<Min: 23 - 24.5 0.5% Min: Galena>>												
<<Min: 23 - 24.5 0.5% Min: Chalcopyrite>>												
24.50	**27.50**	**RHYva**	**Coarse grained to ash tuff** **grey-green**									
<<Min: 25.5 - 25.8 5% Min: Sphalerite>>												
<<Min: 25.5 - 25.8 90% Min: Pyrite>>												
<<Min: 25.8 - 27.5 1.5% Min: Pyrite>>												
<<Alt: 24.5 - 29 Moderate (Alt) Muscovite>> grey-green, related to glassy dyke												
27.50	**29.00**	**OI**	**Heavilly disseminated sulphides in host schist**									
<<Min: 27.5 - 29 1.5% Min: Sphalerite>>												
<<Min: 27.5 - 29 15% Min: Pyrite>>												
<<Min: 27.5 - 29 7.5% Min: Pyrrhotite>>												
<<Min: 27.5 - 29 1.5% Min: Chalcopyrite>>												
29.00	**30.00**	**OA**	**Magnetite bearing sulphides**									
<<Min: 29 - 30 6% Min: Sphalerite>>												

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 29 - 30 67.5% Min: Pyrite>>
<<Min: 29 - 30 7.5% Min: Pyrrhotite>>
<<Min: 29 - 30 0.5% Min: Galena>>
<<Min: 29 - 30 0.5% Min: Chalcopyrite>>

30.00 30.60 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 30 - 30.6 3.5% Min: Sphalerite>>
<<Min: 30 - 30.6 75% Min: Pyrite>>
<<Min: 30 - 30.6 0.5% Min: Galena>>
<<Min: 30 - 30.6 0.5% Min: Chalcopyrite>>

30.60 32.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 30.6 - 32.2 8% Min: Sphalerite>>
<<Min: 30.6 - 32.2 90% Min: Pyrite>>

32.20 33.60 OA Magnetite bearing sulphides

<<Min: 32.2 - 33.6 5% Min: Sphalerite>>
<<Min: 32.2 - 33.6 85% Min: Pyrite>>
<<Min: 32.2 - 33.6 10% Min: Magnetite>> bands

33.60 37.10 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 33.6 - 37.1 8% Min: Sphalerite>>
<<Min: 33.6 - 37.1 85% Min: Pyrite>> buckshot
<<Min: 33.6 - 37.1 1.3% Min: Galena>>

37.10 49.30 RHYv Rhyolite volcaniclastic grey-green

				41.50	42.90	1.40	B00267657	2.4	-0.005	-0.01	0.05	0.21

37.1 - 49.3: locally flow textured sections,

<<Min: 37.3 - 44.6 0.5% Min: Sphalerite>>
<<Min: 37.3 - 44.6 1.5% Min: Pyrite>>
<<Alt: 37.1 - 40.2 Moderate (Alt) Muscovite>> pervasive
<<Alt: 40.2 - 49.3 Moderate (Alt) Muscovite>> grey-green
<<Struc: 47.4 - 49.3 Weak (Alt) Fault>> several fault strings

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.30	**57.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
<<Min: 49.3 - 57 0.5% Min: Sphalerite>>											
<<Min: 49.3 - 57 0.5% Min: Pyrite>>											
57.00	**68.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**									
<<Min: 57 - 59.4 1% Min: Calcite>>											
<<Min: 57 - 59.4 3% Min: Ankerite>>											
<<Min: 59.4 - 60.5 15% Min: Ankerite>>											
<<Min: 60.5 - 63.7 1% Min: Calcite>>											
<<Min: 60.5 - 63.7 3% Min: Ankerite>>											
<<Min: 63.7 - 68.8 10% Min: Calcite>>											
<<Alt: 57 - 60.5 Moderate (Alt) Silicification>> glassy dyke related?											
<<Alt: 57 - 63.7 Moderate (Alt) Muscovite>> glassy dyke related?											
End of Hole @ 68.8											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-080

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414773.40625	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815386.5	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1405.158	Casing Depth (m):		Length (m):	62.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-56	179		179	SS				☑	
47	-56	183		183	SS				☑	
62	-56	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 15.50 RHYv Rhyolite volcaniclastic

9.1 - 15.5: possible lapilli, small sections of coherent rhy

<<Min: 9.1 - 13 1.5% Min: Pyrite>>

<<Min: 13.2 - 18.7 0.5% Min: Pyrite>>

<<Min: 13.5 - 15.5 5% Min: Ankerite>>

<<Alt: 9.1 - 14 Weak (Alt) Muscovite>>

<<Alt: 15 - 18.5 Moderate-Strong (Alt) Silicification>> RHYi and surrounding RHYv

15.50 17.00 RHYi Aphanitic Rhyolite (intrusion)

17.00 17.60 RHYv Rhyolite volcaniclastic

17.60 17.80 RHYi Aphanitic Rhyolite (intrusion)

From (m)	To (m)	Rocktype & Description
17.80	**25.70**	**RHYv** **Rhyolite volcaniclastic**
17.8 - 25.7: banded, could be RHYcw but not siliceous or bleached sericitized MAFt		
<<Min: 18.7 - 25.1 1% Min: Pyrite>>		
<<Alt: 19.7 - 21.1 Weak (Alt) Cordierite>>		
<<Alt: 22 - 25.7 Moderate (Alt) Muscovite>>		
<<Struc: 25 - 25.7 Fault>> broken core, minor clay gouge		
25.70	**32.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 25.7 - 32.3 5% Min: Sphalerite>>		
<<Min: 25.7 - 32.3 70% Min: Pyrite>>		
<<Min: 25.7 - 32.3 0.8% Min: Chalcopyrite>>		
<<Min: 26.4 - 35.5 3% Min: Calcite>> and diss		
32.30	**34.70**	**RHYv** **Rhyolite volcaniclastic**
34.70	**36.70**	**OA** **Magnetite bearing sulphides**
<<Min: 34.7 - 36.7 6% Min: Sphalerite>>		
<<Min: 34.7 - 36.7 67.5% Min: Pyrite>>		
<<Min: 34.7 - 36.7 6.5% Min: Pyrrhotite>>		
<<Min: 34.7 - 36.7 0.8% Min: Chalcopyrite>>		
36.70	**36.90**	**RHYv** **Rhyolite volcaniclastic**
36.90	**38.40**	**OA** **Magnetite bearing sulphides**
38.40	**40.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 38.4 - 41.5 5% Min: Calcite>> and diss		
<<Min: 38.4 - 59 2% Min: Ankerite>> and as fracture filling		
40.00	**46.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
40 - 46: Includes lessor sections of bleached -silicified volcaniclastic		
<<Min: 41.5 - 62.8 2% Min: Calcite>>		
<<Alt: 40 - 62.8 Moderate-Strong (Alt) Silicification>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
21.20	22.70	1.50	B00267127	0.6	0.04	-0.01	0.03	0.16
22.70	24.20	1.50	B00267128	3.9	0.043	-0.01	0.03	0.18
39.90	41.40	1.50	B00267129	1.6	0.008	0.02	0.07	0.14
41.40	42.90	1.50	B00267131	1.2	0.007	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
46.00	**62.80**	**MAFta** **Coarse grained to ash tuff** 46 - 62.8: contains minor sections of RHYi. Unit siliceous and bleached, likely MAFt (minor remnant Calcite) but could be RHYv.(at least in part).									
End of Hole @ 62.8											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-081

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414748.335	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815387.888	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1410.121	Casing Depth (m):		Length (m):	87.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
23	-50	184		184	SS				☑	
56	-50	184		184	SS				☑	
87	-51	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**9.10**	**CASN Casing**
9.10	**13.60**	**RHYvx Quartz and/or feldspar crystal tuff grey-green**
<<Min: 9.1 - 13.6 2% Min: Calcite>>		also patchy
<<Min: 9.1 - 20.6 1% Min: Pyrite>>		
13.60	**20.50**	**RHYi Aphanitic Rhyolite (intrusion) cream**
13.6 - 20.5: RHYi, bx'd glassy looking flow. Sections look siilar to dyke tat klies belowthe mxsx in hole 038		
<<Min: 13.6 - 20.5 0.1% Min: Calcite>>		
<<Alt: 13.6 - 26.7 Strong (Alt) Silicification>>		pistachio green colour common, is this outer alteration?
<<Alt: 13.6 - 26.7 Strong (Alt) Muscovite>>		pistachio green colour common, is this outer alteration?
20.50	**26.70**	**RHYv Rhyolite volcaniclastic green**
<<Min: 20.5 - 26.7 1% Min: Calcite>>		pods,veinlets

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
22.40	23.70	1.30	Q930903	0.7	0.012	-0.01	-0.01	0.01
23.70	25.20	1.50	Q930904	0.6	0.012	-0.01	-0.01	-0.01
25.20	26.70	1.50	Q930905	1.2	0.016	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description
26.70	**36.80**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
<<Min: 26.7 - 36.8 10% Min: Sphalerite>>		
<<Min: 26.7 - 36.8 80% Min: Pyrite>>		
<<Min: 26.7 - 36.8 1% Min: Chalcopyrite>>		
36.80	**38.20**	**OA** **Magnetite bearing sulphides**
<<Min: 36.8 - 38.2 10% Min: Sphalerite>>		
<<Min: 36.8 - 38.2 70% Min: Pyrite>>		
<<Min: 36.8 - 38.9 5% Min: Magnetite>> bands common, mixed with SP?		
38.20	**38.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 38.2 - 38.9 20% Min: Sphalerite>>		
<<Min: 38.2 - 38.9 60% Min: Pyrite>>		
38.90	**58.10**	**RHYi** **Aphanitic Rhyolite (intrusion) grey-green**
38.9 - 58.1: dark brown pblasts - Siderite? Some bx'n lower down, strong green MS matrix, strongly siliceous, QZ eyes?		
<<Min: 38.9 - 40.6 2% Min: Calcite>> locallypervasive		
<<Min: 38.9 - 50.1 1% Min: Pyrite>> scatteredalong foliation, in veins with SP, QZ veins		
<<Min: 40.6 - 50.1 0.5% Min: Calcite>> pblasts, or replacement of crystals		
<<Min: 40.6 - 50.1 0.1% Min: Ankerite>> scattered, locally fractures		
<<Min: 44.6 - 45 1% Min: Sphalerite>> in veins with PY		
<<Min: 50.1 - 57.7 0.25% Min: Pyrite>> minor fol'n parallel		
<<Min: 50.1 - 58.1 2% Min: Ankerite>> replacement or porphyroblasts IN groundmass		
<<Min: 57.7 - 62.1 0.5% Min: Sphalerite>> occurs with PY in massive sx veinlets, also as blebs in lenses, bx matrix		
<<Min: 57.7 - 62.1 3% Min: Pyrite>> and diss'ns in bx'n matrix		
<<Min: 57.7 - 62.1 0.25% Min: Galena>> lge blebs in QZ vns, diss'ns in sx veins		
<<Alt: 38.9 - 47.5 Strong (Alt) Muscovite>> DOMINATES GROUNDMASS		
<<Alt: 47.5 - 62.7 Moderate (Alt) Silicification>> more MS-CB than CL		
<<Alt: 47.5 - 62.7 Moderate (Alt) Muscovite>> more MS-CB than CL		
58.10	**62.70**	**RHYi** **Aphanitic Rhyolite (intrusion) cream**
58.1 - 62.7: RHYi, frac'd, sheared and veined, oxidized locally, massive texture, speckled with brown AK grins,		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.70	28.60	1.90	Q930906	29.9	2.89	0.43	3.08	8.93
28.60	30.10	1.50	Q930907	205	2.68	0.35	3.19	9.35
31.60	33.10	1.50	Q930908	245	2.03	0.33	3.06	8.18
34.60	36.10	1.50	Q930909	137	1.85	0.29	1.71	6.06
36.10	37.60	1.50	Q930911	140	1.97	0.31	2.31	5.66
37.60	38.90	1.30	Q930912	149	2.3	0.3	2.78	7.68
38.90	40.40	1.50	Q930913	2	0.025	-0.01	0.02	0.08
40.40	41.50	1.10	Q930914	4.4	0.018	0.01	0.06	0.09
41.60	43.10	1.50	Q930915	1.8	0.012	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 62.1 - 62.7 0.25% Min: Calcite>> and fractures

62.70 68.90 RHYi Aphanitic Rhyolite (intrusion)

62.7 - 68.9: NC

68.90 80.40 RHYi Aphanitic Rhyolite (intrusion) grey-green

68.9 - 80.4: seems to be an interlayered section of tuff and flow, at least flow pieces (possibly fall back bx?)

<<Min: 68.9 - 74.9 0.1% Min: Pyrite>> along fol'n

<<Min: 74.9 - 80.4 0.25% Min: Sphalerite>> minor small aggregates in sx veis

<<Min: 74.9 - 80.4 0.1% Min: Galena>> diss'd tiny blebs with PY

<<Min: 74.9 - 81.8 2% Min: Pyrite>> local veins, bx filling

<<Min: 74.9 - 82.9 1% Min: Sphalerite>>

<<Min: 74.9 - 82.9 2% Min: Pyrite>>

<<Min: 74.9 - 82.9 1% Min: Chalcopyrite>>

<<Alt: 68.9 - 81.8 Moderate (Alt) Silicification>> more prevalent in tuff sections

<<Alt: 68.9 - 81.8 Moderate (Alt) Muscovite>> more prevalent in tuff sections

80.40 87.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green FMG

80.4 - 87.3: BI pblasts common, leucoxene present locally (highest occurrence of Leucoxene used for upper contact), CA in lenses and bands, after FP xtals?)

<<Min: 80.4 - 81.8 2% Min: Calcite>> fracs

<<Min: 81.8 - 87.3 5% Min: Calcite>> disaggregated veins,fracs, lenses,

<<Alt: 81.8 - 87.3 Weak (Alt) Chlorite>> in grroundmass

<<Alt: 81.8 - 87.3 Weak (Alt) Biotite>> metamorphic

End of Hole @ 87.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-082

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414721.811	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815396.564	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1414.782	Casing Depth (m):		Length (m):	68.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
23	-48	176		176	SS				☑	
53	-48	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.70**	**OVBN Overburden**									
9.70	**13.10**	**RHY undifferentiated rhyolite**									
9.7 - 13.1: strongly broken and oxidized											
<<Min: 9.7 - 12.9 2% Min: Sphalerite>>											
<<Min: 9.7 - 12.9 4% Min: Pyrite>>											
<<Min: 9.7 - 12.9 2% Min: Chalcopyrite>>											
<<Min: 9.7 - 13.1 1% Min: Calcite>>											
<<Min: 9.7 - 20 1% Min: Ankerite>>											
<<Alt: 9.7 - 12.9 Moderate (Alt) Muscovite>>											
<<Alt: 12.9 - 26.5 Weak (Alt) Muscovite>>											
<<Struc: 12.9 - 13.1 Weak (Alt) Fault>> Gouge and breccia											
13.10	**30.90**	**RHYvl Lapilli tuff**	26.40	27.90	1.50	B00267586	0.6	0.017	-0.01	-0.01	-0.01
13.1 - 30.9: Minor interval of siliceous, pebbly appearance volcaniclastic? 25-26.3m.											
<<Min: 13.1 - 30.9 4% Min: Calcite>> Also selective replacement			27.90	29.40	1.50	B00267587	0.6	0.018	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 13.2 - 15.8 1% Min: Pyrite>>
<<Min: 15.8 - 18.7 0.5% Min: Sphalerite>>
<<Min: 15.8 - 18.7 1% Min: Pyrite>>
<<Min: 15.8 - 18.7 0.5% Min: Chalcopyrite>>
<<Min: 20 - 30.9 2% Min: Ankerite>>
<<Min: 20.1 - 23.1 0.5% Min: Sphalerite>>
<<Min: 20.1 - 23.1 1% Min: Pyrite>>
<<Alt: 26.5 - 30.9 Moderate (Alt) Muscovite>>
<<Struc: 28.5 - 28.55 Weak (Alt) Fault>> minor gouge

30.90 31.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

31.40 33.00 RHYv Rhyolite volcaniclastic

<<Min: 31.4 - 33 5% Min: Calcite>>
<<Min: 31.4 - 33 1% Min: Ankerite>>
<<Alt: 31.4 - 33 Moderate (Alt) Muscovite>>

33.00 35.90 OD Brecciated sulphides

<<Min: 33 - 35.9 10% Min: Sphalerite>>
<<Min: 33 - 35.9 75% Min: Pyrite>>
<<Min: 33 - 35.9 0.5% Min: Chalcopyrite>>
<<Min: 33 - 43.2 5% Min: Calcite>>
<<Min: 33 - 43.2 1% Min: Ankerite>>

35.90 36.40 OA Magnetite bearing sulphides

<<Min: 35.9 - 36.4 10% Min: Sphalerite>>
<<Min: 35.9 - 36.4 75% Min: Pyrite>>
<<Min: 35.9 - 36.4 4% Min: Pyrrhotite>>
<<Min: 35.9 - 36.4 1% Min: Chalcopyrite>>

36.40 43.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

From (m)	To (m)	Rocktype & Description
43.20	**50.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

43.2 - 50: Strongly sericite altered and bleached. Calcite in bands

<<Min: 43.2 - 51 10% Min: Calcite>> As bands and replacement.

<<Min: 43.2 - 68.9 2% Min: Ankerite>>

<<Min: 43.3 - 48.8 0.5% Min: Pyrite>>

<<Alt: 43.2 - 50 Weak-Moderate (Alt) Muscovite>>

50.00	**68.90**	**RHYi** **Aphanitic Rhyolite (intrusion)**

50 - 68.9: Aphanitic minor "amygdules" of AK.Inclusions of clastic blocks of RHY

<<Min: 51 - 60.5 5% Min: Calcite>>

<<Min: 60.5 - 68.9 0.1% Min: Calcite>>

End of Hole @ 68.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.70	46.20	1.50	B00267588	0.4	0.02	-0.01	-0.01	-0.01
46.20	47.70	1.50	B00267589	1	0.013	-0.01	0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-083

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414721.758	Core Size:		Azimuth:	280	Date Logging Complete:	
UTM Northing:	6815398.327	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1414.789	Casing Depth (m):		Length (m):	93.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	280		280	SS				☑	
20	-85	271		271	SS				☑	
50	-86	241		241	SS				☑	
93	-84	236		236	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.30 OVBN Overburden

<<Min: 5 - 62.6 10% Min: Sphalerite>>

<<Min: 5 - 62.6 60% Min: Pyrite>>

<<Min: 5 - 62.6 5% Min: Chalcopyrite>>

7.30 10.60 MDSt Rhyolite tuff dominant mudstone

<<Min: 7.3 - 10.7 0.5% Min: Pyrite>>

<<Min: 7.3 - 10.9 5% Min: Ankerite>>

<<Alt: 7.3 - 10.9 Weak (Alt) Muscovite>>

10.60 25.00 MAFt Mafic Volcaniclastics

10.6 - 25: 10.6-13.5:deformed (swirls!) soupy (tuffaceous?) laminations, weakly brecciated, soft, sericite green - ankerite overprint, cord porphyroblasts or spherulites or cord replacing spherulites? Cooked up at contact with MDSt - alt due to RHYi further downhole. 13.5-15.5;.biotite-sericite altered. 15.5-25; banded pale green white moderately silicified. Local sections more siliceous with lappilli, siliceous bands.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 10.7 - 19.3 10% Min: Pyrite>>									
		<<Min: 10.9 - 15.5 20% Min: Ankerite>>									
		<<Min: 15.5 - 25 5% Min: Calcite>>									
		<<Min: 15.5 - 32.7 5% Min: Ankerite>>									
		<<Min: 19.3 - 24.9 1.2% Min: Pyrite>>									
		<<Alt: 10.9 - 13.5 Weak-Moderate (Alt) Muscovite>> strong sericite									
		<<Alt: 11.3 - 13.6 Moderate (Alt) Cordierite>> cord porphyroblasts, almost all eplaced by qtz, ankerite. Alterntively spherulites replaced by cord etc?									
		<<Alt: 11.3 - 13.6 Moderate (Alt) Biotite>>									
		<<Alt: 13.5 - 25 Weak (Alt) Muscovite>>									
		<<Alt: 19.3 - 25 Weak-Moderate (Alt) Silicification>>									
		<<Struc: 15.5 - 16 Moderate (Alt) Fault>> 2 narrow zones of crushed core and minor gouge									
25.00	**27.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
		25 - 27: good example of RHYi									
		<<Alt: 25 - 30 Weak-Moderate (Alt) Silicification>> surrounds RHYi dyke									
27.00	**32.70**	**MAFt** **Mafic Volcaniclastics**	28.20	29.70	1.50	B00267118	3.8	0.037	-0.01	0.02	0.07
		27 - 32.7: banded pale green - white tuff, mod silicified									
		<<Min: 27.5 - 32.7 5% Min: Calcite>> bands and fracture filling	29.70	31.20	1.50	B00267119	0.7	0.008	-0.01	0.01	0.08
		<<Alt: 27.5 - 32.7 Moderate (Alt) Muscovite>>									
32.70	**34.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 32.7 - 34 20% Min: Sphalerite>>									
		<<Min: 32.7 - 34 60% Min: Pyrite>>									
34.00	**37.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
		34 - 37.5: curdled texture and hints of MDS									
		<<Min: 34 - 37.5 1% Min: Pyrite>>									
		<<Min: 34 - 37.5 3% Min: Ankerite>>									
		<<Alt: 34 - 37.5 Moderate (Alt) Silicification>>									
		<<Alt: 34 - 37.5 Moderate-Strong (Alt) Muscovite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

37.50 39.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 37.5 - 39.7 15% Min: Sphalerite>>

<<Min: 37.5 - 39.7 60% Min: Pyrite>>

<<Min: 37.5 - 39.7 3% Min: Chalcopyrite>>

39.70 42.50 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 39.7 - 42.5 10% Min: Sphalerite>>

<<Min: 39.7 - 42.5 60% Min: Pyrite>>

<<Min: 39.7 - 42.5 10% Min: Chalcopyrite>>

<<Min: 40.7 - 52.1 3% Min: Calcite>>

42.50 44.80 OA Magnetite bearing sulphides

<<Min: 42.5 - 44.8 10% Min: Sphalerite>>

<<Min: 42.5 - 44.8 60% Min: Pyrite>>

<<Min: 42.5 - 44.8 2% Min: Chalcopyrite>>

44.80 48.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 44.8 - 48.7 15% Min: Sphalerite>>

<<Min: 44.8 - 48.7 60% Min: Pyrite>>

<<Min: 44.8 - 48.7 2% Min: Chalcopyrite>>

48.70 53.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 48.7 - 52.1 0.5% Min: Pyrite>>

<<Min: 48.9 - 52.1 3% Min: Ankerite>>

<<Alt: 48.7 - 53 Weak-Moderate (Alt) Muscovite>> strong sewricite

<<Struc: 52.1 - 52.6 Strong (Alt) Fault>> missing core, sfot schisy remnants,possible fault zone?

53.00 62.60 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 62.5 - 64.7 3% Min: Calcite>>

<<Min: 62.5 - 64.7 3% Min: Ankerite>>

<<Alt: 62.5 - 64.7 Weak-Moderate (Alt) Silicification>>

From (m)	To (m)		Rocktype & Description
<<Alt: 62.5 - 64.7 Weak-Moderate (Alt) Muscovite>>			
62.60	**64.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 62.6 - 64.7 2% Min: Pyrite>>			
64.70	**74.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 64.7 - 74.5 15% Min: Sphalerite>>			
<<Min: 64.7 - 74.5 60% Min: Pyrite>>			
<<Min: 64.7 - 74.5 3% Min: Chalcopyrite>>			
<<Min: 68.5 - 74.5 1% Min: Calcite>>			
74.50	**93.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
74.5 - 93.6: local sections wi9th strong biotite, most of unit is pale grey - green, variablt banded - possible (liklly volcaniclastics?			
<<Min: 74.5 - 81.4 0.5% Min: Sphalerite>>			
<<Min: 74.5 - 81.4 2% Min: Pyrite>>			
<<Min: 74.5 - 81.4 10% Min: Calcite>>			
<<Min: 74.5 - 81.4 6% Min: Ankerite>>			
<<Min: 81.4 - 87.5 5% Min: Calcite>>			
<<Min: 81.4 - 93.6 3% Min: Ankerite>>			
<<Min: 86.1 - 87.3 3% Min: Pyrite>>			
<<Min: 87.3 - 90 2% Min: Pyrite>>			
<<Min: 87.5 - 93.6 1% Min: Calcite>>			
<<Min: 90 - 93.6 2% Min: Pyrite>>			
<<Alt: 74.5 - 93.6 Weak (Alt) Silicification>>			
<<Alt: 74.5 - 93.6 Weak (Alt) Muscovite>> fine grained			
<<Alt: 74.5 - 93.6 Trace (Alt) Chlorite>>			
<<Alt: 85.8 - 93.6 Moderate (Alt) Biotite>>			

End of Hole @ 93.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.00	77.50	1.50	B00267121	0.5	0.011	-0.01	0.02	0.05
77.50	79.00	1.50	B00267122	0.7	0.006	-0.01	0.02	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-084

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415004.453	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815490.949	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1379.952	Casing Depth (m):		Length (m):	109.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
17	-59	175		175	SS				☑	
44	-58	170		170	SS				☑	
78	-58	170		170	SS				☑	
108	-58	171		171	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.30**	**CASN Casing**									
11.30	**11.50**	**OVBN Overburden**									
<<Min: 11.3 - 27 5% Min: Ankerite>>											
<<Min: 11.4 - 18.9 3% Min: Pyrite>>											
<<Min: 11.4 - 18.9 3% Min: Pyrrhotite>>											
11.50	**20.50**	**RHYvl Lapilli tuff**									
<<Min: 18.9 - 20.5 1% Min: Pyrite>>											
<<Min: 18.9 - 20.5 3% Min: Pyrrhotite>>											
20.50	**23.00**	**MDSt Rhyolite tuff dominant mudstone**									
<<Min: 20.5 - 23.9 5% Min: Pyrrhotite>>											
23.00	**23.90**	**MDSc Carbonaceous dominant mudstone**									

From (m)	To (m)		Rocktype & Description
23.90	**26.50**	**RHYvl**	**Lapilli tuff**
26.50	**26.90**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 26.5 - 27 1% Min: Pyrite>>			
26.90	**34.70**	**RHYvl**	**Lapilli tuff**
<<Min: 27 - 29.3 3% Min: Pyrrhotite>>			
<<Min: 27 - 40 15% Min: Ankerite>>			
<<Min: 29.3 - 32.4 3% Min: Pyrrhotite>>			
<<Min: 32.4 - 33 5% Min: Pyrrhotite>>			
<<Min: 33 - 33.5 3% Min: Pyrrhotite>>			
<<Min: 34.6 - 39.7 2% Min: Pyrite>>			
<<Min: 34.6 - 39.7 2% Min: Pyrrhotite>>			
34.70	**58.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 39.7 - 41.2 1% Min: Sphalerite>>			
<<Min: 39.7 - 41.2 10% Min: Pyrite>>			
<<Min: 39.7 - 41.2 3% Min: Pyrrhotite>>			
<<Min: 39.7 - 41.2 1% Min: Chalcopyrite>>			
<<Min: 40 - 48 5% Min: Ankerite>>			
<<Min: 41.2 - 46.1 2% Min: Pyrite>>			
<<Min: 41.2 - 46.1 5% Min: Pyrrhotite>>			
<<Min: 46.1 - 47.6 2% Min: Pyrite>>			
<<Min: 46.1 - 47.6 5% Min: Pyrrhotite>>			
<<Min: 48 - 85 2% Min: Ankerite>>			
<<Alt: 37.8 - 42.3 Moderate (Alt) Chlorite>> associated PO			
<<Alt: 45.9 - 47.6 Moderate (Alt) Chlorite>>			
<<Alt: 48 - 82.3 Weak-Moderate (Alt) Muscovite>> less than usual MU alt of HW, AK persists all the way to mxsx			
58.50	**59.60**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 58.5 - 60.8 5% Min: Pyrite>>			
59.60	**60.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.60	41.20	1.60	B00264133	1.1	0.006	0.02	-0.01	1.01
45.90	47.60	1.70	B00264134	1	0.011	0.04	-0.01	1.08

From (m)	To (m)		Rocktype & Description
60.30	**60.90**	**MDSc**	**Carbonaceous dominant mudstone**
60.90	**63.20**	**RHYc**	**Rhyolite coherant volcanics**
63.20	**64.40**	**MDSc**	**Carbonaceous dominant mudstone**
64.40	**65.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
65.80	**66.90**	**MDSc**	**Carbonaceous dominant mudstone**
66.90	**68.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
68.70	**69.10**	**MDSc**	**Carbonaceous dominant mudstone**
69.10	**72.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 72.4 - 78.1 3% Min: Pyrite>>			
<<Min: 72.4 - 78.1 3% Min: Pyrrhotite>>			
72.50	**75.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
72.5 - 75: the complex interbedding? Of flows and tuffs gives an overturned sense premised on the idea that top rhy-mds cnt will be sharp and flow bottoms will be mixed with sed becoming less so up section			
75.00	**76.60**	**RHYvl**	**Lapilli tuff**
76.60	**80.70**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 78.1 - 82.6 1% Min: Sphalerite>>			
<<Min: 78.1 - 82.6 3% Min: Pyrite>>			
<<Min: 78.1 - 82.6 3% Min: Pyrrhotite>>			
<<Alt: 78.1 - 82.4 Moderate (Alt) Chlorite>>			
80.70	**82.60**	**RHYva**	**Coarse grained to ash tuff**
<<Alt: 82.4 - 84.9 Strong (Alt) Chlorite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
77.70	79.20	1.50	B00264135	0.8	0.022	-0.01	0.04	0.08
79.20	80.70	1.50	B00264136	6.5	0.03	0.04	0.67	0.82

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
82.60	**86.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 82.6 - 86.7 15% Min: Sphalerite>>												
<<Min: 82.6 - 86.7 20% Min: Pyrrhotite>>												
<<Min: 82.6 - 86.7 5% Min: Chalcopyrite>>												
<<Min: 84 - 86.7 1% Min: Calcite>>												
<<Alt: 84.9 - 86.7 Intense (Alt) Cordierite>>												
86.70	**88.00**	**OG** **Chalcopyrite rich sulphides**	**FG**									
<<Min: 86.7 - 87.3 20% Min: Pyrrhotite>>												
<<Min: 86.7 - 87.3 70% Min: Chalcopyrite>>												
<<Min: 87.3 - 90.2 3% Min: Sphalerite>>												
<<Min: 87.3 - 90.2 50% Min: Pyrrhotite>>												
<<Min: 87.3 - 90.2 10% Min: Chalcopyrite>>												
88.00	**90.20**	**OA** **Magnetite bearing sulphides**	**MG**									
90.20	**94.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									
<<Min: 90.2 - 94.8 20% Min: Sphalerite>>												
<<Min: 90.2 - 94.8 50% Min: Pyrite>>												
<<Min: 90.2 - 94.8 5% Min: Chalcopyrite>>												
<<Min: 91 - 95 1% Min: Calcite>>												
94.80	**99.40**	**RHYva** **Coarse grained to ash tuff**		96.30	97.80	1.50	B00264137	0.4	-0.005	-0.01	-0.01	-0.01
94.8 - 99.4: distinct CB porphroblasts and AS xtals, suggests ash tuff												
<<Min: 95 - 98 2% Min: Calcite>>				97.80	99.30	1.50	B00264138	0.3	0.006	-0.01	-0.01	-0.01
<<Min: 96.3 - 100.5 5% Min: Ankerite>>												
<<Min: 98 - 104.3 5% Min: Calcite>>												
<<Alt: 94.8 - 104 Weak (Alt) Silicification>> weak conc. On RHYi												
<<Alt: 94.8 - 104 Weak (Alt) Muscovite>>												
<<Alt: 94.8 - 106 Weak (Alt) Muscovite>>												
99.40	**101.10**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
99.4 - 101.1: shistose												

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-084

From (m)	To (m)		Rocktype & Description	
101.10	**102.80**	**RHYva**	**Coarse grained to ash tuff**	
102.80	**104.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	
104.30	**104.70**	**OF**	**Pyrrhotite rich sulphides**	**MG**
104.3 - 104.7: high PO may need to be new met				
<<Min: 104.3 - 104.7 15% Min: Sphalerite>>				
<<Min: 104.3 - 104.7 50% Min: Pyrrhotite>>				
<<Min: 104.3 - 104.7 5% Min: Chalcopyrite>>				
104.70	**106.30**	**RHYva**	**Coarse grained to ash tuff**	
<<Min: 104.7 - 109.7 5% Min: Ankerite>>				
106.30	**106.80**	**MDSt**	**Rhyolite tuff dominant mudstone**	
106.80	**109.70**	**RHYva**	**Coarse grained to ash tuff**	

End of Hole @ 109.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.30	102.80	1.50	B00264139	0.4	0.016	-0.01	-0.01	-0.01
106.20	107.70	1.50	B00264141	0.4	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-085

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415004.43	Core Size:		Azimuth:	100	Date Logging Complete:	
UTM Northing:	6815489.983	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1380.097	Casing Depth (m):		Length (m):	121	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	100		100	SS				☑	
23	-89	101		101	SS				☑	
63	-86	166		166	SS				☑	
96	-83	156		156	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 11.30 OVBN Overburden

11.30 20.60 RHYvl Lapilli tuff

11.3 - 20.6: Light grey, moderately sheared, > 15% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered. Matrix Mu altered. Probably felsic lapilli tuff.

<<Min: 11.3 - 17 2% Min: Calcite>> Associated with veinlets and diseminated as small fragments/clots

<<Min: 11.3 - 23.5 0.5% Min: Sphalerite>>

<<Min: 11.3 - 23.5 1.5% Min: Pyrite>>

<<Min: 11.3 - 23.5 2% Min: Pyrrhotite>>

<<Min: 11.3 - 27.5 8% Min: Ankerite>> Mainly associated with siliceous bands/fragments.

20.60 23.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

20.6 - 23.5: light grey, fine to medium grained, comprinsing siliceous bands , milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly/moderately MU and AK altered.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

23.50 26.00 MDS Carbonaceous Mudstone & Tuffaceous Mudstone

23.5 - 26: Thin concordant carbonacious mudstone bands within probably RHY.

<<Min: 23.5 - 24.5 1% Min: Pyrite>>

<<Min: 23.5 - 24.5 2% Min: Pyrrhotite>>

<<Min: 24.5 - 29.6 1.5% Min: Pyrite>>

<<Min: 24.5 - 29.6 6.5% Min: Pyrrhotite>>

26.00 29.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

26 - 29.6: light grey, fine to medium grained, comprinsing siliceous bands , milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly/moderately MU and AK altered.

<<Min: 27.5 - 35.7 5% Min: Ankerite>>

<<Min: 29 - 35 3% Min: Calcite>> Associated with veinlets and diseminated as small fragments/clots. Locally more concentrated (pervasive).

29.60 33.00 MDSc Carbonaceous dominant mudstone

29.6 - 33: Alternation of thin carbonaceous mudstone bands with siliceous bands.

<<Min: 29.6 - 33 1% Min: Pyrite>>

<<Min: 29.6 - 33 2% Min: Pyrrhotite>>

33.00 34.50 RHYvl Lapilli tuff

33 - 34.5: Light grey, moderately sheared, > 15% of siliceous fragments/dismembered bands, deformed and folded, flattered within the foliation, mostly Ak altered. Matrix Mu altered. Probably felsic lapilli tuff.

<<Min: 33 - 42.5 2% Min: Pyrite>>

<<Min: 33 - 42.5 3% Min: Pyrrhotite>>

34.50 47.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34.5 - 47.6: light grey, fine to medium grained, comprinsing siliceous bands , milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly/moderately MU and AK altered.

<<Min: 35.7 - 47.5 10% Min: Ankerite>> Mainly associated with siliceous bands/fragments.

<<Min: 43.3 - 47.6 2% Min: Pyrite>>

<<Min: 43.3 - 47.6 3% Min: Pyrrhotite>>

<<Min: 47.5 - 75.3 3% Min: Ankerite>> Mainly associated with siliceous bands/fragments.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 45 - 75.2 Moderate-Strong (Alt) Muscovite>> Pervasive and associated with fracture surface.

47.60 49.20 MDSt Rhyolite tuff dominant mudstone

47.6 - 49.2: The top of the unit (first 10 cm is mudstone dominant) and follows by MDScw.

<<Struc: 48.9 - 49.2 Strong (Alt) Fault>> gauge fault.

49.20 77.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

49.2 - 77.2: light grey, fine to medium grained, comprinsing siliceous bands , milky, deformed,folded and locally dismembered, '' curdy'' texture. Weakly/moderately MU and AK altered.

<<Min: 50.9 - 74.7 2% Min: Pyrite>>

<<Min: 50.9 - 74.7 3% Min: Pyrrhotite>>

<<Min: 75.3 - 78.5 8% Min: Ankerite>> Mainly associated with siliceous bands/fragments.

77.20 78.00 RHYvl Lapilli tuff

77.2 - 78: Short interval of felsic lapilli tuff.

<<Min: 77.9 - 84.4 0.8% Min: Sphalerite>>

<<Min: 77.9 - 84.4 1.5% Min: Pyrite>>

<<Min: 77.9 - 84.4 3.5% Min: Pyrrhotite>>

<<Min: 77.9 - 84.4 0.5% Min: Chalcopyrite>>

78.00 81.10 MDSt Rhyolite tuff dominant mudstone

78 - 81.1: Thin concordant carbonacious mudstone bands within probably RHYva. >5% of cordierite crystals, phenocrystals, distributed within coarse grained matrix.

<<Min: 78.5 - 89.5 3% Min: Ankerite>>

<<Alt: 78.2 - 89.5 Moderate-Strong (Alt) Cordierite>> Phenocrystal of cordierite distributed within the matrix, 0.5-1cm, partially altered. Become bigger after 85m, associated with massive qtz vein.

81.10	**89.50**	**RHYva**	**Coarse grained to ash tuff**	83.50	85.00	1.50	B00233027	6.9	0.006	0.05	0.05	2.2

81.1 - 89.5: Light grey, coarse grained ash tuff, moderate to strongly foliated. 5-10% of phenocrystals of cordierite distributed within the matrix. After 85 m, large interval of massive qtz veins, milky, associated with TL and mineralisation.

<<Min: 84.4 - 89.5 4% Min: Pyrrhotite>>				85.00	86.50	1.50	B00233028	36.8	0.074	1.77	0.02	1.18

<<Min: 84.4 - 89.5 0.8% Min: Chalcopyrite>>

<<Min: 85 - 89.5 8% Min: Calcite>> Associated with veining interval brecciated.

<<Alt: 84.5 - 85 Strong (Alt) Chlorite>> Occuring as bands, centimetric, subconcordant associated with mineralisation.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 84.4 - 89.5 60% Quartz-Tourmaline>> Large interval of massive qtz veins, decimetric, deformed, milky, associated with strong TL at the margins and mineralised with Cp and Po

89.50 91.00 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 89.5 - 91 1.5% Min: Sphalerite>>

<<Min: 89.5 - 91 30% Min: Pyrrhotite>>

<<Min: 89.5 - 91 0.8% Min: Chalcopyrite>>

91.00 91.60 OA Magnetite bearing sulphides

<<Min: 91 - 91.6 4.5% Min: Sphalerite>>

<<Min: 91 - 91.6 5% Min: Pyrite>>

<<Min: 91 - 91.6 27.5% Min: Pyrrhotite>>

<<Min: 91 - 91.6 5% Min: Magnetite>> Occuring as thin massive bands/aggregates.

<<Min: 91 - 91.6 1.3% Min: Chalcopyrite>>

91.60 92.30 OG Chalcopyrite rich sulphides

<<Min: 91.6 - 92.3 5% Min: Sphalerite>>

<<Min: 91.6 - 92.3 50% Min: Pyrrhotite>>

<<Min: 91.6 - 92.3 20% Min: Chalcopyrite>>

92.30 97.10 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 92.3 - 97.1 3% Min: Sphalerite>>

<<Min: 92.3 - 97.1 30% Min: Pyrrhotite>>

<<Min: 92.3 - 97.1 2% Min: Chalcopyrite>>

<<Min: 96.3 - 97.8 10% Min: Chalcopyrite>>

97.10 97.80 OG Chalcopyrite rich sulphides

<<Min: 97.1 - 97.8 5% Min: Sphalerite>>

<<Min: 97.1 - 97.8 50% Min: Pyrrhotite>>

97.80 103.00 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 102.7 - 106 10% Min: Galena>> Occuring as bands/veins subconcordant.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
103.00	**106.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
106.00	**107.50**	**RHYva** **Coarse grained to ash tuff**									
		106 - 107.5: beige to light green, medium to coarse grained, +/- homogeneous. Comprinsing some intervals with siliceous fragment or dismembered bands, and also locally phenocrystals (leucocratic). Ash tuff with short different volcanoclastic sequences?									
		<<Min: 106.2 - 107.5 0.5% Min: Pyrite>>									
		<<Min: 106.2 - 107.5 0.5% Min: Pyrrhotite>>									
107.50	**107.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 107.5 - 107.8 11% Min: Sphalerite>>									
		<<Min: 107.5 - 107.8 65% Min: Pyrite>>									
107.80	**111.30**	**RHYva** **Coarse grained to ash tuff**									
		107.8 - 111.3: beige to light green, medium to coarse grained, +/- homogeneous. Comprinsing some intervals with siliceous fragment or dismembered bands, and also locally phenocrystals (leucocratic). Ash tuff with short different volcanoclastic sequences?									
111.30	**112.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 111.3 - 112.9 60% Min: Pyrite>>									
		<<Min: 111.3 - 112.9 6.5% Min: Pyrrhotite>>									
112.90	**120.10**	**RHYva** **Coarse grained to ash tuff**	114.40	115.90	1.50	B00233029	0.5	-0.005	-0.01	-0.01	0.03
		112.9 - 120.1: beige to light green, medium to coarse grained, +/- homogeneous. Comprinsing some intervals with siliceous fragment or dismembered bands, and also locally phenocrystals (leucocratic). Ash tuff with short different volcanoclastic sequences?									
		<<Min: 112.9 - 121 3% Min: Ankerite>> Mainly associated with qtz-ca veins/veinlets.	115.90	117.40	1.50	B00233031	0.5	-0.005	-0.01	-0.01	0.04
		<<Min: 118.7 - 119 7.5% Min: Pyrrhotite>>	117.40	118.50	1.10	B00233032	-0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 118.7 - 119 1.5% Min: Chalcopyrite>>	118.50	119.70	1.20	B00233033	1.9	0.009	0.08	-0.01	0.12
		<<Min: 120 - 120.1 80% Min: Pyrite>> Massive sulphides band.	119.70	120.10	0.40	B00233034	2.2	0.011	0.06	0.01	0.22
		<<Alt: 119.7 - 120 Strong (Alt) Chlorite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
120.10	**121.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

120.1 - 121: Green, fine to medium grained,interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive). ~ 10% of Qtz-Cal +/- Ak veinlets/bands, concordant. 3-10% of small (leucoxene?) crystals disseminated.

<<Min: 120.1 - 121 12% Min: Calcite>> Associated with qtz-ca veinlets, subconcordant.

<<Alt: 120.1 - 121 Moderate (Alt) Chlorite>> Associated with MAFi.

End of Hole @ 121

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-086

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414701.613	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815376.619	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1419.148	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
14	-56	186		186	SS				☑	
44	-56	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN**	**Overburden**									
6.10	**18.30**	**RHYvl**	**Lapilli tuff**	13.10	14.60	1.50	B00267093	-0.3	0.006	-0.01	-0.01	-0.01
				14.60	16.10	1.50	B00267094	40.8	0.036	0.05	0.65	1.58

<<Min: 6.1 - 15.2 5% Min: Calcite>>

<<Min: 6.1 - 16.1 5% Min: Ankerite>>

<<Min: 6.1 - 18.3 1% Min: Pyrite>> does not include 10 cm pyrite band at 15.5m.

<<Min: 15.2 - 23.2 0.1% Min: Calcite>> and as diss

<<Alt: 10 - 14 Weak (Alt) Muscovite>>

<<Alt: 14 - 18.3 Moderate (Alt) Muscovite>>

18.30	**19.60**	**MDSc**	**Carbonaceous dominant mudstone**	

<<Min: 18.3 - 19.6 8% Min: Pyrite>>

19.60	**22.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
22.80	**26.10**	**RHYv** **Rhyolite volcaniclastic**										
22.8 - 26.1: altered!												
<<Min: 23 - 25.8 1% Min: Pyrite>>												
<<Min: 23.2 - 28.8 2% Min: Calcite>> average of unit												
<<Alt: 23 - 25.6 Weak (Alt) Muscovite>>												
26.10	**30.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
30.50	**34.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**										
30.5 - 34.1: could be altered MAFi - has calcaerous bands and diss												
<<Min: 30.5 - 34.1 1% Min: Pyrite>>												
<<Min: 30.5 - 34.1 5% Min: Calcite>>												
<<Alt: 30.5 - 34.1 Muscovite>>												
34.10	**37.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 34.1 - 36 0.1% Min: Calcite>>												
<<Min: 36 - 37.4 10% Min: Calcite>>												
37.00	**38.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		38.50	40.00	1.50	B00267095	0.7	0.018	-0.01	0.02	0.04
37 - 38.7: could be Alterd MAFi - has calcareous bands and diss												
<<Min: 37 - 59.7 1% Min: Pyrite>> and as fracture filling												
<<Min: 37.4 - 59.7 2% Min: Calcite>> and as bands and diss												
<<Min: 38.5 - 54 2% Min: Ankerite>>												
<<Alt: 37 - 47 Moderate (Alt) Silicification>>												
38.70	**39.10**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
39.10	**43.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		40.00	41.50	1.50	B00267096	-0.3	0.017	-0.01	-0.01	0.14
43.60	**44.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.50	**46.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
46.50	**59.70**	**RHYi** **Aphanitic Rhyolite (intrusion)**									

46.5 - 59.7: minor sections of what looks like MAFi. Looks like deformed qtz- feldspar porphyry from a distance. Also has about 5% Fe oxide-pyrite-carbonate-qtz filled vugs (amygdules) or replaced phenos.

<<Min: 54 - 59.7 10% Min: Ankerite>>

<<Alt: 47 - 59.7 Strong (Alt) Silicification>>

End of Hole @ 59.7

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-087

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415049.04	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815399.548	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1387.072	Casing Depth (m):		Length (m):	78	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
23	-60	172		172	SS				☑	
71	-59	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**12.00**	**CASN**	**Casing**										
12.00	**19.20**	**OVBN**	**Overburden**										
12 - 19.2: overburden-boulders probably													
19.20	**24.00**	**RHYvl**	**Lapilli tuff**	**grey-green** **MG**									
<<Min: 19.2 - 24.7 10% Min: Ankerite>> mostly foliation oriented													
<<Min: 19.2 - 39 0.2% Min: Pyrite>>													
<<Min: 19.2 - 39 0.1% Min: Pyrrhotite>>													
24.00	**33.60**	**RHYvl**	**Lapilli tuff**	**grey-green** **MG**									
<<Alt: 25.1 - 40 Moderate (Alt) Muscovite>>													
33.60	**34.60**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey** **FG**									
33.6 - 34.6: Some large bands, locally folded.													
34.60	**39.00**	**RHYvl**	**Lapilli tuff**	**grey-green** **MG**									

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 35.5 - 37.1 5% Min: Ankerite>>													
39.00	**39.40**	**MDSc**	**Carbonaceous dominant mudstone**	**grey** **FG**									
39 - 39.4: sharp contact with above gradational down hole													
<<Min: 39 - 48.4 2% Min: Ankerite>>													
<<Min: 39 - 52.8 0.1% Min: Pyrite>>													
39.40	**48.40**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green** **MG**									
39.4 - 48.4: generally tuff domnant but local 5-25 cm intervals of good crb MDS													
<<Alt: 40 - 52.8 Strong (Alt) Muscovite>>													
48.40	**52.80**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green** **FMG**	48.40	49.90	1.50	Q311459	2.4	0.037	-0.01	0.03	0.04
48.4 - 52.8: Strong alteration. Could be carbonaceous mudstone with some tuff interbedded.													
					49.90	51.40	1.50	Q311461	32.6	0.336	0.09	0.06	0.59
					51.40	52.90	1.50	Q311462	2.1	0.028	-0.01	0.03	0.05
52.80	**59.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		52.90	54.60	1.70	Q311463	123	1.1	0.66	1.52	6.54
52.8 - 59.8: Barite.													
<<Min: 52.8 - 58 60% Min: Pyrite>> fine grain, wispy laminated locally					54.60	56.40	1.80	Q311464	214	1.48	0.24	2.27	9.98
<<Min: 52.8 - 58.8 5% Min: Sphalerite>>					56.40	57.90	1.50	Q311465	264	1.41	0.28	2.7	8.85
<<Min: 52.8 - 58.8 3% Min: Calcite>>					57.90	59.60	1.70	Q311466	337	1.36	1.01	5.22	14.2
<<Min: 52.8 - 59.8 70% Min: Pyrite>>					59.60	61.10	1.50	Q311467	122	1.52	0.32	0.55	1.65
<<Min: 52.8 - 59.8 3% Min: Magnetite>>													
<<Min: 52.8 - 59.8 10% Min: Chalcopyrite>>													
<<Min: 52.8 - 59.8 1% Min: Calcite>>													
<<Min: 58 - 58.6 40% Min: Sphalerite>> silica or barite (or both) matrix, few calcite.Coarse grain pyrite soe euhedral xtl.													
<<Min: 58 - 58.6 40% Min: Pyrite>>													
<<Min: 58 - 58.6 3% Min: Magnetite>>													
<<Min: 58 - 58.6 3% Min: Galena>>													
<<Min: 58 - 58.6 1% Min: Chalcopyrite>>													

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
59.80	**64.70**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	**FMG**	61.10	62.60	1.50	Q311468	3	0.013	-0.01	0.02	0.06
<<Min: 59.8 - 64.2 3% Min: Pyrite>> stringer (?).						62.60	64.70	2.10	Q311469	78.9	1.02	0.42	0.07	0.24
<<Min: 59.8 - 64.2 2% Min: Galena>>														
<<Min: 64.2 - 67.2 10% Min: Chalcopyrite>> and patchy														
<<Min: 64.2 - 70.4 5% Min: Ankerite>>														
<<Min: 64.4 - 70.4 20% Min: Pyrite>>														
<<Min: 64.4 - 70.4 3% Min: Magnetite>>														
64.70	**65.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**			64.70	66.20	1.50	Q311471	165	1.81	2.03	1.59	5.46
65.00	**67.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**			66.20	67.70	1.50	Q311472	57.7	0.589	0.93	0.94	3.82
65 - 67.2: Calcite in matrix.														
<<Min: 65 - 67.5 1% Min: Arsenopyrite>>														
<<Alt: 65.1 - 68.1 Moderate-Strong (Alt) Chlorite>>														
67.20	**67.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**			67.70	69.20	1.50	Q311473	32.1	0.181	0.78	0.4	3.13
67.90	**69.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**											
<<Alt: 68.1 - 69.1 Strong (Alt) Cordierite>>														
69.10	**72.80**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	**FG**	69.20	71.90	2.70	Q311474	1.2	-0.005	0.03	-0.01	0.01
<<Alt: 69.1 - 71.9 Strong (Alt) Muscovite>>						71.90	72.40	0.50	Q311475	41.6	0.151	0.51	0.61	3.63
<<Alt: 71.9 - 72.4 Moderate (Alt) Cordierite>>						72.40	73.90	1.50	Q311476	2.2	-0.005	-0.01	0.02	0.01
72.80	**78.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FMG**	73.90	75.40	1.50	Q311477	0.6	-0.005	-0.01	-0.01	0.01
72.8 - 78: Sill, with biotite.														
<<Min: 72.8 - 78 25% Min: Calcite>>						75.40	76.90	1.50	Q311478	0.6	-0.005	-0.01	-0.01	0.01

Project: KZK **Hole Number:** K95-087

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 78									

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-088

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415048.974	Core Size:		Azimuth:	130	Date Logging Complete:	
UTM Northing:	6815400.76	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1386.987	Casing Depth (m):		Length (m):	93.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	130		130	SS				☑	
23	-89	136		136	SS				☑	
63	-85	188		188	SS				☑	
93	-82	191		191	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**16.40**	**OVBN Overburden**									
16.40	**39.80**	**RHYvl Lapilli tuff**									

<<Min: 16.4 - 22 0.01% Min: Pyrite>>
<<Min: 16.4 - 24.4 0.5% Min: Pyrrhotite>>
<<Min: 16.4 - 25.2 15% Min: Ankerite>>
<<Min: 16.4 - 33.3 0.01% Min: Calcite>>
<<Min: 22 - 33.3 0.25% Min: Pyrite>>
<<Min: 25.2 - 33.3 10% Min: Ankerite>>
<<Min: 33.3 - 38.7 0.01% Min: Pyrite>>
<<Min: 33.3 - 38.7 0.01% Min: Dolomite>>
<<Min: 33.3 - 45.5 0.025% Min: Calcite>>
<<Min: 33.3 - 45.5 3% Min: Ankerite>>
<<Min: 38.7 - 45.5 0.25% Min: Pyrite>>
<<Alt: 16.4 - 30.5 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 30.5 - 58.2 Strong (Alt) Muscovite>>									
			<<Struc: 19 - 45.5 Weak-Moderate (Alt) Fault>> Trace flg									
39.80	**45.50**	**RHYva**	**Coarse grained to ash tuff**									
45.50	**49.70**	**MDSt**	**Rhyolite tuff dominant mudstone**									
			<<Min: 45.5 - 50.9 0.25% Min: Pyrite>> Lenses									
			<<Min: 45.5 - 59.4 0.01% Min: Calcite>>									
			<<Min: 45.5 - 59.4 1% Min: Ankerite>>									
49.70	**50.90**	**MDSc**	**Carbonaceous dominant mudstone**									
50.90	**58.80**	**MDSt**	**Rhyolite tuff dominant mudstone**	54.90	56.40	1.50	R080197	2	0.031	-0.01	0.02	0.03
			<<Min: 50.9 - 54.7 0.25% Min: Pyrite>>	56.40	57.90	1.50	R080198	2.7	0.077	-0.01	0.03	0.03
			<<Min: 54.7 - 59.4 0.5% Min: Pyrrhotite>> FD/WIS	57.90	59.40	1.50	R080199	5.6	0.098	0.15	0.02	0.08
			<<Alt: 58.2 - 58.8 Intense (Alt) Muscovite>>									
58.80	**59.40**	**RHYv**	**Rhyolite volcaniclastic**									
			<<Min: 58.8 - 59.4 0.01% Min: Sphalerite>>									
			<<Alt: 58.8 - 59.4 Moderate (Alt) Cordierite>>									
59.40	**60.00**	**OG**	**Chalcopyrite rich sulphides**	59.40	60.90	1.50	R080202	90	1.18	1.51	0.56	7.79
			<<Min: 59.4 - 60 0.25% Min: Magnetite>>									
			<<Min: 59.4 - 70.5 0.01% Min: Ankerite>>									
60.00	**60.40**	**OA**	**Magnetite bearing sulphides**									
			<<Min: 60 - 60.4 7% Min: Magnetite>>									
60.40	**70.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	60.90	62.40	1.50	R080203	179	1.12	0.2	2.39	12
			<<Min: 60.4 - 62.4 0.5% Min: Magnetite>>	62.40	63.90	1.50	R080204	218	1.54	0.69	2.98	9.69
			<<Min: 62.4 - 63.1 0.01% Min: Magnetite>>	63.90	65.40	1.50	R080205	135	1.43	0.39	1.17	9.79
			<<Min: 63.1 - 63.9 3% Min: Magnetite>> 10cm of DIS MG through interval starting at 63.3m.	65.40	66.90	1.50	R080206	264	2.18	0.23	1.82	5.53
			<<Min: 63.4 - 64.9 0.025% Min: Calcite>>	66.90	68.40	1.50	R080207	141	1.22	0.11	1.45	5.74
			<<Min: 63.9 - 65.4 0.01% Min: Magnetite>>	68.40	70.50	2.10	R080208	392	1.97	0.59	3.93	9.38
			<<Min: 64.9 - 70.5 2% Min: Calcite>>									
			<<Min: 65.4 - 68.4 0.5% Min: Magnetite>>									

From (m)	To (m)	Rocktype & Description

<<Min: 68.4 - 70.5 0.75% Min: Magnetite>> Trace DIS MG section starting at 69.5m.

70.50 77.50 RHYv Rhyolite volcaniclastic

70.5 - 77.5: difficult to ident.

<<Min: 70.5 - 72 0.01% Min: Sphalerite>>
<<Min: 70.5 - 72 0.01% Min: Galena>>
<<Min: 70.5 - 72 0.01% Min: Chalcopyrite>>
<<Min: 70.5 - 74.4 0.01% Min: Pyrite>>
<<Min: 70.5 - 76 0.01% Min: Arsenopyrite>>
<<Min: 70.5 - 77.5 0.25% Min: Ankerite>>
<<Min: 70.5 - 80.2 0.75% Min: Calcite>>
<<Min: 74.4 - 77.5 0.25% Min: Pyrite>>
<<Min: 76 - 77.5 0.01% Min: Sphalerite>>
<<Min: 76 - 77.5 0.6% Min: Galena>>
<<Min: 76 - 77.5 0.25% Min: Chalcopyrite>>
<<Alt: 70.5 - 77.5 Moderate-Strong (Alt) Muscovite>>
<<Struc: 72.4 - 75.1 Weak (Alt) Fault>>

77.50 85.00 RHYv Rhyolite volcaniclastic

77.5 - 85: difficult to ident.

<<Min: 77.5 - 79 0.7% Min: Galena>>
<<Min: 77.5 - 79 3% Min: Sphalerite>>
<<Min: 77.5 - 79 0.5% Min: Chalcopyrite>>
<<Min: 77.5 - 83.5 0.01% Min: Pyrite>>
<<Min: 77.5 - 87.5 2% Min: Ankerite>>
<<Min: 78.1 - 80.3 0.5% Min: Pyrrhotite>>
<<Min: 79 - 80.5 1.8% Min: Chalcopyrite>>
<<Min: 79 - 80.5 3% Min: Galena>>
<<Min: 79 - 80.5 3.3% Min: Sphalerite>>
<<Min: 80.2 - 89.3 0.01% Min: Calcite>>
<<Min: 80.3 - 83.5 0.25% Min: Pyrrhotite>>
<<Min: 80.5 - 82 0.01% Min: Galena>>
<<Min: 80.5 - 82 0.25% Min: Sphalerite>>
<<Min: 80.5 - 82 0.01% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.50	71.60	1.10	R080209	6.1	0.028	0.02	0.03	0.1
71.60	73.10	1.50	R080211	2.3	0.013	-0.01	-0.01	0.01
73.10	74.60	1.50	R080212	0.4	0.012	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 82 - 83.5 0.01% Min: Chalcopyrite>>
<<Min: 82 - 83.5 0.01% Min: Galena>>
<<Min: 82 - 83.5 0.01% Min: Sphalerite>>
<<Min: 83.5 - 85 0.6% Min: Chalcopyrite>>
<<Min: 83.5 - 85 0.3% Min: Galena>>
<<Min: 83.5 - 85 2% Min: Pyrrhotite>> DIS
<<Min: 83.5 - 85 3% Min: Sphalerite>>
<<Min: 83.5 - 88 1% Min: Pyrite>> Two 10cm semi-massive PY, PO, GL, CP, SP lenses.
<<Alt: 77.5 - 85 Moderate (Alt) Chlorite>> Alternates between PRX 4 and PRV5.

85.00 89.30 RHYv Rhyolite volcaniclastic

85 - 89.3: difficult to ident.

<<Min: 85 - 86.5 3% Min: Sphalerite>>
<<Min: 85 - 86.5 0.4% Min: Galena>>
<<Min: 85 - 86.5 0.6% Min: Chalcopyrite>>
<<Min: 85 - 89.3 0.5% Min: Pyrrhotite>> Two 10cm semi-massive PY, PO, GL, CP, SP lenses.
<<Min: 86.5 - 88 3.3% Min: Sphalerite>> Two 10cm semi-massive PY, PO, GL, CP, SP lenses.
<<Min: 86.5 - 88 0.4% Min: Galena>> Two 10cm semi-massive PY, PO, GL, CP, SP lenses.
<<Min: 86.5 - 88 0.2% Min: Chalcopyrite>> Two 10cm semi-massive PY, PO, GL, CP, SP lenses.
<<Min: 87.5 - 93.6 0.01% Min: Ankerite>>
<<Min: 88 - 89.3 0.01% Min: Sphalerite>>
<<Min: 88 - 89.3 0.01% Min: Galena>>
<<Min: 88 - 89.3 0.01% Min: Chalcopyrite>>
<<Min: 88 - 93.6 0.01% Min: Pyrite>> WIS
<<Alt: 85 - 89.3 Moderate-Strong (Alt) Muscovite>>

89.30 92.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 89.3 - 91.3 0.01% Min: Pyrrhotite>>
<<Min: 89.3 - 93.6 5% Min: Calcite>>
<<Alt: 89.3 - 92.8 Moderate (Alt) Chlorite>>
<<Struc: 91.5 - 92.3 Weak-Moderate (Alt) Fault>>

92.80 93.60 RHYi Aphanitic Rhyolite (intrusion)

92.8 - 93.6: Glassy dyke. Possible QZ eyes.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 92.8 - 93.6 0.01% Min: Sphalerite>>

<<Alt: 92.8 - 93.6 Moderate-Strong (Alt) Silicification>> MUMS as well.

<<Alt: 92.8 - 93.6 Moderate-Strong (Alt) Muscovite>> MUMS as well.

End of Hole @ 93.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-089

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414676.282	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815402.84	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1424.281	Casing Depth (m):		Length (m):	75	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
20	-46	180		180	SS				☑	
75	-46	178		178	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.20**	**OVBN Overburden**									
10.20	**14.80**	**MDSt Rhyolite tuff dominant mudstone**									
<<Min: 11 - 35.4 1% Min: Pyrite>> Commonly along minor discontinuous fractures and parallel to foliation.											
14.80	**18.80**	**RHYv Rhyolite volcaniclastic**									
14.8 - 18.8: Strong alteration											
<<Min: 14.8 - 31.6 5% Min: Ankerite>> Commonly as replacement											
<<Min: 17.2 - 31.6 10% Min: Calcite>> Also veinlets and fracture fill											
<<Struc: 15.8 - 16.7 Weak (Alt) Fault>> Minor <2cm clay slips with clay alteration in wall rock											
18.80	**19.70**	**MDSc Carbonaceous dominant mudstone**									
19.70	**35.40**	**RHYv Rhyolite volcaniclastic**	29.30	30.80	1.50	B00267533	0.4	0.012	-0.01	-0.01	-0.01
19.7 - 35.4: Strongly faulted near base of interval with fragments of massive sulphide.											
<<Min: 27 - 35.4 0.1% Min: Arsenopyrite>>			30.80	32.30	1.50	B00267534	27.4	0.674	0.1	0.47	1.32

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 31.6 - 43.8 0.1% Min: Calcite>>

<<Alt: 25.5 - 31.6 Moderate (Alt) Muscovite>>

<<Alt: 31.6 - 35.4 Strong (Alt) Muscovite>>

<<Struc: 31.6 - 32.4 Weak-Moderate (Alt) Fault>> Weak breccia and gouge. Minor massive sulphide chunks at bottom of interval. Clay alteration in fault zone

35.40 36.90 OA Magnetite bearing sulphides

<<Struc: 35.4 - 35.5 Trace (Alt) Fault>> In MSX with calcite

36.90 43.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

43.20 43.30 OA Magnetite bearing sulphides

43.30 43.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 43.6 - 46 5% Min: Calcite>>

43.80 46.00 RHYv Rhyolite volcaniclastic

43.8 - 46: Silicified inter-sulphide zone with some AS.

<<Min: 43.8 - 46 10% Min: Pyrite>> Also as band concentrations.

<<Min: 43.8 - 46 0.1% Min: Arsenopyrite>> Finely disseminated with locallized concentrations

<<Min: 43.8 - 46 10% Min: Ankerite>>

46.00 49.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 46 - 50.6 0.5% Min: Calcite>>

49.60 50.60 OH Fine grained, megascopically homogeneous pyrite rock

50.60 54.30 RHY undifferentiated rhyolite

50.6 - 54.3: Pale green, strongly banded and silicified. Cut by QZ veining.

<<Min: 50.6 - 54.3 1% Min: Calcite>>

<<Min: 50.6 - 54.3 1% Min: Ankerite>>

<<Min: 50.6 - 54.5 5% Min: Pyrite>> All in wall schists, not vein mineralization

<<Alt: 50.6 - 54.3 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
54.30	**58.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 54.3 - 58.9 0.5% Min: Calcite>>		
58.90	**74.40**	**RHYva** **Coarse grained to ash tuff**
58.9 - 74.4: coarse grained felsic tuff with frags up to 4mm. Variably silicified and weakly bleached. Minor bands of intense SI alt'n. Bottom contact is strongly brecciated and healed.		
<<Min: 58.9 - 75 1% Min: Pyrite>>		
<<Min: 58.9 - 75 5% Min: Calcite>>		
<<Min: 58.9 - 75 0.1% Min: Arsenopyrite>>		
<<Min: 58.9 - 75 3% Min: Ankerite>>		
<<Alt: 58.9 - 74.4 Moderate (Alt) Silicification>> Variable alteration from weak to strong over interval. Some bleaching in strongly silicified zones.		
74.40	**75.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
74.4 - 75: Aphanitic with clots of calcite. 3mm quartz augen shaped inclusions, Possibly amygdules?		

End of Hole @ 75

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
60.40	61.90	1.50	B00267535	0.6	0.014	-0.01	0.01	0.38
61.90	63.40	1.50	B00267536	0.8	0.011	-0.01	0.02	0.21

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-090

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414676.25	Core Size:		Azimuth:	260	Date Logging Complete:	
UTM Northing:	6815402.5	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1424.267	Casing Depth (m):		Length (m):	96.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	260		260	SS				☑	
14	-87	261		261	SS				☑	
96	-86	251		251	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN** **Overburden**									
6.10	**20.40**	**MDSw** **Coherent rhyolite flow with carbonaceous content**	15.90	17.40	1.50	B00267074	1.6	0.042	-0.01	0.01	0.01
<<Min: 6.4 - 20.4 1% Min: Pyrite>>			17.40	18.70	1.30	B00267075	1.3	0.024	-0.01	-0.01	-0.01
<<Min: 10 - 12 5% Min: Ankerite>>											
<<Alt: 6.3 - 18.5 Strong (Alt) Silicification>>											
<<Alt: 6.3 - 20 Weak (Alt) Muscovite>> increases towards 19m											
<<Alt: 18.5 - 20.4 Weak-Moderate (Alt) Silicification>>											
20.40	**21.90**	**OH** **Fine grained, megascopically homogeneous pyrite rock**									
<<Min: 20.4 - 34 5% Min: Calcite>> and in calcite bands and blebs											
21.90	**38.70**	**RHYva** **Coarse grained to ash tuff**	23.40	25.00	1.60	B00267076	0.3	0.005	-0.01	-0.01	-0.01
21.9 - 38.7: Mixed unit of RHYcw (at upper contact), MAFt (locally biotite alt), RHYvx (qtz crystals with 1-5mm banding), and possiblee lapilli tuff near lower (downhole contact).possible calcite and Fe-carb amygdules at 25-25.5m											
<<Min: 22 - 38.7 1% Min: Pyrite>>			25.00	26.50	1.50	B00267077	0.4	0.006	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		
		<<Min: 24 - 37.2 8% Min: Ankerite>>		
		<<Min: 34 - 57.6 1% Min: Calcite>> and as dis		
		<<Min: 36.7 - 37.1 0.1% Min: Sulphosalts>> blebs in qtz vein		
		<<Alt: 21.9 - 32.8 Trace (Alt) Muscovite>>		
		<<Alt: 23 - 35.8 Trace (Alt) Silicification>>		
		<<Alt: 26.5 - 32.6 Weak (Alt) Biotite>>		
		<<Alt: 32.8 - 38.5 Weak (Alt) Muscovite>>		
		<<Alt: 35.8 - 38.7 Weak-Moderate (Alt) Silicification>>		
38.70	**39.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**
39.30	**42.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**
42.60	**44.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**
44.30	**44.90**	**OA**	**Magnetite bearing sulphides**	**FG**
44.90	**55.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**
55.10	**55.90**	**OA**	**Magnetite bearing sulphides**	**FMG**
		<<Min: 55.7 - 57.7 0.1% Min: Sulphosalts>>		
55.90	**57.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**
57.90	**63.60**	**RHY**	**undifferentiated rhyolite**	**FMG**
		57.9 - 63.6: strong muscovite alt unit, weakly brecciated - chaotic deposition(?), sulphosalts as blebs with qtz - ank		
		<<Min: 59 - 63.5 3% Min: Ankerite>>		
		<<Alt: 58.7 - 63.6 Moderate-Strong (Alt) Muscovite>>		
63.60	**66.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**
		<<Min: 63.6 - 78.9 2% Min: Calcite>> and as blebs and diss		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.50	27.00	0.50	B00267078	-0.3	-0.005	-0.01	-0.01	-0.01
27.00	29.60	2.60	B00267079	3.7	-0.005	-0.01	0.1	0.01
29.60	31.10	1.50	B00267081	0.5	0.012	-0.01	-0.01	-0.01
31.10	32.60	1.50	B00267082	5.9	0.032	0.06	0.08	1.09
32.60	34.10	1.50	B00267083	0.5	0.005	-0.01	-0.01	-0.01
34.10	35.70	1.60	B00267084	21.8	0.183	0.22	0.07	0.23
35.70	37.20	1.50	B00267085	1.2	0.011	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.00	**68.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**									
68.10	**69.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**									
69.20	**72.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
72.70	**74.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**									
74.10	**76.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
76.30	**78.90**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**									
78.90	**94.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		80.40	81.90	1.50	B00267086	0.3	-0.005	-0.01	-0.01	-0.01

78.9 - 94.7: unit looks like MAFt- MAFi on theory that it is alterd bleached and weakly silicified MAFi

<<Min: 78.9 - 87.6 1% Min: Calcite>> dis and as thin mm bands | 81.90 | 83.40 | 1.50 | B00267087 | 0.5 | -0.005 | -0.01 | -0.01 | -0.01

<<Min: 78.9 - 96.6 1% Min: Pyrite>>

<<Min: 79 - 94 3% Min: Ankerite>>

<<Min: 87.6 - 88 0.1% Min: Sulphosalts>> blebs diss in qtz vein

<<Min: 87.6 - 96.6 5% Min: Calcite>> dis and as thin mm bands

<<Alt: 78.9 - 93.4 Weak (Alt) Muscovite>> possibly overprint due to nearby MAFi and possible nearby RHYi

<<Alt: 79.8 - 96.6 Weak (Alt) Silicification>> unit is mostly Cominco gngy altered.

<<Alt: 84.2 - 86.6 Weak (Alt) Biotite>>

94.70	**96.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

End of Hole @ 96.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-091

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414650.543	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815363.737	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1430.744	Casing Depth (m):		Length (m):	58.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
17	-51	181		181	SS				☑	
56	-52	176		176	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.70**	**OVBN** **Overburden**									
<<Min: 9.5 - 15 5% Lith: Chlorite>>											
<<Min: 9.5 - 18.4 2% Min: Pyrite>> dis, wisps, and thin bands											
9.70	**11.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
9.7 - 11: brecciated											
<<Min: 9.7 - 12 10% Min: Ankerite>>											
11.00	**15.30**	**RHYv** **Rhyolite volcaniclastic**	13.90	15.40	1.50	B00267034	1.7	0.076	-0.01	0.03	0.05
<<Min: 12 - 18.4 1% Min: Ankerite>> porphroblasts at 15.3 and 18.0-18.4, likely replacing cord.											
<<Alt: 11.3 - 18.4 Trace (Alt) Silicification>>											
<<Alt: 15 - 18.4 Moderate (Alt) Muscovite>>											
15.30	**18.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	15.40	16.90	1.50	B00267035	4.9	0.09	-0.01	0.07	0.14

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
18.40	**27.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
<<Min: 18.4 - 35.6 25% Min: Ankerite>> ankerite replacing cord porphroblasts?													
27.10	**27.60**	**RHY**	**undifferentiated rhyolite**										
27.60	**29.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
29.20	**35.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		30.70	32.30	1.60	B00267036	17.9	0.192	0.04	0.18	0.41
<<Min: 29.2 - 33.8 1% Min: Pyrite>>					32.40	33.80	1.40	B00267037	22.2	0.08	-0.01	0.31	0.88
<<Min: 33.8 - 36.4 5% Min: Pyrite>>					33.80	35.30	1.50	B00267038	21.6	0.421	0.45	0.02	0.06
<<Alt: 29.2 - 36.4 Weak (Alt) Silicification>>													
<<Alt: 29.4 - 31.5 Moderate-Strong (Alt) Muscovite>>													
<<Alt: 31.5 - 36.4 Weak (Alt) Muscovite>>													
<<Alt: 33.7 - 36.4 Weak (Alt) Biotite>>													
35.30	**36.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**										
35.3 - 36.7: mostly RHYcf -qtz-feld,													
<<Min: 36.4 - 58.7 1% Min: Pyrite>>													
<<Alt: 36.4 - 52.7 Trace (Alt) Silicification>>													
36.70	**47.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
36.7 - 47.2: mm bands of harder than steel grey lamaller twinned crystals													
47.20	**53.70**	**RHYv**	**Rhyolite volcaniclastic**		48.70	50.20	1.50	B00267039	1	0.014	-0.01	0.03	0.38
<<Min: 48 - 53.6 8% Min: Calcite>> blebs and bands					50.20	51.70	1.50	B00267041	1.6	0.036	-0.01	0.02	0.05
<<Min: 48 - 58.7 7% Min: Ankerite>>													
<<Min: 53.6 - 58.7 2% Min: Calcite>>													
<<Alt: 47.2 - 55.3 Moderate-Strong (Alt) Silicification>>													

From (m)	To (m)	Rocktype & Description
53.70	**55.30**	**RHYi** **Aphanitic Rhyolite (intrusion)**
53.7 - 55.3: upper contact gradational		
55.30	**58.70**	**RHYvx** **Quartz and/or feldspar crystal tuff**
55.3 - 58.7: qtz phenos		
<<Alt: 55.3 - 58.7 Weak (Alt) Silicification>>		
End of Hole @ 58.7		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-092

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415050.15	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815331.568	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1386.676	Casing Depth (m):		Length (m):	50.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
10	-57	180		180	SS				☑	
50	-58	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.10**	**CASN Casing**									
<<Min: 11 - 14.4 3% Min: Pyrite>>											
11.10	**14.40**	**RHYvl Lapilli tuff**	11.40	12.90	1.50	Q311924	0.4	0.021	-0.01	-0.01	0.03
<<Min: 11.1 - 14.4 10% Min: Ankerite>>			12.90	14.40	1.50	Q311925	-0.3	0.008	-0.01	-0.01	-0.01
<<Alt: 11.1 - 14.9 Strong (Alt) Muscovite>>											
14.40	**15.80**	**OI Heavilly disseminated sulphides in host schist**	14.40	15.80	1.40	Q311926	137	4.21	2.5	0.38	1.22
<<Min: 14.4 - 15.8 20% Min: Pyrite>>											
<<Min: 14.4 - 15.8 5% Min: Magnetite>>											
<<Min: 14.4 - 15.8 10% Min: Chalcopyrite>>											
<<Min: 14.4 - 15.8 5% Min: Ankerite>>											
<<Alt: 14.9 - 15.8 Strong (Alt) Cordierite>>											
15.80	**17.80**	**OA Magnetite bearing sulphides**	15.80	17.30	1.50	Q311927	143	1.96	1.84	0.95	5.78
<<Min: 15.8 - 17.7 20% Min: Magnetite>>			17.30	18.80	1.50	Q311928	141	1.16	0.37	2.15	7.1
<<Min: 15.8 - 17.8 40% Min: Pyrite>>											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 15.8 - 17.8 15% Min: Chalcopyrite>>												
<<Min: 17.5 - 23.2 10% Min: Calcite>>												
<<Min: 17.7 - 19.8 2% Min: Magnetite>>												
17.80	**22.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	18.80	20.30	1.50	Q311929	73.5	0.886	0.35	0.85	3.71
17.8 - 22.9: 17.7 to 19.8 is OD												
<<Min: 17.8 - 22.9 10% Min: Sphalerite>>				20.30	21.80	1.50	Q311931	126	1.17	0.23	1.57	4.23
<<Min: 17.8 - 22.9 60% Min: Pyrite>>				21.80	22.90	1.10	Q311932	299	1.92	0.31	5.3	11.8
<<Min: 17.8 - 22.9 3% Min: Chalcopyrite>>												
<<Min: 19.8 - 22.9 5% Min: Magnetite>>												
22.90	**25.20**	**RHY**	**undifferentiated rhyolite**	22.90	24.00	1.10	Q311933	57.5	0.392	0.3	1.16	1.23
<<Min: 22.9 - 25.2 5% Min: Ankerite>>				24.00	25.20	1.20	Q311934	12.1	0.081	0.03	0.09	0.14
<<Min: 23.2 - 29.9 2% Min: Calcite>>												
<<Alt: 22.9 - 25.2 Strong (Alt) Muscovite>>												
25.20	**26.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	25.20	26.40	1.20	Q311935	179	0.766	0.88	5.11	13
<<Min: 25.2 - 26.4 20% Min: Sphalerite>>												
<<Min: 25.2 - 26.4 50% Min: Pyrite>>												
<<Min: 25.2 - 26.4 7% Min: Magnetite>>												
<<Min: 25.2 - 26.4 5% Min: Chalcopyrite>>												
26.40	**29.70**	**RHY**	**undifferentiated rhyolite**	26.40	27.90	1.50	Q311936	11.6	0.049	0.23	0.12	0.44
<<Min: 26.4 - 29.7 6% Min: Pyrite>>				27.90	29.70	1.80	Q311937	2	0.02	-0.01	0.01	0.05
<<Min: 26.4 - 29.9 3% Min: Ankerite>>												
<<Alt: 26.4 - 29.9 Strong (Alt) Muscovite>>												
29.70	**32.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	29.70	31.20	1.50	Q311938	145	0.823	0.2	3.2	8.02
29.7 - 32.7: Qz vein from 31.2 to 31.8												
<<Min: 29.7 - 31.2 15% Min: Sphalerite>>				31.20	31.80	0.60	Q311939	1.7	0.013	-0.01	0.02	0.65
<<Min: 29.7 - 31.2 60% Min: Pyrite>>				31.80	32.70	0.90	Q311941	169	0.594	0.18	2.64	9.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 29.7 - 31.2 2% Min: Chalcopyrite>>												
<<Min: 29.9 - 32.7 10% Min: Magnetite>>												
<<Min: 29.9 - 32.7 5% Min: Calcite>>												
<<Min: 31.2 - 31.8 0.5% Min: Pyrite>>												
<<Min: 31.2 - 31.8 0.5% Min: Chalcopyrite>>												
<<Min: 31.8 - 32.7 15% Min: Sphalerite>>												
<<Min: 31.8 - 32.7 60% Min: Pyrite>>												
32.70	**50.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **green**	32.70	34.20	1.50	Q311942	0.4	0.007	-0.01	-0.01	0.02
<<Min: 32.7 - 50.6 1% Min: Pyrite>>				34.20	35.70	1.50	Q311943	0.3	0.008	-0.01	-0.01	0.01
<<Min: 32.7 - 50.6 1% Min: Pyrrhotite>>				35.70	37.20	1.50	Q311944	-0.3	0.007	-0.01	-0.01	-0.01
<<Min: 32.7 - 50.6 30% Min: Calcite>>												
<<Alt: 32.7 - 50.6 Strong (Alt) Chlorite>>												

End of Hole @ 50.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-093

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415074.906	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815363.133	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1389.035	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
29	-45	172		172	SS				☑	
59	-46	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**20.90**	**OVBN** **Overburden**									
20.90	**21.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Vein: 21 - 24.2 20% Quartz>>											
21.60	**22.90**	**MDSc** **Carbonaceous dominant mudstone**									
22.90	**27.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 22.9 - 29.5 3% Min: Pyrite>>											
<<Min: 23.5 - 29 10% Min: Ankerite>>											
<<Alt: 23 - 26 Weak (Alt) Muscovite>>											
<<Alt: 26 - 36.5 Moderate-Strong (Alt) Muscovite>>											
27.90	**29.70**	**RHY** **undifferentiated rhyolite**									
<<Min: 29.5 - 31.1 1% Min: Pyrite>>											
<<Struc: 27.9 - 28 Strong (Alt) Fault>> gouge											

From (m)	To (m)		Rocktype & Description
29.70	**29.90**	**MDSc**	**Carbonaceous dominant mudstone**
29.90	**31.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 29.9 - 34 5% Min: Ankerite>>			
<<Min: 31.1 - 32.5 3% Min: Pyrite>>			
31.50	**32.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 31.8 - 35 0.1% Min: Arsenopyrite>>			
<<Min: 32.5 - 33.1 1% Min: Pyrite>>			
32.60	**33.10**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 33 - 35 0.5% Min: Pyrrhotite>>			
33.10	**35.00**	**RHY**	**undifferentiated rhyolite**
<<Min: 33.1 - 35 3% Min: Pyrite>>			
35.00	**35.30**	**MDSc**	**Carbonaceous dominant mudstone**
35.30	**36.80**	**RHY**	**undifferentiated rhyolite**
<<Min: 35.5 - 36.8 3% Min: Pyrite>>			
<<Min: 35.5 - 36.8 0.5% Min: Chalcopyrite>>			
36.80	**38.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
36.8 - 38.5: Cominco logged unit as OI			
<<Min: 36.8 - 38.5 5% Min: Sphalerite>>			
<<Min: 36.8 - 38.5 25% Min: Pyrite>>			
<<Min: 36.8 - 38.5 2% Min: Chalcopyrite>>			
38.50	**39.60**	**RHY**	**undifferentiated rhyolite**
<<Min: 38.5 - 39.6 10% Min: Pyrite>>			
<<Min: 38.5 - 39.6 0.5% Min: Chalcopyrite>>			
<<Alt: 38.5 - 39.6 Moderate (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
32.30	33.80	1.50	B00267317	1.3	0.017	-0.01	0.02	0.07
33.80	35.30	1.50	B00267318	1	0.006	-0.01	-0.01	0.05

From (m)	To (m)	Rocktype & Description
39.60	**40.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
39.6 - 40.4: Cominco logged unit as OJ		
<<Min: 39.6 - 40.4 2% Min: Sphalerite>>		
<<Min: 39.6 - 40.4 25% Min: Pyrite>>		
<<Min: 39.6 - 40.4 1% Min: Chalcopyrite>>		
40.40	**41.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 40.4 - 41.8 5% Min: Pyrite>>		
<<Min: 40.4 - 41.8 3% Min: Pyrrhotite>>		
<<Min: 40.4 - 41.8 3% Min: Chalcopyrite>>		
<<Alt: 40.4 - 41.8 Moderate (Alt) Muscovite>>		
41.80	**43.00**	**OA** **Magnetite bearing sulphides**
41.8 - 43: Cominco logged unit as OA		
<<Min: 41.8 - 44.5 5% Min: Sphalerite>>		
<<Min: 41.8 - 44.5 50% Min: Pyrite>>		
<<Min: 41.8 - 44.5 20% Min: Pyrrhotite>>		
<<Min: 41.8 - 44.5 5% Min: Chalcopyrite>>		
43.00	**44.50**	**OA** **Magnetite bearing sulphides**
44.50	**47.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 44.5 - 47.5 10% Min: Sphalerite>>		
<<Min: 44.5 - 47.5 70% Min: Pyrite>>		
<<Min: 44.5 - 47.5 2% Min: Chalcopyrite>>		
<<Min: 45.5 - 47.5 5% Min: Calcite>>		
47.50	**50.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 47.5 - 48.2 2% Min: Pyrite>>		
<<Min: 47.5 - 49 10% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.00	50.60	1.60	B00267319	0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 49 - 50.6 10% Min: Calcite>>									
		<<Alt: 47.5 - 50.6 Moderate (Alt) Muscovite>> fine grained muscovite - sericite									
		<<Struc: 47.5 - 47.7 Fault>> broken core, missing core									
50.60	**51.90**	**RHYvx** **Quartz and/or feldspar crystal tuff**	50.60	51.90	1.30	B00267321	42.2	0.198	0.15	0.81	2.76
		50.6 - 51.9: poker chip silic bands, rare qtz phenos. Minor (<5cm) gouge at margins.									
		<<Min: 50.6 - 51.9 5% Min: Pyrite>> pyritic bands									
		<<Alt: 50.6 - 51.9 Moderate (Alt) Muscovite>> muscovite and sericite									
		<<Struc: 50.6 - 50.7 Fault>> 2-3cm of gouge									
		<<Struc: 51.8 - 51.9 Fault>> 7cm gouge									
51.90	**53.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	51.90	53.00	1.10	B00267322	-0.3	0.006	-0.01	-0.01	0.02
		51.9 - 53: unit contains bands of dissem pyrite, qtz and chl alteration. Unit does not appear to be a rhyolite.									
		<<Min: 51.9 - 53 10% Min: Calcite>>									
		<<Alt: 51.9 - 54.4 Moderate (Alt) Muscovite>>									
53.00	**54.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
		53 - 54.5: Usual dead boring MAFi footwall.									
		<<Min: 53 - 54.5 3% Min: Pyrite>> pyritic bands									
		<<Min: 53 - 54.5 3% Min: Calcite>>									
		<<Alt: 53 - 54.5 Trace (Alt) Chlorite>>									
54.50	**59.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	54.50	55.90	1.40	B00267323	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 54.5 - 59.7 15% Min: Calcite>>	55.90	57.40	1.50	B00267324	-0.3	-0.005	-0.01	-0.01	-0.01
		End of Hole @ 59.7									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-094

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415074.999	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815364.612	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1388.903	Casing Depth (m):		Length (m):	79.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
26	-88	186		186	SS				☑	
78	-85	185		185	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 20.10 OVBN Overburden

20.10 23.70 RHYv Rhyolite volcaniclastic

20.1 - 23.7: 10 cm caronaceous (MDSt) at 20.4. poker chip silic bands

<<Min: 20.1 - 26.5 0.5% Min: Pyrite>>

<<Min: 20.1 - 31.8 5% Min: Ankerite>>

<<Alt: 20.1 - 31.5 Weak (Alt) Muscovite>>

23.70 24.80 RHYc Rhyolite coherant volcanics

24.80 26.00 RHYv Rhyolite volcaniclastic

<<Alt: 25.9 - 36.3 Moderate-Strong (Alt) Silicification>>

<<Vein: 25.7 - 26.5 15% Quartz>>

26.00 26.30 MDS Carbonaceous Mudstone & Tuffaceous Mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.30	**28.50**	**RHYc** **Rhyolite coherant volcanics**									
26.3 - 28.5: Not a very good RHYc - could also be called a RHYv											
<<Min: 26.5 - 28.5 0.5% Min: Pyrite>>											
<<Min: 26.5 - 31.4 1% Min: Pyrrhotite>>											
<<Min: 27.7 - 27.8 0.1% Min: Arsenopyrite>>											
28.50	**31.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
28.5 - 31.3: does have silic bands and dismembered siliceous bands.											
31.30	**38.70**	**RHYc** **Rhyolite coherant volcanics**	37.20	38.70	1.50	B00267313	0.6	0.014	-0.01	-0.01	-0.01
31.3 - 38.7: Good RHYc - cw except for lowermost 1.5m											
<<Min: 31.4 - 38.7 3% Min: Pyrite>>											
<<Min: 31.8 - 38.7 5% Min: Ankerite>>											
<<Alt: 31.5 - 40 Moderate-Strong (Alt) Muscovite>>											
38.70	**39.00**	**MDSc** **Carbonaceous dominant mudstone**	38.70	40.20	1.50	B00267314	1	0.013	-0.01	-0.01	0.06
<<Min: 38.7 - 41.7 1% Min: Pyrite>>											
<<Min: 38.7 - 41.7 1% Min: Pyrrhotite>>											
39.00	**39.20**	**MDSt** **Rhyolite tuff dominant mudstone**									
39.20	**40.40**	**RHYv** **Rhyolite volcaniclastic**									
39.2 - 40.4: poker chip silic bands											
40.40	**41.20**	**MDSc** **Carbonaceous dominant mudstone**									
41.20	**41.70**	**RHYv** **Rhyolite volcaniclastic**									
41.70	**42.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
41.7 - 42.8: Has approx 30-50% RHY incorporated in unit											
<<Min: 41.7 - 42.8 5% Min: Sphalerite>>											
<<Min: 41.7 - 42.8 40% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 41.7 - 42.8 1% Min: Galena>>

<<Min: 41.7 - 42.8 2% Min: Chalcopyrite>>

42.80 46.40 RHY undifferentiated rhyolite

42.8 - 46.4: includes sections with strong chlorite alteration

<<Min: 42.8 - 44.6 2% Min: Pyrrhotite>>

<<Min: 42.8 - 46.4 10% Min: Ankerite>>

<<Min: 44.6 - 45.2 2.5% Min: Sphalerite>>

<<Min: 44.6 - 45.2 5% Min: Pyrrhotite>>

<<Min: 44.6 - 45.2 1.5% Min: Chalcopyrite>>

<<Min: 45.2 - 45.9 1.5% Min: Pyrrhotite>>

<<Min: 45.2 - 45.9 0.5% Min: Chalcopyrite>>

<<Min: 45.9 - 46.4 1% Min: Pyrite>>

<<Min: 45.9 - 46.4 0.5% Min: Chalcopyrite>>

<<Min: 45.9 - 46.7 1.5% Min: Chalcopyrite>>

<<Alt: 43 - 44.5 Moderate-Strong (Alt) Muscovite>>

<<Alt: 44.6 - 45.1 Moderate-Strong (Alt) Chlorite>>

<<Alt: 46 - 47.1 Weak-Moderate (Alt) Chlorite>>

46.40 47.10 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 46.4 - 47.7 2.5% Min: Sphalerite>>

<<Min: 46.7 - 47.1 12.5% Min: Pyrrhotite>>

<<Min: 46.7 - 47.1 10% Min: Chalcopyrite>>

<<Alt: 46.4 - 47.1 Moderate-Strong (Alt) Cordierite>>

47.10 47.90 OG Chalcopyrite rich sulphides

<<Min: 47.1 - 47.9 45% Min: Pyrrhotite>>

<<Min: 47.1 - 47.9 35% Min: Chalcopyrite>>

<<Min: 47.3 - 58.9 1% Min: Calcite>>

47.90 48.70 OA Magnetite bearing sulphides

<<Min: 47.9 - 48.7 6.5% Min: Sphalerite>>

<<Min: 47.9 - 48.7 65% Min: Pyrite>>

<<Min: 47.9 - 48.7 11% Min: Pyrrhotite>>

<<Min: 47.9 - 48.7 10% Min: Magnetite>> laminated And dis

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 47.9 - 48.7 3.5% Min: Chalcopyrite>>

48.70 50.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 48.7 - 49 7% Min: Sphalerite>>

<<Min: 49.6 - 49.9 5% Min: Magnetite>> dis along lamin

50.60 51.00 OA Magnetite bearing sulphides

<<Min: 50.6 - 51.6 10% Min: Magnetite>>

51.00 56.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 53.9 - 56.1 10% Min: Calcite>>

56.00 58.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

56 - 58.5: silic bands. Could also be a banded siliceous ash tuff or a RHYc.

<<Min: 56 - 58.5 5% Min: Pyrite>>

<<Min: 56.1 - 57.7 5% Min: Calcite>>

<<Alt: 56 - 58.5 Weak (Alt) Muscovite>>

58.50 59.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 58.5 - 59.4 0.5% Min: Pyrrhotite>>

59.40 60.30 OA Magnetite bearing sulphides

<<Min: 59.4 - 60.3 9% Min: Pyrrhotite>>

60.30 61.40 OI Heavilly disseminated sulphides in host schist

<<Min: 60.3 - 61.4 4% Min: Sphalerite>>

<<Min: 60.3 - 61.4 30% Min: Pyrite>>

<<Min: 60.3 - 61.4 7% Min: Pyrrhotite>>

<<Min: 60.3 - 61.4 2% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
61.40	**63.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 61.4 - 63 5% Min: Pyrrhotite>>		
63.00	**63.10**	**OF** **Pyrrhotite rich sulphides**
<<Min: 63 - 63.1 90% Min: Pyrrhotite>>		
63.10	**67.50**	**RHYc** **Rhyolite coherant volcanics**
63.1 - 67.5: has numerous silic bands		
<<Min: 63.1 - 66.1 10% Min: Ankerite>>		
<<Min: 63.1 - 67.4 2% Min: Pyrite>>		
<<Min: 67.4 - 67.9 5% Min: Pyrite>>		
<<Alt: 63.1 - 67.4 Moderate (Alt) Muscovite>>		
67.50	**67.90**	**OI** **Heavilly disseminated sulphides in host schist**
<<Min: 67.7 - 79.3 15% Min: Calcite>>		
67.90	**68.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 67.9 - 68.1 65% Min: Pyrite>>		
<<Min: 67.9 - 68.1 10% Min: Pyrrhotite>>		
68.10	**79.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
End of Hole @ 79.3		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
69.60	71.10	1.50	B00267315	0.4	-0.005	-0.01	-0.01	-0.01
71.10	72.60	1.50	B00267316	-0.3	0.008	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-095

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414625.942	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815357.391	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1436.055	Casing Depth (m):		Length (m):	59.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
17	-50	184		184	SS				☑	
59	-48	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**OVBN Overburden**									
9.80	**16.00**	**RHYva Coarse grained to ash tuff**									
9.8 - 16: Thin banded											
<<Min: 9.8 - 16 10% Min: Ankerite>>											
<<Min: 9.8 - 18.7 10% Min: Calcite>>											
<<Min: 9.8 - 21.6 7% Min: Pyrite>> Minor SP with quartz vein at 18.7-18.9m											
<<Alt: 12 - 16 Weak-Moderate (Alt) Silicification>>											
<<Alt: 15.8 - 21.6 Moderate (Alt) Muscovite>>											
16.00	**17.40**	**RHYi Aphanitic Rhyolite (intrusion)**	17.10	18.60	1.50	B00267524	-0.3	0.014	-0.01	-0.01	0.07
16 - 17.4: Fine grained,uniform composition. Narrow inclusions of banded tuff.											
17.40	**21.60**	**RHYv Rhyolite volcaniclastic**	18.60	20.10	1.50	B00267525	10.3	0.072	0.05	0.03	0.85
17.4 - 21.6: Banding at top of interval, QZ veined and altered with increased SI-MU alteration											
<<Min: 17.4 - 20.1 15% Min: Ankerite>>											

From (m)	To (m)		Rocktype & Description
<<Alt: 17.4 - 21.6 Moderate-Strong (Alt) Silicification>>			
21.60	**25.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
25.10	**25.50**	**OG**	**Chalcopyrite rich sulphides**
25.50	**26.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
26.00	**26.90**	**OA**	**Magnetite bearing sulphides**
26.90	**27.70**	**OA**	**Magnetite bearing sulphides**
27.70	**28.80**	**OA**	**Magnetite bearing sulphides**
28.80	**29.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Min: 28.8 - 29.7 5% Min: Sulphosalts>> TT + ?			
<<Min: 28.8 - 29.7 15% Min: Pyrite>>			
<<Alt: 28.8 - 39.2 Moderate-Strong (Alt) Muscovite>>			
29.70	**31.40**	**OA**	**Magnetite bearing sulphides**
<<Min: 31.2 - 38.9 5% Min: Sulphosalts>> Minor GN, SP			
<<Min: 31.2 - 38.9 15% Min: Pyrite>>			
<<Min: 31.2 - 38.9 10% Min: Ankerite>>			
31.40	**36.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
36.90	**38.90**	**RHYc**	**Rhyolite coherant volcanics**
36.9 - 38.9: Porphyoblasts up to5mm of AK , possibly after CI?			
38.90	**39.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
39.80	**40.10**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
40.10	**41.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
41.80	**43.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
41.8 - 43.2: Minor barite veinlets up to 1cm.TT in narrow veinlets.		
43.20	**44.70**	**RHYv** **Rhyolite volcaniclastic**
43.2 - 44.7: Spotted texture with mm scale white ankerite porphyroblasts		
<<Min: 43.2 - 44.7 3% Min: Pyrite>>		
<<Min: 43.2 - 44.7 15% Min: Ankerite>>		
<<Alt: 43.2 - 44.7 Weak-Moderate (Alt) Muscovite>>		
44.70	**45.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
45.40	**46.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
46.50	**50.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
50.90	**52.20**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 50.9 - 54.5 0.1% Min: Calcite>>		
<<Min: 50.9 - 59.7 2% Min: Pyrite>> Minor SP +/- SS		
<<Min: 50.9 - 59.7 5% Min: Ankerite>>		
<<Alt: 50.9 - 54.4 Weak (Alt) Muscovite>>		
52.20	**54.40**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Struc: 52.4 - 53.2 Weak (Alt) Fault>> Sub-parallel TCA, minor gouge.		
54.40	**59.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
54.4 - 59.7: Silicified med green grey weak banding emphasized by SI		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
52.40	53.90	1.50	B00267526	1.2	0.025	-0.01	0.01	0.09
53.90	55.40	1.50	B00267527	1.1	0.043	-0.01	-0.01	0.09

From (m)	To (m)	Rocktype & Description
		<<Min: 54.5 - 59.7 5% Min: Calcite>>
		<<Alt: 54.4 - 59.7 Moderate-Strong (Alt) Silicification>>
		End of Hole @ 59.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-096

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414626.07	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815357.583	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1436.186	Casing Depth (m):		Length (m):	69.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
14	-87	285		285	SS				☑	
69	-87	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.70**	**CASN Casing**									
6.70	**11.70**	**RHYi Aphanitic Rhyolite (intrusion)**									
<<Min: 6.7 - 11.7 3% Min: Pyrite>>											
<<Min: 6.7 - 20.1 4% Min: Ankerite>>											
<<Min: 6.7 - 52 0% Min: Calcite>>											
<<Alt: 6.7 - 17.5 Moderate (Alt) Silicification>>											
<<Alt: 6.7 - 17.5 Moderate (Alt) Muscovite>>											
11.70	**17.80**	**RHYva Coarse grained to ash tuff**	15.90	17.40	1.50	B00264107	0.3	0.008	-0.01	-0.01	0.01
<<Min: 11.7 - 20.1 3% Min: Pyrite>>			17.40	18.90	1.50	B00264108	2.3	0.02	-0.01	0.02	0.04
<<Alt: 17.5 - 20.4 Moderate (Alt) Muscovite>>											
17.80	**20.10**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
20.10	**21.90**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 20.1 - 21.9 15% Min: Sphalerite>>
<<Min: 20.1 - 21.9 40% Min: Pyrite>>
<<Min: 20.1 - 21.9 10% Min: Pyrrhotite>>
<<Min: 20.1 - 21.9 2% Min: Chalcopyrite>>

21.90 29.60 OA Magnetite bearing sulphides MCG

<<Min: 21.9 - 29.6 15% Min: Sphalerite>>
<<Min: 21.9 - 29.6 40% Min: Pyrite>>
<<Min: 21.9 - 29.6 5% Min: Pyrrhotite>>
<<Min: 21.9 - 29.6 5% Min: Chalcopyrite>>

29.60 33.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

<<Min: 29.6 - 33.3 10% Min: Sphalerite>>
<<Min: 29.6 - 33.3 60% Min: Pyrite>>
<<Min: 29.6 - 33.3 15% Min: Pyrrhotite>>
<<Min: 29.6 - 33.3 2% Min: Chalcopyrite>>
<<Min: 33.2 - 44.7 7% Min: Ankerite>>

33.30 35.60 OI Heavilly disseminated sulphides in host schist MG

<<Min: 33.3 - 35.6 15% Min: Sphalerite>>
<<Min: 33.3 - 35.6 40% Min: Pyrite>>
<<Min: 33.3 - 35.6 2% Min: Chalcopyrite>>
<<Alt: 33.3 - 35.6 Intense (Alt) Muscovite>>

35.60 37.30 OJ Heavilly disseminated sulphides in proximal altered rock MCG

<<Min: 35.6 - 37.3 5% Min: Sphalerite>>
<<Min: 35.6 - 37.3 20% Min: Pyrite>>
<<Alt: 35.6 - 37.3 Strong (Alt) Muscovite>>
<<Alt: 35.6 - 37.3 Weak (Alt) Chlorite>>

37.30 41.70 RHY undifferentiated rhyolite

<<Min: 37.3 - 41.7 1% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
41.70	**43.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 41.7 - 43 25% Min: Sphalerite>>													
<<Min: 41.7 - 43 60% Min: Pyrite>>													
<<Min: 43 - 44.7 15% Min: Sphalerite>>													
<<Min: 43 - 44.7 30% Min: Pyrite>>													
<<Alt: 43 - 44.7 Intense (Alt) Muscovite>>													
<<Alt: 43 - 44.7 Moderate (Alt) Chlorite>>													
43.20	**44.70**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**									
44.70	**46.80**	**RHYv**	**Rhyolite volcaniclastic**										
46.80	**47.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
<<Min: 46.8 - 47.7 20% Min: Sphalerite>>													
<<Min: 46.8 - 47.7 60% Min: Pyrite>>													
47.70	**49.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
49.20	**54.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
<<Min: 49.2 - 54.3 20% Min: Sphalerite>>													
<<Min: 49.2 - 54.3 50% Min: Pyrite>>													
<<Min: 49.2 - 54.3 10% Min: Chalcopyrite>>													
<<Min: 52 - 58.8 2% Min: Calcite>>													
54.30	**54.90**	**OA**	**Magnetite bearing sulphides**	**MG**									
54.90	**58.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
<<Min: 54.9 - 58.8 20% Min: Sphalerite>>													
<<Min: 54.9 - 58.8 50% Min: Pyrite>>													
<<Min: 54.9 - 58.8 10% Min: Chalcopyrite>>													

From (m)	To (m)	Rocktype & Description
58.80	**60.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 58.8 - 69.2 3% Min: Calcite>>		
<<Alt: 58.8 - 60.1 Intense (Alt) Muscovite>>		
60.10	**65.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 60.3 - 65.3 7% Min: Ankerite>>		
<<Alt: 60.1 - 69.2 Weak (Alt) Silicification>>		
<<Alt: 60.1 - 69.2 Weak (Alt) Muscovite>>		
65.30	**69.20**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Min: 65.3 - 69.2 5% Min: Ankerite>>		

End of Hole @ 69.2

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
60.30	61.80	1.50	B00264109	-0.3	-0.005	-0.01	-0.01	0.01
61.80	63.30	1.50	B00264111	-0.3	0.007	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-097

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415101.769	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815340.101	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1392.368	Casing Depth (m):		Length (m):	53.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
17	-47	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 13.40 OVBN Overburden

13.40 23.50 RHYv Rhyolite volcaniclastic grey

13.4 - 23.5: strongly MU altered schist, flattened stretched lapilli?,

<<Min: 13.4 - 14.5 3% Min: Ankerite>>

<<Min: 13.4 - 15.4 1% Min: Pyrrhotite>>

<<Min: 14.5 - 23.5 5% Min: Ankerite>>

<<Min: 15.4 - 23.2 0.5% Min: Pyrite>>

<<Min: 23.2 - 28 0.01% Min: Pyrrhotite>>

<<Alt: 13.4 - 14.5 Weak (Alt) Muscovite>> weak, dark grey colour to rock

<<Alt: 14.5 - 16.7 Moderate (Alt) Muscovite>> light colour, strong schistose texture, conc'd around faults

<<Alt: 16.7 - 23.5 Strong (Alt) Muscovite>> waxy feel, very shistose, wraps around SI-AK lenses and pods

<<Struc: 23.4 - 23.5 Strong (Alt) Fault>> gouge at upper contact of MDS unit

23.50 28.00 MDSc Carbonaceous dominant mudstone black

23.5 - 28: dominantly mx MDS, graphitic fol'n planes, C&S fabric,

From (m)	To (m)	Rocktype & Description

<<Min: 23.5 - 28 0.01% Min: Ankerite>>

<<Alt: 23.5 - 28 Weak (Alt) Muscovite>> in tuffaceous section

28.00 29.90 RHYv Rhyolite volcaniclastic yellow

28 - 29.9: possible narrow section of FP crystal, AK after phenos?

<<Min: 28 - 29.9 3% Min: Ankerite>> locally after FP phenos?

<<Min: 29.8 - 35.9 1% Min: Sphalerite>>

<<Min: 29.8 - 35.9 10% Min: Pyrite>>

<<Min: 29.8 - 35.9 3% Min: Pyrrhotite>>

<<Min: 29.8 - 35.9 1% Min: Chalcopyrite>>

<<Alt: 28 - 29.9 Moderate (Alt) Muscovite>> SI lenses dominate

29.90 35.90 RHY undifferentiated rhyolite grey-green

29.9 - 35.9: weakly formed schistosity, highly distorted section of strong proximal altered felsic(?), very much texturally destructive alt'n, bands of MU and CL with wisps of MG and CI pblasts throughout. Sx are common as blebs small masses

<<Min: 29.9 - 35.9 3% Min: Magnetite>> wisps

<<Min: 29.9 - 35.9 25% Min: Ankerite>> bands and swirls, veins?, lenses, mixed with CL-MG-CI, pblasts in MU sections

<<Alt: 29.9 - 35.9 Strong (Alt) Muscovite>> generally separate bands from CL, AK pblasts t/o

<<Alt: 29.9 - 35.9 Strong (Alt) Chlorite>> massive bands and patches, with MG and CI commonly

<<Alt: 29.9 - 35.9 Weak (Alt) Cordierite>> throughout but conc'd in Cl patches

35.90 41.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 35.9 - 41.9 9% Min: Sphalerite>>

<<Min: 35.9 - 41.9 75% Min: Pyrite>>

<<Min: 35.9 - 41.9 5% Min: Galena>>

<<Min: 35.9 - 41.9 1% Min: Chalcopyrite>>

41.90 42.10 OA Magnetite bearing sulphides

41.9 - 42.1: very narrow section

<<Min: 41.9 - 42.1 15% Min: Magnetite>> layers

42.10 53.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

42.1 - 53.6: dominantly CL, BI scattered, coarse grained towards base, gabbroic from about 52.3 m

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
43.60	45.10	1.50	B00233068	0.4	0.009	-0.01	-0.01	0.01

Project: KZK **Hole Number:** K95-097

From (m)	To (m)	Rocktype & Description
		<<Min: 42.1 - 42.2 5% Min: Pyrrhotite>>
		<<Min: 49.2 - 50.5 0.5% Min: Pyrrhotite>> scattered blebs of PO, trace CP
		<<Min: 49.2 - 50.5 0.01% Min: Chalcopyrite>> w/PO, no alt'n noticeable
		<<Alt: 42.1 - 42.2 Strong (Alt) Chlorite>> massive bands
		<<Alt: 42.1 - 42.2 Moderate (Alt) Biotite>> books, pblasts?
		<<Alt: 42.2 - 43.6 Weak (Alt) Chlorite>> weak marginal alt'n(?) of MAFi
		End of Hole @ 53.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
45.10	46.60	1.50	B00233069	0.4	0.007	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-098

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415101.725	Core Size:		Azimuth:	115	Date Logging Complete:	
UTM Northing:	6815341.385	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1392.473	Casing Depth (m):		Length (m):	65.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	115		115	SS				☑	
17	-87	110		110	SS				☑	
20	-87	112		112	SS				☑	
63	-87	116		116	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**OVBN Overburden**									
9.80	**24.10**	**RHYv Rhyolite volcaniclastic grey**									

9.8 - 24.1: strongly schistose, MU-rich, weak JA, GE, local fault/shear

<<Min: 9.8 - 16.9 3% Min: Pyrite>> small lenses locally
<<Min: 9.8 - 16.9 15% Min: Ankerite>>
<<Min: 16.9 - 20.7 10% Min: Ankerite>>
<<Min: 16.9 - 24.1 1% Min: Pyrite>>
<<Min: 20.7 - 24.1 3% Min: Ankerite>> small lenses
<<Alt: 9.8 - 16.9 Moderate (Alt) Muscovite>> strong alt'n in sections
<<Alt: 16.9 - 24.1 Intense (Alt) Muscovite>> talcose feel on fol'n surfaces
<<Struc: 18.3 - 19.9 Moderate (Alt) Fault>> shearing and bx'n, crushed section near centre

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
24.10	**26.80**	**MDSc**	**Carbonaceous dominant mudstone** **black**									
24.1 - 26.8: massive MDST layers dominate, tuffaceous intervals present												
<<Min: 24.1 - 25.7 0.01% Min: Pyrite>>												
<<Min: 24.1 - 26.8 1% Min: Pyrrhotite>>												
<<Min: 25.7 - 26 5% Min: Pyrite>>												
26.80	**30.10**	**RHYvx**	**Quartz and/or feldspar crystal tuff** **grey**	28.90	30.40	1.50	B00233062	0.8	0.023	-0.01	0.01	0.02
26.8 - 30.1: CB porphyroblasts after FP, no QE noted, scattered sx blebs, MU and QZ separated												
<<Min: 26.8 - 31.1 1% Min: Pyrite>> locally conc'd to 3%, possibly confused with oxidized AK												
<<Min: 26.8 - 32 3% Min: Ankerite>> after FP pblasts, on fol'n												
<<Alt: 26.8 - 30.1 Moderate (Alt) Muscovite>>												
30.10	**33.40**	**RHY**	**undifferentiated rhyolite** **grey-green**	30.40	31.90	1.50	B00233063	0.6	0.022	-0.01	-0.01	-0.01
30.1 - 33.4: lapilli,												
<<Min: 31.1 - 32.9 3% Min: Pyrite>>												
<<Min: 32.9 - 33.4 2% Min: Pyrite>>												
<<Min: 32.9 - 33.4 1% Min: Chalcopyrite>>												
<<Alt: 30.1 - 32.8 Strong (Alt) Muscovite>> talcose												
<<Alt: 32 - 33.4 Strong (Alt) Chlorite>> groundmass, after CI												
<<Alt: 32.8 - 33.4 Strong (Alt) Cordierite>> altered to CL commonly												
33.40	**40.70**	**OA**	**Magnetite bearing sulphides**									
<<Min: 33.4 - 35.7 3% Min: Magnetite>>												
<<Min: 33.4 - 35.7 80% Min: Pyrite>>												
<<Min: 33.4 - 35.7 10% Min: Sphalerite>>												
<<Min: 33.4 - 35.7 5% Min: Chalcopyrite>>												
<<Min: 35.7 - 37.4 2% Min: Chalcopyrite>>												
<<Min: 35.7 - 37.4 65% Min: Pyrite>>												
<<Min: 35.7 - 37.4 20% Min: Sphalerite>>												
<<Min: 35.7 - 40.7 10% Min: Magnetite>> locally massive bands, wisps												
<<Min: 37.4 - 38 1% Min: Galena>>												
<<Min: 37.4 - 38 5% Min: Pyrite>>												
<<Min: 37.4 - 38 5% Min: Sphalerite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 37.4 - 38 10% Min: Chalcopyrite>>
<<Min: 38 - 40.7 10% Min: Sphalerite>>
<<Min: 38 - 40.7 3% Min: Chalcopyrite>>
<<Min: 38 - 40.7 2% Min: Galena>>
<<Min: 38 - 40.7 5% Min: Pyrrhotite>>
<<Min: 38 - 40.7 70% Min: Pyrite>>
<<Vein: 37.4 - 38 90% Quartz>> QV?, seems to be messed up interval

40.70 44.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 40.7 - 44.3 15% Min: Sphalerite>>
<<Min: 40.7 - 44.3 70% Min: Pyrite>>
<<Min: 40.7 - 44.3 5% Min: Galena>>
<<Min: 40.7 - 44.3 1% Min: Chalcopyrite>>

44.30 44.80 OA Magnetite bearing sulphides

<<Min: 44.3 - 44.8 20% Min: Sphalerite>>
<<Min: 44.3 - 44.8 60% Min: Pyrite>>
<<Min: 44.3 - 44.8 5% Min: Magnetite>>
<<Min: 44.3 - 44.8 10% Min: Galena>>

44.80 46.50 RHY undifferentiated rhyolite grey

44.8 - 46.5: MAFi from 45.9-46.2?

<<Min: 44.8 - 45.6 3% Min: Pyrite>>
<<Alt: 44.8 - 48.6 Strong (Alt) Muscovite>>
<<Alt: 45.9 - 46.2 Moderate (Alt) Chlorite>>
<<Alt: 45.9 - 46.2 Moderate (Alt) Biotite>>
<<Vein: 46.2 - 48.6 75% Quartz>> QZ VN with semi-massive sx bands

46.50 47.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 46.5 - 47 40% Min: Sphalerite>>
<<Min: 46.5 - 47 40% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
47.00	**48.60**	**RHY**	**undifferentiated rhyolite**									
47 - 48.6: essentially a QV interval												
48.60	**50.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
48.6 - 50.2: possibly MET2, MG in lower part of interval												
<<Min: 48.6 - 50.2 15% Min: Sphalerite>>												
<<Min: 48.6 - 50.2 50% Min: Pyrite>>												
<<Min: 48.6 - 50.2 3% Min: Galena>>												
<<Min: 48.6 - 50.2 3% Min: Chalcopyrite>>												
<<Min: 49.9 - 50.2 5% Min: Magnetite>>												
50.20	**52.30**	**RHY**	**undifferentiated rhyolite**	**grey-green**								
50.2 - 52.3: CL-BI overprint at base												
<<Min: 50.2 - 52.4 3% Min: Sphalerite>>												
<<Min: 50.2 - 52.4 10% Min: Pyrite>>												
<<Min: 50.2 - 52.4 1% Min: Galena>>												
<<Min: 50.2 - 52.4 1% Min: Chalcopyrite>>												
<<Min: 50.2 - 52.4 3% Min: Ankerite>>												
<<Alt: 50.2 - 52.3 Strong (Alt) Muscovite>>												
<<Alt: 51.7 - 52.3 Weak (Alt) Chlorite>> overprint from MAFi? Or original?												
<<Vein: 52.2 - 53.2 65% Quartz>> QZ vn with intervening CL alt'd schist												
52.30	**65.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	53.70	55.00	1.30	B00233064	0.4	-0.005	-0.01	-0.01	-0.01
52.3 - 65.8: narrow siliceous bands, possible pblasts?, CA pervasive but declines at bottom, gabbroic texture below 64 m												
<<Min: 52.4 - 53.6 3% Min: Calcite>>					55.00	56.00	1.00	B00233065	-0.3	0.005	-0.01	-0.01	0.01
<<Min: 52.4 - 56 1% Min: Ankerite>>					56.00	56.70	0.70	B00233066	7.1	0.2	0.13	0.24	3.82
<<Min: 53.6 - 56 10% Min: Calcite>>					56.70	58.20	1.50	B00233067	1.6	0.011	-0.01	0.03	0.16
<<Min: 56 - 58.2 3% Min: Pyrrhotite>>													
<<Min: 56.1 - 56.7 10% Min: Pyrite>> bands through core													
<<Min: 58.1 - 63.1 15% Min: Calcite>>													
<<Min: 63.1 - 65.8 5% Min: Calcite>> veins													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 52.3 - 53.6 Moderate (Alt) Chlorite>>									
		<<Alt: 52.3 - 53.6 Moderate (Alt) Biotite>> part of CL-BI alteration, proximal?, into MAFi									
		<<Alt: 53.6 - 56 Weak (Alt) Chlorite>>									
		<<Alt: 56 - 58.2 Moderate (Alt) Muscovite>> related to glassy dyke?, leucoxene(?) visible in altered section and in surrounding MAFi									
		End of Hole @ 65.8									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-099

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414598.697	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815303.409	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1446.127	Casing Depth (m):		Length (m):	47.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
17	-52	174		174	SS				☑	
47	-52	172		172	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.90**	**OVBN Overburden**									
9.90	**11.00**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 9.9 - 11.3 20% Min: Sphalerite>> possibly boulder											
<<Min: 9.9 - 11.3 40% Min: Pyrite>> possibly overburden boulder											
<<Min: 9.9 - 16.4 7% Min: Ankerite>>											
11.00	**14.70**	**RHYv Rhyolite volcaniclastic**	13.00	14.00	1.00	B00267329	63.2	2.18	2.44	0.04	2.31
11 - 14.7: interval incomplete with core removed. Very strong oxidation witn heavy limonite-siderite Frags of core with PY,CP,Sp											
<<Min: 11.3 - 14 3% Min: Pyrite>> Remnant pyrite in intense oxidised interval, all limonite siderite.			14.10	14.70	0.60	B00267333	104	1.67	2.11	0.11	0.58
<<Min: 14 - 14.8 20% Min: Pyrite>>											
<<Min: 14 - 14.8 2% Min: Chalcopyrite>>											

From (m)	To (m)		Rocktype & Description
14.70	**16.60**	**RHYv**	**Rhyolite volcaniclastic**

14.7 - 16.6: strong sericite, banded, folds

<<Min: 14.8 - 21.6 5% Min: Pyrite>>

<<Min: 16.4 - 21.6 20% Min: Ankerite>>

<<Alt: 14.7 - 16.6 Weak-Moderate (Alt) Muscovite>>

<<Struc: 15.9 - 16.1 Weak (Alt) Fault>> Gouge breccia zone

16.60	**17.50**	**RHYv**	**Rhyolite volcaniclastic**

16.6 - 17.5: Cordierite and chlorite

<<Alt: 16.6 - 17.5 Weak (Alt) Chlorite>>

<<Alt: 16.6 - 17.5 Weak-Moderate (Alt) Cordierite>>

17.50	**21.60**	**RHYv**	**Rhyolite volcaniclastic**

17.5 - 21.6: Bands of PY,SP dissem.

<<Alt: 17.5 - 21.6 Weak-Moderate (Alt) Muscovite>>

21.60	**22.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
22.90	**24.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

<<Min: 23.4 - 24.3 20% Min: Ankerite>>

24.30	**35.00**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 24.3 - 29 3% Min: Pyrite>> Commonly with QZ stringers

<<Min: 24.3 - 37.4 5% Min: Ankerite>>

<<Min: 26.5 - 47.9 7% Min: Calcite>> Also vein hosted.

<<Min: 33.1 - 35 5% Min: Pyrite>>

<<Alt: 24.3 - 35 Weak (Alt) Muscovite>>

35.00	**35.50**	**OI**	**Heavilly disseminated sulphides in host schist**
35.50	**47.90**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 35.5 - 37.4 5% Min: Pyrite>> Also minor stringers

<<Min: 37.4 - 37.9 1% Min: Sphalerite>> base of interval with 3cm massive sx PY,SP band

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.70	15.70	1.00	B00267331	0.9	0.019	-0.01	-0.01	0.16
15.70	17.10	1.40	B00267332	8.3	0.216	0.05	0.02	0.16
25.80	27.30	1.50	B00267511	0.6	0.014	-0.01	-0.01	0.2
27.30	28.80	1.50	B00267512	0.8	0.017	-0.01	-0.01	0.05

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 37.4 - 37.9 15% Min: Pyrite>>

<<Min: 37.4 - 37.9 25% Min: Ankerite>> With PY,SP

<<Min: 37.9 - 42.8 10% Min: Ankerite>>

<<Min: 37.9 - 47.9 5% Min: Pyrite>> Stringer associated commonly

<<Min: 44.8 - 47.9 15% Min: Ankerite>>

<<Alt: 35.5 - 47.9 Weak (Alt) Muscovite>>

<<Alt: 42.8 - 44.8 Strong (Alt) Silicification>> Fine grained. Possibly Rhyolite intrusive?

End of Hole @ 47.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-100

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Sean Suttie
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414553.4375	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815276	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1459.843	Casing Depth (m):		Length (m):	41.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
14	-66	180		180	SS				☑	
41	-66	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.90 OVBN Overburden

7.90 12.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

7.9 - 12.8: Interval is misxed with Rhyvl component. Presence of cordierite porphyroblasts altered to chlorite, then ankerite?

<<Min: 7.9 - 14.5 0.25% Min: Pyrite>>

<<Min: 7.9 - 22.9 25% Min: Ankerite>>

<<Min: 7.9 - 31.5 0.1% Min: Calcite>>

<<Alt: 7.9 - 14 Weak-Moderate (Alt) Muscovite>>

<<Struc: 11 - 11.5 Fault>>

12.80 14.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 14.5 - 16.5 1% Min: Pyrite>>

<<Min: 14.5 - 16.5 1% Min: Pyrrhotite>>

<<Min: 14.5 - 16.5 0.5% Min: Galena>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 14.5 - 16.5 0.5% Min: Chalcopyrite>>

<<Alt: 12.8 - 17.3 Moderate (Alt) Cordierite>>

<<Alt: 14 - 17.5 Moderate (Alt) Muscovite>>

14.60 17.30 RHYv Rhyolite volcaniclastic

<<Min: 16.5 - 25 1% Min: Pyrite>>

17.30 22.90 RHYv Rhyolite volcaniclastic

<<Alt: 17.5 - 25.2 Weak-Moderate (Alt) Muscovite>>

22.90 25.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 22.9 - 30 10% Min: Ankerite>>

<<Min: 25 - 32.5 0.5% Min: Pyrite>>

25.20 41.50 RHYv Rhyolite volcaniclastic

25.2 - 41.5: Small section of coherent felsic volcanics from 34.8 to 35.2m. Calcite present near base of section (last 10m)

<<Min: 30 - 41.3 1% Min: Ankerite>>

<<Min: 31.5 - 41.3 5% Min: Calcite>>

<<Min: 32.5 - 35.4 2% Min: Pyrite>>

<<Min: 35.4 - 41.3 0.25% Min: Pyrite>>

<<Alt: 25.2 - 41.3 Weak (Alt) Muscovite>>

<<Alt: 34.3 - 41.3 Weak-Moderate (Alt) Silicification>>

<<Struc: 39.1 - 39.4 Fault>>

End of Hole @ 41.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-101

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414574.362	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815382.178	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1449.308	Casing Depth (m):		Length (m):	81.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
14	-46	179		179	SS				☑	
44	-52	183		183	SS				☑	
75	-47	189		189	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN** **Overburden**									
6.10	**29.40**	**RHYv** **Rhyolite volcaniclastic**									
<<Min: 6.1 - 29.4 2% Min: Calcite>>											
<<Min: 6.1 - 39.6 5% Min: Ankerite>>											
<<Min: 6.1 - 45.2 0.5% Min: Pyrite>>											
<<Min: 6.1 - 45.2 0.25% Min: Pyrrhotite>>											
<<Alt: 6.1 - 15.4 Weak (Alt) Muscovite>>											
<<Alt: 15.4 - 39 Moderate (Alt) Muscovite>>											
<<Struc: 14.4 - 14.9 Fault>>											
29.40	**39.00**	**MDS** **Carbonaceous Mudstone & Tuffaceous Mudstone**									
<<Min: 29.4 - 81.1 0.1% Min: Calcite>>											
39.00	**43.90**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 39.6 - 66.7 10% Min: Ankerite>>

<<Alt: 39 - 43 Moderate-Strong (Alt) Muscovite>>

<<Alt: 43 - 57.7 Strong (Alt) Muscovite>>

43.90 57.60 RHYv Rhyolite volcaniclastic

<<Min: 45.2 - 54 2% Min: Sphalerite>>

<<Min: 45.2 - 54 2% Min: Pyrite>>

<<Min: 45.2 - 54 1% Min: Pyrrhotite>>

<<Min: 45.2 - 54 2% Min: Chalcopyrite>>

<<Min: 54 - 81.1 0.5% Min: Pyrite>>

<<Min: 54 - 81.1 0.5% Min: Pyrrhotite>>

<<Alt: 53 - 53.3 Cordierite>>

<<Struc: 48.3 - 48.5 Fault>>

57.60 70.30 RHYvl Lapilli tuff

<<Min: 66.7 - 70.3 25% Min: Ankerite>>

<<Alt: 57.7 - 70.3 Weak-Moderate (Alt) Muscovite>>

70.30 81.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 70.3 - 81.1 3% Min: Ankerite>>

<<Alt: 70.3 - 75.5 Weak (Alt) Muscovite>>

<<Alt: 75 - 81.1 Weak (Alt) Silicification>>

<<Alt: 75.5 - 81.1 Trace (Alt) Muscovite>>

End of Hole @ 81.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-102

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414574.34	Core Size:		Azimuth:	250	Date Logging Complete:	
UTM Northing:	6815382.053	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1449.146	Casing Depth (m):		Length (m):	94	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	250		250	SS				☑	
14	-90	250		250	SS				☑	
44	-85	241		241	SS				☑	
93	-84	206		206	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 8.90 RHYi Aphanitic Rhyolite (intrusion)

<<Alt: 6.1 - 32.6 Weak (Alt) Muscovite>>

8.90 25.00 RHYv Rhyolite volcaniclastic

<<Min: 8.9 - 25 2% Min: Calcite>> Weak CA stringers

<<Min: 9.3 - 15 0.25% Min: Pyrite>>

<<Min: 9.3 - 24.1 3% Min: Ankerite>>

<<Min: 15 - 23.3 1% Min: Pyrite>>

<<Min: 23.3 - 45.6 0.25% Min: Pyrite>>

<<Min: 24.1 - 33.5 7% Min: Ankerite>>

<<Struc: 23.3 - 26.2 Weak (Alt) Fault>> Fault gouge, broken core and QZ veining

25.00 33.50 MDSt Rhyolite tuff dominant mudstone

<<Min: 25 - 51.2 0.25% Min: Calcite>>

From (m)	To (m)		Rocktype & Description
<<Alt: 32.6 - 60 Moderate (Alt) Muscovite>>			
33.50	**51.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 33.5 - 47.9 0.25% Min: Ankerite>>			
<<Min: 45.6 - 48 1% Min: Pyrite>>			
<<Min: 47.9 - 55.3 10% Min: Ankerite>>			
<<Min: 48 - 48.5 10% Min: Pyrrhotite>>			
<<Min: 48 - 48.5 1% Min: Chalcopyrite>>			
<<Min: 48.5 - 53.6 0.25% Min: Arsenopyrite>>			
<<Min: 48.5 - 68.6 3% Min: Pyrrhotite>>			
<<Struc: 34 - 38.9 Moderate (Alt) Fault>> Fault gouge and broken core			
<<Struc: 44.7 - 47.7 Weak-Moderate (Alt) Fault>> gouge and broken core			
51.20	**52.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
52.60	**70.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 68.6 - 70.4 3% Min: Pyrite>>			
<<Min: 68.6 - 70.4 0.25% Min: Chalcopyrite>> weak magnetic			
<<Alt: 60 - 70.4 Strong (Alt) Muscovite>>			
<<Struc: 56.8 - 58.4 Weak (Alt) Fault>> Sub parallel TCA			
<<Struc: 67.2 - 67.4 Weak (Alt) Fault>> Gouge and breccia. Parallel to foliation.			
70.40	**73.70**	**OG**	**Chalcopyrite rich sulphides**
<<Alt: 70.4 - 85.4 Weak (Alt) Cordierite>>			
73.70	**78.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
78.50	**79.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
79.90	**80.90**	**OA**	**Magnetite bearing sulphides**
80.90	**85.40**	**OA**	**Magnetite bearing sulphides**
85.40	**91.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.00	67.50	1.50	B00267507	-0.3	-0.005	-0.01	-0.01	-0.01
67.50	69.00	1.50	B00267508	7.7	0.046	0.07	0.28	0.56
87.00	88.50	1.50	B00267509	0.8	0.006	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 85.4 - 89 2% Min: Ankerite>>

<<Min: 89 - 94 3% Min: Calcite>>

<<Min: 89 - 94 15% Min: Ankerite>>

<<Alt: 85.4 - 94 Weak (Alt) Muscovite>>

91.10 94.00 RHYvl Lapilli tuff

<<Min: 91.1 - 94 0.5% Min: Pyrite>>

End of Hole @ 94

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-103

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415077.375	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815451.452	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1389.935	Casing Depth (m):		Length (m):	110.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
20	-62	180		180	SS				☑	
53	-62	186		186	SS				☑	
109	-61	190		190	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 17.00 OVBN Overburden

17.00 26.00 RHYvl Lapilli tuff

<<Min: 17 - 20.7 1.3% Min: Sphalerite>> logged by cominco

<<Min: 17 - 20.7 2% Min: Pyrite>>

<<Min: 17 - 20.7 7.5% Min: Pyrrhotite>>

<<Min: 17.1 - 52.3 20% Min: Ankerite>>

<<Min: 20.7 - 36 1% Min: Pyrite>>

<<Min: 20.7 - 36 4% Min: Pyrrhotite>>

26.00 26.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

26 - 26.7: flow banded

26.70 30.00 RHYvl Lapilli tuff

From (m)	To (m)	Rocktype & Description
30.00	**32.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
30 - 32.3: lower half of unit contains lapilli sections		
32.30	**47.50**	**RHYv** **Rhyolite volcaniclastic**
32.3 - 47.5: contains small isolated sections of flow banded rhy		
<<Min: 36.3 - 49.4 5% Min: Pyrite>>		
<<Min: 36.3 - 49.4 2% Min: Pyrrhotite>>		
47.50	**52.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 49.4 - 50.4 1% Min: Pyrite>>		
<<Min: 49.4 - 50.4 1% Min: Pyrrhotite>>		
<<Min: 50.4 - 55.5 3.5% Min: Pyrite>>		
<<Min: 50.4 - 55.5 3.5% Min: Pyrrhotite>>		
<<Vein: 49.2 - 50.3 80% Quartz-Sulphide>> at contact with RHYcw		
52.30	**55.40**	**RHYv** **Rhyolite volcaniclastic**
52.3 - 55.4: conains rare blue qtz phenos		
<<Min: 52.3 - 64.3 10% Min: Ankerite>>		
<<Alt: 52.3 - 61.2 Weak-Moderate (Alt) Muscovite>>		
55.40	**61.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 55.5 - 62.9 2.5% Min: Pyrite>>		
<<Min: 55.5 - 62.9 2.5% Min: Pyrrhotite>>		
61.20	**62.80**	**RHYv** **Rhyolite volcaniclastic**
61.2 - 62.8: poker chip silic bands		
<<Alt: 61.2 - 74 Moderate-Strong (Alt) Muscovite>>		
62.80	**63.40**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 63.1 - 67.7 3.5% Min: Pyrite>>		
<<Min: 63.1 - 67.7 3.5% Min: Pyrrhotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
63.40	**64.30**	**RHYv**	**Rhyolite volcaniclastic**
63.4 - 64.3: poker chip silic bands			
64.30	**66.50**	**MDSt**	**Rhyolite tuff dominant mudstone**
64.3 - 66.5: weak carb. Poker chip silic bands			
<<Min: 64.3 - 70.7 3% Min: Ankerite>>			
66.50	**69.30**	**RHY**	**undifferentiated rhyolite**
66.5 - 69.3: poker chip silic bands, could be RHYc or banded siliceous ash….			
<<Min: 67.7 - 68.9 2.5% Min: Pyrite>>			
<<Min: 67.7 - 68.9 2% Min: Pyrrhotite>>			
<<Min: 68.9 - 70.9 3.5% Min: Pyrrhotite>>			
69.30	**70.00**	**MDSt**	**Rhyolite tuff dominant mudstone**
69.3 - 70: poker chip silic bands			
70.00	**70.40**	**MDSc**	**Carbonaceous dominant mudstone**
70.40	**70.70**	**MDSt**	**Rhyolite tuff dominant mudstone**
70.70	**74.00**	**RHYvl**	**Lapilli tuff**
<<Min: 70.7 - 74 10% Min: Ankerite>>			
<<Min: 70.9 - 78 1% Min: Pyrrhotite>>			
74.00	**78.20**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 78 - 79.7 3.5% Min: Pyrrhotite>>			
<<Alt: 78 - 81 Moderate-Strong (Alt) Muscovite>>			
78.20	**79.80**	**RHYvl**	**Lapilli tuff**
<<Min: 78.2 - 82 5% Min: Ankerite>>			
79.80	**80.20**	**MDSc**	**Carbonaceous dominant mudstone**
80.20	**81.20**	**RHYvl**	**Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.50	78.00	1.50	B00267325	0.9	0.023	-0.01	0.02	0.06
78.30	79.80	1.50	B00267326	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 81.1 - 81.3 3.5% Min: Pyrrhotite>>
		<<Min: 81.1 - 81.3 1.3% Min: Chalcopyrite>>
		<<Alt: 81.1 - 83.3 Weak (Alt) Chlorite>> mostly replacing cordierite and or albite
		<<Alt: 81.1 - 83.3 Weak (Alt) Cordierite>>
81.20	**82.00**	**OJ Heavilly disseminated sulphides in proximal altered rock**
		81.2 - 82: Cominco called unit OC
		<<Min: 81.3 - 82 17.5% Min: Pyrrhotite>>
		<<Min: 81.3 - 82 4.5% Min: Chalcopyrite>>
82.00	**82.70**	**OG Chalcopyrite rich sulphides**
		<<Min: 82 - 82.7 2% Min: Sphalerite>>
		<<Min: 82 - 82.7 35% Min: Pyrrhotite>>
		<<Min: 82 - 82.7 45% Min: Chalcopyrite>>
82.70	**87.50**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 86.5 - 91 3% Min: Calcite>>
87.50	**93.00**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 87.5 - 93 4% Min: Galena>>
		<<Min: 91 - 93.4 10% Min: Calcite>>
93.00	**93.40**	**OA Magnetite bearing sulphides**
		<<Min: 93 - 93.4 10% Min: Magnetite>>
93.40	**95.70**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
		<<Alt: 93.4 - 95.7 Weak-Moderate (Alt) Silicification>>
95.70	**96.10**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 96 - 97.1 5% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
96.10	**96.40**	**OA** **Magnetite bearing sulphides**									
<<Min: 96.1 - 96.3 10% Min: Magnetite>>											
96.40	**97.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
97.10	**100.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**									
<<Min: 97.1 - 100.5 5% Min: Pyrrhotite>>											
<<Min: 97.1 - 100.5 5% Min: Magnetite>>											
<<Alt: 97.1 - 100.5 Moderate (Alt) Chlorite>>											
<<Alt: 97.1 - 100.5 Moderate (Alt) Cordierite>>											
100.50	**102.00**	**RHY** **undifferentiated rhyolite**									
<<Min: 100.5 - 107.9 8% Min: Chalcopyrite>>											
<<Alt: 100.5 - 105.5 Moderate (Alt) Muscovite>>											
<<Alt: 100.5 - 105.5 Weak (Alt) Biotite>>											
102.00	**105.00**	**MDSt** **Rhyolite tuff dominant mudstone**	102.00	103.50	1.50	B00267327	0.4	-0.005	-0.01	-0.01	-0.01
102 - 105: weak carbonaceous wisps, weak biotite alteration											
<<Min: 102 - 108 5% Min: Ankerite>>			103.50	105.00	1.50	B00267328	1.4	-0.005	-0.01	0.01	0.17
<<Min: 103.7 - 104.1 2% Min: Pyrite>>											
105.00	**108.00**	**RHYv** **Rhyolite volcaniclastic**									
<<Min: 105.1 - 105.2 0.1% Min: Arsenopyrite>>											
<<Min: 105.5 - 105.7 1% Min: Pyrrhotite>>											
<<Min: 106.2 - 106.7 3% Min: Calcite>>											
<<Min: 106.7 - 108.5 3% Min: Pyrite>>											
<<Min: 107.9 - 108.3 0.5% Min: Sphalerite>>											
<<Min: 107.9 - 108.3 0.1% Min: Galena>> SP and GL associated with glassy dyke silicification											
<<Alt: 105.5 - 106.5 Weak (Alt) Silicification>> likely related to glassy dyke											
<<Alt: 105.5 - 108 Weak (Alt) Muscovite>>											

From (m)	To (m)	Rocktype & Description
108.00	**110.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

108 - 110.2: last core block is 111.6m

<<Min: 109.8 - 110.2 5% Min: Calcite>>

<<Alt: 108 - 108.5 Weak (Alt) Silicification>> likely related to glassy dyke

<<Vein: 108 - 110.1 70% Quartz>> qtz vein is on or very close to rhyolite-mafic contact

End of Hole @ 110.2

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-104

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415077.288	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815451.565	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1389.957	Casing Depth (m):		Length (m):	127.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
24	-90	180		180	SS				☑	
56	-89	221		221	SS				☑	
90	-86	200		200	SS				☑	
127	-86	216		216	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 16.90 OVBN Overburden

<<Min: 16.5 - 21.7 1% Min: Pyrite>> lenses and bands

<<Min: 16.5 - 21.7 0.5% Min: Pyrrhotite>>

16.90 38.00 RHYvl Lapilli tuff grey-brown

16.9 - 38: dark colour, SI-AK-minor SX streaks/clasts t/o, flow textured intervals, defintely disaggregated silica bands t/o

<<Min: 17 - 20 5% Min: Ankerite>>

<<Min: 20 - 25.5 10% Min: Ankerite>>

<<Min: 21.7 - 35.7 1% Min: Pyrite>> lensy, fractures

<<Min: 25.5 - 35.1 5% Min: Calcite>> in groundmass

<<Min: 25.5 - 35.7 15% Min: Ankerite>> lenses in groundmass

<<Min: 35.7 - 43.7 3% Min: Pyrrhotite>> diss'd, minor in bands, sometimes with PY

<<Min: 35.7 - 74.3 10% Min: Ankerite>> bands, patches, lenses and blebs, focused n bands in RHYc

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 17 - 17.3 100% Quartz 15 deg. >> QZ-AK-TO vein

<<Vein: 36.9 - 37.1 100% Quarzt-Tourmaline-Sulphide 30 deg. >> QZ-TO-PY vein, 3 cm

38.00 43.70 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

38 - 43.7: gossanous, JA-GE after PY, deformed flow bands

43.70 56.30 RHYv Rhyolite volcaniclastic grey

43.7 - 56.3: possibly lapilli, ash interval and flow banded intervals as well, disaggregated silicic bands common (I would have logged this as RHYc in previous logs), possible QE in lower part of section

<<Min: 43.7 - 53.7 5% Min: Pyrrhotite>> and blebs, in schistose rock

<<Min: 47.3 - 53.7 1% Min: Pyrite>>

<<Min: 53.7 - 60 5% Min: Pyrite>> bands and lenses

<<Min: 53.7 - 60 1% Min: Pyrrhotite>> blebs

<<Alt: 53.7 - 60 Moderate (Alt) Muscovite>>

56.30 75.60 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

56.3 - 75.6: 60-65.8-RHYv with abdt disaggregated silicic bands or RHYcw

<<Min: 60 - 71.6 3% Min: Pyrrhotite>> and minor bands

<<Min: 65.8 - 75.1 5% Min: Pyrite>> bands, lenses, fractures, veins, commonly deformed

<<Min: 71.6 - 75.1 3% Min: Pyrrhotite>> conc'd in CL bands

<<Min: 75.1 - 77.1 0.5% Min: Pyrite>>

<<Alt: 67.6 - 71.6 Moderate (Alt) Muscovite>> in RHYc, SI dominates

<<Alt: 67.6 - 71.6 Weak (Alt) Chlorite>> local small zones, groundmass to siliceous bands

<<Alt: 71.6 - 75.1 Strong (Alt) Muscovite>> strong waxy feel, light colour outside CL zones

<<Alt: 71.6 - 75.1 Moderate (Alt) Chlorite>> CL zones more prominent

<<Alt: 72.9 - 74 Moderate (Alt) Cordierite>> small masses of pblasts, alters to TO commonly

<<Alt: 75.1 - 79.9 Intense (Alt) Muscovite>> TO pblasts

<<Struc: 67 - 67.7 Weak (Alt) Fault>> broken core

<<Struc: 74.8 - 75.1 Weak (Alt) Fault>> slicks on surface

75.60 77.10 RHYv Rhyolite volcaniclastic

75.6 - 77.1: no CI?, silvery to lt yellow green

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
77.10	**77.50**	**OI** **Heavilly disseminated sulphides in host schist**									
77.1 - 77.5: wispy SP, PY and MG											
<<Min: 77.1 - 77.5 10% Min: Sphalerite>> and masses											
<<Min: 77.1 - 77.5 30% Min: Pyrite>>											
<<Min: 77.1 - 77.5 10% Min: Pyrrhotite>> bands											
<<Min: 77.1 - 77.5 5% Min: Magnetite>>											
77.50	**79.90**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
77.5 - 79.9: gradual contact below											
<<Min: 77.5 - 79.9 0.5% Min: Pyrite>>											
79.90	**81.50**	**MDSt** **Rhyolite tuff dominant mudstone** **dark grey**									
79.9 - 81.5: MDSc from 80.9-81.4, deformed, sx bands, BI layers altered (bleached by MU?) at upper contact											
<<Min: 79.9 - 81.5 5% Min: Pyrite>> diss'd blebs in bands, patches in upper 2/3 of section											
<<Min: 79.9 - 81.5 0.5% Min: Pyrrhotite>> in darker sections											
<<Min: 79.9 - 81.5 5% Min: Ankerite>> in lenses											
<<Alt: 79.9 - 81.5 Weak (Alt) Muscovite>>											
81.50	**86.20**	**RHY** **undifferentiated rhyolite** **cream**	85.10	86.20	1.10	B00233092	0.4	0.008	-0.01	-0.01	-0.01
81.5 - 86.2: strongly altered RHY											
<<Min: 81.5 - 86.5 0.01% Min: Pyrite>> strong MU/CI alt'n											
<<Min: 81.5 - 86.5 0.5% Min: Pyrrhotite>> scattered											
<<Alt: 81.5 - 84.3 Strong (Alt) Muscovite>>											
<<Alt: 84.3 - 86.2 Intense (Alt) Muscovite>>											
<<Alt: 84.3 - 86.2 Intense (Alt) Cordierite>> conc'd t/o section, lensy occurrence locally											
86.20	**88.50**	**MDSt** **Rhyolite tuff dominant mudstone** **dark grey**	86.20	87.50	1.30	B00233093	0.3	0.011	-0.01	-0.01	-0.01
86.2 - 88.5: QZ-MU bands separated by BI partings, good MDSc from 87.5-87.8, BI partings atered to MU at margins of unit											
<<Min: 86.5 - 87.5 1% Min: Pyrite>>			87.50	88.80	1.30	B00233094	1	0.015	-0.01	0.01	0.05
<<Min: 86.5 - 90.2 0.5% Min: Pyrrhotite>> scattered, maybe 3% in MDS											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 87.5 - 87.8 10% Min: Pyrite>> blebby bands in MDS

<<Alt: 86.2 - 88.1 Moderate (Alt) Muscovite>>

<<Alt: 88.1 - 90.2 Strong (Alt) Muscovite>> groundmass to AB(?) masses, and CI-TO

88.50 90.20 RHY undifferentiated rhyolite cream

88.5 - 90.2: highy altered RHY, could this be altered MDS?

<<Min: 88.8 - 90.2 0.01% Min: Galena>> in veins, alt'n

<<Alt: 88.5 - 90.2 Strong (Alt) Cordierite>> conc'd near mxsx contact, with TO

90.20 90.90 OC Chalcopyrite-pyrrhotite net textured sulphides CG

90.2 - 90.9: massive swilrs of PO/CP, MG as small masses

<<Min: 90.2 - 90.9 20% Min: Pyrrhotite>>

<<Min: 90.2 - 90.9 5% Min: Magnetite>>

<<Min: 90.2 - 90.9 15% Min: Chalcopyrite>> patches and streaks

90.90 93.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MG

90.9 - 93.5: buckshot

<<Min: 90.9 - 93.5 20% Min: Sphalerite>>

<<Min: 90.9 - 93.5 60% Min: Pyrite>>

<<Min: 90.9 - 93.5 5% Min: Galena>>

<<Min: 90.9 - 93.5 2% Min: Chalcopyrite>>

93.50 94.40 OA Magnetite bearing sulphides FMG

<<Min: 93.5 - 94.5 15% Min: Sphalerite>>

<<Min: 93.5 - 94.5 70% Min: Pyrite>>

<<Min: 93.5 - 94.5 10% Min: Magnetite>>

<<Min: 93.5 - 94.5 2% Min: Chalcopyrite>>

94.40 101.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FCG

94.4 - 101.3: Cominco OBB?

<<Min: 94.5 - 101.3 20% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 94.5 - 101.3 60% Min: Pyrite>>

<<Min: 94.5 - 101.3 5% Min: Galena>>

<<Min: 94.5 - 101.3 2% Min: Chalcopyrite>>

101.30 102.20 OA Magnetite bearing sulphides CG

101.3 - 102.2: Cominco OAG

<<Min: 101.3 - 102.2 15% Min: Sphalerite>>

<<Min: 101.3 - 102.2 50% Min: Pyrite>>

<<Min: 101.3 - 102.2 15% Min: Magnetite>>

<<Min: 101.3 - 102.2 10% Min: Galena>>

<<Min: 101.3 - 102.2 2% Min: Chalcopyrite>>

102.20 103.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides CG

102.2 - 103: Cominco OBO?, includes a couple small schist intervals, totaling 20 cm

<<Min: 102.2 - 103 15% Min: Sphalerite>> bands, masses

<<Min: 102.2 - 103 60% Min: Pyrite>>

<<Min: 102.2 - 103 5% Min: Galena>>

<<Min: 102.2 - 103 1% Min: Chalcopyrite>>

<<Alt: 102.2 - 103 Moderate (Alt) Muscovite>> in schist segments

103.00 104.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FCG

<<Min: 103 - 104.8 10% Min: Sphalerite>> generally well defined bands

<<Min: 103 - 104.8 60% Min: Pyrite>>

<<Min: 103 - 104.8 3% Min: Chalcopyrite>>

104.80 108.90 OJ Heavilly disseminated sulphides in proximal altered rock green-brown CG

104.8 - 108.9: proximal alt'n, PO-CP-minor SP in felsic schist, heavy CL-CI alt'n

<<Min: 104.8 - 108.9 1% Min: Pyrite>>

<<Min: 104.8 - 108.9 10% Min: Pyrrhotite>> bands, veins

<<Min: 104.8 - 108.9 3% Min: Chalcopyrite>> small masses, in veins

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 104.8 - 108.9 Moderate (Alt) Muscovite>> scattered									
		<<Alt: 104.8 - 108.9 Strong (Alt) Chlorite>>									
		<<Alt: 104.8 - 108.9 Strong (Alt) Cordierite>> common throughout									
108.90	**110.80**	**RHY undifferentiated rhyolite grey-green**									
		<<Min: 108.9 - 110.8 0.5% Min: Pyrrhotite>> also scattered									
		<<Min: 108.9 - 110.8 0.5% Min: Arsenopyrite>> scatterd, 0.1%?									
		<<Alt: 108.9 - 110.8 Strong (Alt) Muscovite>>									
110.80	**111.50**	**OJ Heavilly disseminated sulphides in proximal altered rock brown CG**									
		110.8 - 111.5: includes12 cm band of massive SP-PY-MG									
		<<Min: 110.8 - 111.4 15% Min: Sphalerite>> semi-massive to wisps									
		<<Min: 110.8 - 111.4 20% Min: Pyrite>>									
		<<Min: 110.8 - 111.4 5% Min: Magnetite>> streaks									
		<<Min: 110.8 - 111.4 3% Min: Chalcopyrite>> in lower section									
		<<Min: 111.4 - 113.5 0.01% Min: Pyrite>>									
		<<Alt: 110.8 - 111.4 Strong (Alt) Chlorite>> outside sx									
		<<Alt: 110.8 - 111.4 Moderate (Alt) Cordierite>> scattered									
		<<Alt: 111.4 - 113.5 Weak (Alt) Muscovite>> almost looks like grey-green alt'n after glassy dyke									
111.50	**113.80**	**RHY undifferentiated rhyolite grey-green**	112.90	113.80	0.90	B00233095	7.5	0.051	0.13	0.06	0.48
		111.5 - 113.8: possibly alt'd MAFi?, tiny white specks could be leucoxene									
		<<Min: 113.5 - 113.8 5% Min: Pyrite>> bands									
		<<Min: 113.5 - 113.8 5% Min: Pyrrhotite>> w/CP									
		<<Min: 113.5 - 113.8 3% Min: Chalcopyrite>>									
		<<Alt: 113.5 - 113.8 Strong (Alt) Chlorite>> massive to banded									
		<<Alt: 113.5 - 113.8 Moderate (Alt) Cordierite>> scattered									
113.80	**124.10**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown**	113.80	115.30	1.50	B00233096	-0.3	-0.005	-0.01	-0.01	0.02
		113.8 - 124.1: altered below 118.5									
		<<Min: 113.8 - 118.5 0.5% Min: Pyrrhotite>> scattered	115.30	116.80	1.50	B00233097	-0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 113.8 - 118.5 20% Min: Calcite>> small pods, patches									
		<<Min: 115.8 - 118.5 1% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 118.5 - 124.1 3% Min: Calcite>> patches
<<Min: 121.1 - 123.3 3% Min: Pyrite>> in patches and bands
<<Min: 123.2 - 124.1 2% Min: Pyrite>>
<<Min: 123.3 - 127.1 1% Min: Sphalerite>> scattered in bands, veinlets, fractures
<<Min: 123.3 - 127.1 3% Min: Pyrite>> patches,
<<Alt: 118.5 - 121.1 Moderate (Alt) Muscovite>> lt green colour
<<Alt: 118.5 - 122.1 Weak (Alt) Silicification>> short segments of siliceous rock
<<Alt: 121.1 - 127.1 Weak (Alt) Muscovite>> outside glassy dyke segments
<<Vein: 115.5 - 115.8 40% Quartz 70 deg. >> 12 cm QZ-CB vn, CL alt'n envelope
<<Struc: 118.4 - 118.5 Moderate (Alt) Fault>> 2 cm gouge, separates unaltered from altered MAFI

124.10 126.10 RHYi Aphanitic Rhyolite (intrusion) grey

124.1 - 126.1: several segments with narrow intervals of MAFi intervening, 124.1-124.5, 124.8-125.3, 125.6-126.1

<<Min: 124.1 - 127.1 1% Min: Calcite>> in segments between RHYi dykes

126.10 127.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

126.1 - 127.1: strongly altered to 127, sx minlzn.

End of Hole @ 127.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-105

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415100.847	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815537.621	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1390.82	Casing Depth (m):		Length (m):	154.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
20	-61	171		171	SS				☑	
50	-61	179		179	SS				☑	
81	-60	179		179	SS				☑	
105	-61	181		181	SS				☑	
142	-61	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.80 OVBN Overburden

12.80 17.10 RHYc Rhyolite coherant volcanics grey

12.8 - 17.1: weathered, gossanous, broken, tough to pick textures

<<Min: 12.8 - 20.5 1% Min: Pyrite>> and some blebs related to fractures

<<Min: 12.8 - 20.5 0.5% Min: Pyrrhotite>> diss'ns

<<Min: 12.8 - 22.6 10% Min: Ankerite>> and diss'd blebs

17.10 23.20 RHYvl Lapilli tuff grey

17.1 - 23.2: weathered, AK stain outlines clasts?, minor 10 cm dykes present

<<Min: 20.5 - 26.6 0.01% Min: Pyrite>>

<<Min: 22.6 - 23.5 30% Min: Ankerite>>

<<Vein: 20.5 - 21.1 80% Quarzt-Tourmaline-Sulphide>> QZ-AK and QZ-TO-PY vein/bx zone,

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 23.1 - 23.2 Moderate (Alt) Fault>> gouge

23.20 24.20 RHYc Rhyolite coherant volcanics grey-green

23.2 - 24.2: weathered, looking for correlation with narrow RHYc in K95-106 between dykes

<<Min: 23.5 - 26.6 5% Min: Ankerite>>

24.20 26.60 RHYvl Lapilli tuff grey-green

24.2 - 26.6: lower contact gone (sampled)

26.60 28.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

26.6 - 28.8: chill margin from 27.8-28.8, AK pblasts conc'd near centre in cse grain section

<<Min: 26.6 - 27.8 15% Min: Ankerite>> pblasts

<<Min: 26.6 - 32.6 5% Min: Calcite>> associated with dyke

<<Min: 27.8 - 30 5% Min: Ankerite>>

28.80 29.70 RHYvl Lapilli tuff grey

28.8 - 29.7: short stretch between dykes

29.70 31.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

29.7 - 31.9: AK pblasts commonly within dark patches (CL-BI?), lensy appearance, with lighter coloured patches, different texture than in K95-106

<<Min: 30 - 31.9 20% Min: Ankerite>> pblasts

31.90 40.90 RHYvl Lapilli tuff dark grey

31.9 - 40.9: lapilli with minor ash sections, darkly coloured, AK in flattened clasts and in groundmass, unit continuous from 24.2, top 30 cm looks like RHYcw

<<Min: 31.9 - 43.4 0.5% Min: Pyrrhotite>> scattered blebs

<<Min: 31.9 - 46 5% Min: Ankerite>>

40.90 58.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

40.9 - 58.8: disaggregated, flow bands, siliceous bands, with fg sections, PY stringers common in lower half

<<Min: 43.4 - 51 1% Min: Pyrite>> PY lenses and blebs in fractures, shears, deformed stringers

<<Min: 46 - 59.4 15% Min: Ankerite>>

<<Min: 51 - 62.6 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 55.5 - 59.4 3% Min: Pyrite>> deformed stringers primarily, bands, small masses

<<Struc: 46.2 - 46.3 Weak (Alt) Shear>> narrow filled by CB, with CB horsetail fracs for 1 m below, crackle bx above

58.80 65.20 RHYv Rhyolite volcaniclastic grey

58.8 - 65.2: fg, schistose, laminated appearance locally, lapilli commonly defined by SI and AK, shears and faults contained, strong fault at lower contact.

<<Min: 59.4 - 64.1 5% Min: Ankerite>> local patches

<<Min: 62.6 - 64.1 5% Min: Pyrite>> streaks, bands

<<Min: 62.6 - 64.1 3% Min: Pyrrhotite>> scattered, small lenses

<<Vein: 63.3 - 63.6 40% Quarzt-Tourmaline-Sulphide 15 deg. >> QZ-TO-PY vn/bx

<<Struc: 64.1 - 65.2 Strong (Alt) Fault>> gouge, 40 cm lost core

65.20 90.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

65.2 - 90: disaggregated silicic bands, rare QE present

<<Min: 65.2 - 69.5 5% Min: Pyrite>> stringer and patches, diss'd blebs

<<Min: 65.2 - 84.5 10% Min: Ankerite>> diss'd, patches.lenses

<<Min: 65.2 - 96.3 1% Min: Pyrrhotite>> diss'd, minor patches

<<Min: 74 - 81.3 3% Min: Pyrite>> stringers, diss'd blebs, fractures

<<Min: 81.3 - 84.6 0.5% Min: Pyrite>>

<<Min: 84.5 - 96.3 5% Min: Ankerite>> lenses

<<Min: 84.6 - 97.4 3% Min: Pyrite>> in fractures, 5% diss'd/blebs/in veins from 92.2-93.3

<<Alt: 65.2 - 69.6 Moderate (Alt) Muscovite>> PY increased

<<Alt: 65.2 - 69.6 Moderate (Alt) Chlorite>> semi-pervasive, bands, clots, with slightly increased MU

90.00 92.20 RHYv Rhyolite volcaniclastic grey

90 - 92.2: mottled schistose

92.20 97.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

92.2 - 97.4: diss'd PY gives gossan, fine flow bands, schistose sections, disaggregated silicic bands?

<<Min: 96.3 - 101.6 3% Min: Ankerite>> streaks locally

<<Min: 96.3 - 103.8 1% Min: Pyrrhotite>>

<<Alt: 93.2 - 103 Moderate (Alt) Muscovite>> to pervasive

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.20	102.70	1.50	B00233085	-0.3	-0.005	-0.01	-0.01	0.08
102.70	104.20	1.50	B00233086	-0.3	-0.005	-0.01	-0.01	0.03

97.40 105.50 RHYc Rhyolite coherant volcanics grey-brown

97.4 - 105.5: dark matrix at top of interval-MDSc?, compositional layers sub-parallel to core and are cross fol'd, alt'n increases in last 1.5 m to mxsx contact, fold nose?

<<Min: 101.6 - 105.5 10% Min: Ankerite>>

<<Min: 103.8 - 104.4 0.5% Min: Arsenopyrite>> scattered xtals

<<Min: 104.4 - 105.5 1% Min: Pyrite>> in veins, diss'ns

<<Min: 104.4 - 105.5 0.5% Min: Pyrrhotite>>

<<Min: 104.8 - 105.5 3% Min: Pyrrhotite>>

<<Alt: 97.4 - 97.8 Moderate (Alt) Biotite>> MDSc?, not very convincing

<<Alt: 103 - 105.5 Strong (Alt) Muscovite>> not much stronger than previous interval

<<Alt: 104.4 - 105.5 Moderate (Alt) Chlorite>>

<<Alt: 105.1 - 105.5 Moderate (Alt) Cordierite>> dark envelopes of TO around pblasts

<<Vein: 104.6 - 105 80% Quartz-Carbonate 55 deg. >> QZ-AK-TO-minor PY

105.50 106.60 OA Magnetite bearing sulphides CG

105.5 - 106.6: Cominco OGA

<<Min: 105.5 - 106.6 10% Min: Sphalerite>>

<<Min: 105.5 - 106.6 35% Min: Pyrite>>

<<Min: 105.5 - 106.6 20% Min: Chalcopyrite>>

<<Min: 105.5 - 115.7 15% Min: Magnetite>> minor wisps, mostly blebs to small masses, along fol'n

106.60 114.70 OA Magnetite bearing sulphides MCG

106.6 - 114.7: MG as blebs

<<Min: 106.6 - 108.1 20% Min: Sphalerite>>

<<Min: 106.6 - 108.1 50% Min: Pyrite>>

<<Min: 106.6 - 114.7 2% Min: Chalcopyrite>>

<<Min: 108.1 - 114.7 5% Min: Sphalerite>>

<<Min: 108.1 - 114.7 75% Min: Pyrite>>

114.70 115.70 OA Magnetite bearing sulphides CG

114.7 - 115.7: Cominco OGA

<<Min: 114.7 - 115.7 5% Min: Sphalerite>>

<<Min: 114.7 - 115.7 50% Min: Pyrite>>

<<Min: 114.7 - 115.7 20% Min: Chalcopyrite>> fracture/vein

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

115.70 116.60 OJ Heavilly disseminated sulphides in proximal altered rock green-brown FCG

115.7 - 116.6: strongly altered, CP strong

<<Min: 115.7 - 116.6 5% Min: Pyrite>> bands
<<Min: 115.7 - 116.6 5% Min: Magnetite>>
<<Min: 115.7 - 116.6 5% Min: Chalcopyrite>>
<<Min: 115.7 - 117.6 3% Min: Ankerite>> in veins, quite local
<<Alt: 115.7 - 116.6 Strong (Alt) Chlorite>>
<<Alt: 115.7 - 116.6 Strong (Alt) Cordierite>>

116.60 117.60 RHY undifferentiated rhyolite grey

116.6 - 117.6: alt'd

<<Min: 116.6 - 117.6 3% Min: Pyrite>>
<<Min: 116.6 - 117.6 1% Min: Chalcopyrite>>
<<Alt: 116.6 - 117.6 Strong (Alt) Muscovite>>
<<Alt: 116.6 - 117.6 Strong (Alt) Cordierite>>

117.60 119.20 OA Magnetite bearing sulphides MCG

<<Min: 117.6 - 119.2 10% Min: Sphalerite>> blebs
<<Min: 117.6 - 119.2 70% Min: Pyrite>>
<<Min: 117.6 - 119.2 10% Min: Magnetite>> laminated
<<Min: 117.6 - 119.2 2% Min: Chalcopyrite>> mixed with PY
<<Min: 117.6 - 137.9 0.5% Min: Ankerite>> in veins, fractures

119.20 128.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides CG

<<Min: 119.2 - 128.2 20% Min: Sphalerite>> variable conc'ns, antithetic to PY generally
<<Min: 119.2 - 128.2 60% Min: Pyrite>>

128.20 129.10 OA Magnetite bearing sulphides CG

<<Min: 128.2 - 129.1 70% Min: Pyrite>>
<<Min: 128.2 - 129.1 5% Min: Magnetite>>
<<Min: 128.2 - 131.1 15% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
129.10	**132.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									
<<Min: 129.1 - 132.6 70% Min: Pyrite>> buckshot												
<<Min: 131.1 - 132.6 25% Min: Sphalerite>>												
132.60	**133.90**	**OA** **Magnetite bearing sulphides**	**FCG**									
<<Min: 132.6 - 133.9 60% Min: Pyrite>>												
<<Min: 132.6 - 133.9 15% Min: Magnetite>> laminated to blebs												
<<Min: 132.6 - 134.4 20% Min: Sphalerite>>												
133.90	**134.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
<<Min: 133.9 - 134.4 75% Min: Pyrite>>												
134.40	**135.70**	**RHY** **undifferentiated rhyolite**	**yellow**									
134.4 - 135.7: strongly schistose, yellowish green, crenulated, SI lenses, RHYc?, PY stringers												
<<Min: 134.4 - 135.7 3% Min: Pyrite>> stringers, minor diss'ns												
<<Alt: 134.4 - 135.7 Strong (Alt) Muscovite>>												
135.70	**137.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									
<<Min: 135.7 - 137.2 15% Min: Sphalerite>>												
<<Min: 135.7 - 137.2 60% Min: Pyrite>>												
137.20	**137.90**	**OA** **Magnetite bearing sulphides**	**FG**									
<<Min: 137.2 - 137.9 10% Min: Sphalerite>>												
<<Min: 137.2 - 137.9 70% Min: Pyrite>>												
<<Min: 137.2 - 137.9 5% Min: Magnetite>> diss'd blebs in core												
<<Min: 137.2 - 137.9 5% Min: Chalcopyrite>>												
137.90	**140.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 137.9 - 139.4 40% Min: Pyrite>> bands												
<<Min: 137.9 - 139.4 10% Min: Chalcopyrite>> ractures, veins												

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 137.9 - 147.1 1% Min: Ankerite>> small lenses, diss'd blebs													
<<Min: 139.4 - 141.7 5% Min: Pyrite>> localized bands													
<<Min: 139.4 - 141.7 3% Min: Chalcopyrite>> in sx bands													
<<Alt: 137.9 - 140.3 Moderate (Alt) Muscovite>> mixed in													
<<Alt: 137.9 - 140.3 Strong (Alt) Chlorite>>													
<<Alt: 137.9 - 140.3 Intense (Alt) Cordierite>> masses													
140.30	**141.70**	**RHY** **undifferentiated rhyolite**	**grey-green**										
140.3 - 141.7: schistose, well fol'd													
<<Min: 140.3 - 141.7 0.5% Min: Arsenopyrite>> scattered crystals													
<<Alt: 140.3 - 141.7 Strong (Alt) Muscovite>>													
<<Alt: 140.3 - 141.7 Weak (Alt) Chlorite>> localized													
141.70	**142.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		**CG**									
<<Min: 141.7 - 142 3% Min: Sphalerite>>													
<<Min: 141.7 - 142 1% Min: Chalcopyrite>>													
<<Alt: 141.7 - 146.5 Moderate (Alt) Muscovite>>													
142.00	**146.30**	**RHYv** **Rhyolite volcaniclastic**	**grey**		142.20	143.70	1.50	B00233087	0.4	-0.005	-0.01	-0.01	0.06
<<Min: 142 - 145.8 1% Min: Pyrite>> possible stringers					143.70	144.70	1.00	B00233088	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 145.8 - 146.7 5% Min: Pyrite>> on fol'n					144.70	145.80	1.10	B00233089	-0.3	-0.005	-0.01	-0.01	0.02
<<Alt: 144.4 - 146.5 Moderate (Alt) Chlorite>> encroaching on MU, could be MU overprinting on MAFi?					145.80	147.10	1.30	B00233091	11	0.016	0.16	0.11	1.34
146.30	**147.10**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		**CG**									
<<Min: 146.7 - 147.1 2% Min: Sphalerite>>													
<<Min: 146.7 - 147.1 15% Min: Pyrite>> wisps and masses													
<<Min: 146.7 - 147.1 5% Min: Pyrrhotite>> and wisps along fol'n													
<<Alt: 146.5 - 147.1 Strong (Alt) Chlorite>> massive, proximal alt'n													
<<Alt: 147 - 147.1 Intense (Alt) Silicification>> narrow band at contact-alt'n front?													
147.10	**154.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**										
<<Min: 147.1 - 151.5 10% Min: Calcite>> typical MAFi													
<<Min: 151.5 - 151.8 5% Min: Pyrrhotite>> fractures													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 151.5 - 154.2 Moderate (Alt) Muscovite>> grey-green alt'n?, fg, homogeneous, no CA									

End of Hole @ 154.2

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-106

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415100.867	Core Size:		Azimuth:	130	Date Logging Complete:	
UTM Northing:	6815536.731	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1390.922	Casing Depth (m):		Length (m):	157.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	130		130	SS				☑	
20	-85	131		131	SS				☑	
50	-83	151		151	SS				☑	
81	-87	168		168	SS				☑	
111	-87	185		185	SS				☑	
157	-85	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.80**	**OVBN**	**Overburden**									
10.80	**16.70**	**RHYc**	**Rhyolite coherant volcanics**	**grey**								
10.8 - 16.7: Short, oxidized section, may be lapilli tuff intervals mixed in as well												
<<Min: 10.8 - 14.2 1% Min: Pyrite>> JA-GE on fracture margins												
<<Min: 10.8 - 19.9 5% Min: Ankerite>>												
16.70	**19.90**	**RHYvl**	**Lapilli tuff**	**dark grey**								
16.7 - 19.9: micaceous, low SI, possibly meta-sediment?												
19.90	**22.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**								
19.9 - 22.2: strongly ankeritic, homogeneous, Dyke?, QV's common,												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 19.9 - 22.2 1% Min: Calcite>> minor fractures

<<Min: 19.9 - 22.2 15% Min: Ankerite>> mostly pblasts, local lenses

22.20 23.60 RHYcq Quartz porphyry green

22.2 - 23.6: lt green, CL present?, curdy tx, possible QE's

<<Min: 22.2 - 23.6 3% Min: Pyrite>> conc'd at margins of interval (dyke contacts)

<<Min: 22.2 - 23.6 3% Min: Ankerite>> small lenses

<<Alt: 22.2 - 23.6 Weak (Alt) Chlorite>> possible overprint related to surrounding dykes, CL-MS SCHS

23.60 27.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

23.6 - 27.2: homogeneous, CL-MS schist, intermediate?,

<<Min: 23.6 - 27.3 0.5% Min: Pyrrhotite>> and diss'ns, scattered in dyke, related to veinlets, possibly to CA alt'n

<<Min: 23.6 - 27.3 5% Min: Calcite>> focused in central portion of dyke

<<Min: 23.6 - 27.3 10% Min: Ankerite>> pervasive t/o dyke, gives a stain to the rock but probably not as conc'd as appearance might indicate

27.20 42.70 RHYvl Lapilli tuff grey-green

27.2 - 42.7: possible CL or MS in schist, mottled appearance. Ankeritic clasts stand out, vary in concentration, Small laminated sections included, ash?, section includes large fault

<<Min: 27.3 - 32.9 0.01% Min: Pyrite>> scattered

<<Min: 27.3 - 40.8 5% Min: Ankerite>> reduced around fault

<<Min: 32.9 - 36.2 1% Min: Pyrite>> oxidized

<<Min: 39.6 - 46 1% Min: Pyrite>> scattered small blebs and in fractures, related to the presence of QZ-TO veining sub-parallel to core axis i.e. exaggerated width.

<<Min: 40.8 - 42.7 10% Min: Ankerite>> patches, lenses

<<Vein: 32.9 - 36 35% Quartz 60 deg. >> QZ and QZ-TO veins, caught up in fault zone

<<Vein: 40 - 40.1 1% Quarzt-Tourmaline-Sulphide 10 deg. >> 1 mm QZ-TO-PY veinlet, close to core axis, TO envelope

<<Struc: 32.9 - 36.2 Strong (Alt) Fault>> angle measured at margin on narrow shear

42.70 46.00 RHYc Rhyolite coherant volcanics grey-brown

42.7 - 46: strongly heterogeneous, disaggregated RHYc, fragments common, deformed flow bands

<<Min: 42.7 - 51.6 5% Min: Ankerite>> scattered

<<Vein: 44.8 - 45.3 20% Quarzt-Tourmaline-Sulphide 10 deg. >> 15 cm QZ-TO-PY vein, irregular, TO selvedge

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

46.00 51.70 RHYv Rhyolite volcaniclastic grey

46 - 51.7: broken and oxidized locally, fairly fine grained, not as mottled as RHYvl above

<<Min: 46 - 51.6 3% Min: Pyrite>> bands

<<Min: 51.6 - 55.4 0.5% Min: Pyrite>> small lenses

<<Min: 51.6 - 55.5 1% Min: Ankerite>> small blebs

<<Struc: 51.6 - 53.1 Strong (Alt) Fault>> angle measured on narrow gouge at bottom of interval

51.70 74.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

51.7 - 74.2: heterogeneous RHYc, variable textures, mostly brecciated or disaggregated but locally massive flow bands

<<Min: 55.4 - 59.3 3% Min: Pyrite>> small blebs, bands, masses

<<Min: 55.5 - 56.2 20% Min: Ankerite>>

<<Min: 56.2 - 69 5% Min: Ankerite>> scattered small lenses, minor bands

<<Min: 59.3 - 62.4 1% Min: Sphalerite>> local sections

<<Min: 59.3 - 62.4 10% Min: Pyrite>> seams, small masses, fractures

<<Min: 59.3 - 62.4 0.5% Min: Chalcopyrite>> scattered

<<Min: 62.4 - 75.2 3% Min: Pyrite>> diss'd, also in fractures, minor shears, and deformed stringers

<<Min: 62.4 - 75.2 1% Min: Pyrrhotite>> scattered blebs

<<Min: 69 - 80.8 10% Min: Ankerite>> lenses, bands, diss'ns

<<Alt: 57.1 - 61.9 Moderate (Alt) Chlorite>> generally in streaks and patches in groundmass, related to increased sx content?

<<Alt: 61.9 - 69 Weak (Alt) Chlorite>>

<<Alt: 61.9 - 78.3 Weak (Alt) Muscovite>> slight increase?, waxy on fol'n planes

<<Vein: 64.8 - 64.9 5% Quarzt-Tourmaline-Sulphide 10 deg. >> QZ-TO-AK-PY veinlet

74.20 85.00 RHYvl Lapilli tuff grey

74.2 - 85: mottled, banded, abundant dark SI-AK-PO pseudo-fragments, below fault, from 84.5, several small sections of RHYc texture-large clasts?, deformed

<<Min: 75.2 - 80.8 3% Min: Pyrrhotite>> scattered in dark lenses (Clasts?)

<<Min: 80.8 - 84.5 0.01% Min: Pyrite>>

<<Min: 80.8 - 100.9 5% Min: Ankerite>> lenses, patches, veins

<<Min: 84.5 - 86.4 0.5% Min: Pyrite>>

<<Vein: 80.8 - 84.5 25% Quarzt-Tourmaline-Sulphide 20 deg. >> QZ-TO-PY, irregular, fault zone hosted, TO selvedges

<<Struc: 74.8 - 75.2 Weak (Alt) Fault>> couple narrow pyritic shears

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 80.8 - 84.5 Moderate (Alt) Fault>> several fault strings, measured on vein margin

85.00 99.80 RHYc Rhyolite coherant volcanics grey-brown

85 - 99.8: heterogeneous, includes tuffaceous intervals, patchy JA-GE gossan from sx, abdt AK,

<<Min: 86.4 - 87.8 10% Min: Pyrite>> bands

<<Min: 86.4 - 93.2 3% Min: Pyrrhotite>> scattered and in fractures, lenses with AK

<<Min: 87.8 - 93.2 0.5% Min: Pyrite>>

<<Min: 93.2 - 96.3 5% Min: Pyrite>> associated with SI as lenses, veinlets, also in fractures with strong JA envelopes

<<Min: 93.2 - 96.3 1% Min: Pyrrhotite>>

<<Min: 96.3 - 100.9 3% Min: Pyrrhotite>> and scattered blebs

<<Min: 99.2 - 100.6 1% Min: Pyrite>>

<<Alt: 96.2 - 100.9 Weak (Alt) Muscovite>> waxy feel on fol'n, MU variable but always present, lighter colour

99.80 103.70 RHYv Rhyolite volcaniclastic dark grey

99.8 - 103.7: darkly coloured SI-AK-SX clasts/lenses in lighter, bands of MU-rich schist, strong alt'n around fault

<<Min: 100.9 - 103.7 1% Min: Pyrite>>

<<Alt: 100.9 - 103.7 Strong (Alt) Muscovite>> stronger around fault

<<Alt: 101.8 - 103 Moderate (Alt) Cordierite>> in MU altered schist

<<Vein: 101.5 - 105.7 30% Quartz-Carbonate>> QZ-CB with minor TO and trace GL, stockwork?

<<Struc: 100.9 - 101.9 Moderate (Alt) Fault>> alteration surrounds, gougy sections

103.70 110.40 RHYc Rhyolite coherant volcanics buff

108.90	110.40	1.50	B00233077	3.9	0.014	-0.01	0.13	0.24

103.7 - 110.4: light coloured, strongly MU altered section of RHYc, scattered TO pblasts. CI pblasts (why?), QV 's common-contributes to alt'n?,

<<Min: 103.7 - 110.4 0.01% Min: Pyrite>> several gossanous fractures from 109.5 down.

<<Min: 103.7 - 110.4 0.01% Min: Galena>> scattered blebs

<<Min: 103.7 - 110.4 3% Min: Ankerite>> focused at top and bottom of interval

<<Min: 109.5 - 110.4 1% Min: Arsenopyrite>> scatterd xtals

<<Alt: 103.7 - 110.4 Intense (Alt) Muscovite>> light coulour, QZ-AK lenses, CI pblasts?, interesting alt'n zone

<<Alt: 103.7 - 110.4 Moderate (Alt) Cordierite>> scattered pblasts?, minor clusters, are these AB?

110.40 114.70 OJ Heavilly disseminated sulphides in proximal altered rock green-brown CG

110.40	111.90	1.50	B00233078	5.2	0.018	0.17	0.09	0.48

110.4 - 114.7: very heavily CL-CI altered sulphidic unit, probably RHYc continued

From (m)	To (m)	Rocktype & Description
		<<Min: 110.4 - 114.7 2% Min: Sphalerite>>
		<<Min: 110.4 - 114.7 5% Min: Pyrite>> in fractures, veins, diss'd
		<<Min: 110.4 - 114.7 10% Min: Pyrrhotite>> masses, veins, blebs
		<<Min: 110.4 - 114.7 3% Min: Chalcopyrite>> in PO, and blebs and veinlets, frac filling
		<<Min: 110.4 - 114.7 3% Min: Ankerite>> interstitial
		<<Alt: 110.4 - 114.7 Strong (Alt) Chlorite>> bands, streaks, groundmass
		<<Alt: 110.4 - 114.7 Intense (Alt) Cordierite>> Conc'd bands, masses
		<<Vein: 112.1 - 112.3 60% Quarzt-Tourmaline-Sulphide 15 deg. >> QZ-CL-TO-SX vein, 3cm true width
114.70	**123.90**	**RHY undifferentiated rhyolite grey-brown**
		114.7 - 123.9: very altered section, increases to bottom at mxsx contact, CL, CI, MU alt'n, sx stringers common
		<<Min: 114.7 - 116.9 3% Min: Pyrrhotite>> local blebs, diss'd bands
		<<Min: 114.7 - 116.9 0.01% Min: Galena>>
		<<Min: 114.7 - 117.2 15% Min: Ankerite>>
		<<Min: 116.9 - 122.3 2% Min: Sphalerite>>
		<<Min: 116.9 - 122.3 5% Min: Pyrite>> more masses than CP
		<<Min: 116.9 - 122.3 10% Min: Pyrrhotite>> and narrow massive bands, with PY, CP
		<<Min: 116.9 - 122.3 1% Min: Chalcopyrite>> scattered along fol'n, in bands with other sx, mixed with PO
		<<Min: 117.2 - 123.9 1% Min: Ankerite>> in MU schist
		<<Min: 122.3 - 123.9 5% Min: Pyrite>>
		<<Min: 122.3 - 123.9 5% Min: Chalcopyrite>> small masses in vein/alt'n
		<<Alt: 114.7 - 116.9 Strong (Alt) Muscovite>>
		<<Alt: 114.7 - 116.9 Moderate (Alt) Cordierite>> scattered and masses
		<<Alt: 116.9 - 122.3 Strong (Alt) Muscovite>> in groundmass of section, locally reduced
		<<Alt: 116.9 - 122.3 Moderate (Alt) Chlorite>> occurs locally for the most part, usually with SX as bands or patches
		<<Alt: 116.9 - 122.3 Strong (Alt) Cordierite>> diss'd to masses
		<<Alt: 122.3 - 123.9 Strong (Alt) Chlorite>> after TO?, weird mineral in vein, needles and radiating sheaves, AC?
		<<Alt: 122.3 - 123.9 Intense (Alt) Cordierite>> massive, with massive TO, in QV/bx zone at mxsx contact
		<<Vein: 122.3 - 123.9 90% Quarzt-Tourmaline-Sulphide>> QZ-TO-CL-CP vn/bx
123.90	**124.40**	**No Core No Core**
		<<Struc: 123.9 - 124.4 Moderate (Alt) Fault>> lost core, gougy zone?

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
111.90	113.40	1.50	B00233079	22.5	0.094	0.49	0.29	0.43
113.40	114.70	1.30	B00233081	4.1	0.028	0.12	0.06	0.81
114.70	115.90	1.20	B00233082	4.6	0.013	0.02	0.13	0.28
115.90	116.90	1.00	B00233083	8.5	0.035	-0.01	0.28	0.42

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

124.40 126.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

124.4 - 126.5: PO in upper 20 cm, couple bands (10-15cm) of MG-laminated mxsx near 127m

<<Min: 124.4 - 126.5 3% Min: Chalcopyrite>>

<<Min: 124.4 - 127.1 10% Min: Sphalerite>> bands

<<Min: 124.4 - 127.1 60% Min: Pyrite>>

<<Min: 124.4 - 127.1 10% Min: Pyrrhotite>> bands at top of interval

<<Min: 124.4 - 129.4 3% Min: Ankerite>>

126.50 127.10 OA Magnetite bearing sulphides

<<Min: 126.5 - 126.9 20% Min: Magnetite>> laminated MG mxsx

<<Min: 126.5 - 126.9 20% Min: Chalcopyrite>> massive bands with MG

127.10 127.50 RHY undifferentiated rhyolite grey-green

127.1 - 127.5: narrow section similar to 114.7-116.9

<<Min: 127.1 - 127.5 1% Min: Sphalerite>>

<<Min: 127.1 - 127.5 1% Min: Pyrite>>

<<Alt: 127.1 - 127.5 Strong (Alt) Muscovite>>

<<Alt: 127.1 - 127.5 Moderate (Alt) Cordierite>>

127.50 127.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 127.5 - 128.5 15% Min: Sphalerite>>

<<Min: 127.5 - 128.5 40% Min: Pyrite>>

<<Min: 127.5 - 128.5 30% Min: Magnetite>>

<<Min: 127.5 - 128.5 3% Min: Chalcopyrite>>

127.90 128.50 OA Magnetite bearing sulphides

127.9 - 128.5: massive tetxure, no banding obvious except at top, sub-parallel to core axis,

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

128.50 132.30 OJ Heavilly disseminated sulphides in proximal altered rock

128.5 - 132.3: host RHYc, possibly MET4,down to 129.4 with several mxsx bands, not much typical stringer mineralization as expected in MET8

<<Min: 128.5 - 129.4 5% Min: Sphalerite>>
<<Min: 128.5 - 129.4 25% Min: Pyrite>>
<<Min: 128.5 - 129.4 10% Min: Magnetite>> massive zones
<<Min: 128.5 - 129.4 3% Min: Chalcopyrite>>
<<Min: 129.4 - 132.4 2% Min: Sphalerite>> blebs
<<Min: 129.4 - 132.4 5% Min: Pyrrhotite>> wisps
<<Min: 129.4 - 132.4 3% Min: Chalcopyrite>> fractures
<<Min: 129.4 - 132.4 10% Min: Ankerite>> lenses
<<Alt: 128.5 - 129.4 Strong (Alt) Muscovite>> TO pblasts, CI?
<<Alt: 129.4 - 132.4 Strong (Alt) Chlorite>> not massive
<<Alt: 129.4 - 132.4 Strong (Alt) Cordierite>> masses common

132.30 136.80 RHYv Rhyolite volcaniclastic grey

132.3 - 136.8: homogeneous

<<Min: 132.4 - 136.8 0.5% Min: Pyrite>> minor in SI lenses
<<Min: 132.4 - 136.8 3% Min: Ankerite>>
<<Alt: 132.4 - 136.8 Strong (Alt) Muscovite>> not very waxy feel on fol'n

136.80 140.10 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 136.8 - 140.1 5% Min: Sphalerite>>
<<Min: 136.8 - 140.1 85% Min: Pyrite>>
<<Min: 136.8 - 142.4 3% Min: Ankerite>> local, in mxsx and schist

140.10 140.50 RHY undifferentiated rhyolite

140.1 - 140.5: very altered section, CY? Or talc possibly?

<<Alt: 140.1 - 141.3 Moderate (Alt) Talc-serpentine>> Or is it just MU?
<<Alt: 140.1 - 141.3 Strong (Alt) Cordierite>> masses

From (m)	To (m)	Rocktype & Description
140.50	**141.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 140.5 - 141.1 40% Min: Pyrite>>
		<<Min: 140.5 - 141.1 3% Min: Galena>>
		<<Min: 140.5 - 141.1 1% Min: Chalcopyrite>>
		<<Min: 141.1 - 141.3 5% Min: Chalcopyrite>> in QV
141.30	**143.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 141.3 - 143.2 15% Min: Sphalerite>>
		<<Min: 141.3 - 143.2 70% Min: Pyrite>>
		<<Min: 141.3 - 143.2 3% Min: Chalcopyrite>>
143.20	**143.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 143.2 - 143.8 15% Min: Pyrite>> streaks and masses
		<<Min: 143.2 - 143.8 3% Min: Chalcopyrite>>
		<<Alt: 143.2 - 143.8 Weak (Alt) Muscovite>> no talcose feel
		<<Alt: 143.2 - 143.8 Moderate (Alt) Chlorite>>
143.80	**145.50**	**OA** **Magnetite bearing sulphides**
		143.8 - 145.5: laminated and bx'd , poss DMG?
		<<Min: 143.8 - 145.5 15% Min: Magnetite>> to diss'd blebs
		<<Min: 143.8 - 148.7 10% Min: Sphalerite>> to masses
		<<Min: 143.8 - 148.7 60% Min: Pyrite>>
		<<Min: 143.8 - 148.7 3% Min: Chalcopyrite>>
		<<Min: 143.8 - 148.7 0.01% Min: Calcite>> minor patches
145.50	**146.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
146.90	**148.70**	**OA** **Magnetite bearing sulphides**
		146.9 - 148.7: bx'd section included, very high Pb

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 146.9 - 148.7 20% Min: Magnetite>> laminated

148.70 151.30 RHY undifferentiated rhyolite grey

148.7 - 151.3: strongly schistose with SI domains, could be altered MAFi, no sign of intrusive's texture

<<Min: 148.7 - 148.9 3% Min: Pyrrhotite>> in fine grained fol'd intervals
<<Min: 148.7 - 151.3 3% Min: Chalcopyrite>> stringer minlzn
<<Min: 148.7 - 152.7 0.5% Min: Pyrite>>
<<Min: 148.7 - 153.3 1% Min: Calcite>> small blebs
<<Alt: 148.7 - 149.5 Strong (Alt) Muscovite>> in siliceous section
<<Alt: 148.7 - 149.5 Weak (Alt) Chlorite>> between MU
<<Alt: 148.7 - 150 Weak (Alt) Cordierite>> scattered bands
<<Alt: 149.5 - 151.3 Strong (Alt) Chlorite>> stringer CP
<<Vein: 148.7 - 149.5 15% Quartz-Carbonate>> QZ-AK-TO

151.30 157.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green MCG

			153.30	154.50	1.20	B00233084	0.5	-0.005	-0.01	0.02	0.02

151.3 - 157.6: may be in contact with mxsx, gabbroic below 156

<<Min: 151.9 - 152.7 1% Min: Sphalerite>> strung along fol'n
<<Min: 153.3 - 157.6 10% Min: Calcite>> scattered t/o, wanes somewhat towards bottom of interval
<<Alt: 151.3 - 152.7 Moderate (Alt) Chlorite>>
<<Alt: 152.7 - 153.1 Moderate (Alt) Silicification>> after glassy dyke?
<<Alt: 152.7 - 153.1 Moderate (Alt) Muscovite>>

End of Hole @ 157.6

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-107

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415126.839	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815465.088	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1398.627	Casing Depth (m):		Length (m):	135.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
23	-64	177		177	SS				☑	
56	-66	179		179	SS				☑	
87	-65	178		178	SS				☑	
135	-64	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 13.00 OVBN Overburden

13.00 20.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

13 - 20.1: possible amygdules - qtz. Banded towards lower contact - thinking of possible intermediate ash here…

<<Min: 13 - 20.1 10% Min: Calcite>>

<<Min: 13 - 21.4 3% Min: Ankerite>>

20.10 21.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

21.40 23.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 21.4 - 23 10% Min: Calcite>>

<<Min: 21.4 - 55 5% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

23.00 24.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 23 - 26.2 5% Min: Calcite>>

<<Min: 23.7 - 25.7 0.5% Min: Pyrite>>

24.20 25.10 RHYv Rhyolite volcaniclastic

25.10 25.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

25.1 - 25.9: Ankerite -pyrite replaced feldspar phenocrysts

<<Min: 25.7 - 27.5 0.5% Min: Pyrite>>

<<Vein: 25.7 - 27.2 15% Quartz-Tourmaline>> 1 cm vein down core axis

25.90 29.40 RHYv Rhyolite volcaniclastic

25.9 - 29.4: silic bands, RHYcw in places.

<<Min: 29.3 - 31.5 1% Min: Pyrrhotite>>

<<Struc: 27.9 - 28.8 Moderate (Alt) Fault>> broken core, minor fault gouge, qtz vein

29.40 34.00 RHYvl Lapilli tuff

<<Min: 29.4 - 44 5% Min: Calcite>>

<<Vein: 31.3 - 32.1 5% Quartz-Tourmaline>> (2) 1-2cm qtz-tour veinlets crosscutting CA

34.00 36.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

34 - 36.1: Contacts look 'cold' possible MAFta. Unit banded throughout.

<<Min: 35.4 - 44.6 0.5% Min: Pyrite>>

36.10 37.10 RHYvl Lapilli tuff

37.10 37.40 RHYva Coarse grained to ash tuff

37.1 - 37.4: fine grained, sharp upper (up hole) contact, gradational lower contact

37.40 38.70 RHYvl Lapilli tuff

38.70 39.00 RHYva Coarse grained to ash tuff

38.7 - 39: Similar to 37.1-37.4

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

39.00 39.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39 - 39.5: dismembered siliceous bands

39.50 60.50 RHYvl Lapilli tuff

39.5 - 60.5: local zones with islands of remnant chlorite alteration. Silicic bands ie. 44-48m.

<<Min: 47.6 - 54.5 5% Min: Calcite>>

<<Min: 48.1 - 59.2 2% Min: Pyrite>>

<<Min: 48.1 - 59.2 0.5% Min: Pyrrhotite>>

<<Min: 55 - 78.5 15% Min: Ankerite>>

<<Min: 59.2 - 64 3% Min: Pyrite>>

<<Min: 59.2 - 64 1% Min: Pyrrhotite>>

60.50 60.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

60.90 61.40 RHYvl Lapilli tuff

61.40 62.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

62.10 64.00 RHYvl Lapilli tuff

64.00 64.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

64.40 65.90 RHYvl Lapilli tuff

<<Min: 64.5 - 76.8 2% Min: Pyrite>>

<<Min: 64.5 - 76.8 2% Min: Pyrrhotite>>

65.90 67.10 RHYv Rhyolite volcaniclastic

65.9 - 67.1: Abundant silic bands in unit but not enough to call it a RHYcw.

<<Alt: 66 - 76 Weak (Alt) Muscovite>>

67.10 77.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 71 - 75 3% Min: Calcite>>

<<Min: 76.8 - 85.9 5% Min: Pyrite>>

77.40 81.20 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 78.5 - 93.9 5% Min: Ankerite>>									
		<<Alt: 78 - 82 Weak (Alt) Silicification>>									
81.20	**83.50**	**MDSw Coherent rhyolite flow with carbonaceous content**									
		<<Alt: 81.5 - 94 Moderate (Alt) Muscovite>>									
83.50	**85.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
85.00	**85.60**	**MDSt Rhyolite tuff dominant mudstone**									
85.60	**88.40**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
		<<Min: 85.9 - 87.4 1% Min: Pyrrhotite>>									
		<<Min: 87.4 - 88.4 0.5% Min: Pyrite>>									
		<<Min: 87.4 - 88.4 3% Min: Pyrrhotite>>									
88.40	**93.50**	**RHYvx Quartz and/or feldspar crystal tuff**									
		88.4 - 93.5: sections with poker chip siliceous bands, carb-ankerite replaced feldspar phenocrysts.and rare blue qtz eyes.									
		<<Min: 88.4 - 93.3 1% Min: Pyrrhotite>>									
		<<Min: 89 - 92 1% Min: Calcite>> replacing feldspar phenos									
		<<Min: 93.3 - 96.9 0.5% Min: Pyrrhotite>>									
93.50	**95.10**	**MDSt Rhyolite tuff dominant mudstone**	93.60	95.10	1.50	B00267301	0.3	-0.005	-0.01	-0.01	0.05
		<<Min: 93.6 - 96.9 1% Min: Pyrite>>									
95.10	**95.80**	**MDSc Carbonaceous dominant mudstone**	95.10	95.80	0.70	B00267302	0.8	0.008	-0.01	-0.01	0.55
95.80	**96.30**	**RHYv Rhyolite volcaniclastic**	95.80	96.30	0.50	B00267303	0.5	-0.005	-0.01	-0.01	-0.01
		<<Alt: 95.8 - 97.5 Moderate-Strong (Alt) Muscovite>>									
96.30	**96.90**	**MDSt Rhyolite tuff dominant mudstone**									
96.90	**97.90**	**RHYv Rhyolite volcaniclastic**									
		<<Min: 97.1 - 98.2 1% Min: Pyrrhotite>>									
		<<Min: 97.1 - 98.2 1% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 96.9 - 110.1 Weak-Moderate (Alt) Cordierite>> variable concentration but cordierite throughout

97.90 100.60 OJ Heavilly disseminated sulphides in proximal altered rock CG

<<Min: 98.2 - 100.6 3% Min: Pyrrhotite>>

<<Min: 98.2 - 100.6 8% Min: Chalcopyrite>>

<<Min: 98.5 - 105 5% Min: Ankerite>>

<<Alt: 98.8 - 100.7 Moderate (Alt) Chlorite>> replacing cordierite for most part

100.60 105.10 RHYv Rhyolite volcaniclastic

<<Min: 105 - 106.4 5% Min: Calcite>>

<<Alt: 100.6 - 105 Moderate (Alt) Muscovite>>

<<Alt: 103.2 - 107 Weak-Moderate (Alt) Chlorite>>

105.10 106.90 OJ Heavilly disseminated sulphides in proximal altered rock MG

106.90 109.80 OG Chalcopyrite rich sulphides CG

<<Min: 106.9 - 109.8 0.5% Min: Sphalerite>>

<<Min: 106.9 - 109.8 20% Min: Pyrrhotite>>

<<Min: 106.9 - 109.8 33% Min: Chalcopyrite>>

109.80 110.70 OA Magnetite bearing sulphides CG

109.8 - 110.7: cord replaced by chlorite and likely pyrite

<<Min: 109.8 - 110.7 10% Min: Pyrite>>

<<Min: 109.8 - 110.7 30% Min: Pyrrhotite>>

<<Min: 109.8 - 110.7 5% Min: Chalcopyrite>>

<<Min: 109.8 - 116.4 10% Min: Magnetite>> also dis and in thin bands.

110.70 116.40 OA Magnetite bearing sulphides CG

110.7 - 116.4: cord replaced by pyrite?

<<Min: 110.7 - 116.3 2% Min: Sphalerite>>

<<Min: 110.7 - 116.3 50% Min: Pyrite>>

<<Min: 110.7 - 116.3 15% Min: Pyrrhotite>>

<<Min: 110.7 - 116.3 0.5% Min: Chalcopyrite>>

<<Min: 116.3 - 117.6 80% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
116.40	**117.60**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FMG**									
117.60	**119.10**	**OA** **Magnetite bearing sulphides**	**MG**									
<<Min: 117.6 - 119.1 1% Min: Sphalerite>>												
<<Min: 117.6 - 119.1 60% Min: Pyrite>>												
<<Min: 117.6 - 119.1 1% Min: Chalcopyrite>>												
<<Min: 117.6 - 119.4 10% Min: Magnetite>> also dis and in mm bands												
119.10	**124.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
119.1 - 124.7: minor chlorite and cordierite near lower contact												
<<Min: 119.1 - 124.7 15% Min: Sphalerite>>												
<<Min: 119.1 - 124.7 50% Min: Pyrite>>												
<<Min: 119.1 - 124.7 1% Min: Chalcopyrite>>												
<<Min: 122.5 - 123.8 10% Min: Calcite>>												
124.70	**127.20**	**RHYv** **Rhyolite volcaniclastic**	**MCG**									
124.7 - 127.2: local concentrations of sulfides over cm and <cm scale.poker chip bands of silica.												
<<Min: 124.7 - 127.2 2% Min: Sphalerite>>												
<<Min: 124.7 - 127.2 10% Min: Pyrite>>												
<<Min: 124.7 - 127.2 10% Min: Pyrrhotite>>												
<<Min: 124.7 - 127.2 2% Min: Chalcopyrite>>												
<<Min: 125.3 - 126.6 5% Min: Calcite>>												
<<Alt: 124.7 - 129.8 Weak-Moderate (Alt) Muscovite>> sericite alteration												
<<Alt: 125 - 126.5 Moderate (Alt) Cordierite>>												
127.20	**133.00**	**RHYv** **Rhyolite volcaniclastic**		129.20	129.80	0.60	B00267304	1.1	-0.005	-0.01	0.02	0.04
127.2 - 133: contains local silica bands. Pale grey-green sericite altered.												
<<Min: 127.2 - 131.5 0.5% Min: Pyrite>>				129.90	131.10	1.20	B00267305	7.8	-0.005	-0.01	0.36	-0.01
<<Min: 131.2 - 135.9 5% Min: Calcite>>				131.20	132.70	1.50	B00267306	0.5	-0.005	-0.01	-0.01	0.02
<<Alt: 132 - 135.9 Trace (Alt) Muscovite>> sercite alteration												
<<Struc: 132.3 - 132.7 Moderate-Strong (Alt) Fault>> crushed rock and minor gouge												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
133.00	**134.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
133 - 134.2: palew grey - green sericite altered											
134.20	**135.90**	**RHYv** **Rhyolite volcaniclastic**									
134.2 - 135.9: pale grey - green sericite altered											
End of Hole @ 135.9											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-108

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415126.906	Core Size:	NQ	Azimuth:	120	Date Logging Complete:	
UTM Northing:	6815466.23	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1398.407	Casing Depth (m):		Length (m):	153.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	120		120	SS				☑	
20	-87	111		111	SS				☑	
47	-84	159		159	SS				☑	
81	-85	156		156	SS				☑	
111	-84	182		182	SS				☑	
150	-81	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**13.00**	**OVBN** **Overburden**									
13.00	**15.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 13 - 16.9 0.5% Min: Pyrrhotite>>											
<<Min: 13 - 16.9 10% Min: Calcite>>											
<<Min: 13 - 16.9 3% Min: Ankerite>>											
15.10	**15.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
15.1 - 15.4: well developed flow banding											
15.40	**16.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

16.90 19.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

16.9 - 19.1: Dismembered, pseudo RHYvl

<<Min: 16.9 - 19.3 0.5% Min: Pyrrhotite>>

<<Min: 16.9 - 23.6 15% Min: Ankerite>>

19.10 23.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

19.1 - 23.6: Minor RHYcw near lower contact, barely calcareous, no well developed chill margins; could be a tuff

<<Min: 19.1 - 19.7 5% Min: Calcite>>

<<Min: 19.7 - 38.7 3% Min: Calcite>>

23.60 24.80 RHYv Rhyolite volcaniclastic

<<Min: 23.6 - 24.8 0.5% Min: Pyrrhotite>>

<<Min: 23.6 - 29.7 5% Min: Ankerite>>

24.80 25.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

25.20 26.20 RHYv Rhyolite volcaniclastic

<<Min: 25.2 - 26.2 0.5% Min: Pyrrhotite>>

26.20 28.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

26.2 - 28.1: weakly calcareouis, gradational upper contact, could be a tuff

<<Min: 28 - 35.5 2% Min: Pyrrhotite>>

<<Min: 28 - 38.6 0.1% Min: Pyrite>>

28.10 29.40 RHYv Rhyolite volcaniclastic

29.40 29.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

29.70 35.60 RHYvl Lapilli tuff

<<Min: 29.7 - 68.9 15% Min: Ankerite>>

<<Min: 35.5 - 36.7 0.5% Min: Pyrrhotite>>

35.60 36.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 36.7 - 38.6 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
36.80	**38.30**	**RHYvl** **Lapilli tuff**									
38.30	**38.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
38.60	**40.50**	**RHYv** **Rhyolite volcaniclastic**									
<<Min: 38.6 - 41.8 0.5% Min: Pyrrhotite>>											
40.50	**41.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
41.10	**42.90**	**RHYv** **Rhyolite volcaniclastic**									
<<Min: 41.8 - 42.9 1% Min: Pyrrhotite>>											
<<Vein: 41.5 - 42.9 60% Quartz-Carbonate>>											
42.90	**43.70**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 42.9 - 44 2% Min: Pyrrhotite>>											
43.70	**55.90**	**RHYvl** **Lapilli tuff**									
<<Min: 44 - 63 2% Min: Pyrite>>											
<<Min: 44 - 63 2% Min: Pyrrhotite>>											
55.90	**61.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
61.80	**63.20**	**RHYvl** **Lapilli tuff**									
<<Min: 63 - 72 0.5% Min: Pyrite>>											
<<Min: 63 - 72 2% Min: Pyrrhotite>>											
<<Min: 63.1 - 69.4 3% Min: Calcite>>											
63.20	**63.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
63.50	**90.20**	**RHYvl** **Lapilli tuff**									
63.5 - 90.2: minor ash horizons and local silic bands											
<<Min: 68.9 - 84 3% Min: Ankerite>>											
<<Min: 69.4 - 72 5% Min: Calcite>>											
<<Min: 72 - 84 1% Min: Calcite>>											
<<Min: 72 - 84.4 2% Min: Pyrite>>											
<<Min: 72 - 84.4 2% Min: Pyrrhotite>>											
<<Min: 84 - 93.6 10% Min: Ankerite>>											
<<Min: 84.4 - 89.4 3.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description
		<<Min: 89.4 - 94.4 2% Min: Pyrrhotite>>
		<<Alt: 81.6 - 96.8 Moderate (Alt) Muscovite>>
90.20	**94.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 93.4 - 93.9 5% Min: Pyrite>>
		<<Min: 93.6 - 110 5% Min: Ankerite>>
94.30	**96.80**	**MDSc** **Carbonaceous dominant mudstone**
		94.3 - 96.8: includes a 25cm section of RHYv
		<<Min: 94.4 - 96.8 3% Min: Pyrrhotite>>
		<<Alt: 94.3 - 96.8 Moderate-Strong (Alt) Silicification>>
96.80	**99.10**	**MDSt** **Rhyolite tuff dominant mudstone**
		<<Min: 96.8 - 97.6 1% Min: Pyrrhotite>>
		<<Alt: 96.8 - 107.6 Weak (Alt) Muscovite>>
99.10	**102.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 99.1 - 109.6 1% Min: Pyrrhotite>>
102.80	**104.10**	**MDSt** **Rhyolite tuff dominant mudstone**
104.10	**105.60**	**MDSc** **Carbonaceous dominant mudstone**
105.60	**106.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
106.60	**107.60**	**MDSc** **Carbonaceous dominant mudstone**
107.60	**110.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 109.6 - 113.3 5% Min: Pyrrhotite>>
		<<Alt: 107.6 - 113.3 Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
108.80	110.30	1.50	B00267296	0.3	-0.005	-0.01	-0.01	0.03

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
110.30	111.80	1.50	B00267297	4.3	0.075	-0.01	0.03	0.08

From (m)	To (m)		Rocktype & Description
110.30	**113.30**	**MDSt**	**Rhyolite tuff dominant mudstone**

110.3 - 113.3: lower 2.5m is variably bleached and altered.

<<Struc: 111.6 - 113.3 Moderate (Alt) Fault>> broken core, rock flour

113.30	**113.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

<<Min: 113.3 - 113.7 0.5% Min: Sphalerite>>

<<Min: 113.3 - 113.7 9% Min: Pyrrhotite>>

<<Min: 113.3 - 113.7 1.5% Min: Chalcopyrite>>

<<Alt: 113.3 - 115.8 Moderate (Alt) Chlorite>> Replaces cordierite

<<Alt: 113.3 - 117.9 Moderate-Strong (Alt) Cordierite>>

113.70	**115.70**	**OG**	**Chalcopyrite rich sulphides**

<<Min: 113.7 - 115.7 30% Min: Pyrrhotite>>

<<Min: 113.7 - 115.7 25% Min: Chalcopyrite>>

<<Min: 115.5 - 117.5 10% Min: Magnetite>> mm bands or lamination

115.70	**117.50**	**OA**	**Magnetite bearing sulphides**

<<Min: 115.7 - 117.5 11% Min: Pyrrhotite>>

<<Min: 115.7 - 117.5 2.5% Min: Chalcopyrite>>

117.50	**118.30**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**

<<Min: 117.5 - 118.3 30% Min: Pyrrhotite>>

<<Min: 117.5 - 118.3 8% Min: Chalcopyrite>>

<<Min: 117.5 - 118.5 30% Min: Pyrrhotite>>

<<Alt: 117.9 - 124.1 Weak (Alt) Cordierite>>

118.30	**119.40**	**OA**	**Magnetite bearing sulphides**

<<Min: 118.3 - 119.4 7% Min: Pyrrhotite>>

<<Min: 118.3 - 126.8 10% Min: Magnetite>> dis and as thin bands-lamin

119.40	**126.70**	**OA**	**Magnetite bearing sulphides**
126.70	**130.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

From (m)	To (m)	Rocktype & Description
		<<Min: 129 - 130.1 15% Min: Calcite>>
130.10	**130.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Alt: 130.1 - 130.6 Moderate (Alt) Muscovite>>
130.60	**133.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 130.6 - 131.5 15% Min: Calcite>>
133.30	**135.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 133.3 - 135.3 8% Min: Sphalerite>>
		<<Min: 133.3 - 135.3 22.5% Min: Pyrite>>
		<<Min: 133.3 - 135.3 15% Min: Pyrrhotite>>
		<<Min: 133.3 - 135.3 1.3% Min: Chalcopyrite>>
		<<Alt: 133.3 - 135.3 Moderate (Alt) Chlorite>> Replaces cordierite and as bands
		<<Alt: 133.3 - 135.3 Moderate-Strong (Alt) Cordierite>>
135.30	**139.40**	**RHYv** **Rhyolite volcaniclastic**
		135.3 - 139.4: local dismembered silic bands. Sericite altered
		<<Min: 135.3 - 139.4 0.5% Min: Pyrite>>
		<<Min: 135.5 - 139.4 3% Min: Ankerite>>
		<<Min: 139.1 - 144.3 15% Min: Calcite>>
		<<Alt: 135.3 - 139.4 Moderate (Alt) Muscovite>>
		<<Struc: 135.6 - 136.8 Weak (Alt) Fault>> broken core, <10cm crushed rock with rock flour.
139.40	**144.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
144.30	**153.30**	**RHYv** **Rhyolite volcaniclastic**
		144.3 - 153.3: interlayered ash beds, poker chip qtz bands, blebby qtz bands. Possibly an epiclastic? Sericite altered.
		<<Min: 144.3 - 151.4 1% Min: Pyrite>> Diss in bands
		<<Min: 144.3 - 153.3 3% Min: Calcite>>
		<<Min: 145.5 - 153.3 3% Min: Ankerite>>
		<<Min: 151.4 - 153.3 0.5% Min: Sphalerite>> with py

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
136.80	138.30	1.50	B00267298	0.6	-0.005	-0.01	-0.01	0.03
138.30	139.40	1.10	B00267299	0.6	0.008	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 151.4 - 153.3 2% Min: Pyrite>> Diss in bands
		<<Alt: 144.3 - 153.3 Weak (Alt) Muscovite>> sericite alteration
		End of Hole @ 153.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-109

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415291.889	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815396.885	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1465.753	Casing Depth (m):		Length (m):	212.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
20	-52	169		169	SS				☑	
50	-52	171		171	SS				☑	
81	-53	172		172	SS				☑	
114	-54	176		176	SS				☑	
142	-54	175		175	SS				☑	
172	-52	179		179	SS				☑	
203	-50	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.80**	**OVBN Overburden**									
9.80	**14.00**	**SED undifferentiated Sediment grey**									
9.8 - 14: SED in this ddh = phyllite, argillite, mudstone											
<<Min: 9.8 - 14.1 2% Min: Pyrite>>											
<<Min: 13 - 28 5% Min: Ankerite>>											
<<Struc: 13 - 26.8 Moderate-Strong (Alt) Shear>> foiiation parallel to shear planes											
14.00	**14.70**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) pink**									
<<Min: 14.1 - 14.3 0.5% Min: Galena>> cominco sampled this section											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 14.3 - 29.1 1% Min: Pyrite>> and mm size blebs

14.70 17.40 SED undifferentiated Sediment grey-brown

<<Vein: 14.7 - 18.6 50% Quartz>>

17.40 18.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

18.60 29.40 SED undifferentiated Sediment grey

<<Min: 24.3 - 28 5% Min: Calcite>> and diss

<<Min: 29.3 - 34.3 10% Min: Ankerite>>

<<Vein: 20.7 - 22.6 20% Quartz>>

<<Struc: 26.8 - 34.5 Strong (Alt) Fault>> crushed schist and rock flour, minor gouge, blocks of schist with shearing along foliation

29.40 34.50 MAFt Mafic Volcaniclastics green

29.4 - 34.5: strongly foliated 10-30 degrees to CA, faint traces oif fuchsite or green sericite. Minor bands of carbonaceous mudstone

<<Min: 34 - 40 5% Min: Calcite>>

<<Min: 34.3 - 47.9 5% Min: Ankerite>>

34.50 37.50 SED undifferentiated Sediment grey-brown

<<Min: 34.6 - 42 0.5% Min: Pyrite>>

<<Struc: 34.5 - 39.5 Strong (Alt) dominant foliation>> weak shear planes parallel to foliation

37.50 38.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

38.80 44.50 SED undifferentiated Sediment grey

<<Min: 42 - 92.9 0.1% Min: Pyrite>>

<<Min: 42 - 130 0.5% Min: Pyrrhotite>>

<<Min: 43 - 53.6 10% Min: Calcite>> and as laminations

<<Vein: 41.5 - 44.5 20% Quartz>> sheared veinlets and veins

<<Struc: 39.5 - 41.9 Strong (Alt) Fault>> crushed schist and rock flour, minor gouge, blocks of schist with shearing along foliation

<<Struc: 41.9 - 49.6 Moderate-Strong (Alt) Shear>> shearing parallel to foliation

44.50 46.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

46.60 52.60 SED undifferentiated Sediment grey-green

<<Min: 47.9 - 50.6 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 50.6 - 130 3% Min: Ankerite>>

<<Struc: 49.6 - 50.7 Strong (Alt) Fault>> crushed schist, 20 cam gouge. Fault is contact of wider shear fault zone starting at top of hole.

<<Struc: 50.7 - 66.2 Moderate (Alt) >> laminations 00-45 degrees to CA crosscut by foliation at 80 degrees to CA resulting in pronounced crenulations.

<<Struc: 50.7 - 66.2 Moderate-Strong (Alt) >>

52.60 53.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

53.50 74.90 SED undifferentiated Sediment grey

53.5 - 74.9: Minoir carbon, more siliceous (quartz rich siltstone?), siliceous white to light grey quartz rich (mm) bands.

<<Min: 53.6 - 72 5% Min: Calcite>> and as laminations

<<Min: 72 - 74.9 3% Min: Calcite>>

<<Alt: 65.3 - 70.6 Weak-Moderate (Alt) Silicification>>

<<Vein: 65.9 - 70.3 5% Quartz-Carbonate>>

<<Struc: 66.2 - 71.9 Moderate-Strong (Alt) dominant foliation>>

<<Struc: 73 - 80 Moderate (Alt) Fault>> broad zone of deformation cored by 1m of crushed schist and foliation - shear at 00 to core axis.

74.90 77.00 SEDc calcareous Sediment grey

74.9 - 77: 10% calcite as disseminations and laminations

<<Min: 74.9 - 77 10% Min: Calcite>> CA laminations and diss

<<Vein: 76.1 - 80.9 20% Quartz-Carbonate>>

77.00 84.50 SED undifferentiated Sediment grey

<<Min: 77 - 85.2 5% Min: Calcite>> and as diss

<<Vein: 83.2 - 84.6 15% Quartz-Carbonate>>

<<Struc: 80 - 130 Strong (Alt) dominant foliation>> foliation and laminations mostly parallel but minor folds broad with bedding at up to 00 degrees to core axis not uncommon.

84.50 85.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

85.20 86.90 SED undifferentiated Sediment grey

<<Min: 85.2 - 130 5% Min: Calcite>> Calcite laminations, disseminations and veins

<<Alt: 86.2 - 86.9 Weak (Alt) Silicification>>

<<Vein: 86.2 - 98 5% Quartz-Carbonate>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

86.90 130.00 SEDc calcareous Sediment grey

86.9 - 130: SEDc = SED (phyllite, mudstone) but with 5-20% calcite over meter interval

<<Min: 92.9 - 98.5 2% Min: Pyrite>> dis in bands

<<Min: 98.5 - 130 0.1% Min: Pyrite>>

<<Alt: 92.9 - 95 Weak-Moderate (Alt) Silicification>>

<<Alt: 116.3 - 116.5 Weak (Alt) Chlorite>> in qtz vein within mafic dyke

<<Vein: 97 - 100.7 10% Quartz-Carbonate>>

<<Vein: 100.7 - 105.8 5% Quartz-Carbonate>>

<<Vein: 114 - 130 5% Quartz-Chalcopyrite>>

130.00 140.10 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

130 - 140.1: good example of flow banded rhyolite. 139-140.1: less flow banding and ash content increases.

<<Min: 130 - 140 0.3% Min: Pyrrhotite>>

<<Min: 130 - 140.1 10% Min: Ankerite>>

<<Min: 134.4 - 135 5% Min: Calcite>>

<<Min: 140 - 147.6 3% Min: Pyrite>>

<<Min: 140 - 147.6 2% Min: Pyrrhotite>>

<<Struc: 130 - 140.1 Weak (Alt) dominant foliation>> variable (30-80) weak foliation, good-coherent RHYcw has little to no foliation.

140.10 147.60 MDSc Carbonaceous dominant mudstone black

<<Min: 142.8 - 143.8 5% Min: Ankerite>>

<<Struc: 140.1 - 150.2 Moderate-Strong (Alt) dominant foliation>>

147.60 151.80 RHYva Coarse grained to ash tuff grey-green

<<Min: 147.6 - 164.5 10% Min: Ankerite>>

<<Min: 147.6 - 172 1% Min: Pyrite>> mm foliaform veinlets and dis.

<<Min: 147.6 - 191.9 1% Min: Pyrrhotite>>

<<Struc: 150.2 - 151.8 Moderate-Strong (Alt) Shear>> crushed schist, minor gouge.

<<Struc: 150.2 - 152.5 Moderate-Strong (Alt) dominant foliation>> shear zone

151.80 167.80 RHYvl Lapilli tuff grey-green

151.8 - 167.8: varies between lapilli and ash tuff. Includes three <50cm intermediate (mafic) mafic ash tuff beds or dykes. Ash

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 164.5 - 172 5% Min: Ankerite>>

<<Min: 164.7 - 165.7 5% Min: Calcite>>

<<Struc: 151.8 - 186 Strong (Alt) dominant foliation>> fol 70-80 to CA

<<Struc: 154.2 - 154.3 Moderate (Alt) Fault>> minor gouge

<<Struc: 156.6 - 156.8 Moderate (Alt) Fault>> minor gouge

<<Struc: 165.1 - 166.4 Weak-Moderate (Alt) Fault>> crushed schist, minor gouge

167.80 180.30 RHYva Coarse grained to ash tuff grey-green

167.8 - 180.3: appears to be mutiple bedded ash tuff horizons.

<<Min: 168.7 - 169 5% Min: Calcite>>

<<Min: 169 - 171.2 1% Min: Calcite>>

<<Min: 171.2 - 191.9 5% Min: Calcite>>

<<Min: 172 - 187 0.1% Min: Pyrite>>

<<Min: 172 - 191 10% Min: Ankerite>>

<<Vein: 178.2 - 181.7 10% Quartz-Chalcopyrite>> 15-30cm wide qtz vein zones appear to be at contact between ash tuff beds at 178.6 and 181.7m.

<<Struc: 169.9 - 172.1 Moderate-Strong (Alt) Shear>> weak shear with minor rock flour - crushed schist follwing joint set parallel to joint (joints noted elsewhere in ddh)

180.30 191.90 RHYvl Lapilli tuff grey-green

180.3 - 191.9: variable lapilli - ash bed, Fines upward at contact (ie. 180.3m).

<<Min: 187 - 191.9 1% Min: Pyrite>> few wisps and mm veinlets

<<Min: 191 - 205.2 3% Min: Ankerite>>

<<Alt: 190.8 - 195 Weak (Alt) Chlorite>> Dark green chlorite on foliation - fractures

<<Alt: 191.7 - 194 Weak (Alt) Muscovite>> in qtz healed brittle fractured rhyolite along with minor argillic alteration.

<<Struc: 186 - 188 Strong (Alt) dominant foliation>> 45-70 to CA

<<Struc: 186.9 - 187.2 Moderate-Strong (Alt) Shear>> also minor rock flour on 45 degree foliation - shear 0.5m either side.

<<Struc: 188 - 192.5 Strong (Alt) dominant foliation>>

<<Struc: 190.6 - 194 Weak-Moderate (Alt) Shear>> chlorite and minor crushed schist associated withbrittle fractured rhyolite

191.90 205.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

191.9 - 205.2: good examp-le of RHYcw

<<Min: 191.9 - 194 3% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 191.9 - 203 0.1% Min: Pyrite>> mostly in fractures
<<Min: 194 - 205.2 1% Min: Calcite>>
<<Min: 201.7 - 201.8 0.1% Min: Arsenopyrite>> in fracture
<<Min: 203 - 205.2 0.5% Min: Pyrite>> mostly in fractures
<<Vein: 191.9 - 196.4 40% Quartz>> qtz vein filling open space in brittle fractured RHYcw
<<Vein: 201.9 - 202.5 80% Quartz>> qtz vein filling open space in brittle fractured RHYcw
<<Struc: 192.5 - 205.2 Weak-Moderate (Alt) dominant foliation>> very weak - poorly developed foliation, 80-90 to CA

205.20 211.40 RHYvl Lapilli tuff grey-green

205.2 - 211.4: contains ash rich sections

<<Min: 205.2 - 211.1 1% Min: Pyrrhotite>>
<<Min: 205.2 - 212.1 10% Min: Calcite>>
<<Min: 205.2 - 212.1 10% Min: Ankerite>>
<<Alt: 207.6 - 212.1 Moderate (Alt) Biotite>>
<<Vein: 211.1 - 211.4 100% Quartz-Chalcopyrite>> at mafic dyke contact
<<Struc: 205.2 - 212.1 Strong (Alt) dominant foliation>>

211.40 212.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

End of Hole @ 212.1

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-110

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415291.905	Core Size:	NQ	Azimuth:	280	Date Logging Complete:	
UTM Northing:	6815396.085	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1465.716	Casing Depth (m):		Length (m):	84.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	280		280	SS				☑	
23	-89	283		283	SS				☑	
53	-89	296		296	SS				☑	
84	-87	301		301	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 15.20 OVBN Overburden

15.20 23.10 SED undifferentiated Sediment dark grey

<<Min: 15.2 - 23.1 0.1% Min: Pyrite>>

<<Min: 15.2 - 23.1 5% Min: Calcite>> and veinlets

<<Min: 15.2 - 23.2 10% Min: Ankerite>>

<<Vein: 15.2 - 82 5% Quartz-Carbonate>> Entire drill hole is in a fault zone, qtz-carbonate veinlets in as filling inb brecciated and fractured schist are ubiquitous.

<<Struc: 15.2 - 56.1 Strong (Alt) Fault>> Entire drill hole is in a fault zone of variable intensity. Phyllites - argillites are sheared, brecciated and locally crushed to zones of rock flour. The MAFi are more competent but still strongly sheared.

<<Struc: 15.2 - 84.2 Moderate (Alt) >> bedding defined by lamination - compositional banding; mostly parallel to foliation but locally foliation crosscuts laminations resulting inb crenulations

<<Struc: 15.2 - 84.2 Strong (Alt) Foliation>> foliation is parrallel to shearing - faulting which is at low angles to CA, 00-30 degrees for most part.

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

23.10 25.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

23.1 - 25.3: contains entrained pieces of SEDc

<<Min: 23.1 - 25.4 0.5% Min: Pyrite>>

<<Min: 23.1 - 25.4 0.5% Min: Pyrrhotite>>

<<Min: 23.1 - 25.4 10% Min: Calcite>> banded veinlets

<<Min: 23.2 - 32.5 5% Min: Ankerite>>

25.30 36.10 SED undifferentiated Sediment dark grey

<<Min: 25.4 - 32.5 10% Min: Calcite>> Sedc clasts in FBX and calcite veinlets

<<Min: 25.4 - 38.1 1% Min: Pyrite>>

<<Min: 32.5 - 36.1 3% Min: Calcite>>

<<Min: 32.5 - 56.1 10% Min: Ankerite>>

36.10 38.10 SED undifferentiated Sediment

<<Min: 36.1 - 38.9 10% Min: Calcite>> and in fracture veinlets

38.10 38.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 38.1 - 38.9 3% Min: Pyrite>>

38.90 40.00 SED undifferentiated Sediment dark grey

<<Min: 38.9 - 52.5 20% Min: Calcite>> and in fracture veinlets

<<Min: 38.9 - 56.1 1% Min: Pyrite>>

40.00 43.80 SEDc calcareous Sediment grey

40 - 43.8: light grey limy bands and laminations.

43.80 44.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

44.10 56.10 SEDc calcareous Sediment dark grey

<<Min: 52.5 - 56.1 5% Min: Calcite>> fracture veinlets

56.10 62.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

<<Min: 56.1 - 62 0.5% Min: Pyrite>>

<<Min: 56.1 - 62 0.5% Min: Pyrrhotite>>

<<Min: 56.1 - 62 5% Min: Calcite>> fracture veinlets

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 56.1 - 64.1 20% Min: Ankerite>>

<<Struc: 56.1 - 62 Moderate (Alt) Shear>> More competent MAFi; sheard at 10-45 degrees to CA.

62.00 63.30 SED undifferentiated Sediment dark grey

<<Min: 62 - 77 20% Min: Calcite>> and in fracture veinlets

<<Min: 62 - 84.2 1% Min: Pyrite>>

<<Struc: 62 - 84.2 Strong (Alt) Fault>> shear plans for mostt part at 10-30 degrees to CA

63.30 64.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 64.1 - 76.5 10% Min: Ankerite>>

64.20 66.00 SED undifferentiated Sediment dark grey

66.00 71.90 SEDc calcareous Sediment grey

71.90 73.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) pink

73.10 82.00 SED undifferentiated Sediment dark grey

<<Min: 76.5 - 84.2 5% Min: Ankerite>>

<<Min: 77 - 81 5% Min: Calcite>> entrained SEDc clasts and fracture veinlets

82.00 82.50 SED undifferentiated Sediment

82.50 84.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

84.00 84.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) cream

End of Hole @ 84.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-111

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	415100	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815426	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1393.38	Casing Depth (m):		Length (m):	111.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-56	175		175	SS				☑	
53	-57	180		180	SS				☑	
81	-57	172		172	SS				☑	
111	-57	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.40 OVBN Overburden

10.40 12.70 RHYc Rhyolite coherant volcanics

10.4 - 12.7: short section, locally calcareous, poss. Tuff

<<Min: 10.4 - 12.5 1% Min: Pyrite>>

<<Min: 10.4 - 12.7 3% Min: Calcite>> very local but strong

<<Min: 10.4 - 12.7 3% Min: Ankerite>> scattered

12.70 15.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

12.7 - 15: amygdaloidal (QZ-AK), strongly deformed QZ-CB-CA veins

<<Min: 12.7 - 15 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

15.00 34.80 RHYvl Lapilli tuff grey

15 - 34.8: mottled unit, dark patches generally QZ-SX, CL locally?

<<Min: 15 - 19.9 5% Min: Ankerite>>

<<Min: 15 - 27.8 1% Min: Pyrrhotite>> small wisps, blebs, scattered

<<Min: 19.9 - 27.8 1% Min: Ankerite>> scattered, some local patches

<<Min: 27.8 - 30.8 3% Min: Pyrrhotite>> generally conc'd in specific intervals

<<Min: 27.8 - 32 10% Min: Ankerite>> diss'd blebs

<<Min: 30.8 - 34.8 1% Min: Pyrrhotite>> sparsely scattered

<<Min: 32 - 34.8 3% Min: Ankerite>>

<<Alt: 27.8 - 34.8 Moderate (Alt) Muscovite>> talcose feeling on fol'n, lt grey colour

34.80 61.80 RHYc Rhyolite coherant volcanics grey

34.8 - 61.8: variably textured, brecciated, disaggregated flow bands common, deformed, locally sulphidic,

<<Min: 34.8 - 38.1 15% Min: Ankerite>> lenses

<<Min: 34.8 - 53.5 3% Min: Pyrrhotite>> diss'd, fine bands, minor veinlets, bands

<<Min: 38.1 - 53 5% Min: Ankerite>> bands

<<Min: 53 - 61.8 3% Min: Ankerite>> small lenses

<<Alt: 34.8 - 45.8 Weak (Alt) Muscovite>> locally moderate strength

<<Alt: 37.5 - 38.8 Moderate (Alt) Chlorite>> related to?

<<Alt: 45.8 - 61.8 Moderate (Alt) Muscovite>>

61.80 64.50 MDS Carbonaceous Mudstone & Tuffaceous Mudstone

<<Min: 61.8 - 64.5 1% Min: Ankerite>> small lenses

<<Alt: 61.8 - 64.5 Moderate (Alt) Muscovite>> in tuffaceous sections primarily

<<Struc: 62.3 - 62.8 Moderate (Alt) Fault>>

64.50 70.10 RHYvl Lapilli tuff grey

64.5 - 70.1: well fol'd,

<<Min: 64.5 - 76.6 0.01% Min: Ankerite>> local aggregates

<<Alt: 64.5 - 70.3 Strong (Alt) Muscovite>>

<<Struc: 64.5 - 65.5 Strong (Alt) Fault>> gouge and mush, lost core

From (m)	To (m)		Rocktype & Description	
70.10	**75.30**	**MDSc**	**Carbonaceous dominant mudstone**	**black**

70.1 - 75.3: dominantly carbonaceous MDST, deformed,

<<Alt: 70.3 - 74.6 Weak (Alt) Muscovite>> minor tuff sections
<<Alt: 74.6 - 76.6 Weak (Alt) Chlorite>> slight overlap on the MU
<<Alt: 74.6 - 76.6 Weak (Alt) Cordierite>> scattered pblasts
<<Alt: 74.6 - 82.6 Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description	
75.30	**77.80**	**RHYv**	**Rhyolite volcaniclastic**	

<<Min: 76.6 - 79.2 5% Min: Ankerite>>
<<Alt: 76.6 - 77.8 Moderate (Alt) Chlorite>> lt colour due to persistence of MU?
<<Alt: 76.6 - 77.8 Moderate (Alt) Cordierite>>

From (m)	To (m)		Rocktype & Description	
77.80	**79.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	

<<Min: 77.8 - 79.2 1% Min: Pyrite>>
<<Min: 77.8 - 79.2 2% Min: Pyrrhotite>> at top of interval
<<Min: 77.8 - 79.2 10% Min: Chalcopyrite>> fractures, veins, stringers
<<Alt: 77.8 - 79.2 Strong (Alt) Chlorite>> massive sections between sx bands
<<Alt: 77.8 - 79.2 Strong (Alt) Cordierite>> strong presence

From (m)	To (m)		Rocktype & Description	
79.20	**81.20**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**

79.2 - 81.2: PY-CP-PO stringers, CI conc'd near bottom

<<Min: 79.2 - 81.2 3% Min: Pyrite>>
<<Min: 79.2 - 81.2 0.5% Min: Chalcopyrite>>
<<Min: 79.2 - 82.6 0.5% Min: Ankerite>> scatterd blebs, minor pblasts?, after?
<<Alt: 79.2 - 81.3 Weak (Alt) Cordierite>> widely scattered
<<Alt: 79.2 - 82.6 Moderate (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description	
81.20	**82.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**grey-brown**

81.2 - 82.6: masses of PY-CP-MG in clotty CL-CI alt'n, remnant MU also present between sx stringers/masses

<<Min: 81.2 - 82.6 15% Min: Pyrite>> vein-hosted, aggregates
<<Min: 81.2 - 82.6 3% Min: Magnetite>> with sx generally

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.80	75.30	1.50	B00233071	1.5	-0.005	-0.01	0.02	0.06
75.30	76.60	1.30	B00233072	1.4	0.014	-0.01	0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 81.2 - 82.6 5% Min: Chalcopyrite>> stringers, patches

<<Alt: 81.3 - 82.6 Intense (Alt) Cordierite>> to pervasive, at the expense of CL in this section?

82.60 84.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

82.6 - 84.8: should be OB, Cu-rich though, grade looks like OJ, due diligence sample, 012060

<<Min: 82.6 - 84.8 3% Min: Sphalerite>>

<<Min: 82.6 - 84.8 50% Min: Pyrite>> Cominco logging

<<Min: 82.6 - 84.8 10% Min: Pyrrhotite>> Cominco logging

<<Min: 82.6 - 84.8 10% Min: Chalcopyrite>> intimately mixed with massive PY

<<Min: 84.1 - 95.9 1% Min: Ankerite>> scattered, associated with veining

84.80 87.20 OA Magnetite bearing sulphides

<<Min: 84.8 - 87.2 20% Min: Sphalerite>>

<<Min: 84.8 - 87.2 55% Min: Pyrite>>

<<Min: 84.8 - 87.2 20% Min: Magnetite>> as laminations, and blebs, small masses

<<Min: 84.8 - 87.2 3% Min: Chalcopyrite>>

87.20 87.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

87.2 - 87.7: sporadic MG

<<Min: 87.2 - 87.7 10% Min: Sphalerite>>

<<Min: 87.2 - 87.7 70% Min: Pyrite>>

87.70 88.20 OA Magnetite bearing sulphides

<<Min: 87.7 - 88.2 5% Min: Sphalerite>>

<<Min: 87.7 - 88.2 70% Min: Pyrite>>

<<Min: 87.7 - 88.2 10% Min: Magnetite>> mostly in fine laminations

88.20 94.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 88.2 - 93.9 20% Min: Sphalerite>> bands and masses in core, with GL

<<Min: 88.2 - 93.9 70% Min: Pyrite>>

<<Min: 88.2 - 93.9 5% Min: Galena>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 88.2 - 93.9 1% Min: Chalcopyrite>>

<<Min: 93.3 - 94 5% Min: Calcite>> in groundmass of mxsx

<<Min: 93.9 - 95.9 5% Min: Sphalerite>>

<<Min: 93.9 - 95.9 10% Min: Pyrite>>

<<Min: 93.9 - 95.9 40% Min: Pyrrhotite>>

<<Min: 93.9 - 95.9 3% Min: Magnetite>> also, replaces PO in veinlets, pods

<<Min: 93.9 - 95.9 2% Min: Galena>>

<<Min: 93.9 - 95.9 3% Min: Chalcopyrite>>

94.20 95.90 OJ Heavilly disseminated sulphides in proximal altered rock green-brown

94.2 - 95.9: some net-texture CP, PO, also mx bands of PO, PO-CP, MG common as blebs and replacing PO in veinlets

<<Alt: 94.2 - 95.9 Moderate (Alt) Chlorite>> matrix to sx zones

<<Alt: 94.2 - 95.9 Strong (Alt) Cordierite>> pblasts and masses in matrix to sx zones

95.90 103.00 RHYv Rhyolite volcaniclastic grey

97.40	98.90	1.50	B00233073	0.6	0.01	-0.01	-0.01	-0.01

95.9 - 103: sliceous domains common, well fol'd, MU quite strong t/o, sheared locally

<<Min: 95.9 - 101.8 0.5% Min: Pyrite>> diss'd, also minor narrow bands

98.90	100.40	1.50	B00233074	1.1	0.011	-0.01	0.02	0.01

<<Min: 95.9 - 101.8 0.5% Min: Pyrrhotite>> scattered

100.40	101.80	1.40	B00233075	1.3	0.012	-0.01	0.02	0.03

<<Min: 95.9 - 101.8 1% Min: Ankerite>> scattered

101.80	103.00	1.20	B00233076	10.6	0.042	0.06	0.19	0.95

<<Min: 97.1 - 99.3 0.01% Min: Arsenopyrite>> widely scattered

<<Min: 101.8 - 103 5% Min: Pyrite>> bands, diss'd blebs, wisps

<<Min: 101.8 - 103.5 3% Min: Pyrrhotite>> minor blebs with PY

<<Min: 102.5 - 111.6 10% Min: Calcite>> pervasive

<<Alt: 95.9 - 99.3 Strong (Alt) Muscovite>> talcose feel, well fol'd

<<Alt: 99.3 - 103 Moderate (Alt) Muscovite>> focused on shears

<<Struc: 101.7 - 101.9 Moderate (Alt) Fault>> shear zone?

103.00 111.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

103 - 111.6: typical MAFi, sharp upper contact marked by appearance of leucoxene, BI becomes more prevalent near bottom of hole, possibly a couple small BI SCHS dykes

<<Alt: 109.5 - 111.6 Moderate (Alt) Biotite>> gradual increase through section, still strong at end of hole

Project: KZK **Hole Number:** K95-111

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 111.6									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-112

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415101.818	Core Size:	NQ	Azimuth:	40	Date Logging Complete:	
UTM Northing:	6815426.163	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1393.654	Casing Depth (m):		Length (m):	116.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	40		40	SS				☑	
17	-88	47		47	SS				☑	
57	-88	86		86	SS				☑	
84	-89	118		118	SS				☑	
116	-88	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.50 OVBN Overburden

9.50 11.80 RHYv Rhyolite volcaniclastic

<<Min: 9.5 - 11.7 0.5% Min: Pyrite>>

<<Min: 9.5 - 12.8 15% Min: Ankerite>>

<<Min: 11.7 - 12.8 15% Min: Calcite>>

11.80 12.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

12.80 13.80 RHYv Rhyolite volcaniclastic

<<Min: 12.8 - 13.8 5% Min: Ankerite>>

13.80 15.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

13.8 - 15.1: possible qtz amygdules

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 13.8 - 15.1 20% Min: Calcite>>

<<Min: 13.8 - 17.5 3% Min: Ankerite>>

15.10 16.70 RHYv Rhyolite volcaniclastic

15.1 - 16.7: silic bands, weqak biotite alt

16.70 17.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

16.7 - 17: sharp lower contact,, more gradational upper contact, possibly a graded ash bed

17.00 21.20 RHYvl Lapilli tuff

17 - 21.2: dismembered silic bands, minor 'Z' folds when foliation is oriented to near horizontal,

<<Min: 17.5 - 26 5% Min: Ankerite>>

<<Min: 17.6 - 19.9 0.5% Min: Pyrite>>

<<Min: 19.9 - 20.3 1% Min: Pyrite>>

<<Min: 19.9 - 20.3 1% Min: Pyrrhotite>>

<<Min: 20.3 - 21.2 5% Min: Pyrite>>

<<Vein: 17.6 - 17.7 20% Quartz-Tourmaline>>

21.20 21.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

21.2 - 21.9: well developed flow banding

<<Min: 21.2 - 24.5 3% Min: Pyrite>>

21.90 34.00 RHYvl Lapilli tuff

21.9 - 34: abundant dismembered silic bands, approaching RHYcw

<<Min: 24.5 - 40.7 2% Min: Pyrite>>

<<Min: 25.9 - 40.7 2% Min: Pyrrhotite>>

<<Min: 26 - 40.5 20% Min: Ankerite>>

<<Min: 31.7 - 38.6 5% Min: Calcite>>

<<Alt: 25 - 44 Weak (Alt) Chlorite>> Remnant forest green chlorite surrounded by sericite alteration plus chlorite in fractures.

34.00 40.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34 - 40.3: well developed flow banding, silica bands >50%

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

40.30 48.40 RHYvl Lapilli tuff

40.3 - 48.4: silic bands

<<Min: 40.5 - 45 10% Min: Ankerite>>

<<Min: 40.7 - 57 2% Min: Pyrrhotite>>

<<Min: 44 - 57 2% Min: Pyrite>>

<<Min: 45 - 63 15% Min: Ankerite>>

48.40 73.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

48.4 - 73.8: well developed RHYcw for most part. Minor carbonaceous material at 59.6 and 64.5. local minor 'Z' and 'U' folds.

<<Min: 56.7 - 63.1 0.1% Min: Arsenopyrite>>

<<Min: 57 - 63.1 10% Min: Pyrite>> minor thin py bands

<<Min: 57 - 63.1 3% Min: Pyrrhotite>>

<<Min: 63 - 83 10% Min: Ankerite>>

<<Min: 63.1 - 75 0.5% Min: Pyrite>>

<<Min: 63.1 - 75 1% Min: Pyrrhotite>>

<<Alt: 63 - 69.6 Weak-Moderate (Alt) Muscovite>>

<<Alt: 69.6 - 73.8 Moderate-Strong (Alt) Muscovite>>

<<Struc: 62.8 - 62.9 Moderate (Alt) Fault>> broken core and gouge

73.80 75.50 MDSt Rhyolite tuff dominant mudstone

<<Min: 75 - 77.1 1% Min: Pyrite>>

<<Alt: 73.8 - 90 Moderate-Strong (Alt) Muscovite>>

75.50 75.90 MDSw Coherent rhyolite flow with carbonaceous content

75.5 - 75.9: weak carbon mudst

75.90 77.10 MDSc Carbonaceous dominant mudstone

75.9 - 77.1: includes 20cm section MDSw.

77.10 78.20 MDSw Coherent rhyolite flow with carbonaceous content

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 77.1 - 78.6 1% Min: Pyrite>>													
<<Min: 77.1 - 78.6 1% Min: Pyrrhotite>>													
78.20	**82.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 78.6 - 85.8 0.5% Min: Pyrrhotite>>													
82.30	**85.80**	**RHYvx**	**Quartz and/or feldspar crystal tuff**										
82.3 - 85.8: rare qtz and feldspar altered phenos, well banded.													
<<Min: 83 - 90.5 5% Min: Ankerite>>													
<<Alt: 82.6 - 85.8 Trace (Alt) Biotite>>													
85.80	**86.20**	**MDSt**	**Rhyolite tuff dominant mudstone**		85.80	87.10	1.30	B00267307	2	0.019	-0.01	-0.01	0.13
<<Min: 85.8 - 89.3 0.5% Min: Pyrite>>													
<<Min: 85.8 - 89.3 0.5% Min: Pyrrhotite>>													
86.20	**87.10**	**MDSc**	**Carbonaceous dominant mudstone**										
87.10	**88.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		87.10	88.50	1.40	B00267308	1.5	0.031	-0.01	0.01	0.09
<<Alt: 87.1 - 93.5 Moderate-Strong (Alt) Cordierite>>													
88.50	**90.50**	**RHYv**	**Rhyolite volcaniclastic**		88.50	89.30	0.80	B00267309	4	0.074	-0.01	0.01	0.01
<<Struc: 90.2 - 91.8 Strong (Alt) Fault>> broken core and gouge													
90.50	**92.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 90.5 - 92.4 5% Min: Calcite>>													
<<Min: 90.5 - 92.5 5% Min: Chalcopyrite>>													
<<Alt: 90.5 - 92.8 Weak (Alt) Chlorite>>													
92.40	**93.90**	**OG**	**Chalcopyrite rich sulphides**	**CG**									
92.4 - 93.9: probably should be MET6 as very minor chlorite present.													
<<Min: 92.4 - 95.3 1% Min: Calcite>>													
<<Min: 92.5 - 93.9 10% Min: Pyrrhotite>>													
<<Min: 92.5 - 93.9 40% Min: Chalcopyrite>>													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.90	**95.40**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**MG**									
<<Min: 93.9 - 95.5 80% Min: Pyrite>>												
<<Min: 93.9 - 95.5 2% Min: Chalcopyrite>>												
95.40	**108.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 95.5 - 108.7 15% Min: Sphalerite>>												
<<Min: 95.5 - 108.7 60% Min: Pyrite>>												
<<Min: 95.5 - 108.7 2% Min: Chalcopyrite>>												
<<Min: 95.6 - 96.2 3% Min: Magnetite>>												
<<Min: 101.5 - 104.8 10% Min: Calcite>>												
<<Min: 104.8 - 106.5 3% Min: Calcite>>												
108.70	**108.90**	**OA** **Magnetite bearing sulphides**	**MG**									
108.7 - 108.9: banded mag												
<<Min: 108.7 - 108.9 5% Min: Sphalerite>>												
<<Min: 108.7 - 108.9 50% Min: Pyrite>>												
<<Min: 108.7 - 108.9 20% Min: Pyrrhotite>>												
<<Min: 108.7 - 108.9 1% Min: Chalcopyrite>>												
<<Min: 108.7 - 109.1 15% Min: Magnetite>> banded												
108.90	**109.20**	**OA** **Magnetite bearing sulphides**	**MG**									
108.9 - 109.2: banded mag												
<<Min: 108.9 - 109.2 1% Min: Sphalerite>>												
<<Min: 108.9 - 109.2 40% Min: Pyrite>>												
<<Min: 108.9 - 109.2 30% Min: Pyrrhotite>>												
<<Min: 108.9 - 109.2 10% Min: Chalcopyrite>>												
<<Min: 109.1 - 111.9 5% Min: Magnetite>> blebs < cm size												
<<Alt: 109.1 - 112.2 Moderate-Strong (Alt) Chlorite>>												
<<Alt: 109.1 - 112.2 Moderate-Strong (Alt) Cordierite>>												

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.20	**110.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**										
109.2 - 110.2: up to 10% mag													
<<Min: 109.2 - 110.2 3% Min: Sphalerite>>													
<<Min: 109.2 - 110.2 20% Min: Pyrite>>													
<<Min: 109.2 - 110.2 20% Min: Pyrrhotite>>													
<<Min: 109.2 - 110.2 5% Min: Chalcopyrite>>													
<<Min: 110 - 112.2 5% Min: Ankerite>>													
110.20	**112.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**										
110.2 - 112.2: up to 10% mag													
<<Min: 110.2 - 112.2 5% Min: Sphalerite>>													
<<Min: 110.2 - 112.2 15% Min: Pyrite>>													
<<Min: 110.2 - 112.2 5% Min: Pyrrhotite>>													
<<Min: 110.2 - 112.2 5% Min: Chalcopyrite>>													
<<Alt: 112.1 - 116.7 Moderate (Alt) Muscovite>>													
112.20	**116.70**	**RHYv** **Rhyolite volcaniclastic**			113.40	114.90	1.50	B00267311	0.9	-0.005	-0.01	-0.01	0.09
<<Min: 112.2 - 116.2 3% Min: Ankerite>>					114.90	116.40	1.50	B00267312	1.3	-0.005	-0.01	0.02	0.1
<<Min: 112.2 - 116.7 1% Min: Pyrite>>													
<<Min: 112.2 - 116.7 1% Min: Pyrrhotite>>													
<<Min: 113 - 116 5% Min: Calcite>>													
<<Vein: 114.5 - 115.2 50% Quartz>>													
End of Hole @ 116.7													

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-113

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415241.996	Core Size:		Azimuth:	90	Date Logging Complete:	
UTM Northing:	6815523.771	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1440.235	Casing Depth (m):		Length (m):	221.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	90		90	SS				☑	
13	-44	76		76	SS				☑	
47	-47	80		80	SS				☑	
71	-48	83		83	SS				☑	
102	-49	86		86	SS				☑	
132	-50	91		91	SS				☑	
166	-56	100		100	SS				☑	
196	-57	101		101	SS				☑	
218	-57	101		101	SS				☑	

From (m)	To (m)	Rocktype & Description
0.00	**5.70**	**OVBN** **Overburden**
5.70	**8.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 5.7 - 10.7 5% Min: Calcite>>		
<<Min: 5.7 - 21 5% Min: Ankerite>>		
8.30	**10.70**	**MDSt** **Rhyolite tuff dominant mudstone**
10.70	**11.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Min: 10.7 - 18.3 1% Min: Calcite>>
11.60	**18.50**	**MDSt** **Rhyolite tuff dominant mudstone**
		<<Min: 18.3 - 33.5 5% Min: Calcite>>
18.50	**19.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Vein: 18.5 - 28.2 Quartz-Carbonate 45 deg. >>
19.50	**28.90**	**MDSt** **Rhyolite tuff dominant mudstone**
		19.5 - 28.9: incl. <30cm MAFi dike
		<<Min: 21 - 33.51 10% Min: Ankerite>>
		<<Vein: 25.7 - 26 Quartz-Carbonate 50 deg. >>
28.90	**33.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		28.9 - 33.5: incl. <30
		<<Vein: 31.3 - 32.6 Quartz-Carbonate>>
33.50	**45.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 33.51 - 54.4 3% Min: Ankerite>> discontinuous throughout
		<<Min: 39.7 - 56.7 5% Min: Calcite>>
		<<Alt: 33.7 - 37.9 Weak (Alt) Muscovite>>
45.00	**45.50**	**MDSc** **Carbonaceous dominant mudstone**
45.50	**49.80**	**RHYvl** **Lapilli tuff**
		45.5 - 49.8: incl. 0.3m MAFi dike
49.80	**55.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 54.4 - 81 10% Min: Ankerite>>
55.40	**57.30**	**RHYvl** **Lapilli tuff**
		<<Min: 56.7 - 59.2 10% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
57.30	**59.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
59.10	**66.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 59.2 - 66.3 5% Min: Calcite>>		
66.30	**73.10**	**RHYvl** **Lapilli tuff**
73.10	**78.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 73.1 - 78.9 5% Min: Calcite>>		
<<Min: 76.4 - 76.5 80% Min: Pyrrhotite>>		
78.90	**81.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 78.9 - 81.1 10% Min: Calcite>>		
81.00	**82.40**	**RHYif** **feldspar and quartz porphyry intrusions**
<<Min: 81 - 93.3 2% Min: Ankerite>>		
<<Min: 81.1 - 88.5 0.5% Min: Pyrite>>		
82.40	**95.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
82.4 - 95.2: Quartz eye + euhedral mg feldspar		
<<Min: 88.5 - 90.7 0.5% Min: Pyrite>>		
<<Min: 90.9 - 95.2 0.5% Min: Pyrite>>		
<<Min: 93.3 - 108.5 5% Min: Ankerite>>		
<<Min: 94.5 - 111 5% Min: Calcite>>		
<<Alt: 89.1 - 94.5 Weak (Alt) Muscovite>>		
95.20	**97.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
97.70	**103.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
97.7 - 103.9: similar to previous, QE + porph. Feld.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
103.90	**104.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
104.40	**106.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
104.4 - 106.9: QE + FP		
106.90	**107.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
107.80	**125.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
107.8 - 125.8: QE + FP		
<<Min: 108.5 - 132.4 2% Min: Ankerite>>		
<<Min: 115.8 - 125.4 0.5% Min: Pyrite>>		
<<Min: 115.8 - 125.4 0.5% Min: Pyrrhotite>>		
<<Min: 123.4 - 130 5% Min: Calcite>>		
125.80	**127.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
125.8 - 127: icl. 0.3m RHYcw		
127.00	**128.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
128.50	**129.60**	**RHYvl** **Lapilli tuff**
129.60	**132.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
132.40	**134.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 132.4 - 134.4 5% Min: Ankerite>>		
<<Alt: 133.5 - 144.5 Weak-Moderate (Alt) Muscovite>>		
134.40	**147.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
134.4 - 147.7: QE + FP (euhedral, mg to cg)		
<<Min: 134.4 - 147.7 1% Min: Ankerite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 144.5 - 150 Weak (Alt) Shear>> Deflected foliation, becomes steeper TCA. Local <20cm unconsolidated gouge intervals.

147.70 149.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 147.7 - 153.9 2% Min: Ankerite>>

<<Min: 147.7 - 157.4 2% Min: Calcite>>

149.00 151.00 RHYvl Lapilli tuff

<<Vein: 149 - 151.3 Quartz-Carbonate>>

151.00 152.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

152.30 156.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

152.3 - 156.8: QE + FP

<<Min: 153 - 165.2 0.5% Min: Pyrite>>

<<Min: 153 - 165.2 0.5% Min: Pyrrhotite>>

<<Min: 153.9 - 165.3 5% Min: Ankerite>>

<<Struc: 155.4 - 164.4 Weak-Moderate (Alt) Shear>> Steepening of foliation TCA. Degree of strain is more intense compared to uphole intervals. Local healed gouge zones <30cm.

156.80 165.30 RHYvl Lapilli tuff

<<Min: 157.4 - 165.6 1% Min: Calcite>>

<<Min: 165.2 - 165.5 0.5% Min: Pyrite>>

165.30 171.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 165.3 - 172.4 10% Min: Ankerite>>

<<Min: 165.5 - 167.9 0.5% Min: Pyrrhotite>>

<<Min: 165.6 - 170 10% Min: Calcite>>

<<Min: 170 - 182.2 1% Min: Calcite>>

171.30 178.10 RHYvl Lapilli tuff

<<Min: 172.4 - 198.8 5% Min: Ankerite>>

<<Struc: 171.8 - 188 Moderate-Strong (Alt) Shear>> protomylonite to healed cataclastic txt pervasive throughout. Milled coherent qtz fragments and pervasive (discrete) gouge zones subparallel TCA.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

178.10 194.20 RHY undifferentiated rhyolite

178.1 - 194.2: strong cataclastic txt overprint, consolidated clay fault gouge with milled pebble sz clasts, flt bx

<<Vein: 183.6 - 184 Quartz-Carbonate>>

<<Struc: 188 - 196.4 Strong (Alt) Fault>> Pervasive cataclastic (fault bx) mortar txt throughout. Weakly consolidated to mod. Healed. Late stage overprinting cataclastic txt on protomylonite developed.

194.20 201.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

194.2 - 201.7: FP overprinted by ankerite, possibly mixed with RHYvl within fault bx.

<<Min: 198.8 - 206.6 10% Min: Ankerite>>

<<Min: 201.1 - 206 10% Min: Calcite>>

<<Struc: 201 - 209.1 Intense (Alt) Fault>> Pervasive consolidated fault gouge with intensely comminutated clay to sand size matrix and pebble size bx clasts. Rock type changes discernable by color of gouge zone.

201.70 206.10 RHY undifferentiated rhyolite

201.7 - 206.1: healed clay gouge dominant, minor intervals of strongly comminutated rock, milled pebble sz clasts in fault bx

<<Vein: 204.2 - 205 Quartz-Carbonate>>

206.10 213.80 MDSc Carbonaceous dominant mudstone

206.1 - 213.8: strngly graphitic, appears heterolitic with interstitial qtz banding towards end of interval (grad. LCT). Broken throughout, flt bx.

<<Min: 206.1 - 213.8 2% Min: Pyrite>>

<<Min: 206.6 - 212.9 5% Min: Ankerite>>

<<Min: 212.9 - 221.3 2% Min: Ankerite>>

<<Struc: 209.1 - 221.3 Moderate-Strong (Alt) Shear>> pervasively broken core, no gouge. Protomylonite to mylonite developed throughout. Contrasting rock types of MDSc/MDSt and RHY - deformation highlighted by heterolithic appearing MDSt and MDSc. RHY is more massive but does have fabric developed at high angle TCA.

213.80 215.80 RHY undifferentiated rhyolite

213.8 - 215.8: siliceous RHY, possibly RHYcw, cataclastic overprint

215.80 219.40 MDSc Carbonaceous dominant mudstone

215.8 - 219.4: strongly graphitic. Foliation sub parallel to core axis.

<<Min: 215.8 - 219.4 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
219.40	**221.30**	**RHYvl** **Lapilli tuff** 219.4 - 221.3: strongly silicified <<Min: 219.4 - 221.3 2% Min: Calcite>>									
End of Hole @ 221.3											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-114

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415242.724	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815525.45	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1440.425	Casing Depth (m):		Length (m):	217.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
14	-65	180		180	SS				☑	
44	-65	178		178	SS				☑	
71	-66	181		181	SS				☑	
123	-67	185		185	SS				☑	
154	-68	189		189	SS				☑	
184	-67	197		197	SS				☑	
215	-67	191		191	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.90**	**OVBN** **Overburden**									
6.90	**7.90**	**MDSt** **Rhyolite tuff dominant mudstone**									
<<Min: 6.9 - 12.8 5% Min: Calcite>>											
<<Min: 6.9 - 35 5% Min: Ankerite>>											
7.90	**8.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
8.90	**11.00**	**MDSt** **Rhyolite tuff dominant mudstone**									

From (m)	To (m)	Rocktype & Description
11.00	**12.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
12.70	**20.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 12.7 - 21.6 0.5% Min: Pyrite>>
		<<Min: 12.7 - 21.6 0.5% Min: Pyrrhotite>>
		<<Min: 12.8 - 24.2 2% Min: Calcite>>
20.50	**24.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		20.5 - 24: lumped 60cm RHY (uphole equivalent)
		<<Min: 21.6 - 22.9 10% Min: Pyrrhotite>>
24.00	**34.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		24 - 34.1: Patchy quartz eyes, discontinuous curdy txt
		<<Min: 24.2 - 58 1% Min: Calcite>>
34.10	**58.00**	**RHYvl** **Lapilli tuff**
		<<Min: 35 - 57 10% Min: Ankerite>>
		<<Min: 57 - 82 3% Min: Ankerite>>
		<<Alt: 51.6 - 56.2 Weak (Alt) Muscovite>>
		<<Alt: 51.6 - 167.7 Weak (Alt) Muscovite>> fg ser overprinting grey-green chlorite
		<<Alt: 56.2 - 163.4 Weak (Alt) Chlorite>>
		<<Vein: 51.3 - 52.8 40% Quartz-Carbonate>>
58.00	**58.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 58 - 65 5% Min: Calcite>>
58.70	**60.70**	**RHYvl** **Lapilli tuff**
60.70	**70.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		60.7 - 70.5: minor diking, <1m throughout. No assoc. alt, sharp contacts.
		<<Min: 65 - 70.4 2% Min: Calcite>>
		<<Min: 70.4 - 72.5 10% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

70.50 72.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

70.5 - 72.5: minor RHY throughout. <30cm

72.50 77.10 RHYva Coarse grained to ash tuff

<<Min: 72.5 - 90.8 3% Min: Calcite>>

77.10 79.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

79.50 90.20 RHYvl Lapilli tuff

<<Min: 82 - 88.8 10% Min: Ankerite>>

<<Min: 85.5 - 88.7 0.5% Min: Pyrite>>

<<Min: 88.8 - 122 3% Min: Ankerite>>

<<Struc: 87.2 - 87.5 Fault>> consolidated healed gouge and pebble-size rock fragments.

90.20 92.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

90.2 - 92.1: discont. RHYvl throughout

<<Min: 90.8 - 132.2 5% Min: Calcite>>

92.10 99.90 RHYvl Lapilli tuff

99.90 108.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

99.9 - 108: <1m RHYvl throughout

<<Min: 100.9 - 103 0.5% Min: Pyrrhotite>>

108.00 113.60 RHYvl Lapilli tuff

<<Min: 108 - 108.7 0.5% Min: Pyrite>>

<<Min: 108 - 108.7 0.5% Min: Pyrrhotite>>

113.60 116.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

116.00 122.00 RHYvl Lapilli tuff

122.00 126.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 122 - 126.5 15% Min: Ankerite>>

<<Min: 123.8 - 126 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Min: 126.5 - 137 3% Min: Ankerite>>

<<Vein: 123.8 - 126.4 Quartz-Carbonate>>

<<Struc: 122.8 - 126 Fault>> variably broken quartz vein and wall rock /w minor gouge throughout

126.60 129.80 RHYvl Lapilli tuff

129.80 132.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

132.20 137.00 RHYvl Lapilli tuff

<<Min: 132.2 - 163.4 2% Min: Calcite>>

137.00 139.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 137 - 139.8 1.5% Min: Pyrite>>

<<Min: 137 - 139.8 0.5% Min: Pyrrhotite>>

<<Min: 137 - 140.2 10% Min: Ankerite>>

139.80 157.30 RHYvl Lapilli tuff

<<Min: 140.2 - 162.5 2% Min: Ankerite>>

<<Min: 146.1 - 159.9 0.5% Min: Pyrite>>

<<Min: 146.1 - 159.9 3% Min: Pyrrhotite>>

<<Vein: 143.9 - 146 Quartz-Tourmaline>>

157.30 159.80 RHYva Coarse grained to ash tuff

157.3 - 159.8: <20cm MAFi

159.80 171.20 RHYvl Lapilli tuff

<<Min: 159.9 - 184.2 0.5% Min: Pyrite>>

<<Min: 159.9 - 184.2 5% Min: Pyrrhotite>>

<<Min: 162.5 - 181 10% Min: Ankerite>>

<<Alt: 167.7 - 188.2 Strong (Alt) Muscovite>>

<<Struc: 167.8 - 169.5 Fault>> fold axis, variably broken (poker chips) throughout, v. minor flt gouge.

171.20 173.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

173.20 176.80 RHYvl Lapilli tuff

176.80 178.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

178.10 182.30 RHYvl Lapilli tuff

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
182.20	183.70	1.50	B00264149	0.3	0.013	-0.01	-0.01	0.1

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 181 - 188.2 20% Min: Ankerite>>									
182.30	**188.20**	**RHYva**	**Coarse grained to ash tuff**	183.70	185.20	1.50	B00264151	0.7	-0.005	-0.01	0.02	0.02
			182.3 - 188.2: megacrystic (v.oarse) ankerite porphyroblasts from 187.5 to 188.2									
			<<Min: 184.2 - 188.2 2% Min: Pyrrhotite>>	185.20	186.70	1.50	B00264152	0.6	-0.005	-0.01	0.01	0.03
			<<Alt: 186.7 - 187.4 Moderate (Alt) Cordierite>> partial replacement by tourmaline. Patchy skeletal txt throughout tourmaline.									
188.20	**190.40**	**OA**	**Magnetite bearing sulphides**									
			<<Min: 188.2 - 188.8 0.5% Min: Sphalerite>>									
			<<Min: 188.2 - 188.8 50% Min: Pyrite>>									
			<<Min: 188.2 - 188.8 15% Min: Pyrrhotite>>									
			<<Min: 188.2 - 188.8 3% Min: Chalcopyrite>>									
190.40	**199.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
			<<Min: 190.4 - 199.5 10% Min: Sphalerite>>									
			<<Min: 190.4 - 199.5 80% Min: Pyrite>>									
			<<Min: 190.4 - 199.5 0.5% Min: Chalcopyrite>>									
			<<Min: 195 - 199.5 5% Min: Calcite>>									
199.50	**204.00**	**RHY**	**undifferentiated rhyolite**	201.00	202.50	1.50	B00264153	0.6	0.011	-0.01	-0.01	-0.01
			<<Min: 199.5 - 203.4 2% Min: Pyrrhotite>>	202.50	204.00	1.50	B00264154	0.5	-0.005	-0.01	-0.01	0.05
			<<Min: 199.5 - 207.5 3% Min: Ankerite>>									
			<<Alt: 199.5 - 207.9 Strong (Alt) Muscovite>>									
			<<Vein: 203.2 - 204 Quartz-Carbonate>>									
204.00	**217.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	204.00	205.50	1.50	B00264155	0.3	-0.005	-0.01	-0.01	-0.01
			<<Min: 204.2 - 208 2% Min: Pyrrhotite>>									
			<<Min: 207.9 - 217.3 15% Min: Calcite>>									
			<<Alt: 207.9 - 217.3 Moderate (Alt) Chlorite>>									
			<<Struc: 212.5 - 213.5 Fault>> minor fault gouge, core strongly broken along foliation poker chips									

End of Hole @ 217.3

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-115

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415250.825	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815354.958	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1444.372	Casing Depth (m):		Length (m):	148.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
26	-48	171		171	SS				☑	
56	-48	173		173	SS				☑	
87	-49	176		176	SS				☑	
117	-49	178		178	SS				☑	
148	-50	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**18.30**	**CASN** **Casing**									
18.30	**19.50**	**OVBN** **Overburden**									
19.50	**23.00**	**MAFt** **Mafic Volcaniclastics**									
23.00	**34.80**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 25 - 43 3% Min: Pyrite>>											
<<Min: 32 - 38 1% Min: Calcite>>											
<<Vein: 26.4 - 27.8 100% Quartz>>											
<<Struc: 23.2 - 26.4 Strong (Alt) Shear>>											
34.80	**43.20**	**MAFt** **Mafic Volcaniclastics**									
34.8 - 43.2: interbanded with mdsc											

From (m)	To (m)	Rocktype & Description

<<Min: 38 - 48.5 5% Min: Calcite>>

<<Min: 43 - 76 0.5% Min: Pyrite>>

43.20 48.50 MDSc Carbonaceous dominant mudstone

43.2 - 48.5: calcareous

48.50 54.90 MAFt Mafic Volcaniclastics

<<Min: 48.5 - 61 10% Min: Calcite>>

54.90 56.00 MDSc Carbonaceous dominant mudstone

54.9 - 56: calcareous

56.00 60.70 MAFt Mafic Volcaniclastics

<<Vein: 56 - 58.8 40% Quartz-Carbonate>>

60.70 81.00 MDSc Carbonaceous dominant mudstone

60.7 - 81: calcareous

<<Min: 61 - 73 15% Min: Calcite>>

<<Min: 73 - 79.5 2% Min: Calcite>>

<<Min: 76 - 78.2 2% Min: Pyrite>>

<<Min: 76 - 78.2 9% Min: Pyrrhotite>>

<<Min: 76 - 78.2 0.5% Min: Chalcopyrite>>

<<Min: 78.2 - 135.6 0.5% Min: Pyrite>>

<<Min: 79.5 - 82.5 15% Min: Calcite>>

81.00 82.40 MAFt Mafic Volcaniclastics

82.40 84.70 MDSc Carbonaceous dominant mudstone

82.4 - 84.7: calcareous

<<Min: 82.5 - 87.5 10% Min: Calcite>>

84.70 85.80 MAFt Mafic Volcaniclastics

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

85.80 99.60 MDSc Carbonaceous dominant mudstone

85.8 - 99.6: contact with underlying felsic sequence seems conformable, interbedding of MDS and RHYva(andesitic tuff?)

<<Min: 87.5 - 99.6 2% Min: Calcite>>

99.60 135.60 RHYva Coarse grained to ash tuff

99.6 - 135.6: fairly massive fine grained unit, weakly calcareous schist, could be intermediate tuff

<<Min: 99.6 - 108 1% Min: Calcite>>
<<Min: 108 - 135 3% Min: Calcite>>
<<Min: 135 - 148.1 1% Min: Calcite>>
<<Vein: 135 - 138.9 60% Quartz>>
<<Struc: 101.4 - 102.6 Moderate (Alt) Fault>>

135.60 148.10 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 135.6 - 148.1 3% Min: Pyrite>>
<<Alt: 135.6 - 148.1 Moderate (Alt) Silicification>>
<<Alt: 135.6 - 148.1 Weak (Alt) Muscovite>>
<<Struc: 141.6 - 142.1 Moderate (Alt) Fault>>

End of Hole @ 148.1

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-116

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415250.824	Core Size:		Azimuth:	77	Date Logging Complete:	
UTM Northing:	6815357.89	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1444.615	Casing Depth (m):		Length (m):	46.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	77		77	SS				☑	
20	-87	77		77	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.20 OVBN Overburden

12.20 19.10 MAFt Mafic Volcaniclastics

<<Min: 13 - 46 15% Min: Calcite>>

<<Struc: 15 - 46 Intense (Alt) Fault>> entire hole is a zone of faulting with 50cm scale regions of pure gouge and cataclastic textures within very broken core

19.10 21.10 MDSc Carbonaceous dominant mudstone

19.1 - 21.1: bands of strongly calcareous material

21.10 21.70 MAFt Mafic Volcaniclastics

21.70 25.90 MDSc Carbonaceous dominant mudstone

21.7 - 25.9: bands of strongly calcareous material

25.90 26.50 MAFt Mafic Volcaniclastics

From (m)	To (m)		Rocktype & Description
26.50	**29.90**	**MDSc**	**Carbonaceous dominant mudstone**
26.5 - 29.9: bands of strongly calcareous material			
29.90	**30.90**	**MAFt**	**Mafic Volcaniclastics**
30.90	**32.30**	**MDSc**	**Carbonaceous dominant mudstone**
30.9 - 32.3: bands of strongly calcareous material			
32.30	**35.70**	**MAFt**	**Mafic Volcaniclastics**
35.70	**37.00**	**MDSc**	**Carbonaceous dominant mudstone**
35.7 - 37: bands of strongly calcareous material			
37.00	**40.30**	**MAFt**	**Mafic Volcaniclastics**
40.30	**40.90**	**MDSc**	**Carbonaceous dominant mudstone**
40.3 - 40.9: bands of strongly calcareous material			
40.90	**44.40**	**MAFt**	**Mafic Volcaniclastics**
44.40	**46.30**	**MDSc**	**Carbonaceous dominant mudstone**
44.4 - 46.3: bands of strongly calcareous material			

End of Hole @ 46.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-116A

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415250.824	Core Size:		Azimuth:	360	Date Logging Complete:	
UTM Northing:	6815357.89	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1444.615	Casing Depth (m):		Length (m):	129.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	360		360	SS				☑	
66	-87	347		347	SS				☑	
97	-86	326		326	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.80 OVBN Overburden

9.80 11.30 MDSc Carbonaceous dominant mudstone

9.8 - 11.3: calcareous bands

<<Min: 9.8 - 63.5 15% Min: Calcite>>

<<Struc: 10 - 58.2 Strong (Alt) Fault>> HQ core little better than a RC hole. Very broken core and gouge throughout.

11.30 14.30 MAFt Mafic Volcaniclastics

11.3 - 14.3: olive green, calcareous

14.30 15.00 MDSc Carbonaceous dominant mudstone

14.3 - 15: calcareous bands

15.00 17.90 MAFt Mafic Volcaniclastics

15 - 17.9: olive green, calcareous

From (m)	To (m)	Rocktype & Description
		<<Vein: 16.1 - 17.2 100% Quartz>>
17.90	**19.00**	**MDSc** **Carbonaceous dominant mudstone**
		17.9 - 19: calcareous bands
19.00	**21.40**	**MAFt** **Mafic Volcaniclastics**
		19 - 21.4: olive green, calcareous
21.40	**23.90**	**MDSc** **Carbonaceous dominant mudstone**
		21.4 - 23.9: calcareous bands
23.90	**24.90**	**MAFt** **Mafic Volcaniclastics**
		23.9 - 24.9: olive green, calcareous
24.90	**28.00**	**MDSc** **Carbonaceous dominant mudstone**
		24.9 - 28: calcareous bands
28.00	**30.00**	**MAFt** **Mafic Volcaniclastics**
		28 - 30: olive green, calcareous
30.00	**38.00**	**MDSc** **Carbonaceous dominant mudstone**
		30 - 38: calcareous bands
38.00	**40.20**	**MAFt** **Mafic Volcaniclastics**
		38 - 40.2: olive green, calcareous
40.20	**44.00**	**MDSc** **Carbonaceous dominant mudstone**
		40.2 - 44: calcareous bands
44.00	**47.00**	**MAFt** **Mafic Volcaniclastics**
		44 - 47: olive green, calcareous

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

47.00 53.20 MDSc Carbonaceous dominant mudstone

47 - 53.2: calcareous bands

53.20 54.30 MAFt Mafic Volcaniclastics

53.2 - 54.3: olive green, calcareous

<<Min: 53.2 - 54.3 1% Min: Pyrrhotite>>

54.30 63.50 MDSc Carbonaceous dominant mudstone

54.3 - 63.5: calcareous bands

<<Struc: 58.2 - 103 Strong (Alt) Fault>> gouge and healed cataclastic material throughout.

63.50 66.10 MAFt Mafic Volcaniclastics

63.5 - 66.1: caught up in structural zone.

<<Min: 63.5 - 103 5% Min: Calcite>>

66.10 68.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

66.1 - 68.1: curdy, deformed in structure

<<Alt: 66.1 - 103 Weak-Moderate (Alt) Chlorite>> function of faulting. Late overprint

68.10 112.40 RHYva Coarse grained to ash tuff

68.1 - 112.4: homogeneous, non calcareous more siliceous grey

<<Min: 68.1 - 68.2 5% Min: Pyrrhotite>>

<<Min: 72.4 - 74.5 1% Min: Pyrrhotite>>

<<Vein: 72.4 - 75.7 100% Quartz>>

<<Vein: 108.6 - 109 100% Quartz-Sericite/White mica>>

<<Struc: 105 - 129 Moderate-Strong (Alt) Fault>> as above but slightly less intense.

112.40 113.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

112.4 - 113: biotite present, banded

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

113.00 115.60 RHYva Coarse grained to ash tuff

113 - 115.6: amygdules or fragments are calcareous. Is this our new mafic flow rock? Very broken up in fault zone

115.60 118.00 RHYv Rhyolite volcaniclastic

115.6 - 118: siliceous compared

118.00 129.50 RHYva Coarse grained to ash tuff

118 - 129.5: homogeneous, non calcareous more siliceous grey

<<Vein: 127.4 - 127.6 100% Quartz>>

End of Hole @ 129.5

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-117

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415202.929	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815447.236	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1428.28	Casing Depth (m):		Length (m):	172.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
14	-61	188		188	SS				☑	
44	-62	183		183	SS				☑	
75	-62	187		187	SS				☑	
105	-63	196		196	SS				☑	
166	-63	202		202	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 5.40 OVBN Overburden

5.40 16.70 RHYvl Lapilli tuff

<<Min: 5.4 - 19.6 0.5% Min: Pyrite>>

<<Min: 5.4 - 19.6 0.5% Min: Pyrrhotite>>

<<Min: 9.5 - 25 2% Min: Calcite>>

<<Min: 10.5 - 27.2 5% Min: Ankerite>>

<<Alt: 5.4 - 23.5 Weak-Moderate (Alt) Chlorite>>

<<Alt: 5.4 - 23.9 Weak-Moderate (Alt) Chlorite>> sel. Repl. Appears to overprint throughout.

16.70 19.55 RHYcw Curdy textured-flow banded (flows, subvolcanics)

19.55 20.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

From (m)	To (m)		Rocktype & Description
20.00	**25.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 20.1 - 25.9 0.5% Min: Pyrite>>			
<<Min: 25 - 38 5% Min: Calcite>>			
<<Alt: 21.5 - 27.2 Weak (Alt) Muscovite>>			
25.80	**27.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
27.20	**28.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 27.2 - 60.55 10% Min: Ankerite>>			
<<Alt: 27.2 - 49.2 Moderate (Alt) Muscovite>>			
28.60	**32.30**	**RHYvl**	**Lapilli tuff**
32.30	**35.00**	**RHY**	**undifferentiated rhyolite**
<<Struc: 32.3 - 35 Weak-Moderate (Alt) Shear>>			
35.00	**38.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
38.00	**40.50**	**RHYvl**	**Lapilli tuff**
40.50	**41.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
41.40	**44.00**	**RHYvl**	**Lapilli tuff**
44.00	**45.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
45.10	**46.50**	**RHYvl**	**Lapilli tuff**
<<Min: 45.1 - 48.2 0.5% Min: Pyrite>>			
<<Min: 45.1 - 48.2 0.5% Min: Pyrrhotite>>			
46.50	**49.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 47.3 - 50.6 1% Min: Calcite>>			
<<Alt: 49.2 - 84.1 Weak-Moderate (Alt) Muscovite>>			
<<Vein: 48 - 49 Quartz>>			
49.70	**52.50**	**RHYvl**	**Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
52.50	**53.05**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
53.05	**60.55**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 59.6 - 60.5 0.5% Min: Pyrite>>			
<<Vein: 53.6 - 54 Quartz>>			
<<Vein: 56.4 - 60.1 Quartz-Carbonate>>			
60.55	**61.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 60.55 - 95.2 20% Min: Ankerite>>			
61.80	**68.50**	**RHYvl**	**Lapilli tuff**
68.50	**68.65**	**RHYvl**	**Lapilli tuff**
<<Alt: 68.5 - 74.62 Moderate-Strong (Alt) Chlorite>>			
68.65	**68.90**	**RHYvl**	**Lapilli tuff**
68.90	**70.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
70.00	**71.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
71.80	**74.62**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 74.6 - 78.5 0.5% Min: Pyrite>>			
74.62	**84.85**	**RHYvl**	**Lapilli tuff**
<<Alt: 84.1 - 110.6 Weak (Alt) Muscovite>>			
84.85	**85.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 84.85 - 86 5% Min: Calcite>>			
<<Alt: 84.85 - 124.55 Weak-Moderate (Alt) Chlorite>> overprint, late chlorite			
85.50	**88.85**	**RHYvl**	**Lapilli tuff**
<<Struc: 86.9 - 87.4 Fault>>			
88.85	**90.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
90.40	**91.60**	**RHYvl**	**Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
91.60	**95.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
<<Vein: 92.6 - 92.9 Quartz-Tourmaline>>												
95.20	**95.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 95.2 - 115 2% Min: Ankerite>>												
95.70	**104.90**	**RHYvl**	**Lapilli tuff**									
<<Min: 97 - 99.1 1% Min: Calcite>>												
<<Struc: 103.6 - 110.5 Fault>>			cataclastic bx, mortar txt with milled clasts in healed flt gouge matrix									
104.90	**106.10**	**RHY**	**undifferentiated rhyolite**									
106.10	**107.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
107.10	**122.70**	**RHYvl**	**Lapilli tuff**	120.00	121.50	1.50	B00267735	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 110.6 - 122.3 0.5% Min: Pyrrhotite>>				121.50	123.00	1.50	B00267736	0.5	-0.005	-0.01	-0.01	0.01
<<Min: 110.7 - 112 2% Min: Calcite>>												
<<Min: 112 - 115.5 5% Min: Calcite>>												
<<Min: 115 - 124.55 15% Min: Ankerite>>												
<<Min: 115.5 - 117.7 2% Min: Calcite>>												
<<Min: 122 - 123.5 5% Min: Calcite>>												
<<Alt: 115.5 - 124.55 Weak-Moderate (Alt) Muscovite>>												
122.70	**124.55**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	123.00	124.55	1.55	B00267737	-0.3	-0.005	-0.01	-0.01	-0.01
122.7 - 124.55: crbncs component increases towars lct, up to 40% locally												
124.55	**128.70**	**MDSc**	**Carbonaceous dominant mudstone**	124.55	126.80	2.25	B00267738	0.9	0.014	0.01	0.03	0.16
<<Min: 125.8 - 128.5 0.5% Min: Pyrite>>				126.90	128.20	1.30	B00267739	1.4	-0.005	0.02	0.01	0.31
<<Alt: 128 - 129.6 Strong (Alt) Muscovite>>												
128.70	**131.10**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
<<Min: 129.6 - 130.2 2% Min: Chalcopyrite>>												
<<Min: 130.2 - 131.1 20% Min: Pyrrhotite>>												
<<Min: 130.2 - 131.1 2% Min: Chalcopyrite>>												

From (m)	To (m)	Rocktype & Description
131.10	**132.30**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 131.1 - 132.3 30% Min: Pyrite>>		
<<Min: 131.1 - 132.3 15% Min: Pyrrhotite>>		
<<Min: 131.1 - 132.3 5% Min: Chalcopyrite>>		
132.30	**133.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 132.3 - 133.5 10% Min: Sphalerite>>		
<<Min: 132.3 - 133.5 30% Min: Pyrite>>		
<<Min: 132.3 - 133.5 2% Min: Pyrrhotite>>		
<<Min: 132.3 - 133.5 1.5% Min: Chalcopyrite>>		
133.50	**134.40**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 133.5 - 134.4 5% Min: Sphalerite>>		
<<Min: 133.5 - 134.4 40% Min: Pyrite>>		
<<Min: 133.5 - 134.4 0.5% Min: Chalcopyrite>>		
134.40	**136.00**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
<<Min: 134.4 - 136 0.5% Min: Sphalerite>>		
<<Min: 134.4 - 136 80% Min: Pyrite>>		
<<Min: 134.4 - 136 0.5% Min: Galena>>		
136.00	**145.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 136 - 145.3 15% Min: Sphalerite>>		
<<Min: 136 - 145.3 60% Min: Pyrite>>		
<<Min: 136 - 145.3 1% Min: Galena>>		
<<Min: 136 - 145.3 1% Min: Chalcopyrite>>		
<<Min: 143.9 - 155 10% Min: Calcite>>		
145.30	**146.50**	**OH** **Fine grained, megascopically homogeneous pyrite rock**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
146.50	**152.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 146.5 - 152.1 15% Min: Sphalerite>>												
<<Min: 146.5 - 152.1 60% Min: Pyrite>>												
<<Min: 146.5 - 152.1 1% Min: Galena>>												
<<Min: 146.5 - 152.1 1% Min: Chalcopyrite>>												
152.10	**155.50**	**RHYvl**	**Lapilli tuff**	153.60	155.10	1.50	B00267741	1	-0.005	-0.01	-0.01	0.03
<<Min: 152.1 - 156.4 15% Min: Ankerite>>				155.10	156.70	1.60	B00267742	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 152.1 - 156.5 0.5% Min: Pyrite>>												
<<Alt: 152.1 - 155 Moderate-Strong (Alt) Chlorite>>												
<<Alt: 155 - 164.6 Moderate (Alt) Muscovite>>												
<<Alt: 155 - 164.6 Weak (Alt) Chlorite>> wk overprint of strong muscovite alt.												
<<Vein: 152.1 - 156 Quartz-Carbonate>>												
<<Vein: 155.3 - 155.9 Quartz>>												
<<Struc: 153.6 - 158.5 Fault>> discont. Gouge intervals /w broken core												
155.50	**156.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	156.70	158.20	1.50	B00267743	1	0.012	-0.01	-0.01	-0.01
<<Min: 156.4 - 164.6 5% Min: Ankerite>>												
<<Min: 156.5 - 170 0.5% Min: Pyrite>>												
156.90	**164.40**	**RHYvl**	**Lapilli tuff**	158.20	159.70	1.50	B00267744	1.3	0.025	-0.01	0.01	-0.01
<<Min: 164 - 168 10% Min: Calcite>>												
<<Vein: 163.5 - 163.9 Quartz>>												
164.40	**172.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	169.60	171.00	1.40	B00267745	1.7	0.013	-0.01	0.06	0.5
<<Min: 168 - 172.5 20% Min: Calcite>>				171.00	172.50	1.50	B00267746	0.8	0.011	-0.01	0.03	0.21
<<Min: 170 - 172 1% Min: Sphalerite>>												
<<Min: 170 - 172 1% Min: Pyrite>>												
<<Min: 170 - 172 0.5% Min: Chalcopyrite>>												
<<Alt: 164.6 - 172.5 Moderate-Strong (Alt) Chlorite>>												
<<Alt: 171.1 - 172 Moderate (Alt) Muscovite>>												
<<Vein: 166.5 - 168.4 Quartz>>												
<<Vein: 169.6 - 172 Quartz-Carbonate>>												

Project: **KZK** **Hole Number:** **K95-117**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 172.5									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-118

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415202.769	Core Size:		Azimuth:	150	Date Logging Complete:	
UTM Northing:	6815446.4	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1428.178	Casing Depth (m):		Length (m):	169.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	150		150	SS				☑	
13	-89	158		158	SS				☑	
41	-86	207		207	SS				☑	
78	-84	208		208	SS				☑	
108	-83	196		196	SS				☑	
136	-83	197		197	SS				☑	
169	-81	197		197	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.50**	**OVBN Overburden**									
5.50	**16.10**	**RHYvl Lapilli tuff**									
<<Min: 6 - 111 10% Min: Ankerite>>											
<<Alt: 5.5 - 16 Trace (Alt) Muscovite>>											
<<Alt: 16 - 24 Weak (Alt) Muscovite>>											
16.10	**24.40**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 16.1 - 17.7 0.5% Min: Pyrrhotite>>											
<<Min: 17 - 87 10% Min: Calcite>>											
<<Min: 17.7 - 18.5 0.5% Min: Pyrrhotite>>											
<<Min: 18.5 - 31.2 0.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description
24.40	**25.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 25 - 32 Weak (Alt) Muscovite>>		
25.10	**31.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Struc: 28 - 36.6 Moderate (Alt) Fault>> broken core zone, minor gouge zones		
31.00	**31.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 31.2 - 31.7 0.5% Min: Pyrite>>		
31.40	**36.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 31.7 - 49 0.5% Min: Pyrrhotite>>		
<<Alt: 32 - 36 Moderate (Alt) Muscovite>>		
<<Alt: 36 - 48 Weak (Alt) Muscovite>>		
36.60	**48.10**	**RHYvl** **Lapilli tuff**
36.6 - 48.1: getting less lapilli down hole and 30cm of ashy, tops downhole		
48.10	**50.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
48.1 - 50.9: fine grained, grey, vfg biotie speckled, not calcareous		
<<Min: 49 - 50.9 3% Min: Pyrite>>		
50.90	**52.80**	**RHYvl** **Lapilli tuff**
<<Alt: 50.9 - 58.3 Weak (Alt) Muscovite>>		
52.80	**58.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
52.8 - 58: creamy white, like 95-124 that interior to this is definitly RHYi		
58.00	**59.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 58.1 - 59.5 0.5% Min: Pyrite>>		
<<Min: 59.5 - 62.8 0.5% Min: Pyrrhotite>>		
<<Alt: 58.3 - 69 Weak (Alt) Muscovite>>		
59.60	**65.80**	**RHYvl** **Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 62.8 - 65.8 0.5% Min: Pyrite>>

65.80 66.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 65.8 - 67 0.5% Min: Pyrite>>

66.90 69.60 RHYvl Lapilli tuff

<<Min: 67 - 68.7 0.5% Min: Pyrite>>

<<Min: 68.7 - 69.4 0.5% Min: Pyrrhotite>>

<<Min: 69.4 - 69.6 0.5% Min: Pyrrhotite>>

69.60 71.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 69.6 - 70.9 0.5% Min: Pyrrhotite>>

<<Min: 70.9 - 71.5 2% Min: Pyrrhotite>>

71.00 71.50 RHYi Aphanitic Rhyolite (intrusion)

71 - 71.5: bleached margins of MAFi on either side. Flow foliated like rhycw in appearance

71.50 73.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 71.5 - 73.1 0.5% Min: Pyrrhotite>>

<<Alt: 73 - 83 Weak (Alt) Muscovite>>

73.10 78.10 RHYvl Lapilli tuff

<<Min: 73.1 - 75.3 0.5% Min: Pyrrhotite>>

<<Min: 75.3 - 78.1 0.5% Min: Pyrrhotite>>

78.10 79.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 78.1 - 79.7 0.5% Min: Pyrrhotite>>

<<Min: 79.7 - 80.8 0.5% Min: Pyrrhotite>>

79.90 83.70 RHYvl Lapilli tuff

<<Min: 80.8 - 81.9 0.5% Min: Pyrrhotite>>

<<Min: 81.9 - 83.8 0.5% Min: Pyrrhotite>>

83.70 86.70 RHYva Coarse grained to ash tuff

83.7 - 86.7: med grey, with pale pink brown banding

<<Min: 83.8 - 84 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 85 - 85.2 100% Quartz>>

<<Struc: 84.4 - 85.4 Weak-Moderate (Alt) Fault>> broken core

86.70 86.80 RHYvl Lapilli tuff

86.80 87.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

87.50 89.00 RHYvl Lapilli tuff

<<Min: 87.6 - 91.3 0.5% Min: Pyrrhotite>>

<<Alt: 88 - 102.5 Weak (Alt) Muscovite>>

89.00 90.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

90.50 91.40 RHYvl Lapilli tuff

<<Min: 91.3 - 91.8 0.5% Min: Pyrrhotite>>

91.40 91.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 91.8 - 93.7 0.5% Min: Pyrite>>

<<Min: 91.8 - 93.7 0.5% Min: Pyrrhotite>>

91.90 96.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 93.7 - 102.2 2% Min: Pyrrhotite>>

96.50 102.50 RHYvl Lapilli tuff

<<Min: 102.2 - 103.2 0.5% Min: Pyrrhotite>>

102.50 103.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 103.2 - 103.8 1% Min: Pyrrhotite>>

<<Alt: 102.5 - 111 Weak-Moderate (Alt) Muscovite>>

<<Struc: 103 - 104 Moderate (Alt) Fault>> broken core zone, minor gouge zones

103.30 116.80 RHYvl Lapilli tuff

<<Min: 103.8 - 108 0.5% Min: Pyrrhotite>>

<<Min: 108 - 116.4 0.5% Min: Pyrrhotite>>

<<Min: 111 - 139.3 15% Min: Ankerite>>

<<Min: 116.4 - 138.3 1% Min: Pyrite>>

<<Min: 116.4 - 138.3 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 111 - 138 Moderate-Strong (Alt) Muscovite>>									
		<<Vein: 104.5 - 105 67% Quartz>>									
		<<Struc: 108 - 111 Weak-Moderate (Alt) Fault>> broken core									
		<<Struc: 112 - 118 Weak-Moderate (Alt) Fault>> broken core zone, minor gouge zones									
116.80	**138.20**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	137.50	139.00	1.50	B00232619	3.4	0.026	0.02	-0.01	0.1
		<<Struc: 123 - 123.5 Weak-Moderate (Alt) Fault>> broken core zone, minor gouge zones									
		<<Struc: 134.4 - 134.8 Moderate (Alt) Fault>> gouge and broken core									
		<<Struc: 137 - 138 Weak (Alt) Fault>> broken core									
138.20	**139.90**	**MDSw Coherent rhyolite flow with carbonaceous content**	139.00	140.50	1.50	B00232621	0.3	0.012	-0.01	-0.01	0.09
		<<Min: 138.3 - 139.3 0.5% Min: Pyrrhotite>>									
		<<Min: 139.3 - 139.6 0.5% Min: Pyrrhotite>>									
		<<Min: 139.6 - 139.8 0.5% Min: Pyrrhotite>>									
		<<Min: 139.8 - 140.1 1% Min: Pyrite>>									
		<<Min: 139.8 - 140.1 0.5% Min: Pyrrhotite>>									
		<<Alt: 139.3 - 141.3 Moderate-Strong (Alt) Silicification>>									
		<<Vein: 139.3 - 139.9 85% Quartz>>									
139.90	**141.10**	**MDSc Carbonaceous dominant mudstone**									
		<<Min: 140.1 - 141.6 0.5% Min: Pyrite>>									
		<<Min: 140.1 - 141.6 1% Min: Pyrrhotite>>									
141.10	**142.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
		<<Min: 141.6 - 142 0.5% Min: Pyrrhotite>>									
		<<Min: 141.6 - 142 2% Min: Chalcopyrite>>									
		<<Alt: 141.3 - 142 Intense (Alt) Muscovite>>									
		<<Alt: 141.8 - 146.2 Moderate-Strong (Alt) Cordierite>>									
142.00	**142.50**	**OJ Heavilly disseminated sulphides in proximal altered rock** **MG**									
		<<Min: 142 - 142.5 5% Min: Pyrrhotite>>									
		<<Min: 142 - 142.5 8% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 142 - 146.2 Moderate-Strong (Alt) Muscovite>>

<<Alt: 142 - 146.2 Moderate (Alt) Chlorite>>

142.50 145.50 RHYv Rhyolite volcaniclastic

142.5 - 145.5: extremely altered with po stringers 10% chlorite, cordierite. Proximal alteration. Very difficult to determine protolith

<<Min: 142.5 - 145.5 0.5% Min: Sphalerite>>

<<Min: 142.5 - 145.5 3% Min: Pyrite>>

<<Min: 142.5 - 145.5 10% Min: Pyrrhotite>>

<<Min: 142.5 - 145.5 0.5% Min: Chalcopyrite>>

<<Vein: 143.9 - 144.4 100% Quartz-Carbonate>>

145.50 150.30 OJ Heavilly disseminated sulphides in proximal altered rock MG

145.5 - 150.3: slightly elevated lead, could go met7

<<Min: 145.5 - 150.3 5% Min: Sphalerite>>

<<Min: 145.5 - 150.3 50% Min: Pyrite>>

<<Min: 145.5 - 150.3 5% Min: Pyrrhotite>>

<<Min: 145.5 - 150.3 2% Min: Chalcopyrite>>

150.30 158.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

150.3 - 158.2: slightly elevated lead, could go met7

<<Min: 150.3 - 158.2 18% Min: Sphalerite>>

<<Min: 150.3 - 158.2 65% Min: Pyrite>>

<<Min: 150.3 - 158.2 0.5% Min: Pyrrhotite>>

<<Min: 150.3 - 158.2 0.5% Min: Chalcopyrite>>

158.20 161.00 RHYvl Lapilli tuff

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
159.70	161.20	1.50	B00232622	0.3	0.009	-0.01	-0.01	-0.01

<<Min: 158.2 - 158.9 0.5% Min: Pyrite>>

<<Min: 158.2 - 158.9 0.5% Min: Galena>>

<<Min: 158.9 - 164.4 0.5% Min: Pyrite>>

<<Min: 158.9 - 164.4 0.5% Min: Pyrrhotite>>

<<Min: 160 - 164.5 5% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description
		<<Alt: 158.2 - 159 Strong (Alt) Muscovite>>
		<<Alt: 158.2 - 159 Moderate (Alt) Cordierite>>
		<<Alt: 159 - 164.5 Weak-Moderate (Alt) Muscovite>>
161.00	**164.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
164.50	**169.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		164.5 - 169.8: leopard rock
		<<Min: 164.5 - 169.8 15% Min: Calcite>>
		<<Min: 165.3 - 169.8 0.5% Min: Pyrite>>
		<<Min: 165.3 - 169.8 0.5% Min: Pyrrhotite>>
		<<Vein: 164.5 - 164.9 90% Quartz>>
		<<Struc: 164.5 - 165 Weak-Moderate (Alt) Fault>> broken core
		End of Hole @ 169.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
161.20	162.70	1.50	B00232623	0.4	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-119

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415229.044	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815351.881	Casing Pulled?:		Dip:	-70	Drill Company:	
UTM Elev. (m):	1434.935	Casing Depth (m):		Length (m):	79.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180		180	SS				☑	
44	-71	177		177	SS				☑	
78	-71	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.20 OVBN Overburden

12.20 13.00 MDSc Carbonaceous dominant mudstone

12.2 - 13: claclareous, rubble core

<<Min: 12.2 - 71.7 30% Min: Calcite>> calcareous rocks

<<Struc: 12.2 - 58 Moderate-Strong (Alt) Fault>> very strongly broken rock with zones of fault gouge

13.00 14.50 MAFt Mafic Volcaniclastics

13 - 14.5: olive green calcareous, rubble core

14.50 18.40 MDSc Carbonaceous dominant mudstone

14.5 - 18.4: some minor mafic tuffacous material within calcareous argillite

18.40 19.90 MAFt Mafic Volcaniclastics

18.4 - 19.9: olive green, 5cm band of MDSc within

From (m)	To (m)		Rocktype & Description
19.90	**23.40**	**MDSc**	**Carbonaceous dominant mudstone**
19.9 - 23.4: <5% Maft bands			
23.40	**24.00**	**MAFt**	**Mafic Volcaniclastics**
23.4 - 24: intercalacted with minor MDSc			
24.00	**32.70**	**MDSc**	**Carbonaceous dominant mudstone**
24 - 32.7: clacareous argillte			
<<Vein: 25 - 26.4 90% Quartz>>			
32.70	**33.90**	**MAFt**	**Mafic Volcaniclastics**
33.90	**40.80**	**MDSc**	**Carbonaceous dominant mudstone**
33.9 - 40.8: <5% MAFt intercalacted			
40.80	**43.90**	**MAFt**	**Mafic Volcaniclastics**
43.90	**45.00**	**MDSc**	**Carbonaceous dominant mudstone**
45.00	**47.50**	**MAFt**	**Mafic Volcaniclastics**
47.50	**59.80**	**MDSc**	**Carbonaceous dominant mudstone**
47.5 - 59.8: foliation parallel to CA. Very strong fault gouge 58-59.7m			
<<Struc: 58 - 61.5 Intense (Alt) Fault>> 100% unhealed gouge and rock flour			
59.80	**62.50**	**MAFt**	**Mafic Volcaniclastics**
59.8 - 62.5: very strongly fault gouged to 61.5m			
<<Vein: 62.1 - 62.5 90% Quartz>>			
62.50	**71.70**	**MDSc**	**Carbonaceous dominant mudstone**
62.5 - 71.7: very minor intercalated olive green mafic tuff			
<<Struc: 63.3 - 69 Moderate (Alt) Fault>> broken core			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
71.70	**73.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
71.7 - 73.3: felsic flow rock in sharp (1cm) conformable contact with the MDSc		
<<Min: 71.7 - 76 1% Min: Pyrrhotite>>		
<<Alt: 71.7 - 79.6 Trace (Alt) Muscovite>>		
73.30	**73.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
73.50	**76.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Struc: 73.5 - 79.6 Moderate (Alt) Fault>> broken core		
76.00	**76.10**	**MDSc** **Carbonaceous dominant mudstone**
76 - 76.1: sharp lower contact, gradational upper contact indicating stratigraphy is tops up		
76.10	**76.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
76.50	**77.40**	**MDSc** **Carbonaceous dominant mudstone**
76.5 - 77.4: more silty, not calcareous		
77.40	**77.90**	**MAFt** **Mafic Volcaniclastics**
77.4 - 77.9: olive green calcareous		
<<Min: 77.4 - 77.9 12% Min: Calcite>>		
77.90	**78.20**	**MDSc** **Carbonaceous dominant mudstone**
78.20	**79.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

End of Hole @ 79.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-120

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	21-Sep-15
UTM Easting	415154.473	Core Size:		Azimuth:	180	Date Logging Complete:	22-Sep-15
UTM Northing:	6815400.069	Casing Pulled?:		Dip:	-75	Drill Company:	
UTM Elev. (m):	1405.649	Casing Depth (m):		Length (m):	114.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	180		180	SS				☑	
11	-75	172		172	SS				☑	
41	-75	178		178	SS				☑	
72	-75	188		188	SS				☑	
114	-74	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN Overburden**									
6.10	**11.20**	**RHYvl Lapilli tuff**									
<<Min: 6.1 - 17.8 0.5% Min: Pyrrhotite>>											
<<Min: 6.1 - 62.5 10% Min: Ankerite>>											
<<Min: 6.1 - 72.2 0.5% Min: Calcite>>											
11.20	**12.60**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
12.60	**30.40**	**RHYvl Lapilli tuff**									
<<Min: 17.8 - 20.4 0.5% Min: Pyrrhotite>>											
<<Min: 20.4 - 21.5 0.5% Min: Pyrrhotite>>											
<<Min: 22.4 - 29.6 0.5% Min: Pyrite>>											
<<Min: 22.4 - 29.6 0.5% Min: Pyrrhotite>>											
<<Min: 29.6 - 33.1 0.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

30.40 38.30 RHYva Coarse grained to ash tuff

<<Min: 33.1 - 33.4 0.5% Min: Pyrite>>

<<Min: 33.4 - 38.2 0.5% Min: Pyrrhotite>>

<<Min: 38.2 - 43.6 0.5% Min: Pyrrhotite>>

<<Vein: 33 - 37 10% Quartz-Carbonate>>

<<Struc: 36.7 - 37.3 Strong (Alt) Fault>>

38.30 55.00 RHYvl Lapilli tuff

<<Min: 43.6 - 45 0.5% Min: Pyrrhotite>>

<<Min: 45 - 49.8 0.5% Min: Pyrrhotite>>

<<Min: 49.8 - 51 2% Min: Pyrrhotite>>

<<Min: 51 - 61.5 0.5% Min: Pyrite>>

<<Min: 51 - 61.5 2% Min: Pyrrhotite>>

<<Struc: 52 - 63 Moderate (Alt) >> good development of fold closures and spaced cleavage S0/S1 surfaces cut at high angle by S2?

55.00 62.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 61.5 - 66.2 3% Min: Pyrrhotite>>

62.50 66.10 RHYva Coarse grained to ash tuff

<<Min: 62.5 - 63.5 5% Min: Ankerite>>

<<Min: 63.5 - 84.2 25% Min: Ankerite>> marginal to MXSX, may be siderite & other CB

<<Alt: 63 - 72.2 Moderate (Alt) Muscovite>>

66.10 69.20 MDSw Coherent rhyolite flow with carbonaceous content

66.1 - 69.2: weakly carbonaceous RHYcw

<<Min: 66.2 - 66.5 0.5% Min: Pyrite>>

<<Min: 66.2 - 66.5 1% Min: Pyrrhotite>>

<<Min: 66.5 - 67.7 20% Min: Pyrite>>

<<Min: 66.5 - 67.7 0.5% Min: Pyrrhotite>>

<<Min: 67.7 - 72.2 0.5% Min: Pyrite>>

<<Min: 67.7 - 72.2 0.5% Min: Pyrrhotite>>

69.20 72.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
72.20	**78.30**	**MDSc**	**Carbonaceous dominant mudstone**		76.90	78.30	1.40	B00264176	16.2	0.127	0.08	0.05	0.9
72.2 - 78.3: well developed black carbonaceous mudstone, moderately siliceous													
<<Min: 72.2 - 78.4 3% Min: Pyrite>>													
<<Min: 72.2 - 78.4 0.5% Min: Pyrrhotite>>													
<<Min: 72.2 - 94 0% Min: Calcite>>													
78.30	**83.50**	**MDSt**	**Rhyolite tuff dominant mudstone**		78.40	79.90	1.50	B00264177	0.4	-0.005	-0.01	-0.01	0.01
78.3 - 83.5: grey and black to strongly siliceous sections near base,													
<<Min: 78.4 - 79.4 0.5% Min: Pyrite>>					79.90	81.40	1.50	B00264178	2.4	0.033	0.01	0.03	0.11
<<Min: 78.4 - 79.4 2% Min: Pyrrhotite>>													
<<Min: 80.9 - 82.9 0.5% Min: Pyrrhotite>>													
<<Min: 82.9 - 83.5 0.5% Min: Pyrrhotite>>													
<<Alt: 78.3 - 79.8 Weak (Alt) Cordierite>>													
<<Alt: 78.3 - 83.5 Moderate (Alt) Muscovite>>													
<<Alt: 79.8 - 80.7 Strong (Alt) Cordierite>>													
<<Alt: 80.7 - 83.5 Weak (Alt) Cordierite>>													
83.50	**84.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**FG**									
83.5 - 84.2: mainly CB and MS +/- TA gangue only mino PO													
<<Min: 83.5 - 84.2 10% Min: Sphalerite>>													
<<Min: 83.5 - 84.2 40% Min: Pyrite>>													
<<Min: 83.5 - 84.2 4% Min: Chalcopyrite>>													
84.20	**90.00**	**OA**	**Magnetite bearing sulphides**	**FG**									
<<Min: 84.2 - 90 8% Min: Sphalerite>>													
<<Min: 84.2 - 90 60% Min: Pyrite>>													
<<Min: 84.2 - 90 7% Min: Pyrrhotite>>													
90.00	**90.40**	**RHYva**	**Coarse grained to ash tuff**										
<<Min: 90 - 90.4 10% Min: Pyrite>>													
<<Alt: 90 - 90.4 Moderate (Alt) Cordierite>>													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
90.40	**92.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 90.4 - 92.1 20% Min: Sphalerite>>												
<<Min: 90.4 - 92.1 60% Min: Pyrite>>												
<<Min: 91.9 - 93 5% Min: Tetrahedrite>>												
92.10	**93.70**	**OI** **Heavilly disseminated sulphides in host schist**	**MCG**									
92.1 - 93.7: Likely RHYva with finely dissem TO, cut by DO/AK string and coarse TT + mino SP PY GL												
<<Min: 92.1 - 93.7 30% Min: Pyrite>>												
<<Min: 92.1 - 93.7 7% Min: Chalcopyrite>>												
93.70	**99.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 93.7 - 99.6 18% Min: Sphalerite>>												
<<Min: 93.7 - 99.6 50% Min: Pyrite>>												
<<Min: 93.7 - 99.6 5% Min: Pyrrhotite>>												
<<Min: 94 - 99.7 3% Min: Calcite>>												
99.60	**105.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		103.30	104.80	1.50	B00264179	0.5	0.005	-0.01	-0.01	-0.01
<<Min: 99.6 - 101.2 1% Min: Pyrite>>				104.80	105.80	1.00	B00264181	0.7	0.014	-0.01	-0.01	-0.01
<<Min: 99.7 - 114.8 1% Min: Ankerite>>												
<<Min: 99.7 - 114.9 0% Min: Calcite>>												
<<Min: 101.2 - 102.4 8% Min: Sphalerite>>												
<<Min: 101.2 - 102.4 20% Min: Pyrite>>												
<<Min: 101.2 - 102.4 3% Min: Pyrrhotite>>												
<<Min: 102.4 - 109.7 4% Min: Pyrite>>												
<<Min: 102.4 - 109.7 1% Min: Pyrrhotite>>												
<<Alt: 99.7 - 114.9 Moderate (Alt) Muscovite>> slight greenish colour												
105.70	**114.90**	**RHYv** **Rhyolite volcaniclastic**		105.90	107.40	1.50	B00264182	3.4	0.036	0.02	0.08	0.24
105.7 - 114.9: variable schist indistinct textures, mod-strong MU alteration strong foliation, is Felsic but could include vl and cw												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 110 - 114.9 1% Min: Pyrite>> <<Min: 110 - 114.9 2% Min: Pyrrhotite>> <<Vein: 109.5 - 114.9 20% Quartz-Carbonate>> **End of Hole @ 114.9**									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-121

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	22-Sep-15
UTM Easting	415152.439	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815320.3	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1405.533	Casing Depth (m):		Length (m):	62.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
18	-62	176		176	SS				☑	
61	-62	181		181	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**29.80**	**CASN Casing**									
29.80	**35.40**	**OVBN Overburden**									
35.40	**39.30**	**MDSt Rhyolite tuff dominant mudstone**									
35.4 - 39.3: sheared											
<<Struc: 35.4 - 45.8 Intense (Alt) Fault>> strongly faulted ground rock and gouge, lith still recognizeable. Note of entire hole MXsx is only lithology not sheared											
39.30	**43.20**	**MDSc Carbonaceous dominant mudstone**	41.00	43.20	2.20	B00264183	2.5	0.04	0.03	0.01	0.18
39.3 - 43.2: sheared											
43.20	**45.80**	**RHY undifferentiated rhyolite**	43.20	44.30	1.10	B00264184	1.1	-0.005	0.01	-0.01	0.03
43.2 - 45.8: intensely sheared											
<<Alt: 43.2 - 43.9 Strong (Alt) Muscovite>> faulted core contacts uncertain											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
45.80	**46.30**	**OG** **Chalcopyrite rich sulphides** **CG**									
<<Min: 45.8 - 46 5% Min: Pyrrhotite>> massive sulphide OG high grade Cu, OB low grade, faulted material clay and gouge											
46.30	**46.90**	**OA** **Magnetite bearing sulphides** **MG**									
46.3 - 46.9: most grade in OG section sample combines two zones, OA appears low grade in base metals											
46.90	**59.70**	**RHY** **undifferentiated rhyolite**	48.40	49.90	1.50	B00264185	0.3	0.01	-0.01	-0.01	-0.01
46.9 - 59.7: intensely sheared											
<<Struc: 46.9 - 59.7 Intense (Alt) Fault>> gouge and ground up rock, reconizeable lith. Contorted											
59.70	**62.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
59.7 - 62.5: broken core, aphanitic no amygdules or phenos											
<<Struc: 59.7 - 62.5 Moderate-Strong (Alt) Fault>> broken up pebbles RHYi											
End of Hole @ 62.5											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-122

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415129.265	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815366.448	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1398.064	Casing Depth (m):		Length (m):	78	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
7	-46	176		176	SS				☑	
38	-46	176		176	SS				☑	
77	-44	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 10.60 RHYv Rhyolite volcaniclastic

<<Min: 9.1 - 10.8 0.5% Min: Pyrite>>

<<Min: 9.1 - 10.8 20% Min: Ankerite>>

10.60 12.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 10.8 - 12.1 15% Min: Calcite>>

12.10 30.80 RHYvl Lapilli tuff

<<Min: 12.1 - 22.8 15% Min: Ankerite>>

<<Min: 12.1 - 25.2 1% Min: Pyrite>>

<<Min: 12.1 - 25.2 1% Min: Pyrrhotite>>

<<Min: 14.5 - 14.7 15% Min: Calcite>>

<<Min: 22.8 - 25.2 3% Min: Calcite>>

<<Min: 22.8 - 25.2 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description

<<Min: 25.2 - 32.2 1% Min: Pyrite>>

<<Min: 25.2 - 32.2 1% Min: Pyrrhotite>>

<<Min: 25.2 - 35 15% Min: Ankerite>>

<<Min: 28 - 30 5% Min: Calcite>>

<<Alt: 14.7 - 33 Trace (Alt) Chlorite>> on fractures and in qtz veins. Also patches of originalmetmorphic remnant chlorite as 'islands' surrounded by more later sericite alteration.

30.80 31.60 MAFta Coarse grained to ash tuff

31.60 38.40 RHYvl Lapilli tuff

<<Min: 33.3 - 38.7 1% Min: Pyrite>>

<<Min: 33.3 - 38.7 1% Min: Pyrrhotite>>

<<Min: 35 - 38.4 10% Min: Ankerite>>

<<Alt: 34 - 38.9 Weak-Moderate (Alt) Muscovite>>

38.40 38.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 38.4 - 45.2 Weak-Moderate (Alt) Silicification>> MDSc units are very siliceous

38.90 42.30 MDSc Carbonaceous dominant mudstone

<<Alt: 38.9 - 44.8 Moderate (Alt) Muscovite>>

<<Vein: 39.5 - 42.7 25% Quartz>>

42.30 44.10 MDSt Rhyolite tuff dominant mudstone

44.10 44.80 MDSc Carbonaceous dominant mudstone

44.80 47.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 44.9 - 50 2% Min: Pyrite>>

<<Alt: 44.8 - 50 Moderate-Strong (Alt) Muscovite>>

47.60 50.20 RHYv Rhyolite volcaniclastic

47.6 - 50.2: poker chip silica bandswith strong muscovite partings

<<Vein: 48.5 - 50.6 15% Quartz>>

50.20 54.20 MDSc Carbonaceous dominant mudstone

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
50.90	52.40	1.50	B00267292	1	0.012	0.01	0.02	0.26

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
52.40	53.60	1.20	B00267293	4.5	0.045	0.02	0.03	0.39

<<Alt: 50.2 - 56.1 Moderate-Strong (Alt) Silicification>> MDSc unit is very siliceous

<<Alt: 53.9 - 54 Weak (Alt) Cordierite>>

<<Alt: 54 - 56.1 Moderate-Strong (Alt) Muscovite>>

<<Struc: 50.3 - 56.1 Weak-Moderate (Alt) Fault>> lots of broken core, possible fault zone of just shitty drillers in hard blocky ground?

54.20 56.10 MDSt Rhyolite tuff dominant mudstone

<<Alt: 56 - 56.7 Weak-Moderate (Alt) Cordierite>>

56.10 65.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

56.1 - 65.4: locally coarse grained, banded, barite as cm size segregations and as crude bands +/- sulfides.

<<Min: 56.1 - 65.4 2% Min: Sphalerite>>

<<Min: 56.1 - 65.4 5% Min: Pyrite>>

<<Min: 56.1 - 65.4 1.5% Min: Chalcopyrite>>

<<Min: 64.2 - 65.4 10% Min: Calcite>>

65.40 66.70 RHYv Rhyolite volcaniclastic

65.4 - 66.7: core rubblw but includews pieces of RHYcw. Unit is intensely sericite altered - talcose surfaces.

<<Min: 65.4 - 66.7 0.5% Min: Sphalerite>>

<<Alt: 65.4 - 66.7 Moderate (Alt) Talc-serpentine>>

66.70 69.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

<<Min: 66.7 - 69.4 2% Min: Sphalerite>>

<<Min: 66.7 - 69.4 50% Min: Pyrite>>

<<Min: 66.7 - 69.4 0.5% Min: Chalcopyrite>>

<<Min: 68.5 - 69.4 15% Min: Calcite>>

<<Alt: 67.3 - 68.4 Moderate (Alt) Cordierite>>

69.40 71.30 RHYv Rhyolite volcaniclastic

69.4 - 71.3: silica bands, pieces of pyritic core rubble and lower 20cm looks to intrusive contact with clay-sericite

<<Min: 69.4 - 69.7 20% Min: Pyrite>>

<<Min: 69.7 - 70.6 4% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 69.7 - 70.6 10% Min: Pyrite>>
		<<Min: 69.7 - 70.6 1.5% Min: Chalcopyrite>>
		<<Alt: 69.4 - 69.7 Weak-Moderate (Alt) Cordierite>>
		<<Struc: 71 - 71.4 Moderate-Strong (Alt) Fault>> also a contact between RHY and MAFi along shear planes. Core rubble zone.
71.30	**78.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 71.3 - 78 15% Min: Calcite>>

End of Hole @ 78

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
71.30	72.80	1.50	B00267294	0.9	-0.005	0.01	-0.01	0.02
72.80	74.30	1.50	B00267295	-0.3	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-123

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415129.265	Core Size:	NQ	Azimuth:	70	Date Logging Complete:	
UTM Northing:	6815366.448	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1398.064	Casing Depth (m):		Length (m):	96.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	70		70	SS				☑	
14	-88	74		74	SS				☑	
44	-88	161		161	SS				☑	
96	-88	156		156	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 8.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 6.1 - 8 5% Min: Calcite>>

<<Min: 6.1 - 10.3 10% Min: Ankerite>>

<<Min: 8 - 8.8 15% Min: Calcite>>

<<Min: 8.7 - 8.9 3% Min: Pyrite>>

<<Min: 8.8 - 16 3% Min: Calcite>>

<<Vein: 8.7 - 11.7 15% Quartz>>

8.90 10.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

8.9 - 10.8: minor ash beds

<<Min: 8.9 - 9.6 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 8.9 - 9.6 0.5% Min: Pyrrhotite>>

<<Min: 9.6 - 39.7 0.5% Min: Pyrrhotite>>

<<Min: 10.3 - 39.8 10% Min: Ankerite>>

10.80 11.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

11.30 39.60 RHYvl Lapilli tuff

11.3 - 39.6: local patches with islands of remnant chlorite alteration. 33.0-45.0; silicic texture, sections of ash.

<<Alt: 16 - 39 Trace (Alt) Cordierite>> on fractures and as remnant original chlorite 'islands' surrounded by sericite alteration

<<Alt: 35 - 41.5 Weak (Alt) Muscovite>>

39.60 49.00 RHYv Rhyolite volcaniclastic

39.6 - 49: 32.6-38.7 poor core rec'y. 39.6.0-45.0; silicic bands, narrow (<20cm) bands of curdy texture, sections of ash. Transitional to following RHYcw unit.

<<Min: 39.7 - 46.4 2% Min: Pyrite>>

<<Min: 39.7 - 46.4 2% Min: Pyrrhotite>>

<<Min: 39.8 - 45 3% Min: Ankerite>>

<<Min: 45 - 50.9 10% Min: Ankerite>>

<<Min: 46.4 - 46.7 10% Min: Pyrite>>

<<Min: 46.7 - 58.4 0.5% Min: Pyrrhotite>>

<<Alt: 41.5 - 50.9 Moderate-Strong (Alt) Muscovite>>

49.00 50.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

50.90 53.00 MDSt Rhyolite tuff dominant mudstone

50.9 - 53: Poor core rec'y. Unit includes 15cm RHYcw and 20cm of MDSc.

<<Alt: 50.9 - 58.4 Weak-Moderate (Alt) Silicification>> poor core rec'y

<<Alt: 50.9 - 58.4 Weak (Alt) Muscovite>>

53.00 54.20 MDSc Carbonaceous dominant mudstone

53 - 54.2: poor core rec'y.

From (m)	To (m)		Rocktype & Description
54.20	**57.10**	**MDSt**	**Rhyolite tuff dominant mudstone**
57.10	**58.40**	**MDSc**	**Carbonaceous dominant mudstone**

57.1 - 58.4: poor core rec'y - missing core

From (m)	To (m)		Rocktype & Description
58.40	**62.70**	**RHYv**	**Rhyolite volcaniclastic**

58.4 - 62.7: poker chip banding, silicic banding with strong muscovite partings; 61.8-62.7m: chlorite & cordierite altered.

<<Min: 58.4 - 62.7 0.5% Min: Pyrite>>

<<Min: 58.4 - 62.7 0.5% Min: Pyrrhotite>>

<<Alt: 58.4 - 62.7 Moderate-Strong (Alt) Muscovite>>

<<Alt: 61.8 - 63.3 Moderate (Alt) Cordierite>>

<<Alt: 61.9 - 63.1 Weak (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description	
62.70	**63.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**

<<Min: 62.7 - 63.3 25% Min: Pyrrhotite>>

<<Min: 62.7 - 63.3 3% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description	
63.30	**63.70**	**OG**	**Chalcopyrite rich sulphides**	**MG**

<<Min: 63.3 - 63.7 3% Min: Sphalerite>>

<<Min: 63.3 - 63.7 60% Min: Pyrite>>

<<Min: 63.3 - 63.7 5% Min: Pyrrhotite>>

<<Min: 63.3 - 63.7 5% Min: Chalcopyrite>>

<<Alt: 63.3 - 66.4 Weak (Alt) Cordierite>> replaced by limonite, chlorite and ??

From (m)	To (m)		Rocktype & Description	
63.70	**64.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**

<<Min: 63.7 - 64.6 15% Min: Sphalerite>>

<<Min: 63.7 - 64.6 70% Min: Pyrite>>

<<Min: 63.7 - 64.6 2% Min: Pyrrhotite>>

<<Min: 63.7 - 64.6 2% Min: Chalcopyrite>>

<<Min: 64 - 64.2 15% Min: Calcite>> and on fractures

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
57.00	58.40	1.40	B00267287	1	0.016	0.01	0.01	0.09
58.40	60.00	1.60	B00267288	1	0.014	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
64.60	**65.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**								
65.90	**68.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**								
<<Min: 65.9 - 74.2 17.5% Min: Sphalerite>>												
<<Min: 65.9 - 74.2 5% Min: Pyrite>>												
<<Min: 65.9 - 74.2 0.5% Min: Pyrrhotite>>												
<<Min: 65.9 - 74.2 0.8% Min: Chalcopyrite>>												
68.80	**69.90**	**OA**	**Magnetite bearing sulphides**	**FG**								
<<Min: 68.8 - 69.9 15% Min: Magnetite>>												
69.90	**74.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**								
<<Min: 73 - 74.7 10% Min: Calcite>>												
74.20	**77.30**	**RHYv**	**Rhyolite volcaniclastic**									
<<Min: 74.2 - 77.3 10% Min: Pyrite>>												
<<Min: 76.2 - 76.5 5% Min: Calcite>>												
<<Alt: 74.2 - 74.7 Moderate (Alt) Cordierite>> replaced by qtz												
<<Alt: 77.1 - 78.5 Weak (Alt) Cordierite>> replaced by qtz												
77.30	**78.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**								
<<Min: 77.3 - 77.7 10% Min: Calcite>>												
<<Min: 77.3 - 78.8 15% Min: Sphalerite>>												
<<Min: 77.3 - 78.8 5% Min: Pyrite>>												
<<Min: 77.3 - 78.8 0.8% Min: Chalcopyrite>>												
78.80	**81.80**	**RHYv**	**Rhyolite volcaniclastic**									
78.8 - 81.8: Also in part a OI unit but doesn't qualify for a MET zone designation: has some grade and is between MxSx units												
<<Min: 78.8 - 79.2 10% Min: Pyrite>>												
<<Min: 78.8 - 79.2 3% Min: Chalcopyrite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 79.2 - 81.8 1.5% Min: Sphalerite>>									
		<<Min: 79.2 - 81.8 5% Min: Pyrite>>									
		<<Alt: 78.8 - 81.8 Weak (Alt) Muscovite>>									
		<<Vein: 78.8 - 79.4 70% Quartz-Pyrite>>									
		<<Struc: 79.2 - 80.1 Moderate-Strong (Alt) Fault>> missing core, broken core, minor gouge									
81.80	**82.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FG**									
		<<Min: 81.8 - 82.3 5% Min: Sphalerite>>									
		<<Min: 81.8 - 82.3 70% Min: Pyrite>>									
		<<Min: 81.8 - 82.3 1% Min: Chalcopyrite>>									
		<<Min: 81.8 - 82.3 5% Min: Calcite>>									
82.30	**96.30**	**RHYv** **Rhyolite volcaniclastic**	84.10	85.60	1.50	B00267289	4.1	0.023	0.04	0.08	0.26
		82.3 - 96.3: poker chip muscovite partings, dismembered silica bands. 2%+ diss py+po, trace calcite. Last .5 m has RHYi type silicification.									
		<<Min: 82.3 - 85.6 5% Min: Ankerite>>	85.60	87.10	1.50	B00267291	3.7	0.03	0.02	0.09	0.34
		<<Min: 82.3 - 92.7 0.5% Min: Sphalerite>>									
		<<Min: 82.3 - 96.3 2% Min: Pyrite>>									
		<<Min: 82.3 - 96.3 2% Min: Pyrrhotite>>									
		<<Min: 85.6 - 96.3 3% Min: Ankerite>>									
		<<Alt: 82.3 - 96.3 Moderate-Strong (Alt) Muscovite>>									
		<<Alt: 95.7 - 96.3 Trace (Alt) Chlorite>>									
		<<Alt: 95.8 - 96.3 Moderate-Strong (Alt) Silicification>>									
		<<Struc: 83.3 - 84.1 Moderate (Alt) Fault>> core rubble, fault suspected									

End of Hole @ 96.3

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-124

Prospect:	Krakatoa	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	16-Sep-15
UTM Easting	415204.512	Core Size:		Azimuth:	180	Date Logging Complete:	17-Sep-15
UTM Northing:	6815347.606	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1424.962	Casing Depth (m):		Length (m):	290.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
26	-55	178		178	SS				☑	
44	-55	181		181	SS				☑	
75	-56	182		182	SS				☑	
102	-55	180		180	SS				☑	
132	-55	182		182	SS				☑	
166	-56	186		186	SS				☑	
196	-56	185		185	SS				☑	
230	-56	188		188	SS				☑	
257	-55	188		188	SS				☑	
287	-56	190		190	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**22.80**	**CASN** **Casing**									
22.80	**23.20**	**OVBN** **Overburden**									
23.20	**32.30**	**MDSc** **Carbonaceous dominant mudstone**									

23.2 - 32.3: limy

<<Min: 23.2 - 32.6 10% Min: Calcite>>

From (m)	To (m)	Rocktype & Description

<<Min: 26.3 - 29 0.5% Min: Pyrite>>
<<Min: 29 - 29.5 0.5% Min: Pyrite>>
<<Min: 29.5 - 30.7 0.5% Min: Pyrite>>
<<Min: 30.7 - 31.5 0.5% Min: Pyrite>>
<<Min: 31.5 - 32.3 0.5% Min: Pyrite>>
<<Vein: 23.5 - 27.7 20% Quartz-Carbonate>>
<<Struc: 23.2 - 24.4 Strong (Alt) Shear>> contorted drag folded mds

32.30 60.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.3 - 60.6: mixed w mds

<<Min: 32.3 - 38.5 2% Min: Pyrrhotite>>
<<Min: 32.6 - 65.4 2% Min: Calcite>>
<<Min: 38.5 - 39.2 0.5% Min: Pyrrhotite>>
<<Min: 40.1 - 42.5 0.5% Min: Pyrrhotite>>
<<Min: 42.5 - 47.5 1% Min: Pyrrhotite>>
<<Min: 46 - 69 3% Min: Ankerite>>
<<Min: 47.5 - 48.1 2% Min: Pyrrhotite>>
<<Min: 55.9 - 59.7 0.5% Min: Pyrrhotite>>
<<Min: 59.7 - 62.5 2% Min: Pyrrhotite>>
<<Struc: 59.7 - 60.6 Strong (Alt) Fault>> gouge

60.60 63.70 MDSc Carbonaceous dominant mudstone

60.6 - 63.7: limy bnd MAFi

<<Min: 62.5 - 64.4 2% Min: Pyrrhotite>>

63.70 64.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.7 - 64.8: interbnd mds

64.80 65.40 MDSc Carbonaceous dominant mudstone

<<Min: 65 - 65.6 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
65.40	**68.70**	**MDS** **Carbonaceous Mudstone & Tuffaceous Mudstone**
65.4 - 68.7: may be chert or felsic tuff		
<<Min: 65.4 - 105 1% Min: Calcite>>		
<<Min: 65.6 - 69.2 3% Min: Pyrrhotite>>		
68.70	**71.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 69 - 72 15% Min: Ankerite>>		
<<Min: 69.2 - 70.3 0.5% Min: Pyrrhotite>>		
<<Min: 71.4 - 72 1% Min: Pyrrhotite>>		
71.90	**73.00**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 72 - 73 0.5% Min: Pyrite>>		
<<Min: 72 - 73 0.5% Min: Pyrrhotite>>		
<<Min: 72 - 99.9 5% Min: Ankerite>>		
73.00	**74.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 73 - 74.5 0.5% Min: Pyrite>>		
<<Min: 73 - 74.5 0.5% Min: Pyrrhotite>>		
74.00	**76.00**	**RHYva** **Coarse grained to ash tuff**
74 - 76: minor mds laminae		
<<Min: 74.5 - 75.8 2% Min: Pyrrhotite>>		
<<Min: 75.8 - 78.5 1% Min: Pyrrhotite>>		
76.00	**83.40**	**RHYvl** **Lapilli tuff**
<<Min: 78.5 - 81.3 0.5% Min: Pyrrhotite>>		
<<Min: 81.3 - 83.4 7% Min: Pyrrhotite>>		
83.40	**83.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
83.90	**99.90**	**RHYvl** **Lapilli tuff**
<<Min: 83.9 - 90.5 2% Min: Pyrrhotite>>		
<<Min: 90.5 - 92.6 1% Min: Pyrrhotite>>		
<<Min: 92.6 - 93.4 0.5% Min: Pyrrhotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 93.4 - 93.9 0.5% Min: Pyrrhotite>>

<<Min: 93.9 - 102.3 1% Min: Pyrite>>

<<Min: 93.9 - 102.3 0.5% Min: Pyrrhotite>>

99.90 102.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

99.9 - 102.7: faint planar flow foliation

<<Min: 99.9 - 188.8 2% Min: Ankerite>>

<<Min: 102.3 - 121.8 0.5% Min: Pyrite>>

102.70 121.80 RHYc Rhyolite coherant volcanics

102.7 - 121.8: aphanitic, looks like rhyi but margins especially on btm are flow foliated. If extrusive lower cnt is better foliated - tops up.

<<Min: 105 - 117 0% Min: Calcite>>

<<Min: 117 - 121.8 1% Min: Calcite>>

121.80 126.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

121.8 - 126.8: foliated base of flow?

<<Min: 121.8 - 126.9 0.5% Min: Pyrrhotite>>

<<Min: 121.8 - 128 3% Min: Calcite>>

<<Vein: 124.9 - 126.5 35% Quartz-Carbonate>>

126.80 171.00 RHYva Coarse grained to ash tuff

126.8 - 171: very similar to ash in k97-178

<<Min: 126.9 - 135.9 0.5% Min: Pyrrhotite>>

<<Min: 128 - 148 10% Min: Calcite>>

<<Min: 135.9 - 137.3 0.5% Min: Pyrite>>

<<Min: 137.3 - 141.6 1% Min: Pyrrhotite>>

<<Min: 141.6 - 143.4 0.5% Min: Pyrrhotite>>

<<Min: 141.6 - 143.4 0.5% Min: Pyrite>>

<<Min: 143.4 - 143.8 0.5% Min: Pyrrhotite>>

<<Min: 143.8 - 144.6 0.5% Min: Pyrite>>

<<Min: 144.6 - 145.1 1% Min: Pyrite>>

<<Min: 144.6 - 145.1 3% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 145.1 - 151.2 0.5% Min: Pyrite>>
<<Min: 145.1 - 151.2 0.5% Min: Pyrrhotite>>
<<Min: 148 - 164 3% Min: Calcite>>
<<Min: 151.2 - 167 0.5% Min: Pyrrhotite>>
<<Min: 151.2 - 167 0.5% Min: Pyrite>>
<<Min: 164 - 177 5% Min: Calcite>>
<<Min: 167 - 167.8 0.5% Min: Pyrite>>
<<Min: 167.8 - 170.6 0.5% Min: Pyrrhotite>>
<<Min: 170.6 - 171.4 0.5% Min: Pyrite>>
<<Vein: 130.4 - 135.8 15% Calcite>>
<<Struc: 129.7 - 130 Strong (Alt) Fault>> gouge
<<Struc: 168.7 - 169.8 Moderate-Strong (Alt) Fault>>

171.00 171.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 171.4 - 189.6 0.5% Min: Pyrite>>
<<Min: 171.4 - 189.6 0.5% Min: Pyrrhotite>>

171.60 172.80 RHYva Coarse grained to ash tuff

172.80 182.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

172.8 - 182.9: excellent flow foliation

<<Min: 177 - 191 2% Min: Calcite>>
<<Vein: 173 - 176.9 20% Quartz>>
<<Struc: 181.7 - 182.9 Intense (Alt) Fault>> gouge

182.90 188.80 RHYvl Lapilli tuff

182.9 - 188.8: peperitic base to flow - tops up but if dyke no tops indication

188.80 189.50 RHYva Coarse grained to ash tuff

<<Min: 188.8 - 214 5% Min: Ankerite>>

189.50 207.20 RHYvl Lapilli tuff

<<Min: 189.6 - 190.6 1% Min: Pyrrhotite>>
<<Min: 190.6 - 191.2 1% Min: Pyrrhotite>>
<<Min: 191 - 239 3% Min: Calcite>>
<<Min: 193.4 - 211.6 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 193.4 - 211.6 1% Min: Pyrrhotite>>
207.20	**209.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
209.50	**213.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 211.6 - 212.9 0.5% Min: Pyrite>>
213.20	**225.10**	**RHYvl** **Lapilli tuff**
		<<Min: 214 - 237 2% Min: Ankerite>>
		<<Min: 214.3 - 218.6 2% Min: Pyrite>>
		<<Min: 218.6 - 219.3 1% Min: Pyrrhotite>>
		<<Min: 219.3 - 230 1% Min: Pyrite>>
		<<Min: 219.3 - 230 1% Min: Pyrrhotite>>
225.10	**230.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 230 - 232.9 1% Min: Pyrite>>
		<<Min: 230 - 232.9 2% Min: Pyrrhotite>>
		<<Alt: 226.5 - 257 Weak (Alt) Muscovite>>
		<<Vein: 229 - 234 40% Quartz>>
230.10	**236.80**	**RHYv** **Rhyolite volcaniclastic**
		<<Min: 233.5 - 236.9 2% Min: Pyrrhotite>>
236.80	**238.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 236.9 - 247.7 3% Min: Pyrrhotite>>
		<<Min: 237 - 257 15% Min: Ankerite>>
238.20	**242.30**	**RHYvl** **Lapilli tuff**
		<<Min: 239 - 271 2% Min: Calcite>>
242.30	**243.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
243.80	**248.10**	**RHYvl** **Lapilli tuff**
		<<Min: 247.7 - 251.2 5% Min: Pyrite>>
		<<Min: 247.7 - 251.2 1% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
248.10	**249.00**	**MDSc**	**Carbonaceous dominant mudstone**
249.00	**250.80**	**MDSt**	**Rhyolite tuff dominant mudstone**
250.80	**253.10**	**RHYva**	**Coarse grained to ash tuff**

250.8 - 253.1: 10 percent section semi msv py replacement

<<Min: 251.2 - 252.5 1% Min: Pyrite>>

<<Min: 251.2 - 252.5 8% Min: Pyrrhotite>>

<<Min: 252.5 - 252.7 30% Min: Pyrite>>

<<Min: 252.5 - 252.7 15% Min: Pyrrhotite>>

<<Min: 252.7 - 254.4 3% Min: Pyrite>>

<<Min: 252.7 - 254.4 5% Min: Pyrrhotite>>

253.10	**256.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 254.4 - 255.2 15% Min: Pyrite>>

<<Min: 254.4 - 255.2 10% Min: Pyrrhotite>>

<<Min: 255.2 - 271 1% Min: Pyrite>>

<<Min: 255.2 - 271 2% Min: Pyrrhotite>>

256.20	**262.40**	**RHYva**	**Coarse grained to ash tuff**

<<Min: 257 - 271 1% Min: Ankerite>>

<<Alt: 257 - 271 Moderate (Alt) Muscovite>>

262.40	**264.00**	**RHYc**	**Rhyolite coherant volcanics**

262.4 - 264: poss rhyi

264.00	**271.00**	**RHY**	**undifferentiated rhyolite**

271.00	**273.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

271 - 273.4: SULPHIDES VERY CALCAREOUS

<<Min: 271 - 273.4 6% Min: Sphalerite>>

<<Min: 271 - 273.4 65% Min: Pyrite>>

MG

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
266.80	268.30	1.50	B00264156	0.7	0.012	-0.01	-0.01	-0.01
268.30	269.50	1.20	B00264157	0.8	0.011	-0.01	-0.01	0.09

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 271 - 273.4 10% Min: Calcite>>

273.40 280.40 RHY undifferentiated rhyolite

<<Min: 273.4 - 279.9 0.5% Min: Pyrite>>

<<Min: 273.4 - 279.9 0.5% Min: Pyrrhotite>>

<<Min: 273.4 - 280.4 0.5% Min: Calcite>>

<<Min: 279.9 - 280.1 2% Min: Sphalerite>>

<<Min: 279.9 - 280.1 20% Min: Pyrite>>

<<Min: 279.9 - 280.1 10% Min: Pyrrhotite>>

<<Min: 279.9 - 280.1 0.5% Min: Chalcopyrite>>

<<Min: 280.1 - 280.4 0.5% Min: Pyrite>>

<<Min: 280.1 - 280.4 0.5% Min: Pyrrhotite>>

<<Alt: 273.4 - 280.4 Moderate-Strong (Alt) Muscovite>>

<<Struc: 278.4 - 278.6 Intense (Alt) Fault>> gouge

280.40 281.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **MG**

280.4 - 281.6: sx very calcareous

<<Min: 280.4 - 281.6 4% Min: Sphalerite>>

<<Min: 280.4 - 281.6 75% Min: Pyrite>>

<<Min: 280.4 - 281.6 5% Min: Pyrrhotite>>

<<Min: 280.4 - 281.6 3% Min: Chalcopyrite>>

<<Min: 280.4 - 281.6 10% Min: Calcite>>

281.60 285.00 RHY undifferentiated rhyolite

<<Min: 281.6 - 285 0.5% Min: Pyrite>>

<<Min: 281.6 - 285 0.5% Min: Pyrrhotite>>

<<Min: 281.6 - 285 0% Min: Calcite>>

<<Alt: 281.6 - 286.6 Moderate (Alt) Muscovite>>

<<Vein: 283.5 - 286 20% Quartz-Carbonate>>

285.00 286.70 OI Heavilly disseminated sulphides in host schist **MG**

285 - 286.7: 285-290.8 is mafi, oi interval is in mafi

<<Min: 285 - 286.6 20% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 285 - 286.7 3% Min: Sphalerite>>
		<<Min: 285 - 286.7 20% Min: Pyrite>>
		<<Min: 286.6 - 290.8 10% Min: Calcite>>
286.70	**290.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 286.7 - 290.8 1% Min: Pyrite>>

End of Hole @ 290.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
288.10	289.60	1.50	B00264158	2.5	0.018	-0.01	0.03	0.09
289.60	290.80	1.20	B00264159	2.3	0.014	-0.01	0.03	0.09

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-125

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415204.602	Core Size:		Azimuth:	280	Date Logging Complete:	
UTM Northing:	6815347.042	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1425.022	Casing Depth (m):		Length (m):	142.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	280		280	SS				☑	
29	-86	273		273	SS				☑	
90	-84	276		276	SS				☑	
142	-83	269		269	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 21.30 OVBN Overburden

21.30 25.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 21.3 - 32.3 0.5% Min: Pyrite>>

<<Min: 22 - 31.5 10% Min: Ankerite>>

<<Alt: 21.3 - 33 Weak (Alt) Muscovite>>

25.60 31.50 RHYvl Lapilli tuff

<<Struc: 28 - 34 Weak-Moderate (Alt) Fault>> broken poker chip core

31.50 31.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 31.5 - 33.5 15% Min: Calcite>>

31.80 32.30 RHYva Coarse grained to ash tuff

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

32.30 32.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.90 33.40 RHYvl Lapilli tuff

<<Alt: 33 - 40 Moderate (Alt) Muscovite>> structural

33.40 33.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

33.4 - 33.5: this group of MAFi display gradational contacts with felsics and no chill margins

33.50 44.40 RHYvl Lapilli tuff

<<Min: 33.6 - 44.4 0.5% Min: Pyrite>>

<<Min: 34 - 80 10% Min: Ankerite>>

<<Alt: 40 - 66.8 Weak (Alt) Muscovite>>

<<Struc: 34 - 40 Moderate-Strong (Alt) Fault>> broken core and gouge zones

<<Struc: 40 - 67 Weak-Moderate (Alt) Fault>> broken core

44.40 45.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 44.4 - 46 0.5% Min: Pyrite>>

45.10 45.50 RHYvl Lapilli tuff

45.50 45.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

45.80 53.70 RHYvl Lapilli tuff

<<Min: 46.6 - 66.8 0.5% Min: Pyrite>>

53.70 66.80 RHYvx Quartz and/or feldspar crystal tuff

66.80 68.30 SED undifferentiated Sediment

66.8 - 68.3: biotite, chlorite, calcite, quartz. Graded texture, tops overturned. However MAFi textures elsewhere indicate tops up

<<Min: 68 - 72 15% Min: Calcite>>

<<Min: 68.2 - 69.2 0.5% Min: Pyrite>>

<<Struc: 67 - 96.8 Moderate (Alt) Fault>> broken core minor gouge zones

68.30 76.20 RHYvl Lapilli tuff

<<Min: 69.2 - 73.2 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Min: 73.2 - 87.5 0.5% Min: Pyrite>>

<<Alt: 69 - 75 Weak (Alt) Muscovite>>

<<Alt: 75 - 96.8 Weak-Moderate (Alt) Muscovite>>

76.20 77.10 RHYvx Quartz and/or feldspar crystal tuff

77.10 109.20 RHYvl Lapilli tuff

<<Min: 80 - 96 15% Min: Ankerite>>

<<Min: 87.5 - 88.7 1% Min: Pyrite>>

<<Min: 89 - 100.6 1% Min: Pyrite>>

<<Min: 96.8 - 112 10% Min: Ankerite>>

<<Min: 100.6 - 108.8 4% Min: Pyrite>>

<<Min: 108.8 - 112 2% Min: Pyrrhotite>>

<<Alt: 96.8 - 109.2 Moderate-Strong (Alt) Muscovite>>

<<Struc: 108.5 - 112 Weak-Moderate (Alt) Fault>> broken core chips

109.20 112.00 MDSc Carbonaceous dominant mudstone

109.2 - 112: hard sil, non calcareous, some py

<<Alt: 109.2 - 112 Moderate (Alt) Silicification>>

112.00 114.60 MDSw Coherent rhyolite flow with carbonaceous content

112 - 114.6: py and biotite porphyroblasts in felsic material

<<Min: 112 - 114.3 2% Min: Pyrrhotite>>

<<Min: 114.3 - 115.6 1% Min: Pyrite>>

114.60 118.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

114.6 - 118.8: good textures 114-116 then increasingly intense alt to mu, bi, porphyroblasts = ashier??

<<Min: 115.6 - 118.8 0.5% Min: Sphalerite>>

<<Min: 115.6 - 118.8 3% Min: Pyrite>>

<<Min: 115.6 - 118.8 1% Min: Pyrrhotite>>

<<Min: 115.6 - 118.8 0.3% Min: Chalcopyrite>>

<<Alt: 115 - 118 Intense (Alt) Muscovite>>

<<Alt: 115 - 118 Moderate (Alt) Biotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.80	114.30	1.50	B00232616	0.5	0.008	-0.01	-0.01	-0.01
114.30	115.80	1.50	B00232615	1.7	0.062	-0.01	0.02	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 118.6 - 120.2 Strong (Alt) Chlorite>>

118.80 119.30 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 118.8 - 119.3 7% Min: Sphalerite>>

<<Min: 118.8 - 119.3 10% Min: Pyrite>>

<<Min: 118.8 - 119.3 0.5% Min: Galena>>

<<Min: 118.8 - 119.3 1% Min: Chalcopyrite>>

119.30 120.20 OC Chalcopyrite-pyrrhotite net textured sulphides

119.3 - 120.2: but po not chlorite

<<Min: 119.3 - 120.2 0.5% Min: Sphalerite>>

<<Min: 119.3 - 120.2 50% Min: Pyrite>>

<<Min: 119.3 - 120.2 2% Min: Pyrrhotite>>

<<Min: 119.3 - 120.2 5% Min: Chalcopyrite>>

120.20 122.20 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 120.2 - 122.2 12% Min: Sphalerite>>

122.20 123.30 OA Magnetite bearing sulphides

123.30 125.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

123.3 - 125.4: in general agree with the met5, but this and below could just as easily be met7 imo

<<Min: 123.3 - 125.4 20% Min: Sphalerite>>

<<Min: 123.3 - 125.4 70% Min: Pyrite>>

<<Min: 123.3 - 125.4 5% Min: Galena>>

<<Min: 123.3 - 125.4 0.5% Min: Chalcopyrite>>

125.40 129.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

125.4 - 129.8: meter measurement wrong here and in assay table. Originally 129m

From (m)	To (m)	Rocktype & Description
		<<Min: 125.4 - 129 16% Min: Sphalerite>>
		<<Min: 125.4 - 129 60% Min: Pyrite>>
		<<Min: 125.4 - 129 4% Min: Galena>>
		<<Min: 125.4 - 129 0.3% Min: Chalcopyrite>>
		<<Min: 127 - 129.8 3% Min: Calcite>>
129.80	**142.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		129.8 - 142.3: leopard rock intrusive
		<<Min: 129.8 - 142.3 15% Min: Calcite>>
		<<Min: 130.1 - 135.5 0.5% Min: Pyrrhotite>>
		<<Vein: 135 - 138.2 80% Quartz-Chlorite>>
		<<Struc: 134 - 140 Moderate (Alt) Fault>> broken core and minor gouge zones
		End of Hole @ 142.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
129.80	131.30	1.50	B00232617	-0.3	0.005	-0.01	-0.01	0.01
131.30	132.80	1.50	B00232618	0.6	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-126

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414623.56	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815473.71	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1437.26	Casing Depth (m):		Length (m):	142.3	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
14	-46	172		172	SS				☑	
44	-47	175		175	SS				☑	
75	-47	175		175	SS				☑	
105	-48	175		175	SS				☑	
142	-49	176		176	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.90**	**OVBN** **Overburden**									
7.90	**12.70**	**MDSt** **Rhyolite tuff dominant mudstone**									
<<Min: 7.9 - 34.6 1% Min: Pyrite>>											
<<Min: 7.9 - 81 0.1% Min: Calcite>> and fracture fill											
<<Alt: 7.9 - 62.8 Weak (Alt) Muscovite>>											
12.70	**19.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 13 - 22 8% Min: Ankerite>>											

From (m)	To (m)	Rocktype & Description
19.60	**36.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
19.6 - 36.6: minor carbonaceous material present.		
<<Min: 22 - 30 5% Min: Ankerite>>		
<<Min: 30 - 39 3% Min: Ankerite>>		
<<Min: 34.6 - 54.2 3% Min: Pyrite>>		
36.60	**38.20**	**MDSt** **Rhyolite tuff dominant mudstone**
38.20	**51.70**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 39 - 54.2 10% Min: Ankerite>>		
<<Alt: 45 - 54 Weak-Moderate (Alt) Silicification>>		
51.70	**54.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
54.20	**64.00**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 54.2 - 61.8 15% Min: Ankerite>>		
<<Min: 54.2 - 62.8 2% Min: Pyrrhotite>>		
<<Min: 61.8 - 83.5 8% Min: Ankerite>>		
<<Min: 62.8 - 86.8 1% Min: Pyrite>>		
<<Alt: 62.8 - 78.5 Weak-Moderate (Alt) Muscovite>> intensity isnot		
64.00	**71.90**	**MDSt** **Rhyolite tuff dominant mudstone**
71.90	**81.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 78.5 - 87.2 Moderate-Strong (Alt) Muscovite>>		
81.90	**87.40**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 83.5 - 85 20% Min: Ankerite>>		
<<Min: 85 - 87.2 4% Min: Ankerite>>		
<<Min: 86.8 - 87.4 5% Min: Pyrite>>		
<<Alt: 86.7 - 87.2 Weak (Alt) Cordierite>>		
<<Alt: 86.8 - 87.4 Moderate (Alt) Biotite>>		
<<Alt: 87.1 - 87.4 Weak (Alt) Chlorite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.00	84.50	1.50	B00267019	0.5	0.016	-0.01	-0.01	0.04
84.50	86.00	1.50	B00267021	0.5	0.026	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
87.40	**88.00**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 87.4 - 88 50% Min: Pyrite>>													
88.00	**89.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 88 - 89.4 40% Min: Sphalerite>>													
<<Min: 88 - 89.4 40% Min: Pyrite>>													
<<Min: 88 - 89.4 1% Min: Chalcopyrite>>													
<<Alt: 89.2 - 93 Moderate-Strong (Alt) Muscovite>>													
89.40	**92.40**	**RHYv**	**Rhyolite volcaniclastic**										
<<Min: 89.4 - 92.4 4% Min: Pyrite>>													
<<Min: 89.4 - 92.4 0.8% Min: Chalcopyrite>>													
<<Struc: 90 - 90.7 Strong (Alt) Fault>>													
92.40	**94.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 92.4 - 94.1 30% Min: Sphalerite>>													
<<Min: 92.4 - 94.1 40% Min: Pyrite>>													
<<Min: 92.4 - 94.1 0.8% Min: Chalcopyrite>>													
<<Alt: 92.7 - 93.2 Moderate-Strong (Alt) Cordierite>>													
94.10	**94.70**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 94.1 - 94.7 10% Min: Sphalerite>>													
<<Min: 94.1 - 94.7 40% Min: Pyrite>>													
94.70	**99.20**	**RHYv**	**Rhyolite volcaniclastic**										
<<Min: 94.7 - 99.2 5% Min: Pyrite>>													
<<Alt: 94.7 - 99.2 Moderate (Alt) Muscovite>>													
99.20	**99.70**	**OG**	**Chalcopyrite rich sulphides**	**FMG**									
<<Min: 99.2 - 99.7 20% Min: Pyrite>>													
<<Min: 99.2 - 99.7 15% Min: Pyrrhotite>>													
<<Min: 99.2 - 99.7 60% Min: Chalcopyrite>>													
99.70	**104.10**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 99.7 - 104.1 7.5% Min: Sphalerite>>													
<<Min: 99.7 - 104.1 60% Min: Pyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 99.7 - 104.1 4% Min: Pyrrhotite>>													
<<Min: 99.7 - 104.1 3% Min: Chalcopyrite>>													
104.10	**104.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**									
<<Min: 104.1 - 104.7 15% Min: Sphalerite>>													
<<Min: 104.1 - 104.7 60% Min: Pyrite>>													
<<Min: 104.1 - 104.7 0.5% Min: Chalcopyrite>>													
104.70	**107.10**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 104.7 - 107.1 10% Min: Sphalerite>>													
<<Min: 104.7 - 107.1 40% Min: Pyrite>>													
107.10	**107.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 107.1 - 107.9 15% Min: Sphalerite>>													
<<Min: 107.1 - 107.9 60% Min: Pyrite>>													
<<Min: 107.1 - 107.9 0.5% Min: Chalcopyrite>>													
107.90	**118.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		109.40	110.90	1.50	B00267022	17.4	0.169	0.05	0.24	0.46
107.9 - 118.9: textures obliterated in upper (first) 3 m													
<<Min: 107.9 - 110.6 4% Min: Pyrite>>					110.90	112.40	1.50	B00267023	1.9	0.012	-0.01	0.03	0.02
<<Min: 107.9 - 119.2 0.5% Min: Sphalerite>>													
<<Min: 107.9 - 119.2 0.5% Min: Chalcopyrite>>													
<<Min: 108 - 110.6 15% Min: Ankerite>>													
<<Min: 110.6 - 112 4% Min: Ankerite>>													
<<Min: 110.6 - 118 2% Min: Pyrite>>													
<<Min: 112 - 117 12% Min: Ankerite>>													
<<Min: 117 - 129 5% Min: Ankerite>>													
<<Min: 118 - 142.3 1% Min: Pyrite>>													
<<Alt: 107.9 - 112.6 Weak-Moderate (Alt) Muscovite>>													
<<Alt: 115 - 118.9 Weak (Alt) Silicification>>													
118.90	**128.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										

From (m)	To (m)	Rocktype & Description

<<Min: 119.5 - 129 8% Min: Calcite>>

<<Alt: 123 - 135 Moderate-Strong (Alt) Silicification>>

128.80 134.50 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 129 - 138 4% Min: Ankerite>>

134.50 142.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

134.5 - 142.3: chlorite-biotite alt, strong leucoxine noted at 137m.

<<Min: 136.5 - 142.3 5% Min: Calcite>>

<<Min: 138 - 142.3 15% Min: Ankerite>>

<<Alt: 138.2 - 139.4 Moderate-Strong (Alt) Biotite>>

End of Hole @ 142.3

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-127

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414622.91	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815473.98	Casing Pulled?:		Dip:	-75	Drill Company:	
UTM Elev. (m):	1437.46	Casing Depth (m):		Length (m):	129.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	180		180	SS				☑	
14	-74	184		184	SS				☑	
44	-74	183		183	SS				☑	
75	-74	187		187	SS				☑	
105	-73	186		186	SS				☑	
129	-73	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.30 CASN Casing

7.30 8.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 7.3 - 8.6 1.5% Min: Pyrite>>

<<Min: 7.3 - 8.6 0.5% Min: Pyrrhotite>>

<<Min: 7.3 - 68 2% Min: Ankerite>>

<<Min: 7.3 - 109.5 0.5% Min: Calcite>>

8.40 12.80 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 9.6 - 38.7 2.5% Min: Pyrite>>

<<Min: 9.6 - 38.7 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
12.80	**38.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
38.90	**44.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Min: 38.9 - 48.6 2% Min: Pyrrhotite>>		
44.50	**45.60**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Struc: 44.6 - 44.7 Moderate (Alt) Fault>> gouge		
45.60	**47.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
47.50	**61.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 48.6 - 62.6 1.5% Min: Pyrite>>		
<<Min: 48.6 - 62.6 0.5% Min: Pyrrhotite>>		
61.70	**64.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Min: 62.6 - 64.8 20% Min: Pyrrhotite>>		
64.70	**69.40**	**MDSc** **Carbonaceous dominant mudstone**
64.7 - 69.4: impressive very carbonaceous and fine-laminated mds		
<<Min: 64.8 - 67.7 2% Min: Pyrite>>		
<<Min: 64.8 - 67.7 0.5% Min: Pyrrhotite>>		
<<Min: 67.7 - 70.4 1.5% Min: Pyrite>>		
<<Min: 68 - 71 15% Min: Ankerite>>		
69.40	**70.80**	**MDSt** **Rhyolite tuff dominant mudstone**
70.80	**82.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
70.8 - 82.9: mod amt QE		
<<Min: 71 - 110 2% Min: Ankerite>>		
<<Alt: 72 - 86 Moderate (Alt) Muscovite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
82.90	**83.50**	**MDSc** **Carbonaceous dominant mudstone**										
83.50	**83.90**	**MDSc** **Carbonaceous dominant mudstone**										
83.90	**85.30**	**MDSt** **Rhyolite tuff dominant mudstone**										
85.30	**92.40**	**RHYva** **Coarse grained to ash tuff**										
<<Min: 90.6 - 92.4 0.3% Min: Sphalerite>>												
<<Min: 90.6 - 92.4 1% Min: Pyrite>>												
<<Min: 90.6 - 92.4 2% Min: Pyrrhotite>>												
<<Min: 90.6 - 92.4 0.5% Min: Chalcopyrite>>												
<<Alt: 86 - 103 Strong (Alt) Muscovite>>												
<<Alt: 86.9 - 92 Moderate (Alt) Cordierite>>												
<<Alt: 89 - 103 Moderate (Alt) Chlorite>>												
<<Struc: 85.5 - 85.6 Moderate (Alt) Fault>> gouge												
92.40	**92.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 92.4 - 92.9 3% Min: Sphalerite>>												
<<Min: 92.4 - 92.9 6% Min: Pyrite>>												
<<Min: 92.4 - 92.9 4% Min: Chalcopyrite>>												
92.90	**103.00**	**RHYvl** **Lapilli tuff**		98.50	100.00	1.50	B00264101	1.8	-0.005	-0.01	-0.01	0.07
<<Min: 102.8 - 104.5 0.3% Min: Sphalerite>>				100.00	101.50	1.50	B00264102	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 102.8 - 104.5 3% Min: Pyrite>>				101.50	103.00	1.50	B00264103	0.8	0.01	-0.01	-0.01	0.16
<<Min: 102.8 - 104.5 0.4% Min: Chalcopyrite>>												
103.00	**104.50**	**RHYv** **Rhyolite volcaniclastic**										
<<Alt: 103 - 105 Strong (Alt) Chlorite>>												
104.50	**105.60**	**OD** **Brecciated sulphides**	**CG**									
<<Min: 104.5 - 105.6 10% Min: Sphalerite>>												
<<Min: 104.5 - 105.6 60% Min: Pyrite>>												
<<Min: 104.5 - 105.6 5% Min: Pyrrhotite>>												
<<Min: 104.5 - 105.6 1% Min: Chalcopyrite>>												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
105.60	**108.60**	**OA**	**Magnetite bearing sulphides**	**MG**									
<<Min: 105.6 - 108.6 12% Min: Sphalerite>>													
<<Min: 105.6 - 108.6 70% Min: Pyrite>>													
<<Min: 105.6 - 108.6 6% Min: Pyrrhotite>>													
<<Min: 105.6 - 108.6 1% Min: Chalcopyrite>>													
108.60	**110.20**	**OD**	**Brecciated sulphides**	**MCG**									
<<Min: 108.6 - 110.2 10% Min: Sphalerite>>													
<<Min: 108.6 - 110.2 60% Min: Pyrite>>													
<<Min: 108.6 - 110.2 5% Min: Pyrrhotite>>													
<<Min: 108.6 - 110.2 1% Min: Chalcopyrite>>													
<<Min: 109.5 - 128 3% Min: Calcite>>													
<<Min: 110 - 115.7 20% Min: Ankerite>>													
110.20	**110.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**									
<<Alt: 110.3 - 116 Moderate (Alt) Muscovite>>													
110.80	**115.40**	**RHY**	**undifferentiated rhyolite**										
<<Min: 110.8 - 115.4 3% Min: Sphalerite>>													
<<Min: 110.8 - 115.4 5% Min: Pyrite>>													
<<Min: 110.8 - 115.4 0.5% Min: Chalcopyrite>>													
115.40	**115.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 115.4 - 115.8 8% Min: Sphalerite>>													
<<Min: 115.4 - 115.8 65% Min: Pyrite>>													
<<Min: 115.4 - 115.8 0.5% Min: Chalcopyrite>>													
<<Min: 115.7 - 129.5 1% Min: Ankerite>>													
115.80	**126.20**	**RHYv**	**Rhyolite volcaniclastic**		117.30	118.80	1.50	B00264104	9.7	0.059	0.04	0.05	0.55
<<Min: 115.8 - 128 1% Min: Pyrite>>					118.80	120.30	1.50	B00264105	2.8	0.024	-0.01	0.04	0.21
<<Alt: 116 - 129.5 Moderate (Alt) Silicification>>					120.30	121.80	1.50	B00264106	-0.3	0.02	-0.01	-0.01	-0.01
<<Alt: 116 - 129.5 Moderate-Strong (Alt) Muscovite>>													
126.20	**128.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 128 - 129.5 15% Min: Calcite>>											
128.10	**129.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
End of Hole @ 129.5											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-128

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414600.7	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815498.32	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1443.58	Casing Depth (m):		Length (m):	142	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
14	-64	173		173	SS				☑	
44	-64	171		171	SS				☑	
75	-64	172		172	SS				☑	
105	-64	175		175	SS				☑	
135	-64	175		175	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.80**	**OVBN Overburden**									
7.80	**17.00**	**RHYvl Lapilli tuff**									
<<Min: 7.9 - 10.9 3% Min: Pyrrhotite>>											
<<Min: 7.9 - 11 1% Min: Pyrite>>											
<<Min: 7.9 - 30 6% Min: Ankerite>>											
<<Min: 10.9 - 29.4 0.2% Min: Pyrrhotite>>											
<<Min: 11 - 65 2% Min: Pyrite>>											
<<Alt: 8.5 - 85.1 Weak (Alt) Muscovite>> musc on partings											
17.00	**23.20**	**MDSt Rhyolite tuff dominant mudstone**									
23.20	**32.20**	**RHYvl Lapilli tuff**									
<<Min: 30 - 72 3% Min: Ankerite>>											

From (m)	To (m)		Rocktype & Description
32.20	**62.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
62.00	**70.20**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 65 - 82.6 1% Min: Pyrite>>			
<<Min: 68 - 70.2 3% Min: Calcite>>			
70.20	**79.90**	**RHYvl**	**Lapilli tuff**
<<Min: 72 - 87 8% Min: Ankerite>>			
79.90	**85.10**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 82.6 - 110 3% Min: Pyrite>> and as fine dissem			
85.10	**96.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 87 - 101 4% Min: Ankerite>>			
<<Alt: 85.1 - 108.3 Moderate (Alt) Muscovite>>			
96.00	**96.80**	**MDSc**	**Carbonaceous dominant mudstone**
96.80	**101.60**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 97 - 99 1% Min: Pyrrhotite>>			
<<Min: 101 - 108.2 8% Min: Ankerite>>			
101.60	**117.10**	**RHYva**	**Coarse grained to ash tuff**
<<Min: 110 - 117.1 1% Min: Pyrite>>			
<<Alt: 107.6 - 113 Weak (Alt) Biotite>> could be overprint			
<<Alt: 108.3 - 117.1 Strong (Alt) Muscovite>> classis musc nextto mineralization			
117.10	**117.60**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
117.60	**123.30**	**OA**	**Magnetite bearing sulphides**
123.30	**126.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
126.70	**128.10**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.60	114.10	1.50	B00267005	0.6	0.005	-0.01	-0.01	0.06
114.10	115.60	1.50	B00267006	0.6	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
128.10	**137.00**	**RHYvl** **Lapilli tuff**
<<Min: 128.2 - 134 5% Min: Ankerite>>		
<<Min: 128.2 - 142 1% Min: Pyrite>>		
<<Alt: 128.2 - 137 Weak-Moderate (Alt) Muscovite>> mixture of syngenetic and overprint musc - unit between MAFi and mineralization.		
<<Alt: 128.2 - 140.1 Weak-Moderate (Alt) Silicification>> Sl patches and bands (bands likely replacing calcite in altered MAFi)		
137.00	**142.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 140.1 - 142 5% Min: Calcite>> on frac and as bands		
<<Alt: 137 - 140 Weak (Alt) Muscovite>> musc -sericite		
<<Alt: 140.1 - 142 Weak-Moderate (Alt) Biotite>>		
End of Hole @ 142		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
129.70	131.20	1.50	B00267007	1.4	0.011	-0.01	0.05	0.09
131.20	132.70	1.50	B00267008	0.4	0.016	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-129

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414600.84	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815497.26	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1443.49	Casing Depth (m):		Length (m):	151.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
41	-88	177		177	SS				☑	
72	-88	185		185	SS				☑	
102	-87	191		191	SS				☑	
133	-86	191		191	SS				☑	
150	-86	194		194	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.90**	**CASN**	**Casing**								
4.90	**12.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**								
4.9 - 12.2: gradational contact 12.2											
<<Min: 4.9 - 19.6 2% Min: Pyrite>>											
<<Min: 4.9 - 39 3% Min: Ankerite>>											
<<Alt: 4.9 - 80.8 Trace (Alt) Muscovite>>											
12.20	**19.30**	**RHYva**	**Coarse grained to ash tuff**								
19.30	**24.30**	**MDSt**	**Rhyolite tuff dominant mudstone**								
19.3 - 24.3: sharp contacts,unit includes sections RHYva											

From (m)	To (m)	Rocktype & Description
		<<Min: 19.6 - 26.4 2% Min: Pyrrhotite>>
24.30	**39.00**	**RHYva** **Coarse grained to ash tuff**
		24.3 - 39: boitite increases near contacts. Oxi ends at30m
		<<Struc: 29.9 - 30.1 Moderate (Alt) Fault>> minor gouge
39.00	**39.20**	**MAFt** **Mafic Volcaniclastics**
		<<Min: 39 - 44 15% Min: Ankerite>>
		<<Min: 39 - 45 10% Min: Calcite>> and disseminatd calcite
39.20	**40.10**	**MXSX** **Massive Sulphide**
		39.2 - 40.1: pyritiized mafic tuff? Sharp contacts
		<<Min: 39.3 - 40.2 4% Min: Sphalerite>>
		<<Min: 39.3 - 40.2 30% Min: Pyrite>>
		<<Min: 39.3 - 40.2 5% Min: Pyrrhotite>>
		<<Min: 39.3 - 40.2 1% Min: Chalcopyrite>>
40.10	**42.80**	**MAFt** **Mafic Volcaniclastics**
42.80	**45.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 44 - 56.7 5% Min: Ankerite>>
45.00	**51.00**	**RHYvl** **Lapilli tuff**
		<<Min: 45 - 51 2% Min: Pyrrhotite>>
		<<Min: 45 - 114.9 1% Min: Calcite>>
51.00	**54.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		51 - 54.6: unit includes about 50% RHYvl
54.60	**70.80**	**RHYvl** **Lapilli tuff**
		54.6 - 70.8: minor sections RHYcw near lower contact
		<<Min: 56.7 - 92.7 12% Min: Ankerite>>
		<<Min: 56.9 - 70.7 2% Min: Pyrrhotite>>
70.80	**72.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		70.8 - 72.1: sharp contacts

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.20	40.10	0.90	B00267004	11.1	0.221	0.08	0.18	2.3

From (m)	To (m)	Rocktype & Description
72.10	**89.00**	**RHYvl** **Lapilli tuff**

<<Min: 72.1 - 78.7 2% Min: Pyrrhotite>>

<<Min: 78.7 - 89.1 3% Min: Pyrrhotite>>

<<Alt: 80.8 - 102.2 Moderate (Alt) Muscovite>>

89.00	**92.40**	**MDSt**	**Rhyolite tuff dominant mudstone**

89 - 92.4: mixed with RHYvl, minor gouge on lower contact

92.40	**107.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

92.4 - 107.8: gradational lower contact. 101 - 101.4m minor gouge and broken zne

<<Min: 92.7 - 133 2% Min: Ankerite>>

<<Min: 94.9 - 109.6 2% Min: Pyrrhotite>>

<<Min: 94.9 - 109.6 1% Min: Chalcopyrite>>

<<Alt: 102.2 - 133 Strong (Alt) Muscovite>>

107.80	**111.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

<<Min: 109.6 - 119.5 2% Min: Pyrrhotite>>

111.50	**113.20**	**MDSc**	**Carbonaceous dominant mudstone**
113.20	**117.65**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
117.65	**133.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

117.65 - 133: textures below 124m partly or entirely obliterated by muscovite alteration and below 124 unit contains blebs, bands and sections of pyrrhotite - pyrite and chlorite.

<<Min: 119.5 - 123.3 1% Min: Sphalerite>>

<<Min: 119.5 - 123.3 3% Min: Pyrrhotite>>

<<Min: 126.6 - 126.9 3% Min: Sphalerite>>

<<Min: 126.6 - 126.9 1% Min: Pyrrhotite>>

<<Min: 126.6 - 126.9 3% Min: Chalcopyrite>>

<<Min: 126.9 - 128.6 0.3% Min: Sphalerite>>

<<Min: 126.9 - 128.6 3% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Alt: 123.5 - 133 Moderate (Alt) Chlorite>>
		<<Alt: 125 - 127.5 Weak-Moderate (Alt) Cordierite>> disseminated in chloritic bands
133.00	**135.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 133 - 135.3 8% Min: Sphalerite>>
		<<Min: 133 - 135.3 45% Min: Pyrite>>
		<<Min: 133 - 135.3 5% Min: Pyrrhotite>>
		<<Min: 133 - 135.3 2% Min: Chalcopyrite>>
135.30	**140.10**	**OA** **Magnetite bearing sulphides**
		<<Min: 135.3 - 140.1 12% Min: Sphalerite>>
		<<Min: 135.3 - 140.1 2% Min: Chalcopyrite>>
140.10	**151.50**	**RHYv** **Rhyolite volcaniclastic**
		140.1 - 151.5: 140.1-141.9m: quartz vein, 141.9-151.5m: minor discordant qtz-tourmaline veinlets.
		<<Min: 140.9 - 144 15% Min: Ankerite>>
		<<Min: 144 - 151.5 5% Min: Ankerite>>
		<<Min: 147.5 - 151.5 1% Min: Calcite>>
		<<Alt: 140.9 - 151.5 Moderate-Strong (Alt) Muscovite>>

End of Hole @ 151.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
141.60	143.10	1.50	B00267001	0.7	0.005	-0.01	-0.01	0.01
143.10	144.60	1.50	B00267002	0.6	-0.005	-0.01	-0.01	0.06
144.60	146.10	1.50	B00267003	2.3	0.009	0.02	0.02	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-130

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	17-Sep-15
UTM Easting	415181.726	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815377.175	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1416.26	Casing Depth (m):		Length (m):	123.7	Drill Rig:	
Local Easting:	5175	Stored?:		Claims Title		Drill Started:	
Local Northing:	6815195	Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):	1418					Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
20	-60	177		177	SS				☑	
50	-62	186		186	SS				☑	
81	-61	185		185	SS				☑	
123	-61	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.60 CASN Casing

<<Min: 12.3 - 19 0.5% Min: Calcite>>

12.60 38.40 RHYvl Lapilli tuff

<<Min: 12.6 - 16.7 4% Min: Pyrrhotite>>

<<Min: 12.6 - 20.1 15% Min: Ankerite>>

<<Min: 19 - 37.4 1% Min: Calcite>>

<<Min: 20.1 - 36.5 2% Min: Ankerite>>

<<Min: 36.5 - 58 5% Min: Ankerite>>

<<Min: 37.4 - 107.4 0.5% Min: Calcite>>

<<Alt: 38.2 - 52.9 Moderate (Alt) Muscovite>>

38.40 54.70 RHY undifferentiated rhyolite

<<Min: 39 - 47.5 0.5% Min: Pyrite>>

<<Min: 47.5 - 52.1 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 52.1 - 53.6 1% Min: Pyrrhotite>>									
		<<Min: 53.6 - 61.5 0.5% Min: Pyrrhotite>>									
		<<Struc: 47 - 51.8 Strong (Alt) Fault>> gouge and change in ca angle 55-20									
54.70	**61.30**	**RHYc** **Rhyolite coherant volcanics**									
		54.7 - 61.3: strong alt op									
		<<Min: 58 - 94 15% Min: Ankerite>>									
61.30	**62.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
		<<Min: 61.5 - 62.7 3% Min: Pyrrhotite>>									
62.30	**73.00**	**RHYvl** **Lapilli tuff**									
		<<Min: 62.7 - 69.9 1.5% Min: Pyrrhotite>>									
		<<Min: 69.9 - 74 3% Min: Pyrrhotite>>									
73.00	**94.50**	**RHY** **undifferentiated rhyolite**									
		73 - 94.5: strong shistocity									
		<<Min: 74 - 90.3 2% Min: Pyrite>>									
		<<Min: 74 - 90.3 5% Min: Pyrrhotite>>									
		<<Min: 90.3 - 92 10% Min: Pyrite>>									
		<<Min: 92 - 97.7 5% Min: Pyrite>>									
		<<Min: 94 - 101 2% Min: Ankerite>>									
		<<Alt: 74 - 94.5 Strong (Alt) Muscovite>>									
94.50	**99.40**	**MDSc** **Carbonaceous dominant mudstone**	96.00	97.50	1.50	B00264161	1.9	0.03	0.02	0.02	0.33
		94.5 - 99.4: very carbonaceous banded py									
		<<Min: 97.7 - 101 0.5% Min: Pyrite>>	97.50	99.40	1.90	B00264162	1.7	0.063	0.01	0.01	0.59
		<<Alt: 94.5 - 97.6 Weak (Alt) Muscovite>>									
		<<Alt: 97.6 - 100.6 Strong (Alt) Muscovite>>									
		<<Struc: 97.5 - 99.4 Strong (Alt) Fault>> crb gouge									
99.40	**100.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	99.40	100.20	0.80	B00264163	0.4	-0.005	-0.01	-0.01	-0.01
		<<Alt: 99.4 - 101 Moderate (Alt) Cordierite>>	100.20	101.10	0.90	B00264164	22.4	0.235	0.89	0.04	0.58

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
100.60	**103.60**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
<<Min: 101 - 102.6 1% Min: Sphalerite>>												
<<Min: 101 - 102.6 8% Min: Pyrite>>												
<<Min: 101 - 102.6 1% Min: Pyrrhotite>>												
<<Min: 101 - 102.6 1% Min: Chalcopyrite>>												
<<Min: 101 - 107 15% Min: Ankerite>>												
<<Min: 102.6 - 103.5 4% Min: Sphalerite>>												
<<Min: 102.6 - 103.5 5% Min: Pyrite>>												
<<Min: 102.6 - 103.5 2% Min: Chalcopyrite>>												
<<Min: 103.5 - 104.9 20% Min: Sphalerite>>												
<<Min: 103.5 - 104.9 5% Min: Pyrite>>												
<<Min: 103.5 - 104.9 20% Min: Pyrrhotite>>												
<<Min: 103.5 - 104.9 20% Min: Chalcopyrite>>												
<<Alt: 100.6 - 107.4 Moderate (Alt) Chlorite>> may be replacing CI												
<<Alt: 101 - 102.7 Intense (Alt) Cordierite>>												
103.60	**105.20**	**OG** **Chalcopyrite rich sulphides**	**CG**									
<<Struc: 104.9 - 107.3 Moderate (Alt) Fault>> highly schistose core loss												
105.20	**107.40**	**RHY** **undifferentiated rhyolite**										
<<Min: 105.2 - 105.4 0.5% Min: Sphalerite>>												
<<Min: 105.2 - 105.4 20% Min: Pyrite>>												
<<Min: 105.2 - 105.4 5% Min: Pyrrhotite>>												
<<Min: 105.2 - 105.4 15% Min: Chalcopyrite>>												
<<Min: 105.4 - 107.4 3% Min: Pyrite>>												
<<Min: 107 - 119.5 2% Min: Ankerite>>												
107.40	**111.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 107.4 - 111.9 10% Min: Sphalerite>>												
<<Min: 107.4 - 111.9 65% Min: Pyrite>>												
<<Min: 107.4 - 111.9 3% Min: Calcite>>												

From (m)	To (m)	Rocktype & Description
111.90	**119.50**	**FBX** **Fault Breccia**

111.9 - 119.5: clay rubble, minor pyrite, MU and GR/MDS gouge. This may be a low angle fault that has cut out the lower portion of mxsx it in RD's hole K95-131

<<Min: 111.9 - 119.9 1% Min: Pyrite>> in fault gouge

<<Struc: 111.9 - 119.5 Intense (Alt) Fault>> intense gouge and multi lithic milled rock

119.50	**123.70**	**RHYva** **Coarse grained to ash tuff**

<<Min: 119.5 - 123.7 0.5% Min: Pyrite>>

<<Min: 119.5 - 123.7 5% Min: Ankerite>>

<<Struc: 121.4 - 123.7 Strong (Alt) Fault>> gouge

End of Hole @ 123.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
113.40	114.90	1.50	B00264165	2.4	0.008	0.03	0.02	0.11

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-131

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415181.776	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815375.763	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1416.186	Casing Depth (m):		Length (m):	128	Drill Rig:	
Local Easting:	5175	Stored?:		Claims Title		Drill Started:	
Local Northing:	6815194.5	Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):	1418					Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
17	-89	180		180	SS				☑	
47	-87	170		170	SS				☑	
75	-85	223		223	SS				☑	
128	-85	204		204	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.00 OVBN Overburden

10.00 14.30 RHYvl Lapilli tuff

<<Min: 10 - 60.5 10% Min: Ankerite>>

<<Alt: 10 - 31.5 Weak (Alt) Muscovite>>

14.30 15.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 14.3 - 15.5 15% Min: Calcite>>

15.50 19.80 RHYvl Lapilli tuff

19.80 22.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

19.8 - 22.6: forest green with fg biotite and chill margins

<<Min: 19.8 - 22.6 15% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 22.5 - 26.3 Weak (Alt) Fault>> broken core

22.60 23.20 RHYvl Lapilli tuff

23.20 23.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

23.60 27.70 RHYvl Lapilli tuff

27.70 28.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 27.7 - 28.6 15% Min: Calcite>>

<<Min: 28 - 60.5 0.5% Min: Pyrrhotite>>

28.60 45.60 RHYvl Lapilli tuff

<<Min: 45 - 46 0.5% Min: Pyrite>>

<<Alt: 31.5 - 35 Weak-Moderate (Alt) Muscovite>>

<<Alt: 35 - 41 Weak (Alt) Muscovite>>

<<Alt: 41 - 43 Weak-Moderate (Alt) Muscovite>>

<<Alt: 43 - 53 Weak (Alt) Muscovite>>

<<Struc: 30 - 32.5 Moderate (Alt) Fault>> broken core and minor gouge zones

<<Struc: 43 - 47 Weak-Moderate (Alt) Fault>> broken core and minor gouge zones

45.60 46.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

45.6 - 46.3: brown fg biotite. Sharp contacts but no chill margins

<<Min: 45.6 - 46.3 10% Min: Calcite>>

46.30 50.70 RHYvl Lapilli tuff

<<Min: 50.5 - 52 10% Min: Calcite>>

<<Vein: 50.6 - 50.9 90% Quartz>>

50.70 51.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

51.20 65.20 RHYvl Lapilli tuff

<<Min: 60.5 - 75 15% Min: Ankerite>>

<<Min: 61.3 - 62.2 1.5% Min: Pyrite>>

<<Min: 62.2 - 62.9 1% Min: Pyrite>>

<<Min: 62.9 - 63.6 1% Min: Pyrite>>

<<Min: 63.6 - 65.1 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 65.1 - 67.4 0.5% Min: Pyrite>>
		<<Alt: 53 - 58.5 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 58.5 - 60.5 Weak (Alt) Muscovite>>
		<<Alt: 60.5 - 76.2 Weak-Moderate (Alt) Muscovite>>
		<<Struc: 58 - 58.5 Moderate-Strong (Alt) Fault>> gouge zone
65.20	**65.90**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
65.90	**72.30**	**RHYvl Lapilli tuff**
		<<Min: 67.4 - 67.8 1% Min: Pyrite>>
		<<Min: 67.8 - 76 1.5% Min: Pyrite>>
72.30	**87.60**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 75 - 86 5% Min: Ankerite>>
		<<Min: 76 - 81.9 3.5% Min: Pyrite>>
		<<Min: 83 - 87.5 17.5% Min: Pyrite>>
		<<Min: 87.5 - 88.9 1% Min: Pyrite>>
		<<Alt: 76.2 - 85 Moderate (Alt) Muscovite>>
		<<Alt: 85 - 87.6 Moderate-Strong (Alt) Muscovite>>
		<<Struc: 76 - 78 Weak-Moderate (Alt) Fault>> broken poker chips
		<<Struc: 81 - 88 Moderate (Alt) Fault>> poker chips and minor gouge zones
87.60	**94.70**	**MDSc Carbonaceous dominant mudstone**
		87.6 - 94.7: minor true graphitic planes. Some mm scale tuffaceous bands
		<<Min: 88.9 - 94.7 4% Min: Pyrite>>
		<<Struc: 88 - 99.1 Weak-Moderate (Alt) Fault>> poker chips
94.70	**96.60**	**MDSw Coherent rhyolite flow with carbonaceous content**
		<<Alt: 94.7 - 99.1 Moderate (Alt) Muscovite>>
96.60	**99.10**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
94.60	96.10	1.50	B00232624	0.9	0.011	-0.01	0.01	0.07
96.10	97.60	1.50	B00232625	1	0.014	-0.01	-0.01	0.01
97.60	99.10	1.50	B00232626	0.7	0.02	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
99.10	**100.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
99.1 - 100.7: non magnetic decent cu grade												
<<Min: 99.1 - 100.7 6% Min: Sphalerite>>												
<<Min: 99.1 - 100.7 75% Min: Pyrite>>												
<<Min: 99.1 - 100.7 2% Min: Galena>>												
<<Min: 99.1 - 100.7 2% Min: Chalcopyrite>>												
100.70	**100.90**	**RHY** **undifferentiated rhyolite**										
100.90	**101.70**	**OA** **Magnetite bearing sulphides**	**FMG**									
<<Min: 100.9 - 101.7 10% Min: Sphalerite>>												
<<Min: 100.9 - 101.7 70% Min: Pyrite>>												
<<Min: 101 - 111.5 5% Min: Calcite>>												
101.70	**102.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
<<Min: 101.7 - 102.5 8% Min: Sphalerite>>												
<<Min: 101.7 - 102.5 75% Min: Pyrite>>												
102.50	**103.10**	**OA** **Magnetite bearing sulphides**	**FMG**									
<<Min: 102.5 - 103.1 8% Min: Sphalerite>>												
<<Min: 102.5 - 103.1 75% Min: Pyrite>>												
103.10	**104.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
<<Min: 103.1 - 104.6 6% Min: Sphalerite>>												
<<Min: 103.1 - 104.6 80% Min: Pyrite>>												
104.60	**106.50**	**OA** **Magnetite bearing sulphides**	**FMG**									
<<Min: 104.6 - 106.5 15% Min: Sphalerite>>												
<<Min: 104.6 - 106.5 70% Min: Pyrite>>												
<<Min: 104.6 - 106.5 2% Min: Galena>>												

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
106.50	**109.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
<<Min: 106.5 - 109.9 15% Min: Sphalerite>>												
<<Min: 106.5 - 109.9 70% Min: Pyrite>>												
<<Min: 106.5 - 109.9 4% Min: Galena>>												
<<Min: 106.5 - 109.9 2% Min: Chalcopyrite>>												
109.90	**110.50**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FG**									
<<Min: 109.9 - 110.5 5% Min: Sphalerite>>												
<<Min: 109.9 - 110.5 85% Min: Pyrite>>												
110.50	**116.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
110.5 - 116.7: pb grade wise is on the border 5 and 7. also get ca blebs with coarser cp and gl grains surrounding												
<<Min: 110.5 - 116.7 10% Min: Sphalerite>>												
<<Min: 110.5 - 116.7 70% Min: Pyrite>>												
<<Min: 110.5 - 116.7 4% Min: Galena>>												
<<Min: 110.5 - 116.7 2% Min: Chalcopyrite>>												
116.70	**117.30**	**RHYva** **Coarse grained to ash tuff**		116.70	118.20	1.50	B00232627	0.5	0.036	-0.01	-0.01	0.04
116.7 - 117.3: certain felsic, just ation of whether an ash or RHYv volcaniclastic												
<<Min: 116.7 - 117.3 5% Min: Pyrite>>												
<<Min: 116.7 - 117.3 1% Min: Pyrrhotite>>												
<<Alt: 116.7 - 117.4 Moderate (Alt) Muscovite>>												
117.30	**120.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		118.20	119.70	1.50	B00232628	2.6	0.008	-0.01	0.04	0.02
<<Min: 117.3 - 120.4 2% Min: Pyrrhotite>>				119.70	121.20	1.50	B00232629	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 117.4 - 122.3 15% Min: Calcite>>												
<<Vein: 118.5 - 118.8 95% Quartz-Chlorite>>												
<<Struc: 118.3 - 121.7 Moderate (Alt) Fault>> poker chips and minor gouge zones												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

120.00 120.40 RHYvl Lapilli tuff

120 - 120.4: seems to bleach mafi on either side so possibly RHYi, texturally does not fit.

120.40 122.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 120.4 - 120.9 1% Min: Pyrite>>

<<Min: 120.5 - 122.3 7% Min: Ankerite>>

<<Min: 120.9 - 122.3 1.5% Min: Pyrrhotite>>

<<Alt: 120.4 - 122.3 Weak-Moderate (Alt) Chlorite>> metamorphic? Massive, no sx, ak porphyroblasts

122.30 124.50 RHYvl Lapilli tuff

<<Min: 122.3 - 124.1 2% Min: Pyrite>>

<<Min: 124.1 - 128 4% Min: Pyrite>>

<<Alt: 122.3 - 128 Moderate-Strong (Alt) Muscovite>>

124.50 128.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

124.5 - 128: ******UNIT is well altered, with 4% pyrite in silica bands of cw and stg mu alt. This hole might have been stopped too soon. Might be another massive sul[phide lense down there

End of Hole @ 128

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-132

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Robin Black
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414675.82	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815484.78	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1423.91	Casing Depth (m):		Length (m):	123.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
14	-64	169		169	SS				☑	
44	-64	168		168	SS				☑	
75	-64	167		167	SS				☑	
122	-65	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

<<Min: 0 - 17.1 2% Lith: Muscovite>>

6.10 9.83 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 6.1 - 17.1 Weak (Alt) Muscovite>>

9.83 11.45 MDSw Coherent rhyolite flow with carbonaceous content

11.45 20.40 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 13.6 - 16 3% Min: Pyrite>> fine disseminated in dark bands w/cl

<<Min: 17.1 - 22.7 3% Lith: Muscovite>>

<<Alt: 17.1 - 22.7 Weak-Moderate (Alt) Muscovite>>

<<Struc: 19.7 - 19.75 Fault>> Gauge

From (m)	To (m)		Rocktype & Description
20.40	**40.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 23.1 - 30.4 3% Min: Ankerite>>			
<<Min: 39.4 - 41.1 3% Min: Pyrite>>			
<<Alt: 22.7 - 71.8 Weak (Alt) Muscovite>>			
40.80	**47.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
47.80	**61.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
61.40	**65.70**	**MDSt**	**Rhyolite tuff dominant mudstone**
65.70	**71.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
71.50	**72.80**	**MDSc**	**Carbonaceous dominant mudstone**
72.80	**73.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
73.10	**74.20**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
74.20	**80.70**	**OA**	**Magnetite bearing sulphides**
80.70	**81.10**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
81.10	**84.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
84.20	**84.90**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.00	67.40	1.40	B00267537	0.5	0.013	-0.01	-0.01	-0.01
67.40	68.80	1.40	B00267538	0.5	0.008	-0.01	-0.01	-0.01
68.80	70.40	1.60	B00267539	0.5	0.006	-0.01	-0.01	-0.01
70.40	71.30	0.90	B00267541	1.6	-0.005	-0.01	0.01	-0.01

From (m)	To (m)		Rocktype & Description
84.90	**85.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
85.60	**90.40**	**RHYcf**	**Feldspar & feldspar quartz porphyry**
90.40	**92.90**	**RHYcf**	**Feldspar & feldspar quartz porphyry**
92.90	**98.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 92.9 - 93.5 Moderate-Strong (Alt) Chlorite>>			
<<Alt: 92.9 - 93.5 Strong (Alt) Cordierite>>			
98.20	**98.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
98.50	**98.80**	**OA**	**Magnetite bearing sulphides**
98.80	**102.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
102.50	**114.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
114.30	**123.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 114.4 - 122.4 0.5% Min: Calcite>>			
<<Alt: 114.4 - 123.4 Weak (Alt) Muscovite>>			
<<Alt: 114.4 - 123.4 Weak (Alt) Chlorite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
115.80	116.60	0.80	B00267542	0.9	0.007	-0.01	-0.01	0.03
116.60	118.50	1.90	B00267543	0.4	0.014	-0.01	-0.01	0.01
118.50	119.30	0.80	B00267544	-0.3	-0.005	-0.01	-0.01	-0.01
119.30	120.70	1.40	B00267545	5.7	0.018	-0.01	0.09	0.22
120.70	122.40	1.70	B00267546	5.4	0.025	-0.01	0.07	0.17
122.40	123.40	1.00	B00267547	-0.3	-0.005	-0.01	-0.01	0.04

End of Hole @ 123.4

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-133

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414676.01	Core Size:		Azimuth:	150	Date Logging Complete:	
UTM Northing:	6815483.41	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1423.89	Casing Depth (m):		Length (m):	145.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	150		150	SS				☑	
14	-87	141		141	SS				☑	
44	-87	144		144	SS				☑	
75	-86	166		166	SS				☑	
105	-86	168		168	SS				☑	
145	-85	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.40**	**OVBN** **Overburden**									
6.40	**10.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 6.5 - 14.5 1% Min: Pyrite>>											
<<Alt: 6.4 - 74 Trace (Alt) Muscovite>>											
10.70	**14.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
14.00	**20.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
<<Min: 14.5 - 20 1% Min: Pyrrhotite>>											
<<Min: 20 - 29.3 1% Min: Pyrite>>											

From (m)	To (m)		Rocktype & Description
20.40	**37.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 29.3 - 41.5 2% Min: Pyrite>>			
37.00	**44.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Min: 41.5 - 61.5 1% Min: Pyrite>> a			
44.70	**48.00**	**MDSc**	**Carbonaceous dominant mudstone**
48.00	**71.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 61.5 - 69 2% Min: Pyrite>>			
<<Min: 64 - 87.5 5% Min: Ankerite>>			
<<Min: 69 - 91.5 1% Min: Pyrite>>			
71.40	**73.80**	**MDSc**	**Carbonaceous dominant mudstone**
73.80	**81.70**	**RHYv**	**Rhyolite volcaniclastic**
73.8 - 81.7: contains hghly strained RHYcw			
<<Alt: 74 - 88.4 Weak (Alt) Muscovite>>			
81.70	**81.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
81.80	**84.00**	**RHYv**	**Rhyolite volcaniclastic**
81.8 - 84: lower contact is gradational			
<<Alt: 82.5 - 94 Strong (Alt) Silicification>>			
84.00	**88.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
88.30	**90.60**	**MDSc**	**Carbonaceous dominant mudstone**
<<Alt: 88.4 - 99.7 Trace (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
78.70	80.20	1.50	B00267053	0.7	0.006	-0.01	-0.01	-0.01
84.00	85.50	1.50	B00267073	0.3	0.015	-0.01	-0.01	-0.01
85.50	87.50	2.00	B00267054	-0.3	0.008	-0.01	-0.01	-0.01
87.50	89.00	1.50	B00267055	0.4	0.014	-0.01	-0.01	-0.01
89.00	90.60	1.60	B00267056	0.8	0.005	-0.01	-0.01	0.06

From (m)	To (m)		Rocktype & Description
90.60	**95.30**	**MDSt**	**Rhyolite tuff dominant mudstone**

90.6 - 95.3: biotite and possible cord porphyroblasts

<<Min: 91.5 - 94.5 2% Min: Pyrite>>

<<Min: 94.5 - 99 2% Min: Pyrrhotite>> excluding pyrrhotite band

<<Alt: 91.2 - 95 Trace (Alt) Cordierite>>

From (m)	To (m)		Rocktype & Description
95.30	**97.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

<<Min: 95.6 - 105 5% Min: Ankerite>>

<<Alt: 96.5 - 105.9 Weak-Moderate (Alt) Biotite>> in patches, often surrounding ankerite porphyroblasts (and or lithic clasts?)

From (m)	To (m)		Rocktype & Description
97.40	**103.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

97.4 - 103.4: altered unit with 0.75m qtz-tour vein with sandy sections.

<<Min: 99 - 111.7 1% Min: Pyrite>>

<<Alt: 99.7 - 111 Weak (Alt) Muscovite>>

<<Alt: 100.4 - 104 Weak (Alt) Chlorite>> with biotite

From (m)	To (m)		Rocktype & Description
103.40	**110.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**

103.4 - 110.3: could be equivalent in part to qtz-porphyry unit in 95-132. Alteration and porphyroblasts replacing feldspar phenos

<<Min: 108 - 115.7 8% Min: Ankerite>>

From (m)	To (m)		Rocktype & Description
110.30	**115.80**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 111.7 - 114.3 1% Min: Pyrrhotite>>

<<Min: 114.3 - 115.8 1% Min: Pyrite>>

<<Min: 114.4 - 115.2 0.25% Min: Arsenopyrite>>

<<Alt: 111 - 114.3 Moderate (Alt) Muscovite>>

<<Alt: 114.1 - 115.2 Moderate (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
90.60	92.20	1.60	B00267057	1.1	0.006	-0.01	-0.01	0.03
92.20	93.80	1.60	B00267058	1	0.01	-0.01	-0.01	0.01
100.40	101.90	1.50	B00267059	0.5	0.008	-0.01	0.01	0.02
101.90	103.40	1.50	B00267061	1.3	0.01	-0.01	0.06	0.11
103.40	104.90	1.50	B00267062	0.5	-0.005	-0.01	-0.01	0.04
104.90	106.40	1.50	B00267063	3.1	0.025	0.02	0.14	0.27
106.40	107.90	1.50	B00267064	3.9	0.011	0.07	0.12	0.95
107.90	109.40	1.50	B00267065	2.4	-0.005	0.02	0.1	0.26
109.40	110.90	1.50	B00267066	2.6	0.009	0.02	0.09	0.41
110.90	112.40	1.50	B00267067	0.6	-0.005	-0.01	-0.01	0.12
112.40	113.40	1.00	B00267068	2.1	-0.005	-0.01	0.03	-0.01
113.40	114.30	0.90	B00267069	1.3	-0.005	-0.01	0.02	0.25

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 114.1 - 115.6 Moderate (Alt) Biotite>>									
115.80	**116.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**									
		<<Alt: 116 - 129.6 Weak-Moderate (Alt) Silicification>> interstitial silica between sulfide grains									
116.50	**117.10**	**OA** **Magnetite bearing sulphides** **MG**									
117.10	**120.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **MCG**									
		117.1 - 120.9: coarse gr sections									
120.90	**126.90**	**OA** **Magnetite bearing sulphides** **FMG**									
126.90	**129.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**									
		<<Min: 129.5 - 131.5 5% Min: Pyrite>>									
129.60	**145.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	131.10	132.60	1.50	B00267071	-0.3	-0.005	-0.01	-0.01	0.03
		129.6 - 145.4: 129.6-131.6: altered light green and fine grained weakly siliceous and section contains0.5 m of white qtz veining.									
		<<Min: 131.5 - 145.4 1% Min: Pyrite>>	132.60	134.10	1.50	B00267072	-0.3	0.013	-0.01	-0.01	0.01
		<<Min: 131.7 - 145.4 15% Min: Calcite>> dis and bands									
		<<Alt: 131.7 - 136.2 Moderate (Alt) Chlorite>>									
		<<Alt: 131.7 - 145.4 Moderate-Strong (Alt) Biotite>> pervasively diss throughout most of unit. Leucoxene 134.4-137.8									

End of Hole @ 145.4

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-134

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415153.135	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815570.542	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1403.209	Casing Depth (m):		Length (m):	191.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
23	-51	173		173	SS				☑	
53	-53	177		177	SS				☑	
84	-54	177		177	SS				☑	
114	-55	179		179	SS				☑	
145	-56	177		177	SS				☑	
190	-56	176		176	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**14.60**	**OVBN Overburden**									
14.60	**16.40**	**RHYvl Lapilli tuff**									
14.6 - 16.4: 0.1% diss tourmaline											
<<Min: 14.6 - 24.2 0.5% Min: Pyrite>>											
<<Min: 14.6 - 24.2 3% Min: Pyrrhotite>>											
<<Min: 15 - 43.3 5% Min: Ankerite>>											
16.40	**18.60**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
16.4 - 18.6: 0.1% diss tourmaline											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

18.60 23.00 RHYvl Lapilli tuff

18.6 - 23: silic bands, 0.1% diss tourmaline

23.00 23.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

23.60 31.60 RHYvx Quartz and/or feldspar crystal tuff

23.6 - 31.6: rare altered feldspar phenocrysts. Otherwise a lapilli tuff. 0.1% diss fine grained tourmaline

<<Min: 24.2 - 26.5 0.5% Min: Pyrite>>

<<Min: 24.2 - 26.5 4% Min: Pyrrhotite>>

<<Min: 26.5 - 28.8 2% Min: Pyrite>>

<<Min: 28.8 - 29.9 2% Min: Pyrite>>

<<Min: 29.9 - 30.4 1% Min: Pyrite>>

<<Min: 29.9 - 30.4 2% Min: Pyrrhotite>>

<<Min: 30.4 - 30.6 3% Min: Pyrite>>

<<Min: 30.6 - 31.4 0.5% Min: Pyrite>>

<<Min: 31.4 - 31.8 0.5% Min: Pyrrhotite>>

<<Vein: 25.6 - 25.7 40% Quartz-Tourmaline>>

31.60 32.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 31.8 - 34.6 0.5% Min: Pyrite>>

<<Min: 31.8 - 34.6 0.5% Min: Pyrrhotite>>

32.00 34.90 RHYvx Quartz and/or feldspar crystal tuff

32 - 34.9: rare altered feldspar phenos, otherwise a lapilli tuff. 0.1% diss tourmaline

<<Min: 34.6 - 36.1 1% Min: Pyrrhotite>>

<<Min: 34.8 - 36 10% Min: Calcite>>

34.90 35.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

35.20 38.40 RHYvl Lapilli tuff

35.2 - 38.4: patches of chlorite alteration (controlled by dykes?).

<<Min: 36 - 39.9 1% Min: Calcite>>

From (m)	To (m)	Rocktype & Description

<<Min: 36.1 - 36.7 0.5% Min: Pyrrhotite>>

<<Min: 36.7 - 37.8 0.5% Min: Pyrrhotite>>

<<Min: 37.8 - 38.2 0.5% Min: Pyrite>>

<<Min: 38.2 - 39.3 0.5% Min: Pyrrhotite>>

<<Min: 38.2 - 39.3 0.5% Min: Chalcopyrite>>

38.40 39.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

39.20 39.90 RHYvl Lapilli tuff

<<Min: 39.3 - 39.6 1% Min: Pyrite>>

<<Min: 39.3 - 39.6 0.5% Min: Pyrrhotite>>

<<Min: 39.6 - 40 0.5% Min: Pyrite>>

<<Min: 39.6 - 40 0.5% Min: Pyrrhotite>>

39.90 40.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 39.9 - 44.5 10% Min: Calcite>>

40.50 41.00 RHYvl Lapilli tuff

40.5 - 41: possible pepperite?

<<Min: 40.5 - 41 0.5% Min: Pyrite>>

<<Min: 40.5 - 41 0.5% Min: Pyrrhotite>>

41.00 44.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 43.3 - 59 10% Min: Ankerite>>

44.50 46.00 RHYvl Lapilli tuff

44.5 - 46: Brown blotchy remnant sericitized chlorite

<<Min: 44.5 - 46 2% Min: Calcite>>

<<Min: 45.9 - 46.5 0.5% Min: Pyrite>>

46.00 46.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 46 - 46.7 10% Min: Calcite>>

<<Min: 46.5 - 47.4 0.5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

46.70 53.30 RHYvl Lapilli tuff

46.7 - 53.3: Brown blotchy remnant sericitized chlorite and rare chlorite - altered lapilli? .

<<Min: 46.7 - 50.6 1% Min: Calcite>>

<<Min: 47.4 - 49.8 0.5% Min: Pyrite>>

<<Min: 49.8 - 53.5 0.5% Min: Pyrite>>

<<Min: 49.8 - 53.5 0.5% Min: Pyrrhotite>>

<<Min: 50.6 - 53.3 5% Min: Calcite>>

53.30 54.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 53.3 - 54.4 15% Min: Calcite>>

54.40 56.70 RHYvl Lapilli tuff

54.4 - 56.7: ankerite alt lapilli

<<Min: 54.4 - 56.8 0.5% Min: Pyrite>>

<<Vein: 56.5 - 56.6 50% Quartz-Tourmaline>>

56.70 58.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 56.8 - 57.4 0.5% Min: Pyrite>>

<<Min: 57 - 58.7 10% Min: Calcite>>

<<Min: 57.4 - 58.7 0.5% Min: Pyrite>>

58.70 65.50 RHYvl Lapilli tuff

58.7 - 65.5: chlorite and ankerite altered lapilli

<<Min: 58.7 - 62.4 0.5% Min: Pyrite>>

<<Min: 58.7 - 65.5 2% Min: Calcite>>

<<Min: 59 - 88.4 5% Min: Ankerite>>

<<Min: 62.4 - 65.5 1% Min: Pyrite>>

65.50 68.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 65.5 - 67.5 0.5% Min: Pyrite>>

<<Min: 65.5 - 67.8 15% Min: Calcite>>

<<Min: 67.5 - 69 0.5% Min: Pyrite>>

<<Min: 67.5 - 69 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

68.20 74.60 RHYvl Lapilli tuff

<<Min: 69 - 74.3 0.5% Min: Pyrite>>

<<Min: 69 - 74.3 0.5% Min: Pyrrhotite>>

74.60 77.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

74.6 - 77.7: poker chip type banded rhy

<<Min: 75 - 77.7 0.5% Min: Pyrite>>

<<Min: 76 - 96 1% Min: Calcite>>

77.70 81.00 RHYvl Lapilli tuff

77.7 - 81: similar to above lapilli tuff but more sericitized

<<Min: 77.7 - 78.5 0.5% Min: Pyrite>>

<<Min: 80.7 - 82.7 2% Min: Pyrite>>

<<Min: 80.7 - 82.7 2% Min: Pyrrhotite>>

81.00 82.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 82.7 - 86.9 2% Min: Pyrrhotite>>

82.90 88.40 RHYvl Lapilli tuff

82.9 - 88.4: islands of remnant chlorite-biotite altered tuff

<<Min: 86.9 - 87.5 0.5% Min: Pyrrhotite>>

<<Min: 87.5 - 88.3 1% Min: Pyrrhotite>>

<<Min: 88.3 - 96.4 2% Min: Pyrite>>

<<Min: 88.3 - 96.4 2% Min: Pyrrhotite>>

88.40 102.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.4 - 102.4: 99.4-102.4m: mottled texture, wider bands of sericite alteration surrounding irregular dismembered silica bands - patches

<<Min: 88.4 - 100.5 15% Min: Ankerite>>

<<Min: 96.4 - 97.3 2% Min: Pyrrhotite>>

<<Min: 97.3 - 99.5 0.5% Min: Pyrite>>

<<Min: 97.3 - 99.5 2% Min: Pyrrhotite>>

<<Min: 99.5 - 100.6 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 100.5 - 118.2 20% Min: Ankerite>>

<<Min: 100.6 - 138.3 2% Min: Pyrite>>

<<Min: 100.6 - 138.3 4% Min: Pyrrhotite>>

<<Alt: 88.4 - 105 Weak (Alt) Muscovite>> mostly background sericite

<<Vein: 96.3 - 96.4 20% Quartz-Tourmaline>>

102.40 113.10 RHYvl Lapilli tuff

102.4 - 113.1: rare silic bands

<<Min: 105 - 116 1% Min: Calcite>>

<<Alt: 105 - 118.2 Weak-Moderate (Alt) Muscovite>> real muscovite showing up

113.10 121.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

113.1 - 121.5: mottled texture, bismembered silic bands surrounded by mm sericite domains

<<Min: 118.2 - 124 20% Min: Ankerite>>

<<Alt: 118.2 - 140 Moderate-Strong (Alt) Muscovite>>

121.50 127.30 RHYvl Lapilli tuff

<<Min: 124 - 135 15% Min: Ankerite>>

<<Struc: 126.8 - 126.9 Moderate-Strong (Alt) Fault>> 5 cm gouge

127.30 130.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

127.3 - 130: similar to 113.1-121.5m

130.00 137.50 RHYvl Lapilli tuff

			136.00	137.50	1.50	B00267275	0.4	0.007	0.01	-0.01	0.01

<<Min: 135 - 139 5% Min: Ankerite>>

<<Struc: 134.4 - 134.6 Moderate-Strong (Alt) Fault>> 15cm fault gouge

137.50 139.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

			137.50	139.00	1.50	B00267276	1	0.009	-0.01	-0.01	0.01

137.5 - 139: lower 1.3m of unit is altered, locally sheared.

<<Struc: 138.6 - 139.1 Moderate-Strong (Alt) Fault>> minor gouge

139.00 144.10 OJ Heavilly disseminated sulphides in proximal altered rock **MCG**

<<Min: 140.5 - 144.1 3% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 140.5 - 152 5% Min: Ankerite>>

<<Alt: 140.5 - 144.5 Moderate-Strong (Alt) Cordierite>> chlorite

144.10 144.40 OF Pyrrhotite rich sulphides **MCG**

<<Min: 144.1 - 144.4 8% Min: Chalcopyrite>>

144.40 152.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 145.3 - 152.3 0.5% Min: Pyrite>>

<<Min: 152.3 - 152.5 0.5% Min: Pyrite>>

<<Min: 152.3 - 152.5 1% Min: Pyrrhotite>>

<<Alt: 144.4 - 152.5 Moderate (Alt) Muscovite>>

<<Alt: 150.3 - 152.6 Moderate-Strong (Alt) Cordierite>>

<<Struc: 144.4 - 144.9 Moderate-Strong (Alt) Fault>> minor gouge zones

152.50 153.50 OH Fine grained, megascopically homogeneous pyrite rock **FG**

152.5 - 153.5: irregular magnetite distribution

<<Min: 152.5 - 153.5 85% Min: Pyrite>>

153.50 156.90 OA Magnetite bearing sulphides **FG**

<<Min: 153.5 - 156.9 10% Min: Sphalerite>>

<<Min: 153.5 - 156.9 55% Min: Pyrite>>

<<Min: 153.5 - 156.9 15% Min: Pyrrhotite>>

<<Min: 153.5 - 156.9 5% Min: Chalcopyrite>>

156.90 158.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **FG**

<<Min: 156.9 - 158.8 18% Min: Sphalerite>>

<<Min: 156.9 - 158.8 40% Min: Pyrite>>

<<Min: 156.9 - 158.8 10% Min: Pyrrhotite>>

<<Min: 156.9 - 158.8 5% Min: Chalcopyrite>>

158.80 159.20 OA Magnetite bearing sulphides **FG**

<<Min: 158.8 - 159.2 12% Min: Sphalerite>>

<<Min: 158.8 - 159.2 40% Min: Pyrite>>

<<Min: 158.8 - 159.2 10% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 158.8 - 159.2 8% Min: Chalcopyrite>>										
159.20	**161.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
		<<Min: 159.2 - 161.5 15% Min: Sphalerite>>										
		<<Min: 159.2 - 161.5 55% Min: Pyrite>>										
		<<Min: 159.2 - 161.5 10% Min: Pyrrhotite>>										
		<<Min: 159.2 - 161.5 10% Min: Chalcopyrite>>										
161.50	**170.60**	**OA** **Magnetite bearing sulphides**	**FMG**									
		<<Min: 161.5 - 170.6 8% Min: Sphalerite>>										
		<<Min: 161.5 - 170.6 30% Min: Pyrite>>										
		<<Min: 161.5 - 170.6 7% Min: Pyrrhotite>>										
		<<Min: 161.5 - 170.6 20% Min: Chalcopyrite>>										
170.60	**179.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**									
		<<Min: 170.6 - 179.2 30% Min: Sphalerite>>										
		<<Min: 170.6 - 179.2 30% Min: Pyrite>>										
		<<Min: 170.6 - 179.2 5% Min: Pyrrhotite>>										
		<<Min: 170.6 - 179.2 10% Min: Chalcopyrite>>										
		<<Min: 172.2 - 179.2 2% Min: Calcite>> and diss										
179.20	**182.40**	**RHYvl** **Lapilli tuff**		180.70	182.20	1.50	B00267277	1.1	0.008	0.01	-0.01	0.13
		<<Min: 179.2 - 182.4 2% Min: Pyrite>>		182.20	183.50	1.30	B00267278	0.6	0.008	-0.01	-0.01	0.02
		<<Min: 179.2 - 183 5% Min: Calcite>>										
		<<Alt: 179.2 - 183 Moderate (Alt) Muscovite>>										
		<<Struc: 181.2 - 181.3 Moderate-Strong (Alt) Fault>> minor gouge										
182.40	**191.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**										
		182.4 - 191.4: minor pseudo leucoxene at 182.4-182.6m										
		<<Min: 182.4 - 191.4 0.5% Min: Pyrrhotite>>										
		<<Min: 183 - 191.4 15% Min: Calcite>>										
		<<Alt: 182.7 - 186 Moderate-Strong (Alt) Chlorite>> good forest green chlorite compared to more typical metamorphic chlorite downb the hole…										

Project: **KZK** **Hole Number:** **K95-134**

From (m)	To (m)	Rocktype & Description
		End of Hole @ 191.4

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-135

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	20-Sep-15
UTM Easting	415153.322	Core Size:		Azimuth:	215	Date Logging Complete:	21-Sep-15
UTM Northing:	6815569.08	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1403.253	Casing Depth (m):		Length (m):	194.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	215		215	SS				☑	
17	-88	214		214	SS				☑	
47	-89	199		199	SS				☑	
81	-89	298		298	SS				☑	
111	-88	206		206	SS				☑	
142	-87	174		174	SS				☑	
172	-85	202		202	SS				☑	
194	-83	187		187	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.30**	**CASN** **Casing**									
9.30	**11.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 9.3 - 43 5% Min: Ankerite>>											
<<Min: 9.5 - 10.5 1% Min: Calcite>>											
<<Min: 9.5 - 11.1 1% Min: Pyrrhotite>>											
<<Min: 10.5 - 13 5% Min: Calcite>>											
11.10	**13.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 11.1 - 13 4% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description
13.00	**23.10**	**RHYvl Lapilli tuff**
<<Min: 13 - 14.7 0.5% Min: Pyrite>>		
<<Min: 13 - 14.7 3% Min: Pyrrhotite>>		
<<Min: 13 - 22 1% Min: Calcite>>		
<<Min: 14.7 - 18.8 2% Min: Pyrrhotite>>		
<<Min: 18.8 - 20 0.5% Min: Pyrite>>		
<<Min: 18.8 - 20 1% Min: Pyrrhotite>>		
<<Min: 20 - 23.3 0.5% Min: Pyrite>>		
<<Min: 20 - 23.3 4% Min: Pyrrhotite>>		
<<Min: 22 - 25.5 5% Min: Calcite>>		
23.10	**25.50**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 23.3 - 25.9 0.5% Min: Pyrrhotite>>		
25.50	**26.10**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
25.5 - 26.1: possible pepperite tuff marginal to MAFi		
<<Min: 25.5 - 30.8 1% Min: Calcite>>		
<<Min: 25.9 - 26.6 0.5% Min: Pyrite>>		
<<Min: 25.9 - 26.6 1% Min: Pyrrhotite>>		
26.10	**30.50**	**RHYvl Lapilli tuff**
<<Min: 26.6 - 29 3% Min: Pyrrhotite>>		
<<Min: 29 - 30.9 0.5% Min: Pyrite>>		
<<Min: 29 - 30.9 1% Min: Pyrrhotite>>		
30.50	**30.80**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
30.5 - 30.8: possible mixed mafic anf RHYvl marginal to MAFi		
30.80	**32.50**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 30.8 - 32.5 10% Min: Calcite>>		
<<Min: 30.9 - 34.6 0.5% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
32.50	**36.40**	**RHY** **undifferentiated rhyolite**
32.5 - 36.4: may be RHYcw but texturally obscured		
<<Min: 32.5 - 44.2 2% Min: Calcite>>		
<<Min: 34.6 - 36.8 3% Min: Pyrrhotite>>		
36.40	**37.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 36.8 - 37.5 3% Min: Pyrrhotite>>		
37.50	**44.20**	**RHY** **undifferentiated rhyolite**
37.5 - 44.2: may be RHYcw or v		
<<Min: 43 - 52 10% Min: Ankerite>>		
<<Min: 43.9 - 44.2 1% Min: Pyrrhotite>>		
44.20	**44.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 44.2 - 45.9 0.5% Min: Pyrrhotite>>		
<<Min: 44.2 - 47.9 5% Min: Calcite>>		
44.90	**46.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 45.9 - 47.8 0.5% Min: Pyrrhotite>>		
46.00	**47.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
47.80	**52.10**	**RHYvl** **Lapilli tuff**
<<Min: 47.8 - 51.8 0.5% Min: Pyrrhotite>>		
<<Min: 47.9 - 52.1 1% Min: Calcite>>		
<<Min: 51.8 - 52.2 0.5% Min: Pyrite>>		
<<Min: 52 - 72 5% Min: Ankerite>>		
52.10	**54.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 52.1 - 54 10% Min: Calcite>>		
<<Min: 54 - 89.8 0.5% Min: Calcite>>		
54.10	**68.20**	**RHY** **undifferentiated rhyolite**
54.1 - 68.2: uncertain ident, massive mottled and siliceous, but texture diffuse and uncertain		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 59.8 - 64.1 0.5% Min: Pyrite>>

<<Min: 64.1 - 71.9 0.5% Min: Pyrrhotite>>

<<Vein: 54.1 - 59.8 90% Quartz-Carbonate>>

68.20 74.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

68.2 - 74.2: QE

<<Min: 71.9 - 77.9 0.5% Min: Pyrite>>

<<Min: 72 - 88 15% Min: Ankerite>>

74.20 79.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 77.9 - 81.3 0.5% Min: Pyrite>>

<<Min: 77.9 - 81.3 0.5% Min: Pyrrhotite>>

79.70 83.90 RHYvl Lapilli tuff

<<Min: 81.3 - 82 0.5% Min: Pyrite>>

<<Min: 82 - 83 0.5% Min: Pyrite>>

<<Min: 83 - 83.9 0.5% Min: Pyrite>>

<<Min: 83 - 83.9 1% Min: Pyrrhotite>>

83.90 84.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 83.9 - 84.7 0.5% Min: Pyrite>>

<<Min: 84.7 - 87.6 0.5% Min: Pyrite>>

<<Min: 84.7 - 87.6 0.5% Min: Pyrrhotite>>

84.80 87.40 RHYvl Lapilli tuff

87.40 89.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 87.6 - 89.9 8% Min: Pyrite>>

<<Min: 88 - 93.4 5% Min: Ankerite>>

89.80 93.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 89.9 - 93.4 0.5% Min: Pyrite>>

<<Min: 89.9 - 93.4 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.30	**100.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 93.3 - 156 0.5% Min: Calcite>>											
<<Min: 93.4 - 101.2 5% Min: Pyrite>>											
<<Min: 93.4 - 125 15% Min: Ankerite>>											
<<Vein: 93.8 - 96 15% Quartz-Carbonate>>											
<<Vein: 100.1 - 102.2 40% Quartz-Carbonate>>											
100.90	**102.50**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 102 - 118.7 1% Min: Pyrite>>											
<<Min: 102 - 118.7 2% Min: Pyrrhotite>>											
102.50	**109.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
109.70	**133.10**	**RHYvl** **Lapilli tuff**									
<<Min: 118.7 - 125.7 2% Min: Pyrite>>											
<<Min: 118.7 - 125.7 4% Min: Pyrrhotite>>											
<<Min: 125 - 146 5% Min: Ankerite>>											
<<Min: 125.7 - 145 1% Min: Pyrite>>											
<<Min: 125.7 - 145 7% Min: Pyrrhotite>>											
<<Alt: 127.2 - 142.3 Weak (Alt) Muscovite>>											
133.10	**134.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
134.40	**138.40**	**RHYvl** **Lapilli tuff**									
138.40	**144.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Alt: 142.3 - 155 Moderate (Alt) Muscovite>>											
<<Struc: 140.5 - 143.5 Moderate (Alt) Foliation>> dominant foliation averages 60 but in this interval foliation changesto 20-30											
144.90	**146.80**	**RHYv** **Rhyolite volcaniclastic**	144.90	145.40	0.50	B00264173	5.7	0.018	0.08	0.02	0.11
144.9 - 146.8: Cl altered zone schistose											
<<Min: 145 - 146.8 5% Min: Sphalerite>>			145.50	146.80	1.30	B00264174	3	0.02	0.12	0.01	0.26
<<Min: 145 - 146.8 5% Min: Pyrrhotite>>											
<<Min: 145 - 146.8 0.5% Min: Chalcopyrite>>											

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
151.50	151.90	0.40	B00264175	7.3	0.028	0.04	0.11	2

<<Min: 146 - 178 2% Min: Ankerite>>

<<Alt: 144.9 - 146.3 Moderate (Alt) Chlorite>>

<<Alt: 146.3 - 147.8 Weak (Alt) Talc-serpentine>>

146.80 154.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 146.8 - 151.5 1% Min: Sphalerite>>

<<Min: 146.8 - 154.8 12% Min: Pyrrhotite>>

<<Min: 146.8 - 154.8 0.5% Min: Chalcopyrite>>

<<Min: 151.5 - 151.8 7% Min: Sphalerite>>

<<Min: 151.8 - 154.2 1% Min: Sphalerite>>

154.20 157.60 RHYva Coarse grained to ash tuff

154.2 - 157.6: fine grained schistose with CI ppo

<<Min: 154.8 - 155.6 3% Min: Pyrrhotite>>

<<Min: 155.6 - 157.4 0.5% Min: Pyrite>>

<<Min: 155.6 - 157.4 1% Min: Pyrrhotite>>

<<Min: 156 - 160.6 3% Min: Calcite>>

<<Min: 157.4 - 161 1% Min: Pyrrhotite>>

<<Alt: 154.4 - 157.6 Moderate (Alt) Cordierite>>

157.60 159.00 MDSt Rhyolite tuff dominant mudstone

157.6 - 159: medium grey phyllite/schist with CL-TO after CI, weakly carbonaceoius fine grained

<<Alt: 157.6 - 159.6 Strong (Alt) Cordierite>>

159.00 163.00 RHYva Coarse grained to ash tuff

159 - 163: gradatioinal with overlying MDSt, abundant Cippo

<<Min: 161 - 162.3 8% Min: Pyrrhotite>>

<<Min: 162.3 - 166.1 5% Min: Pyrite>>

<<Min: 162.3 - 166.1 15% Min: Pyrrhotite>>

<<Alt: 159.6 - 166.1 Moderate (Alt) Cordierite>>

163.00 169.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 166.1 - 168.2 8% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 168.2 - 174.5 3% Min: Pyrrhotite>>

<<Alt: 166.1 - 170.1 Weak (Alt) Cordierite>>

<<Alt: 168.3 - 177.8 Moderate (Alt) Chlorite>>

169.40 176.10 MDSt Rhyolite tuff dominant mudstone

169.4 - 176.1: variable unit local CLm altration, Ciw, intervals RHYva and possible RHYvl, locally moderately carbonaceous

<<Min: 174.7 - 184.3 5% Min: Pyrrhotite>>

<<Min: 174.7 - 184.3 1% Min: Chalcopyrite>>

176.10 178.10 MDSc Carbonaceous dominant mudstone

176.1 - 178.1: moderately carbonaceous

<<Alt: 177.8 - 190.4 Weak (Alt) Chlorite>>

178.10 182.00 MDSt Rhyolite tuff dominant mudstone

178.1 - 182: variable, mixed mds and tuff + tuff-only intervals, narrow good MDSc

182.00 190.40 RHYv Rhyolite volcaniclastic

182 - 190.4: indistinct, mod perv CL alt

<<Min: 184.3 - 187.2 0.5% Min: Pyrite>>

<<Min: 184.3 - 187.2 2% Min: Pyrrhotite>>

<<Min: 187.2 - 190.3 2% Min: Sphalerite>>

<<Min: 187.2 - 190.3 2% Min: Pyrite>>

<<Min: 187.2 - 190.3 10% Min: Pyrrhotite>>

<<Min: 187.2 - 190.3 0.5% Min: Chalcopyrite>>

190.40 194.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 190.4 - 194.2 15% Min: Calcite>>

End of Hole @ 194.2

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-136

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414729.11	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815493.28	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1411.98	Casing Depth (m):		Length (m):	125.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
14	-61	172		172	SS				☑	
44	-61	177		177	SS				☑	
75	-61	173		173	SS				☑	
105	-61	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 14.00 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 6.1 - 13.9 2% Min: Pyrite>>

<<Min: 10 - 32.3 5% Min: Ankerite>>

<<Min: 13.9 - 20.2 1% Min: Pyrite>>

14.00 36.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

14 - 36.9: Blue qtz phenos, local wispsof mudst nar contacts

<<Min: 21.2 - 32.8 1% Min: Pyrite>>

<<Min: 32.3 - 38.4 10% Min: Ankerite>>

<<Min: 32.8 - 36.7 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 36.7 - 40 1% Min: Pyrite>>
		<<Alt: 14 - 55.6 Weak (Alt) Muscovite>>
		<<Alt: 14 - 76.2 Weak-Moderate (Alt) Silicification>>
36.90	**40.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
40.00	**40.40**	**MDSc** **Carbonaceous dominant mudstone**
		<<Min: 40 - 40.5 3.5% Min: Pyrite>>
40.40	**76.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		40.4 - 76.2: Blue qtz phenos. Last 4.5m bleached, crosscut by qtz-sulfide-musc(-tour?) vein
		<<Min: 40.5 - 68.7 1% Min: Pyrite>>
		<<Min: 43.5 - 65.8 5% Min: Ankerite>>
		<<Min: 68.7 - 69.7 3% Min: Pyrite>>
		<<Min: 69.7 - 70 0.5% Min: Pyrite>>
		<<Min: 70 - 70.4 3% Min: Pyrite>>
		<<Min: 71.3 - 73 2.5% Min: Pyrite>>
		<<Min: 73 - 73.3 2% Min: Pyrite>>
		<<Min: 73 - 73.3 4% Min: Chalcopyrite>>
		<<Min: 73.3 - 73.8 0.5% Min: Pyrite>>
		<<Min: 73.8 - 74.8 3.5% Min: Pyrite>>
		<<Min: 74.5 - 76 3% Min: Calcite>>
		<<Min: 74.8 - 75.6 1% Min: Pyrite>>
		<<Min: 74.8 - 75.6 0.8% Min: Sphalerite>>
		<<Min: 75.6 - 76.2 1.5% Min: Sphalerite>>
		<<Min: 75.6 - 76.2 1.3% Min: Chalcopyrite>>
		<<Min: 75.6 - 76.2 0.5% Min: Pyrrhotite>>
		<<Min: 75.6 - 76.2 1% Min: Pyrite>>
		<<Alt: 55.6 - 67.5 Moderate (Alt) Muscovite>>
		<<Alt: 67.5 - 76.2 Weak (Alt) Muscovite>>
76.20	**76.90**	**OA** **Magnetite bearing sulphides**
		<<Min: 76.2 - 76.9 5% Min: Sphalerite>>
		<<Min: 76.2 - 76.9 30% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.40	71.90	1.50	B00267097	0.6	0.005	-0.01	-0.01	-0.01
72.00	73.60	1.60	B00267098	4.9	-0.005	0.17	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 76.2 - 76.9 40% Min: Pyrrhotite>>

<<Min: 76.2 - 76.9 5% Min: Chalcopyrite>>

76.90 77.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 76.9 - 77.3 15% Min: Sphalerite>>

<<Min: 76.9 - 77.3 60% Min: Pyrite>>

77.30 78.50 OA Magnetite bearing sulphides

<<Min: 77.3 - 78.5 5% Min: Sphalerite>>

<<Min: 77.3 - 78.5 75% Min: Pyrite>>

<<Min: 77.3 - 78.5 15% Min: Pyrrhotite>>

<<Min: 77.3 - 78.5 2% Min: Chalcopyrite>>

78.50 78.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 78.5 - 78.9 15% Min: Sphalerite>>

<<Min: 78.5 - 78.9 60% Min: Pyrite>>

<<Min: 78.5 - 78.9 1% Min: Chalcopyrite>>

78.90 81.10 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 78.9 - 81.1 7.5% Min: Sphalerite>>

<<Min: 78.9 - 81.1 65% Min: Pyrite>>

<<Min: 78.9 - 81.1 15% Min: Pyrrhotite>>

<<Min: 78.9 - 81.1 2% Min: Chalcopyrite>>

81.10 87.00 OA Magnetite bearing sulphides

<<Min: 81.1 - 87 5% Min: Sphalerite>>

<<Min: 81.1 - 87 70% Min: Pyrite>>

<<Min: 81.1 - 87 5% Min: Pyrrhotite>>

<<Min: 81.1 - 87 1.5% Min: Chalcopyrite>>

87.00 90.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

From (m)	To (m)	Rocktype & Description
		<<Min: 87 - 90.3 7.5% Min: Sphalerite>>
		<<Min: 87 - 90.3 65% Min: Pyrite>>
90.30	**91.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 90.3 - 91.5 17.5% Min: Sphalerite>>
		<<Min: 90.3 - 91.5 40% Min: Pyrite>>
91.50	**93.90**	**RHYv** **Rhyolite volcaniclastic**
		<<Min: 91.5 - 93.9 0.5% Min: Sphalerite>>
		<<Min: 91.5 - 93.9 5% Min: Pyrite>>
		<<Alt: 91.5 - 93.9 Moderate-Strong (Alt) Silicification>>
93.90	**94.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 93.9 - 94.7 10% Min: Sphalerite>>
		<<Min: 93.9 - 94.7 45% Min: Pyrite>>
94.70	**99.00**	**RHYv** **Rhyolite volcaniclastic**
		<<Min: 94.7 - 95.4 5% Min: Sphalerite>>
		<<Min: 94.7 - 95.4 5% Min: Pyrite>>
		<<Min: 94.7 - 95.4 3% Min: Chalcopyrite>>
		<<Min: 95.4 - 96.8 2.5% Min: Sphalerite>>
		<<Min: 95.4 - 96.8 5% Min: Pyrite>>
		<<Min: 96.8 - 97.4 3.5% Min: Pyrite>>
		<<Min: 97.7 - 99 2.5% Min: Sphalerite>>
		<<Min: 97.7 - 99 20% Min: Pyrite>>
		<<Min: 97.7 - 99 1% Min: Chalcopyrite>>
		<<Alt: 96.3 - 99 Weak-Moderate (Alt) Chlorite>>
		<<Alt: 96.3 - 99 Moderate (Alt) Biotite>>
		<<Alt: 97.3 - 99 Weak-Moderate (Alt) Cordierite>> ankerite after cord
99.00	**99.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 99 - 99.8 7.5% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 99 - 99.8 75% Min: Pyrite>>

<<Min: 99 - 99.8 1.5% Min: Chalcopyrite>>

99.80 102.10 OA Magnetite bearing sulphides

<<Min: 99.8 - 102.1 7.5% Min: Sphalerite>>

<<Min: 99.8 - 102.1 80% Min: Pyrite>>

<<Min: 99.8 - 102.1 1.5% Min: Chalcopyrite>>

102.10 102.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 102.1 - 102.9 17.5% Min: Sphalerite>>

<<Min: 102.1 - 102.9 60% Min: Pyrite>>

102.90 105.40 RHYvx Quartz and/or feldspar crystal tuff

102.9 - 105.4: could be disrupteed RHYcw

<<Min: 103 - 103.5 10% Min: Pyrite>>

<<Min: 103.5 - 103.8 0.5% Min: Pyrite>>

<<Min: 103.8 - 105.4 12.5% Min: Pyrite>>

<<Alt: 102.9 - 105.4 Moderate-Strong (Alt) Silicification>>

105.40 105.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 105.4 - 105.6 12.5% Min: Sphalerite>>

<<Min: 105.4 - 105.6 65% Min: Pyrite>>

105.60 106.40 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 105.6 - 106.4 7.5% Min: Pyrite>>

106.40 111.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 106.4 - 111.6 15% Min: Sphalerite>>

<<Min: 106.4 - 111.6 65% Min: Pyrite>>

<<Min: 106.6 - 113.2 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
111.60	**112.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 111.6 - 112 12.5% Min: Sphalerite>>		
112.00	**113.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 112 - 113.2 17.5% Min: Sphalerite>>		
<<Min: 112 - 113.2 60% Min: Pyrite>>		
113.20	**125.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
113.2 - 125.8: 113.2-122.4; bleached altered, qtz veined.		
<<Min: 113.2 - 114.5 5% Min: Pyrite>>		
<<Min: 113.2 - 114.5 0.5% Min: Chalcopyrite>>		
<<Min: 113.2 - 125.3 10% Min: Calcite>> average of unit		
<<Min: 114.5 - 115.9 1.5% Min: Pyrite>>		
<<Min: 116.2 - 118.3 1% Min: Pyrrhotite>>		
<<Min: 118.3 - 118.7 1.5% Min: Pyrite>>		
<<Min: 118.3 - 118.7 0.5% Min: Pyrrhotite>>		
<<Min: 118.5 - 125.8 2% Min: Ankerite>> average of unit		
<<Min: 119.1 - 120 1.5% Min: Pyrite>>		
<<Min: 120 - 120.6 3.5% Min: Pyrite>>		
<<Min: 120.6 - 121 0.5% Min: Pyrite>>		
<<Alt: 113.2 - 124.7 Weak-Moderate (Alt) Silicification>>		

End of Hole @ 125.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
114.70	116.20	1.50	B00267099	1.9	0.017	-0.01	0.07	0.04
116.20	117.70	1.50	B00267101	-0.3	-0.005	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-137

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414729.12	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815493.53	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1412	Casing Depth (m):		Length (m):	138.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
14	-88	173		173	SS				☑	
44	-87	178		178	SS				☑	
105	-85	216		216	SS				☑	
135	-84	196		196	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

<<Alt: 5.1 - 52.3 Weak-Moderate (Alt) Silicification>> rhycw so of course rock is siliceous

6.10 13.00 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 6.1 - 11.7 1% Min: Pyrite>>

<<Min: 6.1 - 76.2 5% Min: Ankerite>>

<<Min: 11.7 - 23.2 0.5% Min: Pyrite>>

<<Min: 11.7 - 23.2 2% Min: Pyrrhotite>>

<<Alt: 6.1 - 20.4 Weak (Alt) Muscovite>>

13.00 68.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

13 - 68.7: rare blue qtz phenos

From (m)	To (m)	Rocktype & Description

<<Min: 23.5 - 26.4 1% Min: Pyrite>>
<<Min: 28.3 - 41.9 20% Min: Pyrite>>
<<Min: 42.1 - 65 20% Min: Pyrite>>
<<Min: 65 - 69.3 2% Min: Pyrite>>
<<Alt: 20.4 - 28 Moderate (Alt) Muscovite>>
<<Alt: 28 - 75 Weak-Moderate (Alt) Muscovite>>
<<Alt: 52.3 - 77.8 Strong (Alt) Silicification>>
<<Struc: 13.2 - 13.3 Fault>> crushed core, minor clay gouge.
<<Struc: 23.1 - 23.5 Fault>> crushed, minor gouge, broken core; other clay gouge zones <10cm wide present nearby
<<Struc: 41.8 - 49.1 Fault>> crushed core, minor gouge

68.70 69.10 MDSc Carbonaceous dominant mudstone

69.10 77.70 RHYv Rhyolite volcaniclastic

69.1 - 77.7: altered,protolith may have been RHYcw

<<Min: 69.3 - 76.8 2% Min: Pyrite>>
<<Min: 74 - 76.3 1% Min: Calcite>>
<<Min: 76.8 - 77.7 4% Min: Pyrite>>
<<Alt: 76.8 - 79.5 Weak-Moderate (Alt) Chlorite>>
<<Struc: 74.4 - 75.3 Fault>> 0.3m missing core, missing core, bad ground? Fault?

77.70 87.60 OA Magnetite bearing sulphides

<<Min: 77.7 - 87.6 10% Min: Sphalerite>>
<<Min: 77.7 - 87.6 70% Min: Pyrite>>
<<Min: 77.7 - 87.6 5% Min: Pyrrhotite>>
<<Min: 77.7 - 87.6 3% Min: Chalcopyrite>>

87.60 89.60 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 87.6 - 89.6 15% Min: Sphalerite>>
<<Min: 89.4 - 98 5% Min: Calcite>>

89.60 90.50 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 89.6 - 90.5 18% Min: Sphalerite>>
<<Min: 89.6 - 90.5 70% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.20	74.70	1.50	B00267102	-0.3	-0.005	-0.01	0.01	0.04
74.70	76.20	1.50	B00267103	0.8	0.009	-0.01	0.03	0.03

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 89.6 - 90.5 1% Min: Chalcopyrite>>												
<<Alt: 89.6 - 112 Moderate (Alt) Cordierite>> cord and qtt, ank after cord												
<<Alt: 90 - 101 Moderate-Strong (Alt) Chlorite>>												
90.50	**93.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 90.5 - 93.6 1% Min: Pyrite>>												
93.60	**103.20**	**RHYv**	**Rhyolite volcaniclastic**	95.10	96.60	1.50	B00267104	1.2	-0.005	-0.01	0.02	0.1
<<Min: 93.6 - 96.7 0.8% Min: Sphalerite>>				96.60	98.10	1.50	B00267105	8.6	0.048	0.15	0.11	0.25
<<Min: 93.6 - 96.7 0.3% Min: Pyrite>>				98.10	99.60	1.50	B00267106	6.9	0.044	0.11	0.15	0.27
<<Min: 93.6 - 96.7 2% Min: Pyrrhotite>>				99.60	101.10	1.50	B00267107	5.2	0.14	0.26	0.02	0.06
<<Min: 93.6 - 96.7 0.3% Min: Chalcopyrite>>				101.10	102.60	1.50	B00267108	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 96.3 - 100.2 8% Min: Ankerite>>				102.60	104.10	1.50	B00267109	1	0.009	-0.01	0.02	0.01
<<Min: 100.9 - 109 0.5% Min: Sphalerite>>												
<<Min: 100.9 - 109 1% Min: Pyrite>>												
<<Min: 100.9 - 109 2% Min: Pyrrhotite>>												
<<Min: 100.9 - 109 0.5% Min: Chalcopyrite>>												
<<Alt: 93.6 - 101 Moderate (Alt) Biotite>>												
<<Alt: 93.6 - 116.6 Trace (Alt) Silicification>>												
<<Alt: 94 - 104 Moderate (Alt) Muscovite>>												
103.20	**108.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	104.10	105.60	1.50	B00267111	1.1	-0.005	-0.01	0.04	0.15
<<Min: 105 - 112.5 8% Min: Ankerite>>				105.60	107.10	1.50	B00267112	0.8	-0.005	-0.01	0.02	0.14
<<Alt: 105.5 - 112 Moderate (Alt) Chlorite>>				107.10	108.60	1.50	B00267113	0.6	-0.005	-0.01	0.02	0.21
<<Struc: 104.1 - 104.2 Fault>> narrow zone of crushed - powdered rhyolite (not gouge)												
108.50	**113.20**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	108.60	110.10	1.50	B00267114	-0.3	0.006	-0.01	-0.01	0.06
<<Min: 109 - 113.2 0.5% Min: Sphalerite>>				110.10	111.60	1.50	B00267115	86.8	1.16	2.43	0.05	0.18
<<Min: 109 - 113.2 6% Min: Pyrite>>												
<<Min: 109 - 113.2 3% Min: Pyrrhotite>>												
<<Min: 109 - 113.2 2% Min: Chalcopyrite>>												

From (m)	To (m)	Rocktype & Description
113.20	**113.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 113.2 - 113.5 35% Min: Pyrite>>		
<<Min: 113.2 - 113.5 5% Min: Chalcopyrite>>		
113.50	**113.80**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
<<Min: 113.5 - 113.8 70% Min: Pyrite>>		
113.80	**123.60**	**OA** **Magnetite bearing sulphides**
<<Min: 113.8 - 123.6 10% Min: Sphalerite>>		
<<Min: 113.8 - 123.6 25% Min: Pyrite>>		
<<Min: 113.8 - 123.6 10% Min: Pyrrhotite>>		
<<Min: 113.8 - 123.6 4% Min: Chalcopyrite>>		
<<Min: 117 - 120 1% Min: Calcite>> average		
<<Min: 120 - 138.9 10% Min: Calcite>> average		
123.60	**123.90**	**OF** **Pyrrhotite rich sulphides**
<<Min: 123.6 - 123.9 75% Min: Pyrite>>		
<<Min: 123.6 - 123.9 10% Min: Chalcopyrite>>		
123.90	**124.50**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 123.9 - 124.5 10% Min: Sphalerite>>		
<<Min: 123.9 - 124.5 20% Min: Pyrite>>		
<<Min: 123.9 - 124.5 20% Min: Pyrrhotite>>		
<<Min: 123.9 - 124.5 35% Min: Chalcopyrite>>		
124.50	**126.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 124.5 - 126.2 8% Min: Sphalerite>>		
<<Min: 124.5 - 126.2 60% Min: Pyrite>>		
126.20	**138.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 126.2 - 126.5 0.5% Min: Pyrite>>		
<<Min: 128 - 130 5% Min: Ankerite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
127.70	129.20	1.50	B00267116	-0.3	0.012	-0.01	-0.01	0.01
129.20	130.70	1.50	B00267117	-0.3	-0.005	-0.01	-0.01	0.31

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 129.4 - 138.9 1% Min: Sphalerite>>
<<Min: 129.4 - 138.9 3% Min: Pyrrhotite>>
<<Min: 129.4 - 138.9 0.5% Min: Chalcopyrite>>
<<Alt: 126.2 - 138.9 Weak (Alt) Silicification>>
<<Alt: 126.2 - 138.9 Weak-Moderate (Alt) Biotite>>

End of Hole @ 138.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-138

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414773.44	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815504.89	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1403.63	Casing Depth (m):		Length (m):	126.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
14	-59	181		181	SS				☑	
44	-59	181		181	SS				☑	
75	-59	190		190	SS				☑	
105	-59	171		171	SS				☑	
126	-56	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN** **Overburden**									
6.10	**9.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 6.1 - 10 0.5% Min: Pyrite>>											
<<Min: 6.1 - 79.7 5% Min: Ankerite>>											
9.30	**14.40**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 10 - 11.4 0.5% Min: Pyrite>>											
<<Min: 11.4 - 12.2 0.5% Min: Pyrite>>											
<<Min: 12.2 - 14.4 0.5% Min: Pyrite>>											
14.40	**20.50**	**MDSt** **Rhyolite tuff dominant mudstone**									

From (m)	To (m)	Rocktype & Description
		<<Min: 14.4 - 16.8 0.5% Min: Pyrite>>
		<<Min: 16.8 - 17.2 0.5% Min: Pyrite>>
		<<Min: 17.2 - 19.2 0.5% Min: Pyrite>>
		<<Min: 19.2 - 19.8 0.5% Min: Pyrite>>
		<<Min: 19.8 - 20.3 0.5% Min: Pyrite>>
		<<Min: 20.3 - 22.8 1% Min: Pyrite>>
20.50	**25.60**	**RHYvl** **Lapilli tuff**
		<<Min: 22.8 - 24 1% Min: Pyrite>>
		<<Min: 24 - 24.2 0.5% Min: Pyrite>>
		<<Min: 24.2 - 33.7 2.5% Min: Pyrite>>
		<<Struc: 21.2 - 21.6 Weak (Alt) Fault>> gouge
25.60	**29.00**	**RHYc** **Rhyolite coherant volcanics**
29.00	**36.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 33.7 - 39 1% Min: Pyrite>>
		<<Struc: 35.6 - 35.7 Weak (Alt) Fault>> gouge
36.30	**65.80**	**RHYc** **Rhyolite coherant volcanics**
		<<Min: 39 - 44.8 1% Min: Pyrite>>
		<<Min: 39 - 44.8 0.5% Min: Pyrrhotite>>
		<<Min: 46.1 - 53.6 2.5% Min: Pyrite>>
		<<Min: 46.1 - 53.6 0.5% Min: Pyrrhotite>>
		<<Min: 53.6 - 65.9 3.5% Min: Pyrite>>
		<<Struc: 42.4 - 46 Moderate (Alt) Fault>> Broken core and strong fault gouge/breccia
65.80	**66.40**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 65.9 - 66.4 1% Min: Pyrite>>
66.40	**72.60**	**RHYc** **Rhyolite coherant volcanics**
		<<Min: 66.4 - 72.6 7.5% Min: Pyrite>>
72.60	**74.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 72.6 - 74.7 2% Min: Sphalerite>>
		<<Min: 72.6 - 74.7 60% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
68.50	69.60	1.10	B00267591	1.3	0.047	-0.01	-0.01	0.1
69.60	71.10	1.50	B00267592	1	0.034	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 72.6 - 74.7 2.5% Min: Chalcopyrite>>
74.70	**79.70**	**RHYc** **Rhyolite coherant volcanics**
		<<Min: 74.7 - 75.6 0.5% Min: Pyrite>>
		<<Min: 75.6 - 79.7 0.5% Min: Pyrite>>
79.70	**82.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 79.7 - 82.2 17.5% Min: Sphalerite>>
		<<Min: 79.7 - 82.2 65% Min: Pyrite>>
		<<Min: 79.7 - 82.2 1% Min: Chalcopyrite>>
82.20	**84.30**	**OA** **Magnetite bearing sulphides**
		<<Min: 82.2 - 84.3 7.5% Min: Sphalerite>>
		<<Min: 82.2 - 84.3 75% Min: Pyrite>>
		<<Min: 82.2 - 84.3 2.5% Min: Pyrrhotite>>
		<<Min: 82.2 - 84.3 1.5% Min: Chalcopyrite>>
84.30	**86.50**	**OA** **Magnetite bearing sulphides**
		<<Min: 84.3 - 86.5 3.5% Min: Sphalerite>>
		<<Min: 84.3 - 86.5 65% Min: Pyrite>>
		<<Min: 84.3 - 86.5 17.5% Min: Pyrrhotite>>
		<<Min: 84.3 - 86.5 1.5% Min: Chalcopyrite>>
86.50	**87.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 86.5 - 87.2 3.5% Min: Sphalerite>>
		<<Min: 86.5 - 87.2 5% Min: Pyrite>>
		<<Min: 86.5 - 87.2 12.5% Min: Pyrrhotite>>
		<<Min: 86.5 - 87.2 2.5% Min: Chalcopyrite>>
87.20	**87.40**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
		<<Min: 87.2 - 87.4 10% Min: Pyrite>>
		<<Min: 87.2 - 87.4 17.5% Min: Pyrrhotite>>
		<<Min: 87.2 - 87.4 22.5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.20	77.20	1.00	B00267593	1	0.037	-0.01	-0.01	0.03
77.20	78.20	1.00	B00267594	1.3	0.024	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description
87.40	**88.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 87.4 - 88.2 3.5% Min: Sphalerite>>		
<<Min: 87.4 - 88.2 45% Min: Pyrite>>		
<<Min: 87.4 - 88.2 10% Min: Pyrrhotite>>		
<<Min: 87.4 - 88.2 2% Min: Chalcopyrite>>		
88.20	**89.60**	**OA** **Magnetite bearing sulphides**
<<Min: 88.2 - 89.6 3.5% Min: Sphalerite>>		
<<Min: 88.2 - 89.6 65% Min: Pyrite>>		
<<Min: 88.2 - 89.6 17.5% Min: Pyrrhotite>>		
<<Min: 88.2 - 89.6 1.5% Min: Chalcopyrite>>		
89.60	**92.60**	**OA** **Magnetite bearing sulphides**
<<Min: 89.6 - 92.6 6.5% Min: Sphalerite>>		
<<Min: 89.6 - 92.6 75% Min: Pyrite>>		
<<Min: 89.6 - 92.6 2.5% Min: Pyrrhotite>>		
<<Min: 89.6 - 92.6 1.5% Min: Chalcopyrite>>		
92.60	**93.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 92.6 - 93.2 7.5% Min: Sphalerite>>		
<<Min: 92.6 - 93.2 65% Min: Pyrite>>		
<<Min: 92.6 - 93.2 1.5% Min: Chalcopyrite>>		
93.20	**94.70**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 93.2 - 94.5 0.5% Min: Pyrite>>		
<<Min: 94.5 - 101.1 0.5% Min: Sphalerite>>		
<<Min: 94.5 - 101.1 3% Min: Pyrite>>		
<<Alt: 93.2 - 94.7 Moderate (Alt) Silicification>>		
94.70	**99.20**	**RHYi** **Aphanitic Rhyolite (intrusion)**
99.20	**102.30**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 99.2 - 102.5 3% Min: Calcite>> also fracture an vein hostred		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
94.70	96.20	1.50	B00267595	20.3	0.088	-0.01	0.01	0.33
96.20	97.70	1.50	B00267596	47.5	0.237	-0.01	0.04	0.19
97.70	99.40	1.70	B00267597	18.1	0.232	-0.01	0.11	0.24
99.50	100.70	1.20	B00267598	1.5	0.417	0.01	0.31	0.6

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 101.1 - 102.3 0.5% Min: Sphalerite>>

<<Min: 101.1 - 102.3 2.5% Min: Pyrite>>

<<Alt: 99.2 - 101.1 Strong (Alt) Silicification>>

<<Alt: 101.1 - 102.3 Weak-Moderate (Alt) Silicification>>

102.30 102.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 102.3 - 102.8 7.5% Min: Sphalerite>>

<<Min: 102.3 - 102.8 70% Min: Pyrite>>

<<Min: 102.3 - 102.8 1% Min: Pyrrhotite>>

<<Min: 102.3 - 102.8 0.8% Min: Chalcopyrite>>

102.80 103.30 OA Magnetite bearing sulphides

<<Min: 102.8 - 103.3 4% Min: Sphalerite>>

<<Min: 102.8 - 103.3 70% Min: Pyrite>>

<<Min: 102.8 - 103.3 10% Min: Pyrrhotite>>

<<Min: 102.8 - 103.3 1.3% Min: Chalcopyrite>>

103.30 104.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 103.3 - 104.6 7.5% Min: Sphalerite>>

<<Min: 103.3 - 104.6 70% Min: Pyrite>>

104.60 105.30 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 104.6 - 105.3 3.5% Min: Sphalerite>>

<<Min: 104.6 - 105.3 90% Min: Pyrite>>

<<Min: 104.6 - 105.3 1.3% Min: Chalcopyrite>>

105.30 105.60 OA Magnetite bearing sulphides

<<Min: 105.3 - 105.6 3% Min: Sphalerite>>

<<Min: 105.3 - 105.6 80% Min: Pyrite>>

105.60 108.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 105.6 - 108.3 10% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 105.6 - 108.3 70% Min: Pyrite>>
		<<Min: 105.6 - 108.3 2.5% Min: Pyrrhotite>>
		<<Min: 105.6 - 108.3 1.5% Min: Chalcopyrite>>
108.30	**110.80**	**RHYc Rhyolite coherant volcanics**
		108.3 - 110.8: Possibly tuff or coherent, elements of both.
		<<Min: 108.3 - 110.8 1% Min: Pyrite>>
		<<Alt: 108.3 - 110.3 Weak-Moderate (Alt) Silicification>>
110.80	**112.70**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 110.8 - 112.7 17.5% Min: Sphalerite>>
		<<Min: 110.8 - 112.7 60% Min: Pyrite>>
		<<Min: 110.8 - 112.7 0.8% Min: Chalcopyrite>>
112.70	**113.40**	**OH Fine grained, megascopically homogeneous pyrite rock**
		<<Min: 112.7 - 113.4 7.5% Min: Sphalerite>>
		<<Min: 112.7 - 113.4 85% Min: Pyrite>>
		<<Min: 112.7 - 113.4 0.8% Min: Chalcopyrite>>
113.40	**114.90**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 113.4 - 114.9 12.5% Min: Sphalerite>>
		<<Min: 113.4 - 114.9 60% Min: Pyrite>>
		<<Min: 113.4 - 114.9 0.8% Min: Chalcopyrite>>
		<<Min: 114.8 - 119 3% Min: Calcite>>
114.90	**119.00**	**MAFt Mafic Volcaniclastics**
		114.9 - 119: Altered light grey-green, homogeneous texture. Could also be MAFi?
		<<Min: 114.9 - 118.1 0.5% Min: Pyrite>>
		<<Min: 118.1 - 118.5 0.5% Min: Pyrite>>
		<<Min: 118.5 - 118.8 0.5% Min: Pyrite>>
		<<Min: 118.8 - 119.8 1.5% Min: Pyrite>>
		<<Alt: 114.9 - 119 Weak-Moderate (Alt) Silicification>> Common green-grey proximal alteration

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
116.40	117.90	1.50	B00267599	1.6	0.017	-0.01	0.04	0.04
117.90	119.00	1.10	B00267601	1.9	0.01	-0.01	0.04	0.06

From (m)	To (m)	Rocktype & Description
119.00	**121.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

119 - 121.5: Med green with large dark BI, white CA. Classic MAFi

<<Min: 119 - 121.5 10% Min: Calcite>> calcite bands

<<Min: 119.8 - 121.6 0.5% Min: Pyrite>>

<<Alt: 119 - 121.5 Moderate (Alt) Chlorite>>

<<Alt: 119 - 121.5 Moderate (Alt) Biotite>>

121.50	**125.30**	**MAFt** **Mafic Volcaniclastics**

121.5 - 125.3: light green-grey homogeneous composition as per 114.9-119m

<<Min: 121.5 - 125.3 3% Min: Calcite>>

<<Alt: 121.5 - 125.3 Weak-Moderate (Alt) Silicification>>

125.30	**126.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 125.3 - 126.8 10% Min: Calcite>> calcite bsnds

<<Alt: 125.3 - 126.8 Moderate (Alt) Chlorite>>

<<Alt: 125.3 - 126.8 Weak-Moderate (Alt) Biotite>>

End of Hole @ 126.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-139

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414773.2	Core Size:		Azimuth:	250	Date Logging Complete:	
UTM Northing:	6815503.94	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1403.59	Casing Depth (m):		Length (m):	132.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	250		250	SS				☑	
14	-88	249		249	SS				☑	
44	-88	143		143	SS				☑	
84	-84	201		201	SS				☑	
105	-84	211		211	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 5.20 OVBN Overburden

<<Alt: 4.2 - 32 Weak (Alt) Muscovite>> strong side of 2

5.20 6.70 MDSt Rhyolite tuff dominant mudstone

<<Min: 5.2 - 6.6 0.5% Min: Pyrite>>

<<Min: 5.5 - 8 5% Min: Ankerite>>

<<Min: 6.6 - 13 0.5% Min: Pyrite>>

<<Min: 6.6 - 13 0.5% Min: Pyrrhotite>>

6.70 13.40 RHYv Rhyolite volcaniclastic

<<Min: 13 - 21.8 2% Min: Pyrite>>

13.40 18.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 13.4 - 19 5% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

18.80 25.20 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 21.8 - 23.8 10% Min: Pyrite>>

<<Min: 21.8 - 23.8 1% Min: Pyrrhotite>>

<<Min: 23.8 - 31.4 8% Min: Pyrite>>

<<Min: 23.8 - 31.4 0.5% Min: Pyrrhotite>>

25.20 32.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 31.4 - 33.8 15% Min: Pyrite>>

<<Min: 31.5 - 41.8 10% Min: Ankerite>>

<<Alt: 32 - 33.5 Weak (Alt) Biotite>>

<<Alt: 32 - 41.7 Weak (Alt) Muscovite>>

32.20 34.80 RHYvl Lapilli tuff

<<Min: 33.8 - 35.4 1% Min: Pyrite>>

<<Min: 33.8 - 35.4 3% Min: Pyrrhotite>>

34.80 41.70 MDSt Rhyolite tuff dominant mudstone

34.8 - 41.7: 0.4m missing core between 137ft-147ft.

<<Min: 35.4 - 41.9 1% Min: Pyrite>>

<<Min: 35.4 - 41.9 0.5% Min: Pyrrhotite>>

41.70 68.80 RHYcq Quartz porphyry

41.7 - 68.8: wisps mudstone, local banded RHYcw sections

<<Min: 41.9 - 68 3% Min: Pyrite>>

<<Min: 45.5 - 68.8 5% Min: Ankerite>>

<<Min: 68 - 68.9 3% Min: Pyrite>>

<<Min: 68 - 68.9 5% Min: Pyrrhotite>>

<<Alt: 41.7 - 67.5 Moderate (Alt) Muscovite>>

<<Alt: 58 - 78 Moderate-Strong (Alt) Silicification>>

<<Alt: 67.5 - 76 Weak (Alt) Muscovite>>

<<Struc: 44.8 - 46.3 Fault>> broken core, missing core

68.80 70.00 MDSc Carbonaceous dominant mudstone

From (m)	To (m)		Rocktype & Description
<<Min: 68.9 - 76.3 3% Min: Pyrite>>			
70.00	**79.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
70 - 79.7: bleached and altered below 74m			
<<Min: 72.7 - 80.8 5% Min: Ankerite>>			
<<Min: 76.3 - 79.7 1% Min: Pyrite>>			
<<Struc: 76 - 78.6 Fault>> broken core, core rubble, missing core, minor sheared gougy schist			
79.70	**80.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Min: 79.7 - 80.1 20% Min: Pyrite>>			
<<Min: 79.7 - 80.1 5% Min: Pyrrhotite>>			
<<Min: 79.7 - 80.1 20% Min: Chalcopyrite>>			
80.10	**80.80**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 80.1 - 80.8 7% Min: Pyrite>>			
<<Min: 80.1 - 80.8 8% Min: Chalcopyrite>>			
80.80	**81.60**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 80.8 - 81.6 15% Min: Pyrrhotite>>			
<<Min: 80.8 - 81.6 35% Min: Chalcopyrite>>			
81.60	**82.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Min: 81.6 - 82.3 20% Min: Pyrrhotite>>			
<<Min: 81.6 - 82.3 30% Min: Chalcopyrite>>			
82.30	**83.70**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 82.3 - 84.7 15% Min: Pyrrhotite>>			
<<Min: 82.3 - 84.7 7% Min: Chalcopyrite>>			
83.70	**84.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
84.70	**86.40**	**OF**	**Pyrrhotite rich sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.80	78.30	1.50	B00267123	3.8	0.022	0.11	0.02	0.04
78.30	79.70	1.40	B00267124	23.2	0.353	1.14	0.07	0.48

From (m)	To (m)	Rocktype & Description

<<Min: 84.7 - 86.4 50% Min: Pyrrhotite>>

<<Min: 84.7 - 86.4 20% Min: Chalcopyrite>>

86.40 86.70 OA Magnetite bearing sulphides

<<Min: 86.4 - 86.7 60% Min: Pyrite>>

<<Min: 86.4 - 86.7 20% Min: Chalcopyrite>>

86.70 88.00 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 86.7 - 88 5% Min: Pyrite>>

<<Min: 86.7 - 88 20% Min: Pyrrhotite>>

<<Min: 86.7 - 88 60% Min: Chalcopyrite>>

88.00 94.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 88 - 94.4 5% Min: Sphalerite>>

<<Min: 88 - 94.4 65% Min: Pyrite>>

94.40 100.00 RHYv Rhyolite volcaniclastic

<<Min: 94.4 - 100 1% Min: Sphalerite>>

<<Min: 94.4 - 100 5% Min: Pyrite>>

<<Min: 97 - 100 8% Min: Ankerite>>

<<Alt: 94.5 - 97 Moderate-Strong (Alt) Cordierite>>

<<Alt: 94.5 - 99 Weak-Moderate (Alt) Muscovite>>

<<Alt: 97.7 - 98.5 Strong (Alt) Silicification>> qtz flooded

100.00 101.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 100 - 101.4 15% Min: Sphalerite>>

<<Min: 100 - 101.4 40% Min: Pyrite>>

101.40 104.30 RHYv Rhyolite volcaniclastic

<<Min: 101.4 - 104.3 0.5% Min: Sphalerite>>

<<Min: 101.4 - 104.3 0.5% Min: Pyrite>>

<<Min: 101.4 - 104.3 0.5% Min: Chalcopyrite>>

<<Min: 102.2 - 103.8 5% Min: Calcite>>

<<Alt: 101.8 - 102.2 Weak (Alt) Chlorite>> adjacent to qtz-tour vein

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 103 - 104.3 Trace (Alt) Chlorite>>

<<Alt: 103.7 - 104.3 Strong (Alt) Cordierite>> repaced by qtx

<<Alt: 103.9 - 114 Moderate (Alt) Biotite>>

104.30 105.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 104.3 - 105.9 2% Min: Sphalerite>>

<<Min: 104.3 - 105.9 70% Min: Pyrite>>

<<Min: 104.3 - 105.9 0.5% Min: Chalcopyrite>>

105.90 114.10 RHYv Rhyolite volcaniclastic

<<Min: 105.9 - 113.3 1% Min: Pyrite>>

<<Min: 105.9 - 113.3 2% Min: Chalcopyrite>>

<<Min: 108 - 111 8% Min: Ankerite>>

<<Min: 113.3 - 114.1 8% Min: Pyrite>>

<<Min: 113.3 - 114.1 3% Min: Pyrrhotite>>

<<Min: 113.3 - 114.1 15% Min: Chalcopyrite>>

<<Alt: 106 - 111 Moderate (Alt) Chlorite>>

<<Alt: 106 - 111.9 Weak-Moderate (Alt) Muscovite>>

<<Alt: 108.8 - 114 Moderate (Alt) Cordierite>> replaced by qtz and ankerite

114.10 115.60 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 114.1 - 115.6 10% Min: Pyrrhotite>>

<<Min: 114.1 - 115.6 60% Min: Chalcopyrite>>

115.60 118.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 115.6 - 118 70% Min: Pyrite>>

<<Min: 115.6 - 118 5% Min: Chalcopyrite>>

118.00 118.40 OA Magnetite bearing sulphides

<<Min: 118 - 118.4 70% Min: Pyrite>>

<<Min: 118 - 118.4 5% Min: Pyrrhotite>>

<<Min: 118 - 118.4 5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
118.40	**121.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 118.4 - 121.4 5% Min: Sphalerite>>		
<<Min: 118.4 - 121.4 60% Min: Pyrite>>		
<<Min: 118.4 - 121.4 0.5% Min: Pyrrhotite>>		
<<Min: 118.4 - 121.4 2% Min: Chalcopyrite>>		
<<Alt: 121 - 123 Weak (Alt) Chlorite>>		
121.40	**125.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 121.4 - 124 8% Min: Calcite>>		
<<Min: 121.4 - 124.8 0.5% Min: Pyrite>>		
<<Min: 124.8 - 132.6 0.5% Min: Sphalerite>>		
<<Min: 124.8 - 132.6 1% Min: Pyrite>>		
<<Alt: 121.4 - 123.3 Moderate-Strong (Alt) Biotite>> in MAFi		
125.10	**132.60**	**RHYi** **Aphanitic Rhyolite (intrusion)**
125.1 - 132.6: contains narrow sections of MAFi-MAFt		
<<Min: 127 - 129 3% Min: Ankerite>>		
<<Alt: 126.5 - 132.6 Moderate-Strong (Alt) Silicification>> RHYi dyke		
End of Hole @ 132.6		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
122.90	124.40	1.50	B00267125	0.3	-0.005	-0.01	-0.01	0.01
124.40	125.90	1.50	B00267126	2.4	0.018	-0.01	0.05	0.55

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-140

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414874.76	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815492.665	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1392.84	Casing Depth (m):		Length (m):	125.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
14	-62	164		164	SS				☑	
44	-62	177		177	SS				☑	
93	-62	168		168	SS				☑	
125	-62	173		173	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.50 OVBN Overburden

6.50 10.20 RHYv Rhyolite volcaniclastic

6.5 - 10.2: partially oxidized

<<Min: 6.5 - 10.2 0.5% Min: Pyrite>>

<<Min: 6.5 - 10.2 0.5% Min: Pyrrhotite>>

<<Min: 7.2 - 50 10% Min: Ankerite>>

10.20 10.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

10.80 13.50 RHYv Rhyolite volcaniclastic

<<Min: 10.8 - 13.8 1% Min: Pyrite>>

<<Min: 10.8 - 13.8 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
13.50	**15.70**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 13.8 - 16 1% Min: Pyrite>>		
<<Min: 13.8 - 16 2.5% Min: Pyrrhotite>>		
15.70	**28.30**	**RHYv** **Rhyolite volcaniclastic**
15.7 - 28.3: variable fine grained to lapilli		
<<Min: 16 - 16.6 1% Min: Pyrite>>		
<<Min: 16 - 16.6 3.5% Min: Pyrrhotite>>		
<<Min: 16.6 - 20.9 3% Min: Pyrite>>		
<<Min: 16.6 - 20.9 0.5% Min: Pyrrhotite>>		
<<Min: 20.9 - 22.7 2% Min: Pyrite>>		
<<Min: 20.9 - 22.7 0.5% Min: Pyrrhotite>>		
<<Min: 22.7 - 26.3 0.5% Min: Pyrite>>		
<<Min: 22.7 - 26.3 1.5% Min: Pyrrhotite>>		
<<Min: 26.3 - 28.2 0.5% Min: Pyrite>>		
<<Min: 26.3 - 28.2 1.5% Min: Pyrrhotite>>		
<<Min: 28.2 - 30.2 0.5% Min: Pyrrhotite>>		
28.30	**30.20**	**MDSt** **Rhyolite tuff dominant mudstone**
28.3 - 30.2: 10cm of MDSc		
30.20	**67.40**	**RHYc** **Rhyolite coherant volcanics**
30.2 - 67.4: Sulphide "burn" common in lower part of interval		
<<Min: 30.2 - 41.7 0.5% Min: Pyrite>>		
<<Min: 30.2 - 41.7 0.5% Min: Pyrrhotite>>		
<<Min: 42.1 - 67.4 0.5% Min: Pyrite>>		
<<Min: 42.1 - 67.4 0.5% Min: Pyrrhotite>>		
<<Min: 59.7 - 74.1 5% Min: Ankerite>>		
<<Alt: 42 - 62 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 62 - 74.1 Moderate-Strong (Alt) Muscovite>>		
<<Vein: 41.8 - 42.1 90% Quartz>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
62.90	64.40	1.50						
64.40	65.90	1.50						

From (m)	To (m)	Rocktype & Description
67.40	**68.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 67.4 - 68.1 12.5% Min: Sphalerite>>		
<<Min: 67.4 - 68.1 65% Min: Pyrite>>		
<<Min: 67.4 - 68.1 1.5% Min: Galena>>		
<<Min: 67.4 - 68.1 1.5% Min: Chalcopyrite>>		
68.10	**74.10**	**RHYcf** **Feldspar & feldspar quartz porphyry**
<<Min: 68.1 - 73.4 0.5% Min: Pyrite>>		
<<Min: 73.4 - 74.1 0.5% Min: Pyrite>>		
<<Min: 73.4 - 74.1 0.8% Min: Chalcopyrite>>		
74.10	**74.20**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 74.1 - 74.2 10% Min: Pyrite>>		
<<Min: 74.1 - 74.2 25% Min: Pyrrhotite>>		
<<Min: 74.1 - 74.2 35% Min: Chalcopyrite>>		
74.20	**76.90**	**OA** **Magnetite bearing sulphides**
<<Min: 74.2 - 76.9 17.5% Min: Sphalerite>>		
<<Min: 74.2 - 76.9 65% Min: Pyrite>>		
<<Min: 74.2 - 76.9 7.5% Min: Pyrrhotite>>		
<<Min: 74.2 - 76.9 6.5% Min: Chalcopyrite>>		
76.90	**77.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 76.9 - 77.7 5% Min: Sphalerite>>		
<<Min: 76.9 - 77.7 5% Min: Pyrite>>		
<<Min: 76.9 - 77.7 12.5% Min: Pyrrhotite>>		
<<Min: 76.9 - 77.7 1.5% Min: Chalcopyrite>>		
77.70	**78.30**	**OA** **Magnetite bearing sulphides**
<<Min: 77.7 - 78.3 10% Min: Sphalerite>>		
<<Min: 77.7 - 78.3 65% Min: Pyrite>>		
<<Min: 77.7 - 78.3 7.5% Min: Pyrrhotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 77.7 - 78.3 1% Min: Galena>>

<<Min: 77.7 - 78.3 1% Min: Chalcopyrite>>

78.30 79.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 78.3 - 79.4 20% Min: Sphalerite>>

<<Min: 78.3 - 79.4 65% Min: Pyrite>>

<<Min: 78.3 - 79.4 3% Min: Pyrrhotite>>

<<Min: 78.3 - 79.4 3% Min: Galena>>

<<Min: 78.3 - 79.4 1% Min: Chalcopyrite>>

79.40 79.80 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 79.4 - 79.8 10% Min: Sphalerite>>

<<Min: 79.4 - 79.8 15% Min: Pyrite>>

<<Min: 79.4 - 79.8 3% Min: Galena>>

<<Min: 79.4 - 81.7 20% Min: Ankerite>>

79.80 81.70 RHY undifferentiated rhyolite

<<Min: 79.8 - 81.2 20% Min: Pyrite>>

<<Min: 79.8 - 81.2 7.5% Min: Pyrrhotite>>

<<Min: 79.8 - 81.2 2% Min: Chalcopyrite>>

<<Min: 81.2 - 81.7 0.5% Min: Pyrite>>

<<Min: 81.2 - 81.7 0.5% Min: Pyrrhotite>>

<<Alt: 80.2 - 81.5 Weak-Moderate (Alt) Cordierite>>

<<Alt: 80.4 - 81.7 Weak-Moderate (Alt) Chlorite>>

81.70 82.00 OA Magnetite bearing sulphides

<<Min: 81.7 - 82 17.5% Min: Sphalerite>>

<<Min: 81.7 - 82 40% Min: Pyrite>>

<<Min: 81.7 - 82 5% Min: Pyrrhotite>>

<<Min: 81.7 - 82 3.5% Min: Galena>>

82.00 82.30 OA Magnetite bearing sulphides

<<Min: 82 - 82.3 40% Min: Pyrite>>

<<Min: 82 - 82.3 10% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 82 - 82.3 17.5% Min: Chalcopyrite>>

82.30 82.40 OF Pyrrhotite rich sulphides

<<Min: 82.3 - 82.4 10% Min: Pyrite>>

<<Min: 82.3 - 82.4 70% Min: Pyrrhotite>>

82.40 85.40 RHYva Coarse grained to ash tuff

82.4 - 85.4: Thin banded

<<Min: 82.4 - 82.8 5% Min: Sphalerite>>

<<Min: 82.4 - 82.8 0.5% Min: Pyrite>>

<<Min: 82.4 - 82.8 5% Min: Pyrrhotite>>

<<Min: 82.4 - 82.8 1.5% Min: Galena>>

<<Min: 82.5 - 86.9 10% Min: Calcite>>

<<Min: 82.8 - 84.4 0.5% Min: Pyrite>>

<<Min: 82.8 - 84.4 0.5% Min: Pyrrhotite>>

<<Min: 84.4 - 85.4 0.5% Min: Pyrrhotite>>

<<Alt: 82.5 - 85.4 Weak-Moderate (Alt) Muscovite>>

85.40 98.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

85.4 - 98.7: Strong alt'n, mm scale spheres, = spherulites? Strong CA as replacement or frags?

<<Min: 85.4 - 86.7 2.5% Min: Pyrite>>

<<Min: 85.4 - 86.7 2.5% Min: Pyrrhotite>>

<<Min: 85.4 - 101.9 20% Min: Ankerite>>

<<Min: 86.7 - 87.1 7.5% Min: Pyrrhotite>>

<<Min: 86.7 - 87.1 2.5% Min: Pyrite>>

<<Min: 87.1 - 88.1 7.5% Min: Pyrrhotite>>

<<Min: 87.1 - 88.1 2.5% Min: Pyrite>>

<<Min: 88.1 - 88.9 1.5% Min: Galena>>

<<Min: 88.1 - 89 1.5% Min: Sphalerite>>

<<Min: 88.1 - 89 2.5% Min: Pyrrhotite>>

<<Min: 88.1 - 89 2.5% Min: Pyrite>>

<<Min: 89 - 91.1 5% Min: Pyrrhotite>>

<<Min: 89 - 91.1 2.5% Min: Pyrite>>

<<Min: 89 - 91.1 2.5% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 89 - 91.1 0.8% Min: Chalcopyrite>>									
		<<Min: 91.1 - 96.7 1.3% Min: Chalcopyrite>>									
		<<Min: 91.1 - 96.7 5% Min: Pyrrhotite>>									
		<<Min: 91.1 - 96.7 2.5% Min: Pyrite>>									
		<<Min: 91.1 - 96.7 1.5% Min: Sphalerite>>									
		<<Min: 92 - 96 5% Min: Calcite>>									
		<<Min: 96.7 - 97.4 0.5% Min: Pyrrhotite>>									
		<<Min: 97.4 - 98.2 1% Min: Pyrrhotite>>									
		<<Min: 98.2 - 98.7 0.5% Min: Pyrite>>									
		<<Min: 98.2 - 98.7 1% Min: Pyrrhotite>>									
		<<Alt: 85.4 - 98.7 Strong (Alt) Chlorite>>									
98.70	**100.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	98.90	100.40	1.50	B00267631	4.2	0.009	0.13	-0.01	0.08
		<<Min: 98.7 - 99.4 0.5% Min: Pyrite>>									
		<<Min: 98.7 - 99.4 2.5% Min: Pyrrhotite>>									
		<<Min: 99.4 - 99.7 1% Min: Pyrrhotite>>									
		<<Alt: 98.7 - 103.9 Strong (Alt) Muscovite>> As MS									
		<<Alt: 98.7 - 103.9 Weak-Moderate (Alt) Chlorite>> Stringers of CL									
		<<Vein: 99.6 - 101.9 80% Quartz>>									
100.40	**105.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	100.40	101.90	1.50	B00267632	2.4	-0.005	-0.01	0.03	0.09
		100.4 - 105.5: Very soft, med.green, black CL stringers. Mafic?									
		<<Min: 100.4 - 100.9 0.5% Min: Pyrite>>	101.90	102.90	1.00	B00267633	0.6	-0.005	-0.01	-0.01	0.09
		<<Min: 100.4 - 100.9 0.5% Min: Pyrrhotite>>	102.90	103.90	1.00	B00267634	-0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 101.6 - 103.9 1% Min: Pyrrhotite>>									
		<<Min: 101.9 - 112 3% Min: Ankerite>>									
		<<Min: 103.9 - 105.5 3.5% Min: Pyrrhotite>>									
		<<Alt: 103.9 - 109.2 Strong (Alt) Chlorite>>									
105.50	**107.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**									
		<<Min: 105.5 - 107.7 12.5% Min: Sphalerite>>									
		<<Min: 105.5 - 107.7 10% Min: Pyrrhotite>>									

From (m)	To (m)		Rocktype & Description
			<<Min: 105.5 - 107.7 4% Min: Chalcopyrite>>
107.70	**110.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			107.7 - 110.8: CL altered at top of interval
			<<Min: 107.7 - 109.1 1.5% Min: Sphalerite>>
			<<Min: 107.7 - 109.1 2.5% Min: Pyrrhotite>>
			<<Min: 107.7 - 109.1 1% Min: Chalcopyrite>>
			<<Alt: 109.2 - 110.8 Moderate-Strong (Alt) Muscovite>>
110.80	**111.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 110.8 - 111.5 6.5% Min: Sphalerite>>
			<<Min: 110.8 - 111.5 60% Min: Pyrite>>
			<<Min: 110.8 - 111.5 3.5% Min: Pyrrhotite>>
			<<Min: 110.8 - 111.5 1.5% Min: Galena>>
			<<Min: 110.8 - 111.5 1.5% Min: Chalcopyrite>>
111.50	**111.80**	**OA**	**Magnetite bearing sulphides**
			<<Min: 111.5 - 111.8 5% Min: Pyrite>>
			<<Min: 111.5 - 111.8 5% Min: Pyrrhotite>>
			<<Min: 111.5 - 111.8 4% Min: Chalcopyrite>>
111.80	**113.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			<<Min: 111.8 - 112.7 0.5% Min: Pyrite>>
			<<Alt: 111.8 - 117.7 Weak-Moderate (Alt) Muscovite>>
113.20	**113.80**	**OI**	**Heavilly disseminated sulphides in host schist**
			<<Min: 113.2 - 113.8 10% Min: Pyrite>>
113.80	**117.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			113.8 - 117.7: Fine grained light green grey strong alt'n.
			<<Vein: 113.8 - 114.8 90% Quartz-Tourmaline>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
115.30	116.80	1.50	B00267635	0.5	0.011	-0.01	-0.01	0.03
116.80	118.30	1.50	B00267636	-0.3	0.009	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
117.70	**119.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

117.7 - 119.4: Dark, coarse Bl

<<Min: 117.7 - 125.9 20% Min: Calcite>> Also fracture related

<<Alt: 117.7 - 119.4 Moderate (Alt) Chlorite>>

<<Alt: 117.7 - 119.4 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description
119.40	**125.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

119.4 - 125.9: All MS alt'n. some fuchsite green. Leucoxene

<<Alt: 119.4 - 121.5 Strong (Alt) Muscovite>> As MS, with fuchsite green throughout

<<Alt: 121.5 - 122.1 Moderate (Alt) Chlorite>>

<<Alt: 121.5 - 122.1 Moderate-Strong (Alt) Biotite>>

<<Alt: 122.1 - 125.9 Strong (Alt) Muscovite>> As MS. Minor Fuchsite green.

<<Struc: 122.1 - 125.9 Trace (Alt) Fault>> Weak fault with intense clay alteration.

End of Hole @ 125.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-141

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414874.788	Core Size:		Azimuth:	240	Date Logging Complete:	
UTM Northing:	6815491.845	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1392.926	Casing Depth (m):		Length (m):	133.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	240		240	SS				☑	
14	-89	237		237	SS				☑	
44	-88	249		249	SS				☑	
75	-87	208		208	SS				☑	
105	-88	213		213	SS				☑	
133	-86	200		200	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 10.50 RHYvl Lapilli tuff

6.1 - 10.5: lapilli tuff with minor sed component as po and biotite very weak ca patches. Not mdsw!

<<Min: 6.1 - 8.9 0.5% Min: Pyrite>>
<<Min: 6.1 - 12 5% Min: Calcite>>
<<Min: 8.9 - 10.4 0.5% Min: Pyrite>>
<<Min: 8.9 - 10.4 3% Min: Pyrrhotite>>
<<Min: 10.4 - 12 0.5% Min: Pyrite>>
<<Min: 10.4 - 12 1% Min: Pyrrhotite>>
<<Alt: 6.1 - 12 Weak-Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

10.50 12.00 SED undifferentiated Sediment

10.5 - 12: fine grained. High fine biotite content. Intercalated with felsic tuffaceous material. Not mdsw!

12.00 13.30 RHYvl Lapilli tuff

<<Min: 12 - 12.5 0.5% Min: Pyrite>>

<<Min: 12 - 12.5 1% Min: Pyrrhotite>>

<<Min: 12 - 62.2 10% Min: Ankerite>>

<<Min: 12.5 - 14.6 5% Min: Pyrrhotite>>

13.30 15.50 MDSw Coherent rhyolite flow with carbonaceous content

13.3 - 15.5: low carbonaceous component, very gradational contacts.

<<Min: 14.6 - 17.6 0.5% Min: Pyrite>>

<<Min: 14.6 - 17.6 7% Min: Pyrrhotite>>

15.50 19.90 RHYvl Lapilli tuff

<<Min: 17.6 - 29.3 2% Min: Pyrite>>

<<Min: 17.6 - 29.3 8% Min: Pyrrhotite>>

<<Alt: 15.5 - 25 Weak (Alt) Muscovite>>

19.90 27.00 RHYvx Quartz and/or feldspar crystal tuff

19.9 - 27: 7-8% feldspar crystals broken, 2-5mm in size within lapilli tuff.

<<Alt: 25 - 36.6 Weak-Moderate (Alt) Muscovite>>

27.00 30.60 RHYvl Lapilli tuff

<<Min: 29.3 - 30.1 0.5% Min: Pyrite>>

<<Min: 29.3 - 30.1 5% Min: Pyrrhotite>>

<<Min: 30.1 - 30.8 2% Min: Pyrite>>

<<Min: 30.1 - 30.8 2% Min: Pyrrhotite>>

30.60 31.50 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 30.8 - 31.4 1% Min: Pyrrhotite>>

<<Min: 31.4 - 62.2 1% Min: Pyrite>>

<<Min: 31.4 - 62.2 1% Min: Pyrrhotite>>

<<Struc: 30.6 - 31 Moderate (Alt) Fault>> broken and gougy in mdsw

From (m)	To (m)	Rocktype & Description
31.50	**62.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

31.5 - 62.3: mod well developed curdy text with py po sulphidization

<<Min: 62.2 - 64.1 0.5% Min: Pyrite>>
<<Min: 62.2 - 64.1 3% Min: Pyrrhotite>>
<<Alt: 36.6 - 62.3 Moderate-Strong (Alt) Muscovite>>
<<Alt: 40.5 - 41.5 Weak-Moderate (Alt) Biotite>>
<<Struc: 57 - 58 Moderate (Alt) Fault>> broken and missing core

62.30	**64.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**

62.3 - 64.7: high deformation

<<Min: 62.3 - 80.6 5% Min: Ankerite>>
<<Min: 64.1 - 64.3 0.5% Min: Pyrite>>
<<Min: 64.1 - 64.3 5% Min: Pyrrhotite>>
<<Min: 64.3 - 77.9 5% Min: Pyrite>>
<<Min: 64.3 - 77.9 0.5% Min: Pyrrhotite>>
<<Alt: 62.3 - 67 Weak (Alt) Muscovite>>

64.70	**66.00**	**MDSc** **Carbonaceous dominant mudstone**

64.7 - 66: lower contact defined by 10cm fol parallel qv

66.00	**76.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**

66 - 76.8: FOLD HINGE! High mud compnent with rhycw.

<<Alt: 67 - 80.6 Moderate-Strong (Alt) Muscovite>>

76.80	**80.60**	**RHYc** **Rhyolite coherant volcanics**

76.8 - 80.6: knife sharp contact with mxsx below

<<Min: 77.9 - 79.3 0.5% Min: Pyrite>>
<<Min: 77.9 - 79.3 2% Min: Pyrrhotite>>
<<Min: 79.3 - 80.6 5% Min: Pyrite>>
<<Min: 79.3 - 80.6 3% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.10	77.60	1.50	B00232512	1	-0.005	-0.01	0.02	0.03
77.60	79.10	1.50	B00232513	3.8	0.009	0.01	0.09	0.22

From (m)	To (m)	Rocktype & Description
80.60	**81.70**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 80.6 - 81.7 15% Min: Sphalerite>>		
<<Min: 80.6 - 81.7 30% Min: Pyrite>>		
<<Min: 80.6 - 81.7 3% Min: Pyrrhotite>>		
<<Min: 80.6 - 81.7 30% Min: Chalcopyrite>>		
81.70	**83.10**	**RHYc** **Rhyolite coherant volcanics**
81.7 - 83.1: knife sharp upper and lower contacts with mxsx		
<<Min: 81.7 - 83.1 1% Min: Pyrrhotite>>		
<<Min: 81.7 - 83.1 10% Min: Ankerite>>		
<<Alt: 81.7 - 83.1 Moderate-Strong (Alt) Muscovite>>		
<<Vein: 81.7 - 82.1 Quartz>>		
83.10	**84.90**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 83.1 - 84.9 8% Min: Sphalerite>>		
<<Min: 83.1 - 84.9 20% Min: Pyrrhotite>>		
<<Min: 83.1 - 84.9 0.5% Min: Galena>>		
<<Min: 83.1 - 84.9 30% Min: Chalcopyrite>>		
<<Alt: 83.1 - 103 Moderate-Strong (Alt) Muscovite>>		
84.90	**86.60**	**OG** **Chalcopyrite rich sulphides**
<<Min: 84.9 - 86.6 5% Min: Sphalerite>>		
<<Min: 84.9 - 86.6 15% Min: Pyrrhotite>>		
<<Min: 84.9 - 86.6 0.5% Min: Galena>>		
<<Min: 84.9 - 86.6 40% Min: Chalcopyrite>>		
86.60	**87.30**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
<<Min: 86.6 - 87.3 0.5% Min: Sphalerite>>		
<<Min: 86.6 - 87.3 5% Min: Pyrite>>		
<<Min: 86.6 - 87.3 35% Min: Pyrrhotite>>		
<<Min: 86.6 - 87.3 0.5% Min: Galena>>		
<<Min: 86.6 - 87.3 25% Min: Chalcopyrite>>		
87.30	**88.90**	**OA** **Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Min: 87.3 - 88.9 3% Min: Sphalerite>>
		<<Min: 87.3 - 88.9 55% Min: Pyrite>>
		<<Min: 87.3 - 88.9 0.5% Min: Galena>>
		<<Min: 87.3 - 88.9 2% Min: Chalcopyrite>>
88.90	**89.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 88.9 - 89.8 7% Min: Sphalerite>>
		<<Min: 88.9 - 89.8 40% Min: Pyrite>>
		<<Min: 88.9 - 89.8 8% Min: Pyrrhotite>>
		<<Min: 88.9 - 89.8 2% Min: Galena>>
		<<Min: 88.9 - 89.8 10% Min: Chalcopyrite>>
89.80	**90.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 89.8 - 90.1 25% Min: Sphalerite>>
		<<Min: 89.8 - 90.1 40% Min: Pyrite>>
90.10	**90.40**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
		<<Min: 90.1 - 90.4 10% Min: Sphalerite>>
		<<Min: 90.1 - 90.4 10% Min: Pyrite>>
		<<Min: 90.1 - 90.4 20% Min: Pyrrhotite>>
		<<Min: 90.1 - 90.4 0.5% Min: Galena>>
		<<Min: 90.1 - 90.4 30% Min: Chalcopyrite>>
90.40	**93.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 90.4 - 93.4 10% Min: Sphalerite>>
		<<Min: 90.4 - 93.4 50% Min: Pyrite>>
93.40	**119.50**	**RHYv** **Rhyolite volcaniclastic**
		93.4 - 119.5: top 3m looks more coherent. Intensely altered with massive chlorite fw alteration pipe with po cpy =/- py and qtz after cordierite? After 102.8m. Little muddier ak section at 112.2-112.4m
		<<Min: 93.4 - 99.2 1% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
95.10	96.60	1.50	B00232514	2.8	0.017	-0.01	0.05	0.08
96.60	98.10	1.50	B00232515	2.8	0.017	-0.01	0.13	0.21

From (m)	To (m)	Rocktype & Description
		<<Min: 93.4 - 99.2 3% Min: Pyrrhotite>>
		<<Min: 93.4 - 108.6 5% Min: Ankerite>>
		<<Min: 99.2 - 108.6 1% Min: Pyrite>>
		<<Min: 99.2 - 108.6 5% Min: Pyrrhotite>>
		<<Min: 102.7 - 103.5 5% Min: Calcite>>
		<<Min: 104.9 - 106.5 1% Min: Chalcopyrite>>
		<<Min: 108.6 - 117 0.5% Min: Pyrite>>
		<<Min: 108.6 - 117 1% Min: Pyrrhotite>>
		<<Min: 108.6 - 119.5 5% Min: Ankerite>>
		<<Min: 114.5 - 115.5 0.5% Min: Chalcopyrite>>
		<<Alt: 97.7 - 98.1 Strong (Alt) Chlorite>>
		<<Alt: 102 - 103 Moderate (Alt) Chlorite>>
		<<Alt: 103 - 108.6 Weak (Alt) Muscovite>>
		<<Alt: 103 - 108.6 Intense (Alt) Chlorite>> near 100% cl with po cpy qtz after cordierite.
		<<Alt: 108.6 - 118 Weak (Alt) Muscovite>>
		<<Alt: 108.6 - 119.5 Strong (Alt) Chlorite>> banded some portions near massive. Good footwall alt
		<<Alt: 118 - 119.5 Moderate (Alt) Muscovite>>
119.50	**120.80**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 119.5 - 120.8 20% Min: Sphalerite>>
		<<Min: 119.5 - 120.8 55% Min: Pyrite>>
120.80	**124.10**	**RHYc Rhyolite coherant volcanics**
		<<Min: 120.8 - 121.3 20% Min: Pyrite>>
		<<Min: 121.3 - 122 0.5% Min: Pyrite>>
		<<Alt: 120.8 - 124.1 Moderate (Alt) Muscovite>>
		<<Alt: 120.8 - 124.1 Moderate (Alt) Chlorite>>
124.10	**125.10**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 124.1 - 125.1 3% Min: Sphalerite>>
		<<Min: 124.1 - 125.1 60% Min: Pyrite>>
125.10	**126.90**	**RHYc Rhyolite coherant volcanics**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
113.30	114.80	1.50	B00232516	7.9	0.025	0.16	0.46	1.05
114.80	116.30	1.50	B00232517	36.8	0.186	0.29	1.09	4.98
116.30	117.80	1.50	B00232518	-0.3	0.005	-0.01	-0.01	0.05
126.60	128.10	1.50	B00232519	6.1	0.011	-0.01	0.26	0.04

From (m)	To (m)	Rocktype & Description

<<Min: 125.1 - 126.9 1% Min: Pyrite>>

<<Min: 125.1 - 126.9 5% Min: Ankerite>>

<<Alt: 125.1 - 126.9 Moderate (Alt) Muscovite>>

<<Alt: 125.1 - 126.9 Moderate (Alt) Chlorite>>

126.90 129.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

126.9 - 129.5: calcareous component, chl bi

<<Min: 126.9 - 133.2 0.5% Min: Pyrrhotite>>

<<Min: 126.9 - 133.2 10% Min: Calcite>>

<<Alt: 126.9 - 129.5 Weak-Moderate (Alt) Muscovite>>

<<Alt: 126.9 - 129.5 Weak (Alt) Chlorite>>

<<Alt: 126.9 - 129.5 Weak (Alt) Biotite>>

<<Vein: 128 - 128.2 Quartz>>

129.50 130.40 RHYi Aphanitic Rhyolite (intrusion)

129.5 - 130.4: very siliceous bleaches MAFi therefore intrusive nature

<<Alt: 129.5 - 130.4 Weak (Alt) Muscovite>>

130.40 133.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

130.4 - 133.2: chl, co3, bt

<<Alt: 130.4 - 133.2 Weak (Alt) Chlorite>>

<<Alt: 130.4 - 133.2 Weak-Moderate (Alt) Biotite>>

End of Hole @ 133.2

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
128.10	129.60	1.50	B00232521	-0.3	-0.005	-0.01	-0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-142

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414822.43	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815503.38	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1397.66	Casing Depth (m):		Length (m):	132.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
132	-59	170		170	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.10 OVBN Overburden

6.10 20.70 RHYvl Lapilli tuff

<<Min: 6.1 - 17.6 1.5% Min: Pyrite>>

<<Min: 6.1 - 17.6 3.5% Min: Pyrrhotite>>

<<Min: 10 - 37 10% Min: Ankerite>>

<<Min: 10 - 103.8 5.5% Min: Sphalerite>>

<<Min: 10 - 103.8 65% Min: Pyrite>>

<<Min: 10 - 103.8 0.5% Min: Pyrrhotite>>

<<Min: 10 - 103.8 1.5% Min: Chalcopyrite>>

<<Min: 17.6 - 26.9 0.5% Min: Pyrite>>

<<Min: 17.6 - 26.9 1% Min: Pyrrhotite>>

<<Alt: 12 - 66.5 Weak (Alt) Muscovite>>

20.70 27.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

20.7 - 27.3: upper contact is transitional with RHYvl

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 26.9 - 27 0.5% Min: Pyrite>>

<<Min: 26.9 - 27 3.5% Min: Pyrrhotite>>

27.30 35.30 RHYvl Lapilli tuff

<<Min: 27.3 - 27.7 1% Min: Pyrite>>

<<Min: 27.3 - 27.7 4% Min: Pyrrhotite>>

<<Min: 27.3 - 27.7 0.5% Min: Chalcopyrite>>

<<Min: 27.7 - 35.4 0.5% Min: Pyrite>>

<<Min: 27.7 - 35.4 1% Min: Pyrrhotite>>

35.30 38.47 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 37 - 80.1 5% Min: Ankerite>>

<<Alt: 38 - 81.6 Weak (Alt) Silicification>>

38.47 43.00 MDSw Coherent rhyolite flow with carbonaceous content

38.47 - 43: sulphidized at lower contact

<<Min: 38.8 - 43 0.5% Min: Pyrite>>

<<Min: 38.8 - 43 1% Min: Pyrrhotite>>

43.00 67.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

43 - 67.5: sulphidized at upper contact

<<Min: 43 - 67.7 0.5% Min: Pyrite>>

<<Min: 43 - 67.7 0.5% Min: Pyrrhotite>>

<<Alt: 66.5 - 81 Moderate (Alt) Muscovite>>

<<Struc: 55.2 - 55.3 Moderate (Alt) Fault>> thinn crush - gouge zone

67.50 71.20 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 67.7 - 68.1 0.5% Min: Pyrite>>

<<Min: 67.7 - 68.1 1% Min: Pyrrhotite>>

<<Min: 68.1 - 70.4 0.5% Min: Pyrite>>

<<Min: 68.1 - 70.4 1% Min: Pyrrhotite>>

<<Min: 70.4 - 73.5 1% Min: Pyrite>>

<<Min: 70.4 - 73.5 2.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 70.4 - 73.5 0.5% Min: Chalcopyrite>>
71.20	**73.00**	**MDSc** **Carbonaceous dominant mudstone**
73.00	**73.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
		<<Min: 73.5 - 81.6 0.5% Min: Pyrite>>
73.80	**81.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		73.8 - 81.6: local 10's of cm sulphidized patches
81.60	**82.60**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
		<<Min: 81.6 - 82.6 3.5% Min: Sphalerite>>
		<<Min: 81.6 - 82.6 17.5% Min: Pyrite>>
		<<Min: 81.6 - 82.6 12.5% Min: Pyrrhotite>>
		<<Min: 81.6 - 82.6 10% Min: Chalcopyrite>>
		<<Alt: 81.6 - 120.4 Strong (Alt) Silicification>>
82.60	**84.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 82.6 - 84 22.5% Min: Sphalerite>>
		<<Min: 82.6 - 84 35% Min: Pyrite>>
		<<Min: 82.6 - 84 7.5% Min: Pyrrhotite>>
		<<Min: 82.6 - 84 3% Min: Chalcopyrite>>
84.00	**89.80**	**OA** **Magnetite bearing sulphides**
		<<Min: 84 - 89.8 7.5% Min: Sphalerite>>
		<<Min: 84 - 89.8 65% Min: Pyrite>>
		<<Min: 84 - 89.8 7.5% Min: Pyrrhotite>>
		<<Min: 84 - 89.8 1.5% Min: Chalcopyrite>>
89.80	**91.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.50	78.10	1.60	B00267145	3.4	0.01	0.02	0.04	0.05
78.10	80.10	2.00	B00267146	5	0.025	0.01	0.07	0.11

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 89.8 - 91 12.5% Min: Sphalerite>>

<<Min: 89.8 - 91 5% Min: Pyrite>>

<<Min: 89.8 - 91 1.5% Min: Chalcopyrite>>

91.00 92.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

91 - 92.3: well banded, pale grey-green, white aphanitic rhy bands

92.30 92.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 92.3 - 92.5 12.5% Min: Sphalerite>>

<<Min: 92.3 - 92.5 60% Min: Pyrite>>

<<Min: 92.3 - 92.5 0.8% Min: Chalcopyrite>>

92.50 97.30 RHYv Rhyolite volcaniclastic

92.5 - 97.3: 92.5-95.8; coherent banded rhy as at 91-92.3

<<Min: 92.5 - 95.8 5% Min: Ankerite>>

<<Min: 95.6 - 97.5 1% Min: Pyrite>>

<<Min: 95.6 - 97.5 0.5% Min: Pyrrhotite>>

<<Alt: 95.8 - 100.2 Trace (Alt) Chlorite>>

<<Alt: 95.8 - 100.2 Moderate (Alt) Biotite>> highly altered; proximal altereation

97.30 98.60 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 97.5 - 97.9 0.5% Min: Pyrite>>

<<Min: 97.5 - 97.9 5% Min: Chalcopyrite>>

<<Min: 97.9 - 100.2 1.5% Min: Pyrite>>

<<Min: 97.9 - 100.2 1.5% Min: Pyrrhotite>>

<<Min: 97.9 - 100.2 0.5% Min: Chalcopyrite>>

98.60 100.20 RHYv Rhyolite volcaniclastic

100.20 101.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 100.2 - 101 7.5% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 100.2 - 101 60% Min: Pyrite>>

<<Min: 100.2 - 101 0.5% Min: Pyrrhotite>>

<<Min: 100.2 - 101 0.8% Min: Chalcopyrite>>

101.00 103.80 OA Magnetite bearing sulphides

103.80 105.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 103.8 - 105.9 10% Min: Sphalerite>>

<<Min: 103.8 - 105.9 65% Min: Pyrite>>

<<Min: 103.8 - 105.9 0.5% Min: Pyrrhotite>>

<<Min: 103.8 - 105.9 1.3% Min: Chalcopyrite>>

105.90 106.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 105.9 - 106.7 7.5% Min: Sphalerite>>

<<Min: 105.9 - 106.7 65% Min: Pyrite>>

<<Min: 105.9 - 106.7 0.5% Min: Chalcopyrite>>

106.70 108.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 106.7 - 108.5 15% Min: Sphalerite>>

<<Min: 106.7 - 108.5 70% Min: Pyrite>>

<<Min: 106.7 - 108.5 0.5% Min: Pyrrhotite>>

<<Min: 106.7 - 108.5 1.5% Min: Chalcopyrite>>

108.50 113.40 RHYv Rhyolite volcaniclastic

<<Min: 108.5 - 120.4 3% Min: Calcite>> and as fracture filling and bands

<<Min: 108.9 - 112.5 0.5% Min: Pyrite>>

<<Min: 108.9 - 112.5 2.5% Min: Pyrrhotite>>

<<Min: 112.8 - 113.4 0.8% Min: Sphalerite>>

<<Min: 112.8 - 113.4 1.5% Min: Pyrite>>

<<Min: 112.8 - 113.4 2.5% Min: Pyrrhotite>>

<<Struc: 108.5 - 111.3 Moderate-Strong (Alt) Fault>> broken core, missing core - suspected fault

113.40 113.90 OF Pyrrhotite rich sulphides

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 113.4 - 113.9 7.5% Min: Pyrite>>

<<Min: 113.4 - 113.9 70% Min: Pyrrhotite>>

<<Min: 113.4 - 113.9 1.5% Min: Chalcopyrite>>

113.90 114.70 RHYv Rhyolite volcaniclastic

<<Min: 113.9 - 114.7 2.5% Min: Pyrite>>

<<Min: 113.9 - 114.7 7.5% Min: Pyrrhotite>>

<<Min: 113.9 - 114.7 0.5% Min: Chalcopyrite>>

114.70 115.80 OF Pyrrhotite rich sulphides

<<Min: 114.7 - 115.8 5% Min: Pyrite>>

<<Min: 114.7 - 115.8 75% Min: Pyrrhotite>>

<<Min: 114.7 - 115.8 1.5% Min: Chalcopyrite>>

115.80 117.20 RHY undifferentiated rhyolite

115.8 - 117.2: 80% missing core

117.20 117.70 OF Pyrrhotite rich sulphides

<<Min: 117.2 - 117.7 5% Min: Pyrite>>

<<Min: 117.2 - 117.7 75% Min: Pyrrhotite>>

<<Min: 117.2 - 117.7 0.5% Min: Chalcopyrite>>

117.70 120.40 MAFt Mafic Volcaniclastics

			120.20	121.80	1.60	B00267147	1.8	-0.005	0.01	0.03	0.05

117.7 - 120.4: variably bleached and altered. Typical FW. 131-132.6m very siliceous, possibly aphanitic banded rhy - RHYi?

<<Struc: 117.7 - 120.4 Moderate-Strong (Alt) Fault>> broken core, missing core - suspected fault

120.40 131.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

			121.80	123.40	1.60	B00267148	-0.3	0.005	-0.01	-0.01	0.02

<<Min: 120.4 - 131 5% Min: Calcite>> and fracture fillind and bands

<<Min: 129.5 - 131 0.5% Min: Pyrite>>

<<Alt: 120.5 - 129.5 Weak-Moderate (Alt) Muscovite>>

<<Alt: 120.5 - 131 Weak (Alt) Chlorite>>

131.00 132.60 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 131 - 132.6 2% Min: Pyrite>>

<<Alt: 131 - 132.6 Intense (Alt) Silicification>>

Project: **KZK** **Hole Number:** **K95-142**

From (m)	To (m)	Rocktype & Description
		End of Hole @ 132.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-143

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414822.56	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815503.04	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1397.57	Casing Depth (m):		Length (m):	148.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
14	-88	191		191	SS				☑	
44	-88	196		196	SS				☑	
75	-87	176		176	SS				☑	
105	-86	179		179	SS				☑	
136	-85	186		186	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.60**	**OVBN Overburden**									
7.60	**11.10**	**RHYvl Lapilli tuff**									
<<Min: 7.6 - 9.2 1% Min: Pyrite>>											
<<Min: 7.6 - 9.2 2% Min: Pyrrhotite>>											
<<Min: 7.6 - 54.1 10% Min: Ankerite>>											
<<Min: 9.2 - 9.8 5% Min: Pyrrhotite>>											
<<Min: 9.8 - 11 10% Min: Pyrrhotite>>											
<<Min: 11 - 11.3 5% Min: Pyrrhotite>>											
<<Alt: 7.6 - 11.1 Weak (Alt) Muscovite>>											
11.10	**13.50**	**MDSt Rhyolite tuff dominant mudstone**									
<<Min: 11.3 - 12.1 0.5% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 11.3 - 12.1 0.5% Min: Pyrrhotite>>

<<Min: 13.3 - 14.3 8% Min: Pyrrhotite>>

<<Alt: 11.1 - 13.5 Trace (Alt) Muscovite>>

13.50 19.90 RHYvl Lapilli tuff

13.5 - 19.9: minor 10cm sections more rhycw around 18m

<<Min: 14.3 - 36.2 4% Min: Pyrrhotite>>

<<Alt: 13.5 - 37.4 Weak (Alt) Muscovite>>

19.90 21.60 RHYvx Quartz and/or feldspar crystal tuff

19.9 - 21.6: 10% 2-5mm feldspar xtals at lower contact diminishing upwards

21.60 23.50 RHYvl Lapilli tuff

23.50 26.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

23.5 - 26: pseudo-fragmental texture

26.00 37.40 RHYvl Lapilli tuff

<<Min: 36.2 - 52.9 2% Min: Pyrite>>

<<Min: 36.2 - 52.9 4% Min: Pyrrhotite>>

37.40 39.60 MDSt Rhyolite tuff dominant mudstone

37.4 - 39.6: gradational lower contact into rhycw

<<Alt: 37.4 - 39.6 Trace (Alt) Muscovite>>

39.60 52.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39.6 - 52.1: bottom 5m are more foliated and broken with fault gouge. Possibly tuffaceous

<<Alt: 39.6 - 52.1 Moderate (Alt) Muscovite>>

<<Alt: 47.5 - 52.1 Trace (Alt) Biotite>>

<<Vein: 47.9 - 50.9 Quarzt-Tourmaline-Sulphide>>

<<Struc: 48 - 49 Moderate (Alt) Fault>> two 10kcm gouge zones in broken foliated core

From (m)	To (m)	Rocktype & Description
52.10	**54.10**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
52.1 - 54.1: sharp bottom contact		
<<Min: 52.9 - 54.1 0.5% Min: Pyrite>>		
<<Alt: 52.1 - 54.1 Weak (Alt) Muscovite>>		
54.10	**69.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
54.1 - 69.7: 5-10% py po as stringer and dissem. Possible failed horizon 10m thickness below mdsw		
<<Min: 54.1 - 72 7% Min: Ankerite>>		
<<Min: 54.1 - 74.1 1% Min: Pyrite>>		
<<Min: 54.1 - 74.1 1% Min: Pyrrhotite>>		
<<Alt: 54.1 - 74.3 Moderate-Strong (Alt) Muscovite>>		
69.70	**74.30**	**RHYc** **Rhyolite coherant volcanics**
69.7 - 74.3: stg alteration plus sulphide burn		
<<Min: 72 - 87 13% Min: Ankerite>>		
<<Min: 74.1 - 75.3 8% Min: Pyrite>>		
74.30	**75.10**	**MDSc** **Carbonaceous dominant mudstone**
74.3 - 75.1: gradational contacts over 5cm		
<<Alt: 74.3 - 75.1 Trace (Alt) Muscovite>>		
75.10	**87.00**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 75.3 - 80.8 3% Min: Pyrrhotite>>		
<<Min: 80.8 - 82.8 0.5% Min: Pyrite>>		
<<Min: 82.8 - 83.4 0.5% Min: Pyrite>>		
<<Min: 83.4 - 85.6 2% Min: Pyrite>>		
<<Min: 85.6 - 87 1% Min: Pyrite>>		
<<Min: 85.6 - 87 1% Min: Pyrrhotite>>		
<<Alt: 75.1 - 88.3 Strong (Alt) Muscovite>>		
<<Vein: 83.3 - 86.1 Quartz>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
84.00	85.50	1.50	B00232505	4.6	0.02	-0.01	0.12	0.23
85.50	87.00	1.50	B00232506	1.4	0.03	-0.01	0.03	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
87.00	**87.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**									
<<Min: 87 - 87.2 30% Min: Sphalerite>>											
<<Min: 87 - 87.2 10% Min: Pyrite>>											
<<Min: 87 - 87.2 8% Min: Chalcopyrite>>											
87.20	**92.20**	**RHYc** **Rhyolite coherant volcanics**	87.20	88.30	1.10	B00232507	0.8	-0.005	-0.01	0.03	0.03
87.2 - 92.2: assumed to be as box of core missing from 88.3 to 94.2m top of cu rich massive sulphides											
<<Min: 87.2 - 87.7 2% Min: Pyrrhotite>>											
<<Min: 87.7 - 89.4 0.5% Min: Pyrite>>											
<<Min: 89.4 - 92.2 10% Min: Pyrite>>											
<<Min: 89.4 - 92.2 5% Min: Pyrrhotite>>											
<<Min: 89.4 - 92.2 15% Min: Chalcopyrite>>											
<<Alt: 87.5 - 88.3 Moderate (Alt) Chlorite>> and a little stringery											
<<Alt: 87.5 - 88.3 Moderate (Alt) Biotite>>											
92.20	**92.50**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**									
<<Min: 92.2 - 92.5 30% Min: Pyrite>>											
<<Min: 92.2 - 92.5 15% Min: Pyrrhotite>>											
<<Min: 92.2 - 92.5 30% Min: Chalcopyrite>>											
92.50	**93.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 92.5 - 93.7 35% Min: Sphalerite>>											
<<Min: 92.5 - 93.7 55% Min: Pyrite>>											
93.70	**95.40**	**OA** **Magnetite bearing sulphides**									
<<Min: 93.7 - 95.4 10% Min: Sphalerite>>											
<<Min: 93.7 - 95.4 50% Min: Pyrite>>											
<<Min: 93.7 - 95.4 10% Min: Pyrrhotite>>											
95.40	**95.70**	**RHYc** **Rhyolite coherant volcanics**									
<<Min: 95.4 - 95.7 3% Min: Pyrite>>											
<<Alt: 95.4 - 95.7 Strong (Alt) Muscovite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

95.70 95.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 95.7 - 95.9 18% Min: Sphalerite>>

<<Min: 95.7 - 95.9 20% Min: Pyrite>>

95.90 106.50 RHYcq Quartz porphyry

95.9 - 106.5: at 101.2m 10cm of semi massive py and sp. Lower contact with massive sulphides at 106.5 is chl, qv and cp stringer

<<Min: 95.9 - 102.1 1% Min: Sphalerite>>

<<Min: 95.9 - 102.1 8% Min: Pyrite>>

<<Min: 95.9 - 102.1 0.5% Min: Pyrrhotite>>

<<Min: 95.9 - 102.1 0.5% Min: Chalcopyrite>>

<<Min: 96 - 106.5 5% Min: Ankerite>>

<<Min: 102.1 - 106.5 5% Min: Pyrite>>

<<Min: 102.1 - 106.5 2% Min: Pyrrhotite>>

<<Min: 102.1 - 106.5 1% Min: Chalcopyrite>>

<<Alt: 95.9 - 106.5 Moderate-Strong (Alt) Muscovite>>

<<Alt: 102 - 106.5 Moderate (Alt) Chlorite>>

<<Alt: 102.5 - 106.5 Weak (Alt) Biotite>>

106.50 106.70 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 106.5 - 106.7 60% Min: Pyrite>>

<<Min: 106.5 - 106.7 25% Min: Chalcopyrite>>

106.70 111.30 OH Fine grained, megascopically homogeneous pyrite rock

<<Min: 106.7 - 111.3 45% Min: Pyrite>>

111.30 125.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 111.3 - 125.4 12% Min: Sphalerite>>

<<Min: 111.3 - 125.4 65% Min: Pyrite>>

<<Min: 111.3 - 125.4 2% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
125.40	**127.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
125.4 - 127.6: upper contact with massive sx defined by 20cm qv.											
<<Min: 125.4 - 127.6 3% Min: Pyrite>>											
<<Alt: 125.7 - 127.6 Moderate-Strong (Alt) Muscovite>>											
<<Vein: 125.4 - 125.6 Quartz>>											
127.60	**133.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 127.6 - 133.1 20% Min: Sphalerite>>											
<<Min: 127.6 - 133.1 55% Min: Pyrite>>											
133.10	**136.60**	**RHYc** **Rhyolite coherant volcanics**	134.60	136.10	1.50	B00232508	-0.3	-0.005	-0.01	-0.01	0.02
133.1 - 136.6: strongly altered with minor qtz veining and bands with brown sp											
<<Min: 133.5 - 148.4 5% Min: Ankerite>>			136.10	137.60	1.50	B00232509	0.7	0.006	-0.01	-0.01	0.43
<<Min: 135.7 - 137.3 1% Min: Pyrite>>											
<<Alt: 133.1 - 136.6 Moderate-Strong (Alt) Muscovite>>											
<<Alt: 133.1 - 136.6 Weak-Moderate (Alt) Chlorite>>											
<<Struc: 134 - 135.6 Weak-Moderate (Alt) Fault>> broken core. 10cm gouge zone at 135.3m											
136.60	**138.00**	**MAFt** **Mafic Volcaniclastics**	137.60	139.10	1.50	B00232511	2.1	0.013	-0.01	0.03	0.66
136.6 - 138: lower contact with rhyi defined by 20cm qv											
<<Min: 136.6 - 147 3% Min: Sphalerite>>											
<<Alt: 136.6 - 137.8 Weak-Moderate (Alt) Muscovite>>											
<<Alt: 136.6 - 137.8 Trace (Alt) Chlorite>>											
<<Alt: 136.6 - 137.8 Weak (Alt) Biotite>>											
<<Vein: 137.5 - 138 Quartz>>											
138.00	**140.20**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
<<Min: 140 - 142 5% Min: Calcite>>											
<<Alt: 138 - 140.2 Moderate (Alt) Silicification>>											
140.20	**142.00**	**MAFt** **Mafic Volcaniclastics**									
<<Min: 140.2 - 148.4 3% Min: Pyrite>>											
<<Alt: 140.2 - 142 Weak-Moderate (Alt) Muscovite>>											

From (m)	To (m)	Rocktype & Description

<<Alt: 140.2 - 142 Weak (Alt) Chlorite>>

142.00 148.40 RHYc Rhyolite coherant volcanics

142 - 148.4: mod to stg mu ser alt.

<<Alt: 142 - 148.4 Moderate-Strong (Alt) Muscovite>>

End of Hole @ 148.4

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-144

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414897.965	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815501.926	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1389.063	Casing Depth (m):		Length (m):	132.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
14	-46	180		180	SS				☑	
44	-46	179		179	SS				☑	
75	-47	181		181	SS				☑	
105	-49	181		181	SS				☑	
132	-49	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.30**	**OVBN Overburden**									
7.30	**27.50**	**RHYvl Lapilli tuff**									

7.3 - 27.5: variable textures with lapilli free sub-meter intervals. Broken feldspar xtals around 24m

<<Min: 7.3 - 14.7 0.5% Min: Pyrrhotite>>
<<Min: 11 - 27.5 13% Min: Ankerite>>
<<Min: 14.7 - 18.1 0.5% Min: Pyrite>>
<<Min: 14.7 - 18.1 0.5% Min: Pyrrhotite>>
<<Min: 21.5 - 23.2 0.5% Min: Pyrite>>
<<Min: 21.5 - 23.2 1.5% Min: Pyrrhotite>>
<<Min: 23.2 - 25.5 0.5% Min: Pyrite>>
<<Min: 23.2 - 25.5 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

<<Min: 25.5 - 27.7 1% Min: Pyrrhotite>>

<<Alt: 10.9 - 15.9 Weak (Alt) Muscovite>>

<<Alt: 15.9 - 26 Trace (Alt) Muscovite>>

<<Alt: 15.9 - 26 Weak-Moderate (Alt) Chlorite>> might not be alteration b ut just metamorphic grade

<<Alt: 15.9 - 26 Trace (Alt) Biotite>> as above

<<Alt: 26 - 33 Weak (Alt) Muscovite>>

<<Vein: 16.5 - 16.6 Quartz>>

27.50 33.00 MDSt Rhyolite tuff dominant mudstone

<<Min: 27.5 - 52.9 10% Min: Ankerite>>

<<Min: 27.7 - 33 0.5% Min: Pyrite>>

<<Min: 27.7 - 33 3% Min: Pyrrhotite>>

33.00 50.10 RHYc Rhyolite coherant volcanics

33 - 50.1: very short sections with poorly developed curdy texture. Approx 1% 2mm glassy quartz eyes

<<Alt: 33 - 50.1 Weak-Moderate (Alt) Muscovite>>

50.10 52.90 MDSw Coherent rhyolite flow with carbonaceous content

<<Alt: 50.1 - 52.9 Weak (Alt) Muscovite>>

52.90 62.30 RHYc Rhyolite coherant volcanics

52.9 - 62.3: same as 33 - 50.1m

<<Min: 52.9 - 68.2 5% Min: Ankerite>>

<<Min: 62.2 - 69.1 2% Min: Pyrite>>

<<Min: 62.2 - 69.1 0.5% Min: Pyrrhotite>>

<<Alt: 52.9 - 68.2 Weak-Moderate (Alt) Muscovite>>

62.30 68.20 MDSw Coherent rhyolite flow with carbonaceous content

62.3 - 68.2: weakly developed, stronger developed 20cm bands mdsw within

68.20 73.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

68.2 - 73: pseudo fragmental dissagregated texture in sharp contact with mxsx below. Last 1.5 m is extremely altered to sericite

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
68.50	70.00	1.50	B00232522	0.5	0.027	-0.01	0.04	0.07

From (m)	To (m)	Rocktype & Description

<<Min: 68.2 - 73 3% Min: Ankerite>>
<<Min: 69.1 - 72 0.5% Min: Pyrite>>
<<Min: 72 - 73 0.5% Min: Pyrite>>
<<Min: 72 - 73 0.5% Min: Pyrrhotite>>
<<Alt: 68.2 - 71.3 Strong (Alt) Muscovite>>
<<Alt: 71.3 - 73 Intense (Alt) Muscovite>> extremely strong, near 100%

73.00 73.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 73 - 73.3 7.5% Min: Sphalerite>>
<<Min: 73 - 73.3 60% Min: Pyrite>>
<<Min: 73 - 73.3 2.5% Min: Galena>>
<<Min: 73 - 73.3 0.8% Min: Chalcopyrite>>

73.30 73.80 RHYc Rhyolite coherant volcanics

73.3 - 73.8: so strongly altered that original textures gone

<<Alt: 73.3 - 73.8 Strong (Alt) Muscovite>>

73.80 74.30 OJ Heavilly disseminated sulphides in proximal altered rock

<<Min: 73.8 - 74.3 5% Min: Sphalerite>>
<<Min: 73.8 - 74.3 30% Min: Pyrite>>
<<Min: 73.8 - 74.3 1.5% Min: Pyrrhotite>>
<<Min: 73.8 - 74.3 0.8% Min: Galena>>
<<Min: 73.8 - 74.3 0.5% Min: Chalcopyrite>>

74.30 75.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

74.3 - 75.2: weakly developed curdy. Pseudofrasgmental texture.

<<Min: 74.3 - 75.2 1% Min: Pyrite>>
<<Min: 74.3 - 75.2 3% Min: Ankerite>>
<<Alt: 74.3 - 75.2 Strong (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.00	71.50	1.50	B00232523	0.6	0.018	-0.01	0.03	0.08

From (m)	To (m)	Rocktype & Description
75.20	**76.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 75.2 - 76.5 10% Min: Sphalerite>>		
<<Min: 75.2 - 76.5 70% Min: Pyrite>>		
<<Min: 75.2 - 76.5 2.5% Min: Pyrrhotite>>		
<<Min: 75.2 - 76.5 3.5% Min: Galena>>		
<<Min: 75.2 - 76.5 0.8% Min: Chalcopyrite>>		
76.50	**77.70**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 76.5 - 77.7 5% Min: Ankerite>>		
<<Alt: 76.5 - 77.7 Strong (Alt) Muscovite>>		
77.70	**80.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 77.7 - 80.5 17.5% Min: Sphalerite>>		
<<Min: 77.7 - 80.5 70% Min: Pyrite>>		
<<Min: 77.7 - 80.5 5% Min: Pyrrhotite>>		
<<Min: 77.7 - 80.5 1.5% Min: Galena>>		
<<Min: 77.7 - 80.5 0.8% Min: Chalcopyrite>>		
80.50	**81.10**	**RHYv** **Rhyolite volcaniclastic**
80.5 - 81.1: intense alteration. Texturally destroyed. Ak, ca, mu, +/- chl rock		
<<Min: 80.5 - 81.1 6% Min: Sphalerite>>		
<<Min: 80.5 - 81.1 12.5% Min: Pyrite>>		
<<Min: 80.5 - 81.1 0.8% Min: Galena>>		
<<Min: 80.5 - 81.1 0.8% Min: Chalcopyrite>>		
<<Min: 80.5 - 86.5 20% Min: Calcite>>		
<<Min: 80.5 - 87.2 30% Min: Ankerite>>		
<<Alt: 80.5 - 81.1 Moderate (Alt) Muscovite>>		
<<Alt: 80.5 - 81.1 Weak (Alt) Chlorite>>		
81.10	**81.60**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.10	84.60	1.50	B00232524	7.2	0.014	-0.01	0.15	0.19
84.60	86.10	1.50	B00232525	-0.3	-0.005	-0.01	-0.01	0.01
86.10	87.60	1.50	B00232526	48.7	0.228	0.28	0.6	1.6
87.60	89.20	1.60	B00232527	8.1	0.039	0.03	0.09	0.31
89.20	90.70	1.50	B00232528	1.1	0.007	-0.01	-0.01	0.12
93.70	95.20	1.50	B00232529	2.8	0.082	0.21	-0.01	0.1
95.20	96.70	1.50	B00232531	0.8	0.014	0.05	-0.01	0.03

81.60 89.50 RHY undifferentiated rhyolite

81.6 - 89.5: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Min: 81.6 - 87.3 0.5% Min: Pyrite>>

<<Min: 81.6 - 87.3 0.5% Min: Pyrrhotite>>

<<Min: 87.3 - 90.7 5% Min: Pyrite>> concentrated in one 10cm semi massive band otherwise 0.5 dis

<<Min: 87.5 - 100 2% Min: Calcite>>

<<Min: 87.5 - 100 15% Min: Ankerite>>

<<Alt: 81.6 - 90.6 Moderate-Strong (Alt) Muscovite>>

89.50 90.70 RHYvl Lapilli tuff

89.5 - 90.7: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Alt: 90.6 - 98.6 Strong (Alt) Chlorite>>

<<Alt: 90.6 - 98.6 Weak (Alt) Biotite>>

90.70 99.80 RHY undifferentiated rhyolite

90.7 - 99.8: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Min: 90.7 - 93.1 1% Min: Pyrite>>

<<Min: 90.7 - 93.1 1.3% Min: Chalcopyrite>>

<<Min: 93.1 - 105.5 1% Min: Pyrrhotite>>

<<Min: 93.1 - 105.7 0.5% Min: Pyrite>>

<<Min: 94.3 - 95.3 0.5% Min: Chalcopyrite>>

<<Alt: 98.6 - 107 Strong (Alt) Muscovite>>

99.80 103.40 RHYvl Lapilli tuff

99.8 - 103.4: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Min: 100 - 105.7 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description
103.40	**106.50**	**RHY** **undifferentiated rhyolite**

103.4 - 106.5: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Min: 103.7 - 105.5 0.8% Min: Chalcopyrite>>

<<Min: 105.5 - 105.7 0.5% Min: Pyrrhotite>>

<<Min: 105.7 - 110.2 0.01% Min: Galena>>

<<Min: 105.7 - 110.2 0.01% Min: Arsenopyrite>>

<<Min: 105.7 - 113.2 5% Min: Calcite>>

<<Min: 105.7 - 113.2 30% Min: Ankerite>>

<<Alt: 106 - 107 Weak-Moderate (Alt) Biotite>>

<<Vein: 105.5 - 107.1 Quartz>> discordant to fol ca angle of 45 degrees

From (m)	To (m)	Rocktype & Description
106.50	**110.20**	**RHYva** **Coarse grained to ash tuff**

106.5 - 110.2: recognizable volcaniclastic possibly lapilli between 99.8 - 103.4m and 89.5 - 90.7m. Above and below are sections so intensely altered to ca -ank-chl and mu that protolith is impossible to determine. FROM CIRCA 106.5 - 110.2 IS CHL, AK- CA ROCK HIGHLY DE

<<Alt: 107 - 113.2 Strong (Alt) Chlorite>> sections massive - banded as foliation between ak, ca bands

From (m)	To (m)	Rocktype & Description
110.20	**110.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

<<Min: 110.2 - 110.5 0.5% Min: Pyrite>>

<<Min: 110.2 - 110.5 7.5% Min: Pyrrhotite>>

<<Min: 110.2 - 110.5 6.5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
110.50	**113.20**	**RHYv** **Rhyolite volcaniclastic**

110.5 - 113.2: same as 81.6 - 110.2

<<Min: 110.5 - 113.2 0.5% Min: Pyrite>>

<<Min: 110.5 - 113.2 1% Min: Pyrrhotite>>

<<Min: 110.5 - 113.2 0.5% Min: Galena>>

<<Min: 110.5 - 113.2 0.5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
113.20	**115.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

<<Min: 113.2 - 115.8 5% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
105.70	107.20	1.50	B00232532	2.5	0.01	0.05	0.04	0.09
107.20	108.70	1.50	B00232533	-0.3	-0.005	-0.01	-0.01	0.03

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 113.2 - 115.8 22.5% Min: Pyrite>>
<<Min: 113.2 - 115.8 10% Min: Pyrrhotite>>
<<Min: 113.2 - 115.8 0.5% Min: Galena>>
<<Min: 113.2 - 115.8 3.5% Min: Chalcopyrite>>

115.80 123.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

			117.30	118.80	1.50	B00232534	0.5	0.013	-0.01	-0.01	0.01

115.8 - 123.2: well developed curdy text with heavy qv development and foliform ca ak alteration in bottom 1m

<<Min: 115.8 - 121.9 3% Min: Pyrite>>

			118.80	120.30	1.50	B00232535	1.7	0.02	-0.01	0.03	0.06

<<Min: 115.8 - 121.9 0.5% Min: Pyrrhotite>>

			120.30	121.70	1.40	B00232536	29.9	0.128	0.02	0.47	1.04

<<Min: 115.8 - 121.9 0.01% Min: Chalcopyrite>>
<<Min: 115.8 - 123.2 10% Min: Ankerite>>
<<Min: 121.9 - 122.6 0.8% Min: Galena>>
<<Min: 121.9 - 122.6 2.5% Min: Chalcopyrite>>
<<Min: 122.4 - 123.2 10% Min: Calcite>>
<<Alt: 115.8 - 123.2 Moderate-Strong (Alt) Muscovite>>
<<Vein: 122 - 123.2 Quartz>>

123.20 123.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 123.2 - 123.5 12.5% Min: Sphalerite>>
<<Min: 123.2 - 123.5 40% Min: Pyrite>>
<<Min: 123.2 - 123.5 0.5% Min: Pyrrhotite>>
<<Min: 123.2 - 123.5 0.5% Min: Galena>>
<<Min: 123.2 - 123.5 2.5% Min: Chalcopyrite>>

123.50 123.80 RHY undifferentiated rhyolite

123.5 - 123.8: very stg chl alt footwal with py =/-cp

<<Min: 123.5 - 124 5% Min: Pyrite>>
<<Min: 123.5 - 124 5% Min: Pyrrhotite>>
<<Alt: 123.5 - 124.8 Moderate-Strong (Alt) Chlorite>>

123.80 128.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

			125.00	126.50	1.50	B00232537	4	-0.005	-0.01	0.09	0.03

123.8 - 128.9: chl-bt-ca with bleaching alteration near RHYc below

From (m)	To (m)	Rocktype & Description
		<<Alt: 127 - 132.2 Moderate-Strong (Alt) Muscovite>>
		<<Struc: 128.7 - 130.5 Moderate-Strong (Alt) Fault>> two stg gouge zones creating contact between rhyc and maft
128.90	**132.20**	**RHYc** **Rhyolite coherant volcanics**
		128.9 - 132.2: strongly banded, lots of silica, wk ca, stg mu possibly the altered MAFi.
132.20	**132.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
132.40	**132.90**	**RHYc** **Rhyolite coherant volcanics**

End of Hole @ 132.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
126.50	128.00	1.50	B00232538	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-145

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414898.025	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815502.937	Casing Pulled?:		Dip:	-65	Drill Company:	
UTM Elev. (m):	1389.124	Casing Depth (m):		Length (m):	132.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180		180	SS				☑	
11	-66	181		181	SS				☑	
41	-65	183		183	SS				☑	
71	-66	186		186	SS				☑	
102	-65	184		184	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.10 OVBN Overburden

3.10 22.00 RHYvl Lapilli tuff

<<Min: 3.1 - 47.5 10% Min: Ankerite>> selective replacement

<<Min: 3.5 - 9.1 0.5% Min: Pyrite>>

<<Min: 3.5 - 9.1 1% Min: Pyrrhotite>>

<<Min: 9.3 - 11.5 0.5% Min: Pyrite>>

<<Min: 9.3 - 11.5 0.5% Min: Pyrrhotite>>

<<Min: 11.5 - 12 0.5% Min: Pyrite>>

<<Min: 11.5 - 12 0.5% Min: Pyrrhotite>>

<<Min: 13.4 - 13.5 0.5% Min: Pyrrhotite>>

<<Vein: 11.6 - 13.2 100% Quartz>> Minor PO

<<Struc: 8.6 - 13.2 Weak-Moderate (Alt) Fault>> Numerous small faults, top of vein 30TCA, bottom gougey, minor gouge zones

From (m)	To (m)	Rocktype & Description
22.00	**23.90**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 22.1 - 23.9 0.5% Min: Pyrite>>		
<<Min: 22.1 - 23.9 1.5% Min: Pyrrhotite>>		
23.90	**29.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Struc: 25.8 - 26.4 Weak (Alt) Fault>> Parallel TCA		
29.50	**52.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 34.5 - 38.9 0.5% Min: Pyrite>>		
<<Min: 41.4 - 52.5 0.5% Min: Pyrite>>		
<<Min: 41.4 - 52.5 1% Min: Pyrrhotite>>		
<<Min: 47.5 - 67.5 5% Min: Ankerite>>		
<<Alt: 52.1 - 75.7 Moderate (Alt) Muscovite>>		
<<Struc: 38.5 - 41.5 Weak-Moderate (Alt) Fault>> In Pyritic oxidized zone.		
52.40	**53.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
53.80	**60.80**	**RHYc** **Rhyolite coherant volcanics**
<<Vein: 57.2 - 59 40% Quartz>>		
<<Struc: 54.2 - 55 Weak-Moderate (Alt) Fault>> gouge		
60.80	**70.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
70.20	**75.70**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 71.5 - 75.7 10% Min: Ankerite>>		
<<Min: 71.8 - 72.9 0.5% Min: Pyrite>>		
<<Min: 71.8 - 72.9 0.5% Min: Galena>>		
<<Min: 71.8 - 72.9 0.5% Min: Chalcopyrite>>		
<<Min: 73.3 - 73.6 0.8% Min: Chalcopyrite>>		
<<Min: 73.6 - 75.5 0.5% Min: Sphalerite>>		
<<Min: 73.6 - 75.5 2.5% Min: Pyrrhotite>>		
<<Min: 73.6 - 75.5 5% Min: Chalcopyrite>>		
<<Vein: 71.8 - 73.9 80% Quartz>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
71.20	72.70	1.50	B00267666	0.8	-0.005	0.02	0.01	0.1
72.70	74.20	1.50	B00267667	15.4	0.508	0.91	0.03	0.1

From (m)	To (m)	Rocktype & Description
75.70	**78.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 75.7 - 78.4 22.5% Min: Sphalerite>>

<<Min: 75.7 - 78.4 20% Min: Pyrite>>

<<Min: 75.7 - 78.4 30% Min: Pyrrhotite>>

<<Min: 75.7 - 78.4 1.5% Min: Galena>>

<<Min: 75.7 - 78.4 10% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
78.40	**80.20**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

<<Min: 78.4 - 80.2 2.5% Min: Sphalerite>>

<<Min: 78.4 - 80.2 2.5% Min: Pyrite>>

<<Min: 78.4 - 80.2 17.5% Min: Pyrrhotite>>

<<Min: 78.4 - 80.2 7.5% Min: Chalcopyrite>>

<<Min: 78.4 - 84 10% Min: Ankerite>>

<<Alt: 78.4 - 83.6 Intense (Alt) Chlorite>>

<<Alt: 78.4 - 83.6 Intense (Alt) Cordierite>>

From (m)	To (m)	Rocktype & Description
80.20	**83.60**	**RHY** **undifferentiated rhyolite**

80.2 - 83.6: Strong alt'n

<<Min: 80.2 - 83.6 7.5% Min: Sphalerite>>

<<Min: 80.2 - 83.6 2.5% Min: Pyrite>>

<<Min: 80.2 - 83.6 2.5% Min: Pyrrhotite>>

<<Min: 80.2 - 83.6 1.5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
83.60	**86.30**	**RHY** **undifferentiated rhyolite**

83.6 - 86.3: light beige-grey appears weakly banded in part,

<<Min: 83.6 - 86.3 0.5% Min: Pyrite>>

<<Min: 83.6 - 86.3 1% Min: Pyrrhotite>>

<<Min: 83.6 - 86.3 0.8% Min: Chalcopyrite>>

<<Min: 84 - 86.3 20% Min: Dolomite>>

<<Alt: 83.6 - 86.3 Strong (Alt) Muscovite>> As MS

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
86.30	**86.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 86.3 - 86.6 10% Min: Sphalerite>>		
<<Min: 86.3 - 86.6 50% Min: Pyrite>>		
<<Min: 86.3 - 86.6 1.5% Min: Galena>>		
<<Min: 86.3 - 86.6 0.8% Min: Chalcopyrite>>		
86.60	**87.50**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 86.6 - 87.5 5% Min: Pyrite>>		
87.50	**87.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 87.5 - 87.9 13% Min: Sphalerite>>		
<<Min: 87.5 - 87.9 40% Min: Pyrite>>		
<<Min: 87.5 - 87.9 1.5% Min: Galena>>		
<<Min: 87.5 - 87.9 0.8% Min: Chalcopyrite>>		
87.90	**92.60**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 88.5 - 91.2 0.5% Min: Sphalerite>>		
<<Min: 88.5 - 91.2 7.5% Min: Pyrite>>		
<<Min: 88.5 - 91.2 0.5% Min: Pyrrhotite>>		
<<Min: 88.5 - 91.2 0.5% Min: Chalcopyrite>>		
<<Min: 90.2 - 92.6 15% Min: Ankerite>>		
<<Min: 91.2 - 92.5 0.5% Min: Pyrite>>		
<<Min: 91.2 - 92.5 2.5% Min: Pyrrhotite>>		
<<Min: 92.5 - 94.4 0.5% Min: Sphalerite>>		
<<Min: 92.5 - 94.4 0.5% Min: Pyrite>>		
<<Min: 92.5 - 94.4 2.5% Min: Pyrrhotite>>		
<<Alt: 87.9 - 92.6 Moderate (Alt) Muscovite>> As MS		
<<Vein: 87.9 - 88.7 70% Quartz>>		
92.60	**94.40**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
92.6 - 94.4: poss RHYva		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
89.40	90.90	1.50	B00267668	12	0.034	0.38	0.06	0.11
90.90	92.40	1.50	B00267669	1.9	-0.005	-0.01	0.05	0.13
92.40	93.30	0.90	B00269761	15.6	0.052	0.05	0.35	1.89
93.30	94.40	1.10	B00269762	8.4	0.024	0.06	0.13	2.07

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 92.6 - 94.4 20% Min: Ankerite>>												
<<Alt: 92.6 - 94.4 Moderate (Alt) Chlorite>>												
94.40	**98.30**	**MDS**	**Carbonaceous Mudstone & Tuffaceous Mudstone**	94.40	95.90	1.50	B00269763	-0.3	-0.005	-0.01	-0.01	0.05
94.4 - 98.3: Strong CB alt, poss replaced CI in RHYva? Resembles north holes section 5150E												
<<Min: 94.4 - 97.3 30% Min: Dolomite>> Possibly sed. Dolomite				96.15	97.30	1.15	B00269764	2.5	0.006	0.02	-0.01	0.77
<<Min: 97.3 - 103.7 1.5% Min: Sphalerite>>				97.30	98.80	1.50	B00269765	2.1	0.008	0.06	0.03	2.5
<<Min: 97.3 - 103.7 0.5% Min: Pyrite>>												
<<Min: 97.3 - 103.7 2.5% Min: Pyrrhotite>>												
<<Min: 97.3 - 103.7 0.8% Min: Chalcopyrite>>												
<<Min: 97.3 - 115.5 30% Min: Ankerite>> Also replacement												
<<Alt: 94.4 - 98.2 Weak (Alt) Chlorite>> Dolomite altered zone within interval												
<<Alt: 98.2 - 115.5 Moderate (Alt) Chlorite>> variable with distinct bands, possibly epiclastics. Minor RHY												
<<Vein: 97.6 - 101.2 60% Ankerite>>												
98.30	**107.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	98.80	99.70	0.90	B00269766	0.3	-0.005	0.01	-0.01	0.12
98.3 - 107: Intense CL alt local 5% CP over 0.5m + wispy SP GL												
<<Min: 103.7 - 105.1 2% Min: Sphalerite>>				99.70	101.20	1.50	B00269767	16.5	0.012	0.02	0.29	0.56
<<Min: 103.7 - 105.1 0.5% Min: Pyrite>>				101.20	102.40	1.20	B00269768	3.5	0.037	0.15	0.04	0.49
<<Min: 103.7 - 105.1 1% Min: Galena>>				102.40	103.70	1.30	B00269769	32.6	0.068	0.57	1.15	1.85
<<Min: 103.7 - 105.1 0.5% Min: Chalcopyrite>>				103.70	104.05	0.35	B00269771	2.2	0.006	0.11	0.06	1.22
<<Min: 105.1 - 109.5 0.5% Min: Sphalerite>>				104.60	105.60	1.00	B00269772	3.2	0.021	0.03	0.17	0.74
<<Min: 105.1 - 109.5 0.5% Min: Pyrite>>				105.60	107.00	1.40	B00269773	-0.3	-0.005	-0.01	-0.01	0.03
<<Min: 105.1 - 109.5 2.5% Min: Pyrrhotite>>												
107.00	**112.00**	**RHYva**	**Coarse grained to ash tuff**	107.00	108.50	1.50	B00269774	-0.3	0.005	-0.01	-0.01	0.02
107 - 112: Strong CB alt, poss replacing earlier formed CL-CI assemblage. This CB-DO assemblage seems to overprint OR alteration												
<<Min: 109.5 - 110 0.5% Min: Sphalerite>>				108.50	109.60	1.10	B00269775	22	0.013	0.01	0.31	0.6
<<Min: 110 - 115.5 2% Min: Sphalerite>>				109.60	110.60	1.00	B00269776	-0.3	-0.005	-0.01	-0.01	0.03
<<Min: 110 - 115.5 0.5% Min: Pyrite>>				110.60	112.00	1.40	B00269777	1.3	-0.005	-0.01	0.03	0.06
<<Min: 110 - 115.5 3% Min: Pyrrhotite>>												

From (m)	To (m)	Rocktype & Description
		<<Min: 110 - 115.5 1.3% Min: Chalcopyrite>>
		<<Min: 110 - 116.3 0.5% Min: Galena>>
		<<Vein: 108.7 - 110.1 60% Quartz>>
112.00	**115.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		112 - 115.5: as above
115.50	**115.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 115.5 - 115.7 12.5% Min: Sphalerite>>
		<<Min: 115.5 - 115.7 75% Min: Pyrite>>
		<<Min: 115.5 - 115.7 0.8% Min: Chalcopyrite>>
115.70	**116.50**	**RHY** **undifferentiated rhyolite**
		<<Min: 115.7 - 116.3 1.5% Min: Sphalerite>>
		<<Min: 115.7 - 116.3 5% Min: Pyrite>>
		<<Min: 115.7 - 116.3 0.5% Min: Chalcopyrite>>
		<<Vein: 115.7 - 116.3 80% Quartz>> PY
116.50	**117.40**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 116.5 - 117.4 5% Min: Sphalerite>>
		<<Min: 116.5 - 117.4 7.5% Min: Pyrite>>
		<<Min: 116.5 - 117.4 22.5% Min: Pyrrhotite>>
		<<Min: 116.5 - 117.4 2% Min: Chalcopyrite>>
117.40	**118.20**	**OA** **Magnetite bearing sulphides**
		<<Min: 117.4 - 118.2 7.5% Min: Sphalerite>>
		<<Min: 117.4 - 118.2 60% Min: Pyrite>>
		<<Min: 117.4 - 118.2 10% Min: Pyrrhotite>>
		<<Min: 117.4 - 118.2 1.5% Min: Chalcopyrite>>
118.20	**119.40**	**RHY** **undifferentiated rhyolite**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.00	113.50	1.50	B00267671	4.7	-0.005	0.02	0.09	0.48
113.50	115.00	1.50	B00267672	23.4	0.109	0.2	0.22	1.84

From (m)	To (m)		Rocktype & Description
119.40	**120.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 119.4 - 120.3 15% Min: Sphalerite>>

<<Min: 119.4 - 120.3 65% Min: Pyrite>>

<<Min: 119.4 - 120.3 0.5% Min: Pyrrhotite>>

<<Min: 119.4 - 120.3 2% Min: Galena>>

<<Min: 119.4 - 120.3 0.5% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description
120.30	**121.30**	**RHY**	**undifferentiated rhyolite**

<<Min: 120.3 - 120.7 10% Min: Pyrite>>

<<Min: 120.3 - 120.7 0.5% Min: Pyrrhotite>>

<<Alt: 120.3 - 125.9 Moderate-Strong (Alt) Muscovite>> As MS also with fuchsite

From (m)	To (m)		Rocktype & Description
121.30	**125.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

121.3 - 125.9: Strong MS alt. Light green-grey with fuchsite-sericite. Minor CL-BI bands.

<<Min: 121.3 - 125.9 10% Min: Calcite>>

From (m)	To (m)		Rocktype & Description
125.90	**132.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

125.9 - 132.9: Mod -strong CL-BI with white calcite bands. Narrow intervals of increased MS alt. light green-grey

<<Min: 125.9 - 132.9 20% Min: Calcite>> also replacement

<<Alt: 125.9 - 132.9 Moderate (Alt) Chlorite>>

<<Alt: 125.9 - 132.9 Weak-Moderate (Alt) Biotite>>

End of Hole @ 132.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
121.80	123.30	1.50	B00267673	0.9	-0.005	0.01	-0.01	0.19
123.30	124.80	1.50	B00267674	0.5	0.006	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-146

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414897.418	Core Size:		Azimuth:	250	Date Logging Complete:	
UTM Northing:	6815491.804	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1388.392	Casing Depth (m):		Length (m):	139.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	250		250	SS				☑	
11	-85	241		241	SS				☑	
41	-86	244		244	SS				☑	
72	-86	218		218	SS				☑	
102	-84	211		211	SS				☑	
133	-82	212		212	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.70 OVBN Overburden

<<Min: 3.6 - 39 15% Min: Ankerite>>

3.70 24.00 RHYvl Lapilli tuff

<<Min: 3.7 - 6.5 2% Min: Pyrrhotite>>

<<Min: 6.5 - 8.2 1% Min: Pyrite>>

<<Min: 6.5 - 8.2 8% Min: Pyrrhotite>>

<<Min: 8.2 - 16.6 4% Min: Pyrrhotite>>

<<Min: 16.6 - 23.2 1% Min: Pyrite>>

<<Min: 16.6 - 23.2 4% Min: Pyrrhotite>>

<<Min: 23.2 - 23.9 3% Min: Pyrrhotite>>

<<Min: 23.9 - 24.8 1% Min: Pyrrhotite>>

<<Struc: 14 - 15 Moderate-Strong (Alt) Fault>> broken core, minor clay gouge

From (m)	To (m)	Rocktype & Description
24.00	**24.80**	**MDSt** **Rhyolite tuff dominant mudstone**
24 - 24.8: 20.6-23.5; weak chl		
24.80	**31.10**	**RHYvl** **Lapilli tuff**
<<Min: 24.8 - 30.5 2% Min: Pyrrhotite>>		
<<Min: 30.5 - 31.3 1% Min: Pyrrhotite>>		
31.10	**35.20**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 31.3 - 31.8 2% Min: Pyrrhotite>>		
<<Min: 31.8 - 32.6 4% Min: Pyrrhotite>>		
<<Min: 32.6 - 32.9 1% Min: Pyrrhotite>>		
<<Min: 32.9 - 33.6 0.5% Min: Pyrite>>		
<<Min: 32.9 - 33.6 0.5% Min: Pyrrhotite>>		
<<Min: 33.6 - 35.3 0.5% Min: Pyrite>>		
<<Min: 33.6 - 35.3 0.5% Min: Pyrrhotite>>		
35.20	**42.50**	**RHYvl** **Lapilli tuff**
35.2 - 42.5: silic-bands, local RHYcw		
<<Min: 35.3 - 38.7 2% Min: Pyrite>>		
<<Min: 35.3 - 38.7 0.5% Min: Pyrrhotite>>		
<<Min: 39 - 79 10% Min: Ankerite>>		
<<Min: 39.9 - 50.3 0.5% Min: Pyrite>>		
<<Min: 39.9 - 50.3 0.5% Min: Pyrrhotite>>		
<<Alt: 40.5 - 57.5 Weak-Moderate (Alt) Muscovite>>		
42.50	**50.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
42.5 - 50.9: silic-bands, local RHYcw		
<<Min: 50.3 - 53.2 0.5% Min: Pyrite>>		
<<Min: 50.3 - 53.2 0.5% Min: Pyrrhotite>>		
<<Struc: 49.6 - 50.6 Moderate (Alt) >> broken core, minor gouge		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
50.90	**52.10**	**MDSt**	**Rhyolite tuff dominant mudstone**									

50.9 - 52.1: sheared silic bands

52.10	**79.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	78.20	79.70	1.50	B00267209	0.7	0.008	-0.01	0.07	0.03

52.1 - 79.2: 71.5-79.2; brx with qtz veining, local intense ser alt, original lith difficult to determine.

<<Min: 53.2 - 71.3 3% Min: Pyrite>>
<<Min: 53.2 - 71.3 1% Min: Pyrrhotite>>
<<Min: 71.3 - 72.6 0.5% Min: Pyrite>>
<<Min: 71.3 - 72.6 0.5% Min: Pyrrhotite>>
<<Min: 71.3 - 72.6 1% Min: Chalcopyrite>>
<<Min: 72.6 - 74.1 1% Min: Pyrite>>
<<Min: 72.6 - 74.1 0.5% Min: Pyrrhotite>>
<<Min: 72.6 - 74.1 1% Min: Chalcopyrite>>
<<Min: 74.1 - 77.9 0.5% Min: Pyrite>>
<<Min: 74.1 - 77.9 0.5% Min: Pyrrhotite>>
<<Min: 77.9 - 79.2 3% Min: Pyrite>>
<<Alt: 57.5 - 82.5 Moderate-Strong (Alt) Muscovite>>
<<Vein: 71.4 - 79.2 40% Quartz>> qtz vein and qtz- rhy? Brx

79.20	**82.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	79.70	81.20	1.50	B00267211	-0.3	0.024	-0.01	0.02	0.03

79.2 - 82.7: brecciated and altered near lower contact

<<Min: 79.2 - 81.5 0.5% Min: Pyrrhotite>>
<<Min: 81.5 - 82.7 8% Min: Sphalerite>>
<<Min: 81.5 - 82.7 1% Min: Pyrite>>
<<Min: 81.5 - 82.7 2% Min: Pyrrhotite>>

82.70	**83.10**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**CG**

82.7 - 83.1: met 3

<<Min: 82.7 - 83.1 25% Min: Pyrrhotite>>
<<Min: 82.7 - 83.1 55% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
83.10	**83.80**	**OA** **Magnetite bearing sulphides**	**FMG**									

83.1 - 83.8: met 3

<<Min: 83.1 - 83.8 2% Min: Sphalerite>>
<<Min: 83.1 - 83.8 50% Min: Pyrite>>
<<Min: 83.1 - 83.8 10% Min: Pyrrhotite>>
<<Min: 83.1 - 83.8 0.5% Min: Chalcopyrite>>

83.80	**85.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									

83.8 - 85.4: met 7

<<Min: 83.8 - 85.4 10% Min: Sphalerite>>
<<Min: 83.8 - 85.4 30% Min: Pyrite>>
<<Min: 83.8 - 85.4 5% Min: Pyrrhotite>>
<<Min: 83.8 - 85.4 20% Min: Chalcopyrite>>

85.40	**86.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**MG**									

85.4 - 86.9: met 7

<<Min: 85.4 - 86.9 20% Min: Sphalerite>>
<<Min: 85.4 - 86.9 40% Min: Pyrite>>
<<Min: 85.4 - 86.9 0.5% Min: Pyrrhotite>>
<<Min: 85.4 - 86.9 0.5% Min: Chalcopyrite>>

86.90	**87.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									

86.9 - 87.5: met 7

<<Min: 86.9 - 87.5 15% Min: Sphalerite>>
<<Min: 86.9 - 87.5 45% Min: Pyrite>>
<<Min: 86.9 - 87.5 10% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
87.50	**88.30**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**	**CG**									
87.5 - 88.3: met7												
<<Min: 87.5 - 88.3 45% Min: Pyrite>>												
<<Min: 87.5 - 88.3 10% Min: Pyrrhotite>>												
<<Min: 87.5 - 88.3 15% Min: Chalcopyrite>>												
88.30	**90.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
88.3 - 90.4: met 7												
<<Min: 88.3 - 90.4 25% Min: Sphalerite>>												
<<Min: 88.3 - 90.4 45% Min: Pyrite>>												
<<Min: 88.3 - 90.4 0.5% Min: Pyrrhotite>>												
<<Min: 88.3 - 90.4 0.5% Min: Chalcopyrite>>												
90.40	**90.60**	**OA** **Magnetite bearing sulphides**	**MG**									
90.4 - 90.6: met 3												
<<Min: 90.4 - 90.6 50% Min: Pyrite>>												
<<Min: 90.4 - 90.6 0.5% Min: Pyrrhotite>>												
<<Min: 90.4 - 90.6 0.5% Min: Chalcopyrite>>												
90.60	**91.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
90.6 - 91.3: met 7												
<<Min: 90.6 - 91.3 5% Min: Sphalerite>>												
<<Min: 90.6 - 91.3 40% Min: Pyrite>>												
<<Min: 90.6 - 91.3 3% Min: Pyrrhotite>>												
<<Min: 90.6 - 91.3 10% Min: Chalcopyrite>>												
91.30	**91.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**									
91.3 - 91.9: met 7												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 91.3 - 91.9 15% Min: Sphalerite>>
<<Min: 91.3 - 91.9 55% Min: Pyrite>>
<<Min: 91.3 - 91.9 0.5% Min: Chalcopyrite>>

91.90 92.40 OA Magnetite bearing sulphides

91.9 - 92.4: has mag, diss sx, met 3

<<Min: 91.9 - 92.4 15% Min: Pyrite>>
<<Min: 91.9 - 92.4 5% Min: Chalcopyrite>>

92.40 93.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MG

92.4 - 93.6: met 7

<<Min: 92.4 - 93.6 15% Min: Sphalerite>>
<<Min: 92.4 - 93.6 55% Min: Pyrite>>
<<Min: 92.4 - 93.6 0.5% Min: Pyrrhotite>>
<<Min: 92.4 - 93.6 5% Min: Chalcopyrite>>

93.60 94.80 OA Magnetite bearing sulphides MG

93.6 - 94.8: met 3

<<Min: 93.6 - 94.8 5% Min: Sphalerite>>
<<Min: 93.6 - 94.8 35% Min: Pyrite>>
<<Min: 93.6 - 94.8 0.5% Min: Pyrrhotite>>
<<Min: 93.6 - 94.8 10% Min: Chalcopyrite>>

94.80 96.60 RHY undifferentiated rhyolite

<<Min: 94.8 - 96.6 3% Min: Pyrite>>
<<Min: 94.8 - 96.6 3% Min: Chalcopyrite>>
<<Alt: 94.8 - 96 Moderate-Strong (Alt) Cordierite>>

96.60 98.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FG

96.6 - 98.8: met 5

<<Min: 96.6 - 98.8 18% Min: Sphalerite>>
<<Min: 96.6 - 98.8 45% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 96.6 - 98.8 7% Min: Chalcopyrite>>

98.80 116.30 RHY undifferentiated rhyolite

<<Min: 98.8 - 116.3 0.5% Min: Pyrite>>
<<Min: 98.8 - 116.3 6% Min: Pyrrhotite>>
<<Min: 98.8 - 116.3 1% Min: Chalcopyrite>>
<<Min: 104.3 - 116 3% Min: Ankerite>>
<<Alt: 98.8 - 103 Moderate-Strong (Alt) Muscovite>>
<<Alt: 102 - 119.7 Moderate-Strong (Alt) Chlorite>>
<<Alt: 102 - 119.7 Moderate (Alt) Biotite>>
<<Alt: 103 - 116 Weak (Alt) Muscovite>>
<<Alt: 103 - 116.2 Weak (Alt) Silicification>>

116.30 117.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

116.3 - 117.6: met5

<<Min: 116.3 - 117.6 18% Min: Sphalerite>>
<<Min: 116.3 - 117.6 55% Min: Pyrite>>
<<Min: 116.3 - 117.6 0.5% Min: Pyrrhotite>>
<<Min: 116.3 - 117.6 2% Min: Chalcopyrite>>

117.60 119.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 117.6 - 119.7 0.5% Min: Pyrite>>
<<Min: 117.6 - 119.7 3% Min: Pyrrhotite>>
<<Min: 117.6 - 119.7 1% Min: Chalcopyrite>>

119.70 122.10 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG

119.7 - 122.1: met5

<<Min: 119.7 - 122.1 25% Min: Sphalerite>>
<<Min: 119.7 - 122.1 50% Min: Pyrite>>
<<Min: 119.7 - 122.1 0.5% Min: Pyrrhotite>>
<<Min: 119.7 - 122.1 0.5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
122.10	**134.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

122.1 - 134.9: could be RHYv from 122.1-125.0m

<<Min: 122.1 - 124.7 8% Min: Pyrite>>
<<Min: 122.1 - 124.7 3% Min: Chalcopyrite>>
<<Min: 122.5 - 126 5% Min: Ankerite>>
<<Min: 123.7 - 139.9 10% Min: Calcite>> bleached musc silica band zones have low Ca
<<Min: 124.7 - 127 6% Min: Pyrite>>
<<Min: 127 - 129.8 1% Min: Pyrite>>
<<Min: 127 - 129.8 3% Min: Pyrrhotite>>
<<Min: 129.8 - 132.3 0.5% Min: Pyrite>>
<<Min: 129.8 - 132.3 2% Min: Pyrrhotite>>
<<Min: 132.3 - 133.2 2% Min: Pyrite>>
<<Min: 133.2 - 133.4 3% Min: Pyrrhotite>>
<<Min: 133.4 - 133.7 1% Min: Pyrrhotite>>
<<Min: 133.7 - 134 3% Min: Pyrrhotite>>
<<Min: 134 - 134.6 0.5% Min: Pyrite>>
<<Min: 134.6 - 135 0.5% Min: Pyrite>>
<<Alt: 122.1 - 139.5 Moderate (Alt) Silicification>> follows musc alt zones
<<Alt: 122.1 - 139.5 Weak-Moderate (Alt) Muscovite>> Muscovite in bleached, sericite alt +/- leucoxene zones
<<Alt: 127.2 - 132 Moderate (Alt) Chlorite>>

134.90	**139.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 135 - 135.5 0.5% Min: Pyrite>>
<<Min: 135.5 - 135.9 0.5% Min: Pyrite>>
<<Min: 136.3 - 139.1 0.5% Min: Pyrite>>
<<Min: 139.4 - 139.9 2% Min: Pyrite>>
<<Alt: 139.4 - 139.9 Weak (Alt) Muscovite>>
<<Alt: 139.4 - 139.9 Moderate (Alt) Biotite>>

End of Hole @ 139.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
123.70	125.20	1.50	B00267212	9.8	0.101	0.22	0.12	0.47
125.20	126.70	1.50	B00267213	1.4	0.009	-0.01	0.04	0.08

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-147

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	05-Sep-15
UTM Easting	414950.76	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815600.47	Casing Pulled?:		Dip:	-45	Drill Company:	
UTM Elev. (m):	1382.35	Casing Depth (m):		Length (m):	181.7	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Re-logged at historical core archive.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	180		180	SS				☑	
17	-48	168		168	SS				☑	
47	-48	167		167	SS				☑	
75	-49	170		170	SS				☑	
105	-50	169		169	SS				☑	
139	-50	179		179	SS				☑	
175	-52	173		173	SS				☑	
181	-52	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.10**	**OVBN** **Overburden**									
9.10	**57.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

9.1 - 57.5: Thick interval of dominantly coherent rhyolite with patches of curdy rhyolite and siliceous banding. Intermittent intervals of tuffaceous work.

<<Min: 9.1 - 90.2 10% Min: Ankerite>>

<<Min: 9.8 - 12.3 1% Min: Pyrite>>

<<Min: 12.3 - 13.6 1% Min: Pyrrhotite>>

<<Min: 12.3 - 13.6 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 13.6 - 23.6 3% Min: Pyrrhotite>>
<<Min: 13.6 - 23.6 4% Min: Pyrite>>
<<Min: 23.6 - 27.2 2% Min: Pyrrhotite>>
<<Min: 23.6 - 27.2 4% Min: Pyrite>>
<<Min: 27.2 - 34.4 4% Min: Pyrite>>
<<Min: 34.4 - 34.9 1% Min: Pyrite>>
<<Min: 34.9 - 38 1% Min: Pyrite>>
<<Min: 34.9 - 38 3% Min: Pyrrhotite>>
<<Min: 38 - 41.4 4% Min: Pyrrhotite>>
<<Min: 38 - 41.4 1% Min: Pyrite>>
<<Min: 41.4 - 42.5 1% Min: Pyrrhotite>>
<<Min: 42.5 - 47.9 4% Min: Pyrrhotite>>
<<Min: 42.5 - 47.9 2% Min: Pyrite>>
<<Min: 47.9 - 50.1 2% Min: Pyrrhotite>>
<<Min: 50.1 - 52.2 6% Min: Pyrrhotite>>
<<Min: 50.1 - 52.2 1% Min: Pyrite>>
<<Min: 55 - 59.8 1% Min: Pyrite>>
<<Min: 55 - 59.8 3% Min: Pyrrhotite>>
<<Vein: 34.4 - 34.9 90% Quartz>> Massive Qz-carb vein with some recrystallized cg SP
<<Vein: 52.1 - 55 90% Quartz>>

57.50 73.20 RHYvl Lapilli tuff

57.5 - 73.2: Dominantly fragmental volcanics with 30-40 cm intervals of coherent rhyolite within bottom 4-5 m of unit.

<<Min: 59.8 - 60.3 0.5% Min: Pyrite>>
<<Min: 59.8 - 60.3 5% Min: Pyrrhotite>>
<<Min: 61.2 - 62.9 0.5% Min: Pyrite>>
<<Min: 61.2 - 62.9 2% Min: Pyrrhotite>>
<<Min: 62.9 - 67.9 2% Min: Pyrrhotite>>
<<Min: 67.9 - 71.7 0.5% Min: Pyrite>>
<<Min: 67.9 - 71.7 1% Min: Pyrrhotite>>
<<Min: 71.7 - 73.2 0.5% Min: Pyrite>>
<<Min: 71.7 - 73.2 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

73.20 81.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

73.2 - 81.7: Good coherent (curdy and siliceous banding) between top of interval and 78.5 m. 78.5 - 81.7 m texture is less conclusive.

<<Min: 73.2 - 74.5 0.5% Min: Pyrite>>

<<Min: 73.2 - 74.5 2% Min: Pyrrhotite>>

<<Min: 74.5 - 75 0.5% Min: Pyrite>>

<<Min: 74.5 - 75 3% Min: Pyrrhotite>>

<<Min: 75 - 75.9 3% Min: Pyrrhotite>>

<<Min: 75.9 - 79.9 0.5% Min: Pyrite>>

<<Min: 75.9 - 79.9 4% Min: Pyrrhotite>>

<<Min: 79.9 - 83.6 5% Min: Pyrrhotite>>

<<Struc: 80.6 - 80.7 Fault>> Weak minor fault gouge zone

81.70 90.20 MDSt Rhyolite tuff dominant mudstone

81.7 - 90.2: Overall 15-20% carbonaceous material but concentrated in bands 10-40 cm wide.

<<Min: 83.6 - 84.4 1% Min: Pyrite>>

<<Min: 83.6 - 84.4 2% Min: Pyrrhotite>>

<<Min: 84.4 - 99.4 1% Min: Pyrite>>

<<Min: 84.4 - 99.4 5% Min: Pyrrhotite>>

<<Alt: 85.4 - 89.7 Weak (Alt) Muscovite>>

<<Alt: 89.7 - 105 Moderate (Alt) Muscovite>>

90.20 96.50 RHY undifferentiated rhyolite

90.2 - 96.5: Moderate muscovite intensity, no distinctive texture so avoiding coherent / volcaniclastic designation

<<Min: 90.2 - 131.7 5% Min: Ankerite>>

96.50 99.40 MDSt Rhyolite tuff dominant mudstone

96.5 - 99.4: Roughly 15% carbonaceous material, moderate MU altered

99.40 103.90 RHY undifferentiated rhyolite

99.4 - 103.9: No distinctive texture.

<<Min: 99.4 - 103 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 103 - 109.5 3% Min: Pyrite>>

<<Min: 103 - 109.5 6% Min: Pyrrhotite>>

103.90 109.50 MDSt Rhyolite tuff dominant mudstone

103.9 - 109.5: Roughly 10% carbonaceous material, MU appears to replace carbonaceous material.

<<Alt: 105 - 121.2 Strong (Alt) Muscovite>>

109.50 124.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

109.5 - 124.4: Chloritic interval near centre of unit. Silicaeous bands locally, 70% confident on coherent flow interpretation. Foliation is highly inconsistent between 121 - 125 m with penetrative S1 schistosity overprinted by cm-scale spaced crenulation cleavage (S2).

<<Min: 109.5 - 111.8 2% Min: Pyrite>>

<<Min: 109.5 - 111.8 2% Min: Pyrrhotite>>

<<Min: 111.8 - 112.5 4% Min: Pyrite>>

<<Min: 111.8 - 112.5 10% Min: Pyrrhotite>>

<<Min: 111.8 - 112.5 2% Min: Chalcopyrite>>

<<Min: 116.9 - 121.1 0.5% Min: Pyrite>>

<<Min: 116.9 - 121.1 0.5% Min: Pyrrhotite>>

<<Min: 116.9 - 121.1 1% Min: Chalcopyrite>>

<<Min: 121.1 - 122.2 3% Min: Pyrite>>

<<Min: 121.1 - 122.2 8% Min: Pyrrhotite>>

<<Alt: 117 - 121.2 Moderate (Alt) Chlorite>>

<<Alt: 121.2 - 122.3 Strong (Alt) Chlorite>> Related with blebs of PO+GL+SP

<<Alt: 121.2 - 122.3 Strong (Alt) Cordierite>> Related with blebs of PO+GL+SP

<<Alt: 122.3 - 127.5 Strong (Alt) Muscovite>>

<<Alt: 122.3 - 127.5 Moderate (Alt) Chlorite>>

<<Struc: 121 - 125 Crenulation cleavage>> Crenulation cleavage at high angle to core axis. Cleavge is crenulating penetrative foliation (which is subparallel to the core axis). Penetrative foliation varies widely over this intersection, from perpendicular to core axis at the top to ~parallel in the middle to perpendicular at the bottom. May indicte folding on a macro-scale.

124.40 149.40 RHYv Rhyolite volcaniclastic

124.4 - 149.4: Fine-grained with abundant overprinting coarse QZ-AK veins. Strong CL alteration. Localized intervals with disseminated PO-GL-CP and ASP.

<<Min: 127.5 - 129.9 3% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 127.5 - 129.9 1% Min: Pyrite>>

<<Min: 127.5 - 129.9 15% Min: Pyrrhotite>>

<<Min: 127.5 - 129.9 1% Min: Chalcopyrite>>

<<Min: 129 - 129.8 2% Min: Arsenopyrite>> Disseminated AS in strong CL+/-CI altered zone

<<Min: 129.9 - 131.6 0.5% Min: Pyrite>>

<<Min: 129.9 - 131.6 0.5% Min: Pyrrhotite>>

<<Min: 131.7 - 157.3 25% Min: Ankerite>>

<<Min: 141.8 - 151.3 0.5% Min: Pyrite>>

<<Min: 141.8 - 151.3 0.5% Min: Pyrrhotite>>

<<Min: 141.8 - 151.3 0.5% Min: Chalcopyrite>>

<<Alt: 127.5 - 130 Strong (Alt) Chlorite>> Related to blebs of PO+GL+CP and disseminated AP

<<Alt: 127.5 - 130 Moderate (Alt) Cordierite>> Related to blebs of PO+GL+CP and disseminated AP

<<Alt: 130 - 132.5 Strong (Alt) Muscovite>>

<<Alt: 132.5 - 148.9 Moderate-Strong (Alt) Chlorite>> Overprinted by QZ-carb veining

<<Alt: 148.9 - 150.5 Strong (Alt) Muscovite>>

<<Vein: 131.7 - 133 70% Quartz-Carbonate>> QZ-AK veining

<<Vein: 135.5 - 152.2 50% Quartz-Carbonate>> QZ-AK veining

149.40	**157.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	154.10	155.60	1.50	B00264112	6.9	0.046	0.09	0.03	0.14

149.4 - 157.1: Siliceous banding and localized chlorite alteration.

<<Min: 151.3 - 157.7 0.5% Min: Pyrite>>

				155.60	157.10	1.50	B00264113	3.4	0.01	0.05	0.02	0.03

<<Min: 151.3 - 157.7 1% Min: Pyrrhotite>>

<<Min: 154 - 154.5 1% Min: Arsenopyrite>> disseminated AS associated with bands of CL-alteration

<<Alt: 150.5 - 151.2 Moderate (Alt) Muscovite>>

<<Alt: 150.5 - 151.2 Strong (Alt) Chlorite>>

<<Alt: 151.2 - 157.1 Strong (Alt) Muscovite>>

<<Alt: 151.2 - 158.5 Moderate (Alt) Chlorite>> Mostly confined to ~10 cm bands of masive CL associated with AP+PO+/-GL+/-SP

157.10	**158.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**								

157.1 - 158.5: Heavily disseminated sulphides in CL-MU+/-CI altered schist.

<<Min: 157.7 - 158.5 2% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 157.7 - 158.5 30% Min: Pyrite>>

<<Min: 157.7 - 158.5 1% Min: Pyrrhotite>>

<<Alt: 157.1 - 158.5 Moderate (Alt) Muscovite>>

<<Alt: 158.3 - 158.5 Strong (Alt) Cordierite>>

158.50 158.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

158.5 - 158.9: OB MSXS with bands of TT

<<Min: 158.5 - 158.9 15% Min: Tetrahedrite>> Bands of TT in MSXS

<<Min: 158.5 - 158.9 15% Min: Sphalerite>>

<<Min: 158.5 - 158.9 60% Min: Pyrite>>

158.90 159.90 RHY undifferentiated rhyolite

158.9 - 159.9: grey and white banded schist between 2 MSXS lenses. Overprinted by carb-alteration? High assay results for Barium.(Barite altered?)

<<Min: 158.9 - 159.9 2% Min: Pyrite>>

<<Alt: 158.9 - 159.9 Moderate (Alt) Muscovite>> Overprintd by carb?

<<Alt: 159.6 - 159.9 Strong (Alt) Cordierite>> Barite? Assay shows high barium values

159.90 161.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides **CG**

159.9 - 161.9: Cg wispy laminated OB MSXS. ~high grade Pb/Zn

<<Min: 159.9 - 161.9 15% Min: Sphalerite>>

<<Min: 159.9 - 161.9 70% Min: Pyrite>>

161.90 163.80 OJ Heavilly disseminated sulphides in proximal altered rock

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.70	165.20	1.50	B00264114	0.7	-0.005	-0.01	-0.01	0.05

161.9 - 163.8: Footwall CL-altered rock with pyritic stringers

<<Min: 161.9 - 166.3 5% Min: Calcite>>

<<Min: 161.9 - 167.3 8% Min: Pyrite>>

<<Min: 161.9 - 167.3 3% Min: Pyrrhotite>>

<<Min: 161.9 - 167.3 10% Min: Chalcopyrite>>

<<Alt: 161.9 - 163.8 Intense (Alt) Chlorite>> Massive CL with pyrite stringers

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

163.80 164.20 MAFi **Mafic Intrusions (primarily footwall mafic intrusion)**

163.8 - 164.2: CA-CL+/-BI Schist. Locally cross-cut by ~3 cm zone of massive CL-alteration with sharp contacts.

<<Alt: 163.8 - 164.2 Strong (Alt) Chlorite>>

<<Alt: 163.8 - 164.2 Moderate (Alt) Biotite>>

164.20 164.80 OJ **Heavilly disseminated sulphides in proximal altered rock**

164.2 - 164.8: Massive Cl-altered rock with sulphide stringers

<<Alt: 164.2 - 164.8 Strong (Alt) Chlorite>> Massive CL with pyrite stringers

164.80 165.10 MAFi **Mafic Intrusions (primarily footwall mafic intrusion)**

164.8 - 165.1: CA-CL+/-BI schist

<<Alt: 164.8 - 165.1 Strong (Alt) Chlorite>>

<<Alt: 164.8 - 165.1 Moderate (Alt) Biotite>>

165.10 166.30 OJ **Heavilly disseminated sulphides in proximal altered rock**

165.20	166.30	1.10	B00264115	42.6	0.466	1.58	0.12	0.64

165.1 - 166.3: Massive CL-alteration with PY+CP stringers

<<Alt: 165.1 - 166.3 Intense (Alt) Chlorite>> Massive CL with PY+/-CP stringers

166.30 177.30 MAFi **Mafic Intrusions (primarily footwall mafic intrusion)**

166.30	167.80	1.50	B00264116	0.7	-0.005	-0.01	0.02	0.08

166.3 - 177.3: From 166.3-171 the unit is a CA-CL-BI schist. From 171-177.3 the unit appears to be overprinted by silicification and is a MS-QZ-CA+/-CL schist but still texturally similar to the top of the unit.

<<Min: 166.3 - 171 20% Min: Calcite>>

<<Min: 171 - 181.7 5% Min: Calcite>> Silicified MAFi

<<Alt: 166.3 - 171 Strong (Alt) Chlorite>>

<<Alt: 166.3 - 171 Strong (Alt) Biotite>>

<<Alt: 171 - 181.7 Strong (Alt) Silicification>> Related to RHYi

<<Alt: 171 - 181.7 Strong (Alt) Muscovite>> Related to RHYi

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

177.30 177.80 RHYi Aphanitic Rhyolite (intrusion)

177.3 - 177.8: light grey Qz-phyric/amygdaloidal QZ-MU schist. Unit still has a penetrative foliation with MU/MS-bands

177.80 181.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

177.8 - 181.7: The unit appears to be overprinted by silicification and is a MS-QZ-CA+/-CL schist but still texturally similar to other MAFi found in the hole

End of Hole @ 181.7

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-148

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414950.7	Core Size:		Azimuth:	228	Date Logging Complete:	
UTM Northing:	6815601.03	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.34	Casing Depth (m):		Length (m):	210	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	228		228	SS				☑	
14	-90	228		228	SS				☑	
44	-89	228		228	SS				☑	
75	-89	147		147	SS				☑	
105	-89	171		171	SS				☑	
136	-88	186		186	SS				☑	
166	-87	178		178	SS				☑	
199	-87	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.50**	**OVBN** **Overburden**									
5.50	**13.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 5.5 - 14.3 0.5% Min: Sphalerite>>											
<<Min: 5.5 - 14.3 0.5% Min: Pyrite>>											
<<Min: 5.5 - 14.3 0.5% Min: Pyrrhotite>>											
<<Min: 5.5 - 28 5% Min: Ankerite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

13.30 17.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

13.3 - 17.5: Chill margins

<<Min: 13.3 - 17.5 15% Min: Calcite>>

17.50 20.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 20.4 - 21 0.5% Min: Pyrite>>

<<Min: 20.4 - 21 0.5% Min: Pyrrhotite>>

20.60 21.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

21.00 28.80 RHYc Rhyolite coherant volcanics

21 - 28.8: not a good example of RHYc

<<Min: 21 - 28.7 0.5% Min: Pyrite>>

<<Min: 21 - 28.7 1% Min: Pyrrhotite>>

<<Min: 28 - 86 10% Min: Ankerite>>

28.80 29.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

28.8 - 29.5: chill margins

29.50 34.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

34.70 36.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

34.7 - 36.1: likely a MAFi but could be a sed as per Cominco log

<<Min: 34.7 - 35.7 15% Min: Calcite>>

36.10 39.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Vein: 36.2 - 39.5 15% Quartz>>

39.90 68.60 RHYvl Lapilli tuff

39.9 - 68.6: locally has silic bands,; 53.9, 56.2 and curdy texture increases towards bottom of unit. grey colored patches due to remnant chl alt

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 41.3 - 50.5 0.5% Min: Pyrrhotite>>
<<Min: 47.9 - 64.3 0.5% Min: Calcite>> and fracture filling
<<Min: 51.2 - 51.9 0.5% Min: Pyrrhotite>>
<<Min: 64.3 - 67.7 5% Min: Calcite>> assoc with chl alt
<<Min: 64.4 - 67.9 0.5% Min: Pyrrhotite>>
<<Min: 67.9 - 70.4 0.5% Min: Pyrite>>
<<Min: 67.9 - 70.4 0.5% Min: Pyrrhotite>>
<<Alt: 41.7 - 52.4 Weak (Alt) Chlorite>> remnant dis chl
<<Alt: 64.2 - 67.8 Weak (Alt) Chlorite>> remnant dis chl
<<Vein: 66.1 - 66.5 10% Quartz-Tourmaline>>

68.60 83.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 70.4 - 79 0.5% Min: Pyrite>>
<<Min: 70.4 - 79 1% Min: Pyrrhotite>>
<<Min: 79 - 80.2 0.5% Min: Pyrrhotite>>
<<Min: 80.2 - 81.4 0.5% Min: Pyrrhotite>>
<<Min: 81.4 - 84.2 0.5% Min: Pyrrhotite>>
<<Alt: 69 - 78 Moderate (Alt) Silicification>>
<<Alt: 69 - 100.3 Weak (Alt) Muscovite>>

83.40 87.90 RHYvl Lapilli tuff

<<Min: 84.2 - 88.1 0.5% Min: Pyrrhotite>>
<<Min: 86 - 101 20% Min: Ankerite>>

87.90 96.70 MDSc Carbonaceous dominant mudstone

87.9 - 96.7: rare feld phenos

<<Min: 88.1 - 89.7 0.5% Min: Pyrrhotite>>
<<Alt: 92.7 - 99.7 Weak (Alt) Chlorite>> remnant dis chl

96.70 98.50 MDSc Carbonaceous dominant mudstone

<<Min: 96.8 - 99.7 0.5% Min: Pyrrhotite>>

98.50 100.30 MDSt Rhyolite tuff dominant mudstone

<<Min: 99.7 - 100.9 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

100.30 113.30 RHYc Rhyolite coherant volcanics

<<Min: 100.9 - 101.2 0.5% Min: Pyrite>>

<<Min: 100.9 - 101.2 0.5% Min: Pyrrhotite>>

<<Min: 101 - 134.7 5% Min: Ankerite>>

<<Min: 101.2 - 113.5 0.5% Min: Pyrite>>

<<Min: 101.2 - 113.5 0.5% Min: Pyrrhotite>>

<<Alt: 100.3 - 133.5 Strong (Alt) Muscovite>>

<<Alt: 103 - 137 Weak-Moderate (Alt) Silicification>>

<<Struc: 101.2 - 102.4 Weak-Moderate (Alt) Fault>> broken musc schist, minor gouge

113.30 113.90 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 113.5 - 113.6 0.5% Min: Pyrite>>

<<Min: 113.5 - 113.6 3.5% Min: Pyrrhotite>>

<<Min: 113.6 - 114 0.5% Min: Pyrite>>

<<Min: 113.6 - 114 2% Min: Pyrrhotite>>

113.90 133.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

113.9 - 133.6: brecciated, locally strong musc and chl alt, remnant carbonaceous wisps,

<<Min: 114 - 116.5 0.5% Min: Pyrrhotite>>

<<Alt: 114 - 122.5 Weak (Alt) Biotite>>

<<Alt: 133.5 - 143.5 Weak (Alt) Muscovite>>

<<Vein: 116.7 - 140.9 10% Quartz>> 4 zones of large (<1m wide) qtz veins

<<Vein: 118.2 - 189 10% Quartz>> lots of narrow white qtz veins

<<Struc: 119.5 - 200 Moderate-Strong (Alt) Fault>> broken core, minor gouge

<<Struc: 124 - 124.2 Moderate-Strong (Alt) Fault>> broken core, minor gouge

<<Struc: 127.9 - 128.1 Moderate-Strong (Alt) Fault>> broken core, minor gouge

133.60 136.30 RHYvl Lapilli tuff

133.6 - 136.3: coarse clasts <5cm,

<<Min: 134.7 - 151 2% Min: Ankerite>>

136.30 137.10 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
137.10	**151.50**	**RHYc**	**Rhyolite coherant volcanics**		147.00	148.50	1.50	B00267224	1	-0.005	-0.01	-0.01	0.02
137.1 - 151.5: strong proximal chl alt													
<<Min: 137.6 - 148.9 0.5% Min: Pyrite>>					148.60	149.60	1.00	B00267225	7.1	0.033	0.07	0.06	0.71
<<Min: 137.6 - 148.9 1% Min: Pyrrhotite>>													
<<Min: 137.6 - 148.9 0.5% Min: Chalcopyrite>> in proximal chl alt													
<<Min: 137.7 - 137.8 0.1% Min: Arsenopyrite>>													
<<Min: 149.7 - 151 0.5% Min: Pyrrhotite>>													
<<Alt: 137.3 - 151 Strong (Alt) Chlorite>> proximal alt													
<<Alt: 143.5 - 151.5 Moderate (Alt) Muscovite>>													
151.50	**151.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
<<Min: 151.5 - 151.7 7.5% Min: Sphalerite>>													
<<Min: 151.5 - 151.7 60% Min: Pyrite>>													
<<Min: 151.5 - 151.7 0.8% Min: Chalcopyrite>>													
151.70	**152.20**	**RHY**	**undifferentiated rhyolite**										
<<Min: 151.7 - 152.2 1.5% Min: Pyrite>>													
<<Alt: 151.7 - 155 Moderate-Strong (Alt) Muscovite>>													
152.20	**152.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
<<Min: 152.2 - 152.8 12.5% Min: Sphalerite>>													
<<Min: 152.2 - 152.8 65% Min: Pyrite>>													
<<Min: 152.2 - 152.8 0.5% Min: Pyrrhotite>>													
<<Min: 152.2 - 152.8 1.5% Min: Chalcopyrite>>													
152.80	**159.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		154.30	155.80	1.50	B00267226	-0.3	0.005	-0.01	-0.01	-0.01
152.8 - 159.7: leucoxene at lower contact													
<<Min: 153 - 160 10% Min: Calcite>> IN MAFIC ROCKS					155.80	157.30	1.50	B00267227	-0.3	-0.005	-0.01	-0.01	0.01
<<Alt: 152.8 - 155 Moderate (Alt) Silicification>>													
<<Alt: 154.8 - 159.9 Strong (Alt) Chlorite>> MAFi unit													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
159.70	**189.10**	**RHYif** **feldspar and quartz porphyry intrusions**									
<<Min: 159.8 - 160 0.5% Min: Pyrite>>											
<<Min: 160 - 166.4 2.5% Min: Pyrite>>											
<<Min: 160 - 169 1% Min: Calcite>>											
<<Min: 166.4 - 167.6 2.5% Min: Pyrite>>											
<<Min: 166.4 - 167.6 0.5% Min: Pyrrhotite>>											
<<Min: 167.6 - 189.1 1.3% Min: Sphalerite>> in cross cutting qtz-py-galena-Veinlets And fracture filling cuttin rhy dyke											
<<Min: 167.6 - 189.1 1.5% Min: Pyrite>>											
<<Min: 189 - 193.3 1% Min: Calcite>>											
<<Alt: 159.7 - 193 Weak (Alt) Muscovite>> with rhy dyke, leucoxene at lower contact											
<<Alt: 159.7 - 193.5 Weak-Moderate (Alt) Silicification>> rhy dyke so lots of silica around											
189.10	**195.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	192.40	193.90	1.50	B00267228	1.1	-0.005	-0.01	0.04	0.14
<<Min: 189.1 - 193.4 0.5% Min: Pyrite>>			194.00	195.50	1.50	B00267229	0.4	0.007	-0.01	-0.01	0.02
<<Min: 193.3 - 195.5 5% Min: Calcite>>											
<<Min: 195.4 - 195.5 1.5% Min: Sphalerite>>											
<<Min: 195.4 - 195.5 70% Min: Pyrite>>											
<<Min: 195.4 - 195.5 5% Min: Pyrrhotite>>											
<<Min: 195.4 - 195.5 0.5% Min: Chalcopyrite>>											
195.50	**195.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
195.70	**210.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	197.00	198.50	1.50	B00267231	1.8	-0.005	0.01	0.06	0.29
195.7 - 210: Could be RHYv all or in part., 196.6-199.9; looks like rhy with strong musc alt. local almost curdy looking curdy bands, remnant calcite 109.3-210m. Sericitealt follows late S2? Crosscutting foliation											
<<Min: 195.7 - 196.2 2.5% Min: Pyrite>>			198.50	199.90	1.40	B00267232	1.6	0.007	-0.01	0.04	0.34
<<Min: 195.7 - 196.2 3.5% Min: Pyrrhotite>>											
<<Min: 195.7 - 196.2 1.3% Min: Chalcopyrite>>											
<<Min: 199 - 209.3 8% Min: Ankerite>>											
<<Min: 209.2 - 210 2% Min: Calcite>>											
<<Alt: 196.6 - 199.9 Strong (Alt) Muscovite>> below proximal chl alt with cp											

From (m)	To (m)	Rocktype & Description

<<Alt: 197 - 210 Moderate-Strong (Alt) Silicification>> associate with two qtz - tourmaline veins

<<Alt: 199.9 - 210 Weak (Alt) Muscovite>> associated with qtz - tour veins.

<<Alt: 200.7 - 207 Weak-Moderate (Alt) Chlorite>> MAFi unit, remnant proximal chl cut by sericite alt on foliation - forms islands of chl alt.

<<Vein: 201 - 209 3% Quartz-Tourmaline>> 2 narrow qtz-tour veins with alt envelopes

End of Hole @ 210

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-149

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414748.81	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815685.84	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1412.74	Casing Depth (m):		Length (m):	206	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
17	-57	171		171	SS				☑	
44	-59	171		171	SS				☑	
75	-60	171		171	SS				☑	
105	-61	173		173	SS				☑	
135	-61	178		178	SS				☑	
166	-61	175		175	SS				☑	
196	-61	171		171	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.30**	**CASN** **Casing**									
4.30	**7.40**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 4.3 - 13 15% Min: Calcite>>											
<<Min: 4.3 - 20 7% Min: Ankerite>>											
<<Min: 4.9 - 7 0.5% Min: Pyrrhotite>>											
<<Min: 7 - 7.5 0.5% Min: Pyrrhotite>>											
7.40	**9.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 7.5 - 10.2 0.5% Min: Pyrrhotite>>											
9.80	**18.30**	**RHYva** **Coarse grained to ash tuff**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 10.4 - 15.2 0.5% Min: Pyrrhotite>>

<<Min: 13 - 17.9 5% Min: Calcite>>

<<Min: 17.9 - 63.8 1% Min: Calcite>>

18.30 31.60 RHYvl Lapilli tuff

<<Min: 18.6 - 19.2 0.5% Min: Pyrrhotite>>

<<Min: 20 - 38.4 20% Min: Ankerite>>

<<Min: 20.4 - 27.5 0.5% Min: Pyrrhotite>>

<<Min: 28.6 - 31.7 0.5% Min: Pyrite>>

31.60 37.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31.6 - 37.6: Wavy laminated crenulated texture. Laminations on cm scale. AK porphyroblasts.

37.60 62.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

37.6 - 62.2: curdy rhyolite texture

<<Min: 37.7 - 66.4 0.5% Min: Pyrrhotite>>

<<Min: 37.7 - 66.4 0.5% Min: Chalcopyrite>>

<<Min: 38.4 - 93 10% Min: Ankerite>>

62.20 75.00 RHYvl Lapilli tuff

62.2 - 75: 72.1-73.5 mafic dyke

<<Min: 63.8 - 78 3% Min: Calcite>>

<<Min: 73.6 - 74.3 1% Min: Pyrite>>

<<Min: 74.3 - 102.9 1% Min: Pyrite>>

<<Min: 74.3 - 102.9 2% Min: Pyrrhotite>>

75.00 87.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

75 - 87.2: 72.1-73.5 mafic dyke

<<Min: 78 - 111.1 2% Min: Calcite>>

87.20 93.00 RHYvl Lapilli tuff

87.2 - 93: 72.1-73.5 mafic dyke

From (m)	To (m)	Rocktype & Description
93.00	**102.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
93 - 102.1: possible quartz eyes		
<<Min: 93 - 121 5% Min: Ankerite>>		
102.10	**106.60**	**RHYvl** **Lapilli tuff**
102.1 - 106.6: Dark colour disseminated PO		
<<Min: 102.9 - 107.1 2% Min: Pyrrhotite>>		
106.60	**115.80**	**RHYvl** **Lapilli tuff**
106.6 - 115.8: Distinct dark lipilli		
<<Min: 107.1 - 110.2 3% Min: Pyrite>>		
<<Min: 107.1 - 110.2 1% Min: Pyrrhotite>>		
<<Min: 107.1 - 110.2 0.5% Min: Chalcopyrite>>		
<<Min: 110.2 - 111.1 3% Min: Pyrrhotite>>		
<<Min: 111.1 - 114.4 4% Min: Pyrrhotite>>		
<<Min: 111.1 - 116.7 3% Min: Calcite>>		
<<Min: 114.4 - 124.3 1% Min: Pyrite>>		
<<Min: 114.4 - 124.3 3% Min: Pyrrhotite>>		
115.80	**124.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
115.8 - 124.8: curdy rhyolite, possible FD porp		
<<Min: 116.7 - 121 1% Min: Calcite>>		
<<Min: 121 - 127.7 2% Min: Calcite>>		
<<Min: 121 - 148 20% Min: Ankerite>>		
<<Min: 124.3 - 127.3 3% Min: Pyrite>>		
<<Min: 124.3 - 127.3 1% Min: Pyrrhotite>>		
124.80	**127.70**	**RHYvl** **Lapilli tuff**
<<Min: 127.3 - 127.7 6% Min: Pyrite>>		
127.70	**141.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 127.7 - 138.4 1% Min: Pyrite>>		
<<Min: 127.7 - 138.4 3% Min: Pyrrhotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 127.7 - 157.3 1% Min: Calcite>>									
		<<Min: 138.4 - 141.7 15% Min: Pyrite>>									
141.70	**148.10**	**MDSt** **Rhyolite tuff dominant mudstone**									
		141.7 - 148.1: weakly carbonaceous									
		<<Min: 141.7 - 143.5 0.5% Min: Pyrite>>									
		<<Min: 141.7 - 143.5 1% Min: Pyrrhotite>>									
		<<Min: 143.5 - 144.6 4% Min: Pyrrhotite>>									
		<<Min: 144.6 - 145.8 0.5% Min: Pyrite>>									
		<<Min: 144.6 - 145.8 1% Min: Pyrrhotite>>									
		<<Min: 145.8 - 148 3% Min: Pyrrhotite>>									
		<<Min: 148 - 151.9 5% Min: Pyrrhotite>>									
148.10	**164.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	161.10	162.60	1.50	Q930801	0.4	-0.005	-0.01	0.02	0.04
		<<Min: 153.4 - 161.5 2% Min: Pyrite>>	162.60	164.20	1.60	Q930802	0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 153.4 - 161.5 0.5% Min: Pyrrhotite>>									
		<<Min: 157.3 - 169.2 0.5% Min: Calcite>>									
		<<Min: 161.5 - 163.4 1% Min: Pyrite>>									
		<<Min: 161.5 - 163.4 0.5% Min: Pyrrhotite>>									
		<<Alt: 148.1 - 164.1 Moderate (Alt) Muscovite>>									
164.10	**168.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	164.30	165.80	1.50	Q930803	36.1	0.03	0.55	0.67	1.65
		<<Min: 164.1 - 169.3 5% Min: Pyrite>>	165.80	166.40	0.60	Q930804	3.8	0.006	0.05	0.06	0.91
		<<Min: 164.1 - 169.3 12% Min: Pyrrhotite>>	166.50	168.10	1.60	Q930805	1.9	0.009	0.03	0.02	0.05
		<<Min: 164.1 - 169.3 2% Min: Chalcopyrite>>									
		<<Alt: 164.1 - 172.7 Strong (Alt) Chlorite>> less than 2% CI porphroblasts in CLCB SCHS									
168.10	**174.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	168.10	169.50	1.40	Q930806	1.7	-0.005	0.01	0.01	0.11
		168.1 - 174.2: this might be intense CL alteration rather than a mafic									
		<<Min: 169.2 - 174.2 1% Min: Calcite>>	169.60	171.00	1.40	Q930807	55.9	0.7	1.52	0.06	0.22
		<<Min: 169.3 - 174.2 3% Min: Pyrite>>	171.00	172.70	1.70	Q930808	107	0.997	3.9	0.03	0.32
		<<Min: 169.3 - 174.2 8% Min: Pyrrhotite>>	172.70	174.20	1.50	Q930809	185	2.21	4.45	0.28	1.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 169.3 - 174.2 15% Min: Chalcopyrite>>									
		<<Alt: 172.7 - 174.2 Moderate (Alt) Cordierite>> very strong CL									
174.20	**176.30**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
		<<Min: 174.2 - 176.3 20% Min: Sphalerite>>									
		<<Min: 174.2 - 176.3 45% Min: Pyrite>>									
		<<Min: 174.2 - 187.9 0.5% Min: Calcite>>									
176.30	**176.70**	**OC Chalcopyrite-pyrrhotite net textured sulphides**									
		<<Min: 176.3 - 176.7 20% Min: Sphalerite>>									
		<<Min: 176.3 - 176.7 20% Min: Pyrite>>									
		<<Min: 176.3 - 176.7 15% Min: Pyrrhotite>>									
		<<Min: 176.3 - 176.7 35% Min: Chalcopyrite>>									
176.70	**177.00**	**OJ Heavilly disseminated sulphides in proximal altered rock**									
		<<Min: 176.7 - 177 15% Min: Sphalerite>>									
		<<Min: 176.7 - 177 35% Min: Pyrite>>									
		<<Min: 176.7 - 177 15% Min: Chalcopyrite>>									
177.00	**180.30**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	180.20	180.30	0.10	Q930811	250	5.43	6.32	0.88	4.83
		<<Min: 177 - 180.3 20% Min: Sphalerite>>									
		<<Min: 177 - 180.3 40% Min: Pyrite>>									
180.30	**180.90**	**OA Magnetite bearing sulphides**	180.30	181.50	1.20	Q930812	121	1.27	2.29	0.86	4.58
		<<Min: 180.3 - 180.9 45% Min: Pyrite>>									
		<<Min: 180.3 - 180.9 5% Min: Pyrrhotite>>									
		<<Min: 180.3 - 180.9 15% Min: Chalcopyrite>>									
180.90	**182.60**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	181.50	182.60	1.10	Q930813	187	1.61	0.72	2.24	6.63
		<<Min: 180.9 - 182.6 15% Min: Sphalerite>>									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 180.9 - 182.6 50% Min: Pyrite>>												
182.60	**185.90**	**RHYv**	**Rhyolite volcaniclastic**	182.60	184.30	1.70	Q930814	25.6	0.166	0.39	0.26	2
<<Min: 182.6 - 185.9 5% Min: Sphalerite>>				184.30	185.90	1.60	Q930815	28.8	0.289	0.57	0.17	1.33
<<Min: 182.6 - 185.9 25% Min: Pyrite>>												
185.90	**187.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	185.90	186.90	1.00	Q930816	60.7	0.875	0.23	0.87	5.13
<<Min: 185.9 - 187.7 15% Min: Sphalerite>>				186.90	187.70	0.80	Q930817	74	0.742	0.25	0.8	6.24
<<Min: 185.9 - 187.7 60% Min: Pyrite>>												
<<Min: 185.9 - 187.7 0.5% Min: Pyrrhotite>>												
<<Min: 185.9 - 187.7 0.5% Min: Chalcopyrite>>												
187.70	**193.20**	**RHYva**	**Coarse grained to ash tuff**	187.70	189.30	1.60	Q930818	4.5	0.039	0.01	0.07	0.18
<<Min: 187.7 - 190 3% Min: Pyrite>>				189.30	189.90	0.60	Q930819	0.6	0.012	-0.01	-0.01	0.05
<<Min: 187.9 - 190.2 3% Min: Calcite>>				190.00	190.80	0.80	Q930821	3.8	0.029	-0.01	0.04	0.14
<<Min: 190 - 193 1% Min: Sphalerite>>				190.90	192.40	1.50	Q930822	7	0.069	0.08	0.15	0.53
<<Min: 190 - 193 4% Min: Pyrite>>				192.40	193.00	0.60	Q930823	8.7	0.355	0.06	0.24	0.78
<<Min: 190.2 - 197 1% Min: Calcite>>				193.00	194.50	1.50	Q930824	69.4	1.05	3.01	0.27	1.63
<<Min: 191.6 - 196.8 15% Min: Ankerite>>												
<<Min: 193 - 196.5 3% Min: Pyrite>>												
<<Min: 193 - 196.5 5% Min: Pyrrhotite>>												
<<Min: 193 - 196.5 20% Min: Chalcopyrite>>												
<<Alt: 187.7 - 193.2 Moderate (Alt) Muscovite>>												
193.20	**197.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	194.50	196.00	1.50	Q930825	37.4	0.466	2.15	0.09	0.3
<<Min: 196.5 - 197.4 0.5% Min: Pyrite>>				196.00	196.90	0.90	Q930826	15.5	0.164	0.86	0.04	0.34
<<Alt: 193.2 - 197 Moderate (Alt) Muscovite>>												
<<Alt: 193.2 - 197 Moderate (Alt) Chlorite>>												
<<Alt: 193.2 - 197 Moderate (Alt) Biotite>>												
197.00	**206.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	197.00	198.50	1.50	Q930827	0.7	0.007	0.03	-0.01	0.01
197 - 206: Distinctive calcite bands and calcite porphyroblastic texture. EOH												
<<Min: 197 - 202.9 20% Min: Calcite>>				198.50	199.90	1.40	Q930828	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 200.3 - 201.6 1% Min: Pyrite>>				200.00	201.50	1.50	Q930829	0.8	0.059	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 202.9 - 206 10% Min: Calcite>>									
		End of Hole @ 206									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-150

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414748.87	Core Size:		Azimuth:	247	Date Logging Complete:	
UTM Northing:	6815684.64	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1412.73	Casing Depth (m):		Length (m):	178.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	247		247	SS				☑	
11	-86	247		247	SS				☑	
41	-87	199		199	SS				☑	
72	-87	198		198	SS				☑	
102	-85	202		202	SS				☑	
133	-82	191		191	SS				☑	
163	-82	196		196	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.30**	**OVBN** **Overburden**									
4.30	**6.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 4.3 - 22 4% Min: Ankerite>>											
6.90	**15.40**	**RHYcf** **Feldspar & feldspar quartz porphyry**									
6.9 - 15.4: complex zone, interfingering feldspar quartz porphryand maficrocks.											
<<Min: 9.3 - 10.2 1% Min: Pyrite>>											
<<Min: 14.5 - 19 3% Min: Calcite>>											
<<Min: 15.3 - 19 0.5% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description

<<Min: 15.3 - 19 0.5% Min: Pyrrhotite>>

15.40 19.70 RHYva Coarse grained to ash tuff

<<Min: 19.1 - 25.7 0.5% Min: Pyrite>>

<<Min: 19.1 - 25.7 0.5% Min: Pyrrhotite>>

19.70 32.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

19.7 - 32.3: indistinct; may be tuffaceous.

<<Min: 22 - 102 15% Min: Ankerite>>

32.30 39.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.3 - 39.5: interlayers of rhyolite

<<Min: 32.3 - 39.5 3% Min: Calcite>>

<<Min: 32.4 - 35 0.5% Min: Pyrrhotite>>

<<Min: 35.1 - 35.5 0.5% Min: Pyrrhotite>>

<<Min: 36.7 - 39.5 1% Min: Pyrrhotite>>

39.50 48.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39.5 - 48.2: 39.5 to 44.9 very well developed curdy texture

<<Min: 39.5 - 50.3 2% Min: Pyrrhotite>>

<<Min: 39.5 - 56 1% Min: Calcite>>

48.20 53.90 RHYvl Lapilli tuff

53.90 57.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 55.2 - 56.2 3.5% Min: Pyrrhotite>>

<<Min: 56.2 - 62.5 1% Min: Pyrrhotite>>

57.30 70.70 RHYvl Lapilli tuff

<<Min: 62.5 - 62.8 0.5% Min: Pyrite>>

<<Min: 62.5 - 62.8 1% Min: Pyrrhotite>>

<<Min: 62.8 - 70.6 0.5% Min: Pyrite>>

<<Min: 62.8 - 70.6 0.5% Min: Pyrrhotite>>

<<Min: 70.6 - 75 0.5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 70.6 - 75 0.5% Min: Pyrrhotite>>												
70.70	**84.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
70.7 - 84.7: curdy banded and lapilli												
<<Min: 79 - 132 1% Min: Calcite>>												
84.70	**86.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 86 - 132.7 1% Min: Pyrite>>												
<<Min: 86 - 132.7 1% Min: Pyrrhotite>>												
86.20	**110.50**	**RHYva**	**Coarse grained to ash tuff**									
<<Min: 102 - 135.6 5% Min: Ankerite>>												
110.50	**115.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
110.5 - 115.4: Irregular patches of heavy pyrite.												
115.40	**123.30**	**RHYva**	**Coarse grained to ash tuff**									
123.30	**134.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 133.1 - 135.4 1.5% Min: Pyrite>>												
<<Min: 133.1 - 135.4 0.5% Min: Pyrrhotite>>												
<<Alt: 123.3 - 132.5 Weak (Alt) Muscovite>>												
<<Alt: 132.5 - 146.3 Moderate (Alt) Muscovite>>												
134.90	**146.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	139.50	141.80	2.30	Q930863	-0.3	-0.005	-0.01	-0.01	0.01
134.9 - 146.3: Graphite content for interval is variable and contains visible quartz eyes.												
<<Min: 135.7 - 138 0.5% Min: Pyrite>>				141.80	142.30	0.50	Q930864	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 135.7 - 138 0.5% Min: Pyrrhotite>>				142.60	143.30	0.70	Q930865	-0.3	0.007	-0.01	-0.01	-0.01
<<Min: 138 - 142.2 1% Min: Pyrite>>				143.30	144.80	1.50	Q930866	-0.3	0.008	-0.01	-0.01	-0.01
<<Min: 142.2 - 145.7 1% Min: Pyrite>>				144.80	146.30	1.50	Q930867	0.6	0.006	-0.01	-0.01	0.05
<<Min: 142.2 - 145.7 0.5% Min: Pyrrhotite>>												
146.30	**146.70**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	146.30	147.80	1.50	Q930868	48.4	0.302	0.71	0.29	1.73

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 146.3 - 146.7 85% Min: Pyrite>>									
		<<Min: 146.3 - 146.7 2.5% Min: Pyrrhotite>>									
		<<Min: 146.3 - 146.7 0.8% Min: Chalcopyrite>>									
146.70	**149.40**	**OA Magnetite bearing sulphides**	147.80	149.30	1.50	Q930869	57.1	0.271	0.67	1.97	5.94
		<<Min: 146.7 - 149.4 2.5% Min: Sphalerite>>	149.30	150.80	1.50	Q930871	59.2	0.766	0.73	0.91	1.65
		<<Min: 146.7 - 149.4 75% Min: Pyrite>>									
		<<Min: 146.7 - 149.4 7.5% Min: Pyrrhotite>>									
		<<Min: 146.7 - 149.4 1.5% Min: Chalcopyrite>>									
149.40	**153.50**	**OH Fine grained, megascopically homogeneous pyrite rock**	150.80	152.30	1.50	Q930872	29.9	0.413	0.34	0.18	1.75
		<<Min: 149.4 - 153.5 2.5% Min: Sphalerite>>	152.30	153.80	1.50	Q930873	35.8	0.383	0.24	0.33	2.89
		<<Min: 149.4 - 153.5 80% Min: Pyrite>>									
		<<Min: 149.4 - 153.5 2.5% Min: Pyrrhotite>>									
		<<Min: 149.4 - 153.5 0.8% Min: Chalcopyrite>>									
153.50	**155.30**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	153.80	155.30	1.50	Q930874	61.6	0.435	0.14	1.98	10
		<<Min: 153.5 - 155.3 10% Min: Sphalerite>>									
		<<Min: 153.5 - 155.3 57.5% Min: Pyrite>>									
		<<Min: 153.5 - 155.3 0.5% Min: Pyrrhotite>>									
		<<Min: 153.5 - 155.3 0.8% Min: Chalcopyrite>>									
155.30	**155.80**	**OJ Heavilly disseminated sulphides in proximal altered rock**	155.30	156.90	1.60	Q930875	53	0.338	1.81	0.39	6.82
		<<Min: 155.3 - 155.8 10% Min: Pyrite>>									
		<<Min: 155.3 - 155.8 0.5% Min: Pyrrhotite>>									
		<<Min: 155.3 - 155.8 0.5% Min: Chalcopyrite>>									
155.80	**156.20**	**OA Magnetite bearing sulphides**									
		<<Min: 155.8 - 156.2 5% Min: Sphalerite>>									
		<<Min: 155.8 - 156.2 60% Min: Pyrite>>									
		<<Min: 155.8 - 156.2 5% Min: Pyrrhotite>>									
		<<Min: 155.8 - 156.2 0.8% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description
156.20	**156.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 156.2 - 156.9 12.5% Min: Pyrite>>		
<<Min: 156.2 - 156.9 22.5% Min: Pyrrhotite>>		
<<Min: 156.2 - 156.9 4.5% Min: Chalcopyrite>>		
156.90	**167.60**	**RHYv** **Rhyolite volcaniclastic**
156.9 - 167.6: Laminated semi-massive sulphides.		
<<Min: 156.9 - 159.3 10% Min: Pyrite>>		
<<Min: 156.9 - 159.3 7.5% Min: Pyrrhotite>>		
<<Min: 156.9 - 159.3 1.5% Min: Chalcopyrite>>		
<<Min: 156.9 - 166 5% Min: Ankerite>>		
<<Min: 159.3 - 159.8 0.5% Min: Pyrite>>		
<<Min: 159.3 - 159.8 0.5% Min: Pyrrhotite>>		
<<Min: 159.8 - 162.3 1.5% Min: Pyrite>>		
<<Min: 159.8 - 162.3 2.5% Min: Pyrrhotite>>		
<<Min: 159.8 - 162.3 0.5% Min: Chalcopyrite>>		
<<Alt: 156.9 - 161 Strong (Alt) Chlorite>>		
<<Alt: 161 - 168.1 Weak (Alt) Chlorite>>		
167.60	**178.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 167.6 - 178.9 15% Min: Calcite>>		

End of Hole @ 178.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
156.90	158.40	1.50	Q930876	18.1	0.129	0.58	0.04	0.52
158.40	159.90	1.50	Q930877	27.7	0.221	1.07	0.03	0.11
159.90	161.40	1.50	Q930878	1.3	0.009	0.02	0.03	0.09
161.40	162.90	1.50	Q930879	7.3	0.036	0.49	0.12	0.19
162.90	164.40	1.50	Q930881	1.1	0.008	0.01	0.04	0.14

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-151

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414900.28	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815642.03	Casing Pulled?:		Dip:	-50	Drill Company:	
UTM Elev. (m):	1387.61	Casing Depth (m):		Length (m):	187.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180		180	SS				☑	
14	-51	183		183	SS				☑	
44	-54	179		179	SS				☑	
71	-55	176		176	SS				☑	
102	-55	178		178	SS				☑	
132	-56	171		171	SS				☑	
166	-56	176		176	SS				☑	
187	-56	177		177	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.70**	**OVBN Overburden**									
3.70	**7.10**	**RHYvl Lapilli tuff**									
3.7 - 7.1: sharp lower contact with sed.											
<<Min: 3.7 - 7.1 2% Min: Pyrrhotite>>											
<<Min: 3.7 - 7.8 10% Min: Ankerite>>											
7.10	**7.80**	**RHYva Coarse grained to ash tuff**									
7.1 - 7.8: fine grained wacke.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

7.80 11.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

7.8 - 11.2: fine grained margin, coarser grained centre, calcareous

<<Min: 7.8 - 11.2 10% Min: Calcite>>

<<Min: 7.8 - 11.2 5% Min: Ankerite>>

11.20 14.10 RHYva Coarse grained to ash tuff

11.2 - 14.1: wacke as above

<<Min: 11.2 - 14.1 10% Min: Ankerite>>

14.10 14.90 RHYvl Lapilli tuff

<<Min: 14.2 - 14.8 0.5% Min: Pyrrhotite>>

14.90 17.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

14.9 - 17: fine grained, green, clacareous bands

<<Min: 14.9 - 17 10% Min: Calcite>>

17.00 21.30 RHYvx Quartz and/or feldspar crystal tuff

17 - 21.3: lappili xtal tuff with 2% broken 2-5mm feldspar phenos. Po blebs,

<<Min: 17 - 22 5% Min: Ankerite>>

21.30 56.00 RHYvl Lapilli tuff

21.3 - 56: lapilli tuff, but quite homogeneous in appearance wit hchl-bt-po splotches. Could be epiclastic

<<Min: 22.3 - 55.5 1% Min: Pyrrhotite>>

<<Min: 28 - 35 8% Min: Ankerite>>

<<Min: 35 - 40 5% Min: Ankerite>>

<<Min: 55.5 - 88.9 2% Min: Pyrrhotite>>

<<Vein: 27.1 - 27.5 100% Quartz>>

<<Vein: 46.5 - 48 50% Quartz-Chlorite>> 2cm wide down the core axis, quartz chlorite

56.00 60.80 RHYvx Quartz and/or feldspar crystal tuff

56 - 60.8: sparse feldspasr crystals

<<Min: 57 - 106.4 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 57 - 106 Weak (Alt) Muscovite>>

<<Alt: 58.8 - 77 Weak (Alt) Biotite>>

60.80 86.30 RHYvl Lapilli tuff

60.8 - 86.3: short sections within with feldspar crystals present. Also some decimeter developed curdy textures.

<<Vein: 65.5 - 66.3 60% Tourmaline>> 3cm wide close to ca angle.possible beryl in envelope

86.30 88.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

86.3 - 88: pseudofragmental texture and weakly developed curdy texture

88.00 91.90 RHYvl Lapilli tuff

<<Min: 88 - 90 0.5% Min: Pyrite>>

<<Min: 88.9 - 99 2% Min: Pyrrhotite>>

91.90 103.40 MDSt Rhyolite tuff dominant mudstone

91.9 - 103.4: upper 5m is "classic" mdst with patches of weak mdst with rhyvl with coarse lapilli and possible crystal fragments. Well developed mdst from 102.8-103.4

<<Min: 99.3 - 112.3 0.5% Min: Pyrite>>

<<Min: 99.3 - 112.3 1% Min: Pyrrhotite>>

103.40 104.80 RHYvl Lapilli tuff

104.80 106.40 MDSt Rhyolite tuff dominant mudstone

<<Min: 106 - 120 5% Min: Ankerite>>

<<Alt: 106 - 112.8 Weak (Alt) Muscovite>>

106.40 108.50 RHYvx Quartz and/or feldspar crystal tuff

106.4 - 108.5: lapilli tuff with sparse feldspar crystals

108.50 112.80 MDSt Rhyolite tuff dominant mudstone

<<Min: 112.3 - 133.4 1.5% Min: Pyrrhotite>>

<<Min: 112.3 - 133.4 1.5% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description
112.80	**142.00**	**RHYc** **Rhyolite coherant volcanics**

112.8 - 142: classic coherent rhyolite with sections of banding. Increasingly altered towards texturally destructive chl-mu-sp-cp-po stringer zone below in RHY can no longer tell. @133.3-133.5 fine grained sil mud.

<<Min: 120 - 142 3% Min: Ankerite>>
<<Min: 133.4 - 133.6 2.5% Min: Pyrrhotite>>
<<Min: 133.6 - 138.4 1.5% Min: Pyrrhotite>>
<<Min: 138.4 - 141.9 0.8% Min: Sphalerite>>
<<Min: 138.4 - 141.9 2% Min: Pyrite>>
<<Min: 138.4 - 141.9 7% Min: Pyrrhotite>>
<<Min: 138.4 - 141.9 0.8% Min: Chalcopyrite>>
<<Min: 141.9 - 152 1.3% Min: Sphalerite>>
<<Min: 141.9 - 152 5% Min: Pyrrhotite>>
<<Min: 141.9 - 152 0.8% Min: Chalcopyrite>>
<<Alt: 112.8 - 126 Weak-Moderate (Alt) Muscovite>>
<<Alt: 126 - 142 Moderate (Alt) Muscovite>>
<<Alt: 139 - 142 Weak (Alt) Chlorite>>

142.00	**146.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

142 - 146.4: MET8? Very stg chl alteration with sp cp and py runs 0.3% Cu and 1%Zn

<<Alt: 142 - 150 Moderate (Alt) Muscovite>>
<<Alt: 142 - 155.9 Strong (Alt) Chlorite>> stringer cl zone with cp-sp-po-py

146.40	**153.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

146.4 - 153: curdy textures, stg ch mu alteration and py -sp tr cp present. Bottom contact is picked due to change in grade and alteration that may fit met 8 zone

<<Vein: 150 - 150.5 100% Quartz-Chlorite>> chl-ank envelopes 3cm

153.00	**155.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

153 - 155.9: MET8? Chl cp-sp-po stringers in rhycw

<<Min: 153 - 155.9 2.5% Min: Sphalerite>>
<<Min: 153 - 155.9 15% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
137.40	138.90	1.50	B00232539	0.5	-0.005	-0.01	0.02	0.02
138.90	140.40	1.50	B00232541	0.4	0.008	-0.01	0.02	0.03

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 153 - 155.9 1.3% Min: Chalcopyrite>>

155.90 159.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

155.9 - 159.8: Stg chl stringer alt to 157.9m, isolated OJ from 157.8-157.9

<<Alt: 155.9 - 159.8 Moderate (Alt) Muscovite>>

<<Alt: 155.9 - 159.8 Moderate (Alt) Chlorite>>

159.80 160.60 OA Magnetite bearing sulphides

159.8 - 160.6: MET2

<<Min: 159.8 - 160.6 15% Min: Sphalerite>>

<<Min: 159.8 - 160.6 70% Min: Pyrite>>

<<Min: 159.8 - 160.6 1% Min: Chalcopyrite>>

160.60 161.00 RHY undifferentiated rhyolite

160.6 - 161: intense ser alt. texture destructive between sx

<<Alt: 160.6 - 161 Strong (Alt) Muscovite>>

161.00 165.90 OA Magnetite bearing sulphides

161 - 165.9: MET4 but high Pb (2-4%)

<<Min: 161 - 166.1 10% Min: Sphalerite>>

<<Min: 161 - 166.1 50% Min: Pyrite>>

<<Min: 161 - 166.1 37% Min: Magnetite>>

<<Min: 161 - 166.1 3% Min: Chalcopyrite>>

165.90 166.10 OC Chalcopyrite-pyrrhotite net textured sulphides

165.9 - 166.1: MET6?

<<Min: 165.9 - 166.1 10% Min: Pyrrhotite>>

166.10 166.50 RHY undifferentiated rhyolite

166.1 - 166.5: intense ser alt between sx lenses

<<Min: 166.1 - 166.5 0.5% Min: Pyrite>>

<<Alt: 166.1 - 166.6 Strong (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description
166.50	**167.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
166.5 - 167.3: MET7? Low pb			
167.30	**171.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 167.3 - 168.5 1% Min: Pyrite>>			
<<Alt: 167.3 - 171.7 Weak-Moderate (Alt) Muscovite>>			
<<Alt: 167.3 - 171.7 Moderate-Strong (Alt) Chlorite>>			
<<Vein: 168.4 - 169.4 90% Quartz-Chlorite>>			
171.70	**174.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
171.7 - 174.7: MET7? Or MET5 (however we are downdip on the central portion here)			
174.70	**175.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 174.7 - 175.2 2% Min: Pyrite>>			
<<Alt: 174.7 - 175.6 Moderate-Strong (Alt) Muscovite>>			
<<Struc: 175 - 176.5 Fault>> broken and rubbled core missing core			
175.20	**175.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
175.2 - 175.9: MET7? Or MET5?			
<<Alt: 175.2 - 187.8 Weak-Moderate (Alt) Muscovite>>			
175.90	**177.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 175.9 - 178.4 1.5% Min: Pyrrhotite>>			
177.30	**187.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 180.4 - 182.1 1.5% Min: Pyrrhotite>>			
<<Min: 184.4 - 187.8 1.5% Min: Pyrrhotite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
177.40	178.90	1.50	B00232542	0.6	-0.005	-0.01	-0.01	0.04
178.90	180.40	1.50	B00232543	-0.3	0.009	-0.01	-0.01	0.01

Project: **KZK** **Hole Number:** **K95-151**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 187.8									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-152

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414900.24	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815641.24	Casing Pulled?:		Dip:	-70	Drill Company:	
UTM Elev. (m):	1387.69	Casing Depth (m):		Length (m):	172.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180		180	SS				☑	
11	-70	181		181	SS				☑	
41	-69	183		183	SS				☑	
71	-70	185		185	SS				☑	
99	-70	188		188	SS				☑	
132	-70	191		191	SS				☑	
163	-70	189		189	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.70**	**OVBN** **Overburden**									
3.70	**5.80**	**RHYvl** **Lapilli tuff**									
<<Min: 3.7 - 5.7 3% Min: Pyrite>>											
<<Min: 3.7 - 5.7 2% Min: Pyrrhotite>>											
<<Min: 3.7 - 22.3 7% Min: Ankerite>>											
<<Min: 5.7 - 6.9 0.5% Min: Pyrrhotite>>											
5.80	**6.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
6.80	**12.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 6.9 - 15.4 4% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

12.30 14.70 RHYvl Lapilli tuff

14.70 16.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 15.4 - 16.2 5% Min: Pyrrhotite>>

<<Min: 16.2 - 25.8 4% Min: Pyrite>>

<<Min: 16.2 - 25.8 6% Min: Pyrrhotite>>

16.30 25.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 22.3 - 32.6 15% Min: Ankerite>>

25.80 38.40 RHYvl Lapilli tuff

<<Min: 26.4 - 31.2 2% Min: Pyrrhotite>>

<<Min: 31.2 - 62.4 1% Min: Pyrite>>

<<Min: 31.2 - 62.4 2% Min: Pyrrhotite>>

<<Min: 32.6 - 55.5 7% Min: Ankerite>>

38.40 45.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

45.20 64.20 RHYvl Lapilli tuff

<<Min: 55.5 - 82 5% Min: Ankerite>>

<<Min: 63.9 - 92.5 1% Min: Pyrrhotite>>

<<Vein: 62.3 - 63.9 95% Quartz>> Large and massive quartz vein, milky, ~1% of Po/Py associated.

64.20 72.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

72.10 74.20 RHYvl Lapilli tuff

74.20 75.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

75.30 78.30 RHYvl Lapilli tuff

78.30 82.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 82 - 90.2 15% Min: Ankerite>>

<<Vein: 79.2 - 79.5 90% Quartz-Pyrrhotite 10 deg. >> Massive quartz vein, milky, discordant, sharp contacts. 3-4 % of Po (aggregats) within the vein.

82.70 90.20 RHYvl Lapilli tuff

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
90.20	**93.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 90.2 - 96.1 7% Min: Ankerite>>												
93.20	**93.70**	**MDSt**	**Rhyolite tuff dominant mudstone**									
93.70	**101.30**	**RHYvl**	**Lapilli tuff**									
93.7 - 101.3: VXTL?												
<<Min: 94.1 - 101 1% Min: Pyrite>>												
<<Min: 94.1 - 101 8% Min: Pyrrhotite>>												
<<Min: 96.1 - 103.4 4% Min: Ankerite>>												
<<Min: 101 - 105.2 0.5% Min: Pyrite>>												
<<Min: 101 - 105.2 0.5% Min: Pyrrhotite>>												
101.30	**106.60**	**MDSt**	**Rhyolite tuff dominant mudstone**									
<<Min: 103.4 - 152.8 3% Min: Ankerite>>												
<<Min: 105.2 - 132.2 1% Min: Pyrite>>												
<<Min: 105.2 - 132.2 3% Min: Pyrrhotite>>												
<<Alt: 103.4 - 106.8 Moderate (Alt) Muscovite>>												
106.60	**152.80**	**RHY**	**undifferentiated rhyolite**	148.00	149.50	1.50	B00233001	1.8	-0.005	-0.01	0.02	0.03
<<Min: 133.4 - 138.2 3% Min: Pyrite>>				149.50	151.00	1.50	B00233002	3.5	0.01	-0.01	0.06	0.25
<<Min: 147.2 - 153.8 3% Min: Pyrrhotite>>												
<<Alt: 106.8 - 152.8 Strong (Alt) Muscovite>>												
<<Struc: 106.8 - 109 Strong (Alt) Fault>> Fault/shear, marked by strong fracturation (chips) associated with strong MU.												
152.80	**154.40**	**OA**	**Magnetite bearing sulphides**									
<<Min: 153.8 - 154.4 75% Min: Pyrite>>												
154.40	**160.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 154.4 - 160.3 15% Min: Sphalerite>>												
<<Min: 154.4 - 160.3 55% Min: Pyrite>>												
<<Min: 154.4 - 160.3 4% Min: Chalcopyrite>>												
160.30	**162.90**	**RHY**	**undifferentiated rhyolite**	162.00	163.50	1.50	B00233003	-0.3	-0.005	-0.01	-0.01	0.04

From (m)	To (m)	Rocktype & Description
		<<Min: 160.3 - 162.8 2% Min: Pyrite>>
		<<Min: 160.3 - 162.8 2% Min: Chalcopyrite>>
		<<Alt: 162.2 - 163.2 Strong (Alt) Chlorite>>
162.90	**167.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 163.2 - 166.2 15% Min: Calcite>>
		<<Min: 166.2 - 172.5 3% Min: Calcite>>
		<<Alt: 164.8 - 172.5 Moderate (Alt) Silicification>>
		<<Alt: 164.8 - 172.5 Moderate (Alt) Muscovite>>
167.10	**169.80**	**RHYv** **Rhyolite volcaniclastic**
		<<Min: 167.2 - 172.5 1% Min: Sphalerite>>
		<<Min: 167.2 - 172.5 1% Min: Pyrite>>
169.80	**172.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

End of Hole @ 172.5

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.50	165.00	1.50	B00233004	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-153

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414900.12	Core Size:		Azimuth:	202	Date Logging Complete:	
UTM Northing:	6815640.26	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1387.68	Casing Depth (m):		Length (m):	172.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	202		202	SS				☑	
14	-88	202		202	SS				☑	
38	-86	209		209	SS				☑	
68	-85	203		203	SS				☑	
99	-80	198		198	SS				☑	
129	-80	193		193	SS				☑	
172	-78	193		193	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.10**	**OVBN** **Overburden**									
<<Min: 4 - 85.2 15% Min: Ankerite>>											
4.10	**5.30**	**RHYvl** **Lapilli tuff**									
5.30	**6.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
5.3 - 6.6: dyke, chill margins											
<<Min: 6.5 - 9.4 0.5% Min: Pyrite>>											
<<Min: 6.5 - 9.4 0.5% Min: Pyrrhotite>>											
6.60	**12.00**	**RHYvx** **Quartz and/or feldspar crystal tuff**									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 9.4 - 12 2% Min: Pyrite>>

12.00 15.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

12 - 15: dyke, chill margins

<<Min: 12 - 15 2% Min: Pyrite>>

<<Min: 12 - 15 3% Min: Pyrrhotite>>

15.00 21.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 15 - 21.8 8% Min: Pyrite>>

21.80 22.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

21.8 - 22.6: dyke, chill margins

<<Min: 21.8 - 22.6 0.5% Min: Pyrite>>

<<Min: 21.8 - 22.6 3% Min: Pyrrhotite>>

22.60 23.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 22.6 - 23.7 4% Min: Pyrite>>

<<Min: 22.6 - 23.7 0.5% Min: Chalcopyrite>>

23.60 48.90 RHYvl Lapilli tuff

<<Min: 23.7 - 79.8 4% Min: Pyrite>>

<<Min: 23.7 - 79.8 5% Min: Pyrrhotite>>

<<Struc: 36 - 36.8 Moderate (Alt) Fault>> crushed with minor gouge

<<Struc: 38.5 - 38.6 Moderate-Strong (Alt) Fault>> fault gouge

48.90 78.90 RHYcf Feldspar & feldspar quartz porphyry

48.9 - 78.9: minor qtz and feld phenos

78.90 81.80 MDSt Rhyolite tuff dominant mudstone

<<Min: 79.8 - 81.1 1% Min: Pyrite>>

<<Min: 79.8 - 81.1 1% Min: Pyrrhotite>>

<<Min: 81.1 - 85.7 8% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
81.80	**118.90**	**RHYvl Lapilli tuff** <<Min: 85.2 - 94.5 20% Min: Ankerite>> <<Min: 86.7 - 90.6 4% Min: Pyrite>> <<Min: 90.6 - 102.7 4% Min: Pyrite>> <<Min: 90.6 - 102.7 6% Min: Pyrrhotite>> <<Min: 94.5 - 118 15% Min: Ankerite>> <<Min: 102.7 - 105.8 2% Min: Pyrite>> <<Min: 102.7 - 105.8 6% Min: Pyrrhotite>> <<Min: 105.8 - 120.6 1% Min: Pyrite>> <<Min: 105.8 - 120.6 7% Min: Pyrrhotite>> <<Min: 118 - 131.8 10% Min: Ankerite>> <<Alt: 105 - 121.5 Weak-Moderate (Alt) Muscovite>> <<Struc: 117.9 - 118.2 Moderate (Alt) Fault>> crushed with minor gouge									
118.90	**120.40**	**MDSt Rhyolite tuff dominant mudstone**									
120.40	**133.60**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)** 120.4 - 133.6: qtz veing and dis sulfides (sulfide burn) from 126-133.6. <<Min: 120.6 - 124.7 2% Min: Pyrrhotite>> <<Min: 124.7 - 130.6 4% Min: Pyrite>> <<Min: 124.7 - 130.6 2% Min: Pyrrhotite>> <<Min: 130.6 - 131 1% Min: Pyrite>> <<Min: 131 - 131.9 2% Min: Pyrrhotite>> <<Min: 132.8 - 133.5 0.5% Min: Sphalerite>> <<Min: 132.8 - 133.5 1% Min: Pyrite>> <<Min: 132.8 - 133.5 2% Min: Pyrrhotite>> <<Min: 132.8 - 133.5 1% Min: Chalcopyrite>> <<Min: 133.5 - 136.2 1% Min: Sphalerite>> <<Min: 133.5 - 136.2 8% Min: Pyrite>> <<Min: 133.5 - 136.2 20% Min: Pyrrhotite>> <<Min: 133.5 - 136.2 3% Min: Chalcopyrite>> <<Alt: 121.5 - 133.6 Moderate-Strong (Alt) Muscovite>> <<Vein: 130.4 - 132.7 50% Quartz>>	128.80	130.30	1.50	B00267214	1.7	0.012	-0.01	0.09	0.22
			130.30	131.80	1.50	B00267215	0.5	-0.005	-0.01	0.02	0.03

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
133.60	**137.10**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**									
133.6 - 137.1: met 8. proximal chl and musc alt zones												
<<Min: 136.2 - 137.7 13% Min: Sphalerite>>												
<<Min: 136.2 - 137.7 10% Min: Pyrrhotite>>												
<<Min: 136.2 - 137.7 7% Min: Chalcopyrite>>												
<<Min: 136.2 - 151.5 5% Min: Ankerite>>												
<<Alt: 133.6 - 136.2 Strong (Alt) Cordierite>>												
<<Alt: 133.6 - 142.3 Strong (Alt) Chlorite>> proximal chl alt												
137.10	**151.70**	**RHY** **undifferentiated rhyolite**		139.60	141.10	1.50	B00267216	0.3	-0.005	0.02	-0.01	0.05
<<Min: 137.7 - 142.4 0.5% Min: Sphalerite>>				141.10	142.60	1.50	B00267217	5.1	0.041	0.07	0.07	0.29
<<Min: 137.7 - 142.4 1% Min: Pyrite>>				147.00	148.50	1.50	B00267218	8.7	0.12	0.21	0.03	0.07
<<Min: 137.7 - 142.4 1% Min: Pyrrhotite>>				148.50	150.00	1.50	B00267219	1.5	0.025	0.03	0.01	0.04
<<Min: 142.4 - 143 2% Min: Sphalerite>>				150.00	151.50	1.50	B00267221	0.5	0.01	-0.01	-0.01	-0.01
<<Min: 142.4 - 143 15% Min: Pyrite>>												
<<Min: 142.4 - 143 10% Min: Chalcopyrite>>												
<<Min: 143 - 146.9 2% Min: Sphalerite>>												
<<Min: 143 - 146.9 3% Min: Pyrite>>												
<<Min: 146.9 - 149.8 1% Min: Pyrite>>												
<<Min: 146.9 - 149.8 4% Min: Pyrrhotite>>												
<<Alt: 142.6 - 147 Moderate (Alt) Muscovite>>												
<<Alt: 147 - 149.6 Moderate-Strong (Alt) Chlorite>> proximal chl alt												
<<Alt: 149.9 - 153.2 Moderate (Alt) Muscovite>>												
<<Alt: 151 - 153.2 Weak-Moderate (Alt) Silicification>>												
<<Struc: 141.3 - 143.4 Weak-Moderate (Alt) Fault>> several small zones of crushed core and minor gouge												
151.70	**153.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**										
153.20	**154.10**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**	**MG**									
153.2 - 154.1: met 8												
<<Min: 153.2 - 154.1 5% Min: Pyrite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 153.2 - 154.1 30% Min: Pyrrhotite>>

<<Min: 153.2 - 154.1 40% Min: Chalcopyrite>>

154.10 154.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FG

154.1 - 154.6: met 6

<<Min: 154.1 - 154.6 4% Min: Sphalerite>>

<<Min: 154.1 - 154.6 70% Min: Pyrite>>

154.60 155.50 RHY undifferentiated rhyolite

<<Min: 154.6 - 155.5 4% Min: Sphalerite>>

<<Min: 154.6 - 155.5 25% Min: Chalcopyrite>>

<<Alt: 154.6 - 155.5 Strong (Alt) Cordierite>>

155.50 155.70 OJ Heavilly disseminated sulphides in proximal altered rock CG

155.5 - 155.7: met 6

<<Min: 155.5 - 155.7 5% Min: Sphalerite>>

<<Min: 155.5 - 155.7 10% Min: Pyrrhotite>>

<<Min: 155.5 - 155.7 40% Min: Chalcopyrite>>

155.70 156.60 OC Chalcopyrite-pyrrhotite net textured sulphides CG

155.7 - 156.6: met 6

<<Min: 155.7 - 156.6 5% Min: Pyrite>>

<<Min: 155.7 - 156.6 10% Min: Pyrrhotite>>

<<Min: 155.7 - 156.6 50% Min: Chalcopyrite>>

156.60 157.10 OJ Heavilly disseminated sulphides in proximal altered rock MG

156.6 - 157.1: met 6

<<Min: 156.6 - 157.1 20% Min: Pyrite>>

<<Min: 156.6 - 157.1 10% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 156.6 - 157.1 25% Min: Chalcopyrite>>												
157.10	**159.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
157.1 - 159.9: met 7												
<<Min: 157.1 - 159.9 15% Min: Sphalerite>>												
<<Min: 157.1 - 159.9 55% Min: Pyrite>>												
<<Min: 157.1 - 159.9 3% Min: Chalcopyrite>>												
<<Alt: 158.8 - 159 Moderate-Strong (Alt) Muscovite>>												
159.90	**160.60**	**RHY** **undifferentiated rhyolite**										
<<Min: 159.9 - 160.6 10% Min: Pyrite>>												
<<Min: 159.9 - 160.6 5% Min: Chalcopyrite>>												
160.60	**165.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
160.6 - 165.2: met 7												
<<Min: 160.6 - 165.2 20% Min: Sphalerite>>												
<<Min: 160.6 - 165.2 60% Min: Pyrite>>												
<<Min: 160.6 - 165.2 5% Min: Chalcopyrite>>												
165.20	**172.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		166.70	168.20	1.50	B00267222	-0.3	-0.005	-0.01	-0.01	-0.01
165.2 - 172.8: variably bleached - altere, leucoxene zones.												
<<Min: 165.2 - 166.8 6% Min: Pyrite>>				168.20	169.70	1.50	B00267223	-0.3	0.007	-0.01	-0.01	0.02
<<Min: 165.2 - 172.8 10% Min: Calcite>>												
<<Min: 165.2 - 172.8 3% Min: Ankerite>>												
<<Min: 167.6 - 169.8 0.5% Min: Pyrite>>												
<<Min: 169.8 - 171.5 0.5% Min: Pyrite>>												
<<Min: 171.5 - 172.8 0.5% Min: Pyrite>>												
<<Min: 171.5 - 172.8 2% Min: Pyrrhotite>>												
<<Alt: 165.2 - 166.7 Weak (Alt) Chlorite>> weak chl-sulfide proximal alt												
<<Alt: 165.2 - 172.8 Weak (Alt) Muscovite>>												

Project: **KZK** **Hole Number:** **K95-153**

From (m)	To (m)	Rocktype & Description
		End of Hole @ 172.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-154

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414700.86	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815623.8	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1420.85	Casing Depth (m):		Length (m):	187.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
17	-60	179		179	SS				☑	
47	-61	177		177	SS				☑	
78	-62	179		179	SS				☑	
108	-63	187		187	SS				☑	
135	-63	180		180	SS				☑	
187	-63	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.10**	**OVBN Overburden**									
6.10	**23.80**	**RHYvl Lapilli tuff**									

6.1 - 23.8: brown-red wisps, commonly BI and PO,PY

<<Min: 6.1 - 32 1% Min: Pyrrhotite>>

<<Min: 6.1 - 70 5% Min: Ankerite>>

<<Min: 6.2 - 32 1% Min: Pyrite>> wispy

<<Min: 10 - 24.7 3% Min: Calcite>>

<<Alt: 6.1 - 23.8 Weak-Moderate (Alt) Biotite>> also patchy and commonly with PO.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

23.80 24.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

23.8 - 24.7: mostly fine grained, interbeds with more felsic bands

<<Alt: 23.8 - 46.5 Moderate-Strong (Alt) Biotite>> Variably altered with brown bands of strong alteration within weaker disseminated biotite alteration.

24.70 32.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

24.7 - 32.7: Darker colour near base of interval, with darker carbonaceous? Content.

<<Min: 24.7 - 32.7 0.1% Min: Calcite>>

<<Min: 32 - 88 1% Min: Pyrite>>

<<Min: 32 - 88 3% Min: Pyrrhotite>>

<<Min: 32.4 - 38.4 20% Min: Ankerite>>

<<Struc: 32.4 - 38.4 Trace (Alt) Fault>> Interval with TO veining and strong red-brown AK alt'n

32.70 32.90 MDSt Rhyolite tuff dominant mudstone

<<Min: 32.7 - 43.5 5% Min: Calcite>>

32.90 38.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

38.50 42.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Alt: 38.5 - 42.2 Intense (Alt) Biotite>>

<<Alt: 39.9 - 40.4 Moderate (Alt) Cordierite>> some as QZ eyes after CI? Minor CI at 41.5-41.6

42.20 46.30 RHYvl Lapilli tuff

<<Min: 43.5 - 65.9 0.1% Min: Calcite>>

46.30 46.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

46.50 48.70 RHYvl Lapilli tuff

<<Alt: 46.5 - 59.9 Weak (Alt) Biotite>>

48.70 57.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

57.10 59.90 RHYvl Lapilli tuff

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

59.90 65.90 RHYcf Feldspar & feldspar quartz porphyry

59.9 - 65.9: feldspars up to 5mm

<<Alt: 59.9 - 65.9 Weak-Moderate (Alt) Biotite>> Increased colour index with BI increase

65.90 69.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

65.9 - 69.4: Veined and folded

<<Min: 65.9 - 71 5% Min: Calcite>>

<<Alt: 65.9 - 69.4 Strong (Alt) Biotite>>

69.40 80.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 70 - 155.5 10% Min: Ankerite>> Also in minor veins.

<<Min: 71 - 84 0.1% Min: Calcite>>

<<Alt: 69.4 - 81.8 Moderate (Alt) Biotite>> Minor intervals of strong BI

80.60 81.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

81.10 88.60 RHYvl Lapilli tuff

<<Min: 84 - 88.6 3% Min: Calcite>>

88.60 94.90 No Core No Core

88.6 - 94.9: Box 15 missing

94.90 117.70 RHYvl Lapilli tuff

94.9 - 117.7: Strongly broken, numerous clay/fault zones, numerous sulphide"burn" zones

<<Min: 94.9 - 104 2% Min: Calcite>>

<<Min: 94.9 - 156.8 1% Min: Pyrite>>

<<Min: 94.9 - 156.8 1% Min: Pyrrhotite>>

<<Alt: 100.8 - 102.7 Moderate (Alt) Biotite>>

<<Struc: 108.4 - 117.7 Weak (Alt) Fault>> Broken core, minor gouge, PY stringers in fault or gougey slips. Looks shallow TCA 15

117.70 120.30 MDSt Rhyolite tuff dominant mudstone

<<Alt: 117.7 - 149 Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

120.30 125.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

125.00 134.50 MDSw Coherent rhyolite flow with carbonaceous content

134.50 155.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

134.5 - 155.2: strongly tectonized. Bottom of interval with strong sulphide "burn".Box 24 likely dropped, no core fitting/jumbled alteration.

155.20 155.50 RHYvl Lapilli tuff

155.2 - 155.5: Weak CL alt'n

155.50 156.10 RHYvl Lapilli tuff

155.5 - 156.1: intense CL with coarse diss PY

<<Min: 155.5 - 166.7 15% Min: Ankerite>>

<<Alt: 155.5 - 166.7 Intense (Alt) Chlorite>>

156.10 156.80 OA Magnetite bearing sulphides

156.80 160.30 RHY undifferentiated rhyolite

156.8 - 160.3: CL-MS strong, PY bands

160.30 166.70 OJ Heavilly disseminated sulphides in proximal altered rock

<<Alt: 160.5 - 166.7 Moderate-Strong (Alt) Cordierite>> up to 1cm dia.

166.70 167.10 OA Magnetite bearing sulphides

167.10 167.60 OJ Heavilly disseminated sulphides in proximal altered rock

167.60 172.00 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

From (m)	To (m)	Rocktype & Description
172.00	**176.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

172 - 176: very fine grained and altered to light grey. Unit could possibly be an ash tuff/sed?

<<Min: 172 - 173.5 10% Min: Pyrite>>

<<Min: 172 - 173.5 3% Min: Chalcopyrite>>

<<Min: 172 - 173.5 15% Min: Ankerite>> + replacement

<<Min: 173.5 - 174.4 7% Min: Pyrite>>

<<Min: 173.5 - 174.4 7% Min: Chalcopyrite>>

<<Min: 174.4 - 178 1% Min: Calcite>>

<<Alt: 172 - 173.5 Moderate (Alt) Chlorite>> With AK

<<Alt: 172 - 176 Strong (Alt) Muscovite>> Grey, completely sericite altered.

From (m)	To (m)	Rocktype & Description
176.00	**187.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

176 - 187.8: Calcite banded

<<Min: 178 - 187.8 15% Min: Calcite>> Veins up to 20mm, Commonly as calcite lenses parallel to foliation.

<<Alt: 176 - 187.6 Moderate-Strong (Alt) Biotite>>

<<Alt: 176 - 187.8 Strong (Alt) Chlorite>>

End of Hole @ 187.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
175.00	176.50	1.50	B00267562	6	0.058	0.14	-0.01	0.1
176.50	178.00	1.50	B00267563	2.2	-0.005	0.01	0.03	0.09

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-155

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414700.84	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815624.35	Casing Pulled?:		Dip:	-80	Drill Company:	
UTM Elev. (m):	1420.83	Casing Depth (m):		Length (m):	178.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-80	180		180	SS				☑	
14	-79	189		189	SS				☑	
44	-79	198		198	SS				☑	
75	-76	186		186	SS				☑	
105	-76	190		190	SS				☑	
135	-75	188		188	SS				☑	
178	-75	182		182	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.40 OVBN Overburden

6.40 9.60 RHYvl Lapilli tuff

<<Min: 6.4 - 15.2 0.5% Min: Pyrite>>

<<Min: 6.4 - 15.2 1% Min: Pyrrhotite>>

<<Min: 6.4 - 38.6 7% Min: Ankerite>>

9.60 32.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 15.2 - 25.7 1% Min: Pyrite>>

<<Min: 15.2 - 25.7 4% Min: Pyrrhotite>>

<<Min: 25.7 - 27.2 0.5% Min: Pyrite>>

<<Min: 27.2 - 32.5 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 27.2 - 32.5 1% Min: Pyrrhotite>>

<<Alt: 23 - 33.1 Weak (Alt) Biotite>> weak bands

32.50 35.90 RHYvl Lapilli tuff

<<Min: 32.5 - 35.9 0.5% Min: Pyrite>>

<<Alt: 33.9 - 38.6 Moderate (Alt) Chlorite>>

<<Alt: 33.9 - 38.6 Moderate (Alt) Biotite>>

35.90 38.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 35.9 - 43.4 10% Min: Calcite>> Also disseminated

38.60 41.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

38.6 - 41.7: Extremely Ankerite altered

<<Min: 38.6 - 43.3 3% Min: Pyrite>>

<<Min: 38.6 - 43.6 40% Min: Ankerite>>

<<Struc: 39.7 - 40.3 Weak (Alt) Fault>> Strongly AK altered zone (red-brown) with minor faults. Weak TO veining.

41.70 43.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 43.3 - 44.5 2% Min: Pyrite>>

<<Min: 43.3 - 44.5 2% Min: Pyrrhotite>>

<<Alt: 41.7 - 44.6 Weak-Moderate (Alt) Biotite>>

43.40 53.60 RHYvl Lapilli tuff

43.4 - 53.6: Minor interval of RHYcw

<<Min: 43.4 - 65.8 3% Min: Calcite>>

<<Min: 43.6 - 53.6 5% Min: Ankerite>>

<<Min: 44.5 - 45.1 2% Min: Pyrite>>

<<Min: 45.1 - 49.6 3% Min: Pyrite>>

<<Min: 45.1 - 49.6 0.5% Min: Pyrrhotite>>

<<Min: 49.6 - 51.6 4% Min: Pyrite>>

<<Min: 51.6 - 53.5 2% Min: Pyrite>>

<<Min: 51.6 - 53.5 3% Min: Pyrrhotite>>

<<Min: 53.5 - 59.7 3% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

53.60 59.60 RHYcf Feldspar & feldspar quartz porphyry

53.6 - 59.6: weak feldspar porphyritic

<<Alt: 53.6 - 73.2 Weak (Alt) Biotite>> Variable from strong in mafic unit to weak in felsic units. Weak banding with PO, PY minor CL

59.60 61.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 59.6 - 61 15% Min: Ankerite>>

<<Min: 59.7 - 60.7 2% Min: Pyrite>>

<<Min: 60.7 - 65.8 4% Min: Pyrrhotite>>

61.90 65.90 RHYvl Lapilli tuff

<<Min: 65.8 - 68.2 2% Min: Pyrrhotite>>

<<Min: 65.8 - 70 3% Min: Calcite>>

65.90 68.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

68.20 82.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

68.2 - 82.7: Minor feldspar porphyritic intervals

<<Min: 68.2 - 73.2 2% Min: Pyrite>>

<<Min: 68.2 - 73.2 5% Min: Pyrrhotite>>

<<Min: 70 - 96 1% Min: Calcite>>

<<Min: 73.2 - 78 4% Min: Pyrite>>

<<Min: 73.2 - 84 15% Min: Ankerite>>

<<Min: 78 - 80.1 0.5% Min: Pyrite>>

<<Min: 78 - 80.1 0.5% Min: Pyrrhotite>>

<<Min: 80.1 - 84.6 8% Min: Pyrite>>

82.70 101.50 RHYvl Lapilli tuff

82.7 - 101.5: Minor RHYcw intervals. Possibly blocks

<<Min: 84 - 121 5% Min: Ankerite>>

<<Min: 84.6 - 88 4% Min: Pyrrhotite>>

<<Min: 88 - 90.7 5% Min: Pyrrhotite>>

<<Min: 90.7 - 96.1 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

<<Min: 96 - 106 2% Min: Calcite>>

<<Min: 96.1 - 99.9 2% Min: Pyrrhotite>>

<<Min: 99.9 - 108.7 4% Min: Pyrrhotite>>

<<Alt: 90.5 - 96.1 Moderate (Alt) Biotite>>

<<Alt: 99.1 - 99.9 Weak-Moderate (Alt) Biotite>>

101.50 108.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 106 - 120.3 0.1% Min: Calcite>>

108.60 122.00 RHYvl Lapilli tuff

<<Min: 108.7 - 110 0.5% Min: Pyrite>>

<<Min: 108.7 - 110 3% Min: Pyrrhotite>>

<<Min: 116.2 - 122 0.5% Min: Pyrite>>

<<Min: 116.2 - 122 1% Min: Pyrrhotite>>

<<Min: 120.3 - 125.5 2% Min: Calcite>>

<<Min: 121 - 149.3 3% Min: Ankerite>>

122.00 124.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 123.1 - 142.1 5% Min: Pyrite>>

<<Alt: 122 - 149.3 Moderate-Strong (Alt) Muscovite>>

124.20 136.80 MDSw Coherent rhyolite flow with carbonaceous content

124.2 - 136.8: Minor carb. and PY patches

<<Struc: 131.6 - 132.3 Weak (Alt) Fault>> Minor gouge + QZ vein

136.80 142.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

142.00 142.10 MDSc Carbonaceous dominant mudstone

142 - 142.1: Thin, silicified

142.10 149.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

142.1 - 149.3: Irregular pyritic bands common.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.90	146.40	1.50	B00267564	0.5	0.006	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 142.1 - 142.3 3% Min: Pyrite>>
		<<Min: 142.3 - 149.3 0.5% Min: Pyrite>>
149.30	**150.90**	**RHY** **undifferentiated rhyolite**
		149.3 - 150.9: CL,AK,CI,PY,CP
		<<Min: 149.3 - 150.3 1% Min: Pyrite>>
		<<Min: 149.3 - 150.3 2% Min: Pyrrhotite>>
		<<Min: 149.3 - 150.9 3% Min: Ankerite>>
		<<Min: 150.3 - 150.9 2% Min: Sphalerite>>
		<<Min: 150.3 - 150.9 3% Min: Pyrrhotite>>
		<<Min: 150.3 - 150.9 15% Min: Chalcopyrite>>
		<<Alt: 149.3 - 150.9 Strong (Alt) Chlorite>>
		<<Alt: 149.3 - 150.9 Moderate (Alt) Cordierite>> Patchy ankerite throughout
150.90	**152.10**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**
		<<Min: 150.9 - 152.1 15% Min: Sphalerite>>
		<<Min: 150.9 - 152.1 20% Min: Pyrrhotite>>
		<<Min: 150.9 - 152.1 40% Min: Chalcopyrite>>
152.10	**157.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 152.1 - 157.1 35% Min: Sphalerite>>
		<<Min: 152.1 - 157.1 15% Min: Pyrite>>
		<<Min: 152.1 - 157.1 10% Min: Pyrrhotite>>
		<<Min: 152.1 - 157.1 5% Min: Chalcopyrite>>
		<<Min: 157 - 159 3% Min: Ankerite>>
157.10	**157.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
		<<Min: 157.1 - 157.7 10% Min: Sphalerite>>
		<<Min: 157.1 - 157.7 35% Min: Pyrite>>
		<<Min: 157.1 - 157.7 5% Min: Pyrrhotite>>
		<<Min: 157.1 - 157.7 5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
146.40	147.90	1.50	B00267565	1.1	0.01	-0.01	-0.01	0.02
147.90	149.40	1.50	B00267566	3.7	0.011	0.05	0.06	0.44

From (m)	To (m)	Rocktype & Description
157.70	**159.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 157.7 - 159.1 15% Min: Sphalerite>>		
<<Min: 157.7 - 159.1 40% Min: Pyrite>>		
<<Min: 157.7 - 159.1 10% Min: Pyrrhotite>>		
159.10	**162.50**	**OA** **Magnetite bearing sulphides**
<<Min: 159.1 - 162.5 5% Min: Sphalerite>>		
<<Min: 159.1 - 162.5 55% Min: Pyrite>>		
<<Min: 159.1 - 162.5 5% Min: Pyrrhotite>>		
<<Min: 159.1 - 162.5 3% Min: Chalcopyrite>>		
162.50	**162.80**	**OA** **Magnetite bearing sulphides**
<<Min: 162.5 - 162.6 35% Min: Pyrite>>		
<<Min: 162.5 - 162.6 20% Min: Pyrrhotite>>		
<<Min: 162.6 - 162.8 5% Min: Sphalerite>>		
<<Min: 162.6 - 162.8 60% Min: Pyrite>>		
<<Min: 162.6 - 162.8 5% Min: Pyrrhotite>>		
<<Min: 162.6 - 162.8 5% Min: Chalcopyrite>>		
162.80	**165.30**	**OD** **Brecciated sulphides**
<<Min: 162.8 - 163.2 30% Min: Pyrite>>		
<<Min: 162.8 - 163.2 15% Min: Pyrrhotite>>		
<<Min: 163.2 - 163.7 10% Min: Sphalerite>>		
<<Min: 163.2 - 163.7 65% Min: Pyrite>>		
<<Min: 163.7 - 163.9 20% Min: Pyrite>>		
<<Min: 163.7 - 163.9 30% Min: Pyrrhotite>>		
165.30	**166.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 165.3 - 166 25% Min: Pyrite>>		
<<Min: 165.3 - 166 30% Min: Pyrrhotite>>		
<<Min: 165.3 - 166 5% Min: Chalcopyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
166.00	**174.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

166 - 174.1: Variably altered with varying MS, AK, CL

<<Min: 166 - 172 2% Min: Sphalerite>>
<<Min: 166 - 172 6% Min: Pyrite>>
<<Min: 166 - 172 5% Min: Pyrrhotite>>
<<Min: 166 - 172 1% Min: Chalcopyrite>>
<<Min: 166 - 178.6 7% Min: Ankerite>> also vein hosted
<<Min: 172 - 172.6 2% Min: Pyrrhotite>>
<<Min: 172.6 - 174.1 2% Min: Sphalerite>>
<<Min: 172.6 - 174.1 4% Min: Pyrite>>
<<Min: 172.6 - 174.1 8% Min: Chalcopyrite>>
<<Alt: 166 - 174 Strong (Alt) Muscovite>> Some intense patches of sericite as complete replacement.
<<Alt: 174 - 178.6 Weak (Alt) Chlorite>>
<<Alt: 174 - 178.6 Weak (Alt) Biotite>> Variable over interval

From (m)	To (m)	Rocktype & Description
174.10	**178.60**	**RHYvl** **Lapilli tuff**

174.1 - 178.6: Bottom of interval = RHYc?

<<Min: 174.1 - 178.6 2% Min: Sphalerite>>
<<Min: 174.1 - 178.6 3% Min: Chalcopyrite>>

End of Hole @ 178.6

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
167.50	169.00	1.50	B00267567	3.9	0.029	0.02	0.04	0.26
169.00	170.50	1.50	B00267568	19.7	0.131	0.47	0.11	0.52
170.50	171.50	1.00	B00267569	7.3	0.066	0.19	0.04	0.19
171.50	172.60	1.10	B00267571	5.7	0.008	0.04	0.08	0.33

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-156

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414849.61	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815682.06	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1396.81	Casing Depth (m):		Length (m):	199.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
14	-56	180		180	SS				☑	
44	-57	180		180	SS				☑	
75	-57	177		177	SS				☑	
105	-58	184		184	SS				☑	
135	-58	183		183	SS				☑	
166	-58	183		183	SS				☑	
199	-59	183		183	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.40 CASN Casing

0 - 6.4: Core boxes present, rock missing

6.40 35.50 RHYvl Lapilli tuff

6.4 - 35.5: Core boxes present, rock missing

35.50 38.60 RHYvl Lapilli tuff

<<Min: 35.5 - 38.6 0.5% Min: Calcite>>

<<Min: 35.5 - 47.5 20% Min: Ankerite>>

<<Min: 35.5 - 123 0.75% Min: Pyrite>>

<<Min: 35.5 - 123 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 35.5 - 92 Weak (Alt) Muscovite>>

38.60 42.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

38.6 - 42: Excellent contorted flow foliation, Tightly spaced folded quartz-rich bands fold axes paralell to foliation. Sericite and muscovite, minor Fe-carb

<<Min: 38.6 - 40.7 5% Min: Calcite>>

42.00 44.40 RHYvl Lapilli tuff

42 - 44.4: Top of interval contains larage brecciated clasts replaced by Fe-carb.

44.40 45.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 45 - 50.6 0.5% Min: Calcite>>

45.20 64.90 RHYvl Lapilli tuff

45.2 - 64.9: Interval contains a mix of textures. Long Fe-carbonate altered feldspar/quartz ribbons, Porphyroblasts in fine grained quartz,sericite,muscovite groundmass (resembles curdy Rhy flow texture, and flattened lapilli. Could be a flow/tuff mixture interval.

<<Min: 47.5 - 82 10% Min: Ankerite>>

<<Min: 50.6 - 104.9 0.25% Min: Calcite>>

64.90 66.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

66.50 72.80 RHYvl Lapilli tuff

66.5 - 72.8: texture of coarse-grain to lapilli sized fragments. Dominantly coarse grained. Contains biotite rich flattened lithics and dark, regularly spaced bands

72.80 73.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

73.90 87.30 RHYvl Lapilli tuff

73.9 - 87.3: Contains 40cm rhyolite flow at 89.9m. Quartz-pyrite rich stringers at 103.8 to 104.6

<<Min: 82 - 111 15% Min: Ankerite>>

87.30 90.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

90.10 108.50 RHYvl Lapilli tuff

90.1 - 108.5: Contains 40cm rhyolite flow at 89.9m. Quartz-pyrite rich stringers at 103.8 to 104.6; strong deformation, isoclinal folds, kink banding, contorted veinlets

<<Alt: 92 - 122 Moderate (Alt) Muscovite>>

108.50 109.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

108.5 - 109.6: curdy to flow banded texture

109.60 116.10 RHYva Coarse grained to ash tuff

109.6 - 116.1: Dominantly coarse grained tuff. Contains some flattened lapilli fragments intermittantly, as well as flattened lenses of quartz-pyrite-biotite-chlorite (mafic lapilli?)

<<Min: 111 - 169 5% Min: Ankerite>>

116.10 118.00 MDSt Rhyolite tuff dominant mudstone

116.1 - 118: Very weakly carbonaceous, Main minerals include quartz, muscovite, sericite, biotite, Fe-carbonate. Textures range from contorted, thin banded, lapilli fragments, and foliation parallel sheared contortions. Possible argillaceous component.

118.00 120.40 MDSc Carbonaceous dominant mudstone

120.40 123.00 MDSt Rhyolite tuff dominant mudstone

120.4 - 123: Contains mix of lapilli and coarse grained fragments. Minor biotite component

<<Alt: 122 - 142 Weak (Alt) Muscovite>>

123.00 132.00 MDSw Coherent rhyolite flow with carbonaceous content FG

123 - 132: Mineralogy: Quartz,muscovite,biotite,sericite. Very fissile rock, broken surfaces of core are greasy. Texture is mostly wavy mica dominated foliations.

132.00 142.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

132 - 142: Quartz rich interval with pervasive sericite and minor carbonate. Thin dark bands of quartz+/- sulphide (Py, Cpy) present.

<<Min: 132 - 158 0.5% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 132 - 169.9 1% Min: Pyrite>>									
			<<Struc: 133.1 - 133.7 Fault>> Fault is surrounded by smaller faults <10cm within interval from 132m - 151.5m									
142.00	**149.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
			142 - 149.7: Quartz-rich, contains muscovite and sericite with Fe-carbonate. Texture is complex; possible flow with intervals of deformed breccia and lapilli fragments. Disseminated wisps and clots of sulphides. Lapilli tuff adjacent at149.7m									
			<<Alt: 142 - 155 Moderate (Alt) Muscovite>>									
149.70	**169.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	165.30	166.80	1.50	Q311826	0.5	0.009	-0.01	0.01	0.01
			149.7 - 169.9: muscovite present. At 149.7 to 151.2m there is an interval of lapilli tuff dominated by quartz, chlorite, biotite.									
			<<Min: 165 - 169 0.5% Min: Pyrrhotite>>	166.80	168.40	1.60	Q311827	1.4	0.016	0.01	0.02	0.17
			<<Alt: 155 - 168 Strong (Alt) Muscovite>>	168.40	169.90	1.50	Q311828	4.2	0.057	0.03	0.06	0.49
			<<Alt: 168 - 169.9 Moderate-Strong (Alt) Cordierite>>									
169.90	**172.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	169.90	171.40	1.50	Q311829	147	2.82	0.4	0.73	4.45
			<<Min: 169.9 - 187.8 1% Min: Calcite>>	171.40	172.80	1.40	Q311831	115	1.62	0.36	1.27	4.77
172.80	**176.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	172.80	176.40	3.60	Q311832	25.1	0.676	0.5	0.06	0.76
176.40	**183.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	176.40	177.90	1.50	Q311833	153	1.56	0.47	1.11	4.98
				177.90	179.40	1.50	Q311834	135	0.99	0.2	2.47	10.5
				179.40	180.90	1.50	Q311835	211	2.09	0.54	2.57	7.11
				180.90	182.40	1.50	Q311836	69.8	0.478	0.01	2.8	7.94
				182.40	183.80	1.40	Q311837	277	2.44	0.57	2.79	8.53
183.80	**184.10**	**OI**	**Heavilly disseminated sulphides in host schist**	183.80	184.10	0.30	Q311838	229	2.17	0.84	1.24	3.74
184.10	**185.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	184.10	186.70	2.60	Q311839	110	0.828	0.37	1.97	7.66

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
185.60	**186.10**	**OI**	**Heavilly disseminated sulphides in host schist**										
186.10	**187.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		186.70	187.80	1.10	Q311842	111	0.752	0.19	3.48	9.48
<<Min: 187 - 192 2% Min: Sphalerite>>													
<<Min: 187 - 193 0.5% Min: Chalcopyrite>>													
<<Min: 187 - 199.9 1% Min: Pyrrhotite>>													
187.80	**190.80**	**RHYv**	**Rhyolite volcaniclastic**		187.80	189.30	1.50	Q311843	21.5	0.226	0.74	0.03	0.1
187.8 - 190.8: Sulphide bearing stringers (bi, cp, py,)													
<<Min: 187.8 - 199.9 1% Min: Pyrite>>					189.30	190.80	1.50	Q311844	3.6	0.007	-0.01	0.08	0.11
<<Min: 187.8 - 199.9 20% Min: Calcite>>													
<<Min: 188 - 195 0.25% Min: Galena>>													
190.80	**199.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**FG**	190.80	192.30	1.50	Q311845	1.7	0.015	-0.01	-0.01	0.31
190.8 - 199.9: Emerald green, sericite rich speckled with iron-oxidized white mineral (ankerite?) Appears as halo around fault and fades gradually in and out with mafic CL-BI-CA rock.													
<<Alt: 190.8 - 199.9 Moderate-Strong (Alt) Silicification>>													
<<Alt: 190.8 - 199.9 Moderate-Strong (Alt) Muscovite>>													
<<Struc: 192.1 - 192.2 Fault>>													
End of Hole @ 199.9													

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-157

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414852.225	Core Size:		Azimuth:	244	Date Logging Complete:	
UTM Northing:	6815672.599	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1395.951	Casing Depth (m):		Length (m):	172.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	244		244	SS				☑	
11	-89	244		244	SS				☑	
41	-88	214		214	SS				☑	
72	-88	247		247	SS				☑	
102	-87	203		203	SS				☑	
133	-85	199		199	SS				☑	
172	-84	191		191	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.70**	**OVBN Overburden**									
3.70	**15.10**	**RHYvl Lapilli tuff**									

3.7 - 15.1: Lapilli tuff +/- crystal tuff. Dark coloration due to higher concentrations of diseminated sulphides (Po and Py)

<<Min: 3.7 - 15.1 0.5% Min: Pyrrhotite>>

<<Min: 3.7 - 15.1 10% Min: Ankerite>>

<<Min: 3.7 - 15.6 0.25% Min: Calcite>> trace on fractures

<<Min: 3.7 - 60.6 0.25% Min: Pyrite>>

<<Alt: 3.7 - 21.5 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

15.10 25.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

15.1 - 25.3: Flow is cross cut by mafic dykes. Alteration to fine grained chlorite/biotite present. Distal to dykes flow has curdy texture and Fe-carbonate content.

<<Min: 15.1 - 22 15% Min: Ankerite>>

<<Min: 15.1 - 38.6 1% Min: Pyrrhotite>>

<<Min: 15.6 - 22 5% Min: Calcite>> Associated with mafic dykes

<<Min: 22 - 53 0.25% Min: Calcite>> on fractures

<<Min: 22 - 53 8% Min: Ankerite>>

25.30 29.60 RHYvl Lapilli tuff

25.3 - 29.6: Small intervals of rhyolite flow mixed with predominant lapilli unit. Patches of tuff exhibit chlorite/biotite alteration.

29.60 33.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

29.6 - 33: mixed rhyolite lapilli and ash tuff

33.00 38.00 RHYvl Lapilli tuff

33 - 38: lailli tuff intersected by several fine grained mafic dykes. 50 cm rhyolite flow at base of interval.

<<Alt: 33 - 40 Weak (Alt) Muscovite>>

<<Struc: 35.7 - 36 Fault>>

38.00 48.60 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 38.6 - 102 0.5% Min: Pyrrhotite>>

<<Alt: 40 - 120 Moderate (Alt) Muscovite>>

48.60 61.50 RHYvl Lapilli tuff

<<Min: 53 - 57.2 5% Min: Ankerite>>

<<Min: 53 - 60.6 2% Min: Calcite>>

<<Min: 57.2 - 60.6 2% Min: Ankerite>>

<<Min: 60.6 - 72.8 15% Min: Ankerite>>

<<Min: 60.6 - 102 0.5% Min: Pyrite>>

<<Min: 60.6 - 114 1% Min: Calcite>> On fractures and within mafic intrusions

From (m)	To (m)	Rocktype & Description
61.50	**72.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
61.5 - 72.8: Mixed small rhyolite flow intervals		
72.80	**77.70**	**RHYvl** **Lapilli tuff**
72.8 - 77.7: lapilli are chlorite/biotite rich,odd unit fragment of CI and suspected others, could this be clastic alteration, analagous to clastic sulphide??		
<<Min: 72.8 - 77.9 2% Min: Ankerite>>		
77.70	**91.50**	**RHYvl** **Lapilli tuff**
77.7 - 91.5: Cross cut by small (<10cm) mafic dykes. Rhyolite flow at base of interval (~1.5m)		
<<Min: 77.9 - 93.5 12% Min: Ankerite>>		
91.50	**92.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
92.70	**111.90**	**RHYvl** **Lapilli tuff**
92.7 - 111.9: Similar peculiar alteration, as interval abovedark grey alteration to biotite/chlorite lapilli		
<<Min: 93.5 - 104.3 2% Min: Ankerite>>		
<<Min: 102 - 107.5 1% Min: Pyrite>>		
<<Min: 102 - 114.9 1% Min: Pyrrhotite>>		
<<Min: 104.3 - 139 15% Min: Ankerite>>		
<<Min: 107.5 - 142.6 2% Min: Pyrite>>		
111.90	**113.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
113.10	**135.00**	**RHYvl** **Lapilli tuff**
<<Min: 114.9 - 131 1.5% Min: Pyrrhotite>>		
<<Min: 131 - 142.6 0.25% Min: Pyrrhotite>>		
<<Alt: 120 - 130 Weak (Alt) Muscovite>>		
<<Alt: 130 - 142.6 Strong (Alt) Muscovite>>		
<<Struc: 132.5 - 142.6 Fault>> 3 large faults >35cm ea. Several small fault gouge occurances		
135.00	**138.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
135 - 138: base of interval has ~60cm argillaceous/greasy dark grey fisile unit. This section is interrupted by two large faults ~70cm ea. Interval mixed with (ash?) tuffs.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
136.00	137.50	1.50	Q311846	0.4	-0.005	-0.01	-0.01	0.02

From (m)	To (m)		Rocktype & Description
138.00	**142.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
142.60	**147.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Alt: 142.6 - 164.2 Moderate (Alt) Cordierite>>			
147.70	**148.90**	**RHYv**	**Rhyolite volcaniclastic**
147.7 - 148.9: Contains semi massivesulphides. Highly altered.			
148.90	**152.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
152.00	**156.50**	**OD**	**Brecciated sulphides**
156.50	**157.50**	**RHYv**	**Rhyolite volcaniclastic**
156.5 - 157.5: highly altered with semi-massive sulphide			
157.50	**161.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 158 - 166 1% Min: Calcite>>			
161.70	**164.20**	**RHYv**	**Rhyolite volcaniclastic**
161.7 - 164.2: highly altered with semi-massive sulphide			
<<Min: 163.2 - 172.8 0.25% Min: Pyrite>>			
<<Min: 163.2 - 172.8 0.25% Min: Pyrrhotite>>			
164.20	**169.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 164.2 - 172.8 1% Min: Ankerite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
137.50	139.00	1.50	Q311847	0.4	0.006	-0.01	-0.01	-0.01
139.00	142.60	3.60	Q311848	2.4	0.062	0.05	-0.01	0.08
142.60	144.10	1.50	Q311849	119	1.32	0.36	2.02	7.65
144.10	145.60	1.50	Q311851	192	1.47	0.34	2.79	7.32
145.60	147.10	1.50	Q311852	184	1.65	0.37	2.48	6.28
147.10	147.70	0.60	Q311853	272	2.23	0.39	3.33	8.25
147.70	148.90	1.20	Q311854	329	3.04	1.11	2.74	3.61
148.90	151.70	2.80	Q311855	222	3.07	0.48	3.31	8.01
151.70	153.60	1.90	Q311856	50.4	0.864	0.55	0.79	3.14
153.60	155.10	1.50	Q311857	83	1.57	2.22	0.35	3.36
155.10	156.50	1.40	Q311858	160	2.45	3.45	0.44	4.87
156.50	157.50	1.00	Q311859	98.2	1.28	1.18	0.75	3.91
157.50	159.00	1.50	Q311861	55.1	0.475	0.36	0.72	3.16
159.00	160.90	1.90	Q311862	107	1.27	0.4	2.2	8.73
160.90	161.70	0.80	Q311863	161	1.31	0.35	3.34	8.3
161.70	163.20	1.50	Q311864	45.5	0.704	1.29	0.21	0.62
163.20	164.20	1.00	Q311865	39.7	0.526	1.04	0.16	1.7
164.20	166.70	2.50	Q311866	0.6	0.024	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 166 - 169.1 20% Min: Calcite>> mafic sill?

<<Alt: 164.2 - 169.1 Moderate-Strong (Alt) Chlorite>> Questionable as to whether this is truly proximal alteration or just chloritization of mafic sill. Bounded by rhyolitic flow with pervasive MU-MS alteration.

169.10 172.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 169.1 - 172.8 0.25% Min: Calcite>>

<<Alt: 169.1 - 172.8 Moderate (Alt) Muscovite>>

End of Hole @ 172.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-158

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414800.94	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815676.76	Casing Pulled?:		Dip:	-55	Drill Company:	
UTM Elev. (m):	1402.08	Casing Depth (m):		Length (m):	196.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180		180	SS				☑	
11	-57	171		171	SS				☑	
41	-60	172		172	SS				☑	
71	-60	172		172	SS				☑	
102	-61	172		172	SS				☑	
132	-61	179		179	SS				☑	
163	-61	178		178	SS				☑	
196	-62	176		176	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.00**	**OVBN Overburden**									
3.00	**34.20**	**No Core No Core**									
3 - 34.2: Boxes 1-5 empty.											
<<Min: 3.7 - 11.8 0.5% Min: Pyrrhotite>>											
<<Min: 11.8 - 22.4 3% Min: Pyrrhotite>>											
<<Min: 22.4 - 28.8 1% Min: Pyrite>>											
<<Min: 22.4 - 28.8 0.5% Min: Pyrrhotite>>											
<<Min: 30.9 - 54.3 6% Min: Pyrrhotite>>											
34.20	**35.30**	**RHYvl Lapilli tuff**									

From (m)	To (m)	Rocktype & Description

<<Min: 34.2 - 54.3 10% Min: Ankerite>>

35.30	**45.40**	**RHYc**	**Rhyolite coherant volcanics**
45.40	**47.90**	**RHYvl**	**Lapilli tuff**
47.90	**50.40**	**RHYc**	**Rhyolite coherant volcanics**
50.40	**50.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

50.4 - 50.7: Minor dyke

50.70	**54.30**	**RHYc**	**Rhyolite coherant volcanics**
54.30	**57.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

54.3 - 57.4: Strong AK alteration and wispy banding

<<Min: 54.3 - 57.5 25% Min: Ankerite>> also veining

57.40	**70.70**	**RHYc**	**Rhyolite coherant volcanics**

<<Min: 57.5 - 92.8 3% Min: Pyrite>>

<<Min: 57.5 - 92.8 1% Min: Pyrrhotite>>

<<Min: 57.5 - 129.5 10% Min: Calcite>>

<<Min: 57.5 - 129.5 10% Min: Ankerite>>

70.70	**100.70**	**RHYvl**	**Lapilli tuff**

<<Min: 100.4 - 107.6 4% Min: Pyrite>>

<<Min: 100.4 - 107.6 5% Min: Pyrrhotite>>

100.70	**119.30**	**RHYc**	**Rhyolite coherant volcanics**

<<Min: 107.6 - 122.2 2% Min: Pyrite>>

<<Min: 107.6 - 122.2 7% Min: Pyrrhotite>>

<<Struc: 117.6 - 117.7 Weak (Alt) Fault>> gouge

119.30	**122.40**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 122.2 - 142.2 2% Min: Pyrite>>

<<Min: 122.2 - 142.2 0.5% Min: Pyrrhotite>>

<<Alt: 121.5 - 129.5 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
122.40	**134.90**	**MDSt** **Rhyolite tuff dominant mudstone**

122.4 - 134.9: Could be MDSw

<<Min: 129.5 - 142 7% Min: Ankerite>>

<<Alt: 130 - 142 Moderate (Alt) Muscovite>>

<<Struc: 129.5 - 129.8 Moderate (Alt) Fault>> gougey

134.90	**137.80**	**MDSc**	**Carbonaceous dominant mudstone**
137.80	**142.00**	**MDSt**	**Rhyolite tuff dominant mudstone**

137.8 - 142: Could be MDSw

142.00	**171.10**	**RHYc**	**Rhyolite coherant volcanics**

<<Min: 142 - 171 15% Min: Ankerite>>

<<Min: 142.2 - 151.4 4% Min: Pyrite>>

<<Min: 142.2 - 151.4 1% Min: Pyrrhotite>>

<<Min: 151.4 - 154.3 2% Min: Pyrite>>

<<Min: 151.4 - 154.3 0.5% Min: Pyrrhotite>>

<<Min: 154.3 - 165.4 3% Min: Pyrite>>

<<Min: 154.3 - 165.4 0.5% Min: Pyrrhotite>>

<<Min: 165.4 - 171.1 2% Min: Pyrite>>

<<Min: 165.4 - 171.1 2% Min: Pyrrhotite>>

<<Alt: 142 - 151.2 Strong (Alt) Muscovite>> Extremely oxidized/gossanous to yellow brown Distinct oxidation.

<<Alt: 151.2 - 171.1 Moderate-Strong (Alt) Muscovite>>

<<Struc: 142 - 151.2 Trace (Alt) Fault>> Zone of strong foliation, strong MU with some broken core and strongly oxidized yellow-brown.

171.10	**172.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Min: 171.1 - 172.7 20% Min: Sphalerite>>

<<Min: 171.1 - 172.7 60% Min: Pyrite>>

<<Min: 171.1 - 172.7 0.5% Min: Chalcopyrite>>

172.70	**175.10**	**OA**	**Magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
166.60	168.10	1.50	B00267622	0.3	0.006	-0.01	0.02	0.02
168.10	169.60	1.50	B00267623	4.3	0.028	0.01	0.14	1.21

From (m)	To (m)	Rocktype & Description

<<Min: 172.7 - 175.1 40% Min: Pyrite>>

<<Min: 172.7 - 175.1 15% Min: Pyrrhotite>>

<<Min: 172.7 - 175.1 1% Min: Chalcopyrite>>

175.10 180.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 175.1 - 180.7 20% Min: Sphalerite>>

<<Min: 175.1 - 180.7 25% Min: Pyrite>>

<<Min: 175.1 - 180.7 2% Min: Chalcopyrite>>

<<Min: 176.7 - 180.7 1% Min: Calcite>>

180.70 184.30 RHYv Rhyolite volcaniclastic

180.7 - 184.3: Light grey-green, banded, some SI RHY bands. Strong MS alteration.

<<Min: 180.7 - 184.7 5% Min: Sphalerite>>

<<Min: 180.7 - 184.7 20% Min: Pyrite>>

<<Min: 180.7 - 187 3% Min: Ankerite>>

<<Alt: 180.7 - 184.3 Moderate-Strong (Alt) Muscovite>> As MS.

184.30 196.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

184.3 - 196.9: distinctly coloured and altered mafics Varies from white to dark green. Minor RHY band.

<<Min: 184.7 - 185.8 0.5% Min: Pyrite>>

<<Min: 185.8 - 186.3 35% Min: Pyrite>>

<<Min: 185.8 - 186.3 2% Min: Chalcopyrite>>

<<Min: 186.3 - 187.1 4% Min: Sphalerite>>

<<Min: 186.3 - 187.1 8% Min: Pyrite>>

<<Min: 186.3 - 189.1 15% Min: Calcite>> bands of calcite

<<Min: 187.1 - 189.3 0.5% Min: Pyrite>>

<<Min: 189.1 - 192.4 1% Min: Calcite>>

<<Min: 189.3 - 192.6 0.5% Min: Pyrite>>

<<Min: 192.4 - 196.9 15% Min: Calcite>> Calcite bands

<<Min: 192.6 - 193.6 0.5% Min: Pyrite>>

<<Min: 193.6 - 195.6 0.5% Min: Pyrite>>

<<Min: 193.6 - 195.6 1% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
184.60	185.80	1.20	B00267624	2.4	0.016	0.01	0.01	0.04
186.30	187.80	1.50	B00267625	4.1	0.04	0.05	0.12	0.33

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 184.3 - 189.1 Moderate-Strong (Alt) Chlorite>>

<<Alt: 184.3 - 189.1 Moderate (Alt) Biotite>>

<<Alt: 189.1 - 192.4 Strong (Alt) Silicification>>

<<Alt: 189.1 - 192.4 Weak-Moderate (Alt) Muscovite>> MS

<<Alt: 192.4 - 196.9 Moderate (Alt) Chlorite>>

<<Alt: 192.4 - 196.9 Moderate-Strong (Alt) Biotite>> coarse disseminations/aggregates. Minor inteval of green mica(fuchsite/mariposite) in strongly sericite alt'd band at bottom of interval

End of Hole @ 196.9

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-159

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414800.192	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815671.119	Casing Pulled?:		Dip:	-70	Drill Company:	
UTM Elev. (m):	1402.506	Casing Depth (m):		Length (m):	189.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180		180	SS				☑	
11	-70	174		174	SS				☑	
41	-70	173		173	SS				☑	
68	-70	179		179	SS				☑	
99	-70	175		175	SS				☑	
129	-69	174		174	SS				☑	
189	-70	174		174	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.90 OVBN Overburden

3.90 12.50 RHYvl Lapilli tuff

<<Min: 3.9 - 12.6 4% Min: Pyrrhotite>>

<<Min: 4 - 93 7% Min: Ankerite>>

<<Alt: 4 - 12.5 Weak (Alt) Muscovite>>

<<Alt: 4 - 20.5 Weak (Alt) Chlorite>> and diss as partings in rhyolite and mafic tuff

12.50 16.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 12.6 - 15.7 0.5% Min: Pyrite>>

<<Min: 12.6 - 15.7 2% Min: Pyrrhotite>>

<<Min: 15.7 - 31.7 2% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 15.7 - 31.7 2% Min: Pyrite>>

16.10 31.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 16.1 - 60 Weak-Moderate (Alt) Muscovite>>

31.70 44.80 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 31.7 - 41.3 4% Min: Pyrrhotite>>

<<Min: 41.3 - 44.8 3% Min: Pyrite>>

<<Alt: 32 - 39.4 Weak-Moderate (Alt) Chlorite>> matrix and clast? Alt in xtal lapilli tuff

44.80 45.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

44.8 - 45.3: fine grained. Could be tuff

<<Min: 44.8 - 45.2 5% Min: Pyrrhotite>>

<<Min: 45.2 - 47.2 4% Min: Pyrrhotite>>

45.30 47.50 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 47.2 - 49.9 1% Min: Pyrrhotite>>

47.50 52.20 RHYvl Lapilli tuff

<<Min: 49.9 - 54.1 1% Min: Pyrrhotite>>

52.20 54.30 RHYc Rhyolite coherant volcanics

<<Min: 54.1 - 55.5 1% Min: Pyrrhotite>>

54.30 55.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

54.3 - 55.5: could be a tuff

55.50 57.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 55.5 - 58.2 1% Min: Pyrite>>

<<Min: 55.5 - 58.2 3% Min: Pyrrhotite>>

57.80 58.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

57.8 - 58.9: could be a tuff

From (m)	To (m)	Rocktype & Description
58.90	**93.30**	**RHYvl** **Lapilli tuff**
<<Min: 58.9 - 79.7 4% Min: Pyrrhotite>>		
<<Min: 79.7 - 83.7 3% Min: Pyrite>>		
<<Min: 79.7 - 83.7 4% Min: Pyrrhotite>>		
<<Min: 83.7 - 113.2 5% Min: Pyrite>>		
<<Min: 83.7 - 113.2 4% Min: Pyrrhotite>>		
<<Min: 93 - 111.5 5% Min: Ankerite>>		
<<Alt: 60 - 114 Moderate (Alt) Muscovite>>		
93.30	**107.30**	**RHYc** **Rhyolite coherant volcanics**
93.3 - 107.3: some curdy sections, and tuffaceous sections		
107.30	**114.20**	**RHYvl** **Lapilli tuff**
<<Min: 111.5 - 136.8 10% Min: Ankerite>>		
<<Min: 113.2 - 118.1 0.5% Min: Pyrite>>		
<<Min: 113.2 - 118.1 3% Min: Pyrrhotite>>		
<<Alt: 114 - 127 Weak-Moderate (Alt) Muscovite>>		
114.20	**117.70**	**MDSt** **Rhyolite tuff dominant mudstone**
114.2 - 117.7: faulted lower contact.		
<<Struc: 117.2 - 117.7 Strong (Alt) Fault>> lower mdst and rhyv contact		
117.70	**123.00**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 118.1 - 123 4% Min: Pyrrhotite>>		
123.00	**126.80**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 123 - 126.7 2% Min: Pyrite>>		
<<Min: 123 - 126.7 2% Min: Pyrrhotite>>		
<<Min: 126.7 - 157.9 0.5% Min: Pyrite>>		
<<Min: 126.7 - 157.9 4% Min: Pyrrhotite>>		
126.80	**158.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
126.8 - 158.2: last 0.5m intense musc chl, ankerite alt before massive sulphides		
<<Min: 136.8 - 157.9 5% Min: Ankerite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
153.70	155.20	1.50	B00232501	0.7	-0.005	-0.01	-0.01	-0.01
155.20	156.70	1.50	B00232502	0.7	0.008	-0.01	0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 138.7 - 140 1% Min: Sphalerite>>
<<Min: 157.9 - 158.2 80% Min: Pyrite>>
<<Min: 157.9 - 158.2 3% Min: Pyrrhotite>>
<<Min: 157.9 - 158.2 10% Min: Ankerite>>
<<Alt: 127 - 157.9 Moderate-Strong (Alt) Muscovite>>
<<Alt: 154 - 157.9 Moderate (Alt) Silicification>>
<<Alt: 157.9 - 158.2 Intense (Alt) Muscovite>> immediate HW to massive sulphides
<<Alt: 157.9 - 158.2 Intense (Alt) Chlorite>> immediate HW to massive sulphides
<<Struc: 137.4 - 142 Moderate (Alt) Fault>> broken core and 10cm gouge zones

158.20 159.40 OA Magnetite bearing sulphides

<<Min: 158.2 - 159.4 8% Min: Sphalerite>>
<<Min: 158.2 - 159.4 50% Min: Pyrite>>
<<Min: 158.2 - 159.4 5% Min: Pyrrhotite>>

159.40 165.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 159.4 - 165.4 20% Min: Sphalerite>>
<<Min: 159.4 - 165.4 50% Min: Pyrite>>
<<Min: 159.4 - 165.4 2% Min: Chalcopyrite>>

165.40 165.60 OA Magnetite bearing sulphides

<<Min: 165.4 - 165.6 60% Min: Pyrite>>
<<Min: 165.4 - 165.6 5% Min: Pyrrhotite>>

165.60 166.40 OI Heavilly disseminated sulphides in host schist

165.6 - 166.4: semi massive stringer sulphides with intense chlorite, cordierite, alteration, py, gn and cp

<<Min: 165.6 - 166.4 15% Min: Pyrite>>
<<Min: 165.6 - 166.4 7% Min: Pyrrhotite>>
<<Min: 165.6 - 166.4 8% Min: Chalcopyrite>>
<<Alt: 165.7 - 166.4 Strong (Alt) Chlorite>>
<<Alt: 165.7 - 166.4 Strong (Alt) Cordierite>>

166.40 166.80 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 166.4 - 166.8 15% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Min: 166.4 - 166.8 5% Min: Pyrrhotite>>

<<Min: 166.4 - 166.8 40% Min: Chalcopyrite>>

166.80 167.90 OA Magnetite bearing sulphides

<<Min: 166.8 - 167.9 60% Min: Pyrite>>

<<Min: 166.8 - 167.9 5% Min: Chalcopyrite>>

167.90 172.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 167.9 - 172.5 25% Min: Sphalerite>>

<<Min: 167.9 - 172.5 40% Min: Pyrite>>

172.50 175.60 OI Heavilly disseminated sulphides in host schist

172.5 - 175.6: 35% sulphides py, sp as dis and bands. in intense sericite altered RHY. Last 0.4m intense sericite chlorite, ankerite alteration.

<<Min: 172.5 - 175.1 10% Min: Sphalerite>>

<<Min: 172.5 - 175.1 30% Min: Pyrite>>

<<Min: 175.1 - 175.6 5% Min: Pyrite>>

<<Min: 175.1 - 175.6 10% Min: Ankerite>>

<<Alt: 173 - 175.5 Moderate-Strong (Alt) Muscovite>> last 0.3m intense

<<Alt: 175.2 - 175.5 Moderate-Strong (Alt) Chlorite>> banded to massive in groundmass with mu. 30% dissem porhyroblasts of amphibole to 4mm.

175.60 176.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 175.6 - 176.4 15% Min: Sphalerite>>

<<Min: 175.6 - 176.4 45% Min: Pyrite>>

176.40 177.60 RHYc Rhyolite coherant volcanics

176.4 - 177.6: intense mu, sericite, strong chlorite alteration

<<Alt: 176.4 - 177.6 Moderate (Alt) Muscovite>>

177.60 182.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 177.6 - 182.4 3% Min: Calcite>>

<<Min: 177.6 - 182.4 3% Min: Ankerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
177.80	179.30	1.50	B00232503	1.2	0.01	0.02	-0.01	0.05
179.30	180.80	1.50	B00232504	1.9	0.028	0.05	0.01	0.07

From (m)	To (m)	Rocktype & Description

<<Min: 180.1 - 182.6 4% Min: Pyrite>>

<<Alt: 177.6 - 182.4 Weak (Alt) Muscovite>>

<<Alt: 177.6 - 182.4 Moderate (Alt) Chlorite>> and diss

<<Alt: 177.6 - 182.4 Weak (Alt) Biotite>>

182.40 184.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 182.6 - 189.9 1% Min: Pyrite>>

<<Alt: 182.4 - 184.8 Moderate-Strong (Alt) Muscovite>>

184.80 189.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 184.8 - 189.9 5% Min: Calcite>>

<<Min: 184.8 - 189.9 2% Min: Ankerite>>

<<Alt: 184.8 - 189.9 Weak (Alt) Chlorite>>

<<Alt: 184.8 - 189.9 Weak-Moderate (Alt) Biotite>> in mafic unit

End of Hole @ 189.9

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-160

Prospect:	ABM	Hole Type:	DD	Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414800.125	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815671.5	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1402.548	Casing Depth (m):		Length (m):	170	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
11	-86	183		183	SS				☑	
41	-86	199		199	SS				☑	
72	-85	191		191	SS				☑	
102	-85	196		196	SS				☑	
133	-84	196		196	SS				☑	
169	-84	188		188	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.00 OVBN Overburden

3.00 12.80 RHYvl Lapilli tuff

3 - 12.8: 20cm fine grained mafic dyke at 4m

<<Min: 3 - 4.4 3% Min: Pyrite>>

<<Min: 3 - 23.5 10% Min: Ankerite>>

<<Min: 4.6 - 12.7 3% Min: Pyrite>>

<<Min: 4.6 - 12.7 3% Min: Pyrrhotite>>

12.80 15.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

12.8 - 15.8: chilled margins, sharp contacts, alt feld phenos in middle

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 13 - 18 5% Min: Calcite>>

<<Alt: 12.8 - 15.8 Weak-Moderate (Alt) Biotite>> fresh biot in dyke

15.80 20.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 15.8 - 26.5 1.5% Min: Pyrite>>

<<Min: 15.8 - 26.5 3% Min: Pyrrhotite>>

20.60 32.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

20.6 - 32.1: chilled margins, alt feldspar phenos in middle.

<<Min: 20.6 - 33 10% Min: Calcite>>

<<Min: 23.5 - 33 4% Min: Ankerite>>

<<Alt: 20.6 - 32.6 Weak-Moderate (Alt) Chlorite>> in mafic dyke

<<Alt: 20.6 - 32.9 Moderate (Alt) Biotite>> fresh biot in dyke

32.10 41.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32.1 - 41.3: Brecciated and healed RHYcw, cut by or interbedded with fine grained more mafic (now ankerite alt) dyke or tuff. Pyritized flt zone with gouge 38-38.5m.

<<Min: 33 - 60.8 15% Min: Ankerite>>

<<Struc: 37.7 - 38.5 Moderate (Alt) Fault>> boken core, minor gouge

41.30 41.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 41.3 - 41.9 0.5% Min: Pyrrhotite>>

41.90 55.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

41.9 - 55.6: chilled margins, x-tal biotite in center

<<Min: 41.9 - 55.6 0.5% Min: Pyrrhotite>>

<<Alt: 48.3 - 52.4 Trace (Alt) Chlorite>>

<<Alt: 55.2 - 58 Weak-Moderate (Alt) Biotite>>

55.60 60.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

55.6 - 60.8: odd, contorted looking RHYcw, very siliceous (late qtz?), minor biotite. Minor feldsapr x-tals.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 55.6 - 57.8 1.5% Min: Pyrrhotite>>

<<Min: 60 - 61.4 0.5% Min: Sphalerite>>

<<Min: 60 - 61.4 3% Min: Pyrite>>

<<Alt: 57.4 - 60.8 Moderate-Strong (Alt) Silicification>>

60.80 104.10 RHYvl Lapilli tuff

60.8 - 104.1: Good lapilli tuff for most part, rare sections of more mafic looking banded tuff.

<<Min: 60.8 - 86 10% Min: Ankerite>>

<<Min: 61.4 - 102.9 3% Min: Pyrite>>

<<Min: 61.4 - 102.9 1.5% Min: Pyrrhotite>>

<<Min: 86 - 104 5% Min: Ankerite>>

<<Min: 102.9 - 105.4 2% Min: Pyrite>>

<<Min: 102.9 - 105.4 2% Min: Pyrrhotite>>

<<Min: 104 - 121.5 10% Min: Ankerite>>

104.10 105.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

105.30 111.70 RHYvl Lapilli tuff

105.3 - 111.7: good lapilli tuff for most part. Minor sections of more mafic tuff or possibly narrow (10's cm) dykes (ie. 117.5m).

111.70 122.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

111.7 - 122.5: good lapilli tuff for most part. Minor sections of more mafic tuff or possibly narrow (10's cm) dykes (ie. 117.5m).

<<Min: 121.5 - 125.7 5% Min: Ankerite>>

<<Alt: 116 - 139 Weak (Alt) Muscovite>>

122.50 125.60 RHYvl Lapilli tuff

122.5 - 125.6: good lapilli tuff for most part. Minor sections of more mafic tuff or possibly narrow (10's cm) dykes (ie. 117.5m).

125.60 128.50 MDSt Rhyolite tuff dominant mudstone

<<Min: 125.7 - 139.2 15% Min: Ankerite>>

<<Min: 127 - 128.8 2.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

128.50 131.50 RHYvl Lapilli tuff

128.5 - 131.5: good lapilli tuff for most part. Minor sections of more mafic tuff or possibly narrow (10's cm) dykes (ie. 117.5m).

131.50 139.00 MDSw Coherent rhyolite flow with carbonaceous content

131.5 - 139: mixture of coherent and lapilli rhy

<<Struc: 135.7 - 135.8 Moderate (Alt) Fault>> small gouge zone

139.00 148.90 RHY undifferentiated rhyolite

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
142.30	143.80	1.50	B00267141	0.4	-0.005	-0.01	-0.01	-0.01
143.80	145.30	1.50	B00267142	0.5	-0.005	-0.01	-0.01	-0.01

<<Min: 139 - 148.4 4% Min: Pyrite>>

<<Min: 139 - 148.4 1.5% Min: Pyrrhotite>>

<<Min: 139.2 - 145 4% Min: Ankerite>>

<<Alt: 139 - 148 Moderate-Strong (Alt) Muscovite>>

<<Struc: 145.2 - 151.8 Strong (Alt) Fault>> broken core, missing core and core rubble, minor gouge

148.90 154.50 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 148.9 - 154.5 7.5% Min: Sphalerite>>

<<Min: 148.9 - 154.5 70% Min: Pyrite>>

<<Min: 148.9 - 154.5 2.5% Min: Chalcopyrite>>

<<Struc: 154.4 - 156.1 Strong (Alt) Fault>> broken core, core rubble, minor gouge

154.50 154.80 RHYv Rhyolite volcaniclastic

<<Min: 154.5 - 154.8 10% Min: Pyrite>>

<<Min: 154.5 - 154.8 0.8% Min: Chalcopyrite>>

154.80 155.60 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 154.8 - 155.6 7.5% Min: Sphalerite>>

<<Min: 154.8 - 155.6 70% Min: Pyrite>>

<<Min: 154.8 - 155.6 0.5% Min: Chalcopyrite>>

155.60 158.50 RHY undifferentiated rhyolite

155.6 - 158.5: intense chlorite-biotite alt

<<Min: 155.6 - 157.5 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 155.6 - 157.5 0.5% Min: Chalcopyrite>>
		<<Min: 157.9 - 158.4 0.5% Min: Sphalerite>>
		<<Min: 157.9 - 158.4 0.5% Min: Chalcopyrite>>
		<<Min: 158.4 - 158.5 0.5% Min: Pyrite>>
		<<Alt: 155.6 - 157.3 Weak-Moderate (Alt) Biotite>>
		<<Alt: 155.6 - 158.5 Strong (Alt) Chlorite>> strong chl-biot alt or original lith… section includes 0.5m qtz vein
		<<Alt: 157 - 161 Weak-Moderate (Alt) Muscovite>>
158.50	**158.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Min: 158.5 - 158.9 7.5% Min: Sphalerite>>
		<<Min: 158.5 - 158.9 60% Min: Pyrite>>
158.90	**170.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		158.9 - 170: contains 3m of pale green RHYt
		<<Min: 158.9 - 160 2.5% Min: Pyrite>>
		<<Min: 159 - 169.8 8% Min: Calcite>>
		<<Min: 163.7 - 166.9 1% Min: Pyrite>>
		<<Min: 166.5 - 169.8 3% Min: Ankerite>>
		<<Alt: 159.2 - 169.8 Moderate-Strong (Alt) Chlorite>> altered mafic tuffs in package of mafic and rhy tuff. Lacal patches of diss leucoxene
		<<Alt: 161.8 - 169.8 Moderate (Alt) Biotite>> freah biot in mafic tuffs
		End of Hole @ 170

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
160.40	161.90	1.50	B00267143	0.5	-0.005	-0.01	-0.01	-0.01
161.90	163.40	1.50	B00267144	0.4	0.007	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K95-161

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Jim Lehtinen
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414799.609	Core Size:		Azimuth:	143	Date Logging Complete:	
UTM Northing:	6815369.231	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1401.104	Casing Depth (m):		Length (m):	540.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	143		143	SS				☑	
14	-86	116		116	SS				☑	
44	-86	121		121	SS				☑	
75	-85	139		139	SS				☑	
105	-85	143		143	SS				☑	
136	-84	153		153	SS				☑	
197	-82	166		166	SS				☑	
227	-82	165		165	SS				☑	
258	-80	173		173	SS				☑	
288	-80	179		179	SS				☑	
319	-79	179		179	SS				☑	
349	-78	181		181	SS				☑	
410	-77	188		188	SS				☑	
437	-76	191		191	SS				☑	
467	-73	196		196	SS				☑	
499	-72	196		196	SS				☑	
529	-71	196		196	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.40**	**OVBN Overburden**									

From (m)	To (m)		Rocktype & Description
			<<Min: 6.1 - 13.5 10% Min: Pyrite>>
6.40	**14.20**	**RHYc**	**Rhyolite coherant volcanics**
			<<Min: 13.5 - 14.2 0.5% Min: Sphalerite>>
			<<Min: 13.5 - 14.2 0.5% Min: Chalcopyrite>>
			<<Alt: 6.4 - 14.2 Weak-Moderate (Alt) Muscovite>>
			<<Vein: 13.5 - 14.2 100% Quartz>> PY in stringers
14.20	**14.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
14.40	**17.80**	**RHYc**	**Rhyolite coherant volcanics**
			<<Min: 14.4 - 17.8 0.5% Min: Sphalerite>>
			<<Min: 14.4 - 17.8 2% Min: Pyrite>>
			<<Alt: 14.4 - 17.8 Weak-Moderate (Alt) Muscovite>>
17.80	**18.30**	**OI**	**Heavilly disseminated sulphides in host schist**
			<<Min: 17.8 - 18.3 3.5% Min: Sphalerite>>
			<<Min: 17.8 - 18.3 17.5% Min: Pyrite>>
18.30	**18.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 18.3 - 18.6 5% Min: Sphalerite>>
			<<Min: 18.3 - 18.6 70% Min: Pyrite>>
			<<Min: 18.3 - 18.6 0.8% Min: Chalcopyrite>>
18.60	**19.10**	**OI**	**Heavilly disseminated sulphides in host schist**
			<<Min: 18.6 - 19.1 0.5% Min: Sphalerite>>
			<<Min: 18.6 - 19.1 20% Min: Pyrite>>
19.10	**20.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
			<<Min: 19.1 - 20.4 12.5% Min: Sphalerite>>
			<<Min: 19.1 - 20.4 70% Min: Pyrite>>
			<<Min: 19.1 - 20.4 1.5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
13.50	14.90	1.40	B00267626	37.4	0.377	0.15	0.7	1.76
14.90	16.20	1.30	B00267627	3.7	0.032	0.01	0.07	0.13

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

20.40 23.80 OA Magnetite bearing sulphides

<<Min: 20.4 - 23.8 3.5% Min: Sphalerite>>

<<Min: 20.4 - 23.8 50% Min: Pyrite>>

<<Min: 20.4 - 23.8 1% Min: Chalcopyrite>>

23.80 25.90 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

<<Min: 23.8 - 25.9 12.5% Min: Sphalerite>>

<<Min: 23.8 - 25.9 60% Min: Pyrite>>

<<Min: 23.8 - 25.9 1% Min: Chalcopyrite>>

25.90 31.20 RHYv Rhyolite volcaniclastic

25.9 - 31.2: Extremely broken core. Fault gouge, QZ vein fragments, poor recovery

<<Min: 30 - 53.5 3% Min: Ankerite>>

<<Alt: 25.9 - 35 Weak (Alt) Muscovite>>

<<Struc: 26.5 - 31.2 Weak-Moderate (Alt) Fault>> Rubble core, gouge, veining, poor recovery

31.20 31.90 OA Magnetite bearing sulphides

<<Min: 31.2 - 32.9 2% Min: Sphalerite>>

<<Min: 31.2 - 32.9 70% Min: Pyrite>>

31.90 35.40 RHY undifferentiated rhyolite

31.9 - 35.4: MB changed from MAFi. Strongly broken core, little recovery in box

<<Min: 35 - 45 3% Min: Calcite>>

<<Alt: 35 - 65.6 Muscovite>> As MS,pale green

35.40 41.60 RHYi Aphanitic Rhyolite (intrusion)

41.60 45.00 RHY undifferentiated rhyolite

41.6 - 45: MB changed from MAFi. Strongly broken core, little recovery in box

<<Min: 41.8 - 45 0.5% Min: Pyrite>>

45.00 46.00 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 45 - 53 1% Min: Calcite>>

46.00 47.70 RHYva Coarse grained to ash tuff

47.70 48.60 RHYi Aphanitic Rhyolite (intrusion)

From (m)	To (m)	Rocktype & Description
48.60	**52.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
48.6 - 52.3: MB changed from RHYc		
52.30	**54.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
52.3 - 54.2: Fine grained weakly chloritic, banded		
<<Min: 53 - 65.6 5% Min: Calcite>>		
<<Min: 53.5 - 55.4 25% Min: Ankerite>>		
54.20	**65.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
54.2 - 65.6: MB changed from RHYva		
<<Min: 59 - 60.6 30% Min: Ankerite>>		
<<Min: 60.6 - 68 10% Min: Ankerite>>		
65.60	**71.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 65.6 - 73 15% Min: Calcite>>		
<<Alt: 65.6 - 71.8 Weak-Moderate (Alt) Chlorite>> Regional Metamorphic grade		
<<Alt: 65.6 - 71.8 Moderate (Alt) Biotite>> Regional metamorphic BI		
71.80	**85.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
71.8 - 85.8: MB changed from RHYva, Fine to med grained, MS SI, light green		
<<Min: 71.8 - 85 5% Min: Ankerite>>		
<<Min: 73 - 85.8 5% Min: Calcite>>		
<<Min: 84.3 - 85.8 0.5% Min: Pyrite>>		
<<Alt: 71.8 - 85.8 Moderate-Strong (Alt) Muscovite>> MS		
85.80	**98.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 85.8 - 97 15% Min: Calcite>>		
<<Min: 87 - 88.9 0.5% Min: Pyrite>>		
<<Min: 88.9 - 93.4 0.5% Min: Pyrite>>		
<<Min: 88.9 - 93.4 0.5% Min: Pyrrhotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 88.9 - 93.4 0.5% Min: Chalcopyrite>>

<<Min: 93.4 - 98.4 0.5% Min: Pyrrhotite>>

<<Min: 97 - 128 0.01% Min: Calcite>>

<<Min: 98.4 - 109.2 0.5% Min: Sphalerite>>

<<Min: 98.4 - 109.2 5% Min: Pyrite>>

<<Alt: 85.8 - 87 Weak-Moderate (Alt) Chlorite>>

<<Alt: 85.8 - 87 Strong (Alt) Biotite>>

<<Alt: 87 - 88.9 Moderate-Strong (Alt) Muscovite>>

<<Alt: 88.9 - 98.5 Strong (Alt) Chlorite>>

<<Alt: 88.9 - 98.5 Weak-Moderate (Alt) Biotite>>

98.50 109.10 RHYc Rhyolite coherant volcanics

<<Min: 98.5 - 109.1 5% Min: Ankerite>>

<<Alt: 98.5 - 109.1 Moderate-Strong (Alt) Muscovite>> as MS

109.10 112.10 MDSc Carbonaceous dominant mudstone

<<Min: 109.2 - 112.8 1.5% Min: Pyrite>>

<<Min: 109.2 - 112.8 2.5% Min: Pyrrhotite>>

112.10 119.00 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 112.1 - 116.5 10% Min: Ankerite>>

<<Min: 115.2 - 116.4 0.5% Min: Pyrrhotite>>

<<Min: 116.4 - 123.9 0.5% Min: Pyrite>>

<<Min: 116.4 - 123.9 0.5% Min: Pyrrhotite>>

<<Min: 116.5 - 135.5 10% Min: Ankerite>>

<<Alt: 112.1 - 124 Weak-Moderate (Alt) Muscovite>>

119.00 124.10 RHYc Rhyolite coherant volcanics

<<Min: 123.9 - 124.6 0.5% Min: Sphalerite>>

<<Min: 123.9 - 124.6 25% Min: Pyrrhotite>>

<<Alt: 124 - 186.9 Weak-Moderate (Alt) Biotite>> BI as replacement and finely disseminated Some concentration around QZ-TO veining

124.10 135.40 RHYvx Quartz and/or feldspar crystal tuff

124.1 - 135.4: Lapilli and crystal tuff. White felspar xtals in med-dark patchy tuff. Some lapilli.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

135.40 138.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

135.4 - 138.4: Strong AK alt., BI Strong banding in core of intrusive

<<Min: 135.5 - 140.5 20% Min: Ankerite>>

138.40 174.30 RHYvx Quartz and/or feldspar crystal tuff

138.4 - 174.3: Variable xtal content. Complete AK replacement of xtals in part. Lapilli rich sections. QZ-TO veining

<<Min: 140.5 - 160 10% Min: Ankerite>>
<<Min: 151.5 - 156.3 1.5% Min: Pyrrhotite>>
<<Min: 156.3 - 157.8 0.5% Min: Pyrrhotite>>
<<Min: 156.3 - 157.8 0.5% Min: Chalcopyrite>>
<<Min: 157.8 - 158.7 0.5% Min: Pyrrhotite>>
<<Min: 157.8 - 158.7 0.5% Min: Chalcopyrite>>
<<Min: 160 - 176 10% Min: Ankerite>> replacing FS xtals
<<Min: 162.5 - 164.6 1.5% Min: Pyrrhotite>>
<<Min: 165.4 - 167.5 5% Min: Pyrrhotite>>
<<Min: 167.5 - 168.9 7.5% Min: Pyrrhotite>>
<<Min: 168.9 - 169.6 2% Min: Pyrrhotite>>
<<Min: 168.9 - 169.6 0.5% Min: Chalcopyrite>>
<<Min: 169.6 - 174.3 0.5% Min: Pyrite>>
<<Min: 169.6 - 174.3 0.5% Min: Pyrrhotite>>
<<Vein: 156.3 - 183.6 20% Quartz-Tourmaline>> TO in veins and fractures as well as proximal alteration

174.30 186.90 RHYv Rhyolite volcaniclastic

174.3 - 186.9: Dark colour due to Alt'n some TO alt parallel to vein

<<Min: 175 - 176 3% Min: Calcite>>
<<Min: 176 - 184.8 3% Min: Ankerite>>
<<Min: 178.9 - 184.7 0.5% Min: Pyrrhotite>>
<<Min: 184.8 - 192.7 20% Min: Ankerite>>

186.90 188.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Alt: 186.9 - 203.5 Weak-Moderate (Alt) Chlorite>>
<<Alt: 186.9 - 203.5 Weak (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description
188.50	**191.00**	**RHYv** **Rhyolite volcaniclastic**
191.00	**203.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

191 - 203: Gradational contact with Feldspar crystals into more felsic RHYv.

<<Min: 192.7 - 196.2 5% Min: Ankerite>>
<<Min: 196.2 - 198 10% Min: Ankerite>>
<<Min: 198 - 203.5 5% Min: Ankerite>>
<<Vein: 196.2 - 197.8 30% Quartz>>

203.00	**204.50**	**RHYv**	**Rhyolite volcaniclastic**

203 - 204.5: FS xtals up to 7mm

<<Min: 203.5 - 207.5 10% Min: Ankerite>>
<<Min: 203.7 - 204.4 0.5% Min: Pyrrhotite>>
<<Min: 203.7 - 204.4 0.5% Min: Chalcopyrite>>
<<Min: 204.3 - 206 5% Min: Calcite>>
<<Min: 204.4 - 205 0.5% Min: Pyrite>>
<<Min: 204.4 - 205 0.5% Min: Pyrrhotite>>
<<Alt: 203.5 - 205 Weak (Alt) Muscovite>> asMS

204.50	**230.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 207.5 - 284 3% Min: Ankerite>>
<<Min: 212 - 225 3% Min: Calcite>>
<<Min: 216 - 224.4 0.5% Min: Pyrrhotite>>
<<Min: 216 - 224.4 0.5% Min: Chalcopyrite>>
<<Min: 225 - 231 15% Min: Calcite>>
<<Alt: 205 - 230.7 Moderate-Strong (Alt) Chlorite>>
<<Alt: 205 - 230.7 Moderate (Alt) Biotite>>
<<Alt: 230.7 - 233.6 Weak-Moderate (Alt) Muscovite>> In siliceous RHY

230.80	**236.60**	**RHYv**	**Rhyolite volcaniclastic**

230.8 - 236.6: interbeds of strongly siliceous with MS-SI-BI

<<Alt: 233.6 - 251.5 Moderate (Alt) Chlorite>>
<<Alt: 233.6 - 251.5 Moderate (Alt) Biotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 234.3 - 236.3 15% Quartz>>

236.60 250.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 239 - 256 10% Min: Calcite>>

<<Min: 240.5 - 249 0.5% Min: Pyrrhotite>>

<<Min: 240.5 - 249 0.5% Min: Chalcopyrite>>

250.60 252.70 RHYv Rhyolite volcaniclastic

250.6 - 252.7: Banded gradational contact at top

<<Alt: 251.5 - 252.3 Weak-Moderate (Alt) Muscovite>> as MS

<<Alt: 252.3 - 259.1 Weak (Alt) Chlorite>>

<<Alt: 252.3 - 259.1 Weak-Moderate (Alt) Biotite>>

252.70 255.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

255.00 265.20 RHYv Rhyolite volcaniclastic

255 - 265.2: Interbedded SI RHY with more mafic ash tuff. "QZ-TO vein, Possible mylonite high strain zone noted previously

<<Alt: 259.1 - 261.5 Moderate (Alt) Muscovite>> as MS

<<Alt: 261.5 - 281 Moderate-Strong (Alt) Chlorite>>

<<Alt: 261.5 - 281 Moderate (Alt) Biotite>>

<<Vein: 257.3 - 259.9 15% Quartz>>

265.20 281.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 268.3 - 274.8 0.5% Min: Pyrrhotite>>

<<Min: 275.8 - 283.1 0.5% Min: Pyrrhotite>>

<<Min: 276 - 277.5 20% Min: Calcite>>

<<Min: 277.5 - 289 1% Min: Calcite>>

<<Vein: 273.8 - 276.6 20% Quartz>>

281.00 286.70 RHYv Rhyolite volcaniclastic

281 - 286.7: Narrow curdey intervals

<<Min: 283.1 - 288.7 0.5% Min: Pyrrhotite>>

<<Min: 284 - 291 20% Min: Ankerite>>

<<Alt: 281 - 286.7 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 281 - 286.7 Weak (Alt) Biotite>>

286.70 299.90 RHYv Rhyolite volcaniclastic

286.7 - 299.9: Extremely broken core in faulted/vein zone

<<Min: 293 - 303.5 20% Min: Ankerite>> Also in veining in fault zone

<<Min: 297 - 299 3% Min: Calcite>>

<<Min: 299 - 303 20% Min: Calcite>>

<<Alt: 286.7 - 297.5 Moderate (Alt) Chlorite>>

<<Alt: 286.7 - 297.5 Moderate (Alt) Biotite>>

<<Vein: 293.4 - 305.8 20% Quartz>> In fault zone

<<Struc: 292.5 - 299.9 Moderate (Alt) Fault>> Gouge, broken core, veining varied lithology

299.90 313.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

299.9 - 313.6: Thin banding

<<Min: 301.9 - 307.7 0.5% Min: Pyrrhotite>>

<<Min: 306.8 - 318 10% Min: Ankerite>> Q

<<Min: 312 - 318 1% Min: Calcite>>

<<Min: 312.3 - 313 0.5% Min: Pyrrhotite>>

<<Alt: 299.9 - 310.6 Moderate (Alt) Chlorite>>

<<Alt: 299.9 - 310.6 Moderate (Alt) Biotite>> Also disseminated

<<Alt: 310.6 - 313.6 Moderate-Strong (Alt) Chlorite>>

<<Alt: 310.6 - 313.6 Moderate (Alt) Biotite>>

313.60 314.30 RHYv Rhyolite volcaniclastic

314.30 320.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

314.3 - 320.1: Mafic tuff. Strong lower chill contact.

<<Min: 318 - 325 1% Min: Calcite>>

<<Min: 318 - 325 1% Min: Ankerite>>

320.10 343.50 RHYv Rhyolite volcaniclastic

320.1 - 343.5: dark colour due to alteration. Minor xtal-lapill tuff, FS phenos.

<<Min: 337 - 347 3% Min: Ankerite>>

<<Alt: 343 - 360 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 321.9 - 332 20% Quartz>>

343.50 343.80 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 343.5 - 343.8 0.5% Min: Pyrite>>

343.80 355.50 RHYv Rhyolite volcaniclastic

343.8 - 355.5: FS porphyritic in part

<<Min: 354.7 - 357.2 0.5% Min: Pyrite>>

<<Min: 354.7 - 357.2 0.5% Min: Chalcopyrite>>

<<Alt: 343.8 - 360 Moderate (Alt) Chlorite>> minor intense alt

<<Vein: 345.9 - 346.2 100% Quartz>>

355.50 356.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

356.70 368.40 RHYv Rhyolite volcaniclastic

356.7 - 368.4: well banded. Green-brown CL/AK bands with light grey MS-QZ bands

<<Min: 357 - 379 1% Min: Ankerite>>

<<Min: 357.2 - 367.3 0.5% Min: Pyrite>>

<<Min: 357.2 - 367.3 0.5% Min: Pyrrhotite>>

<<Min: 357.2 - 367.3 0.5% Min: Chalcopyrite>>

<<Min: 367.3 - 368.1 0.5% Min: Pyrite>>

<<Min: 367.3 - 368.1 0.5% Min: Pyrrhotite>>

<<Min: 368.1 - 369.4 0.5% Min: Pyrrhotite>>

<<Alt: 360 - 368.4 Weak-Moderate (Alt) Chlorite>>

<<Alt: 360 - 368.4 Weak-Moderate (Alt) Biotite>>

<<Vein: 365.9 - 368.1 30% Quartz>>

368.40 370.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 368.4 - 370.1 5% Min: Calcite>>

<<Alt: 368.4 - 370 Strong (Alt) Chlorite>>

<<Alt: 368.4 - 370 Strong (Alt) Biotite>>

<<Alt: 370 - 377 Moderate (Alt) Biotite>>

370.10 379.40 RHYvl Lapilli tuff

<<Min: 379 - 386 5% Min: Ankerite>>

<<Alt: 377 - 420 Weak-Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 377.6 - 383 Moderate-Strong (Alt) Fault>> breccia, gouge veining, intrusive, all broken

379.40 383.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

379.4 - 383.7: Shouldering strong fault zone.

383.70 405.30 RHYvl Lapilli tuff

383.7 - 405.3: strong veining withTO

<<Min: 391.8 - 395.3 0.5% Min: Pyrite>>

<<Min: 396 - 398 3% Min: Calcite>>

<<Min: 397 - 435.3 10% Min: Ankerite>>

<<Vein: 388.1 - 397.6 30% Quarzt-Chlorite-Tourmaline>> proximal to vein alteration

<<Struc: 402 - 402.3 Weak (Alt) Fault>> gouge

405.30 417.90 RHYc Rhyolite coherant volcanics

405.3 - 417.9: Som curdy sections, flow bands. QZ eyes

<<Min: 416.1 - 420.1 0.5% Min: Pyrrhotite>>

417.90 435.30 RHYvl Lapilli tuff

417.9 - 435.3: QZ eyes

<<Min: 421.6 - 428.6 0.5% Min: Pyrrhotite>>

<<Min: 428.6 - 433.5 0.5% Min: Pyrite>>

<<Min: 428.6 - 433.5 0.5% Min: Pyrrhotite>>

<<Alt: 420 - 428.6 Moderate (Alt) Chlorite>>

<<Alt: 420 - 428.6 Moderate-Strong (Alt) Biotite>>

<<Alt: 428.6 - 433.5 Strong (Alt) Chlorite>>

<<Alt: 428.6 - 433.6 Strong (Alt) Biotite>>

<<Vein: 432 - 436.8 50% Quartz>>

<<Struc: 421.2 - 421.3 Weak (Alt) Fault>> gouge

435.30 437.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 435.3 - 447.4 10% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

437.50 438.20 RHYif feldspar and quartz porphyry intrusions

437.5 - 438.2: fine grained

<<Min: 437.5 - 438.1 0.5% Min: Pyrite>>

438.20 447.40 RHYv Rhyolite volcaniclastic

<<Min: 440.5 - 443.8 0.5% Min: Pyrite>>

<<Min: 440.5 - 443.8 0.5% Min: Pyrrhotite>>

<<Min: 443.8 - 447.4 0.5% Min: Pyrite>>

<<Alt: 440.5 - 447.4 Weak-Moderate (Alt) Chlorite>>

<<Alt: 440.5 - 447.4 Weak-Moderate (Alt) Biotite>>

447.40 454.70 MDSc Carbonaceous dominant mudstone

<<Min: 448.7 - 450.7 0.5% Min: Pyrrhotite>>

<<Min: 449 - 455 5% Min: Calcite>>

<<Min: 453.5 - 468.4 0.5% Min: Pyrrhotite>>

<<Struc: 447.4 - 447.7 Weak-Moderate (Alt) Fault>> gouge

454.70 472.60 SEDc calcareous Sediment

454.7 - 472.6: epiclastic to tuffaceous sediment, strong calcite stringer/veining

<<Min: 455 - 540.1 15% Min: Calcite>>

<<Min: 468.4 - 468.8 0.5% Min: Pyrite>>

<<Alt: 454.7 - 474.7 Moderate (Alt) Chlorite>> regional metamorphic

<<Alt: 454.7 - 474.7 Moderate (Alt) Biotite>>

<<Struc: 458.5 - 459 Weak-Moderate (Alt) Fault>> gouge

472.60 474.70 MDSc Carbonaceous dominant mudstone

472.6 - 474.7: Numerous interbeds of epiclastic chloritic sed.and calcite vein/replacement

474.70 477.40 RHYc Rhyolite coherant volcanics

<<Min: 474.7 - 477.1 0.5% Min: Pyrite>>

<<Min: 477.1 - 478 0.5% Min: Pyrite>>

477.40 478.00 RHYi Aphanitic Rhyolite (intrusion)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

478.00 481.50 RHYc Rhyolite coherant volcanics

478 - 481.5: minor RHYi

<<Min: 480.8 - 481 0.5% Min: Pyrite>>

<<Min: 481.4 - 483.8 0.5% Min: Pyrrhotite>>

<<Alt: 479 - 489 Moderate (Alt) Chlorite>>

<<Alt: 479 - 489 Moderate (Alt) Biotite>>

481.50 483.80 SED undifferentiated Sediment

483.80 484.90 RHYcf Feldspar & feldspar quartz porphyry

483.8 - 484.9: fine grained equivalent

484.90 489.00 SED undifferentiated Sediment

<<Min: 486.4 - 486.9 0.5% Min: Pyrite>>

<<Min: 487.2 - 489 0.5% Min: Pyrite>>

<<Vein: 486.5 - 487 40% Quartz>>

489.00 493.20 RHYif feldspar and quartz porphyry intrusions

489 - 493.2: finergrained, interbands of sed

<<Alt: 489 - 499.2 Weak-Moderate (Alt) Biotite>> interbedded with RHYif altn in seds only

493.20 494.00 SED undifferentiated Sediment

<<Min: 493.9 - 494.6 0.5% Min: Pyrite>>

494.00 494.70 RHYif feldspar and quartz porphyry intrusions

494 - 494.7: inter bands of sed

494.70 495.60 SED undifferentiated Sediment

495.60 498.70 RHYif feldspar and quartz porphyry intrusions

<<Min: 498.6 - 499.4 0.5% Min: Pyrite>>

<<Struc: 497.7 - 498 Weak (Alt) Fault>> gouge

498.70 499.20 SED undifferentiated Sediment

From (m)	To (m)	Rocktype & Description
499.20	**500.40**	**MDSc** **Carbonaceous dominant mudstone**
500.40	**501.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 500.4 - 511.5 Moderate (Alt) Chlorite>>		
501.90	**502.30**	**RHYif** **feldspar and quartz porphyry intrusions**
502.30	**511.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 504 - 511.5 Moderate (Alt) Biotite>>		
511.50	**518.90**	**RHYif** **feldspar and quartz porphyry intrusions**
511.5 - 518.9: Megacryst feldspar porphyry. Elongated white FS up to2cmx1cm in light grey matrix		
518.90	**522.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 518.9 - 522.4 Moderate (Alt) Chlorite>>		
<<Alt: 518.9 - 522.4 Strong (Alt) Biotite>>		
522.40	**526.20**	**RHYif** **feldspar and quartz porphyry intrusions**
522.4 - 526.2: large phenos		
526.20	**527.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
526.2 - 527.9: minor felsic int.		
<<Alt: 526.2 - 527.9 Moderate (Alt) Chlorite>>		
<<Alt: 526.2 - 527.9 Moderate (Alt) Biotite>>		
527.90	**528.20**	**RHYif** **feldspar and quartz porphyry intrusions**
527.9 - 528.2: FG		
<<Alt: 527.9 - 540.1 Weak-Moderate (Alt) Chlorite>>		
<<Alt: 527.9 - 540.1 Weak-Moderate (Alt) Biotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

528.20 533.60 RHYv Rhyolite volcaniclastic

528.2 - 533.6: minor quartz eyes. Minor FG RHYif

<<Min: 530.8 - 532.1 0.5% Min: Pyrrhotite>>

<<Min: 530.8 - 532.1 0.8% Min: Chalcopyrite>>

<<Min: 532.4 - 532.9 0.5% Min: Pyrrhotite>>

533.60 535.00 RHYv Rhyolite volcaniclastic

533.6 - 535: FS +QZ phenos or xtals up to 5mm. Interbeds of finer ash? Finely banded in part.

<<Min: 534.2 - 534.5 0.5% Min: Pyrrhotite>>

<<Min: 534.9 - 540.1 0.5% Min: Pyrite>>

End of Hole @ 540.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-172

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414950.95	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815850.83	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1382.05	Casing Depth (m):		Length (m):	349.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	SS				☑	
17	-88	183		183	SS				☑	
78	-83	192		192	SS				☑	
139	-86	201		201	SS				☑	
200	-83	210		210	SS				☑	
270	-81	207		207	SS				☑	
322	-79	211		211	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.40**	**OVBN** **Overburden**									
9.40	**11.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
		<<Min: 10.9 - 11.5 10% Min: Ankerite>>									
		<<Min: 10.9 - 13.5 10% Min: Calcite>>									
		<<Min: 10.9 - 17 0.5% Min: Pyrrhotite>>									
11.50	**34.80**	**RHYvl** **Lapilli tuff**									
		11.5 - 34.8: blue qtz phenos. 23.5-26.7 minor zones (<30cm) poorly developed RHYcw									
		<<Min: 11.5 - 17 5% Min: Ankerite>>									
		<<Min: 17 - 26.8 2% Min: Pyrrhotite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 17 - 26.8 3% Min: Calcite>>
<<Min: 17 - 26.8 10% Min: Ankerite>>
<<Min: 26.5 - 32.6 15% Min: Ankerite>>
<<Min: 26.8 - 34.5 5% Min: Calcite>> and in thin mm bands
<<Min: 27.3 - 34.8 1.5% Min: Pyrite>>
<<Min: 27.3 - 34.8 0.5% Min: Pyrrhotite>>
<<Min: 32.6 - 42.6 5% Min: Ankerite>>
<<Min: 34.5 - 45.7 5% Min: Calcite>> in qtz vein, frac and as diss.
<<Alt: 25.5 - 26.8 Weak (Alt) Silicification>>
<<Vein: 12.8 - 15.3 10% Quartz-Tourmaline 0 deg. >>
<<Vein: 17.2 - 17.5 70% Quartz-Tourmaline 75 deg. >>
<<Struc: 32.6 - 33.1 Moderate-Strong (Alt) Fault>> crushed schist, minor gouge

34.80 43.60 RHYva Coarse grained to ash tuff grey-green

34.8 - 43.6: blue qtz phenos

<<Min: 34.8 - 50.4 0.5% Min: Pyrite>>
<<Min: 42.6 - 50 5% Min: Ankerite>>
<<Alt: 34.8 - 44.5 Moderate (Alt) Silicification>> associated with abundant qtz veins
<<Vein: 35.4 - 45.2 15% Quartz-Carbonate>> numerous 2-20cm qtz-carb veinles in rhy ash unit

43.60 45.70 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

45.70 48.60 RHYva Coarse grained to ash tuff grey-green

45.7 - 48.6: blue qtz phenos

48.60 69.90 RHYvl Lapilli tuff grey

48.6 - 69.9: Remnant calcareous 'islands' of chlorite-biotite alteration surrounded by light grey sericite alteration.

<<Min: 48.6 - 72.8 0.5% Min: Pyrrhotite>>
<<Min: 50 - 58 15% Min: Ankerite>>
<<Min: 51.9 - 59.9 3% Min: Calcite>>
<<Min: 58 - 68 5% Min: Ankerite>>
<<Min: 59.9 - 60.4 10% Min: Calcite>>
<<Min: 60.4 - 67.5 10% Min: Calcite>>
<<Min: 67.3 - 71.9 2% Min: Pyrite>>
<<Min: 68 - 96.2 15% Min: Ankerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 50.9 - 60.5 Weak (Alt) Biotite>> diss and associated with mafic dykes

<<Alt: 51.9 - 52.9 Moderate-Strong (Alt) Chlorite>> in mafic dyke

69.90 73.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 72.8 - 80.6 2% Min: Pyrite>>

<<Min: 72.8 - 80.8 0.2% Min: Pyrrhotite>>

73.10 75.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

75.40 80.20 RHYvl Lapilli tuff grey-brown

80.20 81.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 80.8 - 81 15% Min: Pyrrhotite>>

<<Alt: 80.7 - 81.2 Moderate (Alt) Chlorite>> alteration zone on margin of RHYcw

81.00 85.00 RHYvl Lapilli tuff grey-green

<<Min: 81 - 104 1% Min: Pyrrhotite>>

85.00 86.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

<<Min: 85 - 86.7 5% Min: Calcite>>

<<Alt: 85 - 86.7 Moderate (Alt) Chlorite>> mafic dyke

86.90 89.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

89.80 93.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey

<<Min: 91.2 - 93 20% Min: Calcite>>

93.00 99.30 RHYvl Lapilli tuff grey-green

93 - 99.3: minor silic bands, well developed 95.7-96.0 adjacent to qtz-chlorite brx 96.0 - 96.3m

<<Min: 96.2 - 111 20% Min: Ankerite>>

<<Alt: 96 - 96.3 Moderate-Strong (Alt) Chlorite>> brecciated zone

<<Alt: 96 - 96.3 Moderate-Strong (Alt) Biotite>>

<<Vein: 93 - 93.8 5% Quartz 45 deg. >>

99.30 100.70 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

100.70 102.60 RHYvl Lapilli tuff grey-green

102.60 105.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

102.6 - 105.8: disaggregated silic bands

<<Min: 104 - 112.6 1% Min: Pyrite>>

<<Vein: 104 - 104.3 90% Quartz-Tourmaline 30 deg. >>

105.80 111.90 RHYvx Quartz and/or feldspar crystal tuff grey-green

105.8 - 111.9: minor chalky feldspar pheons

<<Min: 111 - 128 10% Min: Ankerite>>

<<Alt: 110 - 122 Weak (Alt) Muscovite>> associated with feldspar phyric rhyolite

111.90 122.30 RHYcf Feldspar & feldspar quartz porphyry grey-green

111.9 - 122.3: feldspar phenos, quite possibly crystal ash tuff all or in part.

<<Min: 112.6 - 117.7 0.5% Min: Sphalerite>>

<<Min: 112.6 - 117.7 0.5% Min: Pyrite>>

<<Min: 112.6 - 117.7 0.3% Min: Pyrrhotite>>

<<Min: 117.7 - 121.9 0.5% Min: Pyrite>>

<<Min: 121.9 - 136 0.2% Min: Sphalerite>>

<<Min: 121.9 - 136 2% Min: Pyrite>>

<<Min: 121.9 - 136 0.5% Min: Pyrrhotite>>

<<Struc: 112.2 - 112.6 Moderate-Strong (Alt) Shear>> possible contact zone?

<<Struc: 119.9 - 122 Weak (Alt) Fault>> two 15 cm zones of crushed core and gouge

122.30 133.40 RHYvx Quartz and/or feldspar crystal tuff grey-green

122.3 - 133.4: minor (<3%) chlaky white feldspar crystals, irregularly distributed.

<<Min: 128 - 162.8 20% Min: Ankerite>>

133.40 134.80 RHYcf Feldspar & feldspar quartz porphyry grey-green

133.4 - 134.8: Disaggregated RHYcw, RHYcw surrounding section of RHYcf - feldspar phenos (- rhyoite dyke?).

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
134.80	**153.20**	**RHYvl**	**Lapilli tuff** **grey-green**									
<<Min: 136.2 - 140.7 2% Min: Pyrite>> and in fractures												
<<Min: 140.9 - 159 2% Min: Pyrite>>												
<<Struc: 136 - 136.2 Moderate-Strong (Alt) Fault>> crushed schist, minor gouge												
153.20	**154.60**	**RHYv**	**Rhyolite volcaniclastic** **grey**									
153.2 - 154.6: highly strained and silicified, may have been a RHYvl												
154.60	**158.30**	**RHYcf**	**Feldspar & feldspar quartz porphyry** **grey**									
154.6 - 158.3: chalky white feldspar phenos												
<<Struc: 156.8 - 156.9 Moderate (Alt) Fault>> crushed schist, minor gouge												
158.30	**162.80**	**RHYv**	**Rhyolite volcaniclastic** **grey**									
158.3 - 162.8: mixed unit, few silic bands, lapilli present												
<<Min: 159 - 166.4 2% Min: Pyrrhotite>>												
<<Alt: 160 - 163.7 Weak-Moderate (Alt) Muscovite>>												
162.80	**164.00**	**MDSt**	**Rhyolite tuff dominant mudstone** **grey**									
162.8 - 164: weak carbonaceous material, laminar banding.												
<<Min: 162.8 - 188 5% Min: Ankerite>>												
<<Min: 163.7 - 164 3% Min: Pyrite>>												
<<Alt: 163.7 - 171 Moderate-Strong (Alt) Muscovite>>												
164.00	**166.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
166.40	**169.90**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
166.4 - 169.9: Mix of MDSt and MDSw with few cm bands of MDSc												
<<Min: 168.2 - 176.6 2% Min: Pyrite>>												
169.90	**206.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	206.30	207.30	1.00	B00267347	-0.3	0.01	-0.01	-0.01	-0.01
<<Min: 177.9 - 188.1 1.5% Min: Pyrite>>												
<<Min: 188 - 206.3 3% Min: Ankerite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 190.4 - 199.5 2.5% Min: Pyrite>>

<<Min: 200.4 - 202.8 1% Min: Pyrite>>

<<Min: 203.3 - 204.1 1.5% Min: Pyrite>>

<<Min: 206.3 - 208.3 2% Min: Pyrite>>

<<Alt: 171 - 179 Strong (Alt) Muscovite>>

<<Alt: 179 - 204.8 Weak-Moderate (Alt) Muscovite>> variable intensity

<<Alt: 204.8 - 219 Weak (Alt) Muscovite>> intensity decreases downhole

<<Vein: 199 - 206.3 15% Quartz-Tourmaline>> numerous small </= 10cm qtz veins

<<Struc: 172.7 - 172.8 Moderate (Alt) Fault>> crushed schist, minor gouge

<<Struc: 176 - 178 Weak (Alt) Fault>> crushed schist, minor gouge, parallel to foliation

<<Struc: 187.9 - 189.9 Moderate-Strong (Alt) Fault>> crushed schist, minor gouge

<<Struc: 199.6 - 206.4 Moderate (Alt) Fault>> crushed schist, minor gouge, missing core 204.8-206.3m.

206.40	**207.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey-green**	207.30	207.80	0.50	B00267348	0.3	0.016	-0.01	-0.01	-0.01

206.4 - 207.8: 207.6-207.7m; 6cm band of 20% dis py - should be the zone! (according to Treavor). 204.8-206.3: 10% core rec'y.

207.80	**208.30**	**MDSc**	**Carbonaceous dominant mudstone**	**dark grey**	207.80	208.30	0.50	B00267349	2.8	0.02	0.02	0.12	0.26
208.30	**209.30**	**MDSc**	**Carbonaceous dominant mudstone**	**grey-brown**	208.30	209.80	1.50	B00267351	1.4	0.012	-0.01	0.07	0.14

<<Min: 208.3 - 208.9 1% Min: Pyrite>>

<<Min: 208.3 - 221.6 3% Min: Ankerite>>

<<Min: 208.9 - 210.5 1% Min: Pyrite>>

209.30	**224.40**	**RHY**	**undifferentiated rhyolite**	**light grey**

209.3 - 224.4: mostly featureless eqigranular leucocratic granular rhyolite. Blue qtz phenos in upper half of unit and lower half containing lapili. Unit is a massive qtz phyric rhyolite ash tuff?

<<Min: 210.5 - 222 2% Min: Pyrite>> diss in wispy bands

<<Min: 221.6 - 234.5 10% Min: Ankerite>>

<<Min: 222 - 229.1 0.5% Min: Pyrite>>

224.40	**242.90**	**RHYvl**	**Lapilli tuff**	**grey-green**

224.4 - 242.9: mottled grey-green; dark green islands of remnant biot-chl alteration surrounded by grey qtz-musc-ser alt.

<<Min: 224.4 - 227.5 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 227.5 - 235.5 15% Min: Calcite>>

<<Min: 229.1 - 239.7 0.1% Min: Pyrite>>

<<Min: 229.1 - 239.7 0.5% Min: Pyrrhotite>>

<<Min: 234.5 - 251.6 5% Min: Ankerite>>

<<Min: 235.5 - 250.5 5% Min: Calcite>>

<<Min: 239.7 - 247 0.5% Min: Pyrite>>

<<Min: 239.7 - 251 0.5% Min: Pyrrhotite>>

<<Alt: 241.3 - 250.5 Weak (Alt) Chlorite>>

<<Vein: 233.5 - 239 5% Quartz-Tourmaline>> Two 1-2cm qtz - tour veinlets. Disseminated tourmaline alteration (dis, wisps, veinlets) from 229.4-251m

242.90 251.50 RHYv Rhyolite volcaniclastic grey-green

242.9 - 251.5: Unique looking, dark green grey mottled appearance, locally brecciated, matrix and fracture filling of qtz-chl (healed). Late brittle fractures filled with pyrite. Overall unit looks like a lapilli tuff or epiclastic. No through going silic bands or good

<<Min: 247 - 248.1 5% Min: Pyrite>>

<<Min: 248.1 - 258.3 0.5% Min: Pyrite>>

<<Struc: 251 - 251.5 Moderate (Alt) Fault>> crushed schist, minor gouge

251.50 261.10 RHYvl Lapilli tuff grey-green

251.5 - 261.1: Mottled, similar to 224.4-242.9m with sections containing islands of remnant botite-chlorite alteration. Some minor silic bands.

<<Min: 251.6 - 258.2 10% Min: Ankerite>> patchy

<<Min: 257 - 272.5 3% Min: Calcite>>

<<Alt: 256.5 - 261.2 Weak-Moderate (Alt) Chlorite>> rims on lapilli clasts…and fracture filling

<<Vein: 252.3 - 252.6 75% Quartz>>

261.10 349.60 RHYvx Quartz and/or feldspar crystal tuff grey-green

261.1 - 349.6: abundant (5%+) blue qtz phenocrysts throughout unit.Unit could be an epiclastic.281.9-284.2m silic bands.

<<Min: 267 - 271 3% Min: Ankerite>>

<<Min: 267.5 - 267.9 0.5% Min: Pyrrhotite>>

<<Min: 290.5 - 294.7 3% Min: Calcite>>

<<Min: 294.2 - 309.9 0.5% Min: Pyrrhotite>>

<<Min: 306.9 - 308.4 5% Min: Pyrite>> bands and dis, highly oxidized

<<Min: 310.3 - 310.9 0.1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 310.3 - 310.9 0.5% Min: Pyrrhotite>>
<<Min: 310.5 - 317.4 5% Min: Calcite>>
<<Min: 311.4 - 313.9 0.1% Min: Pyrite>>
<<Min: 317.3 - 349.6 0.1% Min: Pyrite>>
<<Min: 317.3 - 349.6 0.1% Min: Pyrrhotite>> cominco reported 0.1% chalcopyrite for this interval.
<<Min: 333 - 349.6 3% Min: Calcite>>
<<Alt: 320.6 - 326 Weak-Moderate (Alt) Biotite>> associated with minor mafic dykelets (<20cm wide)
<<Alt: 342 - 348 Weak-Moderate (Alt) Biotite>> associated with minor mafic dykelets (<20cm wide)
<<Vein: 261.1 - 266.6 20% Quartz-Carbonate>>
<<Vein: 270.4 - 270.8 10% Quartz-Tourmaline 15 deg. >>
<<Vein: 281.6 - 283.7 20% Quartz>>
<<Vein: 302.3 - 303.9 20% Quartz>>
<<Vein: 312.5 - 312.9 80% Quartz-Sericite/White mica>> brecciated, on contact with mafic dyke
<<Vein: 316.9 - 318 80% Quartz-Sericite/White mica>> brecciated with Mafic dyke
<<Vein: 323.7 - 325.2 15% Quartz>>

End of Hole @ 349.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-173

Prospect:	Krakatoa	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415238.134	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815250.696	Casing Pulled?:		Dip:	-86	Drill Company:	
UTM Elev. (m):	1438.823	Casing Depth (m):		Length (m):	291.4	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-86	180		180	SS				☑	
15	-86	158		158	SS				☑	
21	-86	158		158	SS				☑	
82	-84	169		169	SS				☑	
145	-81	174		174	SS				☑	
206	-79	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 5.50 OVBN Overburden

5.50 8.30 MDSc Carbonaceous dominant mudstone

5.5 - 8.3: Dark grey, fine grained, strongly foliated/sheared (intervals with crenulation). Alternation with thin carbonacious bands (mudstone), very fine grained, and tuffaceous bands. Banded texture. The foliation is folded and irregular. Moderate to strong calcite (clots/ thin veinlets) within mudstone/tuff intervals.

<<Min: 5.5 - 11 15% Min: Ankerite>>

<<Min: 5.5 - 17.5 10% Min: Calcite>> Also occuring as thin pervasive bands

8.30 10.30 MAFta Coarse grained to ash tuff

8.3 - 10.3: Mafic ash tuff or intrusive unit, fine to medium grained, +/- homogeneous, light green. Weakly chlorite altered (pervasive), moderate to strongly CA altered (Thin vesicular veinlets, concordant, and also locally pervasive).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

10.30 37.00 MDSc Carbonaceous dominant mudstone

10.3 - 37: Dark grey, fine grained, strongly foliated/sheared (intervals with crenulation and fault gauge). Alternation with thin carbonacious bands (mudstone), very fine grained, and tuffaceous bands. Banded texture. The foliation is folded and irregular. Moderate to strong calcite (clots/ thin veinlets) within mudstone/tuff intervals. Locally comprising short intervals of MAFta/MAFi.

20.6-24m: Large interval dominated by carbonaceous mudstone, >70%, Brecciated.

<<Min: 10.4 - 12.7 0% Min: Pyrrhotite>>

<<Min: 11 - 37 3% Min: Ankerite>> Mainly associated with MAFi.

<<Min: 12.7 - 13.1 1% Min: Pyrrhotite>>

<<Min: 13.4 - 24.9 0% Min: Pyrite>>

<<Min: 13.4 - 24.9 0.5% Min: Pyrrhotite>>

<<Min: 17.5 - 20.6 4% Min: Calcite>> Also occuring as thin pervasive bands

<<Min: 20.6 - 26.5 1% Min: Calcite>>

<<Min: 26.5 - 37 6% Min: Calcite>> Also occuring as thin pervasive bands

<<Min: 29.2 - 29.5 0% Min: Pyrrhotite>>

<<Min: 29.5 - 30.2 0.5% Min: Pyrrhotite>>

<<Min: 30.2 - 30.5 1% Min: Pyrrhotite>>

<<Min: 30.5 - 37 0.5% Min: Pyrrhotite>>

<<Struc: 20.6 - 24 Strong (Alt) Fault>> Interval fractured,sheared associated with strong oxidation. Comprinsing fault gauge.

<<Struc: 29.5 - 31 Intense (Alt) Fault>> Fault gauge

<<Struc: 33.1 - 40 Intense (Alt) Fault>> Fault gauge.

37.00 78.60 RHYva Coarse grained to ash tuff

37 - 78.6: Tuffaceous unit, fine to medium grained, +/- homogeneous, light grey greenish. Matrix seems to be weakly chlorite (green/grey mica?) altered (pervasive). Comprinsing coarse grains/fragments, distributed within the matrix, mostly calcite and Ak altered, possibility of lapilli sized fragment. Probably (felsic) ash tuff with lapilli sequences.

<<Min: 37 - 78.5 8% Min: Ankerite>>

<<Min: 37 - 78.6 3% Min: Calcite>> Associated with qtz-cal porphyroblats, partially Ak.

<<Min: 53.6 - 56.4 0% Min: Pyrrhotite>>

<<Min: 56.4 - 58.4 0% Min: Pyrrhotite>>

<<Min: 60 - 69.2 0% Min: Pyrrhotite>>

<<Min: 69.2 - 73.8 0% Min: Pyrite>>

<<Min: 69.2 - 73.8 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 73.8 - 78.8 0% Min: Pyrite>>

<<Min: 73.8 - 78.8 0.5% Min: Pyrrhotite>>

<<Alt: 38.5 - 53.6 Intense (Alt) Muscovite>> Associated with intense fractured/sheared fault interval.

<<Vein: 38.2 - 43.5 15% Quartz>> Interval comprinsing massive qtz veins, white, decimetric, deformed.

<<Vein: 59.7 - 62 20% Quartz-Tourmaline>> Interval comprinsing tourmaline-qtz veins, fractured, irregular contacts, discordant, mineralised (Po, GL traces).

<<Vein: 61 - 61.7 90% Quartz-Tourmaline>> Massive tourmaline-qtz veins, fractured, irregular contacts, mineralised (Po, GL traces)

<<Struc: 38.5 - 52.8 Intense (Alt) Fault>> Large interval intensively sheared and fractured. Fault interval.

78.60 88.80 RHYi Aphanitic Rhyolite (intrusion)

78.6 - 88.8: Massive felsic intrusive, beige, aphanitic to very fine grained, fractured, strongly siliceous. Comprinsing massive milky qtz vein, metric.

<<Min: 81.1 - 85.5 1% Min: Pyrite>>

<<Min: 81.1 - 85.5 0.5% Min: Pyrrhotite>>

<<Min: 81.1 - 85.5 0% Min: Chalcopyrite>>

<<Vein: 81 - 85.6 95% Quartz>> Massive white qtz veins, metric, mineralised (Py and traces of GL).

88.80 91.80 RHYvl Lapilli tuff

88.8 - 91.8: Light grey greenish, massive, fine grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive). Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, some of those strongly stretched, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Locally, interval with small biotite porphyroblasts, mm. Felsic ash/lapilli tuff unit?

91.80 95.20 RHYi Aphanitic Rhyolite (intrusion)

91.8 - 95.2: Massive felsic intrusive, beige to light grey, aphanitic to very fine grained, fractured, strongly siliceous.

95.20 114.50 RHYvl Lapilli tuff

95.2 - 114.5: Light grey greenish, massive, fine grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive). Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, some of those strongly stretched, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Locally, interval with small biotite porphyroblasts, mm. Felsic ash/lapilli tuff unit?

<<Min: 95.2 - 96.1 0% Min: Pyrite>>

<<Min: 95.2 - 104 3% Min: Calcite>> Associated with qtz-cal porphyroblats, partially Ak.

<<Min: 95.2 - 104 3% Min: Ankerite>>

<<Min: 96.1 - 99.3 0% Min: Pyrrhotite>>

<<Min: 101.3 - 106 0% Min: Pyrrhotite>>

<<Min: 104 - 114.5 3% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 111.3 - 114.5 1% Min: Pyrrhotite>>

<<Alt: 99.1 - 101.2 Strong (Alt) Muscovite>> Associated with fault gauge interval.

<<Struc: 99.1 - 101.2 Moderate-Strong (Alt) Fault>> Interval fractured comprinsing fault gauge.

114.50 117.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

114.5 - 117.4: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate to strongly biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).

<<Min: 114.5 - 117.4 5% Min: Calcite>>

<<Alt: 114.5 - 117.9 Moderate-Strong (Alt) Biotite>> MAFi.

117.40 126.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

117.4 - 126.6: Light grey to beige, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, locally "curdy" texture. Weakly MU and AK altered.

<<Min: 117.4 - 126.5 1% Min: Calcite>>

<<Min: 126.3 - 146.5 3% Min: Ankerite>>

<<Min: 126.5 - 144 3% Min: Calcite>>

126.60 132.10 RHYvl Lapilli tuff

126.6 - 132.1: Light grey, massive, fine to coarse grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive).Caracterised by felsic fragments, lapilli sized, weakly Ak, oriented within foliation, Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Locally, interval with small biotite porphyroblasts, mm. Lapilli tuff unit?

<<Alt: 129.5 - 131 Intense (Alt) Muscovite>> Fault gauge

132.10 133.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

132.1 - 133.1: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate to strongly biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).

<<Alt: 132.1 - 133.1 Moderate (Alt) Biotite>> MAFi

133.10 144.00 RHYva Coarse grained to ash tuff

133.1 - 144: Light grey, massive, fine to coarse grained. Weakly foliated. Matrix weakly (Mu) altered (pervasive).<3% felsic fragments, lapilli sized, weakly Ak, oriented within foliation, Comprinsing locally calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Ash tuff unit?

<<Min: 133.2 - 138.6 0% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 133.2 - 138.6 1% Min: Pyrrhotite>>

<<Min: 140.1 - 144 0% Min: Pyrite>>

<<Min: 140.1 - 144 1% Min: Pyrrhotite>>

144.00 145.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

144 - 145.6: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate to strongly biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).

<<Min: 144 - 145.6 6% Min: Calcite>>

<<Min: 144 - 145.9 0% Min: Pyrite>>

<<Alt: 144 - 145.6 Moderate-Strong (Alt) Biotite>> MAFi

145.60 154.00 RHYva Coarse grained to ash tuff

145.6 - 154: Light grey, massive, fine to coarse grained. Weakly foliated. Matrix weakly (Mu) altered (pervasive).<3% felsic fragments, lapilli sized, weakly Ak, oriented within foliation, Comprinsing locally calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Ash tuff unit?

<<Min: 145.6 - 154.3 3% Min: Calcite>>

<<Min: 145.9 - 149.2 0% Min: Pyrite>>

<<Min: 145.9 - 149.2 0% Min: Pyrrhotite>>

<<Min: 146.5 - 182 2% Min: Ankerite>>

<<Min: 151.8 - 163.5 0% Min: Pyrite>>

<<Min: 151.8 - 163.5 0% Min: Pyrrhotite>>

<<Alt: 149 - 152.2 Intense (Alt) Muscovite>> Fault gauge

<<Alt: 153.2 - 266 Moderate-Strong (Alt) Muscovite>> Fracture surface.

<<Struc: 149 - 152.2 Intense (Alt) Fault>> Fault gauge

154.00 154.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

154 - 154.3: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate to strongly biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).

<<Alt: 154 - 154.3 Moderate-Strong (Alt) Biotite>> MAFi

154.30 167.00 RHYva Coarse grained to ash tuff

154.3 - 167: Light grey, massive, fine to coarse grained. Weakly foliated. Matrix weakly (Mu) altered (pervasive).<3% felsic fragments, lapilli sized, weakly Ak, oriented within foliation, Comprinsing locally calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Ash tuff unit?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 154.3 - 194.6 1% Min: Calcite>>

<<Min: 164.5 - 166.9 0% Min: Pyrite>>

<<Min: 164.5 - 166.9 0% Min: Pyrrhotite>>

<<Min: 166.9 - 195.4 1% Min: Pyrite>>

<<Min: 166.9 - 195.4 0% Min: Pyrrhotite>>

<<Alt: 163 - 164.5 Strong (Alt) Muscovite>> Fault gauge

<<Vein: 154.3 - 154.6 95% Quartz>> Massive qtz vein, milky, discordant.

<<Struc: 163 - 164.5 Strong (Alt) Fault>> Fault gauge

167.00 196.60 RHYvl Lapilli tuff

167 - 196.6: Light grey, massive, fine to coarse grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive).Caracterised by felsic fragments, lapilli sized, weakly Ak, oriented within foliation, Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Locally, interval with small biotite porphyroblasts, mm. Lapilli tuff unit?

<<Min: 182 - 193.1 4% Min: Ankerite>>

<<Min: 194.6 - 195.1 6% Min: Calcite>>

<<Min: 195.4 - 207.1 2% Min: Pyrite>>

<<Min: 195.4 - 207.1 0% Min: Pyrrhotite>>

<<Alt: 194.6 - 195.1 Moderate (Alt) Biotite>> MAFi

196.60 201.50 RHYc Rhyolite coherant volcanics

196.6 - 201.5: Ash tuff interval comprinsing 30-40 % of aphanitic felsic volcanic, milky/beige, microcracked, margins/contacts dismembered, decimetric.

201.50 201.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

201.5 - 201.8: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate to strongly biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).

201.80 225.50 RHYvl Lapilli tuff

201.8 - 225.5: Light grey, massive, fine to coarse grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive).Caracterised by felsic fragments, lapilli sized, moderately Ak, oriented within foliation, Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Qtz eyes, <2mm, disseminated within the matrix. Locally, interval with small biotite porphyroblasts, mm. Lapilli tuff unit?

<<Min: 203 - 242.7 4% Min: Ankerite>>

<<Alt: 210 - 253.2 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
225.50	**233.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
225.5 - 233.6: Light grey, fine to medium grained, comprinsing silica bands, milky, partially Ak, deformed,folded and locally dismembered, locally " curdy" texture. Weakly/moderately MU and AK altered.													
233.60	**242.60**	**RHYvl**	**Lapilli tuff**										
233.6 - 242.6: Light grey, massive, fine to coarse grained, matrix +/- equigranular. Weak to moderately foliated. Matrix weakly (Mu) altered (pervasive).Caracterised by felsic fragments, lapilli sized, moderately Ak, oriented within foliation, Comprinsing calcite porphyroblats, 0.5-2 cm sized, subrounded, flattered within foliation. Lapilli tuff unit?													
<<Struc: 237 - 242.7 Moderate-Strong (Alt) Fault>> Interval strongly fractured with short fault gauge.													
242.60	**249.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		248.40	249.90	1.50	B00233046	0.5	-0.005	-0.01	-0.01	-0.01
242.6 - 249.3: Light grey, fine to medium grained, comprinsing silica bands, milky, partially Ak, deformed,folded and locally dismembered, locally " curdy" texture. Weakly/moderately MU and AK altered.													
<<Min: 242.7 - 251.9 8% Min: Ankerite>>													
<<Min: 249.2 - 249.9 7% Min: Pyrite>>													
249.30	**250.20**	**MDSt**	**Rhyolite tuff dominant mudstone**		249.90	251.40	1.50	B00233047	-0.3	-0.005	-0.01	-0.01	0.01
249.3 - 250.2: Interval coprinsing thin carbonaeous bands (mudstone),interbedded with tuff.													
<<Min: 249.9 - 251.4 4% Min: Pyrite>>													
<<Min: 249.9 - 251.4 0.5% Min: Pyrrhotite>>													
250.20	**251.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
250.2 - 251.4: Light grey, fine to medium grained, comprinsing silica bands, milky, partially Ak, deformed,folded and locally dismembered, locally " curdy" texture. Weakly/moderately MU and AK altered.													
251.40	**253.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**	251.50	251.90	0.40	B00233048	-0.3	-0.005	-0.01	-0.01	0.2
<<Min: 251.4 - 253.3 10% Min: Pyrite>>					253.20	254.70	1.50	B00233049	2.6	0.015	-0.01	0.03	0.07
<<Min: 251.4 - 253.3 5% Min: Pyrrhotite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
253.30	**266.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		254.70	256.20	1.50	B00233051	0.6	-0.005	-0.01	-0.01	-0.01
253.3 - 266: Light grey, fine to medium grained, comprinsing silica bands, milky, partially Ak, deformed,folded and locally dismembered, locally " curdy" texture. Moderately MU and AK altered.													
<<Min: 254.3 - 265.7 2% Min: Pyrite>>					261.30	262.80	1.50	B00233052	0.9	0.006	-0.01	-0.01	0.01
<<Min: 256 - 283.9 1% Min: Calcite>>					262.80	264.20	1.40	B00233053	0.5	-0.005	-0.01	-0.01	-0.01
266.00	**267.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**									
<<Min: 266 - 267.2 1% Min: Sphalerite>>													
<<Min: 266 - 267.2 5% Min: Pyrite>>													
<<Min: 266 - 267.2 0.1% Min: Chalcopyrite>>													
267.20	**281.00**	**RHY**	**undifferentiated rhyolite**		269.60	271.00	1.40	B00233054	0.6	0.01	-0.01	-0.01	0.01
267.2 - 281: Interval intensively fractured.													
<<Min: 267.2 - 271.2 2% Min: Pyrite>>					271.00	272.00	1.00	B00233055	0.5	0.008	-0.01	-0.01	-0.01
<<Min: 271.9 - 276.9 1% Min: Pyrite>>					272.00	273.50	1.50	B00233056	0.5	0.006	-0.01	-0.01	-0.01
<<Alt: 269.6 - 281 Strong (Alt) Muscovite>> Pervasive and fracture surface. Associated with strong fracturation and fault.					273.60	276.50	2.90	B00233057	0.4	-0.005	-0.01	-0.01	-0.01
<<Struc: 269.6 - 281 Intense (Alt) Fault>> Fault gauge					276.50	278.00	1.50	B00233058	9.5	0.04	0.27	0.02	0.22
281.00	**283.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**									
<<Min: 281 - 283.9 6% Min: Sphalerite>>													
<<Min: 281 - 283.9 60% Min: Pyrite>>													
<<Min: 281 - 283.9 2% Min: Pyrrhotite>>													
<<Min: 281 - 283.9 2% Min: Chalcopyrite>>													
283.90	**285.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
283.9 - 285.8: Green, fine to medium grained, interval of mafic intrusive, strongly sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong). Centimetric chlorite clots, flattered, mafic crystals altered? > 15% of Qtz-Cal veinlets/bands, concordant.													
<<Min: 283.9 - 285.8 6% Min: Calcite>>													
<<Alt: 283.9 - 285.8 Moderate (Alt) Chlorite>> MAFi													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
285.80	**286.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**									
<<Min: 285.8 - 286.3 5% Min: Sphalerite>>												
<<Min: 285.8 - 286.3 75% Min: Pyrite>>												
<<Min: 285.8 - 286.3 0.5% Min: Chalcopyrite>>												
<<Min: 285.8 - 286.3 1% Min: Calcite>>												
286.30	**291.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		288.30	289.80	1.50	B00233059	2.9	0.024	-0.01	0.05	0.06
286.3 - 291.4: Green, fine to medium grained, interval of mafic intrusive, strongly sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong). Centimetric chlorite clots, flattered, mafic crystals altered? > 15% of Qtz-Cal veinlets/bands, concordant.												
<<Min: 286.3 - 286.7 1% Min: Sphalerite>>				289.80	291.30	1.50	B00233061	2	0.014	-0.01	0.03	0.05
<<Min: 286.3 - 286.7 20% Min: Pyrite>>												
<<Min: 286.3 - 291.4 6% Min: Calcite>>												
<<Min: 286.7 - 291.4 1% Min: Pyrite>>												
<<Alt: 286.3 - 291.4 Moderate (Alt) Chlorite>> MAFi												
End of Hole @ 291.4												

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-174

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415205.675	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815755.591	Casing Pulled?:		Dip:	-86	Drill Company:	
UTM Elev. (m):	1412.632	Casing Depth (m):		Length (m):	377	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-86	180		180	SS				☑	
23	-85	183		183	SS				☑	
84	-80	189		189	SS				☑	
145	-75	189		189	SS				☑	
206	-72	192		192	SS				☑	
270	-72	188		188	SS				☑	
331	-71	197		197	SS				☑	
377	-71	201		201	SS				☑	

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.70**	**OVBN**	**Overburden**									
8.70	**9.10**	**RHYvl**	**Lapilli tuff**	8.70	10.20	1.50	B00267732	-0.3	-0.005	0.01	-0.01	0.04
8.7 - 9.1: Strongly oxidized, disseminated sulphides throughout												
<<Min: 8.7 - 9.1 1% Min: Pyrite>>												
9.10	**9.35**	**MDU**	**carbonaceous mudstone upper sequence**									
9.35	**11.70**	**RHYvl**	**Lapilli tuff**	10.20	11.70	1.50	B00267733	-0.3	-0.005	-0.01	-0.01	0.01
9.35 - 11.7: Strong oxidation. Disseminated sulphides incl. sph and py												
<<Min: 9.35 - 13 0.5% Min: Pyrite>>												

From (m)	To (m)	Rocktype & Description
		<<Min: 10.3 - 11 5% Min: Sphalerite>>
11.70	**14.00**	**MAFt Mafic Volcaniclastics**
14.00	**16.20**	**MDU carbonaceous mudstone upper sequence**
		14 - 16.2: wk-mod chloritized from mafic dikes
16.20	**17.50**	**MAFt Mafic Volcaniclastics**
		16.2 - 17.5: #################
17.50	**31.90**	**MDU carbonaceous mudstone upper sequence**
		<<Min: 17.5 - 36.4 0% Min: Pyrite>>
		<<Min: 17.5 - 36.4 1% Min: Pyrrhotite>>
		<<Min: 17.5 - 36.4 0% Min: Chalcopyrite>>
31.90	**32.35**	**MAFt Mafic Volcaniclastics**
32.35	**37.00**	**MDU carbonaceous mudstone upper sequence**
		<<Min: 35 - 37.2 10% Min: Ankerite>>
		<<Min: 36.4 - 36.8 0% Min: Pyrite>>
37.00	**37.50**	**MAFt Mafic Volcaniclastics**
37.50	**40.55**	**MDU carbonaceous mudstone upper sequence**
		<<Min: 38 - 40.55 5% Min: Calcite>>
40.55	**42.40**	**RHYvx Quartz and/or feldspar crystal tuff**
		<<Min: 40.55 - 43.1 20% Min: Calcite>>
		<<Vein: 41.3 - 43.1 Quartz-Chalcopyrite>>
42.40	**43.10**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**
43.10	**44.50**	**RHYvx Quartz and/or feldspar crystal tuff**
		<<Min: 43.1 - 47.2 5% Min: Calcite>>
		<<Vein: 44.3 - 47 Quartz-Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
11.70	12.90	1.20	B00267734	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.50	**45.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
45.20	**46.15**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
46.15	**49.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 47.2 - 56.5 2% Min: Calcite>>												
49.20	**58.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
<<Min: 56.5 - 58.3 10% Min: Calcite>>												
<<Min: 57 - 62.75 10% Min: Ankerite>>												
58.30	**59.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 58.3 - 72.5 5% Min: Calcite>>												
59.50	**60.40**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
60.40	**61.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
61.20	**62.40**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
62.40	**62.75**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
62.75	**64.95**	**RHYvx**	**Quartz and/or feldspar crystal tuff**				**CG**					
<<Min: 62.75 - 72.2 2% Min: Ankerite>>												
64.95	**65.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
65.50	**67.50**	**RHYvx**	**Quartz and/or feldspar crystal tuff**				**CG**					
67.50	**69.15**	**RHYvl**	**Lapilli tuff**									
69.15	**70.16**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									

From (m)	To (m)		Rocktype & Description
70.16	**72.50**	**RHYcq**	**Quartz porphyry**

70.16 - 72.5: QE + FP

<<Min: 72.2 - 79.8 10% Min: Ankerite>>

72.50	**79.80**	**RHYvl**	**Lapilli tuff**

<<Alt: 72.5 - 86.1 Weak (Alt) Muscovite>>

79.80	**81.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 79.8 - 102.5 10% Min: Ankerite>>

<<Vein: 80.5 - 90 Quartz>>

81.90	**98.80**	**RHYvl**	**Lapilli tuff**

<<Alt: 86.1 - 90.7 Weak-Moderate (Alt) Muscovite>>

<<Alt: 90 - 131.7 Weak-Moderate (Alt) Chlorite>>

<<Alt: 90.7 - 152.3 Weak (Alt) Muscovite>>

98.80	**100.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 98.8 - 101 5% Min: Calcite>>

100.80	**113.60**	**RHYvl**	**Lapilli tuff**

<<Min: 111.8 - 130.5 5% Min: Calcite>>

113.60	**114.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
114.90	**115.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
115.20	**116.70**	**RHYvl**	**Lapilli tuff**
116.70	**116.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
116.90	**120.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
120.70	**124.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 121 - 124.7 1% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			CG					

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

124.50 124.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

124.90 126.50 RHYvl Lapilli tuff

126.50 127.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

127.10 127.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

127.20 128.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

128.70 128.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

128.90 135.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

128.9 - 135.2: +bi. Mixing with RHYvl discont near UCT. RHYvl <30cm.

<<Min: 130.5 - 135.2 10% Min: Calcite>>

<<Min: 132 - 135.2 10% Min: Ankerite>>

<<Alt: 131.7 - 152.3 Weak (Alt) Chlorite>> OVERPRINT

135.20 137.60 RHYvl Lapilli tuff

<<Min: 135.2 - 137.5 0.1% Min: Pyrite>>

<<Min: 137.5 - 138.5 20% Min: Calcite>>

<<Min: 137.5 - 153 0.1% Min: Pyrite>>

<<Min: 137.5 - 153 0.1% Min: Pyrrhotite>>

<<Vein: 135.7 - 136.7 Quartz>>

137.60 137.85 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

137.85 183.60 RHYvl Lapilli tuff

137.85 - 183.6: ser+ank overprint. Gradational LCT. <20cm intervals of RHYcw near LCT, discontinuous, inconclusive txt.

<<Min: 146 - 176 15% Min: Ankerite>>

<<Min: 153 - 162.8 0.1% Min: Pyrite>>

<<Min: 171.4 - 175.7 0.1% Min: Pyrite>>

<<Min: 171.4 - 175.7 0.1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 176 - 245.5 15% Min: Ankerite>>

<<Alt: 152.3 - 180.9 Weak-Moderate (Alt) Muscovite>>

<<Alt: 180.9 - 191.5 Moderate (Alt) Muscovite>>

<<Struc: 158.4 - 159 Fault>> healed gouge

<<Struc: 164.2 - 164.4 Fault>> healed gouge

183.60 191.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 184.6 - 188.1 1% Min: Pyrite>>

<<Min: 184.6 - 188.1 1% Min: Pyrrhotite>>

<<Min: 188.1 - 191.7 0.5% Min: Pyrite>>

<<Min: 188.1 - 191.7 0.5% Min: Pyrrhotite>>

191.30 193.20 RHYvl Lapilli tuff

<<Min: 191.7 - 211 1% Min: Pyrite>>

<<Min: 191.7 - 211 1% Min: Pyrrhotite>>

<<Alt: 191.5 - 223 Weak-Moderate (Alt) Muscovite>>

<<Alt: 191.5 - 223 Weak-Moderate (Alt) Chlorite>>

193.20 194.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

194.00 199.15 RHYvl Lapilli tuff

199.15 200.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

200.40 203.25 RHYvl Lapilli tuff

203.25 204.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

204.80 206.10 RHYvl Lapilli tuff

206.10 207.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

207.70 209.40 RHYvl Lapilli tuff

209.40 210.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

210.90 212.00 MDSt Rhyolite tuff dominant mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 211 - 216.5 1.5% Min: Pyrite>>

<<Min: 211 - 216.5 1.5% Min: Pyrrhotite>>

212.00 213.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

212 - 213: 5 - 10% carbonaceous component throughout

213.00 216.10 MDSt Rhyolite tuff dominant mudstone

216.10 220.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

220.30 223.00 MDSt Rhyolite tuff dominant mudstone

223.00 244.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 231.5 - 233 5% Min: Calcite>>

<<Min: 236.1 - 244.2 1% Min: Sphalerite>>

<<Min: 236.1 - 244.2 7% Min: Pyrite>>

<<Min: 236.1 - 244.2 5% Min: Pyrrhotite>>

<<Alt: 223 - 260 Moderate (Alt) Muscovite>>

<<Vein: 236 - 238 Quartz>>

244.00 244.20 RHYvl Lapilli tuff

244.20 244.90 OI Heavilly disseminated sulphides in host schist

244.2 - 244.9: stringer zone, locally up to 30% sulphides, weak throughout. Poor copper.

<<Min: 244.2 - 244.9 4% Min: Sphalerite>>

<<Min: 244.2 - 244.9 1% Min: Pyrite>>

<<Min: 244.2 - 244.9 3% Min: Pyrrhotite>>

<<Min: 244.2 - 244.9 1% Min: Galena>>

<<Min: 244.2 - 244.9 0.1% Min: Chalcopyrite>>

<<Alt: 244.2 - 244.9 Moderate-Strong (Alt) Chlorite>>

244.90 247.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 244.9 - 247.9 0.5% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 244.9 - 247.9 1% Min: Pyrite>>

<<Min: 244.9 - 247.9 1% Min: Pyrrhotite>>

<<Min: 246 - 276 5% Min: Ankerite>>

<<Alt: 244.9 - 247.9 Moderate (Alt) Muscovite>>

<<Alt: 244.9 - 247.9 Weak (Alt) Chlorite>>

<<Vein: 247 - 254.5 Quartz>>

<<Struc: 246.1 - 246.3 Fault>> bkn, gouge

<<Struc: 247 - 261.2 Shear>> broken core, gouge, overprinting mylonite developed in core throughout.

247.90 250.40 OI Heavilly disseminated sulphides in host schist

247.9 - 250.4: Convoluted stringer zones, locally semi massive over 30cm. Copper poor throughout. Py +/- cpy (tr) 60% locally, 10% throughout.

<<Min: 247.9 - 250.4 5% Min: Sphalerite>>

<<Min: 247.9 - 250.4 2% Min: Pyrite>>

<<Min: 247.9 - 250.4 1% Min: Pyrrhotite>>

<<Min: 247.9 - 250.4 0.5% Min: Galena>>

<<Min: 247.9 - 250.4 0.5% Min: Chalcopyrite>>

<<Alt: 247.9 - 257.4 Moderate-Strong (Alt) Chlorite>>

250.40 253.20 RHYvl Lapilli tuff

<<Min: 250.4 - 252.4 0.1% Min: Sphalerite>>

<<Min: 250.4 - 252.4 1% Min: Pyrite>>

<<Min: 250.4 - 252.4 0.1% Min: Pyrrhotite>>

<<Min: 252.9 - 259.9 0.1% Min: Sphalerite>>

<<Min: 252.9 - 259.9 1% Min: Pyrite>>

<<Min: 252.9 - 259.9 0.1% Min: Pyrrhotite>>

253.20 259.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

259.80 263.40 RHYvl Lapilli tuff

<<Min: 259.9 - 272.4 0.5% Min: Sphalerite>>

<<Min: 259.9 - 272.4 1% Min: Pyrite>>

<<Min: 259.9 - 272.4 2% Min: Pyrrhotite>>

<<Alt: 260 - 277.2 Strong (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
263.40	**271.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
271.10	**271.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
271.90	**292.90**	**RHYvl** **Lapilli tuff**
<<Min: 272.4 - 277 0.5% Min: Sphalerite>>		
<<Min: 272.4 - 277 1% Min: Pyrite>>		
<<Min: 272.4 - 277 3% Min: Pyrrhotite>>		
<<Min: 276 - 296 2% Min: Ankerite>>		
<<Min: 277 - 309.3 0.1% Min: Sphalerite>>		
<<Min: 277 - 309.3 1% Min: Pyrite>>		
<<Min: 277 - 309.3 1% Min: Pyrrhotite>>		
<<Alt: 277.2 - 278.4 Weak-Moderate (Alt) Muscovite>>		
<<Alt: 277.2 - 318.4 Weak-Moderate (Alt) Chlorite>>		
<<Alt: 278.4 - 330.5 Moderate (Alt) Muscovite>>		
<<Vein: 272.5 - 277 Quartz-Carbonate>>		
292.90	**293.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
293.80	**295.00**	**RHYvl** **Lapilli tuff**
295.00	**311.35**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 296 - 318 5% Min: Ankerite>>		
<<Min: 304 - 307 2% Min: Calcite>>		
<<Min: 309 - 320 5% Min: Calcite>>		
<<Min: 309.3 - 318.5 0.1% Min: Sphalerite>>		
<<Min: 309.3 - 318.5 1.5% Min: Pyrite>>		
<<Min: 309.3 - 318.5 1.5% Min: Pyrrhotite>>		
<<Vein: 300.75 - 303 Quartz>>		
311.35	**313.60**	**RHYvl** **Lapilli tuff**
313.60	**320.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 318 - 331 5% Min: Ankerite>>		
<<Min: 318.5 - 318.7 3% Min: Sphalerite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 318.5 - 318.7 2% Min: Pyrite>>
<<Min: 318.5 - 318.7 35% Min: Pyrrhotite>>
<<Min: 318.7 - 334.8 0.1% Min: Sphalerite>>
<<Min: 318.7 - 334.8 1.5% Min: Pyrite>>
<<Min: 318.7 - 334.8 1.5% Min: Pyrrhotite>>
<<Alt: 318.4 - 336.6 Weak (Alt) Chlorite>>

320.00 337.20 RHYvl Lapilli tuff

<<Min: 328 - 330 5% Min: Calcite>>
<<Min: 331 - 360 15% Min: Ankerite>>
<<Min: 334.8 - 335 3% Min: Pyrite>>
<<Min: 334.8 - 335 2% Min: Pyrrhotite>>
<<Min: 335 - 337.2 1% Min: Pyrite>>
<<Min: 335 - 337.2 1% Min: Pyrrhotite>>
<<Alt: 330.5 - 336.6 Weak-Moderate (Alt) Muscovite>>
<<Alt: 336.6 - 352.8 Moderate (Alt) Muscovite>>

337.20 342.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 337.2 - 342 0.5% Min: Pyrite>>
<<Min: 337.2 - 342 0.5% Min: Pyrrhotite>>
<<Min: 339 - 345 20% Min: Calcite>>
<<Struc: 339.5 - 342 Shear>> protomylonite, broken core + overconsolidated healed gouge

342.00 345.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 342 - 344.8 0.1% Min: Pyrite>>
<<Min: 342 - 344.8 1% Min: Pyrrhotite>>
<<Min: 344.8 - 352.1 1% Min: Pyrite>>
<<Min: 344.8 - 352.1 1% Min: Pyrrhotite>>

345.00 353.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 345 - 352 5% Min: Calcite>>
<<Min: 352 - 366.5 2% Min: Calcite>>
<<Min: 352.1 - 358 1% Min: Pyrite>>
<<Min: 352.1 - 358 1.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 352.8 - 357.5 Weak (Alt) Muscovite>>

<<Alt: 352.8 - 364.7 Weak-Moderate (Alt) Chlorite>>

353.00 357.90 RHYvl Lapilli tuff

<<Alt: 357.5 - 364.7 Moderate (Alt) Muscovite>>

357.90 359.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 358 - 359.7 1% Min: Pyrrhotite>>

359.30 363.00 RHYvl Lapilli tuff

<<Min: 359.7 - 364.6 1% Min: Pyrite>>

<<Min: 359.7 - 364.6 1.5% Min: Pyrrhotite>>

<<Min: 360 - 369 25% Min: Ankerite>>

<<Min: 360.5 - 375.2 10% Min: Calcite>>

363.00 364.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

364.70 372.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 369 - 377 5% Min: Ankerite>>

<<Alt: 364.7 - 377 Weak (Alt) Muscovite>>

<<Alt: 364.7 - 377 Weak-Moderate (Alt) Chlorite>>

372.00 375.20 RHYvl Lapilli tuff

<<Min: 374.4 - 375.2 1% Min: Pyrite>>

<<Min: 374.4 - 375.2 2% Min: Pyrrhotite>>

375.20 377.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

375.2 - 377: +BI

<<Min: 375.2 - 377 1% Min: Pyrite>>

<<Min: 375.2 - 377 2% Min: Pyrrhotite>>

<<Min: 375.2 - 377 20% Min: Calcite>>

<<Vein: 376 - 377 Quartz-Carbonate>>

End of Hole @ 377

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-175

Prospect:	ABM	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	415350.049	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815300.006	Casing Pulled?:		Dip:	-86	Drill Company:	
UTM Elev. (m):	1499.66	Casing Depth (m):		Length (m):	482.5	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-86	180		180	SS				☑	
164	-80	205		205	SS				☑	
225	-73	200		200	SS				☑	
396	-66	194		194	SS				☑	
478	-64	193		193	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.00 OVBN Overburden

3.00 18.30 MAFi Mafic Intrusions (primarily green-brown FG footwall mafic intrusion)

3 - 18.3: massive, relatively homogeneous, intermediate?, BI from weak sedimentary component?, abdt CA veinlets, not strongly schistose so possibly a sill?

<<Min: 3 - 32.6 5% Min: Calcite>> in veinlets, patches in groundmass

<<Min: 13.1 - 14.8 3% Min: Pyrite>> strongly gossanous, PY in seams and blebs on fol'n, in veinlets -sheared zone?

18.30 19.90 RHYif feldspar and quartz porphyry buff intrusions

18.3 - 19.9: not really a RHY, probably intermediate rock, spotty due to Felsic phenos or augens, in soft micaceous groundmass, no CA, minor BI pblasts

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

19.90 31.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

19.9 - 31.2: same unit as 3-18.3, fg homogeneous groundmass, CA in veinets, minor blebs, small mafic looking dykelets cut through and have gossanous envelopes

<<Min: 20.6 - 24 0.01% Min: Pyrite>> blotchy JA best evidence

<<Struc: 20.2 - 20.21 Strong (Alt) dominant foliation>>

31.20 31.60 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

31.2 - 31.6: narrow bed, CB in lenses, black pblasts-TO or BI?

31.60 43.30 MAFta Coarse grained to ash tuff green

31.6 - 43.3: Intermediate tuff? With sedimentary component represented by BI partings that increase towards bottom of interval, Abundant AK-CA veinlets throughout, almost dominant, highly deformed, transposed layers and veinlets, interbedded at bottom with underlying unit.

Could this be MDSt, as below, with CL alteration associated with the veining?

<<Min: 31.6 - 43.3 0.01% Min: Pyrite>> associated with AK-QZ veining, rare

<<Min: 31.6 - 47.1 5% Min: Ankerite>> contorted veinlets, with CA, QZ

<<Min: 32.6 - 43.3 3% Min: Calcite>> in AK veinlets

<<Alt: 31.6 - 43.3 Moderate (Alt) Chlorite>> related to intense AK-CA-QZ veining in section, could be an alt'n lithology i.e. should be part of MDSt below

<<Vein: 35.5 - 35.7 90% Quartz-Chalcopyrite 20 deg. >> 10 cm QZ-CA-AK-minor PY vein

43.30 47.10 MDSt Rhyolite tuff dominant mudstone dark grey

43.3 - 47.1: interlayered quartzose and BI-rich layers, gradational from MAFta above, contorted

<<Min: 43.3 - 70 5% Min: Calcite>>

47.10 80.80 SEDc calcareous Sediment black

47.1 - 80.8: interlayered black MDS with lighter, QZ-CA-AK lenses/bands, segregated components, Originally a turbiditic unit?-argillite with silty layers?, contorted, maybe weakly carbonaceous locally, particulalry in fault/shear zones, overall would this form a conductive unit?

<<Min: 47.1 - 49 1% Min: Pyrite>> heavy oxidation-JA- in shear?, PY in fracs, on fol'n, sporadic

<<Min: 55.9 - 64 0.5% Min: Pyrite>> scattered and in narrow lenses or bands

<<Min: 70 - 70.7 3% Min: Pyrrhotite>> diss'd along fol'n in alt'n zone

<<Min: 70 - 70.7 10% Min: Calcite>> pervasive

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 70.7 - 86.9 5% Min: Calcite>> seems stronger below 70 m

<<Alt: 70 - 70.7 Moderate (Alt) Chlorite>> weak zone in SED

<<Vein: 49 - 86.9 15% Quartz-Carbonate>> abundant QZ-CA-DO veins, spaced and vein zones

<<Struc: 53.6 - 55.8 Moderate (Alt) Fault>> broken core, gouge

<<Struc: 55.3 - 55.31 Strong (Alt) dominant foliation>>

<<Struc: 64 - 69.8 Intense (Alt) Fault>> measured on edge of gouge zone, very broken, lots of gouge, reasonable recovery

<<Struc: 76.2 - 76.3 Moderate (Alt) Fault>> slip plane

80.80 82.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 80.8 - 82.1 3% Min: Pyrrhotite>> diss'd along fol'n

<<Alt: 80.8 - 82.1 Moderate (Alt) Chlorite>> looks like QE present as in unit below but possibly remnant QZ from SED

<<Alt: 81.2 - 81.8 Weak (Alt) Silicification>>

82.10 86.90 MDSt Rhyolite tuff dominant mudstone dark grey

82.1 - 86.9: tuffaceous component dominant, picks up possibly in alt'n zone from 80.8-82.1 where QE's occur

<<Min: 82.1 - 86.9 1% Min: Pyrrhotite>> blebs in QZ-AK domains, and in fractures locally

<<Min: 82.1 - 86.9 10% Min: Ankerite>> in groundmass, lensy

<<Struc: 86.5 - 86.9 Moderate (Alt) Fault>> broken core

86.90 94.10 RHYif feldspar and quartz porphyry intrusions green FG

86.9 - 94.1: sill?, trace slightly bluish QE's scattered trhough unit but distinct - felsic? With CL alt'n?

<<Min: 86.9 - 92.4 3% Min: Pyrrhotite>>

<<Min: 86.9 - 94.1 15% Min: Calcite>> to pervasive, in veins

<<Min: 86.9 - 94.3 5% Min: Ankerite>> lenses

<<Min: 92.4 - 94.3 5% Min: Pyrrhotite>> and wisps

<<Alt: 86.9 - 94.3 Moderate (Alt) Chlorite>> wx'd out around fault

94.10 106.50 SEDc calcareous Sediment black

94.1 - 106.5: slight variation from MDSt, CA in lenses, contorted, AK locally in groundmass, several small RHYif dykelets cutting through

<<Min: 94.1 - 106.5 10% Min: Calcite>> occurs in lenses with QZ, veinlets

<<Min: 94.3 - 104.7 0.5% Min: Pyrrhotite>> small lenses, scattered

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 100.1 - 104.7 10% Min: Ankerite>> in groundmass, lenses

106.50 110.30 MDSc Carbonaceous dominant mudstone black

106.5 - 110.3: laminated appearance, contorted, possibly carbonaceous, intruded by QE RHYi

110.30 113.50 SEDc calcareous Sediment black

110.3 - 113.5: bedded, CA in patches, lenses, possibly carbonaceous, extremely deformed QZ-CA veinlets t/o, broken core

<<Min: 110.3 - 113.5 0.5% Min: Pyrrhotite>> scattered

<<Min: 110.3 - 113.5 5% Min: Calcite>>

<<Min: 110.3 - 117.5 0.5% Min: Pyrite>> and in QZ vn

113.50 115.00 RHYif feldspar and quartz porphyry intrusions green MG

113.5 - 115: relatively homogeneous, poorly fol'd, bluish QE, numerous dykelets in proximity to this interval

<<Min: 113.5 - 115 10% Min: Calcite>> t/o dyke

<<Alt: 113.5 - 115 Weak (Alt) Chlorite>> not as strong, because CA prevalent?

115.00 129.10 SEDc calcareous Sediment black

115 - 129.1: highly contorted, variable CA/AK, cut by numerous felsic dykelets, QV's minor

<<Min: 115 - 125.9 5% Min: Calcite>>

<<Min: 117.5 - 125.9 0.5% Min: Pyrrhotite>> and wisps, scattered

<<Min: 125.9 - 129.1 0.5% Min: Pyrite>>

<<Min: 127 - 132.8 3% Min: Ankerite>> scattered in SED and strong in dykes

<<Alt: 126.4 - 127 Weak (Alt) Silicification>> related to fault? Or nearby dyke?

<<Vein: 116.3 - 116.7 100% Quartz 60 deg. >> qz-cl-py

<<Struc: 126.5 - 126.53 Moderate (Alt) Fault>> drags fol'n, filled by PY, SI alt'n around

129.10 140.20 SED undifferentiated Sediment black

129.1 - 140.2: much less CB veining but CA pervasive locally, graphitic coatings on fol'n and in fault, several MAFi dykes included

<<Min: 129.1 - 139.9 0.5% Min: Pyrrhotite>> in fractures

<<Min: 129.1 - 139.9 10% Min: Calcite>> absent locally

<<Struc: 129.8 - 133.6 Strong (Alt) Fault>> measured on gouge contact, several dykes and minor QV's in interval

<<Struc: 132.1 - 132.11 Strong (Alt) Contact>> upper contact of dyke

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 137.8 - 140.2 Strong (Alt) Fault>> measured on gouge contact

140.20 144.30 RHYvl Lapilli tuff grey

140.2 - 144.3: minor disaggregated silicic bands included, lapilli generally poorly defined

<<Min: 140.2 - 147.2 0.01% Min: Pyrite>> and veins

<<Min: 140.2 - 147.2 0.5% Min: Pyrrhotite>> scattered, minor fracs

<<Min: 140.2 - 147.2 5% Min: Ankerite>> scattered in groundmass

144.30 147.20 RHYc Rhyolite coherant volcanics grey-brown

144.3 - 147.2: curdy texture, minor silicic bands, fol'n weak

<<Min: 145.7 - 147.2 0.01% Min: Galena>> in QV

<<Min: 145.7 - 147.2 0.01% Min: Chalcopyrite>>

147.20 177.70 RHYvl Lapilli tuff grey

147.2 - 177.7: generally fine lapilli to ash, RHYc tx's uncommon, moderately to well fol'd, dark grey in stretches, TO pblasts common but local

<<Min: 147.2 - 161.2 10% Min: Ankerite>>

<<Min: 147.2 - 168.8 0.5% Min: Pyrrhotite>> diss'ns

<<Min: 161.2 - 162.2 20% Min: Ankerite>> pblasts

<<Min: 162.2 - 177.7 5% Min: Ankerite>>

<<Min: 168.8 - 175.9 1% Min: Pyrite>> in veins and fault zone

<<Min: 175.9 - 198.2 0.01% Min: Pyrrhotite>>

<<Vein: 162.6 - 163.4 30% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CB vns, minor PY

<<Vein: 168.8 - 170.7 20% Quartz-Tourmaline>> irregular QZ-TO veining, sub parallel TCA

<<Struc: 153.5 - 158.7 Moderate (Alt) Fault>> series of smal gouge zones, large from 156.4-156.9

<<Struc: 165.2 - 165.4 Moderate (Alt) Fault>> small gouge, measured at edge

<<Struc: 168.8 - 172.5 Strong (Alt) Fault>> gouge, broken core, veining

177.70 179.30 RHYvx Quartz and/or feldspar crystal tuff dark grey

177.7 - 179.3: grainy appearance, whitish xtals in groundmas, poss. QZ after FP?, minor lapilli present, sparse TO

<<Min: 177.7 - 185 1% Min: Ankerite>>

<<Min: 177.7 - 204.9 5% Min: Calcite>> scattered in groundmass, small lenses, in fracs

179.30 199.60 RHYvl Lapilli tuff grey-brown

179.3 - 199.6: moderate to fine lapilli, TO common, pretty homogeneous section

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 198.2 - 200.3 1% Min: Pyrite>> and veinlets along fol'n, at contact with fault/RHYc

<<Struc: 194.5 - 194.8 Moderate (Alt) Fault>> JA stained gouge, pyritic

199.60 204.90 RHYc Rhyolite coherant volcanics grey-green

199.6 - 204.9: finely banded at top, fault shearing?, more competent below about 201.7

<<Alt: 200.3 - 202.1 Weak (Alt) Muscovite>> around fault, contact zone

<<Alt: 200.3 - 205 Weak (Alt) Chlorite>>

<<Struc: 200.3 - 201.1 Moderate (Alt) Fault>> narrow gouge, broken core

204.90 208.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

204.9 - 208.5: felsic(?) groundmass

<<Min: 204.9 - 208.3 10% Min: Calcite>> pervasive

<<Min: 208.3 - 231 1% Min: Calcite>>

208.50 210.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

208.5 - 210.4: massive, banded

<<Min: 208.5 - 225.9 3% Min: Ankerite>> lenses

210.40 221.10 RHYvl Lapilli tuff grey

210.4 - 221.1: relatively homogeneous, minor flow banded clasts

<<Min: 211 - 211.8 10% Min: Pyrite>> seams, cut QZ vn

<<Min: 211.8 - 215.5 0.5% Min: Pyrite>>

<<Min: 215.5 - 221.1 3% Min: Pyrrhotite>> diss'd

<<Vein: 211 - 211.8 75% Quartz-Chalcopyrite>> QZ-CB, cut by pyritic fractures, veins

<<Struc: 216 - 216.2 Weak (Alt) Fault>> gouge

221.10 223.80 RHYc Rhyolite coherant volcanics grey-green

221.1 - 223.8: strong anastomosing fol'n, small frags, possibly volcaniclastic (disaggregated silicic bands)

223.80 231.00 RHYvl Lapilli tuff grey

223.8 - 231: faulted, scattered lapilli, locally ash

<<Min: 227.4 - 231 1% Min: Pyrite>>

<<Min: 227.4 - 231 0.5% Min: Pyrrhotite>>

<<Struc: 225.9 - 227.4 Moderate (Alt) Fault>> irregular contacts

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

231.00 238.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

231 - 238.6: section contains several fg to mg, BI-rich dykes with intervening RHYvl (3 m total)

<<Min: 231 - 238.6 0.5% Min: Pyrrhotite>>

<<Min: 231 - 238.6 15% Min: Calcite>> in dykes exclusively

238.60 258.50 RHYvl Lapilli tuff grey-green

238.6 - 258.5: continuous from section above dykes (223.8m), fine grained sections are ash?, schistosity increases in bottom third

<<Min: 238.6 - 246.5 1% Min: Calcite>>

<<Min: 238.6 - 262.2 0.01% Min: Pyrrhotite>>

<<Min: 238.6 - 262.2 3% Min: Ankerite>>

<<Min: 246.5 - 250.1 20% Min: Calcite>> pervasive

<<Min: 250.1 - 252.3 3% Min: Calcite>>

<<Min: 250.1 - 262.2 0.01% Min: Pyrite>> seams

258.50 262.60 RHYc Rhyolite coherant volcanics grey

258.5 - 262.6: massive, fol'n anastomosing

<<Alt: 262 - 268.1 Moderate (Alt) Chlorite>> faulting and QZ veining in RHYva, MS too?

<<Struc: 262.2 - 262.7 Moderate (Alt) Fault>> minor gouge, drags fol'n

262.60 268.10 RHYv Rhyolite volcaniclastic green-brown FMG

262.6 - 268.1: fg, massive section, CL altered?, local lapilli, also xtals?, looks a bit like a dyke execept for siliceous groundmass

<<Min: 265.2 - 282.7 0.5% Min: Pyrrhotite>> scattered

<<Vein: 262.7 - 264 Quartz>> QZ-CB, vuggy (leached),

268.10 272.50 RHYvl Lapilli tuff grey

268.1 - 272.5: scattered lapilli, ankerite staining

<<Min: 269.2 - 286.6 5% Min: Ankerite>>

<<Min: 270 - 286.6 5% Min: Calcite>>

<<Struc: 268.1 - 270 Strong (Alt) Fault>> several strands, gouge, broken core

272.50 286.60 RHYvl Lapilli tuff grey-brown

272.5 - 286.6: abdt disaggregated silicic bands, possibly disaggregated RHYc

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 282.7 - 288 0.5% Min: Pyrite>> in faults

<<Struc: 273.1 - 274.1 Moderate (Alt) Fault>> crushed rock to wx'd wall rock

<<Struc: 275.7 - 279.6 Moderate (Alt) Fault>> variably crushed and weathered rock, gouge

<<Struc: 282.7 - 286.9 Strong (Alt) Fault>> again, variably crushed and weathered rock, gouge

286.60 292.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

286.6 - 292.6: strongly carbonatized and weathered dyke, minor felsic volcanic intervals, faulted, fg, dk brown, mafic pblasts

<<Min: 286.6 - 287.3 20% Min: Calcite>> pervasive

<<Min: 286.6 - 290.5 20% Min: Ankerite>>

<<Min: 288 - 330.5 0.5% Min: Pyrite>> JA stain common

<<Min: 290.5 - 292.6 20% Min: Calcite>> pervasive

<<Min: 290.5 - 298 5% Min: Ankerite>>

<<Vein: 289.8 - 290.3 95% Tourmaline 40 deg. >> TO-CB vn/bx

292.60 313.60 RHYc Rhyolite coherant volcanics grey-brown

292.6 - 313.6: largely disaggregated, wk MU alt'n

<<Min: 298 - 314.1 10% Min: Ankerite>> lensy and blebs

<<Min: 298 - 345.7 0.5% Min: Pyrrhotite>> and small patches or lenses of diss'ns

<<Alt: 293.6 - 294.4 Weak (Alt) Muscovite>> fault zone

<<Struc: 293.6 - 294.9 Moderate (Alt) Fault>> gouge, sheared, broken core

<<Struc: 296.7 - 299.7 Strong (Alt) Fault>> wanders in and out of core axis

<<Struc: 308.5 - 313.4 Strong (Alt) Fault>> variable structure orientations

313.60 314.10 MDSt Rhyolite tuff dominant mudstone black

313.6 - 314.1: MDST dominant bed

314.10 336.50 RHYc Rhyolite coherant volcanics grey

314.1 - 336.5: very heterogeneous section, minor fg iintervals, mostly disaggregated bands, flow rocks

<<Min: 314.1 - 344.2 10% Min: Ankerite>> lensy

<<Min: 330.5 - 333 5% Min: Pyrite>> bands, fracs

<<Alt: 316.9 - 331 Weak (Alt) Muscovite>> forms fol'n between siliceous domains

<<Struc: 331.6 - 338.1 Strong (Alt) Fault>> gossanous, carbonaceous gouge locally

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

336.50 340.00 RHYvl Lapilli tuff grey

340.00 345.70 MDSt Rhyolite tuff dominant mudstone dark grey

340 - 345.7: dominantly MDSt but section of RHYv and RHYvl included,

<<Min: 340 - 345.7 3% Min: Calcite>> in groundmass, fracs

<<Min: 344.2 - 395 1% Min: Ankerite>> frac

<<Struc: 345 - 348.2 Moderate (Alt) Fault>> couple gouge zones

345.70 389.50 RHYvl Lapilli tuff grey-green FMG

345.7 - 389.5: long section of quite similar, lapilli to ash tuff, possibly crystal locally, weak MU (MS) throughout, well fol'd, "poker chip", fol'n perpendicular to core axis.

<<Min: 345.7 - 359.1 0.5% Min: Pyrite>> and diss'ns

<<Min: 359.1 - 361.8 5% Min: Pyrite>> bands of diss'ns and blebs, silic'd zone?, fractures

<<Min: 361.8 - 391.3 0.5% Min: Pyrite>>

<<Alt: 371.2 - 396.5 Moderate (Alt) Muscovite>> bands, patches, in faults, Grey-green alt'n?

<<Struc: 361.8 - 362.8 Strong (Alt) Fault>> lost core

<<Struc: 369.9 - 371.6 Moderate (Alt) Fault>> broken

<<Struc: 381 - 392.3 Strong (Alt) Fault>> minor rock type change from poker chip to more solid core, MU alt'n drops.

389.50 396.60 RHYc Rhyolite coherant volcanics grey-green

389.5 - 396.6: largely siliceous domains

<<Min: 391.3 - 405 1% Min: Pyrrhotite>> diss'ns

<<Min: 395 - 405 3% Min: Ankerite>> lensy

<<Struc: 396.3 - 396.5 Moderate (Alt) Fault>> gouge, fragments

396.60 407.70 RHYvl Lapilli tuff grey-green

396.6 - 407.7: siliceous, fg, ash intervals?,

<<Min: 403.4 - 411.9 0.5% Min: Sphalerite>> blebs in veins

<<Min: 403.4 - 411.9 3% Min: Pyrite>> blebs in veins and disseminations in host rock

<<Min: 403.4 - 411.9 0.5% Min: Pyrrhotite>>

<<Min: 403.4 - 411.9 0.5% Min: Galena>> blebs in veins

<<Alt: 403.4 - 422.9 Moderate (Alt) Muscovite>> strong muscovite in fault

<<Vein: 403.4 - 422.6 30% Quartz>> QZ VNS

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

407.70 411.90 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

407.7 - 411.9: banded, siliceous,locally disaggregated silicic bands

411.90 422.90 RHYv Rhyolite volcaniclastic grey-green

411.9 - 422.9: disaggregated silic bands, abundant qtz veins

<<Min: 411.9 - 422.9 1% Min: Pyrite>>

<<Struc: 413.1 - 416.1 Moderate (Alt) Fault>>

422.90 482.50 RHYvl Lapilli tuff grey-brown

<<Min: 422.9 - 446.6 1% Min: Pyrrhotite>>

<<Min: 430.4 - 432.2 3% Min: Pyrite>>

<<Min: 446.6 - 448.3 5% Min: Calcite>>

<<Min: 455 - 482.5 3% Min: Calcite>>

<<Min: 455 - 482.5 10% Min: Ankerite>>

<<Alt: 430.5 - 432.5 Weak (Alt) Silicification>> qtz eye porphyry dyke? Slica -pyrite bands parallel to foliation

<<Vein: 451 - 451.4 10% Tourmaline 5 deg. >> tourmaline vein with ankerite

<<Vein: 459.6 - 459.9 5% Quartz-Tourmaline 10 deg. >> QZ-TO vein

<<Vein: 478.5 - 478.7 20% Quartz-Tourmaline 15 deg. >>

<<Struc: 425.3 - 432.1 Strong (Alt) Fault>> multiple gouge - crush zones, qtz veining with minor tourmaline.

<<Struc: 436.2 - 438.4 Moderate (Alt) Fault>>

<<Struc: 445.1 - 445.9 Weak (Alt) Fault>>

<<Struc: 461.1 - 461.3 Moderate (Alt) Fault>>

<<Struc: 481.7 - 482.5 Moderate (Alt) Fault>> crushed schist

End of Hole @ 482.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-177

Prospect:	ABM	Hole Type:		Survey Type:		Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:		Survey By:		Date Logging Start:	
UTM Easting	414450	Core Size:	NQ	Azimuth:	180	Date Logging Complete:	
UTM Northing:	6815380	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1481.89	Casing Depth (m):		Length (m):	68.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
68	-60	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.10**	**OVBN**	**Overburden**									
8.10	**11.00**	**MDSt**	**Rhyolite tuff dominant mudstone** **medium grey**	8.50	10.00	1.50	B00267334	7	0.041	0.02	0.24	0.25
<<Min: 8.1 - 11.5 0.5% Min: Pyrite>>				10.00	11.50	1.50	B00267335	3.4	0.017	-0.01	0.09	0.06
11.00	**11.50**	**RHYv**	**Rhyolite volcaniclastic** **grey-green**									
11.50	**13.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **brown**	11.50	12.50	1.00	B00267336	1.2	-0.005	-0.01	-0.01	0.04
11.5 - 13.2: strongly oxidized, original textures largely obliterated, Iron oxide blebs replacing pyrrhotite? Texture at 13.1m suggests a MAFi.												
<<Min: 11.5 - 13.4 5% Min: Pyrite>> and as oxidized blebs and thin oxidized bands				12.50	13.20	0.70	B00267337	0.6	-0.005	0.04	-0.01	0.05
<<Min: 11.5 - 13.4 5% Min: Pyrrhotite>> and as oxidized blebs and thin oxidized bands												
13.20	**16.40**	**RHYv**	**Rhyolite volcaniclastic** **medium grey**	13.20	14.40	1.20	B00267338	0.8	-0.005	-0.01	-0.01	0.01
13.2 - 16.4: possibly a coarse ash tuff with some coarser clasts of samee composition												
<<Min: 13.2 - 16.3 20% Min: Ankerite>>												
<<Min: 13.4 - 15.3 0.1% Min: Pyrite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 15.3 - 18.5 0.5% Min: Pyrite>> and as fine diss

<<Min: 15.6 - 18.5 0.5% Min: Pyrrhotite>>

<<Min: 16.3 - 18.4 5% Min: Ankerite>>

<<Alt: 13.2 - 14 Moderate (Alt) Silicification>>

<<Alt: 13.2 - 23.5 Trace (Alt) Muscovite>>

<<Vein: 14.7 - 16.4 30% Quartz-Carbonate>> qtz-ankerite in fracture zone

16.40 17.10 RHYcw Curdy textured-flow banded (flows, subvolcanics) medium grey

16.4 - 17.1: block of coherent rhyolite surroundeed by volcaniclastics

17.10 19.10 RHYv Rhyolite volcaniclastic medium grey

17.1 - 19.1: blue qtz phenos

<<Min: 18.4 - 24.2 15% Min: Ankerite>> patchy

<<Min: 18.5 - 20.5 1% Min: Pyrite>> and as fine diss

<<Min: 18.5 - 20.5 3% Min: Pyrrhotite>>

19.10 19.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion) beige

19.1 - 19.7: looks like an intermediate dyke

19.70 21.00 RHYv Rhyolite volcaniclastic grey-brown

19.7 - 21: includes sections of RHYcw and coarse ash

<<Min: 20.5 - 22.6 0.5% Min: Pyrite>>

<<Alt: 19.8 - 22.4 Moderate (Alt) Silicification>>

21.00 23.50 MDSt Rhyolite tuff dominant mudstone grey-brown

21 - 23.5: includes sections of RHYcw

<<Min: 22.6 - 24.3 1% Min: Pyrite>>

<<Min: 22.6 - 24.3 3% Min: Pyrrhotite>>

23.50 24.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

23.5 - 24: similar to 19.1-19.7m.

<<Alt: 23.5 - 27.1 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
24.00	**27.10**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey**	24.00	24.60	0.60	B00267339	2.7	0.139	0.08	-0.01	0.02
<<Min: 24.1 - 24.2 0.1% Min: Arsenopyrite>> dis gr dis aspy in 1 cm wide band					24.60	25.60	1.00	B00267341	0.5	-0.005	-0.01	-0.01	0.02
<<Min: 24.3 - 25.6 3% Min: Pyrite>> and in wispy bands													
<<Min: 25.6 - 27.1 0.1% Min: Sphalerite>> seen by Cominco													
<<Min: 25.6 - 27.1 10% Min: Pyrite>> small blebs and diss													
<<Min: 25.6 - 27.1 2% Min: Pyrrhotite>>													
<<Min: 25.6 - 27.1 0.1% Min: Chalcopyrite>> seen by cominco													
<<Struc: 27 - 30 Moderate (Alt) Fault>> broken core and minor gouge													
27.10	**29.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	27.10	28.60	1.50	B00267342	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 27.1 - 34.6 1% Min: Pyrite>> 34.3m 1cm qtz band dis py-sp													
<<Min: 27.1 - 34.6 0.1% Min: Pyrrhotite>>													
<<Min: 27.1 - 34.8 5% Min: Ankerite>> patchy													
<<Alt: 27.1 - 39.3 Moderate-Strong (Alt) Muscovite>>													
<<Alt: 27.1 - 42.4 Moderate (Alt) Silicification>>													
29.30	**31.70**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**									
<<Min: 30 - 46.5 3% Min: Calcite>> 1-3% fracture filling and diss calcite													
31.70	**34.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
34.80	**35.70**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**									
<<Min: 34.8 - 38.9 10% Min: Ankerite>> patchy													
<<Min: 35 - 36.7 0.1% Min: Sphalerite>> logged by cominco													
<<Min: 35 - 36.7 1% Min: Pyrite>>													
<<Min: 35 - 36.7 1% Min: Pyrrhotite>>													
35.70	**38.00**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey**									
<<Min: 36.7 - 37.5 0.1% Min: Pyrite>>													
<<Min: 36.7 - 37.5 2% Min: Pyrrhotite>>													
38.00	**38.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**									
<<Min: 38 - 38.9 0.1% Min: Pyrite>>													
<<Min: 38 - 38.9 3% Min: Pyrrhotite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 38 - 38.9 0.1% Min: Chalcopyrite>>

38.60 39.30 MDSt Rhyolite tuff dominant mudstone grey

<<Min: 38.9 - 39 0.1% Min: Arsenopyrite>> 1cm round calcareous rhy clast rimmed with aspy

<<Min: 38.9 - 39.4 0.1% Min: Pyrrhotite>>

<<Min: 38.9 - 52.2 5% Min: Ankerite>> patchy

39.30 42.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

<<Min: 39.4 - 42.3 0.1% Min: Pyrite>>

<<Min: 39.4 - 42.3 0.5% Min: Pyrrhotite>>

<<Min: 42.3 - 45.3 0.5% Min: Pyrite>>

<<Min: 42.3 - 45.3 1% Min: Pyrrhotite>>

<<Alt: 39.3 - 42.2 Strong (Alt) Muscovite>> abundant fine muscovite

<<Vein: 39.3 - 41.1 60% Quartz>>

<<Vein: 42.1 - 42.4 70% Quartz>>

42.40 45.10 MDSw Coherent rhyolite flow with carbonaceous content grey-brown

<<Alt: 42.4 - 50 Weak-Moderate (Alt) Muscovite>>

<<Alt: 42.4 - 51 Moderate (Alt) Silicification>>

45.10 59.10 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

45.1 - 59.1: 50-59.1; flow banding at low angles to CA and dominant foliation cross cutting at usual high angle to foliation resulting in crenulations and transposed flowbanding - local pseudo RHYvl texture. Ash - lapilli sections may be present. 51.6-57.7m not very siliceous - could be RHYvl. Traces of minor MDS at 50m and 57.1m.

<<Min: 45.3 - 49.8 1% Min: Pyrrhotite>>

<<Min: 45.3 - 57.1 1% Min: Pyrite>>

<<Min: 46.5 - 58.5 5% Min: Calcite>>

<<Min: 49.8 - 52 0.1% Min: Pyrrhotite>>

<<Min: 52 - 57.1 1% Min: Pyrrhotite>>

<<Min: 52.5 - 57 10% Min: Ankerite>>

<<Min: 57 - 68.9 3% Min: Ankerite>>

<<Min: 57.1 - 58.6 2% Min: Pyrite>>

<<Min: 57.1 - 58.6 0.5% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 58.5 - 68.5 1% Min: Calcite>>													
<<Min: 58.6 - 59.5 2% Min: Pyrite>>													
<<Min: 58.6 - 59.5 1% Min: Pyrrhotite>>													
<<Alt: 50 - 62.4 Moderate (Alt) Muscovite>>													
<<Alt: 56.5 - 68.9 Intense (Alt) Silicification>> but of course rhy is siliceous!													
59.10	**59.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**grey-brown**									
<<Min: 59.5 - 60.5 0% Min: Pyrrhotite>>													
59.70	**68.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**	64.10	65.20	1.10	B00267343	0.5	-0.005	-0.01	-0.01	-0.01
59.7 - 68.9: blue qtz phenos													
<<Min: 60.5 - 65.2 1% Min: Pyrite>> dis in bands					65.20	66.50	1.30	B00267344	0.3	-0.005	-0.01	0.01	0.03
<<Min: 62.5 - 68.9 1% Min: Calcite>>					66.50	67.40	0.90	B00267345	0.7	0.009	-0.01	-0.01	0.02
<<Min: 65.2 - 66 2% Min: Pyrite>>					67.40	68.90	1.50	B00267346	0.4	-0.005	-0.01	-0.01	0.01
<<Min: 66 - 66.5 1% Min: Pyrite>>													
<<Min: 66.5 - 67.1 5% Min: Pyrite>> dis in bands													
<<Min: 67.1 - 68.9 3% Min: Pyrite>>													
<<Alt: 62.4 - 68.9 Moderate-Strong (Alt) Muscovite>>													
<<Struc: 60.7 - 61.2 Weak (Alt) Fault>> minor broken core and gouge													
End of Hole @ 68.9													

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-178

Prospect:	Krakatoa	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	14-Sep-15
UTM Easting	415238.134	Core Size:		Azimuth:	180	Date Logging Complete:	15-Sep-15
UTM Northing:	6815250.696	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1438.823	Casing Depth (m):		Length (m):	359.7	Drill Rig:	
Local Easting:	5250	Stored?:		Claims Title		Drill Started:	
Local Northing:	6815069.5	Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):	1452					Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	SS				☑	
12	-60	177		177	SS				☑	
73	-60	179		179	SS				☑	
157	-60	171		171	SS				☑	
218	-61	159		159	SS				☑	
279	-62	160		160	SS				☑	
340	-61	179		179	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.50 CASN Casing

3.50 3.90 OVBN Overburden

<<Min: 3.8 - 33 10% Min: Calcite>>

<<Min: 3.8 - 38.7 3% Min: Ankerite>>

3.90 6.40 MAFt Mafic Volcaniclastics

<<Min: 4.5 - 6.3 0% Min: Pyrite>>

<<Min: 4.5 - 6.3 1% Min: Pyrrhotite>>

<<Min: 6.3 - 11.4 3% Min: Pyrite>>

<<Min: 6.3 - 11.4 3% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
6.40	**9.70**	**MDS** **Carbonaceous Mudstone & Tuffaceous Mudstone**
6.4 - 9.7: cacareous, intbed maft		
9.70	**12.70**	**MAFt** **Mafic Volcaniclastics**
<<Min: 11.4 - 12.5 0% Min: Pyrite>>		
<<Min: 11.4 - 12.5 1% Min: Pyrrhotite>>		
<<Min: 12.5 - 12.8 3% Min: Pyrite>>		
<<Min: 12.5 - 12.8 3% Min: Pyrrhotite>>		
12.70	**22.30**	**MDS** **Carbonaceous Mudstone & Tuffaceous Mudstone**
12.7 - 22.3: limy, intbed maft		
<<Min: 12.8 - 13 0% Min: Pyrite>>		
<<Min: 12.8 - 13 1% Min: Pyrrhotite>>		
<<Min: 13 - 16 3% Min: Pyrite>>		
<<Min: 13 - 16 3% Min: Pyrrhotite>>		
22.30	**24.60**	**MAFt** **Mafic Volcaniclastics**
<<Min: 24.3 - 25.5 1% Min: Pyrite>>		
<<Min: 24.3 - 25.5 1% Min: Pyrrhotite>>		
24.60	**28.10**	**MDSc** **Carbonaceous dominant mudstone**
24.6 - 28.1: limy		
<<Min: 25.5 - 25.6 0% Min: Pyrrhotite>>		
<<Min: 26.6 - 27 0% Min: Pyrrhotite>>		
<<Min: 28 - 29.4 1% Min: Pyrrhotite>>		
28.10	**32.60**	**MDSt** **Rhyolite tuff dominant mudstone**
28.1 - 32.6: poss rhyv component		
<<Min: 29.4 - 31.7 0% Min: Pyrite>>		
<<Min: 29.4 - 31.7 0% Min: Pyrrhotite>>		
<<Min: 31.7 - 32.5 1% Min: Pyrrhotite>>		
<<Min: 32.5 - 35.5 0% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 32.5 - 35.5 0% Min: Pyrrhotite>>

32.60 38.70 MDSc Carbonaceous dominant mudstone

32.6 - 38.7: graphitic

<<Min: 33 - 38.7 5% Min: Calcite>>

<<Min: 36 - 42.2 1% Min: Pyrrhotite>>

<<Struc: 35.4 - 35.7 Moderate (Alt) Fault>> gouge

38.70 73.70 RHYva Coarse grained to ash tuff

38.7 - 73.7: massive fine grained unit, <4%lenses to equand light coloured patches of QZ-CA-FD that locally look like amygdules. Tecturally considered as poissible mafic:soft, non siliceous, weakly calcareous, local biotite anf possible amygdules. Cominco whole rk however indicates felsic based on Zr/Ti ratios and conc.

<<Min: 38.7 - 69 10% Min: Ankerite>>

<<Min: 38.7 - 73.7 2% Min: Calcite>>

<<Min: 42.2 - 43.5 0% Min: Pyrite>>

<<Min: 42.2 - 43.5 1% Min: Pyrrhotite>>

<<Min: 43.5 - 47.9 0% Min: Pyrite>>

<<Min: 43.5 - 47.9 1% Min: Pyrrhotite>>

<<Min: 49.1 - 55 0% Min: Pyrite>>

<<Min: 49.1 - 55 1% Min: Pyrrhotite>>

<<Min: 55 - 68.4 0% Min: Pyrite>>

<<Min: 55 - 68.4 0% Min: Pyrrhotite>>

<<Min: 69 - 108 1% Min: Ankerite>>

<<Vein: 68.4 - 88.2 20% Quartz>>

<<Struc: 67.4 - 86 Strong (Alt) Fault>> gouge

73.70 84.10 RHYc Rhyolite coherant volcanics

73.7 - 84.1: aphanitic rhy, possible rhyi

<<Min: 73.7 - 86 0.5% Min: Calcite>>

<<Min: 75.5 - 86 0% Min: Pyrite>>

84.10 88.20 RHYvx Quartz and/or feldspar crystal tuff

84.1 - 88.2: interpreted as peperite marginal to rhyc

<<Min: 86 - 87.8 0% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 86 - 87.8 0% Min: Pyrrhotite>>
		<<Min: 86 - 112.6 2% Min: Calcite>>
		<<Min: 87.9 - 88.1 1% Min: Pyrrhotite>>
88.20	**91.00**	**RHYva** **Coarse grained to ash tuff**
91.00	**94.40**	**RHYc** **Rhyolite coherant volcanics**
		91 - 94.4: pepperite margins
		<<Min: 91 - 93.5 1% Min: Pyrrhotite>>
94.40	**102.30**	**RHYva** **Coarse grained to ash tuff**
		94.4 - 102.3: poss amygd
		<<Min: 94.4 - 99.3 0% Min: Pyrrhotite>>
		<<Min: 99.3 - 102.6 1% Min: Pyrrhotite>>
102.30	**103.20**	**RHYvx** **Quartz and/or feldspar crystal tuff**
		102.3 - 103.2: pepperite
		<<Min: 102.6 - 107.5 1% Min: Pyrrhotite>>
103.20	**103.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
103.90	**107.00**	**RHYvx** **Quartz and/or feldspar crystal tuff**
		103.9 - 107: pepperite
107.00	**108.30**	**RHYva** **Coarse grained to ash tuff**
		<<Min: 108 - 160 2% Min: Ankerite>>
		<<Vein: 107.5 - 110.6 25% Quartz-Carbonate>>
108.30	**112.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 112.5 - 120.2 0% Min: Pyrrhotite>>
112.60	**113.10**	**RHYva** **Coarse grained to ash tuff**
		<<Min: 112.6 - 164 0% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
113.10	**117.30**	**RHYvx** **Quartz and/or feldspar crystal tuff**
113.1 - 117.3: pepperite		
117.30	**118.10**	**RHYc** **Rhyolite coherant volcanics**
118.10	**120.20**	**RHYvx** **Quartz and/or feldspar crystal tuff**
118.1 - 120.2: lapilli		
120.20	**127.80**	**RHYva** **Coarse grained to ash tuff**
120.2 - 127.8: poss amygd		
<<Min: 120.2 - 127.8 0% Min: Pyrite>>		
<<Min: 120.2 - 127.8 1% Min: Pyrrhotite>>		
127.80	**130.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**
127.8 - 130.4: lapilli		
<<Min: 127.8 - 130 1% Min: Pyrite>>		
<<Min: 127.8 - 130 0% Min: Pyrrhotite>>		
130.40	**132.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 130.6 - 132.8 0% Min: Pyrite>>		
<<Min: 130.6 - 132.8 1% Min: Pyrrhotite>>		
<<Min: 132.8 - 135.6 0% Min: Pyrite>>		
<<Min: 132.8 - 135.6 1% Min: Pyrrhotite>>		
132.90	**135.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 135.6 - 141.7 1% Min: Pyrrhotite>>		
135.70	**141.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
141.80	**144.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
144.30	**146.80**	**RHYvx** **Quartz and/or feldspar crystal tuff**
144.3 - 146.8: pepperite		
146.80	**149.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 148.2 - 148.8 0% Min: Pyrrhotite>>		
<<Min: 149.2 - 161.8 0% Min: Pyrrhotite>>		
149.30	**158.50**	**RHYvx** **Quartz and/or feldspar crystal tuff**
158.50	**162.20**	**RHYvl** **Lapilli tuff**
<<Min: 160 - 188 10% Min: Ankerite>>		
<<Min: 161.8 - 164.9 0% Min: Pyrite>>		
<<Min: 161.8 - 164.9 2% Min: Pyrrhotite>>		
162.20	**166.30**	**RHYvx** **Quartz and/or feldspar crystal tuff**
162.2 - 166.3: distinctive unit, weakly crb, distinct fd and qe		
<<Min: 164 - 273 1% Min: Calcite>>		
<<Min: 164.9 - 169.4 1% Min: Pyrrhotite>>		
166.30	**173.00**	**RHYvl** **Lapilli tuff**
<<Min: 169.4 - 171.9 0% Min: Pyrrhotite>>		
<<Min: 171.9 - 173.8 0% Min: Pyrite>>		
<<Min: 171.9 - 173.8 1% Min: Pyrrhotite>>		
173.00	**176.90**	**RHYvx** **Quartz and/or feldspar crystal tuff**
<<Min: 173.8 - 174.2 2% Min: Pyrrhotite>>		
176.90	**199.60**	**RHYvl** **Lapilli tuff**
<<Min: 188 - 221 2% Min: Ankerite>>		
<<Min: 188.2 - 193.5 0% Min: Pyrite>>		
<<Min: 188.2 - 193.5 0% Min: Pyrrhotite>>		
<<Min: 193.5 - 200.2 0% Min: Pyrite>>		
<<Min: 193.5 - 200.2 0% Min: Pyrrhotite>>		
<<Struc: 183.3 - 188.2 Intense (Alt) Fault>> milled rk and gouge		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Struc: 190.3 - 192.5 Moderate (Alt) Fault>>
199.60	**200.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
200.30	**201.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**
		<<Min: 200.5 - 207.8 0% Min: Pyrite>>
		<<Min: 200.5 - 207.8 0% Min: Pyrrhotite>>
		<<Struc: 200.3 - 205 Weak-Moderate (Alt) Fault>>
201.40	**203.20**	**RHYc** **Rhyolite coherant volcanics**
		<<Vein: 201.7 - 207.9 15% Quartz-Carbonate>>
203.20	**208.10**	**RHYvx** **Quartz and/or feldspar crystal tuff**
		<<Min: 207.8 - 210.8 0% Min: Pyrite>>
		<<Min: 207.8 - 210.8 0% Min: Pyrrhotite>>
208.10	**210.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
210.70	**214.00**	**RHYv** **Rhyolite volcaniclastic**
		<<Min: 210.8 - 214.9 0% Min: Pyrite>>
		<<Min: 210.8 - 214.9 0% Min: Pyrrhotite>>
214.00	**216.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
216.50	**221.20**	**RHYva** **Coarse grained to ash tuff**
		<<Min: 216.5 - 221.2 0% Min: Pyrite>>
		<<Min: 216.5 - 221.2 1% Min: Pyrrhotite>>
		<<Min: 221 - 226 15% Min: Ankerite>>
221.20	**227.00**	**RHYvl** **Lapilli tuff**
		<<Min: 221.6 - 227.9 0% Min: Pyrite>>
		<<Min: 221.6 - 227.9 0% Min: Pyrrhotite>>
		<<Min: 226 - 258 5% Min: Ankerite>>
227.00	**228.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 227.9 - 230.6 0% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 227.9 - 230.6 2% Min: Pyrrhotite>>

228.00 243.70 RHYvl Lapilli tuff

<<Min: 240 - 242.8 1% Min: Pyrite>>

<<Min: 240 - 242.8 2% Min: Pyrrhotite>>

<<Vein: 243 - 246.8 15% Quartz>>

243.70 264.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 244 - 246 3% Min: Pyrite>>

<<Min: 244 - 246 5% Min: Pyrrhotite>>

<<Min: 247.8 - 258.5 1% Min: Pyrite>>

<<Min: 247.8 - 258.5 1% Min: Pyrrhotite>>

<<Min: 258 - 287 1% Min: Ankerite>>

<<Min: 258.5 - 258.8 5% Min: Pyrite>>

<<Min: 258.5 - 258.8 3% Min: Pyrrhotite>>

<<Alt: 260 - 292 Moderate (Alt) Muscovite>>

264.80 276.90 RHY undifferentiated rhyolite

<<Struc: 272.5 - 280 Strong (Alt) Fault>> gouge

276.90 281.20 MDSt Rhyolite tuff dominant mudstone

276.9 - 281.2: very weakly carbonaceous

<<Min: 279.2 - 282.1 10% Min: Pyrite>>

<<Min: 279.2 - 282.1 2% Min: Pyrrhotite>>

281.20 287.40 RHY undifferentiated rhyolite

<<Min: 282.1 - 287.1 5% Min: Pyrite>>

<<Min: 287 - 336 0.5% Min: Ankerite>>

<<Min: 287.1 - 289.7 5% Min: Pyrite>>

287.40 289.80 MDSc Carbonaceous dominant mudstone

<<Min: 289.7 - 319.4 3% Min: Pyrite>>

289.80 308.00 RHYc Rhyolite coherant volcanics

<<Alt: 292 - 308 Strong (Alt) Muscovite>>

<<Struc: 297 - 297.8 Strong (Alt) Fault>> gouge

From (m)	To (m)	Rocktype & Description
308.00	**313.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 308 - 332 Moderate (Alt) Muscovite>>		
313.50	**338.50**	**RHY** **undifferentiated rhyolite**
<<Min: 319.4 - 338.4 3% Min: Pyrite>>		
<<Min: 319.4 - 338.4 2% Min: Pyrrhotite>>		
<<Min: 336 - 359.7 5% Min: Ankerite>>		
<<Struc: 316 - 338.5 Strong (Alt) Fault>> gouge variable orientatio, folding and flt		
338.50	**359.70**	**RHYvl** **Lapilli tuff**

End of Hole @ 359.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-181

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414747.522	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6814604.822	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1429.834	Casing Depth (m):		Length (m):	130.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	UNKN				☑	
130	-60	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**12.20**	**OVBN** **Overburden**											
12.20	**12.90**	**RHYc** **Rhyolite coherant volcanics**	**yellow**	**FG**	12.20	12.90	0.70	B00264186	3	0.015	0.01	0.03	0.02
12.2 - 12.9: strong MU partings between QZ bands,													
<<Min: 12.2 - 12.9 0.5% Min: Pyrite>>													
<<Alt: 12.2 - 12.9 Strong (Alt) Muscovite>> strong partings													
12.90	**17.60**	**OA** **Magnetite bearing sulphides**											
12.9 - 17.6: OB/OA at top, wispy SP to mx PY, with MG													
<<Min: 17 - 17.2 0.15% Min: Barite>> grey ductile soft no fizz. In massive sx													
17.60	**19.70**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**green-brown**		19.60	20.70	1.10	B00264187	1.8	0.009	-0.01	-0.01	0.02
17.6 - 19.7: heavy CL, with MU, CP-SP-MG-PY in bands, stringers,													
<<Alt: 17.6 - 19.7 Intense (Alt) Chlorite>> heavy CL, with MU locally													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

19.70 31.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

19.7 - 31.5: flow banded, contorted, local stringers, 3

<<Min: 19.7 - 31.5 0.5% Min: Pyrite>>

<<Min: 19.7 - 31.5 0.5% Min: Pyrrhotite>>

<<Alt: 19.7 - 31.5 Strong (Alt) Muscovite>>

31.50 57.80 RHYvl Lapilli tuff

31.5 - 57.8: variable clasts, locally dark sx/SI clasts

<<Min: 31.5 - 58.2 1% Min: Pyrite>> in lapilli, lenses

<<Alt: 31.5 - 51.3 Moderate (Alt) Muscovite>>

<<Alt: 51.3 - 58.2 Weak (Alt) Muscovite>>

<<Struc: 45.5 - 45.6 Moderate (Alt) Fault>>

57.80 58.20 SED undifferentiated Sediment

58.20 68.90 RHYvx Quartz and/or feldspar crystal tuff green

58.2 - 68.9: lapilli tuff, bluish QE t/o, light green, sx bands common, 2-3% PY, dykes common in interval, whitish lapilli locally, crowded, almost curdy tx?

<<Min: 58.2 - 74.1 5% Min: Pyrite>> diss'd in bands, lenses, fractures

<<Alt: 58.2 - 74.1 Moderate (Alt) Muscovite>>

68.90 69.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

68.9 - 69.2: narrowbrown bt dyke

69.20 70.10 RHYvx Quartz and/or feldspar crystal tuff

70.10 70.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

70.1 - 70.9: narrowbrown bt dyke

70.90 74.10 RHYvx Quartz and/or feldspar crystal tuff

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
74.10	**78.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**									

74.1 - 78.6: curdy to flow banded, blue QE t/o,

<<Alt: 74.1 - 90.9 Weak (Alt) Muscovite>>

78.60	**80.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									

78.6 - 80: could bea tuff

80.00	**81.20**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
81.20	**86.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **green-brown**									

<<Struc: 82.8 - 83 Moderate (Alt) Fault>> fault gouge

86.40	**86.80**	**OI**	**Heavilly disseminated sulphides in host schist**									

86.4 - 86.8: sampledby cominco. Barite,pyrite?? Right t lower contact of mafic and qe lapilli tuff

<<Min: 86.4 - 86.8 20% Min: Barite>>

<<Min: 86.4 - 89.2 10% Min: Pyrite>> severalbands of mx PY, PY-SP, muddy MS bands, QZ-AK veins

86.80	**90.90**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
90.90	**101.80**	**RHYvl**	**Lapilli tuff** **grey-green**									

90.9 - 101.8: no QE, lapilli to ash tuff, locally "muddy" sericite bands, AK alt'n locally as patches, lenses -lapilli?,

<<Alt: 90.9 - 102.5 Weak (Alt) Muscovite>>

101.80	**102.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									

<<Alt: 102.5 - 105.7 Strong (Alt) Muscovite>>

102.90	**104.40**	**RHYvl**	**Lapilli tuff**									
104.40	**104.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									
104.60	**105.80**	**RHYvl**	**Lapilli tuff**									

<<Alt: 105.7 - 113 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 105.7 - 113 Moderate (Alt) Chlorite>>

105.80 113.70 MAFi Mafic Intrusions (primarily green footwall mafic intrusion)

105.8 - 113.7: forrest green, fine grained. Not THE mafi intrusive. Looks like those far in the hwor fw kzk sequence

<<Min: 113 - 116.8 1% Min: Pyrite>> seams locally

<<Alt: 113 - 116.8 Strong (Alt) Muscovite>> SI locally, QV's, PY seams, MAFi interupts

113.70 114.40 RHYvl Lapilli tuff

114.40 114.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

114.90 130.10 RHYvl Lapilli tuff

114.9 - 130.1: bottom 8m hass chl green hue but looksprimary. Much like the stuff high in the hwon the east side where s2 foliation was getting overprinted by ser alt.

<<Alt: 116.8 - 122.6 Moderate (Alt) Chlorite>> clots, etc, AK patches

<<Alt: 122.6 - 130.1 Moderate (Alt) Chlorite>> homogeneous, intensity increasing towards bottom of hole?

End of Hole @ 130.1

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-182

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414746.942	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6814398.87	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1451.187	Casing Depth (m):		Length (m):	135.9	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	UNKN				☑	
135	-60	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**7.00**	**OVBN** **Overburden**
7.00	**15.70**	**RHYvx** **Quartz and/or feldspar crystal green tuff**

7 - 15.7: ash to lapilli, QE and FP(?) crystals to 2 mm, greenish, weak CL, MU

<<Min: 7 - 39.4 1% Min: Pyrite>> bands, alt zones

<<Min: 7 - 70.3 10% Min: Ankerite>>

<<Min: 14.1 - 17.5 1% Min: Chalcopyrite>> stringers, blebs in CL alt'n zones

<<Alt: 14.1 - 15.7 Moderate (Alt) Chlorite>> minor CP stringers with strong CL envelopes

15.70	**16.10**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

15.7 - 16.1: very wk py stringers

<<Alt: 15.7 - 17.5 Strong (Alt) Chlorite>> strong around stringers with PY, CP, CL-BI-CA bands common, dark brown lapilli with CA, CL drops off by 20 m

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
16.10	**17.10**	**RHYvx** **Quartz and/or feldspar crystal tuff**
17.10	**17.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
17.1 - 17.5: very wk py stringers		
17.50	**30.50**	**RHYvx** **Quartz and/or feldspar crystal tuff**
30.50	**30.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
30.5 - 30.8: possible 4cm chl py stringer within		
30.80	**39.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**
30.8 - 39.4: much finer rare qe grading into an ash tuff		
<<Min: 38.3 - 40.4 1% Min: Chalcopyrite>> stringers, blebs		
<<Alt: 38.3 - 40.4 Strong (Alt) Chlorite>> strong to banded, with CP stringers, blebs		
39.40	**40.50**	**RHYvx** **Quartz and/or feldspar crystal tuff**
39.4 - 40.5: prominent blue QE in green rock		
<<Min: 40.4 - 41.5 15% Min: Pyrite>> stringers, patches in CL alt'n		
<<Min: 40.4 - 41.5 10% Min: Chalcopyrite>> stringers, fractures		
<<Alt: 40.4 - 41.5 Intense (Alt) Chlorite>> massive Cl		
40.50	**41.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
40.5 - 41.5: cl ci py and trace cp		
<<Alt: 41.4 - 41.5 Weak-Moderate (Alt) Cordierite>>		
41.50	**44.20**	**RHYva** **Coarse grained to ash tuff**
41.5 - 44.2: trace small QE's occurring locally, CL-MS Schist		
<<Alt: 41.5 - 47.3 Strong (Alt) Chlorite>> patches, bands with sx minlzn		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 43.5 - 64.7 Moderate (Alt) Chlorite>> CL-MS SCHS

44.20 47.10 OJ Heavilly disseminated sulphides in proximal altered rock

44.2 - 47.1: weakly developed, but cl ci py and 0.5% cp

<<Alt: 44.2 - 45.2 Weak-Moderate (Alt) Cordierite>>

47.10 65.90 RHYva Coarse grained to ash tuff

47.1 - 65.9: several stg chl +/- ci cross cutting stringers

<<Min: 65.7 - 68 3% Min: Chalcopyrite>> stringers, fractures

<<Alt: 64.7 - 70.3 Strong (Alt) Chlorite>>

<<Alt: 64.8 - 65 Weak-Moderate (Alt) Cordierite>>

65.90 66.30 OJ Heavilly disseminated sulphides in proximal altered rock

65.9 - 66.3: weakly developed stg chl, trcp with py

66.30 67.60 RHYva Coarse grained to ash tuff

67.60 68.10 OJ Heavilly disseminated sulphides in proximal altered rock

67.6 - 68.1: weakly developed stg chl, trcp with py

68.10 70.30 RHYva Coarse grained to ash tuff

68.1 - 70.3: 15cm chl py stringer at bottom contact

70.30 84.10 RHYvl Lapilli tuff grey-brown

70.3 - 84.1: possible FP xtals, or porphyroblasts, in and out, AK common

<<Min: 70.3 - 135.9 5% Min: Ankerite>>

<<Min: 71.5 - 73.1 3% Min: Pyrite>> blebs, fractures

<<Min: 71.5 - 73.1 3% Min: Chalcopyrite>> blebs, in fractures

<<Min: 73.1 - 75.3 1% Min: Pyrite>> bands, blebs

<<Min: 73.1 - 75.3 1% Min: Pyrrhotite>> bands blebs

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
84.10	**85.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **light grey**									
84.1 - 85.1: flow, or large block, white, aphanitic, QV with fracture controlled PY, Sp, GL												
85.10	**104.90**	**RHYva**	**Coarse grained to ash tuff** **green-brown**									
85.1 - 104.9: weak BI on slips, in groundmass, folded QV's or lenses, 104.9-108.8												
<<Min: 88.3 - 132.3 1% Min: Pyrite>> in Cl bands, scatered												
<<Min: 88.3 - 132.3 0.01% Min: Chalcopyrite>> in CL bands, stringeres locally												
<<Alt: 88.13 - 132.3 Moderate (Alt) Chlorite>> locally, strong Cl around CP-PY stringers												
104.90	**108.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-brown**									
104.9 - 108.8: flow textures, strongly sheared, disaggrtegated silicic bands?												
108.80	**118.90**	**RHYvl**	**Lapilli tuff** **green-brown**									
108.8 - 118.9: 118.9-GL-SP-PY-CP in stringers@ 90° TCA												
118.90	**132.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff** **green-brown**									
118.9 - 132.3: crystal lapilli tuff, clastic texture, with QE's, FP phenos, local flow bands?, strongly sheared												
<<Alt: 121.5 - 131 Strong (Alt) Silicification>> siliceous groundmass												
132.30	**135.90**	**RHYvl**	**Lapilli tuff**									

End of Hole @ 135.9

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-183

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414746.498	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6814558.398	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1431.973	Casing Depth (m):		Length (m):	84.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	UNKN				☑	
84	-90	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**6.10**	**OVBN** **Overburden**
6.10	**8.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
6.1 - 8.2: mostly missing, broken core, overburden?		
8.20	**29.80**	**RHYva** **Coarse grained to ash tuff**
8.2 - 29.8: ash to lapilli tuff, light colour, quite broken, weathered section		
<<Alt: 8.2 - 12 Strong (Alt) Muscovite>>		
<<Alt: 12 - 14.6 Weak (Alt) Muscovite>>		
<<Alt: 14.6 - 18.6 Strong (Alt) Muscovite>>		
<<Alt: 18.6 - 29.8 Moderate (Alt) Muscovite>>		
29.80	**43.10**	**RHYvl** **Lapilli tuff**
29.8 - 43.1: brown coloured clasts, AK-SX alt'n, well foliated		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
8.20	11.20	3.00	B00264188	0.4	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

43.10 51.90 RHYva Coarse grained to ash tuff

43.1 - 51.9: ash to lapilli, bluish QE's,

51.90 55.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

51.9 - 55.6: curdy, local flow bands, minor tuff sections, multiple MAFi dykes,

<<Alt: 51.9 - 60 Moderate (Alt) Muscovite>>

55.60 57.30 SEDc calcareous Sediment beige FG

55.6 - 57.3: fine grained thin bedded wacke- arkose sediment 100% no doubt, lower boundary with qtz vein

<<Vein: 57 - 57.3 100% Quartz>>

57.30 58.40 RHYvx Quartz and/or feldspar crystal tuff

57.3 - 58.4: almmost curdy texture rhycw but gradational lower boundary into finer lapilli tuff, very rare qe. Perhaps traction bx bottom, or ashy cloud top to a flow

58.40 60.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

58.4 - 60: classic dyke unit. Note the fw mafi intrusion is absent in this hole just like k97-181

60.00 64.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

60 - 64.1: short sections with lapilli or flow bx textures

<<Alt: 60 - 64 Strong (Alt) Muscovite>> alt'n focused on fol'n

64.10 64.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

64.1 - 64.8: finer grained dyke

<<Alt: 64.7 - 70.9 Moderate (Alt) Muscovite>>

64.80 70.70 RHYvl Lapilli tuff

70.70 73.00 RHYva Coarse grained to ash tuff green

70.7 - 73: fine grained, green, porphyroblastsof amp chl, could beintermediate composition

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.00	**74.40**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
73 - 74.4: narrow highly distrupted, but bleach margins wuth rhyva											
<<Min: 73 - 74.4 5% Min: Pyrite>> bands in RHYc,											
74.40	**76.00**	**RHYva** **Coarse grained to ash tuff**	74.50	76.00	1.50	B00264189	-0.3	-0.005	-0.01	-0.01	0.01
74.4 - 76: fine grained, green, porphyroblastsof amp chl, could beintermediate composition											
76.00	**76.20**	**OI** **Heavilly disseminated sulphides in host schist**	76.00	76.20	0.20	B00264191	0.9	0.035	0.02	-0.01	0.11
76 - 76.2: 50% semi massive pyrite at contact between ash and rhycw											
<<Min: 76 - 77 15% Min: Pyrite>> semi-massive to banded PY											
76.20	**81.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	76.20	77.70	1.50	B00264192	-0.3	-0.005	-0.01	-0.01	-0.01
76.2 - 81.4: poor curdy, rare qe, toss up betweenthis and RHYvx											
<<Min: 77 - 81.4 0.5% Min: Sphalerite>> wisps top diss'ns											
<<Min: 77 - 81.4 5% Min: Pyrite>> bands to lenses											
81.40	**84.10**	**RHYvl** **Lapilli tuff**									
81.4 - 84.1: ash to lapilli, dark coloured schist, CL-MU alt'n,											
<<Alt: 81.4 - 84.1 Moderate (Alt) Chlorite>>											
End of Hole @ 84.1											

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-184

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Chad Bustin
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	04-Nov-15
UTM Easting	414707.552	Core Size:		Azimuth:		Date Logging Complete:	04-Nov-15
UTM Northing:	6814585.23	Casing Pulled?:		Dip:		Drill Company:	
UTM Elev. (m):	1436.45	Casing Depth (m):		Length (m):	29.6	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Collared andstopped in Fault Creek Fault

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	UNKN				☑	
29	-90	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.70 OVBN Overburden

10.70 17.40 RHYvl Lapilli tuff

<<Vein: 13.8 - 14.3 100% Quartz>>

<<Struc: 10.7 - 29.6 Intense (Alt) Fault>> FC Fault

17.40 29.60 FBX Fault Breccia

17.4 - 29.6: Gouge of felsic materialin FCFault. Grey sections too. 3SULPHIDICFRAGMENTS AT 24.3M AND 27.3M 1CM SIZED not MXSX

End of Hole @ 29.6

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-185

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414800.047	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6814629.929	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1422.973	Casing Depth (m):		Length (m):	55.2	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Lapilli stuffs with cm scale py silica bands = dissem. Possible splay off Fault Creek Fault at 47.8 - 48.6m. Difficult to determine if in the HW or FW. However, no QE units or MAFi so more plausibe that it remained in HW and was not drilled deep enough.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	UNKN				☑	
55.2	-90	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.20**	**OVBN** **Overburden**									
8.20	**11.50**	**RHYc** **Rhyolite coherant volcanics**									
11.50	**55.20**	**RHYvl** **Lapilli tuff**									

<<Min: 16.5 - 25 2% Min: Pyrite>>

<<Min: 26 - 38 2% Min: Pyrite>>

<<Min: 45 - 47.8 2% Min: Pyrite>>

<<Alt: 11.5 - 55.2 Moderate (Alt) Muscovite>>

<<Struc: 25.5 - 29.5 Weak-Moderate (Alt) Fault>>

<<Struc: 45 - 47 Strong (Alt) Fault>>

<<Struc: 47.8 - 48.6 Strong (Alt) Fault>> gouge, splay off of FC Fault?

End of Hole @ 55.2

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-186

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Chad Bustin
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	04-Nov-15
UTM Easting	414843.339	Core Size:		Azimuth:		Date Logging Complete:	04-Nov-15
UTM Northing:	6814825.456	Casing Pulled?:		Dip:		Drill Company:	
UTM Elev. (m):	1407.965	Casing Depth (m):		Length (m):	49.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
						Parent Hole:	

Comments:

Appears to mimic the FW sequence seen in the most updip holes on Krakatoa located 190m to the NE.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180		180	UNKN				☑	
49	-60	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 11.30 OVBN Overburden

0 - 11.3: Boulder orsubcrop of THE FW MAFi 9.1-11.3m.

11.30 14.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

11.3 - 14: could be roken margin of RHYi

<<Min: 11.3 - 27.4 2% Min: Pyrite>>

14.00 27.40 RHYi Aphanitic Rhyolite (intrusion)

27.40 29.00 FBX Fault Breccia

27.4 - 29: felsic protolith. Splay of FC Fault?

<<Min: 27.4 - 35.3 1% Min: Pyrite>>

<<Min: 27.4 - 35.3 1% Min: Pyrrhotite>>

<<Alt: 27.4 - 49.1 Weak (Alt) Muscovite>>

<<Struc: 27.4 - 29 Strong (Alt) Fault>> splay of fcfault?

From (m)	To (m)	Rocktype & Description
29.00	**30.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Struc: 29 - 35.8 Weak-Moderate (Alt) Fault>> broken minor gouge		
30.60	**35.30**	**RHYvl** **Lapilli tuff**
35.30	**36.20**	**MDSt** **Rhyolite tuff dominant mudstone**
35.3 - 36.2: lower contact has 6cm of pyritic fine ash		
<<Min: 35.3 - 36.2 8% Min: Pyrite>>		
36.20	**49.10**	**RHYvl** **Lapilli tuff**
<<Min: 36.2 - 49.1 1% Min: Pyrite>>		
<<Min: 36.2 - 49.1 1% Min: Pyrrhotite>>		
<<Struc: 47 - 47.3 Moderate-Strong (Alt) Fault>> gouge, strong but narrow		
<<Struc: 48.3 - 48.6 Moderate-Strong (Alt) Fault>> gouge, strong but narrow		

End of Hole @ 49.1

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K97-187

Prospect:	FCZ	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	414849.903	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6814660.868	Casing Pulled?:		Dip:	-90	Drill Company:	
UTM Elev. (m):	1414.783	Casing Depth (m):		Length (m):	65.8	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Presence of wacke sediment and blue qe bearing white augen gneiss RHYVX below seems to correlate with SED in K97-181 in Fw to the massive sulphide. This suggests it pinches out here naturally not from faulting and our best hope is that it strikes NW SE. However only weak -mod mu alteration here.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	180		180	UNKN				☑	
65	-90	180		180	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**6.10**	**OVBN** **Overburden**
6.10	**13.10**	**RHYvl** **Lapilli tuff**
<<Min: 10 - 27 2% Min: Pyrite>>		
13.10	**20.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 14 - 27 Weak (Alt) Muscovite>>		
20.40	**47.80**	**RHYvl** **Lapilli tuff**
<<Min: 36 - 56 1% Min: Pyrite>>		
<<Alt: 27 - 40 Trace (Alt) Muscovite>>		
<<Alt: 40 - 60 Weak-Moderate (Alt) Muscovite>>		
47.80	**58.80**	**RHYvl** **Lapilli tuff**
<<Min: 56 - 62.2 3% Min: Pyrite>>		
58.80	**61.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
61.10	**62.20**	**RHYvl** **Lapilli tuff**
62.20	**62.80**	**SED** **undifferentiated Sediment**
62.2 - 62.8: 10% pyrite in thinly bedded wacke		
<<Min: 62.2 - 62.8 10% Min: Pyrite>>		
62.80	**65.80**	**RHYvx** **Quartz and/or feldspar crystal tuff**
62.8 - 65.8: distinct augen gneiss with blue qtz eyes. Porphyry unit?		

End of Hole @ 65.8

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K98-188

Prospect:	GP4F	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	419465.571	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6813228.504	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1340.032	Casing Depth (m):		Length (m):	182	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-62	180		180	SS				☑	
73	-62	180		180	SS				☑	
148	-63	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 24.40 OVBN Overburden

24.40 31.00 SED undifferentiated Sediment green-brown

24.4 - 31: dark BI bands and speckled rock, SED?

31.00 51.40 RHYva Coarse grained to ash tuff grey-brown

31 - 51.4: fine grained, diss'd PO/PY

<<Min: 31 - 51.4 0.5% Min: Pyrite>>

<<Min: 31 - 51.4 0.5% Min: Pyrrhotite>>

<<Min: 49.5 - 51.4 Min: Sphalerite>>

<<Min: 49.5 - 51.4 Min: Galena>>

<<Min: 49.5 - 51.4 Min: Chalcopyrite>>

<<Struc: 49.5 - 51.4 Moderate (Alt) Fault>> structural zone, QV's, sx bands with SP-GL-PY-CP

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
51.40	**69.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**grey-brown**									
51.4 - 69.3: tuff?, QE's, abundant BI-rich layers													
69.30	**78.10**	**RHY**	**undifferentiated rhyolite**	**green-brown**									
69.3 - 78.1: footwall or proximal alteration, CL-CI-GA with CP, PO, PY, AS, GL, SP													
78.10	**80.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
80.50	**121.20**	**RHYcf**	**Feldspar & feldspar quartz porphyry**	**grey-green**									
80.5 - 121.2: intrusion or flow?, variable tx, QE and large FP or white lapilli, rock is massive with weak foliation, later bands of BI wit CP stringers, minor SP-GL-PY stringers present in conc'd zones													
<<Min: 80.5 - 121.2 0.01% Min: Sphalerite>> scattered stringers with GL, PY													
<<Min: 80.5 - 121.2 0.01% Min: Chalcopyrite>> stringers in BI (after CL) altered bands													
<<Struc: 116.8 - 119.3 Moderate (Alt) Fault>> QE porphyry carries through													
121.20	**129.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**									
121.2 - 129: banded, strongly foliated, local bands of AC(?), green													
<<Struc: 125.6 - 134.5 Strong (Alt) Fault>> gouge, lost core recovery													
129.00	**135.60**	**RHYc**	**Rhyolite coherant volcanics**	**grey-brown**									
129 - 135.6: glassy, aphanitic at top, flow banded below, BI on fol'n													
135.60	**182.00**	**SED**	**undifferentiated Sediment**	**grey-brown**									
135.6 - 182: highly variable rock to bottom, sediment, tuff, BI, BI-CL, BI-MU schists,													

End of Hole @ 182

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K98-196

Prospect:	GP4F	Hole Type:		Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:		Survey By:	Challenger_Survey	Date Logging Start:	
UTM Easting	419457.321	Core Size:		Azimuth:	180	Date Logging Complete:	
UTM Northing:	6813516.851	Casing Pulled?:		Dip:	-60	Drill Company:	
UTM Elev. (m):	1363.499	Casing Depth (m):		Length (m):	316.1	Drill Rig:	
Local Easting:		Stored?:		Claims Title		Drill Started:	
Local Northing:		Cemented?:		Core Storage Loc.:		Drill Completed:	
Local Elev. (m):						Purpose:	
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-61	180		180	SS				☑	
164	-63	180		180	SS				☑	
316	-66	180		180	SS				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.10 OVBN Overburden

9.10 51.40 SED undifferentiated Sediment grey-green

9.1 - 51.4: black, green and grey striped schist, tuuf/sediment?, local TO clots, AC locally in CL bands, light brown (altered) pblasts core BI clots (CI, AK?), dykes included

51.40 77.40 RHYvx Quartz and/or feldspar crystal tuff grey-brown

51.4 - 77.4: siliceous, fine grained groundmass, QE of variable size and concentration t/o, locally look broken, moderate foliation, black BI-rich dykes t/o

<<Struc: 51.4 - 62 Strong (Alt) Fault>> oxidized

77.40 81.40 RHYc Rhyolite coherant volcanics

77.4 - 81.4: flow?, massive to foliated

81.40 83.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

83.70 108.40 RHYvl Lapilli tuff grey-green

83.7 - 108.4: dark grey to lt green, siliceous, local FP phenos/lapilli, BI partings, MS-SI overprint on BI, minor dykes present

108.40 149.50 RHYvl Lapilli tuff grey-brown

108.4 - 149.5: highly variable tx, and strain, strain picks up around dykes/faults, BI in groundmass, large FP domains, stretched lapilli?, QE's in groundmass, crowded commonly, local MS, overall grain of rock fines towards fault at 155.5m

149.50 176.60 RHYva Coarse grained to ash tuff

149.5 - 176.6: tuff, finer tx than unit above, minor FP or lapilli

<<Struc: 155.5 - 164 Strong (Alt) Fault>> serious fault, gouge, broken rock, dykes

176.60 193.50 RHYvl Lapilli tuff grey-brown

176.6 - 193.5: as above

193.50 214.50 RHYva Coarse grained to ash tuff light grey

193.5 - 214.5: QZ-MS-MU schist, minor BI in bands, very local FP phenos(?), trace sx

<<Min: 193.5 - 214.5 0.5% Min: Pyrite>>

<<Min: 193.5 - 214.5 0.5% Min: Pyrrhotite>>

214.50 217.30 RHYv Rhyolite volcaniclastic green

214.5 - 217.3: proximal alteration of RHYva?, massive CL bands, SI-MS bands, deformed veins(?) of QZ-AC-CL-CP

<<Min: 214.5 - 217.3 0.5% Min: Pyrite>> veins

<<Min: 214.5 - 217.3 0.5% Min: Chalcopyrite>> veins, wisps

<<Min: 214.5 - 226.4 0.5% Min: Pyrite>> sx stringers, with CP

<<Alt: 214.5 - 217.3 Strong (Alt) Chlorite>>

<<Alt: 214.5 - 217.3 Moderate (Alt) Biotite>>

217.30 226.40 RHYcf Feldspar & feldspar quartz porphyry grey-brown

217.3 - 226.4: disaggregated flow bands?, FP phenos with QE's, grey to black sepckled groundmass, local BI-CL bands with sx stringers

<<Alt: 217.3 - 226.4 Weak (Alt) Chlorite>>

226.40 241.20 RHYva Coarse grained to ash tuff green-brown

226.4 - 241.2: CL-BI-CI-GA schist, proximal alteration, CL, CI, BI in bands to masses, GA pblasts, CP-PY stringers with SP-GL

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 226.4 - 229.8 0.5% Min: Chalcopyrite>>

<<Min: 236.2 - 240.2 5% Min: Sphalerite>> stringers, bands

<<Min: 236.2 - 240.2 5% Min: Pyrite>>

<<Min: 236.2 - 240.2 3% Min: Galena>> in bands with other sx

<<Min: 236.2 - 240.2 3% Min: Chalcopyrite>> stringers, blebs

<<Alt: 226.4 - 229.8 Moderate (Alt) Silicification>>

<<Alt: 226.4 - 229.8 Moderate (Alt) Garnet>>

<<Alt: 226.4 - 229.8 Moderate (Alt) Chlorite>>

<<Alt: 229.8 - 236.2 Strong (Alt) Garnet>>

<<Alt: 229.8 - 236.2 Strong (Alt) Chlorite>>

<<Alt: 229.8 - 236.2 Moderate (Alt) Cordierite>>

<<Alt: 236.2 - 240.2 Strong (Alt) Garnet>>

<<Alt: 236.2 - 240.2 Intense (Alt) Chlorite>>

<<Alt: 236.2 - 240.2 Weak (Alt) Cordierite>>

241.20 242.20 OF Pyrrhotite rich sulphides

241.2 - 242.2: massive PO zones

242.20 255.10 RHYvl Lapilli tuff medium grey

242.2 - 255.1: sill or flow?, massive, siliceous, white sections, generally grey (BI matrix), faint FP phenos due to siliceous overprint?, deformed QV's with PY, SP

<<Struc: 252.1 - 256.2 Strong (Alt) Fault>> broken gound, schistose, sheared?

255.10 275.40 RHYva Coarse grained to ash tuff green-brown

255.1 - 275.4: strongly altered, fine grained, well banded, coarse AC present in bands, lenses,

<<Min: 255.1 - 269.3 3% Min: Pyrrhotite>>

<<Min: 255.1 - 269.3 1% Min: Chalcopyrite>> blebs and stringers

<<Min: 269.3 - 275.4 0.5% Min: Pyrite>> stringers in CL bands

<<Min: 269.3 - 275.4 0.5% Min: Chalcopyrite>> stringers

<<Alt: 255.1 - 269.3 Moderate (Alt) Garnet>> scattered

<<Alt: 255.1 - 269.3 Strong (Alt) Chlorite>> massive, proximal alteration

<<Alt: 255.1 - 269.3 Strong (Alt) Cordierite>> masses, blebs

<<Alt: 269.3 - 275.4 Strong (Alt) Chlorite>> banded, AC in layers, lenses

<<Alt: 269.3 - 275.4 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

275.40 277.40 OI Heavilly disseminated sulphides in host schist

275.4 - 277.4: rubble zone, fragments of rock

<<Min: 275.4 - 277.5 10% Min: Pyrite>> masses in sx zone

<<Min: 275.4 - 277.5 30% Min: Pyrrhotite>> bands

<<Min: 275.4 - 277.5 5% Min: Chalcopyrite>> with PO

<<Alt: 275.4 - 277.5 Intense (Alt) Chlorite>>

277.40 286.50 RHYva Coarse grained to ash tuff green-brown

277.4 - 286.5: altered tuff, textures obliterated

<<Min: 277.5 - 286.5 3% Min: Sphalerite>> stringers, bands, with GL

<<Min: 277.5 - 286.5 3% Min: Pyrrhotite>> in QV's, bx zones

<<Alt: 277.5 - 286.5 Moderate (Alt) Muscovite>>

<<Alt: 277.5 - 286.5 Strong (Alt) Chlorite>> AC in layers, lenses

<<Alt: 277.5 - 286.5 Moderate (Alt) Cordierite>>

286.50 294.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-brown

286.5 - 294.4: flow, schistose, broken, FP phenos?, lapilli?, simialr to footwall rocks in 188 but no QE present, Sp in scattered stringers

<<Min: 286.5 - 294.4 1% Min: Sphalerite>> stringers, diss'ns, wisps

294.40 304.50 RHYva Coarse grained to ash tuff grey-brown

294.4 - 304.5: fine grained, homogeneous, well foliated, QZ-MU-BI-MS

<<Struc: 300 - 303.8 Moderate (Alt) Fault>> gouge, 2 m lost core

304.50 316.10 RHYc Rhyolite coherant volcanics grey-green

304.5 - 316.1: flow, aphanitic, white to light grey, trace QE?, QZ-MU-BI schist

End of Hole @ 316.1

Appendix F: LiDAR survey report

LiDAR Project Summary

Airborne Imaging

5757 4th Street SE
Calgary, Alberta, Canada
T2H 1K8

Telephone: (403) 215 2960
Fax: (403) 243 8681
www.airborneimaginginc.com

Project Information

Project Name:	Finlayson - High Density Area
Project Number:	13214
Client:	Challenger Geomatics

Project Type:	Local Area
Project Location:	Watson Lk, YT, Canada
Project Size:	33 sq km

Acquisition Projects

Project Name	Project Number	Vintage
1571	Finlayson	Sept. 2015

Acquisition Parameters

Date (MM/DD/YY)	Mission	Flying Height (m)	Flying Speed (knots)	Pulse Rate Rep (kHz)	Scan Freq (Hz)	Scan Angle (degree)	Side Lap %	Point Density (pts/m²)	LiDAR System
09/27/15	7915270a	1300	160	410	53	50	50	9.50	Leica ALS70
Multiple Return Capabilities:			YES		**Number of returns recorded:**				Maximum 4

Geodetic Control

Horizontal Datum:	Nad83 CSRS	**Vertical Datum:**	CGVD28
Geoid Model:	HT2.0	**UTM Zone:**	9

Note: We established a local geodetic network fixed to the following control:

Station ID	Lat	Long	Orthometric Height
72Y023	N60deg 21' 02.83600"	W129deg 03' 17.44660"	839.473m
77Y011	N60deg 04' 56.82910"	W129deg 22' 07.22160"	858.916m

Calibration Methodology

Airborne Imaging performs a complete calibration on every LiDAR acquisition flight, data is acquired over a calibration site flown with at least two passes in opposite directions before and after the flight. Any error in the attitude of the aircraft (roll, pitch and heading) can be observed and corrected for within system specifications. To statistically quantify the accuracy, we compare the LiDAR elevations with independently surveyed ground points. A GPS mounted truck collects data while driving on an open road. The kinematic positions on the road are post-processed from a nearby base station (common to the aerial survey)

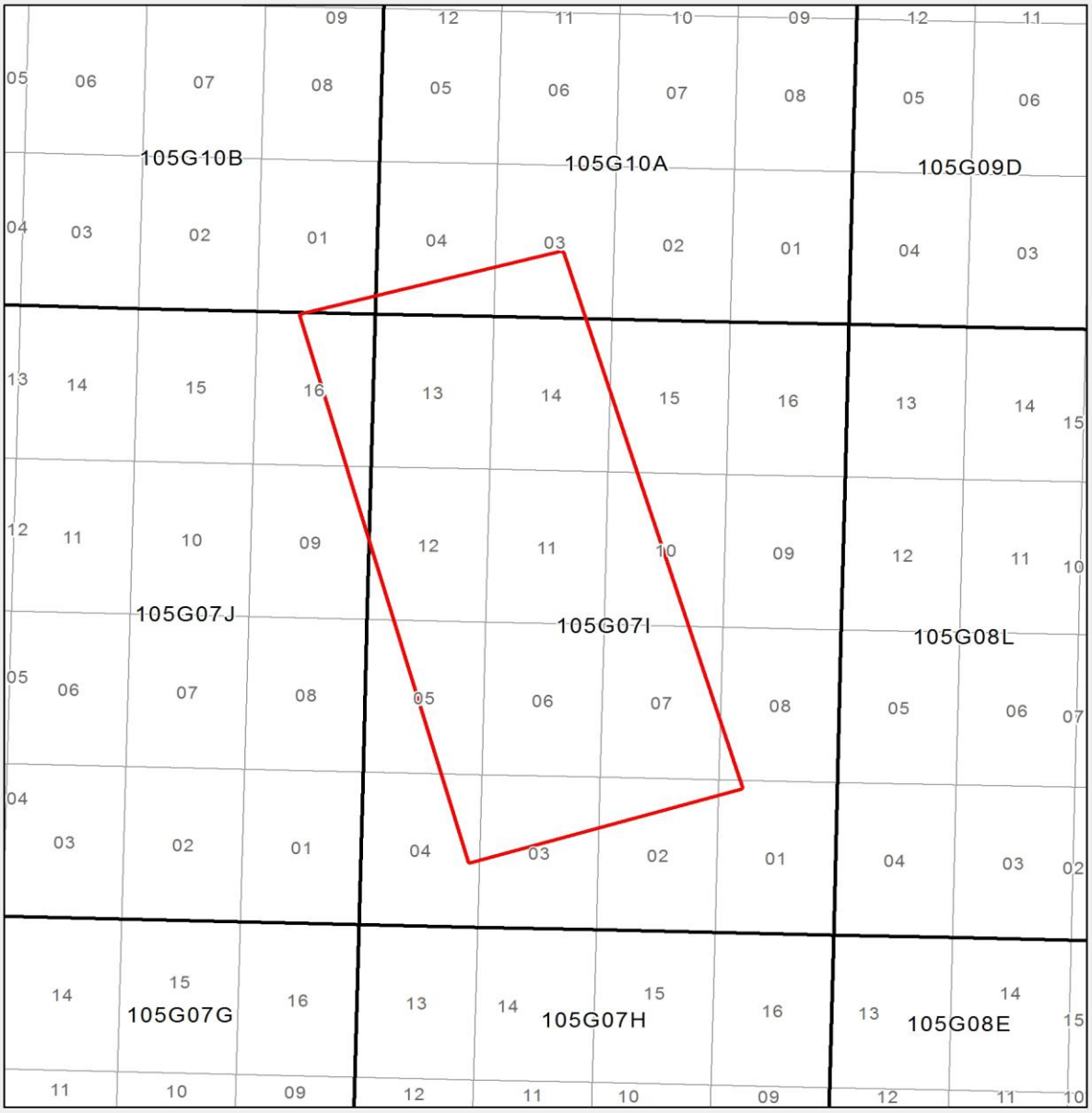
Accuracy

Horizontal Accuracy, 95% or 2σ:	35 cm
Fundamental Vertical Accuracy (on flat hard surfaces), 95% or 2σ:	15 cm

Deliverables

Hillshade Images (Geotiffs), Bare Earth, Full Feature
1m Grids (XYZ ASCII), Bare Earth and Full Feature
Point Cloud (LAS v1.2, ASPRS Classes)

Projected in UTM 9 NAD 83 Summary Produced: October 9, 2015



13214 - Finlayson 2015 - Challenger Geomatics

The Red outline represents the extent of the new data delivered.
Data is tiled following the National Topographic System (NTS).

The NTS system is separated into four tiling levels for example: 93 L 10 D.
These blocks are further divided into 16ths for a manageable tile size of approx. 2km X 2km.
The final tile names appear as follows: 093L10D15

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    b. graphic files derived from the point data, showing the area in a shaded form, in a digital format

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8. This Agreement is the complete and exclusive statement of the understanding between the Licensee and Airborne Imaging with respect to the LiDAR data and may be amended or modified only in a written instrument signed by a duly authorized representative of both parties. If any provision is determined to be invalid or unenforceable, the remaining provisions of this Agreement shall continue to be valid and enforceable. Without the prior written consent of Airborne Imaging, neither this Agreement nor any of the rights granted by it may be assigned or transferred by the Licensee. This restriction on assignments or transfers shall apply to assignments or transfers by operation of law, as well as by contract, merger or consolidation.

9. It is THE LICENSEE'S RESPONSIBILITY to ensure that its use of the LiDAR data complies with these terms and to seek prior written permission from Airborne Imaging for any uses not expressly permitted or not specified in this Agreement.

Appendix G: DGPS survey report

CHALLENGER GEOMATICS LTD.

302 Jarvis Street
Whitehorse, Yukon
Y1A 2H2
PHONE: (867) 668-6940
FAX: (867) 668-6950

October 19, 2015

Mr. Robin Black, M.Sc P.Geo
Exploration Manager
BMC Minerals (No. 1) Ltd.

Our File:
37034

Dear Mr. Black;

Re: Survey Methodology and Equipment; Kudz Ze Kayah (KZK), Yukon

Thank you for the opportunity to work on this interesting project. The following outlines our general survey methodology and the technical equipment we use at KZK.

Challenger uses exclusively Leica Geomatics Ltd. survey grade technical equipment. In open areas (almost all of KZK) we use Leica Viva Global Navigation Satellite Systems (GNSS). GNSS includes GPS and other satellites and is more robust than GPS alone. We have used differentially corrected Real Time Kinematic (RTK) GNSS for most measurements at KZK. These measurements are possible when we have radio contact with our base receiver. When we do not have radio contact (ie in GP4F) we post process the GNSS vectors. We have survey control that will reach the GP4F area with radio however the cost to move the GNSS base station with the helicopter is too high unless we are measuring many locations in GP4F.

Challenger also has several total stations available in case GNSS techniques are not appropriate (heavy trees). Thus far we have not used anything other than GNSS on the KZK site. Please find attached a fact sheet for the Leica Viva GS15 GNSS receiver.
Coordinates for our control have been derived using Natural Resources Canada's Precise Point Positioning (PPP) service which uses precise GNSS orbit information to compute the absolute position of a measured point. Uncertainty statistics are provided and are primarily a function of observation time and satellite constellation. Once a PPP solution for our primary control point was obtained we processed static GNSS vectors within our control network to determine the coordinates of all other control. These values were compared against PPP values for these points as a check. Several control stations are located in various areas to allow for checks (performed each day to ensure equipment is performing correctly) and are available in case of destruction of other control points. All check measurements are recorded in hard copy and digitally.

CHALLENGER GEOMATICS LTD.

302 Jarvis Street
Whitehorse, Yukon
Y1A 2H2
PHONE: (867) 668-6940
FAX: (867) 668-6950

All coordinates listed are UTM Zone 9, NAD 83 CSRS. All elevations are orthometric and are based on the HT2 v 2.0 geoid model.

Please contact me with any questions.

Paul Burbidge, CLS.
North 60 Office

Whitehorse, Yukon

Attachments

Leica Viva GS15
Data sheet



Engaging software

The Leica Viva GS15 GNSS smart antenna is accompanied with the revolutionary Captivate software, turning complex data into the most realistic and workable 3D models. With easy-to-use apps and familiar touch technology, all forms of measured and design data can be viewed in all dimensions. Leica Captivate spans industries and applications with little more than a simple swipe, regardless of whether you work with GNSS, total stations or both.

Seamlessly share data among all your instruments

Leica Geo Office imports and combines data from your GNSS, total station and level instruments for one final and accurate result. Processing has never been made easier when all your instruments work in tandem to produce precise and actionable information.

ACC»

Customer care is only a click away

Through Active Customer Care (ACC), a global network of experienced professionals is only a click away to expertly guide you through any problem. Eliminate delays with superior technical service, finish jobs faster with excellent consultancy support, and avoid costly site revisits with online service to send and receive data directly from the field. Control your costs with a tailored Customer Care Package, giving you peace of mind you're covered anywhere, anytime.

Leica Viva GS15

GNSS PERFORMANCE		
GNSS technology	Leica SmartTrack	Advanced four constellation tracking
Number of channels		120 (up to 60 satellites simultaneously on two frequencies) / 500+[1]
Signal tracking		GPS (L1, L2, L2C, L5), Glonass (L1, L2), BeiDou (B1, B2), Galileo (E1, E5a, E5b, Alt-BOC) QZSS (L1, L2, L5)[2], SBAS (WAAS, EGNOS, MSAS, CAGAN)
MEASUREMENT PERFORMANCE & ACCURACY[3]		
RTK technology	Leica SmartCheck Network RTK Time for initialisation	Continuous check of RTK solution, reliability 99.99% VRS, FKP, iMAX, MAC (RTCM SC 104) Typically 4s
Code differential	DGPS / RTCM	Typically 25cm
Real-time kinematic	Single baseline (< 30km) Network RTK	Hz 8mm + 1ppm / V 15mm + 1ppm Hz 8mm + 0.5ppm / V 15mm + 0.5ppm
Post processing	Static (phase) with long observations Static and rapid static (phase)	Hz 3mm + 0.1ppm / V 3.5mm + 0.4ppm Hz 3mm + 0.5ppm / V 5mm + 0.5ppm
COMMUNICATIONS		
Communication ports	Lemo Bluetooth®	USB and RS232 serial Bluetooth® v2.00 + EDR, class 2
Communication protocols	RTK data protocols NMEA output	Leica, Leica 4G, CMR, CMR+, RTCM 2.2, 2.3, 3.0, 3.1, 3.2 MSM NMEA 0183 V 4.00 and Leica proprietary
Built-in data links	3.5G phone modem Radio modem	Fully integrated, internal or external antenna Fully integrated, receive and transmit, internal or external antenna 403 - 470 MHz, 1 W output power
External data links		GSM / GPRS / UMTS / CDMA and UHF / VHF modem
GENERAL		
User interface	Buttons and LEDs Web server	On/Off and Function button, 8 status LEDs Full status information and configuration options
Data recording	Storage Data type and recording rate	Removable SD card, 1 GB Leica GNSS raw data and RINEX data up to 20 Hz
Power management	Internal power supply External power supply Operation time[4]	2 exchangeable Li-Ion batteries (2.6 Ah / 7.4 V) Nominal 12 V DC, range 10.5 - 28 V DC 10 h receiving RTK data with internal UHF radio 9 h transmitting RTK data with internal UHF radio (1W) 7.5 h receiving / transmitting RTK data with internal modem
Weight and Dimensions	Weight Diameter x Height	1.34 kg (GS15) / 3.30 kg standard RTK rover setup on pole 196mm x 198mm
Environmental	Temperature Drop Proof against water, sand and dust Vibration Humidity Functional shock	-40 to 65°C operating, -40 to 80°C storage Withstands topple over from a 2m survey pole onto hard surfaces IP68 (IEC60529 / MIL STD 810G 506.5 I / MIL STD 810G 510.5 I / MIL STD 810G 512.5 I) Withstands strong vibration (ISO9022-36-08 / MIL STD 810G 514.6 Cat.24) 100% (ISO9022-13-06 / ISO9022-12-04 / MIL STD 810G 507.5 I) 40g / 15 to 23 msec (MIL STD 810G 516.6 I)

LEICA GS15 GNSS SMARTANTENNA	Single Frequency	Performance	Professional	Unlimited[1]
SUPPORTED GNSS SYSTEMS				
GPS L2 / GPS L5 / GLONASS / Galileo / BeiDou	• / • / • / • / •	✔ / • / • / • / •	✔ / ✔ / ✔ / ✔ / •	✔ / ✔ / ✔ / ✔ / ✔
RTK PERFORMANCE				
DGPS/RTCM. RTK Unlimited, Network RTK	•	✔	✔	✔
SmartLink (L-band)	•	•	•	✔
POSITION UPDATE & DATA RECORDING				
5 Hz / 20 Hz positioning	✔ / •	✔ / ✔	✔ / ✔	✔ / ✔
Raw data / RINEX data logging	✔ / •	✔ / •	✔ / ✔	✔ / ✔
NMEA out	•	•	✔	✔
ADDITIONAL FEATURES				
RTK reference station functionality	•	✔	✔	✔

✔ Standard • Optional

[1] The Unlimited series includes a future upgrade to 500+ channels.
[2] Support of QZSS is incorporated and will be provided through future firmware upgrade.

[3] Measurement precision, accuracy, reliability and time for initialisation are dependent upon various factors including number of satellites, observation time, atmospheric conditions, multipath etc. Figures quoted assume normal to favourable conditions. A full BeiDou and Galileo constellation will further increase measurement performance and accuracy.
[4] Might vary with temperature, age of battery, transmit power of data link device.

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- when it has to be **right**

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Appendix H: Drill collar coordinates and orientations

This appendix contains the most up-to-date collar coordinates for all 2015 drill holes (Table H-1) and all of those historical drill holes that were re-surveyed in 2015 (Table H-2). The survey used to located the collar is indicated as either differential GPS ("RTK DGPS") or as done by the integration of LiDAR elevation data with eastings and northings from a handheld GPS ("GPS-LiDAR") or azimuth pointing system ("APS-LiDAR").

Table H-1: Survey collar information for 2015 diamond drill holes

Hole ID	Easting[1]	Northing[1]	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K15-200	414749	6815599	1409	211.5	180	-70	RTK DGPS
K15-201	414795	6815363	1400	35	180	-60	RTK DGPS
K15-202	414795	6815365	1400	71	180	-60	RTK DGPS
K15-203	414850	6815544	1395	173	180	-60	RTK DGPS
K15-204	414549	6815464	1457	149	180	-60	RTK DGPS
K15-205	414850	6815543	1395	146	180	-60	RTK DGPS
K15-206	414652	6815747	1430	237	180	-65	RTK DGPS
K15-207	414554	6815405	1455	112	180	-60	RTK DGPS
K15-208	414788	6819204	1318	42	180	-90	GPS-LiDAR
K15-209	414625	6815359	1436	54	180	-50	RTK DGPS
K15-210	414705	6819176	1320	36	180	-90	GPS-LiDAR
K15-211	414474	6816552	1491	20	180	-90	GPS-LiDAR
K15-212	414902	6818520	1332	36	180	-90	GPS-LiDAR
K15-213	414625	6815358	1436	99	180	-50	RTK DGPS
K15-214	414808	6816270	1430	32	180	-90	GPS-LiDAR
K15-215	414915	6817786	1362	33	180	-90	GPS-LiDAR
K15-216	414846	6815744	1395	233	180	-65	RTK DGPS
K15-216W1	414846	6815744	1395	182	195	-61	RTK DGPS
K15-217	415455	6816730	1388	10	180	-90	GPS-LiDAR
K15-218	414678	6815354	1424	81	180	-60	RTK DGPS
K15-219	415850	6816872	1464	30	180	-90	GPS-LiDAR
K15-220	415782	6816158	1451	33	180	-90	GPS-LiDAR
K15-221	414676	6815358	1424	44	180	-60	RTK DGPS
K15-222	416314	6816049	1465	18	180	-90	GPS-LiDAR
K15-223	414753	6815349	1409	71	180.8	-70	RTK DGPS
K15-224	419404	6813276	1355	351	180	-70	RTK DGPS
K15-225	414753	6815351	1409	25	180.96	-70	RTK DGPS
K15-226	414851	6815676	1396	230	180	-70	RTK DGPS
K15-226W1	414851	6815676	1396	182	180	-70	RTK DGPS
K15-227	414872	6815377	1391	86	180	-60	RTK DGPS
K15-228	414748	6815380	1409	95	180.4	-70	RTK DGPS
K15-229	414749	6815427	1409	110	181.38	-70	RTK DGPS
K15-230	414872	6815379	1391	41	180	-55	RTK DGPS
K15-231	414750	6815467	1408	176	180	-70	RTK DGPS
K15-232	414844	6815601	1395	209	180.68	-60	RTK DGPS

Hole ID	Easting[1]	Northing[1]	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K15-233	414899	6815797	1387	224	180	-60	RTK DGPS
K15-234	419417	6813699	1373	393	180	-70	RTK DGPS
K15-235	414931	6815550	1384	47	158.8	-63	RTK DGPS
K15-235R	414931	6815550	1384	176	158.8	-63	RTK DGPS
K15-236	414751	6815499	1407	149	179.69	-70	RTK DGPS
K15-237	414751	6815497	1407	119	179.15	-70	RTK DGPS
K15-238	414902	6815741	1389	245	180.17	-60	RTK DGPS
K15-238W1	414902	6815741	1389	194	180.17	-58	RTK DGPS
K15-239	414751	6815544	1408	192	180.82	-70	RTK DGPS
K15-240	414952	6815425	1383	110	180	-60	RTK DGPS
K15-241	414952	6815425	1383	35	179.85	-65	RTK DGPS
K15-241R	414952	6815422	1383	65	179.8	-60	RTK DGPS
K15-242	415135	6815439	1401	161	167.07	-65	RTK DGPS
K15-243	414802	6815776	1404	221	180.04	-65	RTK DGPS
K15-243W1	414802	6815776	1404	200	180.4	-63	RTK DGPS
K15-244	415051	6815420	1387	119	179.93	-60	RTK DGPS
K15-245	415051	6815416	1387	70	180.25	-60	RTK DGPS
K15-246	415134	6815442	1401	129	167.24	-65	RTK DGPS
K15-247	418953	6813685	1477	414	180	-85	RTK DGPS
K15-248	415203	6815283	1424	278.5	0.53	-75	RTK DGPS
K15-249	415048	6815301	1385	68	180.16	-60	RTK DGPS
K15-250	414702	6815768	1421	251	180	-51	RTK DGPS
K15-251	415049	6815339	1386	86	179	-60	RTK DGPS
K15-252	415049	6815337	1386	41	180.44	-60	RTK DGPS
K15-253	414702	6815768	1421	230	180	-65	RTK DGPS
K15-254	415051	6815378	1387	100	179.86	-60	RTK DGPS
K15-255	415101	6815307	1393	80	179.88	-50	RTK DGPS
K15-256	415101	6815309	1393	32	180.76	-50	RTK DGPS
K15-257	414702	6815768	1421	218	181.06	-81	RTK DGPS
K15-258	415203	6815275	1424	299	176	-53	RTK DGPS
K15-259	415101	6815372	1392	120	134.82	-55	RTK DGPS
K15-260	414749	6815674	1411	227	180.64	-70	RTK DGPS
K15-260W1	414749	6815674	1411	196	180.64	-70	RTK DGPS
K15-261	419651	6813231	1311	302	180	-60	RTK DGPS
K15-262	415101	6815372	1391	348	125.25	-45	RTK DGPS
K15-263	415206	6815596	1424	254	180	-75	RTK DGPS
K15-264	414800	6815625	1402	218	180	-60	RTK DGPS
K15-264W1	414800	6815625	1402	176.7	180	-60	RTK DGPS
K15-265	415207	6815595	1424	285	181	-55	RTK DGPS
k15-266	414699	6815466	1419	110	180.2	-60	RTK DGPS
K15-267	415151	6815554	1403	218	179.67	-65	RTK DGPS
K15-268	418753	6814107	1493	355	180	-70	RTK DGPS

Hole ID	Easting[1]	Northing[1]	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K15-269	414699	6815466	1419	72.72	180.2	-60	RTK DGPS
K15-270	415151	6815552	1403	170	180.09	-65	RTK DGPS
K15-271	415250	6815584	1438	258	180	-65	RTK DGPS
K15-272	414699	6815465	1419	128	180.2	-55	RTK DGPS
K15-273	415051	6815507	1382	149	179.13	-77	RTK DGPS
K15-274	414675	6815455	1425	128	180.5	-70	RTK DGPS
K15-275	415051	6815507	1382	122	180.75	-71.5	RTK DGPS
K15-276	414675	6815453	1425	110	180.22	-70	RTK DGPS
K15-277	415249	6815348	1442	357.8	190	-68	RTK DGPS
K15-278	414625	6815539	1437	197.26	180.14	-70	RTK DGPS
K15-278W1	414625	6815539	1437	161	180.14	-70	RTK DGPS
K15-279	415026	6815454	1383	275	340	-50	RTK DGPS
K15-280	419662	6813562	1325	408	180	-70	RTK DGPS
K15-281	414594	6815656	1448	260	181.38	-55	APS-LiDAR
K15-281W1	414594	6815656	1448	199.6	180	-55	APS-LiDAR
K15-282	415242	6815247	1440	340	189.58	-70	RTK DGPS
K15-283	415026	6815454	1383	190.7	340	-50	RTK DGPS
K15-284	414654	6815652	1430	224	180.1	-60	RTK DGPS
K15-284W1	414654	6815652	1430	191	180.1	-60	RTK DGPS
K15-285	419650	6813355	1320	306	179	-70	APS
K15-286	415150	6815496	1406	200	180.46	-65	RTK DGPS
K15-287	414801	6815439	1400	131	179.98	-60	RTK DGPS
K15-288	414800	6815437	1401	86	179.61	-60	RTK DGPS
K15-289	414598	6815652	1446	236	180.7	-70	APS-LiDAR
K15-290	415151	6815395	1404	142	180.5	-65	APS-LiDAR
K15-291	415073	6815746	1388	242	216	-50	APS-LiDAR
K15-292	415157	6815158	1412	312	219.81	-80	APS-LiDAR
K15-293	414598	6815652	1446	239	180.7	-86	APS-LiDAR
K15-294	419406	6813500	1377	306	180	-85	APS
K15-295	415049	6815664	1382	201.5	179.97	-60	APS-LiDAR
K15-296	414840	6815378	1395	62	180.02	-70	APS-LiDAR
K15-297	415055	6815303	1386	350	144.97	-45	APS-LiDAR
K15-298	415151	6815341	1406	114	179.74	-75	APS-LiDAR
K15-299	415074	6815570	1383	170	205	-63	APS-LiDAR
K15-300	415250	6815495	1448	200.1	125.25	-45	APS-LiDAR
K15-301	415049	6815467	1386	140.1	180.36	-60	APS-LiDAR
K15-302	419500	6813355	1340	210	180	-60	APS
K15-303	415075	6815150	1386	247.8	89.83	-75	APS-LiDAR
K15-304	415149	6815074	1406	254	234.72	-60	APS-LiDAR
K15-305	415157	6815159	1412	300	234.82	-45	APS-LiDAR
K15-306	419500	6813355	1340	246	180	-85	APS
K15-307	415080	6815123	1385	277	210	-85	APS-LiDAR

Hole ID	Easting[1]	Northing[1]	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K15-308	415159	6815054	1407	194	210.22	-79	APS-LiDAR
K15-309	415154	6815159	1411	306	210.08	-60	APS-LiDAR
K15-310	415158	6815049	1406	191	210.22	-45	APS-LiDAR
K15-311	415158	6815051	1406	263	29.71	-80	APS-LiDAR
K15-312	415036	6814952	1387	110	209.97	-48	APS-LiDAR
K15-313	414925	6814966	1389	153	30	-80	APS-LiDAR
K15-314	414946	6815001	1386	195	30	-78	APS-LiDAR
K15-315	415108	6815066	1393	210	210.76	-48	APS-LiDAR
K15-316	414989	6814983	1387	181	210.15	-55	APS-LiDAR
K15-317	415037	6814949	1387	170.6	29.46	-78	APS-LiDAR
K15-318	415075	6815120	1385	35	180	-90	APS-LiDAR
K15-319	414946	6815001	1386	254	30	-60	APS-LiDAR
K15-320	415076	6815121	1385	269	210.5	-46.5	APS-LiDAR
K15-321	415076	6815225	1388	308	211.1	-45	APS-LiDAR
K15-322	414988	6814978	1387	197	29.9	-82	APS-LiDAR
K15-323	414945	6814996	1387	229.8	305	-55	APS-LiDAR
K15-324	415076	6815517	1386	362	180.27	-70	APS-LiDAR
K15-325	415158	6815051	1406	404.1	178.94	-60	APS-LiDAR
K15-326	415245	6815347	1442	443	179.87	-66	APS-LiDAR
K15-327	414639	6815180	1443	221	194.48	-60	APS-LiDAR
K15-328	414678	6815205	1429	236	194.8	-60	APS-LiDAR
K15-329	414801	6814638	1422	200	180.29	-55	APS-LiDAR
K15-330	414932	6818702	1350	50.95	180	-90	APS-LiDAR
K15-331	415347	6816415	1387	32	180	-90	APS-LiDAR
K15-332	414797	6814638	1422	182	180	-83	APS-LiDAR
K15-333	415045	6816220	1381	71	180	-90	APS-LiDAR
K15-334	414775	6818845	1319	50.5	180	-90	APS-LiDAR
K15-335	414694	6817330	1418	32.33	180	-90	APS-LiDAR
K15-336	414792	6819017	1318	50.5	0	-90	APS-LiDAR

[1] Easting and Northing coordinates are presented in UTM Zone 9, NAD83 projection

Table H-2: Survey collar information for historical diamond drill holes

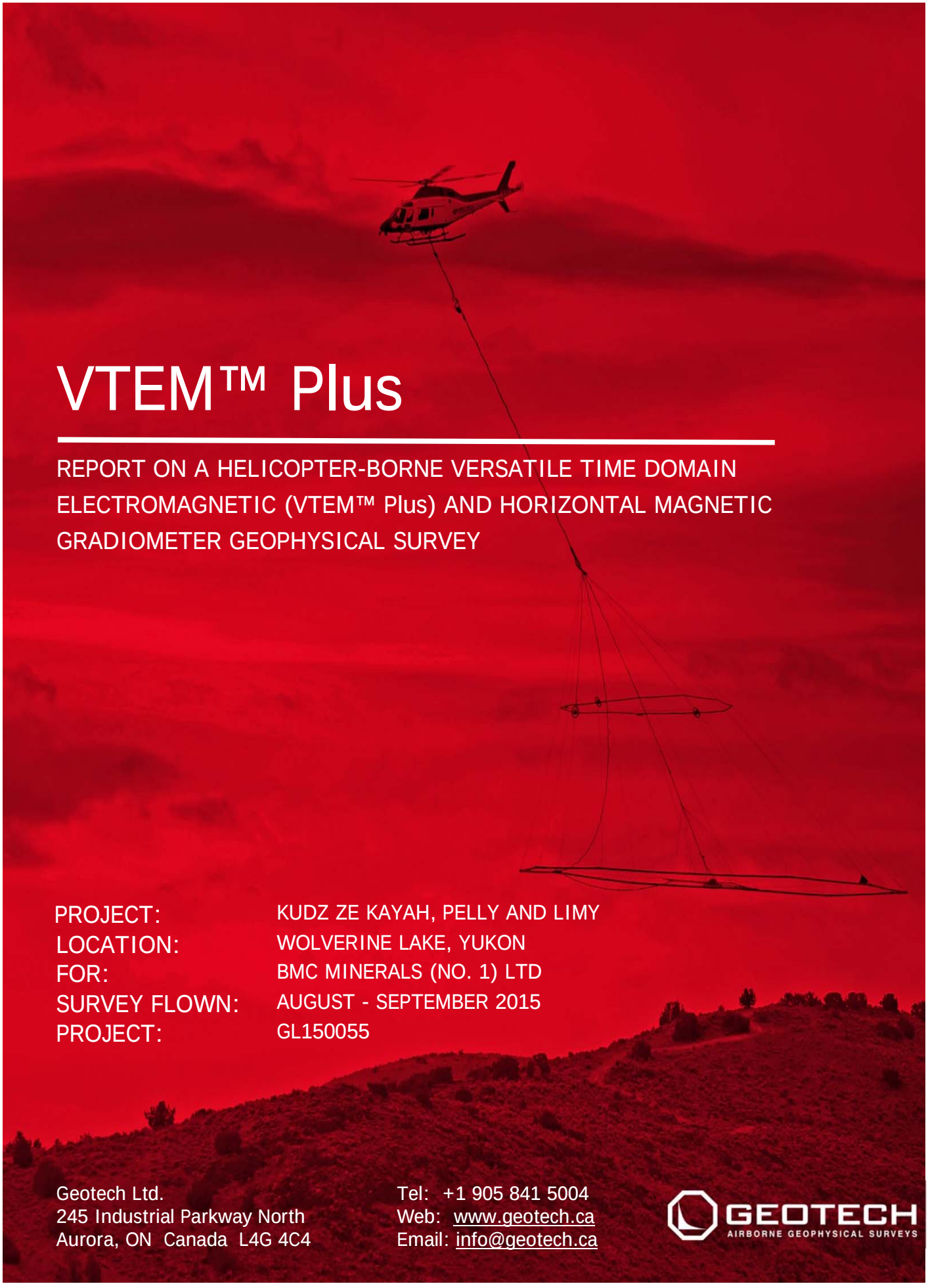
Hole ID	Easting²	Northing²	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K95-070	415057	6815577	1380	166.1	180	-45	RTK DGPS
K95-084	415004	6815491	1380	109.7	180	-60	RTK DGPS
K95-085	415004	6815490	1380	121	100	-90	RTK DGPS
K95-105	415101	6815538	1391	154.2	180	-60	RTK DGPS
K95-106	415101	6815537	1391	157.6	130	-90	RTK DGPS
K95-107	415127	6815465	1399	135.9	180	-65	RTK DGPS
K95-108	415127	6815466	1398	153.3	120	-90	RTK DGPS
K95-109	415292	6815397	1466	212.1	180	-50	RTK DGPS
K95-110	415292	6815396	1466	84.4	280	-90	RTK DGPS
K95-112	415102	6815426	1394	116.7	40	-90	RTK DGPS
K95-113	415242	6815524	1440	221.3	90	-45	RTK DGPS
K95-114	415243	6815525	1440	217.3	180	-65	RTK DGPS
K95-115	415251	6815355	1444	148.1	180	-45	RTK DGPS
K95-116	415251	6815358	1445	46.3	77	-90	RTK DGPS
K95-116A	415251	6815358	1445	129.5	360	-90	RTK DGPS
K95-117	415203	6815447	1428	172.5	180	-65	RTK DGPS
K95-118	415203	6815446	1428	169.8	150	-90	RTK DGPS
K95-119	415229	6815352	1435	79.6	180	-70	RTK DGPS
K95-120	415154	6815400	1406	114.9	180	-75	RTK DGPS
K95-121	415152	6815320	1406	62.5	180	-60	RTK DGPS
K95-122	415129	6815366	1398	78	180	-45	RTK DGPS
K95-123	415129	6815366	1398	96.3	70	-90	RTK DGPS
K95-124	415205	6815348	1425	290.8	180	-55	RTK DGPS
K95-125	415205	6815347	1425	142.3	280	-90	RTK DGPS
K95-126	414624	6815474	1437	142.3	180	-45	RTK DGPS
K95-127	414623	6815474	1437	129.5	180	-75	RTK DGPS
K95-128	414601	6815498	1444	142	180	-65	RTK DGPS
K95-129	414601	6815497	1443	151.5	180	-90	RTK DGPS
K95-130	415182	6815377	1416	123.7	180	-60	RTK DGPS
K95-131	415182	6815376	1416	128	180	-90	RTK DGPS
K95-132	414676	6815485	1424	123.4	180	-65	RTK DGPS
K95-133	414676	6815483	1424	145.4	150	-90	RTK DGPS
K95-134	415153	6815571	1403	191.4	180	-50	RTK DGPS
K95-135	415153	6815569	1403	194.2	215	-90	RTK DGPS
K95-136	414729	6815493	1412	125.8	180	-60	RTK DGPS
K95-137	414729	6815494	1412	138.9	180	-90	RTK DGPS
K95-138	414773	6815505	1404	126.8	180	-55	RTK DGPS
K95-139	414773	6815504	1404	132.6	250	-90	RTK DGPS
K95-140	414875	6815493	1393	125.9	180	-60	RTK DGPS
K95-141	414875	6815492	1393	133.2	240	-90	RTK DGPS
K95-142	414822	6815503	1398	132.6	180	-60	RTK DGPS

Hole ID	Easting²	Northing²	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K95-143	414823	6815503	1398	148.4	180	-90	RTK DGPS
K95-144	414898	6815502	1389	132.9	180	-45	RTK DGPS
K95-145	414898	6815503	1389	132.9	180	-65	RTK DGPS
K95-146	414897	6815492	1388	139.9	250	-90	RTK DGPS
K95-147	414951	6815600	1382	181.7	180	-45	RTK DGPS
K95-148	414951	6815601	1382	210	228	-90	RTK DGPS
K95-149	414749	6815686	1413	206	180	-55	RTK DGPS
K95-150	414749	6815685	1413	178.9	247	-90	RTK DGPS
K95-151	414900	6815642	1388	187.8	180	-50	RTK DGPS
K95-152	414900	6815641	1388	172.5	180	-70	RTK DGPS
K95-153	414900	6815640	1388	172.8	202	-90	RTK DGPS
K95-154	414701	6815624	1421	187.8	180	-60	RTK DGPS
K95-155	414701	6815624	1421	178.6	180	-80	RTK DGPS
K95-156	414850	6815682	1397	199.9	180	-55	RTK DGPS
K95-157	414852	6815673	1396	172.8	244	-90	RTK DGPS
K95-158	414801	6815677	1402	196.9	180	-55	RTK DGPS
K95-162	414900	6818925	1340	75.3	180	-90	RTK DGPS
K95-166	413333	6813431	1742	68.6	180	-70	RTK DGPS
K95-168	414703	6815343	1419	171	10	-45	RTK DGPS
K95-169	414651	6815351	1430	157	10	-45	RTK DGPS
K95-170	417105	6815120	1619	442	150	-90	RTK DGPS
K96-171	410583	6810214	1486	99.2	180	-70	RTK DGPS
K97-172	414951	6815851	1382	349.6	180	-90	RTK DGPS
K97-173	415238	6815251	1439	291.4	180	-86	RTK DGPS
K97-174	415206	6815756	1413	377	180	-86	RTK DGPS
K97-175	415350	6815300	1500	482.5	180	-86	RTK DGPS
K97-176	415115	6815802	1391	364.8	180	-86	RTK DGPS
K97-178	415238	6815251	1439	359.7	180	-60	RTK DGPS
K97-181	414748	6814605	1430	130.1	180	-60	RTK DGPS
K97-182	414747	6814399	1451	135.9	180	-60	RTK DGPS
K97-183	414746	6814558	1432	84.1	180	-90	RTK DGPS
K97-184	414708	6814585	1436	29.6			RTK DGPS
K97-185	414800	6814630	1423	55.2	180	-90	RTK DGPS
K97-186	414843	6814825	1408	49.1			RTK DGPS
K97-187	414850	6814661	1415	65.8	180	-90	RTK DGPS
K98-188	419466	6813229	1340	182	180	-60	RTK DGPS
K98-189	419465	6813228	1340	124.7	0	-90	RTK DGPS
K98-190	419566	6813209	1326	109.1	180	-53	RTK DGPS
K98-191	419566	6813208	1326	112.5	0	-90	RTK DGPS
K98-192	419357	6813228	1357	93.6	180	-74	RTK DGPS
K98-193	419461	6813401	1358	199.9	175	-59	RTK DGPS
K98-196	419457	6813517	1363	316.1	180	-60	RTK DGPS

Hole ID	Easting[2]	Northing[2]	Elevation (m)	Length (m)	Azimuth (°)	Dip (°)	Survey Type
K98-197	419357	6813370	1373	172.8	180	-62	RTK DGPS
K98-198	419356	6813495	1382	249	180	-64	RTK DGPS
K97-180	418482	6815055	1464	206.8	180	-60	RTK DGPS
K98-194	420337	6814627	1314	95.7	180	-60	RTK DGPS
K98-195	420542	6814411	1348	98.1	180	-60	RTK DGPS
K04-199	420399	6813522	1294	246	180	-60	RTK DGPS

[2] Easting and Northing coordinates are presented in UTM Zone 9, NAD83 projection

Appendix I: Airborne EM and magnetics survey report



VTEM™ Plus

REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM™ Plus) AND HORIZONTAL MAGNETIC GRADIOMETER GEOPHYSICAL SURVEY

PROJECT:	KUDZ ZE KAYAH, PELLY AND LIMY
LOCATION:	WOLVERINE LAKE, YUKON
FOR:	BMC MINERALS (NO. 1) LTD
SURVEY FLOWN:	AUGUST - SEPTEMBER 2015
PROJECT:	GL150055

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GEOTECH
AIRBORNE GEOPHYSICAL SURVEYS

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G. Resistivity Depth Images (RDI).....

EXECUTIVE SUMMARY

KUDZ ZE KAYAH, PELLY AND LIMY - WOLVERINE LAKE, YUKON

During August 28th to September 7th 2015 Geotech Ltd. carried out a helicopter-borne geophysical survey over Kudz Ze Kayah, Pelly and Limy situated near Wolverine Lake, Yukon.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEMplus) system and horizontal magnetic gradiometer with two caesium sensors. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 557 line-kilometres of geophysical data were acquired during the survey.

In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products were undertaken from the office of Geotech Ltd. in Aurora, Ontario.

The processed survey results are presented as the following maps:

- Electromagnetic stacked profiles of the B-field Z Component,
- Electromagnetic stacked profiles of dB/dt Z Component,
- B-Field Z Component Channel grids,
- dB/dt X Component Fraser Filtered Channel grid,
- Total Magnetic Intensity (TMI),
- Magnetic Total Horizontal Gradient,
- Magnetic Tilt-Angle Derivative of TMI,
- Calculated Time Constant (Tau) with Calculated Vertical Derivative contours and
- Resistivity Depth Images (RDI) sections are presented.

Digital data includes all electromagnetic and magnetic products, plus ancillary data including the waveform.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set.

1. INTRODUCTION

1.1 GENERAL CONSIDERATIONS

Geotech Ltd. performed a helicopter-borne geophysical survey over Kudz Ze Kayah, Pelly and Limy situated near Wolverine Lake, Yukon (Figure 1 & Figure 2).

Robin Black represented BMC Minerals (No. 1) Ltd during the data acquisition and data processing phases of this project.

The geophysical surveys consisted of helicopter borne EM using the versatile time-domain electromagnetic (VTEMplus) system with Full-Waveform processing. Measurements consisted of Vertical (Z) and In-line Horizontal (X) components of the EM fields using induction coils and the aeromagnetic total field using a magnetic gradiometer. A total of 557 line-km of geophysical data were acquired during the survey.

The crew was based out of Inconnu Lodge (Figure 2) in Yukon for the acquisition phase of the survey. Survey flying started on August 28th and was completed on September 7th, 2015.

Data quality control and quality assurance, and preliminary data processing were carried out on a daily basis during the acquisition phase of the project. Final data processing followed immediately after the end of the survey. Final reporting, data presentation and archiving were completed from the Aurora office of Geotech Ltd. in November, 2015.

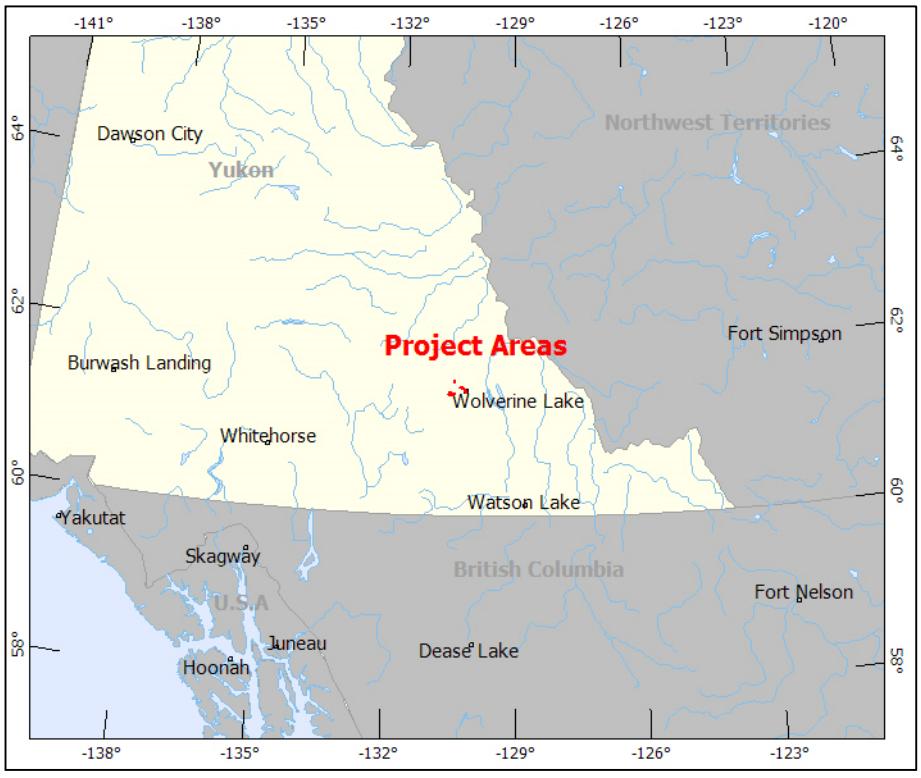

Figure 1: Survey location

1.2 SURVEY AND SYSTEM SPECIFICATIONS

The survey areas, Kudz Ze Kayah, Pelly and Limy are located approximately 13 kilometres west, 1.5 kilometres north and 19 kilometres northwest of Wolverine Lake, Yukon respectively (Figure 2).

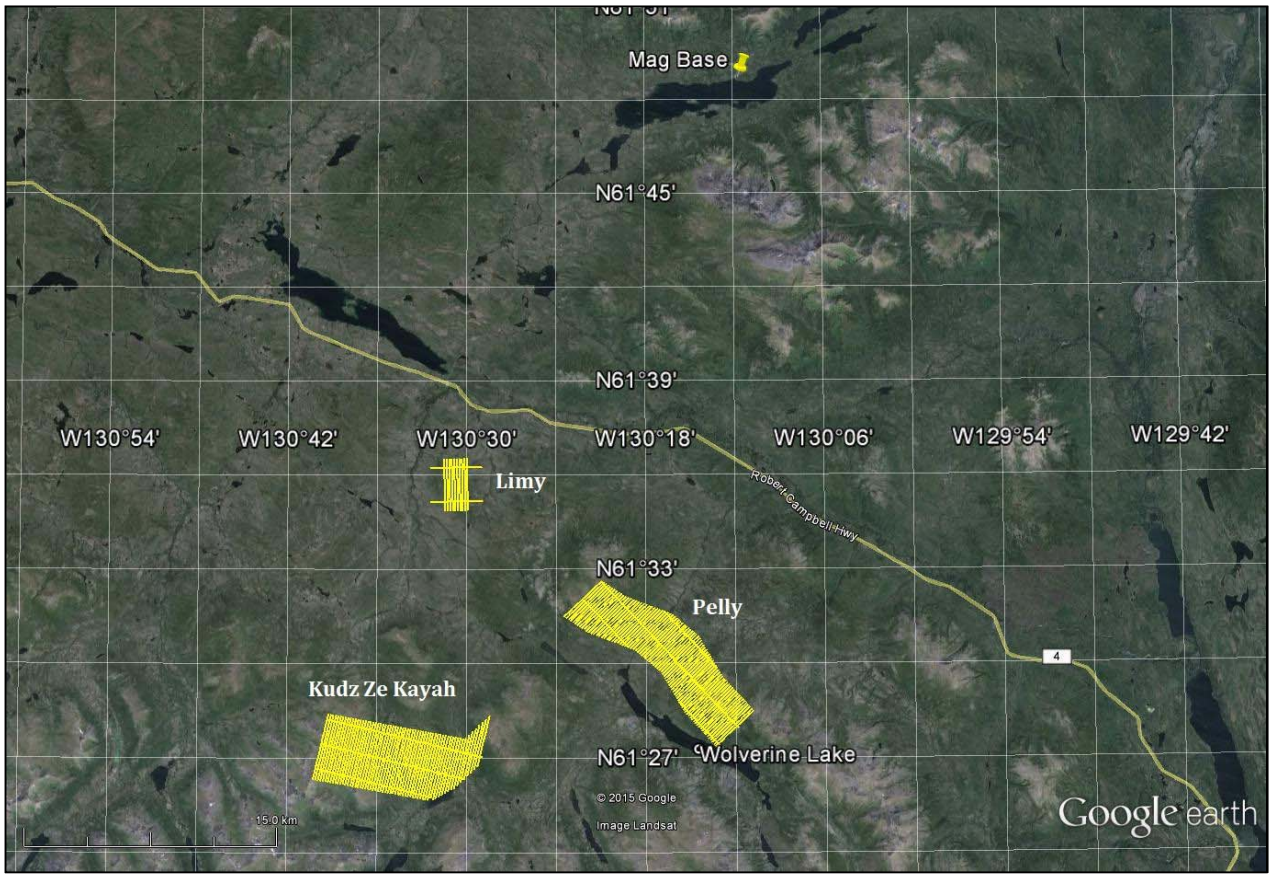

Figure 2: Survey area location on Google Earth.

The block, Kudz Ze Kayah was flown in a northeast to southwest (N 15° E azimuth) direction, Pelly was flown in a southwest to northeast (N48° E azimuth) direction, and Limy were flown in a north to south (N 0° E azimuth) with traverse line spacing of 150 metres as depicted in Figure 3 to 5. Tie lines were flown perpendicular to the traverse lines at a spacing of 1500 and 2000 metres respectively. For more detailed information on the flight spacing and direction see Table 1.

1.3 TOPOGRAPHIC RELIEF AND CULTURAL FEATURES

Topographically, the survey areas exhibits a highly rugged relief with an elevation ranging from 1091 to 2038 metres above mean sea level over an area of 73 square kilometres (Figure 3 to 5).

There are various rivers and streams running through the survey areas which connect various lakes. There are no visible signs of culture such as roads, transmission lines, mining areas and settlements located in the survey areas (Figure 3 to 5).

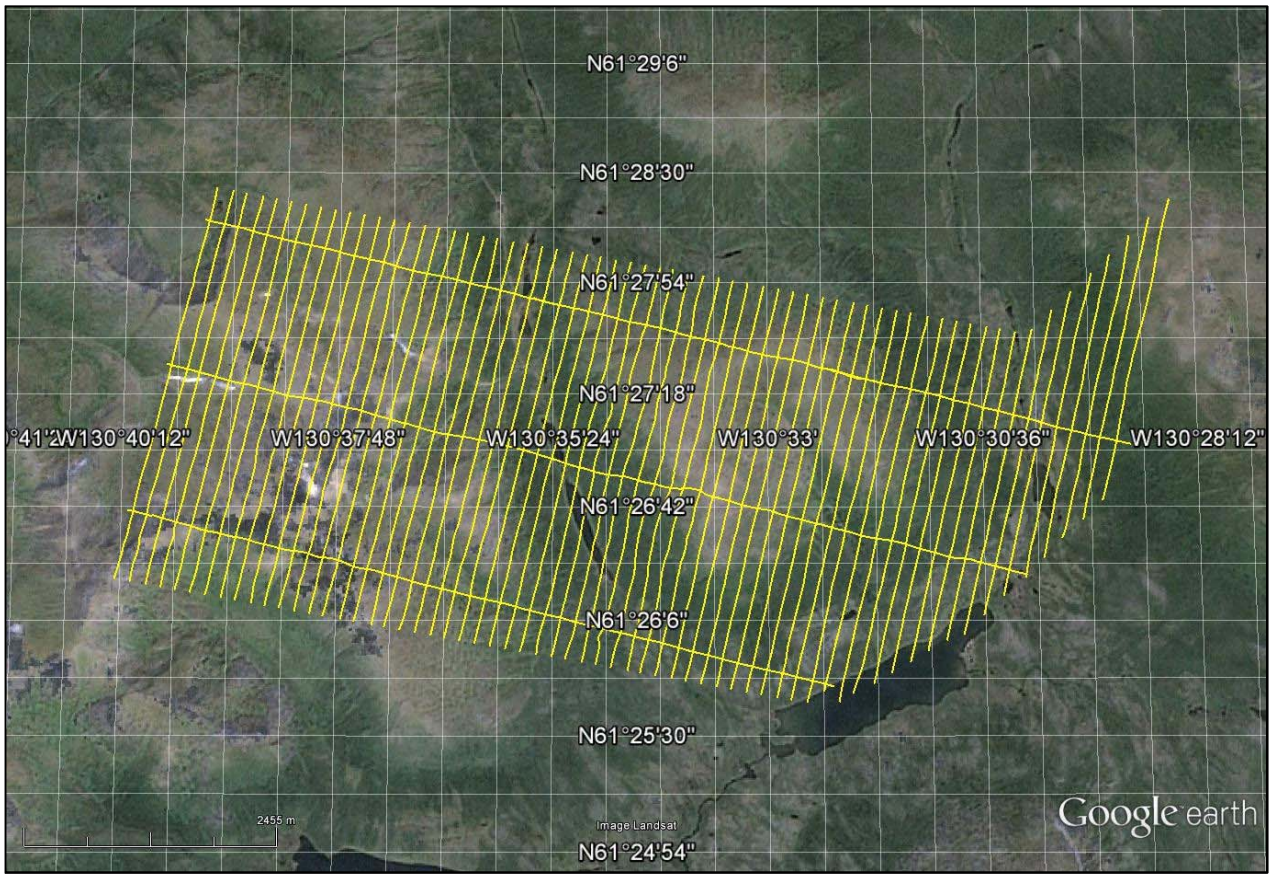

Figure 3: Flight path of Kudz Ze Kayah over a Google Earth Image.

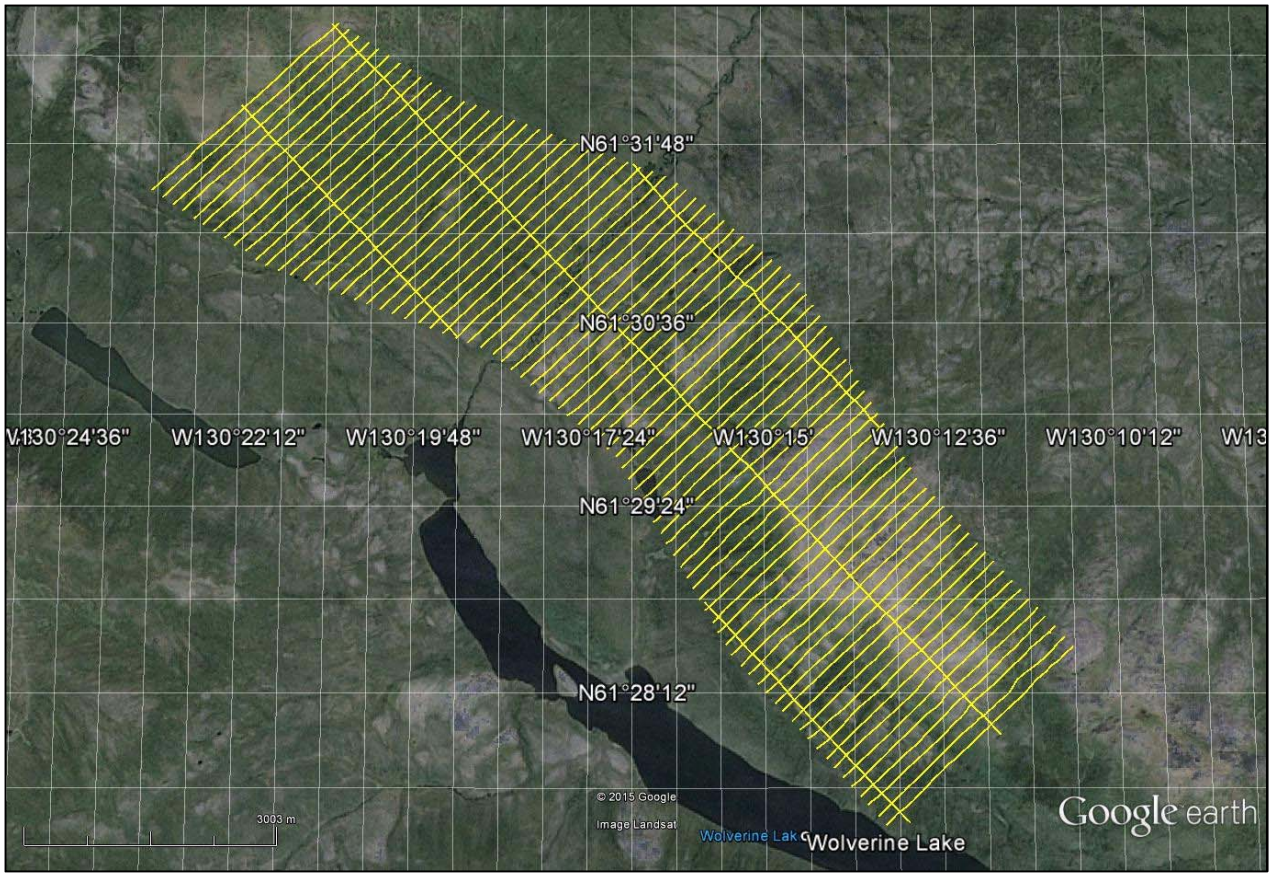

Figure 4: Flight path of Pelly over a Google Earth Image.

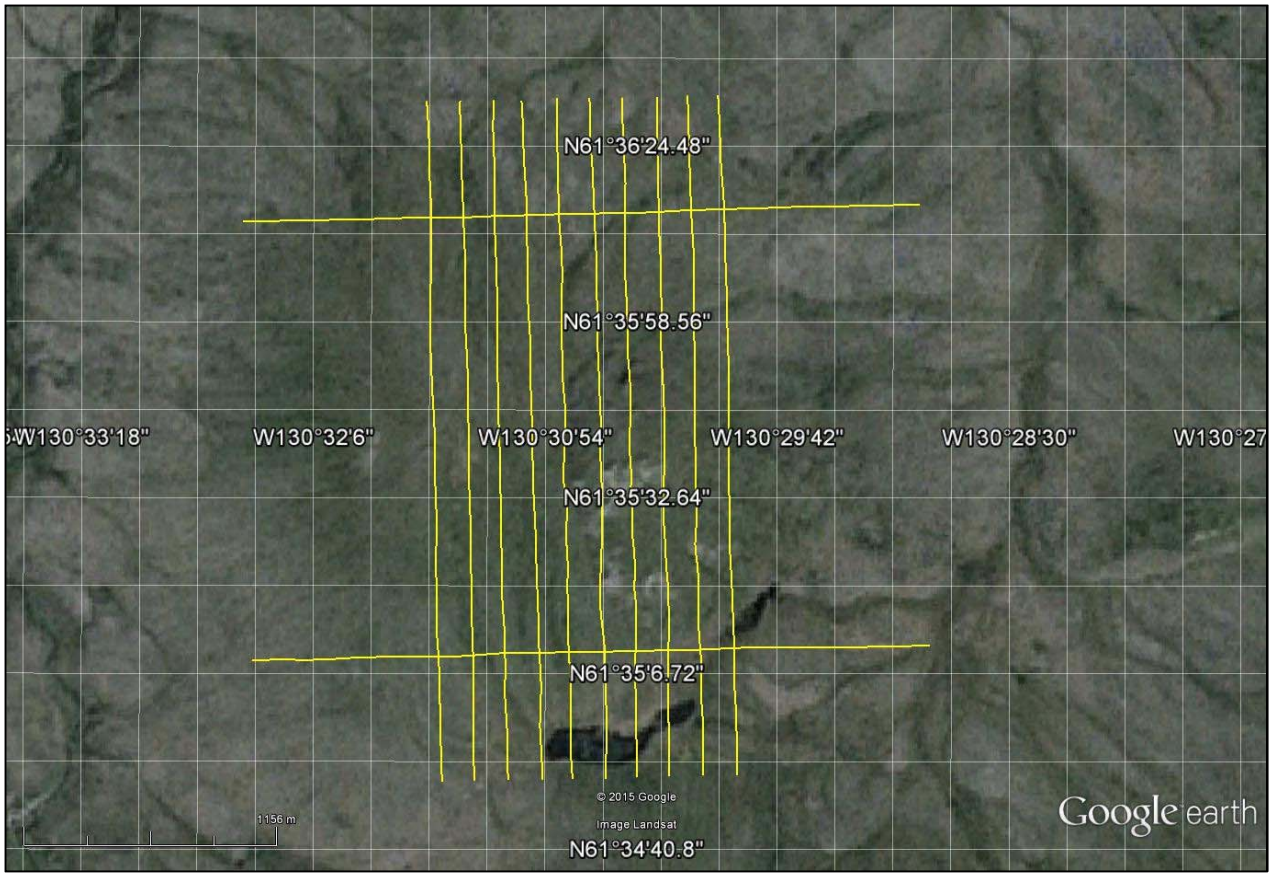

Figure 5: Flight path of Limy over a Google Earth Image.

2. DATA ACQUISITION

2.1 SURVEY AREA

The survey areas (see Figure 3, Figure 4, Figure 5, and Appendix A) and general flight specifications are as follows:

Table 1: Survey Specifications

Survey block	Line spacing (m)	Area (Km^2)	Planned[1] Line-km	Actual Line-km	Flight direction	Line numbers
Kudz Ze Kayah	Traverse: 150	35	260	241.1	N 15° E / N 195° E	L1000 - L1620
	Tie: 1500			26.3	N 105° E / N 285° E	T2001 - T2020
Pelly	Traverse: 150	36	261	245.3	N 48° E / N 228° E	L3000 - L3780
	Tie: 1500			24.1	N 138° E / N 318° E	T4000 - T4021
Limy	Traverse: 150	2	36	31.0	N 0° E / N 180° E	L5000 - L5090
	Tie: 2000			6.2	N 90° E / N 270° E	T6000 - T6010
TOTAL		73	557	574		

Survey area boundaries co-ordinates are provided in Appendix B.

2.2 SURVEY OPERATIONS

Survey operations were based out of Inconnu Lodge in Yukon from August 22nd until September 7th 2015. The following table shows the timing of the flying.

Table 2: Survey schedule

Date	Flight #	Flown km	Block	Crew location	Comments
22-Aug-2015				Watson Lake, Yukon	Crew arrived
23-Aug-2015				Watson Lake, Yukon	System Assembly
24-Aug-2015				Watson Lake, Yukon	System Assembly
25-Aug-2015				Watson Lake, Yukon	System testing
26-Aug-2015				Watson Lake, Yukon	Test completed
27-Aug-2015				Inconnu Lodge, Yukon	System ferry - no production due to weather
28-Aug-2015	1,2,3	103	Kudz Ze Kayah	Inconnu Lodge, Yukon	103km flown
29-Aug-2015	4	9	Pelly	Inconnu Lodge, Yukon	9km flown - limited due to weather
30-Aug-2015	5,6	144	Kudz Ze Kayah, Pelly	Inconnu Lodge, Yukon	144km flown
31-Aug-2015				Inconnu Lodge, Yukon	No production due to weather
1-Sep-2015				Inconnu Lodge, Yukon	No production due to weather
2-Sep-2015	7	69	Limy, Pelly	Inconnu Lodge, Yukon	69km flown limited due to weather
3-Sep-2015	8,9,10	139	Pelly	Inconnu Lodge, Yukon	139km flown
4-Sep-2015	11,12	84	Kudz Ze Kayah, Pelly	Inconnu Lodge, Yukon	84km flown
5-Sep-2015	13	16	Kudz Ze	Inconnu Lodge, Yukon	reflights

[1] Note: Actual Line kilometres represent the total line kilometres in the final database. These line-km normally exceed the Planned Line-km, as indicated in the survey NAV files.

Date	Flight #	Flown km	Block	Crew location	Comments
			Kayah		
6-Sep-2015				Inconnu Lodge, Yukon	Reflights not done due to weather
7-Sep-2015	14	15	Kudz Ze Kayah, Pelly	Inconnu Lodge, Yukon	Remaining kms were flown – flying complete

2.3 FLIGHT SPECIFICATIONS

During the survey the helicopter was maintained at a mean altitude of 77 metres above the ground with an average survey speed of 80 km/hour. This allowed for an actual average Transmitter-receiver loop terrain clearance of 44 metres and a magnetic sensor clearance of 54 metres.

The on board operator was responsible for monitoring the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic features.

On return of the aircrew to the base camp the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer. The data were then uploaded via ftp to the Geotech office in Aurora for daily quality assurance and quality control by qualified personnel.

2.4 AIRCRAFT AND EQUIPMENT

2.4.1 SURVEY AIRCRAFT

The survey was flown using a Eurocopter Aerospatiale (Astar) 350 B3 helicopter, registration C-GAKF. The helicopter is owned and operated by Access Helicopters. Installation of the geophysical and ancillary equipment was carried out by a Geotech Ltd crew.

2.4.2 ELECTROMAGNETIC SYSTEM

The electromagnetic system was a Geotech Time Domain EM (VTEM™Plus) full receiver-waveform streamed data recorded system. The "full waveform VTEM system" uses the streamed half-cycle recording of transmitter and receiver waveforms to obtain a complete system response calibration throughout the entire survey flight. The VTEM™ transmitter current waveform is shown diagrammatically in Figure 6. VTEM with the Serial number 19 had been used for the survey.

The VTEM™ Receiver and transmitter coils were in concentric-coplanar and Z-direction oriented configuration. The receiver system for the project also included a coincident-coaxial X-direction coil to measure the in-line dB/dt and calculate B-Field responses. The Transmitter-receiver loop was towed at a mean distance of 31 metres below the aircraft as shown in Figure 7.

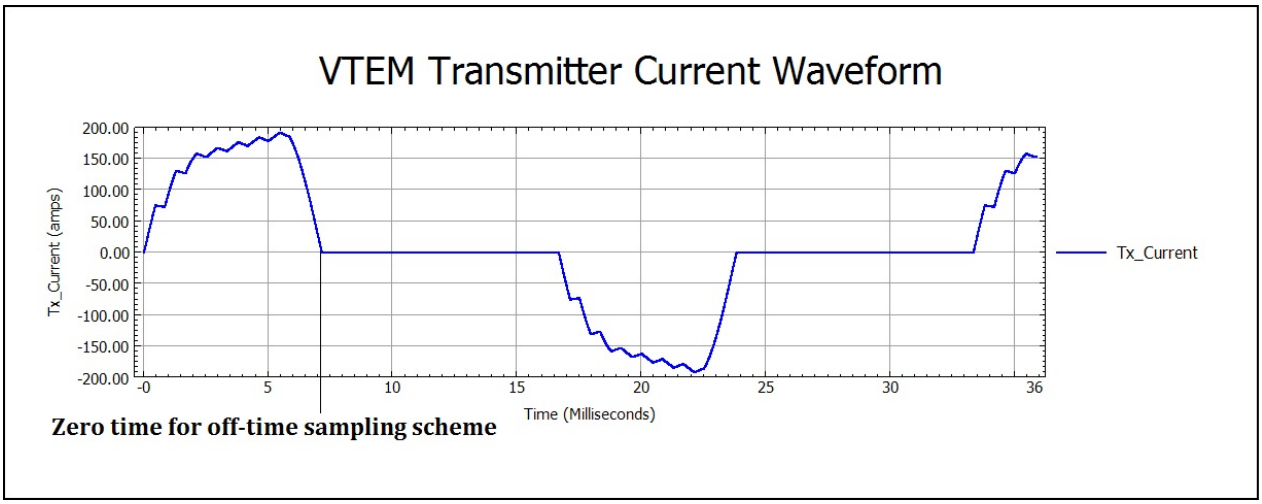

Figure 6: VTEM™ Transmitter Current Waveform

The VTEM™ decay sampling scheme is shown in Table 3 below. Forty-three time measurement gates were used for the final data processing in the range from 0.021 to 8.083 msec. Zero time for the off-time sampling scheme is equal to the current pulse width and is defined as the time near the end of the turn-off ramp where the dI/dt waveform falls to 1/2 of its peak value.

Table 3: Off-Time Decay Sampling Scheme

VTEM™ Decay Sampling Scheme				
Index	Start	End	Middle	Width
Milliseconds				
4	0.018	0.023	0.021	0.005
5	0.023	0.029	0.026	0.005
6	0.029	0.034	0.031	0.005
7	0.034	0.039	0.036	0.005
8	0.039	0.045	0.042	0.006
9	0.045	0.051	0.048	0.007
10	0.051	0.059	0.055	0.008
11	0.059	0.068	0.063	0.009
12	0.068	0.078	0.073	0.010
13	0.078	0.090	0.083	0.012
14	0.090	0.103	0.096	0.013
15	0.103	0.118	0.110	0.015
16	0.118	0.136	0.126	0.018
17	0.136	0.156	0.145	0.020
18	0.156	0.179	0.167	0.023
19	0.179	0.206	0.192	0.027
20	0.206	0.236	0.220	0.030
21	0.236	0.271	0.253	0.035
22	0.271	0.312	0.290	0.040
23	0.312	0.358	0.333	0.046

VTEM™ Decay Sampling Scheme				
Index	Start	End	Middle	Width
Milliseconds				
24	0.358	0.411	0.383	0.053
25	0.411	0.472	0.440	0.061
26	0.472	0.543	0.505	0.070
27	0.543	0.623	0.580	0.081
28	0.623	0.716	0.667	0.093
29	0.716	0.823	0.766	0.107
30	0.823	0.945	0.880	0.122
31	0.945	1.086	1.010	0.141
32	1.086	1.247	1.161	0.161
33	1.247	1.432	1.333	0.185
34	1.432	1.646	1.531	0.214
35	1.646	1.891	1.760	0.245
36	1.891	2.172	2.021	0.281
37	2.172	2.495	2.323	0.323
38	2.495	2.865	2.667	0.370
39	2.865	3.292	3.063	0.427
40	3.292	3.781	3.521	0.490
41	3.781	4.341	4.042	0.560
42	4.341	4.987	4.641	0.646
43	4.987	5.729	5.333	0.742
44	5.729	6.581	6.125	0.852
45	6.581	7.560	7.036	0.979
46	7.560	8.685	8.083	1.125

Z Component: 4 - 46 time gates
X Component: 20 - 46 time gates

VTEM™ system specifications:

Transmitter	Receiver
• Transmitter loop diameter: 26 m • Number of turns: 4 • Effective Transmitter loop area: 2123.7 m^2 • Transmitter base frequency: 30 Hz • Peak current: 191 A • Pulse width: 7.17 ms • Waveform shape: Bi-polar trapezoid • Peak dipole moment: 405,630 nIA • Actual average Transmitter-receiver loop terrain clearance: 44 metres above the ground	• X Coil diameter: 0.32 m • Number of turns: 245 • Effective coil area: 19.69 m^2 • Z-Coil diameter: 1.2 m • Number of turns: 100 • Effective coil area: 113.04 m^2

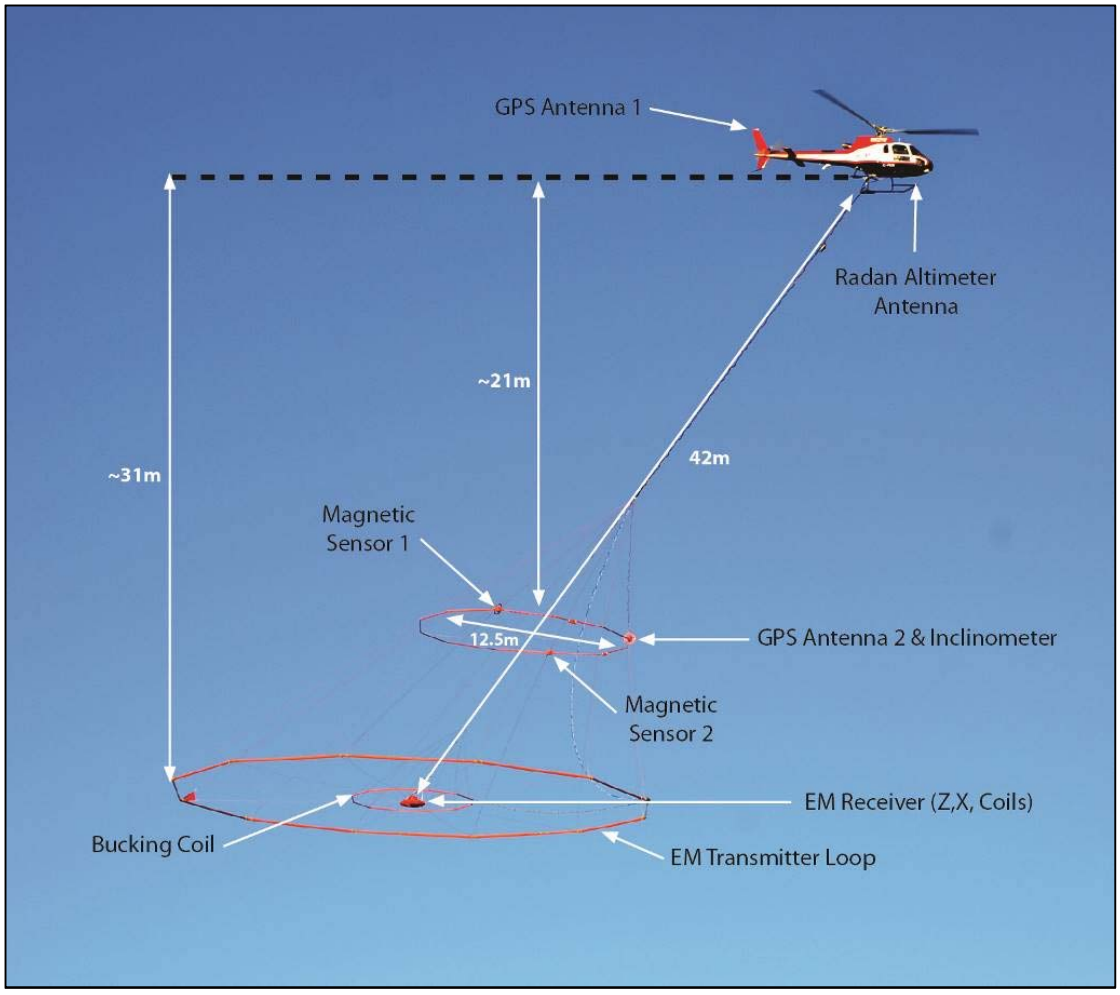

Figure 7: VTEM™Plus System Configuration.

2.4.3 FULL WAVEFORM VTEM™ SENSOR CALIBRATION

The calibration is performed on the complete VTEM™ system installed in and connected to the helicopter, using special calibration equipment.

The procedure takes half-cycle files acquired and calculates a calibration file consisting of a single stacked half-cycle waveform. The purpose of the stacking is to attenuate natural and man-made magnetic signals, leaving only the response to the calibration signal.

2.4.4 HORIZONTAL MAGNETIC GRADIOMETER

The horizontal magnetic gradiometer consists of two Geometrics split-beam field magnetic sensors with a sampling interval of 0.1 seconds. These sensors are mounted 12.5 metres apart on a separate loop, 10 metres above the Transmitter-receiver loop. A GPS antenna and Gyro Inclinometer is installed on the separate loop to accurately record the tilt and position of the magnetic gradiomag bird.

2.4.5 RADAR ALTIMETER

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit (Figure 7).

2.4.6 GPS NAVIGATION SYSTEM

The navigation system used was a Geotech PC104 based navigation system utilizing a NovAtel's WAAS (Wide Area Augmentation System) enabled GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and a NovAtel GPS antenna mounted on the helicopter tail (Figure 7). As many as 11 GPS and two WAAS satellites may be monitored at any one time. The positional accuracy or circular error probability (CEP) is 1.8 m, with WAAS active, it is 1.0 m. The co-ordinates of the survey area were set-up prior to the survey and the information was fed into the airborne navigation system. The second GPS antenna is installed on the additional magnetic loop together with Gyro Inclinometer.

2.4.7 DIGITAL ACQUISITION SYSTEM

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. The data type and sampling interval as provided in Table 4.

Table 4: Acquisition Sampling Rates

Data Type	Sampling
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
Radar Altimeter	0.2 sec
Inclinometer	0.1 sec

2.5 BASE STATION

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Caesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer.

The base station magnetometer sensor was installed at 130° 11.6730' W, 61° 48.7029' N; away from electric transmission lines and moving ferrous objects such as motor vehicles. The base station data were backed-up to the data processing computer at the end of each survey day.

3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project.

FIELD:

Project Manager:	Darren Tuck (Office)
Data QC:	Neil Fiset (Office)
Crew chief:	Roger Leblanc
Operator:	n/a

The survey pilot and the mechanical engineer were employed directly by the helicopter operator – Access Helicopters.

Pilot:	Michael Holcroft
Mechanical Engineer:	n/a

OFFICE:

Preliminary Data Processing:	Neil Fiset
Final Data Processing:	TaiChyi Shei
Final Data QA/QC:	Geoffrey Plastow
Reporting/Mapping:	Liz Mathew

Data acquisition phase was carried out under the supervision of Andrei Bagrianski, P. Geo, and Chief Operating Officer. Processing and Interpretation phases were carried out under the supervision of Geoffrey Plastow, P. Geo, and Data Processing Manager. The customer relations were looked after by David Hitz.

4. DATA PROCESSING AND PRESENTATION

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Ltd.

4.1 FLIGHT PATH

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the NAD83 Datum, UTM Zone 9 North coordinate system in Oasis Montaj.

The flight path was drawn using linear interpolation between x, y positions from the navigation system. Positions are updated every second and expressed as UTM easting's (x) and UTM northing's (y).

4.2 ELECTROMAGNETIC DATA

The Full Waveform EM specific data processing operations included:

- Half cycle stacking (performed at time of acquisition);
- System response correction;
- Parasitic and drift removal by deconvolution.

A three stage digital filtering process was used to reject major sferic events and to reduce noise levels. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 15 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear - logarithmic scale for the B-field Z component and dB/dt responses in the Z and X components. B-field Z component time channel recorded at 2.021 milliseconds (Kudz Ze Kayah) and at 4.641 milliseconds (Limy and Pelly) after the termination of the impulse is also presented as a colour image. Calculated Time Constant (TAU) with Calculated Vertical Derivative contours is presented in Appendix C and E. Resistivity Depth Image (RDI) is also presented in Appendix F and G.

VTEM has two receiver coil orientations. Z-axis coil is oriented parallel to the transmitter coil axis and both are horizontal to the ground. The X-axis coil is oriented parallel to the ground and along the line-of-flight. This combined two coil configuration provides information on the position, depth, dip and thickness of a conductor. Generalized modeling results of VTEM max data are shown in Appendix D.

In general X-component data produce cross-over type anomalies: from "+ to – "in flight direction of flight for "thin" sub vertical targets and from "- to +" in direction of flight for "thick" targets. Z component data produce double peak type anomalies for "thin" sub vertical targets and single peak for "thick" targets.

The limits and change-over of "thin-thick" depends on dimensions of a TEM system (Appendix D, Figure D-16).

Because of X component polarity is under line-of-flight, convolution Fraser Filter (Figure 8) is applied to X component data to represent axes of conductors in the form of grid map. In this case positive FF anomalies always correspond to "plus-to-minus" X data crossovers independent of the flight direction.

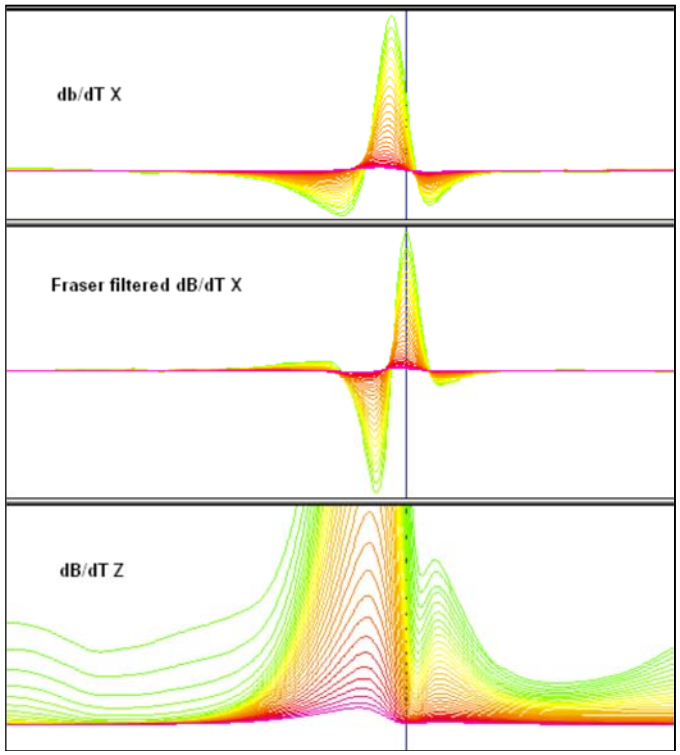

Figure 8: Z, X and Fraser filtered X (FFx) components for "thin" target.

4.3 HORIZONTAL MAGNETIC GRADIOMETER DATA

The horizontal gradients data from the VTEM™Plus are measured by two magnetometers 12.5 m apart on an independent bird mounted10m above the VTEM™ loop. A GPS and a Gyro Inclinometer help to determine the positions and orientations of the magnetometers. The data from the two magnetometers are corrected for position and orientation variations, as well as for the diurnal variations using the base station data.

The position of the centre of the horizontal magnetic gradiometer bird is calculated form the GPS utilizing in-house processing tool in Geosoft. Following that total magnetic intensity is calculated at the center of the bird by calculating the mean values from both sensors. In addition to the total intensity advanced processing is done to calculate the in-line and cross-line (or lateral) horizontal gradient which enhance the understanding of magnetic targets. The in-line (longitudinal) horizontal gradient is calculated from the difference of two consecutive total magnetic field readings divided by the distance along the flight line direction, while the cross-line (lateral) horizontal magnetic gradient is calculated from the difference in the magnetic readings from both magnetic sensors divided by their horizontal separation.

Two advanced magnetic derivative products, the total horizontal derivative (THDR), and tilt angle derivative and are also created. The total horizontal derivative or gradient is defined as:

THDR = sqrt(Hx*Hx+Hy*Hy), where Hx and Hy are cross-line and in-line horizontal gradients.

The tilt angle derivative (TDR) is defined as:

TDR = arctan(Vz/THDR), where THDR is the total horizontal derivative, and Vz is the vertical derivative.

Measured cross-line gradients can help to enhance cross-line linear features during gridding.

5. DELIVERABLES

5.1 SURVEY REPORT

The survey report describes the data acquisition, processing, and final presentation of the survey results. The survey report is provided in two paper copies and digitally in PDF format.

5.2 MAPS

Final maps were produced at scale of 1:10,000 for best representation of the survey size and line spacing. The coordinate/projection system used was NAD83 Datum, UTM Zone 9 North. All maps show the flight path trace and topographic data; latitude and longitude are also noted on maps.

The preliminary and final results of the survey are presented as EM profiles, a late-time gate gridded EM channel, and a colour magnetic TMI contour map.

- Maps at 1:10,000 in Geosoft MAP format, as follows:

GL150055_10k_bb_dBdtz:	dB/dt profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
GL150055_10k_bb_Bfieldz:	B-field profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
GL150055_10k_bb_BFz36:	B-field early time Z Component Channel 36, Time Gate 2.021 ms colour image.
GL150055_10k_bb_BFz42:	B-field early time Z Component Channel 42, Time Gate 4.641 ms colour image.
GL150055_10k_bb_SFxFF24:	dBdt X Component Fraser Filtered Channel 24, Time Gate 0.383 ms colour image.
GL150055_10k_bb_SFxFF26:	dBdt X Component Fraser Filtered Channel 26, Time Gate 0.505 ms colour image.
GL150055_10k_bb_SFxFF30:	dBdt X Component Fraser Filtered Channel 30, Time Gate 0.880 ms colour image.
GL150055_10k_bb_TMI:	Total magnetic intensity (TMI) colour image and contours.
GL150055_10k_bb_TauSF:	dB/dt Calculated Time Constant (Tau) with Calculated Vertical Derivative contours
GL150055_10k_bb_TotHGrad:	Magnetic Total Horizontal Gradient colour image.
GL150055_10k_bb_TiltDrv:	Magnetic Tilt-Angle Derivative colour image.

where bb represents the block name. (i.e. GL150055_10k_Limy_TMI)

- Maps are also presented in PDF format.
- The topographic data base was derived from 1:50,000 NRC (Natural Resources Canada) NTDB data, www.geogratis.ca.
- A Google Earth file *GL150055_bb_FP.kml* showing the flight path of the block is included. Free versions of Google Earth software from: http://earth.google.com/download-earth.html

  where bb represents the block name.

5.3 DIGITAL DATA

Two copies of the data and maps on DVD were prepared to accompany the report. Each DVD contains a digital file of the line data in GDB Geosoft Montaj format as well as the maps in Geosoft Montaj Map and PDF format.

- DVD structure.

Data contains databases, grids and maps, as described below.
Report contains a copy of the report and appendices in PDF format.

Databases in Geosoft GDB format, containing the channels listed in Table 5.

Table 5: Geosoft GDB Data Format

Channel name	Units	Description
X:	metres	UTM Easting NAD83 Zone 9 North
Y:	metres	UTM Northing NAD83 Zone 9 North
Longitude:	Decimal Degrees	WGS 84 Longitude data
Latitude:	Decimal Degrees	WGS 84 Latitude data
Z:	metres	GPS antenna elevation (above Geoid)
Zb:	metres	EM bird elevation (above Geoid)
Radar:	metres	helicopter terrain clearance from radar altimeter
Radarb:	metres	Calculated EM transmitter-receiver loop terrain clearance from radar altimeter
DEM:	metres	Digital Elevation Model
Gtime:	Seconds of the day	GPS time
Mag1L:	nT	Measured Total Magnetic field data (left sensor)
Mag1R:	nT	Measured Total Magnetic field data (right sensor)
Basemag:	nT	Magnetic diurnal variation data
Mag2LZ	nT	Z corrected (w.r.t. loop center) and diurnal corrected magnetic field left mag
Mag2RZ	nT	Z corrected (w.r.t. loop center) and diurnal corrected magnetic field right mag
TMI2	nT	Calculated from diurnal corrected total magnetic field intensity of the centre of the loop
TMI3	nT	Microleveled total magnetic field intensity of the centre of the loop
Hginline		Calculated in-line gradient
Hgcxline		measured cross-line gradient
CVG	nT/m	Calculated Magnetic Vertical Gradient
SFz[4]:	pV/(A*m^4)	Z dB/dt 0.021 millisecond time channel
SFz[5]:	pV/(A*m^4)	Z dB/dt 0.026 millisecond time channel
SFz[6]:	pV/(A*m^4)	Z dB/dt 0.031 millisecond time channel
SFz[7]:	pV/(A*m^4)	Z dB/dt 0.036 millisecond time channel
SFz[8]:	pV/(A*m^4)	Z dB/dt 0.042 millisecond time channel
SFz[9]:	pV/(A*m^4)	Z dB/dt 0.048 millisecond time channel
SFz[10]:	pV/(A*m^4)	Z dB/dt 0.055 millisecond time channel
SFz[11]:	pV/(A*m^4)	Z dB/dt 0.063 millisecond time channel
SFz[12]:	pV/(A*m^4)	Z dB/dt 0.073 millisecond time channel
SFz[13]:	pV/(A*m^4)	Z dB/dt 0.083 millisecond time channel
SFz[14]:	pV/(A*m^4)	Z dB/dt 0.096 millisecond time channel

Channel name	Units	Description
SFz[15]:	pV/(A*m^4)	Z dB/dt 0.110 millisecond time channel
SFz[16]:	pV/(A*m^4)	Z dB/dt 0.126 millisecond time channel
SFz[17]:	pV/(A*m^4)	Z dB/dt 0.145 millisecond time channel
SFz[18]:	pV/(A*m^4)	Z dB/dt 0.167 millisecond time channel
SFz[19]:	pV/(A*m^4)	Z dB/dt 0.192 millisecond time channel
SFz[20]:	pV/(A*m^4)	Z dB/dt 0.220 millisecond time channel
SFz[21]:	pV/(A*m^4)	Z dB/dt 0.253 millisecond time channel
SFz[22]:	pV/(A*m^4)	Z dB/dt 0.290 millisecond time channel
SFz[23]:	pV/(A*m^4)	Z dB/dt 0.333 millisecond time channel
SFz[24]:	pV/(A*m^4)	Z dB/dt 0.383 millisecond time channel
SFz[25]:	pV/(A*m^4)	Z dB/dt 0.440 millisecond time channel
SFz[26]:	pV/(A*m^4)	Z dB/dt 0.505 millisecond time channel
SFz[27]:	pV/(A*m^4)	Z dB/dt 0.580 millisecond time channel
SFz[28]:	pV/(A*m^4)	Z dB/dt 0.667 millisecond time channel
SFz[29]:	pV/(A*m^4)	Z dB/dt 0.766 millisecond time channel
SFz[30]:	pV/(A*m^4)	Z dB/dt 0.880 millisecond time channel
SFz[31]:	pV/(A*m^4)	Z dB/dt 1.010 millisecond time channel
SFz[32]:	pV/(A*m^4)	Z dB/dt 1.161 millisecond time channel
SFz[33]:	pV/(A*m^4)	Z dB/dt 1.333 millisecond time channel
SFz[34]:	pV/(A*m^4)	Z dB/dt 1.531 millisecond time channel
SFz[35]:	pV/(A*m^4)	Z dB/dt 1.760 millisecond time channel
SFz[36]:	pV/(A*m^4)	Z dB/dt 2.021 millisecond time channel
SFz[37]:	pV/(A*m^4)	Z dB/dt 2.323 millisecond time channel
SFz[38]:	pV/(A*m^4)	Z dB/dt 2.667 millisecond time channel
SFz[39]:	pV/(A*m^4)	Z dB/dt 3.063 millisecond time channel
SFz[40]:	pV/(A*m^4)	Z dB/dt 3.521 millisecond time channel
SFz[41]:	pV/(A*m^4)	Z dB/dt 4.042 millisecond time channel
SFz[42]:	pV/(A*m^4)	Z dB/dt 4.641 millisecond time channel
SFz[43]:	pV/(A*m^4)	Z dB/dt 5.333 millisecond time channel
SFz[44]:	pV/(A*m^4)	Z dB/dt 6.125 millisecond time channel
SFz[45]:	pV/(A*m^4)	Z dB/dt 7.036 millisecond time channel
SFz[46]:	pV/(A*m^4)	Z dB/dt 8.083 millisecond time channel
SFx[20]:	pV/(A*m^4)	X dB/dt 0.220 millisecond time channel
SFx[21]:	pV/(A*m^4)	X dB/dt 0.253 millisecond time channel
SFx[22]:	pV/(A*m^4)	X dB/dt 0.290 millisecond time channel
SFx[23]:	pV/(A*m^4)	X dB/dt 0.333 millisecond time channel
SFx[24]:	pV/(A*m^4)	X dB/dt 0.383 millisecond time channel
SFx[25]:	pV/(A*m^4)	X dB/dt 0.440 millisecond time channel
SFx[26]:	pV/(A*m^4)	X dB/dt 0.505 millisecond time channel
SFx[27]:	pV/(A*m^4)	X dB/dt 0.580 millisecond time channel
SFx[28]:	pV/(A*m^4)	X dB/dt 0.667 millisecond time channel
SFx[29]:	pV/(A*m^4)	X dB/dt 0.766 millisecond time channel
SFx[30]:	pV/(A*m^4)	X dB/dt 0.880 millisecond time channel
SFx[31]:	pV/(A*m^4)	X dB/dt 1.010 millisecond time channel
SFx[32]:	pV/(A*m^4)	X dB/dt 1.161 millisecond time channel
SFx[33]:	pV/(A*m^4)	X dB/dt 1.333 millisecond time channel
SFx[34]:	pV/(A*m^4)	X dB/dt 1.531 millisecond time channel
SFx[35]:	pV/(A*m^4)	X dB/dt 1.760 millisecond time channel
SFx[36]:	pV/(A*m^4)	X dB/dt 2.021 millisecond time channel
SFx[37]:	pV/(A*m^4)	X dB/dt 2.323 millisecond time channel

Channel name	Units	Description
SFx[38]:	pV/(A*m^4)	X dB/dt 2.667 millisecond time channel
SFx[39]:	pV/(A*m^4)	X dB/dt 3.063 millisecond time channel
SFx[40]:	pV/(A*m^4)	X dB/dt 3.521 millisecond time channel
SFx[41]:	pV/(A*m^4)	X dB/dt 4.042 millisecond time channel
SFx[42]:	pV/(A*m^4)	X dB/dt 4.641 millisecond time channel
SFx[43]:	pV/(A*m^4)	X dB/dt 5.333 millisecond time channel
SFx[44]:	pV/(A*m^4)	X dB/dt 6.125 millisecond time channel
SFx[45]:	pV/(A*m^4)	X dB/dt 7.036 millisecond time channel
SFx[46]:	pV/(A*m^4)	X dB/dt 8.083 millisecond time channel
BFz	(pV*ms)/(A*m^4)	Z B-Field data for time channels 4 to 46
BFx	(pV*ms)/(A*m^4)	X B-Field data for time channels 20 to 46
SFxFF	pV/(A*m^4)	Fraser Filtered X dB/dt
NchanBF		Latest time channels of TAU calculation
TauBF	ms	Time constant B-Field
NchanSF		Latest time channels of TAU calculation
TauSF	ms	Time constant dB/dt
PLM:		60 Hz power line monitor

Electromagnetic B-field and dB/dt Z component data is found in array channel format between indexes 4 – 46, and X component data from 20 – 46, as described above.

- Database of the Resistivity Depth Images in Geosoft GDB format, containing the following channels:

Table 6: Geosoft Resistivity Depth Image GDB Data Format

Channel name	Units	Description
Xg	metres	UTM Easting NAD83 Zone 9 North
Yg	metres	UTM Northing NAD83 Zone 9 North
Dist:	meters	Distance from the beginning of the line
Depth:	meters	array channel, depth from the surface
Z:	meters	array channel, depth from sea level
AppRes:	Ohm-m	array channel, Apparent Resistivity
TR:	meters	EM system height from sea level
Topo:	meters	digital elevation model
Radarb:	metres	Calculated EM transmitter-receiver loop terrain clearance from radar altimeter
SF:	pV/(A*m^4)	array channel, dB/dT
MAG:	nT	TMI data
CVG:	nT/m	CVG data
DOI:	metres	Depth of Investigation: a measure of VTEM depth effectiveness
PLM:		60Hz Power Line Monitor

- Database of the VTEM Waveform "GL150055_waveform_final.gdb" in Geosoft GDB format, containing the following channels:

Table 7: Geosoft database for the VTEM waveform

Channel name	Units	Description
Time:	milliseconds	Sampling rate interval, 5.2083 microseconds
Tx_Current:	amps	Output current of the transmitter

- Grids in Geosoft GRD and GeoTIFF format, as follows:

bb_BFz36: B-Field Z Component Channel 36 (Time Gate 2.021 ms)
bb_BFz42: B-Field Z Component Channel 42 (Time Gate 4.641 ms)
bb_CVG_TMI: Calculated Vertical Derivative (nT/m)
bb_DEM: Digital Elevation Model (metres)
bb_Hgcxline: Measured Cross-Line Gradient (nT/m)
bb_Hginline: Measured In-Line Gradient (nT/m)
bb_SFxFF24: Fraser Filtered dB/dt X Component Channel 24 (Time Gate 0.383ms)
bb_SFxFF26: Fraser Filtered dB/dt X Component Channel 26 (Time Gate 0.505ms)
bb_SFxFF30: Fraser Filtered dB/dt X Component Channel 30 (Time Gate 0.880ms)
bb_SFz12: dB/dt Z Component Channel 12 (Time Gate 0.073 ms)
bb_SFz30: dB/dt Z Component Channel 30 (Time Gate 0.880 ms)
bb_SFz42: dB/dt Z Component Channel 42 (Time Gate 4.641 ms)
bb_SFz46: dB/dt Z Component Channel 46 (Time Gate 8.083 ms)
bb_TauBF: B-Field Z Component, Calculated Time Constant (ms)
bb_TauSF: dB/dt Z Component, Calculated Time Constant (ms)
bb_Tiltdrv: Magnetic Tilt derivative (radians)
bb_TMI3: Total Magnetic Intensity (nT)
bb_TotHgrad: Magnetic Total Horizontal Gradient (nT/m)

where bb represents block name

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information. A grid cell size of 37.5 metres was used.

6. CONCLUSIONS AND RECOMMENDATIONS

A helicopter-borne versatile time domain electromagnetic (VTEMplus) and horizontal magnetic gradiometer geophysical survey has been completed over Kudz Ze Kayah, Pelly and Limy situated near Wolverine Lake, Yukon.

The total area coverage is 73 km². Total survey line coverage 557 line kilometres. The principal sensors included a Time Domain EM system and a horizontal magnetic gradiometer using two caesium magnetometers. Results have been presented as stacked profiles, and contour colour images at a scale of 1:10,000. A formal Interpretation has not been included or requested.

Based on the geophysical results obtained, a number of TEM anomalous zones are identified across the properties. They can be seen overlapping the TAU decay parameter image presented with the calculated vertical magnetic gradient (CVG) contours (see Appendix C).

If the conductors correspond to an exploration model on the area it is recommended picking EM anomalies with conductance grading and center localization of the targets, detail resistivity depth imaging and plate modeling with test drill hole parameters planning prior to ground follow up and drill testing.

Respectfully submitted[2],

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Geotech Ltd.

TaiChyi Shei
Geotech Ltd.

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Data Processing Manager
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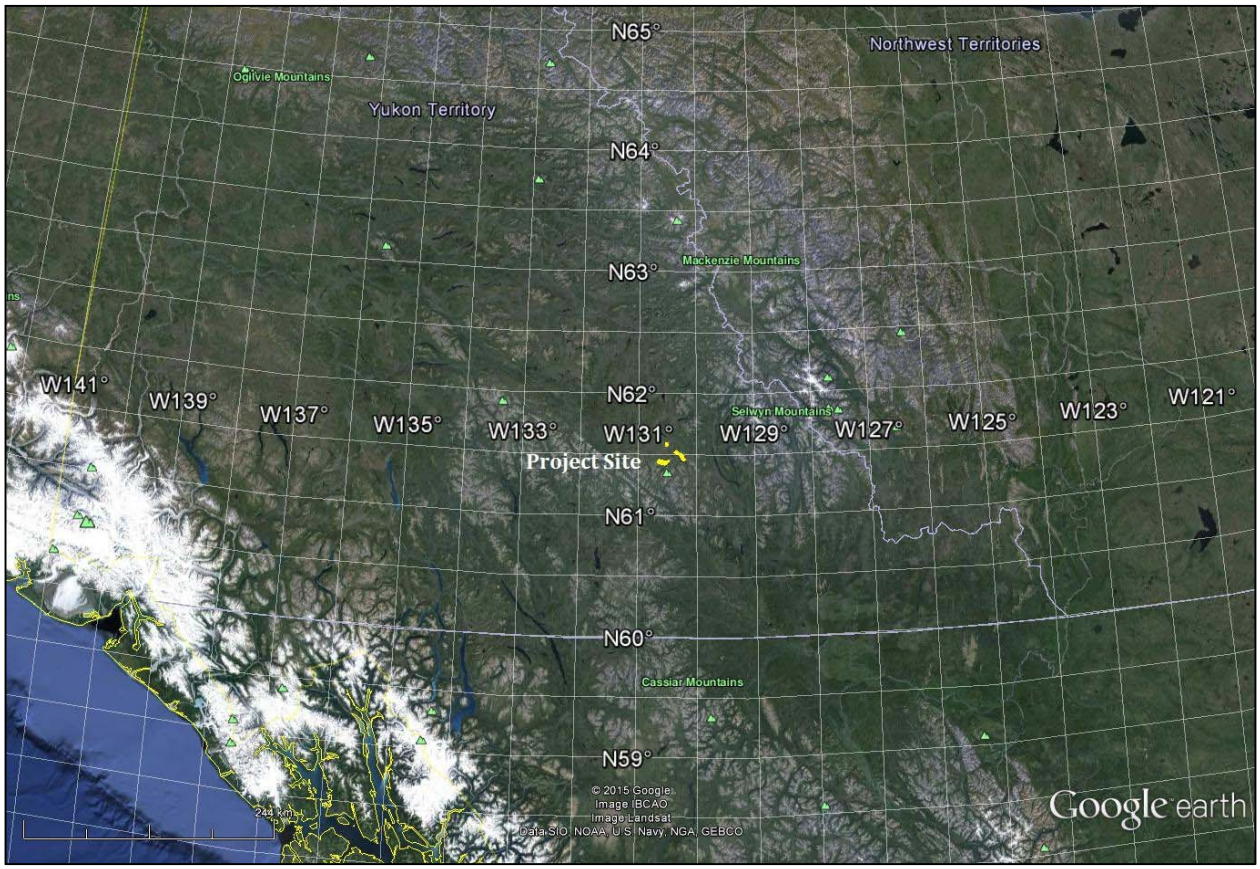
November, 2015

[2] Final data processing of the EM and magnetic data were carried out by ZiHao Han, from the office of Geotech Ltd. in Aurora, Ontario, under the supervision of Geoffrey Plastow, P.Geo. Data Processing Manager.

APPENDIX A

SURVEY AREA LOCATION MAP



Overview of the Survey Area

APPENDIX B

SURVEY AREA COORDINATES
(WGS 84, UTM Zone 9 North)

Kudz Ze Kayah

X	Y
411912	6816608
410899	6812834
417670	6811469
417915	6811601
418000	6811446
419109	6812060
419254	6812104
420807	6813491
421585	6816389
420031	6815002
419887	6814958
411912	6816608
411912	6816608

Limy

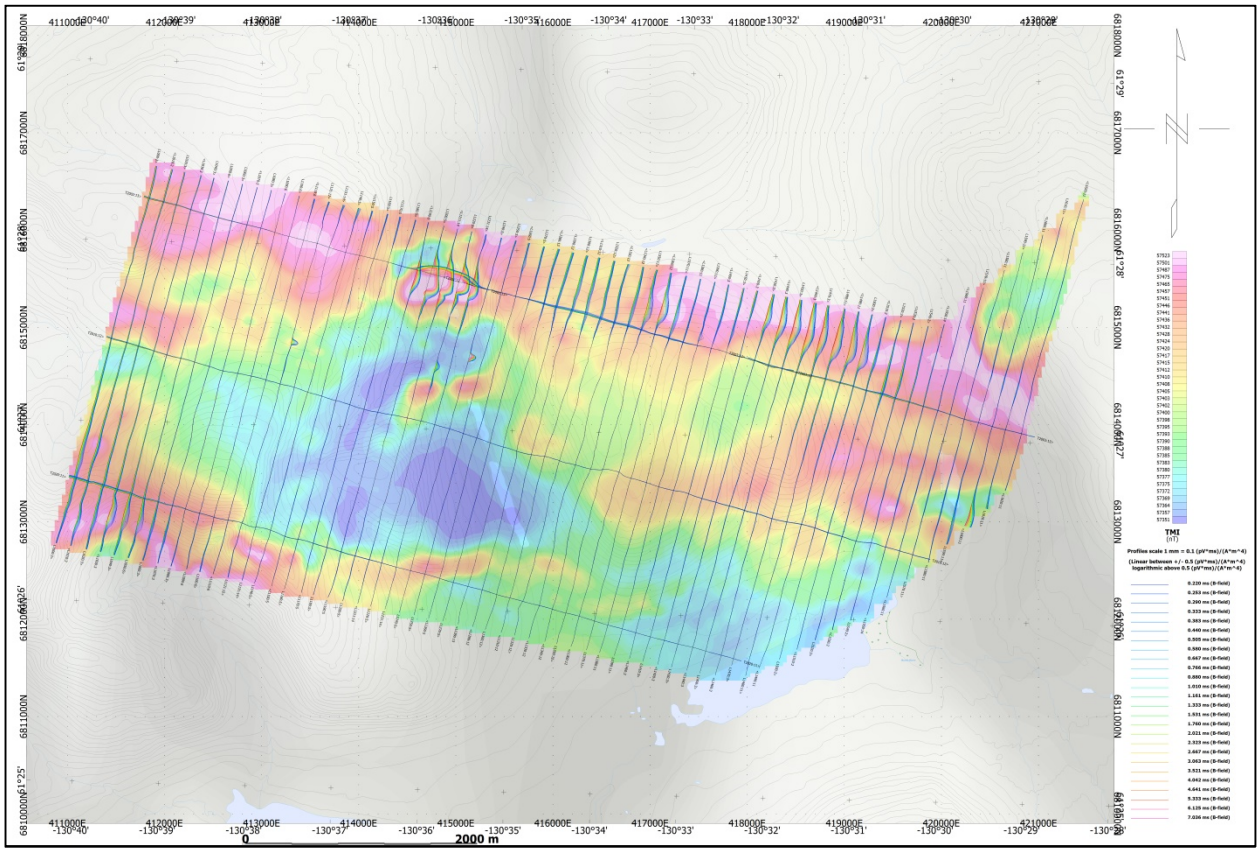
X	Y
419090	6829290
419090	6830665
420490	6830665
420490	6829290

Pelly

X	Y
426041	6822058
428270	6824066
429636	6823115
432388	6822007
433912	6820700
435278	6818265
437147	6816154
434918	6814147
433049	6816258
431683	6818693
430158	6819999
427407	6821108

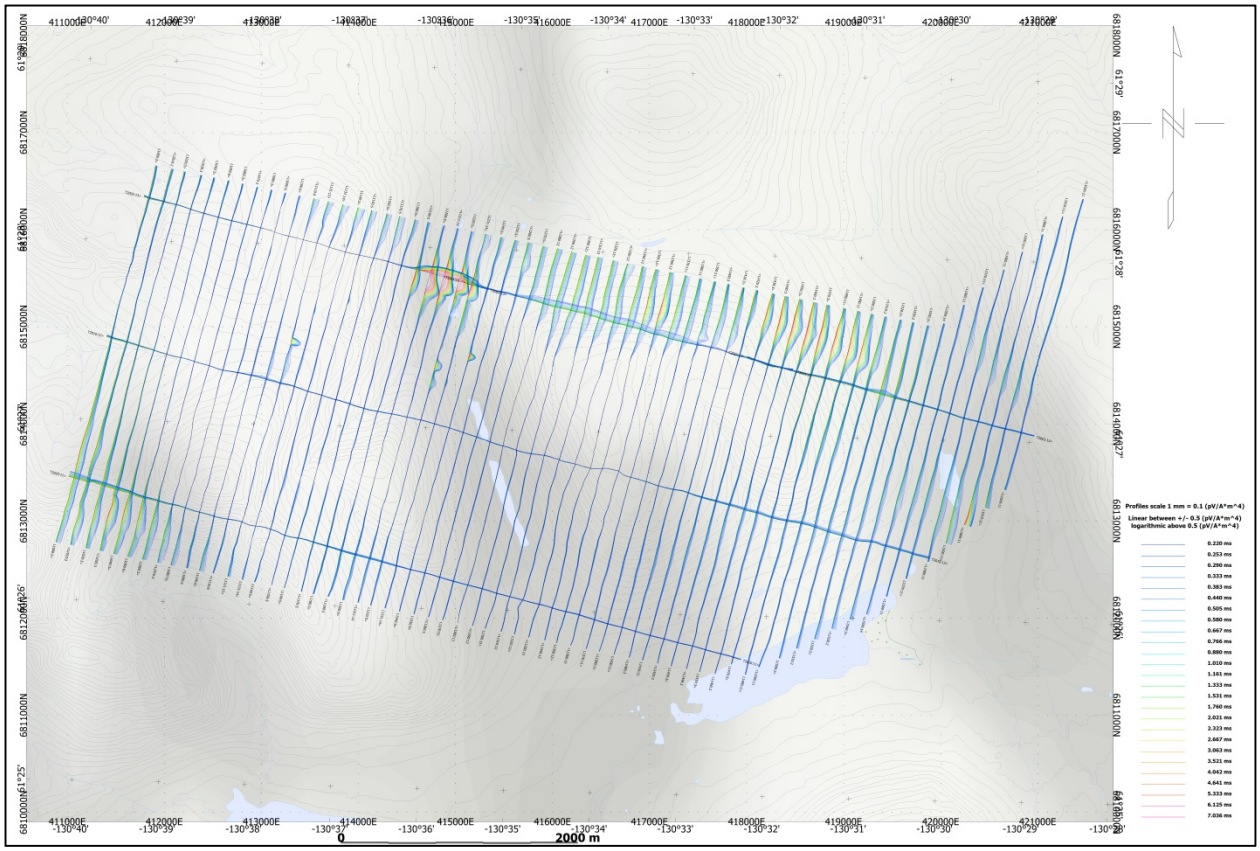
APPENDIX C

GEOPHYSICAL MAPS[1]

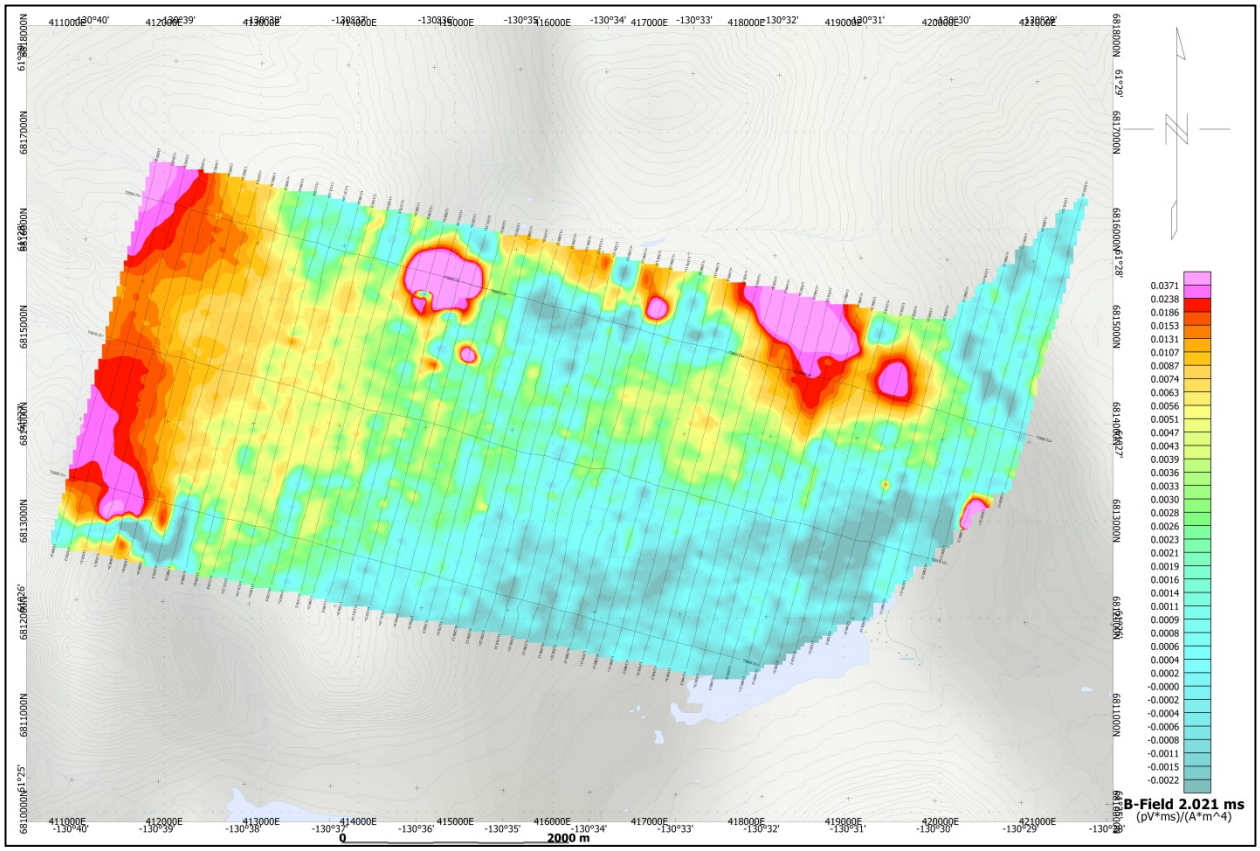


Kudz Ze Kayah - VTEM B-Field Z Component Profiles, Time Gates 0.220 to 7.036 ms

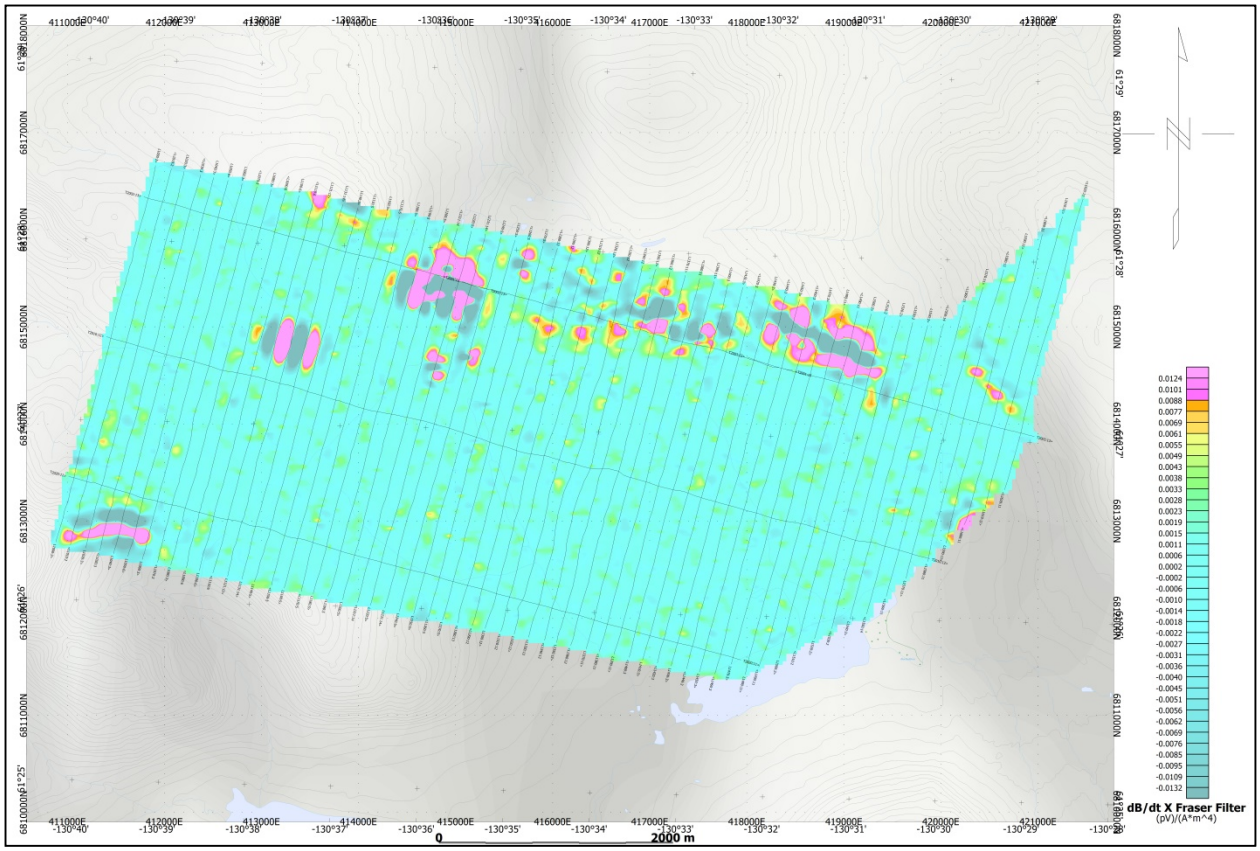
[1] Full size geophysical maps are also available in PDF format on the final DVD



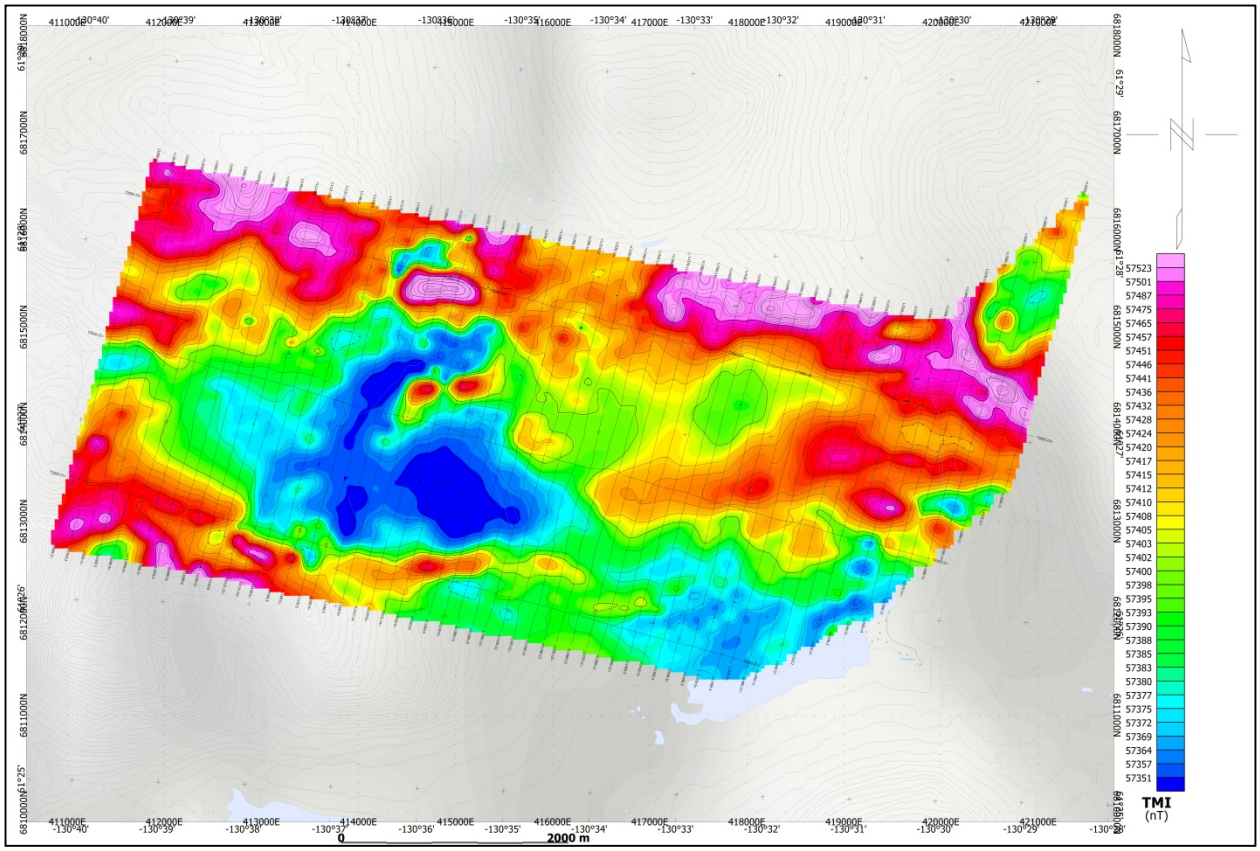
Kudz Ze Kayah - VTEM dB/dt Z Component Profiles, Time Gates 0.220 to 7.036 ms



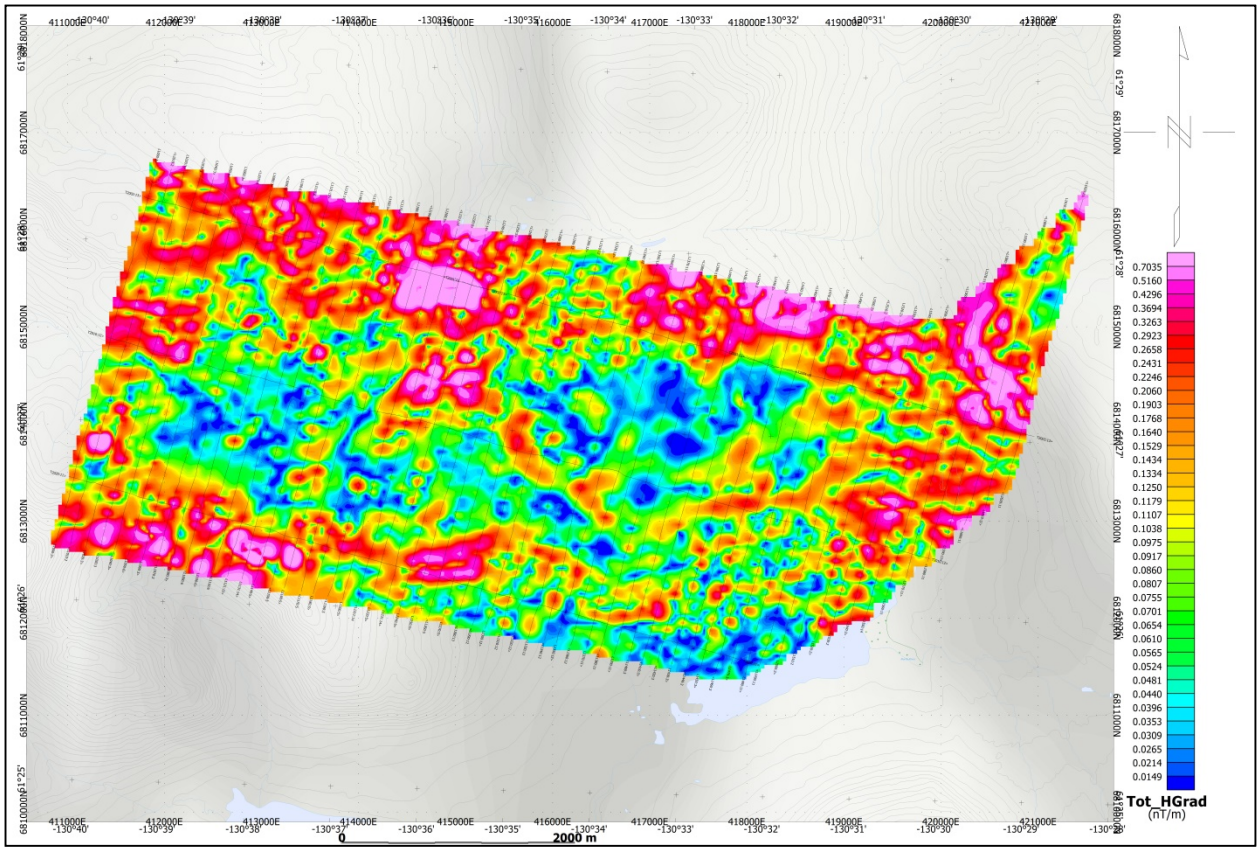
Kudz Ze Kayah - VTEM B-Field Z Component Channel 36, Time Gate 2.021 ms



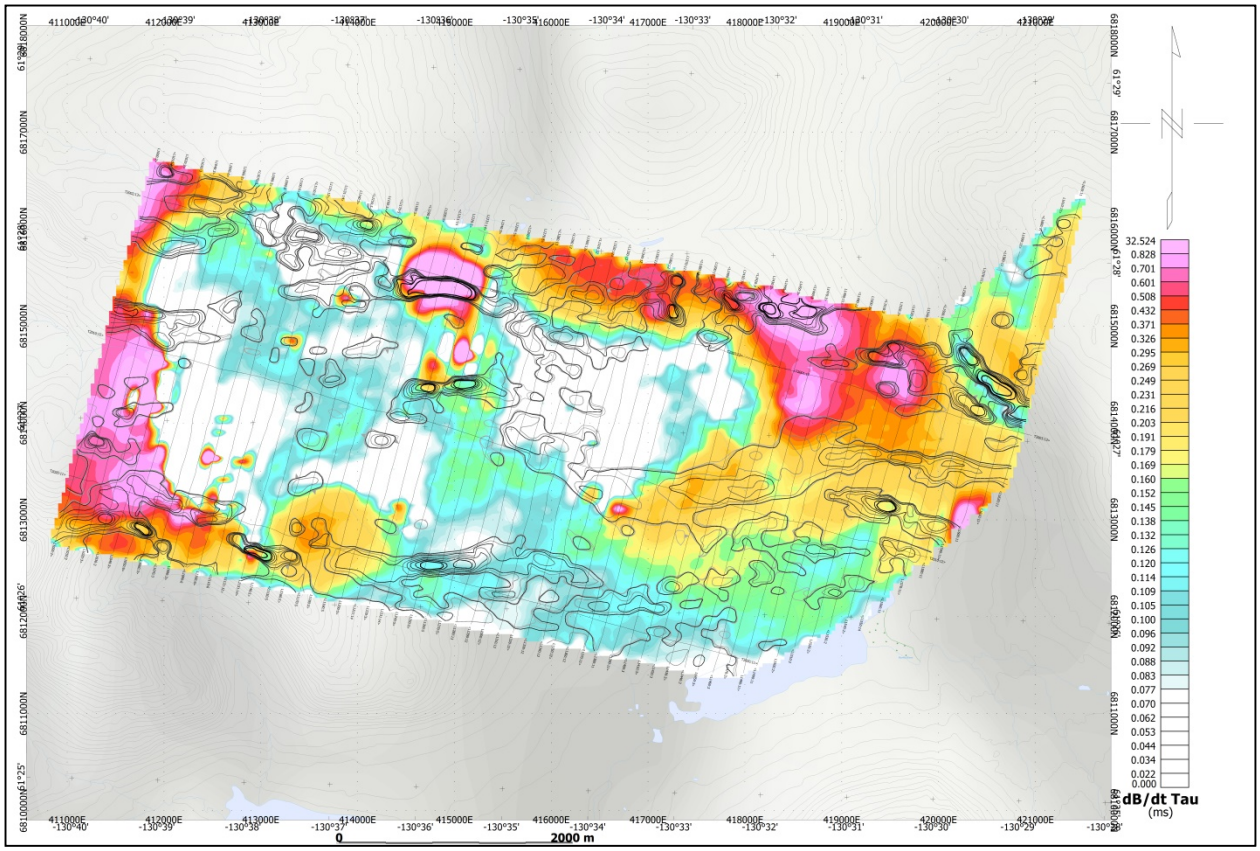
Kudz Ze Kayah - VTEM dB/dt X Component Fraser Filtered Channel 24, Time Gate 0.383 ms



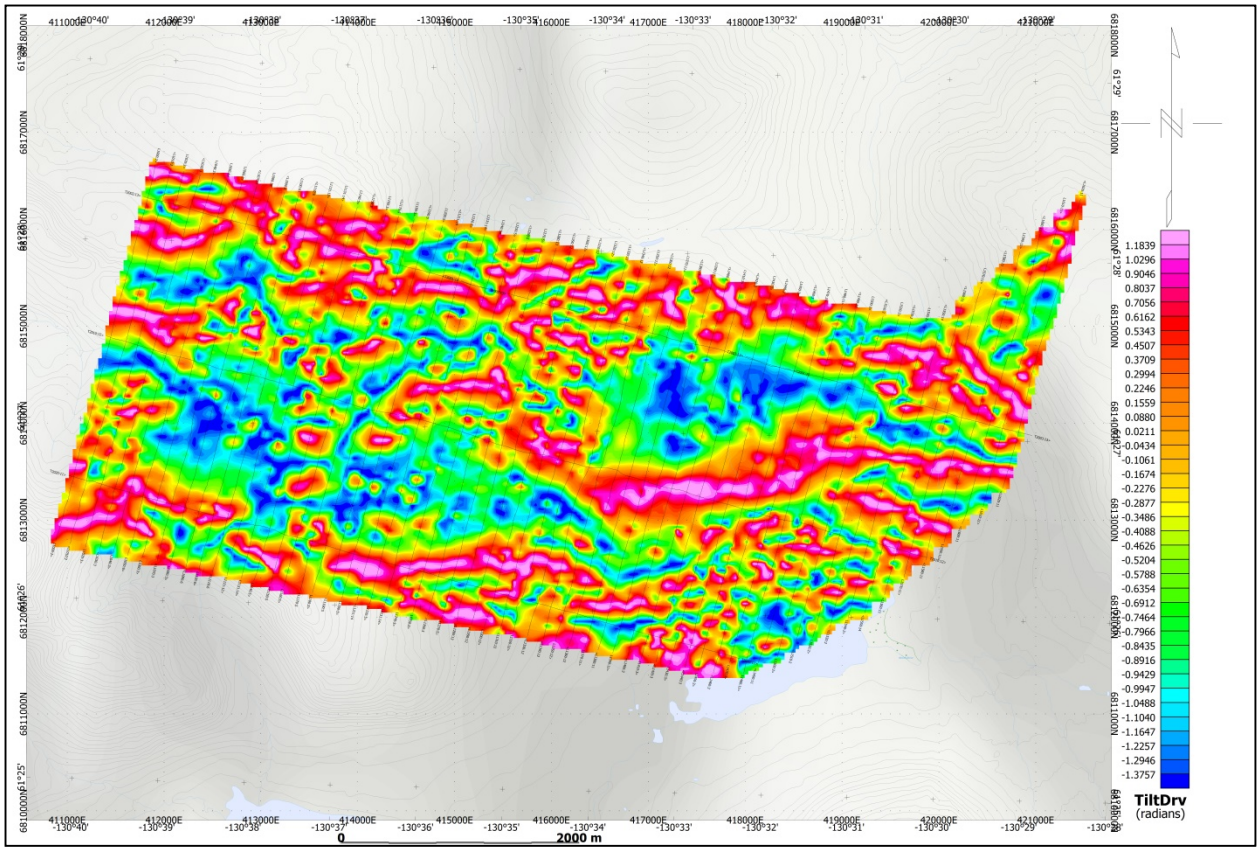
Kudz Ze Kayah - Total Magnetic Intensity (TMI)



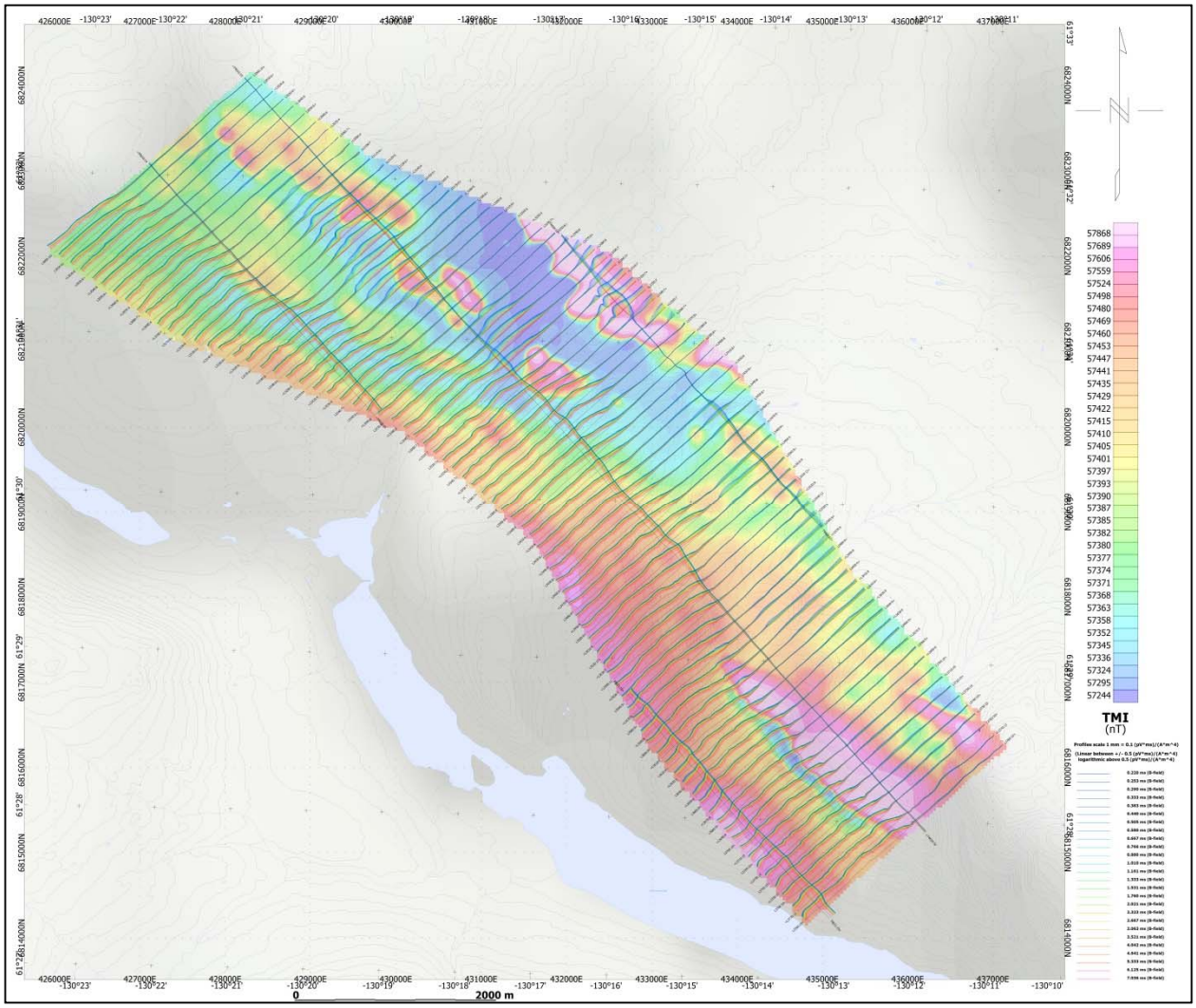
Kudz Ze Kayah - Magnetic Total Horizontal Gradient



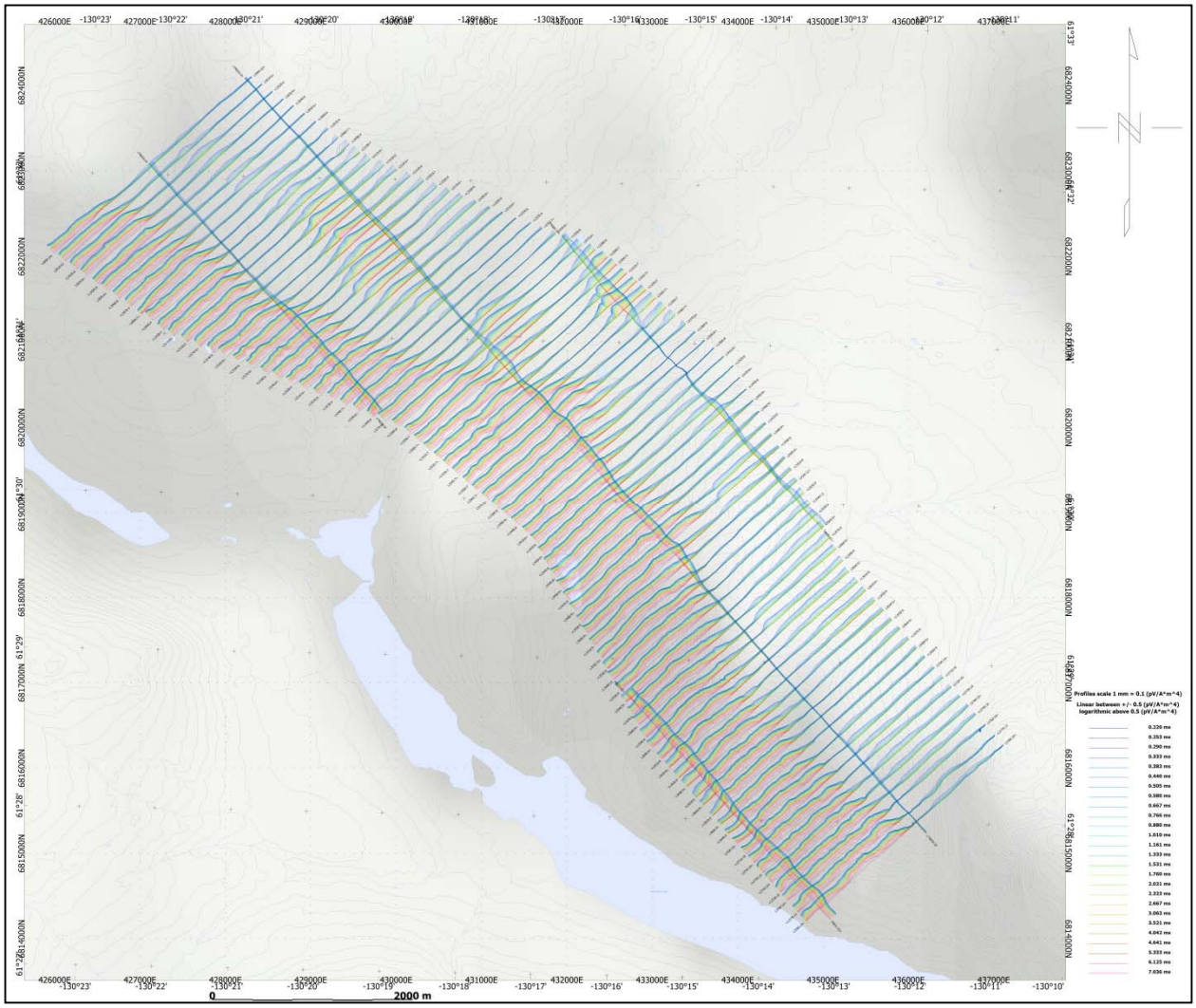
Kudz Ze Kayah - dB/dt Calculated Time Constant (Tau) with Calculated Vertical Derivative contours



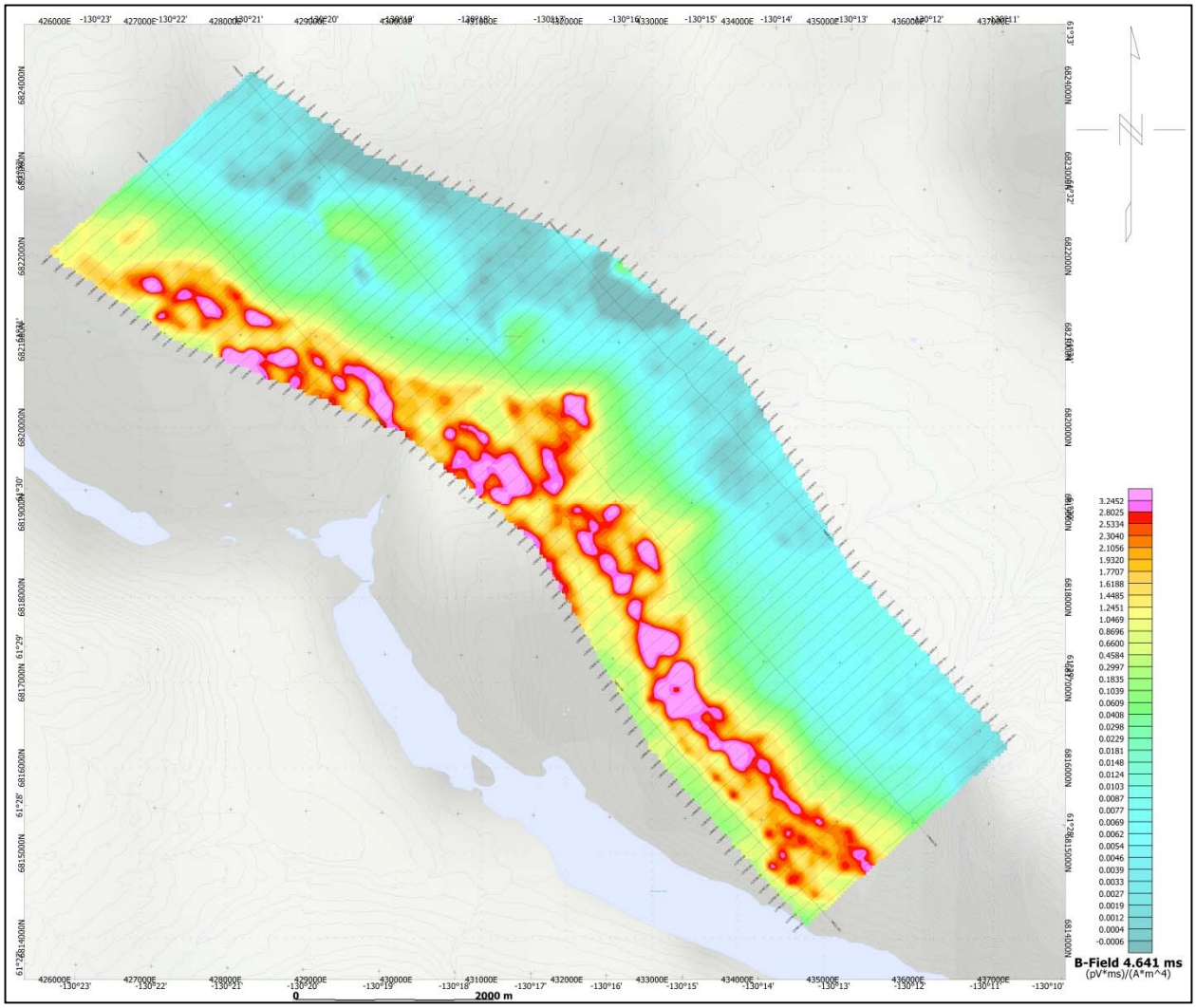
Kudz Ze Kayah - Magnetic Tilt - Angle Derivative



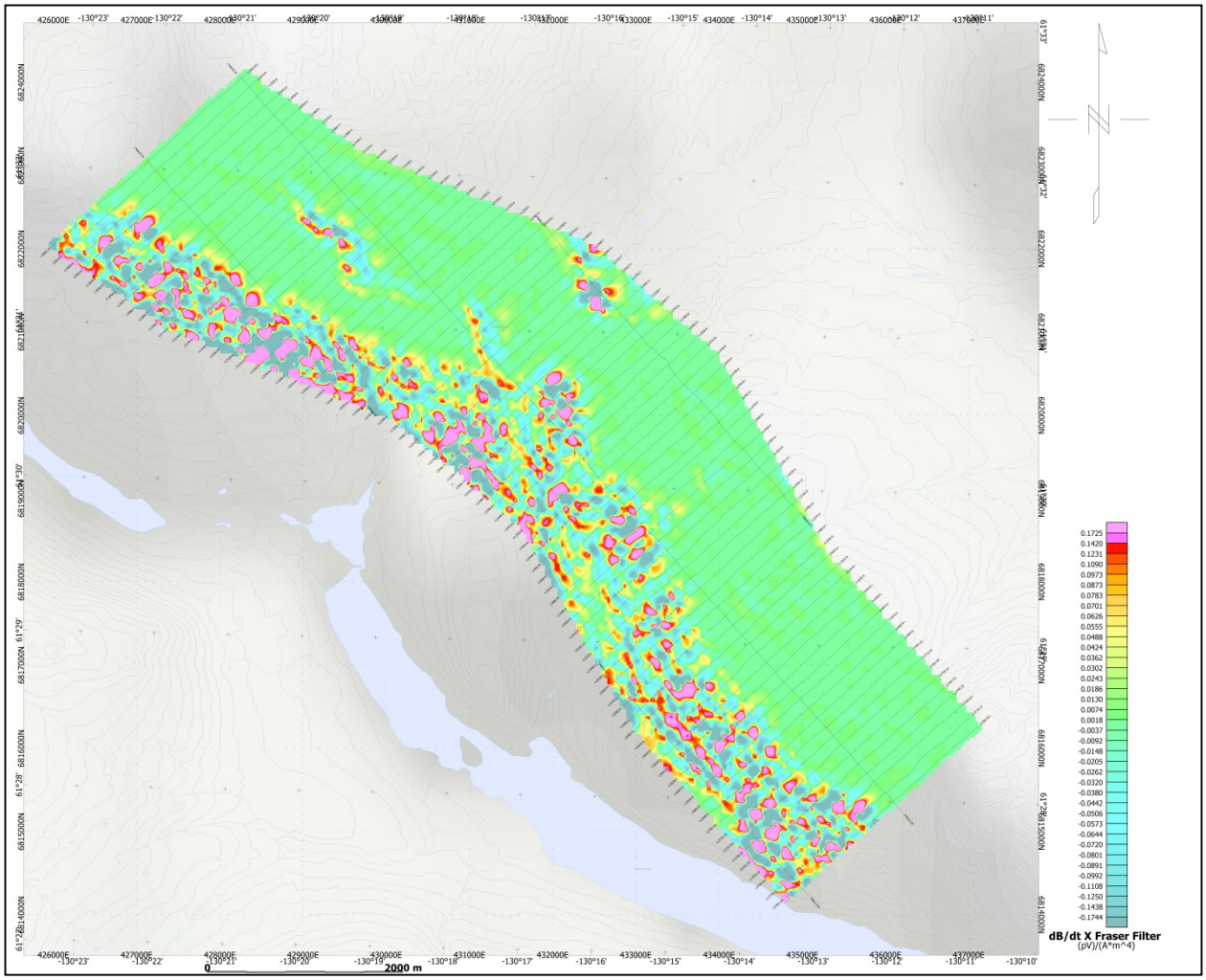
Pelly - VTEM B-Field Z Component Profiles, Time Gates 0.220 to 7.036 ms



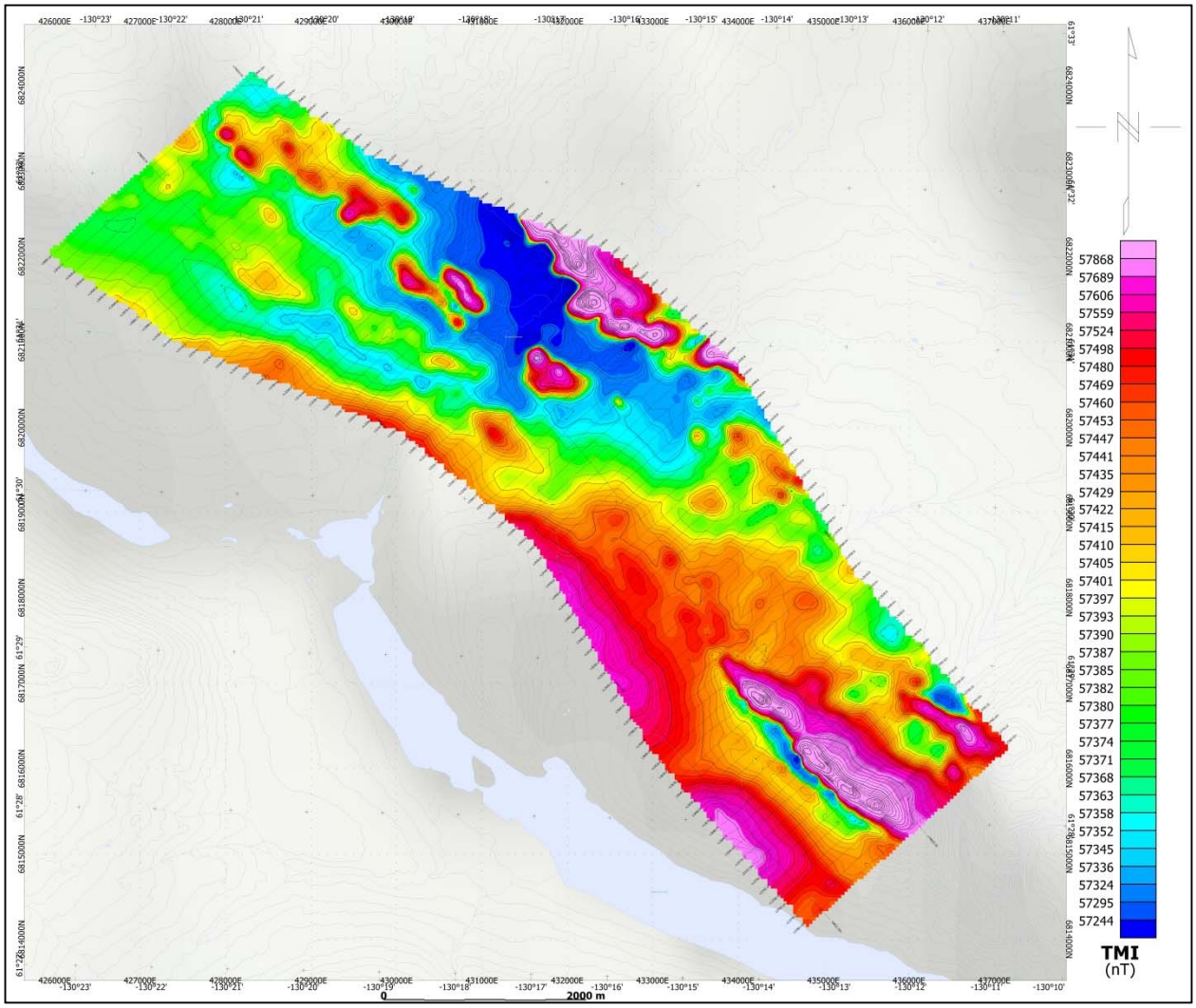
Pelly - VTEM dB/dt Z Component Profiles, Time Gates 0.220 to 7.036 ms



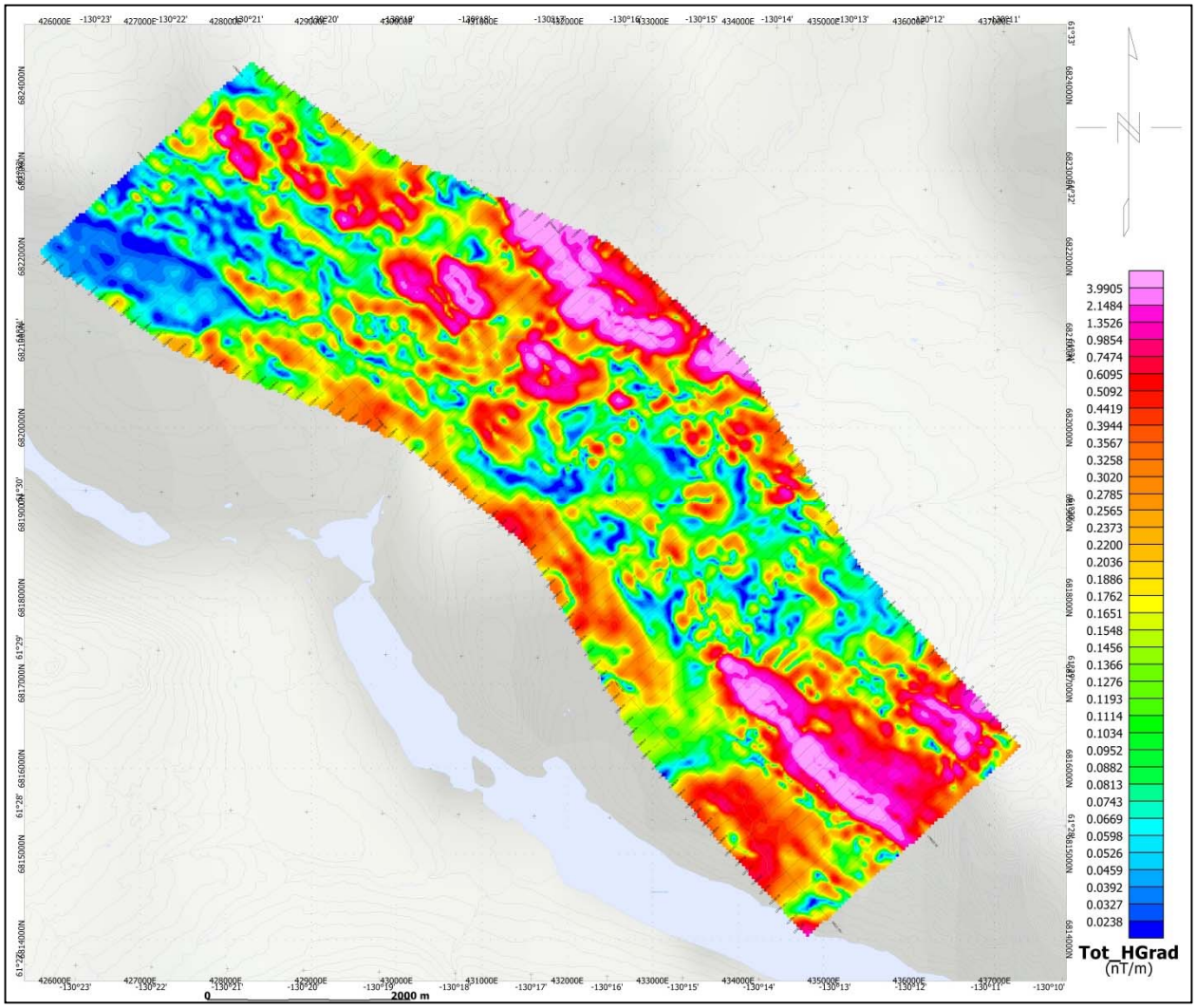
Pelly - VTEM B-Field Z Component Channel 42, Time Gate 4.641 ms



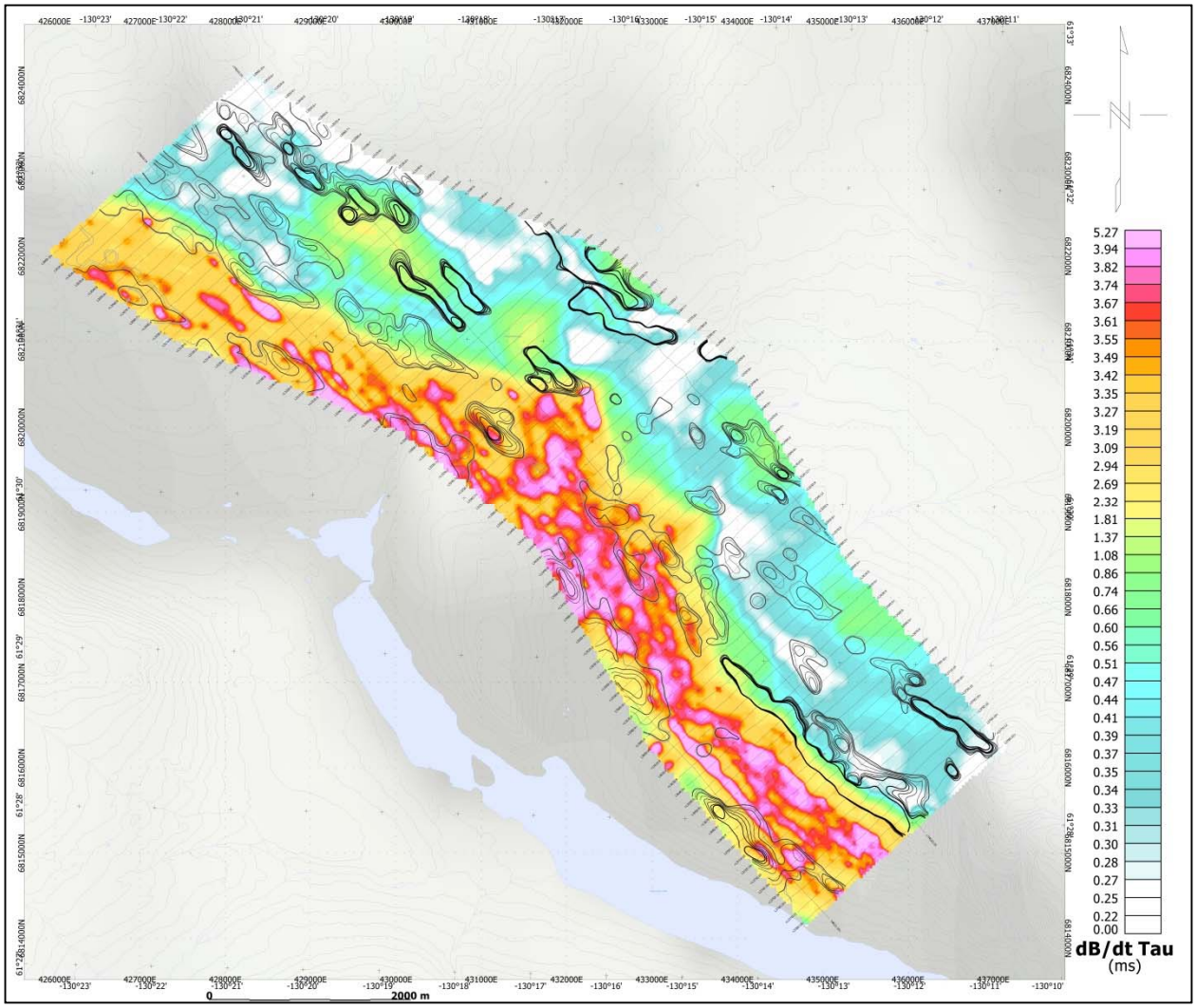
Pelly - VTEM dB/dt X Component Fraser Filtered Channel 26, Time Gate 0.505 ms



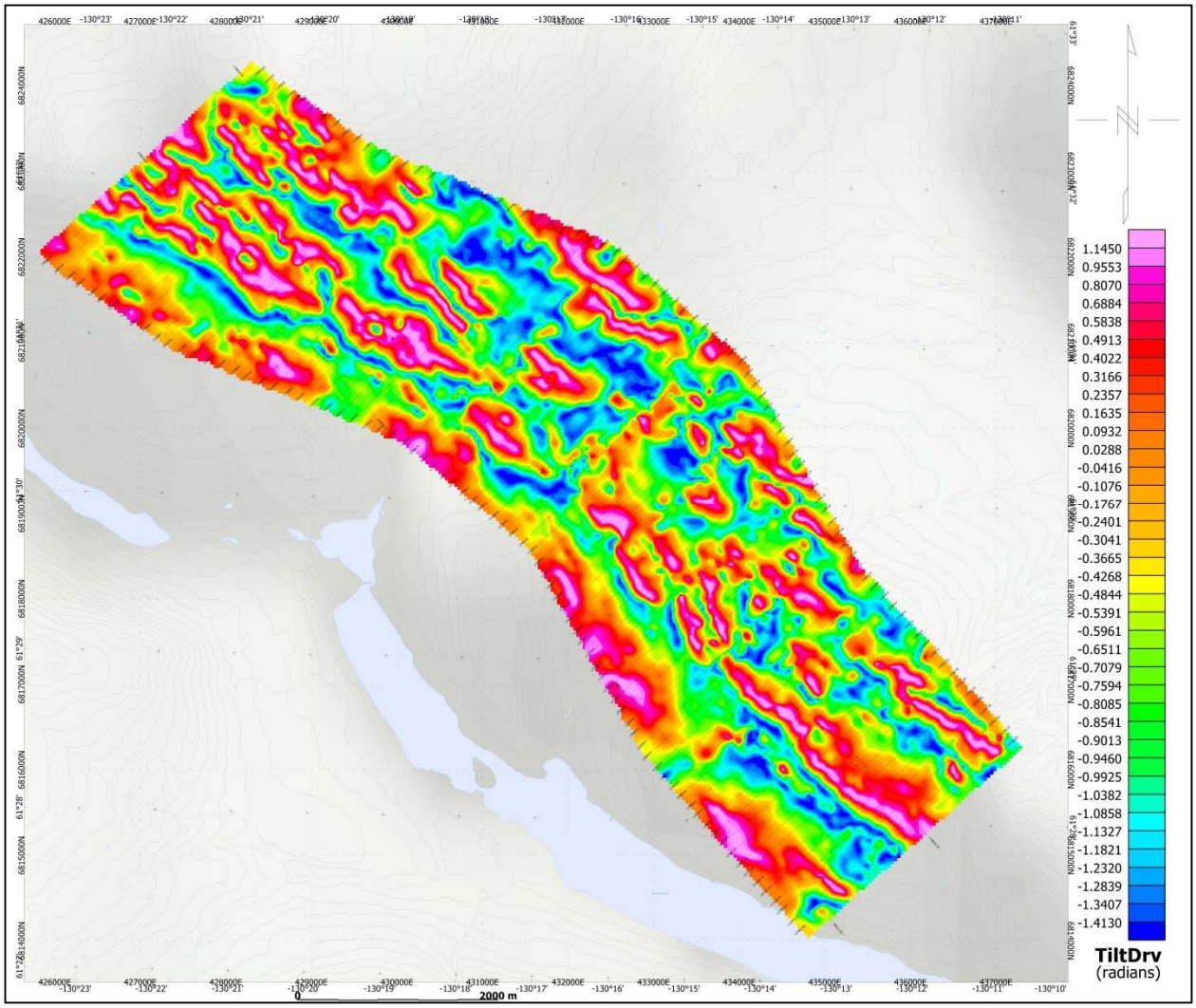
Pelly - Total Magnetic Intensity (TMI)



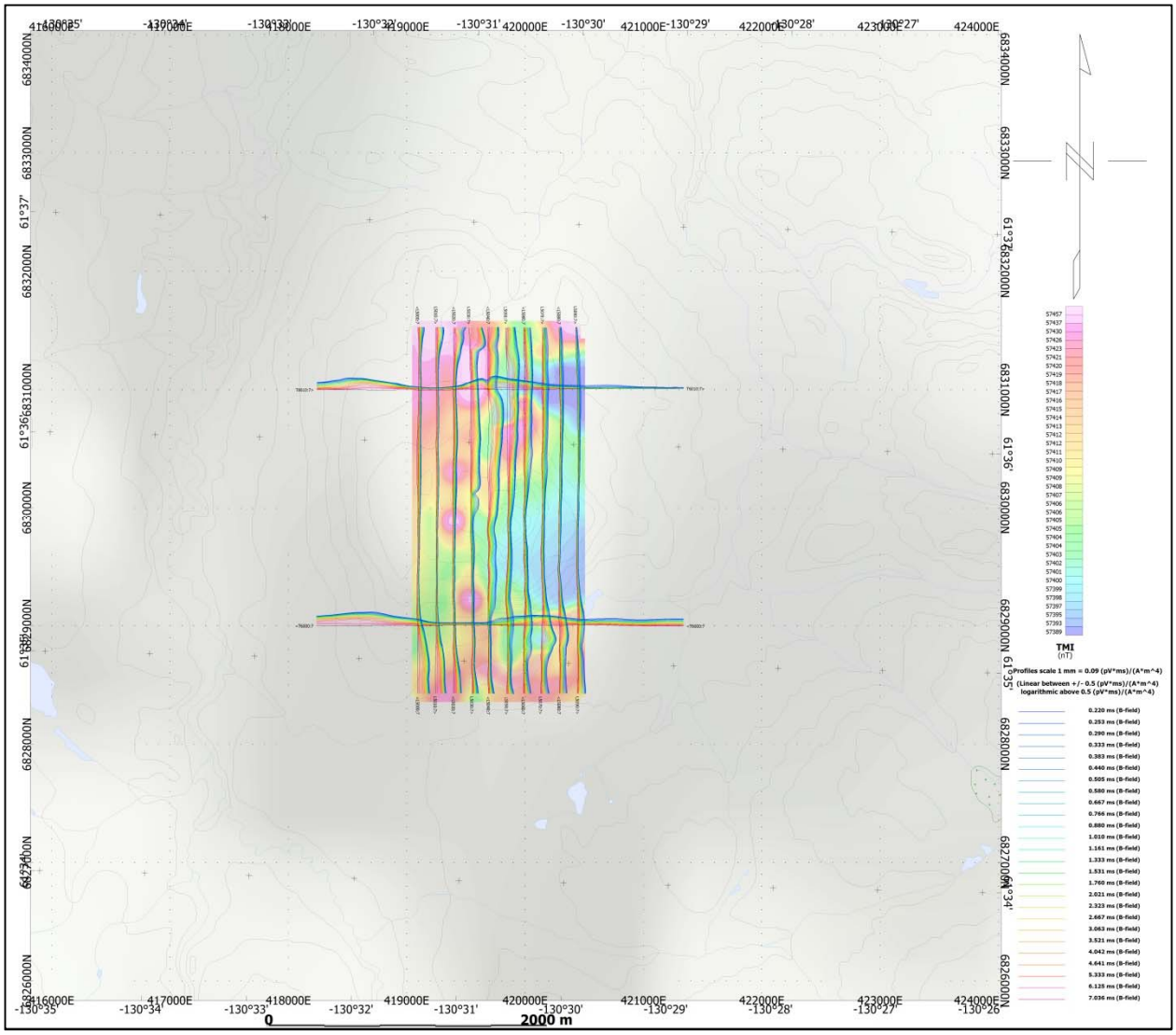
Pelly - Magnetic Total Horizontal Gradient



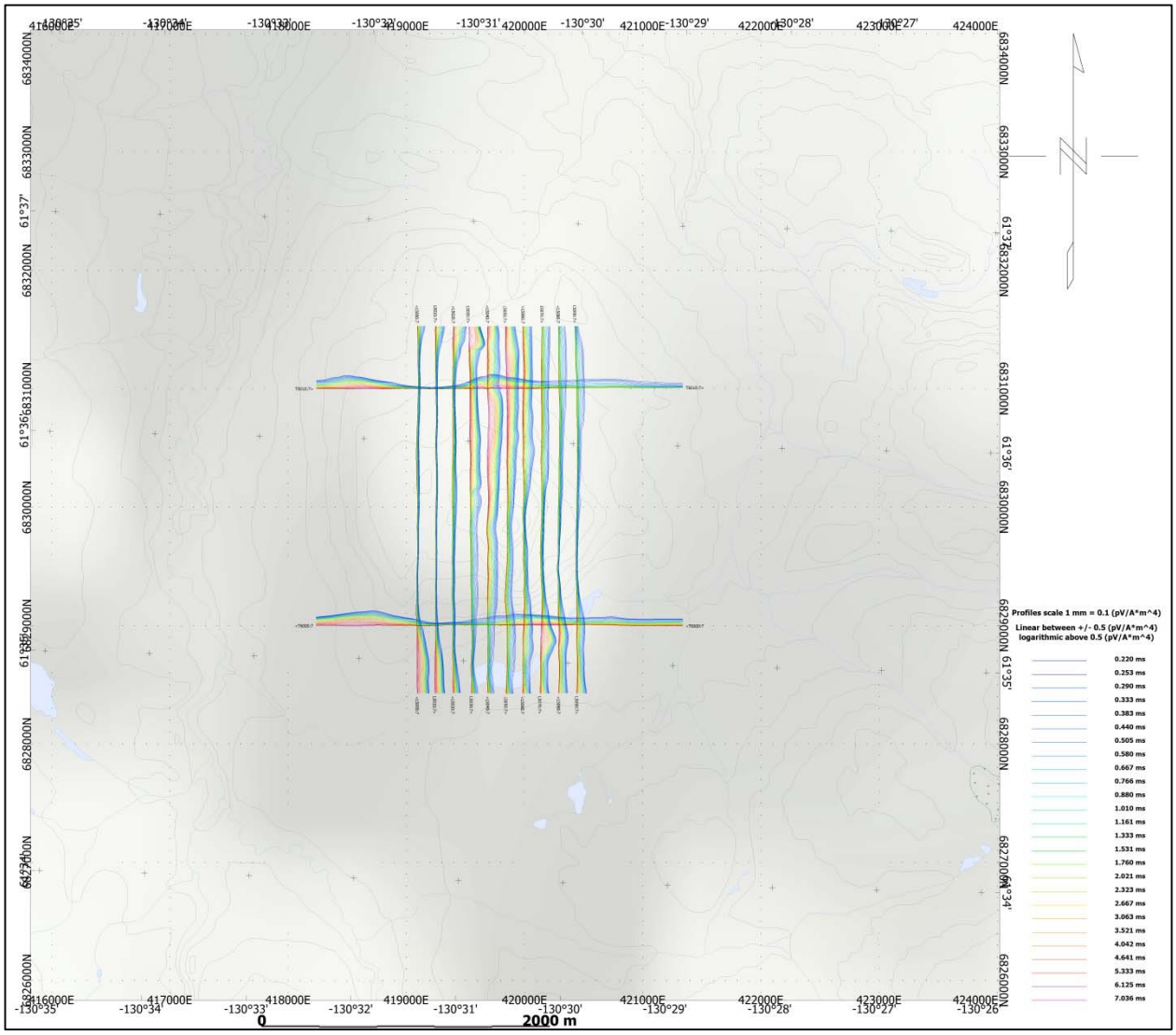
Pelly - dB/dt Calculated Time Constant (Tau) with Calculated Vertical Derivative contours



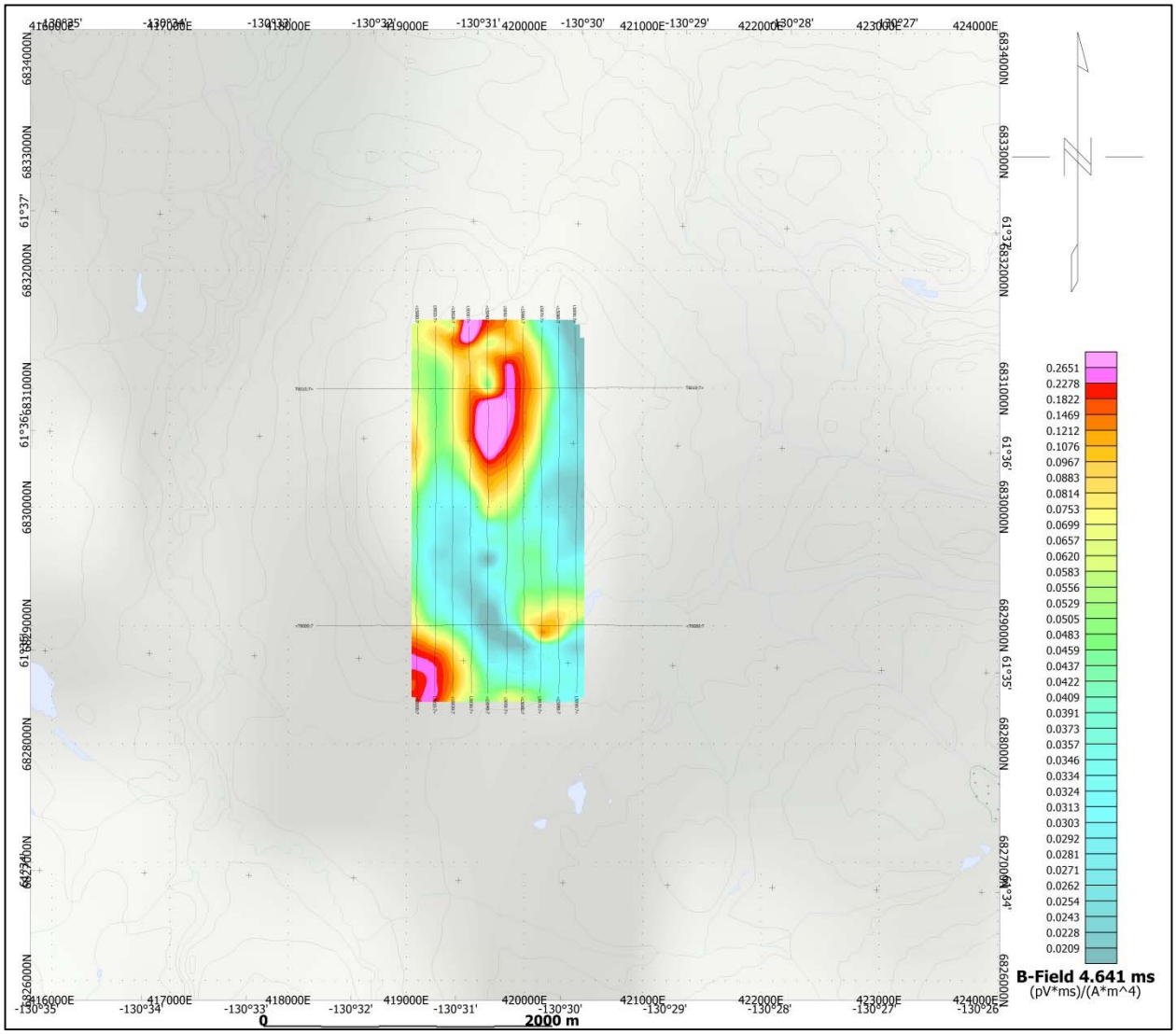
Pelly - Magnetic Tilt - Angle Derivative



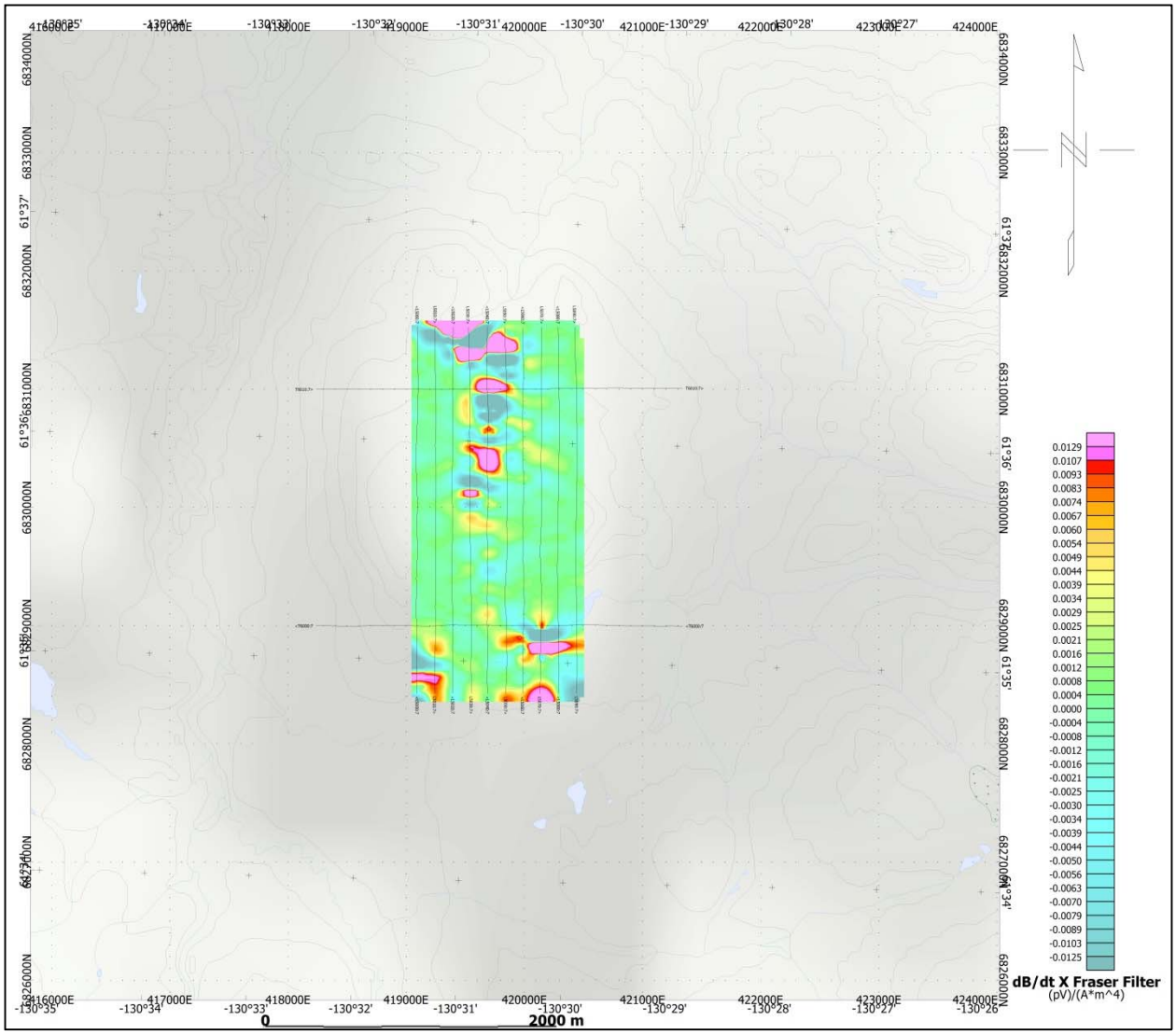
Limy - VTEM B-Field Z Component Profiles, Time Gates 0.220 to 7.036 ms



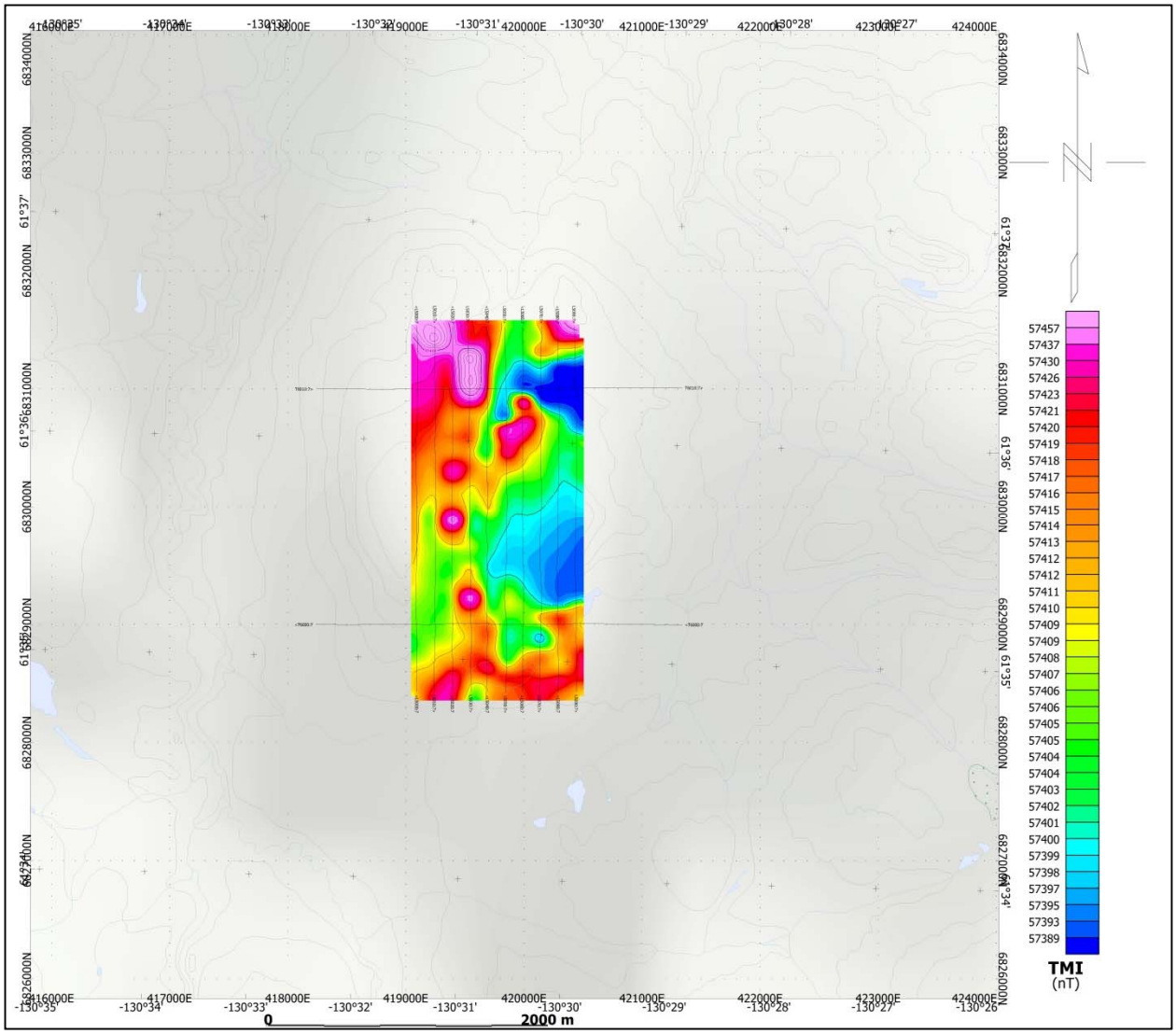
Limy - VTEM dB/dt Z Component Profiles, Time Gates 0.220 to 7.036 ms



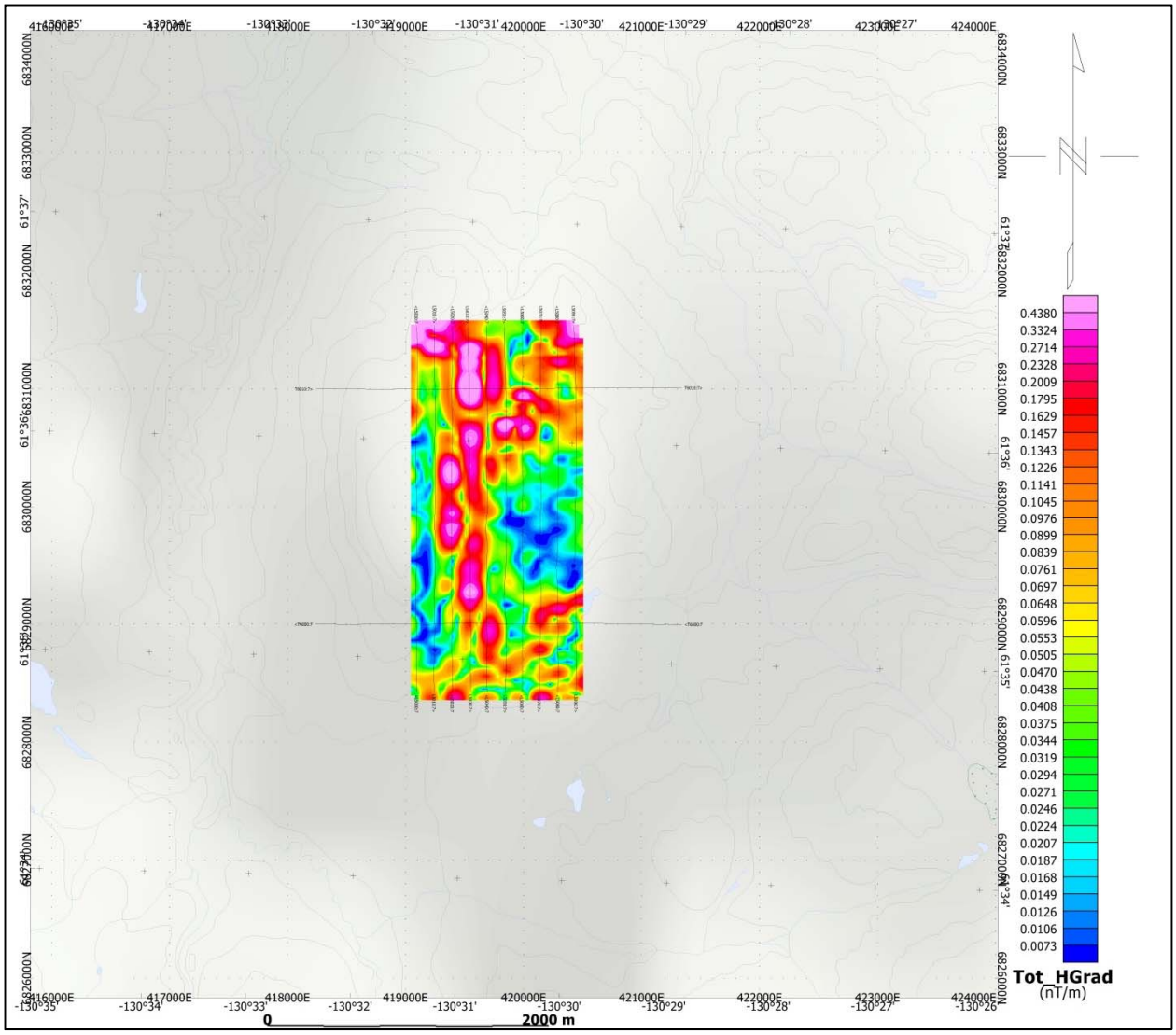
Limy - VTEM B-Field Z Component Channel 42, Time Gate 4.641 ms



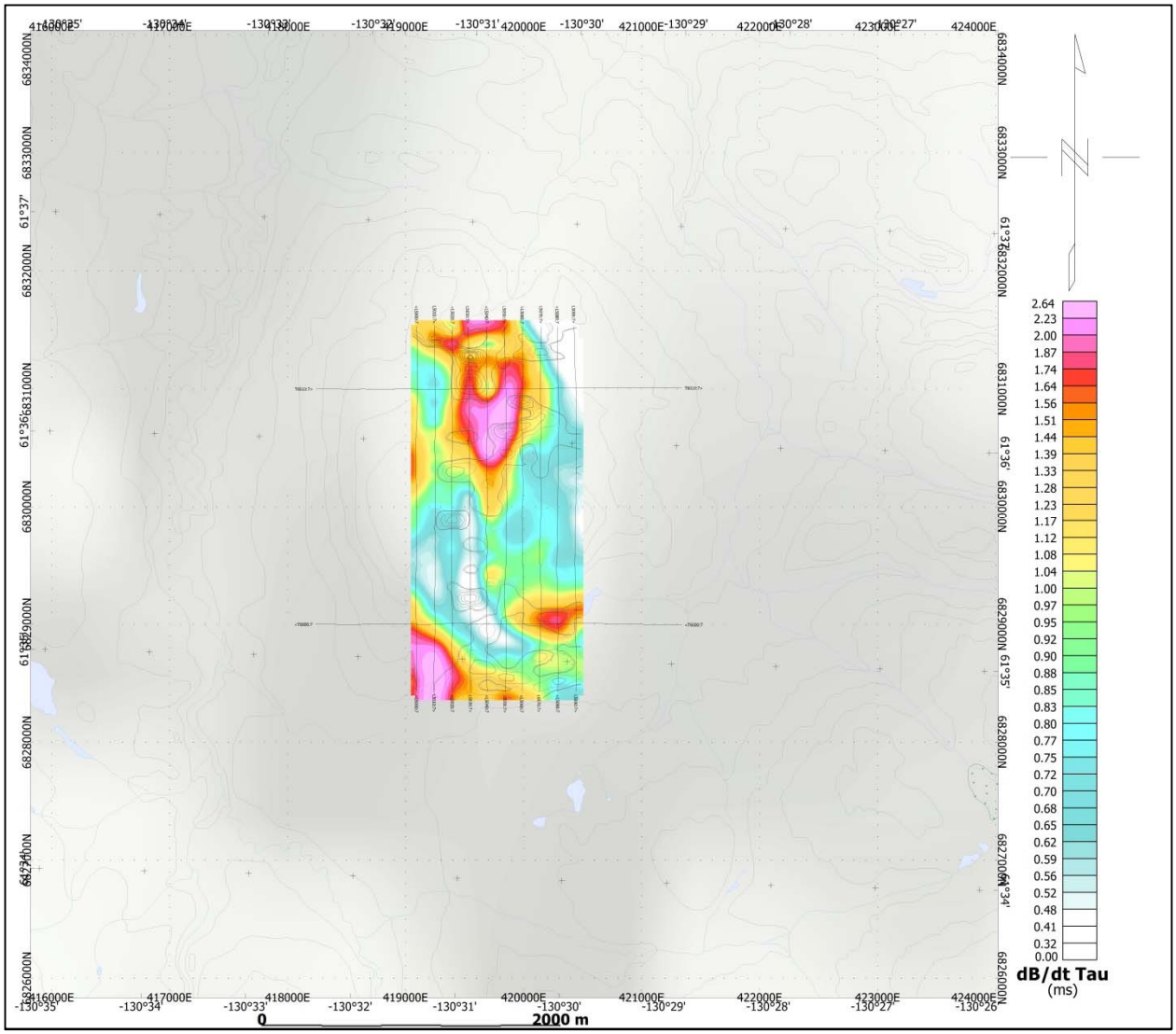
Limy - VTEM dB/dt X Component Fraser Filtered Channel 30, Time Gate 0.880 ms



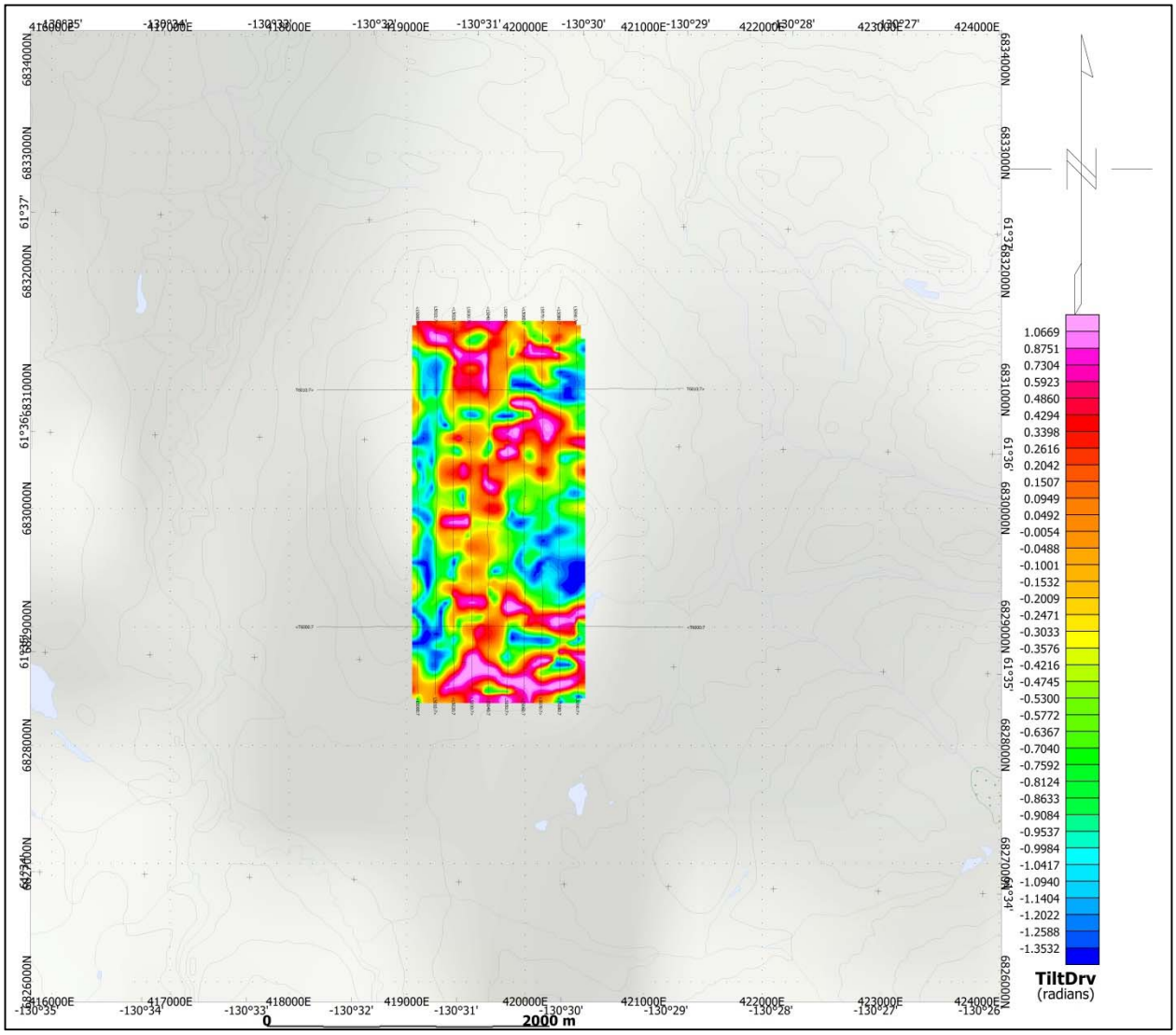
Limy - Total Magnetic Intensity (TMI)



Limy - Magnetic Total Horizontal Gradient



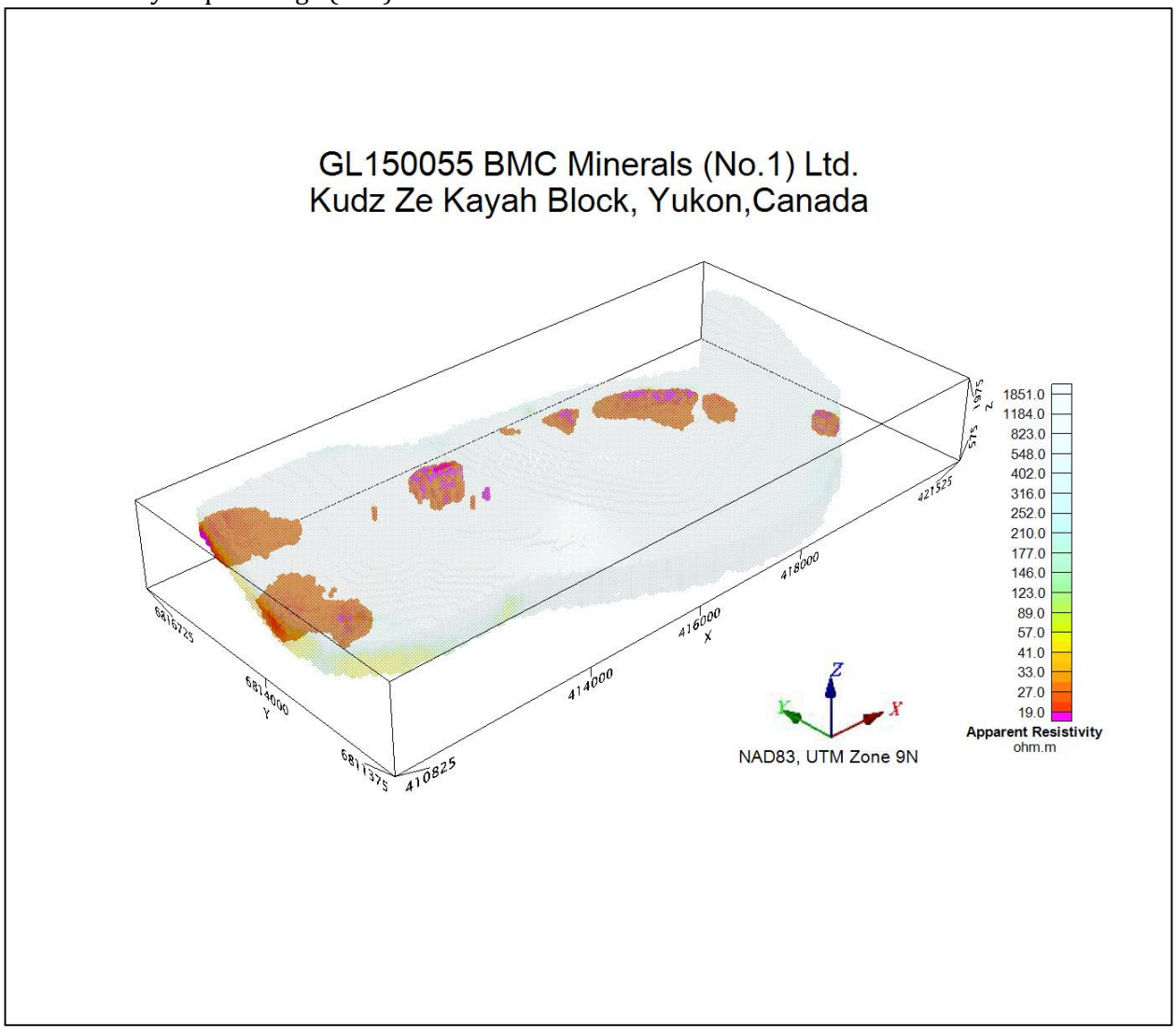
Limy - dB/dt Calculated Time Constant (Tau) with Calculated Vertical Derivative contours

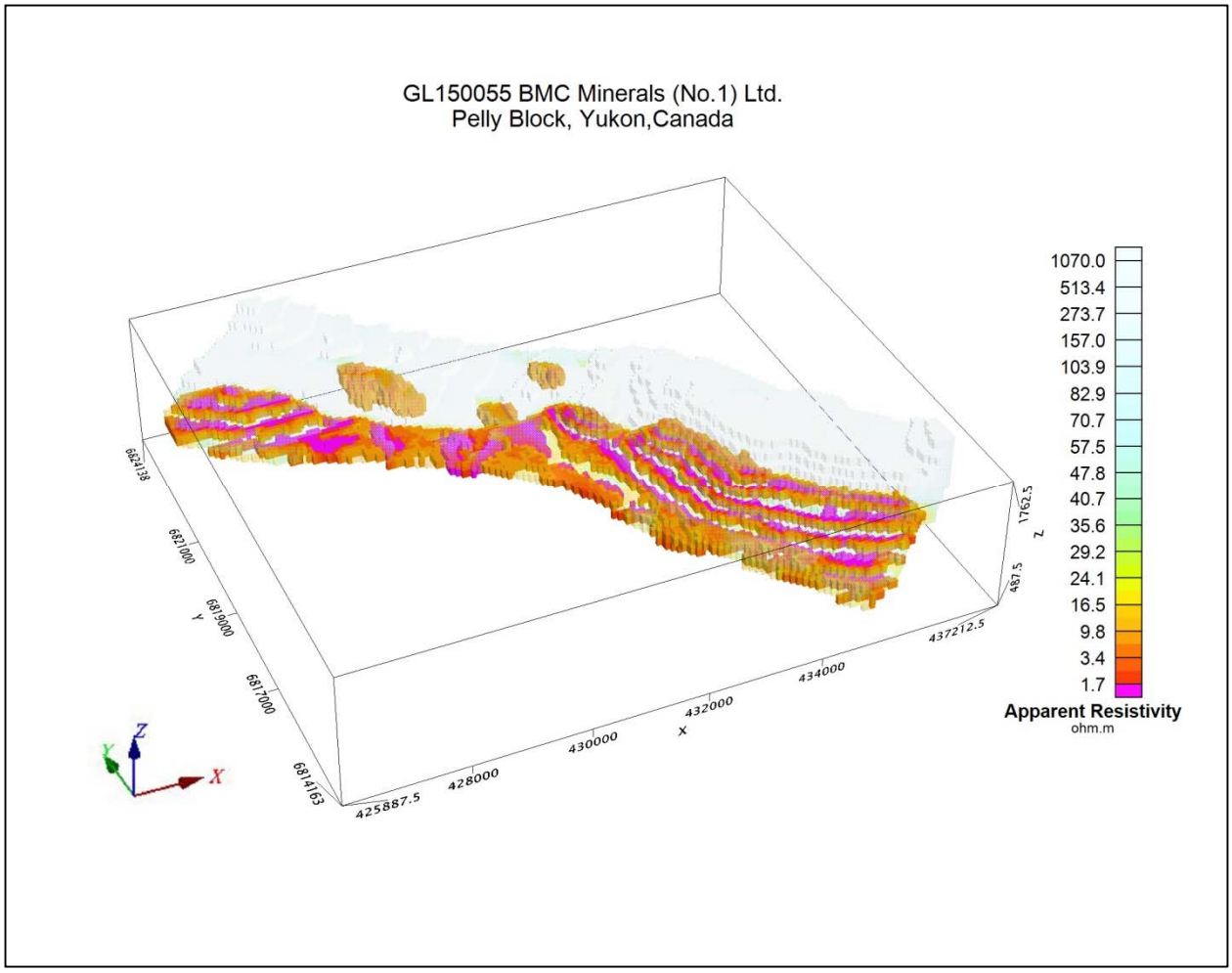


Limy - Magnetic Tilt - Angle Derivative

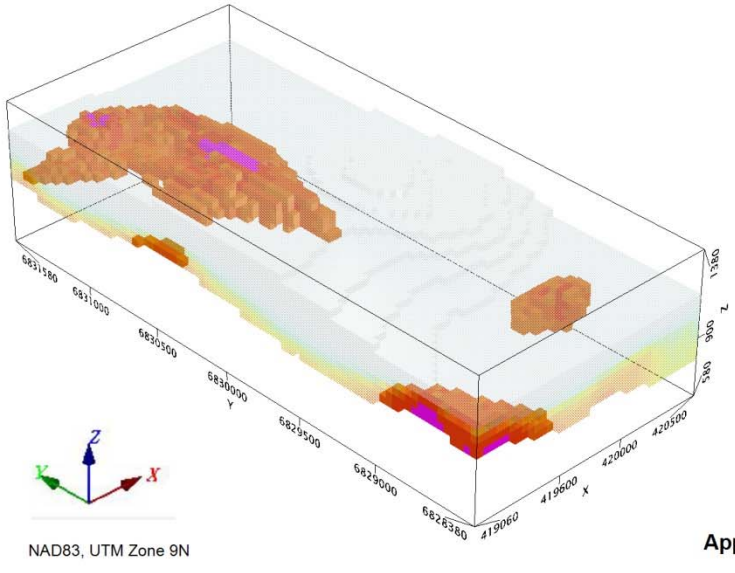
RESISTIVITY DEPTH IMAGE (RDI) MAPS

3D Resistivity-Depth Image (RDI)

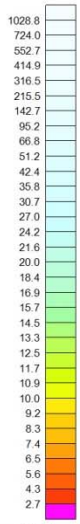



GL150055 BMC Minerals (No.1) Ltd.
Pelly Block, Yukon,Canada
1070.0
513.4
273.7
157.0
103.9
82.9
70.7
57.5
47.8
40.7
35.6
29.2
24.1
16.5
9.8
3.4
1.7
Apparent Resistivity
ohm.m
6824138
6821000
6819000
6817000
6814163
Y
425887.5
428000
430000
432000
434000
437212.5
X
1762.5
487.5
Z
Z
Y
X

GL150055 BMC Minerals (No.1) Ltd.
VTEM_Limy_Block, Yukon,Canada



NAD83, UTM Zone 9N



Apparent Resistivity
ohm.m

APPENDIX D

GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM
INTRODUCTION

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a transmitter loop that produces a primary field. The wave form is a bi-polar, modified square wave with a turn-on and turn-off at each end.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

A set of models has been produced for the Geotech VTEM® system dB/dT Z and X components (see models D1 to D15). The Maxwell ™ modeling program (EMIT Technology Pty. Ltd. Midland, WA, AU) used to generate the following responses assumes a resistive half-space. The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

As the plate dips and departs from the vertical position, the peaks become asymmetrical.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90º to about 30º. The method is not sensitive enough where dips are less than about 30º.

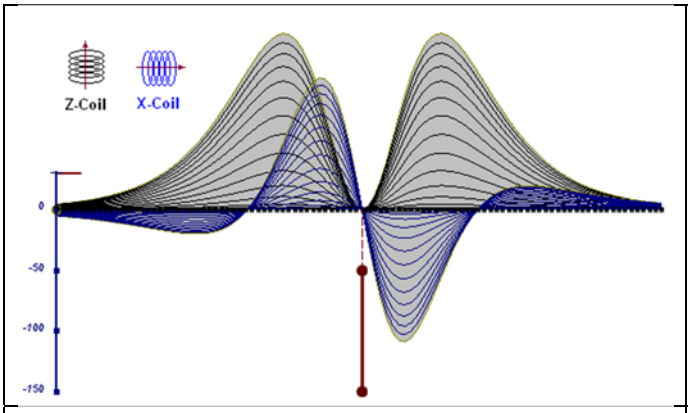


Figure D-1: vertical thin plate

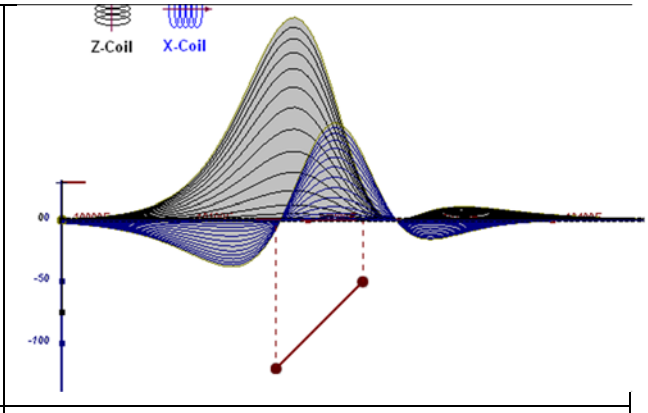


Figure D-2: inclined thin plate

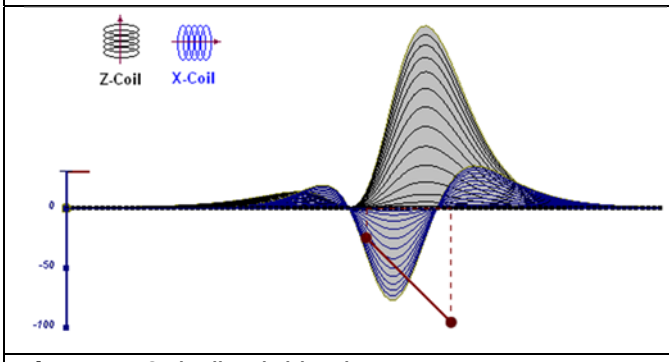


Figure D-3: inclined thin plate

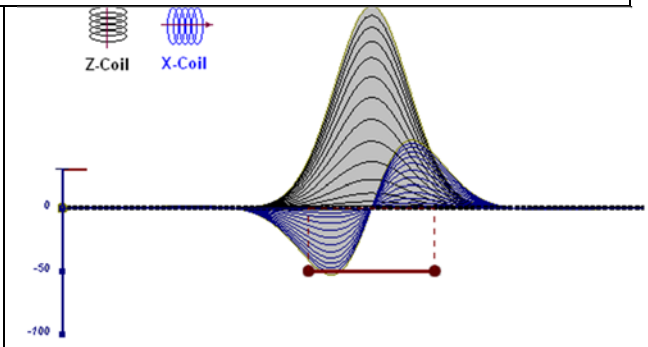


Figure D-4: horizontal thin plate

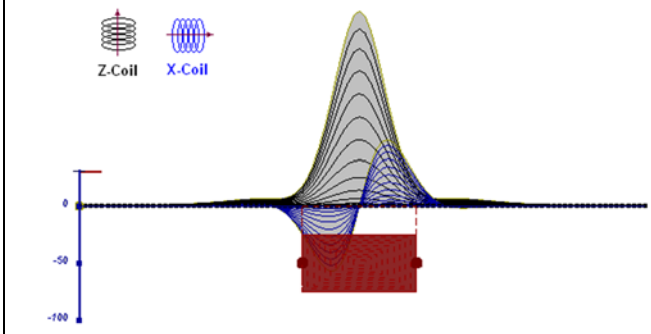


Figure D-5: horizontal thick plate (linear scale of the response)

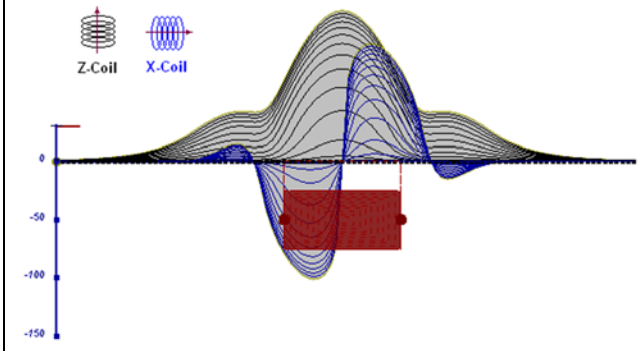


Figure D-6: horizontal thick plate (log scale of the response)

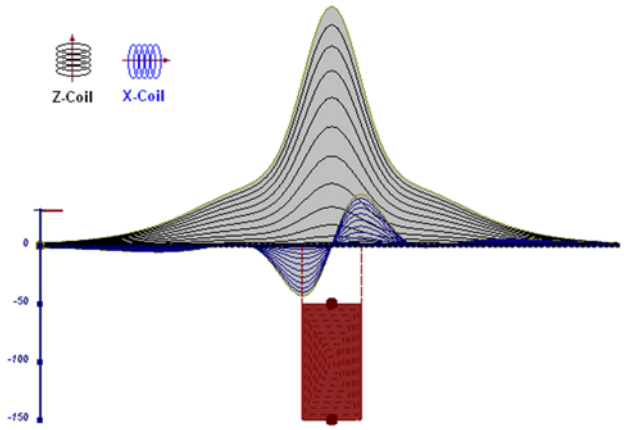


Figure D-7: vertical thick plate (linear scale of the response). 50 m depth

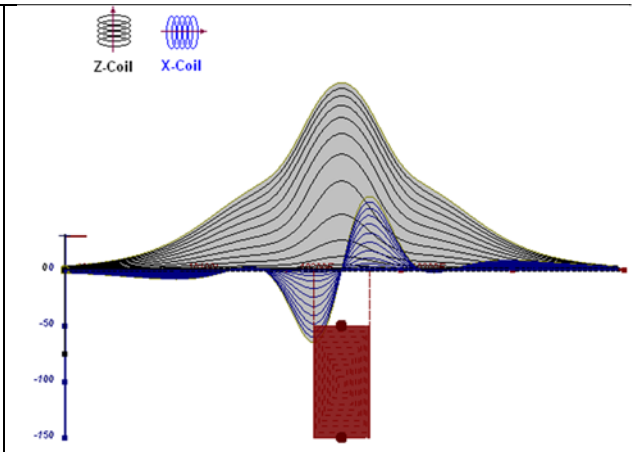


Figure D-8: vertical thick plate (log scale of the response). 50 m depth

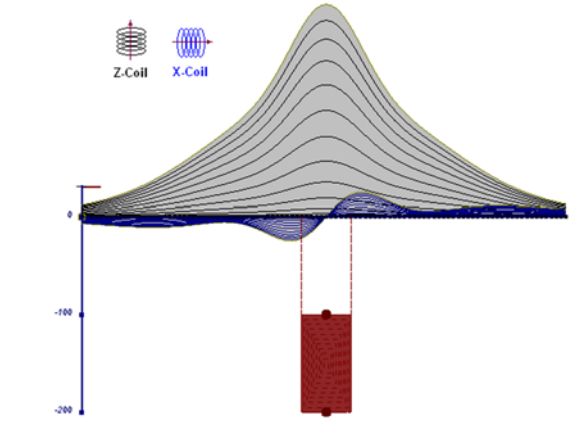


Figure D-9: vertical thick plate (linear scale of the response). 100 m depth

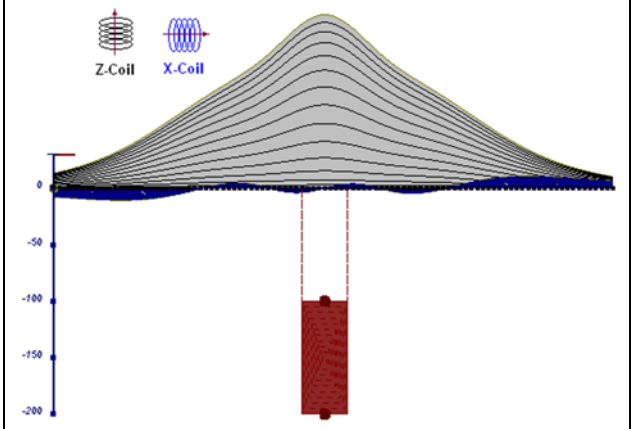


Figure D-10: vertical thick plate (linear scale of the response). Depth / horizontal thickness=2.5

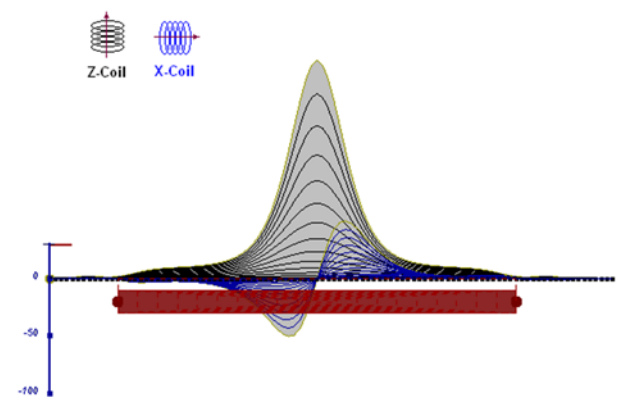


Figure D-11: horizontal thick plate (linear scale of the response)

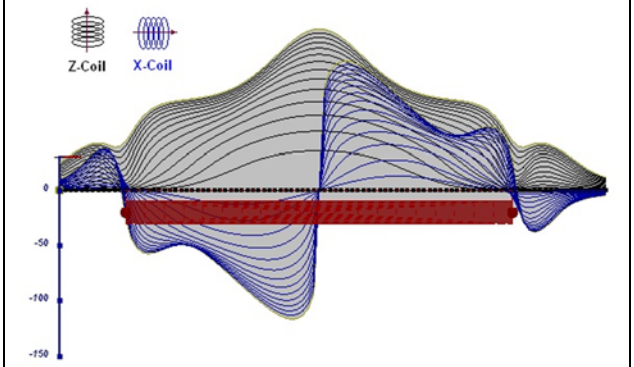


Figure D-12: horizontal thick plate (log scale of the response)

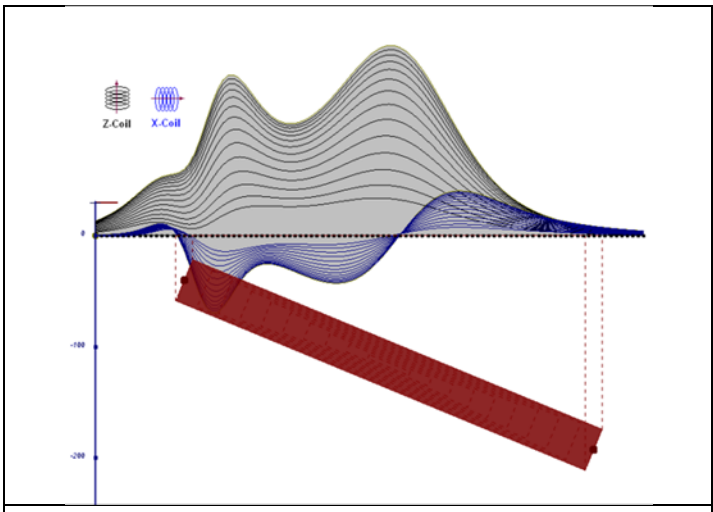


Figure D-13: inclined long thick plate

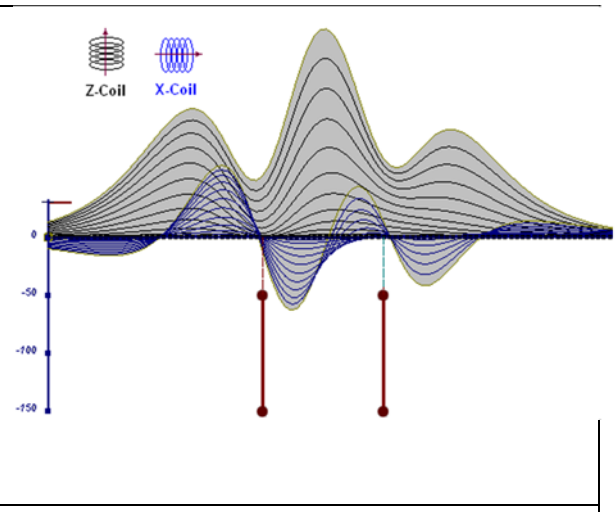


Figure D-14: two vertical thin plates

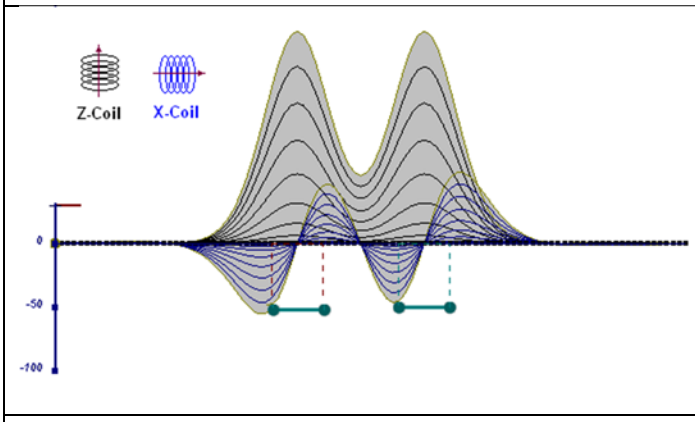


Figure D-15: two horizontal thin plates

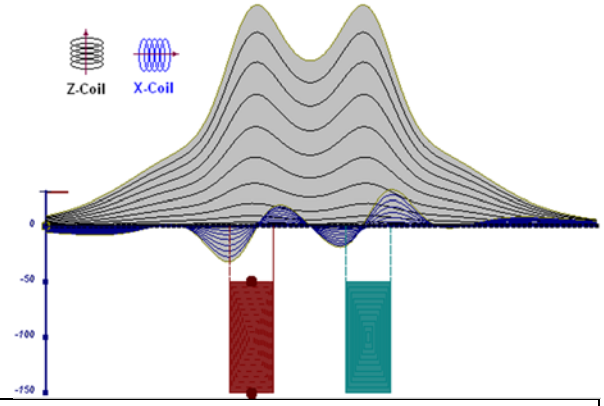


Figure D-16: two vertical thick plates

The same type of target but with different thickness, for example, creates different form of the response:

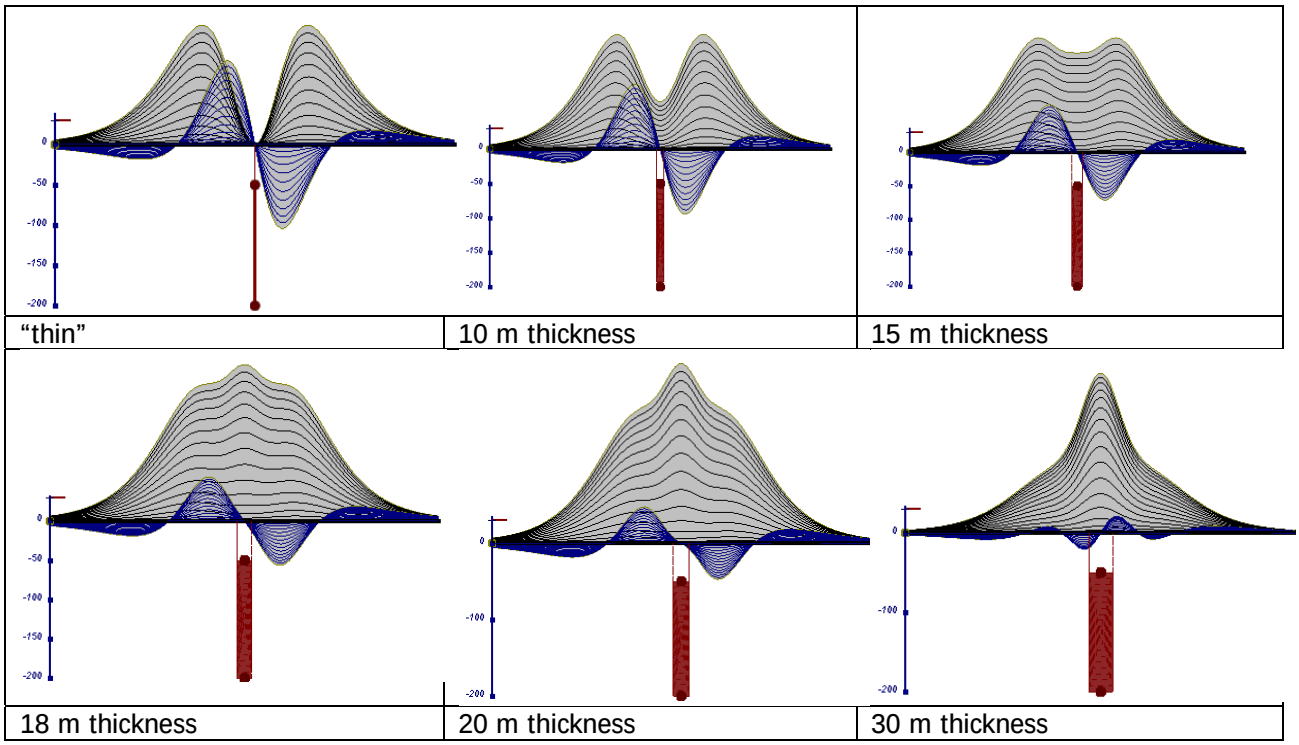


Figure D-17: Conductive vertical plate, depth 50 m, strike length 200 m, depth extends 150 m.

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September 2010

APPENDIX E

EM TIME CONSTANT (TAU) ANALYSIS

Estimation of time constant parameter[1] in transient electromagnetic method is one of the steps toward the extraction of the information about conductances beneath the surface from TEM measurements.

The most reliable method to discriminate or rank conductors from overburden, background or one and other is by calculating the EM field decay time constant (TAU parameter), which directly depends on conductance despite their depth and accordingly amplitude of the response.

THEORY

As established in electromagnetic theory, the magnitude of the electro-motive force (emf) induced is proportional to the time rate of change of primary magnetic field at the conductor. This emf causes eddy currents to flow in the conductor with a characteristic transient decay, whose Time Constant (Tau) is a function of the conductance of the survey target or conductivity and geometry (including dimensions) of the target. The decaying currents generate a proportional secondary magnetic field, the time rate of change of which is measured by the receiver coil as induced voltage during the Off time.

The receiver coil output voltage ($\mathbf{e_0}$) is proportional to the time rate of change of the secondary magnetic field and has the form,

$$e_0 \, \alpha \, (1 / \tau) \, e^{-(t/\tau)}$$

Where,
τ = L/R is the characteristic time constant of the target (TAU)
R = resistance
L = inductance

From the expression, conductive targets that have small value of resistance and hence large value of τ yield signals with small initial amplitude that decays relatively slowly with progress of time. Conversely, signals from poorly conducting targets that have large resistance value and smallτ, have high initial amplitude but decay rapidly with time[1] (Fig. E1).

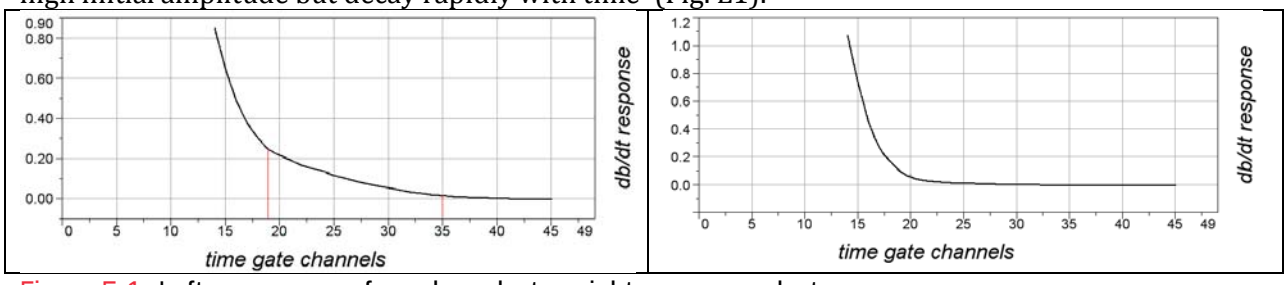

Figure E-1: Left – presence of good conductor, right – poor conductor.

[1] McNeill, JD, 1980, "Applications of Transient Electromagnetic Techniques", Technical Note TN-7 page 5, Geonics Limited, Mississauga, Ontario.

EM Time Constant (Tau) Calculation

The EM Time-Constant (TAU) is a general measure of the speed of decay of the electromagnetic response and indicates the presence of eddy currents in conductive sources as well as reflecting the "conductance quality" of a source. Although TAU can be calculated using either the measured dB/dt decay or the calculated B-field decay, dB/dt is commonly preferred due to better stability (S/N) relating to signal noise. Generally, TAU calculated on base of early time response reflects both near surface overburden and poor conductors whereas, in the late ranges of time, deep and more conductive sources, respectively. For example early time TAU distribution in an area that indicates conductive overburden is shown in Figure 2.

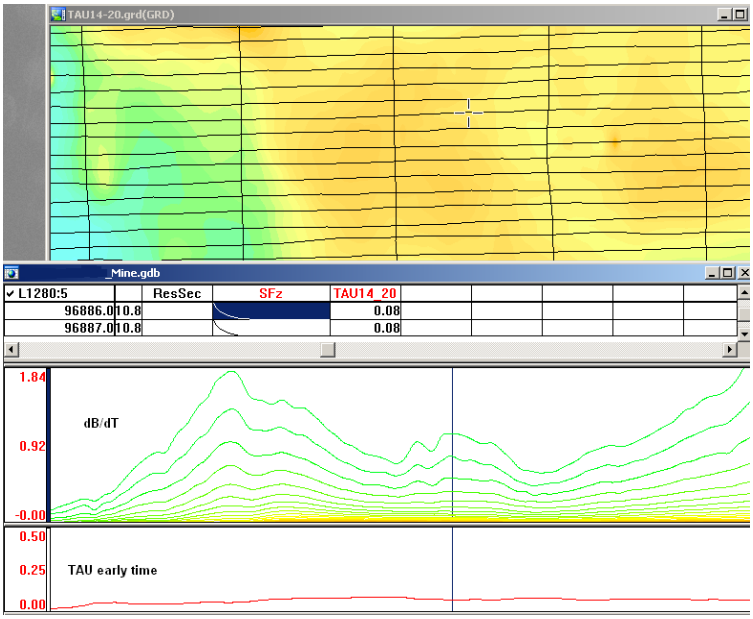

Figure E-2: Map of early time TAU. Area with overburden conductive layer and local sources.

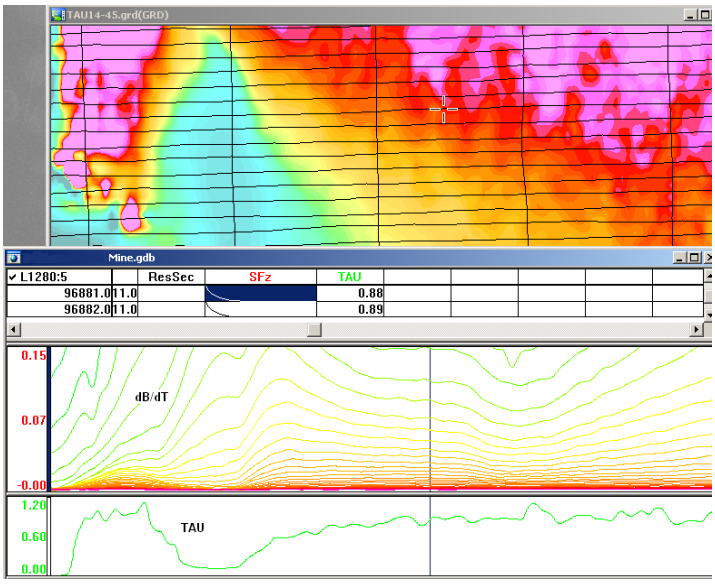

Figure E-3: Map of full time range TAU with EM anomaly due to deep highly conductive target.

There are many advantages of TAU maps:

- TAU depends only on one parameter (conductance) in contrast to response magnitude;
- TAU is integral parameter, which covers time range and all conductive zones and targets are displayed independently of their depth and conductivity on a single map.
- Very good differential resolution in complex conductive places with many sources with different conductivity.
- Signs of the presence of good conductive targets are amplified and emphasized independently of their depth and level of response accordingly.

In the example shown in Figure 4 and 5, three local targets are defined, each of them with a different depth of burial, as indicated on the resistivity depth image (RDI). All are very good conductors but the deeper target (number 2) has a relatively weak dB/dt signal yet also features the strongest total TAU (Figure 4). This example highlights the benefit of TAU analysis in terms of an additional target discrimination tool.

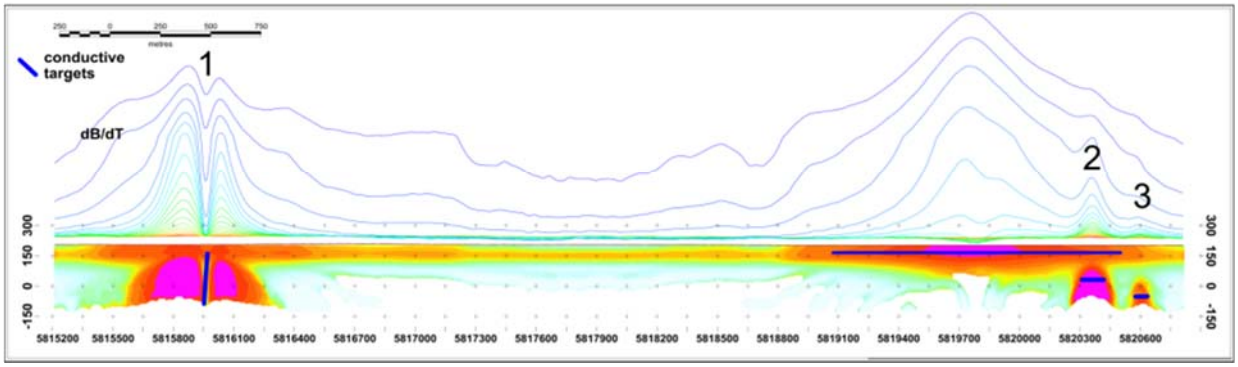

Figure E-4: dB/dt profile and RDI with different depths of targets.

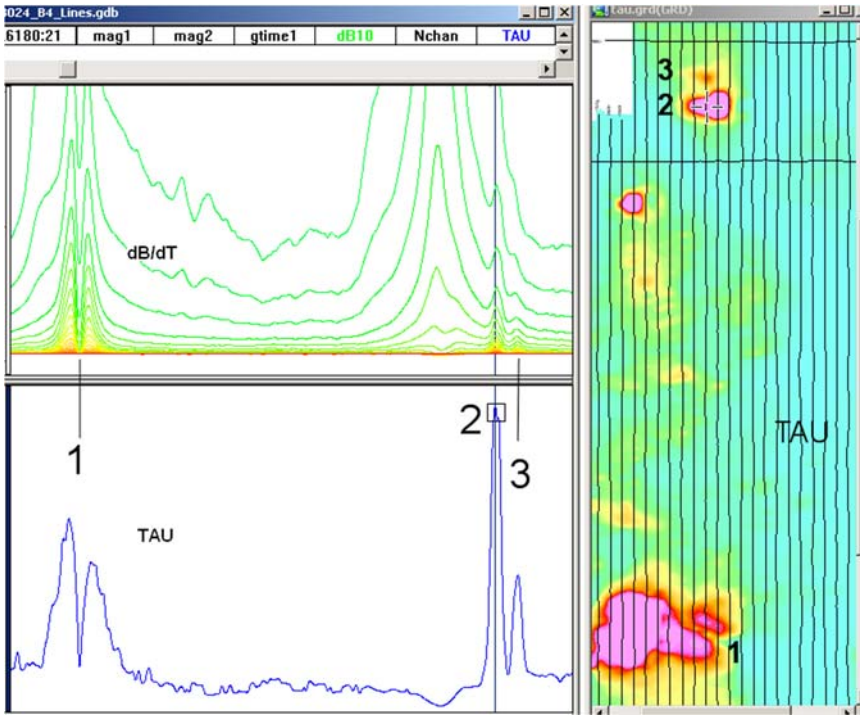

Figure E-5: Map of total TAU and dB/dt profile.

The EM Time Constants for dB/dt and B-field were calculated using the "sliding Tau" in-house program developed at Geotech2. The principle of the calculation is based on using of time window (4 time channels) which is sliding along the curve decay and looking for latest time channels which have a response above the level of noise and decay. The EM decays are obtained from all available decay channels, starting at the latest channel. Time constants are taken from a least square fit of a straight-line (log/linear space) over the last 4 gates above a pre-set signal threshold level (Figure F6). Threshold settings are pointed in the "label" property of TAU database channels. The sliding Tau method determines that, as the amplitudes increase, the time-constant is taken at progressively later times in the EM decay. Conversely, as the amplitudes decrease, Tau is taken at progressively earlier times in the decay. If the maximum signal amplitude falls below the threshold, or becomes negative for any of the 4 time gates, then Tau is not calculated and is assigned a value of "dummy" by default.

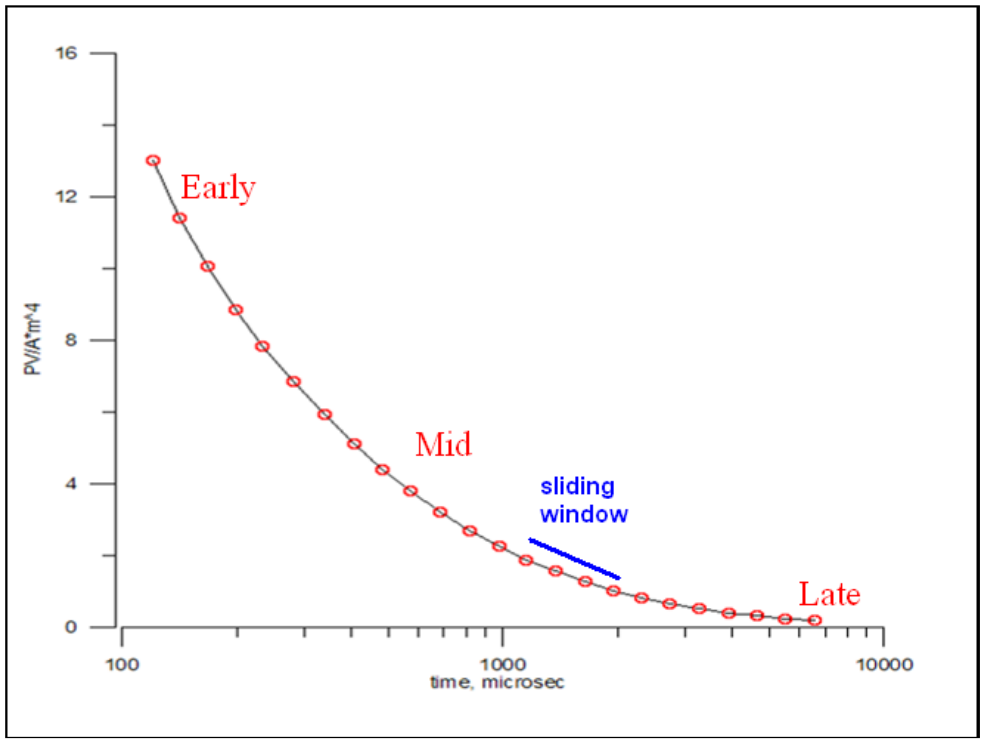

Figure E-6: Typical dB/dt decays of Vtem data

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September 2010

[2] by A.Prikhodko

APPENDIX F

TEM RESISTIVITY DEPTH IMAGING (RDI)

Resistivity depth imaging (RDI) is technique used to rapidly convert EM profile decay data into an equivalent resistivity versus depth cross-section, by deconvolving the measured TEM data.
The used RDI algorithm of Resistivity-Depth transformation is based on scheme of the apparent resistivity transform of Maxwell A.Meju (1998)[1] and TEM response from conductive half-space. The program is developed by Alexander Prikhodko and depth calibrated based on forward plate modeling for VTEM system configuration (Fig. 1-10).

RDIs provide reasonable indications of conductor relative depth and vertical extent, as well as accurate 1D layered-earth apparent conductivity/resistivity structure across VTEM flight lines. Approximate depth of investigation of a TEM system, image of secondary field distribution in half space, effective resistivity, initial geometry and position of conductive targets is the information obtained on base of the RDIs.

Maxwell forward modeling with RDI sections from the synthetic responses (VTEM system).

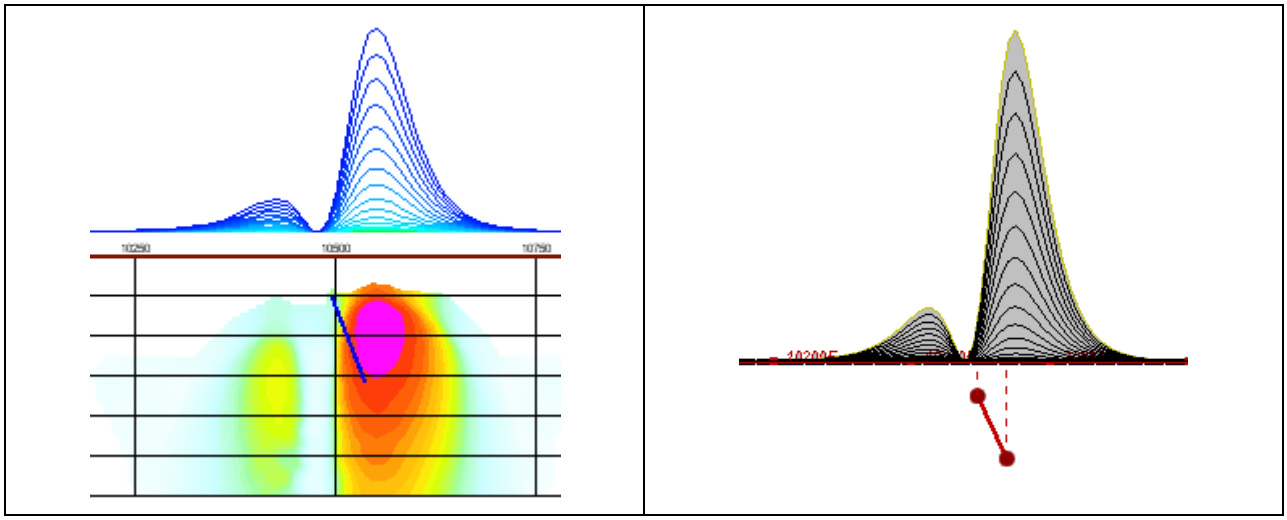


Figure F-1: Maxwell plate model and RDI from the calculated response for conductive “thin” plate (depth 50 m, dip 65 degree, depth extend 100 m).

[1] Maxwell A.Meju, 1998, Short Note: A simple method of transient electromagnetic data analysis, Geophysics, **63**, 405–410.

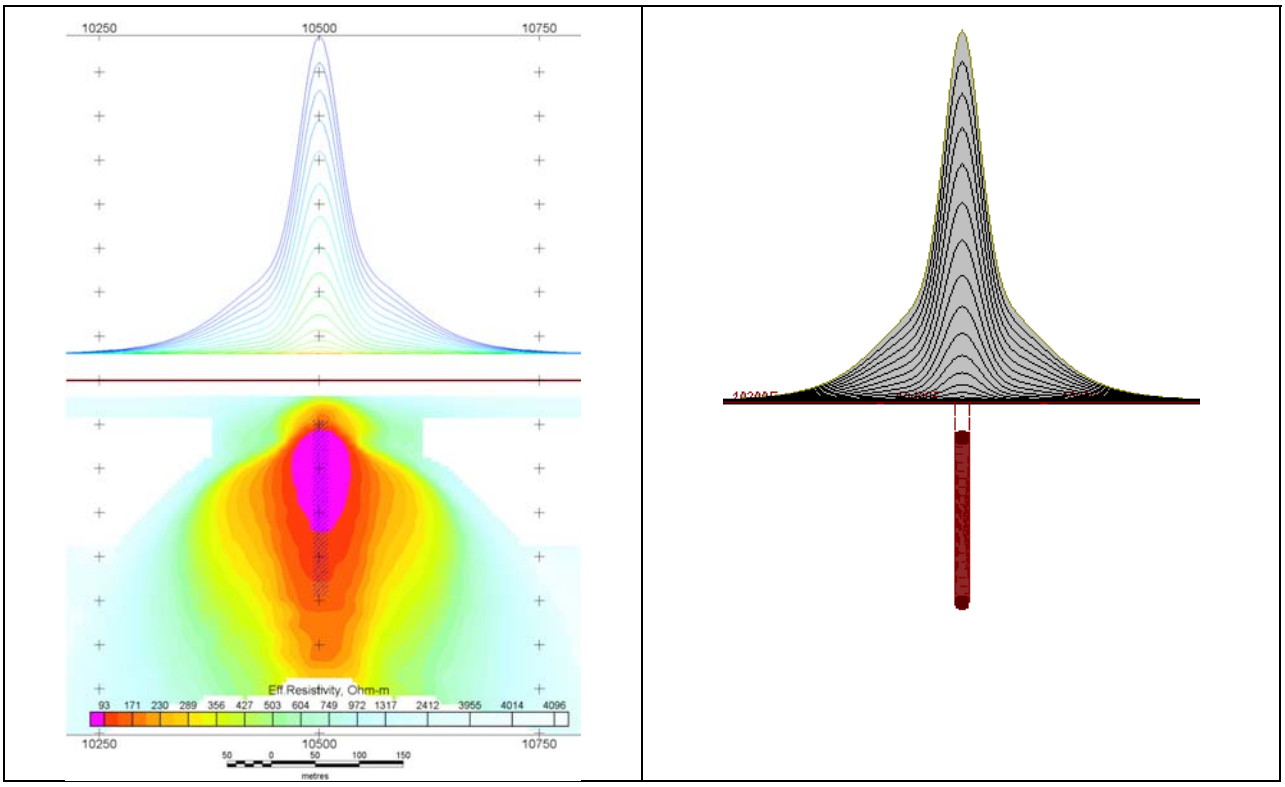


Figure F-2: Maxwell plate model and RDI from the calculated response for “thick” plate 18 m thickness, depth 50 m, depth extend 200 m).

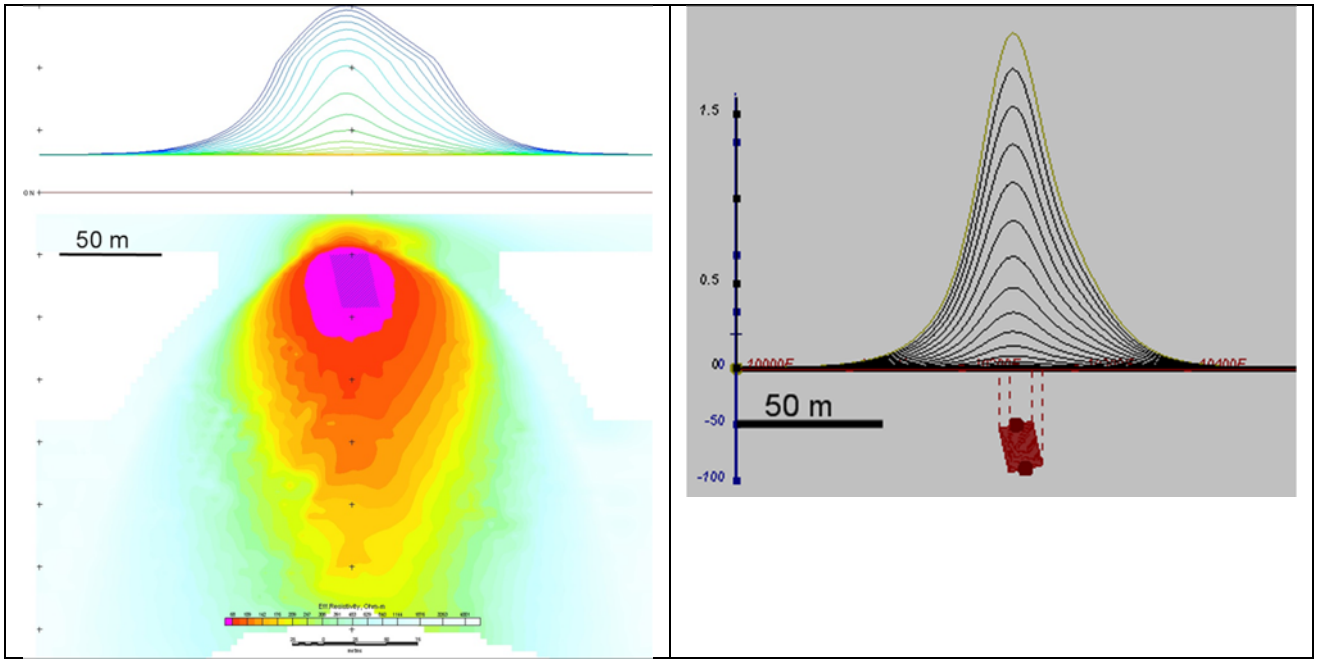


Figure F-3: Maxwell plate model and RDI from the calculated response for bulk (“thick”) 100 m length, 40 m depth extend, 30 m thickness

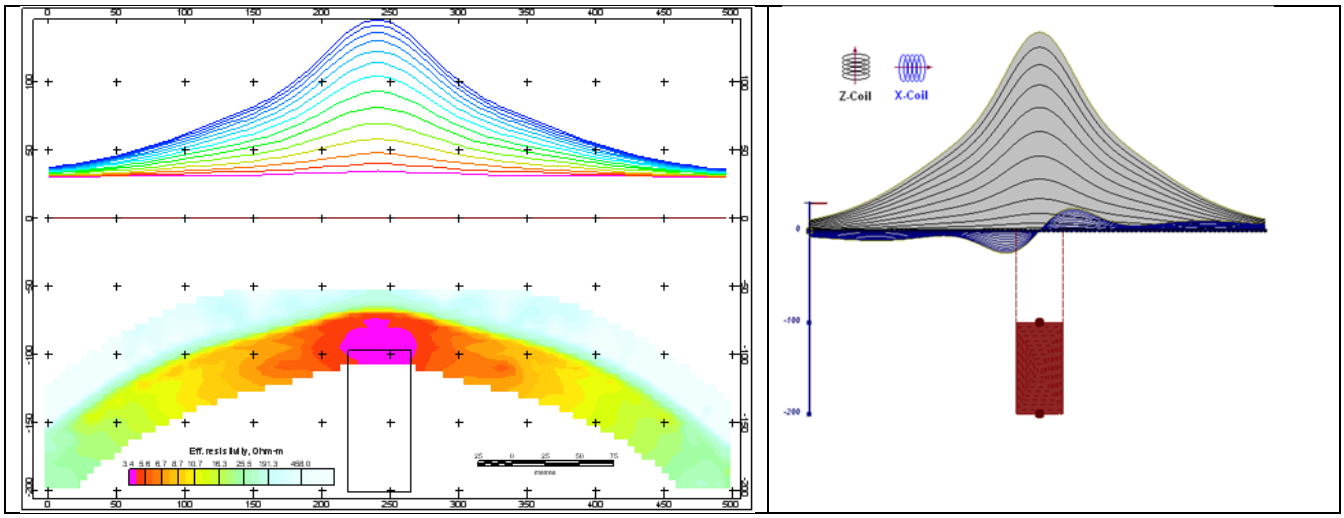


Figure F-4: Maxwell plate model and RDI from the calculated response for “thick” vertical target (depth 100 m, depth extend 100 m). 19-44 chan.

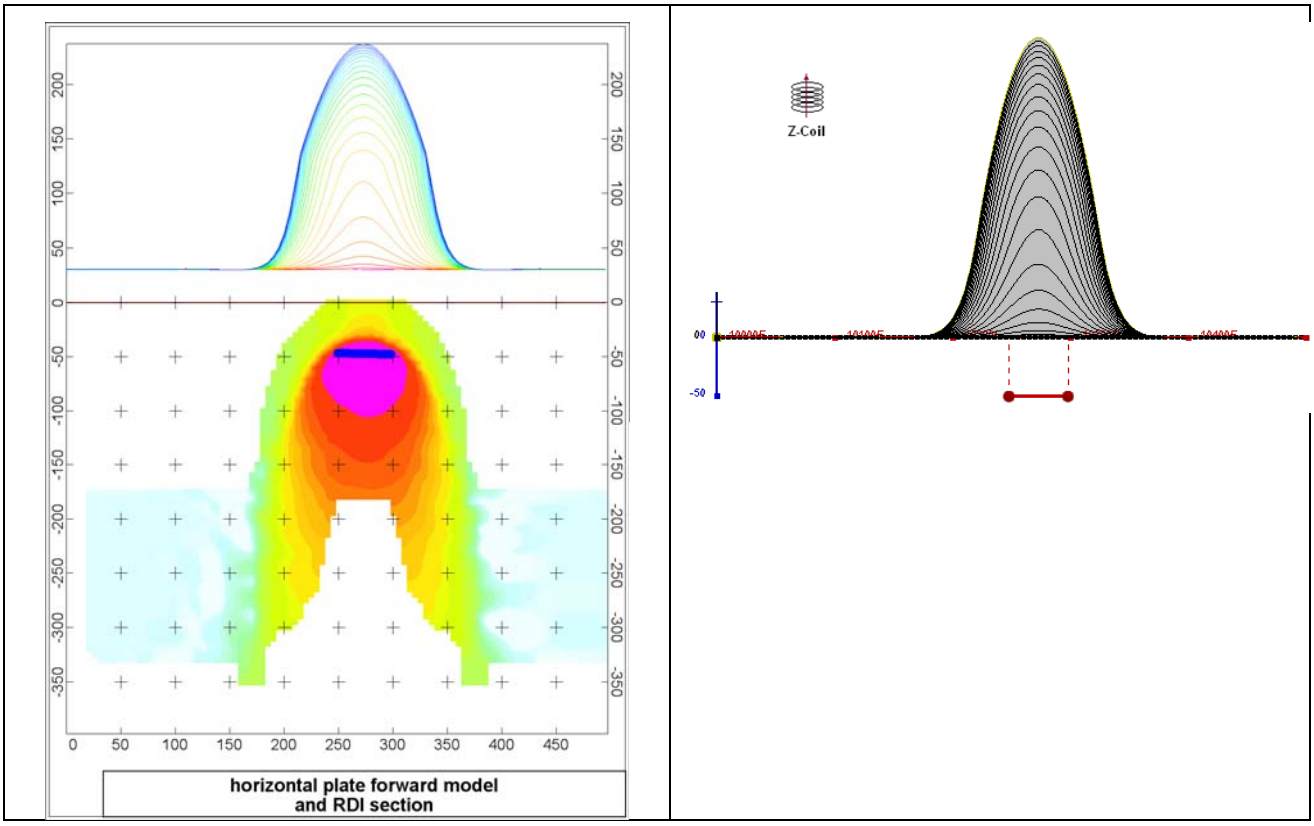


Figure F-5: Maxwell plate model and RDI from the calculated response for horizontal thin plate (depth 50 m, dim 50x100 m). 15-44 chan.

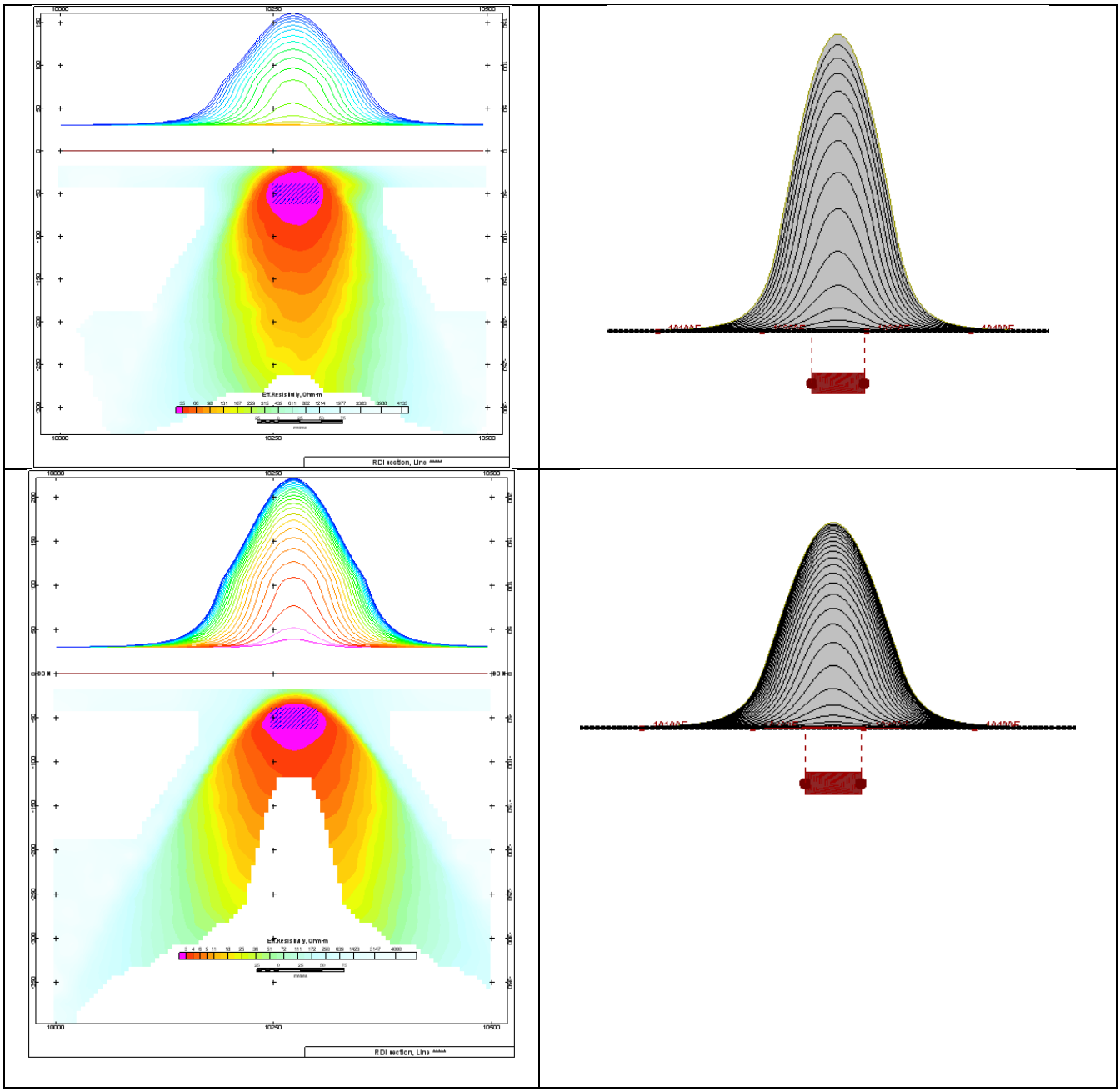


Figure F-6: Maxwell plate model and RDI from the calculated response for horizontal thick (20m) plate – less conductive (on the top), more conductive (below).

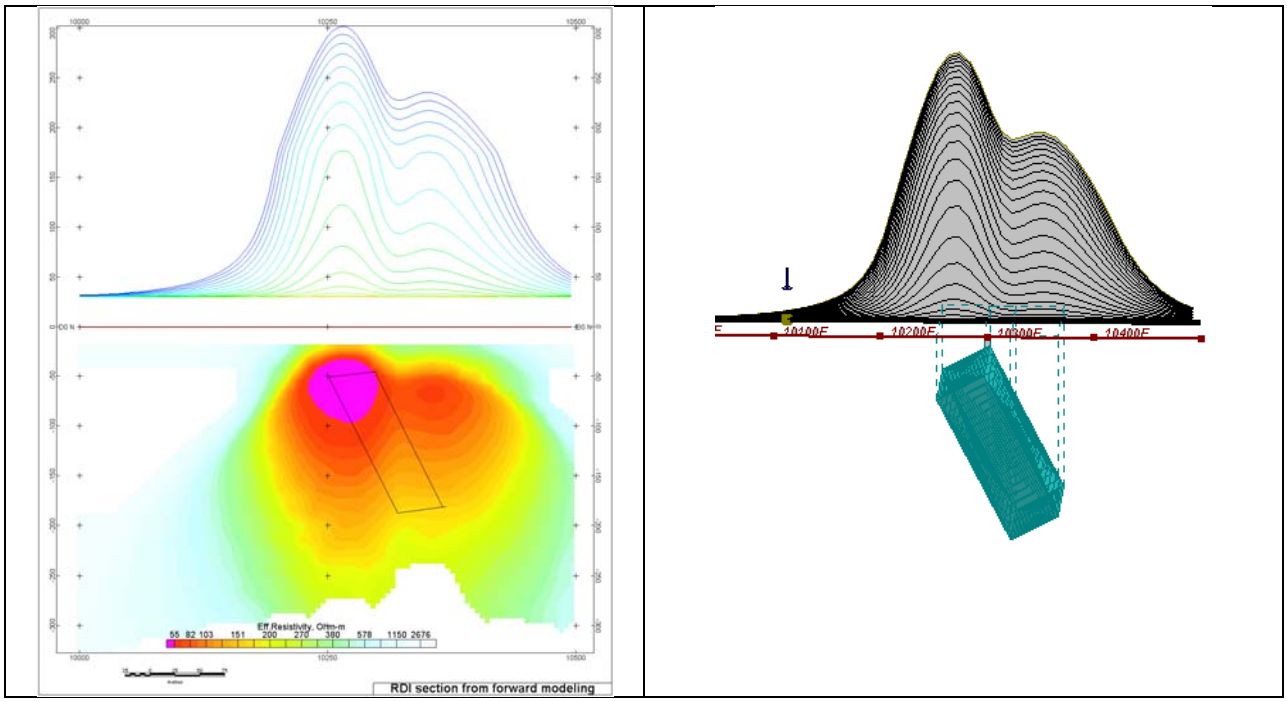


Figure F-7: Maxwell plate model and RDI from the calculated response for inclined thick (50m) plate. Depth extends 150 m, depth to the target 50 m.

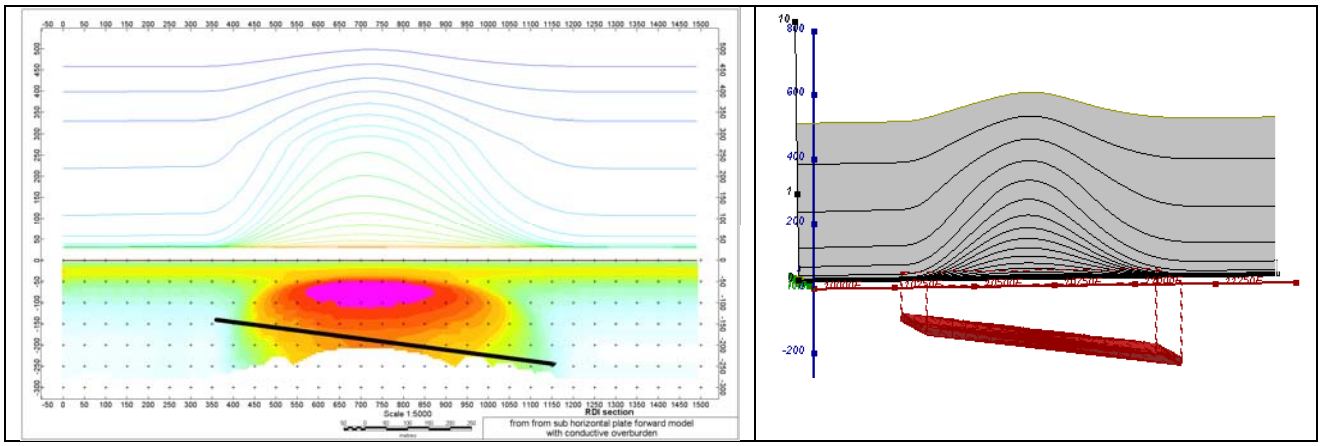


Figure F-8: Maxwell plate model and RDI from the calculated response for the long, wide and deep subhorizontal plate (depth 140 m, dim 25x500x800 m) with conductive overburden.

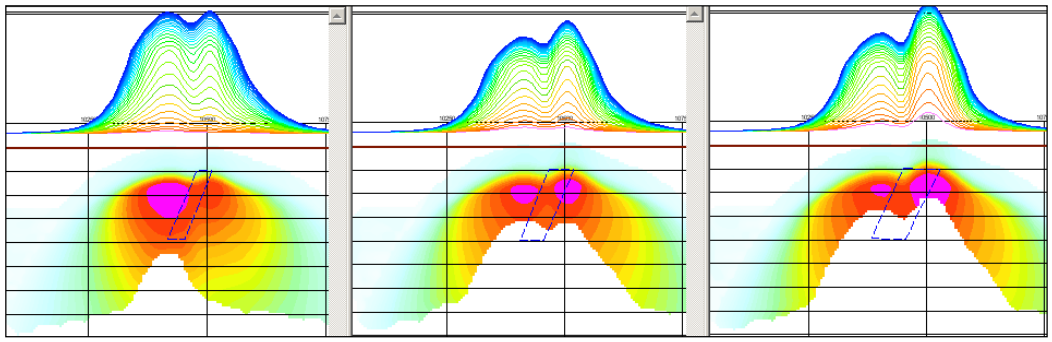


Figure F-9: Maxwell plate models and RDIs from the calculated response for “thick” dipping plates (35, 50, 75 m thickness), depth 50 m, conductivity 2.5 S/m.

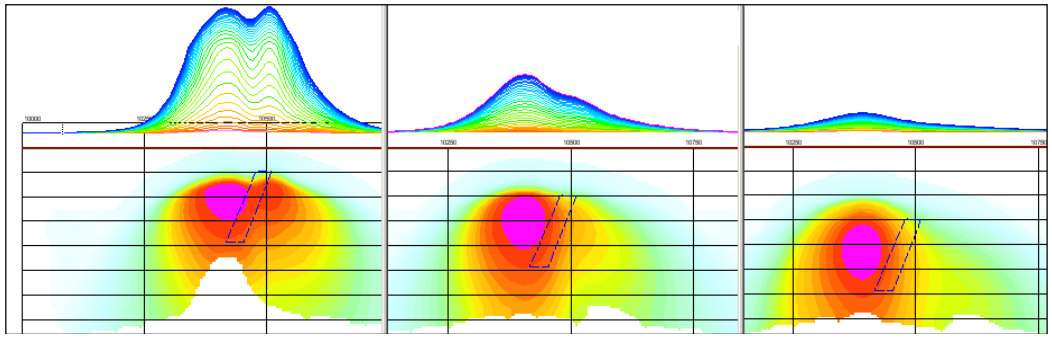
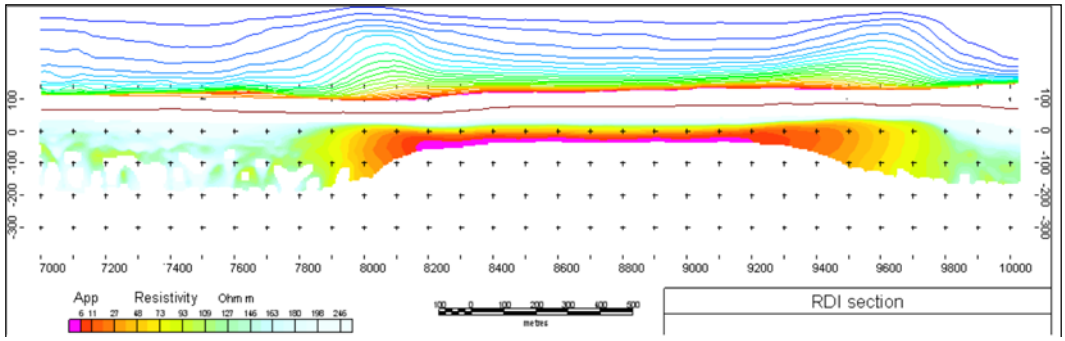


Figure F-10: Maxwell plate models and RDIs from the calculated response for “thick” (35 m thickness) dipping plate on different depth (50, 100, 150 m), conductivity 2.5 S/m.



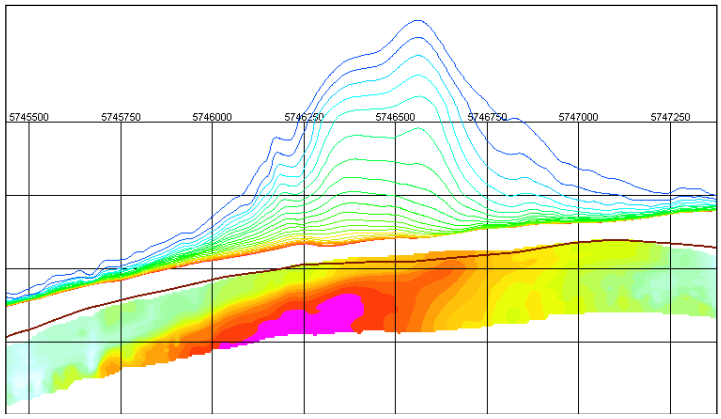
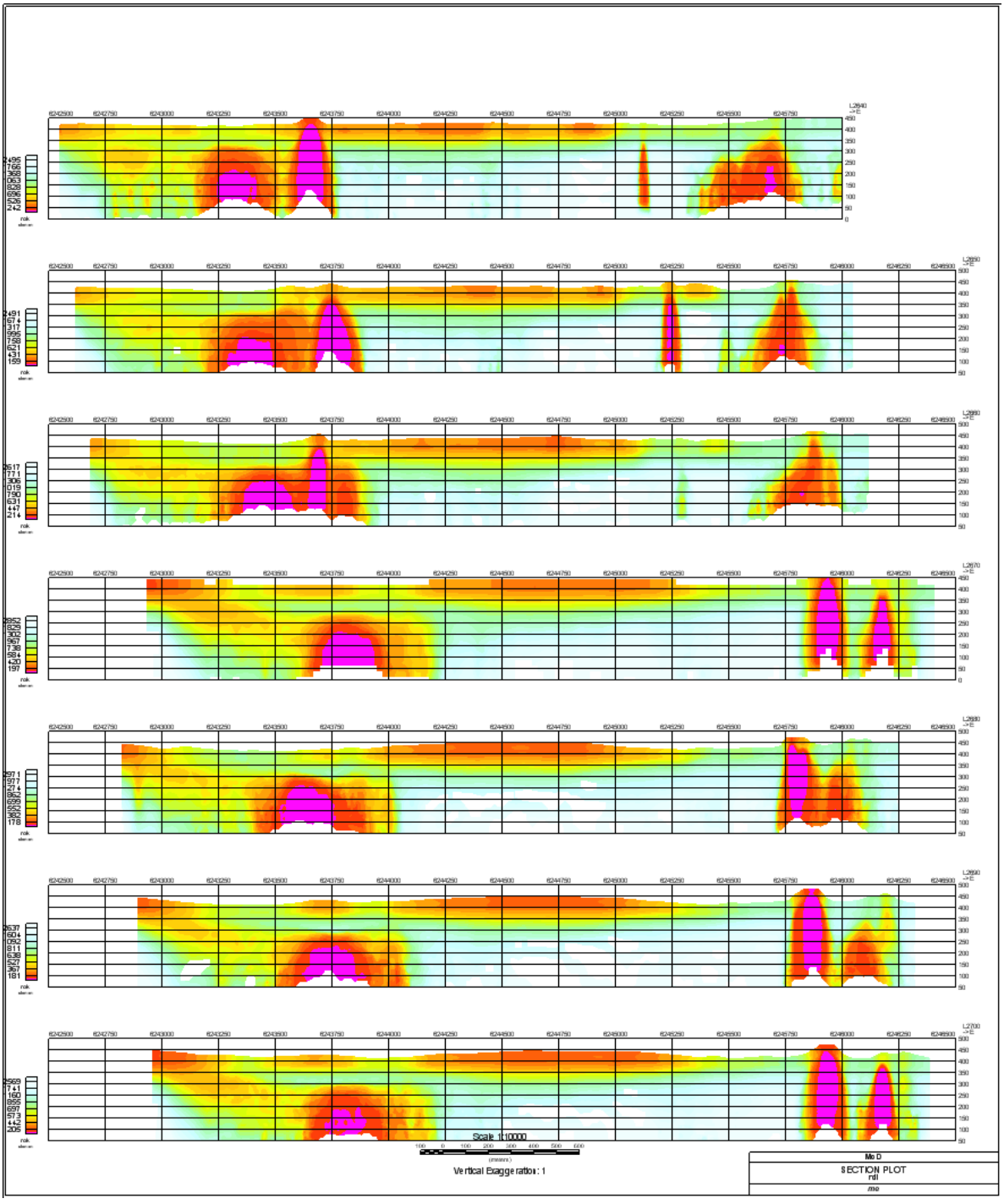


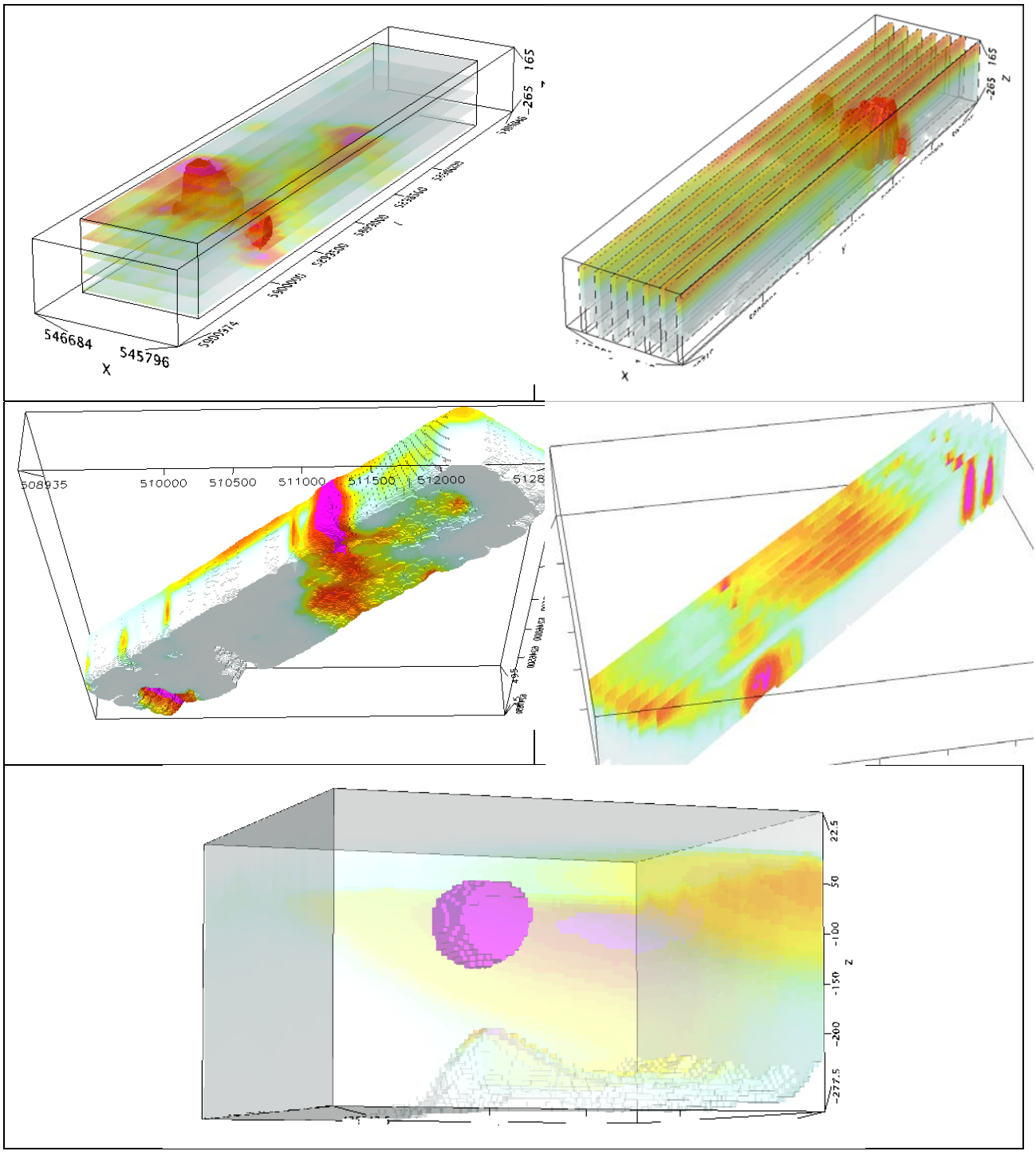
Figure F-11: RDI section for the real horizontal and slightly dipping conductive layers

FORMS OF RDI PRESENTATION

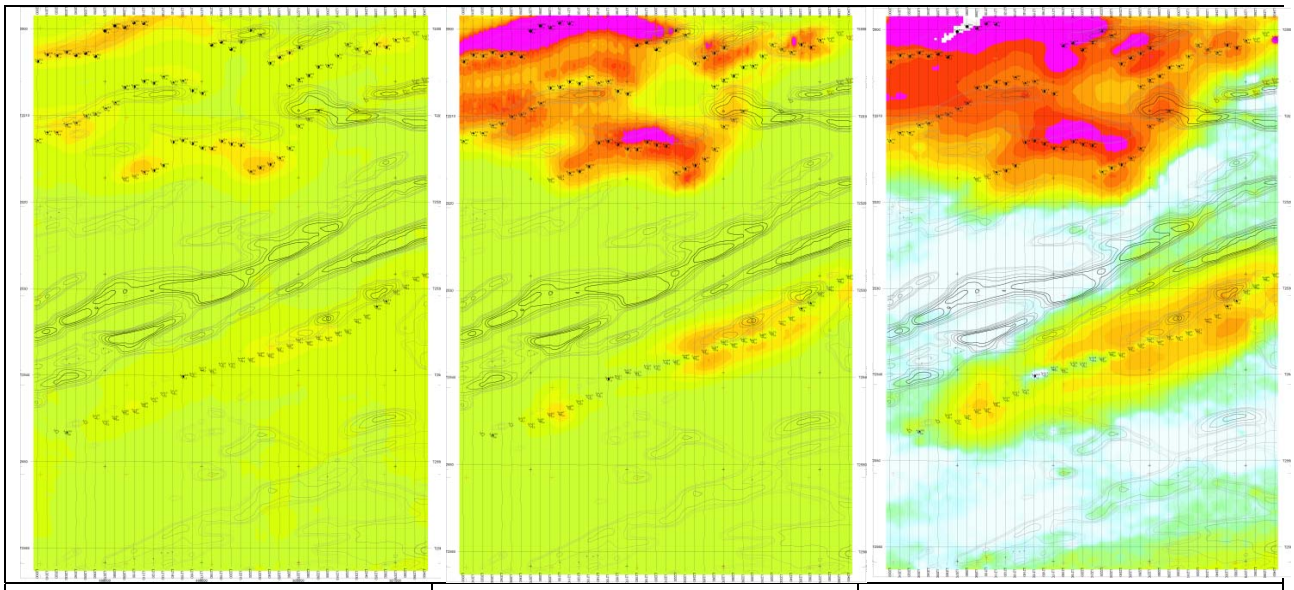
PRESENTATION OF SERIES OF LINES



3D PRESENTATION OF RDIS

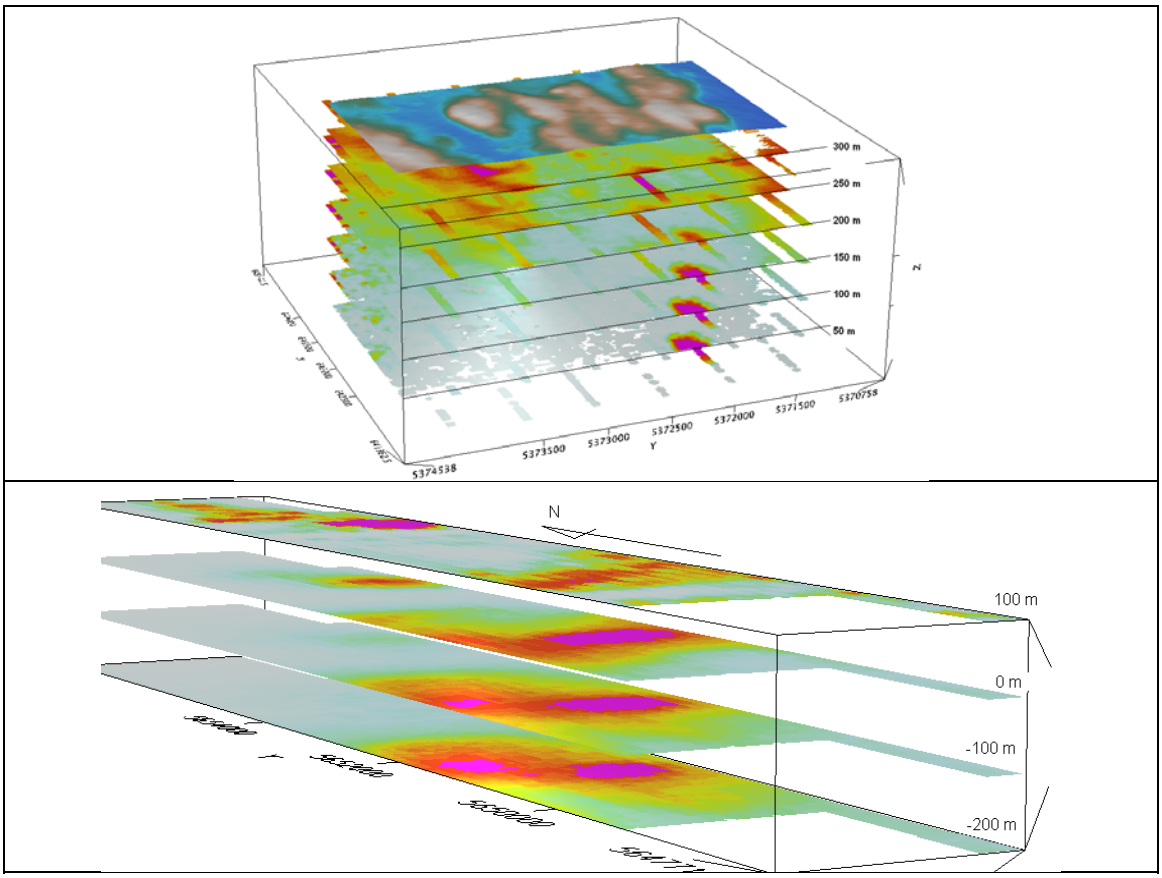


APPARENT RESISTIVITY DEPTH SLICES PLANS:



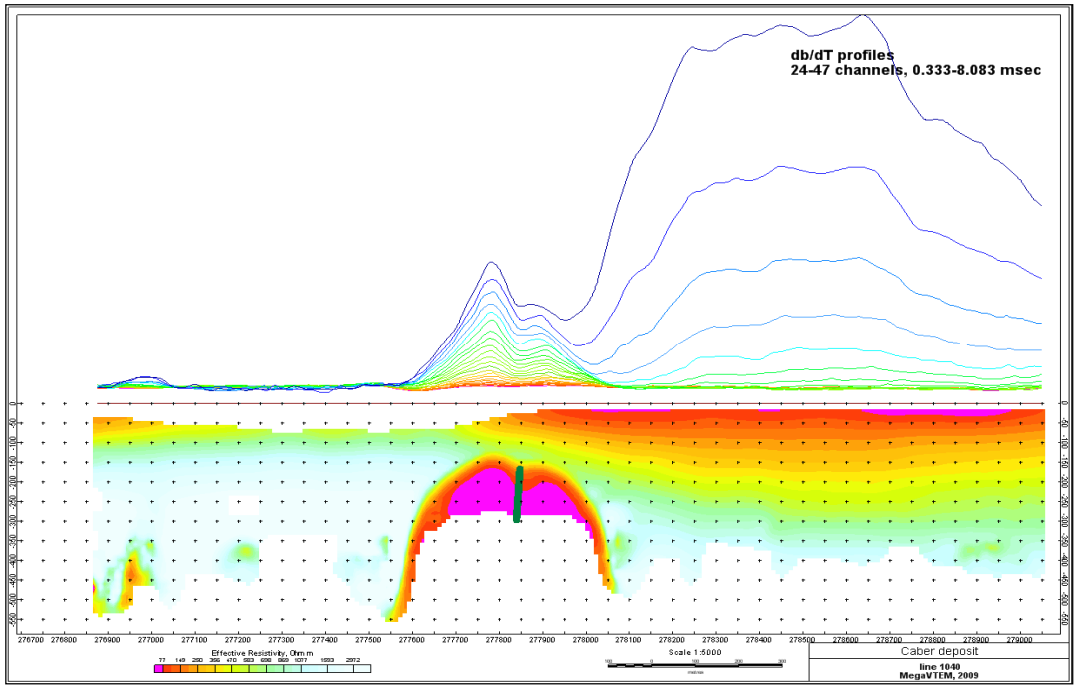
0 m (surface)	-100 m	-200 m

3D VIEWS OF APPARENT RESISTIVITY DEPTH SLICES:

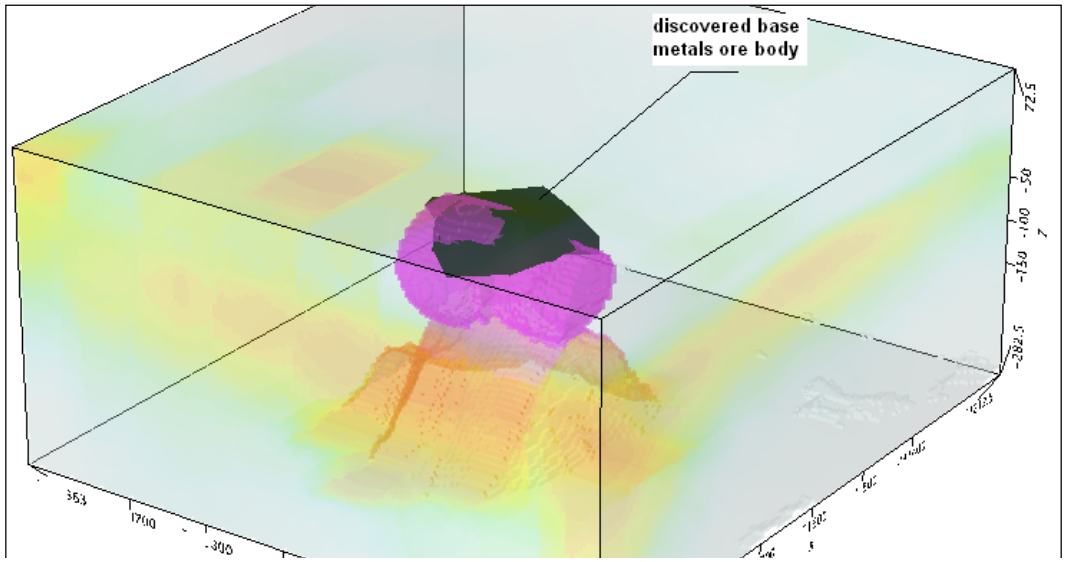


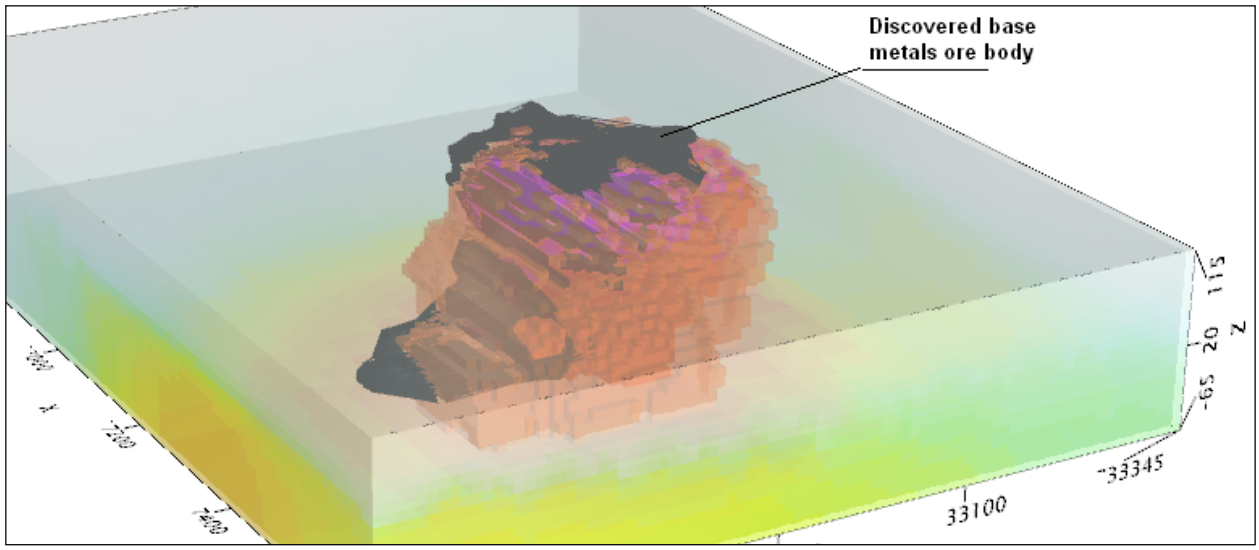
REAL BASE METAL TARGETS IN COMPARISON WITH RDIS:

RDI section of the line over Caber deposit ("thin" subvertical plate target and conductive overburden.



3D RDI VOXELS WITH BASE METALS ORE BODIES (MIDDLE EAST):





Alexander Prikhodko, PhD, P.Geo
Geotech Ltd.
April 2011

APPENDIX G

RESISTIVITY DEPTH IMAGES (RDI)

Please see attached DVD for the PDF.

Appendix J: Ground-based gravity survey report

Gravity Survey – Kudz Ze Kayah

61° 27’ N 130° 31’ W, 105G/07, 105G/08 Yukon, Canada

WORK PERFORMED:
August 9 – October 13, 2015

Prepared for:

BMC Minerals

Prepared by:

AURORA GEOSCIENCES

TECHNICAL REPORT
Gravity at Kudz Ze Kayah

Prepared for:
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Andre Lebel, B.Sc.

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1 SUMMARY

This geophysical report describes a gravity survey conducted for BMC minerals on the Kudz Ze Kayah (KZK) project, Yukon to assist in locating VMS ore deposits within the survey area. The survey was conducted in a 6 km X 2 km area located within NTS map sheets 105 G/07 and 105 G/08 with a station separation of 50 m and a line separation of 200 to 300 m. In total 1734 data points were collected in the 2015 program.

The crew was on-site at the KZK camp operated by BMC Minerals. The geophysics project extended from Aug 9th – Oct 16th, 2015 with the crew simultaneously conducting a DHEM survey (not described in this report). The survey was conducted by one or two gravity crews transported to and from to the survey grid by truck/side by side ATV or helicopter depending on the proximity of the lines to the access road. Travel between points was on foot. Aurora personnel rotations used scheduled flights to and from camp. The crew was prevented from working due to non-flyable weather one day through the course of the survey. Heavy snowfall in the highest part of the survey area made it temporarily unsafe for travel, but the crew concentrated on lower areas until the snow melted and completed all planned gravity points. A crew log describing daily operations and production is included with this report.

No interpretation or modelling of the data are included in this report.

2 CREW AND EQUIPMENT

The following personnel conducted the survey:

Andre Lebel	Geophysicist (Gravity Operator)	Aug. 9 – Aug 22, Aug 26-Aug 31, Sept 4 - Sept 11, Sept 18, Sept 21 - Sept 24, Sept 28 – Oct 2, Oct 6 – Oct 9, 2015
Dave Hildes	Geophysicist (Gravity Operator)	Sept. 11–Sept. 18, 2015
Darrel Epp	Geophysicist (Gravity Operator)	Aug 26 - Aug 31, Sept 4 - Sept 11, Sept 13 - Sept 18, Sept 21 - Sept 24, Sept 28 – Oct 2, Oct 6 – Oct 9, 2015
Franz Dzuiba	Geophysicist (Gravity Operator)	Aug. 25 – Aug 30, 2015
Heiko Mueller	Field Technician (GPS Operator)	Aug. 9 – Aug. 16, Aug. 21 – Aug. 22, Aug. 9 – Aug. 16, Aug. 24 – Aug. 30, and Sept. 4 – Sept. 14 2015
Darren Dawson	Field Technician (GPS Operator)	Sept. 4 – Sept. 11, and Sept. 13 – Sept. 14 2015
Terry Ollie	Field Technician (GPS Operator)	Aug. 10 – Aug. 21, 2015

The crew was equipped with the following instruments and equipment:

Gravity:	Gravity meter - Scintrex CG-5 Gravimeter s/n: 1368
	Gravity meter - Scintrex CG-5 Gravimeter s/n: 349
	Gravity accessories
RTK DGPS:	Leica CS 15 controller s/n: 2907999
	Leica CS 15 controller s/n: 2907005
	Leica GS15 Antenna s/n: 1502720
	Leica GS14 Antenna s/n: 2806121
	Leica GS14 Antenna s/n: 2810411
	Leica GS14 Antenna s/n: 2805723
	Pacific Crest Radio s/n: 10301949
	Pacific Crest Radio-Repeater s/n: 13086191
	GPS accessories
Other:	2 - Laptops with Geosoft, Gravity & GPS processing software
	1 - Repair tools
	1 - Iridium satellite phone
	4 - Garmin handheld GPS
	4 - Bear spray and bear bangers

3 SURVEY LOCATION

The gravity survey consisted of three areas: ABM, GP4F and Rhyolite Peak. ABM comprises a single line (Line 7) which extends over the ABM deposit. The GP4F area consists of Lines 8 – 32 (lines running NNE at a line spacing of 200 m) and Lines 37 and 38 (short lines running ESE) over the GP4F deposit and the area west of GP4F. Rhyolite Peak area consists of Lines 1 – 6 and Lines 33 – 36 on the mountain and plateau in the western portion of the survey grid. Lines 1 – 6 have a line spacing of 300 m while Lines 33 – 36 are over a VTEM anomaly to the west of the ABM deposit and have a line spacing of 200 m. Figure 1 shows the locations of the all lines surveyed in 2015. All coordinates in this report are in the NAD83 (CSRS) datum, UTM Zone 9N projection, and the elevations are recorded as orthometric heights using the CGVD 2013 Geoid (meters above sea level).

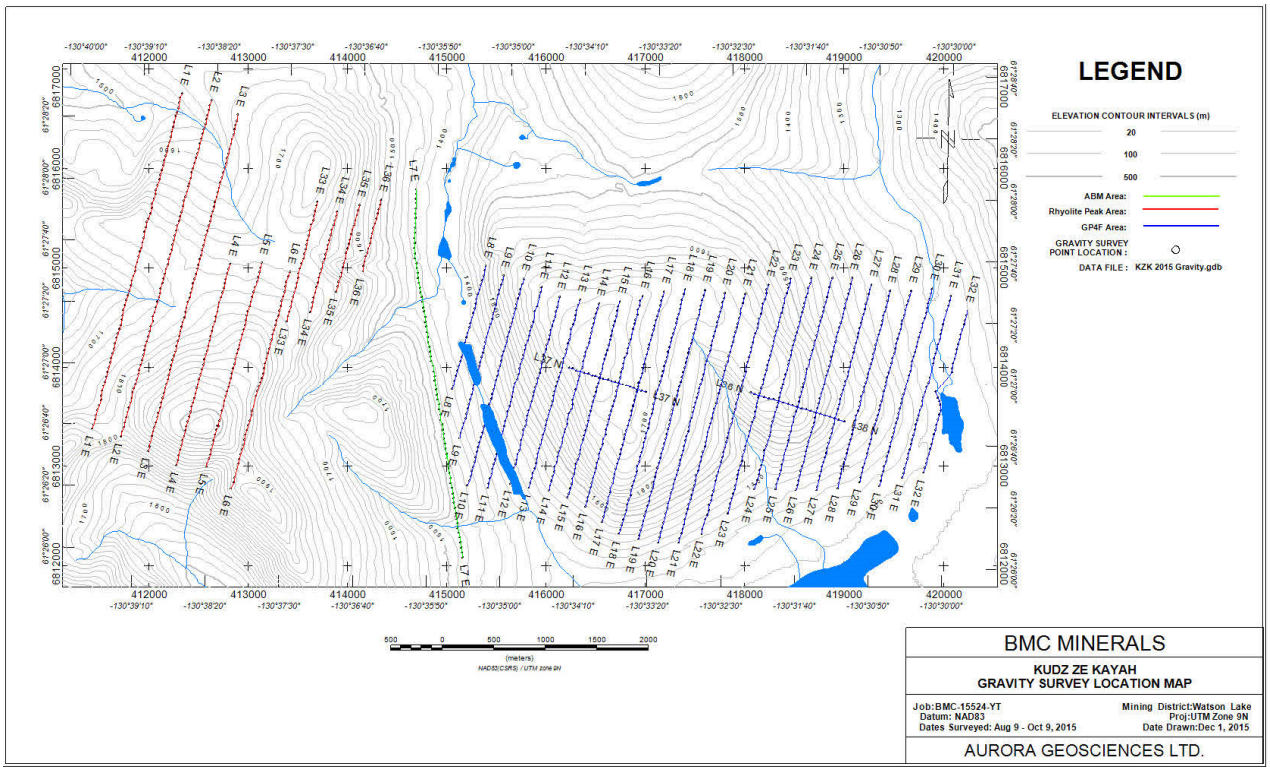


Figure 1: Gravity survey location map

4 SURVEY SPECIFICATIONS

4.1 Gravity Survey Specifications

Each gravity station was located using a handheld Garmin GPS. The site was cleared of soft moss and organics or preferentially located on a low boulder if available. A total of 1792 gravity stations were occupied on the grid, 1602 planned stations, 21 unplanned stations and 169 repeat stations. 20 planned stations were not surveyed due to inaccessibility or due to the presence of a body of water. Figure 2 : Distance between actual to planned location histogram.plots the distance between planned and actual station location; 94% of the points are within 8 m of the planned location.

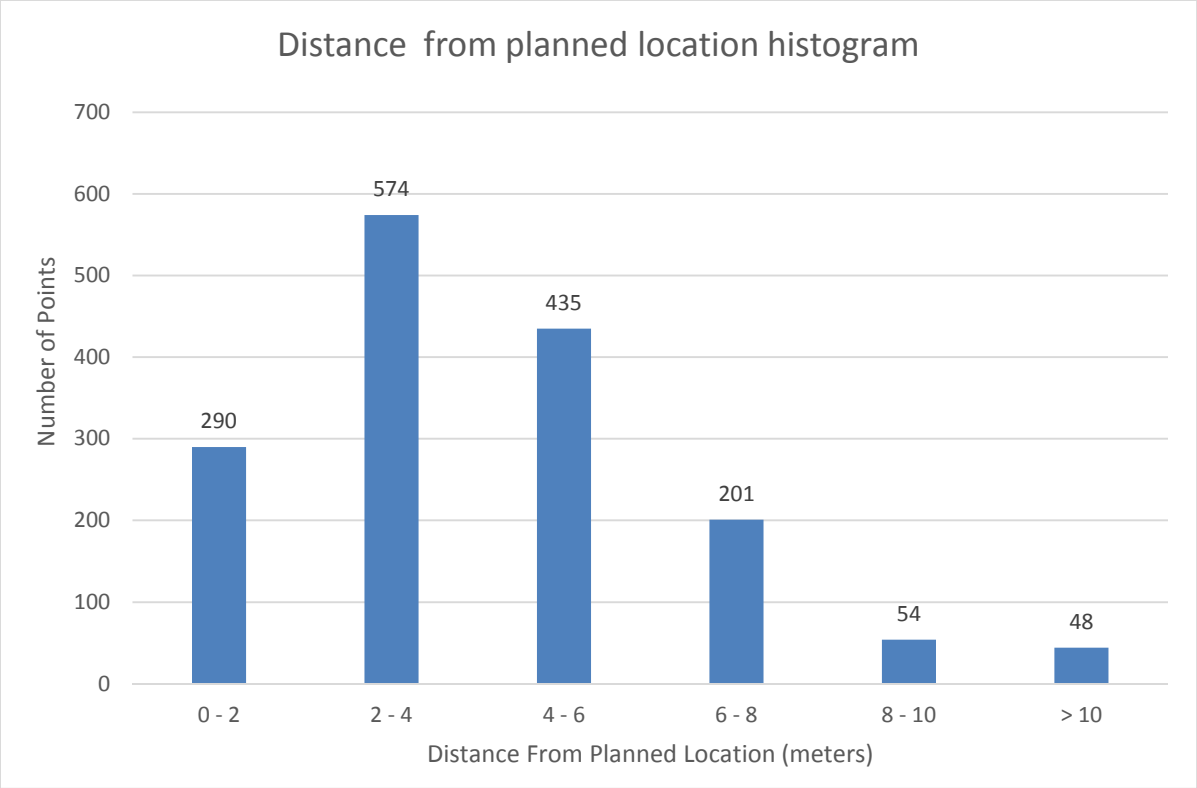


Figure 2 : Distance between actual to planned location histogram.

Station locations: Stations were located with non-differential GPS receivers.

Gravimeter preparation: Both gravimeters were warmed up and levelled on a cement block. The instruments were cycled for up to 24 hours taking 60 seconds readings continuously to determine the remnant instrument drift and to reset instrument drift constants. The instruments remained under power at all times throughout the survey operation.

Walk tests to simulate actual survey conditions were performed. The gravity meter is repeatedly picked up, walked for a minute then returned to exactly the same location and allowed to settle for a pre-determined time before taking the reading. Both gravity meters had a spread less than 0.02 mGal after tie corrections for these tests. The walk tests confirmed that gravity meter s/n: 349 required a longer settling period (5 minutes). A 90 second setting period was sufficient for gravity meter s/n 1368.

Gravity readings: A minimum of two readings that were stacked for a minimum of 20 s were taken at each station and the standard deviation in individual 5Hz readings (after seismic filtering) was kept to less than 0.03 mGal if possible. When this was not possible, readings were repeated at least 3 times to ensure that

the data were repeatable within 0.03 mGal. The gravity meters were leveled and then allowed to settle for a minimum of 90 seconds for gravity meter s/n: 1368 and a minimum of five minutes for gravity meter s/n: 349. Seismic filters were engaged to remove seismic noise and wind noise. Physical wind blocks were also used to reduce wind noise.

Gravity tie readings: Prior and post daily surveying, readings were taken at a control station. Control stations were established at four locations as detailed in Section 4.4. Readings were stacked for a minimum of 60 s. The tie readings were repeated until three readings repeated within 0.01 mGal.

Gravity repeat readings: A minimum of 3 % of the readings were repeated daily in a series of closed loops where the first reading of the loop was repeated in the exact same location. The criterion of a successful repeat reading is that the gravity values are within 0.06 mGal or the loop is redone. Details of the repeat readings are in Section 4.5.

4.2 GPS Survey Specifications

Accompanying the gravity survey was a GPS survey to provide vertical control for the gravity reductions described in Section 5; GPS readings were taken in identical locations as the gravity readings. The specifications for the GPS survey are:

Geographic datum & projection	NAD83 (CSRS) datum, UTM Zone 9N projection.
Elevation datum:	Orthometric Height (CGVD 2013 Geoid) or Meters above Sea Level
Satellites used:	GPS and Glonass
GPS base:	The base stations were established in conjunction with the gravity control stations as detailed in Section 4.4. The daily measured height of the GPS antenna above the control point is detailed in Table 1. The base Leica GPS antenna logged data continuously at one second epochs, recording the data to disk as well as broadcasting over a RTK radio link.

GPS rover: The GPS antenna was placed on the gravity survey station and elevations corrected for a rover antenna height of 2 m. If an RTK link was established, a minimum of 10 coincidental epochs with the base were measured. For stations with no RTK link (post-processed), the greater of 300 or 60 coincidental epochs with the base per kilometer from the base were measured. Regardless of whether the solution is RTK or post-processed, only phase corrected solutions are accepted in the final data set.

GPS repeat readings: A minimum of 3 % of the readings were repeated daily in a series of closed loops where the first reading of the loop was repeated in the exact same location. The criterion of a successful repeat reading is that the horizontal and vertical locations are within 0.01 m or the loop is redone. Details of the repeat readings are in Section 4.5. There were cases where daily loops were not closed because of pressing helicopter scheduling or lack of a phase-corrected GPS solution; in these cases the GPS loops were closed successfully on a subsequent day.

Table 1 : Measured antenna height above control.

Date	Control Station	Height above control(m)
Aug 10, 2015	ABM (9999)	1.094
Aug 11 – 12, 2015	ABM (9999)	1.034
Aug 13, 2015	ABM (9999)	1.043
Aug 14 –Aug 20, 2015	GP4F (9998)	1.062
Aug 20 - 21, 2015	ABM (9999)	0.971
Aug 24 – 30, 2015	Rhyolite Peak (9997)	0.962
Aug 31 – Sept 10, 2015	GP4F-W (9996)	1.042
Sept 11, 2015	GP4F (9998)	0.83
Sept 12 – 22, 2015	GP4F-W (9996)	0.71
Sept 23 – 28, 2015	ABM (9999)	1.075
Sept 29 – Oct 1, 2015	ABM (9999)	0.92
Oct 2 - 6, 2015	GP4F-W (9996)	0.743
Oct 7, 2015	Rhyolite Peak (9997)	0.635
Oct 8, 2015	ABM (9999)	0.87
Oct 9, 2015	GP4F (9998)	0.817

4.3 Gravity Meter Pre-survey Cycling

Prior to the survey each gravity meter was cycled for a period of up to 24 hours to check instrument calibration and the spring drift constant. Figure 3 and Figure 4 show the linear trend for each instrument through a period starting on Aug 8th, 2015 for gravity meter s/n: 1368 and Aug 23rd, 2015 for gravity meter s/n: 349. The gravity meter s/n: 349 cycled at the Rhyolite Peak base and is subject to wind noise. A linear trend can still be seen in Figure 4**Error! Reference source not found.** once the wind subsided. The gravity measurement is shown on the y-axis in mGal vs decimal days on the x-axis. An adjustment was made to the drift constant prior to the start of the survey of - 0.29 mGal/day for gravity meter s/n 1368; no adjustment was made for gravity meter s/n 349.

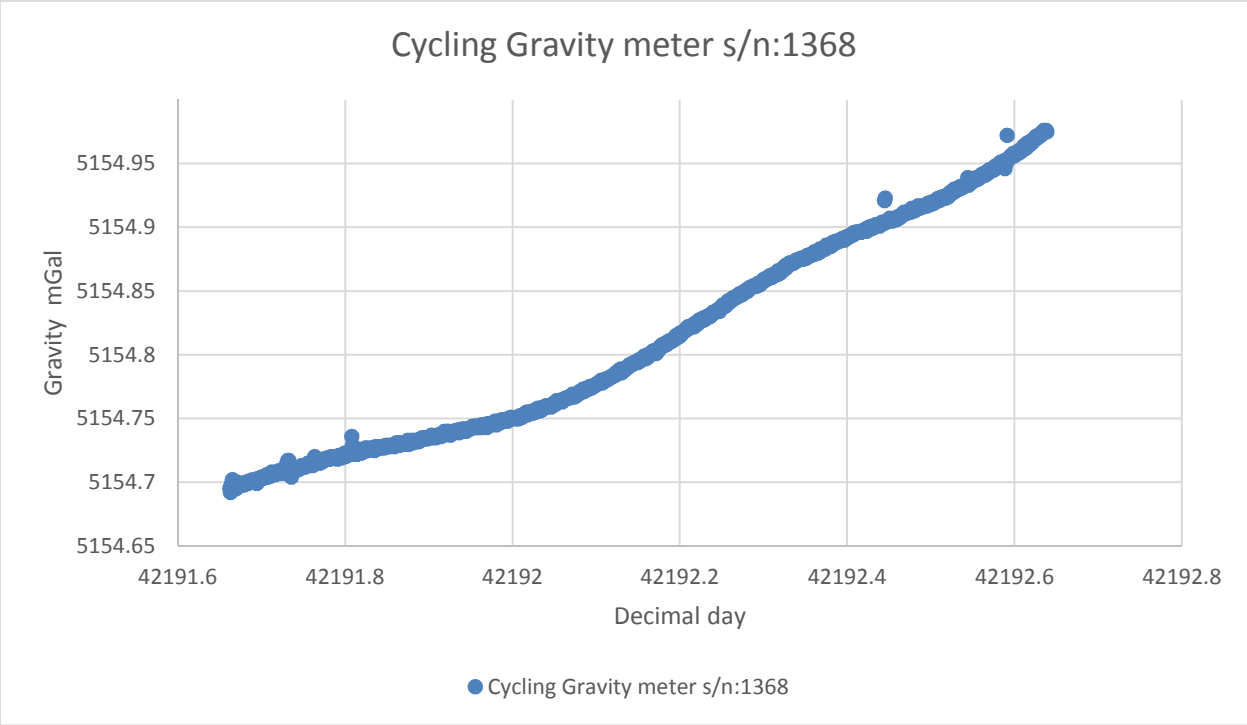


Figure 3 - Gravity meter s/n 1368 cycling results.

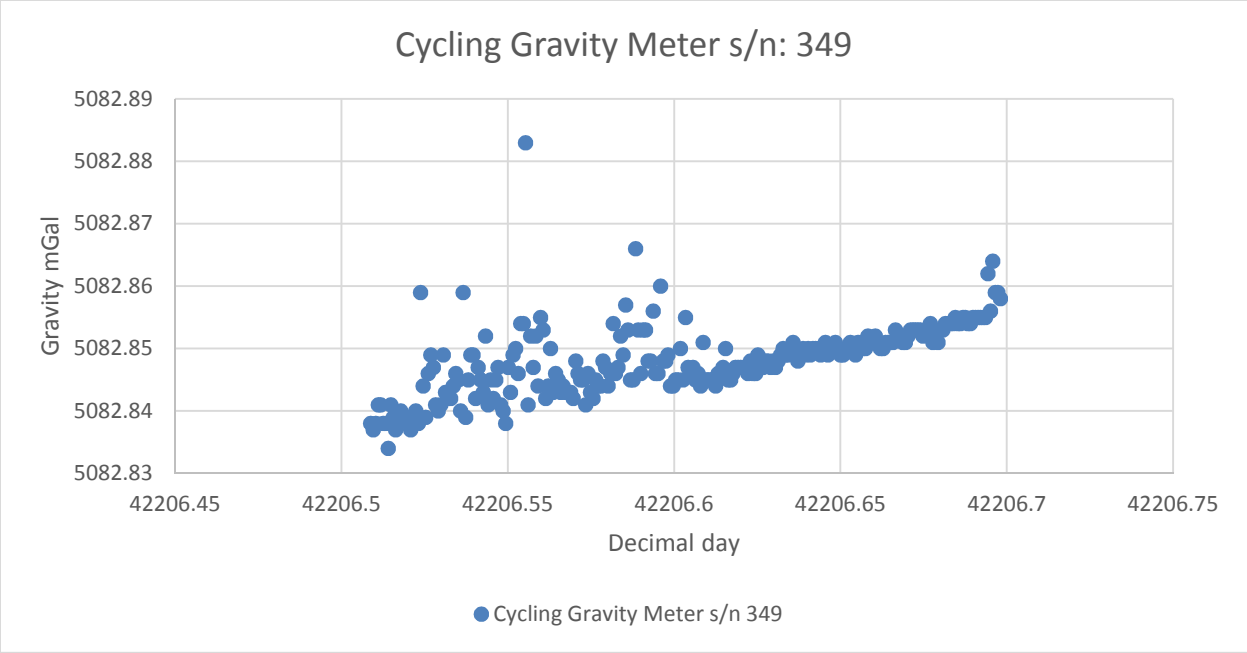


Figure 4 - Gravity meter s/n 349 cycling results.

4.4 Control Points

Control points were established at four locations in 2015 as detailed in Table 2. A concrete pad and two reference posts are installed at each control station; a short T-post protrudes approximately 10 cm above the ground and defines the positional location and a long reference post protrudes at least 30 cm above the ground within a metre of the short post and is labeled with a metal tag. Figure 5, Figure 6, Figure 7 and Figure 8 are pictures of the control stations. The concrete pad defines the gravity control station using a standard Scintrex CG5 tripod with the legs at their minimum extension.

Table 2: Gravity bases locations and dates used.

Base	UTM East (m)	UTM North (m)	Orthometric Height (m)	Dates used (2015)	Gravity Reference Value (mGal)
ABM (9999)	414838.290	6814779.579	1410.286	Aug 10 – 13 Aug 20 – 21 Sept 23 – Oct 1 Oct 08	5023.6
GP4F (9998)	419113.358	6813563.075	1432.621	Aug 13 – 20 Oct 9	5017.554l
Rhyolite Peak (9997)	41224.783	6814019.985	1896.343	Aug 22 – 30 Oct 7	4951.495
GP4F-W (9996)	416569.254	6814021.222	1758.742	Aug 31 – Sept 22 Oct 2 – Oct 6	4923.730

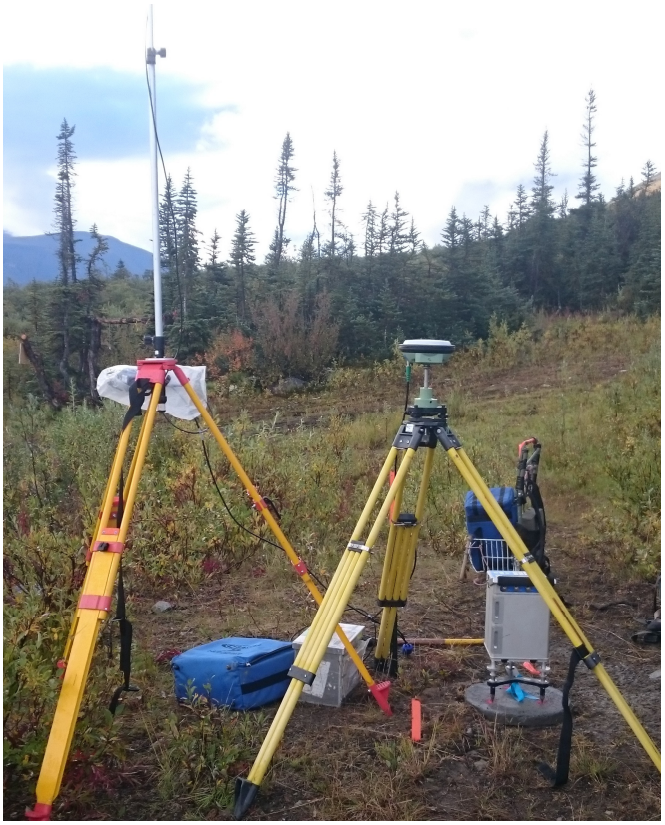


Figure 5: The ABM control station (9999).

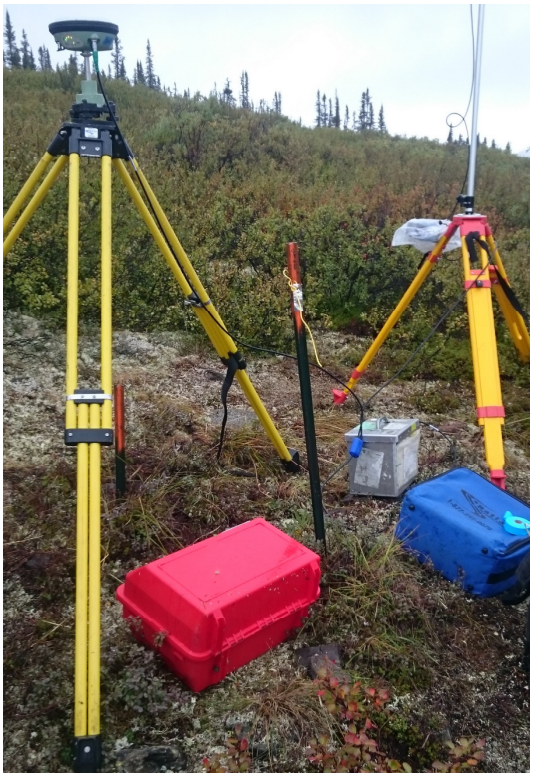


Figure 6: The GP4F control station (9998).



Figure 7: The Rhyolite Peak control station (9997).



Figure 8: The GP4F-W control station (9996).

The gravity reference value of 5023.600 mGal is arbitrarily set (at the value of the first drift reading on Aug 9th 2015) at the ABM control station. The other three gravity control stations were levelled to the ABM control station by an ABABABA tie survey which consisted of a reading at the "A" control station followed by the reading at the "B" control station repeated three times and finishing with a final reading at the "A" control station. After drift corrections for station A, the reference value for control station B is calculated by averaging the three readings. These control tie surveys were done on Aug 13, 2015 for the GP4F base and on Sept 4, 2015 for the GP4F-W and Rhyolite Peak control stations. The details of the tie surveys are appended to this report in *tie surveys.xls*.

Selected GPS base data were decimated to 30 s, converted to RINEX format and sent to the Canadian Spatial Reference System Precise Point Positioning (CSRS-PPP) tool to obtain a corrected position for the control station. Data were not sent to CSRS-PPP until more than 13 days had passed to ensure the best available ephemerides (+/- 2 cm) from the International Terrestrial Reference Frame (ITRF) were used in the correction. Four days of base station data for control point 9999, five days for control points 9998 and 9996 and eight days for control point 9998 were send the CSRS-PPP and the results averaged to obtain the final position as detailed in Table 2 using NAD83 (CSRS) datum, UTM Zone 9N projected coordinates and orthometric Height referenced to the CGVD 2013 Geoid**Error! Reference source not found.**. Reports from CSRS-PPP are appended to this report.

During the survey drift measurements were made at a control point prior to and after each day's survey. Figure 9, Figure 10, Figure 11, Figure 12, Figure 13 and Figure 14**Error! Reference source not found. Error! Reference source not found.** show the drift for each instrument at each control station used for the survey from Aug 10 to Oct 9, 2015. The gravity measurement is shown on the y-axis in mGal vs hours on the x-axis. Datum shifts are caused by memory clearing which is done episodically during the survey to keep the file size of raw data dumps low. A list of the control point locations and dates used is in Table 2.

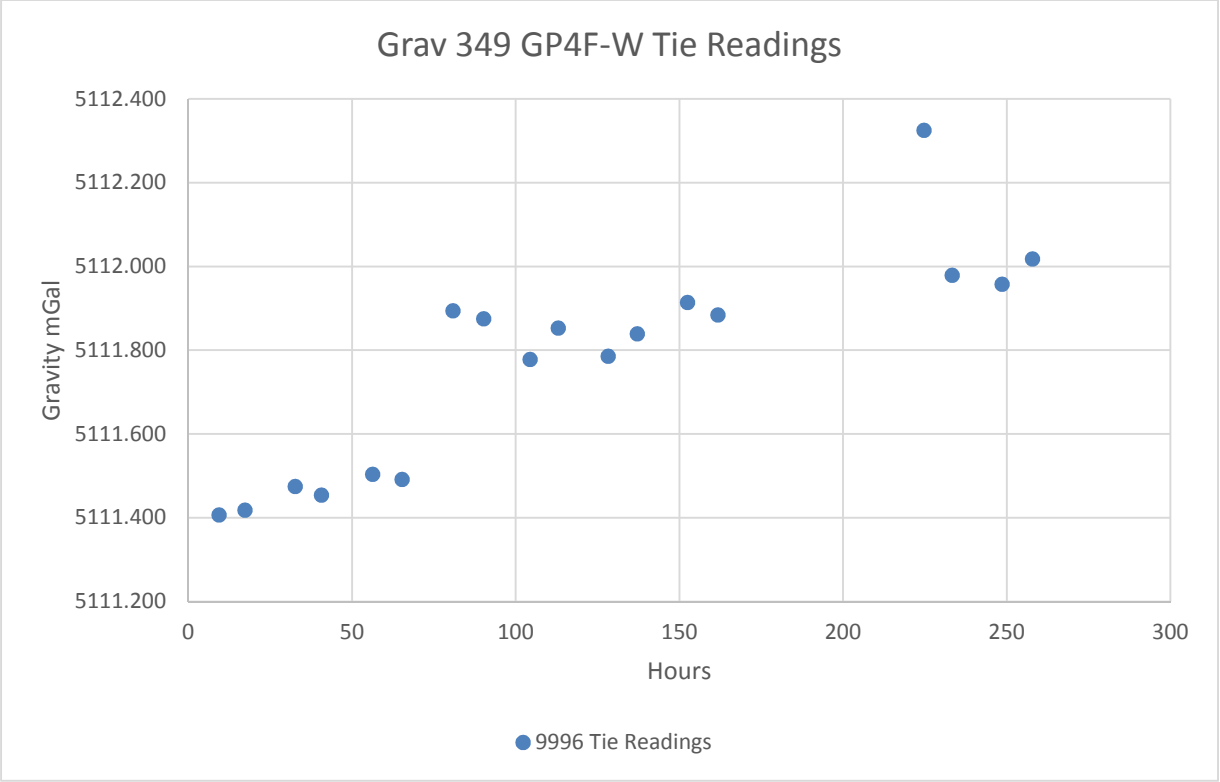


Figure 9: Gravity meter (s/n 349) GP4F-W control station readings.

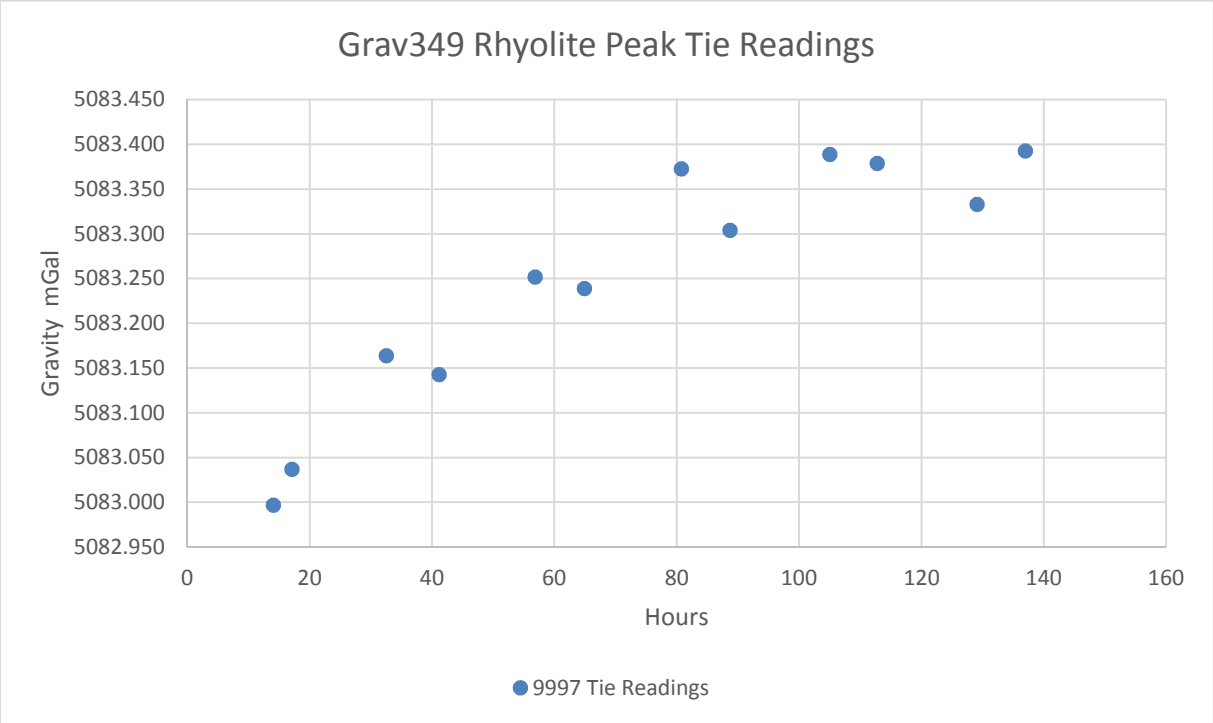


Figure 10: Gravity meter (s/n 349) Rhyolite Peak control station readings.

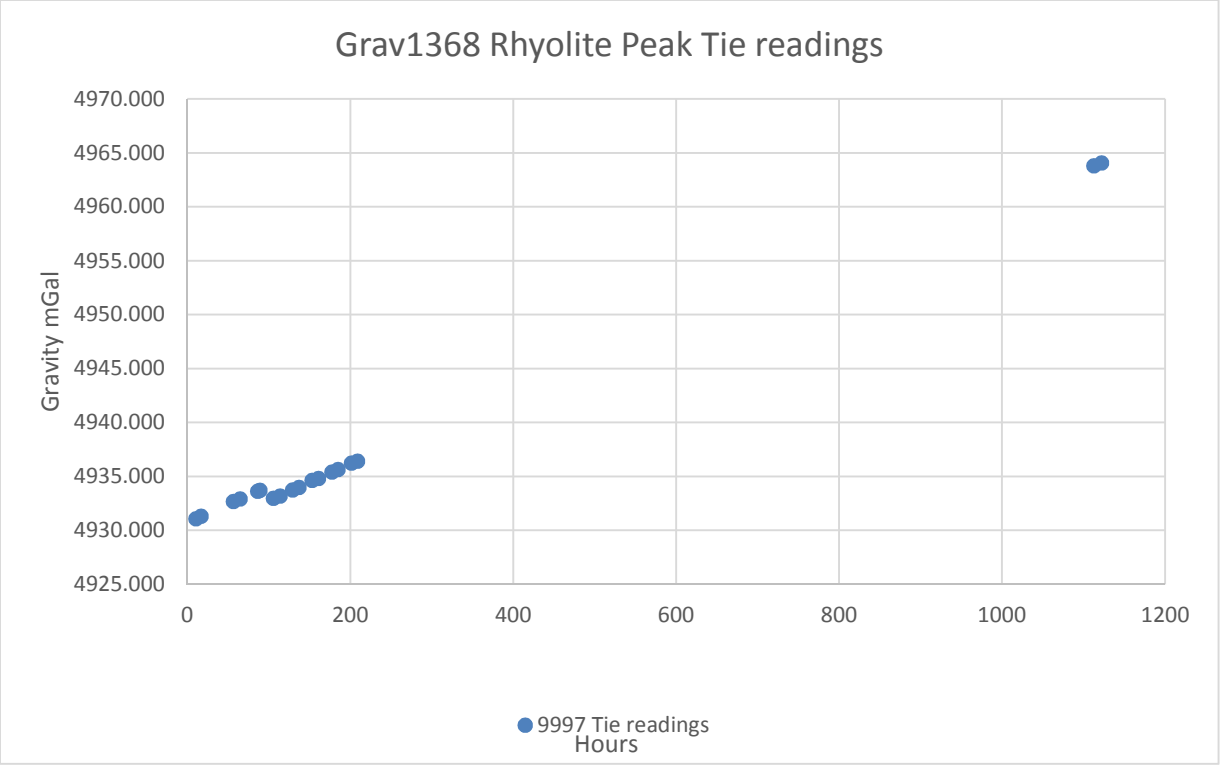


Figure 11: Gravity Meter (s/n 1368) Rhyolite Peak control station readings.

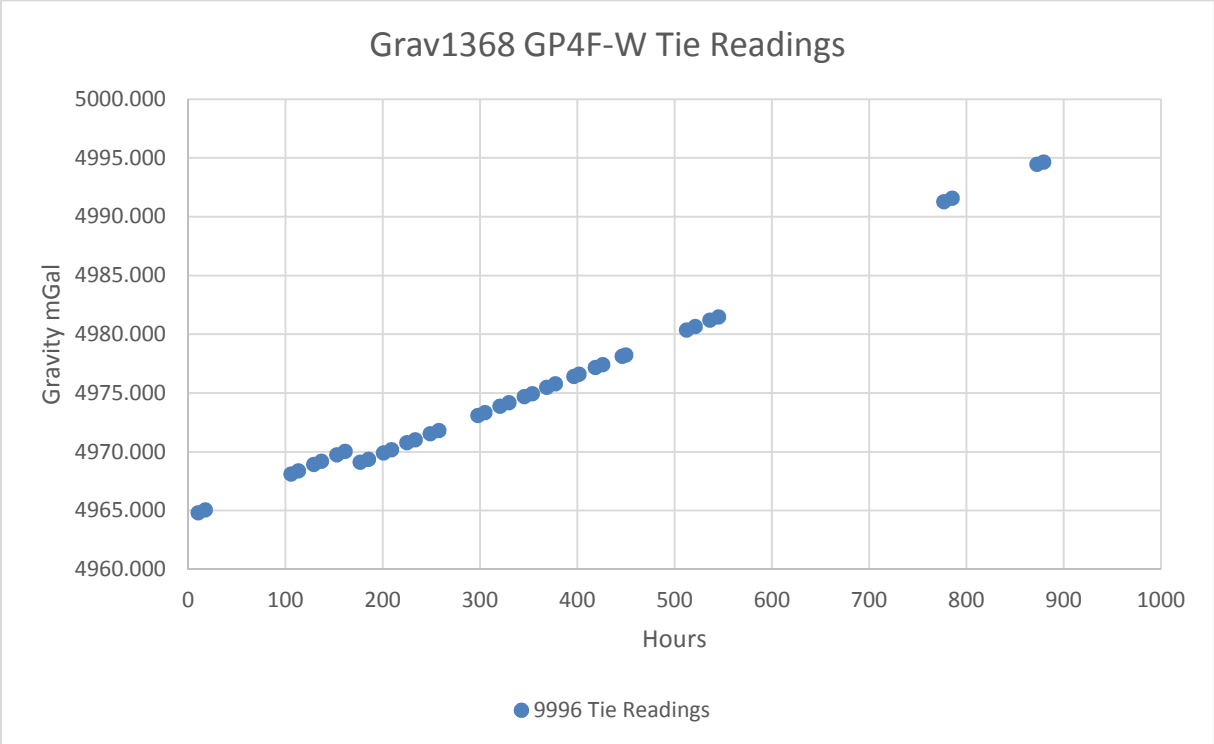


Figure 12: Gravity meter (s/n 1368) GP4F-W control station readings.

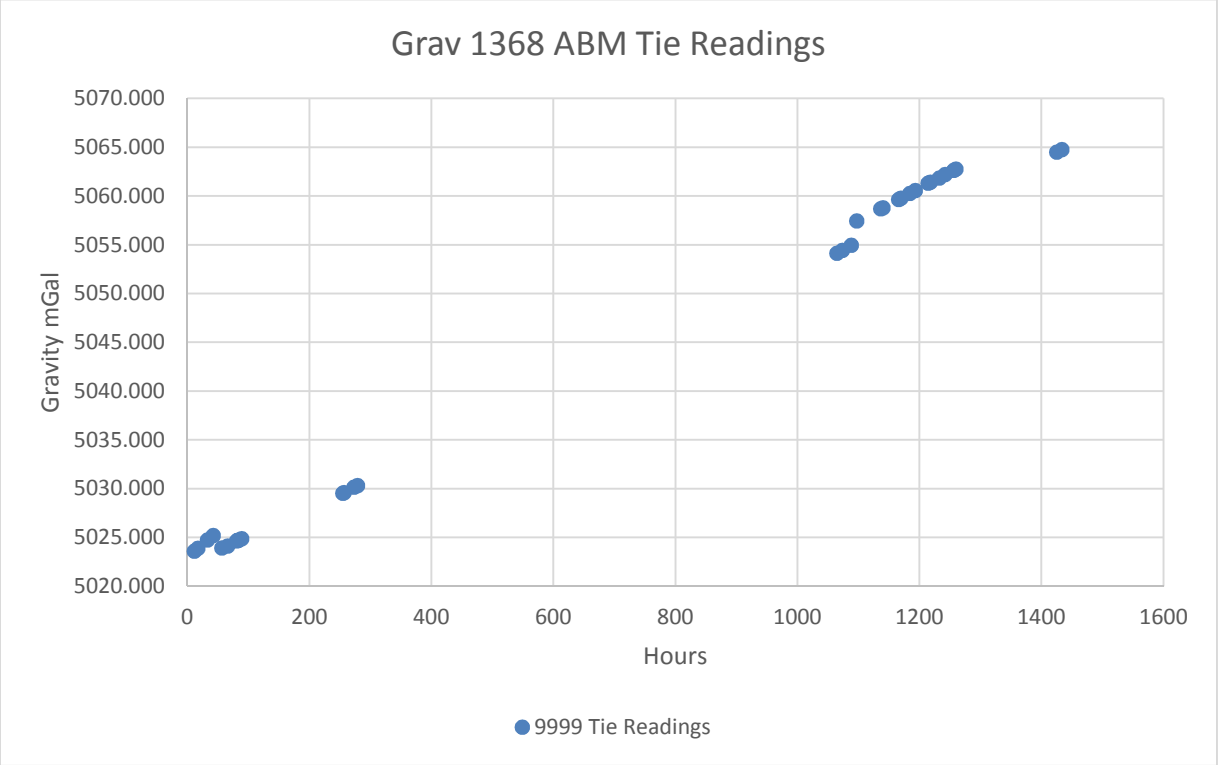


Figure 13: Gravity Meter (s/n 1368) ABM control station readings.

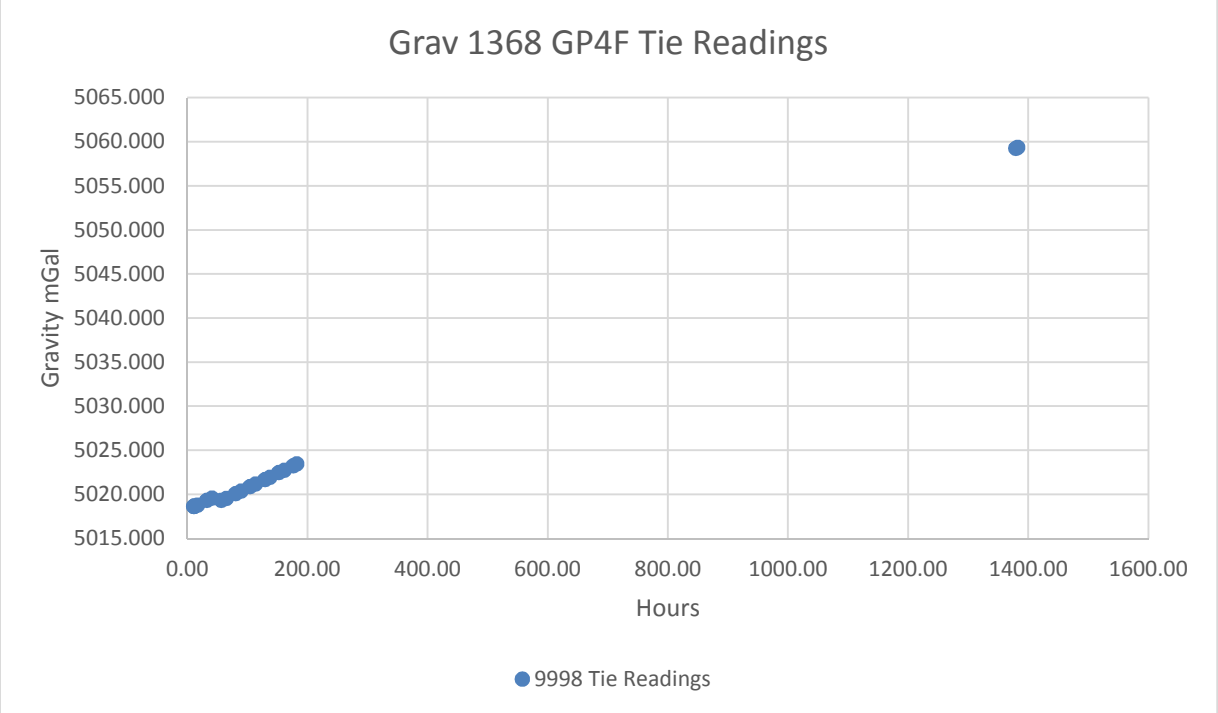


Figure 14: Gravity meter (s/n 1368) GP4F control station readings.

4.5 Repeat Stations

As described in Sections 4.1 and 4.2 a minimum of 3 % of the readings were repeated daily in a series of closed loops where the first reading of the loop was repeated in the exact same location. If the repeated readings did not satisfy the criteria then the loop was redone. The excel sheet *repeats.xlsx* containing all the repeated reading is included with this report.

A histogram of the difference in 169 gravity repeated station is shown in Figure 15. Nine repeat stations were beyond specification and the loops were redone. Excluding these, the average difference in gravity repeats is 0.013 mGal.

Details for the nine repeat stations that were beyond specifications are:

- A gravity meter malfunction on September 4th, 2015 caused an incorrect reading for the loop with repeat reading L17 station 1450.
- A tare of approximately 0.2 mGal on September 13th, 2015 which caused three repeat readings of L18 station 950, L18 station 500 and L17 station 500 to be beyond specifications. The cause of the tare is unknown.
- There was a tare of 2.2 mGal on September 24th, 2015 that caused the gravity values on the three repeat locations on L9 station 1550, L9 station 1550 and L12 station 1050 to not repeat within specifications. The gravimeter suffered a physical knock which caused the tare.
- Repeat readings at L5 station 800 on August 25, 2015 and L5 station 1650 &L6 station 1600 on August 27, 2015 exceeded specification. No reasons could be determined.

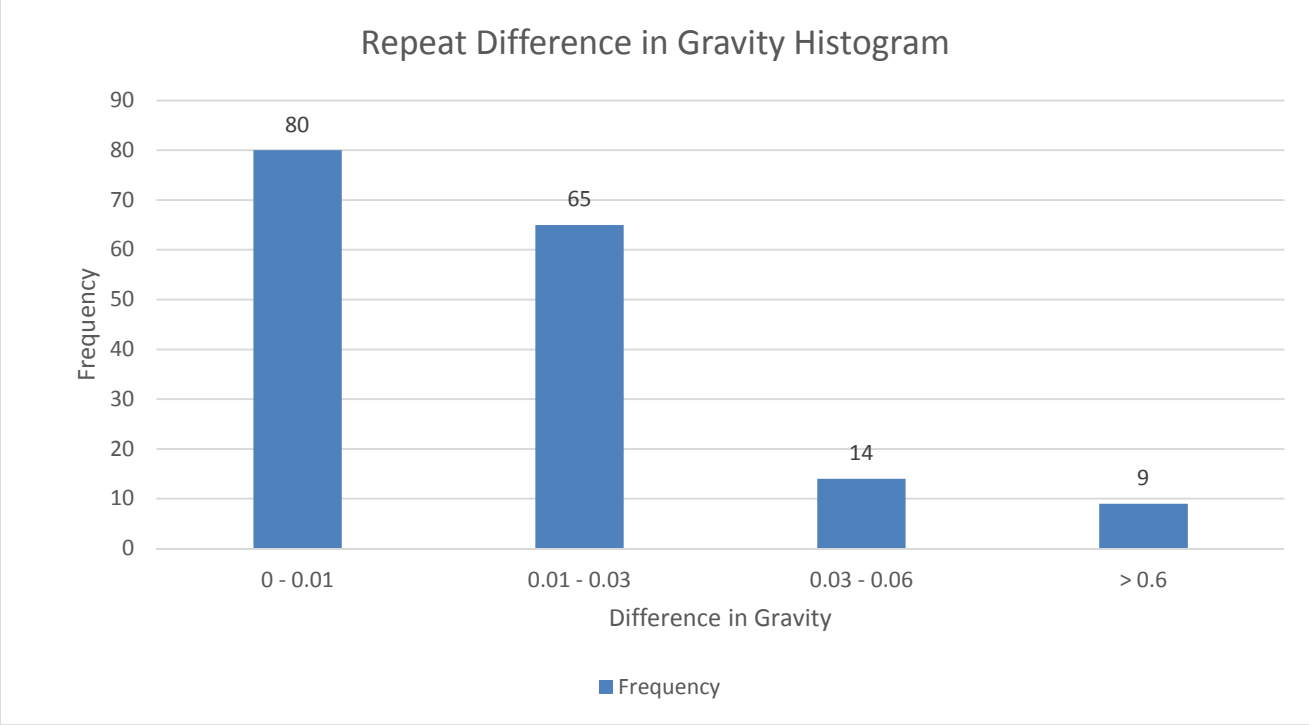


Figure 15: Difference in gravity readings at repeated stations.

A histogram showing the differences in GPS elevation is shown in Figure 16**Error! Reference source not found.**. Five of the elevation repeats were beyond the GPS specification criteria and details are:

- The repeat readings on Aug 15 and 18th, 2015 did not achieve a phase-corrected solution in post-processing and were successfully repeated on a later date.
- The point L2 station 350 collected on August 26th, 2015 was out of specifications by a few millimeters and was rounded to the exact specification in the field. This loop was not redone.
- The point at L18 station 1700 collected on September 5th, 2015 was beyond specification and the loop was later redone.

The elevation repeatability is better than the horizontal repeatability; the proposed explanation is operator error in returning to the identical point in a flat gravity location, particularly where a flat boulder is used as the station. The repeat readings that had a difference of greater than 0.1 m horizontally were either post-processed solutions that later repeated well or were within specification when considering easting and northing separately and no loops were redone due to these repeated values.

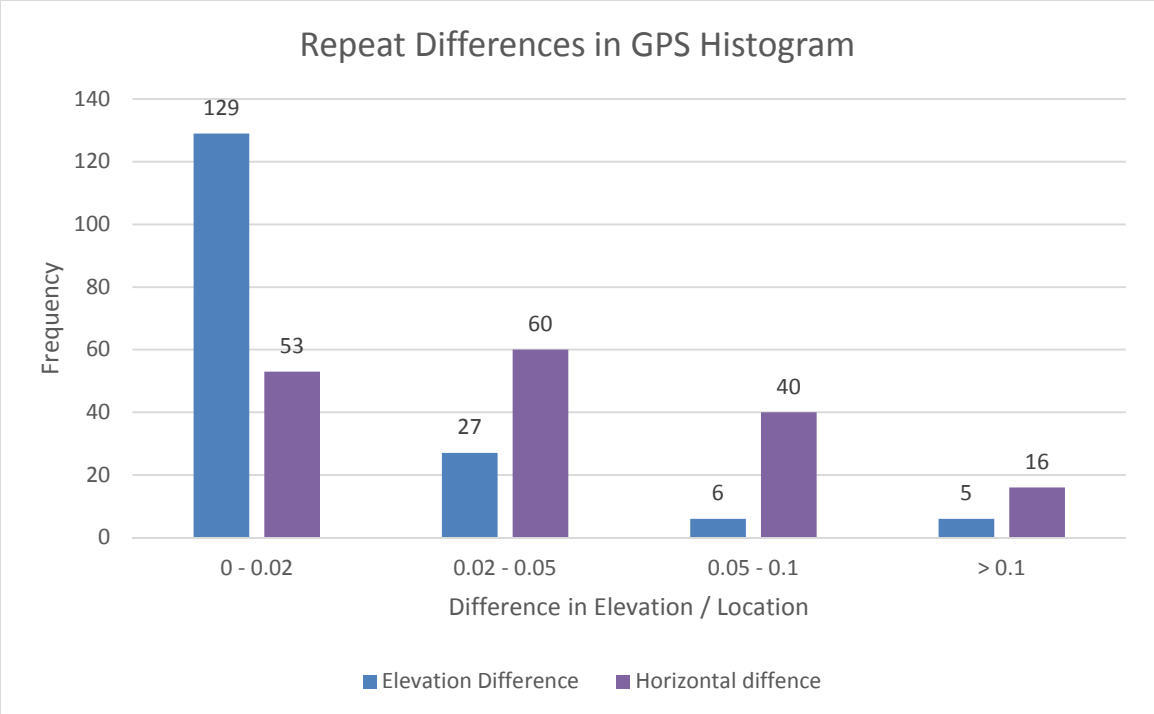


Figure 16: Difference in horizontal location and elevation at GPS repeat stations.

5 DATA PROCESSING

5.1 GPS Processing

The GPS data were downloaded daily in field from the Leica GPS antennae and controllers. Data were post-processed using the algorithm in the Leica Geo-office software based on the same location that was broadcast via RTK to the rover during data collection. Data were checked and unique line-station coordinates attached matching the gravity measurements. Station labels increment typically by 50, the same as the station spacing. Repeat stations are denoted by a station increment of 1.

RTK and post-processed solutions are compiled daily into a spreadsheet that includes both the position and height quality of the solution.

All GPS data are compiled into a single database where a datum shift is applied to each individual day of data to correct both RTK and post-processed solutions to the final corrected location of the control station. This final GPS database, in which all non-phase corrected GPS solution have been discarded, is used for the gravity corrections and is appended to this report.

5.2 Gravity Processing

The gravity data were downloaded daily in the field using Scintrex software and processed using the propriety software package 'Gravred2'. The program merges the gravity data with location and elevation data and corrects for drift, latitude, free-air, Bouguer slab, Bullard–B and a suite of terrain corrections. All corrections were performed daily in the field but final corrections required the corrected GPS control point positions and the final DEM so and so were not completed until after the field program was complete.

5.2.1 Drift

The drift correction removes the linear drift of the gravity meter between the readings at the control stations at the start and end of every survey day. The datum was set arbitrarily on the first day of surveying to 5023.6 mGal, the first reading at the ABM control station (9999) on August 9th. Through the ABABABA survey of each other control station, the appropriate datum for each control station was determined as 5017.554 mGal for the GP4F control station (9998) is, 4923.729 mGal for the Rhyolite Peak control station (9997), and is 4951.495 mGal for GP4F-W control station (9996).

5.2.2 Latitude

The latitude correction is to remove the effects of latitude from the gravity data. A centre latitude is arbitrarily set to 61.5 N and a centre UTME of 416000E, a centre UTMN of 6814000N and UTM declination of -1.4^{o} used to calculate latitude correction from the positional coordinates of each station.

5.2.3 Free-Air, Bouguer Slab and Bullard-B

The free-air correction corrects for the change in distance from the centre of the Earth. A datum of 0 m is used (sea level) and the correction brings the gravity value down to that datum.

The Bouguer slab corrects the gravity for a uniform slab, the thickness of which is equal to the elevation. A uniform density of 2.67 g/cm^3 is used – no other values were experimented with as specific gravity measurements of the core at the project indicated this was an appropriate choice.

The Bouguer slab assumption of an infinite slab is not correct and the Bullard-B correction accounts for the curvature of the earth in the slab. The same density as the Bouguer slab correction of 2.67 g/cm^3 is used.

5.2.4 Terrain corrections

Two styles of terrain corrections are applied to the gravity data: a near-station correction within 20 metres of the station and a far-station correction for terrain further than 20 metres form the station. All terrain corrections use a density of 2.67 g/cm^3.

5.2.4.1 Near-terrain correction (NTC)

The near station correction is a correction that accounts for local differences in topography. The government supplied digital elevation models usually have a cells on the order of 20 m and therefore details close to the station where they have the greatest effect on the gravity reading can be too fine to capture with a 20 m DEM. To compensate for this the gravity operators collect near-station correction measurements at each station that consist of 6 slope readings representing an average slope within the 20 metre radius of the station for each 60° sector. The slopes are converted to an elevation difference and near-station terrain corrections are calculated from the sector equation for the gravitational effect of a vertical cylinder equal to elevation difference and added to the gravity reading.

However BMC Minerals collected LIDAR data on Lines 7 - 22, 35 – 37 and portions of Lines 21 - 25, 33, 34 and 38 resulting in a very high resolution DEM. An algorithm was developed to parse the detailed DEM and calculate the average elevation difference in each of the 60° sectors within 20 metres from the station to mimic the data set collected by slope measurements. The new calculated slopes are used instead of the measured values where the detailed DEM is available.

By comparing the measured slopes against the calculated slopes it was determined that the operators slightly but systematically underestimated the slopes in steep terrain. The effect is no more than 0.19 mGal, but does over-estimate the gravity particularly in steep terrain.

Outside of the LIDAR DEM the points, the original data collected by the operators is used for the NTC corrections. The excel sheet with all the NTC measurements collected is *NTC.xlsx,* either measured or calculated from the LIDAR data. It has the line and station and the slope readings on the left and the elevation differences for the zones on the right.

5.2.4.2 Far-station correction

The far-station corrections compensate for terrain effects from 20 m to 10 km outside the survey area. A combined DEM using the LIDAR data where available and the NRCAN data elsewhere is developed using a cell size of 10 m. The flat top prism algorithm is used to calculate the correction. The effect of correcting for a DEM beyond 10 km results in a differential of less than 0.010 mGal on the scale of this survey and therefore no further corrections were applied to this dataset.

5.2.5 QA/QC

Field data were reduced by the above corrections using whatever data were available to the field crew with final corrections applied once the final GPS control station locations and LIDAR DEM became available.

The gravity data were then manually examined for outliers, high error or high tilt readings. These are masked from the database and an average calculated from the remaining readings.

Maps are created in Geosoft Oasis Montaj. The gravity data after the above corrections is the Bouguer anomaly and is gridded using a minimum curvature gridding algorithm then displayed using a linear colour distribution in Figure 17. Trends are removed using all the points from the Bouguer anomaly map to accentuate property-scale anomalies; the Bouguer anomaly with the first-order trend removed is shown in Figure 18, with the second-order trend removed in Figure 19, and with the third-order trend removed in Figure 20.

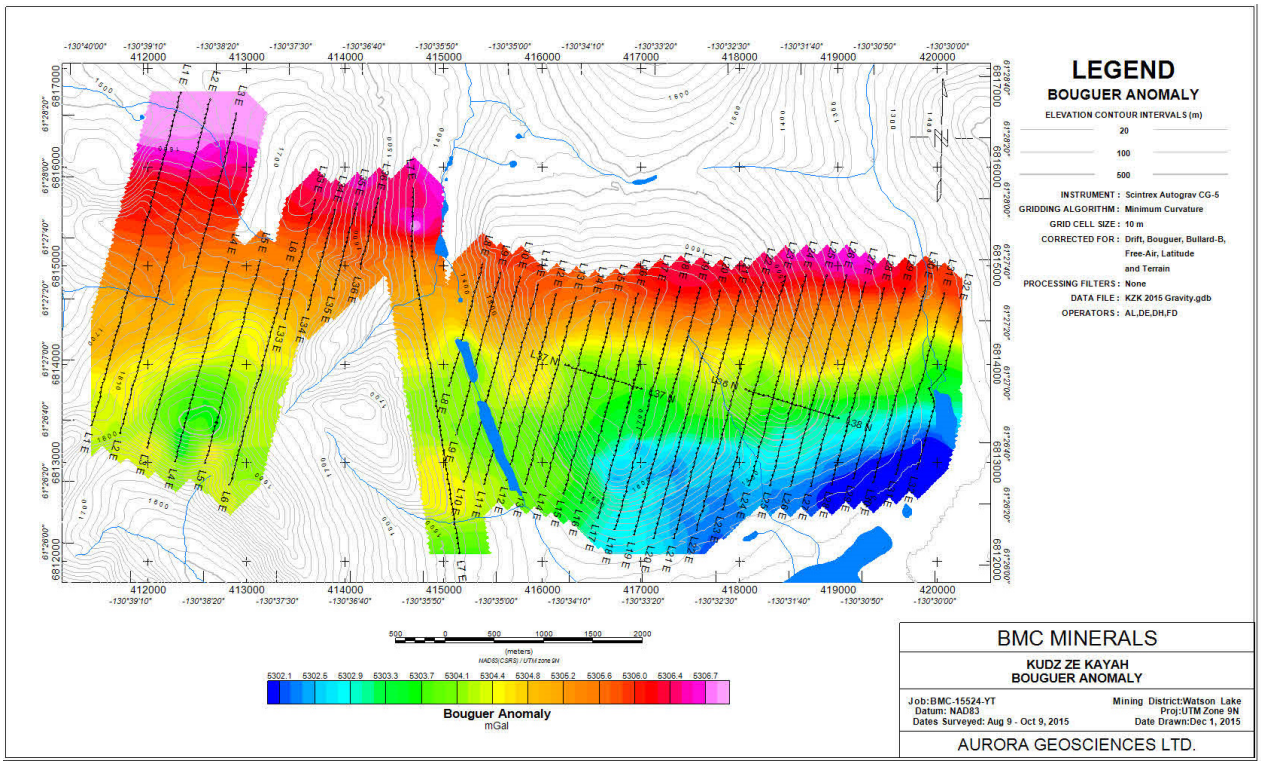


Figure 17: KZK Bouguer anomaly map.

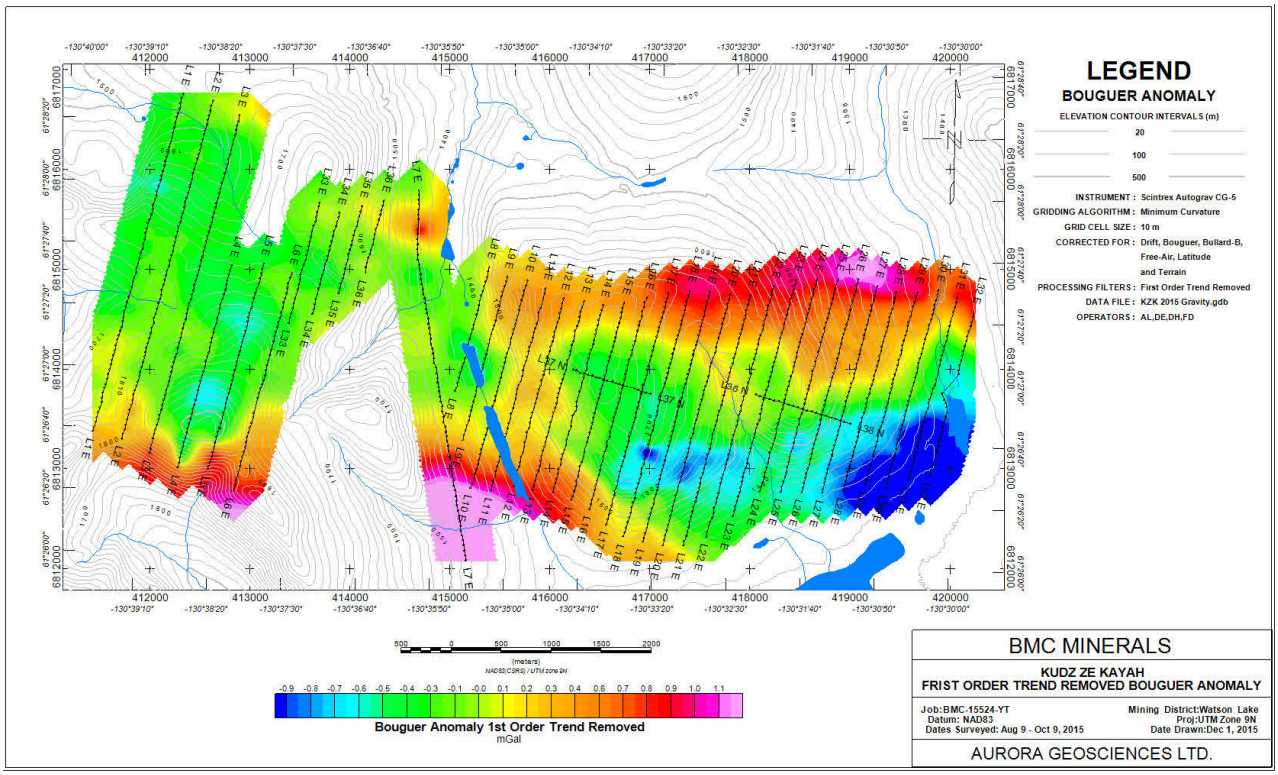


Figure 18: KZK gravity anomaly 1st order trend removed.

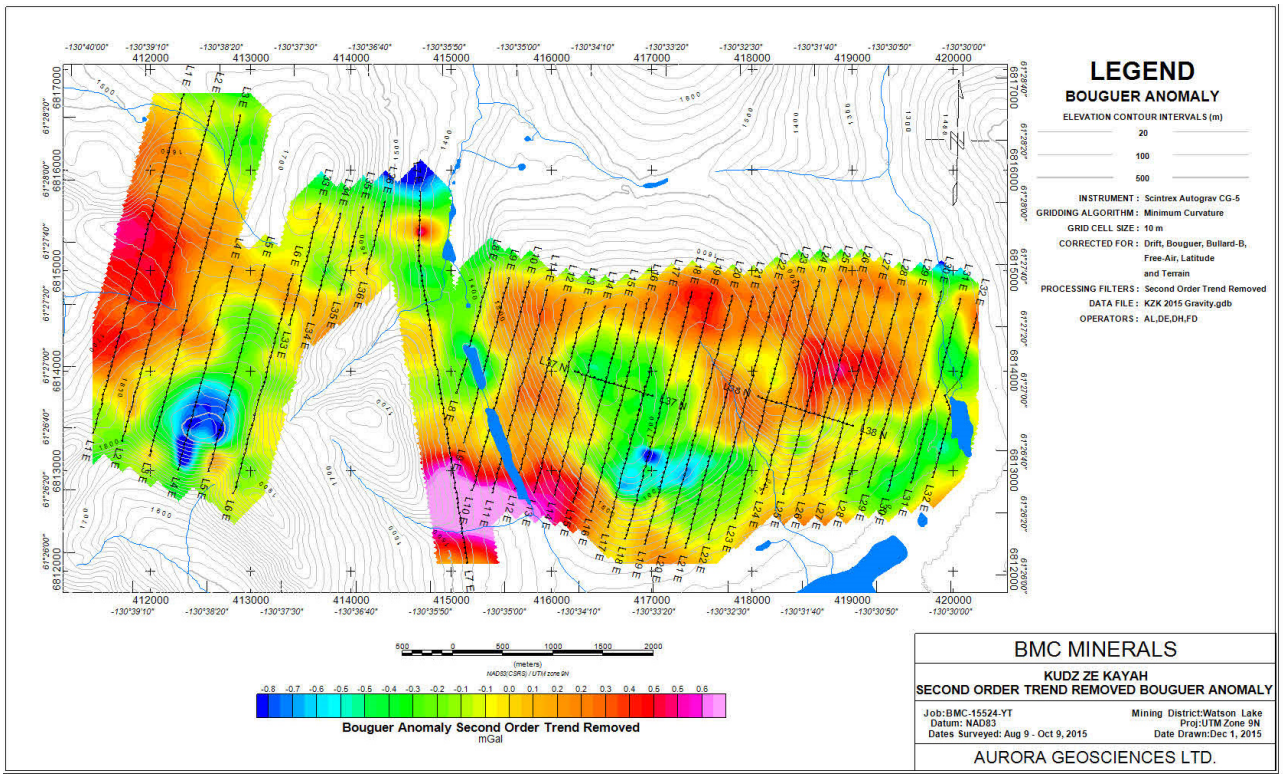


Figure 19: KZK gravity anomaly 2nd order trend removed.

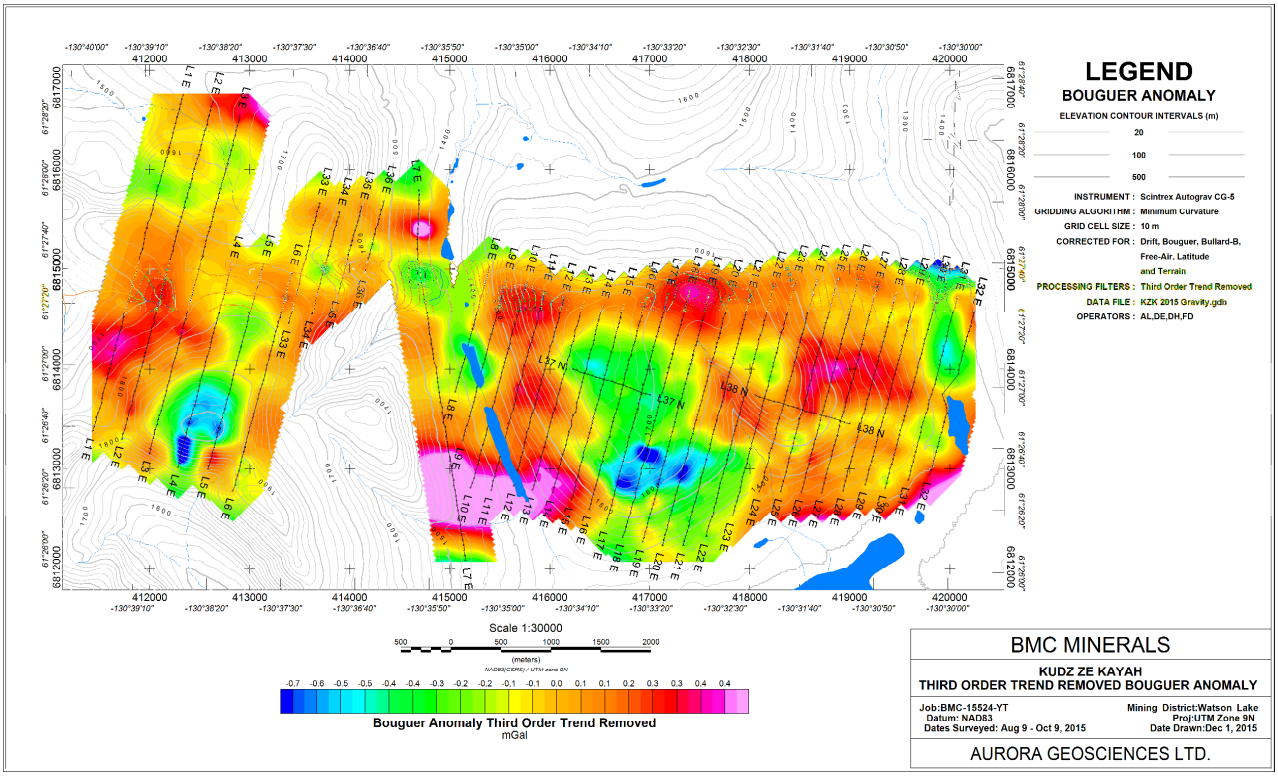


Figure 20: KZK gravity anomaly 3rd order trend removed.

6 PRODUCTS

The following are attached to the digital version of this report

Folder	**File Name & Description of contents**
2015 Gravity Report - KZK	*BMC-15524-YT KZK Gravity & DHEM Crew Log.pdf* - Production summary, daily log and personnel tracking sheet in PDF format. 2015 Gravity Report - KZK.*pdf* - A copy of this report in PDF format.
\Final Data	*KZK 2015 Gravity.xyz & .gdb* - Processed final gravity database in ASCII and Geosoft formats. *KZK 2015 GravityQC.xyz & .gdb* – Quality controlled final gravity database in ASCII and Geosoft formats. *KZK 2015 GPS.xyz & .gdb* - Processed final GPS database in ASCII and Geosoft formats. *Channels.txt* - Describes the data channels.

\Final Data\Raw	the unedited ASCII CG-5 dump files are catalogued by date, file names include (instrument/date/operator's initials) on which they were produced. The GPS dump files include the rover and base folders. *Drifts_and_NTC.xlsx* – Includes instrument drift, *t*he Near Terrain Corrections (NTC) and grid info used in processing as an excel spreadsheet.
\Processing\Canada PPP Corrections	Corrected control stations locations output files from CRSC-PPP
\Processing\GPS Spreadsheets	The GPS data processed by Leica Geo-office organized by day. The points export is the export of the RTK GPS data. The results export is the export of the post processed GPS data.
\Processing	*Base stations.xlsx* – A database of all the GPS locations of the control stations throughout the gravity survey *Gravity meter cycling.xlsx* – The cycling data collected by each gravity meter and charts showing the readings *KZK 2015 control station readings.xlsx* – The readings collected at the control stations throughout the project and charts that track the readings *NTC Measurements.xlsx* – The NTC measurements collected by the operators organized daily and the calculated the NTC values *Repeats.xlsx* – The repeated measurements *Tie Survey.xlsx* – The ABABABA tie surveys done to level the gravity readings at the control stations.
\Figures	*Bouguer Anomaly. Map* - Final Bouguer Gravity Anomaly map in Geosoft packed map format *First Order Trend Removed Bouguer Anomaly. Map* - Final First Order Trend Removed Gravity Anomaly map in Geosoft packed map format

Second Order Trend Removed Bouguer Anomaly. Map - Final Second Order Trend Removed Gravity Anomaly map in Geosoft packed map format

Third Order Trend Removed Bouguer Anomaly. Map - Final Third Order Trend Removed Gravity Anomaly map in Geosoft packed map format

Bouguer Anomaly.pdf - Final Bouguer Gravity Anomaly map in PDF format

First Order Trend Removed Bouguer Anomaly.pdf - Final First Order Trend Removed Gravity Anomaly map PDF format

Second Order Trend Removed Gravity.pdf - Final Second Order Trend Removed Gravity Anomaly map in PDF format

Third Order Trend Removed Bouguer Anomaly.pdf - Final Third Order Trend Removed Gravity Anomaly map in PDF format

Bouguer Anomaly. Tif- Final Bouguer Gravity Anomaly map in GeoTIFF format

First Order Trend Removed Bouguer Anomaly.pdf - Final First Order Trend Removed Gravity Anomaly map GeoTIFF format

Second Order Trend Removed Bouguer Anomaly. Tif- Final Second Order Trend Removed Gravity Anomaly map in GeoTIFF format

Third Order Trend Removed Bouguer Anomaly. Tif - Final Third Order Trend Removed Gravity Anomaly map in GeoTIFF format

Respectfully submitted,

Andre Lebel, B. Sc.

Aurora Geosciences Ltd

Appendix I

Project Log

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

	Heiko Mueller	Franz Dzuiba	Andre Lebel	Dave Hildes	Darrel Epp	Darron Dawson	Terry Ollie
Current Job	**37**	**13**	**54**	**8**	**42**	**14**	**12**
Aug 2015 Totals	19	11	23	0	4		12
Sep 2015 Totals	18	2	23	8	30	14	0
Oct 2015 Totals	0	0	8	0	8	0	0
Sun 9-Aug-2015	Mobilize		Mobilize				
Mon 10-Aug-2015	Gravity		Gravity				Gravity
Tue 11-Aug-2015	Gravity		Gravity				Gravity
Wed 12-Aug-2015	Gravity		Gravity				Gravity
Thu 13-Aug-2015	Gravity		Gravity				Gravity
Fri 14-Aug-2015	Gravity		Gravity				Gravity
Sat 15-Aug-2015	Gravity		Gravity				Gravity
Sun 16-Aug-2015	Demobilize		Gravity				Gravity
Mon 17-Aug-2015			Gravity				Gravity
Tue 18-Aug-2015			Gravity				Gravity
Wed 19-Aug-2015			Gravity				Gravity
Thu 20-Aug-2015			Gravity				Gravity
Fri 21-Aug-2015	Mobilize	Mobilize	Gravity				Demobilize
Sat 22-Aug-2015	Gravity	Digi-atlantis	Gravity				
Sun 23-Aug-2015	Digi-atlantis	Digi-atlantis	Digi-atlantis				
Mon 24-Aug-2015	Gravity	Digi-atlantis	Gravity				
Tue 25-Aug-2015	Digi-atlantis/Gravity	Digi-atlantis/Gravity	Digi-atlantis/Gravity				
Wed 26-Aug-2015	Gravity	Gravity	Gravity				
Thu 27-Aug-2015	Gravity	Gravity	Gravity				
Fri 28-Aug-2015	Gravity	Gravity	Gravity		Mobilize		
Sat 29-Aug-2015	Gravity	Gravity	Gravity		Gravity		
Sun 30-Aug-2015	Gravity	Gravity	Gravity		Gravity		
Mon 31-Aug-2015	Digi-atlantis	Digi-atlantis	Gravity		Gravity		
Tue 1-Sep-2015	weather-day	weather-day	weather-day		weather-day		
Wed 2-Sep-2015	Digi-atlantis	Demobilize	Digi-atlantis		Digi-atlantis		
Thu 3-Sep-2015	Digi-atlantis		Digi-atlantis		Digi-atlantis		
Fri 4-Sep-2015	Gravity		Gravity		Gravity	Mobilize	
Sat 5-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Sun 6-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Mon 7-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Tue 8-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Wed 9-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Thu 10-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Fri 11-Sep-2015	Gravity		Demobilize	Mobilize	Gravity	Gravity	
Sat 12-Sep-2015	Gravity			Gravity	Digi-atlantis	Digi-atlantis	
Sun 13-Sep-2015	Gravity			Gravity	Gravity	Gravity	
Mon 14-Sep-2015	Gravity			Gravity	Gravity	Gravity	
Tue 15-Sep-2015	Working at camp			Gravity	Gravity	Working at camp	
Wed 16-Sep-2015	Working at camp			Loop maintenance / Gravity	Loop maintenance / Gravity	Working at camp	
Thu 17-Sep-2015	Working at camp			Gravity	Gravity	Working at camp	
Fri 18-Sep-2015	Demobilize		Mobilize /Gravity	Demobilize	Gravity	Demobilize	
Sat 19-Sep-2015			Digi-atlantis		Digi-atlantis		
Sun 20-Sep-2015			Digi-atlantis		Digi-atlantis		
Mon 21-Sep-2015			Gravity		Gravity		

	Heiko Mueller	Franz Dzuiba	Andre Lebel	Dave Hildes	Darrel Epp	Darron Dawson	Terry Ollie
Current Job	37	13	54	8	42	14	12
Tue 22-Sep-2015			Gravity		Gravity		
Wed 23-Sep-2015			Gravity		Gravity		
Thu 24-Sep-2015			Gravity		Gravity		
Fri 25-Sep-2015			Loop adjustment		Loop adjustment		
Sat 26-Sep-2015			Gravity/Digi-atlantis		Gravity/Digi-atlantis		
Sun 27-Sep-2015			Gravity/Digi-atlantis		Gravity/Digi-atlantis		
Mon 28-Sep-2015			Gravity		Gravity		
Tue 29-Sep-2015			Collar RTK/ Gravity		Collar RTK/ Gravity		
Wed 30-Sep-2015			Gravity		Gravity		
Thu 1-Oct-2015			Gravity loopmaintance		Gravity/ loopmaintance		
Fri 2-Oct-2015			Gravity		Gravity		
Sat 3-Oct-2015			Digi-atalantis-standby		Digi-atalantis-standby		
Sun 4-Oct-2015			Digi-atalantis		Digi-atalantis		
Mon 5-Oct-2015			Digi-atalantis		Digi-atalantis		
Tue 6-Oct-2015			Gravity		Gravity		
Wed 7-Oct-2015			Gravity		Gravity		
Thu 8-Oct-2015			Gravity		Gravity		
Fri 9-Oct-2015			Gravity/loopmaintance		loopmaintanence		
Sat 10-Oct-2015			Digi-atlantis		Digi-atlantis		
Sun 11-Oct-2015			Digi-atlantis		Digi-atlantis		
Mon 12-Oct-2015			loop clean-up		loop clean-up		
Tue 13-Oct-2015			Demobilize		standby camp work		
Wed 14-Oct-2015	ABM loop setup/ Digi-atlantis				ABM loop setup/ Digi-atlantis		
Thu 15-Oct-2015	Digi-atlantis/ loop cleanup				Digi-atlantis/loop cleanup		
Fri 16-Oct-2015	demobilization				demobilization		



Production Summary - Kudz Ze Kayah Gravity

Production Summary - Kudz Ze Kayah Gravity

	Gravity	Grid - Line	GPS Points	Grid - Line	Digi- atlantis meters	hole
Current Job	**1484.000**		**1418.000**		**2555.000**	
Sat 8-Aug-2015						
Sun 9-Aug-2015						
Mon 10-Aug-2015	23	KZK-7	23	kzk-7		
Tue 11-Aug-2015	40	KZK-7	40	KzK- 7		
Wed 12-Aug-2015	32	KZK 32,31,30	20	KZK 32,31,30		
Thu 13-Aug-2015	20	KZK 29,28,27	20	KZK 29,28,27		
Fri 14-Aug-2015	30	KZK 31,30,29,28	28	KZK 31,30,29,28		
Sat 15-Aug-2015	41	KZK 28, 29, 27, 26	39	KZK 28, 29, 27, 26		
Sun 16-Aug-2015	39	KZK 26, 27	37	KZK 26, 27		
Mon 17-Aug-2015						
Tue 18-Aug-2015	36	KZK 26,27,28	36	KZK 26,27,28		
Wed 19-Aug-2015	27	KZK 30,31,32	37	KZK 30,31,32		
Thu 20-Aug-2015	13	KZK 32, 31	21	KZK 32, 31		
Fri 21-Aug-2015	15	KZK 7 , 8	15	KZK 7 , 8		
Sat 22-Aug-2015	29	KZK 4,5,6	29	KZK 4,5,6		
Sun 23-Aug-2015						
Mon 24-Aug-2015	41	KZK 1,2,3	41	KZK 1,2,3	325	GP4F-21
Tue 25-Aug-2015	21	KzK 4, 5, 6	12	Kzk 5 and 6		
Wed 26-Aug-2015	57	kzk 1, 2,3,4,5,6		kzk 1, 2,3,4,5,6		
Thu 27-Aug-2015	58	kzk3,4,5,6,	58	kzk3,4,5,6,		
Fri 28-Aug-2015	35	KZK 1,2,3,5,6	35	KZK		
Sat 29-Aug-2015	56	KZK 3,2,1	56	KZK 3,2,1		
Sun 30-Aug-2015	59	KZK 2, 1	59	KZK 2, 1		
Mon 31-Aug-2015	31	KZK 15,16,17,18	31	KZK 15,16,17,18		
Tue 1-Sep-2015						
Wed 2-Sep-2015						
Thu 3-Sep-2015					365	GP4F-56
Fri 4-Sep-2015	27	KZK 14,15,16	27	KZK 14,15,16		
Sat 5-Sep-2015	66	KAZK 16,17,18,19	66	KAZK 16,17,18,19		
Sun 6-Sep-2015	70	KZK 19,20,21,22	70	KZK 19,20,21,22		
Mon 7-Sep-2015	57	KZK 26,25,24,23	57	KZK 26,25,24,23		
Tue 8-Sep-2015	64	KZK 17,18,19,20,21,22	64	KZK 17,18,19,20,21,22		
Wed 9-Sep-2015	56	KZK 22,23,24,25	56	KZK 22,23,24,25		
Thu 10-Sep-2015	52	KZK 22,23,24,25	52	KZK 22,23,24,25		
Fri 11-Sep-2015						
Sat 12-Sep-2015		KZK 19, 20, 21		KZK 19, 20, 21	320	GPF-55, KZK-247
Sun 13-Sep-2015		KZK 17, 18, 19, 20, 21		KZK 17, 18, 19, 20, 21		
Mon 14-Sep-2015		KZK 1,2,3,4,5,6		KZK 1,2,3,4,5,6		
Tue 15-Sep-2015		KZK 15, 16, 17		KZK 15, 16, 17		
Wed 16-Sep-2015		KZK 17, 18, 19		KZK 17, 18, 19		
Thu 17-Sep-2015	26	KZK 14, 13, 12	26	KZK 14, 13, 12		
Fri 18-Sep-2015	21	KZK 13, 14	21	KZK 13, 14		

Sat 19-Sep-2015						
Sun 20-Sep-2015					285	GP4F-59
Mon 21-Sep-2015	28	KZK 13,14, 15,16	28	KZK 13,14, 15,16		
Tue 22-Sep-2015	29	KZK 11, 12, 13, 14	29	KZK 11, 12, 13, 14		
Wed 23-Sep-2015	30	KZK 8, 9, 10 and 11	30	KZK 8, 9, 10 and 11		
Thu 24-Sep-2015	26	KZK 8, 9, 10 and 12	26	KZK 8, 9, 10 and 12		
Fri 25-Sep-2015						
Sat 26-Sep-2015	14	KZK 8, 9	14	KZK 8, 9	355	GP4F-63, KZK-268
Sun 27-Sep-2015	13	KZK 9, 10	13	KZK 9, 10		
Mon 28-Sep-2015	36	KZK10,11,12,7	36	KZK10,11,12,7		
Tue 29-Sep-2015						
Wed 30-Sep-2015	30	KZK 11,12,	30	KZK 11,12,		
Thu 1-Oct-2015	7	KZK10	7	KZK10		
Fri 2-Oct-2015	29	KZK 37, 38	29	KZK 37, 38		
Sat 3-Oct-2015						
Sun 4-Oct-2015						
Mon 5-Oct-2015					340	GP4F-57, KZK 280
Tue 6-Oct-2015	13	KZK 37	13	KZK 37		
Wed 7-Oct-2015	48	KZK 33, 34	48	KZK 33, 34		
Thu 8-Oct-2015	36	KZK 35,36, 7	36	KZK 35,36, 7		
Fri 9-Oct-2015	3	KZK 25,26,27	3	KZK 25,26,27		
Sat 10-Oct-2015						
Sun 11-Oct-2015					285	GP4F-58, KZK 285
Mon 12-Oct-2015						
Tue 13-Oct-2015						
Wed 14-Oct-2015						
Thu 15-Oct-2015					280	KX15-016, KX15-292
Fri 16-Oct-2015						
Sat 17-Oct-2015						
Sun 18-Oct-2015						
Mon 19-Oct-2015						

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)
Mobilize day. Andre and Heiko drove from Whitehorse to KZK. Left at 9:30am arrived in camp at 6pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Set up base (9999) at the 25 km mark on the access road. Started gravity surveying Line 7. Working in a team of 3. Terry shadowing to learn the GPS and how the survey works.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Finished off L7. It took until fairly late before we got all the reading finished.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Moved over to the GP4F area. No RTK link, needed to post process and had to take 10 min GPS readings because we were so far away . The GPS base died before the end of the day and we lost the repeat reading. There were many of the GPS data that didn't phase-correct and will have to redone.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Started by redoing the GPS repeats using a 15min reading at the same location as the day before to make sure we got a phase-corrected reading. Did a gravity and GPS base move which involved a tie survey to correct for the movement of the base. Afterwards in the afternoon continued on lines 27,28 and 29 right around the new base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)
Did points next to the base on lines 28, 29, 30 and 31 from approximately Stn 500 to 1000.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on the GP4F area. Read points from 0 to 500 on L29 and L28 and 0 to 300 on L27 and L26.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Heiko demobilized back to Whitehorse. Down to Andre and Terry on the Gravity crew. Continued on the GP4F area, surveyed L 26 and 27 from 300 to 1350.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Got a bump down the hill to do the far reaches of L32,31,30 and 29 from approximatly 1500 to 2000.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	18-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Cloudy, Periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on the far reaches of L 28 and L27 and then back towards the base on L26.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	19-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Rainy in the morning, cloudy in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on GP4F Areas filling in holes on L30,31 and 32, and re-surveying points that did not achieve phase-fixed solutions on L30,31 and 32

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	20-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Rainy in morning, and cloudy and sunny in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Finished off the L32,L31 and a couple other points that were missed on line 30,29,and 28. In the afternoon moved over to the extension over the deposit and surveyed a few hundred meters on that line.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	21-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny, scattered showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Terry left first thing in the morning. Andre went to finish off the line over the ABM deposit and then to L8 and did a loop for a couple more hours. Came back to camp early in case the TEM crew showed up to camp in the afternoon. They did not show up until late.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	22-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cold, windy and rainy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Heiko started on the second priority area. Surveyed from approximately 1000 - 1500 on lines 4,5, &6. Franz laid out the loop for the first hole.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	23-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny, scattered showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre, Heiko and Franz all went on the Digi- Atlantis to start the survey off. Expanded the loop and set up the transmitter. Had to wait until about 5 before we started the dummy probe. It went down all the way to the bottom. Started surveying at the bottom, but there were signal errors and the curves didn't look quite right, so entire crew decided to come in and not try to trouble shoot through the night.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	24-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Heiko continued on the gravity. Surveyed L1, 2 ,3 from approximately 500 - 1000. Franz surveyed the hole from pad GP4F-21, then wound up the wire.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	25-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and cloud.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Had to pick up the loop in the morning because of VTEM survey over the GP4f area in the afternoon. Finished cleaning up the wire around 11:00 but had to wait until 2pm to get bumped over to area we were working on top of the hill because of a drill move and the mining inspector was flying around the site. Did a few gravity points with both gravity meters running in the afternoon.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	26-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Nice day. Decided to get to the top of Rhyolite Peak. Heiko had trouble getting reception to the base with repeater. Tried a few spots on top of the hill found the point where it was previously set up worked the best. Had fairly good connectivity until approximately 4 pm. Heiko couldn't keep ahead of both Andre and Franz, so Andre started to do GPS and gravity at the same time.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	27-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Franz went up and swapped out the battery. Heiko tried to move around the repeater but with the battery dying it didn't make any difference.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	28-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Franz went up and switched out the battery. Heiko tried switching the settings on the repeater and the base to get better connectivity but it was already low. Andre repeated Franz's readings from the day before that did not repeat in the morning then continued on doing readings

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Heiko went up and switched out the battery for the base and repeater. And it worked for the rest of the day. Darrel got rotated in and learned the procedure on the gravity meter because it was different than his previous projects.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	30-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was all socked in first thing in the morning. Had to hike up to the base. Was able to finish off the lines 1 and 2 to the end.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	31-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Were planning on doing the last few GPS points on the Rhyolite Peak area, but the fresh snow on mountain forced a change of plans. Set up the new base on the area in-between ABM and GP4F. We couldn't do the tie survey because the clouds were below the level of the base. Will do it some other time.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	1-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy /Foggy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

The weather was bad - low clouds or fog right down to camp. Stayed in camp all day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	2-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Finished laying the loop, took until 1 pm. Made sure everything was good for the survey and waited for the PVC to be put down and the rods to be pulled, so we could start the survey later in the night. Franz drove back to Whitehorse.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	3-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

clear not windy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

The drillers finished pulling the rods around 11pm. Dummied the hole it was good right down to the bottom. Started Digi-Atlantis surveying the hole at around 12am. The generator died around 3:00 am. Ran up and started it back up. Finshed the survey around 6:00 am. Took the rest of the day off after pulling a double shift.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	4-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Finally had good weather to do the tie survey. Did the tie survey for the base at Rhyolite peak and GP4F west. Continued on with the survey in the area in between ABM and the GP4F.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	5-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrin's first day in the field. Provided training on the GPS rover and how to find gravity stations. Surveyed the north end of lines 16, 17, 18 and 19. Andre and Darrin repeated a loop from yesterday which didn't repeat within the required specifications.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	6-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Surveyed the North end of L20, 21,22, 23. The weather socked in at the end of the day and we had to walk down the hill for a pickup.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	7-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued surveying the N end of lines 26, 25, 24 and 23. Took untill 6pm because it was a long walk out to the location.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	8-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued surveying South of the base on lines 17, 18,19,20,21 and 22.
Thought L17 was only surveyed to 1500 but it was done further.
Doubled half of the loop on line 17.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued on the east side GP4F-W. Surveyed L22, L23, L24 & L25. Got picked up at 5:30pm due to the long walk back to the GP4F-W base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy High winds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Worked lower down because of high winds. Continued surveying the south end lines 25, 24, 23 and 22. Took untill 6pm because it was a long walk out to this area.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Still windy from the previous night's wind storm, mostly sunny.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Dave flew in from Whitehorse and went through camp orientation, Andre flew to Whitehorse. Darrell worked on the loop in preparation for the next hole as the drilling is almost to the expected depth. Many, many moose (& caribou?) breaks and dragged wires, so could not get it completed. Darrin and Heiko worked on cleaning up points in the GP4F area that did get a phase corrected position.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrell and Darrin worked on the loop in the morning, set up and surveyed hole 247 on GP4F Pad 55. Did not have access to the pad until 1300 and survey went long - had to cut it short and did not survey the upper 65 metres of the hole so that the crew could return to camp before nightfall with the data from the bottom of the hole. Had a generator problem at the start of the day which appeared to surge voltage to the transmitter. TEM transmitter equipment was not damaged but the generator quit and the crew used the spare. Dave and Heiko gravity surveyed lines 19, 20 and 21.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly cloudy with some snow showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

All the crew were gravity surveying on lines 17,18,19,20 and 21.
Darrell cleaned up some of the downhole equipment in the morning before walking to line 19 to join Darrin and begin surveying.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly cloudy with very strong winds up high

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Enough snow had melted on Rhyolite Mountain to complete the survey there. Also picked up an assortment of points that were missed, didn't correct to a phase-corrected solution or needed rechecking. High wind and noise for the gravimeters.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	demobilize
Leica GS14 2805723	Aurora	demobilize
Leica CS 2907999	Aurora	demobilize
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Geophysics surveying reduced to a single 2-person gravity crew to be better time coincident with completion of GP4F downhole EM and the gravity survey. Heiko and Darrin will help around camp until they demobilize Friday. Sent one of the rental Leica GPS units out but kept the radio and repeater as this has increased the production of the gravity crew. Darrell and Dave worked on lines 15, 16, 17 - repeated some stations on line 17 from September 13 as a check on the Sept 13 drift. Cleaned the base on Rhyolite Mountain.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Sep-15

PREPARED BY:
Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Dave and Darrell repaired the loop in the morning in anticipation of the next hole being completed. Moved the transmitter site closer to the drill. Then completed gravity on the bottom of lines 17, 18 & 19.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Had a late start to try and take advantage of better internet and correct some GPS points, but internet still poor. Dave and Darrell work on L14, 13 and L12. Bush is pretty thick.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre came into camp and Dave left. Got out to the grid around 2pm. Darrell and Andre continued on the gravity near the base4 because it was only a half day. L13,L14 down hill from the base was done.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	19-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Checked the loop first thing in the morning. It was good, so waited for the drillers to put the PVC down and pull the rods. It was taking a while so moved some spools to pads so that they could be picked up. A rock got jammed in the shoe and the rods brought up the PVC as well. Went back to camp while the drillers cleared the rock from the shoe. Came back out at shift change (7pm). The loop was broken, so we walked the loop and fixed it. Waited for the drillers to finish pulling the rods.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	20-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Cloudy, clearing later in the night

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Started the survey at around 12:30 am. It took untill 5:30 to get the hole surveyed. Stations 295 and 155 were noisy due to water moving the probe around.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	21-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell worked on the southern ends L14, 13 and L15 and L16. Bush is pretty thick.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	22-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Worked on the top hill on lines L11 ,L12, L13 and L14 on the northern end of the lines.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	23-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell worked on the northern ends of lines L8, L9, L10, and L11. Moved the tripods down to the 99 base and set up the repeater on the hill above.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	24-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

sunny in the morning, and snowing in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did gravity on L8, L9, L10 and L12. There was a tare at the end of the day. Darrell slipped and banged the gravimeter.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	25-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy in the morning, sunny in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell repaired the loop and expanded the loop around pad 63. Moved the TX site up the hill next to the drill. Tested the transmitter and the loop to see if it was working for the upcoming survey.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	26-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

snowing in the morning, sunny in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did gravity on L8 and L9 near the south end of the lines in the morning. Came back to camp and rested up in the afternoon for the borehole survey later that day. Went out at 6pm when the drillers finished putting the PVC down the hole. The loop was energized and the hole was dummy probed before the driller shift change. Continued surveying the hole until past midnight.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	27-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

mixed sun and clouds. Light rain at times.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell finished the downhole survey around 2am. Spent the night in the driller survival shack. Rested up in the morning. Continued on with the gravity on L9 and L10 in the afternoon .

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	28-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds. Windy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell continued on the gravity on L10, 11 and 12.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell surveyed approximately 15 historical drill hole collars in the morning. In the afternoon, redid the north ends of L8, L9and L10 when that tare occurred on Sept 23rd.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darell continued on the gravity south of the historical core camp on L12, L11.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	1-Oct-15

PREPARED BY:
Andre Lebel

Comments
Weather
Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)
Andre and Darrell finished off the gap in L10 in the morning. Went over to check the loop in the afternoon for the following dowhole survey.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	2-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did a loop of redos on 18 and 19 and then went over and completed the cross line 38. Sarted on the second cross line 37 towards the end of the day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	3-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell were on standby waiting for the drill hole to shut down and rods to be pulled. The drilling continued, however, and the crew remained on standby.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	4-Oct-15

PREPARED BY:
Andre Lebel

Comments

Weather

Cloudy, Periods of sun

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell went out to repair the loop in the morning. There was a shortage of PVC. While waiting, the crew dummied the hole before they put the PVC and the plug down. Will go out and survey the hole in the evening.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	5-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Digi Atlantis downhole survey throughout the night. Started at 8pm, finished at 4am. Could only survey hole down to a depth of 365m because there was insufficient PVC to reach below 365m. The probe ran out of batteries with only 25m left of the hole. There was also a system error with the transmitter GPS between 140m to 150m, causing a large false anomaly. Returned to camp and rested for the day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	6-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny No wind

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Redid the loop 18 300 - 950 and 17 300 to 600 because of a Tare on Sept 13. Afterwards finsihed off the L37 using The 9996 base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	7-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, Periods of sun

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell started on the infill lines inbetween the ABM and the Rhyolite areas. Read 33 and 34 to completion.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	8-Oct-15

PREPARED BY:
Andre Lebel

Comments

Weather

Sunny in the Morning, Snow and Clouds in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell continued on the infill lines inbetween the ABM and the Rhyolite areas. Read 35 and 36 to completion and L7 1600 and 1450 that were missed. All the readings were done using the the 9999 base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Oct-15

PREPARED BY:
Darrell Epp

Comments

Weather

Cloudy all day with very low ceiling and fog in the morning; minor intermittent snow.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre re-did gravity and gps points for L25, 1800; L26, 1400; and L27, 400. Darrell inspected and fixed loop in preparation for upcoming down-hole survey of GP4F58-285. All gravity readings were done using base 9998.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Cloudy all day. Clear late in the evening.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell on standby for downhole survey of GP4F58-285 from morning until 1pm. Helped with geoteching from 1 to 6pm. Flew out to GP4F @ 7pm to prepare for night downhole EM survey of GP4F58-285.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Clear early morning to cloudy mid-morning and late-morning.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell performed downhole EM survey of GP4F58-285 from 1am to approximately 7:30 am, then returned to camp @ around 8:30 am.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Oct-15

PREPARED BY:
Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell cleaned up loop 2 on GP4F grid. Darrell observed wildlife incident @ approximately 11:30 am. Darrell found male caribou dead and tangled up in EM loop wire during clean up of wire. Safety investigation and discussion followed.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre's demobilization day; Darrell and Andre organized and packed up gear in the morning; Andre participated in some geotech work from about 1 pm to 3:15pm prior to late afternoon departure. Darrell helped with geoteching from 1 pm to 5:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Partially cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrell and Heiko on standby first half of day. Installed ABM loop 2 in afternoon, then went out to perform EM survey of hole KX15-292 at 11:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

From 12am to 830am, Darrell and Heiko set up and performed down hole EM survey of KX15-292 from EOH at 310 m to top of hole at 30 m - 10 m below bottom of casing. Returned to field at 3 pm and cleaned up ABM Loop; Returned to camp at 7:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Partially cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrell and Heiko; Demobilization.

Appendix II Full Scale Figures

LEGEND

ELEVATION CONTOUR INTERVALS (m)

20

100

500

ABM Area:

Rhyolite Peak Area:

GP4F Area:

GRAVITY SURVEY POINT LOCATION :

DATA FILE : KZK 2015 Gravity.gdb

Scale 1:30000

500 0 500 1000 1500 2000

(meters)

NAD83(CSRS) / UTM zone 9N

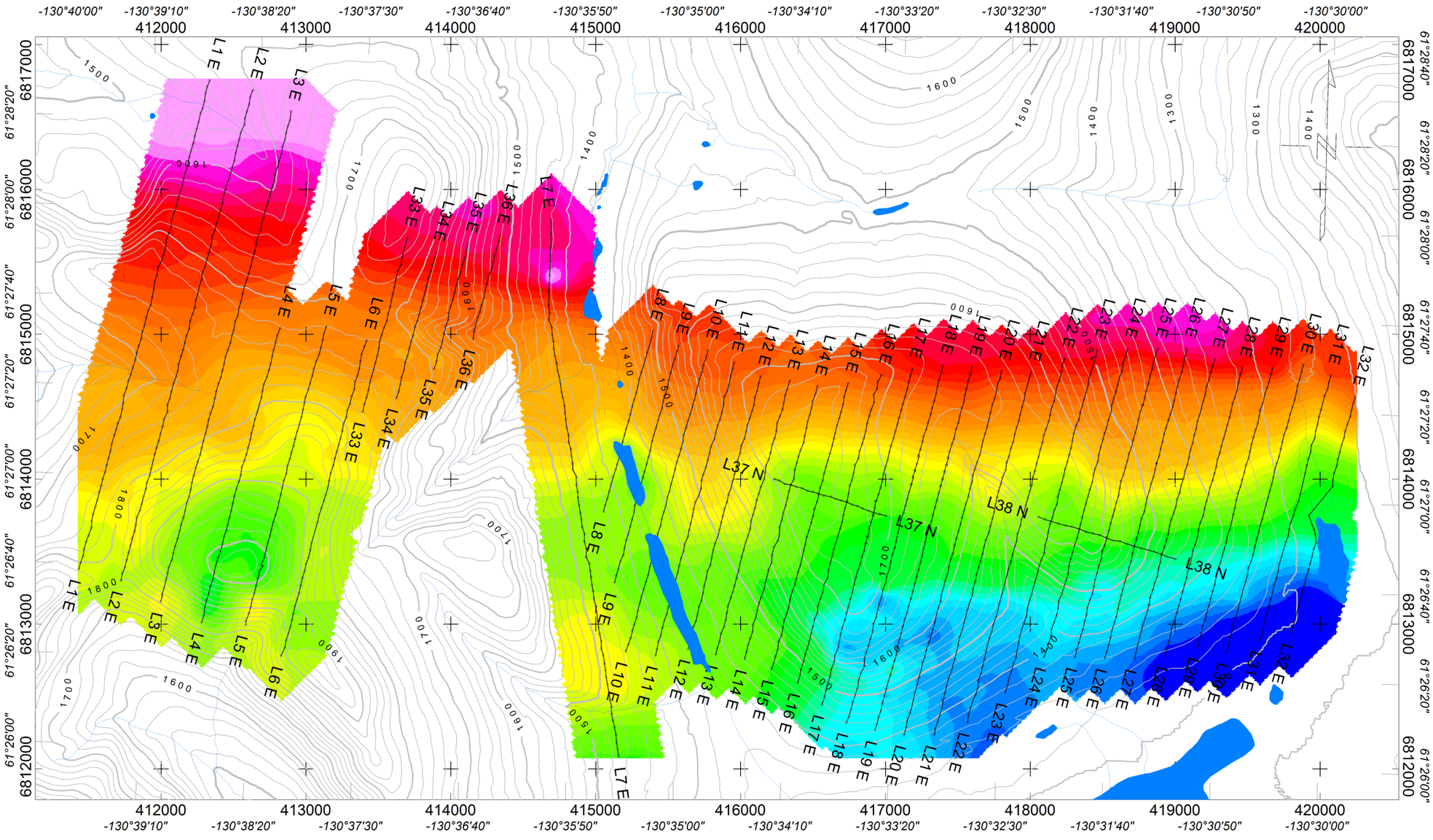
BMC MINERALS

KUDZ ZE KAYAH
GRAVITY SURVEY LOCATION MAP

Job:BMC-15524-YT
Datum: NAD83
Dates Surveyed: Aug 9 - Oct 9, 2015

Mining District:Watson Lake
Proj:UTM Zone 9N
Date Drawn:Dec 1, 2015

AURORA GEOSCIENCES LTD.



LEGEND

BOUGUER ANOMALY

ELEVATION CONTOUR INTERVALS (m)

20

100

500

INSTRUMENT : Scintrex Autograv CG-5

GRIDDING ALGORITHM : Minimum Curvature

GRID CELL SIZE : 10 m

CORRECTED FOR : Drift, Bouguer, Bullard-B, Free-Air, Latitude and Terrain

PROCESSING FILTERS : None

DATA FILE : KZK 2015 Gravity.gdb

OPERATORS : AL,DE,DH,FD

Scale 1:30000

500 0 500 1000 1500 2000

(meters)

NAD83(CSRS) / UTM zone 9N

5302.1 5302.5 5302.9 5303.3 5303.7 5304.1 5304.4 5304.8 5305.2 5305.6 5306.0 5306.4 5306.7

Bouguer Anomaly
mGal

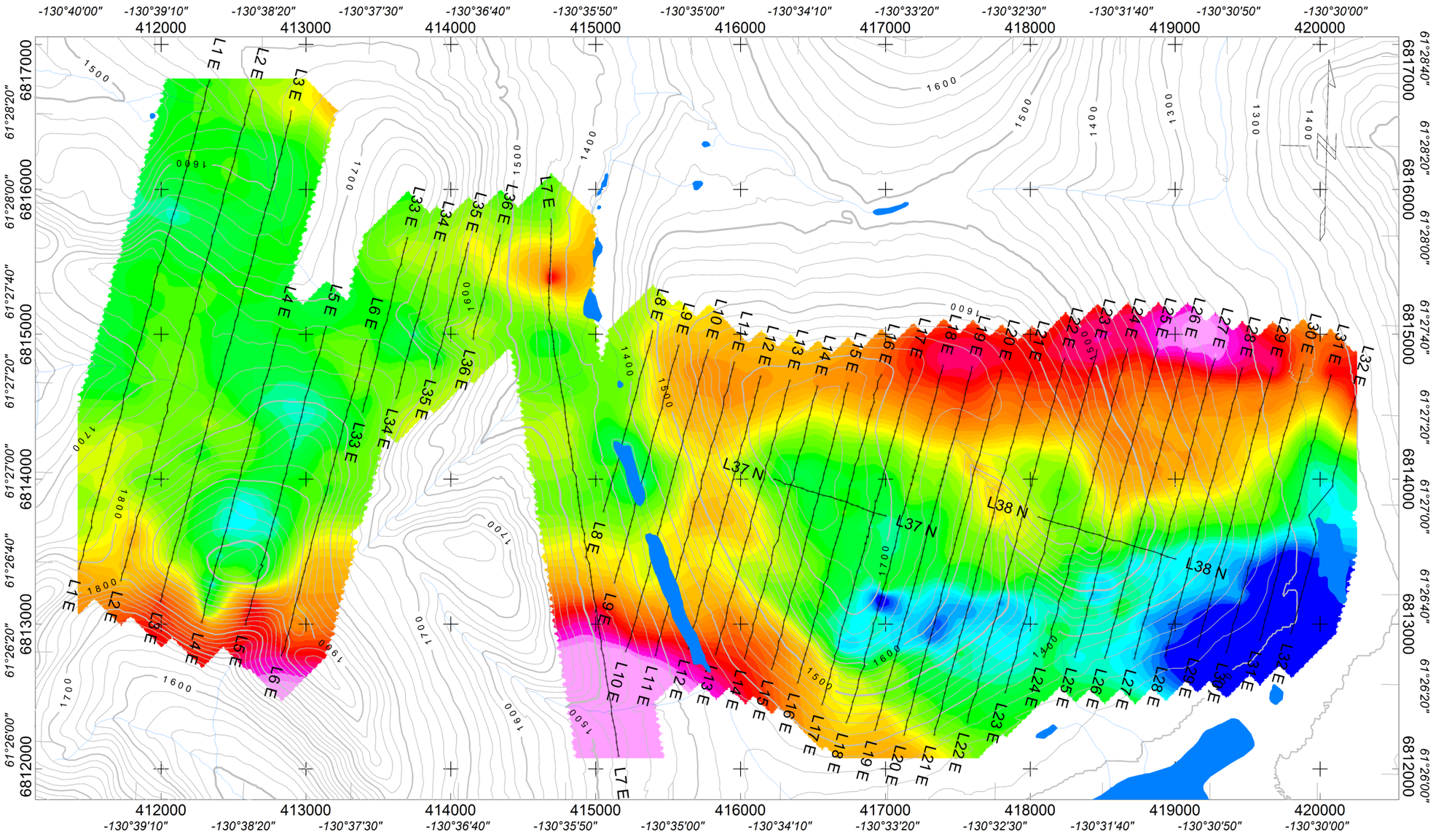
BMC MINERALS

KUDZ ZE KAYAH
BOUGUER ANOMALY

Job:BMC-15524-YT
Datum: NAD83
Dates Surveyed: Aug 9 - Oct 9, 2015

Mining District:Watson Lake
Proj:UTM Zone 9N
Date Drawn:Dec 1, 2015

AURORA GEOSCIENCES LTD.



LEGEND

BOUGUER ANOMALY

ELEVATION CONTOUR INTERVALS (m)

20

100

500

INSTRUMENT : Scintrex Autograv CG-5

GRIDDING ALGORITHM : Minimum Curvature

GRID CELL SIZE : 10 m

CORRECTED FOR : Drift, Bouguer, Bullard-B, Free-Air, Latitude and Terrain

PROCESSING FILTERS : First Order Trend Removed

DATA FILE : KZK 2015 Gravity.gdb

OPERATORS : AL,DE,DH,FD

Scale 1:30000

500 0 500 1000 1500 2000

(meters)

NAD83(CSRS) / UTM zone 9N

-0.9 -0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.1 -0.0 0.1 0.2 0.3 0.4 0.6 0.7 0.8 0.9 1.0 1.1

Bouguer Anomaly 1st Order Trend Removed

mGal

BMC MINERALS

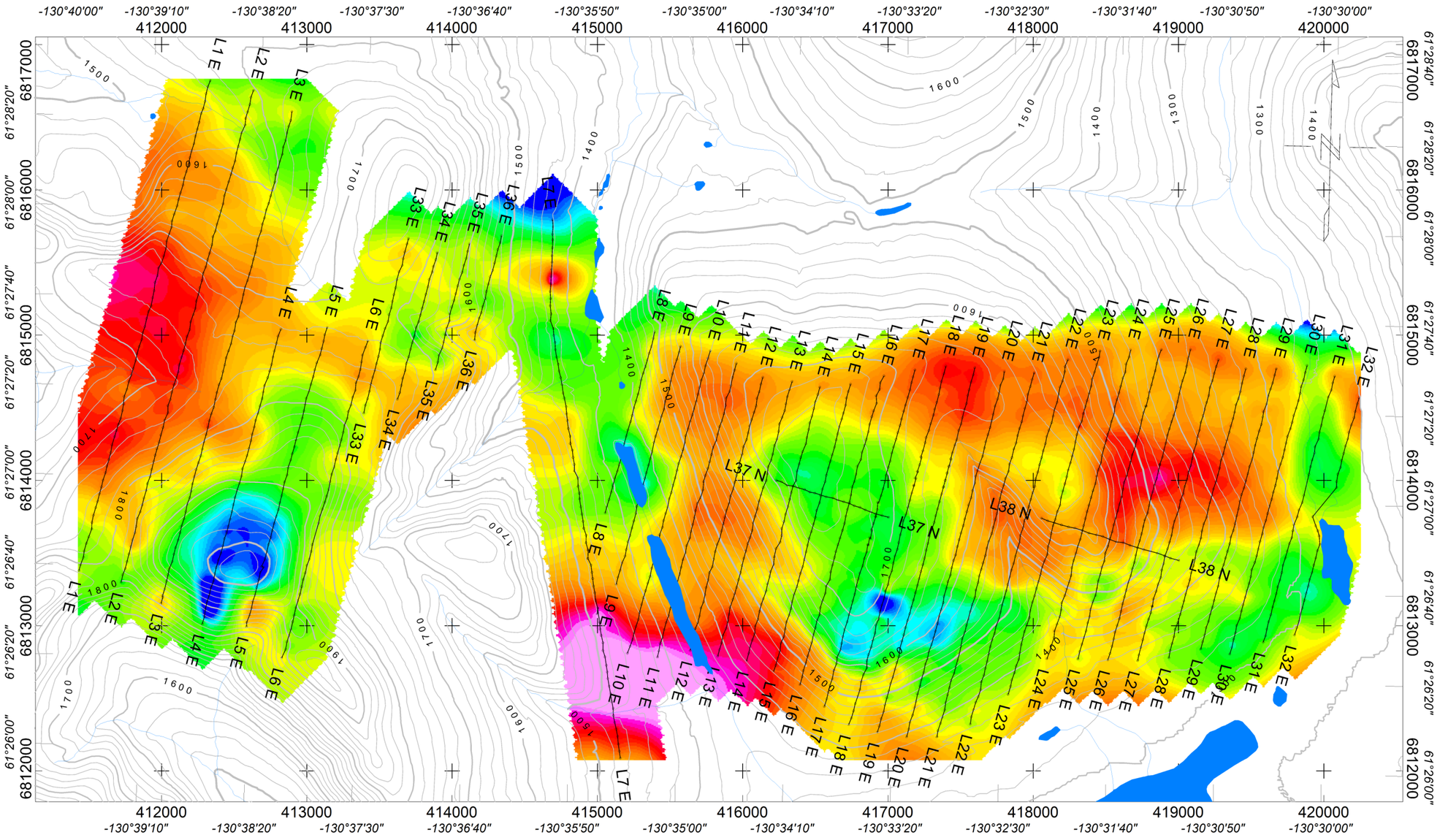
KUDZ ZE KAYAH

FRIST ORDER TREND REMOVED BOUGUER ANOMALY

Job:BMC-15524-YT
Datum: NAD83
Dates Surveyed: Aug 9 - Oct 9, 2015

Mining District:Watson Lake
Proj:UTM Zone 9N
Date Drawn:Dec 1, 2015

AURORA GEOSCIENCES LTD.



LEGEND

BOUGUER ANOMALY

ELEVATION CONTOUR INTERVALS (m)

20

100

500

INSTRUMENT : Scintrex Autograv CG-5

GRIDDING ALGORITHM : Minimum Curvature

GRID CELL SIZE : 10 m

CORRECTED FOR : Drift, Bouguer, Bullard-B, Free-Air, Latitude and Terrain

PROCESSING FILTERS : Second Order Trend Removed

DATA FILE : KZK 2015 Gravity.gdb

OPERATORS : AL,DE,DH,FD

Scale 1:30000

500 0 500 1000 1500 2000

(meters)

NAD83(CSRS) / UTM zone 9N

-0.8 -0.7 -0.6 -0.5 -0.5 -0.4 -0.3 -0.2 -0.1 -0.1 0.0 0.1 0.2 0.2 0.3 0.4 0.5 0.5 0.6

Bouguer Anomaly Second Order Trend Removed

mGal

BMC MINERALS

KUDZ ZE KAYAH

SECOND ORDER TREND REMOVED BOUGUER ANOMALY

Job:BMC-15524-YT
Datum: NAD83
Dates Surveyed: Aug 9 - Oct 9, 2015

Mining District:Watson Lake
Proj:UTM Zone 9N
Date Drawn:Dec 1, 2015

AURORA GEOSCIENCES LTD.

LEGEND

BOUGUER ANOMALY

ELEVATION CONTOUR INTERVALS (m)

20

100

500

INSTRUMENT : Scintrex Autograv CG-5

GRIDDING ALGORITHM : Minimum Curvature

GRID CELL SIZE : 10 m

CORRECTED FOR : Drift, Bouguer, Bullard-B, Free-Air, Latitude and Terrain

PROCESSING FILTERS : Third Order Trend Removed

DATA FILE : KZK 2015 Gravity.gdb

OPERATORS : AL,DE,DH,FD

Scale 1:30000

500 0 500 1000 1500 2000

(meters)

NAD83(CSRS) / UTM zone 9N

-0.7 -0.6 -0.5 -0.5 -0.4 -0.4 -0.3 -0.2 -0.2 -0.1 -0.1 0.0 0.1 0.1 0.2 0.3 0.3 0.4 0.4

Bouguer Anomaly Third Order Trend Removed

mGal

BMC MINERALS

KUDZ ZE KAYAH

THIRD ORDER TREND REMOVED BOUGUER ANOMALY

Job:BMC-15524-YT
Datum: NAD83
Dates Surveyed: Aug 9 - Oct 9, 2015

Mining District:Watson Lake
Proj:UTM Zone 9N
Date Drawn:Dec 1, 2015

AURORA GEOSCIENCES LTD.

Appendix K: Downhole EM survey report

Downhole Electromagnetic Survey – Kudz Ze Kayah

61° 27’ N 130° 31’ W , 105G/07, 105G/08 Yukon, Canada

WORK PERFORMED:
August 21 – October 16, 2015

Prepared for:

BMC Minerals

Prepared by:

AURORA GEOSCIENCES

TECHNICAL REPORT
Downhole TDEM at Kudz Ze Kayah

Prepared for:
BMC Minerals (No.1) Ltd
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Prepared by:
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Andre Lebel, B.Sc.

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1 SUMMARY

This report describes the downhole time domain electro-magnetic survey (DHEM) conducted for BMC minerals on the Kudz Ze Kayah (KZK) project Yukon to assist in locating VMS ore deposits in the near proximity of select diamond drill holes.

The survey consisted of 8 DHEM surveys using 4 loops. The crew stayed on site at the BMC Minerals Inc. KZK camp. The duration of the geophysics project extended from Aug 21st – Oct 16th, 2015, with the crew conducting a gravity survey while during the drilling time of the holes (not described in this report).

On August 21th, 2015 a two person crew drove to KZK from Whitehorse, YT. The survey drill holes and loops were accessed by either side by side or helicopter depending on the proximity of the loops and the survey holes to the access road. The transmitter loops were tested and repaired as required prior to each hole being surveyed. Aurora personnel rotations used scheduled flights to and from camp. The crew demobilized to Whitehorse on Oct 16th, 2015 and the equipment followed shortly after via ground cargo. A crew log describing daily operations and production is included with this report.

Surface EM equipment was on-site as a secondary option to survey during DHEM down-time while drilling was underway. However at the direction of BMC the crew focused exclusively on gravity and DHEM and no surface EM lines were surveyed.

2 CREW AND EQUIPMENT

The following personnel conducted the survey:

Andre Lebel	Geophysicist	Aug. 23, Aug 25, Sept 2 – 3, Sept 19 - 20, Sept 25 - 27, Oct 1, Oct 3 - Oct 5, Oct 9 – 13, 2015	K15-GP4F21-224 K15-GP4F56-234, K15-GP4F59-261, K15-GP4F57-280, K15-GP4F58-285, K15–GP4F63-268
Darrel Epp	Geophysicist	Sept 2 - 3, Sept 12, Sept 16, Sept 19 - 20, Sept 25 – 27, Oct 1, Oct 3 - Oct 5, Oct 9 – 16, 2015	K15-GP4F56-234, K15-GP4F55-247, K15-GP4F59-261, K15-GP4F57-280, K15-GP4F58-285, K15–GP4F63-268, K15-016-292
Franz Dzuiba	Senior Geophysicist	Aug 21 – 25, Aug 31 – Sept 2, 2015	K15-GP4F21-224
Heiko Mueler	Field Technician	Aug 23, Aug 25, Aug 31 – Sept 3, Oct 13 – 16, 2015	K15-GP4F21-224, K15-016-292

Darren Dawson	Field Technician	Sept 12, 2015	K15-GP4F55-247

The crew was equipped with the following instruments and equipment

Digi-Atlantis:	2 – SMARTem24 Receivers s/n: 1175 and 1252
	1 – Panasonic Toughbook
	1 – Digi-Atlantis downhole EM probe s/n:146
Geonics Transmitter:	2 - Geonics TEM-67 Transmitters s/n:71202, 111207
	2 - Geonics TEM-67 Power Modules s/n: 60807,70901
Other DH-EM Gear:	1 - 1000m Downhole Signal Cable and Drum
	1 - Geonics DH-EM winch and Counter s/n: 134
	1 – Dummy Probe with dummy cable and drum
Other:	1 – 1 ton Truck (when required)
	1 – Laptop with Geosoft
	2 – Honda 5Kw Generators
	12 – Large spools of 10 – 14 gauge wire
	1 – Iridium Satellite Phone
	3 – handheld Garmin GPS
	4 – Bear spray and Bear Bangers
	1 – PROTEM receiver and surface coil

3 SURVEY LOCATION

The drill holes and DHEM parameters are described in Table 1. Figure 1 and Figure 2 are location maps showing the drill hole and loop locations of the GP4F area and the Krakatoa area. The transmitter loops were located so that the surveyed drill holes were inside the loop and positioned to have good coupling with expected conductor geometry. The size of the initial GP4F loop (loop 1) was 400 m square which was increased to approximately 1000 m square (loop 2) to surround all the planned holes in the GP4F

area. The GP4F loop was further increased in size (loop 3) to incorporate drill hole K15-GP4F63-268. The size of the ABM loop was 400 m square with its edges approximately parallel to the azimuth of K15-016-292. The crew stayed on site at BMC's KZK camp and accessed the survey holes and loops either by side by side or helicopter. All coordinates in this report are in the NAD83 (CSRS) datum, UTM Zone 9N projection, elevations are height above ellipsoid.

Table 1: DHEM drill holes surveyed.

DDH ID	DDH Location	DDH Dip and Azimuth	Surveyed meters out of a total	TX Loop, Current and TO Time	Date Surveyed
K15-GP4F21-224	0419404.22E 6813575.77N 1354.78m	Dip 70, Azimuth 180	0 – 342 out of 351	GP4F_loop1, 11.0 A, 0.27ms	2015/08/24
K15-GP4F55-247	0418952.70E 6813685.43N 1474.5m	Dip 85, Azimuth 180	70 – 390 out of 414	GP4F_loop2, 15.1 A, 0.41 ms	2015/09/13
K15-GP4F56-234	0419417.38E 6813698.55N 1373.21m	Dip 70, Azimuth 180	15 – 390 out of 393	GP4F_loop2, 11.0 A, 0.316 ms	2015/09/03
K15-GP4F57-280	0419661.85E 6813561.68N 1325.28m	Dip 70, Azimuth 180	25 – 365 out of 408	GP4F_loop3, 15.0 A, 0.482 ms	2015/10/05
K15-GP4F58-285	0419650.00E 68133455.00N 1320.00m	Dip 70, Azimuth 180	15 – 300 out of 306	GP4F_loop3, 15.0 A, 0.482 ms	2015/10/11
K15-GP4F59-261	0419650.76E 6813231.17N 1311.20m	Dip 60, Azimuth 180	15 – 295 out of 302	GP4F_loop2, 15.0 A, 0.425 ms	2015/09/20
K15-GP4F63-268	0419653.27E 6813106.69N 1493.38m	Dip 70, Azimuth 180	5 - 352.5 out of 355	GP4F_loop3, 15.0 A, 0.482 ms	2015/09/27
K15-016-292	0415157.00E 6815158.00N 1411.79m	Dip 80, Azimuth 219.81	30 – 310.0 out of 312	ABM_Loop, 19.0 A, 0.266 ms	2015/10/15

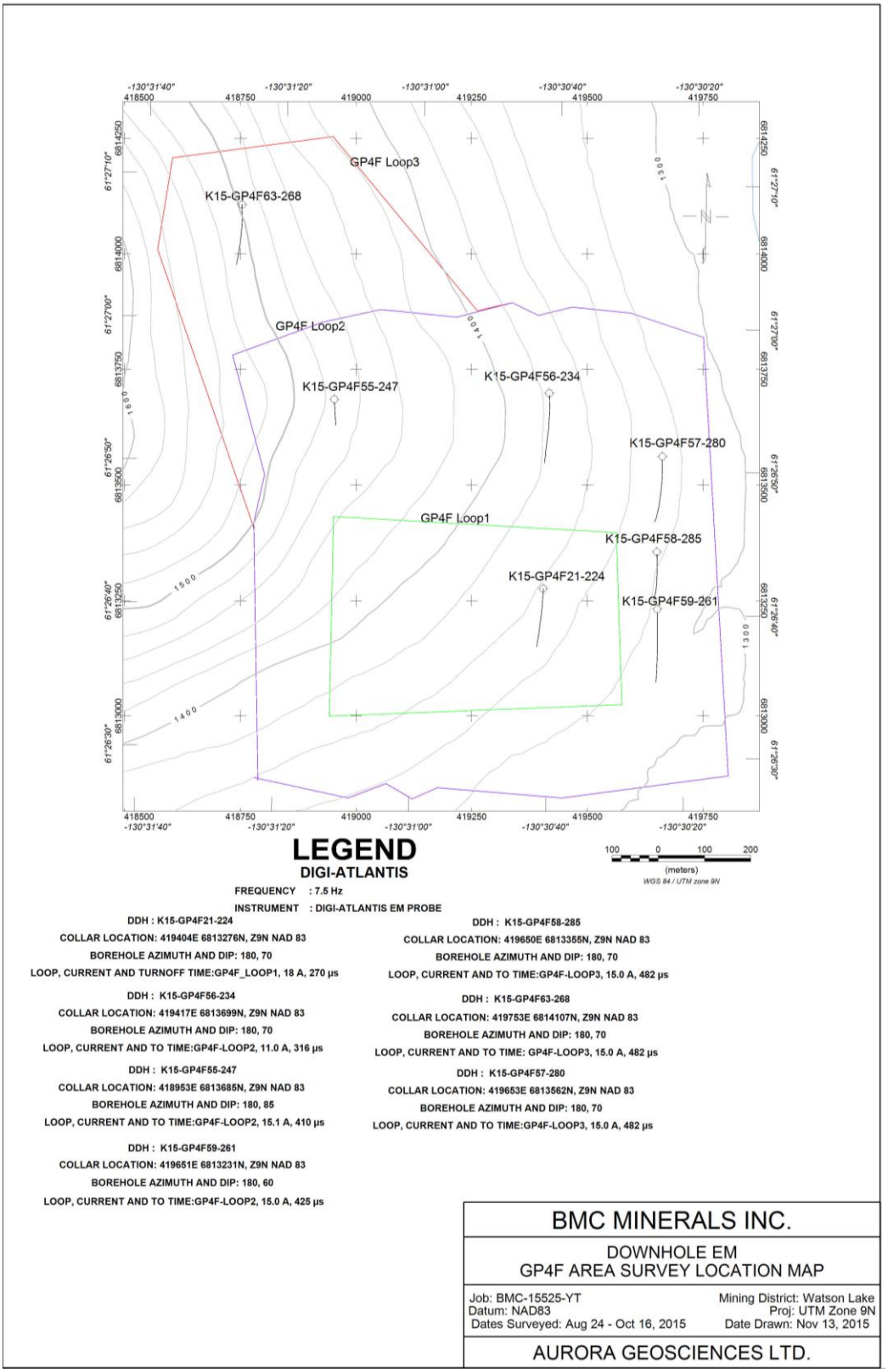


Figure 1: GP4F area survey location map.

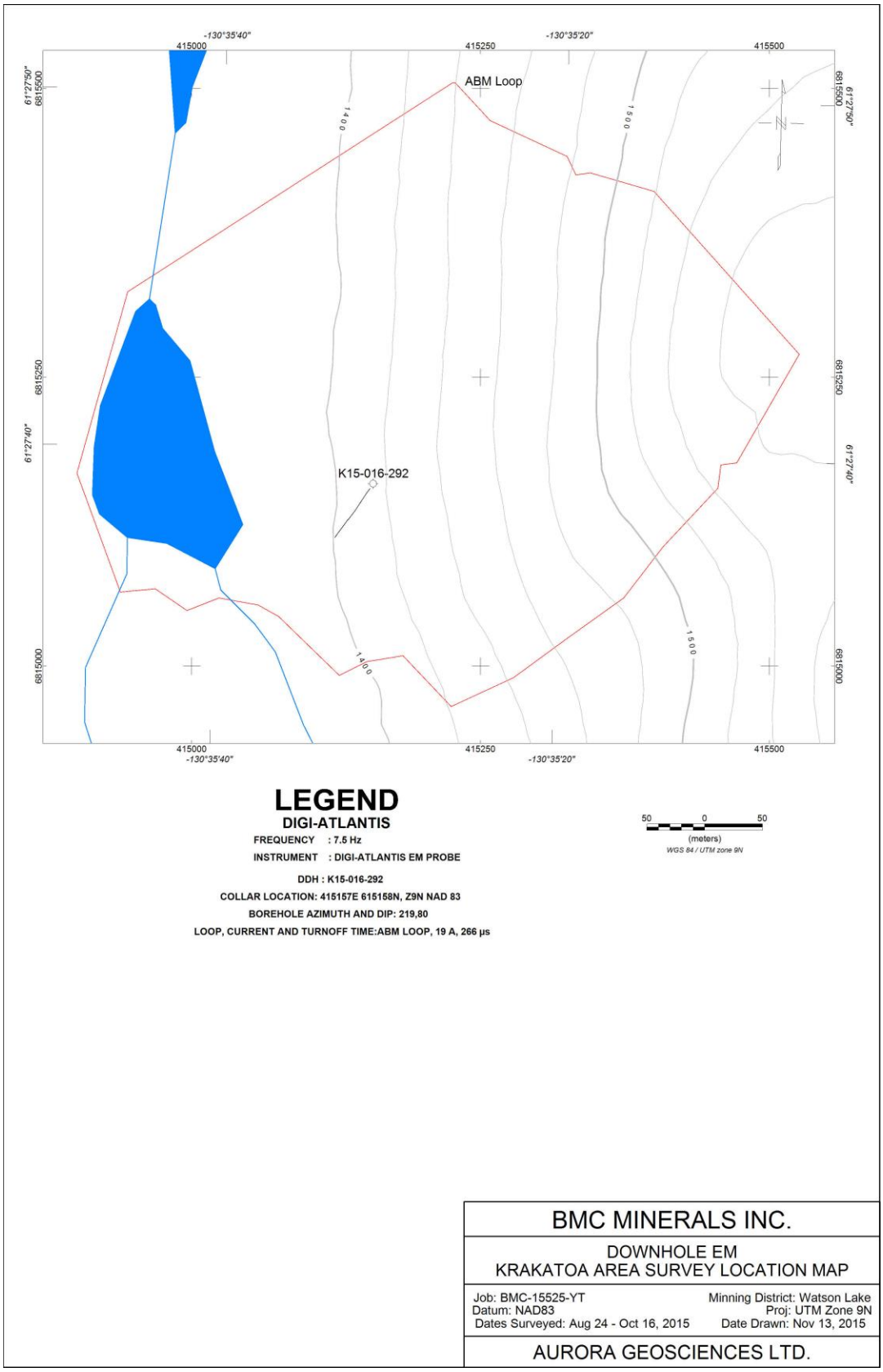


Figure 2: Krakatoa area survey location map.

4 SURVEY SPECIFICATIONS

Each station was determined by the winch counter which was set to zero when the top of the Digi-Atlantis tool was at the top of the drill hole collar. Coordinates of the drill hole collars are supplied by BMC Minerals and were measured by an RTK DGPS system or an APS system. Station spacing was 5 m for all holes with 2.5 m intervals for anomalous areas noticed by the operators. A total of 2569.5 m were surveyed out of the total of 2841 m drilled in the eight holes. Survey gaps of note include the upper 60 m on K15-GP4F55-247 due to time constraints and the lower 43 m on K15-GP4F57-280 because a shortage of PVC and subsequent blockage. **Error! Reference source not found.** lists the DHEM surveyed intervals of the holes.

The survey was performed with the following specifications:

Geographic datum & projection:	NAD83(CSRS) datum, UTM Zone 9N projection
Elevation datum:	Height Above Ellipsoid
Station locations:	Stations were located via the winch counter, generally at 5m intervals
Frequency:	7.5 Hz
Components:	A (down hole), U (cross hole parallel to dip), V (cross hole perpendicular to dip)
Stacks and Repeats:	Readings were stacked for a minimum of 512 stacks and repeated minimum 3 times, except K15-GP4F21-224 where each station was survey with a single stack of 512.
Channels:	SMARTem 24 format, 27 channels for each component. Channel 1 is early time and channel 27 is late time as detailed in Table 2.

Table 2: Channel number, start time (from end of ramp), end time (from end of ramp) and width.

Channel	Start (ms)	End (ms)	Width (ms)
CH 01	0.087	0.112	0.025
CH 02	0.109	0.140	0.031
CH 03	0.135	0.173	0.038
CH 04	0.167	0.215	0.042
CH 05	0.208	0.267	0.059
CH 06	0.258	0.332	0.074
CH 07	0.320	0.412	0.092
CH 08	0.398	0.511	0.113

CH 09	0.494	0.635	0.141
CH 10	0.613	0.788	0.175
CH 11	0.761	0.978	0.217
CH 12	0.945	1.215	0.27
CH 13	1.173	1.508	0.335
CH 14	1.456	1.872	0.416
CH 15	1.808	2.324	0.516
CH 16	2.244	2.885	0.641
CH 17	2.786	3.582	0.796
CH 18	3.459	4.447	0.988
CH 19	4.294	5.521	1.227
CH 20	5.331	6.854	1.523
CH 21	6.618	8.509	1.891
CH 22	8.217	10.564	2.348
CH 23	10.201	13.115	2.91
CH 24	12.664	16.282	3.62
CH 25	15.722	20.214	4.49
CH 26	19.519	25.095	5.58
CH 27	24.232	31.155	6.92

Synchronisation: Transmitter and receiver were synchronized via GPS.

5 DATA PROCESSING

The DH-EM data were downloaded and exported from the EMIT's SMARTem24 data logging software, and raw data converted to ASCII data file (*.dat) and ASCII survey files (*.sur). These raw data are edited with EMIT's Maxwell software where each decay curve was examined and the ones that did not repeat or were suspect are marked for rejection. Polarity reversals were corrected for drill hole K15-GP4F58-285. The headers of the *.dat files were standardized and final coordinates inserted. Data are averaged to one reading for each component at every station and exported as *.tem files. Downhole EM profile plots were created using EMIT's Maxwell software.

6 INTERPRETATION

This section is the results of correspondence between consulting geophysicist Jules Lajoie and geologist Murray Jones. Interpretations are from qualitative examination of profiles only and no detail modelling has been undertaken.

6.1 Hole GP4F21-224

6.1.1 Station 90

A negative crossover in the early-time U component implies a conductor to the south but between channels 3 and 4 the response migrates to a positive crossover in the U component implying a conductor to the north. The response extends to channel 13. This is accompanied by a weak negative dip in the A component indicating an off-hole conductor for both early and middle times. The V component shows a negative crossover at both early and mid-times indicating the causative conductor is to the east of the drill hole. The GP4F mineralized horizon is at 96 to 99 m which is faulted and includes semi-massive sulfides to narrow bands of sulfides (10-15 cm); it is likely not a good continuous conductor.

The bulk of the conductor is interpreted to be off-hole, to the north and east. The anomalous signal decays by channel 10-15, indicative of a weak conductor.

6.1.2 Station 150

An early-time positive crossover at station 150 m in the V component with very weak associated responses in the A and U components indicates an off-hole conductor to the north and west. A small mineralized horizon around 155 m was drilled consisting of 8-10% sulfide (sphalerite-pyrite) in two 1 m intervals on either side of a dyke (4 m wide); the alteration is typical proximal alteration associated with the ABM and GP4F deposits. The weak early-time only response is indicative of a very weak conductor.

6.1.3 Station 220

This anomaly is an early to middle time broad positive response in the A component associated by weak positive crossovers in the U and V components suggesting an in-hole weak conductor. There is a strong fault from approximately 220 – 240 m partially in a black, meta-sediment that is likely the cause of this feature, although the core did not conduct when checked with a hand multi-meter.

6.2 Hole GP4F56-234

There are very sharp (localized) responses at 240 m and 325 m. Both are early to middle-time responses suggesting a weak conductor.

6.2.1 Station 240

A positive in the A component and associated positive crossovers in both the U and V components indicate an in-hole that is mostly to the north and west.

6.2.2 Station 325

This response is in the mineralized GP4F horizon; it has a negative response in the A component with an associated negative crossover in the U component, changing to a positive crossover at channel 13 and disappearing shortly thereafter. This indicates an off-hole conductor to the south (up-dip). The V component response is a sharp positive rather than a crossover of either sign and whether the conductor is to the east or west is therefore ambiguous. This could be a result of a single plate solution being inappropriate, or of under-sampling with 5 m stations as this response is sharp.

6.3 Hole GP4F55-247

There are two anomalies within the hole, a pronounced one at 125 m and a subtle one at 160 m. Both of these are within a bigger unit logged as carbonaceous sediment from 118 m to 166 m presumed to be dipping north. In the early channels there is a broader scale in-hole response in the A component, so the two responses at 125 and 160 could represent smaller more graphitic horizons within the larger carbonaceous unit. The same carbonaceous sediment is presumed to be intersected to the north in drill hole K15-GP4F63-268 at a depth of 330m.

At the very end of the hole, there is the suggestion (at stations 380 to 390) of a response starting in the U component indicating a deeper body down-dip, but this is an incomplete response with no associated response on the A component.

6.3.1 Station 125

The downhole component has a positive anomaly showing an in-hole conductor. In the early-time there are negative crossovers in U and V components that change to positive crossovers after channel 5, suggesting the current filament has passed by the hole and most of the conductor is to the north (down-dip) and to the west as indicated by the later-time channels. The response, particularly the U component, persists into the late-time indicating this is a relatively good conductor.

6.3.2 Station 160

The anomaly at 160 m has a weak positive A component with associated negative crossovers in both the U and V components in the early-time. The A component changes to a negative anomaly and the U component changes to a positive crossover after channel 5. The response is much weaker than that at Station 125 and does not extend into channels later than channel 10. This indicates a weak conductor that is mostly to the north and east.

6.4 Hole GP4F57-280

6.4.1 Station 365

The only anomalous area is an incomplete response the end of the survey (last station is 365 m). This is not the end of the drill hole as there was a shortage of PVC and consequently the hole was blocked preventing a full DHEM survey. Strongly carbonaceous sediment is intersected at 393 m, but this is too far down-hole to explain the DHEM response noted at 360 m.

The response is mostly an early-time (channels 1-10) negative A component anomaly with a negative U crossover and a positive V crossover indicating a weak conductor off-hole, to the south (up-dip) and to the west. Towards mid-time, the U response switches to a very weak positive crossover.

There are several proximal holes; a historic Cominco N-S fence (holes 188-189-193-196) and a BMC N-S fence (drill holes K15-GP4F59-261, K15-GP4F58-285, K15-GP4F-57-280) limit the maximum size of this conductor.

There is an interval of semi-massive to massive sphalerite-pyrrhotite-pyrite from 364.25-365m, albeit with lost core in the middle of the zone. This zone is correlative with a lower zone of mineralization seen in a number of the holes in this area (e.g. to the south at 280 m in K15-GP4F58-285).

6.5 Hole GP4F58-285

The dominant response is a middle-time anomaly centered at 275 m or 280 m which is visible until channel 15. A weaker conductor, only visible in the V component is seen at 225 m.

6.5.1 Station 225

There is a response at station 225 m coincident with a mineralized zone primarily between 225 m and 233 m. Similarly to the anomaly lower down at 275 m – 280 m, it has a clear positive V component crossover indicating the conductor is to the west. There are only very weak A and U component responses.

6.5.2 Station 275

There is a negative A component anomaly and a positive V component crossover indicating the causative conductor is off-hole and to the west. There is only a weak U component response which is a (noisy) negative crossover in the early-time migrating to a positive crossover in the middle-time channels. This indicates the current center is in the shallower up-dip part of the zone to the south at early time, migrating down-dip to the north by mid time, all very much on the west side of the drill hole.

There is a narrow, semi-massive sulfide intercept in-hole at 280 m (pyrrhotite with sphalerite-chalcopyrite) and known massive sulfide mineralization up-dip to the southwest (~200-230 m) and to the west, more or less on strike (~150 m). Disseminated to semi-massive sulfide mineralization was intersected 210 m to the northwest by Cominco in 1998, but no significant massive sulfide. There is weakly carbonaceous sediment below 290 m in the drill hole GP4F58-285. The zone at a depth of 365 to the north on hole GP4F57-280 is roughly correlative based on lithology and alteration.

6.6 Hole GP4F59-261

6.6.1 Station 95

The anomaly at station 95 m is a slight negative early-time A component anomaly with a positive crossover in the V component indicating an off-hole weak conductor to the west. There is no associated response on the U component.

6.6.2 Stations 180, 210 & 240

These anomalies are slight early-time positive A component anomalies with positive crossovers in both U and V components indicating in-hole weak conductors that are primarily to the west and north (down-dip).

There is some ambiguity in the interpretation of whether the anomalies at 210 and 240 are positive (in-hole) or negative (off-hole) but viewing them as positive anomalies matches well with the zones logged in the core that are expected to be weak conductors and therefore the in-hole interpretation is preferred.

6.6.3 Station 285

At the bottom of the surveyed hole is an anomaly in the U and V components which appear to be the start of more significant response coincident with the A component starting to rise. The readings at the bottom of the hole at station 295 m are very noisy and have been discarded but the anomalous responses at 285 and 290 are of good quality. The conductor is interpreted to be to the east and north. The response extends to later channels indicating that it is a better conductor than those further up the hole.

6.7 Hole GP4F63-268

Both of the anomalies at 310 m and 332.5 m extend into the late-time channels, indicative of good conductors but are presumed to be caused by conductive carbonaceous sediments logged around both of these stations.

6.7.1 Station 310

In the early-time, this is a negative A component anomaly indicating an off-hole conductor with no significant U or V response. The response then changes to a positive A component anomaly with weak positive crossovers in the U and V components indicating an in-hole conductor that is to the north (down-dip) and to the west in the late-time.

6.7.2 Station 332.5

In the early-time, this is a negative A component anomaly indicating an off-hole conductor with negative crossovers in U and V indicating a conductor that is south (up-dip) and to the east. The response then changes to a positive A component anomaly with weak positive crossovers in the U and V components indicating an in-hole conductor that is to the north (down-dip) and to the west in the late-time.

There are shoulders in the response at 337.5 m or 340 m indicating a more complicated geometry.

6.8 Hole K15-016-292

6.8.1 Station 175

This is an early-time anomaly with a negative response in the A component and positive crossovers in the U and V components indicating a weak conductor that is off-hole, to the northeast (down-dip) and slightly to the right of the hole (northwest).

Sulfide mineralization is intersected close to this station.

6.8.2 Station 220

At station 220, there is a late-time off-hole response, indicating a good conductor, but not as strong as the one below at station 237.5. There is a negative A component response, very little U component response, and a positive crossover in the V component indicating the conductor is off-hole and to the right of the hole (northwest).

6.8.3 Station 237.5

This is the dominant feature in this hole with a large late-time response indicative of a very good conductor. The late-time A component shows a negative response at 237.5 m with positive crossovers in the U and V components indicating that the conductor is off-hole, down-dip (northeast) and to the right (northwest) of the drill hole. Complexity in the response around station 237.5 is interpreted to reflect heterogeneous geology which cannot be modelled as a single thin conductor; this is consistent with what is logged in the core.

7 PRODUCTS

The following are attached to the digital version of this report

Folder/File	**File Name & Description of contents**
BMC-15525-YT Crew Log.pdf	Production summary, daily log and personnel tracking sheet in PDF format.
Kudz Ze Kayah 2015 Downhole EM Survey.pdf	A copy of this report in PDF format.
Final Data\ *K15-GP4F21-224.tem* *K15-GP4F21-224.tem* *K15-GP4F55-247.tem* *K15-GP4F57-280.tem* *K15-GP4F58-285.tem* *K15-GP4F59-261.tem* *K15-GP4F63-268.tem* *K15-016-292.tem*	Processed final databases in ASCII format.
Final Data\ *K15-GP4F21-224.sur* *K15-GP4F21-224.sur* *K15-GP4F55-247.sur* *K15-GP4F57-280.sur* *K15-GP4F58-285.sur* *K15-GP4F59-261.sur* *K15-GP4F63-268.sur* *K15-016-292.sur*	Azimuth and inclination databases in ASCII formats.

Final Data\ *Channels.txt*	Describes the data channels.
Final Data\ *ABM_loop.tx* *GP4F_loop1.tx* *GP4F_loop2.tx* *GP4F_loop3.tx*	Coordinates of loop corners in NAD83(CSRS) datum, UTM Zone 9N projection with height above ellipsoid elevations.
Raw Data\	The unedited raw Digi-Atlantis dump files, catalogued by date collected.
Raw Data\ *K15-GP4F21-224.dat* *K15-GP4F56-234.dat* *K15-GP4F55-247.dat* *K15-GP4F57-280.dat* *K15-GP4F58-285.dat* *K15-GP4F59-261.dat* *K15-GP4F63-268.dat* *K15-016-292.dat*	Unedited, unstacked databases in ASCII format.
Survey Location Maps\ *Krakatoa area survey location.map*	Krakatoa area survey location map.
Survey Location Maps\ *GP4F area survey location.map*	GP4F area survey location map.
Profile plots\ *K15-Hole Ch 1 – 5.pdf* *K15-Hole Ch 6 – 10.pdf* *K15-Hole Ch 11 – 15.pdf* *K15-Hole Ch 16 – 20.pdf* *K15-Hole Ch 16 – 27.pdf*	Downhole EM data profiles in a .pdf format

Respectfully submitted,

Andre Lebel, B. Sc.

Aurora Geosciences Ltd

Appendix I

Project Log

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

	Heiko Mueller	Franz Dzuiba	Andre Lebel	Dave Hildes	Darrel Epp	Darron Dawson	Terry Ollie
Current Job	**37**	**13**	**54**	**8**	**42**	**14**	**12**
Aug 2015 Totals	19	11	23	0	4		12
Sep 2015 Totals	18	2	23	8	30	14	0
Oct 2015 Totals	0	0	8	0	8	0	0
Sun 9-Aug-2015	Mobilize		Mobilize				
Mon 10-Aug-2015	Gravity		Gravity				Gravity
Tue 11-Aug-2015	Gravity		Gravity				Gravity
Wed 12-Aug-2015	Gravity		Gravity				Gravity
Thu 13-Aug-2015	Gravity		Gravity				Gravity
Fri 14-Aug-2015	Gravity		Gravity				Gravity
Sat 15-Aug-2015	Gravity		Gravity				Gravity
Sun 16-Aug-2015	Demobilize		Gravity				Gravity
Mon 17-Aug-2015			Gravity				Gravity
Tue 18-Aug-2015			Gravity				Gravity
Wed 19-Aug-2015			Gravity				Gravity
Thu 20-Aug-2015			Gravity				Gravity
Fri 21-Aug-2015	Mobilize	Mobilize	Gravity				Demobilize
Sat 22-Aug-2015	Gravity	Digi-atlantis	Gravity				
Sun 23-Aug-2015	Digi-atlantis	Digi-atlantis	Digi-atlantis				
Mon 24-Aug-2015	Gravity	Digi-atlantis	Gravity				
Tue 25-Aug-2015	Digi-atlantis/Gravity	Digi-atlantis/Gravity	Digi-atlantis/Gravity				
Wed 26-Aug-2015	Gravity	Gravity	Gravity				
Thu 27-Aug-2015	Gravity	Gravity	Gravity				
Fri 28-Aug-2015	Gravity	Gravity	Gravity		Mobilize		
Sat 29-Aug-2015	Gravity	Gravity	Gravity		Gravity		
Sun 30-Aug-2015	Gravity	Gravity	Gravity		Gravity		
Mon 31-Aug-2015	Digi-atlantis	Digi-atlantis	Gravity		Gravity		
Tue 1-Sep-2015	weather-day	weather-day	weather-day		weather-day		
Wed 2-Sep-2015	Digi-atlantis	Demobilize	Digi-atlantis		Digi-atlantis		
Thu 3-Sep-2015	Digi-atlantis		Digi-atlantis		Digi-atlantis		
Fri 4-Sep-2015	Gravity		Gravity		Gravity	Mobilize	
Sat 5-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Sun 6-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Mon 7-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Tue 8-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Wed 9-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Thu 10-Sep-2015	Gravity		Gravity		Gravity	Gravity	
Fri 11-Sep-2015	Gravity		Demobilize	Mobilize	Gravity	Gravity	
Sat 12-Sep-2015	Gravity			Gravity	Digi-atlantis	Digi-atlantis	
Sun 13-Sep-2015	Gravity			Gravity	Gravity	Gravity	
Mon 14-Sep-2015	Gravity			Gravity	Gravity	Gravity	
Tue 15-Sep-2015	Working at camp			Gravity	Gravity	Working at camp	
Wed 16-Sep-2015	Working at camp			Loop maintenance / Gravity	Loop maintenance / Gravity	Working at camp	
Thu 17-Sep-2015	Working at camp			Gravity	Gravity	Working at camp	
Fri 18-Sep-2015	Demobilize		Mobilize /Gravity	Demobilize	Gravity	Demobilize	
Sat 19-Sep-2015			Digi-atlantis		Digi-atlantis		
Sun 20-Sep-2015			Digi-atlantis		Digi-atlantis		
Mon 21-Sep-2015			Gravity		Gravity		

	Heiko Mueller	Franz Dzuiba	Andre Lebel	Dave Hildes	Darrel Epp	Darron Dawson	Terry Ollie
Current Job	37	13	54	8	42	14	12
Tue 22-Sep-2015			Gravity		Gravity		
Wed 23-Sep-2015			Gravity		Gravity		
Thu 24-Sep-2015			Gravity		Gravity		
Fri 25-Sep-2015			Loop adjustment		Loop adjustment		
Sat 26-Sep-2015			Gravity/Digi-atlantis		Gravity/Digi-atlantis		
Sun 27-Sep-2015			Gravity/Digi-atlantis		Gravity/Digi-atlantis		
Mon 28-Sep-2015			Gravity		Gravity		
Tue 29-Sep-2015			Collar RTK/ Gravity		Collar RTK/ Gravity		
Wed 30-Sep-2015			Gravity		Gravity		
Thu 1-Oct-2015			Gravity loopmaintance		Gravity/ loopmaintance		
Fri 2-Oct-2015			Gravity		Gravity		
Sat 3-Oct-2015			Digi-atalantis-standby		Digi-atalantis-standby		
Sun 4-Oct-2015			Digi-atalantis		Digi-atalantis		
Mon 5-Oct-2015			Digi-atalantis		Digi-atalantis		
Tue 6-Oct-2015			Gravity		Gravity		
Wed 7-Oct-2015			Gravity		Gravity		
Thu 8-Oct-2015			Gravity		Gravity		
Fri 9-Oct-2015			Gravity/loopmaintance		loopmaintanence		
Sat 10-Oct-2015			Digi-atlantis		Digi-atlantis		
Sun 11-Oct-2015			Digi-atlantis		Digi-atlantis		
Mon 12-Oct-2015			loop clean-up		loop clean-up		
Tue 13-Oct-2015			Demobilize		standby camp work		
Wed 14-Oct-2015	ABM loop setup/ Digi-atlantis				ABM loop setup/ Digi-atlantis		
Thu 15-Oct-2015	Digi-atlantis/ loop cleanup				Digi-atlantis/loop cleanup		
Fri 16-Oct-2015	demobilization				demobilization		



Production Summary - Kudz Ze Kayah Gravity

Production Summary - Kudz Ze Kayah Gravity

	Gravity	Grid - Line	GPS Points	Grid - Line	Digi- atlantis meters	hole
Current Job	**1484.000**		**1418.000**		**2555.000**	
Sat 8-Aug-2015						
Sun 9-Aug-2015						
Mon 10-Aug-2015	23	KZK-7	23	kzk-7		
Tue 11-Aug-2015	40	KZK-7	40	KzK- 7		
Wed 12-Aug-2015	32	KZK 32,31,30	20	KZK 32,31,30		
Thu 13-Aug-2015	20	KZK 29,28,27	20	KZK 29,28,27		
Fri 14-Aug-2015	30	KZK 31,30,29,28	28	KZK 31,30,29,28		
Sat 15-Aug-2015	41	KZK 28, 29, 27, 26	39	KZK 28, 29, 27, 26		
Sun 16-Aug-2015	39	KZK 26, 27	37	KZK 26, 27		
Mon 17-Aug-2015						
Tue 18-Aug-2015	36	KZK 26,27,28	36	KZK 26,27,28		
Wed 19-Aug-2015	27	KZK 30,31,32	37	KZK 30,31,32		
Thu 20-Aug-2015	13	KZK 32, 31	21	KZK 32, 31		
Fri 21-Aug-2015	15	KZK 7 , 8	15	KZK 7 , 8		
Sat 22-Aug-2015	29	KZK 4,5,6	29	KZK 4,5,6		
Sun 23-Aug-2015						
Mon 24-Aug-2015	41	KZK 1,2,3	41	KZK 1,2,3	325	GP4F-21
Tue 25-Aug-2015	21	KzK 4, 5, 6	12	Kzk 5 and 6		
Wed 26-Aug-2015	57	kzk 1, 2,3,4,5,6		kzk 1, 2,3,4,5,6		
Thu 27-Aug-2015	58	kzk3,4,5,6,	58	kzk3,4,5,6,		
Fri 28-Aug-2015	35	KZK 1,2,3,5,6	35	KZK		
Sat 29-Aug-2015	56	KZK 3,2,1	56	KZK 3,2,1		
Sun 30-Aug-2015	59	KZK 2, 1	59	KZK 2, 1		
Mon 31-Aug-2015	31	KZK 15,16,17,18	31	KZK 15,16,17,18		
Tue 1-Sep-2015						
Wed 2-Sep-2015						
Thu 3-Sep-2015					365	GP4F-56
Fri 4-Sep-2015	27	KZK 14,15,16	27	KZK 14,15,16		
Sat 5-Sep-2015	66	KAZK 16,17,18,19	66	KAZK 16,17,18,19		
Sun 6-Sep-2015	70	KZK 19,20,21,22	70	KZK 19,20,21,22		
Mon 7-Sep-2015	57	KZK 26,25,24,23	57	KZK 26,25,24,23		
Tue 8-Sep-2015	64	KZK 17,18,19,20,21,22	64	KZK 17,18,19,20,21,22		
Wed 9-Sep-2015	56	KZK 22,23,24,25	56	KZK 22,23,24,25		
Thu 10-Sep-2015	52	KZK 22,23,24,25	52	KZK 22,23,24,25		
Fri 11-Sep-2015						
Sat 12-Sep-2015		KZK 19, 20, 21		KZK 19, 20, 21	320	GPF-55, KZK-247
Sun 13-Sep-2015		KZK 17, 18, 19, 20, 21		KZK 17, 18, 19, 20, 21		
Mon 14-Sep-2015		KZK 1,2,3,4,5,6		KZK 1,2,3,4,5,6		
Tue 15-Sep-2015		KZK 15, 16, 17		KZK 15, 16, 17		
Wed 16-Sep-2015		KZK 17, 18, 19		KZK 17, 18, 19		
Thu 17-Sep-2015	26	KZK 14, 13, 12	26	KZK 14, 13, 12		
Fri 18-Sep-2015	21	KZK 13, 14	21	KZK 13, 14		

Sat 19-Sep-2015						
Sun 20-Sep-2015					285	GP4F-59
Mon 21-Sep-2015	28	KZK 13,14, 15,16	28	KZK 13,14, 15,16		
Tue 22-Sep-2015	29	KZK 11, 12, 13, 14	29	KZK 11, 12, 13, 14		
Wed 23-Sep-2015	30	KZK 8, 9, 10 and 11	30	KZK 8, 9, 10 and 11		
Thu 24-Sep-2015	26	KZK 8, 9, 10 and 12	26	KZK 8, 9, 10 and 12		
Fri 25-Sep-2015						
Sat 26-Sep-2015	14	KZK 8, 9	14	KZK 8, 9	355	GP4F-63, KZK-268
Sun 27-Sep-2015	13	KZK 9, 10	13	KZK 9, 10		
Mon 28-Sep-2015	36	KZK10,11,12,7	36	KZK10,11,12,7		
Tue 29-Sep-2015						
Wed 30-Sep-2015	30	KZK 11,12,	30	KZK 11,12,		
Thu 1-Oct-2015	7	KZK10	7	KZK10		
Fri 2-Oct-2015	29	KZK 37, 38	29	KZK 37, 38		
Sat 3-Oct-2015						
Sun 4-Oct-2015						
Mon 5-Oct-2015					340	GP4F-57, KZK 280
Tue 6-Oct-2015	13	KZK 37	13	KZK 37		
Wed 7-Oct-2015	48	KZK 33, 34	48	KZK 33, 34		
Thu 8-Oct-2015	36	KZK 35,36, 7	36	KZK 35,36, 7		
Fri 9-Oct-2015	3	KZK 25,26,27	3	KZK 25,26,27		
Sat 10-Oct-2015						
Sun 11-Oct-2015					285	GP4F-58, KZK 285
Mon 12-Oct-2015						
Tue 13-Oct-2015						
Wed 14-Oct-2015						
Thu 15-Oct-2015					280	KX15-016, KX15-292
Fri 16-Oct-2015						
Sat 17-Oct-2015						
Sun 18-Oct-2015						
Mon 19-Oct-2015						

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)
Mobilize day. Andre and Heiko drove from Whitehorse to KZK. Left at 9:30am arrived in camp at 6pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Set up base (9999) at the 25 km mark on the access road. Started gravity surveying Line 7. Working in a team of 3. Terry shadowing to learn the GPS and how the survey works.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Finished off L7. It took until fairly late before we got all the reading finished.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Moved over to the GP4F area. No RTK link, needed to post process and had to take 10 min GPS readings because we were so far away . The GPS base died before the end of the day and we lost the repeat reading. There were many of the GPS data that didn't phase-correct and will have to redone.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Started by redoing the GPS repeats using a 15min reading at the same location as the day before to make sure we got a phase-corrected reading. Did a gravity and GPS base move which involved a tie survey to correct for the movement of the base. Afterwards in the afternoon continued on lines 27,28 and 29 right around the new base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)
Did points next to the base on lines 28, 29, 30 and 31 from approximately Stn 500 to 1000.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on the GP4F area. Read points from 0 to 500 on L29 and L28 and 0 to 300 on L27 and L26.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Heiko demobilized back to Whitehorse. Down to Andre and Terry on the Gravity crew. Continued on the GP4F area, surveyed L 26 and 27 from 300 to 1350.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Got a bump down the hill to do the far reaches of L32,31,30 and 29 from approximatly 1500 to 2000.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	18-Aug-15

PREPARED BY:
Andre Lebel

Comments

Weather
Cloudy, Periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on the far reaches of L 28 and L27 and then back towards the base on L26.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	19-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Rainy in the morning, cloudy in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Continued on GP4F Areas filling in holes on L30,31 and 32, and re-surveying points that did not achieve phase-fixed solutions on L30,31 and 32

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	20-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Rainy in morning, and cloudy and sunny in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1

Notes (production comments, incidents, other)

Finished off the L32,L31 and a couple other points that were missed on line 30,29,and 28. In the afternoon moved over to the extension over the deposit and surveyed a few hundred meters on that line.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	21-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny, scattered showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Terry left first thing in the morning. Andre went to finish off the line over the ABM deposit and then to L8 and did a loop for a couple more hours. Came back to camp early in case the TEM crew showed up to camp in the afternoon. They did not show up until late.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	22-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cold, windy and rainy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Heiko started on the second priority area. Surveyed from approximately 1000 - 1500 on lines 4,5, &6. Franz laid out the loop for the first hole.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	23-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny, scattered showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre, Heiko and Franz all went on the Digi- Atlantis to start the survey off. Expanded the loop and set up the transmitter. Had to wait until about 5 before we started the dummy probe. It went down all the way to the bottom. Started surveying at the bottom, but there were signal errors and the curves didn't look quite right, so entire crew decided to come in and not try to trouble shoot through the night.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	24-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Heiko continued on the gravity. Surveyed L1, 2 ,3 from approximately 500 - 1000. Franz surveyed the hole from pad GP4F-21, then wound up the wire.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	25-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and cloud.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Had to pick up the loop in the morning because of VTEM survey over the GP4f area in the afternoon. Finished cleaning up the wire around 11:00 but had to wait until 2pm to get bumped over to area we were working on top of the hill because of a drill move and the mining inspector was flying around the site. Did a few gravity points with both gravity meters running in the afternoon.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	26-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Nice day. Decided to get to the top of Rhyolite Peak. Heiko had trouble getting reception to the base with repeater. Tried a few spots on top of the hill found the point where it was previously set up worked the best. Had fairly good connectivity until approximately 4 pm. Heiko couldn't keep ahead of both Andre and Franz, so Andre started to do GPS and gravity at the same time.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	27-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Franz went up and swapped out the battery. Heiko tried to move around the repeater but with the battery dying it didn't make any difference.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	28-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Franz went up and switched out the battery. Heiko tried switching the settings on the repeater and the base to get better connectivity but it was already low. Andre repeated Franz's readings from the day before that did not repeat in the morning then continued on doing readings

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

cloudy, periods of rain

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was raining, the top of the mountain was all socked in, decided to work on a lower down area. The base died part way through the day. Heiko went up and switched out the battery for the base and repeater. And it worked for the rest of the day. Darrel got rotated in and learned the procedure on the gravity meter because it was different than his previous projects.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	30-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

It was all socked in first thing in the morning. Had to hike up to the base. Was able to finish off the lines 1 and 2 to the end.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	31-Aug-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Were planning on doing the last few GPS points on the Rhyolite Peak area, but the fresh snow on mountain forced a change of plans. Set up the new base on the area in-between ABM and GP4F. We couldn't do the tie survey because the clouds were below the level of the base. Will do it some other time.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	1-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy /Foggy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	Standby
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

The weather was bad - low clouds or fog right down to camp. Stayed in camp all day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	2-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	1
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 2806121	Aurora	1
Leica GS15 1502720	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Finished laying the loop, took until 1 pm. Made sure everything was good for the survey and waited for the PVC to be put down and the rods to be pulled, so we could start the survey later in the night. Franz drove back to Whitehorse.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	3-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

clear not windy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

The drillers finished pulling the rods around 11pm. Dummied the hole it was good right down to the bottom. Started Digi-Atlantis surveying the hole at around 12am. The generator died around 3:00 am. Ran up and started it back up. Finshed the survey around 6:00 am. Took the rest of the day off after pulling a double shift.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	4-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Finally had good weather to do the tie survey. Did the tie survey for the base at Rhyolite peak and GP4F west. Continued on with the survey in the area in between ABM and the GP4F.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	5-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrin's first day in the field. Provided training on the GPS rover and how to find gravity stations. Surveyed the north end of lines 16, 17, 18 and 19. Andre and Darrin repeated a loop from yesterday which didn't repeat within the required specifications.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	6-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, mixed sleet and snow

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Surveyed the North end of L20, 21,22, 23. The weather socked in at the end of the day and we had to walk down the hill for a pickup.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	7-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued surveying the N end of lines 26, 25, 24 and 23. Took untill 6pm because it was a long walk out to the location.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	8-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued surveying South of the base on lines 17, 18,19,20,21 and 22.
Thought L17 was only surveyed to 1500 but it was done further.
Doubled half of the loop on line 17.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Continued on the east side GP4F-W. Surveyed L22, L23, L24 & L25. Got picked up at 5:30pm due to the long walk back to the GP4F-W base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy High winds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Worked lower down because of high winds. Continued surveying the south end lines 25, 24, 23 and 22. Took untill 6pm because it was a long walk out to this area.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Still windy from the previous night's wind storm, mostly sunny.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Dave flew in from Whitehorse and went through camp orientation, Andre flew to Whitehorse. Darrell worked on the loop in preparation for the next hole as the drilling is almost to the expected depth. Many, many moose (& caribou?) breaks and dragged wires, so could not get it completed. Darrin and Heiko worked on cleaning up points in the GP4F area that did get a phase corrected position.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrell and Darrin worked on the loop in the morning, set up and surveyed hole 247 on GP4F Pad 55. Did not have access to the pad until 1300 and survey went long - had to cut it short and did not survey the upper 65 metres of the hole so that the crew could return to camp before nightfall with the data from the bottom of the hole. Had a generator problem at the start of the day which appeared to surge voltage to the transmitter. TEM transmitter equipment was not damaged but the generator quit and the crew used the spare. Dave and Heiko gravity surveyed lines 19, 20 and 21.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly cloudy with some snow showers

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

All the crew were gravity surveying on lines 17,18,19,20 and 21.
Darrell cleaned up some of the downhole equipment in the morning before walking to line 19 to join Darrin and begin surveying.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Partly cloudy with very strong winds up high

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	1
Leica GS14 2805723	Aurora	1
Leica CS 2907999	Aurora	1
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Enough snow had melted on Rhyolite Mountain to complete the survey there. Also picked up an assortment of points that were missed, didn't correct to a phase-corrected solution or needed rechecking. High wind and noise for the gravimeters.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	0
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	demobilize
Leica GS14 2805723	Aurora	demobilize
Leica CS 2907999	Aurora	demobilize
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Geophysics surveying reduced to a single 2-person gravity crew to be better time coincident with completion of GP4F downhole EM and the gravity survey. Heiko and Darrin will help around camp until they demobilize Friday. Sent one of the rental Leica GPS units out but kept the radio and repeater as this has increased the production of the gravity crew. Darrell and Dave worked on lines 15, 16, 17 - repeated some stations on line 17 from September 13 as a check on the Sept 13 drift. Cleaned the base on Rhyolite Mountain.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Sep-15

PREPARED BY:
Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Dave and Darrell repaired the loop in the morning in anticipation of the next hole being completed. Moved the transmitter site closer to the drill. Then completed gravity on the bottom of lines 17, 18 & 19.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Had a late start to try and take advantage of better internet and correct some GPS points, but internet still poor. Dave and Darrell work on L14, 13 and L12. Bush is pretty thick.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	17-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mostly cloudy, moderate winds, occasional snow showers.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	1
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre came into camp and Dave left. Got out to the grid around 2pm. Darrell and Andre continued on the gravity near the base4 because it was only a half day. L13,L14 down hill from the base was done.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	19-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Mixed sun and clouds

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Checked the loop first thing in the morning. It was good, so waited for the drillers to put the PVC down and pull the rods. It was taking a while so moved some spools to pads so that they could be picked up. A rock got jammed in the shoe and the rods brought up the PVC as well. Went back to camp while the drillers cleared the rock from the shoe. Came back out at shift change (7pm). The loop was broken, so we walked the loop and fixed it. Waited for the drillers to finish pulling the rods.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	20-Sep-15

PREPARED BY:

Dave Hildes

Comments

Weather

Cloudy, clearing later in the night

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Started the survey at around 12:30 am. It took untill 5:30 to get the hole surveyed. Stations 295 and 155 were noisy due to water moving the probe around.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	21-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly sunny

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell worked on the southern ends L14, 13 and L15 and L16. Bush is pretty thick.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	22-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Worked on the top hill on lines L11 ,L12, L13 and L14 on the northern end of the lines.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	23-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mostly cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell worked on the northern ends of lines L8, L9, L10, and L11. Moved the tripods down to the 99 base and set up the repeater on the hill above.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	24-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

sunny in the morning, and snowing in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did gravity on L8, L9, L10 and L12. There was a tare at the end of the day. Darrell slipped and banged the gravimeter.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	25-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy in the morning, sunny in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell repaired the loop and expanded the loop around pad 63. Moved the TX site up the hill next to the drill. Tested the transmitter and the loop to see if it was working for the upcoming survey.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	26-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

snowing in the morning, sunny in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did gravity on L8 and L9 near the south end of the lines in the morning. Came back to camp and rested up in the afternoon for the borehole survey later that day. Went out at 6pm when the drillers finished putting the PVC down the hole. The loop was energized and the hole was dummy probed before the driller shift change. Continued surveying the hole until past midnight.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	27-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

mixed sun and clouds. Light rain at times.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell finished the downhole survey around 2am. Spent the night in the driller survival shack. Rested up in the morning. Continued on with the gravity on L9 and L10 in the afternoon .

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	28-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Mixed sun and clouds. Windy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell continued on the gravity on L10, 11 and 12.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell surveyed approximately 15 historical drill hole collars in the morning. In the afternoon, redid the north ends of L8, L9and L10 when that tare occurred on Sept 23rd.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	29-Sep-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darell continued on the gravity south of the historical core camp on L12, L11.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	1-Oct-15

PREPARED BY:
Andre Lebel

Comments
Weather
Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)
Andre and Darrell finished off the gap in L10 in the morning. Went over to check the loop in the afternoon for the following dowhole survey.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	2-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell did a loop of redos on 18 and 19 and then went over and completed the cross line 38. Sarted on the second cross line 37 towards the end of the day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	3-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny in the morning and cloudy in the afternoon.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell were on standby waiting for the drill hole to shut down and rods to be pulled. The drilling continued, however, and the crew remained on standby.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	4-Oct-15

PREPARED BY:
Andre Lebel

Comments

Weather

Cloudy, Periods of sun

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell went out to repair the loop in the morning. There was a shortage of PVC. While waiting, the crew dummied the hole before they put the PVC and the plug down. Will go out and survey the hole in the evening.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	5-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Digi Atlantis downhole survey throughout the night. Started at 8pm, finished at 4am. Could only survey hole down to a depth of 365m because there was insufficient PVC to reach below 365m. The probe ran out of batteries with only 25m left of the hole. There was also a system error with the transmitter GPS between 140m to 150m, causing a large false anomaly. Returned to camp and rested for the day.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	6-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Sunny No wind

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Redid the loop 18 300 - 950 and 17 300 to 600 because of a Tare on Sept 13. Afterwards finsihed off the L37 using The 9996 base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	7-Oct-15

PREPARED BY:

Andre Lebel

Comments

Weather

Cloudy, Periods of sun

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell started on the infill lines inbetween the ABM and the Rhyolite areas. Read 33 and 34 to completion.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	8-Oct-15

PREPARED BY:
Andre Lebel

Comments

Weather

Sunny in the Morning, Snow and Clouds in the afternoon

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell continued on the infill lines inbetween the ABM and the Rhyolite areas. Read 35 and 36 to completion and L7 1600 and 1450 that were missed. All the readings were done using the the 9999 base.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	9-Oct-15

PREPARED BY:
Darrell Epp

Comments

Weather

Cloudy all day with very low ceiling and fog in the morning; minor intermittent snow.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre re-did gravity and gps points for L25, 1800; L26, 1400; and L27, 400. Darrell inspected and fixed loop in preparation for upcoming down-hole survey of GP4F58-285. All gravity readings were done using base 9998.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	10-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Cloudy all day. Clear late in the evening.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell on standby for downhole survey of GP4F58-285 from morning until 1pm. Helped with geoteching from 1 to 6pm. Flew out to GP4F @ 7pm to prepare for night downhole EM survey of GP4F58-285.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	11-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Clear early morning to cloudy mid-morning and late-morning.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell performed downhole EM survey of GP4F58-285 from 1am to approximately 7:30 am, then returned to camp @ around 8:30 am.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	12-Oct-15

PREPARED BY:
Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre and Darrell cleaned up loop 2 on GP4F grid. Darrell observed wildlife incident @ approximately 11:30 am. Darrell found male caribou dead and tangled up in EM loop wire during clean up of wire. Safety investigation and discussion followed.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	13-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	1
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	1
Leica GS15 Rover	Aurora	1
Leica CS 2907005	Aurora	1
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Andre's demobilization day; Darrell and Andre organized and packed up gear in the morning; Andre participated in some geotech work from about 1 pm to 3:15pm prior to late afternoon departure. Darrell helped with geoteching from 1 pm to 5:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	14-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Partially cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

Darrell and Heiko on standby first half of day. Installed ABM loop 2 in afternoon, then went out to perform EM survey of hole KX15-292 at 11:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	15-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Windy, partially cloudy.

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

Notes (production comments, incidents, other)

From 12am to 830am, Darrell and Heiko set up and performed down hole EM survey of KX15-292 from EOH at 310 m to top of hole at 30 m - 10 m below bottom of casing. Returned to field at 3 pm and cleaned up ABM Loop; Returned to camp at 7:30 pm.

AURORA GEOSCIENCES

BMC-15524-YT Kudz Ze Kayah Gravity

DATE:	16-Oct-15

PREPARED BY:

Darrell Epp

Comments

Weather

Partially cloudy

LOGISTICS

Type	*Contractor*	*Hrs or units*
Truck	Aurora	
Gravity Meter 1368	Aurora	
Leica GS14 2810411	Aurora	
Leica GS14 2805723	Aurora	
Leica CS 2907999	Aurora	
Gravity Meter 349	Aurora	
Leica GS14 base	Aurora	
Leica GS15 Rover	Aurora	
Leica CS 2907005	Aurora	
Digi-Atlantis system	Aurora	1
Geonics PROTEM transmitters	Aurora	1
Geonics surface TEM	Aurora	1
Geonics winches and cables	Aurora	1

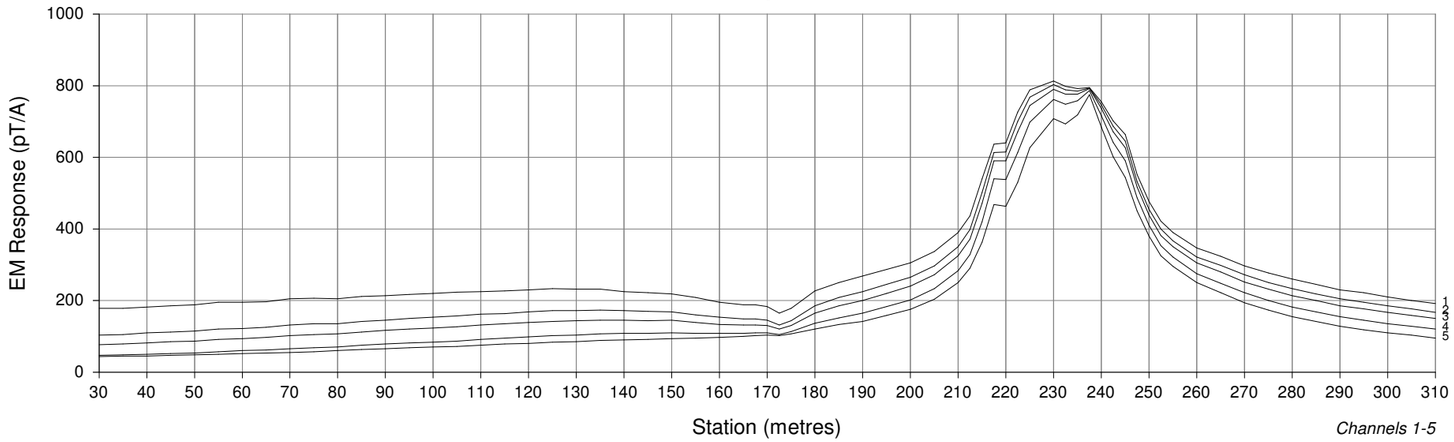
Notes (production comments, incidents, other)

Darrell and Heiko; Demobilization.

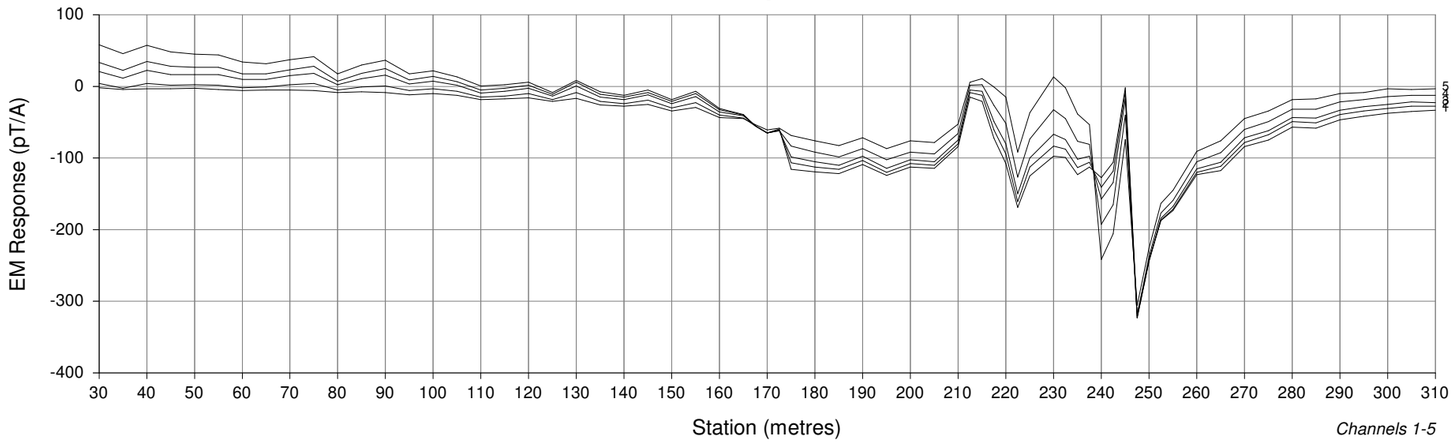
Appendix II

DHEM Profiles

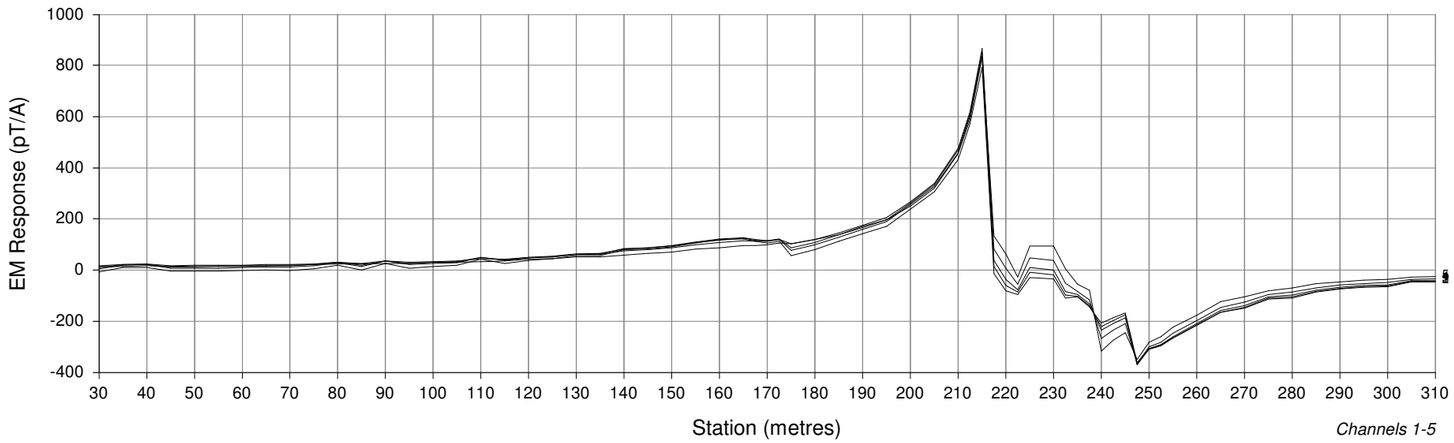
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3535, 0.0250	15	: 2.074, 0.516
2	: 0.3746, 0.0310	16	: 2.510, 0.641
3	: 0.4009, 0.0385	17	: 3.052, 0.796
4	: 0.4334, 0.0478	18	: 3.725, 0.988
5	: 0.4739, 0.0594	19	: 4.560, 1.227
6	: 0.5240, 0.0737	20	: 5.597, 1.523
7	: 0.5864, 0.0915	21	: 6.884, 1.891
8	: 0.6637, 0.1136	22	: 8.483, 2.348
9	: 0.7597, 0.1411	23	: 10.47, 2.91
10	: 0.8790, 0.1751	24	: 12.93, 3.62
11	: 1.027, 0.217	25	: 15.99, 4.49
12	: 1.211, 0.270	26	: 19.78, 5.58
13	: 1.439, 0.335	27	: 24.50, 6.92
14	: 1.722, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: ABM_loopfinal
Tx Current	: 19 A
Turn Off	: 0.266 ms

0 25 50 75 100

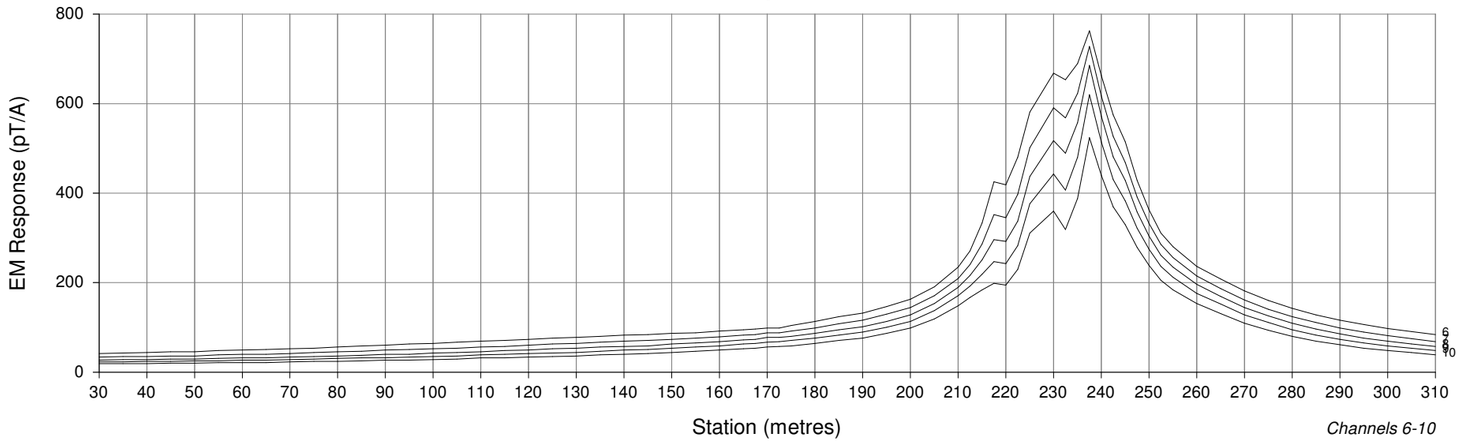
Scale 1:1250

BMC MINERALS LTD

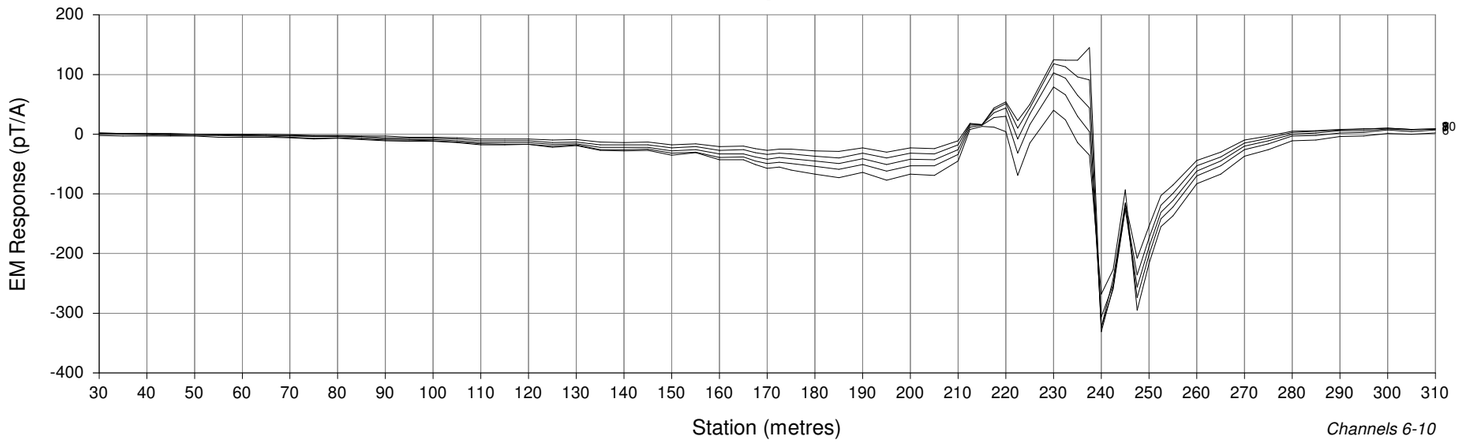
Krakatoa Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-016-292

Job: BMC-15525-YT Date Surveyed: 27/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

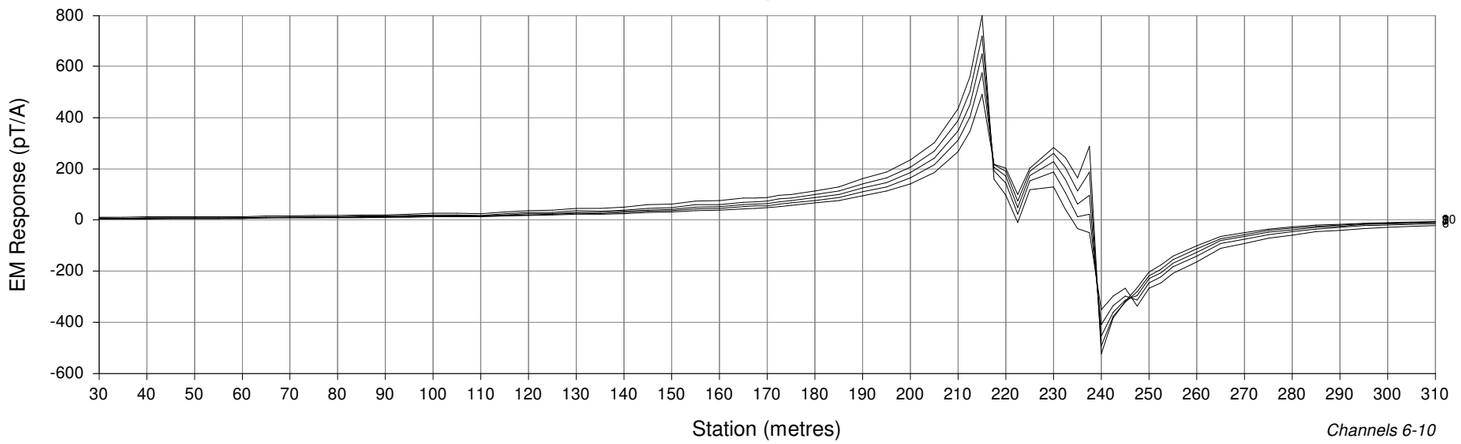
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3535, 0.0250	15	: 2.074, 0.516
2	: 0.3746, 0.0310	16	: 2.510, 0.641
3	: 0.4009, 0.0385	17	: 3.052, 0.796
4	: 0.4334, 0.0478	18	: 3.725, 0.988
5	: 0.4739, 0.0594	19	: 4.560, 1.227
6	: 0.5240, 0.0737	20	: 5.597, 1.523
7	: 0.5864, 0.0915	21	: 6.884, 1.891
8	: 0.6637, 0.1136	22	: 8.483, 2.348
9	: 0.7597, 0.1411	23	: 10.47, 2.91
10	: 0.8790, 0.1751	24	: 12.93, 3.62
11	: 1.027, 0.217	25	: 15.99, 4.49
12	: 1.211, 0.270	26	: 19.78, 5.58
13	: 1.439, 0.335	27	: 24.50, 6.92
14	: 1.722, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: ABM_loopfinal
Tx Current	: 19 A
Turn Off	: 0.266 ms

0 25 50 75 100

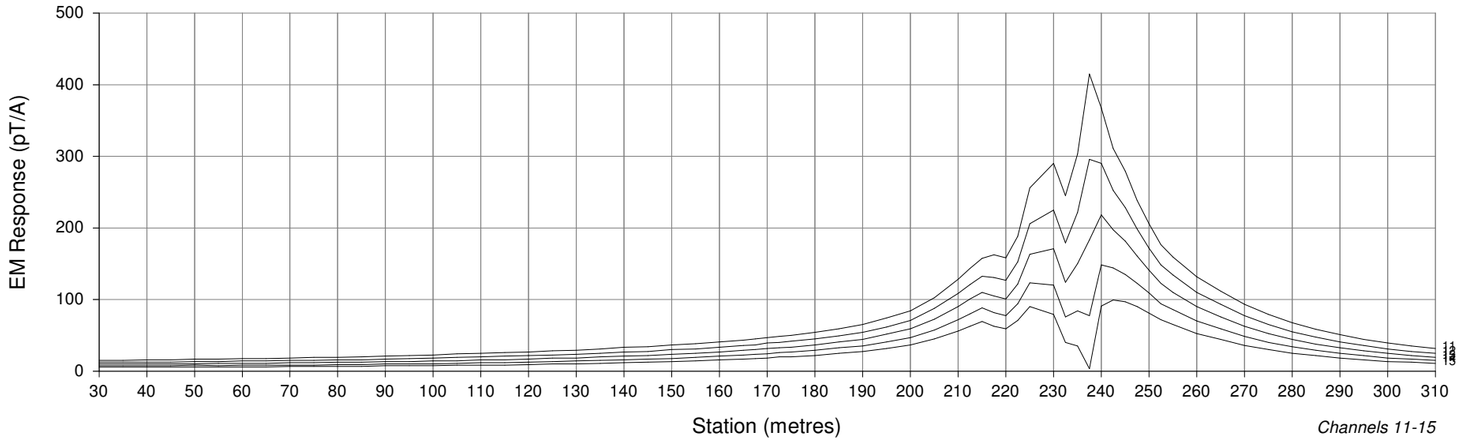
Scale 1:1250

BMC MINERALS LTD

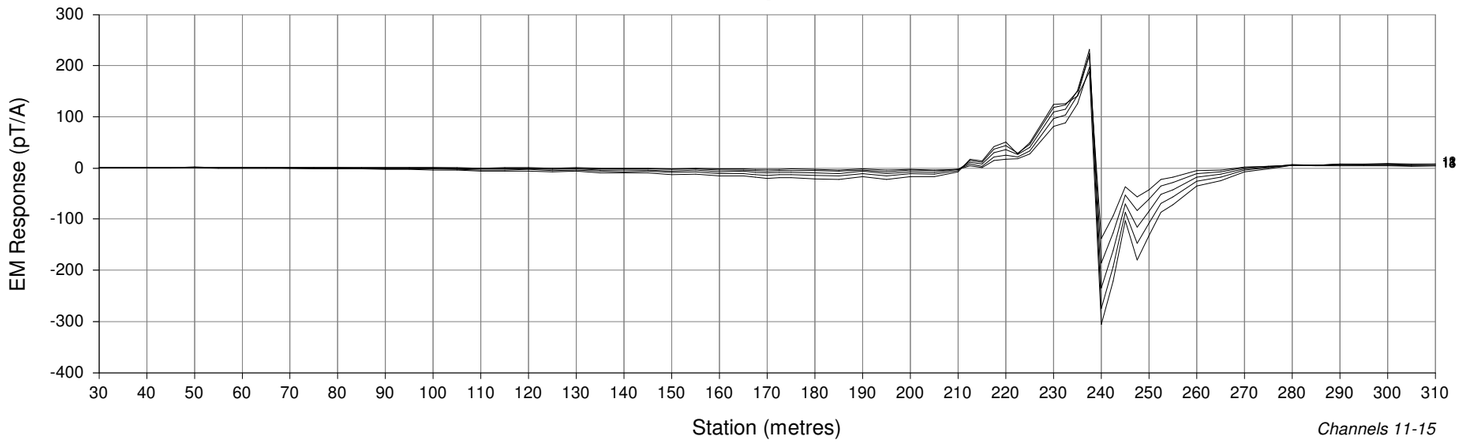
Krakatoa Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-016-292

Job: BMC-15525-YT Date Surveyed: 27/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

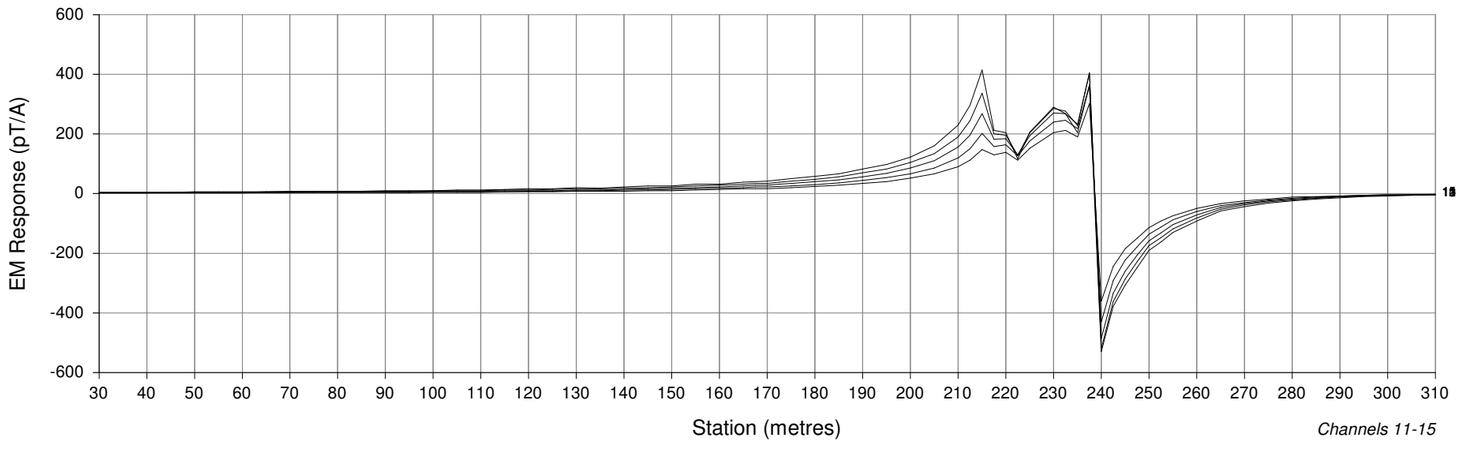
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3535, 0.0250	15	: 2.074, 0.516
2	: 0.3746, 0.0310	16	: 2.510, 0.641
3	: 0.4009, 0.0385	17	: 3.052, 0.796
4	: 0.4334, 0.0478	18	: 3.725, 0.988
5	: 0.4739, 0.0594	19	: 4.560, 1.227
6	: 0.5240, 0.0737	20	: 5.597, 1.523
7	: 0.5864, 0.0915	21	: 6.884, 1.891
8	: 0.6637, 0.1136	22	: 8.483, 2.348
9	: 0.7597, 0.1411	23	: 10.47, 2.91
10	: 0.8790, 0.1751	24	: 12.93, 3.62
11	: 1.027, 0.217	25	: 15.99, 4.49
12	: 1.211, 0.270	26	: 19.78, 5.58
13	: 1.439, 0.335	27	: 24.50, 6.92
14	: 1.722, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: ABM_loopfinal
Tx Current	: 19 A
Turn Off	: 0.266 ms

0 25 50 75 100

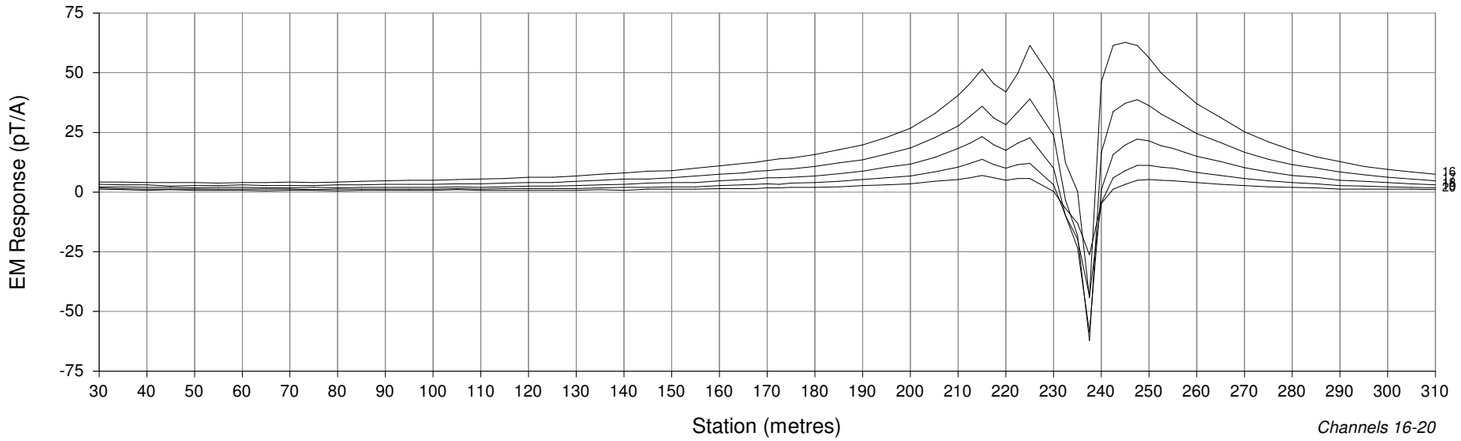
Scale 1:1250

BMC MINERALS LTD

Krakatoa Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-016-292

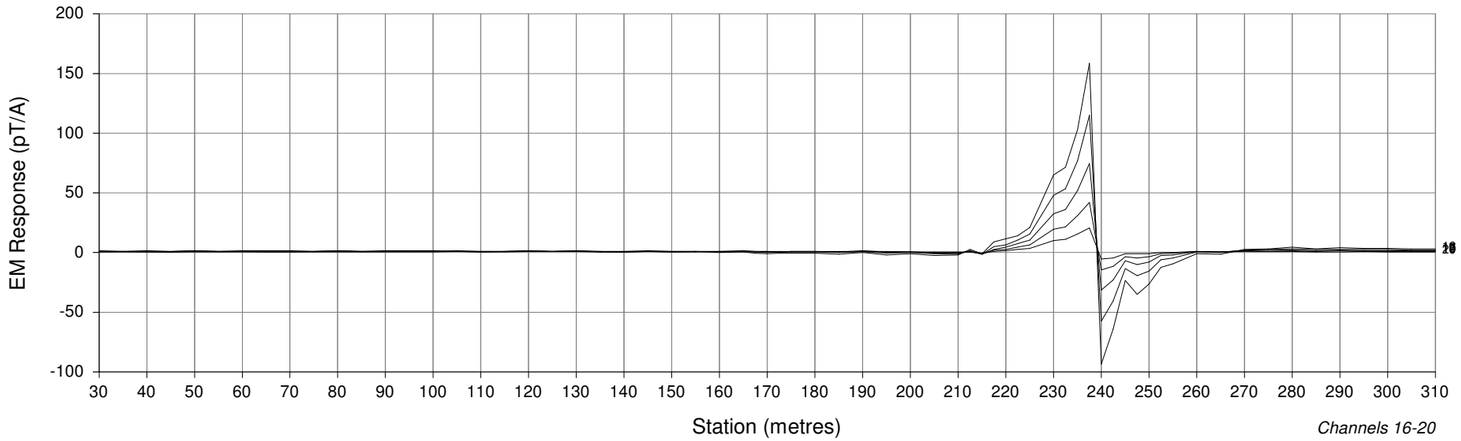
Job: BMC-15525-YT Date Surveyed: 27/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



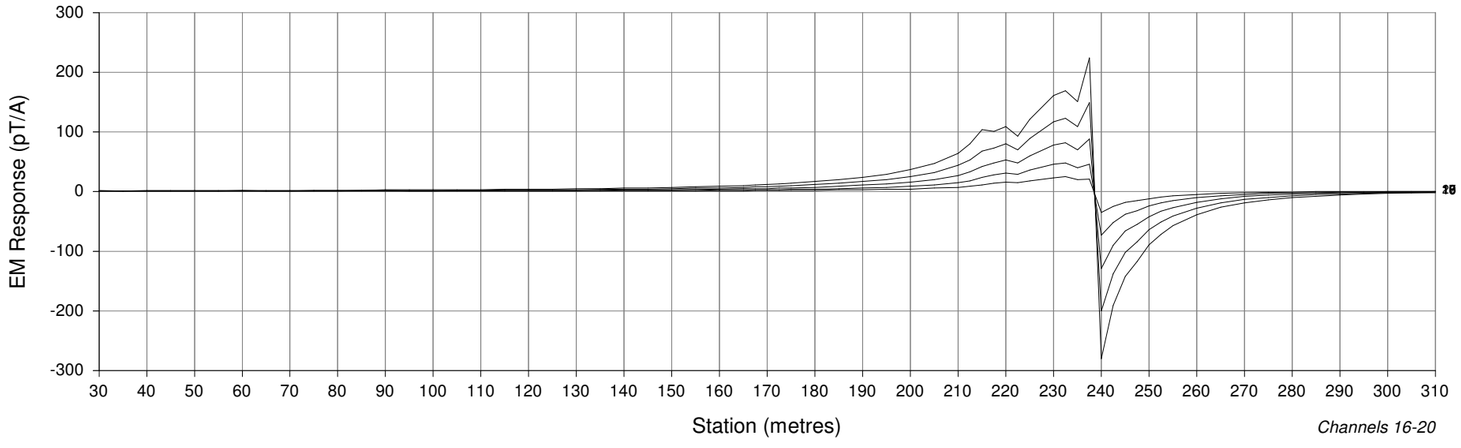
Channels 16-20

U Component



Channels 16-20

V Component



Channels 16-20

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3535, 0.0250	15	: 2.074, 0.516
2	: 0.3746, 0.0310	16	: 2.510, 0.641
3	: 0.4009, 0.0385	17	: 3.052, 0.796
4	: 0.4334, 0.0478	18	: 3.725, 0.988
5	: 0.4739, 0.0594	19	: 4.560, 1.227
6	: 0.5240, 0.0737	20	: 5.597, 1.523
7	: 0.5864, 0.0915	21	: 6.884, 1.891
8	: 0.6637, 0.1136	22	: 8.483, 2.348
9	: 0.7597, 0.1411	23	: 10.47, 2.91
10	: 0.8790, 0.1751	24	: 12.93, 3.62
11	: 1.027, 0.217	25	: 15.99, 4.49
12	: 1.211, 0.270	26	: 19.78, 5.58
13	: 1.439, 0.335	27	: 24.50, 6.92
14	: 1.722, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: ABM_loopfinal
Tx Current	: 19 A
Turn Off	: 0.266 ms

0 25 50 75 100

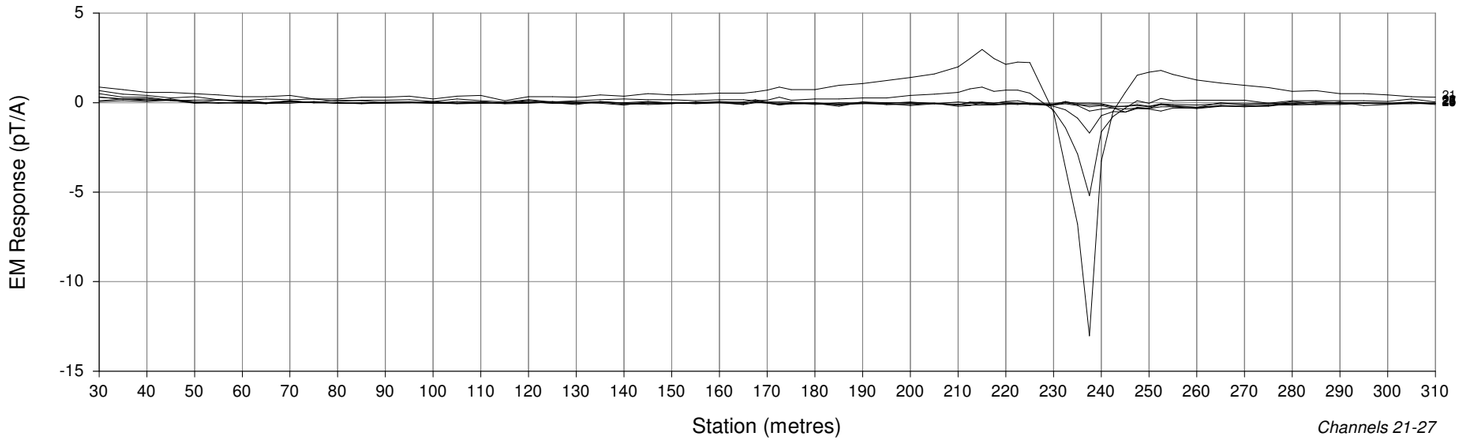
Scale 1:1250

BMC MINERALS LTD

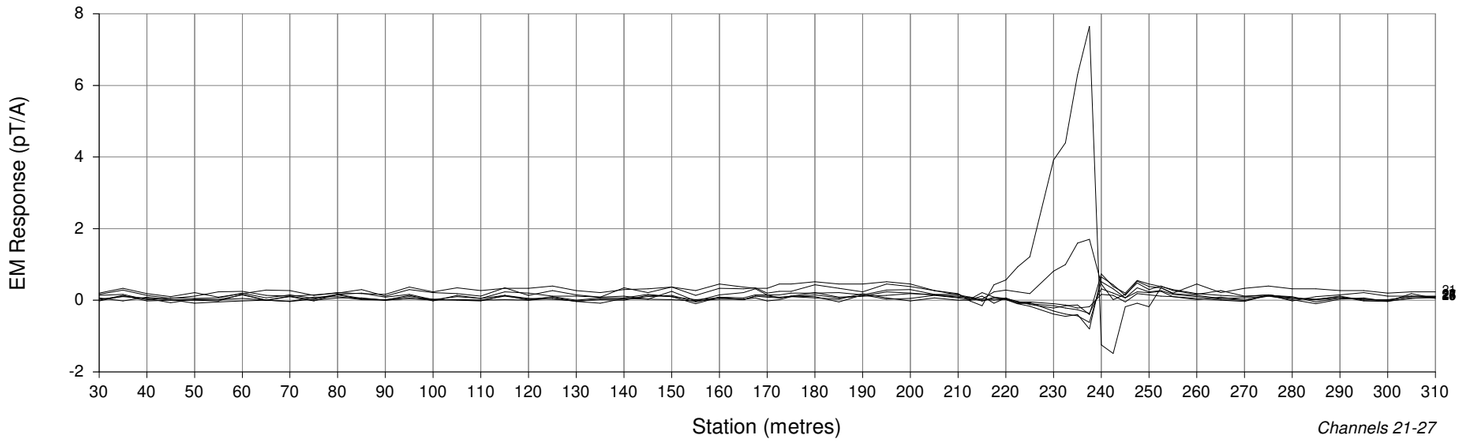
Krakatoa Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 20
DDH: K15-016-292

Job: BMC-15525-YT Date Surveyed: 27/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

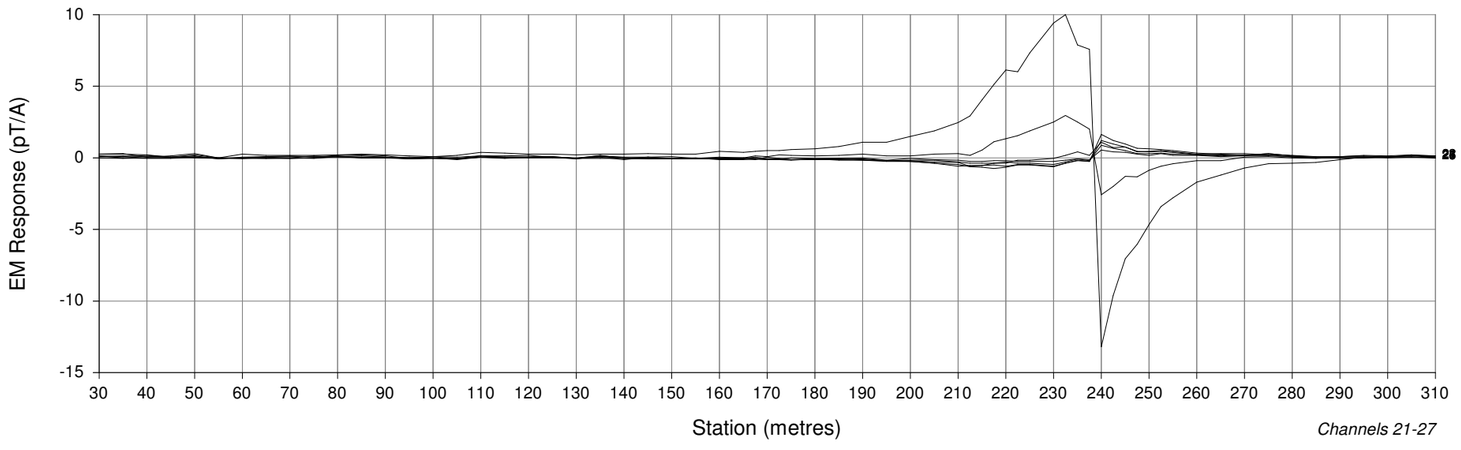
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3535, 0.0250	15	: 2.074, 0.516
2	: 0.3746, 0.0310	16	: 2.510, 0.641
3	: 0.4009, 0.0385	17	: 3.052, 0.796
4	: 0.4334, 0.0478	18	: 3.725, 0.988
5	: 0.4739, 0.0594	19	: 4.560, 1.227
6	: 0.5240, 0.0737	20	: 5.597, 1.523
7	: 0.5864, 0.0915	21	: 6.884, 1.891
8	: 0.6637, 0.1136	22	: 8.483, 2.348
9	: 0.7597, 0.1411	23	: 10.47, 2.91
10	: 0.8790, 0.1751	24	: 12.93, 3.62
11	: 1.027, 0.217	25	: 15.99, 4.49
12	: 1.211, 0.270	26	: 19.78, 5.58
13	: 1.439, 0.335	27	: 24.50, 6.92
14	: 1.722, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: ABM_loopfinal
Tx Current	: 19 A
Turn Off	: 0.266 ms

0 25 50 75 100

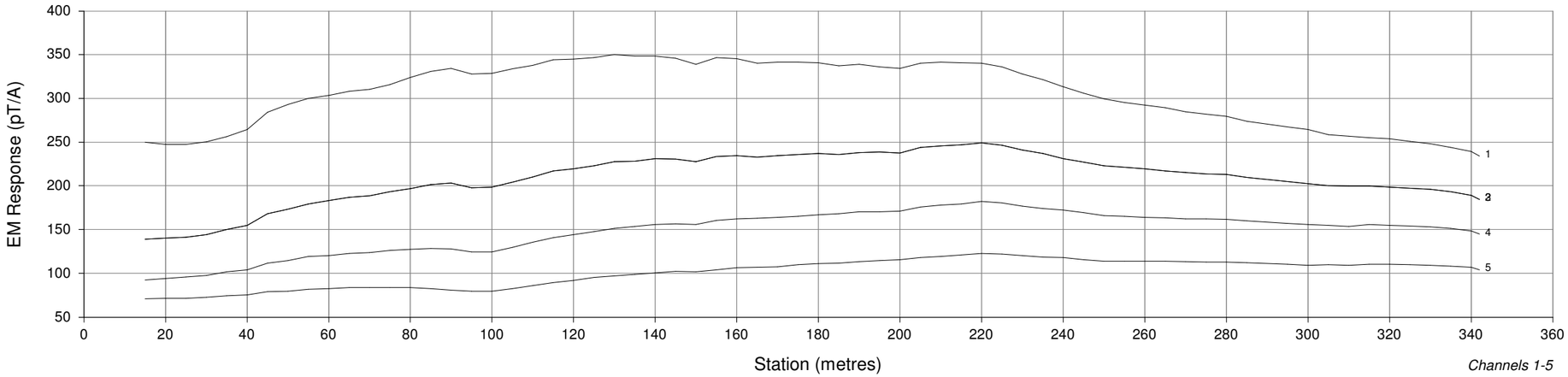
Scale 1:1250

BMC MINERALS LTD

Krakatoa Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 21 - 27
DDH: K15-016-292

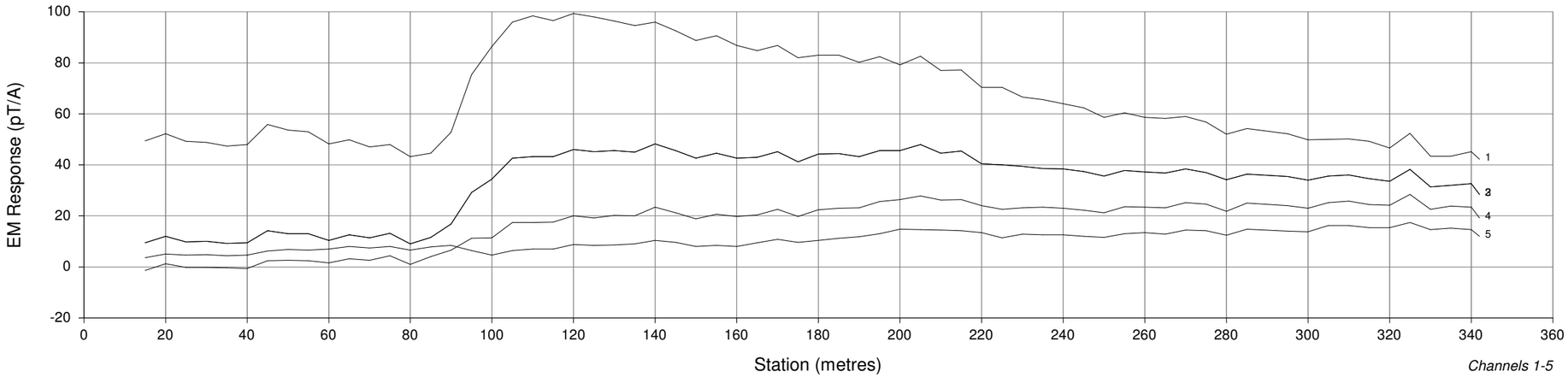
Job: BMC-15525-YT Date Surveyed: 27/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



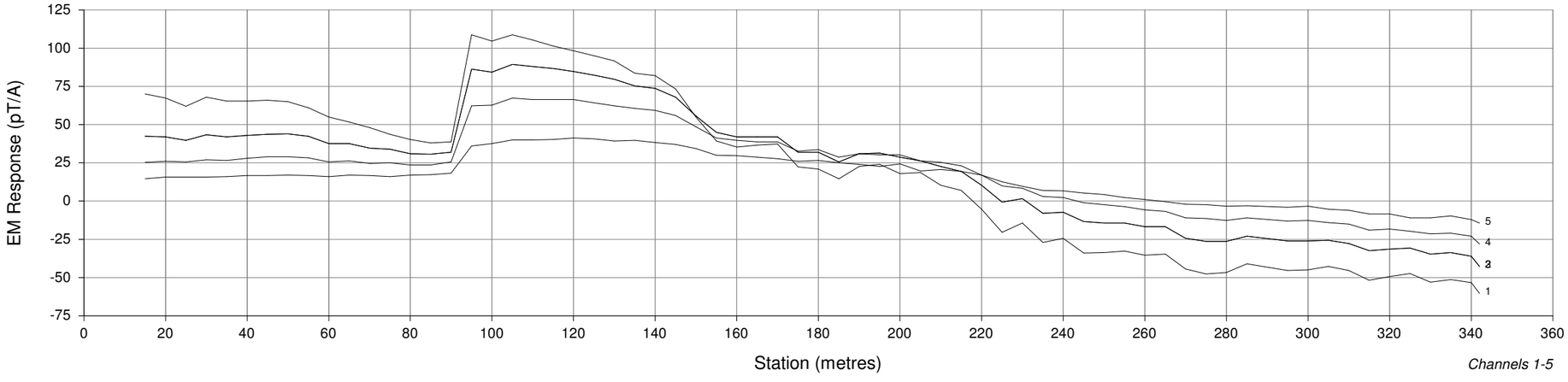
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3570, 0.0250	15	: 2.078, 0.516
2	: 0.3790, 0.0310	16	: 2.514, 0.641
3	: 0.4050, 0.0380	17	: 3.056, 0.796
4	: 0.4370, 0.0480	18	: 3.729, 0.988
5	: 0.4780, 0.0590	19	: 4.564, 1.227
6	: 0.5280, 0.0740	20	: 5.601, 1.523
7	: 0.5900, 0.0920	21	: 6.888, 1.891
8	: 0.6680, 0.1130	22	: 8.487, 2.347
9	: 0.7640, 0.1410	23	: 10.47, 2.91
10	: 0.8830, 0.1750	24	: 12.93, 3.62
11	: 1.031, 0.217	25	: 15.99, 4.49
12	: 1.215, 0.270	26	: 19.79, 5.58
13	: 1.443, 0.335	27	: 24.50, 6.92
14	: 1.726, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2-10 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop1
Tx Current	: 18 A
Turn Off	: 0.27 ms

0 25 50 75 100

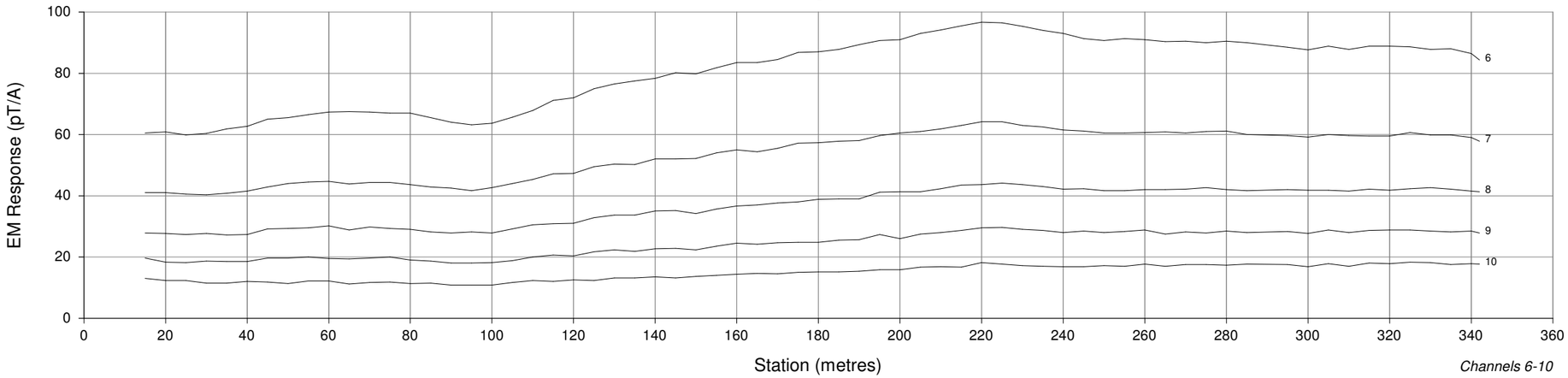
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F21-224

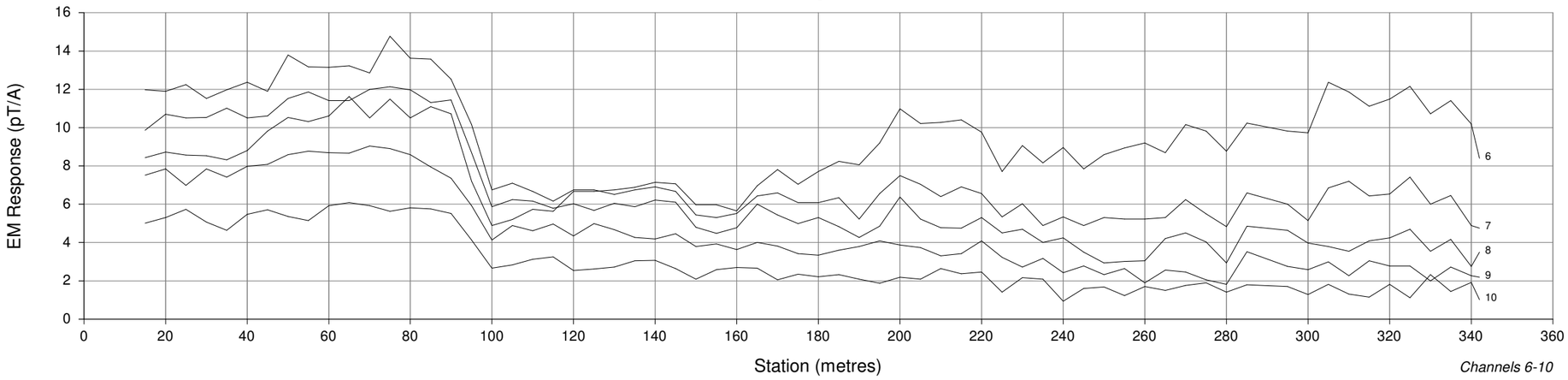
Job: BMC-15525-YT Date Surveyed: 24/08/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



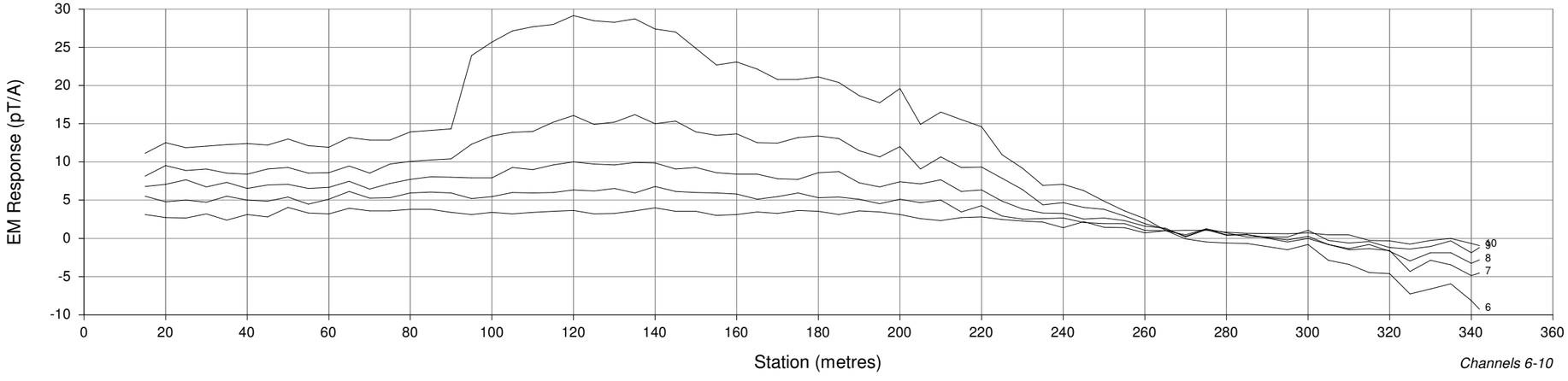
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3570, 0.0250	15	: 2.078, 0.516
2	: 0.3790, 0.0310	16	: 2.514, 0.641
3	: 0.4050, 0.0380	17	: 3.056, 0.796
4	: 0.4370, 0.0480	18	: 3.729, 0.988
5	: 0.4780, 0.0590	19	: 4.564, 1.227
6	: 0.5280, 0.0740	20	: 5.601, 1.523
7	: 0.5900, 0.0920	21	: 6.888, 1.891
8	: 0.6680, 0.1130	22	: 8.487, 2.347
9	: 0.7640, 0.1410	23	: 10.47, 2.91
10	: 0.8830, 0.1750	24	: 12.93, 3.62
11	: 1.031, 0.217	25	: 15.99, 4.49
12	: 1.215, 0.270	26	: 19.79, 5.58
13	: 1.443, 0.335	27	: 24.50, 6.92
14	: 1.726, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2-10 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop1
Tx Current	: 18 A
Turn Off	: 0.27 ms

0 25 50 75 100

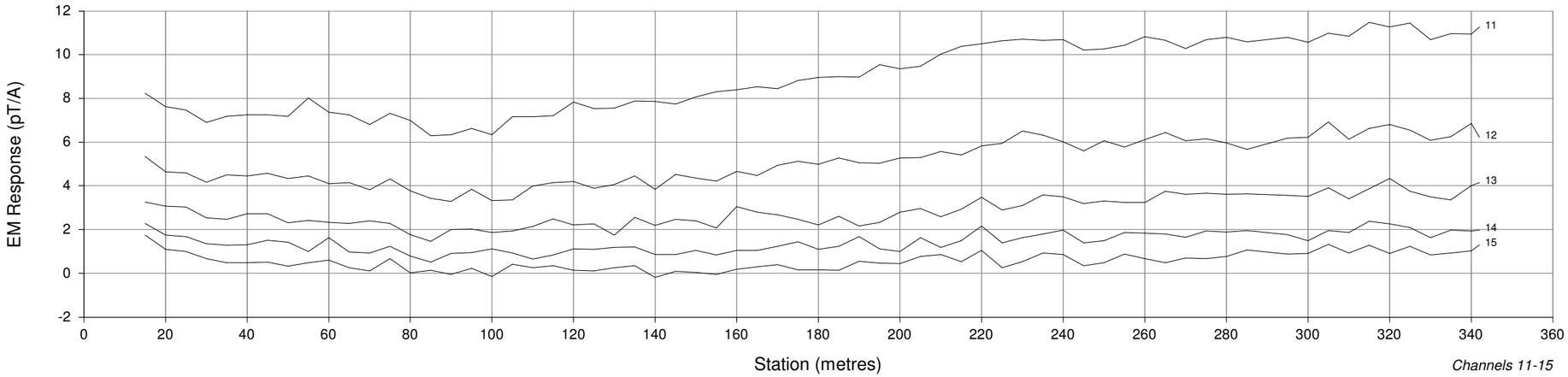
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F21-224

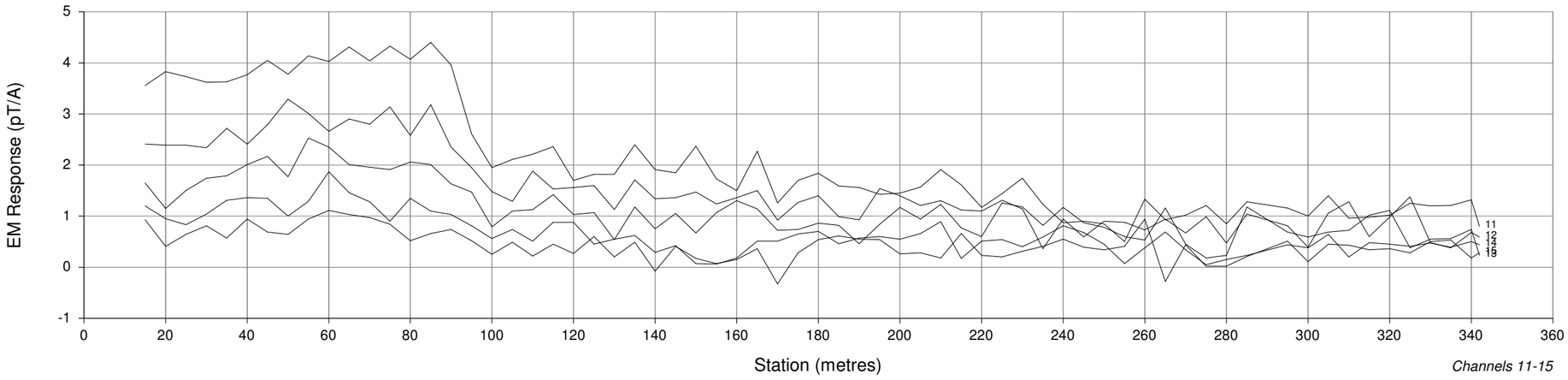
Job: BMC-15525-YT Date Surveyed: 24/08/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



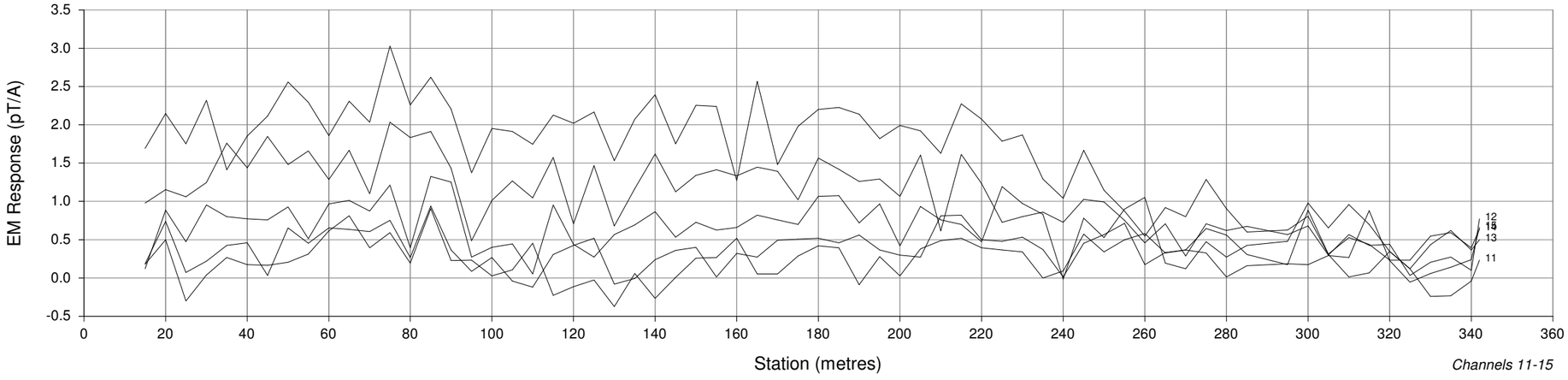
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3570, 0.0250	15	: 2.078, 0.516
2	: 0.3790, 0.0310	16	: 2.514, 0.641
3	: 0.4050, 0.0380	17	: 3.056, 0.796
4	: 0.4370, 0.0480	18	: 3.729, 0.988
5	: 0.4780, 0.0590	19	: 4.564, 1.227
6	: 0.5280, 0.0740	20	: 5.601, 1.523
7	: 0.5900, 0.0920	21	: 6.888, 1.891
8	: 0.6680, 0.1130	22	: 8.487, 2.347
9	: 0.7640, 0.1410	23	: 10.47, 2.91
10	: 0.8830, 0.1750	24	: 12.93, 3.62
11	: 1.031, 0.217	25	: 15.99, 4.49
12	: 1.215, 0.270	26	: 19.79, 5.58
13	: 1.443, 0.335	27	: 24.50, 6.92
14	: 1.726, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2-10 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop1
Tx Current	: 18 A
Turn Off	: 0.27 ms

0 25 50 75 100

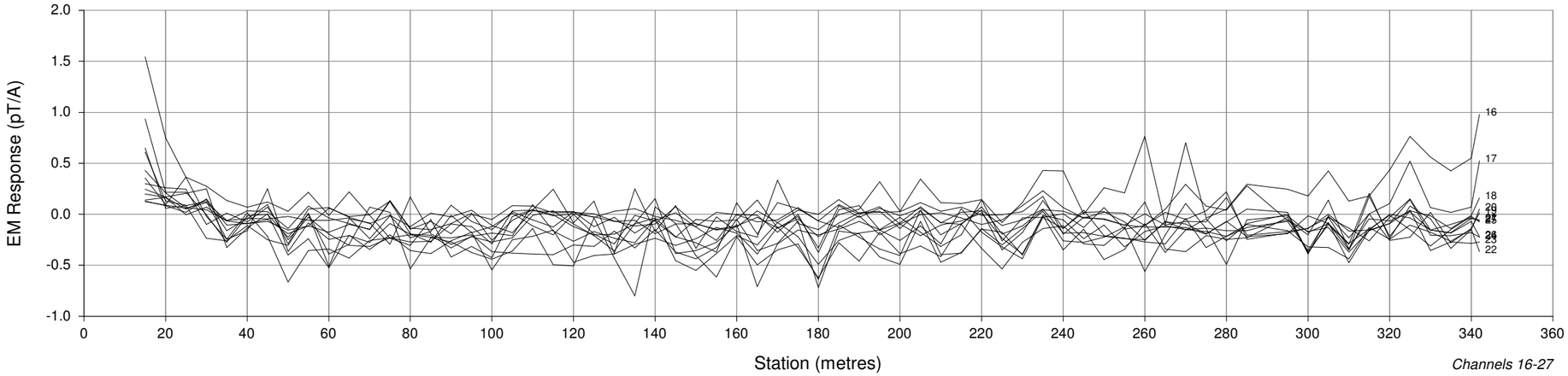
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F21-224

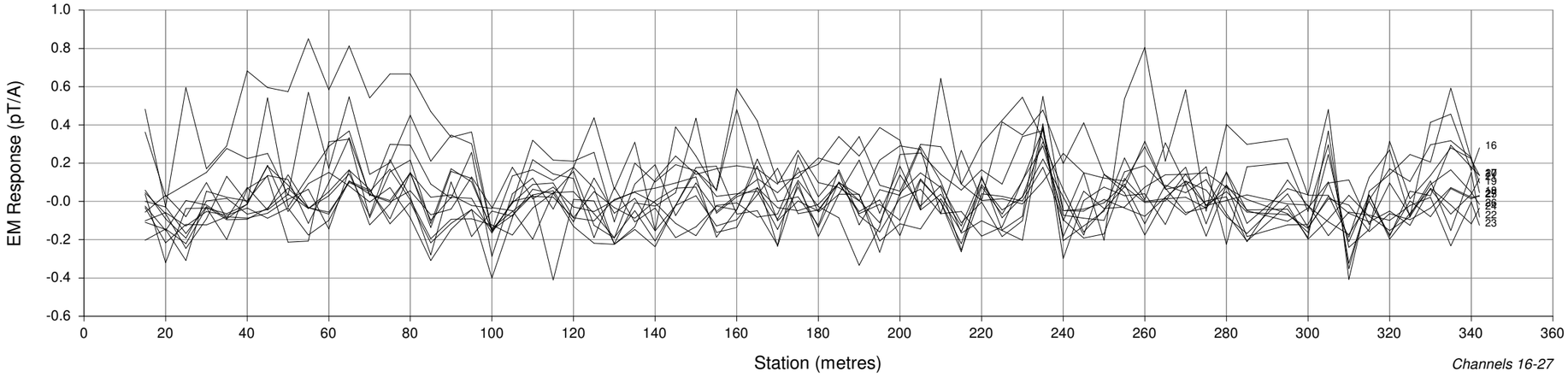
Job: BMC-15525-YT Date Surveyed: 24/08/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



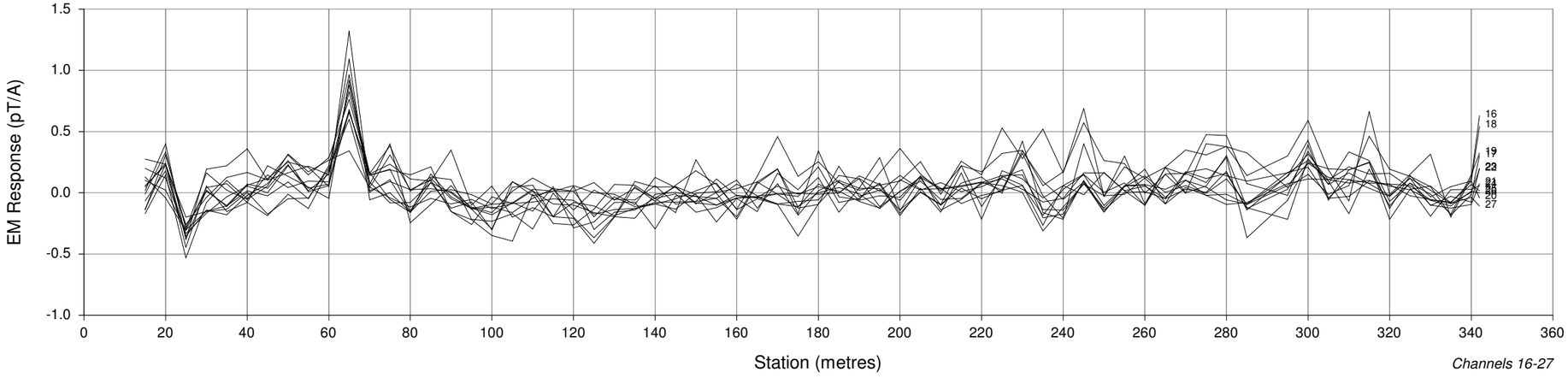
Channels 16-27

U Component



Channels 16-27

V Component



Channels 16-27

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.3570, 0.0250	15	: 2.078, 0.516
2	: 0.3790, 0.0310	16	: 2.514, 0.641
3	: 0.4050, 0.0380	17	: 3.056, 0.796
4	: 0.4370, 0.0480	18	: 3.729, 0.988
5	: 0.4780, 0.0590	19	: 4.564, 1.227
6	: 0.5280, 0.0740	20	: 5.601, 1.523
7	: 0.5900, 0.0920	21	: 6.888, 1.891
8	: 0.6680, 0.1130	22	: 8.487, 2.347
9	: 0.7640, 0.1410	23	: 10.47, 2.91
10	: 0.8830, 0.1750	24	: 12.93, 3.62
11	: 1.031, 0.217	25	: 15.99, 4.49
12	: 1.215, 0.270	26	: 19.79, 5.58
13	: 1.443, 0.335	27	: 24.50, 6.92
14	: 1.726, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2-10 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop1
Tx Current	: 18 A
Turn Off	: 0.27 ms

0 25 50 75 100

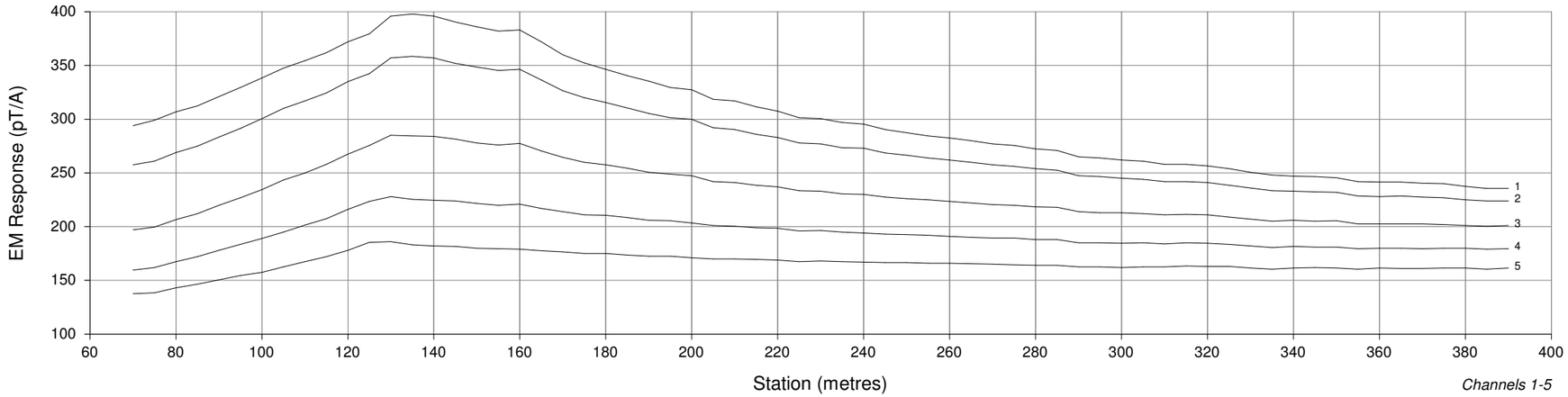
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH: K15-GP4F21-224

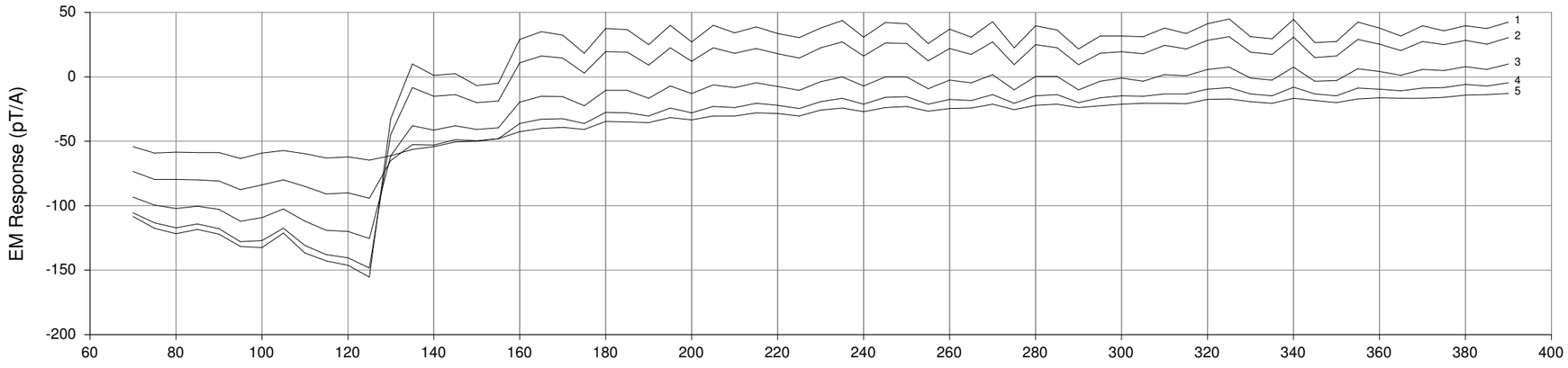
Job: BMC-15525-YT Date Surveyed: 24/08/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



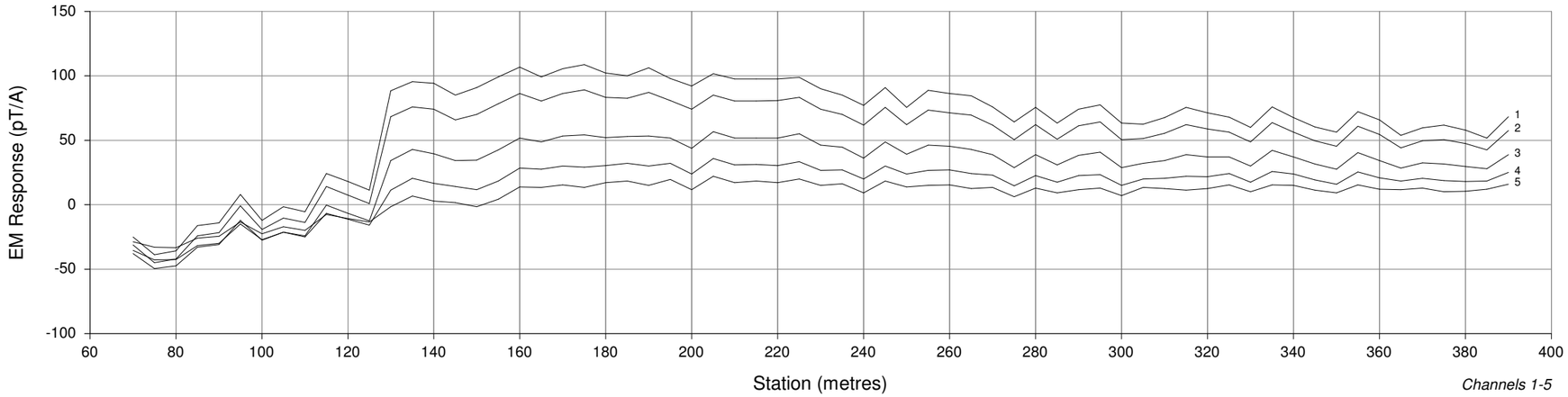
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4970, 0.0250	15	: 2.218, 0.516
2	: 0.5190, 0.0310	16	: 2.654, 0.641
3	: 0.5450, 0.0380	17	: 3.196, 0.796
4	: 0.5770, 0.0480	18	: 3.869, 0.988
5	: 0.6180, 0.0590	19	: 4.704, 1.227
6	: 0.6680, 0.0740	20	: 5.741, 1.523
7	: 0.7300, 0.0920	21	: 7.028, 1.891
8	: 0.8080, 0.1130	22	: 8.627, 2.347
9	: 0.9040, 0.1410	23	: 10.61, 2.91
10	: 1.023, 0.175	24	: 13.07, 3.62
11	: 1.171, 0.217	25	: 16.13, 4.49
12	: 1.355, 0.270	26	: 19.93, 5.58
13	: 1.583, 0.335	27	: 24.64, 6.92
14	: 1.866, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15.1 A
Turn Off	: 0.41 ms

0 25 50 75 100

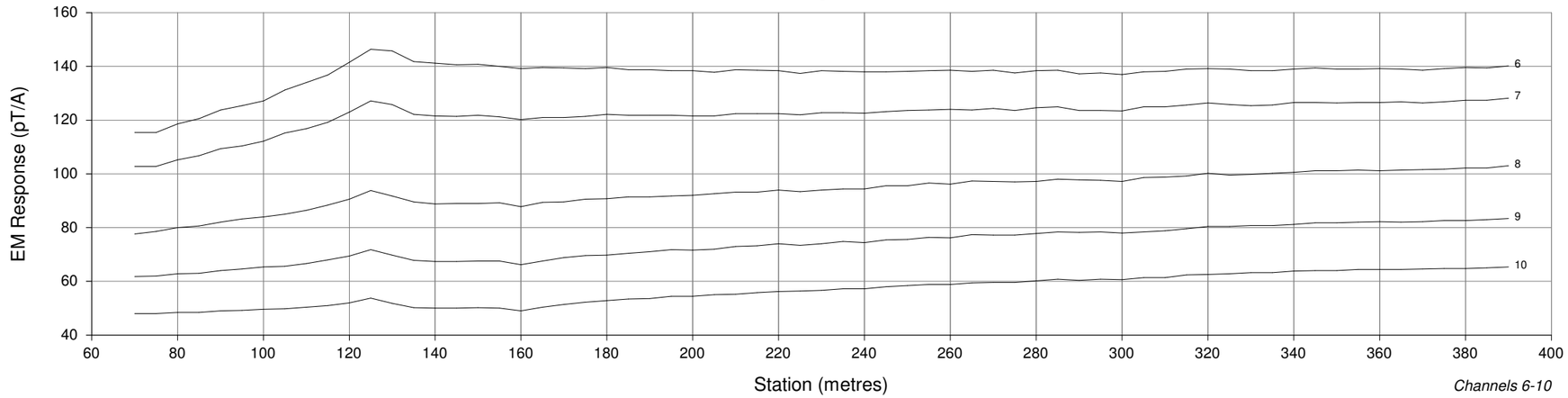
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F55-247

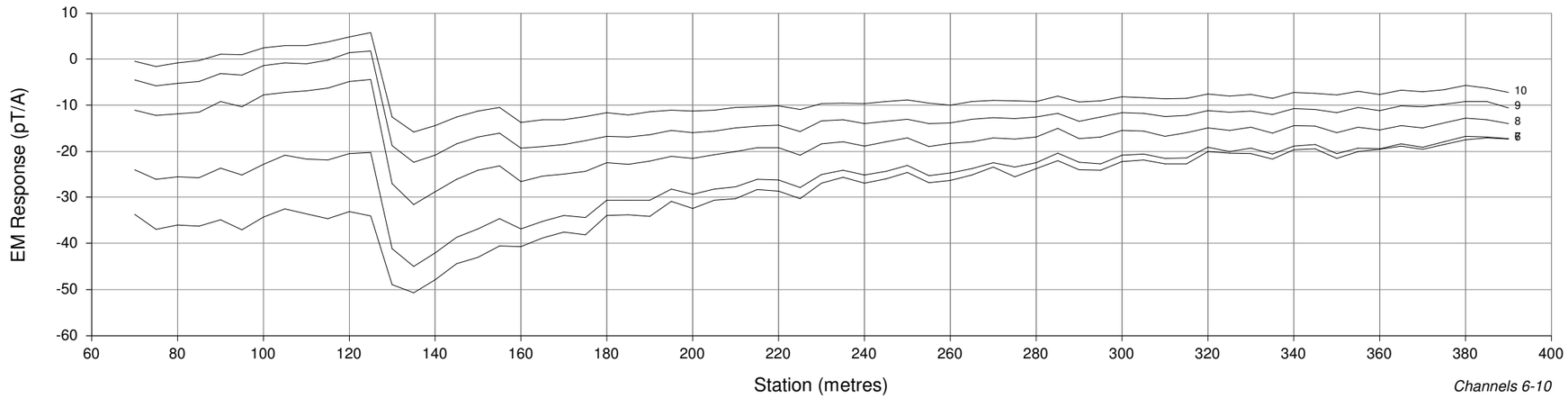
Job: BMC-15525-YT Date Surveyed: 13/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



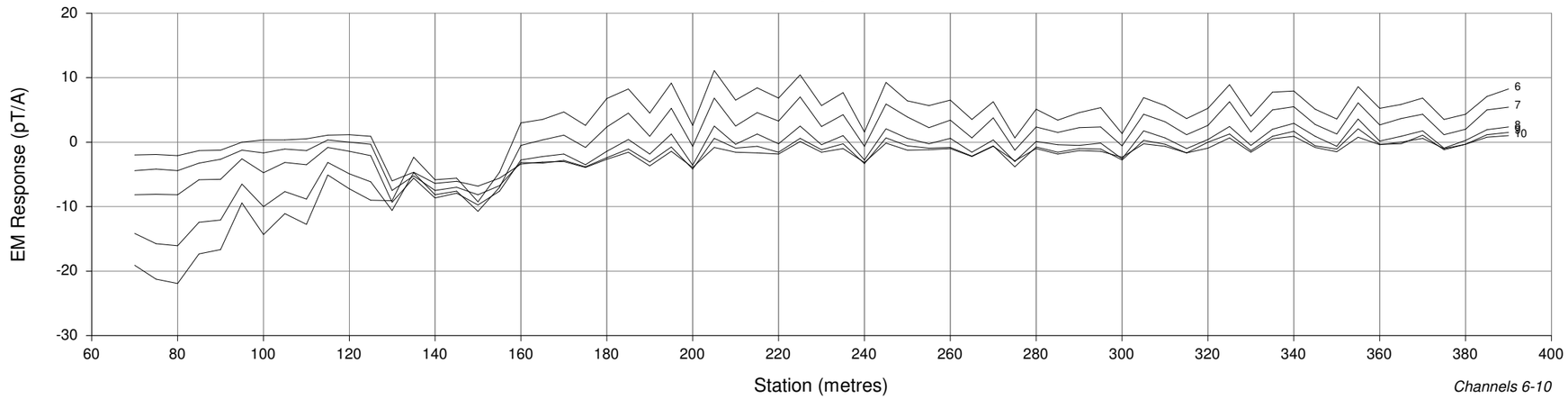
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4970, 0.0250	15	: 2.218, 0.516
2	: 0.5190, 0.0310	16	: 2.654, 0.641
3	: 0.5450, 0.0380	17	: 3.196, 0.796
4	: 0.5770, 0.0480	18	: 3.869, 0.988
5	: 0.6180, 0.0590	19	: 4.704, 1.227
6	: 0.6680, 0.0740	20	: 5.741, 1.523
7	: 0.7300, 0.0920	21	: 7.028, 1.891
8	: 0.8080, 0.1130	22	: 8.627, 2.347
9	: 0.9040, 0.1410	23	: 10.61, 2.91
10	: 1.023, 0.175	24	: 13.07, 3.62
11	: 1.171, 0.217	25	: 16.13, 4.49
12	: 1.355, 0.270	26	: 19.93, 5.58
13	: 1.583, 0.335	27	: 24.64, 6.92
14	: 1.866, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15.1 A
Turn Off	: 0.41 ms

0 25 50 75 100

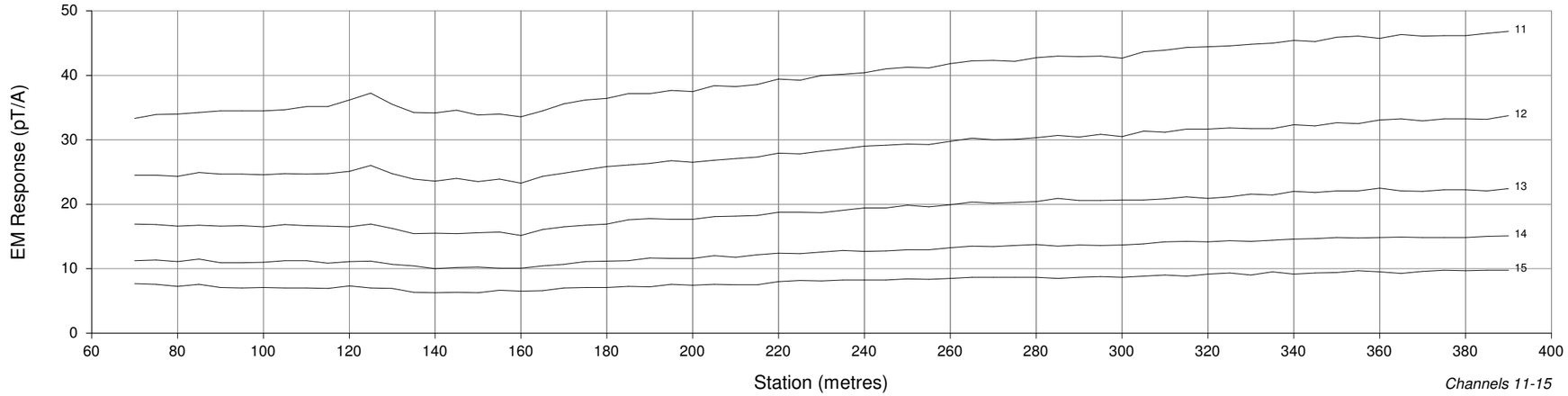
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F55-247

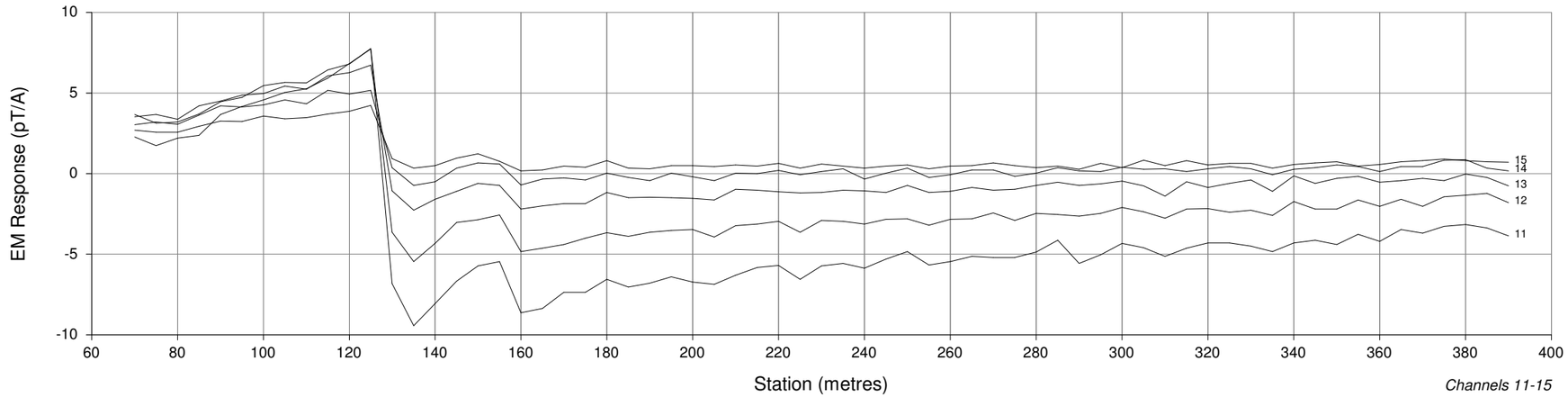
Job: BMC-15525-YT Date Surveyed: 13/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



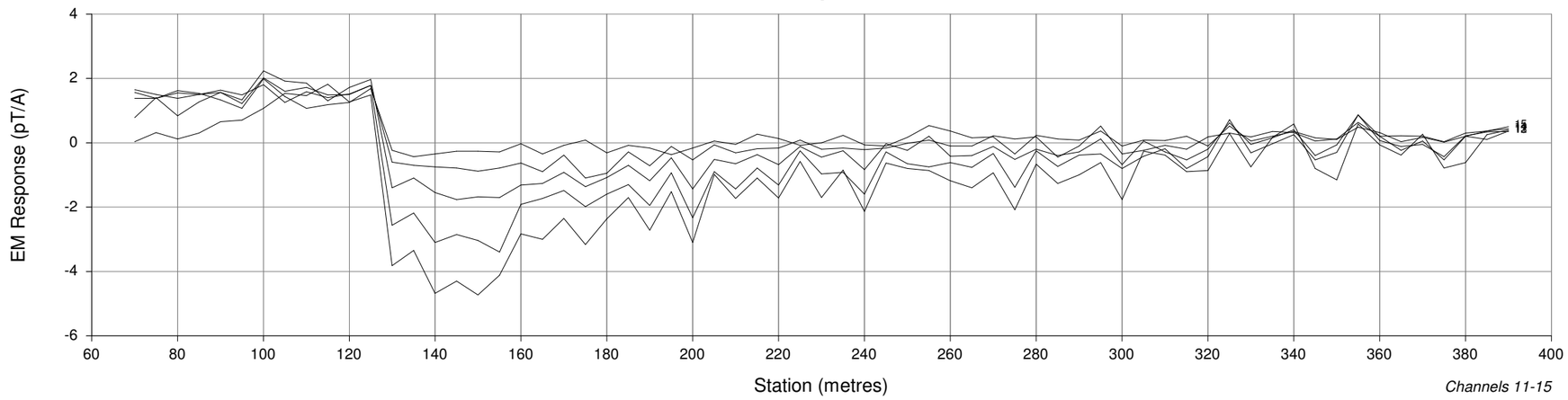
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4970, 0.0250	15	: 2.218, 0.516
2	: 0.5190, 0.0310	16	: 2.654, 0.641
3	: 0.5450, 0.0380	17	: 3.196, 0.796
4	: 0.5770, 0.0480	18	: 3.869, 0.988
5	: 0.6180, 0.0590	19	: 4.704, 1.227
6	: 0.6680, 0.0740	20	: 5.741, 1.523
7	: 0.7300, 0.0920	21	: 7.028, 1.891
8	: 0.8080, 0.1130	22	: 8.627, 2.347
9	: 0.9040, 0.1410	23	: 10.61, 2.91
10	: 1.023, 0.175	24	: 13.07, 3.62
11	: 1.171, 0.217	25	: 16.13, 4.49
12	: 1.355, 0.270	26	: 19.93, 5.58
13	: 1.583, 0.335	27	: 24.64, 6.92
14	: 1.866, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15.1 A
Turn Off	: 0.41 ms

0 25 50 75 100

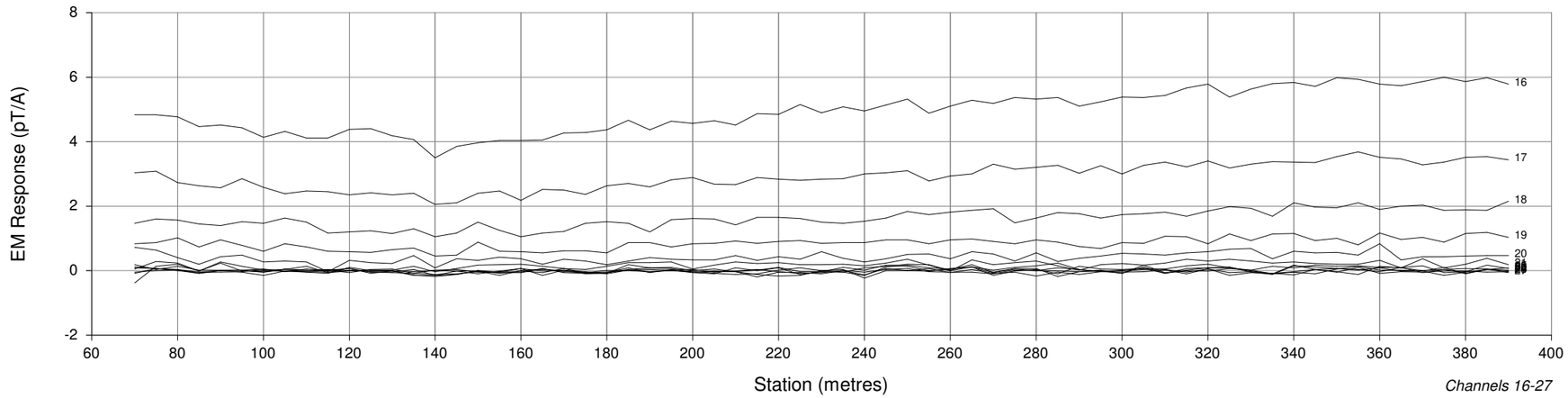
Scale 1:1250

BMC MINERALS LTD

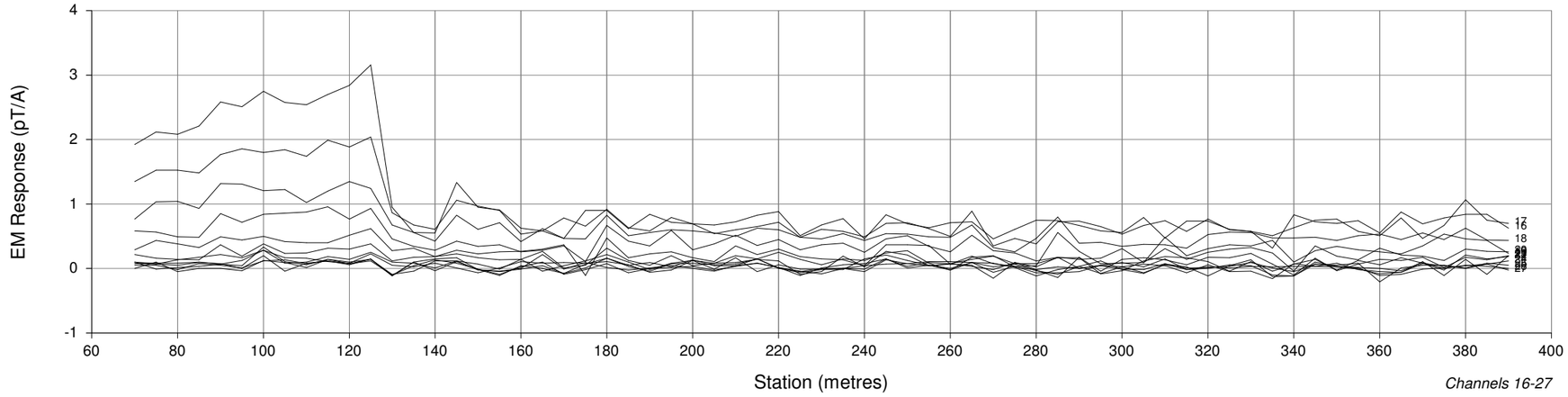
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F55-247

Job: BMC-15525-YT Date Surveyed: 13/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

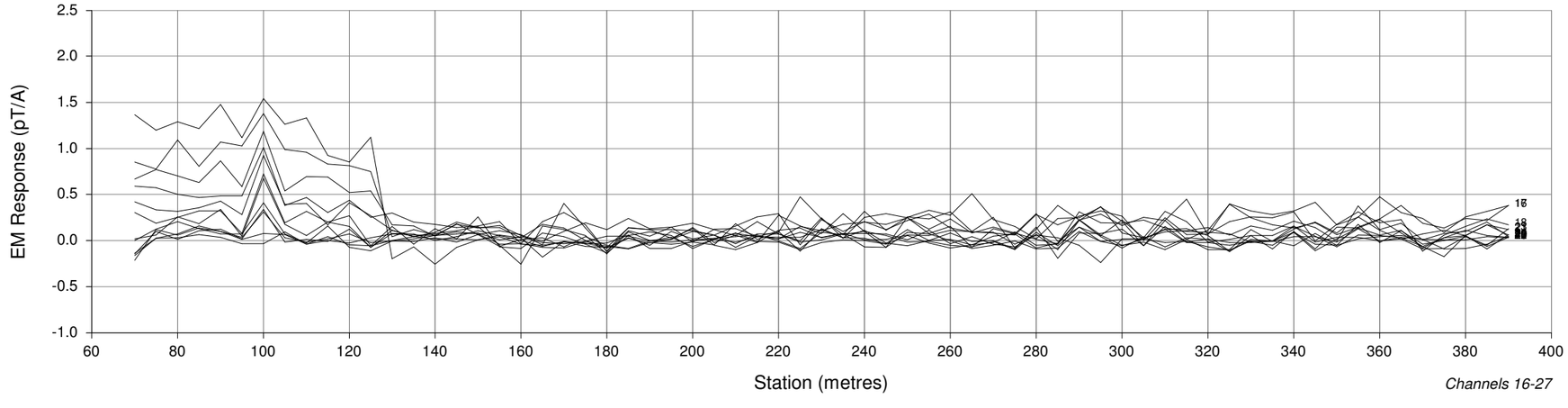
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4970, 0.0250	15	: 2.218, 0.516
2	: 0.5190, 0.0310	16	: 2.654, 0.641
3	: 0.5450, 0.0380	17	: 3.196, 0.796
4	: 0.5770, 0.0480	18	: 3.869, 0.988
5	: 0.6180, 0.0590	19	: 4.704, 1.227
6	: 0.6680, 0.0740	20	: 5.741, 1.523
7	: 0.7300, 0.0920	21	: 7.028, 1.891
8	: 0.8080, 0.1130	22	: 8.627, 2.347
9	: 0.9040, 0.1410	23	: 10.61, 2.91
10	: 1.023, 0.175	24	: 13.07, 3.62
11	: 1.171, 0.217	25	: 16.13, 4.49
12	: 1.355, 0.270	26	: 19.93, 5.58
13	: 1.583, 0.335	27	: 24.64, 6.92
14	: 1.866, 0.416		

SURVEY PARAMETERS

Configuration : Downhole
Station Spacing : 5 m

RECEIVER

Receiver : DigiAtlantis
Frequency : 7.5
Component : A,U,V

TRANSMITTER

Transmitter : Geonics
Loop : GP4F_loop2
Tx Current : 15.1 A
Turn Off : 0.41 ms

0 25 50 75 100

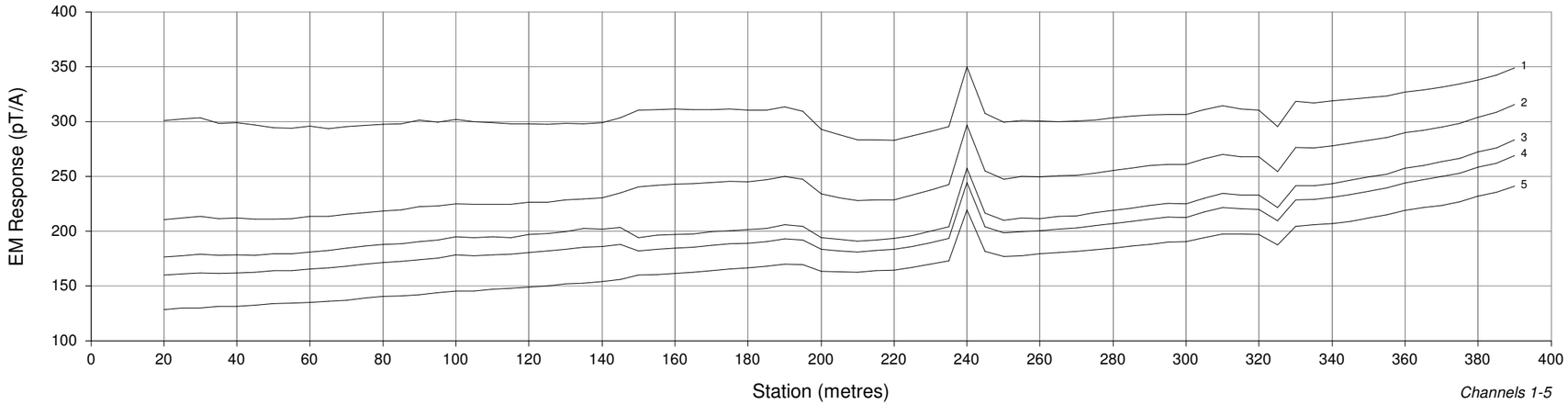
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH: K15-GP4F55-247

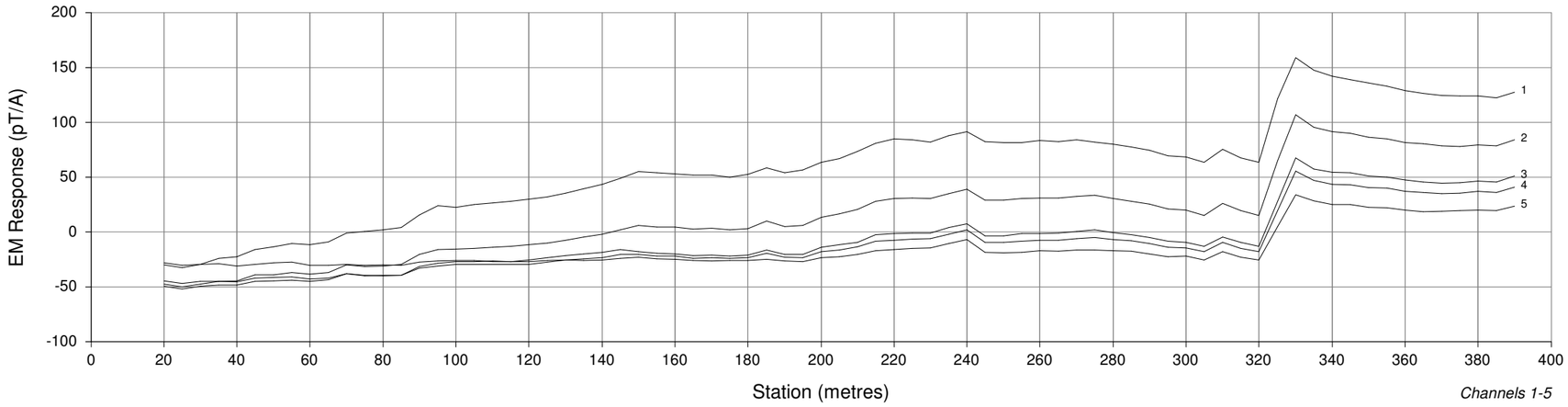
Job: BMC-15525-YT Date Surveyed: 13/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



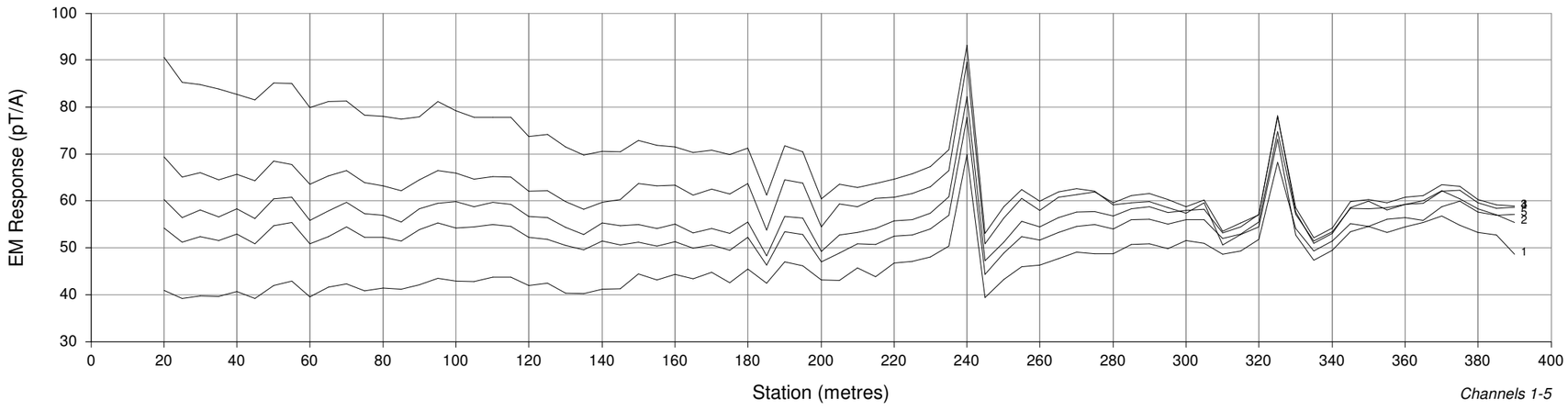
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1 : 0.4070, 0.0250	15 : 2.128, 0.516
2 : 0.4290, 0.0310	16 : 2.564, 0.641
3 : 0.4550, 0.0380	17 : 3.106, 0.796
4 : 0.4870, 0.0480	18 : 3.779, 0.988
5 : 0.5280, 0.0590	19 : 4.614, 1.227
6 : 0.5780, 0.0740	20 : 5.651, 1.523
7 : 0.6400, 0.0920	21 : 6.938, 1.891
8 : 0.7180, 0.1130	22 : 8.537, 2.347
9 : 0.8140, 0.1410	23 : 10.52, 2.91
10 : 0.933, 0.175	24 : 12.98, 3.62
11 : 1.081, 0.217	25 : 16.04, 4.49
12 : 1.265, 0.270	26 : 19.84, 5.58
13 : 1.493, 0.335	27 : 24.55, 6.92
14 : 1.776, 0.416	

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 11 A
Turn Off	: 0.32 ms

0 25 50 75 100

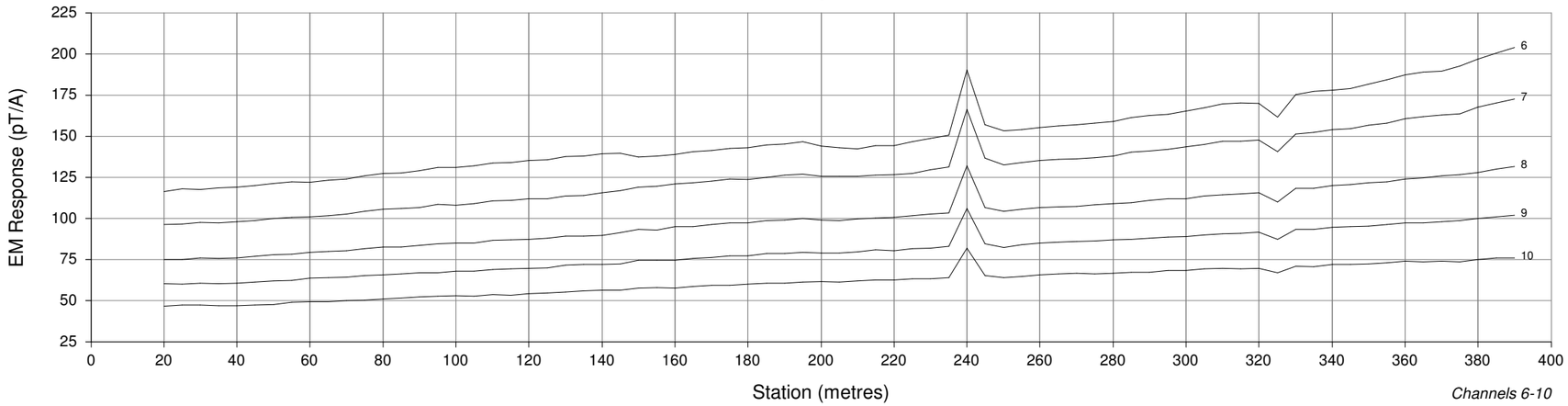
Scale 1:1500

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F56-234

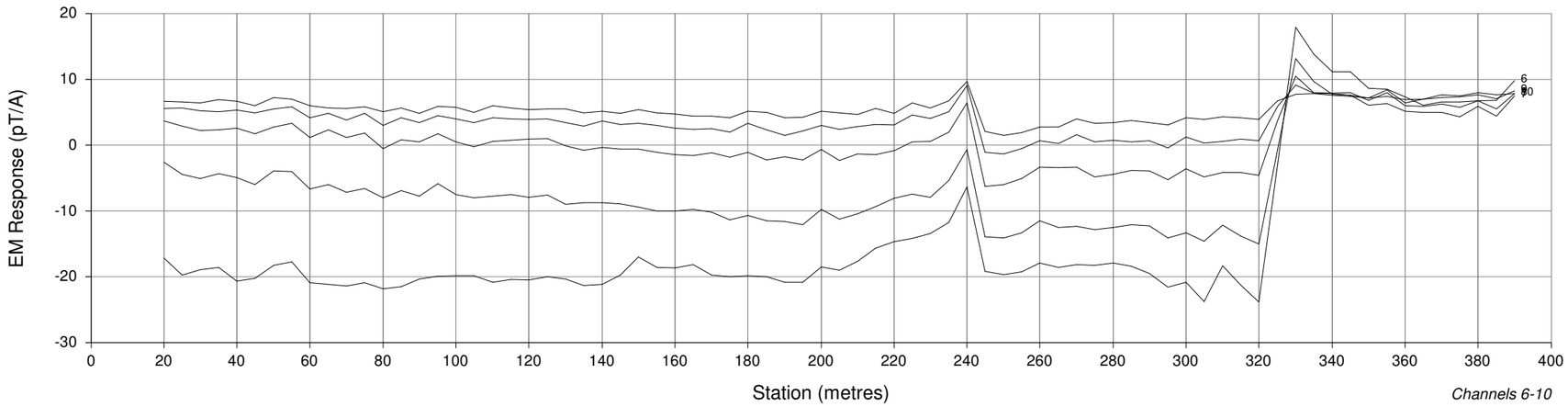
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



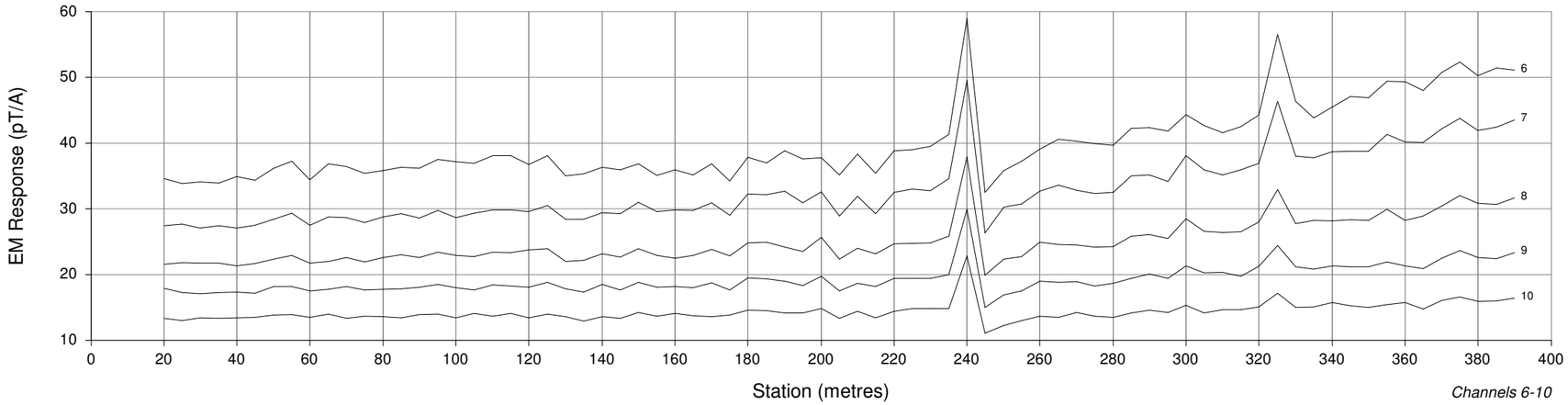
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4070, 0.0250	15	: 2.128, 0.516
2	: 0.4290, 0.0310	16	: 2.564, 0.641
3	: 0.4550, 0.0380	17	: 3.106, 0.796
4	: 0.4870, 0.0480	18	: 3.779, 0.988
5	: 0.5280, 0.0590	19	: 4.614, 1.227
6	: 0.5780, 0.0740	20	: 5.651, 1.523
7	: 0.6400, 0.0920	21	: 6.938, 1.891
8	: 0.7180, 0.1130	22	: 8.537, 2.347
9	: 0.8140, 0.1410	23	: 10.52, 2.91
10	: 0.933, 0.175	24	: 12.98, 3.62
11	: 1.081, 0.217	25	: 16.04, 4.49
12	: 1.265, 0.270	26	: 19.84, 5.58
13	: 1.493, 0.335	27	: 24.55, 6.92
14	: 1.776, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 11 A
Turn Off	: 0.32 ms



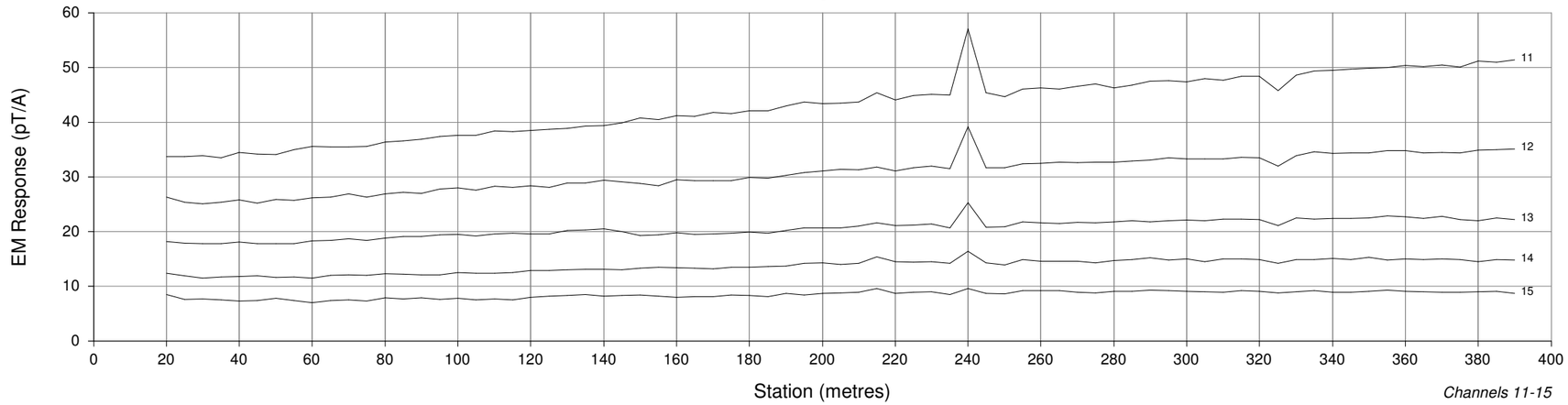
Scale 1:1500

BMC MINERALS LTD

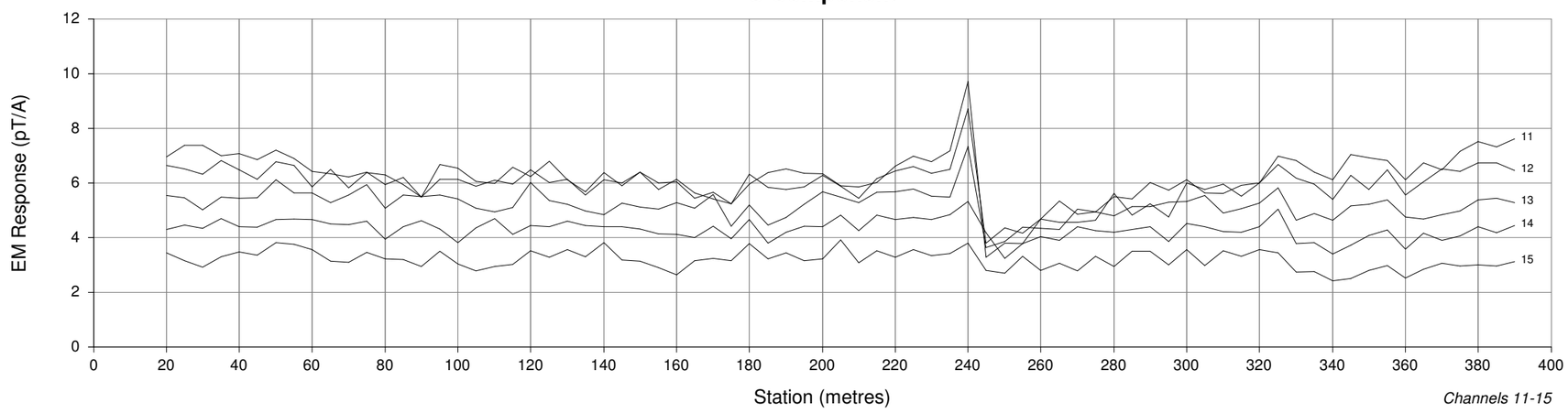
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F56-234

Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

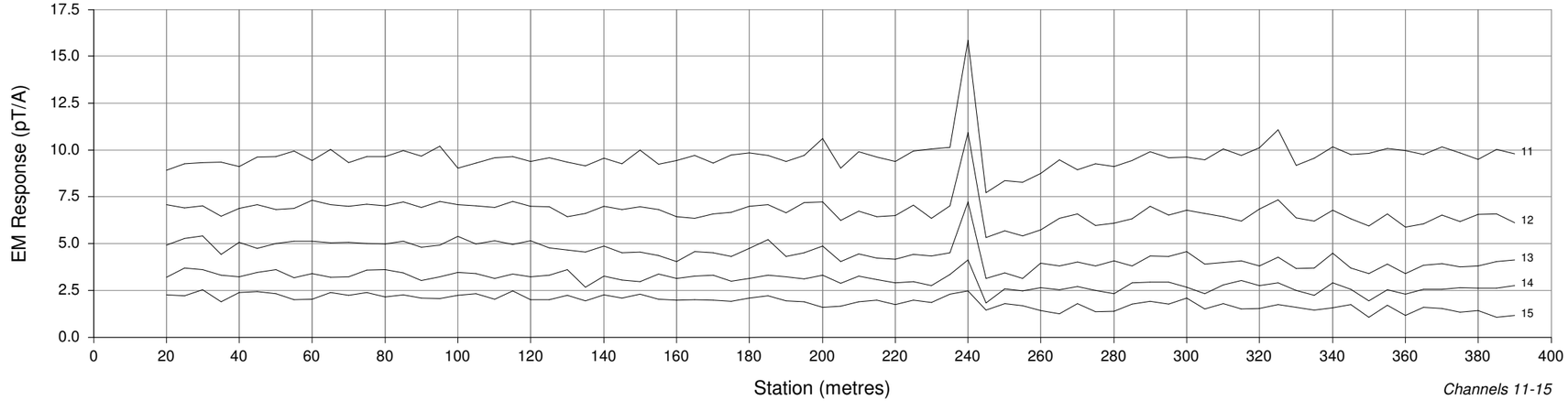
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4070, 0.0250	15	: 2.128, 0.516
2	: 0.4290, 0.0310	16	: 2.564, 0.641
3	: 0.4550, 0.0380	17	: 3.106, 0.796
4	: 0.4870, 0.0480	18	: 3.779, 0.988
5	: 0.5280, 0.0590	19	: 4.614, 1.227
6	: 0.5780, 0.0740	20	: 5.651, 1.523
7	: 0.6400, 0.0920	21	: 6.938, 1.891
8	: 0.7180, 0.1130	22	: 8.537, 2.347
9	: 0.8140, 0.1410	23	: 10.52, 2.91
10	: 0.933, 0.175	24	: 12.98, 3.62
11	: 1.081, 0.217	25	: 16.04, 4.49
12	: 1.265, 0.270	26	: 19.84, 5.58
13	: 1.493, 0.335	27	: 24.55, 6.92
14	: 1.776, 0.416		

SURVEY PARAMETERS

Configuration : Downhole
Station Spacing : 5 m

RECEIVER

Receiver : DigiAtlantis
Frequency : 7.5
Component : A,U,V

TRANSMITTER

Transmitter : Geonics
Loop : GP4F_loop2
Tx Current : 11 A
Turn Off : 0.32 ms

0 25 50 75 100

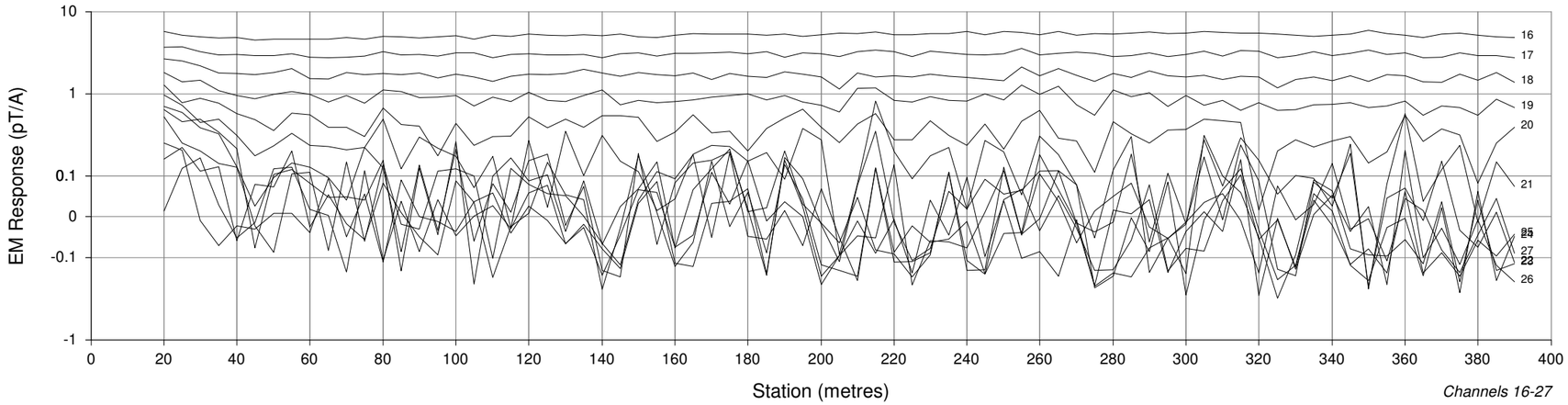
Scale 1:1500

BMC MINERALS LTD

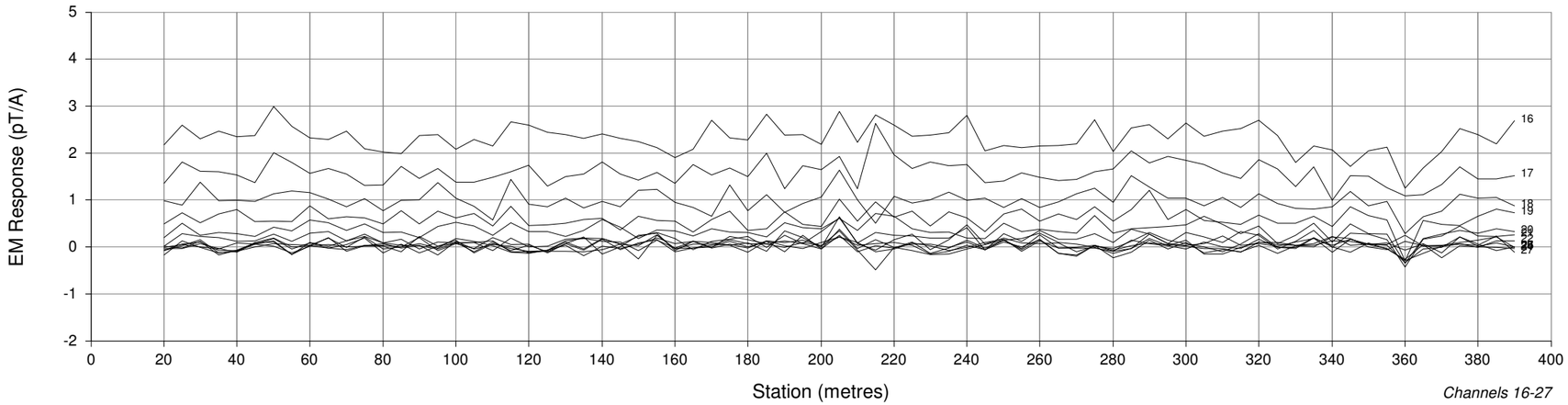
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F56-234

Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

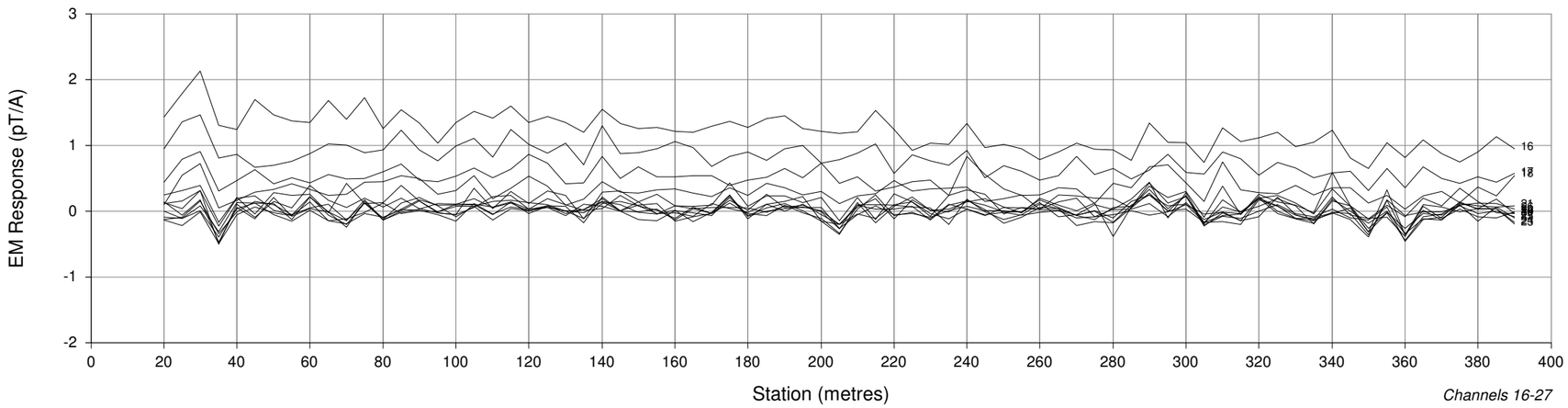
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.4070, 0.0250	15	: 2.128, 0.516
2	: 0.4290, 0.0310	16	: 2.564, 0.641
3	: 0.4550, 0.0380	17	: 3.106, 0.796
4	: 0.4870, 0.0480	18	: 3.779, 0.988
5	: 0.5280, 0.0590	19	: 4.614, 1.227
6	: 0.5780, 0.0740	20	: 5.651, 1.523
7	: 0.6400, 0.0920	21	: 6.938, 1.891
8	: 0.7180, 0.1130	22	: 8.537, 2.347
9	: 0.8140, 0.1410	23	: 10.52, 2.91
10	: 0.933, 0.175	24	: 12.98, 3.62
11	: 1.081, 0.217	25	: 16.04, 4.49
12	: 1.265, 0.270	26	: 19.84, 5.58
13	: 1.493, 0.335	27	: 24.55, 6.92
14	: 1.776, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 11 A
Turn Off	: 0.32 ms

0 25 50 75 100

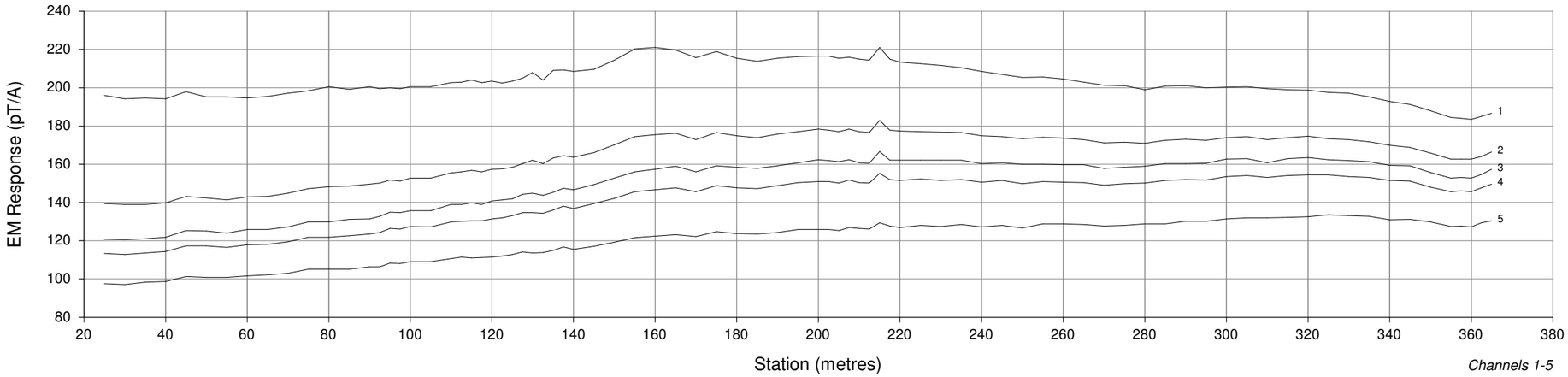
Scale 1:1500

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH: K15-GP4F56-234

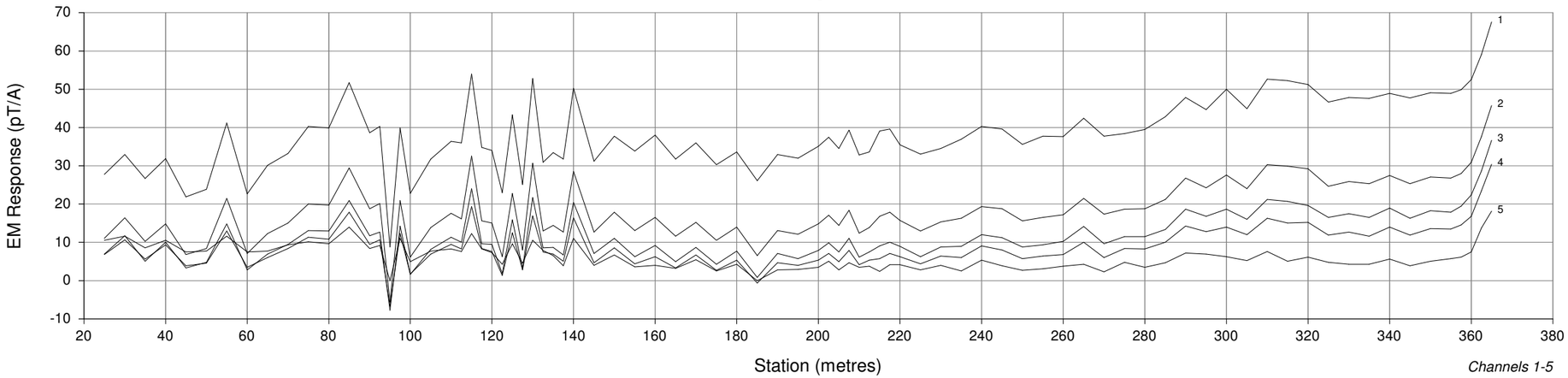
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



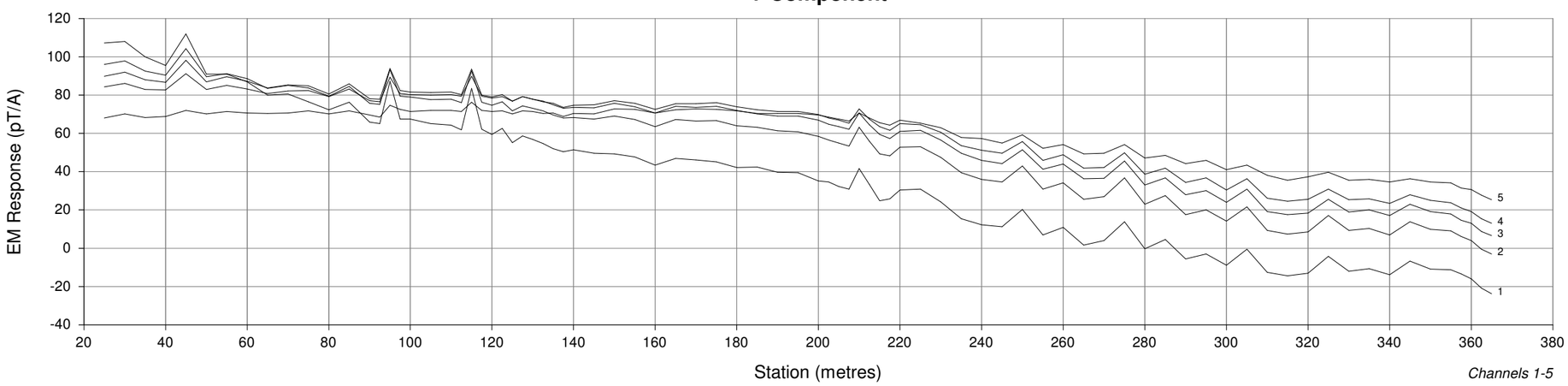
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

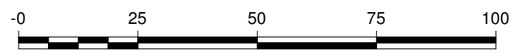
Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms



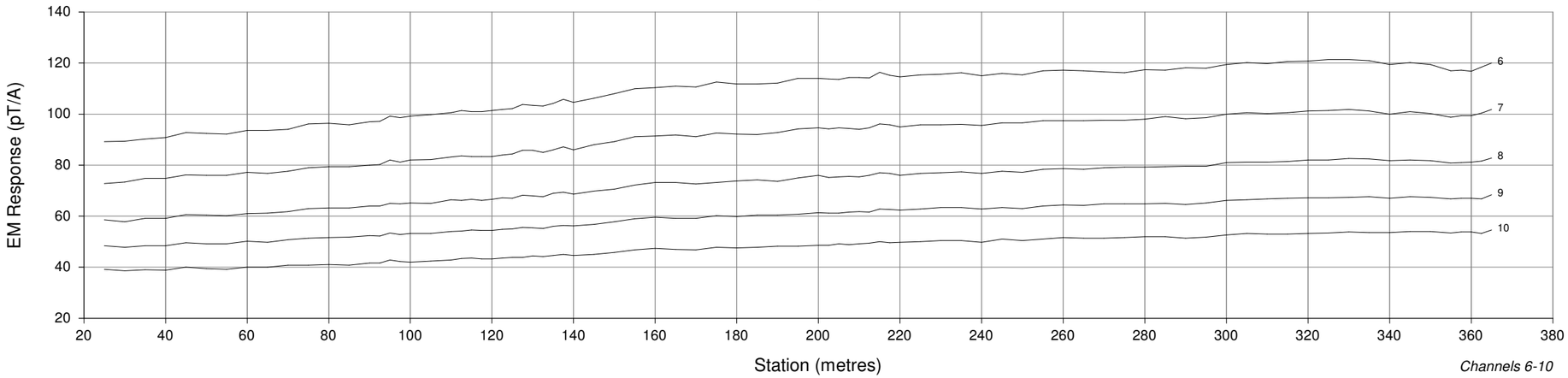
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F57-280

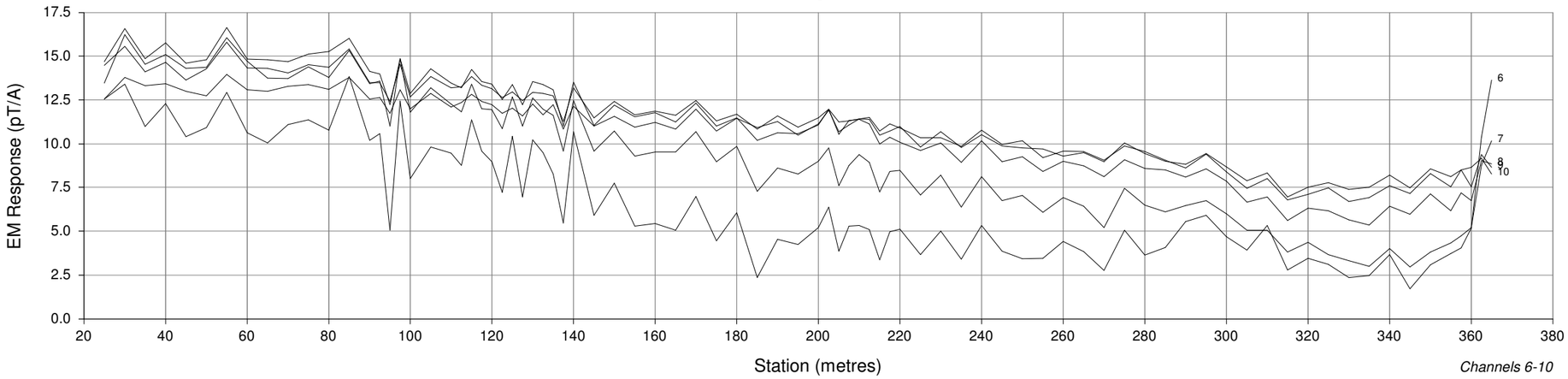
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



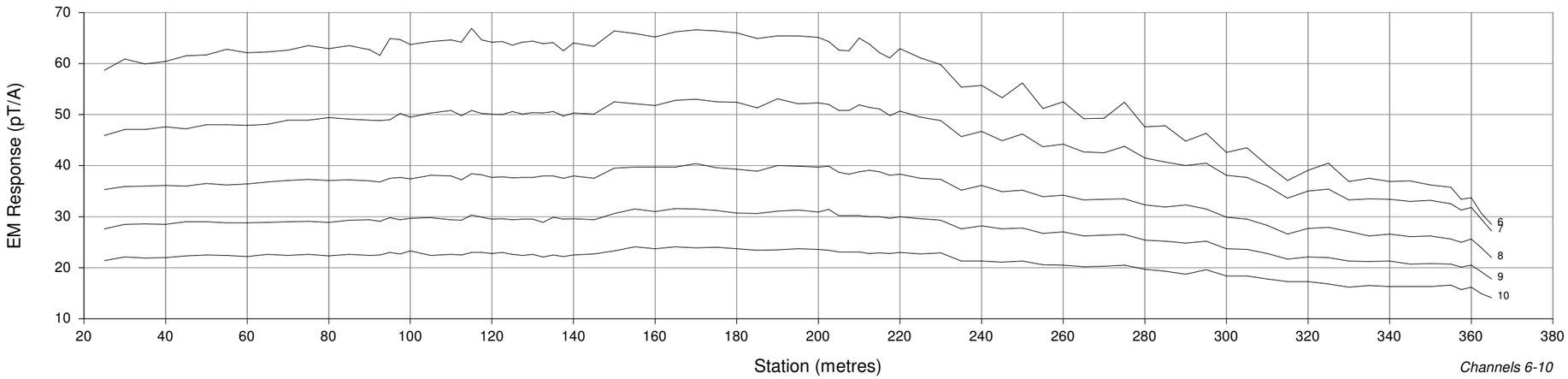
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms



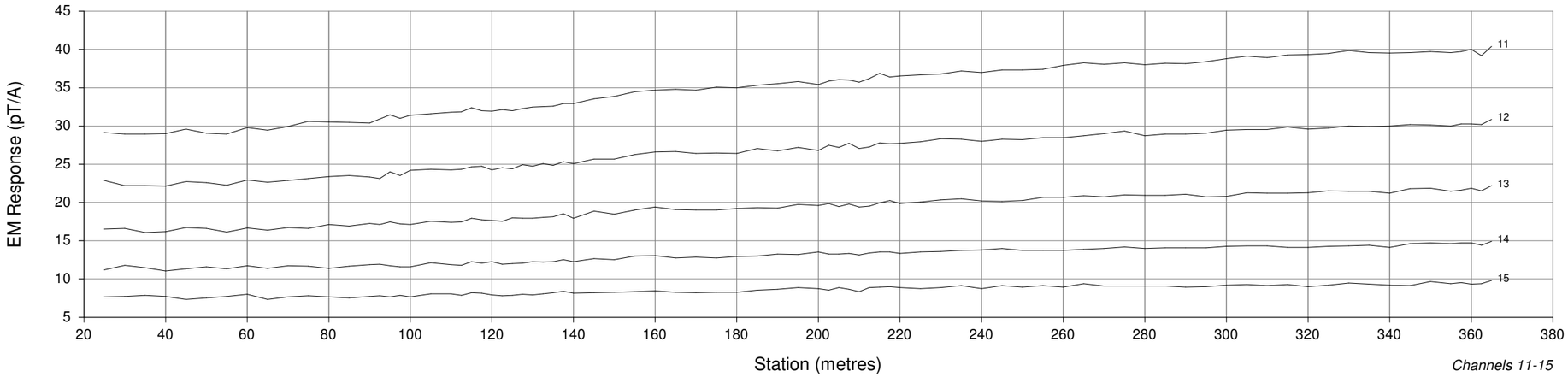
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F57-280

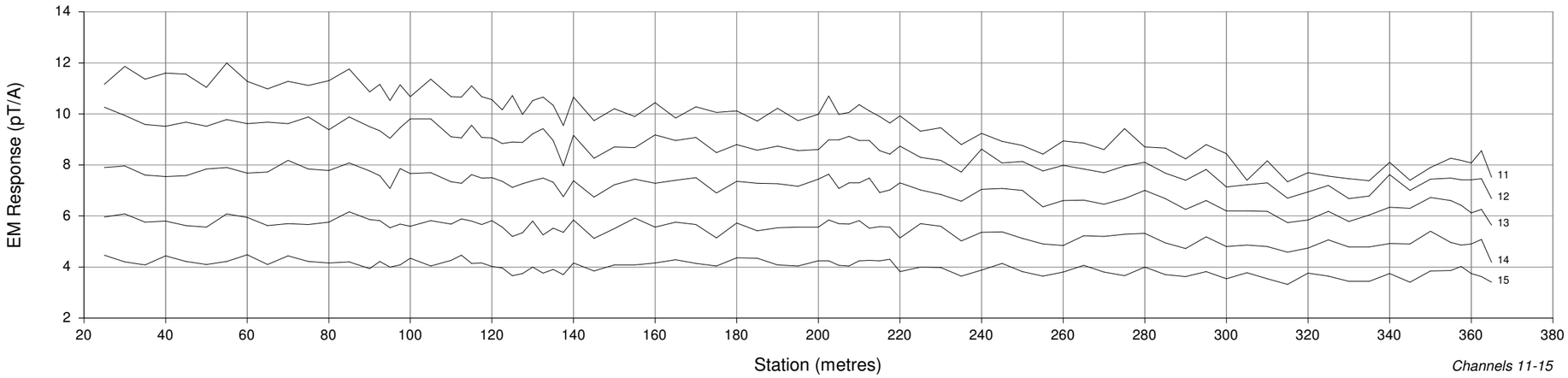
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



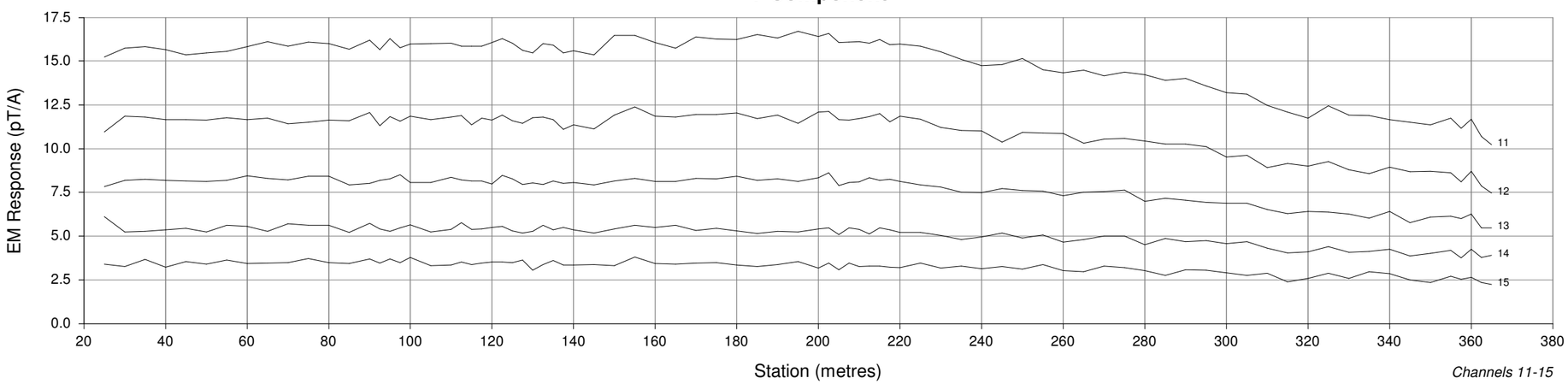
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms



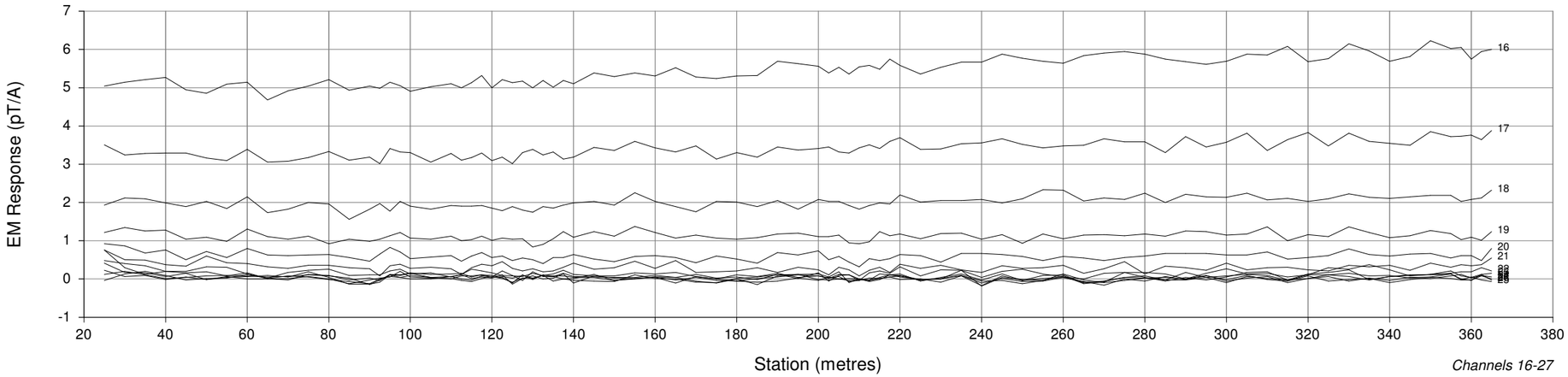
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F57-280

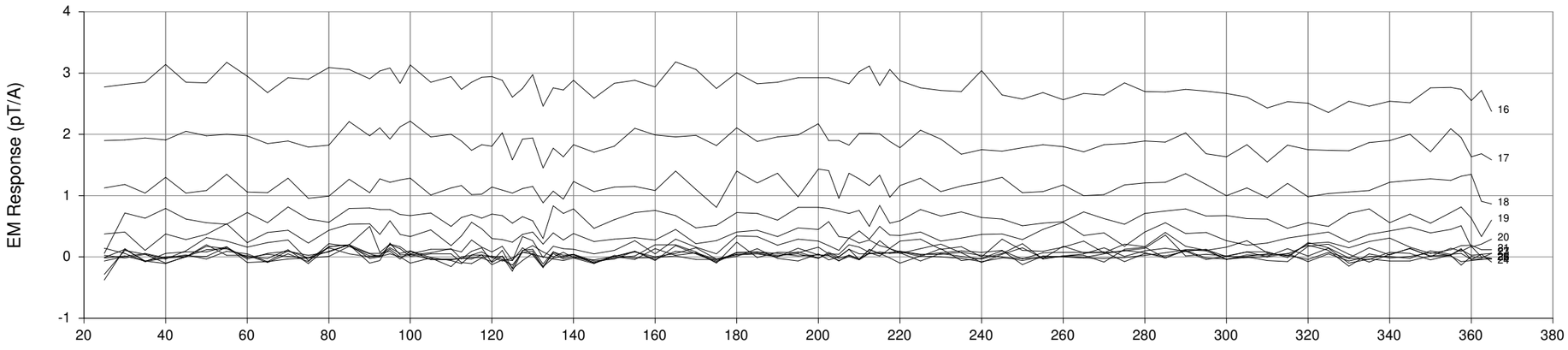
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



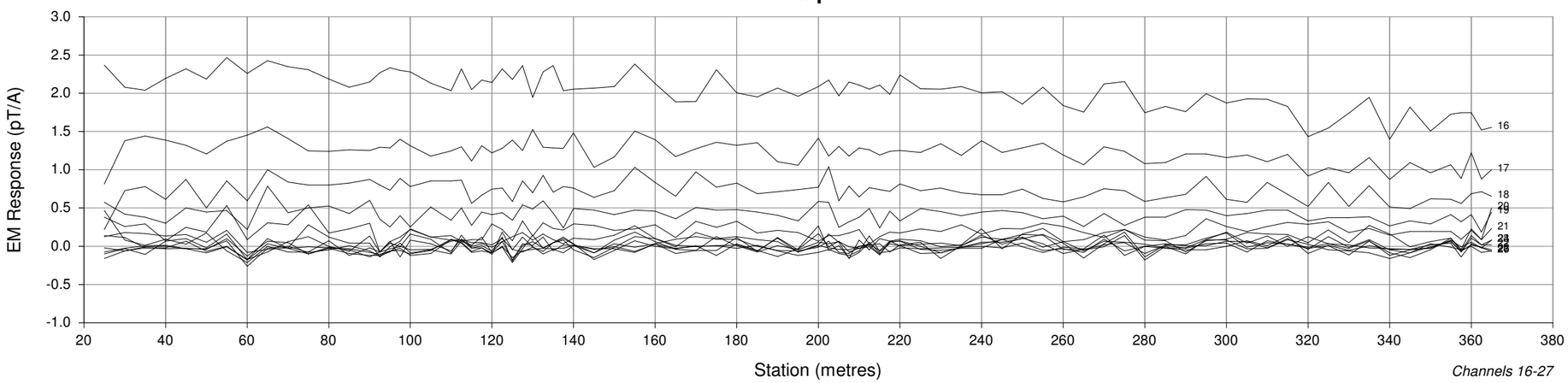
Channels 16-27

U Component



Channels 16-27

V Component



Channels 16-27

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms

-0 25 50 75 100

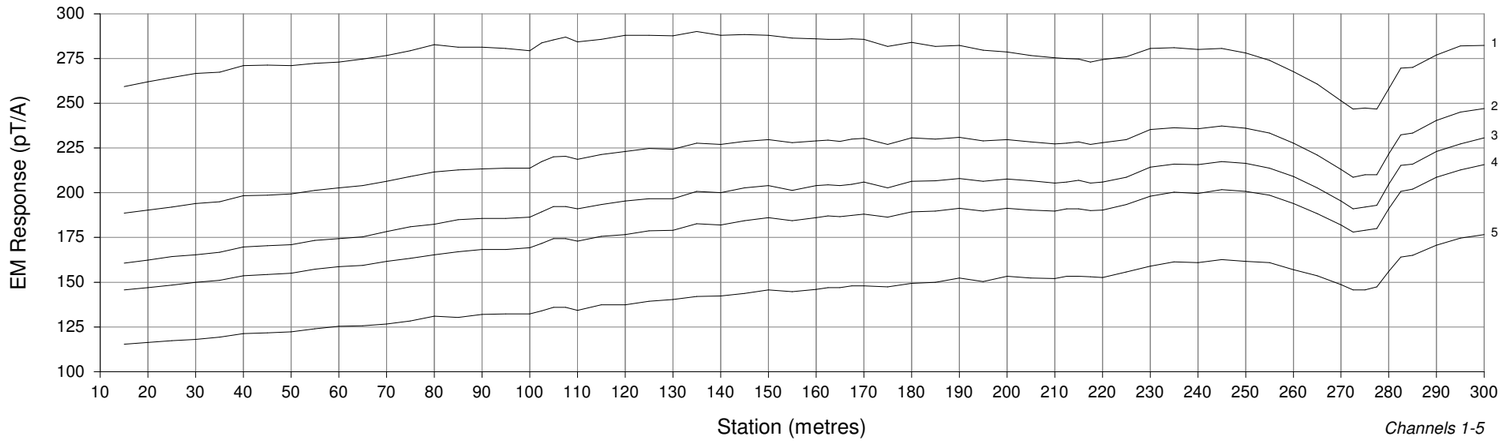
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 -27
DDH: K15-GP4F57-280

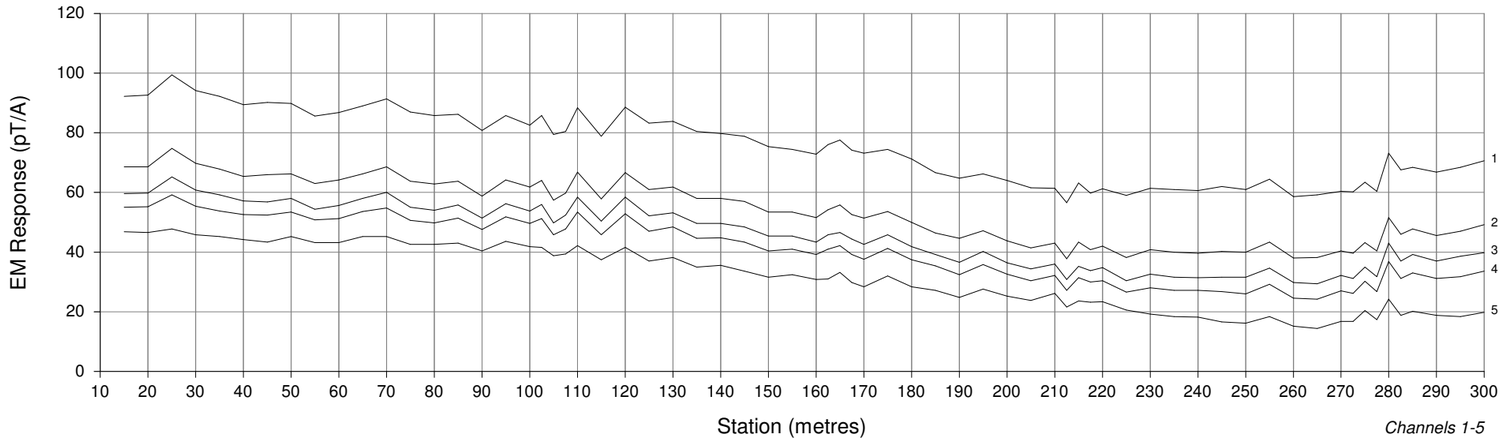
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



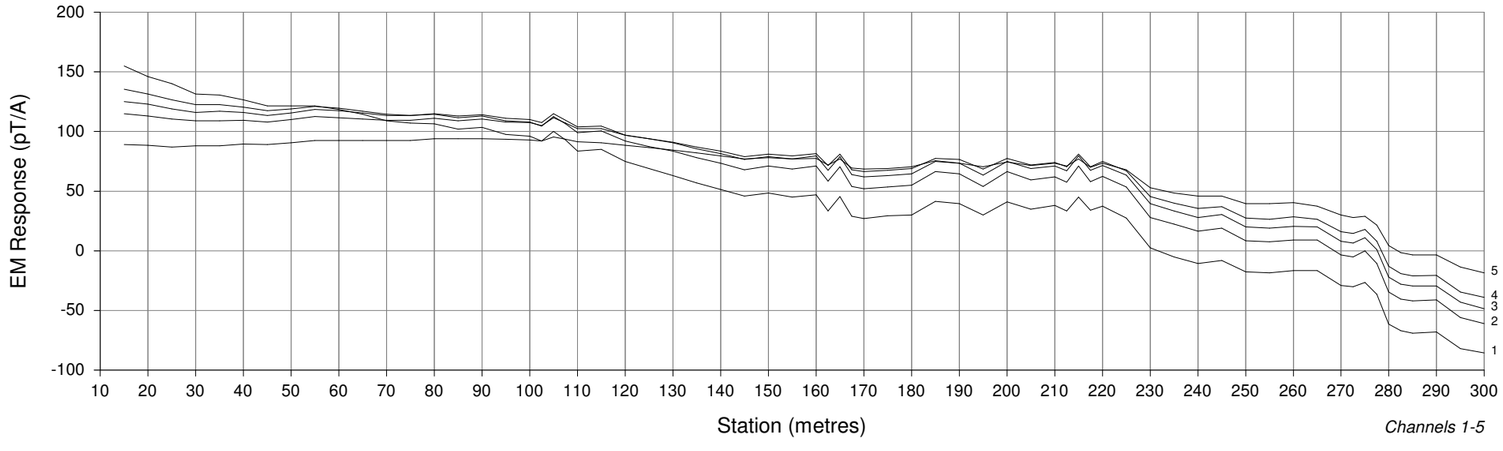
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the end of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

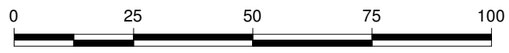
Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms



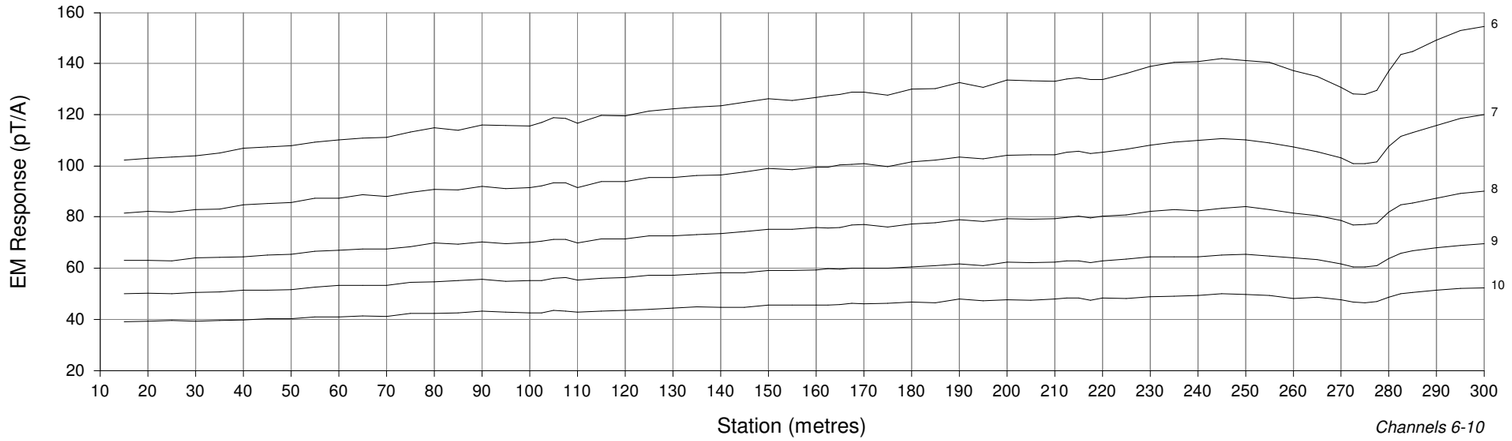
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH:K15-GP4F58-285

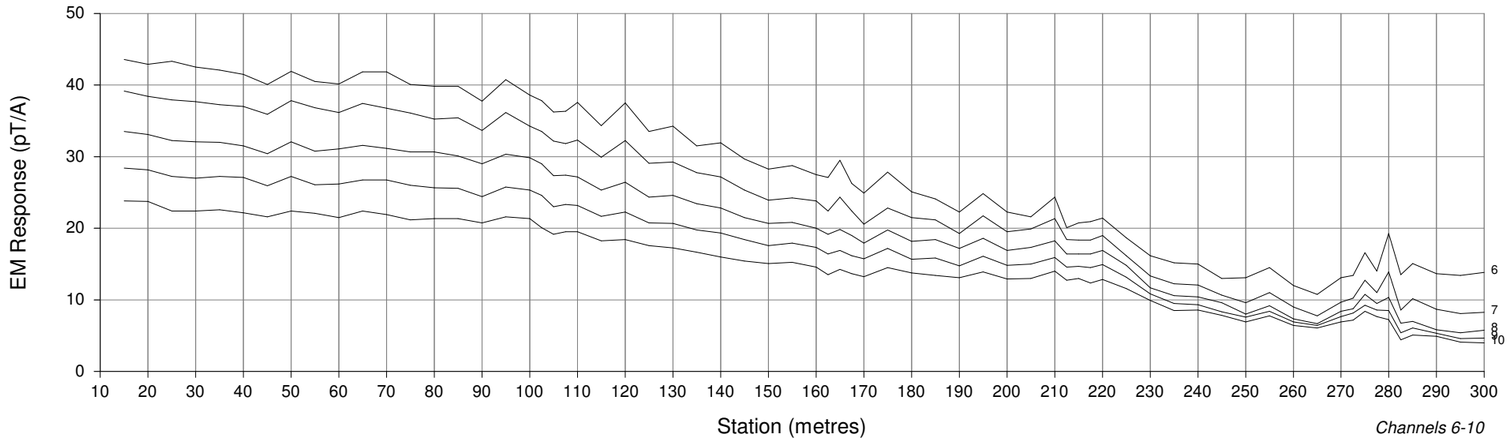
Job: BMC-15525-YT Date Surveyed: 10/10/2015
Date Drawn: 10/11/2015 Drawn By: AL

A Component



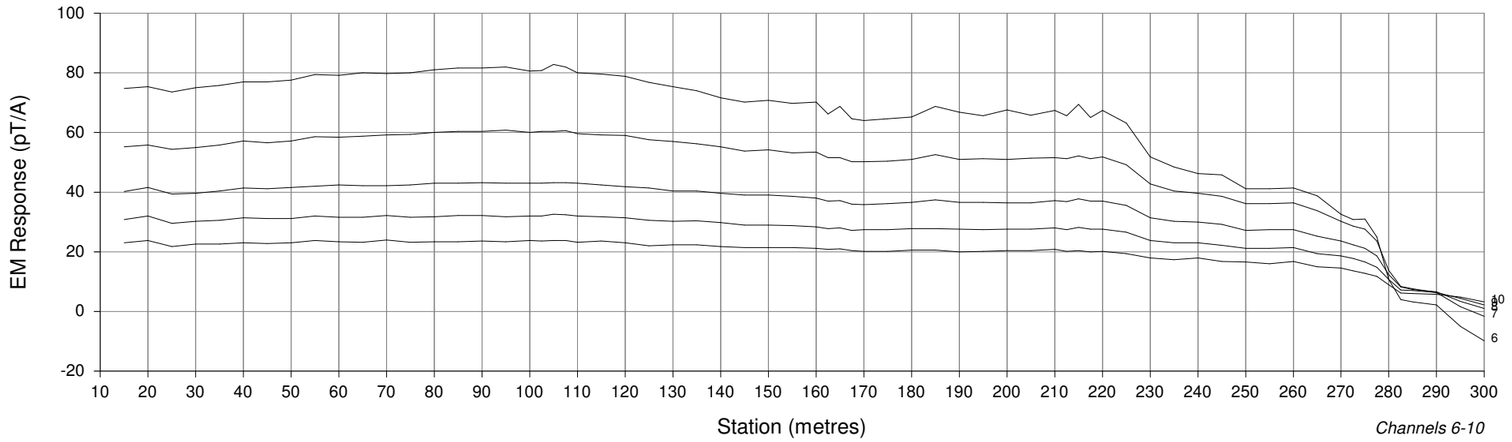
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the end of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

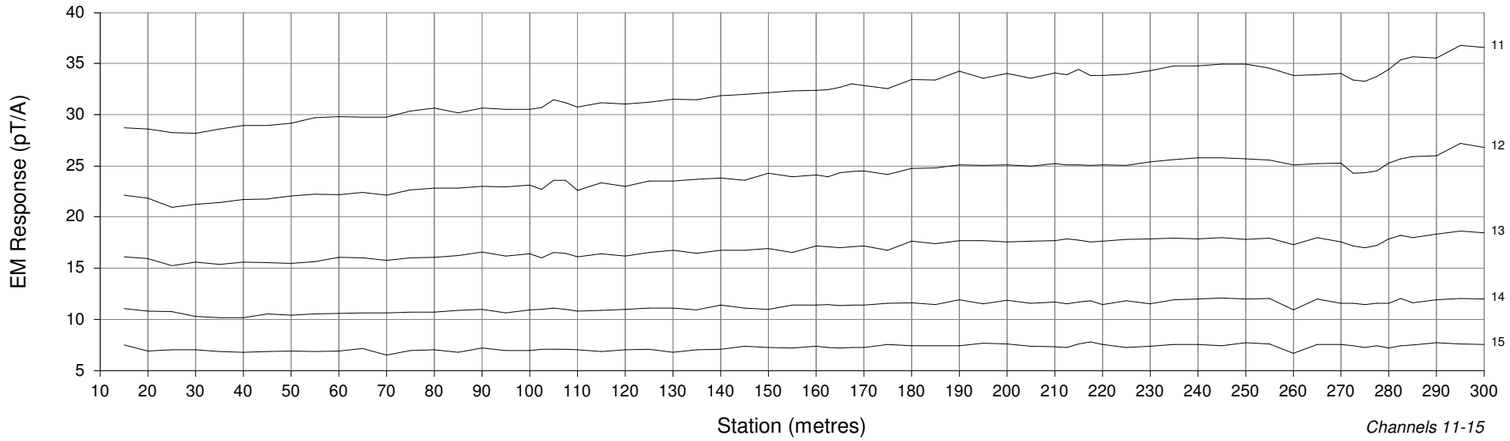
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH:K15-GP4F58-285

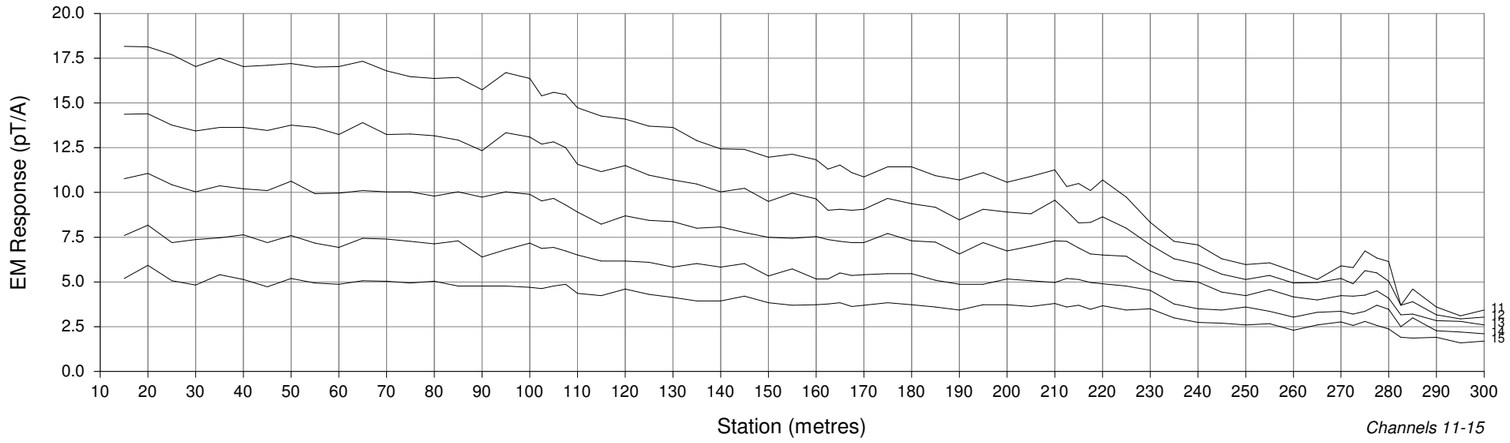
Job: BMC-15525-YT Date Surveyed: 10/10/2015
Date Drawn: 10/11/2015 Drawn By: AL

A Component



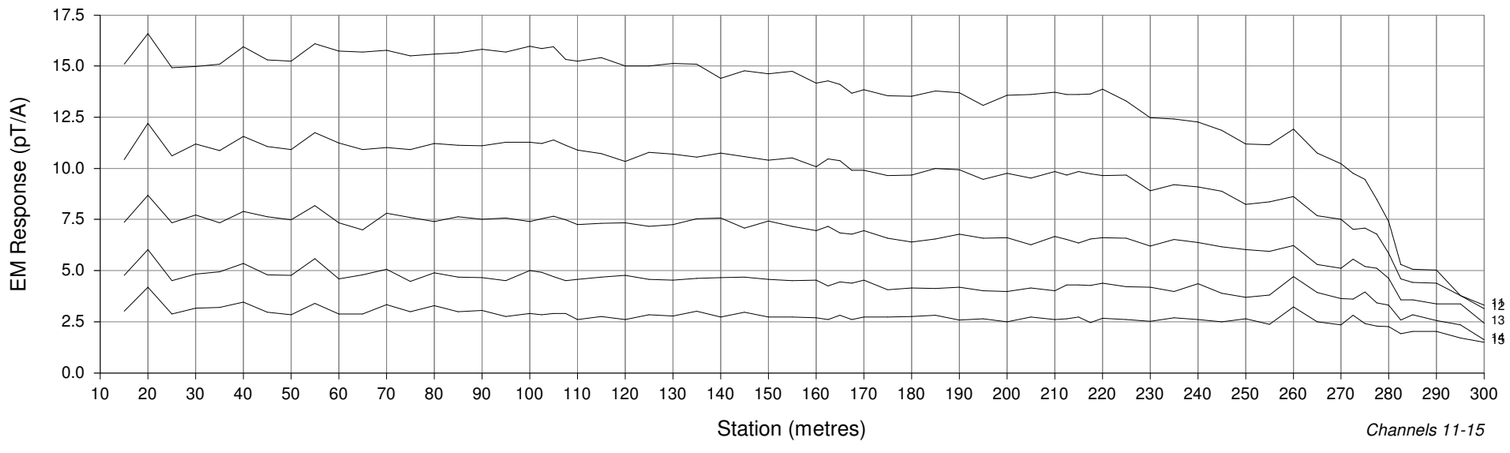
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the end of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

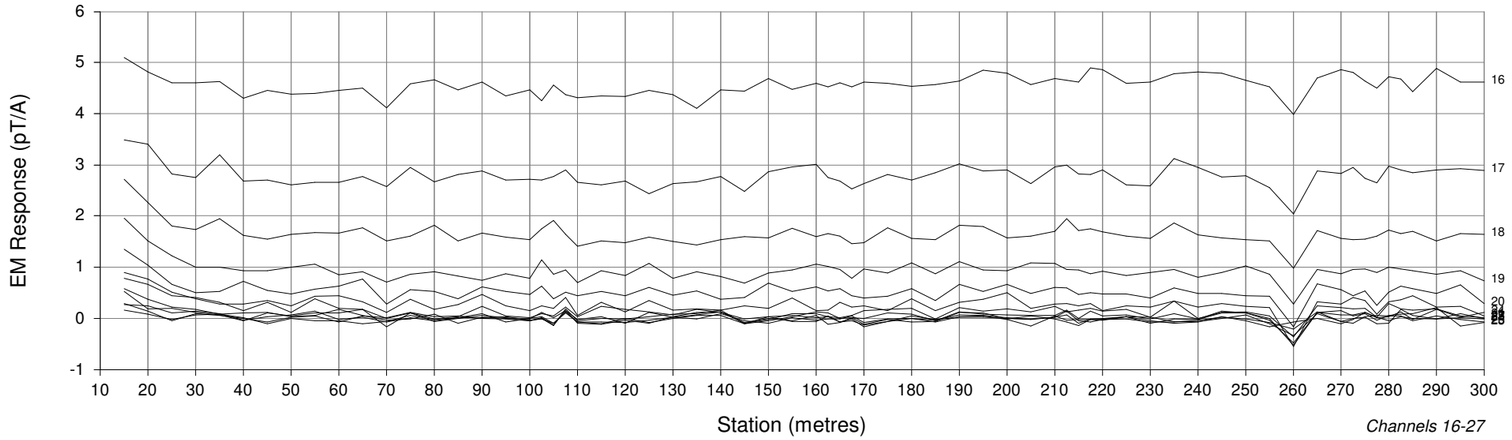
Scale 1:1250

BMC MINERALS LTD

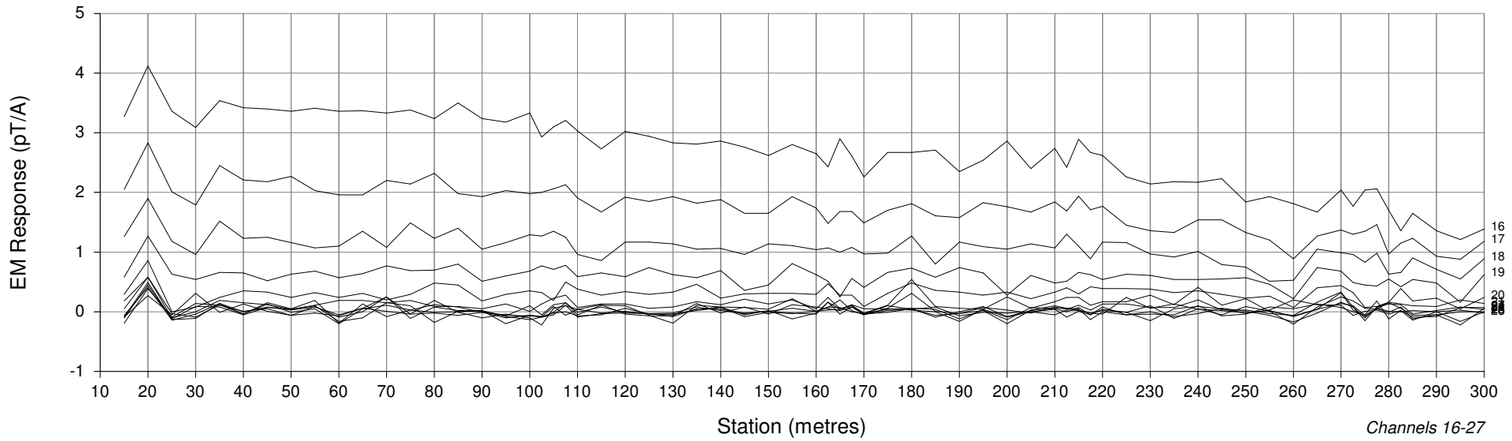
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH:K15-GP4F58-285

Job: BMC-15525-YT Date Surveyed: 10/10/2015
Date Drawn: 10/11/2015 Drawn By: AL

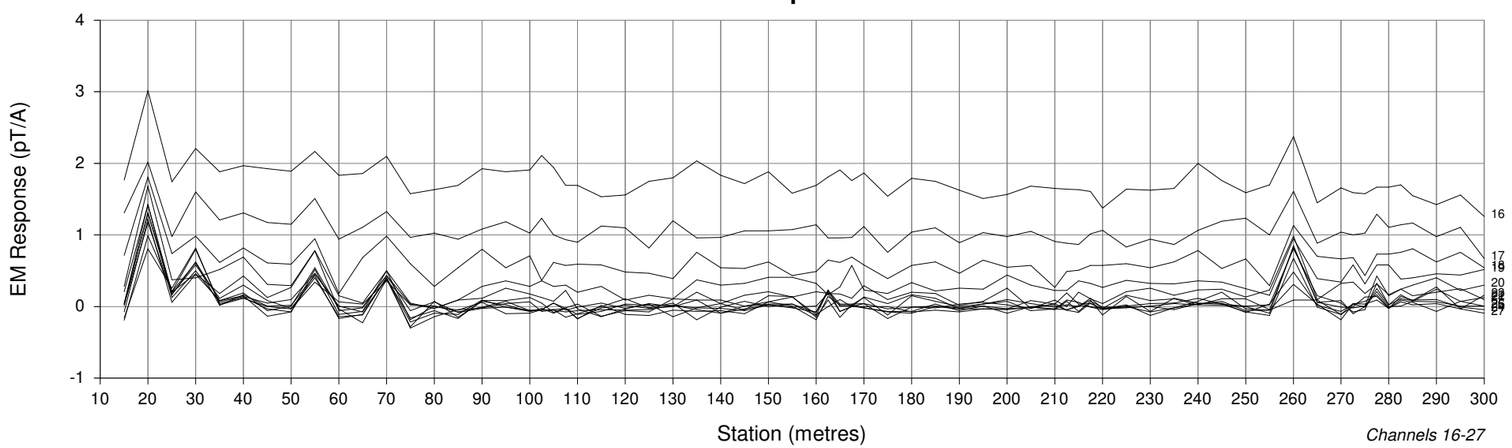
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the end of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: None
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

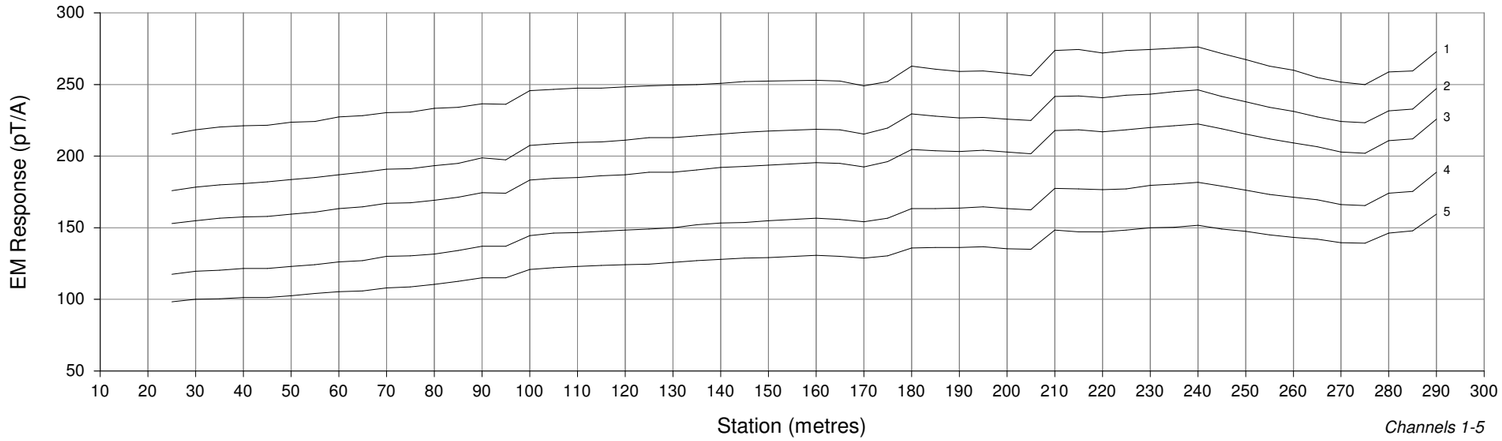
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH:K15-GP4F58-285

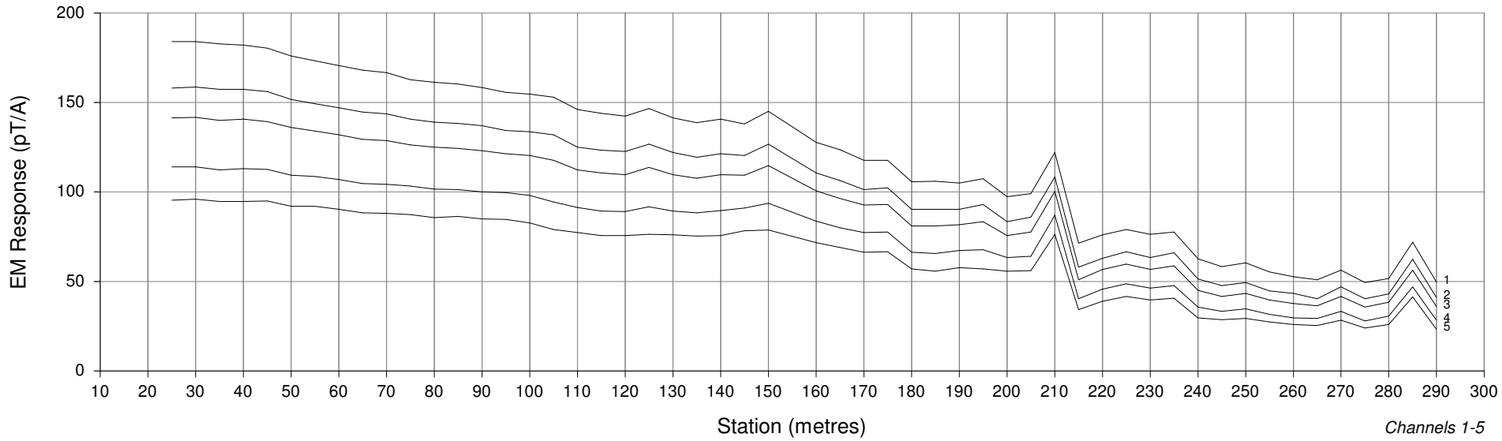
Job: BMC-15525-YT Date Surveyed: 10/10/2015
Date Drawn: 10/11/2015 Drawn By: AL

A Component



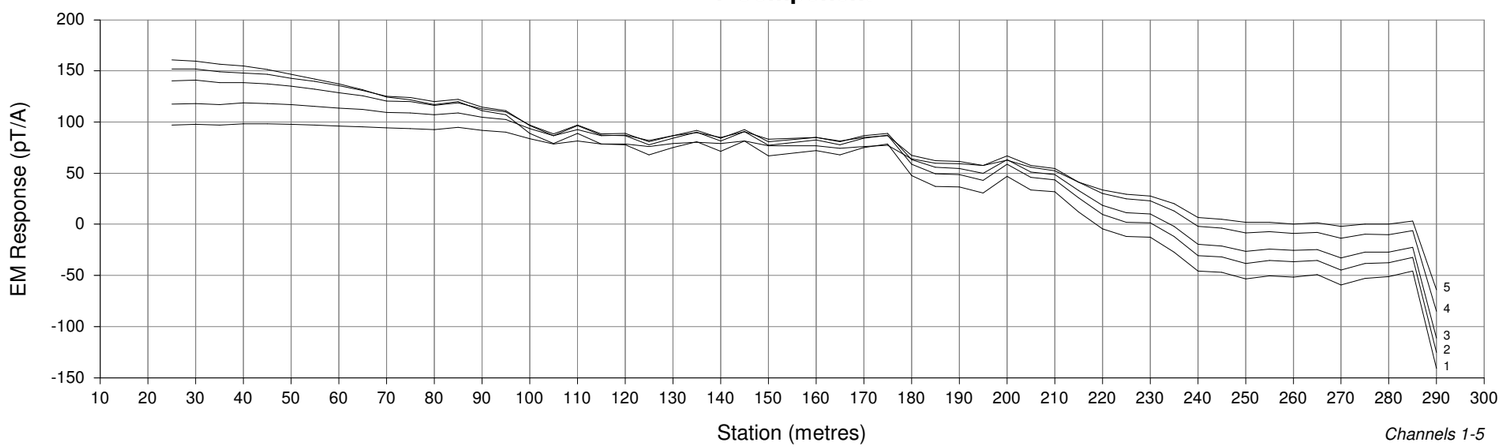
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5120, 0.0250	15	: 2.233, 0.516
2	: 0.5340, 0.0310	16	: 2.669, 0.641
3	: 0.5600, 0.0380	17	: 3.211, 0.796
4	: 0.5920, 0.0480	18	: 3.884, 0.988
5	: 0.6330, 0.0590	19	: 4.719, 1.227
6	: 0.6830, 0.0740	20	: 5.756, 1.523
7	: 0.7450, 0.0920	21	: 7.043, 1.891
8	: 0.8230, 0.1130	22	: 8.642, 2.347
9	: 0.9190, 0.1410	23	: 10.63, 2.91
10	: 1.038, 0.175	24	: 13.09, 3.62
11	: 1.186, 0.217	25	: 16.15, 4.49
12	: 1.370, 0.270	26	: 19.94, 5.58
13	: 1.598, 0.335	27	: 24.66, 6.92
14	: 1.881, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 1-5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

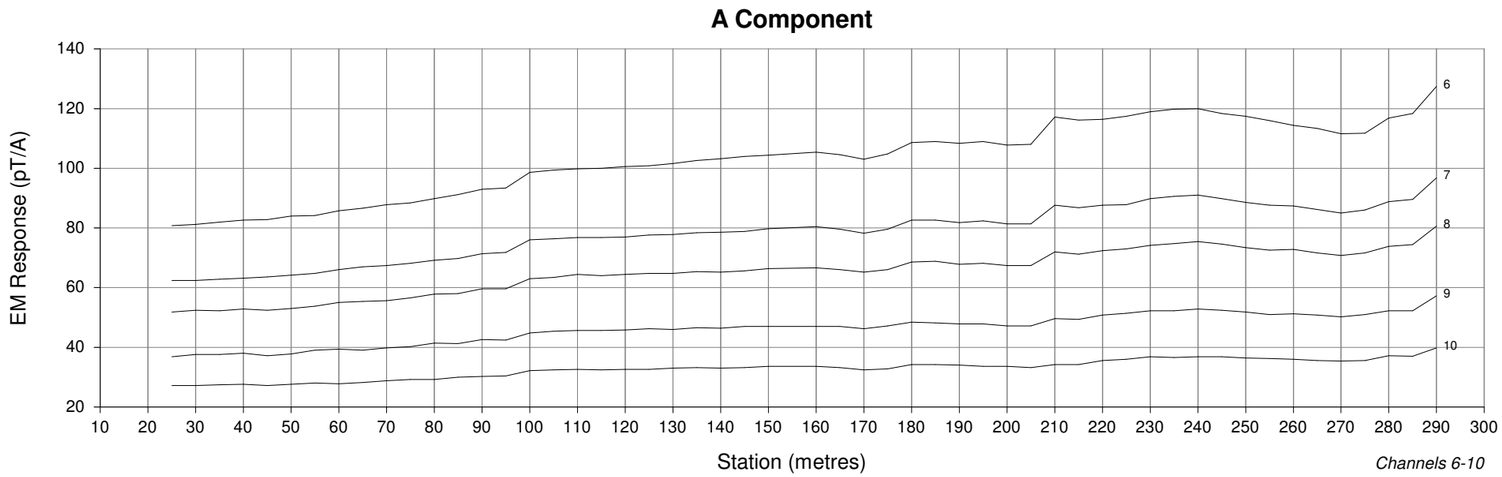
Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15 A
Turn Off	: 0.425 ms

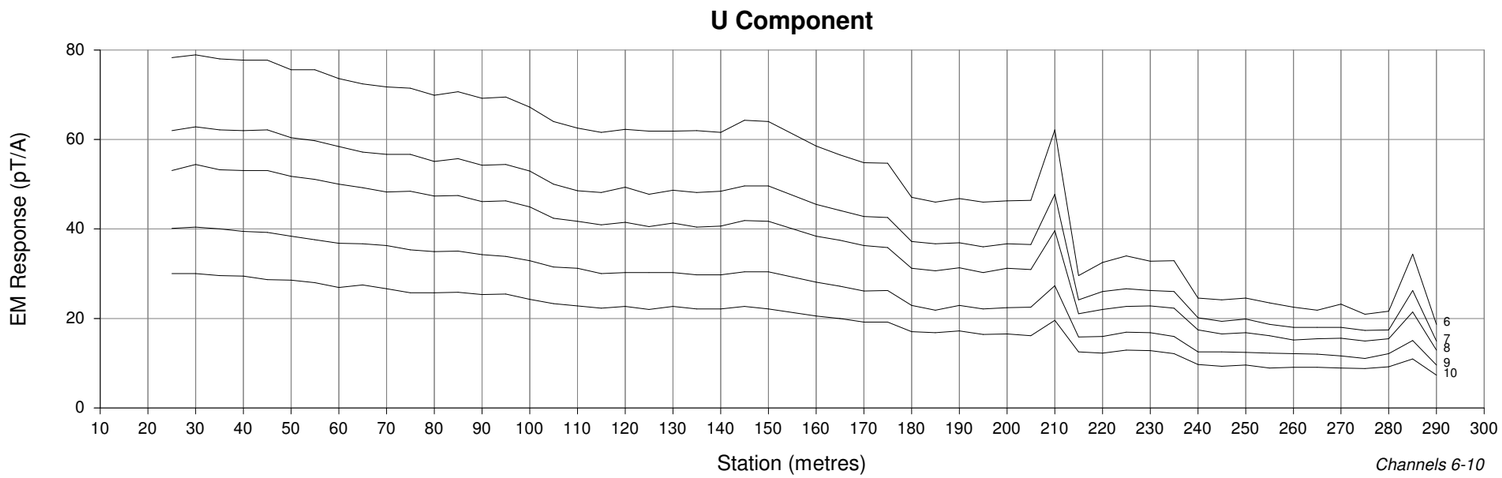


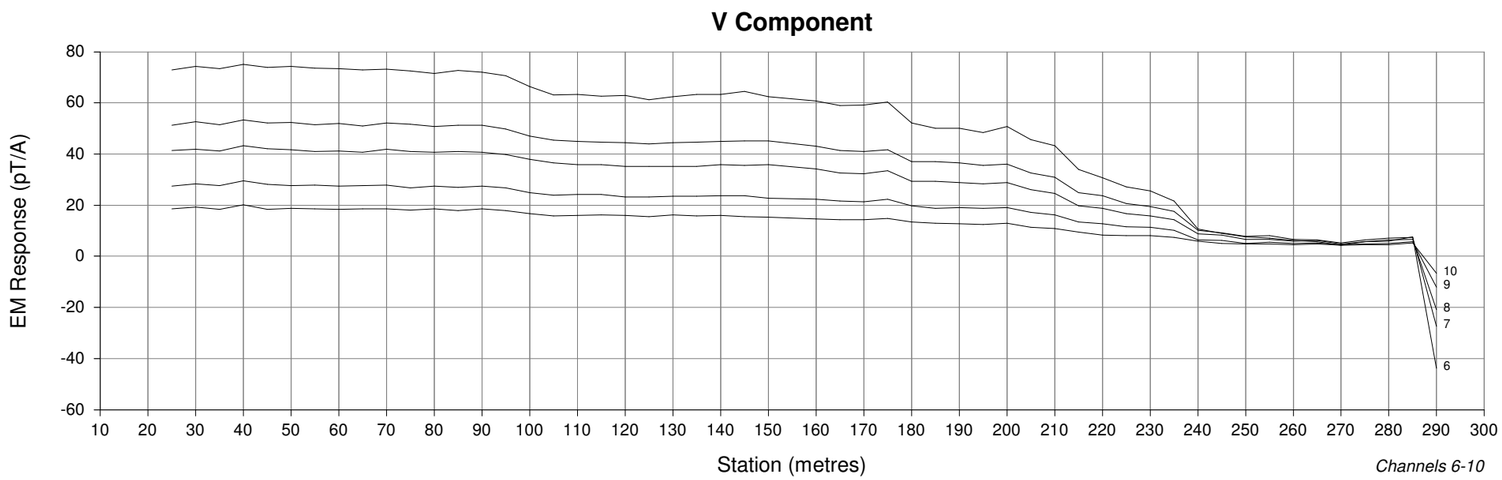
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F59-216







WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5120, 0.0250	15	: 2.233, 0.516
2	: 0.5340, 0.0310	16	: 2.669, 0.641
3	: 0.5600, 0.0380	17	: 3.211, 0.796
4	: 0.5920, 0.0480	18	: 3.884, 0.988
5	: 0.6330, 0.0590	19	: 4.719, 1.227
6	: 0.6830, 0.0740	20	: 5.756, 1.523
7	: 0.7450, 0.0920	21	: 7.043, 1.891
8	: 0.8230, 0.1130	22	: 8.642, 2.347
9	: 0.9190, 0.1410	23	: 10.63, 2.91
10	: 1.038, 0.175	24	: 13.09, 3.62
11	: 1.186, 0.217	25	: 16.15, 4.49
12	: 1.370, 0.270	26	: 19.94, 5.58
13	: 1.598, 0.335	27	: 24.66, 6.92
14	: 1.881, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 1-5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15 A
Turn Off	: 0.425 ms

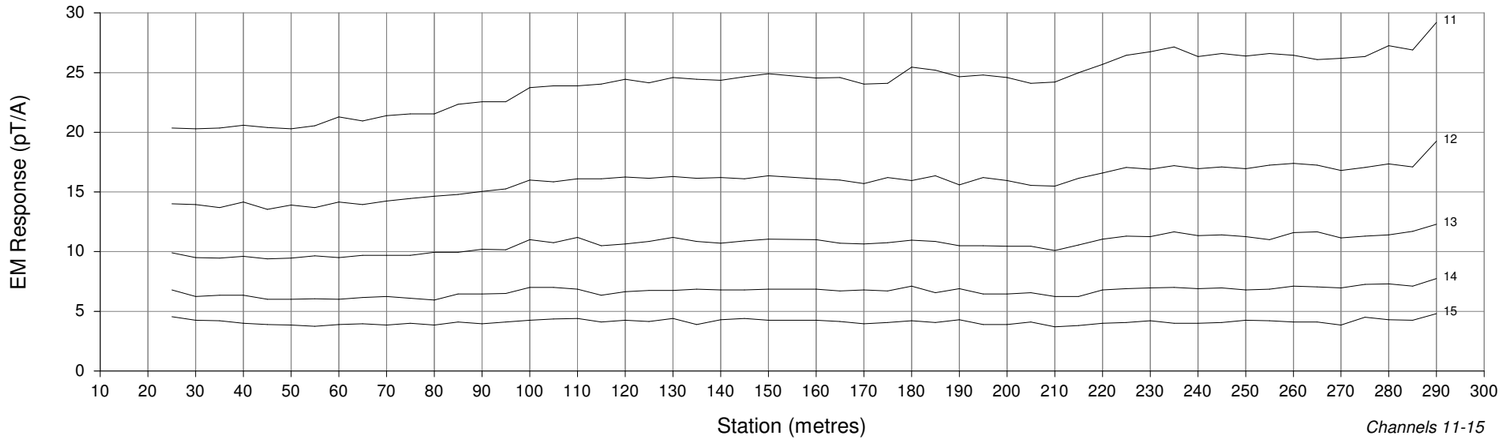
-0 25 50 75 100

Scale 1:1250

BMC MINERALS LTD

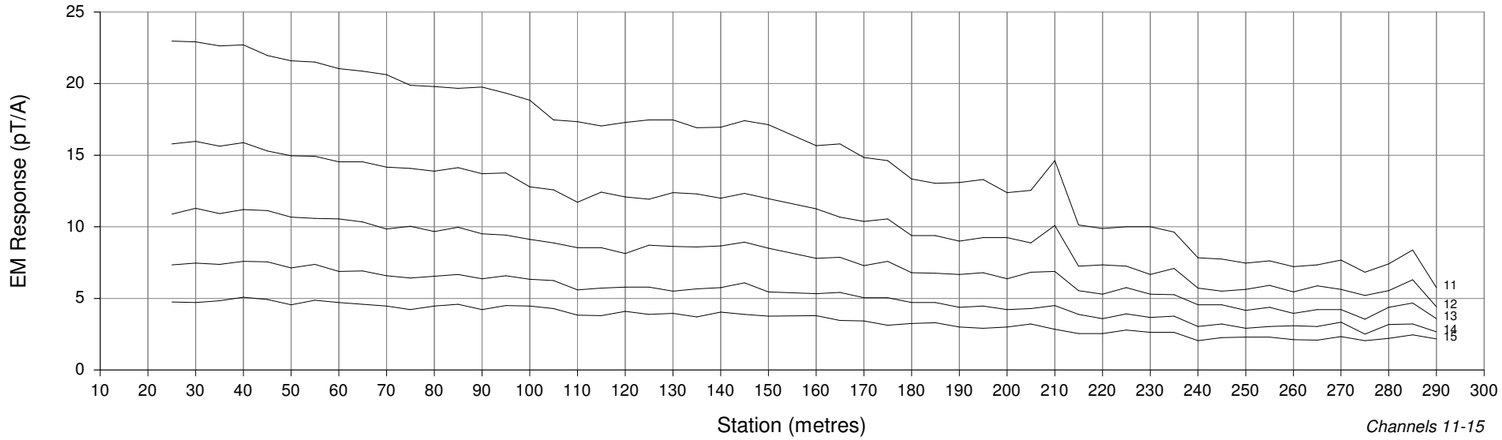
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F59-216

A Component



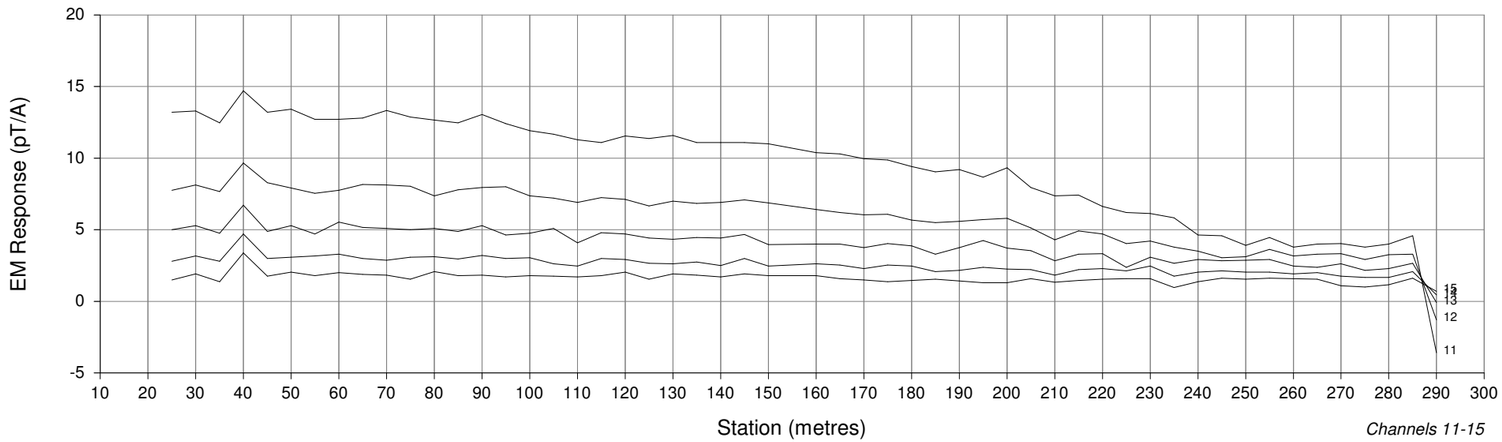
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5120, 0.0250	15	: 2.233, 0.516
2	: 0.5340, 0.0310	16	: 2.669, 0.641
3	: 0.5600, 0.0380	17	: 3.211, 0.796
4	: 0.5920, 0.0480	18	: 3.884, 0.988
5	: 0.6330, 0.0590	19	: 4.719, 1.227
6	: 0.6830, 0.0740	20	: 5.756, 1.523
7	: 0.7450, 0.0920	21	: 7.043, 1.891
8	: 0.8230, 0.1130	22	: 8.642, 2.347
9	: 0.9190, 0.1410	23	: 10.63, 2.91
10	: 1.038, 0.175	24	: 13.09, 3.62
11	: 1.186, 0.217	25	: 16.15, 4.49
12	: 1.370, 0.270	26	: 19.94, 5.58
13	: 1.598, 0.335	27	: 24.66, 6.92
14	: 1.881, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 1-5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15 A
Turn Off	: 0.425 ms

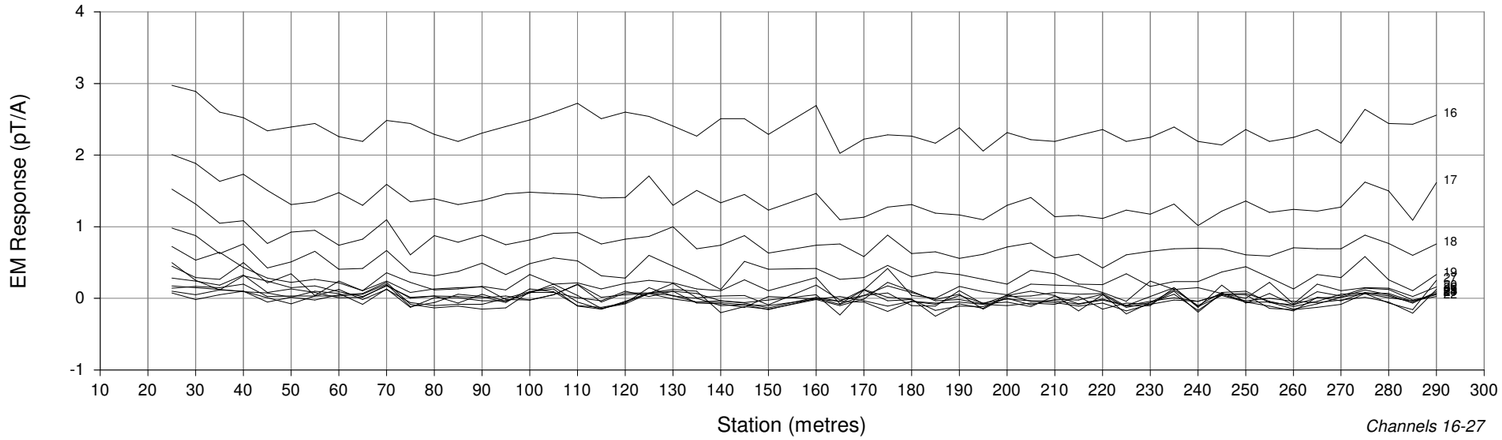
-0 25 50 75 100

Scale 1:1250

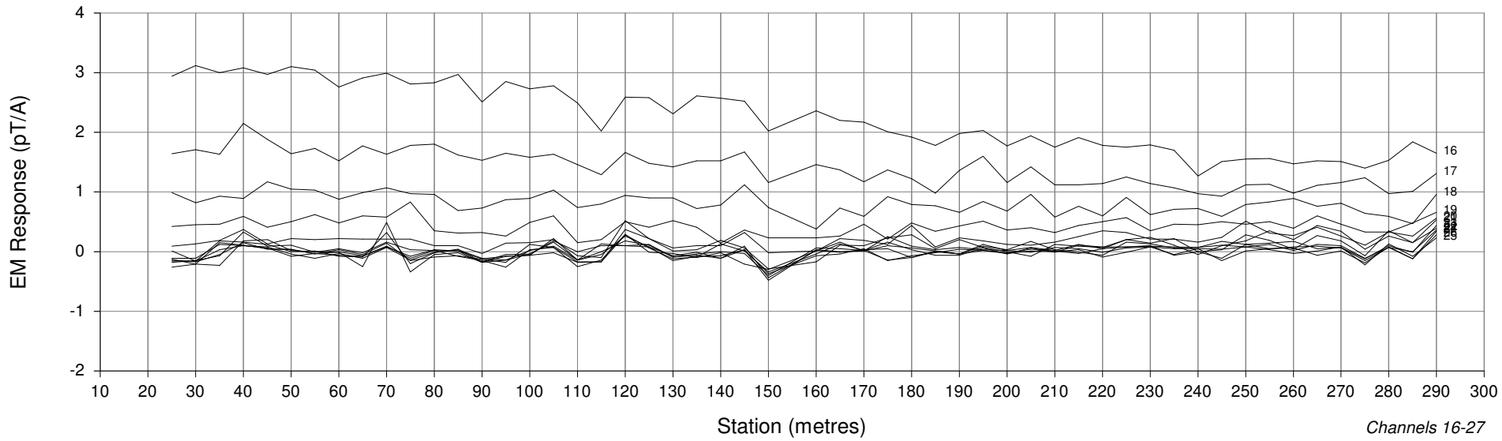
BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F59-216

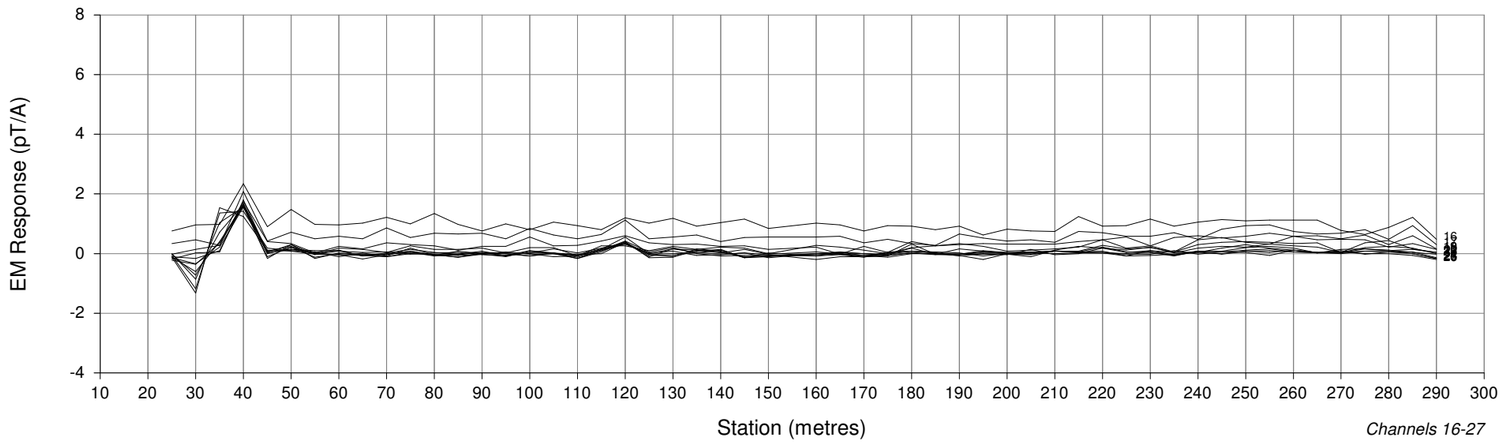
A Component



U Component



V Component



WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5120, 0.0250	15	: 2.233, 0.516
2	: 0.5340, 0.0310	16	: 2.669, 0.641
3	: 0.5600, 0.0380	17	: 3.211, 0.796
4	: 0.5920, 0.0480	18	: 3.884, 0.988
5	: 0.6330, 0.0590	19	: 4.719, 1.227
6	: 0.6830, 0.0740	20	: 5.756, 1.523
7	: 0.7450, 0.0920	21	: 7.043, 1.891
8	: 0.8230, 0.1130	22	: 8.642, 2.347
9	: 0.9190, 0.1410	23	: 10.63, 2.91
10	: 1.038, 0.175	24	: 13.09, 3.62
11	: 1.186, 0.217	25	: 16.15, 4.49
12	: 1.370, 0.270	26	: 19.94, 5.58
13	: 1.598, 0.335	27	: 24.66, 6.92
14	: 1.881, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 1-5 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop2
Tx Current	: 15 A
Turn Off	: 0.425 ms

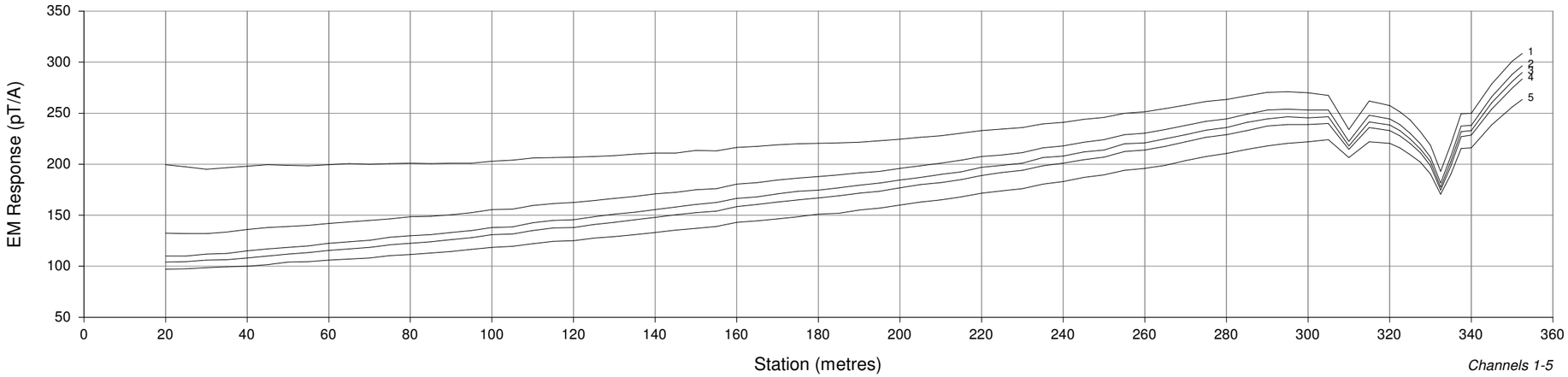
-0 25 50 75 100

Scale 1:1250

BMC MINERALS LTD

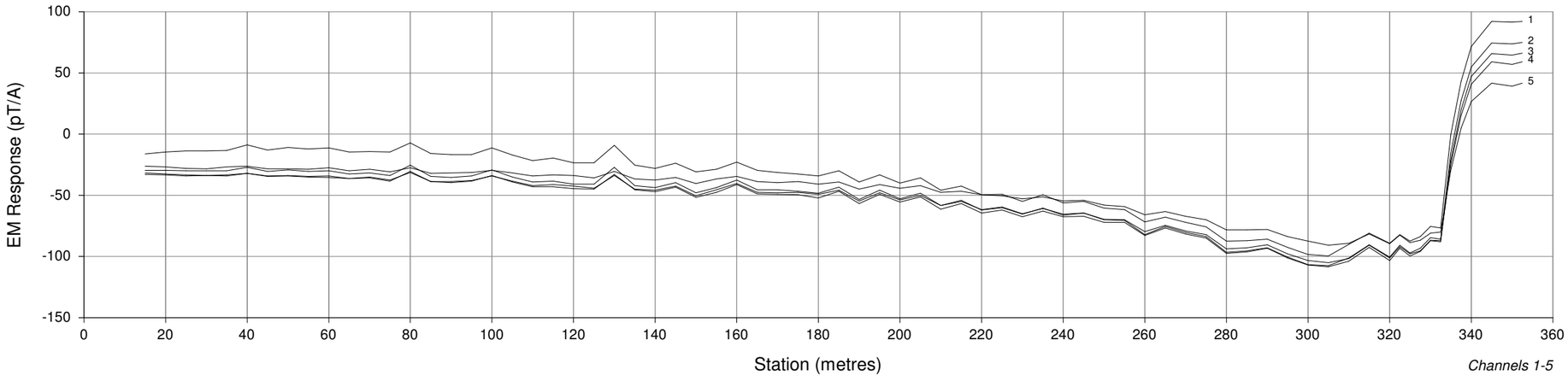
GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH: K15-GP4F59-216

A Component



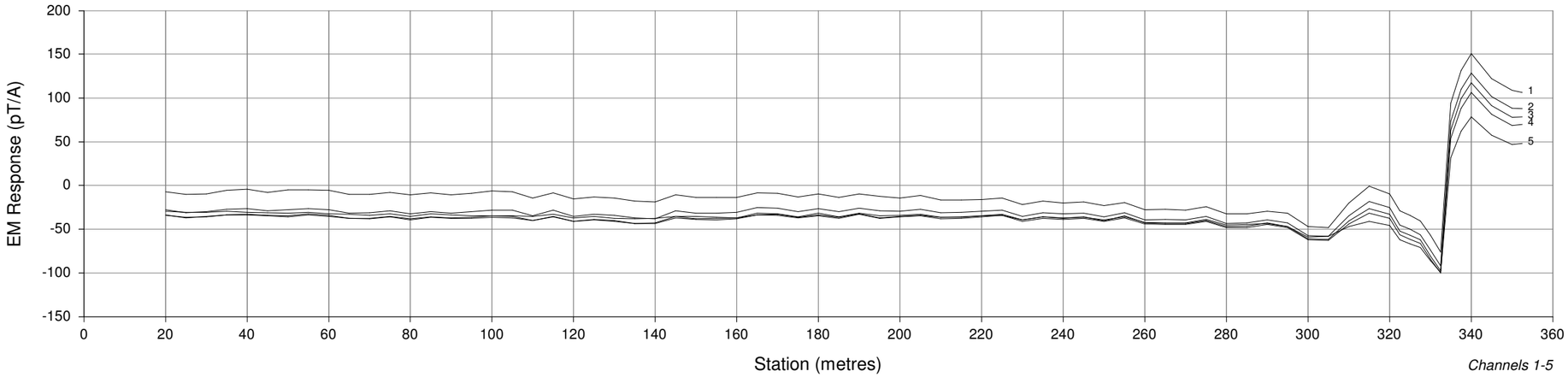
Channels 1-5

U Component



Channels 1-5

V Component



Channels 1-5

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop3
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

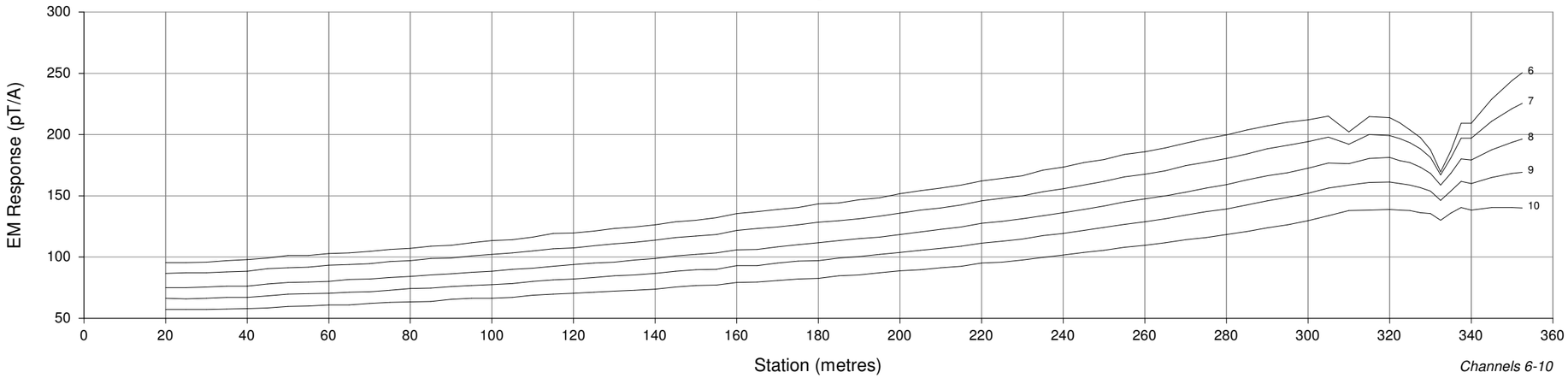
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 1 - 5
DDH: K15-GP4F63-268

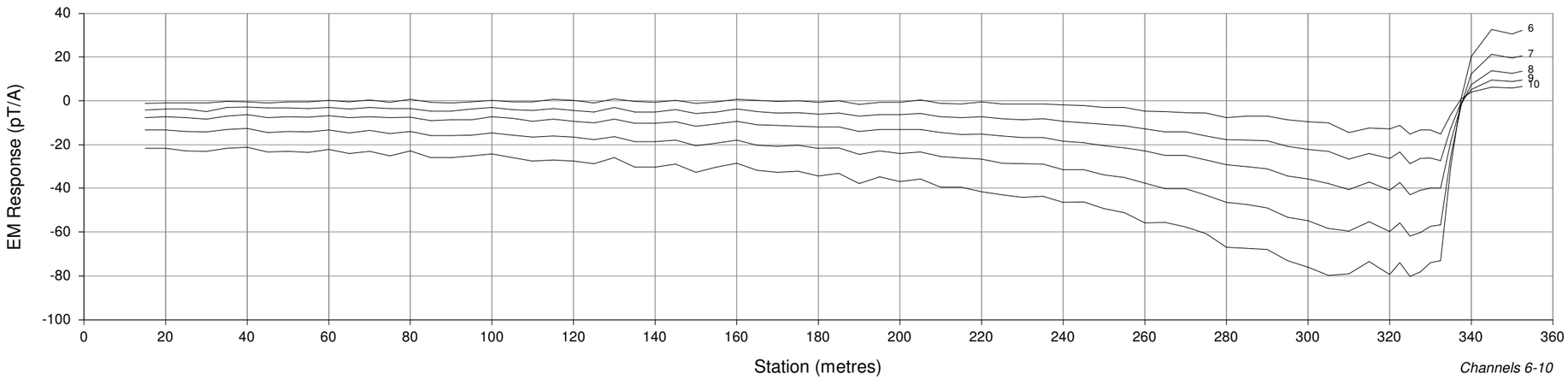
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



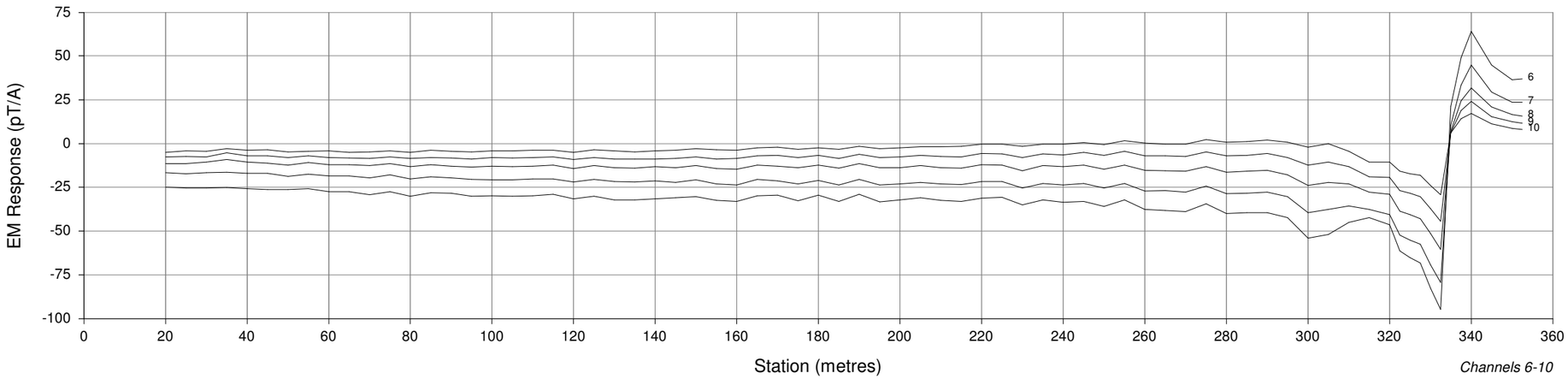
Channels 6-10

U Component



Channels 6-10

V Component



Channels 6-10

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop3
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

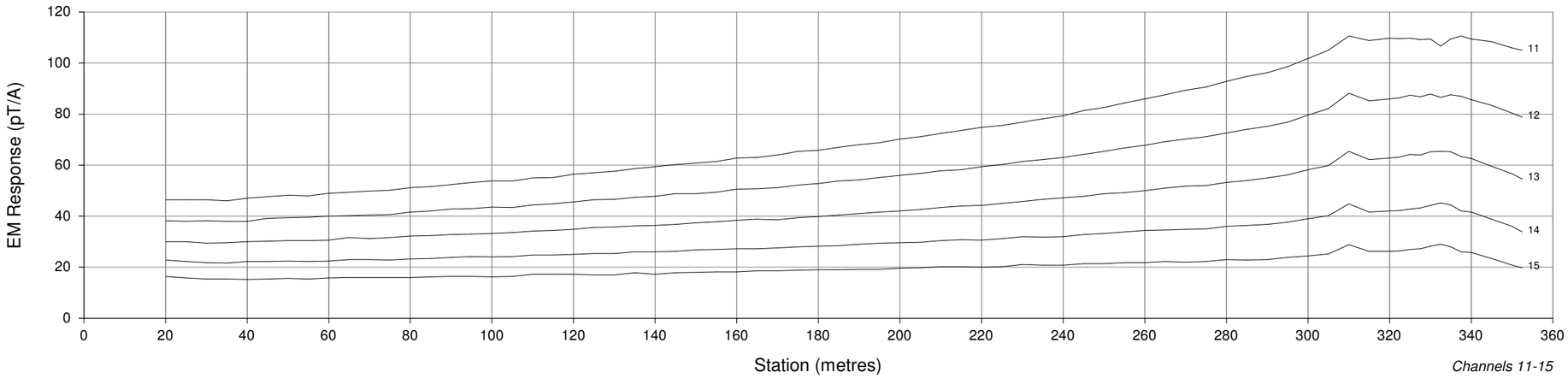
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 6 - 10
DDH: K15-GP4F63-268

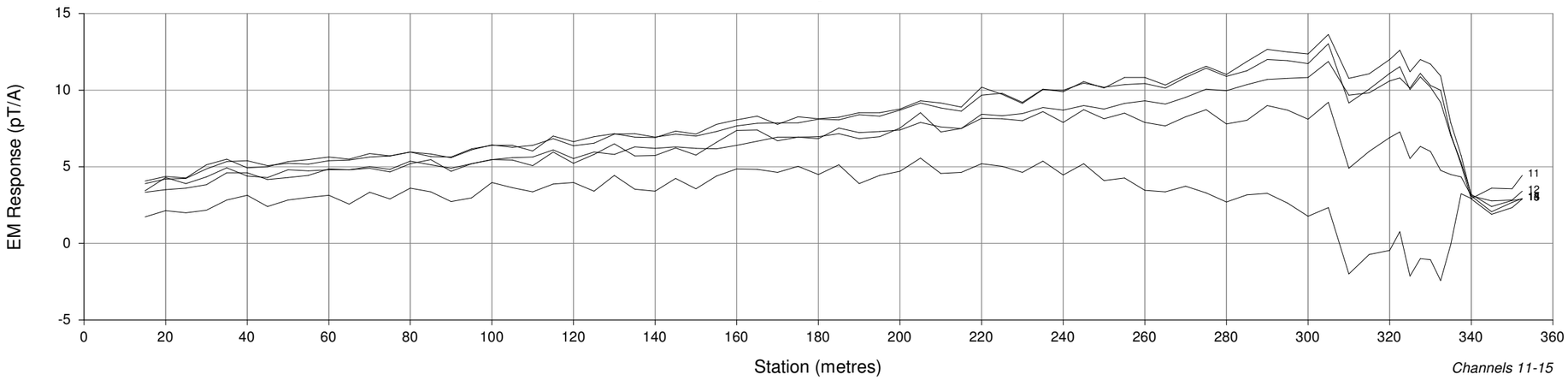
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



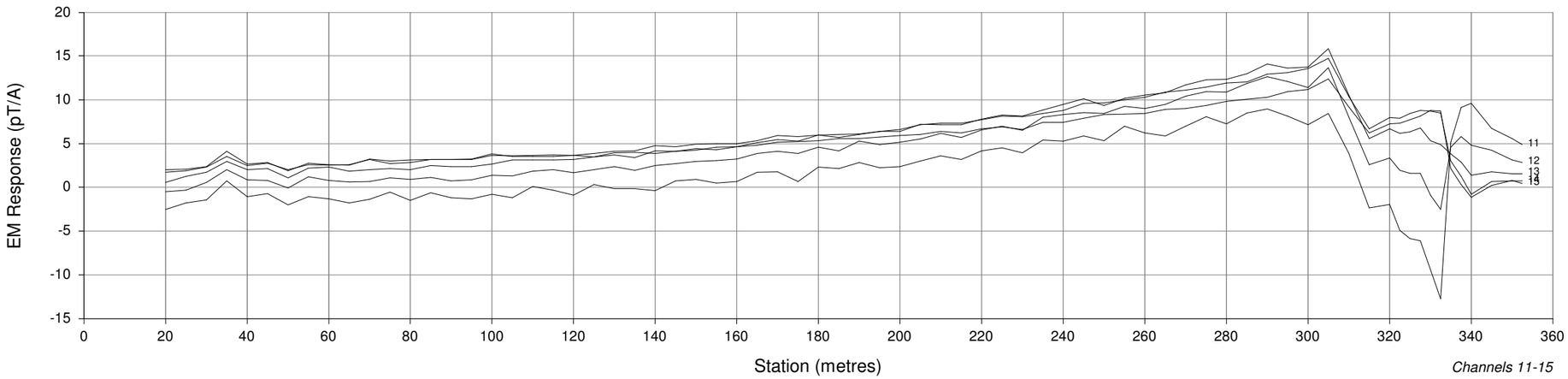
Channels 11-15

U Component



Channels 11-15

V Component



Channels 11-15

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop3
Tx Current	: 15 A
Turn Off	: 0.482 ms

0 25 50 75 100

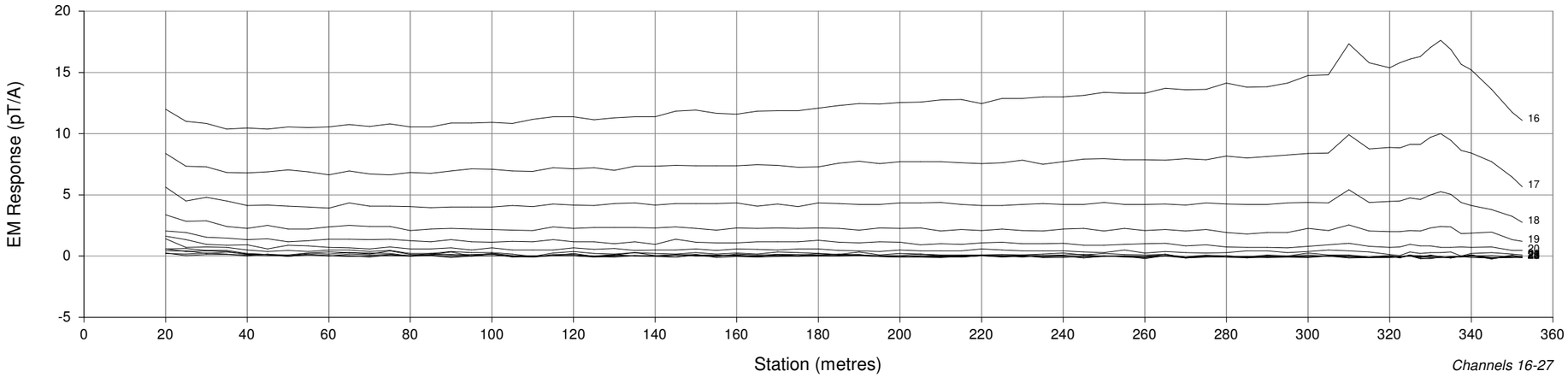
Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 11 - 15
DDH: K15-GP4F63-268

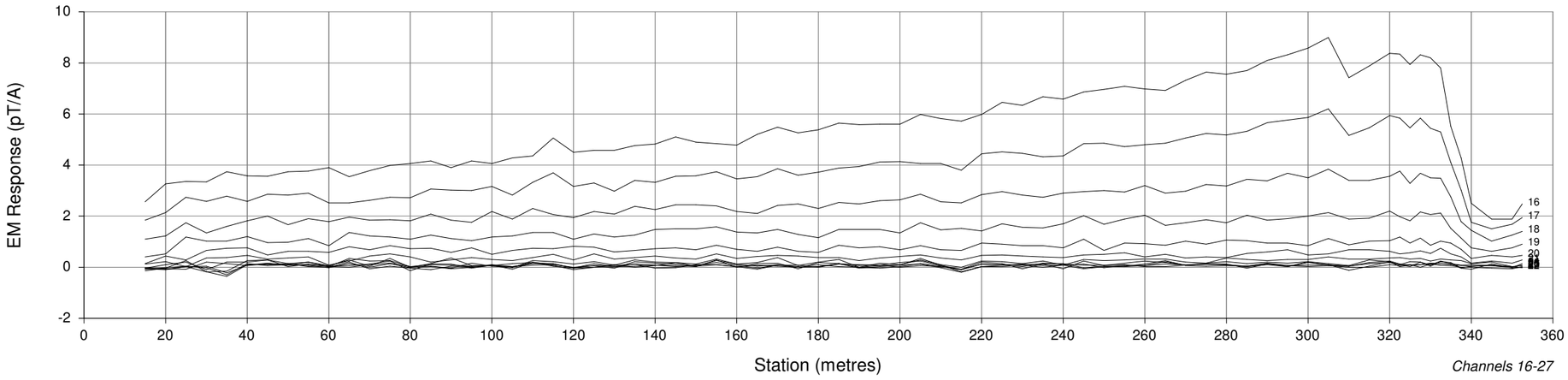
Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

A Component



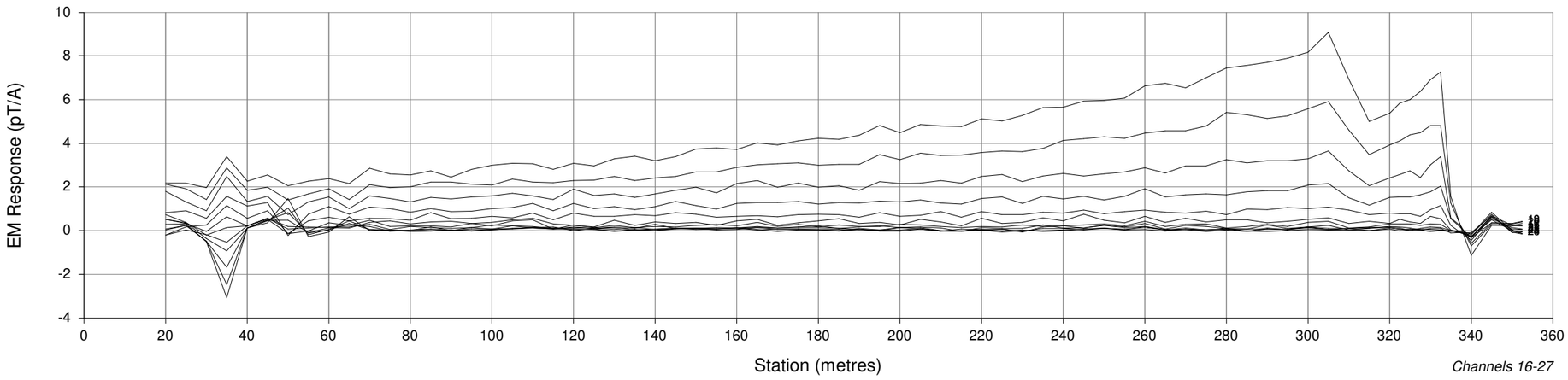
Channels 16-27

U Component



Channels 16-27

V Component



Channels 16-27

WINDOW TIMES (ms): Start Width
From the start of the Ramp

1	: 0.5690, 0.0250	15	: 2.290, 0.516
2	: 0.5910, 0.0310	16	: 2.726, 0.641
3	: 0.6170, 0.0380	17	: 3.268, 0.796
4	: 0.6490, 0.0480	18	: 3.941, 0.988
5	: 0.6900, 0.0590	19	: 4.776, 1.227
6	: 0.7400, 0.0740	20	: 5.813, 1.523
7	: 0.8020, 0.0920	21	: 7.100, 1.891
8	: 0.8800, 0.1130	22	: 8.699, 2.347
9	: 0.976, 0.141	23	: 10.68, 2.91
10	: 1.095, 0.175	24	: 13.15, 3.62
11	: 1.243, 0.217	25	: 16.20, 4.49
12	: 1.427, 0.270	26	: 20.00, 5.58
13	: 1.655, 0.335	27	: 24.71, 6.92
14	: 1.938, 0.416		

SURVEY PARAMETERS

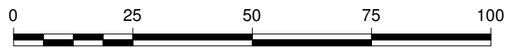
Configuration	: Downhole
Station Spacing	: 2.5-5.0 m

RECEIVER

Receiver	: DigiAtlantis
Frequency	: 7.5
Component	: A,U,V

TRANSMITTER

Transmitter	: Geonics
Loop	: GP4F_loop3
Tx Current	: 15 A
Turn Off	: 0.482 ms



Scale 1:1250

BMC MINERALS LTD

GP4F Prospect
Downhole EM Survey
Profiles of
EM Response
Channels: 16 - 27
DDH: K15-GP4F63-268

Job: BMC-15525-YT Date Surveyed: 03/09/2015
Date Drawn: 12/11/2015 Drawn By: AL

Appendix L: 2015 drilling logs

This appendix contains all of the drill logs generated from the 2015 drilling program, which includes resource definition, exploration, metallurgical, hydrogeological and geotechnical holes. Drill logs are placed in alpha-numeric order with the first page of each log starting on the page number indicated below in Table L-1.

Table L-1: Table of contents for 2015 diamond drill hole logs in this appendix

Hole Number	Length (m)	Target	Purpose	Core Storage Location	Page Number
K15-200	211.5	ABM	Resource/hydrogeological	KZK Camp	1
K15-201	35	ABM	Metallurgical twin	KZK Camp	15
K15-202	71	ABM	Resource/metallurgical/hydrogeological	KZK Camp	18
K15-203	173	ABM	Resource/metallurgical	KZK Camp	22
K15-204	149	ABM	Resource/hydrogeological	KZK Camp	31
K15-205	146	ABM	Metallurgical twin	KZK Camp	37
K15-206	237	ABM	Resource/hydrogeological	KZK Camp	44
K15-207	112	ABM	Resource definition	KZK Camp	52
K15-208	42	Infrastructure	Hydrogeological	KZK Camp	58
K15-209	54	ABM	Metallurgical	KZK Camp	59
K15-210	36	Infrastructure	Hydrogeological	KZK Camp	63
K15-211	20	Infrastructure	Hydrogeological	KZK Camp	65
K15-212	36	Infrastructure	Hydrogeological	KZK Camp	67
K15-213	99	ABM	Metallurgical	KZK Camp	69
K15-214	32	Infrastructure	Hydrogeological	KZK Camp	75
K15-215	33	Infrastructure	Hydrogeological	KZK Camp	77
K15-216	233	ABM	Resource/metallurgical	KZK Camp	79
K15-216W1	182	ABM	Metallurgical wedge	KZK Camp	87
K15-217	10	Infrastructure	Hydrogeological	KZK Camp	91
K15-218	81	ABM	Resource/metallurgical	KZK Camp	92
K15-219	30	Infrastructure	Hydrogeological	KZK Camp	96
K15-220	33	Infrastructure	Hydrogeological	KZK Camp	97
K15-221	44	ABM	Metallurgical twin	KZK Camp	99
K15-222	18	Infrastructure	Hydrogeological	KZK Camp	102
K15-223	71	ABM	Resource/metallurgical	KZK Camp	104
K15-224	351	GP4F	Resource definition	KZK Camp	107
K15-225	25	ABM	Metallurgical twin	KZK Camp	117
K15-226	230	ABM	Resource/metallurgical	KZK Camp	119
K15-226W1	182	ABM	Metallurgical wedge	KZK Camp	127
K15-227	86	ABM	Resource/metallurgical	KZK Camp	132
K15-228	95	ABM	Resource confirmation	KZK Camp	136
K15-229	110	ABM	Resource definition	KZK Camp	139
K15-230	41	ABM	Metallurgical twin	KZK Camp	144
K15-231	176	ABM	Resource definition	KZK Camp	147
K15-232	209	ABM	Resource definition	KZK Camp	154
K15-233	224	ABM	Resource definition	KZK Camp	161

Hole Number	Length (m)	Target	Purpose	Core Storage Location	Page Number
K15-234	393	GP4F	Resource definition	KZK Camp	168
K15-235	47	ABM	Resource definition	KZK Camp	178
K15-235R	176	ABM	Resource definition	KZK Camp	181
K15-236	149	ABM	Resource/metallurgical	KZK Camp	188
K15-237	119	ABM	Metallurgical twin	KZK Camp	195
K15-238	245	ABM	Resource/metallurgical	KZK Camp	200
K15-238W1	194	ABM	Metallurgical wedge	KZK Camp	207
K15-239	192	ABM	Resource confirmation	KZK Camp	211
K15-240	110	ABM	Resource/metallurgical	KZK Camp	219
K15-241	35	ABM	Metallurgical twin	KZK Camp	225
K15-241R	65	ABM	Metallurgical twin	KZK Camp	226
K15-242	161	ABM	Resource/metallurgical/hydrogeological	KZK Camp	230
K15-243	221	ABM	Resource/metallurgical	KZK Camp	237
K15-243W1	200	ABM	Metallurgical wedge	KZK Camp	246
K15-244	119	ABM	Resource/metallurgical	KZK Camp	250
K15-245	70	ABM	Metallurgical twin	KZK Camp	254
K15-246	129	ABM	Metallurgical twin	KZK Camp	256
K15-247	414	GP4F	Exploration	KZK Camp	262
K15-248	278.5	ABM	Resource/hydrogeological	KZK Camp	276
K15-249	68	ABM	Resource definition	KZK Camp	284
K15-250	251	ABM	Resource definition	KZK Camp	287
K15-251	86	ABM	Resource/metallurgical	KZK Camp	295
K15-252	41	ABM	Metallurgical twin	KZK Camp	299
K15-253	230	ABM	Resource definition	KZK Camp	302
K15-254	100	ABM	Resource definition	KZK Camp	309
K15-255	80	ABM	Resource/metallurgical	KZK Camp	315
K15-256	32	ABM	Metallurgical twin	KZK Camp	318
K15-257	218	ABM	Resource definition	KZK Camp	321
K15-258	299	Krakatoa	Exploration	KZK Camp	328
K15-259	120	ABM	Geotechnical	KZK Camp	336
K15-260	227	ABM	Resource/metallurgical	KZK Camp	342
K15-260W1	196	ABM	Metallurgical wedge	KZK Camp	349
K15-261	302	GP4F	Exploration	KZK Camp	354
K15-262	348	ABM	Geotechnical	KZK Camp	365
K15-263	254	ABM	Resource definition	KZK Camp	377
K15-264	218	ABM	Resource/metallurgical	KZK Camp	385
K15-264W1	176.7	ABM	Metallurgical wedge	KZK Camp	397
K15-265	285	ABM	Resource/hydrogeological	KZK Camp	402
K15-266	110	ABM	Metallurgical twin	KZK Camp	412
K15-267	218	ABM	Resource/metallurgical	KZK Camp	419
K15-268	355	GP4F	Exploration	KZK Camp	428
K15-269	72.72	ABM	Resource/metallurgical	KZK Camp	440

Hole Number	Length (m)	Target	Purpose	Core Storage Location	Page Number
K15-270	170	ABM	Metallurgical twin	KZK Camp	444
K15-271	258	ABM	Resource definition	KZK Camp	452
K15-272	128	ABM	Resource/metallurgical	KZK Camp	461
K15-273	149	ABM	Resource/metallurgical	KZK Camp	469
K15-274	128	ABM	Resource/metallurgical	KZK Camp	474
K15-275	122	ABM	Metallurgical twin	KZK Camp	481
K15-276	110	ABM	Metallurgical twin	KZK Camp	487
K15-277	357.8	Krakatoa	Exploration	KZK Camp	494
K15-278	197.26	ABM	Resource/metallurgical	KZK Camp	509
K15-278W1	161	ABM	Metallurgical wedge	KZK Camp	518
K15-279	275	ABM	Resource/metallurgical	KZK Camp	523
K15-280	408	GP4F	Exploration	KZK Camp	532
K15-281	260	ABM	Resource/metallurgical	KZK Camp	547
K15-281W1	199.6	ABM	Metallurgical wedge	KZK Camp	559
K15-282	340	Krakatoa	Exploration	KZK Camp	563
K15-283	190.7	ABM	Metallurgical twin	KZK Camp	572
K15-284	224	ABM	Resource/metallurgical	KZK Camp	581
K15-284W1	191	ABM	Metallurgical wedge	KZK Camp	591
K15-285	306	GP4F	Exploration	KZK Camp	595
K15-286	200	ABM	Resource definition	KZK Camp	605
K15-287	131	ABM	Resource/metallurgical	KZK Camp	611
K15-288	86	ABM	Metallurgical twin	KZK Camp	619
K15-289	236	ABM	Resource definition	KZK Camp	624
K15-290	142	ABM	Resource definition	KZK Camp	632
K15-291	242	ABM	Resource definition	KZK Camp	637
K15-292	312	Krakatoa	Exploration	KZK Camp	644
K15-293	239	ABM	Resource definition	KZK Camp	655
K15-294	306	GP4F	Resource definition	KZK Camp	664
K15-295	201.5	ABM	Resource definition	KZK Camp	674
K15-296	62	ABM	Resource definition	KZK Camp	680
K15-297	350	Krakatoa	Exploration	KZK Camp	684
K15-298	114	ABM	Resource definition	KZK Camp	698
K15-299	170	ABM	Resource confirmation	KZK Camp	702
K15-300	200.1	ABM	Geotechnical	KZK Camp	708
K15-301	140.1	ABM	Resource definition	KZK Camp	716
K15-302	210	GP4F	Resource definition	KZK Camp	721
K15-303	247.8	Krakatoa	Exploration	KZK Camp	727
K15-304	254	Krakatoa	Exploration	KZK Camp	745
K15-305	300	Krakatoa	Exploration	KZK Camp	756
K15-306	246	GP4F	Resource definition	KZK Camp	769
K15-307	277	Krakatoa	Resource definition	KZK Camp	776
K15-308	194	Krakatoa	Resource definition	KZK Camp	791

Hole Number	Length (m)	Target	Purpose	Core Storage Location	Page Number
K15-309	306	Krakatoa	Resource definition	KZK Camp	797
K15-310	191	Krakatoa	Resource definition	KZK Camp	809
K15-311	263	Krakatoa	Resource definition	KZK Camp	817
K15-312	110	Krakatoa	Resource definition	KZK Camp	824
K15-313	153	Krakatoa	Resource definition	KZK Camp	831
K15-314	195	Krakatoa	Resource definition	KZK Camp	838
K15-315	210	Krakatoa	Resource definition	KZK Camp	849
K15-316	181	Krakatoa	Resource definition	KZK Camp	860
K15-317	170.6	Krakatoa	Resource definition	KZK Camp	868
K15-318	35	Krakatoa	Hydrogeological	KZK Camp	878
K15-319	254	Krakatoa	Exploration	KZK Camp	880
K15-320	269	Krakatoa	Resource definition	KZK Camp	889
K15-321	308	Krakatoa	Resource definition	KZK Camp	900
K15-322	197	Krakatoa	Resource definition	KZK Camp	914
K15-323	229.8	Krakatoa	Resource definition	KZK camp	926
K15-324	362	ABM	Exploration	KZK camp	934
K15-325	404.1	Krakatoa	Exploration	KZK Camp	951
K15-326	443	Krakatoa	Exploration	KZK Camp	966
K15-327	221	Santorini	Exploration	KZK camp	977
K15-328	236	Santorini	Exploration	KZK camp	989
K15-329	200	FCZ	Exploration	KZK Camp	1002
K15-330	50.95	ABM	Geotechnical	KZK Camp	1011
K15-331	32	ABM	Geotechnical	KZK Camp	1014
K15-332	182	FCZ	Exploration	KZK Camp	1017
K15-333	71	ABM	Geotechnical	KZK Camp	1024
K15-334	50.5	ABM	Geotechnical	KZK Camp	1026
K15-335	32.33	ABM	Geotechnical	KZK Camp	1028
K15-336	50.5	ABM	Geotechnical	KZK Camp	1030
Total: 148 Holes	25966.06				

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-200

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	01-Aug-15
UTM Easting	414748.527	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	04-Aug-15
UTM Northing:	6815599.239	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1408.934	Casing Depth (m):	6	Length (m):	211.5	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	30-Jul-15
Local Northing:		Cemented?:	VWP	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Aug-15
Local Elev. (m):						Purpose:	Resource/Hydro
Comments:						Parent Hole:	

K15-200 was drilled to twin a sulphide intercept in historic hole K94-008. Packer testing was completed and a vibrating wire piezometer was installed at completion of the hole.
The hanging wall sequence consists of a felsic package of volcanics and two mudstone horizons from 6-140.6 m. MU alteration increases in intensity from 97.4-142.5 m as well as stronger CL and CI alteration in proximity to the MSXS. MSXS occurs from 140.6-159.5 m, consisting of OJ, OB, OD, OA, OC, and OG ore types. The footwall package consists of CL-altered volcaniclastic rocks from 159.5-161.7 m, CL-BI mafic sill from 161.7-186.6 m with a 4.7 m zone of MU and SI alteration believed to be associated with the RHYi. A second package of felsic volcanic rocks occurs to the end of the hole at 211.5 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Trent Newkirk	30-Jul-15		☐	Planned
36	-70.1	154.9	22.5	177.4	ReflexEZS	Geotech	31-Jul-15	5702	☑	
61.5	-70.1	156.2	22.5	178.7	ReflexEZS	Geotech	31-Jul-15	5731	☑	
87	-69.3	156	22.5	178.5	ReflexEZS	Geotech	01-Jul-15	5718	☑	
114	-69.2	162	22.5	184.5	ReflexEZS	Geotech	01-Jul-15	5700	☑	
139.5	-68.4	155.2	22.5	177.7	ReflexEZS	Geotech	02-Jul-15	5557	☑	
172.5	-68.4	159.7	22.5	182.2	ReflexEZS	Geotech	02-Jul-15	5979	☑	
202.5	-68.8	161.3	22.5	183.8	ReflexEZS	Geotech	03-Jul-15	5769	☑	
211.5	-68.5	160.1	22.5	182.6	ReflexEZS	Geotech	04-Jul-15	5779	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**OVBN** **Overburden**									
6.00	**8.80**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 6 - 9.28 2% Min: Pyrite>>											
<<Alt: 6 - 87.8 Weak (Alt) Muscovite>> Regional metamorphism of rhyolite											

From (m)	To (m)	Rocktype & Description
8.80	**13.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 9.28 - 12.36 2% Min: Pyrite>>		
<<Min: 12.36 - 15.57 2% Min: Pyrite>>		
<<Min: 12.36 - 15.57 4% Min: Pyrrhotite>>		
13.30	**15.00**	**RHYvl** **Lapilli tuff**
15.00	**24.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 15.57 - 18.96 1% Min: Pyrite>>		
<<Min: 15.57 - 18.96 4% Min: Pyrrhotite>>		
<<Min: 18.96 - 22.25 1% Min: Pyrite>>		
<<Min: 18.96 - 22.25 3% Min: Pyrrhotite>>		
<<Min: 18.96 - 22.25 1% Min: Calcite>>		
<<Min: 22.25 - 25.5 2% Min: Pyrite>>		
<<Min: 22.25 - 25.5 2% Min: Pyrrhotite>>		
<<Min: 22.25 - 25.5 0.5% Min: Calcite>>		
<<Vein: 19.8 - 20.6 5% Quartz-Carbonate>>		Minor Calcite+Biotite+Tourmaline veins
24.00	**31.50**	**RHYvx** **Quartz and/or feldspar crystal tuff**
24 - 31.5: Contains many lapilli sized Qz and feldspar cystals? Also has lapilli sized lithic fragments. All lapilli sized material is stretched and deformed.		
<<Min: 25.5 - 28.65 1% Min: Pyrite>>		
<<Min: 25.5 - 28.65 3% Min: Pyrrhotite>>		
<<Min: 25.5 - 28.65 0.5% Min: Calcite>>		
<<Min: 28.65 - 31.95 2% Min: Pyrrhotite>>		
<<Struc: 24 - 24.7 Moderate (Alt) Fault>>		moderate fault gouge zone
31.50	**40.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 31.95 - 35.22 1% Min: Pyrite>>		
<<Min: 31.95 - 35.22 3% Min: Pyrrhotite>>		
<<Min: 35.22 - 38.5 1% Min: Pyrite>>		
<<Min: 35.22 - 38.5 2% Min: Pyrrhotite>>		
<<Min: 38.5 - 41.79 2% Min: Pyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 38.5 - 41.79 3% Min: Pyrrhotite>>

40.40 43.50 RHYvl Lapilli tuff

<<Min: 41.79 - 45.48 1% Min: Pyrrhotite>>

<<Min: 41.79 - 45.48 0.5% Min: Calcite>>

43.50 62.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

43.5 - 62.2: Mafic dyke from 46.5-47m. Texture is dominantly curdy or flow banded. From ~51-56 m texture is obscured by spaced cleavage.

<<Min: 45.48 - 48.62 2% Min: Pyrite>>

<<Min: 45.48 - 48.62 2% Min: Pyrrhotite>>

<<Min: 48.62 - 51.72 2% Min: Pyrite>>

<<Min: 48.62 - 51.72 2% Min: Pyrrhotite>>

<<Min: 51.72 - 54.82 1% Min: Pyrite>>

<<Min: 51.72 - 54.82 2% Min: Pyrrhotite>>

<<Min: 54.82 - 58.12 2% Min: Pyrite>>

<<Min: 54.82 - 58.12 2% Min: Pyrrhotite>>

<<Min: 58.12 - 61.62 2% Min: Pyrite>>

<<Min: 58.12 - 61.62 2% Min: Pyrrhotite>>

<<Min: 61.62 - 64.81 1% Min: Pyrite>>

<<Min: 61.62 - 64.81 2% Min: Pyrrhotite>>

62.20 72.00 RHYvl Lapilli tuff

<<Min: 64.81 - 69.28 1% Min: Pyrite>>

<<Min: 64.81 - 69.28 1% Min: Pyrrhotite>>

<<Min: 69.28 - 72.35 1% Min: Pyrite>>

<<Vein: 68 - 68.1 50% Quartz-Carbonate>> Qz-ankerite vein

<<Struc: 67 - 69 Strong (Alt) Fault>> moderate fault gouge zone

<<Struc: 70.5 - 71 Weak (Alt) Fault>> moderate-strong fault gouge zone

72.00 77.20 RHYva Coarse grained to ash tuff

<<Min: 72.35 - 75.66 1% Min: Pyrite>>

<<Min: 72.35 - 75.66 1% Min: Pyrrhotite>>

<<Min: 75.66 - 78.86 1% Min: Pyrite>>

<<Vein: 76.1 - 76.15 20% Quartz-Carbonate>> Qz-ankerite vein

<<Struc: 74 - 74.1 Weak (Alt) Fault>> weak fault gouge zone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 76.3 - 77.2 Strong (Alt) Fault>> moderate fault gouge zone

77.20 85.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 78.86 - 81.91 2% Min: Pyrite>>

<<Min: 78.86 - 81.91 2% Min: Pyrrhotite>>

<<Min: 81.91 - 85.43 2% Min: Pyrite>>

<<Min: 81.91 - 85.43 2% Min: Pyrrhotite>>

<<Struc: 81.9 - 82.7 Moderate (Alt) Fault>> weak-moderate fault gouge zone

85.40 87.00 RHYvl Lapilli tuff

85.4 - 87: ~5% carbonaceous material

<<Min: 85.43 - 88.56 1% Min: Pyrite>>

<<Min: 85.43 - 88.56 1% Min: Pyrrhotite>>

87.00 97.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

87 - 97: Spaced cleavage from 87 to 90 disturbs coherent rhyolite textures. Qz-eyes in unit. ~5% carbonaceous material.

<<Min: 88.56 - 91.95 1% Min: Pyrrhotite>>

<<Min: 91.95 - 95.16 1% Min: Pyrite>>

<<Min: 91.95 - 95.16 1% Min: Pyrrhotite>>

<<Min: 95.16 - 98.39 1% Min: Pyrite>>

<<Min: 95.16 - 98.39 2% Min: Pyrrhotite>>

<<Alt: 87.8 - 97.4 Trace (Alt) Muscovite>> Regional metamorphism of rhyolite

<<Struc: 87.5 - 87.6 Weak (Alt) Fault>> weak fault gouge zone

97.00 103.80 RHYvl Lapilli tuff

<<Min: 98.39 - 101.58 2% Min: Pyrrhotite>>

<<Min: 101.58 - 105.06 2% Min: Pyrite>>

<<Min: 101.58 - 105.06 2% Min: Pyrrhotite>>

<<Alt: 97.4 - 98.4 Moderate (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Alt: 98.4 - 101 Weak (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Alt: 101 - 103.8 Moderate (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Struc: 97.5 - 98.4 Moderate (Alt) Fault>> weak-moderate fault gouge zone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 100.3 - 100.35 Weak (Alt) Fault>> weak fault gouge zone

103.80 106.70 MDSc Carbonaceous dominant mudstone

103.8 - 106.7: ~30% carbonaceous material

<<Min: 105.06 - 108.33 1% Min: Pyrite>>

<<Min: 105.06 - 108.33 2% Min: Pyrrhotite>>

<<Alt: 103.8 - 109.1 Weak (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Struc: 104.52 - 104.53 Trace (Alt) >>

<<Struc: 104.7 - 105 Strong (Alt) Fault>> strong fault gouge zone

<<Struc: 104.8 - 104.81 Trace (Alt) >>

<<Struc: 106 - 106.3 Moderate (Alt) Fault>> weak-moderate fault gouge zone

106.70 107.60 MDSt Rhyolite tuff dominant mudstone

106.7 - 107.6: ~5% carbonaceous material

<<Struc: 107.5 - 107.51 Trace (Alt) >>

107.60 109.10 MDSt Rhyolite tuff dominant mudstone

107.6 - 109.1: ~20% carbonaceous material

<<Min: 108.33 - 111.39 1% Min: Pyrrhotite>>

<<Min: 108.33 - 111.39 0.5% Min: Calcite>>

<<Struc: 107.9 - 107.91 Trace (Alt) >>

109.10 116.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 111.39 - 114.55 1% Min: Pyrrhotite>>

<<Min: 114.55 - 117.88 3% Min: Pyrite>>

<<Min: 114.55 - 117.88 3% Min: Pyrrhotite>>

<<Alt: 109.1 - 116 Moderate-Strong (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Struc: 109.1 - 109.15 Weak (Alt) Fault>> weak fault gouge zone

<<Struc: 109.9 - 109.91 Trace (Alt) >>

<<Struc: 110.9 - 110.91 Trace (Alt) >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 115.35 - 115.36 Trace (Alt) >>

116.00 117.20 MDSw Coherent rhyolite flow with carbonaceous content

116 - 117.2: ~15% carbonaceous material

<<Alt: 116 - 142.5 Strong (Alt) Muscovite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Struc: 116.5 - 116.51 Trace (Alt) >>

<<Struc: 116.54 - 116.55 Trace (Alt) >>

<<Struc: 116.74 - 116.75 Trace (Alt) >>

117.20 140.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

			136.20	137.70	1.50	B00264501	3.2	0.01	-0.01	0.21	0.32

117.2 - 140.6: Rhyolite flow continues to ~133.3 m but has a much higher sulphide content after 140.7. Flow texture is fairly consistent throughout the unit.

<<Min: 117.88 - 121.18 3% Min: Pyrite>>

			137.70	139.20	1.50	B00264502	2.7	0.006	0.01	0.12	0.27

<<Min: 117.88 - 121.18 1% Min: Pyrrhotite>>

			139.20	140.60	1.40	B00264503	2.4	0.007	0.01	0.07	0.22

<<Min: 121.18 - 124.5 2% Min: Ankerite>> Carbonate mineral in Qz-vein that lightly fizzes with HCl when scratched

<<Min: 121.18 - 124.5 1% Min: Pyrrhotite>>

<<Min: 121.18 - 124.5 1% Min: Pyrite>>

<<Min: 124.5 - 127.61 2% Min: Pyrrhotite>>

<<Min: 124.5 - 127.61 3% Min: Pyrite>>

<<Min: 127.61 - 130.76 2% Min: Pyrite>>

<<Min: 127.61 - 130.76 2% Min: Pyrrhotite>>

<<Min: 130.76 - 134.42 1% Min: Pyrrhotite>>

<<Min: 134.42 - 137.31 1% Min: Pyrite>>

<<Min: 134.42 - 137.31 1% Min: Sphalerite>>

<<Min: 137.31 - 140.6 1% Min: Sphalerite>>

<<Min: 137.31 - 140.6 0.5% Min: Chalcopyrite>>

<<Min: 137.31 - 140.6 0.5% Min: Galena>>

<<Min: 137.31 - 140.6 1% Min: Pyrrhotite>>

<<Min: 137.31 - 140.6 2% Min: Pyrite>>

<<Alt: 126.2 - 128 Moderate (Alt) Chlorite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

<<Alt: 132.6 - 140.6 Moderate-Strong (Alt) Chlorite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 138.6 - 140.6 Moderate (Alt) Cordierite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?									
		<<Vein: 123.4 - 124.6 75% Quartz-Carbonate>> Massive Qz-carbonate veining									
		<<Struc: 125.5 - 125.51 Trace (Alt) >> folds box 34 to 37									
		<<Struc: 125.56 - 125.57 Trace (Alt) >>									
		<<Struc: 127.25 - 127.26 Trace (Alt) >>									
		<<Struc: 128.85 - 128.86 Trace (Alt) >>									
		<<Struc: 129.9 - 129.91 Trace (Alt) >>									
		<<Struc: 130.32 - 130.33 Trace (Alt) >>									
		<<Struc: 132 - 133.5 Moderate (Alt) Fault>> weak faulted zone with minor gouge									
		<<Struc: 134.18 - 134.19 Trace (Alt) >>									
		<<Struc: 134.2 - 134.21 Trace (Alt) >> Secondary foliation									
		<<Struc: 134.3 - 134.31 Trace (Alt) >>									
		<<Struc: 134.5 - 134.51 Trace (Alt) >>									
		<<Struc: 134.6 - 134.61 Trace (Alt) >>									
		<<Struc: 136.4 - 136.41 Trace (Alt) >>									
		<<Struc: 136.6 - 136.61 Trace (Alt) >>									
		<<Struc: 136.8 - 136.81 Trace (Alt) >>									
		<<Struc: 136.95 - 136.96 Trace (Alt) >>									
		<<Struc: 137 - 137.01 Trace (Alt) >>									
		<<Struc: 137.3 - 137.31 Trace (Alt) >>									
		<<Struc: 137.35 - 137.36 Trace (Alt) >>									
		<<Struc: 139.65 - 139.66 Trace (Alt) >>									
		<<Struc: 139.75 - 139.76 Trace (Alt) >>									
140.60	**144.00 OJ**	**Heavilly disseminated sulphides in proximal altered rock** **MCG**	140.60	141.30	0.70	B00264504	43.5	0.411	1.27	0.06	0.25
		140.6 - 144: strongly patchy and disseminated sulphide minerals within RHYcw. Massive sulphie from 142-142.2. RHYcw is strogly CL+CI altered (restricted alteration).									
		<<Min: 140.6 - 144 3% Min: Sphalerite>>	141.30	142.00	0.70	B00264505	4.2	0.02	0.08	0.02	0.04
		<<Min: 140.6 - 144 25% Min: Pyrite>>	142.00	143.00	1.00	B00264506	179	0.981	0.36	2.03	5.68
		<<Min: 140.6 - 144 7% Min: Pyrrhotite>>	143.00	144.00	1.00	B00264507	74.9	0.76	0.22	0.73	4.47
		<<Min: 140.6 - 144 1% Min: Galena>>									
		<<Min: 140.6 - 144 2% Min: Chalcopyrite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 140.6 - 144 Strong (Alt) Chlorite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?													
<<Alt: 140.6 - 144 Strong (Alt) Cordierite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?													
<<Struc: 140.95 - 140.96 Trace (Alt) >>													
144.00	**146.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	144.00	144.80	0.80	B00264508	106	0.468	0.16	1.91	8.18
144 - 146.4: Wispy laminated massive sulphide that is predominantly PY+SP+GL+/-CP. Locally 1-5 cm bands of Qz+CL.													
<<Min: 144 - 146.4 7% Min: Sphalerite>>					144.80	145.60	0.80	B00264509	124	1.54	0.34	1.81	8.34
<<Min: 144 - 146.4 70% Min: Pyrite>>					145.60	146.40	0.80	B00264511	113	0.373	0.3	1.79	8.17
<<Min: 144 - 146.4 0.5% Min: Magnetite>>													
<<Min: 144 - 146.4 3% Min: Galena>>													
<<Min: 144 - 146.4 0.5% Min: Chalcopyrite>>													
<<Min: 144 - 146.4 5% Min: Calcite>>													
146.40	**146.90**	**OD**	**Brecciated sulphides**	**FMG**	146.40	146.90	0.50	B00264512	71.4	1.29	0.41	1.83	6.43
146.4 - 146.9: Brecciated massive sulphide (PY+SP+GL+/-CP) with a CA+PY matrix.													
<<Min: 146.4 - 146.9 5% Min: Sphalerite>>													
<<Min: 146.4 - 146.9 70% Min: Pyrite>>													
<<Min: 146.4 - 146.9 2% Min: Galena>>													
<<Min: 146.4 - 146.9 1% Min: Chalcopyrite>>													
<<Min: 146.4 - 146.9 15% Min: Calcite>>													
146.90	**148.40**	**OA**	**Magnetite bearing sulphides**	**MCG**	146.90	147.70	0.80	B00264513	70.9	0.547	1.17	1.78	9.82
146.9 - 148.4: Lamited MG rich massive sulphide (PY+SP+GL+MG+/-CP). Local buckshot texture with Vcg pyrite.													
<<Min: 146.9 - 148.4 5% Min: Sphalerite>>					147.70	148.40	0.70	B00264514	131	0.704	0.15	3.85	9.55
<<Min: 146.9 - 148.4 70% Min: Pyrite>>													
148.40	**152.00**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	148.40	149.00	0.60	B00264515	15.8	0.056	0.42	0.14	1.41
148.4 - 152: PO+CP net texture, with MG+/-PY+/-CL matrix.													
<<Min: 148.4 - 152 20% Min: Pyrite>>					149.00	150.00	1.00	B00264516	119	1.21	3.6	0.19	3.65
<<Min: 148.4 - 152 40% Min: Pyrrhotite>>					150.00	151.00	1.00	B00264517	70.9	0.56	1.74	0.35	2.08

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 148.4 - 152 20% Min: Magnetite>>	151.00	152.00	1.00	B00264518	31.8	0.11	0.3	0.7	2.6
		<<Min: 148.4 - 152 10% Min: Chalcopyrite>>									
		<<Alt: 148.4 - 152 Moderate (Alt) Chlorite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?									
		<<Alt: 148.4 - 152 Weak-Moderate (Alt) Cordierite>> Stronger alteration related to hydrothermal altration subsequently overprinted by metamorphism?									
152.00	**154.00**	**OA** **Magnetite bearing sulphides** **CG**	152.00	153.00	1.00	B00264519	67.7	0.384	0.57	0.64	4.08
		152 - 154: MG-bearing massive sulphide (PY+PO+/-SP+/-GL+/-CP) with local cg-vcg PY buckshot texture.									
		<<Min: 152 - 154 5% Min: Sphalerite>>	153.00	154.00	1.00	B00264521	61.1	0.323	0.78	1.05	7.86
		<<Min: 152 - 154 60% Min: Pyrite>>									
		<<Min: 152 - 154 5% Min: Pyrrhotite>>									
		<<Min: 152 - 154 15% Min: Magnetite>>									
		<<Min: 152 - 154 5% Min: Galena>>									
		<<Min: 152 - 154 5% Min: Chalcopyrite>>									
154.00	**155.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	154.00	154.50	0.50	B00264522	137	0.696	0.29	1.46	6.66
		154 - 155.1: Wispy lamited PY+SP+GL with local AK? (soft but doesn't fizz) matrix.									
		<<Min: 154 - 155.1 15% Min: Sphalerite>>	154.50	155.10	0.60	B00264523	204	1.24	0.35	2.65	10.5
		<<Min: 154 - 155.1 50% Min: Pyrite>>									
		<<Min: 154 - 155.1 1% Min: Magnetite>>									
		<<Min: 154 - 155.1 5% Min: Galena>>									
		<<Min: 154 - 155.1 1% Min: Chalcopyrite>>									
		<<Min: 154 - 155.1 20% Min: Ankerite>> Ankerite or dolomite? Soft carbonate mineral that lightly fizzes with HCl when scratched. Makes up majority of Massive sulphide matrix.									
155.10	**156.90**	**OA** **Magnetite bearing sulphides** **MG**	155.10	156.00	0.90	B00264524	110	0.649	1.19	1.28	12.2
		155.1 - 156.9: MG-bearing massive sulphide (PY+SP+GL+/-CP). Fine laminated texture.									
		<<Min: 155.1 - 156.9 10% Min: Sphalerite>>	156.00	156.85	0.85	B00264525	117	0.746	1.08	1.79	10.7
		<<Min: 155.1 - 156.9 70% Min: Pyrite>>	156.85	157.35	0.50	B00264526	320	5.73	5.49	0.96	5.6
		<<Min: 155.1 - 156.9 15% Min: Magnetite>>									
		<<Min: 155.1 - 156.9 1% Min: Galena>>									
		<<Min: 155.1 - 156.9 1% Min: Chalcopyrite>>									
		<<Min: 155.1 - 156.9 1% Min: Calcite>>									

From (m)	To (m)		Rocktype & Description	
156.90	**157.30**	**OG**	**Chalcopyrite rich sulphides**	**MG**

156.9 - 157.3: CP-rich (~30%) massive sulphide (PY+CP+PO) with minor CL matrix. Non-laminated.

<<Min: 156.9 - 157.3 30% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description	
157.30	**158.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**

157.3 - 158.9: 157.3-157.6 is OA (magnetite-bearing). Fine laminated massive sulphide (PO+/-SP+/-CP+/-GL) with local CA matrix.

<<Min: 157.3 - 158.9 10% Min: Sphalerite>>

<<Min: 157.3 - 158.9 70% Min: Pyrite>>

<<Min: 157.3 - 158.9 5% Min: Magnetite>>

<<Min: 157.3 - 158.9 5% Min: Galena>>

<<Min: 157.3 - 158.9 0.5% Min: Chalcopyrite>>

<<Min: 157.3 - 158.9 5% Min: Calcite>>

From (m)	To (m)		Rocktype & Description	
158.90	**159.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**

158.9 - 159.5: Heavily disseminated PY+SP+GL+CP in CL+QZ+CA schist

<<Min: 158.9 - 159.5 8% Min: Sphalerite>>

<<Min: 158.9 - 159.5 30% Min: Pyrite>>

<<Min: 158.9 - 159.5 2% Min: Pyrrhotite>>

<<Min: 158.9 - 159.5 7% Min: Galena>>

<<Min: 158.9 - 159.5 2% Min: Chalcopyrite>>

<<Min: 158.9 - 159.5 10% Min: Ankerite>> Ankerite or dolomite? Soft carbonate mineral that lightly fizzes with HCl when scratched.

<<Alt: 158.9 - 161.7 Intense (Alt) Chlorite>> Related to PY+PO+CP+SP+/-GL stringers in RHYvl unit.

From (m)	To (m)		Rocktype & Description	
159.50	**161.70**	**RHYvl**	**Lapilli tuff**	**green**

159.5 - 161.7: 159.5-160.1 is dominantly Qz-vein. The unit is intensely CL-altered with PY+PO+CP+SP+/-GL stringers. Large (~10cm) blob of albite? at 161-161.1 m.

<<Min: 159.5 - 161.7 1% Min: Sphalerite>>

<<Min: 159.5 - 161.7 3% Min: Pyrite>>

<<Min: 159.5 - 161.7 2% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
157.35	158.10	0.75	B00264527	199	1.75	1.92	0.97	6.94
158.10	158.90	0.80	B00264528	224	1.25	0.75	2.33	7.82
158.90	159.50	0.60	B00264529	73.8	0.714	0.28	1.88	4.58
159.50	161.00	1.50	B00264532	24.4	0.181	0.37	0.15	0.29
161.00	161.70	0.70	B00264533	22.4	0.113	0.38	0.15	0.73

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 159.5 - 161.7 0.5% Min: Galena>>

<<Min: 159.5 - 161.7 2% Min: Chalcopyrite>>

<<Min: 159.5 - 161.7 2% Min: Calcite>>

<<Vein: 159.5 - 160.1 80% Quartz-Carbonate>> Massive Qz-ankerite vein in CL altered schist

<<Struc: 160.3 - 160.31 Trace (Alt) >> Calcite

<<Struc: 161.4 - 161.5 Weak (Alt) Fault>> weak fractured zone

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
161.70	163.20	1.50	B00264534	0.9	0.007	-0.01	-0.01	0.02

161.70 186.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

161.7 - 186.6: CL-CA-BI mafic schist. Locally intensely altered to bright-green mica. Also contains Leucosome (Ti-oxide mineral?).

<<Min: 161.7 - 165.5 0.5% Min: Pyrite>>

<<Min: 161.7 - 165.5 0.5% Min: Pyrrhotite>>

<<Min: 161.7 - 165.5 20% Min: Calcite>>

<<Min: 165.5 - 167.2 3% Min: Pyrite>>

<<Min: 165.5 - 167.2 5% Min: Calcite>>

<<Min: 167.2 - 186.6 0.5% Min: Pyrite>>

<<Min: 167.2 - 186.6 20% Min: Calcite>>

<<Alt: 161.7 - 163.5 Strong (Alt) Chlorite>> CL-CA-BI metamorphism of mafic sill

<<Alt: 161.7 - 163.5 Moderate-Strong (Alt) Biotite>> CL-CA-BI metamorphism of mafic sill

<<Alt: 163.5 - 169.5 Weak (Alt) Silicification>> Alteration of mafic sill by aphanitic rhyolite dyke? Zone is defined by an inner core of intense silicification with a rind of BI-alteration, surrounded by bright-green mica alteration and green-grey muscovite alteration.

<<Alt: 163.5 - 169.5 Strong (Alt) Muscovite>> Alteration of mafic sill by aphanitic rhyolite dyke? Zone is defined by an inner core of intense silicification with a rind of BI-alteration, surrounded by bright-green mica alteration and green-grey muscovite alteration.

<<Alt: 165.5 - 167.2 Intense (Alt) Silicification>> Alteration of mafic sill by aphanitic rhyolite dyke? Zone is defined by an inner core of intense silicification with a rind of BI-alteration, surrounded by bright-green mica alteration and green-grey muscovite alteration.

<<Alt: 169.5 - 186.6 Strong (Alt) Chlorite>> CL-CA-BI metamorphism of mafic sill

<<Alt: 169.5 - 186.6 Moderate-Strong (Alt) Biotite>> CL-CA-BI metamorphism of mafic sill

<<Vein: 177.3 - 178 80% Quartz-Carbonate>> CA-QZ vein in mafic sill

<<Struc: 161.9 - 161.91 Trace (Alt) >> No Beta angle

<<Struc: 163.5 - 163.51 Trace (Alt) >>

<<Struc: 164.8 - 164.81 Trace (Alt) >>

<<Struc: 167.4 - 167.41 Trace (Alt) >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 168.7 - 168.71 Trace (Alt) >>
<<Struc: 168.8 - 168.81 Trace (Alt) >>
<<Struc: 170.1 - 170.11 Trace (Alt) >> Beta angle close to 90
<<Struc: 170.4 - 170.41 Trace (Alt) >>
<<Struc: 172.2 - 172.21 Trace (Alt) >>
<<Struc: 172.4 - 172.41 Trace (Alt) >>
<<Struc: 174.05 - 174.06 Trace (Alt) >>
<<Struc: 174.2 - 174.21 Trace (Alt) >>
<<Struc: 176.3 - 178.5 Weak (Alt) Fault>> weak fractured zone with minor fault gouge
<<Struc: 179.75 - 179.76 Trace (Alt) >> QZ/Calcite
<<Struc: 179.9 - 179.91 Trace (Alt) >>
<<Struc: 180.2 - 180.21 Trace (Alt) >>
<<Struc: 180.4 - 180.41 Trace (Alt) >>
<<Struc: 183.23 - 183.24 Trace (Alt) >>
<<Struc: 183.43 - 183.44 Trace (Alt) >>
<<Struc: 184.2 - 184.21 Trace (Alt) >>
<<Struc: 184.25 - 184.26 Trace (Alt) >>

186.60 188.60 RHYva Coarse grained to ash tuff

186.6 - 188.6: Dark green CL-schist next to Mafic intrusion. Protolith of rhyolite ash tuff? No strong textures.

<<Min: 186.6 - 188.53 2% Min: Pyrrhotite>>
<<Min: 188.53 - 191.91 2% Min: Pyrrhotite>>
<<Alt: 186.6 - 188.6 Strong (Alt) Chlorite>> Alteration of RHYva from mafic sill?
<<Alt: 186.6 - 188.6 Moderate (Alt) Biotite>> Alteration of RHYva from mafic sill?
<<Struc: 187.33 - 187.34 Trace (Alt) >>
<<Struc: 187.37 - 187.38 Trace (Alt) >>
<<Struc: 187.68 - 187.69 Trace (Alt) >>
<<Struc: 187.94 - 187.95 Trace (Alt) >>

188.60 193.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

188.6 - 193.3: Qz-eye rich Rhyolite coherent flow? Texture becomes a bit obscured due to deformation near the bottom of the unit.

<<Min: 191.91 - 195 1% Min: Pyrite>>
<<Min: 191.91 - 195 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 188.6 - 211.5 Weak (Alt) Muscovite>> Regional metamorphism of rhyolite

<<Struc: 189.05 - 189.06 Trace (Alt) >>

<<Struc: 189.13 - 189.14 Trace (Alt) >>

<<Struc: 190.26 - 190.27 Trace (Alt) >>

<<Struc: 191.59 - 191.6 Trace (Alt) >>

<<Struc: 191.82 - 191.83 Trace (Alt) >>

193.30 197.50 RHYvx Quartz and/or feldspar crystal tuff

193.3 - 197.5: Qz-eye rich crystal tuff? Maybe a coherent rhyolite but the texture is not obvious.

<<Min: 195 - 198.24 2% Min: Pyrite>>

<<Min: 195 - 198.24 4% Min: Pyrrhotite>>

<<Alt: 193.3 - 197.5 Weak (Alt) Chlorite>> Alteration of RHYva from mafic sill?

<<Struc: 194.84 - 194.85 Trace (Alt) >>

<<Struc: 194.98 - 194.99 Trace (Alt) >>

<<Struc: 195.2 - 196.7 Strong (Alt) Fault>> moderate multiple fault gouge zones

197.50 199.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

197.5 - 199.7: Coherent rhyolite flow with well defined flow banded texture

<<Min: 198.24 - 201.57 2% Min: Pyrite>>

<<Min: 198.24 - 201.57 1% Min: Pyrrhotite>>

<<Struc: 197.75 - 197.76 Trace (Alt) >>

<<Struc: 197.96 - 197.97 Trace (Alt) >>

<<Struc: 199.29 - 199.3 Trace (Alt) >>

<<Struc: 199.49 - 199.5 Trace (Alt) >>

<<Struc: 199.54 - 199.55 Trace (Alt) >>

199.70 211.50 RHYvl Lapilli tuff

<<Min: 201.57 - 204.76 1% Min: Pyrite>>

<<Min: 201.57 - 204.76 1% Min: Pyrrhotite>>

<<Min: 203.2 - 207.9 10% Min: Calcite>>

<<Min: 204.76 - 208.31 1% Min: Pyrite>>

<<Min: 204.76 - 208.31 2% Min: Pyrrhotite>>

<<Min: 208.31 - 211.5 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 208.31 - 211.5 1% Min: Pyrrhotite>>

<<Vein: 203.2 - 207.9 30% Quarzt-Chlorite-Tourmaline>> QZ-TR (tourmaline) veining along fractures. Runs ~parallel to core axis. Radiating TR radiates from the fractures outward.

<<Struc: 200.3 - 200.4 Weak (Alt) Fault>> weak-moderate fault gouge zone

<<Struc: 200.53 - 200.54 Trace (Alt) >>

<<Struc: 200.67 - 200.68 Trace (Alt) >>

<<Struc: 200.89 - 200.9 Trace (Alt) >>

<<Struc: 202.7 - 203.2 Moderate (Alt) Fault>> weak fault gouge zone

<<Struc: 203.08 - 203.09 Trace (Alt) >>

<<Struc: 203.37 - 203.38 Trace (Alt) >>

<<Struc: 203.75 - 203.76 Trace (Alt) >>

<<Struc: 205.18 - 205.19 Trace (Alt) >>

<<Struc: 205.28 - 205.29 Trace (Alt) >>

<<Struc: 205.71 - 205.72 Trace (Alt) >>

<<Struc: 206.37 - 206.38 Trace (Alt) >>

<<Struc: 206.61 - 206.62 Trace (Alt) >>

<<Struc: 206.91 - 206.92 Trace (Alt) >>

<<Struc: 208.23 - 208.24 Trace (Alt) >>

<<Struc: 208.37 - 208.38 Trace (Alt) >>

<<Struc: 208.57 - 208.58 Trace (Alt) >>

<<Struc: 208.77 - 208.78 Trace (Alt) >>

<<Struc: 209.95 - 209.96 Trace (Alt) >>

<<Struc: 211.18 - 211.19 Trace (Alt) >>

<<Struc: 211.38 - 211.39 Trace (Alt) >>

End of Hole @ 211.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-201

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	31-Jul-15
UTM Easting	414795.321	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	02-Aug-15
UTM Northing:	6815362.914	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1400.253	Casing Depth (m):	6	Length (m):	35	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	31-Jul-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	01-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-202

Comments:

K15-201 was drilled as twin of K15-202 to collect potentially oxidized samples of the MET3 and MET7 domains. Overburden occurs to 10.2 m. MSXS occurs from 10.20 - 20.00 m, consisting of OB and OA ore types followed by a strongly MU-altered felsic volcaniclastic unit from 20.00 - 21.50 m. From 21.50 - 23.00 m a second intersection of MSXS occurs, comprising the OB ore type. From 23.00 - 26.00 m moderate-strongly MU-altered felsic volcaniclastics occur. An intrusive rhyolite dyke cuts the volcanics from 26.00 m to the end of the hole at 35.00 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180	0	180	APS	Geotech	31-Jul-15		☑	
26	-59.7	159.6	22.5	182.1	ReflexEZS	Geotech	31-Jul-15	5786	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN Casing**									
<<Min: 0 - 16.8 0% Min: Calcite>>											
6.00	**10.20**	**OVBN Overburden**									
6 - 10.2: may be ground core quartz vein and mav sx											
10.20	**14.20**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	10.20	10.90	0.70						
<<Min: 10.2 - 10.9 25% Min: Sphalerite>>			10.90	11.90	1.00						
<<Min: 10.2 - 10.9 40% Min: Pyrite>>			11.90	12.90	1.00						
<<Min: 10.2 - 10.9 5% Min: Galena>>			12.90	13.40	0.50						
<<Min: 10.2 - 10.9 1% Min: Chalcopyrite>>			13.40	14.20	0.80						
<<Min: 10.9 - 14.2 5% Min: Sphalerite>>											
<<Min: 10.9 - 14.2 70% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 10.9 - 14.2 3% Min: Magnetite>>									
		<<Min: 10.9 - 14.2 2% Min: Galena>>									
		<<Min: 10.9 - 14.2 1% Min: Chalcopyrite>>									
14.20	**15.80**	**OA Magnetite bearing sulphides**	14.20	15.00	0.80						
		<<Min: 14.2 - 15.8 7% Min: Sphalerite>>	15.00	15.80	0.80						
		<<Min: 14.2 - 15.8 60% Min: Pyrite>>									
		<<Min: 14.2 - 15.8 20% Min: Magnetite>>									
		<<Min: 14.2 - 15.8 1% Min: Galena>>									
		<<Min: 14.2 - 15.8 2% Min: Chalcopyrite>>									
15.80	**20.00**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	15.80	16.80	1.00						
		15.8 - 20: indistinct texture, conformable contact with underlying mxsx, hangingwall cnt faulted									
		<<Min: 15.8 - 20 15% Min: Sphalerite>>	16.80	17.80	1.00						
		<<Min: 15.8 - 20 50% Min: Pyrite>>	17.80	20.00	2.20						
		<<Min: 15.8 - 20 3% Min: Magnetite>>									
		<<Min: 15.8 - 20 1% Min: Galena>>									
		<<Min: 15.8 - 20 2% Min: Chalcopyrite>>									
		<<Min: 16.8 - 23 1% Min: Calcite>>									
		<<Vein: 18.6 - 20.2 50% Quartz>> ground core fault?									
		<<Struc: 17.4 - 17.5 Foliation>> strong banding mxsx									
		<<Struc: 18.6 - 20 Fault>> ground core possible fault									
20.00	**21.50**	**RHYva Coarse grained to ash tuff**	20.00	21.50	1.50						
		20 - 21.5: indistinct volcaniclastic texture, lower cont conformable lower cnt faulted									
		<<Min: 20 - 21.5 5% Min: Pyrite>>									
		<<Min: 20 - 21.5 1% Min: Galena>>									
		<<Alt: 20 - 21.5 Strong (Alt) Muscovite>>									
		<<Struc: 20 - 20.1 Foliation>> strong dominant fol									
		<<Struc: 20.2 - 20.3 Fault>> ground core possible fault									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-201

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
21.50	**23.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		21.50	23.00	1.50						
21.5 - 23: 21.7-21.9 15% interstitial CP; 22.3-22.5 10% interstitial MG												
<<Min: 21.5 - 23 7% Min: Sphalerite>>												
<<Min: 21.5 - 23 60% Min: Pyrite>>												
<<Min: 21.5 - 23 5% Min: Magnetite>>												
<<Min: 21.5 - 23 3% Min: Galena>>												
<<Min: 21.5 - 23 5% Min: Chalcopyrite>>												
<<Struc: 21.5 - 21.6 >> moderate contact between tuff and mxsx												
23.00	**26.00**	**RHYvx** **Quartz and/or feldspar crystal tuff**	**FG**	23.00	24.00	1.00						
23 - 26: could be alt/deformed RHYi, thin banded with mm quart crystals in fine mtx												
<<Min: 23 - 26 4% Min: Sphalerite>> concentrated 25.5-26				24.00	25.00	1.00						
<<Min: 23 - 26 8% Min: Pyrite>>				25.00	26.00	1.00						
<<Min: 23 - 26 1% Min: Calcite>>												
<<Alt: 23 - 26 Moderate-Strong (Alt) Muscovite>> may be gy-gn assemblage												
26.00	**35.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**		26.00	27.00	1.00						
26 - 35: typical, brittle fracture quartz stringers, patchy gngy alteration												
<<Min: 26 - 35 3% Min: Pyrite>>				27.00	28.00	1.00						
<<Min: 26 - 35 1% Min: Galena>>												
<<Min: 26 - 35 3% Min: Calcite>>												
<<Alt: 26 - 32.3 Weak (Alt) Silicification>>												
<<Alt: 26 - 32.3 Weak (Alt) Muscovite>> patchy and prv gy-gn-style sericite-silica												
<<Alt: 32.3 - 35 Trace (Alt) Silicification>>												
<<Alt: 32.3 - 35 Trace (Alt) Muscovite>>												
<<Vein: 26 - 35 7% Quartz>> typical btittle veining in rhyi												
<<Struc: 26 - 26.1 Foliation>> strong												

End of Hole @ 35

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-202

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	02-Aug-15
UTM Easting	414795.491	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	03-Aug-15
UTM Northing:	6815365.198	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1400.217	Casing Depth (m):	8	Length (m):	71	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	01-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Aug-15
Local Elev. (m):						Purpose:	Resource/Met/Hydro
Comments:						Parent Hole:	

K15-202 was drilled to define the shallow resource extension of the massive sulphide lens. K15-201 was drilled as a twin of K15-202 to collect core to test the metallurgical properties of MET3 and MET7 domains. Packer testing was completed on K15-202 as the hole was advanced.
K15-202 collared into overburden followed by MSXS occurring from 8.00 - 8.90 m consisting of the OB ore type. Strongly MU-altered felsic volcaniclastics were intersected from 8.90 - 9.50 m followed by a second MSXS intercept from 9.5-18.3 m comprising OB and OA ore types. From 18.30 - 20.80 m another strongly MU-altered felsic volcaniclastic unit occurs. A third MSXS intercept occurs from 20.00 - 23.00 m, consisting of the OB ore type. The footwall package comprises felsic volcaniclastics from 23.00 - 24.20 m, an aphanitic intrusive rhyolite dyke (RHYi) from 24.20 - 44.30 m, and a CL-BI mafic sill (MAFi) from 44.30 - 71.00 m. The MAFi displays MU and SI alteration near the contact with the RHYi unit.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.02	0	180.02	APS	Chris Hughes	02-Aug-15		☑	
26	-60.5	161.4	22.5	183.9	ReflexEZS	Geotech	01-Aug-15	5791	☑	
50	-60.5	159.4	22.5	181.9	ReflexEZS	Geotech	02-Aug-15	5777	☑	
71	-61	162	22.5	184.5	ReflexEZS	Geotech	02-Aug-15	5724	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.00**	**CASN** **Casing**									
8.00	**8.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	8.00	8.90	0.90	B00264016	303	3.05	0.58	4.36	16.9
<<Min: 8 - 8.9 15% Min: Sphalerite>> mg											
<<Min: 8 - 8.9 60% Min: Pyrite>> mg											
<<Min: 8 - 8.9 2% Min: Galena>> mg											
8.90	**9.50**	**RHYv** **Rhyolite volcaniclastic**	8.90	9.50	0.60	B00264017	1.7	0.015	-0.01	0.03	0.05
<<Min: 8.9 - 9.5 1% Min: Pyrite>>											
<<Alt: 8.9 - 9.5 Strong (Alt) Muscovite>>											

From (m)	To (m)		Rocktype & Description
9.50	**15.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 9.5 - 15.3 5% Min: Sphalerite>> fg			
<<Min: 9.5 - 15.3 70% Min: Pyrite>> fg			
<<Min: 9.5 - 15.3 3% Min: Magnetite>> fg			
<<Min: 9.5 - 15.3 2% Min: Galena>> fg			
<<Min: 9.5 - 15.3 1% Min: Chalcopyrite>> fg			
<<Struc: 14.5 - 14.6 Foliation>> moderate mxsx banding			
15.30	**17.00**	**OA**	**Magnetite bearing sulphides**
<<Min: 15.3 - 17 7% Min: Sphalerite>> mg			
<<Min: 15.3 - 17 60% Min: Pyrite>> mg			
<<Min: 15.3 - 17 20% Min: Magnetite>> mg			
<<Min: 15.3 - 17 1% Min: Galena>> mg			
<<Min: 15.3 - 17 2% Min: Chalcopyrite>> mg			
17.00	**18.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
17 - 18.3: indistinct texture, conformable contact with underlying mxsx, hangingwall cnt faulted			
<<Min: 17 - 18.3 15% Min: Sphalerite>>			
<<Min: 17 - 18.3 50% Min: Pyrite>>			
<<Min: 17 - 18.3 3% Min: Magnetite>>			
<<Min: 17 - 18.3 1% Min: Galena>>			
<<Min: 17 - 18.3 2% Min: Chalcopyrite>>			
18.30	**20.00**	**RHYva**	**Coarse grained to ash tuff**
18.3 - 20: indistinct volcaniclastic texture, lower cont conformable lower cnt faulted			
<<Min: 18.3 - 20 5% Min: Pyrite>>			
<<Min: 18.3 - 20 1% Min: Chalcopyrite>>			
<<Alt: 18.3 - 20 Strong (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
9.50	10.30	0.80	B00264018	141	2.49	1.24	2.19	6.79
10.30	11.30	1.00	B00264019	91.5	1.53	0.82	1.58	6.03
11.30	12.30	1.00	B00264021	104	1.67	0.53	1.63	5.42
12.30	13.30	1.00	B00264022	129	1.02	0.5	2.28	7.14
13.30	14.30	1.00	B00264023	75.4	0.839	0.21	0.89	6.61
14.30	15.30	1.00	B00264024	84.7	0.836	0.21	1.32	10.9
15.30	16.20	0.90	B00264025	128	2	1.54	2.11	11.5
16.20	17.00	0.80	B00264026	105	0.755	0.77	1.6	11
17.00	18.30	1.30	B00264027	273	0.684	0.21	2.78	8.52
18.30	19.30	1.00	B00264028	4.7	0.054	0.02	0.06	0.13
19.30	20.00	0.70	B00264029	1.5	0.01	0.02	0.02	0.14

From (m)	To (m)		Rocktype & Description
20.00	**23.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

20 - 23: 21.7-21.9 15% interstitial CP; 22.3-22.5 10% interstitial MG

<<Min: 20 - 23 8% Min: Sphalerite>> cg

<<Min: 20 - 23 45% Min: Pyrite>> cg

<<Min: 20 - 23 5% Min: Magnetite>> cg

<<Min: 20 - 23 5% Min: Galena>> cg

<<Min: 20 - 23 4% Min: Chalcopyrite>> cg

From (m)	To (m)		Rocktype & Description
23.00	**24.20**	**RHYvx**	**Quartz and/or feldspar crystal tuff**

23 - 24.2: could be alt/deformed RHYi, thin banded with mm quart crystals in fine mtx

<<Min: 23 - 41 4% Min: Calcite>>

<<Min: 23 - 44.3 0.5% Min: Sphalerite>>

<<Min: 23 - 44.3 4% Min: Pyrite>> cg

<<Alt: 23 - 24.2 Moderate-Strong (Alt) Muscovite>> may be gy-gn assemblage

<<Struc: 23 - 24 Fault>> ground core possble fault

From (m)	To (m)		Rocktype & Description
24.20	**44.30**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

24.2 - 44.3: typical, brittle fracture quartz stringers, patchy gngy alteration

<<Min: 41 - 45 1% Min: Calcite>>

<<Alt: 24.2 - 44.3 Moderate (Alt) Muscovite>> gr-gn alt associated with RHYi

<<Vein: 26 - 27 50% Quartz-Carbonate>>

<<Vein: 27 - 44.3 7% Quartz-Carbonate>>

From (m)	To (m)		Rocktype & Description
44.30	**54.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 45 - 71 7% Min: Calcite>>

<<Alt: 44.3 - 46.4 Weak (Alt) Silicification>>

<<Alt: 44.3 - 46.4 Weak (Alt) Muscovite>> gr-gn alt of MAFi

<<Alt: 46.4 - 47.7 Weak (Alt) Silicification>>

<<Alt: 46.4 - 47.7 Trace (Alt) Muscovite>> gr-gn alt of mafic

<<Alt: 47.7 - 54.5 Moderate (Alt) Silicification>>

<<Alt: 47.7 - 54.5 Moderate (Alt) Muscovite>> gr-gn alt of mafic

	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
	20.00	21.00	1.00	B00264031	68.7	0.086	0.14	3.07	8.58
	21.00	22.00	1.00	B00264032	576	0.844	2.47	7.52	13.8
	22.00	23.00	1.00	B00264033	64.5	0.272	0.09	1.55	10.9
FG	23.00	24.50	1.50	B00264034	2	-0.005	-0.01	0.01	0.12
	24.50	26.00	1.50	B00264035	1.4	0.006	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description
54.50	**64.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 54.5 - 64.8 Moderate (Alt) Silicification>>		
<<Alt: 54.5 - 64.8 Moderate (Alt) Chlorite>> typical MAFi CL-BI		
64.80	**71.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 64.8 - 71 Moderate (Alt) Silicification>>		
<<Alt: 64.8 - 71 Moderate-Strong (Alt) Muscovite>> gr-gn alt of mafic		
<<Struc: 70.1 - 70.15 Fault>> moderate narrow gouge zone		
End of Hole @ 71		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-203

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	03-Aug-15
UTM Easting	414849.911	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	06-Aug-15
UTM Northing:	6815544.492	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1395.382	Casing Depth (m):	4.6	Length (m):	173	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	03-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	05-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-203 was drilled as resource infill hole between historic holes K94-009 and K94-047. K15-205 was drilled as a twin of K15-203 to test the metallurgical properties of MET8, MET6, and MET7 domains.
The hanging wall package (4.6-100.9 m) consists of mixed felsic volcanics with some mudstone horizons. MU-alteration begins at 70 m and increases in intensity toward the first MSXS interval, CL and CI-alteration also increase in intensity proximal to the MSXS. The first MSXS interval occurs at 100.9-109.3 m, consisting of OG, OA, OJ, and OH ore types respectively. From 109.3-119.2 coherent rhyolites occur, with CL and CI-alteration increasing intensity toward 119.2 m. A second interval of MSXS occurs from 119.2-125.6 m, consisting of OB, OA, and OI ore types respectively. From 125.6-126.9 m CL-altered coherent rhyolite occurs. From 126.9-127.3 m a small intersection of MSXS occurs, consisting of OB ore type. From 127.3-134.3 a package of CL-altered felsic volcanics occurs. From 134.3-135 m a small intersect of MSXS occurs consisting of OH ore type. From 135-136.6 m MU-altered coherent rhyolite occurs. From 136.6-139.7 m another MSXS interval occurs, consisting of OH ore type. From 139.7-164.1 a CL-BI mafic sill occurs, with an intrusive aphanitic rhyolite between 145.1-147.2 m. From 147.2-173 a package of felsic volcanics occurs, with a 40 cm MSXS intercept from 164.5-164.9 m, consisting of OB ore type.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.9	0	180.9	APS	Geotech	05-Aug-15		☑	
26	-63	162.6	22.5	185.1	ReflexEZS	Geotech	03-Aug-15	5094	☑	
50	-63	162.6	22.5	185.1	ReflexEZS	Geotech	04-Aug-15	5714	☑	
74	-62.8	163.5	22.5	186	ReflexEZS	Geotech	04-Aug-15	5681	☑	
101	-62.5	167.8	22.5	190.3	ReflexEZS	Geotech	04-Aug-15	5102	☑	
126	-62.9	168.3	22.5	190.8	ReflexEZS	Geotech	04-Aug-15	6052	☑	
170	-62.3	201.7	22.5	224.2	ReflexEZS	Geotech	05-Aug-15	5775	☐	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.60**	**CASN** **Casing**									
4.60	**5.80**	**RHYcf** **Feldspar & feldspar quartz porphyry**									
<<Min: 4.6 - 11 4% Min: Pyrrhotite>>											
<<Min: 4.6 - 25 1% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

5.80 20.20 RHYvl Lapilli tuff

5.8 - 20.2: indistinct lapilli rare QE

<<Min: 11 - 20.5 2% Min: Pyrrhotite>>
<<Struc: 11.29 - 11.3 Trace (Alt) >>
<<Struc: 11.34 - 11.35 Trace (Alt) >>
<<Struc: 12.79 - 12.8 Trace (Alt) >> QZ banded
<<Struc: 13.09 - 13.1 Trace (Alt) >> QZ banded
<<Struc: 13.36 - 13.37 Trace (Alt) >>

20.20 27.40 RHYvx Quartz and/or feldspar crystal tuff

20.2 - 27.4: distinct unit medium grey with minor dusting of BI,5% 1-3mm silica replaced? FD. Could be porph, note bxx sized RHYcw frags

<<Min: 20.5 - 24.7 5% Min: Pyrrhotite>>
<<Min: 24.7 - 29.5 1% Min: Pyrite>>
<<Min: 24.7 - 29.5 2% Min: Pyrrhotite>>
<<Min: 25 - 27.4 4% Min: Calcite>>
<<Struc: 20.29 - 20.3 Trace (Alt) >> PY-PO stringer
<<Struc: 20.48 - 20.49 Trace (Alt) >> PY-PO stringer
<<Struc: 20.66 - 20.67 Trace (Alt) >> PY-PO stringer
<<Struc: 22.92 - 22.93 Trace (Alt) >> QZ-lpl elongated
<<Struc: 23.27 - 23.28 Trace (Alt) >> QZ-lpl elongated
<<Struc: 23.37 - 23.38 Trace (Alt) >> PY-PO stringer

27.40 32.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

27.4 - 32.7: well developed curdy texture

<<Min: 27.4 - 139.7 0.5% Min: Calcite>>
<<Min: 29.5 - 43.5 1% Min: Pyrite>>
<<Min: 29.5 - 43.5 3% Min: Pyrrhotite>>
<<Struc: 28.61 - 28.62 Trace (Alt) >> flow banded
<<Struc: 28.87 - 28.88 Trace (Alt) >> flow banded
<<Struc: 31.83 - 31.84 Trace (Alt) >> mica banded
<<Struc: 32.16 - 32.17 Trace (Alt) >> mica banded

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

32.70 39.20 RHYvl Lapilli tuff

32.7 - 39.2: distinct unit medium grey with minor dusting of BI,5% 1-3mm silica replaced? FD. Could be porph

<<Struc: 35.02 - 35.03 Trace (Alt) >> CL banded

<<Struc: 35.55 - 35.56 Trace (Alt) >> QZ-lpl elongated

<<Struc: 36.05 - 36.06 Trace (Alt) >> elongated lpl

<<Struc: 36.24 - 36.25 Trace (Alt) >> elongated lpl

39.20 42.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

39.2 - 42.4: good curdy texture

<<Struc: 40.52 - 40.53 Trace (Alt) >> mica banded

<<Struc: 41.13 - 41.14 Trace (Alt) >> CL banded

42.40 48.30 RHYvl Lapilli tuff

42.4 - 48.3: distinct unit medium grey with minor dusting of BI,5% 1-3mm silica replaced? FD. Could be porph, patchy TO replacement of lapilli

<<Min: 43.5 - 47.3 2% Min: Pyrite>>

<<Min: 43.5 - 47.3 3% Min: Pyrrhotite>>

<<Min: 47.3 - 58 0.5% Min: Pyrite>>

<<Min: 47.3 - 58 2% Min: Pyrrhotite>>

48.30 55.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

48.3 - 55.8: from 53.5-66.2 very well developed curdy texture

55.80 60.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

55.8 - 60.2: from 53.5-66.2 very well developed curdy texture, very weakly carbonaceous

<<Min: 58 - 71 3% Min: Pyrrhotite>>

60.20 68.50 RHYvl Lapilli tuff

60.2 - 68.5: indistinct lapilli several possible >4cm curdy RHYcw fragments

<<Struc: 62.29 - 62.3 Trace (Alt) >> mica banded

<<Struc: 62.31 - 62.32 Trace (Alt) >> PY-PO stringer

<<Struc: 65.73 - 65.74 Trace (Alt) >> mica banded

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 66.19 - 66.2 Trace (Alt) >> elongated lpl

68.50 71.00 MDSt Rhyolite tuff dominant mudstone

68.5 - 71: best described as RHYcw carbonaceous

<<Alt: 70 - 81.4 Weak (Alt) Muscovite>>

71.00 74.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

71 - 74.2: abundant QE

<<Min: 71 - 74 1% Min: Pyrite>>

<<Min: 74 - 75.3 5% Min: Pyrite>>

74.20 75.30 MDSt Rhyolite tuff dominant mudstone

74.2 - 75.3: better termed RHYcw crb

75.30 81.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

75.3 - 81.4: QZ eyes top of interval

<<Min: 75.3 - 78.5 1% Min: Pyrite>>

<<Min: 78.5 - 81.4 6% Min: Pyrite>>

<<Min: 81 - 99.5 2% Min: Pyrite>>

<<Min: 81 - 99.5 1% Min: Pyrrhotite>>

<<Struc: 79.84 - 79.85 Trace (Alt) >> mica banded

<<Struc: 80.49 - 80.5 Trace (Alt) >> PY-PO stringer

<<Struc: 81.21 - 81.22 Trace (Alt) >> mica banded

81.40 84.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 81.4 - 83.6 Moderate (Alt) Chlorite>>

<<Alt: 83.6 - 99 Weak-Moderate (Alt) Muscovite>>

<<Vein: 83.8 - 86 15% Quartz>>

84.40 85.40 MDSc Carbonaceous dominant mudstone

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
85.40	**99.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		96.40	97.90	1.50	B00264036	1.8	0.007	-0.01	0.04	0.06
85.4 - 99: weakly to moderately crb increasing dwn hole													
<<Struc: 86.8 - 86.81 Trace (Alt) >> mica banded					97.90	99.40	1.50	B00264037	1.3	-0.005	-0.01	0.03	0.04
<<Struc: 87.24 - 87.25 Trace (Alt) >> mica banded													
<<Struc: 88.46 - 88.47 Trace (Alt) >> mica banded													
<<Struc: 88.84 - 88.85 Trace (Alt) >> mica banded													
<<Struc: 89.55 - 89.56 Trace (Alt) >> anastozing CL band													
<<Struc: 91.4 - 91.41 Trace (Alt) >> QZ banded													
<<Struc: 91.41 - 91.42 Trace (Alt) >> mica banded													
<<Struc: 92.23 - 92.24 Trace (Alt) >> mica banded													
<<Struc: 92.74 - 92.75 Trace (Alt) >> mica banded													
<<Struc: 93.34 - 93.35 Trace (Alt) >> mica banded													
<<Struc: 93.66 - 93.67 Trace (Alt) >> QZ banded													
<<Struc: 97.97 - 97.98 Trace (Alt) >> carbonaceous band													
99.00	**100.90**	**RHYvl**	**Lapilli tuff**		99.40	100.90	1.50	B00264038	11.3	0.059	0.32	0.02	0.19
99 - 100.9: strong MU and CL alt difficult to ident protolith													
<<Min: 99.5 - 100.9 4% Min: Pyrite>>													
<<Min: 99.5 - 100.9 1% Min: Chalcopyrite>>													
<<Min: 99.5 - 100.9 1% Min: Arsenopyrite>>													
<<Alt: 99 - 100.9 Strong (Alt) Muscovite>>													
<<Alt: 99 - 100.9 Moderate-Strong (Alt) Chlorite>>													
100.90	**103.20**	**OG**	**Chalcopyrite rich sulphides**	**MG**	100.90	101.90	1.00	B00264039	142	1.92	7.84	0.29	1.19
<<Min: 100.9 - 103.2 20% Min: Sphalerite>>					101.90	102.50	0.60	B00264042	158	2.38	8.59	0.36	15
<<Min: 100.9 - 103.2 15% Min: Pyrite>>					102.50	103.20	0.70	B00264043	185	1.58	6.54	0.6	29.6
<<Min: 100.9 - 103.2 15% Min: Magnetite>>													
<<Min: 100.9 - 103.2 5% Min: Galena>>													
<<Min: 100.9 - 103.2 25% Min: Chalcopyrite>>													
<<Alt: 100.9 - 105.9 Strong (Alt) Cordierite>> within mxsx													
103.20	**104.70**	**OA**	**Magnetite bearing sulphides**	**MG**	103.20	104.00	0.80	B00264044	73.6	0.357	1.43	0.91	15.6
<<Min: 103.2 - 104.7 20% Min: Sphalerite>>					104.00	104.70	0.70	B00264045	90.6	0.997	4.22	0.32	16.6
<<Min: 103.2 - 104.7 15% Min: Pyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 103.2 - 104.7 20% Min: Magnetite>>													
<<Min: 103.2 - 104.7 4% Min: Galena>>													
<<Min: 103.2 - 104.7 4% Min: Chalcopyrite>>													
104.70	**105.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		104.70	105.90	1.20	B00264046	43.3	0.483	2.02	0.11	4.79
<<Min: 104.7 - 105.9 1% Min: Sphalerite>>													
<<Min: 104.7 - 105.9 10% Min: Pyrite>>													
<<Min: 104.7 - 105.9 4% Min: Magnetite>>													
<<Min: 104.7 - 105.9 0.5% Min: Galena>>													
<<Min: 104.7 - 105.9 4% Min: Chalcopyrite>>													
105.90	**109.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	105.90	106.50	0.60	B00264047	228	1.73	0.32	4.89	7.94
<<Min: 105.9 - 106.5 40% Min: Pyrite>>					106.50	107.50	1.00	B00264048	339	1.4	0.43	6.22	9.87
<<Min: 105.9 - 106.5 20% Min: Magnetite>>					107.50	108.50	1.00	B00264049	245	1.52	0.47	3.38	6.84
<<Min: 105.9 - 106.5 3% Min: Galena>>					108.50	109.30	0.80	B00264051	132	1.8	0.6	0.08	0.28
<<Min: 105.9 - 106.5 0.5% Min: Chalcopyrite>>													
<<Min: 106 - 109.3 7% Min: Sphalerite>>													
<<Min: 106 - 109.3 75% Min: Pyrite>>													
<<Min: 106 - 109.3 0.5% Min: Magnetite>>													
<<Min: 106 - 109.3 0.5% Min: Chalcopyrite>>													
109.30	**113.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		109.30	110.80	1.50	B00264052	8	0.079	0.03	0.02	0.14
109.3 - 113.2: alt partly destroyed by alt													
<<Min: 110 - 116.2 5% Min: Pyrite>>					110.80	112.30	1.50	B00264053	25.3	0.051	0.2	0.23	1.96
<<Min: 110 - 116.2 5% Min: Pyrrhotite>>					112.30	113.80	1.50	B00264054	114	0.631	0.71	0.25	4.06
<<Min: 110 - 116.2 2% Min: Chalcopyrite>>													
<<Alt: 109.3 - 113.2 Moderate (Alt) Muscovite>>													
<<Alt: 109.3 - 113.2 Weak (Alt) Chlorite>>													
<<Struc: 112.85 - 112.86 Trace (Alt) >> mica banded													
<<Struc: 113.17 - 113.18 Trace (Alt) >> mica banded													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
113.20	**116.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		113.80	115.30	1.50	B00264055	7.2	0.08	0.08	0.06	0.16
113.2 - 116.2: intense alt													
<<Alt: 113.2 - 116.2 Strong (Alt) Chlorite>>					115.30	116.20	0.90	B00264056	9.1	0.027	0.06	0.19	0.36
<<Struc: 113.21 - 113.22 Trace (Alt) >> CL banded													
116.20	**119.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		116.20	117.70	1.50	B00264057	6.6	0.016	0.03	0.05	0.12
116.2 - 119.2: intense alt protolith invisible													
<<Min: 116.2 - 119.2 2% Min: Pyrite>>					117.70	119.20	1.50	B00264058	37.8	0.162	0.15	0.19	0.72
<<Min: 116.2 - 119.2 7% Min: Pyrrhotite>>													
<<Alt: 116.2 - 119.2 Intense (Alt) Cordierite>>													
119.20	**121.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	119.20	120.20	1.00	B00264059	121	0.939	0.33	2.71	10
<<Min: 119.2 - 121.8 7% Min: Sphalerite>>					120.20	121.00	0.80	B00264061	77.6	0.639	0.08	2.29	7.06
					121.00	121.80	0.80	B00264062	69.5	0.737	0.15	1.46	8.17
121.80	**125.00**	**OA**	**Magnetite bearing sulphides**	**FMG**	121.80	122.40	0.60	B00264063	113	1.3	1.19	1.36	9.47
<<Min: 121.8 - 125 15% Min: Sphalerite>>					122.40	123.00	0.60	B00264064	63.7	0.767	0.25	0.97	9.35
<<Struc: 124.95 - 124.96 Trace (Alt) >> Sulphide lamination					123.00	124.00	1.00	B00264065	70.5	0.347	0.13	2.1	12.1
					124.00	125.00	1.00	B00264066	60.5	0.714	0.31	1.35	11.1
125.00	**125.60**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	125.00	126.00	1.00	B00264067	27.3	0.122	0.06	0.69	1.52
125.60	**126.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		126.00	126.90	0.90	B00264068	3.2	0.026	0.02	0.04	0.24
<<Alt: 125.6 - 126.9 Moderate (Alt) Chlorite>>													
126.90	**127.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	126.90	127.30	0.40	B00264069	140	1.57	0.22	1.52	8.38
127.30	**131.80**	**RHYvl**	**Lapilli tuff**		127.30	128.80	1.50	B00264071	2.5	-0.005	-0.01	0.01	0.13
<<Min: 127.3 - 131.1 3% Min: Pyrrhotite>>					128.80	130.30	1.50	B00264072	4.6	0.022	0.01	0.03	0.15
<<Min: 131.1 - 136.6 12% Min: Pyrite>>					130.30	131.80	1.50	B00264073	11.3	0.056	0.06	0.11	0.57
<<Alt: 127.3 - 131.1 Strong (Alt) Chlorite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 131.1 - 136.6 Strong (Alt) Muscovite>>										
			<<Vein: 131.5 - 136.6 15% Quartz-Carbonate>>										
			<<Struc: 128.01 - 128.02 Trace (Alt) >> CL banded										
			<<Struc: 130.85 - 130.86 Trace (Alt) >> CL banded										
131.80	**134.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		131.80	133.30	1.50	B00264074	1.2	0.01	-0.01	-0.01	0.03
					133.30	134.30	1.00	B00264075	13.6	0.086	0.01	0.05	0.12
134.30	**135.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	134.30	135.00	0.70	B00264076	365	1.05	-0.01	3.85	5.88
135.00	**136.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		135.00	136.60	1.60	B00264077	37.7	0.269	0.03	0.36	1.06
			135 - 136.6: SX along flow bands in RHY										
			<<Struc: 135.95 - 135.96 Trace (Alt) >> mica banded										
136.60	**139.70**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**	136.60	137.60	1.00	B00264078	133	1.34	0.2	2.03	7.02
					137.60	138.60	1.00	B00264079	74.8	0.781	0.11	1.21	5.66
					138.60	139.70	1.10	B00264081	111	0.68	0.18	2.49	7.63
139.70	**145.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		139.70	141.20	1.50	B00264082	31.4	0.101	0.19	0.17	0.35
			<<Min: 139.7 - 147.2 5% Min: Calcite>>		141.20	142.70	1.50	B00264083	1.4	-0.005	-0.01	-0.01	0.02
			<<Min: 139.7 - 164.5 2% Min: Pyrite>>		142.70	144.20	1.50	B00264084	1.1	0.015	-0.01	-0.01	-0.01
			<<Alt: 139.7 - 162.3 Moderate (Alt) Silicification>> typical green Cr-V alt of MAFi										
			<<Alt: 139.7 - 162.3 Moderate (Alt) Muscovite>>										
			<<Alt: 139.7 - 164.1 Moderate (Alt) Chlorite>>										
			<<Struc: 144 - 144.1 Moderate (Alt) Fault>> moderate narrow gouge along kink band										
145.10	**147.20**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										
			145.1 - 147.2: very uncertain could be RHYv or c										
147.20	**164.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
			<<Min: 147.2 - 164.5 15% Min: Calcite>>										
			<<Struc: 152.8 - 154.3 Moderate (Alt) Fault>> moderate-strong contorted zone, faulting along kink bands along with strong green MU-SI alteration										

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-203

From (m)	To (m)	Rocktype & Description
<<Struc: 160.98 - 160.99 Trace (Alt) >>		CA banded
<<Struc: 162.2 - 162.25 Strong (Alt) Fault>>		weak narrow gouge zone
164.10	**164.50**	**RHYva** **Coarse grained to ash tuff**
164.50	**164.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 164.5 - 173 5% Min: Pyrite>>		
164.90	**167.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
164.9 - 167.7: alteration intense		
167.70	**173.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Vein: 169.8 - 173 20% Quartz>>		minor bleby SP-GL
End of Hole @ 173		

	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
FG	164.50	164.90	0.40	B00264085	36.9	0.323	0.27	0.87	8.67

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-204

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	07-Aug-15
UTM Easting	414549.469	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	08-Aug-15
UTM Northing:	6815464.484	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1457.23	Casing Depth (m):	6	Length (m):	149	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	05-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Aug-15
Local Elev. (m):						Purpose:	Resource/Hydro
Comments:						Parent Hole:	

K15-204 was drilled to test the western extension of the massive sulphide lens. Packer testing was completed as the hole advanced.
The hanging wall package (6.00 - 111.90 m) consists of felsic volcanics and intermittent mudstone horizons. A weak MU-alteration zone occurs from 50.20 - 58.00 m and again at 73.00 m where it increases in intensity with proximity to the MSXS. CL-alteration occurs from 95.60 - 102.60 m, with a strong-intense CL-CI-alteration zone between 100.20 - 102.60 m. MSXS occurs between 111.9-118.1 m, consisting of OI, OD, and OA ore types. The footwall package consists of MU-Cl altered felsic volcanics from 118.1-139.1, an aphanitic rhyolite intrusion from 132.7-136.7 m, and a CL-BI altered mafic sill from 136.7-149 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	181.27	0	181.27	APS	Geotech	08-Aug-15		☑	
32	-61	180.7	22.5	203.2	ReflexEZS	Geotech	05-Aug-15	2692	☐	Magnetic field is low, and corrected azimuth incorrect
62	-61	154.4	22.5	176.9	ReflexEZS	Geotech	05-Aug-15	5783	☑	
86	-61	155.4	22.5	177.9	ReflexEZS	Geotech	06-Aug-15	5779	☑	
113	-60.9	164.4	22.5	186.9	ReflexEZS	Geotech	06-Aug-15	6119	☑	
149	-60.6	161.8	22.5	184.3	ReflexEZS	Geotech	08-Aug-15	5731	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN** **Casing**									
6.00	**14.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 6 - 23.6 1% Min: Pyrite>>											
<<Alt: 6 - 50.2 Trace (Alt) Muscovite>>											
14.10	**16.70**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 14.1 - 80.6 0.5% Min: Calcite>>											

From (m)	To (m)		Rocktype & Description
16.70	**22.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Vein: 20.9 - 21.4 80% Quartz-Carbonate>>			
22.20	**23.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
23.20	**40.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
23.2 - 40: Two locally tuffaceous intervals ~20cm each.			
<<Min: 23.6 - 26 3% Min: Pyrite>>			
<<Min: 26 - 35.7 1% Min: Pyrite>>			
<<Min: 35.7 - 39.4 5% Min: Pyrite>>			
<<Min: 39.4 - 50.2 2% Min: Pyrite>>			
<<Min: 39.4 - 50.2 2% Min: Pyrrhotite>>			
40.00	**41.60**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Struc: 40 - 40.1 Strong (Alt) Fault>> weak-moderate fault guoge zone			
41.60	**43.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
43.90	**48.50**	**RHYvl**	**Lapilli tuff**
<<Min: 47 - 50.2 0.5% Min: Chalcopyrite>>			
48.50	**50.20**	**MDSt**	**Rhyolite tuff dominant mudstone**
50.20	**52.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 50.2 - 58 3% Min: Sphalerite>>			
<<Min: 50.2 - 58 5% Min: Pyrite>>			
<<Min: 50.2 - 58 3% Min: Pyrrhotite>>			
<<Min: 50.2 - 58 2% Min: Chalcopyrite>>			
<<Alt: 50.2 - 58 Weak (Alt) Muscovite>>			
<<Vein: 51.3 - 52.8 10% Quartz>>			
<<Struc: 51.35 - 51.4 Moderate (Alt) Fault>> weak-moderate			
52.50	**56.20**	**RHYvl**	**Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
56.20	**58.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
58.00	**65.90**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 58 - 73 3% Min: Pyrite>>											
<<Min: 58 - 73 3% Min: Pyrrhotite>>											
<<Alt: 58 - 73 Trace (Alt) Muscovite>>											
65.90	**68.80**	**RHYvl** **Lapilli tuff**									
68.80	**73.00**	**MDSc** **Carbonaceous dominant mudstone**									
<<Vein: 71.3 - 71.6 100% Quartz>>											
73.00	**80.60**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
<<Min: 73 - 80.6 5% Min: Pyrite>>											
<<Alt: 73 - 84.8 Weak (Alt) Muscovite>>											
<<Struc: 76.6 - 76.7 Strong (Alt) Fault>> moderate micro-faults extendind 60cm on either side of gouge.											
80.60	**95.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 80.6 - 81.4 1% Min: Calcite>>											
<<Min: 80.6 - 84 1% Min: Pyrite>>											
<<Min: 80.6 - 91 1% Min: Pyrite>>											
<<Min: 81.4 - 101.1 0.01% Min: Calcite>>											
<<Min: 91 - 100.2 2% Min: Pyrite>>											
<<Min: 91 - 100.2 2% Min: Pyrrhotite>>											
<<Alt: 84.8 - 95.6 Moderate (Alt) Muscovite>>											
<<Struc: 94.05 - 94.06 Trace (Alt) >> QZ band											
<<Struc: 95.2 - 95.25 Weak (Alt) Fault>> weak-moderate											
95.60	**101.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	100.20	101.10	0.90	B00264535	29.7	0.076	0.78	0.09	0.97
95.6 - 101.1: Cordeirite alteration beginning at 100.7m.											
<<Min: 100.2 - 101.9 3% Min: Sphalerite>>											
<<Min: 100.2 - 101.9 5% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 100.2 - 101.9 10% Min: Pyrrhotite>>										
		<<Min: 100.2 - 101.9 5% Min: Chalcopyrite>>										
		<<Alt: 95.6 - 98.3 Weak (Alt) Chlorite>>										
		<<Alt: 95.6 - 100.2 Strong (Alt) Muscovite>>										
		<<Alt: 98.3 - 100.2 Moderate (Alt) Chlorite>>										
		<<Alt: 100.2 - 102.6 Strong (Alt) Chlorite>>										
		<<Alt: 100.2 - 102.6 Moderate (Alt) Cordierite>>										
		<<Alt: 100.2 - 114.3 Strong (Alt) Muscovite>>										
		<<Struc: 98.54 - 98.55 Trace (Alt) >> QZ band										
		<<Struc: 100.95 - 100.96 Trace (Alt) >> CL band										
101.10	**111.90**	**RHYvl** **Lapilli tuff**		101.10	101.90	0.80	B00264536	2.4	0.008	0.08	0.01	0.51
		<<Min: 101.1 - 110.6 1% Min: Calcite>>		101.90	102.60	0.70	B00264537	1.5	-0.005	0.03	0.03	0.46
		<<Min: 101.9 - 102.6 5% Min: Pyrite>>		107.40	108.90	1.50	B00264538	1.3	-0.005	0.01	-0.01	0.16
		<<Min: 101.9 - 102.6 5% Min: Pyrrhotite>>		108.90	110.40	1.50	B00264539	1.3	-0.005	0.08	-0.01	0.09
		<<Min: 101.9 - 102.6 0.5% Min: Chalcopyrite>>		110.40	111.90	1.50	B00264541	3	0.035	0.39	-0.01	0.22
		<<Min: 102.6 - 108 1% Min: Pyrite>>										
		<<Min: 102.6 - 108 1% Min: Pyrrhotite>>										
		<<Min: 108 - 111.9 5% Min: Pyrite>>										
		<<Min: 108 - 111.9 5% Min: Pyrrhotite>>										
		<<Min: 108 - 111.9 1% Min: Chalcopyrite>>										
		<<Min: 110.6 - 112.2 15% Min: Calcite>>										
		<<Alt: 102.6 - 114.3 Moderate-Strong (Alt) Chlorite>>										
		<<Struc: 106.79 - 106.8 Trace (Alt) >> MU band										
		<<Struc: 111.3 - 111.4 Moderate (Alt) Fault>> weak										
111.90	**114.30**	**OI** **Heavilly disseminated sulphides in host schist**	**FMG**	111.90	112.70	0.80	B00264542	27.2	0.468	3.75	0.03	0.18
		111.9 - 114.3: Brecciated host rock.										
		<<Min: 111.9 - 114.3 8% Min: Chalcopyrite>>		112.70	113.50	0.80	B00264543	45.7	0.805	6.33	0.05	0.28
		<<Min: 112.2 - 116.2 1% Min: Calcite>> Calcite in veinlets within massive sulphide zone.		113.50	114.30	0.80	B00264544	14.3	0.192	2.16	0.01	0.1
114.30	**116.20**	**OD** **Brecciated sulphides**	**FCG**	114.30	115.30	1.00	B00264545	5	0.188	0.7	0.01	0.05
		<<Alt: 114.3 - 118.1 Moderate (Alt) Muscovite>>		115.30	116.20	0.90	B00264546	20.1	0.535	2.68	0.03	4.47
		<<Alt: 114.3 - 118.1 Weak-Moderate (Alt) Chlorite>>										
116.20	**117.20**	**OA** **Magnetite bearing sulphides**	**FG**	116.20	117.20	1.00	B00264547	8.9	0.145	0.24	0.08	6.3

From (m)	To (m)		Rocktype & Description	
117.20	**118.10**	**OI**	**Heavilly disseminated sulphides in host schist**	**FCG**
118.10	**129.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	

<<Min: 119.6 - 132.7 1% Min: Pyrite>>

<<Min: 119.6 - 132.7 1% Min: Pyrrhotite>>

<<Alt: 118.1 - 132.7 Moderate-Strong (Alt) Muscovite>>

<<Alt: 123 - 132.7 Moderate (Alt) Chlorite>>

<<Struc: 119 - 120 Strong (Alt) Fault>> strong heavily faulted section; core missing in section.

<<Struc: 121.91 - 121.92 Trace (Alt) >> Elongated lpl

<<Struc: 124.93 - 124.95 Trace (Alt) >> Elongated lpl

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
117.20	118.10	0.90	B00264548	8.6	0.128	0.51	0.05	1.99
118.10	119.60	1.50	B00264549	6.5	0.024	0.3	0.02	0.73
119.60	121.10	1.50	B00264551	-0.3	-0.005	-0.01	-0.01	0.03
121.10	122.60	1.50	B00264552	0.3	0.006	-0.01	-0.01	-0.01

129.40 132.70 RHYva Coarse grained to ash tuff

<<Struc: 130.88 - 130.89 Trace (Alt) >> MU band

132.70 136.70 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 132.7 - 136.7 1% Min: Pyrite>>

<<Min: 132.7 - 136.7 3% Min: Pyrrhotite>>

<<Min: 132.7 - 136.7 0.5% Min: Chalcopyrite>>

<<Alt: 136.2 - 139.1 Moderate (Alt) Silicification>>

<<Alt: 136.2 - 139.1 Moderate (Alt) Chlorite>>

<<Vein: 134.2 - 135.3 75% Quartz-Carbonate>>

136.70 139.10 RHYvl Lapilli tuff

<<Min: 136.7 - 139.1 2% Min: Pyrite>>

<<Struc: 137.93 - 137.94 Trace (Alt) >> MU band

139.10 149.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 139.1 - 149 1% Min: Pyrite>>

<<Min: 139.1 - 149 20% Min: Calcite>>

<<Alt: 139.1 - 149 Strong (Alt) Chlorite>>

<<Alt: 139.1 - 149 Strong (Alt) Biotite>>

<<Struc: 142.03 - 142.04 Trace (Alt) >> CA band

<<Struc: 145.9 - 145.91 Trace (Alt) >> CA band

<<Struc: 148.94 - 148.95 Trace (Alt) >> CA band

Project: **KZK** **Hole Number:** **K15-204**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 149									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-205

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	06-Aug-15
UTM Easting	414849.957	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	07-Aug-15
UTM Northing:	6815542.83	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1395.479	Casing Depth (m):	3	Length (m):	146	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	05-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	06-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
Comments:						Parent Hole:	K15-203

K15-205 was drilled as a twin of K15-203 to test the metallurgical properties of MET8, MET6, and MET7 domains.
The hanging wall package (3.0 - 100.6 m) consists of felsic volcanics and mudstone horizons. MU-alteration begins at 71.3 m and increases in intensity towards the MSXS horizon. CL-alteration occurs proximal and grading into the MSXS in association with CI. The first MSXS lens occurs from 100.6-109.3 m, consisting of OG, OA, OJ, and OH ore types respectively. Coherent rhyolite occurs from 109.3 - 119.0 m with increasing CL alteration grading into CL-CI-alteration down hole. MSXS intervals occur from 119-125.7 m, consisting of OB, OA, and OI ore types with OB occurring from 126.8 - 127.2 m. MU and CL-altered felsic volcanics occur from 127.2 - 134.9 m followed by a 30 cm OH MSXS interval. A MU-altered coherent rhyolite unit occurs from 135.2 - 136.3 m followed by a finial MSXS interval from 136.3-139.3 m. The footwall package includes a CL-BI mafic sill and aphanitic rhyolite intrusion.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	178.62	0	178.62	APS	Geotech	06-Aug-15		☑	
26	-62.4	158.6	22.5	181.1	ReflexEZS	Geotech	05-Aug-15	5719	☑	
50	-62.6	158.7	22.5	181.2	ReflexEZS	Geotech	07-Aug-15	5732	☑	
77	-62.4	180.3	22.5	202.8	ReflexEZS	Geotech	06-Aug-15	5440	☐	Azimuth is incorrect
101	-62.5	159.5	22.5	182	ReflexEZS	Geotech	06-Aug-15	5426	☑	
125	-62.4	151	22.5	173.5	ReflexEZS	Geotech	06-Aug-15	4865	☐	Magnetic field is low, incorrect calculated azimuth
145	-63	161.6	22.5	184.1	ReflexEZS	Geotech	06-Aug-15	5818	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.00**	**CASN** **Casing**									
<<Min: 0 - 21.16 3% Min: Calcite>>											
3.00	**8.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 3 - 100.6 2% Min: Pyrite>>											
<<Min: 3 - 100.6 2% Min: Pyrrhotite>>											
8.10	**19.80**	**RHYvl** **Lapilli tuff**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 11.1 - 12.2 20% Quartz-Tourmaline>> QZ-TR (tourmaline) veining along fractures. Runs ~parallel to core axis. Radiating TR radiates from the fractures outward.

<<Vein: 18.1 - 19.4 20% Quartz-Tourmaline>> QZ-TR (tourmaline) veining along fractures. Runs ~parallel to core axis. Radiating TR radiates from the fractures outward.

<<Struc: 11.2 - 12.3 Moderate (Alt) Fault>> weak-moderate fractured core

19.80 27.90 RHYv Rhyolite volcaniclastic

19.8 - 27.9: large blocks of coherent rhyolite from 19.8-22.8 within a crystal lapilli matrix. From 22.8-27.9 the blocks and crystals are not as apparent.

<<Min: 21.16 - 28.08 5% Min: Calcite>>

<<Vein: 25.05 - 25.1 80% Quartz>>

27.90 31.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

27.9 - 31: Greenish-grey curdy and flow banded rhyolite. Two ~20cm mafic dyke intrusions.

<<Min: 28.08 - 31.5 3% Min: Calcite>>

<<Struc: 27.9 - 27.95 Moderate (Alt) Fault>> weak-moderate fault gouge zone

31.00 38.90 RHYvl Lapilli tuff

31 - 38.9: distinct unit medium grey with minor dusting of BI,5% 1-3mm silica replaced? FD. Could be porph.Strained with elongated lpl.

<<Struc: 38.2 - 38.3 Moderate (Alt) Fault>> weak fault gouge

38.90 42.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

38.9 - 42.5: good curdy texture

42.50 47.80 RHYvl Lapilli tuff

42.5 - 47.8: distinct unit medium grey with minor dusting of BI,5% 1-3mm silica replaced? FD. Could be porph, patchy TO replacement of lapilli

<<Struc: 44.95 - 45.2 Weak (Alt) Fault>> moderate fault gouge zone

47.80 54.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

47.8 - 54.5: very well developed curdy texture

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

54.50 60.20 MDSt Rhyolite tuff dominant mudstone

54.5 - 60.2: Better described as RHYcw crb. Very well developed curdy texture, very weakly carbonaceous

<<Vein: 59.2 - 59.3 80% Quartz-Tourmaline>> QZ-TR-AK vein that is parasitically (S/Z) folded

60.20 64.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

64.40 68.10 RHYvl Lapilli tuff

64.4 - 68.1: FD crystal lapilli tuff

<<Struc: 67.2 - 67.3 Moderate (Alt) Fault>> moderate fault gouge zone

68.10 71.30 MDSt Rhyolite tuff dominant mudstone

68.1 - 71.3: Better described as RHYcw crb. Carbonaceous material ~20%

<<Vein: 70.9 - 71 90% Quartz>>

71.30 78.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

71.3 - 78.5: abundant QE

<<Alt: 71.3 - 81.5 Weak (Alt) Muscovite>>

78.50 79.30 MDSt Rhyolite tuff dominant mudstone

78.5 - 79.3: Better described as RHYcw crb. ~15-20% carbonaceous content

79.30 81.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

79.3 - 81.5: QZ eyes top of interval

81.50 84.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 81.5 - 83.2 Moderate (Alt) Chlorite>>

<<Alt: 83.2 - 98.3 Weak-Moderate (Alt) Muscovite>>

<<Vein: 84.1 - 86.2 20% Quartz-Carbonate>>

<<Struc: 81.5 - 81.7 Weak (Alt) Fault>> trace fault gouge zone

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
84.30	**86.60**	**MDSc**	**Carbonaceous dominant mudstone**										
84.3 - 86.6: RHYcw crb but with >30-40% carbonaceous material													
86.60	**91.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
86.6 - 91.3: weakly to moderately crb increasing dwn hole													
91.30	**99.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		95.60	96.60	1.00						
91.3 - 99: strong MU and CL alt difficult to ident protolith													
<<Min: 98.3 - 100.6 1% Min: Arsenopyrite>>					96.60	97.60	1.00						
<<Alt: 98.3 - 100.6 Strong (Alt) Muscovite>>					97.60	98.30	0.70						
<<Alt: 98.3 - 100.6 Moderate-Strong (Alt) Chlorite>>					98.30	99.60	1.30						
<<Vein: 95.3 - 95.9 5% Quartz>>													
99.00	**100.60**	**RHY**	**undifferentiated rhyolite**		99.60	100.60	1.00						
99 - 100.6: strong MU and CL alt difficult to ident protolith													
<<Vein: 99.8 - 99.9 60% Quartz>>													
100.60	**102.90**	**OG**	**Chalcopyrite rich sulphides**	**MG**	100.60	101.40	0.80						
<<Min: 100.6 - 102.9 30% Min: Chalcopyrite>> CP-rich massive sulphide					101.40	102.20	0.80						
<<Alt: 100.9 - 105.2 Strong (Alt) Cordierite>> within mxsx					102.20	102.90	0.70						
102.90	**104.90**	**OA**	**Magnetite bearing sulphides**	**MG**	102.90	103.90	1.00						
<<Min: 102.9 - 104.9 10% Min: Sphalerite>>					103.90	104.90	1.00						
<<Min: 102.9 - 104.9 5% Min: Chalcopyrite>>													
104.90	**105.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		104.90	105.20	0.30						
105.20	**109.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**		105.20	106.20	1.00						
<<Min: 105.2 - 109.3 85% Min: Pyrite>>					106.20	107.20	1.00						
					107.20	108.20	1.00						
					108.20	109.30	1.10						

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.30	**110.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		109.30	110.20	0.90						
109.3 - 110.2: alt partly destroyed by alt												
<<Min: 109.3 - 112 2% Min: Pyrrhotite>>												
<<Alt: 109.3 - 115.2 Moderate (Alt) Muscovite>>												
<<Alt: 109.3 - 115.2 Weak (Alt) Chlorite>>												
<<Struc: 109.8 - 114 Moderate (Alt) Fault>>		weak-moderate fractured zone with a few discrete gouge zones										
110.20	**116.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		110.20	111.20	1.00						
110.2 - 116.1: intense alt												
<<Min: 112 - 113 7% Min: Sphalerite>>				111.20	112.20	1.00						
<<Min: 112 - 113 20% Min: Pyrite>>				112.20	113.20	1.00						
<<Min: 112 - 113 3% Min: Chalcopyrite>>				113.20	114.20	1.00						
<<Min: 113 - 115.2 2% Min: Pyrite>>				114.20	115.20	1.00						
<<Min: 113 - 115.2 1% Min: Pyrrhotite>>				115.20	116.10	0.90						
<<Min: 115.2 - 119 2% Min: Pyrite>>												
<<Min: 115.2 - 119 5% Min: Pyrrhotite>>												
<<Min: 115.2 - 119 0.5% Min: Chalcopyrite>>												
<<Min: 115.2 - 119 0.5% Min: Arsenopyrite>>												
<<Alt: 115.2 - 119 Strong (Alt) Chlorite>>												
116.10	**119.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		116.10	117.10	1.00						
116.1 - 119: intense alt protolith invisible												
<<Alt: 116.1 - 119 Intense (Alt) Cordierite>>				117.10	118.10	1.00						
				118.10	119.00	0.90						
119.00	**121.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	119.00	119.80	0.80						
<<Min: 119 - 119.8 5% Min: Sphalerite>>				119.80	120.80	1.00						
<<Min: 119 - 119.8 4% Min: Galena>>				120.80	121.80	1.00						
<<Min: 119.8 - 124.5 5% Min: Sphalerite>>												
121.80	**124.50**	**OA** **Magnetite bearing sulphides**	**FMG**	121.80	122.80	1.00						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
				122.80	123.80	1.00						
				123.80	124.50	0.70						
124.50	**125.70**	**OI**	**Heavilly disseminated sulphides in host schist**	124.50	125.10	0.60						
<<Min: 124.5 - 125.7 50% Min: Pyrite>>				125.10	125.70	0.60						
<<Alt: 124.5 - 131.6 Strong (Alt) Chlorite>>												
125.70	**126.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	125.70	126.80	1.10						
<<Min: 125.7 - 126.8 3% Min: Pyrite>>												
<<Min: 125.7 - 126.8 7% Min: Pyrrhotite>>												
126.80	**127.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	126.80	127.20	0.40						
<<Min: 126.8 - 127.2 6% Min: Sphalerite>>												
127.20	**131.60**	**RHYvl**	**Lapilli tuff**	127.20	128.20	1.00						
<<Min: 127.2 - 131.3 2% Min: Sphalerite>>				128.20	129.20	1.00						
<<Min: 127.2 - 131.3 2% Min: Pyrite>>				129.20	130.20	1.00						
<<Min: 127.2 - 131.3 5% Min: Pyrrhotite>>				130.20	131.30	1.10						
<<Min: 127.2 - 131.3 0.5% Min: Chalcopyrite>>				131.30	132.20	0.90						
<<Min: 131.3 - 131.6 5% Min: Sphalerite>>												
131.60	**134.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	132.20	133.20	1.00						
<<Min: 131.6 - 134.9 2% Min: Pyrite>>				133.20	134.20	1.00						
<<Min: 131.6 - 134.9 3% Min: Pyrrhotite>>				134.20	134.90	0.70						
<<Alt: 131.6 - 136.3 Strong (Alt) Muscovite>>												
<<Vein: 134.5 - 135.8 35% Quartz>> folded Qz-veins in strong MU-altered rhyolite flow with massive sulphide in the flow												
134.90	**135.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	134.90	135.20	0.30						
134.9 - 135.2: Massive pyrtie rock in the folded and flow banded rhyolite. ~40% of the interval is msxs												
<<Min: 134.9 - 135.2 30% Min: Pyrite>>												

From (m)	To (m)	Rocktype & Description
135.20	**136.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
135.2 - 136.3: SX along flow bands in RHY		
<<Min: 135.2 - 136.3 10% Min: Pyrite>>		
136.30	**139.30**	**OH** **Fine grained, megascopically homogeneous pyrite rock**
<<Min: 136.3 - 139.3 90% Min: Pyrite>>		
<<Vein: 138.9 - 142.6 20% Quartz-Carbonate>>		Deformed Qz-carbonate vein zone
139.30	**144.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 139.3 - 142 1% Min: Sphalerite>>		
<<Min: 139.3 - 142.1 3% Min: Chalcopyrite>>		
<<Min: 139.3 - 142.6 2% Min: Pyrite>>		
<<Min: 139.3 - 142.6 4% Min: Pyrrhotite>>		
<<Min: 139.3 - 144.7 10% Min: Calcite>>		
<<Min: 142.6 - 144.7 2% Min: Pyrite>>		
<<Alt: 139.3 - 146 Moderate (Alt) Silicification>>		
<<Alt: 139.3 - 146 Moderate (Alt) Muscovite>>		
<<Alt: 139.3 - 146 Moderate (Alt) Chlorite>>		
144.70	**146.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
144.7 - 146: Rhyolite intrusion??? Mafic around has Fuchsite alteration. This unit is very silica rich but has many MU domains. Diss PY+GL+SP+CP.		
<<Min: 144.7 - 146 3% Min: Sphalerite>>		
<<Min: 144.7 - 146 3% Min: Pyrite>>		
<<Min: 144.7 - 146 3% Min: Galena>>		
<<Min: 144.7 - 146 1% Min: Chalcopyrite>>		

End of Hole @ 146

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
135.20	136.30	1.10						
136.30	137.30	1.00						
137.30	138.30	1.00						
138.30	139.30	1.00						
139.30	140.30	1.00						
140.30	141.30	1.00						
141.30	142.30	1.00						
142.30	143.30	1.00						
143.30	144.30	1.00						

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-206

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	09-Aug-15
UTM Easting	414651.702	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	11-Aug-15
UTM Northing:	6815747.356	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1430.473	Casing Depth (m):	9	Length (m):	237	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Aug-15
Local Elev. (m):						Purpose:	Resource/Hydro
Comments:						Parent Hole:	

K15-206 was drilled to test the continuity/extension of the lower massive sulphide lens (MET4 domain), between historic holes K94-024 and K94-025. Packer testing was completed as the hole advanced.
The hole consists predominantly of felsic volcanics with minor mudstone units. Multiple narrow (>1.5 m) FD-porphyry mafic dykes occur above 85 m. An aphanitic rhyolite intrusion occurs from 199.7 - 213.0 m, and hosts an ~5 m wide zone containing 5% SP. MU and CL-alteration increase in intensity from 88.1 m to 199.7m and decrease in intensity from 216 to 237 m.
Based on the observed alteration pattern and historic hole data, MSXS was expected where the RHYi occurs. The occurrence of higher SP within the RHYi may confirm this hypothesis.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	181.09	0	181.09	APS	Geotech	10-Aug-15		☑	
27	-65.1	158.7	22.5	181.2	ReflexEZS	Geotech	08-Aug-15	5817	☑	
51	-65.5	157.4	22.5	179.9	ReflexEZS	Geotech	08-Aug-15	5821	☑	
75	-65.6	161.2	22.5	183.7	ReflexEZS	Geotech	08-Aug-15	5814	☑	
102	-65.7	163.6	22.5	186.1	ReflexEZS	Geotech	08-Aug-15	5720	☑	
126	-66.1	159.4	22.5	181.9	ReflexEZS	Geotech	09-Aug-15	5805	☑	
150	-65.8	162.4	22.5	184.9	ReflexEZS	Geotech	09-Aug-15	5771	☑	
175	-65.9	160.3	22.5	182.8	ReflexEZS	Geotech	09-Aug-15	5774	☑	
200	-65.9	161.9	22.5	184.4	ReflexEZS	Geotech	09-Aug-15	5679	☑	
225	-65.8	166.3	22.5	188.8	ReflexEZS	Geotech	09-Aug-15	5779	☑	
237	-66.2	168.7	22.5	191.2	ReflexEZS	Geotech	10-Aug-15	5818	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.00 24.50 RHYvx Quartz and/or feldspar crystal tuff

9 - 24.5: QZ-eyes and FD crystals in homogenous volcaniclastic rock. Many lpl sized fragments as well

<<Min: 9 - 73.1 1% Min: Pyrite>>

<<Min: 9 - 73.1 1% Min: Pyrrhotite>>

<<Struc: 18 - 19.5 Weak (Alt) Fault>> moderate faulted zone with discrete fault gouge zone at 18

24.50 27.00 MDSt Rhyolite tuff dominant mudstone

24.5 - 27: Unit goes gradiationally (24.5-25.9) from RHYvx with some carbonaceous material to MDSc (25.9-26.2), then grades back to RHYvs

27.00 32.10 RHYvx Quartz and/or feldspar crystal tuff

27 - 32.1: QZ-eye rich with some FD crystals in a grey aphanitic groundmass

32.10 33.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.1 - 33.2: FD-porphyritic CL-BI dyke (?)

<<Alt: 32.1 - 33.2 Moderate-Strong (Alt) Chlorite>>

<<Alt: 32.1 - 33.2 Moderate-Strong (Alt) Biotite>>

33.20 37.00 RHYvl Lapilli tuff

37.00 47.20 RHYvx Quartz and/or feldspar crystal tuff

37 - 47.2: QZ-eye rich with some FD crystals in a grey aphanitic groundmass. FD-porphyritic CL-BI dyke from 44.5-45 m.

47.20 48.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

47.2 - 48.7: CA-after-FD porphyritic CLBI dyke.

<<Min: 47.2 - 48.7 20% Min: Calcite>>

<<Alt: 47.2 - 48.7 Moderate-Strong (Alt) Chlorite>>

<<Alt: 47.2 - 48.7 Moderate-Strong (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

48.70 52.10 RHYvx Quartz and/or feldspar crystal tuff

48.7 - 52.1: QZ-eye rich with some FD crystals in a grey aphanitic groundmass

52.10 54.70 RHYc Rhyolite coherant volcanics

52.1 - 54.7: grey-brown coherent rhyolite, with curdy texture. Has chilled margins (?) where the unit becomes ~aphanatic on either end.

54.70 66.60 RHYvx Quartz and/or feldspar crystal tuff

54.7 - 66.6: QZ-eye rich with some FD crystals in a grey aphanitic groundmass

<<Vein: 64.3 - 65.6 20% Quartz-Carbonate>> Qz-carb vein set in RHYvx

66.60 69.00 RHYvl Lapilli tuff

69.00 71.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

69 - 71.9: Good curdy texture

71.90 73.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

71.9 - 73.1: FD-porpyritic CL dyke

<<Min: 71.9 - 73.1 15% Min: Calcite>>

<<Alt: 71.9 - 73.1 Moderate (Alt) Chlorite>>

73.10 82.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

73.1 - 82.6: Good curdy texture with dyke between 74.5-74.8 and 79.3-79.7 (MAFi)

<<Min: 73.1 - 108 0.5% Min: Sphalerite>>

<<Min: 73.1 - 108 2% Min: Pyrite>>

<<Min: 73.1 - 108 3% Min: Pyrrhotite>>

<<Min: 73.1 - 108 0.5% Min: Chalcopyrite>>

<<Min: 79.3 - 79.7 15% Min: Calcite>>

<<Alt: 75.8 - 82.6 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

82.60 84.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

82.6 - 84.3: FD-porphyritic CL-BI dyke

<<Min: 82.6 - 88.1 15% Min: Calcite>>

<<Alt: 82.6 - 84.3 Moderate (Alt) Chlorite>>

<<Struc: 83 - 83.4 Moderate (Alt) Fault>> weak-moderate two discrete fault gouge zones

84.30 86.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

86.10 88.10 RHYva Coarse grained to ash tuff

<<Alt: 86.1 - 88.1 Weak-Moderate (Alt) Chlorite>>

88.10 102.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.1 - 102: Good curdy and flow banded textures

<<Min: 88.1 - 93.3 5% Min: Calcite>>

<<Alt: 88.1 - 93.3 Weak (Alt) Chlorite>>

102.00 109.60 RHYvl Lapilli tuff

<<Min: 108 - 164.8 2% Min: Pyrite>>

<<Min: 108 - 164.8 2% Min: Pyrrhotite>>

109.60 121.90 RHYvl Lapilli tuff

109.6 - 121.9: FD porphyry. Increases deformation from relatively unstrained (109.6) to highly strained (121.9) MB likely lithic +/- crystals as lith/xtl lapilli tuff - peperite.

<<Struc: 109.6 - 114.5 Strong (Alt) Fault>> Strongly faulted zone with >2m of core loss and lots of fault gouge

121.90 125.60 RHYvl Lapilli tuff

121.9 - 125.6: FD-crystal lpl tuff. Decrease in deformation from 121.9 to 125.6. Deformation may cause lpl like texture.

125.60 131.30 MDSt Rhyolite tuff dominant mudstone

125.6 - 131.3: carbonaceous content ~10-15%

131.30 135.00 RHYva Coarse grained to ash tuff

131.3 - 135: fine grained tuff, with some FD (?) phenocrysts. Well developed spaced cleavage folds some QZ-veinlets that appear similar to flow banding texture.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

135.00 138.20 MDSt Rhyolite tuff dominant mudstone

135 - 138.2: carbonaceous content ~15-20%

138.20 165.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

138.2 - 165.2: QZ-eye bearing

<<Min: 164.8 - 167.5 1% Min: Sphalerite>>

<<Min: 164.8 - 167.5 2% Min: Pyrite>>

<<Min: 164.8 - 167.5 4% Min: Pyrrhotite>>

<<Min: 164.8 - 167.5 0.5% Min: Galena>>

<<Min: 164.8 - 167.5 1% Min: Chalcopyrite>>

<<Alt: 138.2 - 148 Weak (Alt) Muscovite>>

<<Alt: 148 - 165.2 Moderate (Alt) Muscovite>>

<<Vein: 138.6 - 139.3 25% Quartz>> Qz vein set

<<Struc: 150.3 - 150.5 Moderate (Alt) Fault>> weak-moderate faulted zone with some gouge

165.20 167.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 165.2 - 167.5 Moderate (Alt) Chlorite>>

167.20 170.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 167.5 - 182.9 2% Min: Pyrite>>

<<Min: 167.5 - 182.9 2% Min: Pyrrhotite>>

<<Alt: 167.5 - 178 Moderate (Alt) Muscovite>>

170.90 178.00 MDSt Rhyolite tuff dominant mudstone

170.9 - 178: Carbonaceous content ~10%

178.00 182.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 178 - 182.9 Strong (Alt) Muscovite>>

<<Struc: 180.12 - 180.13 Weak (Alt) >> elongated lpl

<<Struc: 181.35 - 181.36 Weak (Alt) >> elongated lpl

From (m)	To (m)	Rocktype & Description
		<<Struc: 182.34 - 182.35 Weak (Alt) >> elongated lpl
182.90	**188.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		182.9 - 188.9: CL altered coherent rhyolite
		<<Min: 182.9 - 188.9 1% Min: Pyrite>>
		<<Min: 182.9 - 188.9 3% Min: Pyrrhotite>>
		<<Min: 182.9 - 188.9 0.5% Min: Chalcopyrite>>
		<<Alt: 182.9 - 188.9 Strong (Alt) Chlorite>>
		<<Struc: 183.58 - 183.59 Weak (Alt) >> CL band
		<<Struc: 184.47 - 184.49 Weak (Alt) >> Flow band
		<<Struc: 185.77 - 185.78 Weak (Alt) >> MU band
		<<Struc: 187.07 - 187.08 Trace (Alt) >> MU band
		<<Struc: 188.03 - 188.04 Trace (Alt) >> MU band
188.90	**193.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 188.9 - 199.7 2% Min: Pyrite>>
		<<Min: 188.9 - 199.7 2% Min: Pyrrhotite>>
		<<Alt: 188.9 - 199.7 Weak (Alt) Muscovite>>
		<<Struc: 190.85 - 190.86 Trace (Alt) >> MU band
193.10	**194.90**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
194.90	**199.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		<<Struc: 197.5 - 197.8 Strong (Alt) Fault>> moderate fault gouge zone
		<<Struc: 197.89 - 197.9 Trace (Alt) >> MU band
199.70	**213.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		199.7 - 213: Aphanitic QZ-rhyolite intrusion. SP ~5% from 203.5-206.5
		<<Min: 199.7 - 203.4 0.5% Min: Sphalerite>>
		<<Min: 199.7 - 203.4 1% Min: Pyrite>>
		<<Min: 199.7 - 203.4 3% Min: Pyrrhotite>>
		<<Min: 199.7 - 203.4 0.5% Min: Galena>>
		<<Min: 199.7 - 203.4 0.5% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
203.00	204.50	1.50	B00264553	1.2	0.011	-0.01	0.02	0.94
204.50	206.00	1.50	B00264554	1.9	0.018	-0.01	0.01	1.55
206.00	207.50	1.50	B00264555	1.7	0.035	0.01	0.03	1.33

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 200.1 - 216 15% Min: Calcite>>
<<Min: 203.4 - 207 5% Min: Sphalerite>>
<<Min: 203.4 - 207 3% Min: Pyrite>>
<<Min: 203.4 - 207 0.5% Min: Galena>>
<<Min: 203.4 - 207 0.5% Min: Chalcopyrite>>
<<Min: 207 - 213 1% Min: Sphalerite>>
<<Min: 207 - 213 3% Min: Pyrite>>
<<Min: 207 - 213 2% Min: Pyrrhotite>>
<<Alt: 199.7 - 201.1 Strong (Alt) Silicification>>
<<Alt: 199.7 - 201.1 Strong (Alt) Muscovite>>
<<Alt: 211.5 - 216 Strong (Alt) Silicification>>
<<Alt: 211.5 - 216 Moderate-Strong (Alt) Muscovite>>
<<Vein: 201.5 - 215.3 20% Quartz-Carbonate>> CA-QZ vein set in RHYi
<<Struc: 200.95 - 200.96 Trace (Alt) >> MU band

213.00 219.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

213 - 219.2: Strongly altered next to RHYi. Also, has CA-QZ veins (5-30cm) cutting it from 213-215.3.

<<Min: 213 - 217.2 0.5% Min: Sphalerite>>
<<Min: 213 - 217.2 2% Min: Pyrite>>
<<Min: 213 - 217.2 3% Min: Pyrrhotite>>
<<Min: 213 - 217.2 1% Min: Chalcopyrite>>
<<Min: 217.2 - 232.5 2% Min: Pyrite>>
<<Min: 217.2 - 232.5 2% Min: Pyrrhotite>>
<<Alt: 216 - 237 Moderate (Alt) Muscovite>>
<<Struc: 215.71 - 215.72 Trace (Alt) >> MU band
<<Struc: 218.74 - 218.75 Trace (Alt) >> MU band

219.20 221.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

219.2 - 221.1: CL altered RHYcw?

<<Alt: 219.2 - 221.1 Moderate-Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
221.10	**231.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
221.1 - 231.9: QZ-eye bearing		
<<Struc: 230.95 - 230.96 Trace (Alt) >> MU band		
231.90	**237.00**	**RHYvl** **Lapilli tuff**
231.9 - 237: CL-MU-QZ lpl tuff		
<<Min: 232.5 - 237 4% Min: Pyrite>>		
<<Min: 232.5 - 237 2% Min: Pyrrhotite>>		
<<Alt: 232.5 - 237 Weak-Moderate (Alt) Chlorite>>		
<<Struc: 236.92 - 236.93 Trace (Alt) >> elongated lpl		
End of Hole @ 237		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-207

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Sean Suttie
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	09-Aug-15
UTM Easting	414554.169	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	11-Aug-15
UTM Northing:	6815404.739	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1455.015	Casing Depth (m):	6.8	Length (m):	112	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-207 was drilled to test the western continuity/extension of the massive sulphide lens.
The hanging wall package, from 6.8-76.3 m, consists of a sequence of felsic volcanics and mudstone horizons. This package includes an aphanitic rhyolite intrusion from 19.8-20.8 m. Weak MU-alteration begins at 33.7 m and increases in intensity toward the MSXS with CL-alteration occurring in proximity to the MSXS. MSXS occurs from 76.3-85.4 m consisting of OJ, OD, OA, and OH ore types. The footwall package consists of CL-altered felsic volcanics from 85.4-91.3 m, and an aphanitic rhyolite intrusion from 91.3-112 m (EOH).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.89	0	180.89	APS	Geotech	10-Aug-15		☑	
32	-61.1	158	22.5	180.5	ReflexEZS	Geotech	08-Aug-15	5805	☑	
56	-61	156.7	22.5	179.2	ReflexEZS	Geotech	09-Aug-15	5813	☑	
80	-61.3	175	22.5	197.5	ReflexEZS	Geotech	09-Aug-15	6003	☐	High magnetic field possibly resulting in large difference in corrected azimuth.
107	-61.2	163.4	22.5	185.9	ReflexEZS	Geotech	10-Aug-15	5739	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.84**	**OVBN** **Overburden**									
6.84	**11.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
6.84 - 11.6: Locally carbonaceous from 8-9m.											
<<Min: 6.84 - 11.6 0.5% Min: Calcite>>											
<<Min: 6.84 - 15.8 1% Min: Pyrite>> up to 5% PY in veinlet selvages.											
<<Vein: 9.5 - 11.1 5% Quartz-Carbonate>>											
11.60	**15.80**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 11.6 - 19.8 5% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description
15.80	**19.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 15.8 - 22.1 4% Min: Pyrite>>

<<Alt: 19 - 22.1 Strong (Alt) Silicification>> alteration due to aphanitic dyke.

<<Alt: 19 - 22.1 Moderate (Alt) Muscovite>> alteration due to aphanitic dyke.

19.80	**20.80**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

<<Min: 19.8 - 20.8 0.01% Min: Calcite>>

20.80	**30.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

20.8 - 30.7: Intense silicification 1m down section past the contact.

<<Min: 20.8 - 25 10% Min: Calcite>>

<<Min: 22.1 - 33.3 1% Min: Pyrite>>

<<Min: 25 - 37.2 5% Min: Calcite>>

<<Struc: 21.1 - 21.15 Fault>> weak

30.70	**33.90**	**RHYvl**	**Lapilli tuff**

<<Min: 33.3 - 34.2 0.5% Min: Sphalerite>> CP, SP &GL mineralization within 30cm long veinlet.

<<Min: 33.3 - 34.2 5% Min: Pyrite>>

<<Min: 33.3 - 34.2 0.5% Min: Galena>> CP, SP &GL mineralization within 30cm long veinlet.

<<Min: 33.3 - 34.2 0.5% Min: Chalcopyrite>> CP, SP &GL mineralization within 30cm long veinlet.

<<Alt: 33.7 - 38.5 Weak (Alt) Muscovite>>

<<Vein: 32.4 - 37.6 10% Quartz>>

<<Struc: 32.6 - 32.65 Weak (Alt) Fault>> trace

33.90	**41.00**	**MDSt**	**Rhyolite tuff dominant mudstone**

33.9 - 41: Local interval of RHYcw within MDSt unit - 38.5 to 39.1m.

<<Min: 34.2 - 41 1% Min: Pyrite>>

<<Min: 37.2 - 43 1% Min: Calcite>>

<<Alt: 38.5 - 47.8 Moderate (Alt) Muscovite>>

<<Struc: 38.35 - 38.45 Moderate (Alt) Fault>> weak-moderate

<<Struc: 39.1 - 39.15 Moderate (Alt) Fault>> weak

<<Struc: 40.95 - 41 Weak (Alt) Fault>> weak

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
41.00	**51.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
41 - 51.5: 1.2m quartz eye field starting from 46.8m.		
<<Min: 41 - 51.5 3% Min: Pyrite>>		
<<Min: 43 - 70.3 0.01% Min: Calcite>>		
<<Alt: 47.8 - 69.4 Strong (Alt) Muscovite>>		
51.50	**57.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
51.5 - 57.5: Flow banded texture may be due to deformation of crb material.		
<<Min: 51.5 - 57.5 3% Min: Pyrite>>		
57.50	**76.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 57.5 - 60.4 1% Min: Galena>> locally 3% GL in 15cm QZC vein.		
<<Min: 57.5 - 60.4 5% Min: Pyrite>>		
<<Min: 57.5 - 60.4 3% Min: Sphalerite>>		
<<Min: 57.5 - 60.4 3% Min: Chalcopyrite>>		
<<Min: 60.4 - 67.4 1% Min: Pyrite>>		
<<Min: 67.4 - 68.7 5% Min: Sphalerite>>		
<<Min: 67.4 - 68.7 2% Min: Chalcopyrite>>		
<<Min: 67.4 - 68.7 5% Min: Pyrite>>		
<<Min: 67.4 - 68.7 5% Min: Pyrrhotite>>		
<<Min: 68.7 - 76.1 7% Min: Pyrrhotite>>		
<<Min: 68.7 - 76.1 7% Min: Pyrite>>		
<<Min: 70.3 - 75.4 0.5% Min: Calcite>>		
<<Min: 73.4 - 76.3 1% Min: Chalcopyrite>>		
<<Min: 75.4 - 76.1 10% Min: Calcite>>		
<<Min: 76.1 - 77.9 5% Min: Chalcopyrite>>		
<<Min: 76.1 - 77.9 8% Min: Calcite>>		
<<Alt: 63.1 - 66.9 Weak (Alt) Chlorite>>		
<<Alt: 66.9 - 69.4 Moderate (Alt) Chlorite>>		
<<Alt: 69.4 - 77.8 Moderate (Alt) Muscovite>>		
<<Alt: 69.4 - 77.8 Strong (Alt) Chlorite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
65.70	66.70	1.00	B00265001	3.7	0.013	0.08	0.1	1.68
71.80	73.30	1.50	B00265002	0.6	-0.005	-0.01	-0.01	0.01
73.30	74.80	1.50	B00265003	3	0.008	0.16	0.02	0.72
74.80	76.30	1.50	B00265004	5.5	0.007	0.11	0.05	0.13

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Vein: 58.6 - 60.4 50% Quartz-Carbonate>> Minor dolomite blebs and disseminated sulphides within vein.									
			<<Vein: 71 - 71.2 100% Quartz-Carbonate>>									
			<<Struc: 63.3 - 63.4 Trace (Alt) >> QZ band									
			<<Struc: 64.2 - 64.3 Trace (Alt) >> MU band									
			<<Struc: 67.3 - 67.4 Trace (Alt) >> CL band									
			<<Struc: 71 - 71.05 Moderate (Alt) Fault>> weak									
			<<Struc: 71.2 - 71.25 Moderate (Alt) Fault>> weak									
			<<Struc: 73.2 - 73.3 Trace (Alt) >> QZ band									
			<<Struc: 73.8 - 73.9 Trace (Alt) >> QZ band									
			<<Struc: 74.85 - 75 Moderate (Alt) Fault>> moderate									
			<<Struc: 75.6 - 75.7 Trace (Alt) >> MU band									
76.30	**77.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	76.30	77.10	0.80	B00265005	40.3	0.231	2.34	0.17	0.26
			<<Alt: 77.8 - 81 Weak (Alt) Muscovite>>	77.10	77.90	0.80	B00265006	8.9	0.125	0.92	0.02	0.11
			<<Alt: 77.8 - 81 Strong (Alt) Chlorite>>									
			<<Struc: 76.3 - 76.4 Trace (Alt) >> CL band									
			<<Struc: 76.6 - 76.7 Trace (Alt) >> CL band									
			<<Struc: 77 - 77.1 Trace (Alt) >> PY Vein									
77.90	**78.90**	**OD**	**Brecciated sulphides**	77.90	78.90	1.00	B00265007	33	0.662	3.12	0.15	6.32
			<<Min: 77.9 - 78.9 10% Min: Chalcopyrite>>									
78.90	**79.70**	**OA**	**Magnetite bearing sulphides**	78.90	79.70	0.80	B00265008	24.3	0.215	0.67	0.73	5.56
			<<Min: 78.9 - 81.1 10% Min: Chalcopyrite>>									
79.70	**81.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	79.70	80.40	0.70	B00265009	13.1	0.075	0.72	0.13	1.58
				80.40	81.00	0.60	B00265012	19.6	0.203	0.47	0.67	6.24
81.00	**83.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	81.00	82.00	1.00	B00265013	26.6	0.318	0.33	1.52	7.89
				82.00	83.00	1.00	B00265014	14.2	0.312	0.09	0.48	9
83.00	**85.40**	**OA**	**Magnetite bearing sulphides**	83.00	83.80	0.80	B00265015	7.6	0.243	0.31	0.11	9.76
				83.80	84.60	0.80	B00265016	14	0.158	0.25	0.37	10.5
				84.60	85.40	0.80	B00265017	7.6	0.249	0.42	0.08	7.38

From (m)	To (m)	Rocktype & Description
85.40	**90.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

85.4 - 90.3: Intense silicification of unit due to RHYi.

<<Min: 85.4 - 94 2% Min: Pyrite>>

<<Min: 90.1 - 96.1 5% Min: Calcite>>

<<Alt: 85.4 - 112 Strong (Alt) Silicification>>

<<Alt: 85.4 - 112 Moderate (Alt) Muscovite>>

<<Struc: 85.8 - 85.9 Trace (Alt) >> QZ band

90.30	**91.30**	**RHYvl** **Lapilli tuff**

90.3 - 91.3: Intense silicification of unit due to RHYi.

<<Struc: 91 - 91.1 Trace (Alt) >> Elongated lpl - Ques measurement

91.30	**112.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**

91.3 - 112: Quartz phenocrysts abundant; grgy colour fades at 98m.

<<Min: 94 - 112 1% Min: Pyrite>>

<<Min: 96.1 - 112 1% Min: Calcite>>

<<Min: 104.1 - 109 0.5% Min: Sphalerite>> SP mineralization in veinlets.

<<Vein: 107.5 - 108.6 35% Quartz>> minor SP mineralization in lower massive vein.

<<Struc: 91.8 - 91.9 Trace (Alt) >> Elongated lpl

<<Struc: 92.1 - 92.2 Trace (Alt) >> QZ Vein

<<Struc: 93.1 - 93.2 Trace (Alt) >>

<<Struc: 94.9 - 95 Trace (Alt) >>

<<Struc: 97.9 - 98 Trace (Alt) >>

<<Struc: 99.2 - 99.3 Trace (Alt) >>

<<Struc: 100.5 - 100.6 Trace (Alt) >>

<<Struc: 102.8 - 102.9 Trace (Alt) >>

<<Struc: 103.3 - 103.4 Trace (Alt) >>

<<Struc: 106.3 - 106.4 Trace (Alt) >>

<<Struc: 107 - 107.1 Trace (Alt) >>

<<Struc: 109.4 - 109.5 Trace (Alt) >> QZ band

<<Struc: 110 - 110.1 Trace (Alt) >>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
85.40	86.90	1.50	B00265018	0.5	-0.005	-0.01	-0.01	0.04
86.90	88.40	1.50	B00265019	0.4	0.007	-0.01	-0.01	0.03
88.40	89.90	1.50	B00265021	1.5	0.005	-0.01	0.02	0.01

Project: **KZK** **Hole Number:** **K15-207**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 112									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-208

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	08-Nov-15
UTM Easting	414788	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6819204	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1317.73	Casing Depth (m):	21	Length (m):	42	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	09-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-208 was drilled as a monitoring well.
K15-208 encountered mafic CL+BI+FD schists with a horizon of argillite from 26.3-27 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**21.00**	**OVBN Overburden**
21.00	**26.30**	**MAFw mafic volcanic flows**
21 - 26.3: CL+BI+FD (?) schist with vuggy texture		
<<Vein: 24 - 25.5 80% Quartz>> Poor core recovery with chunks fo massive QZ vein		
<<Struc: 23.7 - 23.8 Weak (Alt) Fault>> Fault gouge zone		
26.30	**27.00**	**MDSc Carbonaceous dominant mudstone**
26.3 - 27: Argillitic mudstone with vuggy porosity		
27.00	**42.00**	**MAFw mafic volcanic flows**
27 - 42: CL+BI+FD schist with local vuggy porosity (vesicules?)		
End of Hole @ 42		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-209

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	12-Aug-15
UTM Easting	414625.14	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	12-Aug-15
UTM Northing:	6815358.582	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1436.289	Casing Depth (m):	7.5	Length (m):	54	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Aug-15
Local Elev. (m):						Purpose:	Metallurgical
Comments:						Parent Hole:	

K15-209 was drilled to collect metallurgical samples of MET5 & MET2 domains but was abandoned due to poor core recovery. The hole was re-drilled as K15-213.
The hole intersected a section of felsic volcanic rocks from 8.5-21.4 m displaying increasing MU alteration down hole, followed by MSXS from 21.4-29.4 m consisting of OA and OB ore types. A second package of felsic volcanics occurs from 29.4-39.6 m with heavily disseminated sulphide from 33.7-37.4 m and is strongly MU+CL altered. A second narrow interval of OB and OA occurs followed by a small section of CI+CL altered felsic coherent rocks from 43.4-45.3 m. A third interval of MSXS is present from 45.3-51.3 m consisting of OB and OH ore types. The footwall package consists of CL+MU altered felsic volcaniclastic rocks intruded by an aphanitic rhyolite dyke.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	179.74	0	179.74	APS	Geotech	11-Aug-15		☑	
36	-51.5	155.5	22.5	178	ReflexEZS	Geotech	11-Aug-15	2672	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.50**	**CASN Casing**									
7.50	**8.50**	**OVBN Overburden**									
8.50	**13.10**	**RHYvl Lapilli tuff**									
<<Min: 8.5 - 15.6 3% Min: Pyrite>>											
<<Min: 8.5 - 15.6 2% Min: Pyrrhotite>>											
<<Min: 9.3 - 21.4 10% Min: Calcite>>											
<<Alt: 8.5 - 9.3 Strong (Alt) Silicification>> Related to RHYi?											
<<Alt: 8.5 - 9.3 Strong (Alt) Muscovite>> Related to RHYi?											
<<Alt: 9.3 - 15.6 Moderate (Alt) Muscovite>>											
13.10	**21.40**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	17.90	19.40	1.50	B00265058	15.3	0.126	0.06	0.05	0.5
<<Min: 15.6 - 21.4 2% Min: Pyrite>>			19.40	20.90	1.50	B00265059	0.3	0.008	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 15.6 - 21.4 Moderate (Alt) Muscovite>>					20.90	21.40	0.50	B00265061	15.6	0.498	0.67	0.06	0.48
<<Vein: 16.3 - 18.3 40% Quartz-Carbonate>> QZ-Carb vein set													
<<Struc: 19.4 - 21 Strong (Alt) Fault>> Moderate fault gouge zone. Recovery is very poor, from and to measurements are probably innacurate.													
21.40	**21.80**	**OA**	**Magnetite bearing sulphides**	**MG**	21.40	21.80	0.40	B00265062	54.1	0.831	0.91	0.68	6.91
21.4 - 21.8: OA from 21.4 to 21.8. Bands of high grade SP+GL													
<<Min: 21.4 - 25 10% Min: Sphalerite>>													
21.80	**25.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		21.80	22.80	1.00	B00265063	212	2.2	0.53	5.67	16.8
					22.80	23.80	1.00	B00265064	197	2.47	0.67	3.4	9.07
					23.80	25.00	1.20	B00265065	153	2.49	0.47	2.54	6.62
25.00	**27.00**	**OA**	**Magnetite bearing sulphides**	**MG**	25.00	26.00	1.00	B00265066	34.6	0.793	0.49	0.43	7.68
					26.00	27.00	1.00	B00265067	111	1.35	0.75	0.85	11.2
27.00	**29.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		27.00	28.50	1.50	B00265068	154	1.24	0.36	2.61	8.38
					28.50	29.40	0.90	B00265069	320	1.49	0.5	5.1	10.8
29.40	**30.90**	**RHYvx**	**Quartz and/or feldspar crystal tuff**		29.40	30.90	1.50	B00265071	1.6	0.015	-0.01	0.02	0.19
29.4 - 30.9: FD porphyry with FD pseudomorphed to EP+Fe-oxide/carb													
<<Min: 29.4 - 31.2 2% Min: Pyrite>>													
<<Alt: 29.4 - 37.4 Moderate (Alt) Muscovite>>													
<<Alt: 29.4 - 37.4 Weak (Alt) Chlorite>>													
30.90	**33.70**	**OI**	**Heavilly disseminated sulphides in host schist**		30.90	32.40	1.50	B00265072	106	2.91	1.22	0.13	1.28
30.9 - 33.7: Texture obscured by alteration. Blebs of magnetite surrounded by dolomite/Fe-carb. With disseminated sulphides.													
<<Min: 31.2 - 33.7 2% Min: Sphalerite>>					32.40	33.40	1.00	B00265073	31.2	0.704	0.51	0.43	2.33
<<Min: 31.2 - 33.7 4% Min: Pyrite>>					33.40	33.70	0.30	B00265074	13.9	0.601	0.27	0.08	0.54
<<Min: 31.2 - 33.7 1% Min: Galena>>													
<<Min: 31.2 - 33.7 20% Min: Dolomite>> Dolomite or Fe-carb surrounding blebs of MG													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 33.3 - 33.4 Moderate (Alt) Fault>> moderate fault gouge zone													
33.70	**37.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		33.70	34.80	1.10	B00265075	82.6	0.564	0.11	0.9	3.26
33.7 - 37.4: Sulphide heavily disseminated in CL-altered flow rock													
<<Min: 33.7 - 37.4 3% Min: Sphalerite>>					34.80	35.80	1.00	B00265076	96.5	0.745	0.78	0.74	2.86
<<Min: 33.7 - 37.4 15% Min: Pyrite>>					35.80	36.80	1.00	B00265077	142	2.74	4.31	0.08	1.88
<<Min: 33.7 - 37.4 2% Min: Galena>>					36.80	37.40	0.60	B00265078	92.8	1.34	2.13	0.09	1.27
37.40	**39.60**	**RHYvl**	**Lapilli tuff**		37.40	38.90	1.50	B00265079	4.8	0.052	0.11	0.01	0.34
<<Min: 37.4 - 39.6 1% Min: Sphalerite>>					38.90	39.60	0.70	B00265081	8.1	0.054	-0.01	0.14	0.32
<<Min: 37.4 - 39.6 2% Min: Pyrite>>													
<<Min: 37.4 - 39.6 0.5% Min: Galena>>													
<<Alt: 37.4 - 39.6 Strong (Alt) Muscovite>>													
<<Alt: 37.4 - 39.6 Weak (Alt) Chlorite>>													
39.60	**41.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	39.60	40.60	1.00	B00265082	318	2.23	0.24	5.52	14.9
<<Min: 39.6 - 41.2 15% Min: Sphalerite>>					40.60	41.20	0.60	B00265083	440	3.42	0.68	3.05	9.47
41.20	**42.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	41.20	42.20	1.00	B00265084	549	2.74	0.24	6.74	20
41.2 - 42.2: with ~5% disseminated MG													
<<Min: 41.2 - 43.4 10% Min: Sphalerite>>													
<<Min: 41.2 - 43.4 5% Min: Galena>>													
42.20	**43.40**	**OI**	**Heavilly disseminated sulphides in host schist**		42.20	42.90	0.70	B00265085	626	5.85	0.79	2.46	5.41
<<Alt: 42.2 - 43.4 Weak (Alt) Chlorite>>					42.90	43.40	0.50	B00265086	324	2.98	0.11	3.33	7.24
<<Alt: 42.2 - 43.4 Weak (Alt) Cordierite>>													
<<Alt: 42.2 - 45.3 Strong (Alt) Muscovite>>													
43.40	**45.30**	**RHY**	**undifferentiated rhyolite**		43.40	44.40	1.00	B00265087	3.9	0.037	-0.01	0.04	0.14
43.4 - 45.3: CI proprhoblastic													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 43.4 - 45.3 2% Min: Pyrite>>					44.40	45.30	0.90	B00265088	48.1	0.157	0.03	0.74	1.43
<<Min: 43.4 - 45.3 1% Min: Pyrrhotite>>													
45.30	**51.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	45.30	46.20	0.90	B00265089	330	2.65	0.57	3.4	9.03
<<Min: 45.3 - 46.2 5% Min: Sphalerite>>					46.20	47.20	1.00	B00265092	443	4.49	1.04	3.58	7.08
					47.20	48.20	1.00	B00265093	269	3.19	0.8	4.26	11.1
					48.20	49.20	1.00	B00265094	141	1.56	0.51	1.8	7.29
					49.20	50.20	1.00	B00265095	128	1.06	0.59	2.58	7.87
					50.20	51.30	1.10	B00265096	291	3.46	1.67	2.39	6.94
51.30	**51.80**	**RHYv**	**Rhyolite volcaniclastic**		51.30	51.80	0.50	B00265097	270	2	1.7	0.12	0.75
51.3 - 51.8: 51.3-51.8 is a QZ-Carb vein. 51.8-51.9 is a small section of footwall MU schist which is cut by RHYi at ~51.9.													
<<Min: 51.3 - 51.8 5% Min: Chalcopyrite>>													
<<Min: 51.3 - 51.8 20% Min: Calcite>>													
<<Alt: 51.3 - 51.9 Moderate (Alt) Muscovite>>													
<<Alt: 51.3 - 51.9 Weak (Alt) Chlorite>>													
<<Vein: 51.3 - 51.8 90% Quartz-Carbonate>> QZ-carb vein hosting ~5% CP													
51.80	**53.50**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		51.80	52.80	1.00	B00265098	2.1	0.066	-0.01	0.02	0.1
51.8 - 53.5: aphanitic rhyolite dyke													
<<Min: 51.8 - 53.5 5% Min: Pyrite>>					52.80	54.00	1.20	B00265099	21.7	0.201	0.05	0.67	1.4
53.50	**54.00**	**RHYva**	**Coarse grained to ash tuff**										
53.5 - 54: Note: Small section of MSXS from 54-54.1 which does not seem in place and is not included in log.													
<<Min: 53.5 - 54 1% Min: Pyrite>>													
<<Min: 53.5 - 54 10% Min: Calcite>>													

End of Hole @ 54

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-210

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	08-Nov-15
UTM Easting	414705	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6819176	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1319.63	Casing Depth (m):	12	Length (m):	36	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-210 was drilled as a monitoring well.
K15-210 encountered mafic CL+BI+CA schists and carbonaceous mudstones

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**21.00**	**OVBN** **Overburden**									
21.00	**29.20**	**MAFw** **mafic volcanic flows**									
21 - 29.2: CL+CA+/-BI schist with vuggy porosity (vesicules?)											
<<Min: 21 - 29.2 15% Min: Calcite>>											
<<Struc: 26.5 - 26.7 Weak (Alt) Fault>> Fault gouge zone											
29.20	**29.60**	**MDSc** **Carbonaceous dominant mudstone**									
29.2 - 29.6: Argillitic mudstone with blebby CA											
<<Min: 29.2 - 29.6 15% Min: Calcite>>											
29.60	**30.60**	**MAFw** **mafic volcanic flows**									
29.6 - 30.6: CL+BI+CA schist with local carbonaceous cleavages and vuggy porosity (Vesicules?)											
<<Min: 29.6 - 30.6 15% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description
30.60	**31.10**	**MDSc** **Carbonaceous dominant mudstone**
30.6 - 31.1: Argillitic mudstone with vuggy porosity		
31.10	**33.50**	**SED** **undifferentiated Sediment**
31.1 - 33.5: Unconsilidated sand		
33.50	**36.00**	**MAFw** **mafic volcanic flows**
33.5 - 36: CL+BI+CA schist		
<<Min: 33.5 - 36 20% Min: Calcite>> Disseminated to patchy calcite		
<<Vein: 34 - 34.2 90% Quartz>> Massive QZ+CB vein		
End of Hole @ 36		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-211

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	08-Nov-15
UTM Easting	414474	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6816552	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1491.27	Casing Depth (m):	1.5	Length (m):	20	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Aug-15
Local Elev. (m):						Purpose:	Hydro
						Parent Hole:	

Comments:

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-211 was drilled as a monitoring well.
K15-211 encounters argillitic mudstone, minor coherent rhyolite, and fine grained CL+CA schist.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**1.50**	**OVBN** **Overburden**
1.50	**8.60**	**MDSc** **Carbonaceous dominant mudstone**
1.5 - 8.6: Grey-black, Argillitic mudstone with minor blebby CA.		
<<Min: 1.5 - 8.6 0.5% Min: Pyrrhotite>>		
<<Min: 1.5 - 8.6 5% Min: Calcite>>		
<<Vein: 5.7 - 5.9 40% Quartz>> Deformed QZ+CA vein		
8.60	**9.30**	**RHYc** **Rhyolite coherant volcanics**
8.6 - 9.3: Siliceous coherent rhyolite		
9.30	**15.60**	**MAFta** **Coarse grained to ash tuff**
9.3 - 15.6: CL+QZ+CA schist		
<<Min: 9.3 - 15.6 20% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
		<<Min: 9.3 - 20 0.5% Min: Pyrrhotite>>
		<<Vein: 11.7 - 11.9 100% Quartz>> Massive QZ+CA vein
15.60	**20.00**	**MDSc** **Carbonaceous dominant mudstone**
		15.6 - 20: Grey-black, Argillitic mudstone with minor blebby CA.
		<<Min: 15.6 - 20 5% Min: Calcite>>
		End of Hole @ 20

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-212

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	08-Nov-15
UTM Easting	414902	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6818520	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1332.15	Casing Depth (m):	13.5	Length (m):	36	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	12-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-212 was drilled as a monitoring well.
K15-212 encountered layered light-green, fine grained,CL+BI schists and argillitic mudstones.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**13.80**	**OVBN Overburden**
13.80	**15.00**	**MAFta Coarse grained to ash tuff**
13.8 - 15: Light green, fine grained CL+BI+CA schist		
<<Min: 13.8 - 15 15% Min: Calcite>>		
15.00	**16.20**	**MDSc Carbonaceous dominant mudstone**
15 - 16.2: Black argillitic mudstone		
<<Min: 15 - 16.2 1% Min: Pyrrhotite>>		
<<Min: 15 - 16.2 5% Min: Calcite>>		
16.20	**18.00**	**MAFta Coarse grained to ash tuff**
16.2 - 18: Light green, fine grained CL+BI+CA schist		
<<Min: 16.2 - 18 15% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description
18.00	**20.90**	**MDSc — Carbonaceous dominant mudstone**
		18 - 20.9: Dark grey argillitic mudsotne, with local band of CL schist
		<<Min: 18 - 20.9 0.5% Min: Pyrite>>
		<<Min: 18 - 20.9 5% Min: Calcite>>
20.90	**26.80**	**MAFta — Coarse grained to ash tuff**
		20.9 - 26.8: Light green, fine grained CL+BI+CA schist
		<<Min: 20.9 - 26.8 15% Min: Calcite>>
		<<Vein: 23 - 23.25 80% Quartz>> Massive QZ+CA vein
26.80	**29.90**	**MDSc — Carbonaceous dominant mudstone**
		26.8 - 29.9: Dark grey argillitic mudstone
		<<Min: 26.8 - 29.9 1% Min: Pyrite>>
		<<Min: 26.8 - 29.9 5% Min: Calcite>>
29.90	**36.00**	**MAFta — Coarse grained to ash tuff**
		29.9 - 36: Light green, fine grained CL+BI+CA schist
		<<Min: 29.9 - 36 20% Min: Calcite>>
		<<Vein: 35.75 - 35.85 80% Calcite>> Massive CA vein
		<<Struc: 31.9 - 33 Weak (Alt) Fault>> Highly fractured with local fault gouge

End of Hole @ 36

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-213

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Sean Suttie
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	13-Aug-15
UTM Easting	414625.136	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	15-Aug-15
UTM Northing:	6815357.987	Casing Pulled?:	No	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1436.3	Casing Depth (m):	7.5	Length (m):	99	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	14-Aug-15
Local Elev. (m):						Purpose:	Metallurgical
Comments:						Parent Hole:	

This metallurgical hole was drilled to collect samples that test the near surface oxidation of MET5 and MET2 Domain, as well as validate historical results from hole K95-095.
The structural hanging wall is composed of rhyolite (felsic) flows, quartz feldspar porphyritic rocks and felsic volcaniclastic rocks. Sulphide mineralization is present in three distinct lenses from 21m - 27.7m, 39.2m - 43.1m and 44.7m - 51.6m. The structural footwall rock package is composed of a glassy felsic dike, felsic flow rocks and calcite banded chlorite rich mafic intrusive.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180.41	0	180.41	APS	David Nuttal	12-Aug-15		☑	
33	-51	157.8	22.5	180.3	ReflexEZS	Geotech	12-Aug-15	5673	☑	
58.5	-51.4	157.8	22.5	180.3	ReflexEZS	Geotech	12-Aug-15	5724	☑	
85.5	-51.4	160.3	22.5	182.8	ReflexEZS	Geotech	12-Aug-15	5742	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
7.50	**8.70**	**RHYi** **Aphanitic Rhyolite (intrusion)** **grey-green**									
<<Min: 7.5 - 13.1 3% Min: Pyrite>> Mineralization also present in mm sized veins.											
<<Alt: 7.5 - 8.7 Strong (Alt) Muscovite>>											
<<Alt: 7.5 - 9 Strong (Alt) Silicification>>											
8.70	**13.10**	**RHYvl** **Lapilli tuff** **medium grey**									
<<Min: 8.7 - 13.1 5% Min: Calcite>>											
<<Min: 8.7 - 16.5 2% Min: Pyrrhotite>> Mineralization also present in mm sized veins.											
<<Alt: 8.7 - 13.6 Weak (Alt) Muscovite>>											
<<Struc: 8.7 - 8.75 Fault>> Weak											
13.10	**21.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **medium grey**	16.00	17.00	1.00						
<<Min: 13.1 - 16.5 5% Min: Pyrite>>		10cm interval of 15% SP at 15.6m.	17.00	18.00	1.00						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 13.1 - 16.5 20% Min: Calcite>>					18.00	19.00	1.00						
<<Min: 16.5 - 21.2 1% Min: Pyrite>> Local SP and PY mineralization (~18.6m) of 5 and 8%, respectively.					19.00	20.00	1.00						
<<Min: 16.5 - 21.2 1% Min: Calcite>>					20.00	21.20	1.20						
<<Alt: 13.6 - 16.2 Moderate (Alt) Muscovite>>													
<<Alt: 16.2 - 27.8 Weak (Alt) Chlorite>> initial 4m CL alteration displayed disseminated form.													
<<Alt: 16.2 - 30.3 Strong (Alt) Muscovite>>													
<<Struc: 20.9 - 21 >> Sulphide lamination													
21.20	**21.50**	**OA**	**Magnetite bearing sulphides**		21.20	21.50	0.30						
<<Min: 21.2 - 25 12% Min: Sphalerite>>													
21.50	**25.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		21.50	22.00	0.50						
21.5 - 25: Core recovery poor from 24-25m.													
					22.00	23.00	1.00						
					23.00	24.00	1.00						
					24.00	25.00	1.00						
25.00	**27.80**	**OA**	**Magnetite bearing sulphides**		25.00	26.00	1.00						
<<Min: 25 - 27.8 10% Min: Sphalerite>> Local CP and GL min. of 2% at 25.2m.					26.00	27.00	1.00						
					27.00	27.80	0.80						
27.80	**31.30**	**RHYcf**	**Feldspar & feldspar quartz porphyry**	**grey-green**	27.80	28.50	0.70						
27.8 - 31.3: Pseudomorph feldspar xtls found throughout interval.													
<<Min: 27.8 - 30.1 0.5% Min: Pyrite>>					28.50	29.20	0.70						
<<Min: 27.8 - 30.1 0.5% Min: Pyrrhotite>>					29.20	30.00	0.80						
<<Min: 27.8 - 31.3 0.01% Min: Calcite>>					30.00	31.30	1.30						
<<Min: 30.1 - 30.3 3% Min: Sphalerite>>													
<<Min: 30.1 - 30.3 20% Min: Pyrite>>													
<<Min: 30.1 - 30.3 3% Min: Galena>>													
<<Min: 30.1 - 30.3 5% Min: Chalcopyrite>>													
<<Min: 30.3 - 33.1 5% Min: Sphalerite>>													
<<Min: 30.3 - 33.1 5% Min: Pyrite>>													
<<Alt: 27.8 - 30.3 Weak (Alt) Chlorite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 30.3 - 40 Moderate (Alt) Muscovite>>													
<<Alt: 30.3 - 51.6 Weak (Alt) Chlorite>>													
<<Vein: 30.15 - 30.3 95% Quartz-Carbonate-Sulphide>> 20% PY, 5%CP, 5%SP and 3% GL mineraliztion on wall rock.													
<<Struc: 28.1 - 28.2 Fault>> Weak													
31.30	**33.10**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	31.30	32.02	0.72						
<<Min: 31.3 - 39.2 1% Min: Calcite>>					32.02	33.10	1.08						
<<Vein: 32 - 39.2 27% Quartz-Carbonate>>													
<<Struc: 32.4 - 32.45 Fault>> Weak													
<<Struc: 32.9 - 33 >> QZ band													
33.10	**35.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		33.10	33.90	0.80						
<<Min: 33.1 - 35.4 5% Min: Sphalerite>>					33.90	34.70	0.80						
<<Min: 33.1 - 35.4 2% Min: Galena>>					34.70	35.50	0.80						
<<Min: 33.1 - 35.4 3% Min: Chalcopyrite>>													
<<Min: 35.4 - 39.2 2% Min: Sphalerite>>													
<<Min: 35.4 - 39.2 15% Min: Pyrite>>													
<<Min: 35.4 - 39.2 0.05% Min: Galena>>													
35.50	**39.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		35.50	36.20	0.70						
<<Struc: 36.1 - 36.2 >> QZ band					36.20	37.00	0.80						
<<Struc: 38.2 - 38.3 >> CL band					37.00	38.00	1.00						
					38.00	39.20	1.20						
39.20	**41.70**	**OA**	**Magnetite bearing sulphides**		39.20	39.90	0.70						
<<Min: 39.2 - 41.7 15% Min: Sphalerite>>					39.90	40.60	0.70						
<<Alt: 39.85 - 51.6 Weak (Alt) Cordierite>>					40.60	41.10	0.50						
<<Alt: 40 - 51.6 Weak (Alt) Muscovite>>					41.10	41.70	0.60						
<<Struc: 40.1 - 40.2 >> Sulphide lam													
<<Struc: 40.8 - 40.9 >> Sulphide lam													
41.70	**43.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		41.70	42.40	0.70						
<<Min: 41.7 - 43.1 10% Min: Sphalerite>>					42.40	43.10	0.70						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 41.9 - 42 Vein>> PY vein												
43.10	**44.70**	**RHYva**	**Coarse grained to ash tuff**									
<<Min: 43.1 - 44.7 7% Min: Pyrite>> Local fractures host mineralized PY.												
<<Min: 43.1 - 44.7 5% Min: Calcite>>												
<<Struc: 43.3 - 43.4 >> CL band within RHYva												
44.70	**45.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	44.70	45.70	1.00						
<<Min: 44.7 - 45.7 8% Min: Sphalerite>>												
45.70	**51.60**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	45.70	46.70	1.00						
<<Min: 45.7 - 51.6 4% Min: Sphalerite>> Local CP and SP min of 3 and 8%, respectively within vein starting at 51.5m.				46.70	47.70	1.00						
<<Vein: 51.5 - 51.6 100% Quartz-Carbonate-Sulphide>> Hosts 4% CP and 8% SP mineralization.				47.70	48.70	1.00						
<<Struc: 50.3 - 50.4 >> SP band				48.70	49.70	1.00						
				49.70	50.70	1.00						
				50.70	51.60	0.90						
51.60	**53.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** grey	51.60	52.50	0.90						
<<Min: 51.6 - 53.9 3% Min: Sphalerite>>				52.50	53.10	0.60						
<<Min: 51.6 - 53.9 10% Min: Pyrite>>												
<<Min: 51.6 - 55.3 10% Min: Calcite>>												
<<Alt: 51.6 - 56 Weak-Moderate (Alt) Chlorite>>												
<<Alt: 51.6 - 62 Strong (Alt) Silicification>>												
<<Alt: 51.6 - 62 Moderate (Alt) Muscovite>>												
<<Struc: 51.8 - 51.9 Fault>> Weak												
<<Struc: 52.4 - 52.5 Vein>> QZ-CB vein												
53.10	**55.00**	**RHYvx**	**Quartz and/or feldspar crystal tuff** grey	53.10	54.00	0.90						
53.1 - 55: Silica and muscovite alteration due to proximal felsic dyke, abundant qtz crystals qz after fd?.												
<<Min: 53.9 - 57 4% Min: Pyrite>>				54.00	55.00	1.00						
<<Min: 53.9 - 57 0.01% Min: Chalcopyrite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

55.00 90.50 RHYi Aphanitic Rhyolite (intrusion) grey

55 - 90.5: good evidence of pepperitic contacts, 90% RHYi but intervals of pepperitic xtl tuff??

<<Min: 55.3 - 73 3% Min: Calcite>>
<<Min: 57 - 62 1% Min: Pyrite>>
<<Min: 62 - 76 1% Min: Pyrite>>
<<Min: 62 - 76 0.5% Min: Pyrrhotite>>
<<Min: 73 - 87 5% Min: Calcite>>
<<Min: 76 - 99 0.5% Min: Pyrite>>
<<Min: 76 - 99 0.25% Min: Pyrrhotite>>
<<Min: 87 - 90.5 15% Min: Calcite>>
<<Alt: 62 - 90 Strong (Alt) Silicification>>
<<Alt: 62 - 90 Strong (Alt) Muscovite>>
<<Alt: 90 - 90.5 Moderate (Alt) Silicification>>
<<Alt: 90 - 90.5 Weak (Alt) Muscovite>>
<<Alt: 90 - 90.5 Moderate (Alt) Chlorite>>
<<Vein: 68.1 - 68.6 95% Quartz-Carbonate-Sulphide>>
<<Struc: 56.8 - 56.9 >> QZ band
<<Struc: 58.6 - 58.7 >> QZ-CB band
<<Struc: 59.2 - 59.3 Vein>> QZ-sulphide fracture filled vein
<<Struc: 60 - 60.1 Vein>> QZ VN
<<Struc: 62.9 - 63 >> QZ band
<<Struc: 63.4 - 63.5 Kink bands>> Highly deformed, qz band
<<Struc: 65.5 - 65.6 >> QZ band
<<Struc: 72 - 72.4 Foliation>>
<<Struc: 75.6 - 75.7 >>

90.50 94.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 90.5 - 94.3 25% Min: Calcite>> Locally found within veinlets.
<<Alt: 90.5 - 94.3 Strong (Alt) Chlorite>>
<<Alt: 90.5 - 94.3 Strong (Alt) Biotite>>
<<Struc: 93.7 - 94.4 Fault>> Fractured zone with multiple flt gouges.

94.30 99.00 RHYi Aphanitic Rhyolite (intrusion) grey

<<Min: 94.3 - 99 0.01% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 94.3 - 99 Strong (Alt) Silicification>>

<<Alt: 94.3 - 99 Moderate (Alt) Muscovite>>

<<Vein: 94.3 - 94.4 100% Quartz-Carbonate-Sulphide>> 3% PY mineralization, trace dolomite

<<Struc: 97.3 - 97.4 Vein>> Fe-carbonate veinlets.

<<Struc: 97.8 - 97.9 Fault>> Moderate intensitry for fault gouge.

End of Hole @ 99

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-214

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Mike Leidel
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	10-Nov-15
UTM Easting	414808	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	10-Nov-15
UTM Northing:	6816270	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1429.95	Casing Depth (m):	5	Length (m):	32	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	12-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	12-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-214 encountered fine grained chlorite biotite schist interbedded with a very fine grained mudstone. Calcite and biotite content increased in the last 7m of the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Mike Leidel			☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.30**	**OVBN** **Overburden**									
7.30	**11.12**	**MAFi** **Mafic Intrusions (primarily green FG footwall mafic intrusion)**									

7.3 - 11.12: Fine grained mafic ash or volcaniclastic, with wispy calcite, a chlorite overprint and biotite porphyroblasts (1-3mm). Sharp lower contact with MDS.

<<Min: 7.3 - 11 5% Min: Calcite>>
<<Min: 7.3 - 32 0.1% Min: Pyrrhotite>>
<<Min: 11 - 24.7 1% Min: Calcite>>
<<Alt: 7.3 - 11.12 Weak-Moderate (Alt) Biotite>>
<<Alt: 7.3 - 32 Weak-Moderate (Alt) Chlorite>>
<<Vein: 7.6 - 8.14 68% Quartz>>
<<Vein: 10.44 - 10.46 100% Quartz-Carbonate>>

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
11.12	**19.50**	**MDSc**	**Carbonaceous dominant mudstone**	**black** **VFG**									

11.12 - 19.5: Very fine grained homogenous argillite mudstone. Low calcite and biotite porphyroblast content, and chlorite overprint with intermittent banding.

19.50	**32.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green** **FG**									

19.5 - 32: Fine grained homogenous Mafic ash or dyke with chlorite overprint, biotite porphyroblasts and variable calcite mineralization.

<<Min: 24.7 - 26.8 5% Min: Calcite>>

<<Min: 26.8 - 32 15% Min: Calcite>>

<<Alt: 19.5 - 32 Weak-Moderate (Alt) Biotite>> Biotite porphyroblasts increase from 1-2% between 19.50-24.80m to double that from 24.80-32m

<<Vein: 29.29 - 29.33 100% Quartz-Carbonate>>

End of Hole @ 32

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-215

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Mike Leidel
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	10-Nov-15
UTM Easting	414915	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	10-Nov-15
UTM Northing:	6817786	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1361.6	Casing Depth (m):	13.5	Length (m):	33	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	12-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	13-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-215 encountered a fine grained chlorite biotite mafic schist, which was present throughout the extent of the hole. Between 20.90-22m was a massive brecciated vein stockwork with trace amounts of Cp and Po mineralization.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Mike Leidel			☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 14.20 OVBN Overburden

<<Min: 13.5 - 33 0.1% Min: Pyrite>>

<<Min: 13.5 - 33 0.5% Min: Pyrrhotite>>

<<Min: 13.5 - 33 0.1% Min: Chalcopyrite>>

14.20 20.91 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FG

14.2 - 20.91: Fine grained homogenous Mafic Dyke or Ash, with biotite porphyroblasts and chlorite groundmass. 5-10% Calcite veining with possible calcite replaced amygdules(1-4mm).

<<Min: 14.2 - 17 10% Min: Calcite>> Disseminated in matrix

<<Min: 17 - 20.91 5% Min: Calcite>>

<<Alt: 14.2 - 33 Weak-Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
20.91	**22.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **grey-green** **FG**									
20.91 - 22: Vein- 50-60% veining with calcite, quartz, dolomite, ankerite. Fine grained mafic ash groundmass within vein stockwork. Biotite banding on periphery of veins.											
<<Min: 20.91 - 22 20% Min: Calcite>>											
<<Vein: 20.91 - 22 100% Quartz>> Increasing biotite concentration on periphery											
22.00	**33.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **grey-green** **FG**									
22 - 33: Fine grained homogenous Mafic Dyke or Ash, with biotite porphyroblasts, chlorite groundmass and variable Calcite veining 5-18%. EOH											
<<Min: 22 - 26.83 5% Min: Calcite>>											
<<Min: 26.83 - 27.75 10% Min: Calcite>>											
<<Min: 27.75 - 30 5% Min: Calcite>>											
<<Min: 30 - 33 18% Min: Calcite>>											
<<Vein: 27.55 - 27.56 100% Quartz 30 deg. >>											
<<Vein: 29.53 - 30 21% Quartz>>											
<<Struc: 24.55 - 25.4 Weak-Moderate (Alt) >>											
End of Hole @ 33											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-216

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	14-Aug-15
UTM Easting	414845.596	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	17-Aug-15
UTM Northing:	6815743.656	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1394.852	Casing Depth (m):	6	Length (m):	233	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	13-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	16-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-216 was drilled to twin the sulphide intercept of historic hole K95-157. K15-216W1 is a wedge drilled to collect a sample of the MET6 domain.
The hanging wall package consists of felsic volcanics from 5-147.3 m, with five ~2 m wide FD-porphyry mafic dykes above 63 m and two mudstone units between 136 m and 146 m. Alteration increases in intensity from moderate MU-alteration at 133 m to strong CI+CL-alteration at 146.8 m. MSXS occurs from 147.3-151.3 m, consisting of OJ, OG, and OD ore types followed by strongly MU-altered and fractured felsic volcanics from 151.3-154.8 m. A second MSXS interval occurs from 154.8-157.9, consisting of the OD ore type. A third MSXS interval occurs from 163.9-176.4 m, consisting of OD, OA, OB, and OJ ore types followed by MU+CL-altered felsic volcanics from 176.4 - 178.1 m. A mafic sill (MAFi) is present from 178.1-204.3, with a ~3 m wide wedge of coherent rhyolite within. A fourth MSXS interval occurs below the MAFi at 203.8-204.3 m consisting of semi-massive OJ type mineralization. Felsic volcanics continue to EOH at 233 m decreasing in alteration intensity from strong CL-alteration to moderate MU-alteration.
A well developed fractured and faulted zone occurs from ~135-168.9 m that includes brecciated ore zones.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.24	0	180.24	APS	Geotech	16-Aug-15		☑	
26	-63.1	161.3	22.5	183.8	ReflexEZS	Geotech	13-Aug-15	5782	☑	
50	-62.6	162.6	22.5	185.1	ReflexEZS	Geotech	13-Aug-15	5752	☑	
71	-62.1	161.4	22.5	183.9	ReflexEZS	Geotech	14-Aug-15	5786	☑	
98	-62.6	163.9	22.5	186.4	ReflexEZS	Geotech	14-Aug-15	5754	☑	
125	-62.5	165	22.5	187.5	ReflexEZS	Geotech	14-Aug-15	5761	☑	
149	-62.4	170.7	22.5	193.2	ReflexEZS	Geotech	15-Aug-15	5795	☑	
176	-62.8	163.9	22.5	186.4	ReflexEZS	Geotech	16-Aug-15	5632	☑	
200	-63.1	167.7	22.5	190.2	ReflexEZS	Geotech	15-Aug-15	5800	☑	
230	-63.1	168.8	22.5	191.3	ReflexEZS	Geotech	16-Aug-15	5792	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.00**	**OVBN Overburden**									
5.00	**11.60**	**RHYvl Lapilli tuff**									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 5 - 32.6 1% Min: Pyrite>>

<<Min: 8.1 - 9.4 5% Min: Calcite>>

<<Vein: 8.1 - 9.4 20% Quartz-Carbonate>> QZ-Carb veining in RHYcw

11.60 12.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

11.6 - 12.9: FD-porphyry CL-BI mafic dyke

<<Min: 11.6 - 12.9 3% Min: Calcite>>

<<Vein: 11.6 - 12.9 10% Quartz-Carbonate>> QZ-carb veining in MAFi

12.90 30.20 RHYvl Lapilli tuff

12.9 - 30.2: good curdy texture

30.20 32.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

30.2 - 32.6: FD-porphyry CL-BI mafic dyke

32.60 38.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32.6 - 38.9: Good cury and flow banded texture

<<Min: 32.6 - 133.5 2% Min: Pyrite>>

<<Min: 32.6 - 133.5 2% Min: Pyrrhotite>>

38.90 41.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

38.9 - 41: Sheared FD-porphyry CL-BI mafic dyke

41.00 43.10 RHYvl Lapilli tuff

43.10 45.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

43.1 - 45.3: Sheared FD-porphyry CL-BI mafic dyke. Small section of RHYcw within the dyke.

<<Struc: 43.17 - 43.18 Contact>> Contact of mafic dyke RHYcw

<<Struc: 43.52 - 43.53 Foliation>> Sheared band in MAFi

45.30 61.10 RHYvl Lapilli tuff

45.3 - 61.1: Good curdy and flow banded texture

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 60.9 - 62.8 10% Min: Calcite>>

<<Struc: 61.06 - 61.07 Contact>> Upper contact of MAFi dyke

61.10 62.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

61.1 - 62.8: Cl-BI mafic dyke

<<Struc: 62.68 - 62.69 Contact>> Lower contact MAFi dyke

62.80 67.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

67.00 99.00 RHYvl Lapilli tuff

67 - 99: RHYcw with minor (~5%) carbonaceous material.

<<Struc: 75 - 75.1 Vein>> PY-filled fracture

<<Struc: 81.8 - 81.9 Weak (Alt) Fault>> weak fault w/ minor gouge

<<Struc: 87.5 - 87.6 Weak (Alt) Fault>> weak fault

<<Struc: 97.5 - 97.6 Moderate (Alt) Fault>> weak-moderate fault gouge zone

99.00 109.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

99 - 109: Good curdy and flow banded texture

<<Alt: 101 - 102.4 Weak (Alt) Muscovite>>

<<Alt: 101 - 102.4 Weak (Alt) Chlorite>>

<<Vein: 101.6 - 102.2 20% Quarzt-Chlorite-Carbonate>> QZ-Carb-CL veining associated with some globs of PO

109.00 128.20 RHYvl Lapilli tuff

109 - 128.2: RHYcw with intermittent beds/layers of RHYv

<<Min: 126.3 - 127 3% Min: Calcite>>

<<Alt: 123 - 126 Moderate (Alt) Muscovite>>

<<Alt: 126 - 133 Weak (Alt) Muscovite>>

<<Struc: 124.1 - 124.4 Strong (Alt) Fault>> moderate faulted and fault gouge zone

128.20 136.50 RHYvl Lapilli tuff

128.2 - 136.5: rhyolitic lpl and PO-replaced lpl. Becomes faulted with gouge at 133.6 m

<<Min: 133.5 - 147.3 3% Min: Pyrite>>

<<Alt: 133 - 137.5 Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 133.5 - 136.4 Intense (Alt) Fault>> moderate fault gouge zone													
136.50	**137.50**	**MDSt**	**Rhyolite tuff dominant mudstone**										
136.5 - 137.5: Carbonaceous content ~15%													
<<Struc: 136.98 - 136.99 Foliation>> Dominant foliation in carbonaceous unit.													
137.50	**143.60**	**RHYv**	**Rhyolite volcaniclastic**		142.80	144.30	1.50	B00264556	1	0.01	-0.01	0.01	0.03
137.5 - 143.6: Texture obscured by alteration and faulting/shearing?													
<<Alt: 137.5 - 146.8 Strong (Alt) Muscovite>>													
<<Vein: 141.8 - 142.6 15% Quarzt-Chlorite-Pyrrhotite>> QZ-CL-PO veins in MU-altered rocks													
<<Struc: 138 - 144.2 Moderate (Alt) Fault>> moderately fractured and faulted zone													
143.60	**146.00**	**MDSt**	**Rhyolite tuff dominant mudstone**		144.30	145.80	1.50	B00264557	-0.3	-0.005	-0.01	-0.01	-0.01
143.6 - 146: carbonaceous content ~20%													
<<Struc: 145.3 - 146.8 Strong (Alt) Fault>> moderately fractured and faulted zone					145.80	147.30	1.50	B00264558	21.5	0.097	0.4	0.06	0.16
146.00	**147.30**	**RHYv**	**Rhyolite volcaniclastic**										
146 - 147.3: Texture obscured by alteration and fracturing													
<<Alt: 146.8 - 148.6 Strong (Alt) Cordierite>>													
<<Alt: 147 - 148.6 Strong (Alt) Chlorite>>													
147.30	**148.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		147.30	148.60	1.30	B00264559	143	1.76	4.76	0.09	0.42
147.3 - 148.6: blebs of CP+PO in strongly CL+CI altered rock													
148.60	**148.90**	**OG**	**Chalcopyrite rich sulphides**		148.60	149.00	0.40	B00264561	309	3.07	11.6	0.19	4.18
148.6 - 148.9: Net-textured CP+PO with CP>40%. PY-slickensides on fractured surfaces													
<<Min: 148.6 - 148.9 45% Min: Chalcopyrite>>													
148.90	**150.50**	**OD**	**Brecciated sulphides**	**MG**	149.00	149.70	0.70	B00264562	46.1	0.578	0.07	0.57	4.21
148.9 - 150.5: Brecciated OH with ~5% CP from 150.9-151.3 m													
<<Min: 148.9 - 151.3 5% Min: Calcite>>					149.70	150.50	0.80	B00264563	97.5	1.21	1.31	0.97	6.1
<<Struc: 150.3 - 155.4 Strong (Alt) Fault>> strongly faultedand gouged zone													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
150.50	**154.80**	**RHYv**	**Rhyolite volcaniclastic**		150.50	152.00	1.50	B00264564	51	0.227	1.18	0.12	0.21
150.5 - 154.8: texture obscured by alteration and faulting													
<<Min: 151.3 - 154.8 1% Min: Pyrite>>					152.00	153.20	1.20	B00264565	1.2	0.017	0.01	-0.01	0.03
<<Alt: 150.5 - 154.8 Strong (Alt) Muscovite>>					153.20	154.80	1.60	B00264566	42.4	0.194	0.98	0.12	0.54
154.80	**157.90**	**OD**	**Brecciated sulphides**	**MG**	154.80	156.00	1.20	B00264567	54.2	0.53	1.01	0.83	8.03
154.8 - 157.9: Brecciated OB (Py+CP+/-SP+/-GL)													
					156.00	157.00	1.00	B00264568	61.3	1.1	1.56	0.83	8.01
					157.00	157.90	0.90	B00264569	67.5	0.534	1.41	0.73	2.96
157.90	**163.90**	**RHYv**	**Rhyolite volcaniclastic**		157.90	161.00	3.10	B00264572	5.5	0.062	0.13	-0.01	0.05
157.9 - 163.9: Texture obscured by alteration and faulting													
<<Min: 157.9 - 163.9 1% Min: Pyrite>>					161.00	162.50	1.50	B00264573	30.8	0.242	0.12	0.29	2.4
<<Alt: 157.9 - 163.9 Strong (Alt) Muscovite>>					162.50	163.90	1.40	B00264574	7.9	0.055	0.13	0.01	0.07
<<Struc: 157.9 - 163.9 Strong (Alt) Fault>> strongly/intensely faulted zone with fault gouge													
163.90	**168.90**	**OD**	**Brecciated sulphides**	**MG**	163.90	164.90	1.00	B00264575	137	1.6	1.51	1.78	6.26
163.9 - 168.9: Unit has both wispy laminated texture and local zones brecciated MSXS. Low grade CP+/-SP+/-GL, but ~85% PY. PY-slickensides on fractured surfaces.													
<<Min: 163.9 - 168.9 2% Min: Calcite>>					164.90	165.90	1.00	B00264576	183	1.73	0.42	2.52	8.96
					165.90	166.90	1.00	B00264577	229	1.93	0.54	2.33	7.6
					166.90	167.90	1.00	B00264578	179	1.19	0.38	2.28	7.21
					167.90	168.90	1.00	B00264579	67.1	1.07	0.37	0.83	3.17
168.90	**171.20**	**OA**	**Magnetite bearing sulphides**	**MG**	168.90	169.70	0.80	B00264581	78.6	0.851	1.08	0.96	4.38
168.9 - 171.2: magnetite bearing MSXS													
					169.70	170.50	0.80	B00264582	60.9	0.455	0.69	0.74	5.14
					170.50	171.20	0.70	B00264583	89.6	0.626	1.17	0.55	4.15
171.20	**174.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	171.20	172.10	0.90	B00264584	119	0.568	0.52	1.22	6.26
171.2 - 174.8: laminated to buckshot textured MSXS. PY+SP+GL+/-CP													
<<Min: 171.2 - 174.8 2% Min: Calcite>>					172.10	173.00	0.90	B00264585	68.8	0.856	0.27	1.43	11.1
					173.00	173.90	0.90	B00264586	118	0.935	0.36	2.31	10.2

From (m)	To (m)		Rocktype & Description
174.80	**176.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

174.8 - 176.4: Disseminated to patchy CP+PY+SP+/-GL in CL-altered schist

<<Alt: 174.8 - 178.1 Moderate (Alt) Muscovite>>

<<Alt: 174.8 - 178.1 Moderate-Strong (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description
176.40	**178.10**	**RHYva**	**Coarse grained to ash tuff**

176.4 - 178.1: Cl-altered fine grain volcaniclastic?

<<Min: 176.4 - 178.1 4% Min: Pyrite>>

<<Struc: 176.4 - 176.8 Moderate (Alt) Fault>> weak-moderate faulted zone

From (m)	To (m)		Rocktype & Description
178.10	**182.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

178.1 - 182.3: CA-BI-CL mafic sill

<<Min: 178.1 - 183.6 15% Min: Calcite>>

<<Min: 178.1 - 203.8 1% Min: Pyrite>>

<<Min: 178.1 - 203.8 1% Min: Pyrrhotite>>

<<Alt: 178.1 - 182.3 Moderate-Strong (Alt) Chlorite>>

<<Alt: 178.1 - 182.3 Moderate-Strong (Alt) Biotite>>

<<Struc: 179.9 - 182 Moderate (Alt) Fault>> strong fault gouge zone with high core loss

From (m)	To (m)		Rocktype & Description
182.30	**185.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

182.3 - 185.4: good curdy texture with strong MU alteration of groundmass

<<Min: 184.4 - 203.8 15% Min: Calcite>>

<<Alt: 182.3 - 185.4 Moderate-Strong (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description
185.40	**203.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

185.4 - 203.8: CA-BI-CL mafic sill

<<Alt: 185.4 - 203.8 Moderate-Strong (Alt) Chlorite>>

<<Alt: 185.4 - 203.8 Moderate-Strong (Alt) Biotite>>

<<Struc: 194.09 - 194.1 Foliation>> dominant foliation in MAFi (CA-band)

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
173.90	174.80	0.90	B00264587	201	1.02	0.33	4.1	8.48
174.80	175.60	0.80	B00264588	74	1.66	2.56	0.19	0.54
175.60	176.40	0.80	B00264589	55.3	0.756	1.65	0.31	3.04
176.40	177.30	0.90	B00264591	1.3	0.108	-0.01	0.02	0.03
177.30	178.10	0.80	B00264592	6.4	0.075	0.03	0.16	0.24
178.10	179.60	1.50	B00264593	-0.3	-0.005	0.01	-0.01	0.01
202.30	203.80	1.50	B00264594	-0.3	0.011	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 197.49 - 197.5 Foliation>> dominant foliation in MAFi (CA-band)										
		<<Struc: 201.79 - 201.8 Foliation>> dominant foliation in MAFi (CA-band)										
		<<Struc: 203.35 - 203.36 Foliation>> dominant foliation in MAFi (CA-band)										
203.80	**204.30**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**MG**	203.80	204.30	0.50	B00264595	60.4	0.206	0.29	1.11	2.63
		203.8 - 204.3: semi-massive PY+CP in CL-altered schist										
		<<Alt: 203.8 - 207.5 Strong (Alt) Chlorite>>										
204.30	**212.60**	**RHYva** **Coarse grained to ash tuff**		204.30	205.80	1.50	B00264596	3	0.008	-0.01	0.02	0.05
		204.3 - 212.6: Texture very obscured by alteration? High CL content makes this unit hard to differentiate from MAFi. However, does not have CA and is harder.										
		<<Min: 204.3 - 211.5 3% Min: Pyrrhotite>>										
		<<Min: 211.5 - 233 2% Min: Pyrite>>										
		<<Min: 211.5 - 233 2% Min: Pyrrhotite>>										
		<<Alt: 207.5 - 210 Strong (Alt) Chlorite>>										
		<<Alt: 210 - 216.3 Weak-Moderate (Alt) Muscovite>>										
		<<Alt: 210 - 216.3 Moderate (Alt) Chlorite>>										
		<<Vein: 207.7 - 209.6 50% Quartz-Carbonate>> QZ-carbonate-TR veins in CL-altered rocks										
		<<Struc: 205.17 - 205.18 Foliation>> foliation in CL-altered RHYv										
		<<Struc: 207.06 - 207.07 Foliation>> QZ-band										
212.60	**216.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**										
		212.6 - 216.3: CL-MU-altered RHYcw with moderate curdy/flow banded texture										
		<<Struc: 214.69 - 214.7 Foliation>> QZ-band										
		<<Struc: 215.8 - 215.81 Foliation>> QZ-band										
216.30	**233.00**	**RHYvl** **Lapilli tuff**										
		216.3 - 233: Variation in alteration intensity from moderate CL to moderate MU and lpl composition from rhyolitic to lithic (?)										
		<<Min: 226.6 - 233 10% Min: Calcite>>										
		<<Alt: 216.3 - 233 Moderate (Alt) Muscovite>> Original ateration?										
		<<Vein: 225.6 - 226.4 40% Tourmaline>> TR-QZ-CA veins along fracture that is oblique to core axis										
		<<Struc: 217 - 217.01 Foliation>> MU band										

Project: **KZK** **Hole Number:** **K15-216**

From (m)	To (m)	Rocktype & Description
		<<Struc: 218.8 - 218.9 Strong (Alt) Fault>> weak-moderate fault gouge zone
		<<Struc: 221.46 - 221.47 Foliation>> elongated lpl
		<<Struc: 221.87 - 221.88 Foliation>> elongated lpl
		<<Struc: 226.1 - 226.6 Moderate (Alt) Fault>> weak-moderate faulted zone
		<<Struc: 229.24 - 229.25 Foliation>> elongated lpl
		<<Struc: 232.84 - 232.85 Foliation>> elongated lpl
		End of Hole @ 233

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-216W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	18-Aug-15
UTM Easting	414845.596	Core Size:	HQ3	Azimuth:	195	Date Logging Complete:	19-Aug-15
UTM Northing:	6815743.656	Casing Pulled?:	Yes	Dip:	-61	Drill Company:	Geotech
UTM Elev. (m):	1394.852	Casing Depth (m):	121.5	Length (m):	182	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	16-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	18-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
Comments:						Parent Hole:	K15-216

K15-216W1 wedged off K15-216 at 121.5 m depth to collect a sample of the MET6 Domain.
Unaltered felsic volcanics occur from 121.5 -134 m with strong to intense faulting from 134-169.8 m. Altered and/or faulted felsic volcanics occur from 134-155.2 m, with two carbonaceous horizons. MU-alteration increases in intensity from 136.1-155.2 m in proximity to a MSXS horizon from 155.2-158 m consisting of the OD ore type. Strong to intensely faulted and MU-altered felsic volcanics occur from 158 - 166.7 m followed by MSXS lens consisting of OD, OA, OB, and OJ ore types to 177.1 m. Alteration decreases in intensity from moderate-strong CL-alteration to moderate MU-alteration over an ~6 m interval from 173.1 - 178.9 m. CA-CL-BI altered MAFi occurs from 178.9 - 182 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.24	0	180.24	APS	Geotech	16-Aug-15		☑	Values copied from K15-216
26	-63.1	161.3	22.5	183.8	ReflexEZS	Geotech	13-Aug-15	5782	☑	Values copied from K15-216
50	-62.6	162.6	22.5	185.1	ReflexEZS	Geotech	13-Aug-15	5752	☑	Values copied from K15-216
71	-62.1	161.4	22.5	183.9	ReflexEZS	Geotech	14-Aug-15	5786	☑	Values copied from K15-216
98	-62.6	163.9	22.5	186.4	ReflexEZS	Geotech	14-Aug-15	5754	☑	Values copied from K15-216
121.7	-61.1	170	22.5	192.5	ReflexEZS	Geotech	16-Aug-15	5850	☑	Wedge start; value copied from first wedge survey at 149m
149	-61.1	170	22.5	192.5	ReflexEZS	Geotech	16-Aug-15	5850	☑	
182	-62.1	166.7	22.5	189.2	ReflexEZS	Geotech	18-Aug-15	5622	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

121.70 128.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

121.7 - 128.2: RHYcw with some layers of RHYt

<<Min: 121.7 - 136.1 2% Min: Pyrite>>

<<Min: 121.7 - 136.1 2% Min: Pyrrhotite>>

128.20 136.10 RHYvl Lapilli tuff

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 134 - 136.7 Strong (Alt) Fault>> dry gouge zone

136.10 138.10 MDSt Rhyolite tuff dominant mudstone

<<Min: 136.1 - 155.2 1% Min: Pyrite>>

<<Alt: 136.1 - 138.1 Weak-Moderate (Alt) Muscovite>>

<<Struc: 138 - 144.2 Moderate (Alt) Fault>> fault zone with MU fracture surface

138.10 143.40 RHY undifferentiated rhyolite

138.1 - 143.4: Texture obscured by MU-alteration and faulting

<<Alt: 138.1 - 147.2 Moderate-Strong (Alt) Muscovite>>

143.40 147.20 MDSt Rhyolite tuff dominant mudstone

143.4 - 147.2: Carbonaceous content ~10%. Unit is moderately faulted.

<<Struc: 144.2 - 147.6 Moderate-Strong (Alt) Fault>> fault zone

147.20 155.20 RHY undifferentiated rhyolite

From (m)	To (m)	Width
150.20	151.20	1.00

147.2 - 155.2: Texture is completely obliterated by alterationa and strong-intense faulting, with fault gouge.

	From (m)	To (m)	Width
<<Alt: 147.2 - 155.2 Strong (Alt) Muscovite>> MU makes up a large amount of the clay fault gouge	151.20	152.20	1.00
<<Struc: 147.6 - 154.7 Strong (Alt) Fault>> fault zone with zones of MU fault gouge	152.20	153.20	1.00
<<Struc: 148.5 - 148.51 Strong (Alt) Fault>> MU-cleavage in fault zone	153.20	154.20	1.00
<<Struc: 149.8 - 149.81 Strong (Alt) Fault>> MU-cleavage in fault zone	154.20	155.20	1.00

<<Struc: 153.4 - 153.41 Strong (Alt) Fault>> MU-cleavage in fault zone

<<Struc: 154.7 - 155.2 Intense (Alt) Fault>> wet fault gouge with some 1 mm-1 cm clasts in clay gouge

155.20 158.00 OD Brecciated sulphides FMG

From (m)	To (m)	Width
155.20	156.00	0.80

155.2 - 158: Brecciated MSXS with pyritic groundmass. MSXS clasts are poorly sorted and sub angular. Clast sizes vary from 1 mm-10 cm.

	From (m)	To (m)	Width
<<Struc: 155.2 - 155.21 Contact>> contact of faulted RHY and MSXS (OD)	156.00	157.00	1.00
<<Struc: 157.8 - 160.2 Intense (Alt) Fault>> wet fault gouge with some 1 mm-1 cm clasts in clay gouge	157.00	158.00	1.00

158.00 166.70 RHY undifferentiated rhyolite

From (m)	To (m)	Width
158.00	159.00	1.00

158 - 166.7: strong-intensely faulted felsic material. Sections are completely wet fault gouge with small ~1 mm-1 cm clasts within. Other sections are dry fault gouge.

	From (m)	To (m)	Width
<<Min: 158 - 166.7 2% Min: Pyrite>>	159.00	160.00	1.00
<<Alt: 158 - 166.7 Intense (Alt) Muscovite>> MU makes up a large amount of the fault gouge	160.00	161.00	1.00

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 160.2 - 166.7 Strong (Alt) Fault>> faulted zone with some wet and dry gouge					161.00	162.00	1.00						
<<Struc: 165.8 - 165.81 Strong (Alt) Fault>> MU-cleavage in RHY					162.00	163.00	1.00						
					163.00	164.00	1.00						
					164.00	165.00	1.00						
					165.00	166.00	1.00						
					166.00	166.70	0.70						
166.70	**169.80**	**OD**	**Brecciated sulphides**	**MG**	166.70	167.50	0.80						
166.7 - 169.8: Brecciated MSXS with sub-angular, poorly sorted clasts ranging from 1 mm-10 cm. Sections of this unit are un-fractured.Groundmass of clasts is MSXS.													
					167.50	168.30	0.80						
					168.30	169.10	0.80						
					169.10	169.80	0.70						
169.80	**171.50**	**OA**	**Magnetite bearing sulphides**	**MCG**	169.80	170.80	1.00						
169.8 - 171.5: Magnetite-bearing MSXS dominated by PY.													
<<Alt: 171.3 - 172.2 Moderate-Strong (Alt) Chlorite>> patchy CL in MSXS					170.80	171.50	0.70						
171.50	**175.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	171.50	172.50	1.00						
171.5 - 175.3: wispy laminated MSXS with bands of SP+/-GL. Non-magnetite bearing.													
<<Min: 171.5 - 175.3 15% Min: Sphalerite>>					172.50	173.50	1.00						
					173.50	174.50	1.00						
					174.50	175.30	0.80						
175.30	**177.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		175.30	176.30	1.00						
175.3 - 177.1: Disseminated to banded PY+SP+CP+/-GL in CL-MU altered host schist													
<<Alt: 175.3 - 177.1 Moderate (Alt) Chlorite>>					176.30	177.10	0.80						
<<Alt: 175.3 - 178.9 Moderate (Alt) Muscovite>>													
177.10	**178.90**	**RHY**	**undifferentiated rhyolite**		177.10	178.10	1.00						
177.1 - 178.9: MU-altered silicieous RHY. Texture is obscured by alteration.													
<<Min: 177.1 - 178.9 2% Min: Pyrite>>					178.10	178.90	0.80						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 178 - 178.7 Weak-Moderate (Alt) Fault>> faulted zone									
178.90	**182.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	178.90	179.90	1.00						
		178.9 - 182: CL-CA-BI banded mafic sill									
		<<Min: 178.9 - 182 1% Min: Pyrite>>	179.90	180.90	1.00						
		<<Min: 178.9 - 182 15% Min: Calcite>> CA bands in mafic sill	180.90	181.90	1.00						
		<<Alt: 178.9 - 182 Moderate-Strong (Alt) Chlorite>>									
		<<Alt: 178.9 - 182 Moderate (Alt) Biotite>>									
End of Hole @ 182											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-217

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	07-Nov-15
UTM Easting	415455	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	07-Nov-15
UTM Northing:	6816730	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1387.66	Casing Depth (m):	10	Length (m):	10	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	13-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-217 was drilled as a monitoring well.
K15-217 drilled 10 m into overburden. No core recovered.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.00**	**OVBN Overburden**									
0 - 10: No core recovered											
End of Hole @ 10											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-218

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	14-Aug-15
UTM Easting	414677.716	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	16-Aug-15
UTM Northing:	6815353.816	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1424.351	Casing Depth (m):	9	Length (m):	81	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	14-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Resource infill to confirm extension of massive sulphide lens to below the base of the gravels. Planned as shallow hole to test oxidized/transitional sulphide at the base of the gravel overburden. Massive sulphide interval is present as three distinct lenses between 9.4m to 35m, spaced by metamorphosed felsic volcaniclastic/coherent rocks. The ore zone and structural hangingwall and footwall rocks exhibit moderate to strong syngenetic muscovite and lack presence of chlorite or cordierite alteration mineralization. The structural footwall is composed predominantly of glassy, felsic aphanitic dike with short intervals of silicified felsic volcaniclastic and felsic flow textured rocks. The ore zones are predominantly wispy, buckshot textured (OB) massive sulphides, dominated by pyrite, galena, sphalerite and isolated sulphosalts. From 17.6m to 18.2m there is chalcopyrite rich ore (OG) and from 21m to 21.7m there is magnetite bearing sulphide. The grey aphanitic dike hosts veins that contain quartz, carbonate,pyrite, galena, sphalerite.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180	0	180	APS	David Nuttal	14-Aug-15		☑	
39	-59.6	159.8	22.5	182.3	ReflexEZS	Geotech	15-Aug-15	5739	☑	
63	-63	160.6	22.5	183.1	ReflexEZS	Geotech	15-Aug-15	5750	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**OVBN**	**Overburden**									
9.00	**9.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **medium grey**									
<<Min: 9 - 9.4 1% Min: Pyrite>>												
<<Min: 9 - 17.6 2% Min: Calcite>>												
<<Alt: 9 - 9.4 Weak (Alt) Muscovite>>												
9.30	**14.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	9.40	10.30	0.90	B00265022	253	1.81	0.27	3.29	9.21
9.3 - 14.3: Medium grained to coarse grained. Minerals: pyrite, galena, sphalerite.												

From (m)	To (m)		Rocktype & Description	
			<<Alt: 13.8 - 17.1 Weak-Moderate (Alt) Muscovite>>	
			<<Vein: 13.8 - 14.8 85% Quartz>>	
14.30	**17.10**	**RHYv**	**Rhyolite volcaniclastic**	**dark grey**
			14.3 - 17.1: Interval intercepted by >10cm diameter quartz/carbonate veins.	
			<<Struc: 16 - 16.1 Fault>>	
17.10	**17.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	
17.60	**18.20**	**OG**	**Chalcopyrite rich sulphides**	
			<<Min: 17.6 - 36.3 1% Min: Calcite>>	
18.20	**20.90**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**
			<<Min: 18.2 - 20.9 0.5% Min: Pyrite>>	
			<<Alt: 18.2 - 20.9 Moderate (Alt) Muscovite>>	
20.90	**21.70**	**OA**	**Magnetite bearing sulphides**	
			20.9 - 21.7: Magnetite present at 5%	
21.70	**26.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	
			21.7 - 26.7: In decreasing abundance: Pyrite, galena, sphalerite, chalcopyrite.	
26.70	**27.20**	**RHYv**	**Rhyolite volcaniclastic**	
			26.7 - 27.2: Recovery poor; approximately 30%	
			<<Min: 26.7 - 27.2 5% Min: Pyrite>> Very poor recovery in this section. Confidence in estimates is low,.	
			<<Min: 26.7 - 27.2 5% Min: Galena>>	
			<<Alt: 26.7 - 27.2 Weak (Alt) Muscovite>>	

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
10.30	11.30	1.00	B00265023	259	2.52	0.61	2.01	6.95
11.30	12.30	1.00	B00265024	147	2.05	0.37	1.69	6.91
12.30	13.20	0.90	B00265025	225	1.95	0.26	2.03	6.93
13.20	14.00	0.80	B00265026	149	1.79	0.22	1.62	4.08
14.00	15.00	1.00	B00265027	7.2	0.032	-0.01	0.14	0.52
15.00	16.00	1.00	B00265028	1	0.005	-0.01	0.01	0.26
16.00	17.10	1.10	B00265029	59	0.264	0.04	0.87	1.96
17.10	17.60	0.50	B00265032	86.9	0.572	0.04	1.42	5.49
17.60	18.20	0.60	B00265033	364	3.9	14	0.31	1.48
18.20	19.30	1.10	B00265034	19.4	0.113	0.7	0.01	0.17
19.30	20.00	0.70	B00265035	5.9	0.038	0.02	0.01	0.06
20.00	20.90	0.90	B00265036	19.3	0.761	0.75	0.01	0.12
20.90	21.70	0.80	B00265037	171	8.44	4.67	0.47	2.1
21.70	22.70	1.00	B00265038	176	2.36	0.58	1.19	4.44
22.70	23.70	1.00	B00265039	141	2.06	0.43	1.48	7.35
23.70	24.70	1.00	B00265041	182	1.61	0.28	3.66	13
24.70	25.70	1.00	B00265042	71.6	1.11	0.12	2.35	12.3
25.70	26.70	1.00	B00265043	121	0.693	0.16	2.99	11.1
26.70	27.20	0.50	B00265044	110	0.653	0.13	2.1	5.33

From (m)	To (m)	Rocktype & Description
27.20	**35.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Struc: 33.9 - 34 Fault>>		
35.00	**75.60**	**RHYi** **Aphanitic Rhyolite (intrusion)** **dark grey**
35 - 75.6: Interval contains evidence for small (<30cm) sections of felsic flow +/- felsic volcaniclastic rocks overprinted (silicified) by felsic intrusion that dominates the interval.		
<<Min: 35 - 44.5 1% Min: Pyrite>>		
<<Min: 36.3 - 42 0.5% Min: Calcite>>		
<<Min: 42 - 49.2 4% Min: Calcite>>		
<<Min: 44.5 - 50 1% Min: Sphalerite>>		
<<Min: 44.5 - 50 2% Min: Pyrite>>		
<<Min: 44.5 - 50 0.5% Min: Galena>>		
<<Min: 49.2 - 55.1 2% Min: Calcite>>		
<<Min: 50 - 81 1% Min: Pyrite>>		
<<Min: 50 - 81 0.5% Min: Pyrrhotite>>		
<<Min: 55.1 - 75.6 3% Min: Calcite>>		
<<Alt: 35 - 38 Weak (Alt) Muscovite>>		
<<Alt: 38 - 81 Moderate (Alt) Silicification>>		
<<Struc: 37 - 37.1 Foliation>>		
<<Struc: 48.2 - 48.4 Foliation>>		
<<Struc: 50.4 - 51 Foliation>>		
<<Struc: 69 - 69.1 Foliation>>		
75.60	**76.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**
<<Min: 75.6 - 76 10% Min: Calcite>>		
<<Min: 76 - 80 2% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
27.20	28.20	1.00	B00265045	273	1.83	0.41	3	10.7
28.20	29.20	1.00	B00265046	126	0.884	0.18	2.88	10.8
29.20	30.20	1.00	B00265047	203	1.56	0.46	1.8	10.2
30.20	31.20	1.00	B00265048	175	1.7	0.44	3.08	8.82
31.20	32.20	1.00	B00265049	248	2.25	0.72	3.32	7.39
32.20	33.20	1.00	B00265052	231	2.14	0.62	2.11	7.47
33.20	34.20	1.00	B00265053	167	1.58	0.37	1.72	4.47
34.20	35.00	0.80	B00265054	191	0.87	0.2	2.65	7.11
35.00	36.50	1.50	B00265055	2.8	0.017	-0.01	0.04	0.08
36.50	38.00	1.50	B00265056	2	0.013	-0.01	0.04	0.06
38.00	39.50	1.50	B00265057	1.5	0.012	-0.01	0.02	0.03

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 75.6 - 76 Moderate (Alt) Chlorite>>												
76.10	**80.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
80.00	**81.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
80 - 81: Silicified by adjacent felsic dike.												
<<Struc: 80.5 - 81 Foliation>>												
End of Hole @ 81												

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-219

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	08-Nov-15
UTM Easting	415850	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6816872	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1463.67	Casing Depth (m):	9	Length (m):	30	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	14-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Aug-15
Local Elev. (m):						Purpose:	Hydro
						Parent Hole:	

Comments:

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-219 was drilled as a monitoring well.
K15-219 encountered carbonaceous mudstone throughout the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**9.00**	**OVBN** **Overburden**
9.00	**30.00**	**MDSc** **Carbonaceous dominant mudstone**

9 - 30: Carbonaceous mudstone with blebs of CA+AK

<<Min: 9 - 30 15% Min: Calcite>>
<<Vein: 11.75 - 11.9 60% Quartz>> Massive QZ+CA+AK vein
<<Vein: 13.45 - 13.65 100% Quartz>> Massive QZ+carbonate vein
<<Vein: 18.1 - 18.5 100% Quartz>> Massive QZ+carbonate vein
<<Vein: 18.8 - 19.1 100% Quartz>> Massive QZ+carbonate vein
<<Vein: 19.3 - 19.6 100% Quartz>> Massive QZ+carbonate vein
<<Vein: 24.75 - 24.95 100% Quartz>> Massive QZ+AK vein

End of Hole @ 30

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-220

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	07-Nov-15
UTM Easting	415782	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	07-Nov-15
UTM Northing:	6816158	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1451.17	Casing Depth (m):	5.9	Length (m):	33	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Aug-15
Local Elev. (m):						Purpose:	Hydro
						Parent Hole:	

Comments:

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-220 was drilled as monitoring well.
K15-220 encountered an ash tuff from 11.8-24 m, followed by a calcareous mudstone to a depth of 27.6 m. From 27.6-33 m a lpl tuff is encountered.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description
0.00	**11.80**	**OVBN** **Overburden**
11.80	**24.00**	**RHYva** **Coarse grained to ash tuff**
		11.8 - 24: Grey, fine grained, ash tuff with disseminated euhedral BI and fracture-filling CA
		<<Min: 11.8 - 24 5% Min: Calcite>>
24.00	**27.60**	**MDSc** **Carbonaceous dominant mudstone**
		24 - 27.6: Black carbonaceous mudstone with banded CA
		<<Min: 24 - 27.6 10% Min: Calcite>>
27.60	**33.00**	**RHYvl** **Lapilli tuff**
		27.6 - 33: Grey, lpl tuff, with CL and calcareous lpl in fine grained grey-green (CL?) ash tuff. Dissemiated euhedral BI. Local QZ eyes?
		<<Min: 27.6 - 33 15% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

Project: **KZK** **Hole Number:** **K15-220**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 33									

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-221

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	16-Aug-15
UTM Easting	414675.698	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	17-Aug-15
UTM Northing:	6815358.001	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1424.236	Casing Depth (m):	9	Length (m):	44	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	16-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	16-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
Comments:						Parent Hole:	K15-218

Twin of ABM79 to collect oxidised sample of MET5 domain, planned to drill a minimum of 5 m into the footwall. This hole was added to increase MET spatial coverage.
A massive sulphide interval is present as two distinct lenses between 9.4m to 35m, separated by metamorphosed felsic volcaniclastic/coherent rocks. The ore zone and structural hangingwall and footwall rocks exhibit moderate to strong syngenetic muscovite and lack chlorite or cordierite alteration/mineralization. The structural footwall is composed predominantly of a glassy, felsic aphanitic dike with short intervals of silicified felsic volcaniclastic and felsic flow textured rocks. This dike hosts veins that contain quartz, carbonate, pyrite, galena, sphalerite. The ore zones are predominantly wispy, buckshot textured (OB) massive sulphides, dominated by pyrite, galena, sphalerite and isolated sulphosalts. From 17.6m to 18.2m there is chalcopyrite rich ore (OG) and from 21m to 21.7m there is magnetite bearing sulphide.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180	0	180	APS	David Nuttal	16-Aug-15		☑	
44	-61	160.2	22.5	182.7	ReflexEZS	Geotech	16-Aug-15	5731	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.83**	**OVBN Overburden**	8.80	9.40	0.60						
8.83	**9.40**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey**									
8.83 - 9.4: Casing											
<<Min: 8.83 - 9.4 0.5% Min: Pyrite>>											
9.40	**15.50**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	9.40	10.40	1.00						
9.4 - 15.5: Visibly decreasing abundance: Pyrite, sphalerite, galena.+/- very localized magnetite clots.											
			10.40	11.40	1.00						
			11.40	12.40	1.00						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
					12.40	13.40	1.00						
					13.40	14.40	1.00						
					14.40	15.50	1.10						
15.50	**22.30**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	15.50	16.50	1.00						
15.5 - 22.3: +/- lapilli?													
<<Min: 15.5 - 17 2% Min: Galena>>					16.50	17.50	1.00						
<<Min: 15.5 - 17 1% Min: Barite>>					17.50	18.50	1.00						
<<Min: 15.5 - 22.3 1% Min: Pyrite>>					18.50	19.50	1.00						
<<Alt: 15.5 - 18.9 Weak-Moderate (Alt) Muscovite>>					19.50	20.50	1.00						
<<Alt: 18.9 - 22.3 Moderate (Alt) Muscovite>>					20.50	21.50	1.00						
<<Vein: 15.5 - 16.9 99% Quartz>>					21.50	22.30	0.80						
22.30	**22.60**	**OI**	**Heavilly disseminated sulphides in host schist**		22.30	22.60	0.30						
22.3 - 22.6: Sulphides appear to be ripped up and mixed with adjacent unit in structural hanging wall rather than disseminated.													
22.60	**26.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		22.60	23.60	1.00						
					23.60	24.60	1.00						
					24.60	25.60	1.00						
					25.60	26.30	0.70						
					26.30	26.80	0.50						
26.80	**28.50**	**OA**	**Magnetite bearing sulphides**		26.80	27.80	1.00						
					27.80	28.50	0.70						
28.50	**29.00**	**OI**	**Heavilly disseminated sulphides in host schist**		28.50	29.00	0.50						
<<Vein: 28.5 - 28.8 95% Quartz-Carbonate-Sulphide>>													
29.00	**35.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		29.00	30.00	1.00						
					30.00	31.00	1.00						
					31.00	32.00	1.00						

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
				32.00	33.00	1.00						
				33.00	34.00	1.00						
				34.00	35.00	1.00						
				35.00	35.30	0.30						
35.30	**37.90**	**RHYi**	**Aphanitic Rhyolite (intrusion)** **grey-green**	35.30	36.30	1.00						
<<Min: 35.3 - 44 1% Min: Pyrite>>				36.30	37.30	1.00						
<<Min: 35.3 - 44 0.25% Min: Pyrrhotite>>				37.30	37.90	0.60						
<<Min: 35.3 - 44 0.25% Min: Galena>>												
<<Alt: 35.3 - 37.9 Weak (Alt) Muscovite>>												
<<Alt: 35.3 - 41 Weak-Moderate (Alt) Silicification>>												
37.90	**38.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **cream**	37.90	38.50	0.60						
37.9 - 38.5: Silicified.												
<<Alt: 37.9 - 44 Trace (Alt) Muscovite>>												
38.50	**44.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)** **dark grey**	38.50	39.50	1.00						
<<Alt: 41 - 44 Moderate-Strong (Alt) Silicification>>				39.50	40.50	1.00						

End of Hole @ 44

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-222

Prospect:	Infrst	Hole Type:	DD	Survey Type:	GPS-LIDAR	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:		Date Logging Start:	07-Nov-15
UTM Easting	416314	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	07-Nov-15
UTM Northing:	6816049	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1465.24	Casing Depth (m):	5	Length (m):	18	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Aug-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	16-Aug-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

Northing and easting coordinates are provided by Tetra Tech, and were measured with a hand-held GPS unit. Elevation value was not measured when hole was drilled; the recorded value is taken from the drill plan.
K15-222 was drilled as a monitoring well.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	UNKN				☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 5.20 OVBN Overburden

5.20 10.60 MDSc Carbonaceous dominant mudstone

5.2 - 10.6: Black carbonaceous mudstone with blebby CA

<<Min: 5.2 - 14.4 1% Min: Calcite>>

<<Min: 5.2 - 14.4 5% Min: Ankerite>>

<<Vein: 7.9 - 8 100% Calcite>> Massive CA vein (OVBN?)

10.60 11.20 MAFta Coarse grained to ash tuff

10.6 - 11.2: Fine grained green ash tuff (?)

11.20 13.20 MDSt Rhyolite tuff dominant mudstone

11.2 - 13.2: Mixed carbonaceous sediment and fine grained green ash (?)

From (m)	To (m)	Rocktype & Description
13.20	**14.00**	**MAFta** **Coarse grained to ash tuff**
13.2 - 14: Fien grained green ash tuff (?)		
14.00	**14.40**	**MDSc** **Carbonaceous dominant mudstone**
14 - 14.4: Black, mixed carbonaceous mudstone and green ash tuff (?)		
14.40	**18.00**	**MAFta** **Coarse grained to ash tuff**
14.4 - 18: Fine grained CL+BI+QZ schist, with heavily disseminated BI porphyroblasts and local calcareous lpl.		
<<Min: 14.4 - 18 3% Min: Calcite>>		
End of Hole @ 18		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-223

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	18-Aug-15
UTM Easting	414752.647	Core Size:	NQ3	Azimuth:	180.8	Date Logging Complete:	19-Aug-15
UTM Northing:	6815349.063	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1408.797	Casing Depth (m):	9	Length (m):	71	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	18-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of this drill hole was to determine if the massive sulphide zone comes to surface in this location and to see if the OH zone above the OA and OB zones of K95-081 is present in this area. Results showed that the massive sulphide zone comes to surface at 6815350 mN along the 414750 mE section and that the OH zone in K95-081 is absent at this location.
Overburden extends from surface to 9 m. Below that depth, the hole intersected OA massive sulphide from 9.0-14.0 m, OB massive sulphide from 9-14 m, variably strained RHYi aphanitic rhyolite intrusive from 16.3-50.92 m, MAFi mafic sill from 50.92-59.52 m, and RHYva rhyolitic ash tuff from 59.52-65.2. The total thickness of the massive sulphide intercept is 7.3 m. A strong to intense overprint of silicification and weak to moderate muscovite alteration dominates the RHYi unit. The upper portion of the MAFi unit is intensely silicified and moderately muscovitized. The MAFi unit has moderate pervasive chlorite/biotite alteration. The RHYva unit has been weakly to moderately overprinted by muscovite. The presence of the RHYi unit directly below the massive sulphide zone and the lack of an intense restricted or proximal alteration zone may indicate that the felsic intrusive truncated the bottom of the syngenetic alteration zone. A small section of rubbly massive sulphide from 59.93-60.0 is due to caving of ore zone when the drill bit was changed. Poor recoveries were achieved during the drilling of the massive sulphide zone in this hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.8	0	180.8	APS	Cooper Campbell	16-Aug-15		☑	
35	-69.1	163.6	22.5	186.1	ReflexEZS	Geotech	17-Aug-15	5749	☑	
70	-68.9	164.9	22.5	187.4	ReflexEZS	Geotech	17-Aug-15	5745	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**OVBN** **Overburden**										
9.00	**14.00**	**OA** **Magnetite bearing sulphides**	**CG**	9.00	10.00	1.00	B00266501	83.8	0.62	0.07	2.37	9.73
<<Struc: 10.89 - 10.9 dominant foliation>>				10.00	11.00	1.00	B00266502	71.9	0.446	0.11	1.42	6.58
<<Struc: 13.94 - 13.95 dominant foliation>>				11.00	14.00	3.00	B00266503	151	0.892	0.37	2.64	8.56
14.00	**16.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**	14.00	15.00	1.00	B00266504	151	1.86	0.23	2.62	7.86
				15.00	16.30	1.30	B00266505	90.4	0.758	0.01	1.85	6.15
16.30	**50.92**	**RHYi** **Aphanitic Rhyolite (intrusion)**		16.30	17.80	1.50	B00266506	6.8	0.049	-0.01	-0.01	0.04

From (m)	To (m)	Rocktype & Description
		<<Min: 16.3 - 20.3 0.5% Min: Pyrite>>
		<<Min: 16.3 - 20.3 3% Min: Calcite>>
		<<Min: 20.3 - 26.2 0.25% Min: Pyrite>>
		<<Min: 20.3 - 38.49 1% Min: Calcite>>
		<<Min: 26.2 - 38.49 0.5% Min: Pyrite>>
		<<Min: 34.86 - 50.92 0.01% Min: Sphalerite>>
		<<Min: 38.49 - 49.38 0.25% Min: Pyrite>>
		<<Min: 38.49 - 50.92 0.01% Min: Galena>>
		<<Min: 38.49 - 50.92 0.25% Min: Calcite>>
		<<Min: 49.38 - 56.47 2% Min: Pyrite>>
		<<Alt: 16.3 - 20.3 Strong (Alt) Silicification>>
		<<Alt: 16.3 - 20.3 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 20.3 - 23.33 Intense (Alt) Silicification>>
		<<Alt: 20.3 - 56 Weak (Alt) Muscovite>>
		<<Alt: 23.33 - 31.75 Moderate-Strong (Alt) Silicification>>
		<<Alt: 31.75 - 33.47 Intense (Alt) Silicification>>
		<<Alt: 33.47 - 38.49 Strong (Alt) Silicification>>
		<<Alt: 38.49 - 46.47 Intense (Alt) Silicification>>
		<<Alt: 46.47 - 58.39 Strong (Alt) Silicification>>
		<<Struc: 16.87 - 16.88 dominant foliation>>
		<<Struc: 19.92 - 19.93 dominant foliation>>
		<<Struc: 31.48 - 31.49 dominant foliation>>
		<<Struc: 34.94 - 34.95 dominant foliation>>
		<<Struc: 36.56 - 36.57 dominant foliation>>
		<<Struc: 37.92 - 37.93 dominant foliation>>
		<<Struc: 40.89 - 40.9 dominant foliation>>
		<<Struc: 43.88 - 43.89 dominant foliation>>
		<<Struc: 46.87 - 46.88 dominant foliation>>
		<<Struc: 48.3 - 49.1 Moderate (Alt) Fault>> Broken rock and fault gouge locally
50.92	**59.52**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 50.92 - 55.43 1% Min: Sphalerite>>
		<<Min: 50.92 - 55.43 0.01% Min: Galena>>
		<<Min: 50.92 - 55.43 0.01% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.80	19.30	1.50	B00266507	1.5	0.01	0.07	-0.01	0.02
19.30	20.80	1.50	B00266508	1.4	0.007	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description

<<Min: 50.92 - 56 5% Min: Calcite>>
<<Min: 56 - 59.52 0.25% Min: Calcite>>
<<Min: 56.47 - 71 0.25% Min: Pyrite>>
<<Alt: 56 - 58.39 Weak-Moderate (Alt) Muscovite>>
<<Alt: 58.39 - 59.52 Intense (Alt) Silicification>>
<<Alt: 58.39 - 59.65 Moderate (Alt) Muscovite>>
<<Struc: 55.73 - 55.74 dominant foliation>>
<<Struc: 58.95 - 58.96 dominant foliation>>

59.52 65.20 RHYva Coarse grained to ash tuff

<<Min: 59.52 - 65.2 7% Min: Calcite>>
<<Alt: 59.65 - 65.2 Moderate (Alt) Chlorite>>
<<Alt: 59.65 - 65.2 Weak-Moderate (Alt) Biotite>>
<<Struc: 61.75 - 61.76 dominant foliation>>
<<Struc: 64.67 - 64.68 dominant foliation>>

65.20 71.00 RHYva Coarse grained to ash tuff

<<Min: 65.2 - 71 2% Min: Calcite>>
<<Min: 69.4 - 71 0.01% Min: Sphalerite>>
<<Alt: 65.2 - 71 Weak-Moderate (Alt) Muscovite>>
<<Struc: 70.66 - 70.67 dominant foliation>>

End of Hole @ 71

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-224

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	20-Aug-15
UTM Easting	419404.222	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	24-Aug-15
UTM Northing:	6813275.77	Casing Pulled?:	No	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1354.779	Casing Depth (m):	2	Length (m):	351	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Southernmost hole on Section 419400E. Intended as fill-in hole for resource on GP4F, and should be similar to K98-188.
The hole intersected the GP4F Zone from 91.30 to 99.0, semi-massive sulphide from 95.8 to 99, strongly faulted and poor core recovery. Second zone at 154 consists of two 1m zones of 5-10% PY-SP-GLand CL-CI alteration separated by a mafic dyke.
Overall, the hole consists of metamorphic rocks of sedimentary and intrusive (feldspar and quartz porphyry) affinity in the upper 80 m, felsic volcanic rocks from 80-206 m, and sedimentary rocks to bottom. Faulting is common, particularly in the lower half of the hole where the faults appear to be carbonaceous though not conductive.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Murray Jones	18-Aug-15		☐	
22.5	-69	165	22.4	187.4	ReflexEZS	Geotech	18-Aug-15	5752	☑	
49.5	-69.2	166.8	22.4	189.2	ReflexEZS	Geotech	18-Aug-15	5754	☑	
76.5	-68.9	164.9	22.4	187.3	ReflexEZS	Geotech	19-Aug-15	5734	☑	
102	-68.8	164.4	22.4	186.8	ReflexEZS	Geotech	19-Aug-15	5764	☑	
150	-68.7	167.3	22.4	189.7	ReflexEZS	Geotech	19-Aug-15	5744	☑	
158	-69.4	191.7	22.4	214.1	ReflexEZS	Geotech	22-Aug-15	6009	☐	Magnetic field is high, likely results in incorrect azimuth
174	-68.6	166.8	22.4	189.2	ReflexEZS	Geotech	20-Aug-15	5713	☑	
234	-68.4	168.9	22.4	191.3	ReflexEZS	Geotech	20-Aug-15	5727	☑	
273	-68.2	165.7	22.4	188.1	ReflexEZS	Geotech	20-Aug-15	5716	☑	
300	-67.8	165.6	22.4	188	ReflexEZS	Geotech	22-Aug-15	5717	☑	
342	-70.7	169.9	22.4	192.3	ReflexEZS	Geotech	23-Aug-15	5733	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**2.00**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

2.00 13.10 RHYi Aphanitic Rhyolite (intrusion)

2 - 13.1: similar to Glassy dyke in ABM section, green-grey alteration locally, bleaching around QV's, lge QV's included

<<Min: 2 - 13.1 0.01% Min: Pyrite>> rare

<<Alt: 2 - 8.5 Weak-Moderate (Alt) Silicification>> glassy portion

<<Alt: 8.5 - 10.3 Weak (Alt) Muscovite>> mostly in fractures

<<Alt: 10.3 - 13.1 Weak (Alt) Muscovite>>

<<Alt: 10.3 - 13.1 Moderate (Alt) Biotite>> fractures

<<Vein: 2.5 - 4.5 100% Quartz>> bull QZ vein, broken to bottom, lost core

13.10 43.20 SED undifferentiated Sediment dark grey FG

13.1 - 43.2: BI pblasts consistent t/o unit, TO pblasts also?, harder to ID but visible on fractures, variable colour, MU in bands vary in yellowy green bands common, multiple dark BI (CA) rich dykes cut through with some dark colouration of wall rock common. Locally, small sections of siliceous, lt coloured rock, flow banded?- felsic component? Maybe a tuffaceous/sedimentary mix - porphyry unit?

<<Min: 13.1 - 27.5 0.1% Min: Calcite>> fractures

<<Min: 13.1 - 32.3 0.01% Min: Pyrite>> quite rare, locally on fol'n

<<Min: 27.5 - 29.8 8% Min: Calcite>> diss'd in groundmass

<<Min: 32.3 - 34.3 0.01% Min: Pyrrhotite>> in mx TO vein, minor Diss'ns

<<Min: 32.3 - 34.3 10% Min: Calcite>> to pervasive locally

<<Min: 34.3 - 42.3 0.01% Min: Pyrrhotite>> scattered

<<Min: 34.3 - 43.2 0.01% Min: Pyrite>>

<<Min: 34.3 - 43.2 0.1% Min: Calcite>> local fractures

<<Alt: 22 - 27.5 Weak-Moderate (Alt) Muscovite>> bands and lenses of lghter coloured, altered SCHS, MU visible on frac. On surfaces

<<Alt: 29.8 - 32.3 Trace (Alt) Muscovite>>

<<Alt: 34.3 - 43.2 Weak (Alt) Muscovite>> still gives streaky look to core

<<Vein: 14.2 - 14.7 95% Quartz 70 deg. >> bull QV

<<Struc: 15 - 15.1 Moderate (Alt) Fault>> gouge, broken core below

<<Struc: 26.9 - 27.5 Moderate (Alt) Fault>> gouge and broken core over interval, dyke below

<<Struc: 34.8 - 36 Moderate (Alt) Fault>>

43.20 46.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green MG

43.2 - 46.9: dark green/black bands, AC dominated rock, CL after AC, BI pblasts t/o, patches of fg BI, lt brown colour with coarse black pblasts (Cl?, TO?), local QZ-CA bands with AC, leucoxene scattered in patches.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 43.2 - 46.9 0.1% Min: Pyrite>> local									
		<<Min: 43.2 - 46.9 0.01% Min: Chalcopyrite>> rare									
		<<Min: 43.2 - 46.9 3% Min: Calcite>> veins									
		<<Alt: 43.2 - 46.9 Moderate (Alt) Chlorite>> after AC,									
46.90	**80.20**	**SED undifferentiated Sediment dark grey FMG**	79.70	80.90	1.20	B00269001	13.5	0.036	0.06	0.68	1.48
		46.9 - 80.2: lt grey to darker bands, MU in bands, locally pervasive gives patchy to banded appearance									
		<<Min: 46.9 - 50.8 1% Min: Calcite>>									
		<<Min: 46.9 - 63.4 0.01% Min: Pyrite>>									
		<<Min: 50.8 - 53.9 15% Min: Calcite>> to pervasive									
		<<Min: 53.9 - 61.2 0.1% Min: Calcite>>									
		<<Min: 61.2 - 62.3 15% Min: Calcite>> to pervasive, fractures									
		<<Min: 62.3 - 78.2 0.1% Min: Calcite>> fractures									
		<<Min: 63.4 - 72 2% Min: Pyrite>> locally 5%									
		<<Min: 72 - 74.4 0.5% Min: Pyrite>>									
		<<Min: 74.4 - 80.9 2% Min: Pyrite>> tends to occur in bands along fol'n									
		<<Min: 78.2 - 79.7 8% Min: Calcite>> dyke									
		<<Min: 79.7 - 82.3 2% Min: Sphalerite>> veins, bx filling, along fol'n									
		<<Min: 79.7 - 82.3 2% Min: Pyrite>> and fractures.									
		<<Min: 79.7 - 82.3 0.25% Min: Galena>>									
		<<Alt: 46.9 - 53.9 Weak (Alt) Muscovite>> bands									
		<<Alt: 53.9 - 63.4 Weak-Moderate (Alt) Muscovite>> still banded appearance									
		<<Alt: 63.4 - 74.4 Moderate (Alt) Muscovite>> to patchy									
		<<Alt: 74.4 - 80.9 Moderate-Strong (Alt) Muscovite>> strong fol'n, not in dyke									
		<<Struc: 74.9 - 74.91 Moderate (Alt) Foliation>>									
		<<Struc: 78 - 79.6 Moderate-Strong (Alt) Fault>> broken at top, gouge at bottom									
80.20	**89.90**	**RHYcq Quartz porphyry grey-brown**	80.90	82.30	1.40	B00269002	3.8	0.007	0.04	0.25	0.82
		80.2 - 89.9: abundant blue QZ eyes, clustered and scattered,									
		<<Min: 82.3 - 91.3 0.25% Min: Pyrite>> minor diss'ns	82.30	84.00	1.70	B00269003	0.5	-0.005	0.01	-0.01	0.14
		<<Alt: 80.9 - 82.3 Moderate (Alt) Silicification>> glassy sections	84.00	86.10	2.10	B00269004	1.9	0.008	0.11	0.02	0.31
		<<Alt: 80.9 - 82.3 Strong (Alt) Muscovite>> lt green colour, in groundmass, alt'n possibly cut off by fault on bottom	86.10	87.10	1.00	B00269005	2	0.006	0.03	-0.01	0.02
		<<Alt: 82.3 - 92.6 Moderate (Alt) Muscovite>> bands to patches	87.10	88.50	1.40	B00269006	0.8	0.016	0.03	-0.01	0.03
		<<Struc: 83.5 - 88.1 Strong (Alt) Fault>> very strong fault broken with abdt gouge t/o, solid gouge from 84-86.1m, poor core recovery	88.50	90.00	1.50	B00269007	0.9	-0.005	0.02	-0.01	0.14

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 86.99 - 87 Moderate-Strong (Alt) Foliation>> adjacent to Fault													
89.90	**95.80**	**SED**	**undifferentiated Sediment**	**grey-brown**	90.00	91.30	1.30	B00269008	0.7	-0.005	0.03	0.01	0.08
89.9 - 95.8: sulphide in upper section with SI, SP-PY-GL bands t/o, GA pblasts,in lower section													
<<Min: 91.3 - 92.6 8% Min: Sphalerite>> fol'n control					91.30	92.60	1.30	B00269009	15.5	0.034	0.18	0.77	4.06
<<Min: 91.3 - 92.6 5% Min: Pyrite>> some diis'd blebs, with CP					92.60	93.80	1.20	B00269011	4.4	0.012	0.07	0.56	0.97
<<Min: 91.3 - 92.6 2% Min: Galena>>					93.80	95.00	1.20	B00269012	1.4	-0.005	0.01	0.24	0.63
<<Min: 91.3 - 92.6 0.1% Min: Chalcopyrite>> scattered					95.00	95.75	0.75	B00269013	13.8	0.048	0.07	1.82	2.07
<<Min: 92.6 - 93.8 3% Min: Sphalerite>> as PY					95.75	96.00	0.25	B00269014	30	0.433	0.11	2.94	6.36
<<Min: 92.6 - 93.8 5% Min: Pyrite>> scattered along fol'n													
<<Min: 92.6 - 93.8 0.25% Min: Galena>> with PY, SP													
<<Min: 92.6 - 93.8 0.25% Min: Chalcopyrite>> blebs													
<<Min: 93.8 - 95.8 8% Min: Pyrite>> conc'd bands of PY wisps, blebs along fol'n, no other sx but matrix is dark, fg													
<<Alt: 91.3 - 92.6 Moderate (Alt) Silicification>> MU intervening, sulphide bands t/o													
<<Alt: 92.6 - 95.8 Moderate (Alt) Garnet>> pblasts up to 8 mm dia.													
<<Alt: 92.6 - 95.8 Moderate (Alt) Chlorite>> replaced and/or retrograde BI													
<<Alt: 92.6 - 95.8 Strong (Alt) Biotite>>													
<<Struc: 93 - 93.01 Moderate-Strong (Alt) Foliation>> sx/BI bands in proximal alteration													
<<Struc: 93.9 - 93.91 Moderate (Alt) Foliation>> poor continuity													
<<Struc: 94.3 - 94.9 Moderate (Alt) Fault>> crushed rock													
95.80	**99.00**	**OD**	**Brecciated sulphides**	**grey**	96.00	99.00	3.00	B00269015	104	0.301	0.13	2.24	5.08
95.8 - 99: semi-massive to local bands of massive sulphide, PO content is high, rock is broken, gouge in the middle, core recovery is low, sulphide-rich schist sections included													
<<Min: 95.8 - 99 5% Min: Sphalerite>> conc'd bands locally													
<<Min: 95.8 - 99 5% Min: Pyrrhotite>> mostly massive bands and veins													
<<Min: 95.8 - 99 0.25% Min: Galena>> scattered, with SP													
<<Min: 95.8 - 99 0.5% Min: Chalcopyrite>> mixed with PO													
<<Alt: 95.8 - 98.45 Moderate-Strong (Alt) Muscovite>> on fol'n													
<<Alt: 95.8 - 100.6 Moderate (Alt) Silicification>> QZ in BX too													
<<Struc: 96 - 99 Moderate-Strong (Alt) Fault>> lost core													
99.00	**99.45**	**SED**	**undifferentiated Sediment**	**grey-brown**	99.00	100.10	1.10	B00269016	1.4	0.118	-0.01	0.08	0.19
99 - 99.45: short unmineralized section of sediment													
<<Min: 99 - 100.1 1% Min: Pyrite>> in schist, not dyke													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
99.45	**100.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **brown**									
99.45 - 100.1: dyke at contact											
100.10	**136.80**	**RHYcf** **Feldspar & feldspar quartz porphyry** **grey-brown**	100.10	100.60	0.50	B00269017	35.6	1.44	0.08	1.77	3.27
100.1 - 136.8: blue QZ eyes and FP phenos, locally felsic domains i.e. boudins, also quite variable tx.											
<<Min: 100.1 - 100.6 2% Min: Sphalerite>> along fol'n, similar to 92.6-93.8			100.60	101.90	1.30	B00269018	1.4	0.016	0.02	0.06	0.09
<<Min: 100.1 - 100.6 2% Min: Pyrite>>			101.90	103.40	1.50	B00269019	4.9	0.011	-0.01	0.2	0.51
<<Min: 100.1 - 100.6 3% Min: Pyrrhotite>> bands, wisps			103.40	105.00	1.60	B00269021	0.9	-0.005	0.02	-0.01	0.02
<<Min: 100.1 - 100.6 1% Min: Galena>> with SP											
<<Min: 100.1 - 100.6 0.01% Min: Chalcopyrite>>											
<<Min: 100.6 - 106.7 2% Min: Pyrite>> small masses in QZ vein											
<<Min: 109.02 - 125 0.25% Min: Sphalerite>> associated with QV's,											
<<Min: 109.02 - 125 1% Min: Pyrite>> bands up to5 cm wide of diss'd PY											
<<Min: 109.02 - 125 0.1% Min: Galena>> with PY, SP in QV's											
<<Min: 125 - 136.8 0.5% Min: Pyrite>> along fol'n, w/BI											
<<Alt: 100.1 - 105.7 Weak-Moderate (Alt) Muscovite>> flakes visible on fracs											
<<Alt: 105.7 - 115.86 Weak (Alt) Biotite>> surrounds sx bands in schist, envelope?											
<<Alt: 105.7 - 124.95 Weak-Moderate (Alt) Muscovite>> in groundmass, overprint on BI											
<<Alt: 124.95 - 136.8 Weak (Alt) Muscovite>> mostly BI groundmass											
<<Vein: 115.86 - 117.3 70% Quartz>> bullQZ with MU, sx locally											
<<Struc: 104.7 - 105 Moderate (Alt) Fault>> gouge at 105m											
<<Struc: 117.3 - 125 Moderate (Alt) Fault>> series of faults with gouge, broken core											
<<Struc: 132 - 133.45 Weak (Alt) Fault>> gouge locally											
136.80	**154.80**	**RHYva** **Coarse grained to ash tuff** **grey-green**	150.10	151.57	1.47	B00269022	2.4	-0.005	0.02	0.02	0.04
136.8 - 154.8: lenses and bands of siliceous and micaceous rock, homogeneous appearance, cut by MAFi (BI SCHS)											
<<Min: 136.8 - 143 1% Min: Pyrite>> and fractures			151.57	153.07	1.50	B00269023	2.6	0.013	-0.01	0.01	0.02
<<Min: 143 - 147.14 8% Min: Calcite>> and irregular veins			153.07	153.95	0.88	B00269024	46.2	0.151	-0.01	0.26	0.59
<<Min: 147.14 - 153.07 0.01% Min: Sphalerite>> in rare QV's			153.95	154.80	0.85	B00269025	20.7	0.015	0.1	1.01	1.54
<<Min: 147.14 - 153.07 0.5% Min: Pyrite>> generally along fol"n											
<<Min: 147.14 - 153.07 0.01% Min: Galena>> as SP											
<<Min: 153.07 - 153.95 1% Min: Sphalerite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 153.07 - 153.95 5% Min: Pyrite>> conc'd bands, diss'ns along fol'n									
		<<Min: 153.07 - 153.95 0.5% Min: Galena>>									
		<<Min: 153.95 - 154.42 5% Min: Pyrrhotite>> lge blebs w/CP									
		<<Min: 153.95 - 154.8 5% Min: Sphalerite>> some QV assoc'n but also, as bands through alt'n zone									
		<<Min: 153.95 - 154.8 8% Min: Pyrite>> lge blebs in QV, diss'ns in CL alt zone									
		<<Min: 153.95 - 154.8 1% Min: Galena>> t/o									
		<<Min: 153.95 - 154.8 0.5% Min: Chalcopyrite>> diss'ns in CL zone									
		<<Alt: 136.8 - 143 Weak-Moderate (Alt) Muscovite>> felsic tuff, siliceous gndmss with MU-MS									
		<<Alt: 144.53 - 145.35 Moderate (Alt) Muscovite>> alt'n of MAFi or RHYv?, with 2% PY as diss'd blebs, fracs									
		<<Alt: 147.14 - 153.07 Moderate (Alt) Muscovite>>									
		<<Alt: 153.07 - 154.42 Strong (Alt) Muscovite>> greasy feel, mx clots and bands around QV									
		<<Alt: 153.95 - 154.42 Weak-Moderate (Alt) Chlorite>>									
		<<Alt: 154.42 - 154.8 Moderate-Strong (Alt) Chlorite>> in groundmass									
		<<Alt: 154.42 - 154.8 Strong (Alt) Cordierite>> especially conc'd at top of interval									
		<<Alt: 154.42 - 154.8 Strong (Alt) Biotite>> locally massive BI, coarse flakes									
		<<Struc: 148.5 - 148.51 Weak-Moderate (Alt) Foliation>>									
		<<Struc: 154.79 - 154.8 Weak-Moderate (Alt) Contact>> dyke contact witb alt'n									
154.80	**159.02**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green-brown** **MG**	154.80	156.30	1.50	B00269026	-0.3	-0.005	-0.01	0.02	0.05
		154.8 - 159.02: upper section contains green bands with AC-QZ bands									
		<<Min: 157.8 - 158.35 3% Min: Pyrite>> and diss'ns, short interval of SCHS in dyke	156.30	157.80	1.50	B00269027	-0.3	-0.005	0.01	0.01	0.09
		<<Min: 157.8 - 158.35 0.25% Min: Chalcopyrite>> in host , fracs	157.80	159.02	1.22	B00269028	1.9	-0.005	0.04	0.08	0.17
		<<Struc: 155.08 - 155.09 Moderate (Alt) Foliation>> AC band in dyke(?)									
159.02	**168.16**	**RHYva** **Coarse grained to ash tuff** **grey** **FMG**	159.02	160.12	1.10	B00269029	19	0.023	0.06	1.06	1.85
		159.02 - 168.16: mottled rock, BI overprinted by MU, QE? Locally, TO in sections as needle like pblasts									
		<<Min: 159.02 - 160.12 5% Min: Sphalerite>> as above dyke	160.12	161.40	1.28	B00269031	7.9	0.037	0.01	0.06	0.07
		<<Min: 159.02 - 160.12 5% Min: Pyrite>>	161.40	163.00	1.60	B00269032	102	0.355	-0.01	0.05	0.15
		<<Min: 159.02 - 160.12 2% Min: Galena>> generally diss'd t/o	163.00	164.50	1.50	B00269033	81.1	0.278	-0.01	0.07	0.19
		<<Min: 160.12 - 164.75 0.25% Min: Sphalerite>> in QV's, with PY									
		<<Min: 160.12 - 164.75 2% Min: Pyrite>> in bands, patches									
		<<Min: 164.75 - 165.68 1% Min: Calcite>> not patchy at all									
		<<Min: 165.68 - 168.16 0.5% Min: Pyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 159.02 - 160.12 Weak (Alt) Garnet>> rare pblasts
<<Alt: 159.02 - 160.12 Moderate-Strong (Alt) Chlorite>> bands
<<Alt: 159.02 - 160.12 Moderate-Strong (Alt) Cordierite>> pblasts in conc'd areas
<<Alt: 159.02 - 160.12 Moderate (Alt) Biotite>>
<<Alt: 159.67 - 160.12 Moderate (Alt) Muscovite>>
<<Alt: 160.12 - 160.8 Weak (Alt) Biotite>> MU overprinting?
<<Alt: 160.12 - 164.75 Moderate-Strong (Alt) Muscovite>>
<<Alt: 165.68 - 168.16 Weak-Moderate (Alt) Muscovite>>

168.16 179.10 RHYvx Quartz and/or feldspar crystal tuff grey-brown

168.16 - 179.1: scattered QE?, Tourmline locally, MU overprints BI,

<<Min: 168.16 - 179.1 0.1% Min: Sphalerite>> with PO in fracs, bands
<<Min: 168.16 - 179.1 0.5% Min: Pyrrhotite>> bands along foliation
<<Alt: 168.16 - 179.1 Weak (Alt) Muscovite>>
<<Alt: 168.16 - 179.1 Trace (Alt) Garnet>> scattered pblasts

179.10 186.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown MG

<<Min: 179.1 - 186.5 1% Min: Pyrite>>
<<Min: 179.1 - 186.5 1% Min: Calcite>>
<<Alt: 179.1 - 186.5 Weak (Alt) Chlorite>>

186.50 193.78 RHYv Rhyolite volcaniclastic grey-brown FG

186.5 - 193.78: locally strong MU, around faulting, banded BI/MU schist,

<<Min: 186.5 - 187.5 5% Min: Pyrite>> in bands
<<Min: 186.5 - 193.78 3% Min: Pyrite>> conc'd in bands
<<Min: 186.5 - 193.78 1% Min: Pyrrhotite>> also in bands
<<Alt: 186.5 - 188.8 Moderate-Strong (Alt) Muscovite>> in fault zone
<<Alt: 188.8 - 193.78 Weak (Alt) Muscovite>>
<<Struc: 186.5 - 187.4 Moderate (Alt) Fault>> slips show variable angles

193.78 206.20 RHYcf Feldspar & feldspar quartz porphyry grey-brown FMG

193.78 - 206.2: generally massive appearance,locally high strain apparent

<<Min: 193.78 - 203.2 0.25% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 203.2 - 206.2 3% Min: Pyrite>> and wisps

<<Alt: 203.2 - 206.2 Strong (Alt) Silicification>> near contact

<<Alt: 203.2 - 206.2 Moderate (Alt) Muscovite>>

<<Vein: 196.5 - 197 100% Quartz 85 deg. >> bull QZ, and PY blebs

<<Struc: 206.15 - 206.2 Moderate (Alt) Crenulation cleavage>> adjacent to a fault

206.20 218.61 SED undifferentiated Sediment dark grey

206.2 - 218.61: dark, siliceous, sediment, possibly graphitic very locally

<<Min: 206.2 - 209.75 1% Min: Pyrite>> t/o

<<Min: 209.75 - 218.61 0.25% Min: Pyrite>> local

<<Alt: 206.2 - 211.2 Moderate (Alt) Silicification>>

<<Alt: 211.2 - 218.61 Moderate (Alt) Muscovite>> soapy feel

<<Struc: 206.5 - 216.5 Moderate-Strong (Alt) Fault>> big gouge zones, broken core

<<Struc: 209.75 - 209.76 Moderate-Strong (Alt) Fault>> slip in gouge zone

218.61 235.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

218.61 - 235.4: very heterogeneous section, faulting intense, local stretches of veining, bx filling, gouge,

<<Min: 218.61 - 227.75 20% Min: Calcite>> pervasive, massive CA locally

<<Min: 218.61 - 240 0.01% Min: Sphalerite>> rare, in QV

<<Min: 218.61 - 240 0.1% Min: Pyrite>> in fracs, scattered in fault

<<Min: 218.61 - 240 0.01% Min: Galena>> as SP

<<Alt: 218.61 - 240 Weak (Alt) Muscovite>> retrograde, more clay?

<<Vein: 219.8 - 223.5 20% Quartz 80 deg. >> spaced QZ veins, fault zone, SP in small vein

<<Vein: 224.1 - 227.75 70% Calcium carbonate/Carbonate 60 deg. >> carbonate bx in fault zone, vein?, CA-DI-MG?, gives talcose feel

<<Struc: 223.4 - 240 Strong (Alt) Fault>> multiple strings

235.40 236.90 SED undifferentiated Sediment light grey

235.4 - 236.9: strongly alt'd, caught up in fault, between dykes

236.90 240.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

236.9 - 240: core is crushed, strongly faulted, clay altered?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

240.00 266.46 SED undifferentiated Sediment black FG

240 - 266.46: massive to weakly foliated, silieous toward bottom, probably metamorphic sweat of silica

<<Min: 240 - 266.46 1% Min: Pyrite>> tiny wisps

<<Min: 240 - 266.46 0.1% Min: Pyrrhotite>>

<<Min: 240 - 266.46 0.01% Min: Chalcopyrite>>

<<Alt: 240 - 266.46 Weak (Alt) Silicification>> silica sweats?, prominent on dyke contacts

<<Vein: 241.25 - 247.17 25% Quartz>> QZ-minor CA-tracePO

<<Struc: 253.4 - 256 Moderate-Strong (Alt) Fault>> carbonaceous (not conductive)

266.46 287.53 SEDc calcareous Sediment

<<Min: 266.46 - 306.23 0.01% Min: Pyrite>> local crystals in veinlets,

<<Min: 266.46 - 306.23 0.01% Min: Pyrrhotite>>

<<Min: 266.46 - 306.23 0.01% Min: Chalcopyrite>>

<<Alt: 281.2 - 282.47 Moderate (Alt) Muscovite>> Carbonate?

<<Vein: 284.89 - 287.2 30% Quartz>> QZ-minor clotty CL?

<<Struc: 271.75 - 279.8 Moderate-Strong (Alt) Fault>>

<<Struc: 283.37 - 284.89 Moderate (Alt) Fault>>

287.53 296.45 SED undifferentiated Sediment black

287.53 - 296.45: laminated, SI bands, very dark, homogeneous

<<Struc: 293.15 - 296.3 Moderate (Alt) Fault>>

296.45 300.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) salt + pepper FMG

296.45 - 300.8: leucocratic dyke? Looks like a diorite, BI and AM pblasts scattered t/o, weak fol'n, lies within fault zone, reddish GA pblasts are scattered, 0.1% overall

<<Struc: 299.1 - 303.17 Moderate-Strong (Alt) Fault>> 40 cm gouge near top, broken core

300.80 306.23 SED undifferentiated Sediment black FG

300.8 - 306.23: BI pblasts prominent, siliceous groundmass, seems to grade into darker sediment below, weak GA, silvery PY on fractures

306.23 351.00 SEDc calcareous Sediment green-brown FMG

306.23 - 351: banded rock, BI-AC green to BI brown, and black also. Weakly calcareous version of SED above?, heterogeneous, alt'n is MU-calc-silicate (possibly), BI speckles locally, MAFi occurs throughout but is very chopped up, focused around faults, lt green coloured sections around faults with late CA and vuggy QZ veinlets, PY, too, colour due to MS or EP(?), DI(?).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 306.23 - 351 0.1% Min: Pyrite>> occurs in fractures, veinlets, and small shears. Scattered down the hole.

<<Alt: 324.65 - 328.15 Moderate (Alt) Muscovite>> Is this EP or DI?

<<Alt: 335.2 - 336 Moderate (Alt) Muscovite>> EP/DI?

<<Vein: 330.65 - 331.6 60% Quartz>> QZ

<<Struc: 333.83 - 340 Moderate-Strong (Alt) Fault>> several strings, striae on slips

<<Struc: 343.4 - 346.7 Moderate (Alt) Fault>> gougy,fault breccia, no obvious slips, mostly irregular surfaces.

End of Hole @ 351

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-225

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	20-Aug-15
UTM Easting	414752.728	Core Size:	HQ3	Azimuth:	180.96	Date Logging Complete:	21-Aug-15
UTM Northing:	6815351.293	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1408.902	Casing Depth (m):	9	Length (m):	25	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	18-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	18-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-223

Comments:

The purpose of this hole was to twin K15-223 to collect potentially oxidised sample of MET7 Domain. Oxidized OH was sampled. A massive sulphide body consisting of OH, OA, and OB sits structurally above RHYi. No syngenetic alteration was found directly adjacent to the massive sulphide body in the RHYi. The ore body was intersected at surface. The thickness of massive sulphide intercept was 8 m. The presence of the RHYi unit directly below the massive sulphide zone and the lack of an intense restricted or proximal alteration zone may indicate that the felsic intrusive truncated the bottom of the syngenetic alteration zone.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.96	0	180.96	APS	Cooper Campbell	18-Aug-15		☑	
25	-70.5	162.7	22.5	185.2	ReflexEZS	Geotech	18-Aug-15	5696	☑	

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**OVBN**	**Overburden**										
9.00	**9.90**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**CG**	9.00	9.90	0.90						
<<Struc: 9.5 - 9.65 Weak (Alt) Fault>> Oxidized and faulted sulphide rock. Broken rock.													
9.90	**15.36**	**OA**	**Magnetite bearing sulphides**	**CG**	9.90	10.90	1.00						
					10.90	11.90	1.00						
					11.90	14.00	2.10						
					14.00	15.36	1.36						
15.36	**17.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**	15.36	16.00	0.64						
					16.00	17.00	1.00						
17.00	**25.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		17.00	18.00	1.00						

From (m)	To (m)	Rocktype & Description
		<<Min: 17 - 19.92 0.5% Min: Pyrite>>
		<<Min: 19.92 - 25 0.25% Min: Pyrite>>
		<<Alt: 17 - 19.92 Strong (Alt) Silicification>>
		<<Alt: 17 - 20 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 19.92 - 25 Intense (Alt) Silicification>>
		<<Alt: 20 - 25 Weak (Alt) Muscovite>>
		End of Hole @ 25

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
18.00	19.00	1.00						
19.00	20.00	1.00						
20.00	21.00	1.00						
21.00	22.00	1.00						

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-226

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	20-Aug-15
UTM Easting	414850.978	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	22-Aug-15
UTM Northing:	6815676.392	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1396.44	Casing Depth (m):	6	Length (m):	230	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	18-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	21-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Hole K15-226 was drilled to intersect the historical hole K94-022 in the sulfide zone.
Hole K15-226 is made up of coherent and volcaniclastic rhyolite crosscut by mafic or intermediate dykes on the top 35 meters. A mudstone unit is observed between 125m and 130m. The hole shows progressive moderate to strong muscovite alteration followed by the mineralized zone.
The massive sulfide unit is intersected from 143.7m to 175.7m (32m thick). The footwall consists of a mafic sill crosscut by an aphanitic rhyolite intrusion with green-grey alteration associated from 179.6m to 185.2m. The hole ends at 230.0m in a muscovite altered volcaniclastic rhyolite unit.
The dominant domain of the massive sulfide unit is OB. OA and OG domains are observed as well as minor OH and OJ respectively at the upper and the lower contacts of the massive sulfide.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Dillon Hume	20-Aug-15		☑	
26	-71.5	160.2	22.5	182.7	ReflexEZS	Geotech	18-Aug-15	5849	☑	
50	-71.7	161	22.5	183.5	ReflexEZS	Geotech	19-Aug-15	5762	☑	
74	-71.9	164.5	22.5	187	ReflexEZS	Geotech	19-Aug-15	5764	☑	
101	-71.9	162	22.5	184.5	ReflexEZS	Geotech	19-Aug-15	5782	☑	
125	-71.7	165.1	22.5	187.6	ReflexEZS	Geotech	19-Aug-15	5750	☑	
149	-71.5	154.6	22.5	177.1	ReflexEZS	Geotech	20-Aug-15	5049	☐	Reading not accepted due to difference in magnetic field.
176	-71.7	157.7	22.5	180.2	ReflexEZS	Geotech	20-Aug-15	5767	☑	
200	-71.9	169.4	22.5	191.9	ReflexEZS	Geotech	20-Aug-15	5821	☑	
230	-71.6	167.6	22.5	190.1	ReflexEZS	Geotech	20-Aug-15	5789	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**OVBN** **Overburden**									
6.00	**11.50**	**RHYva** **Coarse grained to ash tuff**									
<<Min: 6 - 59.4 2% Min: Pyrrhotite>>											
<<Min: 6 - 143.7 1% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 6 - 62.3 Weak-Moderate (Alt) Muscovite>> obscures the original texture of the rock

11.50 17.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

11.5 - 17.5: Curdy texture and siliceous flow banded texture

17.50 19.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

17.5 - 19.5: Curdy texture and siliceous flow banded texture

<<Min: 17.5 - 19.5 3% Min: Calcite>>

19.50 22.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

19.5 - 22.5: fgr tuff? ~3% MG-porphyroblasts/phenocrysts

22.50 31.00 RHYva Coarse grained to ash tuff

22.5 - 31: fgr tuff? ~3% MG-porphyroblasts/phenocrysts

<<Struc: 27.8 - 29.9 Strong (Alt) Fault>> weak-moderate faulted zone with some wet fault gouge. Rocks also appear to be ductily strained in this zone

31.00 32.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31 - 32.3: Fgr dark greenish-grey MG-bearing dyke. ~5% CA

<<Min: 31 - 32.3 5% Min: Calcite>>

32.30 36.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32.3 - 36: good siliceous flow banded texture

36.00 83.70 RHYvl Lapilli tuff

36 - 83.7: Curdy rhyolite with some layers of tuffaceous material within

<<Min: 59.4 - 63.4 4% Min: Pyrrhotite>>

<<Min: 63.4 - 103 4% Min: Pyrrhotite>>

<<Vein: 56.9 - 57.5 80% Quartz>> QZ-AK-CL vein

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

83.70 86.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

83.7 - 86.5: Dominated by fgr ash with rhyolite and lpl. Some ~10-30 cm layers of curdy rhyolite (blocks?)

86.50 107.30 RHYvl Lapilli tuff

86.5 - 107.3: Dominated by curdy texture

<<Min: 103 - 106.3 4% Min: Pyrrhotite>>

<<Min: 106.3 - 117.2 2% Min: Pyrrhotite>>

107.30 117.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

107.3 - 117.6: Medium grey volcaniclastic unit with rhyolitic lpl

<<Min: 117.2 - 124.6 4% Min: Pyrrhotite>>

117.60 124.60 RHYvl Lapilli tuff

117.6 - 124.6: lpl ranges from rhyolitic near the top of the unit to sulphides-after-lithics (?) near the bottom of the unit

<<Alt: 121.1 - 125.9 Weak (Alt) Muscovite>>

<<Struc: 122.11 - 122.12 dominant foliation>> elongated lpl

<<Struc: 122.25 - 122.26 dominant foliation>> elongated lpl

<<Struc: 124.5 - 127.4 Strong (Alt) Fault>> weak-moderate fractured zone

124.60 129.30 MDSc Carbonaceous dominant mudstone

124.6 - 129.3: MU-altered and deformed mudstone. ~40-50% carbonaceous material.

<<Min: 124.6 - 143.7 2% Min: Pyrrhotite>>

<<Alt: 125.9 - 128.1 Moderate (Alt) Muscovite>>

<<Alt: 128.1 - 133 Moderate (Alt) Muscovite>>

<<Struc: 127.85 - 127.86 dominant foliation>> carbonaceous band

129.30 131.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

129.3 - 131: texture completed obscured by alteration and deformation

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
131.00	**133.95**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**										
131 - 133.95: texture completed obscured by alteration and deformation													
<<Alt: 133 - 143.7 Strong (Alt) Muscovite>>													
133.95	**143.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		139.20	140.70	1.50	B00264618	0.6	0.005	-0.01	-0.01	-0.01
133.95 - 143.7: texture completed obscured by alteration and deformation													
<<Min: 143.5 - 143.7 3% Min: Chalcopyrite>>					140.70	142.20	1.50	B00264619	2.7	0.012	-0.01	0.1	0.12
<<Struc: 133.95 - 133.96 dominant foliation>> MU cleavage band					142.20	143.70	1.50	B00264621	10.9	0.64	0.11	0.13	0.12
<<Struc: 134.93 - 134.94 dominant foliation>> Mu cleavage domain													
<<Struc: 135.77 - 135.78 dominant foliation>> Mu cleavage domain													
<<Struc: 136.59 - 136.6 dominant foliation>> MU cleavage domain													
<<Struc: 139.72 - 139.73 dominant foliation>> MU cleavage domain													
143.70	**145.80**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	143.70	144.70	1.00	B00264622	60.1	0.789	1.25	0.24	0.83
143.7 - 145.8: CP/PY at upper contact													
					144.70	145.80	1.10	B00264623	48.9	0.83	0.78	0.55	1.08
145.80	**149.20**	**OA**	**Magnetite bearing sulphides**	**FG**	145.80	146.60	0.80	B00264624	21.2	0.295	0.34	0.11	0.38
<<Min: 145.8 - 149.2 5% Min: Magnetite>>					146.60	147.40	0.80	B00264625	17.6	0.287	0.29	0.07	0.44
<<Struc: 146.2 - 146.21 >> fracture					147.40	148.30	0.90	B00264626	32.2	0.372	0.32	0.16	0.34
					148.30	149.20	0.90	B00264627	38	0.562	0.43	0.17	0.64
149.20	**158.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	149.20	150.00	0.80	B00264628	83.4	0.796	0.11	2.07	9.55
149.2 - 158: Locally low sulfide concentration. Dolomite, Ba or/and silica matrix, patchy CL													
					150.00	151.00	1.00	B00264629	17.6	1.65	0.35	2.58	11
					151.00	152.00	1.00	B00264632	120	1.21	0.32	1.48	4.19
					152.00	153.00	1.00	B00264633	25.8	0.102	0.18	0.93	6.55
					153.00	154.00	1.00	B00264634	81.5	0.907	1.34	0.75	2.25
					154.00	155.00	1.00	B00264635	79.1	1.3	1.73	0.18	1.8
					155.00	156.00	1.00	B00264636	31.9	0.645	0.57	0.13	0.17

From (m)	To (m)		Rocktype & Description	
158.00	**162.10**	**OG**	**Chalcopyrite rich sulphides**	**FMG**

158 - 162.1: Patchy CP,PY/PO, locally brecciated or net texture, some coarse PY grain

<<Min: 158 - 162.1 10% Min: Chalcopyrite>>

<<Alt: 158 - 162.1 Moderate (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description	
162.10	**163.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**

162.1 - 163.15: SP laminated

<<Min: 162.1 - 163.15 20% Min: Sphalerite>>

From (m)	To (m)		Rocktype & Description	
163.15	**165.20**	**OA**	**Magnetite bearing sulphides**	**FMG**

<<Min: 163.15 - 165.2 10% Min: Magnetite>>

From (m)	To (m)		Rocktype & Description	
165.20	**170.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

165.2 - 170.6: Maybe dolomite matrix locally or BA. Patch of very soft mineral, maybe talc (greenish) some patch of CP

<<Min: 165.2 - 170.6 5% Min: Sphalerite>>

<<Min: 165.2 - 170.6 3% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description	
170.60	**171.70**	**OA**	**Magnetite bearing sulphides**	**FMG**

170.6 - 171.7: Chlorite rich, lamination, locally folded

<<Min: 170.6 - 171.7 10% Min: Magnetite>>

<<Alt: 170.6 - 173 Moderate (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description	
171.70	**172.30**	**OG**	**Chalcopyrite rich sulphides**	**FG**

<<Min: 171.7 - 172.3 10% Min: Chalcopyrite>>

<<Struc: 171.8 - 171.81 Kink bands>> Lamination in MXSX

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
156.00	157.00	1.00	B00264637	55.8	0.674	0.19	1.28	5.22
157.00	158.00	1.00	B00264638	77.4	0.256	0.13	1.04	4.8
158.00	159.00	1.00	B00264639	163	2.2	2.66	0.44	2.43
159.00	160.00	1.00	B00264641	194	4.09	4.45	0.21	1.16
160.00	161.00	1.00	B00264642	243	3.9	5.85	0.28	2.48
161.00	162.10	1.10	B00264643	146	1.44	2.89	0.46	3.19
162.10	163.15	1.05	B00264644	72	1.41	0.45	1.02	5.99
163.15	164.00	0.85	B00264645	40.3	0.47	0.14	1.31	8.28
164.00	165.20	1.20	B00264646	43.6	0.3	0.08	2.37	9.4
165.20	166.00	0.80	B00264647	99	0.562	0.5	2.67	9.95
166.00	167.00	1.00	B00264648	65.5	0.507	0.19	1.49	8.03
167.00	168.00	1.00	B00264649	62.2	0.489	0.1	1.62	9.11
168.00	168.85	0.85	B00264652	67.4	0.356	0.06	2.22	5.65
168.85	169.65	0.80	B00264653	85.1	0.631	0.17	1.46	6.06
169.65	170.60	0.95	B00264654	67.1	0.714	0.64	1.07	4.33
170.60	171.70	1.10	B00264655	63.3	0.814	1.31	0.85	3.32
171.70	172.30	0.60	B00264656	221	5.43	4.83	0.78	4.05

From (m)	To (m)		Rocktype & Description	
172.30	**174.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

172.3 - 174.1: GL, patch of BA or dolomite

<<Min: 172.3 - 174.1 0.2% Min: Galena>>

<<Alt: 173.6 - 185.2 Strong (Alt) Muscovite>> MU-Si (green-grey alteration) related to intrusive felsic dyke

From (m)	To (m)		Rocktype & Description	
174.10	**175.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**

174.1 - 175.7: CP patch, SP, GL. Locally massive and semi-massive sulfide up to 20 cm. Cpin veinlets.

<<Min: 174.1 - 175.7 0.1% Min: Galena>>

<<Min: 174.1 - 175.7 3% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description	
175.70	**185.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

175.7 - 185.2: Maybe green/grey alteration at 179.6. Birich from 182.7.

<<Min: 175.7 - 179.6 20% Min: Calcite>>

<<Alt: 175.7 - 179.6 Strong (Alt) Chlorite>>

<<Alt: 182.7 - 185.2 Strong (Alt) Biotite>>

<<Struc: 181.8 - 181.81 dominant foliation>>

<<Struc: 184.1 - 184.12 Weak (Alt) Fault>> late fault

<<Struc: 184.7 - 184.71 Foliation>> BI foliation

From (m)	To (m)		Rocktype & Description	
185.20	**189.36**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	

185.2 - 189.36: Sharpe lower contact with 30 cm of alteration. Stringers (about 3 per 10 cm). Considered as aphanitic rhyolite dyke crosscutting the MAFi.

<<Min: 185.2 - 189.36 0.5% Min: Pyrrhotite>> stringers with few PY

<<Alt: 185.2 - 189.36 Strong (Alt) Silicification>> silicified dyke

<<Alt: 185.2 - 202.35 Strong (Alt) Chlorite>>

<<Vein: 185.2 - 189.36 Pyrrhotite>> stringers set

<<Struc: 185.2 - 189.36 Vein>> stringers, PO few Py

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
172.30	173.30	1.00	B00264657	155	1.1	0.57	2.68	5.99
173.30	174.10	0.80	B00264658	118	0.773	0.22	3.09	6.64
174.10	175.00	0.90	B00264659	112	1.98	3.08	0.49	5.88
175.00	175.70	0.70	B00264661	188	1.64	0.38	1.77	3.17
175.70	177.20	1.50	B00264662	1.1	0.01	0.02	0.01	0.07
177.20	178.70	1.50	B00264663	0.6	0.01	-0.01	0.01	0.02
178.70	180.20	1.50	B00264664	0.7	0.012	-0.01	0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

189.36 202.35 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

189.36 - 202.35: Calcite rich, chlorite alteration overprinting. Sheared at 200.00. Biotite rich. One MXSX PY/CP with CA/CL, 30 cm in thesheared zone.

<<Min: 189.36 - 202.35 15% Min: Calcite>>
<<Min: 201.6 - 201.9 5% Min: Chalcopyrite>>
<<Struc: 190.4 - 190.41 Foliation>> CA foliation or veinlet
<<Struc: 190.6 - 190.61 dominant foliation>> CA foliation
<<Struc: 192 - 192.01 dominant foliation>> CA foliation
<<Struc: 192.6 - 192.61 Vein>> CA veinlets
<<Struc: 197.1 - 197.11 Vein>> CA/PO veinlets
<<Struc: 197.3 - 197.31 Vein>> CA veinlet
<<Struc: 200 - 202.35 Shear>> sheared zone in MAFi

202.35 230.00 RHYv Rhyolite volcaniclastic

202.35 - 230: QZ eyes observed. QZ/sulfide banded-Could be coherent rhyolite. Biotite rich when going deeper. CL disseminated as well from 214,4. 230.00 E.O.H.

<<Min: 202.35 - 214.4 0.1% Min: Pyrite>> local patch and vein containing PO/PY/SP/GL
<<Min: 202.35 - 214.4 0.1% Min: Pyrrhotite>>
<<Min: 214.4 - 230 3% Min: Calcite>>
<<Alt: 202.35 - 230 Strong (Alt) Muscovite>>
<<Alt: 214.4 - 230 Weak (Alt) Chlorite>>
<<Alt: 214.4 - 230 Moderate (Alt) Biotite>>
<<Vein: 218 - 219 Chlorite>> CL veinlets set
<<Vein: 224.2 - 224.9 80% Quartz>> QZ/Dolomite
<<Struc: 202.45 - 203.3 Shear>> sherared zone in RHY
<<Struc: 203.3 - 203.44 Strong (Alt) Fault>> fault gouge
<<Struc: 212.1 - 212.11 Vein>> QZ/PO foliation oriented
<<Struc: 218 - 219 Vein>> shallow angle CL veinlet set
<<Struc: 218.2 - 218.21 dominant foliation>>
<<Struc: 219 - 219.01 Vein>> Late Tourmaline vein set
<<Struc: 223.9 - 223.91 Vein>> lower contact with massive QZ vein
<<Struc: 224.2 - 224.9 Vein>> Massive QZ vein with dolomite
<<Struc: 226.4 - 226.41 Vein>> fracture mineralized PO

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 229.1 - 229.11 Vein>> CL veinlets set									

End of Hole @ 230

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-226W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	23-Aug-15
UTM Easting	414850.978	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	24-Aug-15
UTM Northing:	6815676.392	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1396.44	Casing Depth (m):	6	Length (m):	182	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	22-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-226

Comments:

Hole K15-226W1 was a wedge from 111.5m to 182m off of K15-226 in order to collect samples of MET6 and MET7 domains and to increase the spatial coverage of potential underground ore.
The units encountered outside of the massive sulfide are very similar to K15-226 in term of lithology, alteration and depth, with a rhyolitic unit above the ore deposit and strong muscovite alteration of the hanging-wall. The footwall consists of a mafic intrusive sill intersecting the ore deposit at 178.0m. Green-grey alteration suggests the proximity of the felsic dyke.
The massive sulfide extends from 144.2 to 178.0m (33.8m wide). Most of the unit is made up of OA, OB and OG and shows abundant CP relative to the parent hole. The proximal chlorite alteration contains cordierite.
This hole confirms the lateral variations of the massive sulfide domains.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Dillon Hume	20-Aug-15		☑	Values copied from K15-226
26	-71.5	160.2	22.5	182.7	ReflexEZS	Geotech	18-Aug-15	5849	☑	Values copied from K15-226
50	-71.7	161	22.5	183.5	ReflexEZS	Geotech	19-Aug-15	5762	☑	Values copied from K15-226
74	-71.9	164.5	22.5	187	ReflexEZS	Geotech	19-Aug-15	5764	☑	Values copied from K15-226
101	-71.9	162	22.5	184.5	ReflexEZS	Geotech	19-Aug-15	5782	☑	Values copied from K15-226
111.5	-69.4	168.1	22.5	190.6	ReflexEZS	Geotech	22-Aug-15	5813	☑	Wedge start; value copied from first wedge survey at 134m
118	-71.8	184.9	22.5	207.4	ReflexEZS	Geotech	21-Aug-15	2302	☐	Bad survey - low magnetic field, results not accepted.
134	-69.4	168.1	22.5	190.6	ReflexEZS	Geotech	22-Aug-15	5813	☑	
155	-69.4	191.7	0	191.7	ReflexEZS	Geotech	22-Aug-15	6009	☑	Azimuth correction by the Driller

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
111.50	**118.45**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
111.5 - 118.45: disseminated and elongated PO											
<<Min: 111.5 - 124.7 0.2% Min: Pyrrhotite>> elongated											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 111.5 - 130 Moderate (Alt) Muscovite>>												
118.45	**124.70**	**RHYvl** **Lapilli tuff**										
124.70	**130.00**	**MDSc** **Carbonaceous dominant mudstone**										
124.7 - 130: CA disseminated												
<<Struc: 124.7 - 124.74 Moderate (Alt) Fault>> sharpe contact												
<<Struc: 126.5 - 126.7 Moderate (Alt) Shear>>												
130.00	**144.10**	**RHY** **undifferentiated rhyolite**		139.10	140.10	1.00						
130 - 144.1: flow banded locally. Progressive transitionwith mudstone. PY/BI veinlet, folded												
<<Min: 130 - 141.1 0.2% Min: Pyrrhotite>> folded, stringers, discontinuous				140.10	141.10	1.00						
<<Alt: 130 - 144.1 Strong (Alt) Muscovite>>				141.10	142.10	1.00						
<<Vein: 130.1 - 131.5 Quartz-Pyrrhotite>> folded PO discontinuous veinlets				142.10	143.10	1.00						
<<Struc: 130.1 - 131.5 Weak (Alt) Shear>> folded				143.10	144.10	1.00						
<<Struc: 137.5 - 137.6 Moderate (Alt) Fault>> with clay, fault gouge												
<<Struc: 141.5 - 141.55 Weak (Alt) Fault>> sheared												
144.10	**145.55**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FG**	144.10	144.90	0.80						
				144.90	145.55	0.65						
145.55	**146.05**	**OG** **Chalcopyrite rich sulphides**	**FMG**	145.55	146.05	0.50						
145.55 - 146.05: with some patch of host rock												
<<Min: 145.55 - 146.6 20% Min: Chalcopyrite>>												
146.05	**146.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	146.05	146.60	0.55						
146.05 - 146.6: locally host rock												
146.60	**148.95**	**OA** **Magnetite bearing sulphides**	**FG**	146.60	147.30	0.70						
<<Min: 146.6 - 148.95 10% Min: Magnetite>>				147.30	148.00	0.70						
				148.00	148.95	0.95						
148.95	**149.80**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	**FMG**	148.95	149.80	0.85						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
149.80	**159.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	149.80	150.40	0.60						
149.8 - 159.6: SP rich, dolomite maybe barite patch. Large SP xtals associated with host patch. Soft light green mineral (talc?). Locally weak stockwork texture.													
<<Min: 150 - 154.7 5% Min: Sphalerite>>					150.40	151.00	0.60						
<<Min: 150 - 154.7 1% Min: Galena>>					151.00	152.00	1.00						
<<Min: 158.45 - 160.5 1% Min: Sphalerite>> large xtals					152.00	153.00	1.00						
<<Struc: 155.4 - 155.5 Strong (Alt) Fault>> minor					153.00	154.00	1.00						
					154.00	155.00	1.00						
					155.00	156.00	1.00						
					156.00	157.00	1.00						
					157.00	158.00	1.00						
					158.00	158.95	0.95						
					158.95	159.60	0.65						
159.60	**161.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		159.60	160.40	0.80						
<<Min: 159.6 - 161.3 20% Min: Chalcopyrite>> proximal alteration? Large patchof chlorite/talc, almost brecciated tecture					160.40	161.30	0.90						
<<Min: 160.5 - 161 5% Min: Pyrrhotite>> and veins													
<<Alt: 159.6 - 161.3 Strong (Alt) Chlorite>> with talc													
161.30	**163.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	161.30	162.30	1.00						
<<Struc: 162 - 162.2 Weak (Alt) Fault>> minor					162.30	163.20	0.90						
163.20	**165.30**	**OA**	**Magnetite bearing sulphides**	**FG**	163.20	164.00	0.80						
163.2 - 165.3: laminated, Clpatch, SP rich from 163.2 to 154.0m.													
<<Min: 163.2 - 164 3% Min: Sphalerite>>					164.00	164.65	0.65						
<<Min: 163.2 - 165.45 10% Min: Magnetite>> and lamination					164.65	165.30	0.65						
165.30	**166.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	165.30	166.00	0.70						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 165.3 - 166.6 10% Min: Sphalerite>>					166.00	166.60	0.60						
166.60	**167.40**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**	166.60	167.40	0.80						
167.40	**170.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	167.40	168.00	0.60						
					168.00	169.00	1.00						
					169.00	170.00	1.00						
					170.00	170.70	0.70						
170.70	**173.30**	**OI**	**Heavilly disseminated sulphides in host schist**	**MG**	170.70	171.63	0.93						
170.7 - 173.3: folded host rock (BI/GL).													
					171.63	172.40	0.77						
					172.40	173.30	0.90						
173.30	**174.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	173.30	174.20	0.90						
174.20	**175.25**	**OI**	**Heavilly disseminated sulphides in host schist**		174.20	174.70	0.50						
174.2 - 175.25: few patch of host rock.													
<<Min: 174.4 - 175.25 3% Min: Sphalerite>> cordierite zone					174.70	175.25	0.55						
<<Min: 174.4 - 175.25 1% Min: Galena>> cordierite zone													
<<Alt: 174.2 - 175.25 Moderate (Alt) Cordierite>>													
175.25	**176.65**	**OG**	**Chalcopyrite rich sulphides**		175.25	176.00	0.75						
175.25 - 176.65: CP fracture filled. Host rock with dominant CP/GL rich domain.													
<<Min: 175.25 - 176.65 20% Min: Chalcopyrite>> and fracture filled					176.00	176.65	0.65						
176.65	**178.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	176.65	177.30	0.65						
					177.30	178.00	0.70						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.00	**180.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	178.00	179.00	1.00						
178 - 180: calcite riche, TO patch folded associated with PO.											
<<Min: 178 - 180 30% Min: Calcite>> in lithology			179.00	180.00	1.00						
<<Alt: 178 - 180 Moderate-Strong (Alt) Chlorite>>											
180.00	**182.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	180.00	181.00	1.00						
180 - 182: sharpe upper contact. PY in lamination. Maybe green-grey aletration. Sheared from 180.9m, fault proximity (?). 182.0m E.O.H.											
<<Alt: 180 - 180.7 Moderate (Alt) Silicification>> green-grey alteration?			181.00	182.00	1.00						
<<Struc: 181 - 182 Weak (Alt) Shear>> fault proximity?											

End of Hole @ 182

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-227

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	21-Aug-15
UTM Easting	414871.848	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	22-Aug-15
UTM Northing:	6815376.6	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1391.054	Casing Depth (m):	12	Length (m):	86	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	21-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

This hole was drilled as resource infill to confirm extension of massive sulphide lens to below the base of the gravels. It is a shallow hole to test oxidised/transitional sulphide at the base of the gravel overburden.
The logging of this hole confirms that an extension of the massive sulphide lens does continue towards the south below the base of the gravels. The structural hanging wall is composed of overburden gravels and coherent/clastic felsic volcanics. Massive sulphide intervals occur from 11.45m to 11.9m (OB code). 12.65m to 18.2m (OA, OB, OJ codes) and from 33.6m to 36.1m (OB, OI codes) with small coherent/clastic felsic volcanic intervals between. The structural foot wall is composed of a mafic dike that was intruded by a grey, aphanitic felsic dike. The main ore zone is found between 12.65m to 18.2m. Muscovite alteration is pervasive and increases in intensity towards the massive sulphide lenses. Chlorite alteration is pervasive in the mafic dike and is interpreted to be the result of metamorphic overprinting, and therefor not associated with massive sulphides. This hole is significant because it confirms the extension of the massive sulphide ore zone towards the south on section 414850E. In addition an unexpected interval of heavily disseminated sulphides in proximally altered rock (OJ) occurs between 49.2m to 50.8m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180	0	180	APS	David Nuttal	20-Aug-15		☑	
36	-54.4	159.3	22.5	181.8	ReflexEZS	Geotech	21-Aug-15	5782	☑	
66	-53.6	157.6	22.5	180.1	ReflexEZS	Geotech	21-Aug-15	5653	☑	
80	-54.8	160.4	22.5	182.9	ReflexEZS	Geotech	21-Aug-15	5724	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.00**	**OVBN Overburden**									
11.00	**11.45**	**RHYv Rhyolite volcaniclastic**									
<<Min: 11 - 11.45 0.5% Min: Pyrite>>											
<<Alt: 11 - 11.45 Moderate (Alt) Muscovite>>											
11.45	**11.90**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	11.45	11.90	0.45	B00268501	279	2.63	0.61	2.03	8.92
11.90	**12.65**	**RHYv Rhyolite volcaniclastic**	11.90	12.65	0.75	B00268502	177	3.75	0.78	0.17	0.76

From (m)	To (m)		Rocktype & Description
<<Min: 11.9 - 12.65 2% Min: Pyrite>>			
12.65	**14.83**	**OA**	**Magnetite bearing sulphides**
<<Struc: 13.35 - 13.35 dominant foliation>>			
14.83	**16.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
16.70	**18.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Min: 16.7 - 18.2 3% Min: Pyrite>>			
<<Min: 16.7 - 18.6 2% Min: Pyrrhotite>>			
<<Alt: 16.7 - 18.2 Weak-Moderate (Alt) Muscovite>>			
<<Alt: 17 - 18.2 Weak-Moderate (Alt) Chlorite>>			
<<Struc: 16.8 - 16.8 dominant foliation>>			
18.20	**23.00**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 18.6 - 25 2% Min: Pyrite>>			
<<Alt: 18.2 - 23 Weak (Alt) Muscovite>>			
23.00	**29.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
23 - 29.5: flow banded with pervasive sericite.			
<<Min: 25 - 29.5 1% Min: Pyrite>>			
<<Alt: 23 - 26 Weak (Alt) Muscovite>>			
<<Alt: 26 - 29 Weak (Alt) Muscovite>>			
<<Alt: 29 - 32 Weak-Moderate (Alt) Muscovite>>			
<<Vein: 23.4 - 23.6 20% Quartz>>			
<<Vein: 23.6 - 26.1 7% Quartz>>			
<<Vein: 28.4 - 33.5 11% Quartz>>			
29.50	**33.60**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 29.5 - 33.9 0.5% Min: Pyrite>>			
<<Alt: 32 - 33.9 Strong (Alt) Muscovite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
12.65	13.65	1.00	B00268503	140	0.952	0.36	2.84	15.2
13.65	14.30	0.65	B00268504	92.5	1.17	1.42	0.84	12.3
14.30	14.83	0.53	B00268505	184	0.714	0.53	3.38	11.6
14.83	15.80	0.97	B00268506	206	2.09	0.63	3.58	9.83
15.80	16.70	0.90	B00268507	236	2.48	0.6	2.94	10.7
16.70	17.60	0.90	B00268508	60.4	0.779	1.66	0.21	0.61
17.60	18.20	0.60	B00268509	23.8	0.136	0.21	0.3	1.2
18.20	19.70	1.50	B00268511	1.4	0.01	-0.01	-0.01	0.03
19.70	21.20	1.50	B00268512	1.5	0.011	-0.01	-0.01	-0.01
21.20	22.70	1.50	B00268513	1	0.006	-0.01	-0.01	0.01
29.30	30.80	1.50	B00268514	0.6	0.008	-0.01	-0.01	-0.01
30.80	32.30	1.50	B00268515	0.3	0.006	-0.01	-0.01	-0.01
32.30	33.90	1.60	B00268516	0.4	0.007	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 30.05 - 30.075 Weak (Alt) Fault>>									
33.60	**35.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	33.90	35.00	1.10	B00268517	402	2.8	0.75	4.65	11
		<<Struc: 34.5 - 34.5 dominant foliation>>									
35.00	**36.10**	**OI** **Heavilly disseminated sulphides in host schist**	35.00	36.10	1.10	B00268518	34.3	0.415	0.62	0.26	1.42
		<<Alt: 35 - 37 Weak-Moderate (Alt) Muscovite>>									
36.10	**41.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	36.10	37.60	1.50	B00268519	2.6	0.035	0.03	0.02	0.05
		<<Min: 36.1 - 46 2% Min: Pyrite>>	37.60	39.10	1.50	B00268521	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Alt: 37 - 42 Trace (Alt) Muscovite>>	39.10	40.60	1.50	B00268522	0.5	-0.005	-0.01	-0.01	-0.01
		<<Alt: 37.8 - 49 Weak-Moderate (Alt) Silicification>>									
		<<Struc: 36.8 - 37.1 Weak (Alt) Fault>> Fault + fracture zone with gauge.									
41.40	**47.90**	**RHYi** **Aphanitic Rhyolite (intrusion)**	47.70	49.20	1.50	B00268523	1.4	-0.005	0.02	0.03	0.05
		41.4 - 47.9: Pyrite stringers, angular 0.5-2mm diameter quartz phenocrysts, 1-5% calcite. Alteration halo penetrates into mafic intrusion structurally below interval.									
		<<Min: 46 - 68 0.5% Min: Pyrite>>									
		<<Alt: 47 - 49.66 Weak (Alt) Chlorite>>									
		<<Struc: 43.7 - 43.7 dominant foliation>>									
47.90	**49.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
49.20	**50.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	49.20	50.80	1.60	B00268524	18.8	0.093	0.94	0.06	0.34
		49.2 - 50.8: 4-5% CP, 3%PO, 3%PY in chlorite rich rock.									
		<<Alt: 49.66 - 50.2 Moderate (Alt) Chlorite>>									
		<<Alt: 50.2 - 50.8 Strong (Alt) Chlorite>>									
50.80	**86.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	50.80	52.30	1.50	B00268525	-0.3	-0.005	-0.01	-0.01	0.01
		50.8 - 86: Coloration and textural heterogeneity. Possibly due to proximity to felsic intrusion(s)? Presence of fuchsite and calcite banding used to determine that siliceous lithologies are a replacement assemblage of mafic package.									

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 68 - 80 0.5% Min: Pyrite>>

<<Min: 68 - 86 1% Min: Pyrrhotite>>

<<Min: 79 - 82 1% Min: Sphalerite>>

<<Min: 80 - 86 2% Min: Pyrite>>

<<Alt: 50.8 - 60.8 Moderate (Alt) Chlorite>>

<<Alt: 59.7 - 77.3 Moderate (Alt) Silicification>>

<<Alt: 68 - 74 Weak-Moderate (Alt) Chlorite>>

<<Alt: 73 - 79.1 Weak-Moderate (Alt) Chlorite>>

<<Alt: 79.1 - 84.1 Moderate (Alt) Silicification>>

<<Alt: 84.1 - 86 Trace (Alt) Chlorite>>

<<Vein: 66.95 - 67.6 97% Quartz>> 1% muscovite

<<Vein: 78.8 - 85.7 10% Quartz-Carbonate>>

<<Struc: 51.9 - 51.9 dominant foliation>>

<<Struc: 60.3 - 60.35 Weak (Alt) Fault>> gauge present

<<Struc: 65 - 65.05 Weak (Alt) Fault>> Gauge present

<<Struc: 79.7 - 81.3 Weak (Alt) Fault>> High oblique angle to foliation. Displacement approximately 1.5cm. No fault gauge present; fault surface has been healed.

End of Hole @ 86

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-228

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Mark Baknes
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	20-Aug-15
UTM Easting	414748.183	Core Size:	NQ3	Azimuth:	180.4	Date Logging Complete:	21-Aug-15
UTM Northing:	6815380.313	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1408.915	Casing Depth (m):	9	Length (m):	95	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	18-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Aug-15
Local Elev. (m):						Purpose:	Resource Confirmation
Comments:						Parent Hole:	

The purpose of this hole is to confirm the resource delineated by K95-081. The presence of the massive sulphide body was confirmed within an interval of RHYi. This sulphide bearing rhyolite unit sits stratigraphically above MAFi which appears to have intruded RHYi. The ore zone was first intersected at 21.4 m and is 10.4 m thick. The ore zone is diluted by 1.7 m of RHYi. The ore zone consists of OB, OH, and OA massive sulphide types. All alteration types logged were overprinted and not believed to be syngenetic. The RHYi unit appears to be eliminating any syngenetic alteration.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.4	0	180.4	APS	Cooper Campbell	18-Aug-15		☑	
41	-69.1	163.2	22.5	185.7	ReflexEZS	Geotech	19-Aug-15	5754	☑	

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN**	**Casing**										
9.00	**21.40**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		16.90	18.40	1.50	B00264597	3.6	0.011	-0.01	-0.01	-0.01
<<Min: 9 - 21.4 4% Min: Pyrite>>					18.40	19.90	1.50	B00264598	1.5	0.041	-0.01	-0.01	-0.01
<<Min: 9 - 21.4 3% Min: Calcite>>					19.90	21.40	1.50	B00264599	3.5	0.035	-0.01	0.04	0.06
<<Alt: 9 - 21.4 Moderate (Alt) Silicification>>													
<<Alt: 9 - 21.4 Weak-Moderate (Alt) Muscovite>>													
21.40	**25.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	21.40	23.00	1.60	B00264601	254	2.28	0.3	4.08	12
<<Min: 21.4 - 25.7 3% Min: Calcite>>					23.00	24.00	1.00	B00264602	198	1.98	0.31	2.28	8.25
					24.00	25.00	1.00	B00264603	258	3.39	0.49	3	8.71
					25.00	25.70	0.70	B00264604	237	1.67	0.18	4.63	9.54
25.70	**27.40**	**RHY**	**undifferentiated rhyolite**		25.70	26.70	1.00	B00264605	2.5	0.04	-0.01	0.04	0.15

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 25.7 - 27.4 7% Min: Pyrite>>					26.70	27.40	0.70	B00264606	55.2	0.025	0.09	-0.01	0.03
<<Min: 25.7 - 27.4 1% Min: Calcite>>													
<<Alt: 25.7 - 27.4 Weak-Moderate (Alt) Silicification>>													
<<Alt: 25.7 - 27.4 Moderate-Strong (Alt) Muscovite>>													
27.40	**28.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	27.40	28.15	0.75	B00264607	158	1.3	0.23	2.97	9.1
<<Min: 27.4 - 33.5 2% Min: Calcite>>					28.15	28.90	0.75	B00264608	140	1.82	0.36	2.65	11
28.90	**30.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**	28.90	30.00	1.10	B00264609	177	1.45	0.37	1.73	5.4
30.00	**31.00**	**OA**	**Magnetite bearing sulphides**	**FMG**	30.00	31.00	1.00	B00264611	94.9	0.547	0.31	1.71	5.93
31.00	**33.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	31.00	32.00	1.00	B00264612	177	2.77	0.36	3.66	7.82
<<Struc: 31.73 - 31.74 dominant foliation>>					32.00	33.00	1.00	B00264613	96.1	1.12	0.13	2.49	6.92
					33.00	33.50	0.50	B00264614	213	3.59	0.69	1.87	7.43
33.50	**62.60**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		33.50	35.00	1.50	B00264615	6.4	0.023	0.08	0.03	0.07
<<Min: 33.5 - 62.6 0.5% Min: Sphalerite>>					35.00	36.50	1.50	B00264616	1.2	0.009	-0.01	-0.01	0.01
<<Min: 33.5 - 62.6 5% Min: Pyrite>>					36.50	38.00	1.50	B00264617	1.2	0.013	-0.01	-0.01	0.06
<<Min: 33.5 - 62.6 0.5% Min: Galena>>													
<<Min: 33.5 - 62.6 4% Min: Calcite>>													
<<Alt: 33.5 - 62.6 Weak-Moderate (Alt) Silicification>>													
<<Alt: 33.5 - 62.6 Weak-Moderate (Alt) Muscovite>>													
<<Struc: 33.5 - 33.54 Strong (Alt) Fault>>													
62.60	**85.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
62.6 - 85.6: banded alteration, locally intense, CL-BI domains less than 1/2 section													
<<Min: 62.6 - 74 10% Min: Calcite>>													
<<Min: 62.6 - 85.6 3% Min: Pyrite>>													
<<Min: 74 - 76.5 15% Min: Calcite>>													
<<Min: 76.5 - 85.6 3% Min: Calcite>>													
<<Alt: 62.6 - 73.5 Moderate (Alt) Silicification>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 62.6 - 73.5 Moderate (Alt) Muscovite>>
<<Alt: 73.5 - 76.7 Weak (Alt) Silicification>>
<<Alt: 73.5 - 76.7 Weak (Alt) Muscovite>>
<<Alt: 73.5 - 76.7 Weak (Alt) Chlorite>>
<<Alt: 73.5 - 76.7 Weak (Alt) Biotite>>
<<Alt: 76.7 - 85.6 Strong (Alt) Silicification>>
<<Alt: 76.7 - 85.6 Strong (Alt) Muscovite>>
<<Struc: 82.5 - 84.4 Moderate (Alt) Fault>>

85.60 93.30 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 85.6 - 93.3 2% Min: Sphalerite>>
<<Min: 85.6 - 93.3 3% Min: Pyrite>>
<<Min: 85.6 - 93.3 2% Min: Calcite>>
<<Alt: 85.6 - 93.3 Weak (Alt) Silicification>>
<<Alt: 85.6 - 93.3 Weak (Alt) Muscovite>>
<<Vein: 85.6 - 89 30% Quartz-Albite>>

93.30 95.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 93.3 - 95 3% Min: Pyrite>>
<<Min: 93.3 - 95 2% Min: Calcite>>
<<Alt: 93.3 - 95 Strong (Alt) Silicification>>
<<Alt: 93.3 - 95 Strong (Alt) Muscovite>>

End of Hole @ 95

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-229

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	21-Aug-15
UTM Easting	414749.37	Core Size:	NQ3	Azimuth:	181.38	Date Logging Complete:	22-Aug-15
UTM Northing:	6815426.643	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1409.179	Casing Depth (m):	9	Length (m):	110	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	20-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	21-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of this hole is to infill the gap and confirm the resource between K94-038 & K94-039.
The presence of the massive sulphide body was confirmed. The sulphide zone in K15-229 is thicker than that of K94-038 but the thinner than than that of K94-039. Structural hanging wall rhyolitic volcanics are present from surface to 43.4 m. The upper 28.7 m of hanging wall volcanics consists of rhyolite flows which contain variable amounts of carbonaceous material and a thin horizon of carbonaceous mudstone. An undifferentiated unit of rhyolitic volcanics sits stratigraphically above the sulphide zone. The ore zone was first intersected at 43.4 m, consists of OB, OA, OI, and OF sulphide types, and is cumulatively 24.15 m thick, cut (diluted) by 9.53 m of RHYi. The stratigraphic footwall consists of MAFi with RHYi. A possible RHYcw unit was identified at the end of the hole. The only syngenetic alteration observed was located 9.53m below the main sulphide body and consisted of moderate to strong muscovite and moderate to strong chlorite alteration over 3.38 m thickness.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	181.38	0	181.38	APS	Cooper Campbell	20-Aug-15		☑	
25	-67.6	160.6	22.5	183.1	ReflexEZS	Geotech	20-Aug-15	5827	☑	
77	-66.1	159.2	22.5	181.7	ReflexEZS	Geotech	21-Aug-15	5722	☑	
110	-66.4	159.5	22.5	182	ReflexEZS	Geotech	21-Aug-15	5712	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.27**	**OVBN** **Overburden**									
8.27	**10.94**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 8.27 - 23.35 0.25% Min: Pyrite>>											
<<Min: 8.27 - 28.7 0.01% Min: Chalcopyrite>> BL and FD											
<<Alt: 8.27 - 14 Moderate (Alt) Muscovite>>											
10.94	**11.58**	**MDSc** **Carbonaceous dominant mudstone**									
<<Vein: 11.43 - 29.69 3% Quartz-Carbonate-Sulphide 45 deg. >> CP											

From (m)	To (m)	Rocktype & Description
11.58	**22.40**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Alt: 14 - 18.86 Strong (Alt) Muscovite>>		
<<Alt: 18.86 - 24.5 Moderate (Alt) Muscovite>>		
<<Struc: 20.6 - 24.5 Weak (Alt) Fault>> Broken rock and trace fault gouge.		
22.40	**23.35**	**MDSc** **Carbonaceous dominant mudstone**
23.35	**28.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 23.35 - 28.7 0.01% Min: Sphalerite>> VEN, FD,and WIS		
<<Min: 23.35 - 28.7 0.01% Min: Galena>> VEN, FD, and WIS		
<<Min: 23.35 - 33.97 1% Min: Pyrite>>		
<<Alt: 24.5 - 29.9 Moderate-Strong (Alt) Muscovite>>		
<<Struc: 28.15 - 28.16 dominant foliation>>		
<<Struc: 28.17 - 28.18 Foliation>>		
28.70	**33.97**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Alt: 29.9 - 31.2 Strong (Alt) Silicification>>		
<<Alt: 29.9 - 31.2 Moderate (Alt) Muscovite>>		
<<Alt: 31.2 - 33.97 Intense (Alt) Silicification>>		
<<Alt: 31.2 - 33.97 Weak (Alt) Muscovite>>		
<<Struc: 32.98 - 32.99 dominant foliation>>		
<<Struc: 33.1 - 33.11 dominant foliation>>		
33.97	**43.40**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 33.97 - 43.4 0.25% Min: Sphalerite>> DIS		
<<Min: 33.97 - 43.4 3% Min: Pyrite>>		
<<Min: 33.97 - 43.4 0.01% Min: Galena>> FD		
<<Min: 33.97 - 43.4 0.01% Min: Chalcopyrite>>		
<<Alt: 33.97 - 43.4 Strong (Alt) Silicification>>		
<<Alt: 33.97 - 43.4 Moderate-Strong (Alt) Muscovite>>		
<<Struc: 37.44 - 37.45 dominant foliation>>		
43.40	**47.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
38.90	40.40	1.50	B00266509	46	0.25	0.05	0.22	0.81
40.40	41.90	1.50	B00266511	36	0.522	-0.01	0.72	1.14
41.90	43.40	1.50	B00266512	1.9	0.018	-0.01	-0.01	0.01
43.40	44.00	0.60	B00266513	499	3.36	0.44	3.55	10.6

From (m)	To (m)	Rocktype & Description
		<<Struc: 43.59 - 43.6 dominant foliation>>
47.60	**50.18**	**OA** **Magnetite bearing sulphides**
		<<Struc: 49.77 - 49.78 dominant foliation>>
50.18	**61.13**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
61.13	**61.95**	**OA** **Magnetite bearing sulphides**
61.95	**64.17**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		<<Struc: 61.95 - 61.96 dominant foliation>>
64.17	**73.70**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		<<Min: 64.17 - 73.7 0.01% Min: Sphalerite>>
		<<Min: 64.17 - 73.7 0.25% Min: Pyrite>>
		<<Min: 64.17 - 73.7 0.01% Min: Pyrrhotite>>
		<<Min: 64.17 - 73.7 0.01% Min: Galena>>
		<<Alt: 64.17 - 73.7 Moderate-Strong (Alt) Silicification>>
		<<Alt: 64.17 - 73.7 Weak-Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.00	45.00	1.00	B00266519	264	2.38	0.49	2.03	6.95
45.00	46.00	1.00	B00266521	180	2.74	0.5	1.89	5.71
46.00	47.00	1.00	B00266522	125	1.17	0.17	1.83	4.92
47.00	48.00	1.00	B00266523	154	1.95	0.49	2.41	6.92
48.00	49.00	1.00	B00266524	152	0.677	0.26	5.14	10.2
49.00	49.50	0.50	B00266525	106	0.928	0.75	2.45	7.76
49.50	50.18	0.68	B00266526	142	1.55	0.95	3.14	13.2
50.18	51.00	0.82	B00266527	166	1.84	0.38	2.95	8.83
51.00	53.00	2.00	B00266528	152	1.46	0.24	2.57	7.82
53.00	54.00	1.00	B00266529	239	1.06	0.2	3.44	13.3
54.00	55.00	1.00	B00266531	181	0.62	0.13	3.05	14.6
55.00	56.00	1.00	B00266532	347	2.78	0.86	2.65	9.76
56.00	57.00	1.00	B00266533	144	0.952	0.31	3.8	11.6
57.00	58.00	1.00	B00266534	350	1.58	0.68	1.89	8.54
58.00	59.00	1.00	B00266535	187	2.17	0.67	1.29	6.8
59.00	60.00	1.00	B00266536	76.6	0.845	0.26	0.6	2.75
60.00	60.50	0.50	B00266537	49.1	0.588	0.09	1.11	5.29
60.50	61.13	0.63	B00266538	134	2.32	0.53	0.58	2.15
61.13	61.95	0.82	B00266539	119	0.815	0.26	2.48	7.71
61.95	63.00	1.05	B00266541	181	1.53	0.31	3.18	6.54
63.00	63.50	0.50	B00266542	114	1.49	0.36	0.48	2.81
63.50	64.17	0.67	B00266543	139	0.934	0.3	1.2	6.56
64.17	65.67	1.50	B00266544	4.2	0.011	0.01	0.06	0.12
65.67	67.17	1.50	B00266545	3.2	0.012	-0.01	0.05	0.1
67.17	68.67	1.50	B00266546	1.1	0.008	-0.01	-0.01	0.02
72.20	73.70	1.50	B00266547	1	0.031	-0.01	0.01	0.02

From (m)	To (m)	Rocktype & Description
73.70	**76.26**	**OI** **Heavilly disseminated sulphides in host schist**
<<Alt: 73.7 - 77.08 Moderate-Strong (Alt) Muscovite>>		
<<Alt: 73.7 - 77.08 Weak (Alt) Chlorite>>		
<<Vein: 74.28 - 79.8 15% Quartz-Carbonate-Sulphide>> SP, GL		
76.26	**77.08**	**OF** **Pyrrhotite rich sulphides**
<<Struc: 76.95 - 76.96 dominant foliation>>		
77.08	**81.76**	**RHYvx** **Quartz and/or feldspar crystal tuff**
<<Min: 77.08 - 81.76 0.01% Min: Sphalerite>> VEN		
<<Min: 77.08 - 81.76 0.25% Min: Pyrite>>		
<<Min: 77.08 - 81.76 0.01% Min: Galena>> VEN		
<<Alt: 77.08 - 82.69 Weak (Alt) Chlorite>>		
<<Alt: 77.08 - 92.3 Weak (Alt) Muscovite>>		
<<Vein: 81.7 - 102.35 5% Quartz-Carbonate 70 deg. >>		
81.76	**97.59**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 81.76 - 87.56 3% Min: Pyrite>>		
<<Min: 87.56 - 97.59 1% Min: Sphalerite>> WIS		
<<Min: 87.56 - 97.59 1% Min: Pyrite>>		
<<Min: 87.56 - 97.59 0.01% Min: Galena>> WIS		
<<Min: 87.56 - 102.35 0.01% Min: Pyrrhotite>>		
<<Alt: 82.69 - 87.56 Moderate (Alt) Chlorite>>		
<<Alt: 82.69 - 87.56 Moderate-Strong (Alt) Biotite>>		
<<Alt: 87.56 - 97.59 Weak (Alt) Chlorite>>		
<<Alt: 92.3 - 97.59 Moderate (Alt) Muscovite>>		
<<Alt: 96.59 - 97.59 Weak (Alt) Biotite>>		
<<Struc: 88.83 - 88.84 dominant foliation>>		
<<Struc: 94.53 - 94.54 dominant foliation>>		
97.59	**101.52**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Min: 97.59 - 102.35 1% Min: Sphalerite>> Foliation parallel. Separates siliceous domains.		
<<Min: 97.59 - 102.35 0.5% Min: Pyrite>>		
<<Min: 97.59 - 109.4 0.01% Min: Chalcopyrite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.70	74.70	1.00	B00266548	223	0.529	0.74	1.38	3.03
74.70	76.26	1.56	B00266549	24.3	0.089	0.15	0.41	0.91
76.26	77.08	0.82	B00266551	143	0.174	0.25	5.1	11.9
77.08	78.58	1.50	B00266552	4.6	0.006	0.02	0.21	0.36
78.58	80.08	1.50	B00266553	-0.3	-0.005	-0.01	-0.01	0.02
80.08	81.58	1.50	B00266554	4.9	0.029	-0.01	0.13	0.13

From (m)	To (m)	Rocktype & Description
		<<Alt: 97.59 - 101.52 Strong (Alt) Silicification>>
		<<Alt: 97.59 - 101.52 Moderate-Strong (Alt) Muscovite>>
101.52	**109.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 102.35 - 109.4 0.25% Min: Pyrrhotite>>
		<<Min: 102.35 - 110 0.01% Min: Sphalerite>>
		<<Min: 102.35 - 110 1% Min: Pyrite>>
		<<Alt: 101.52 - 102.35 Moderate-Strong (Alt) Silicification>>
		<<Alt: 101.52 - 106.9 Moderate (Alt) Chlorite>>
		<<Alt: 101.52 - 108.04 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 102.35 - 106.9 Weak-Moderate (Alt) Biotite>>
		<<Alt: 106.9 - 108.04 Strong (Alt) Chlorite>>
		<<Alt: 108.04 - 110 Moderate (Alt) Muscovite>>
		<<Alt: 108.04 - 110 Trace (Alt) Chlorite>>
		<<Struc: 105.46 - 108 Weak (Alt) Fault>> Trace fault gouge.
109.40	**110.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
End of Hole @ 110		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-230

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	22-Aug-15
UTM Easting	414871.81	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	22-Aug-15
UTM Northing:	6815378.906	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1390.693	Casing Depth (m):	12	Length (m):	41	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	21-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	22-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-227

Comments:

This hole is a twin of K15-227 to collect oxidised sample of MET7 & MET6 domains and for increased MET spatial coverage. The hole was drilled to 41m depth and successfully captures the portion of massive sulphide to be analysed for MET7 and MET6 domains. Massive sulphide (OB) occurs below and adjacent to overburden cobbles and gravels. Massive sulphide intervals are 11.3m to 12m (OB), 12.5m to 12.8m (OB), 13.2m to 18.45m (OA, OB) and 35.6m to 37.5m. Only intervals between 11.3m to 18.45m were sampled for MET.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180	0	180	APS	David Nuttal	21-Aug-15		☑	
35	-54.7	158.9	22.5	181.4	ReflexEZS	Geotech	22-Aug-15	5683	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.30**	**OVBN**	**Overburden**									
11.30	**12.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	11.30	12.00	0.70						
12.00	**12.50**	**RHYv**	**Rhyolite volcaniclastic** **grey-green**	12.00	12.50	0.50						
<<Min: 12 - 12.5 1% Min: Pyrite>>												
<<Alt: 12 - 12.5 Moderate (Alt) Muscovite>>												
<<Struc: 12.25 - 12.3 Fault>> fault gouge. Parallel to foliation.												
12.50	**12.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	12.50	12.80	0.30						
12.80	**13.20**	**RHYv**	**Rhyolite volcaniclastic** **grey-green**	12.80	13.20	0.40						
<<Min: 12.8 - 13.2 0.5% Min: Pyrite>>												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 12.8 - 13.2 Moderate (Alt) Muscovite>>													
13.20	**16.55**	**OA**	**Magnetite bearing sulphides**		13.20	14.20	1.00						
					14.20	14.80	0.60						
					14.80	15.60	0.80						
					15.60	16.55	0.95						
16.55	**18.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		16.55	17.00	0.45						
					17.00	18.00	1.00						
18.00	**18.20**	**OA**	**Magnetite bearing sulphides**		18.00	18.45	0.45						
18.20	**18.45**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
18.45	**23.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	18.45	19.45	1.00						
<<Min: 18.45 - 18.9 2% Min: Sphalerite>>					19.45	20.45	1.00						
<<Min: 18.45 - 18.9 2% Min: Pyrite>>					20.45	21.45	1.00						
<<Min: 18.45 - 18.9 0.5% Min: Galena>>					21.45	22.45	1.00						
<<Min: 18.45 - 18.9 1% Min: Chalcopyrite>>					22.45	23.50	1.05						
<<Min: 18.5 - 23.9 1% Min: Calcite>>													
<<Min: 18.9 - 35.6 1% Min: Pyrite>>													
<<Min: 18.9 - 35.6 0.25% Min: Pyrrhotite>>													
<<Alt: 18.45 - 24.5 Weak (Alt) Muscovite>>													
<<Vein: 22.7 - 25.9 25% Quartz-Carbonate>>													
23.50	**30.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	23.50	24.50	1.00						
<<Min: 23.9 - 33 3% Min: Calcite>>					24.50	25.50	1.00						
<<Alt: 24.5 - 29 Weak-Moderate (Alt) Muscovite>>					25.50	26.50	1.00						
<<Alt: 29 - 35 Trace (Alt) Muscovite>>					26.50	27.50	1.00						
					27.50	28.50	1.00						
					28.50	29.50	1.00						
					29.50	30.10	0.60						
30.10	**35.60**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	30.10	31.10	1.00						
<<Min: 33 - 35.6 5% Min: Calcite>>					31.10	32.10	1.00						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 35 - 35.6 Weak-Moderate (Alt) Muscovite>>					32.10	33.10	1.00						
<<Vein: 33 - 37.8 7% Quartz-Carbonate>>					33.10	34.10	1.00						
<<Struc: 32.2 - 32.25 Fault>> fault gouge					34.10	35.10	1.00						
					35.10	35.60	0.50						
35.60	**36.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		35.60	36.70	1.10						
<<Min: 35.6 - 37.5 2% Min: Calcite>>													
36.70	**37.50**	**OI**	**Heavilly disseminated sulphides in host schist**		36.70	37.50	0.80						
37.50	**41.00**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	37.50	38.50	1.00						
<<Min: 37.5 - 41 1% Min: Pyrite>>					38.50	39.50	1.00						
<<Min: 37.5 - 41 1% Min: Calcite>>					39.50	40.50	1.00						
<<Alt: 37.5 - 41 Weak (Alt) Muscovite>>					40.50	41.00	0.50						
<<Struc: 38.3 - 40.9 Fault>> Large zone of broken and milled core, poor recovery and abundant fault gauge present.													

End of Hole @ 41

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-231

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	23-Aug-15
UTM Easting	414750.054	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	25-Aug-15
UTM Northing:	6815467.364	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1408.099	Casing Depth (m):	4.5	Length (m):	176	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	21-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of this whole was to confirm the resource between K94 - 039 & K94 - 007.
From surface to 52.9 m K15-236 consists of a thick package of rhyolite flows +/- carbonaceous material and carbonaceous mudstones. The shallowest of two massive sulphide intercepts consisting of OA, OB, and OH ore types was intersected between 52.9-73.3 m (20.4 m total thickness). The two massive sulphide intercepts are separated by RHYi and RHYvx between 73.03 -82.5 m. The deeper of the two massive sulphide intercepts consisting of OB, OA ore types was intersected between 82.5-89.78 m (7.28 m total thickness). The lower sulphide zone contains 2.25 m of RHYv.
The structural footwall consists of MAFi intruded by RHYi, both of which sit stratigraphically above a thick succession of RHYvx and RHYvl. The footwall was intersected between 97.52-176.0 m. A thin unit of what appeared to be OJ was intersected between 127.12-127.9 m.
There is no syngenetic alteration in the felsic volcanic hanging wall. Weak to moderate MU and moderate to strong CL syngenetic alteration is present within a the unit of RHYv in the lower ore zone(89.78-92.03 m). Moderate MU and CL syngenetic alteration is present from 98.37-99.8 m; weak CI alteration present between 98.37-98.66 m. Syngenetic alteration of the footwall has been eliminated by MAFi and RHYi units with the exception of a thin zone of strong CL, moderate CI, and weak BI alteration between 127.12 and 127.9 m. Alteration of the footwall is characterized by a strong CL, and weak BI overprint as well as strong to intense silicification associated with RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Cooper Campbell	22-Aug-15		☑	
26	-68.5	160.1	22.5	182.6	ReflexEZS	Geotech	22-Aug-15	5826	☑	
65	-69	149.3	22.5	171.8	ReflexEZS	Geotech	22-Aug-15	6033	☐	Hit fault at 56 to 59 m. Driller was going to do a survey but chose not to because of bad ground. High magnetic field likely resulting in incorrect survey.
95	-68.3	163.5	22.5	186	ReflexEZS	Geotech	22-Aug-15	5637	☑	
128	-68.6	163.1	22.5	185.6	ReflexEZS	Geotech	23-Aug-15	5750	☑	
176	-67.9	168.5	22.5	191	ReflexEZS	Geotech	23-Aug-15	5746	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.00**	**OVBN** **Overburden**									
4.00	**5.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 4 - 38.76 0.01% Min: Sphalerite>>											

From (m)	To (m)		Rocktype & Description
<<Min: 4 - 38.76 3% Min: Pyrite>>			
<<Min: 4 - 38.76 0.01% Min: Galena>>			
<<Alt: 4 - 28.37 Weak-Moderate (Alt) Muscovite>>			
<<Struc: 4 - 30.85 Weak (Alt) Fault>> Narrow brittle faults with minor gouge and broken rock. Low intensity faults spaced metres apart.			
5.50	**18.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
18.00	**25.92**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
25.92	**28.37**	**MDSc**	**Carbonaceous dominant mudstone**
28.37	**38.76**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
<<Alt: 28.37 - 38.76 Moderate (Alt) Muscovite>>			
38.76	**52.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 38.76 - 45.22 0.25% Min: Sphalerite>> VN			
<<Min: 38.76 - 45.22 2% Min: Pyrite>>			
<<Min: 38.76 - 45.22 0.25% Min: Galena>> VN			
<<Min: 38.76 - 45.22 0.5% Min: Chalcopyrite>>			
<<Min: 45.22 - 47 5% Min: Sphalerite>>			
<<Min: 45.22 - 47 7% Min: Pyrite>>			
<<Min: 45.22 - 47 2% Min: Galena>>			
<<Min: 45.22 - 47 0.5% Min: Chalcopyrite>>			
<<Min: 47 - 52.9 0.01% Min: Sphalerite>>			
<<Min: 47 - 52.9 1% Min: Pyrite>>			
<<Min: 47 - 52.9 0.01% Min: Galena>>			
<<Alt: 38.76 - 48.56 Moderate-Strong (Alt) Muscovite>>			
<<Alt: 48.56 - 52.9 Strong (Alt) Muscovite>>			
<<Struc: 45 - 45.13 Weak (Alt) Fault>> Narrow high intensity fault in massive sulphide. 100% fault gouge.			
<<Struc: 46.1 - 46.11 dominant foliation>>			
<<Struc: 46.57 - 46.58 dominant foliation>>			
<<Struc: 48.56 - 58.85 Weak (Alt) Fault>> Variable orientation. Narrow brittle faults with minor gouge and broken rock. Low intensity faults spaced metres apart.			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
43.72	45.22	1.50	B00266555	8.1	0.16	0.3	0.02	0.05
45.22	46.00	0.78	B00266556	6.5	0.056	-0.01	0.16	0.29
46.00	47.00	1.00	B00266557	19.6	0.441	0.81	0.21	5.74
47.00	48.40	1.40	B00266558	5.7	0.1	0.13	0.06	0.34
48.40	49.90	1.50	B00266559	1	-0.005	-0.01	0.02	0.03
49.90	51.40	1.50	B00266561	2.8	0.039	0.03	0.02	0.05
51.40	52.90	1.50	B00266562	36	0.385	0.11	0.1	0.39

From (m)	To (m)		Rocktype & Description		
52.90	**56.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	
56.90	**58.00**	**OA**	**Magnetite bearing sulphides**	**MG**	
58.00	**59.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	
59.50	**61.33**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	
61.33	**67.23**	**OA**	**Magnetite bearing sulphides**	**MG**	
<<Struc: 61.51 - 61.52 dominant foliation>>					
<<Struc: 62.98 - 62.99 dominant foliation>>					
<<Struc: 63.12 - 63.13 dominant foliation>>					
<<Struc: 64.85 - 64.86 dominant foliation>>					
<<Struc: 67.05 - 67.06 dominant foliation>>					
67.23	**73.03**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	
<<Struc: 69.43 - 69.44 dominant foliation>>					
<<Struc: 71.66 - 71.67 dominant foliation>>					
73.03	**79.83**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		
<<Min: 73.18 - 81.74 2% Min: Sphalerite>>					
<<Min: 73.18 - 81.74 3% Min: Pyrite>>					
<<Min: 73.18 - 81.74 0.01% Min: Galena>>					

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
52.90	54.00	1.10	B00266563	251	2.27	0.4	4.28	9.78
54.00	55.00	1.00	B00266564	256	3.26	0.52	4.21	7.39
55.00	56.00	1.00	B00266565	392	2.73	0.63	4.33	9.91
56.00	56.90	0.90	B00266566	211	1.1	0.73	3.85	7.98
56.90	58.00	1.10	B00266567	91.8	0.281	0.23	2.14	4.89
58.00	59.00	1.00	B00266568	206	1.88	0.4	4.03	13
59.00	59.50	0.50	B00266569	290	2.94	0.81	3.02	8.91
59.50	60.00	0.50	B00266571	48.7	1.36	0.42	0.79	10.3
60.00	61.33	1.33	B00266572	154	1.7	0.7	1.77	5.73
61.33	62.00	0.67	B00266573	140	1.1	1.17	1.79	6.82
62.00	63.00	1.00	B00266574	86.2	1.37	1.57	0.35	5.35
63.00	64.00	1.00	B00266575	28.8	0.953	1.14	0.1	5.16
64.00	65.00	1.00	B00266576	54	0.602	0.76	0.46	7.78
65.00	66.00	1.00	B00266577	113	0.936	0.66	1.44	4.94
66.00	66.50	0.50	B00266578	56.4	0.77	0.66	0.62	3.5
66.50	67.23	0.73	B00266579	66.6	0.873	0.37	1.11	8.14
67.23	68.00	0.77	B00266581	85.2	1.09	0.23	1.29	7.63
68.00	69.00	1.00	B00266582	177	2.26	0.59	0.49	2.32
69.00	70.00	1.00	B00266583	117	1.48	0.22	0.43	4.16
70.00	71.00	1.00	B00266584	221	2.35	0.35	0.95	4.82
71.00	72.00	1.00	B00266585	162	1.4	0.1	1.31	4.96
72.00	73.03	1.03	B00266586	337	4.03	0.44	1.39	5.52
73.03	74.50	1.47	B00266587	11.3	0.169	0.11	0.1	1.19
74.50	76.00	1.50	B00266588	21.5	0.191	-0.01	0.03	0.6
76.00	77.50	1.50	B00266589	55.1	0.554	-0.01	0.04	0.59
77.50	79.00	1.50	B00266591	12.3	0.309	-0.01	0.01	0.14

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 73.18 - 81.74 0.01% Min: Chalcopyrite>>					79.00	80.50	1.50	B00266592	16.2	0.153	-0.01	0.06	0.15
<<Min: 73.18 - 82.5 3% Min: Calcite>>													
<<Alt: 73.18 - 82.5 Moderate-Strong (Alt) Silicification>>													
<<Alt: 73.18 - 82.5 Moderate (Alt) Muscovite>>													
<<Struc: 74.09 - 74.1 dominant foliation>>													
<<Struc: 76.44 - 76.45 dominant foliation>>													
<<Struc: 79.59 - 79.6 dominant foliation>>													
79.83	**82.50**	**RHYvx**	**Quartz and/or feldspar crystal tuff**		80.50	81.74	1.24	B00266593	4.6	0.041	-0.01	0.03	0.02
<<Min: 81.74 - 82.5 0.01% Min: Sphalerite>>					81.74	82.50	0.76	B00266594	25.9	0.149	0.53	0.09	0.36
<<Min: 81.74 - 82.5 0.5% Min: Pyrite>>													
<<Min: 81.74 - 82.5 0.01% Min: Galena>>													
<<Min: 81.74 - 82.5 0.5% Min: Chalcopyrite>>													
<<Vein: 81.74 - 82.5 100% Quartz-Carbonate-Sulphide 50 deg. >> PY, CP, GL, SP													
82.50	**83.22**	**OA**	**Magnetite bearing sulphides**	**MG**	82.50	83.22	0.72	B00266595	114	1.81	1.55	0.49	5.58
83.22	**88.04**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	83.22	84.20	0.98	B00266596	137	1.54	0.54	2.84	8.23
83.22 - 88.04: Short medium grained OA intercepts from 84.04-84.17 m and 86.56-86.78 m													
<<Struc: 85.35 - 85.36 dominant foliation>>					84.20	85.20	1.00	B00266597	69.1	1.42	0.33	0.95	3.72
<<Struc: 86.58 - 86.59 dominant foliation>>					85.20	86.20	1.00	B00266598	108	1.43	0.41	1.18	7.78
					86.20	87.20	1.00	B00266599	98.2	0.977	0.47	1.14	4.02
					87.20	88.04	0.84	B00266601	120	1.1	0.15	3.63	7.15
88.04	**88.46**	**OA**	**Magnetite bearing sulphides**	**MG**	88.04	88.46	0.42	B00266602	121	0.882	0.3	4.58	8.09
88.46	**89.78**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	88.46	89.00	0.54	B00266603	149	2.44	0.43	2.16	8.81
					89.00	89.78	0.78	B00266604	134	2.25	0.5	1.63	7.91
89.78	**92.03**	**RHYv**	**Rhyolite volcaniclastic**		89.78	91.00	1.22	B00266605	24.3	0.388	0.08	0.04	0.11
<<Min: 89.78 - 92.03 0.5% Min: Sphalerite>>					91.00	92.03	1.03	B00266606	32	0.169	0.06	0.1	0.31
<<Min: 89.78 - 92.03 1% Min: Pyrite>>													
<<Alt: 89.78 - 92.03 Weak-Moderate (Alt) Muscovite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 91.48 - 92.03 Moderate-Strong (Alt) Chlorite>>										
			<<Struc: 90.34 - 92 Weak (Alt) Fault>> Narrow brittle faults with minor gouge and broken rock. Low intensity faults spaced metres apart.										
92.03	**97.52**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	92.03	93.00	0.97	B00266607	439	5.6	0.64	2.73	4.76
			<<Struc: 92.75 - 92.76 dominant foliation>>		93.00	94.00	1.00	B00266608	576	4.82	0.55	4.71	9.22
			<<Struc: 93.3 - 93.4 dominant foliation>>		94.00	95.00	1.00	B00266609	282	1.98	0.32	3.5	10
			<<Struc: 94.54 - 94.55 dominant foliation>>		95.00	96.00	1.00	B00266612	218	2.21	0.41	3.94	8.42
					96.00	97.00	1.00	B00266613	175	1.74	0.41	3.58	9.98
					97.00	97.52	0.52	B00266614	71.3	0.405	0.07	1.81	6.16
97.52	**98.37**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		97.52	98.37	0.85	B00266615	11.4	0.072	0.01	0.41	0.31
			<<Min: 97.52 - 99.8 0.01% Min: Sphalerite>>										
			<<Min: 97.52 - 99.8 3% Min: Pyrite>>										
			<<Min: 97.52 - 118.89 10% Min: Calcite>>										
			<<Alt: 97.52 - 98.37 Weak-Moderate (Alt) Muscovite>>										
			<<Alt: 97.52 - 98.37 Moderate (Alt) Chlorite>>										
			<<Alt: 97.52 - 98.37 Trace (Alt) Biotite>>										
98.37	**99.80**	**RHYv**	**Rhyolite volcaniclastic**		98.37	99.80	1.43	B00266616	3	0.011	0.01	0.13	0.15
			<<Alt: 98.37 - 98.66 Weak (Alt) Cordierite>>										
			<<Alt: 98.37 - 99.8 Moderate (Alt) Muscovite>>										
			<<Alt: 98.37 - 99.8 Moderate (Alt) Chlorite>>										
99.80	**119.37**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		99.80	101.30	1.50	B00266617	1.3	-0.005	-0.01	0.03	0.06
			<<Min: 99.8 - 118.89 0.01% Min: Pyrite>>										
			<<Min: 118.89 - 125.36 1% Min: Sphalerite>>										
			<<Min: 118.89 - 125.36 0.01% Min: Pyrite>>										
			<<Min: 118.89 - 125.36 0.5% Min: Pyrrhotite>>										
			<<Min: 118.89 - 125.36 3% Min: Calcite>>										
			<<Alt: 99.8 - 102.53 Moderate (Alt) Muscovite>>										
			<<Alt: 99.8 - 102.53 Weak-Moderate (Alt) Chlorite>>										
			<<Alt: 102.53 - 118.89 Moderate-Strong (Alt) Chlorite>>										
			<<Alt: 102.53 - 118.89 Moderate-Strong (Alt) Biotite>>										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 118.89 - 125.41 Strong (Alt) Silicification>>

<<Alt: 118.89 - 125.41 Weak-Moderate (Alt) Muscovite>>

<<Vein: 99.8 - 161.12 6% Quartz-Carbonate-Sulphide 50 deg. >> Trace PY, SP, PO, CP BLEB.

<<Struc: 102.05 - 108.3 Weak (Alt) Fault>> Narrow brittle faults with minor gouge and broken rock. Low intensity faults spaced metres apart.

<<Struc: 115.36 - 115.37 dominant foliation>>

119.37 125.36 RHYi Aphanitic Rhyolite (intrusion)

125.36 127.12 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 125.36 - 127.12 0.01% Min: Pyrite>>

<<Min: 125.36 - 127.12 0.25% Min: Pyrrhotite>>

<<Min: 125.36 - 127.9 7% Min: Calcite>>

<<Alt: 125.41 - 127.12 Moderate-Strong (Alt) Chlorite>>

<<Alt: 125.41 - 127.12 Weak (Alt) Biotite>>

127.12 127.90 OJ Heavilly disseminated sulphides in proximal altered rock **CG**

<<Min: 127.12 - 127.9 2% Min: Pyrrhotite>>

<<Min: 127.12 - 127.9 1% Min: Chalcopyrite>>

<<Alt: 127.12 - 127.9 Strong (Alt) Chlorite>>

<<Alt: 127.12 - 127.9 Moderate (Alt) Cordierite>>

<<Alt: 127.12 - 127.9 Weak (Alt) Biotite>>

127.90 131.93 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 127.9 - 131.93 0.01% Min: Pyrrhotite>>

<<Min: 127.9 - 131.93 1% Min: Calcite>>

<<Alt: 127.9 - 131.93 Strong (Alt) Chlorite>>

<<Alt: 127.9 - 131.93 Trace (Alt) Biotite>>

131.93 146.56 RHYvx Quartz and/or feldspar crystal tuff

131.93 - 146.56: QZ eyes.

<<Min: 131.93 - 142.94 0.01% Min: Pyrrhotite>>

<<Min: 131.94 - 142.94 0.01% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 131.94 - 142.94 0.01% Min: Pyrite>>
<<Min: 131.94 - 142.94 0.01% Min: Galena>>
<<Min: 142.94 - 145.07 0.25% Min: Sphalerite>>
<<Min: 142.94 - 145.07 1% Min: Pyrrhotite>>
<<Min: 145.07 - 176 0.01% Min: Sphalerite>>
<<Min: 145.07 - 176 0.25% Min: Pyrite>>
<<Min: 145.07 - 176 0.5% Min: Pyrrhotite>>
<<Min: 145.88 - 163.41 1% Min: Calcite>>
<<Alt: 131.93 - 152.69 Moderate-Strong (Alt) Muscovite>>
<<Alt: 141.22 - 145.07 Moderate (Alt) Chlorite>>
<<Alt: 145.07 - 149.09 Weak (Alt) Chlorite>>

146.56 158.89 RHYvl Lapilli tuff

<<Alt: 149.09 - 152.69 Weak-Moderate (Alt) Chlorite>>
<<Alt: 149.09 - 152.69 Weak-Moderate (Alt) Biotite>>
<<Alt: 152.69 - 158.89 Weak (Alt) Chlorite>>
<<Alt: 152.69 - 158.89 Trace (Alt) Biotite>>
<<Alt: 152.69 - 163.41 Moderate (Alt) Muscovite>>

158.89 160.77 RHYvx Quartz and/or feldspar crystal tuff

<<Alt: 158.89 - 160.77 Weak-Moderate (Alt) Chlorite>>
<<Alt: 158.89 - 160.77 Weak-Moderate (Alt) Biotite>>

160.77 163.41 RHYvl Lapilli tuff

<<Alt: 160.77 - 163.41 Weak (Alt) Chlorite>>
<<Alt: 160.77 - 163.41 Trace (Alt) Biotite>>

163.41 176.00 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 163.41 - 176 10% Min: Calcite>>
<<Alt: 163.41 - 176 Weak-Moderate (Alt) Muscovite>>
<<Alt: 163.41 - 176 Weak-Moderate (Alt) Chlorite>>
<<Alt: 163.41 - 176 Weak-Moderate (Alt) Biotite>>

End of Hole @ 176

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-232

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	23-Aug-15
UTM Easting	414843.564	Core Size:	NQ3	Azimuth:	180.68	Date Logging Complete:	25-Aug-15
UTM Northing:	6815601.358	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1395.499	Casing Depth (m):	3	Length (m):	209	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	22-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	24-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole is designed to confirm resource grade between K94-047 & K94-010.
The structural hanging wall of this hole is composed of metamorphosed clastic and coherent felsic volcanics mixed with biotite rich/carbonaceous mudstones and small foliation parallel mafic intrusives. In the structural hangingwall muscovite alteration is pervasive and intensity increases towards the ore body. Proximal to the massive sulphide is an increasing intensity of chloritic and cordierite alteration. Massive sulphide is heavily disseminated within host schist rocks (OJ) between 134.52m to 139.46m. Massive sulphide lenses are 142.47m to 144.91m (OG, OA), 148m to 150.8m (OB, OA), 151.35m to 163.3m (OB, OJ, OI), 163.8m to 164.1m (OB). The structural footwall is composed of a felsic dike, a mafic intrusive and felsic volcaniclastic/coherent shist. An anomolous OJ interval occurs with strong chloritic alteration at 189.8m to 190.06m; this interval contains abundant CP. The footwall contains both chloritic alteration in the mafic intrusive as well as siliceous overprinting thought to be derived from the felsic dike.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.68	0	180.68	APS	David Nuttal	23-Aug-15		☑	
68	-59.7	162.4	22.5	184.9	ReflexEZS	Geotech	22-Aug-15	5758	☑	
89	-59.5	163.4	22.5	185.9	ReflexEZS	Geotech	22-Aug-15	5714	☑	
120	-59.5	165.6	22.5	188.1	ReflexEZS	Geotech	22-Aug-15	5771	☑	
150	-59.6	165.8	22.5	188.3	ReflexEZS	Geotech	22-Aug-15		☑	
179	-60	30.8	22.5	53.3	ReflexEZS	Geotech	22-Aug-15	4721	☐	Values not accepted, low magnetic field
203	-59	162.9	22.5	185.4	ReflexEZS	Geotech	22-Aug-15	5651	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.00**	**OVBN Overburden**									
3.00	**6.70**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) grey**									
<<Min: 3 - 15.7 0.25% Min: Pyrite>>											
<<Min: 3 - 15.72 0.25% Min: Pyrrhotite>>											
<<Alt: 3 - 33 Trace (Alt) Muscovite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
6.70	**12.70**	**RHYvl**	**Lapilli tuff**	**medium grey**									
12.70	**13.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**									
13.20	**15.72**	**RHYvl**	**Lapilli tuff**	**light grey**									
15.72	**17.73**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**leucocratic**									

15.72 - 17.73: White calcite bands.

<<Min: 15.72 - 17.73 1% Min: Pyrrhotite>>

17.73	**26.45**	**RHYvl**	**Lapilli tuff**	**medium grey**

17.73 - 26.45: Mixed fine grain material 21.2m to 21.73m

<<Min: 17.73 - 21.73 0.5% Min: Pyrite>>
<<Min: 17.73 - 22 0.1% Min: Sphalerite>>
<<Min: 21.73 - 22.32 5% Min: Pyrite>>
<<Min: 21.73 - 22.32 3% Min: Pyrrhotite>>
<<Min: 22.32 - 35 0.5% Min: Pyrite>>
<<Vein: 21.8 - 22 98% Quartz>>

26.45	**31.61**	**RHYv**	**Rhyolite volcaniclastic**	**medium grey**

26.45 - 31.61: Dominant texture cannot be recognized.

31.61	**32.19**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**leucocratic**
32.19	**36.60**	**RHYvl**	**Lapilli tuff**	**light grey**

<<Min: 36 - 42 3% Min: Pyrite>>
<<Alt: 33 - 40 Weak (Alt) Muscovite>>

36.60	**38.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**leucocratic**
38.10	**40.38**	**RHY**	**undifferentiated rhyolite**	**grey-brown**

<<Alt: 40 - 96 Trace (Alt) Muscovite>>

40.38	**43.83**	**RHYv**	**Rhyolite volcaniclastic**	**grey**

<<Min: 42 - 74 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

43.83	**63.08**	**RHYvl**	**Lapilli tuff**	**dark grey**

43.83 - 63.08: bottom of interval contains modal abundance of biotite and chlorite, which colours the rock dark grey/brown.

63.08	**64.03**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**melanocratic**
64.03	**66.44**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**leucocratic**
66.44	**73.88**	**MDSt**	**Rhyolite tuff dominant mudstone**	**dark grey**

<<Min: 66.44 - 75 1% Min: Pyrrhotite>>

73.88	**76.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**dark grey**

<<Min: 74 - 88 2% Min: Pyrite>>

<<Min: 75 - 88 1% Min: Pyrrhotite>>

76.10	**77.60**	**RHYvl**	**Lapilli tuff**	
77.60	**85.00**	**RHY**	**undifferentiated rhyolite**	
85.00	**96.00**	**RHYv**	**Rhyolite volcaniclastic**	

<<Min: 88 - 92 0.5% Min: Pyrite>>

<<Min: 88 - 107 0.5% Min: Pyrrhotite>>

<<Min: 92 - 107 2% Min: Pyrite>>

96.00	**113.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	

<<Min: 107 - 141 1% Min: Pyrrhotite>>

<<Min: 107 - 148 2% Min: Pyrite>>

<<Alt: 96 - 107 Weak-Moderate (Alt) Muscovite>>

<<Alt: 107 - 115 Moderate (Alt) Muscovite>>

<<Struc: 96.51 - 96.54 Weak (Alt) Fault>>

<<Struc: 96.71 - 96.74 Weak (Alt) Fault>>

<<Struc: 97.89 - 97.93 Weak (Alt) Fault>>

<<Struc: 104 - 104.05 Moderate (Alt) Fault>>

113.00	**117.10**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**dark grey**

<<Alt: 115 - 122 Moderate-Strong (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 113 - 113.18 Weak (Alt) Fault>>													
<<Struc: 113.7 - 120 Weak (Alt) Fault>> Several small faults in interval													
117.10	**123.68**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**medium grey**									
<<Alt: 122 - 130 Moderate (Alt) Muscovite>>													
<<Struc: 121.56 - 121.72 Moderate (Alt) Fault>>													
123.68	**125.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**dark grey**									
125.00	**132.90**	**RHY**	**undifferentiated rhyolite**	**light grey**									
<<Min: 128 - 134.45 0.5% Min: Sphalerite>>													
<<Alt: 129 - 134.83 Weak (Alt) Chlorite>>													
<<Alt: 130 - 134.45 Strong (Alt) Muscovite>>													
132.90	**134.52**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**melanocratic**	132.95	134.45	1.50	B00268526	12.6	0.129	0.13	0.11	0.72
<<Min: 133.91 - 148 0.5% Min: Pyrite>>					134.45	134.97	0.52	B00268527	28.9	0.358	0.87	0.04	0.08
<<Min: 133.91 - 209 0.5% Min: Pyrrhotite>>													
134.52	**134.83**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**										
134.83	**135.54**	**RHY**	**undifferentiated rhyolite**		134.97	135.54	0.57	B00268528	9.4	0.047	0.09	0.18	0.59
<<Alt: 134.83 - 140.9 Weak-Moderate (Alt) Chlorite>>													
135.54	**135.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		135.54	135.80	0.26	B00268529	16.2	0.057	0.41	0.23	3.76
135.80	**139.12**	**RHYv**	**Rhyolite volcaniclastic**		135.80	137.30	1.50	B00268531	0.6	0.01	-0.01	-0.01	0.02
<<Struc: 136.83 - 136.83 dominant foliation>>					137.30	138.00	0.70	B00268532	-0.3	0.017	-0.01	-0.01	0.02
					138.00	139.12	1.12	B00268533	0.9	-0.005	0.04	-0.01	0.07
139.12	**139.46**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		139.12	139.46	0.34	B00268534	108	1.27	4.08	0.16	0.3
139.46	**142.47**	**RHYv**	**Rhyolite volcaniclastic**	**melanocratic**	139.46	140.96	1.50	B00268535	1.3	-0.005	0.01	0.01	0.16
139.46 - 142.47: Complex interval. Contains abundant chlorite present as alteration, and cordierite porphyroblasts.													

From (m)	To (m)		Rocktype & Description
<<Alt: 140.9 - 145.1 Moderate-Strong (Alt) Chlorite>>			
142.47	**144.20**	**OG**	**Chalcopyrite rich sulphides**
144.20	**144.91**	**OA**	**Magnetite bearing sulphides**
144.91	**148.00**	**RHYv**	**Rhyolite volcaniclastic**
<<Alt: 145.1 - 163.3 Weak (Alt) Chlorite>>			
<<Alt: 146.4 - 148 Strong (Alt) Muscovite>>			
148.00	**150.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
150.20	**150.80**	**OA**	**Magnetite bearing sulphides**
150.80	**151.35**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 151 - 151.35 0.5% Min: Pyrite>>			
<<Alt: 150.8 - 151.35 Strong (Alt) Muscovite>>			
151.35	**152.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
152.60	**154.76**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
154.76	**158.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
158.00	**158.60**	**OI**	**Heavilly disseminated sulphides in host schist**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
140.96	142.47	1.51	B00268536	8.9	0.095	0.25	0.02	0.22
142.47	143.40	0.93	B00268537	208	2.94	9.27	0.09	0.81
143.40	144.20	0.80	B00268538	203	2.73	8.75	0.14	0.78
144.20	144.91	0.71	B00268539	128	1.03	5.22	0.26	1.19
144.91	146.40	1.49	B00268541	2.4	0.014	0.04	0.02	0.37
146.40	148.00	1.60	B00268542	6.5	0.07	0.23	0.01	0.15
148.00	149.00	1.00	B00268543	28.3	0.459	0.1	0.33	2.95
149.00	149.60	0.60	B00268544	55.2	0.392	0.14	0.51	5.37
149.60	150.20	0.60	B00268545	24.4	0.226	0.04	0.37	5.49
150.20	150.80	0.60	B00268546	20.3	0.347	0.41	0.11	2.28
150.80	151.35	0.55	B00268547	4.7	0.054	0.03	0.04	0.27
151.35	152.00	0.65	B00268548	200	1.22	0.02	2.48	5.99
152.00	152.60	0.60	B00268549	189	1.5	0.02	2.47	7.36
152.60	153.60	1.00	B00268551	425	2.48	0.65	1.4	3.58
153.60	154.10	0.50	B00268552	510	1.86	0.65	1.59	4.25
154.10	154.76	0.66	B00268553	243	1.68	0.6	2.4	5.3
154.76	155.70	0.94	B00268554	84	0.838	0.15	1.65	5.87
155.70	156.70	1.00	B00268555	70	0.544	0.11	1.01	2.97
156.70	157.20	0.50	B00268556	123	0.766	0.27	1.94	7.34
157.20	158.00	0.80	B00268557	80	0.345	0.12	3.06	8.89
158.00	158.60	0.60	B00268558	433	3.63	1.09	2.63	5.14

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
158.60	**159.96**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		158.60	159.10	0.50	B00268559	180	0.879	0.39	1.16	5.04
					159.10	159.96	0.86	B00268561	128	1.23	0.28	3.13	8.38
159.96	**161.95**	**OI**	**Heavilly disseminated sulphides in host schist**		159.96	160.50	0.54	B00268562	137	1.6	0.3	3.67	6.65
					160.50	161.40	0.90	B00268563	365	3.07	0.99	5.63	9.94
					161.40	161.95	0.55	B00268564	348	4	0.76	3.77	6.66
161.95	**162.45**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		161.95	162.45	0.50	B00268565	209	1.27	0.15	5	10.8
162.45	**163.30**	**OI**	**Heavilly disseminated sulphides in host schist**		162.45	163.30	0.85	B00268566	159	1.88	0.33	3.66	7.23
<<Min: 163.1 - 209 1% Min: Pyrite>>													
<<Struc: 163 - 163.5 Moderate (Alt) Fault>>													
163.30	**163.80**	**RHY**	**undifferentiated rhyolite**		163.30	164.00	0.70	B00268567	25.2	0.021	0.51	0.23	1.85
<<Alt: 163.3 - 166 Moderate (Alt) Chlorite>>													
163.80	**164.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		164.00	165.50	1.50	B00268568	3.1	0.01	-0.01	0.08	0.24
164.10	**182.72**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**	165.50	167.00	1.50	B00268569	1.1	0.008	-0.01	0.02	0.05
164.1 - 182.72: Silicified mafic intrusive, fuchsite present. Silicification increases towards base of interval where felsic intrusive meets unit.													
<<Alt: 168 - 182 Moderate (Alt) Silicification>>					167.00	168.50	1.50	B00268571	-0.3	-0.005	-0.01	-0.01	0.47
<<Alt: 182 - 188 Strong (Alt) Silicification>>													
<<Vein: 180.1 - 192.6 5% Quartz>>													
<<Struc: 165.88 - 165.9 Weak (Alt) Fault>>													
182.72	**188.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**leucocratic**									
182.72 - 188.1: angular to subrounded quartz (or quartz replaced) phenocrysts. Large siliceous alteration zone occurs around dike.													
<<Alt: 188 - 189 Moderate (Alt) Chlorite>>													

From (m)	To (m)	Rocktype & Description
188.10	**189.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 189 - 190 Strong (Alt) Chlorite>>		
<<Struc: 189.22 - 189.25 Weak (Alt) Fault>>		
<<Struc: 189.59 - 189.62 Weak (Alt) Fault>>		
189.80	**190.06**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Alt: 190 - 191.51 Moderate (Alt) Chlorite>>		
<<Struc: 189.91 - 189.94 Moderate (Alt) Fault>>		
190.06	**191.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
191.50	**201.13**	**RHYv** **Rhyolite volcaniclastic**
<<Alt: 191.51 - 209 Weak (Alt) Muscovite>>		
<<Struc: 194 - 194.26 Moderate (Alt) Fault>>		
<<Struc: 198.42 - 198.48 Weak (Alt) Fault>>		
201.13	**204.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 203.91 - 209 Weak (Alt) Chlorite>>		
<<Struc: 202.4 - 202.5 Weak (Alt) Fault>> Orthogonal to foliation		
<<Struc: 203.9 - 203.91 Weak (Alt) Fault>>		
204.00	**209.00**	**RHYv** **Rhyolite volcaniclastic**
204 - 209: Intersected by small mafic dikes. Abundant sphalerite in isolated lenses.		
<<Struc: 208.71 - 208.79 Moderate (Alt) Fault>>		

End of Hole @ 209

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-233

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	24-Aug-15
UTM Easting	414899.046	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	26-Aug-15
UTM Northing:	6815796.997	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1387.119	Casing Depth (m):	9	Length (m):	224	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Hole K15-233 was drilled to intersect the massive sulfide in a target zone between 180 to 200m.
The upper units (hanging wall) are made up of coherent and lapilitic rhyolite crosscut by mafic dykes, followed by a mudstone unit directly above the massive sulfide. Mineralization starts at 175.2m and ends at 181.36 m (6.16m thick), and consists of both OI and OA domains.
In the hanging-wall, strong muscovite alteration (from 141.80 to 177.22m) as well as strong proximal chlorite alteration with cordierite (from 161 to 177.2) is present. The footwall includes a mafic sill at 181.36m with a progressive contact. The drill hole ends in a fault zone which can be correlated with the fault encountered in hole K15-238.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.53	0	180.53	APS	Geotech	23-Aug-15		☑	
26	-60.9	160.2	22.5	182.7	ReflexEZS	Geotech	23-Aug-15	5766	☑	
50	-61.5	159	22.5	181.5	ReflexEZS	Geotech	23-Aug-15	5779	☑	
74	-61.8	159.8	22.5	182.3	ReflexEZS	Geotech	23-Aug-15	5707	☑	
101	-61.8	160.5	22.5	183	ReflexEZS	Geotech	24-Aug-15	5803	☑	
125	-62.1	163.6	22.5	186.1	ReflexEZS	Geotech	24-Aug-15	5778	☑	
149	-61.9	156	22.5	178.5	ReflexEZS	Geotech	24-Aug-15	5714	☑	
176	-62.5	160	22.5	182.5	ReflexEZS	Geotech	24-Aug-15	5427	☑	
200	-62.4	164.5	22.5	187	ReflexEZS	Geotech	24-Aug-15	5829	☑	
224	-62.4	164.9	22.5	187.4	ReflexEZS	Geotech	25-Aug-15	5802	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN** **Casing**									
9.00	**10.25**	**RHYva** **Coarse grained to ash tuff**									

From (m)	To (m)	Rocktype & Description
10.25	**10.73**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
10.25 - 10.73: Dyke altered CL. BI/CA		
10.73	**17.95**	**RHYva** **Coarse grained to ash tuff**
<<Min: 16 - 45 0.1% Min: Pyrite>>		
<<Min: 16 - 45 0.1% Min: Pyrrhotite>> or patchy		
17.95	**26.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
17.95 - 26.7: Could be porphyritic		
26.70	**31.07**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
26.7 - 31.07: Dyke intruded from 29.51 to 30.46 by MAFi altered CA/CL (feldspar phenos?)		
31.07	**36.77**	**RHYvx** **Quartz and/or feldspar crystal tuff**
31.07 - 36.77: QZ eyes (high density locally), BI rich at ower contact		
<<Vein: 32 - 34 Quartz-Carbonate>> 4 QZ/CA vein 4cm wide		
36.77	**39.00**	**RHYvl** **Lapilli tuff**
36.77 - 39: Locally BI rich		
39.00	**40.81**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
39 - 40.81: Dyke, similar as mafic intrusion of the footwall. CL/BI/CA/MS		
40.81	**49.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Alt: 40.81 - 141.8 Moderate (Alt) Muscovite>>		
<<Vein: 43 - 43.6 Tourmaline 10 deg. >> TML vein shallow angle		
<<Struc: 45.12 - 45.3 Weak (Alt) Fault>> minor		
<<Struc: 46.97 - 46.98 dominant foliation>> QZ banded		
<<Struc: 48.81 - 48.82 dominant foliation>>		
49.30	**50.75**	**RHYvl** **Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

50.75 51.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

50.75 - 51.25: BI rich dyke

51.25 52.15 RHYvl Lapilli tuff

52.15 52.53 RHYcw Curdy textured-flow banded (flows, subvolcanics)

52.53 56.12 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

52.53 - 56.12: Probably dyke, intermediate composition, QZ vein at lower contact

<<Min: 56 - 71 0.2% Min: Pyrrhotite>> Along foliation, discontinuous thin veinlets or elongated mineral

56.12 61.90 RHYc Rhyolite coherant volcanics

<<Struc: 58.81 - 58.82 dominant foliation>>

61.90 67.50 RHYvl Lapilli tuff

<<Struc: 61.96 - 61.97 dominant foliation>>

<<Struc: 64.96 - 64.97 dominant foliation>>

67.50 70.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

70.30 73.44 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

70.3 - 73.44: foliated, few BI

<<Struc: 70.94 - 70.95 dominant foliation>>

73.44 81.44 RHYvl Lapilli tuff

<<Min: 75 - 81.44 0.1% Min: Pyrite>>

81.44 83.43 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

81.44 - 83.43: foliated

<<Min: 81.44 - 91 0.2% Min: Pyrite>> with GL trace

<<Min: 81.44 - 91 0.5% Min: Pyrrhotite>>

83.43 85.78 RHYvl Lapilli tuff

<<Vein: 83.9 - 83.95 Quartz-Sulphide>> QZ with CP/PO

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

85.78 95.01 RHY undifferentiated rhyolite

85.78 - 95.01: maybe vx, feldspar porphyritic. Strong foliation. Clasts extend in the MDSc.

<<Struc: 86.08 - 87.24 Moderate (Alt) Fault>> and sheared

<<Struc: 93.64 - 93.85 Weak (Alt) Fault>> fault gouge

95.01 96.25 MDSc Carbonaceous dominant mudstone

96.25 105.03 RHY undifferentiated rhyolite

96.25 - 105.03: maybe feldspar phenos, SI rich, high density of clasts

<<Min: 96.25 - 105.38 1% Min: Sphalerite>>

<<Min: 96.25 - 105.38 1% Min: Pyrite>> rare patch with CP in QZ vein

105.03 105.98 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

105.98 110.70 RHYvx Quartz and/or feldspar crystal tuff

105.98 - 110.7: QZ eyes, probably feldspar phenoblast, high density. Green aspect at contact with dyke. QZ vein (3 to 5 cn wide)

<<Min: 110 - 122 0.2% Min: Pyrite>>

<<Vein: 108.8 - 110.7 Quartz>> multiple QZ or pod (2 to 5 cm wide, 1 every meter)

110.70 127.08 RHYvl Lapilli tuff

110.7 - 127.08: maybe xl. QZ vein.

<<Min: 122 - 129.95 0.5% Min: Pyrite>>

<<Vein: 117 - 122 Quartz>> multiple QZ or pod (2 to 5 cm wide, 1 to 3 every meter)

<<Struc: 117.09 - 117.14 Weak (Alt) Fault>> fault gouge at contact with QZ vein

<<Struc: 119.07 - 119.11 Weak (Alt) Fault>> fault gouge at contact with QZ vein

127.08 139.18 RHYcw Curdy textured-flow banded (flows, subvolcanics)

127.08 - 139.18: curdy texture from 138.25 to 139.18

<<Vein: 130 - 131 Quartz>> multiple QZ or pod

<<Struc: 134.12 - 134.13 dominant foliation>> MU and PO in foliation

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
139.18	**146.50**	**RHYvl** **Lapilli tuff**									
139.18 - 146.5: discontinuous PO veinlets in foliation											
<<Alt: 141.8 - 177.22 Strong (Alt) Muscovite>>											
<<Struc: 145.75 - 146 Strong (Alt) Fault>> fault gouge, clay, major.											
<<Struc: 146 - 160.14 Moderate (Alt) Fault>> multiple small faults, about 1 every meter (45 degres average)											
146.50	**160.04**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
146.5 - 160.04: broken zone											
<<Min: 150 - 160.14 1% Min: Pyrite>> Elongated along the foliation											
160.04	**160.40**	**MDSc** **Carbonaceous dominant mudstone**									
160.04 - 160.4: CP/PO stringers in proximal alteration. SP patch											
<<Min: 160.14 - 175.2 0.5% Min: Pyrite>> coarse grain											
<<Min: 160.14 - 175.2 1% Min: Pyrrhotite>> In foliation											
<<Min: 160.14 - 175.2 0.2% Min: Chalcopyrite>>											
160.40	**175.20**	**MDSt** **Rhyolite tuff dominant mudstone**	170.70	172.20	1.50	B00264708	9.6	0.037	0.41	0.13	1.2
160.4 - 175.2: CP/PO stringers in proximal alteration. SP patch. By 170m rock unrecognizeable via CL alt											
<<Min: 167.9 - 175.2 1% Min: Sphalerite>> In foliation			172.20	173.70	1.50	B00264709	9.4	0.012	0.17	0.08	0.59
<<Alt: 161 - 170.49 Moderate (Alt) Chlorite>>			173.70	175.20	1.50	B00264711	17.2	0.112	0.63	0.02	0.25
<<Alt: 170.49 - 181.64 Strong (Alt) Chlorite>>											
<<Alt: 174.15 - 184.82 Moderate-Strong (Alt) Cordierite>> Aggregate											
<<Struc: 170.41 - 170.48 Weak (Alt) Fault>> fault gouge, clay											
175.20	**177.22**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	175.20	175.86	0.66	B00264712	42.2	0.498	1.29	0.21	1.58
175.2 - 177.22: Cordierite aggregate											
<<Min: 175.2 - 177.22 10% Min: Pyrrhotite>>			175.86	176.46	0.60	B00264713	16.3	0.167	0.67	0.02	0.12
<<Min: 175.2 - 177.22 3% Min: Chalcopyrite>>			176.46	177.22	0.76	B00264714	85.5	1.08	4.11	0.05	0.87
<<Alt: 175.2 - 177.2 Intense (Alt) Chlorite>>											
<<Struc: 175.46 - 175.47 Vein>> PO/CP stringer in proximal alteration zone											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
177.22	**178.53**	**OA**	**Magnetite bearing sulphides**	177.22	178.00	0.78	B00264715	67.7	0.277	0.98	0.49	7
177.22 - 178.53: laminated. PY/PO, few CP												
<<Min: 177.22 - 178.53 10% Min: Magnetite>>				178.00	178.53	0.53	B00264716	95.1	0.35	2.14	0.76	4.12
<<Min: 177.22 - 178.53 2% Min: Chalcopyrite>>												
178.53	**179.66**	**OI**	**Heavilly disseminated sulphides in host schist**	178.53	179.08	0.55	B00264717	56.1	0.206	1.27	0.89	2.74
<<Min: 178.53 - 179.66 3% Min: Sphalerite>>				179.08	179.66	0.58	B00264718	25.4	0.077	0.33	0.58	3.85
<<Min: 178.53 - 179.66 0.2% Min: Galena>>												
179.66	**180.60**	**OA**	**Magnetite bearing sulphides**	179.66	180.60	0.94	B00264719	29.8	0.267	1.07	0.23	3.61
179.66 - 180.6: PO												
<<Min: 179.66 - 180.6 2% Min: Sphalerite>>												
<<Min: 179.66 - 180.6 20% Min: Pyrrhotite>>												
<<Min: 179.66 - 180.6 10% Min: Magnetite>>												
<<Min: 179.66 - 180.6 3% Min: Chalcopyrite>>												
<<Alt: 179.66 - 180.6 Weak-Moderate (Alt) Chlorite>>												
180.60	**181.36**	**OI**	**Heavilly disseminated sulphides in host schist**	180.60	181.36	0.76	B00264721	26	0.103	0.39	0.36	2.44
180.6 - 181.36: Cordierite replacement. Could be OC, PO rich.												
<<Min: 180.6 - 181.36 1% Min: Sphalerite>>												
<<Min: 180.6 - 181.36 2% Min: Chalcopyrite>>												
181.36	**218.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	181.36	182.86	1.50	B00264722	5.2	0.013	0.03	0.13	0.33
181.36 - 218: MU rich at upper contact, aggreated CB porphyryblasts. Patchy leucoxene. Alt nd cntorting of mafic gives appearance of rhyolite												
<<Min: 185 - 218 20% Min: Calcite>> foliation				182.86	184.36	1.50	B00264723	7	0.018	0.15	0.06	0.15
<<Min: 190.85 - 218 0.2% Min: Sphalerite>>				184.36	185.86	1.50	B00264724	19.8	0.023	0.11	0.12	0.15
<<Min: 190.85 - 218 0.2% Min: Pyrite>> Locally weak halo of oxidation												
<<Min: 190.85 - 218 0.2% Min: Pyrrhotite>> veinlet foliation oriented												
<<Min: 190.85 - 218 0.1% Min: Chalcopyrite>> trace												
<<Alt: 181.64 - 224 Moderate (Alt) Muscovite>>												
<<Alt: 187.1 - 224 Strong (Alt) Chlorite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 194 - 206 Moderate (Alt) Biotite>>
<<Alt: 206 - 224 Moderate (Alt) Biotite>> Associated with kind of SI/MU (maybe be glassy) dyke.
<<Alt: 216.1 - 224 Moderate (Alt) Muscovite>>
<<Struc: 182.14 - 182.16 Vein>> CI altered TML vein
<<Struc: 182.5 - 182.52 Weak (Alt) Fault>> fracture infilled
<<Struc: 185.47 - 185.52 Weak (Alt) Fault>> fault gauge, clay
<<Struc: 185.47 - 185.53 Weak (Alt) Fault>> fault gouge
<<Struc: 188.14 - 188.2 Weak (Alt) Fault>> fault gouge
<<Struc: 188.22 - 188.26 Weak (Alt) Fault>> fault gauge, clay
<<Struc: 193.75 - 193.76 dominant foliation>> CA in foliation
<<Struc: 204.46 - 204.47 dominant foliation>> CA in foliation
<<Struc: 205.77 - 205.78 dominant foliation>> CA veining.
<<Struc: 209.19 - 209.2 dominant foliation>> CA in foliation
<<Struc: 211.71 - 211.78 Weak (Alt) Fault>> fault gouge
<<Struc: 214.76 - 214.77 >> Secondary (ghost) foliation.
<<Struc: 214.78 - 214.79 dominant foliation>>

218.00 224.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

218 - 224: Fauly zone, sheared. Core loss. 224.00m E.O.H.

<<Struc: 219.4 - 221 Strong (Alt) Fault>> major fault
<<Struc: 221 - 224 Shear>>

End of Hole @ 224

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-234

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	27-Aug-15
UTM Easting	419417.376	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	03-Sep-15
UTM Northing:	6813698.554	Casing Pulled?:	No	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1373.213	Casing Depth (m):	12	Length (m):	393	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The hole intersected the typical GP4F stratigraphy with a mixed sediment-mafic-felsic dominated package high in the hole, a broad section of feldspar and quartz porphyry sills and tuff through the middle, and into the "Mineralized Sequence", quartz and feldspar porphyry intruding rhyolite tuff and strongly chlorite, biotite, cordierite and garnet altered rock, including disseminated to semi-massive sphalerite-galena-pyrite-chalcopyrite (OJ? Mineralization). The mineralized and altered section stretches from 306 to 327 metres, with a section of unaltered porphyry from 309-313 and mafic dyke from around 319 to 323 metres.

Alteration associated with fault at bottom of hole is potentially quite significant, with strong MU and stringer sulphide with GL, and potential SP.

Note that on run of core was dropped at drill and core appears to be jumbled from 367.5 to about 369 m. 369 to 372 was reassembled with confidence.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Murray Jones	26-Aug-15		☑	
24	-68.6	157.3	22.4	179.7	ReflexEZS	Geotech	26-Aug-15	5772	☑	
66	-68.5	156.8	22.4	179.2	ReflexEZS	Geotech	26-Aug-15	5755	☑	
105	-69	161.6	22.4	184	ReflexEZS	Geotech	27-Aug-15	5766	☐	
132	-67.8	160.2	22.4	182.6	ReflexEZS	Geotech	27-Aug-15	5768	☑	
159	-68.5	161.5	22.4	183.9	ReflexEZS	Geotech	28-Aug-15	5761	☑	
189	-67.2	160	22.4	182.4	ReflexEZS	Geotech	28-Aug-15	5744	☑	
222	-68.1	166.1	22.4	188.5	ReflexEZS	Geotech	29-Aug-15	5733	☑	
246	-67.7	163.8	22.4	186.2	ReflexEZS	Geotech	30-Aug-15	5788	☑	
276	-67.3	169.5	22.4	191.9	ReflexEZS	Geotech	30-Aug-15	5730	☐	
303	-66.9	170.2	22.4	192.6	ReflexEZS	Geotech	31-Aug-15	5667	☑	
330	-69.7	166.7	22.4	189.1	ReflexEZS	Geotech	31-Aug-15	5855	☐	
363	-65.2	167	22.4	189.4	ReflexEZS	Geotech	01-Sep-15	5776	☑	
387	-65.1	163.7	22.4	186.1	ReflexEZS	Geotech	02-Sep-15	5649	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 12.40 OVBN Overburden

0 - 12.4: Box 1 has several metres of rock that was deemed to be overburden as drillers suggested they thought they had bedrock at 8 metres but they got back into sand and clay below that.

12.40 23.00 SED undifferentiated Sediment brown FG

12.4 - 23: dark coloured uit, some QZ in groundmass, , relatively homogeneous, minor narrow QV's, minor faulting

<<Min: 12.4 - 33.01 0.01% Min: Pyrrhotite>> possibly PY too

<<Min: 15.92 - 20.4 3% Min: Calcite>> mafic unit

<<Struc: 20.8 - 24.5 Moderate (Alt) Fault>> strongly oxidized

23.00 43.90 RHYvx Quartz and/or feldspar crystal tuff grey FMG

23 - 43.9: variably coloured unit, but grey in unweathered sections, QZ and minor FP phenos, generally massive, homogeneous appearance, cut by several narrow makic dykes (BI SCHS).

<<Min: 30.6 - 31.68 1% Min: Calcite>>

<<Min: 33.01 - 34.7 1% Min: Pyrite>> minor fracture control

<<Min: 34.7 - 36.7 3% Min: Calcite>>

<<Min: 34.7 - 43.9 0.1% Min: Pyrrhotite>>

<<Alt: 33.01 - 34.7 Moderate (Alt) Muscovite>> seems to be focused around a QZ vein and fault

43.90 47.85 RHYcq Quartz porphyry dark grey VFG

43.9 - 47.85: banded, siliceous, flow? Rock, is broken and oxidized on fracs

<<Struc: 46.2 - 57.2 Strong (Alt) Fault>> broken core, gouge, lost core

47.85 57.20 MAFt Mafic Volcaniclastics green

47.85 - 57.2: possibbly CL alt'd felsic tuff?, broken ground and dykes cut through, small white phenos-FP?

57.20 70.87 RHYcf Feldspar & feldspar quartz porphyry grey-green

57.2 - 70.87: bluish QE, conc'd locally, FP phenos less common, generally fg, fol'd tuff. Banding near the bottom, both compositional and BI/MU banding.

<<Min: 57.2 - 112.8 0.01% Min: Pyrite>>

<<Min: 60 - 62.82 3% Min: Calcite>> in BI SCHS

<<Alt: 62.82 - 69.7 Weak (Alt) Muscovite>> actually MS, overprints BI

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

70.87 85.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FMG

70.87 - 85: strong BI locally, aphanitic, maybe dyke, mixed looking unit with speckled and homogeneous tx's, overprint by MS common, bleaches (replaces BI) and gives rock light green colour.

<<Min: 80.35 - 85 2% Min: Calcite>>

<<Alt: 77.26 - 80.35 Moderate (Alt) Muscovite>> bleached biotite by MS

<<Struc: 71.7 - 72.8 Weak (Alt) Fault>> broken core, minor gouge

85.00 95.93 MAFta Coarse grained to ash tuff green

85 - 95.93: very well fol'd, striped green with QZ-CB veins/bands, BI is lesser, locally faulted strongly, MS overprint

<<Min: 85 - 95.93 8% Min: Calcite>> in bands in CL SCHS

95.93 106.75 MAFt Mafic Volcaniclastics green-brown MG

95.93 - 106.75: strongly CL-BI banded, possible mixed tuff/sed, coarse and fg CL bands, CA in lenses and veins, BI bands, PO? As very fine diss'ns in BI bands

<<Min: 95.93 - 101 5% Min: Calcite>> bands

<<Min: 95.93 - 106.75 0.01% Min: Pyrrhotite>> seems to be in BI bands, not visible

<<Min: 101 - 108.8 1% Min: Calcite>>

<<Struc: 105.65 - 107 Moderate (Alt) Fault>> gougy, bleaching around structure

106.75 116.99 SED undifferentiated Sediment black

106.75 - 116.99: laminated, siliceous locally, deformed bands,

<<Min: 108.8 - 112.8 5% Min: Calcite>> veins, lenses, fractures

<<Min: 112.8 - 118 1% Min: Calcite>> mostly but also patchy

<<Min: 112.8 - 135.2 0.01% Min: Pyrrhotite>> minor wisps locally

116.99 125.75 MAFt Mafic Volcaniclastics green-brown

116.99 - 125.75: CA bands/patches

<<Min: 118 - 125.75 3% Min: Calcite>> greenish tuff

125.75 153.01 SED undifferentiated Sediment black

125.75 - 153.01: minor CL bands, mafic tuff beds?,

<<Min: 125.75 - 130.85 1% Min: Calcite>>

<<Min: 130.85 - 133.93 3% Min: Calcite>> bands

<<Min: 135.2 - 141.33 3% Min: Calcite>> and fractures

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 135.2 - 153.01 0.5% Min: Pyrite>> with PO

<<Min: 135.2 - 153.01 1% Min: Pyrrhotite>> along fol'n

<<Min: 142.27 - 147.6 5% Min: Calcite>> minor bands/lenses

<<Min: 147.76 - 153.01 1% Min: Calcite>>

<<Vein: 135.54 - 147.6 50% Quartz-Carbonate>> QZ-CA vein swarm

<<Struc: 145.4 - 147.3 Weak (Alt) Fault>> minor broken core, several gougy strings

153.01 203.51 RHYvx Quartz and/or feldspar crystal tuff grey-brown FG

153.01 - 203.51: blue QE in brownish, BI-rich matrix very fg leucoxene(?) in groundmass, scattered, weakly deformed, QZ-CA-CL veinlets,CL-BI alt'n associated with QV's

<<Min: 153.01 - 173.6 3% Min: Calcite>> in veins and bands in tuff

<<Min: 153.01 - 177.39 0.5% Min: Pyrite>> minor in CA vnlts, fracs

<<Min: 166.8 - 197.1 0.5% Min: Pyrrhotite>> in dark section, sedimentary component

<<Min: 173.6 - 197.1 0.01% Min: Calcite>> minor veinlets.

<<Min: 177.39 - 178.71 0.5% Min: Pyrrhotite>>

<<Min: 177.39 - 197.1 0.01% Min: Pyrite>> diss'd bleb in scattered veinlets, with CA-CL

<<Min: 197.1 - 213.08 0.01% Min: Pyrite>>

<<Min: 197.1 - 213.08 1% Min: Calcite>> in dykes

<<Alt: 181.6 - 182.75 Moderate (Alt) Silicification>> related to nearby dyke?

<<Alt: 181.6 - 182.75 Weak (Alt) Muscovite>> bleached

<<Alt: 201 - 205.4 Moderate (Alt) Muscovite>> in broken SED

<<Vein: 160.25 - 164.18 75% Quartz-Carbonate 88 deg. >> QZ-CA veins

<<Vein: 164.7 - 166.8 20% Calcite 90 deg. >> CA-QZ, banded, veins in fol'n

<<Vein: 185 - 185.75 80% Quartz-Tourmaline 45 deg. >> QZ-TO, minor PO

<<Struc: 181.01 - 181.2 Moderate (Alt) Fault>> gouge

<<Struc: 197.1 - 206.45 Strong (Alt) Fault>> sheared rock on magins, very broken, gouge filled structure, obvious slip near centre at 20°

203.51 213.08 SED undifferentiated Sediment dark grey

203.51 - 213.08: sedimentary section, has absorbed all the faulting in this section, MAFi cuts through as well, CL occurs locally, GA pblasts scattered in sediment

<<Struc: 211.9 - 213.08 Strong (Alt) Fault>> mixed gouge broken, MAFi included, SED host

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

213.08 270.69 RHYcf Feldspar & feldspar quartz porphyry brown FMG

213.08 - 270.69: locally highly strained, light coloured domains/clasts, boudins? Or deformed phenos?, blue QE present but scattered, leucoxene present locally, Intermediate composition?, several narrow sections of SED? Or MAFi? Incuded

<<Min: 213.08 - 233.25 0.01% Min: Pyrite>>

<<Min: 213.08 - 233.25 0.5% Min: Pyrrhotite>> tiny generally

<<Min: 213.08 - 250.88 0.01% Min: Calcite>> minor patchy in dykes

<<Min: 233.25 - 242.26 0.01% Min: Pyrrhotite>>

<<Min: 233.25 - 270.69 1% Min: Pyrite>> PY in diss'd bands with CL, CA?, possibly SI locally

<<Min: 242.26 - 242.85 20% Min: Pyrrhotite>> several bands of massive PO

<<Min: 242.85 - 270.69 0.01% Min: Pyrrhotite>> with PY, fine diss'ns elsewhere

<<Min: 250.88 - 254.18 8% Min: Calcite>> and veins

<<Min: 257.3 - 259.33 8% Min: Calcite>> and veins

<<Alt: 213.08 - 223.33 Weak (Alt) Muscovite>> weak bands to pervasive, related to fault?

<<Alt: 231.8 - 233.25 Weak (Alt) Silicification>> fault related

<<Alt: 242.26 - 242.85 Weak (Alt) Silicification>> between mx PO bands

<<Struc: 233.2 - 233.25 Weak (Alt) Fault>> small discrete gouge

<<Struc: 252.1 - 252.75 Moderate (Alt) Fault>> angle at edge of zone, gouge and broken

270.69 278.01 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

270.69 - 278.01: , very broken, fault zone, short intervals of RHYcf and SED

<<Min: 270.69 - 279.2 5% Min: Calcite>>

<<Struc: 271.6 - 279.1 Strong (Alt) Fault>> very broken, rough orientation

278.01 297.02 RHYcf Feldspar & feldspar quartz porphyry grey-brown

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
278.85	279.87	1.02	B00269034	0.8	-0.005	-0.01	-0.01	0.02

278.01 - 297.02: massive FP-minor QZ porphyry, variable strain and alt'n, TO common as pblasts and in QV's

<<Min: 278.9 - 280.98 1% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
279.87	280.87	1.00	B00269035	0.8	-0.005	-0.01	-0.01	-0.01

<<Min: 279.2 - 301.55 0.01% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
293.75	295.25	1.50	B00269036	1.7	-0.005	-0.01	0.07	0.58

<<Min: 280.98 - 285.9 0.5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
295.25	296.75	1.50	B00269037	0.7	-0.005	-0.01	0.02	0.73

<<Min: 285.9 - 293.75 1% Min: Pyrite>> in bands

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
296.75	298.25	1.50	B00269038	0.7	-0.005	-0.01	0.02	0.41

<<Min: 285.9 - 293.75 0.5% Min: Pyrrhotite>> with PY mostly

<<Min: 293.75 - 299.31 1% Min: Sphalerite>> commonly with some PY but also separate

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 293.75 - 299.31 3% Min: Pyrite>> as bands along fol'n, with CL, SI, SP locally									
		<<Min: 293.75 - 299.31 0.01% Min: Galena>>									
		<<Alt: 278.9 - 280.98 Moderate (Alt) Muscovite>>									
		<<Alt: 280.98 - 289.98 Weak (Alt) Muscovite>> locally strong, in shears and as envelope to QZ-TO veins									
		<<Alt: 289.98 - 293.75 Strong (Alt) Muscovite>> in host, in fault gouge									
		<<Alt: 293.75 - 297.02 Moderate (Alt) Silicification>> associated with sx veinlets									
		<<Alt: 293.75 - 297.02 Moderate (Alt) Muscovite>> interstitial to SI patches									
		<<Struc: 290.25 - 293.75 Moderate (Alt) Fault>> gouge, broken, strong MU t/o									
297.02	**308.20**	**RHYvx Quartz and/or feldspar crystal tuff green-brown FG**	298.25	299.31	1.06	B00269039	1.6	-0.005	-0.01	0.08	0.82
		297.02 - 308.2: possibly still RHYcf to 299.1m, well fol'd, QE scattered but generally obvious, MU t/o, locally dark brown from BI, strongly micaceous gouge in slips, alteration increases towards bottom of interval									
		<<Min: 299.31 - 302.15 0.5% Min: Pyrite>>	299.31	300.45	1.14	B00269041	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 301.55 - 302.15 5% Min: Calcite>> and veins	300.45	301.55	1.10	B00269042	-0.3	-0.005	-0.01	-0.01	0.07
		<<Min: 302.15 - 306.03 3% Min: Pyrite>> and bands, locally weak in BI rich sections	301.55	302.15	0.60	B00269043	-0.3	-0.005	-0.01	-0.01	0.14
		<<Min: 306.03 - 308.8 1% Min: Sphalerite>> minor blebs in QZ veins, similar to 293.75-299.31	302.15	303.00	0.85	B00269044	-0.3	-0.005	-0.01	-0.01	0.1
		<<Min: 306.03 - 308.8 0.5% Min: Pyrite>> tiny wisps	303.00	304.03	1.03	B00269045	1	-0.005	-0.01	0.03	0.33
		<<Min: 306.03 - 308.8 3% Min: Pyrrhotite>> in narrow bands, with CP, wisps in rock	304.03	305.03	1.00	B00269046	-0.3	0.016	0.01	0.02	0.07
		<<Min: 306.03 - 308.8 0.01% Min: Galena>> with SP	305.03	306.03	1.00	B00269047	-0.3	-0.005	-0.01	-0.01	0.06
		<<Min: 306.03 - 308.8 1% Min: Chalcopyrite>> and blebs, in bands with PO, in veins and diss'd	306.03	307.00	0.97	B00269048	3.3	0.013	0.17	0.09	0.61
		<<Min: 306.03 - 308.8 0.5% Min: Calcite>> blebs in QV's	307.00	308.20	1.20	B00269049	10	0.053	0.26	0.55	1.5
		<<Alt: 297.02 - 299.31 Moderate (Alt) Muscovite>> and in slips, strong MU									
		<<Alt: 297.02 - 303 Moderate (Alt) Silicification>>									
		<<Alt: 299.31 - 302.15 Weak (Alt) Muscovite>> between BI bands									
		<<Alt: 302.15 - 306.03 Strong (Alt) Muscovite>> to pervasive, drops off in last metre,									
		<<Alt: 306.03 - 308.8 Weak (Alt) Silicification>> remobilized from host?									
		<<Alt: 306.03 - 308.8 Strong (Alt) Chlorite>> surrounds SI domains									
		<<Alt: 306.03 - 308.8 Moderate (Alt) Biotite>> as CL									
		<<Struc: 299.12 - 299.13 Moderate (Alt) Fault>> narrow, highly micaceous gouge in slip									
		<<Struc: 299.35 - 299.36 dominant foliation>> not traceable completely through core									
		<<Struc: 299.99 - 300 dominant foliation>> better continuity									
		<<Struc: 302.15 - 304.25 Moderate (Alt) Fault>> gouge,alt'n t/o, rough attitude									

From (m)	To (m)	Rocktype & Description		
308.20	**313.60**	**RHYcq**	**Quartz porphyry**	**grey-brown**

308.2 - 313.6: locally strongly altered (to 308.8), in and out of MAFi, bluish QE's

<<Min: 308.8 - 313.6 0.01% Min: Pyrite>>

<<Alt: 308.8 - 313.6 Moderate (Alt) Muscovite>>

<<Alt: 308.8 - 313.6 Moderate (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
308.20	308.80	0.60	B00269051	3.7	0.015	0.15	0.05	0.18
308.80	310.13	1.33	B00269052	0.9	0.01	0.02	0.01	0.13
310.13	311.60	1.47	B00269053	-0.3	-0.005	-0.01	-0.01	0.03
311.60	312.60	1.00	B00269054	-0.3	0.006	-0.01	-0.01	-0.01
312.60	313.60	1.00	B00269055	-0.3	-0.005	-0.01	-0.01	-0.01
313.60	314.15	0.55	B00269056	1.7	0.031	0.04	0.02	0.93

From (m)	To (m)	Rocktype & Description		
313.60	**327.61**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**green**

313.6 - 327.61: heavily altered to 327.1, locally sections of RHYcf

<<Min: 313.6 - 318.35 3% Min: Pyrite>> along fol'n, in shears

<<Min: 313.6 - 319.51 1% Min: Sphalerite>> conc'd from 318.35

<<Min: 313.6 - 319.51 5% Min: Pyrrhotite>> scatterd along fol'n, also in veins

<<Min: 313.6 - 319.51 1% Min: Chalcopyrite>> and blebs in heavy CL

<<Min: 318.35 - 319.51 0.5% Min: Galena>> with SP

<<Min: 319.51 - 323.49 0.5% Min: Pyrite>> in QZ-TO veins and envelopes cutting the dyke

<<Min: 323.49 - 327.1 10% Min: Sphalerite>> in bands, 10 cm wide mx SP

<<Min: 323.49 - 327.1 1% Min: Pyrite>> in CL seams, scattered FD in groundmass

<<Min: 323.49 - 327.1 3% Min: Magnetite>> to 5 mm

<<Min: 323.49 - 327.1 3% Min: Galena>> with SP

<<Min: 323.49 - 327.1 1% Min: Chalcopyrite>> scattered

<<Min: 327.1 - 331.15 1% Min: Sphalerite>> assocted with QV's

<<Min: 327.1 - 331.15 0.5% Min: Galena>> in QV selvedges

<<Min: 327.1 - 335.73 3% Min: Pyrrhotite>> along fol'n

<<Min: 327.1 - 335.73 5% Min: Calcite>> in both SED and MAFi

<<Alt: 313.6 - 319.51 Weak (Alt) Garnet>> porphyroblasts to 5 mm

<<Alt: 313.6 - 319.51 Strong (Alt) Chlorite>> massive locally

<<Alt: 313.6 - 319.51 Strong (Alt) Biotite>> massive, coarse

<<Alt: 319.51 - 323.49 Weak (Alt) Muscovite>> locally associated with veinlets

<<Alt: 323.49 - 327.1 Strong (Alt) Chlorite>> massive to banded

<<Alt: 323.49 - 327.1 Moderate (Alt) Cordierite>> conc'd bands and patches, associated with sx

<<Alt: 323.49 - 327.1 Strong (Alt) Biotite>> coarse grained

<<Alt: 327.1 - 335.73 Weak (Alt) Chlorite>> with BI-TO pblasts

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
314.15	315.15	1.00	B00269057	2	0.007	0.25	0.01	0.18
315.15	316.15	1.00	B00269058	1.1	-0.005	0.02	0.03	0.73
316.15	317.35	1.20	B00269059	1.1	-0.005	0.02	0.02	0.64
317.35	318.35	1.00	B00269061	1.3	-0.005	-0.01	0.1	0.13
318.35	319.51	1.16	B00269062	16.9	0.015	0.05	1.5	4.71
319.51	320.40	0.89	B00269063	-0.3	-0.005	-0.01	-0.01	0.05
320.40	321.90	1.50	B00269064	-0.3	-0.005	-0.01	-0.01	0.03
321.90	322.78	0.88	B00269065	0.6	-0.005	0.02	0.01	0.07
322.78	323.49	0.71	B00269066	0.6	-0.005	0.02	-0.01	2.31
323.49	324.10	0.61	B00269067	21.2	0.02	0.07	2.19	6.53
324.10	325.10	1.00	B00269068	15.7	0.022	0.1	1.54	3.84
325.10	326.37	1.27	B00269069	21.4	0.038	0.1	1.65	3.83
326.37	327.61	1.24	B00269072	17.1	0.017	0.04	1.75	2.19

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Vein: 314.15 - 315.15 40% Quarzt-Tourmaline-Sulphide 10 deg. >> QZ-TO-Sx vein, sub parallel to core axis									
		<<Struc: 316.75 - 316.76 dominant foliation>> difficult area to get good plane									
		<<Struc: 317.75 - 317.76 Foliation>> discontinuous									
327.61	**335.73**	**SED undifferentiated Sediment black FG**	327.61	329.10	1.49	B00269073	1.7	-0.005	0.02	0.1	0.19
		327.61 - 335.73: darkly coloured, very close to MAFi, QZ in groundmass, CL bands locally, BI-TO pblasts in CL altered masses, QV's common, brown GA scattered throughout									
		<<Vein: 328.3 - 331.15 20% Quartz-Carbonate 70 deg. >> QZ-CB, iregular	329.10	330.50	1.40	B00269074	1.3	-0.005	0.02	0.05	0.11
		<<Struc: 329.3 - 329.31 Foliation>> not continuous fol'n	330.50	332.00	1.50	B00269075	1	-0.005	0.01	0.02	0.67
		<<Struc: 334 - 335.12 Moderate (Alt) Fault>>									
335.73	**356.55**	**RHYcf Feldspar & feldspar quartz porphyry grey-brown**	343.40	344.10	0.70	B00269076	0.6	-0.005	0.03	0.02	2.15
		335.73 - 356.55: mottled, massive to moderately fol'd unit, interlayered tuff?, FP phenos at top and QZ phenos appear in centre of unit. Phenos locally crowded. "Curdy tx" locally									
		<<Min: 335.73 - 343.4 0.5% Min: Pyrite>> in fracs, veinlets, bands									
		<<Min: 343.4 - 344.07 5% Min: Sphalerite>> conc'd in top of interval									
		<<Min: 343.4 - 344.07 0.5% Min: Pyrite>> scattered									
		<<Min: 343.4 - 344.07 1% Min: Galena>> with SP									
		<<Min: 344.07 - 346.65 0.01% Min: Sphalerite>> in veins									
		<<Min: 344.07 - 356.55 0.5% Min: Pyrite>> minor narrow bands									
		<<Min: 348.25 - 356.55 0.5% Min: Pyrrhotite>> in bands									
		<<Alt: 335.73 - 348.25 Weak (Alt) Muscovite>> overprints BI									
		<<Alt: 343.4 - 344.07 Weak (Alt) Garnet>> scattered									
		<<Alt: 343.4 - 344.07 Strong (Alt) Chlorite>> alternates with BI?									
		<<Alt: 343.4 - 344.07 Moderate (Alt) Biotite>>									
		<<Alt: 348.25 - 356.55 Moderate (Alt) Muscovite>> minor sx associated									
		<<Struc: 335.87 - 335.88 >> difficult to trace									
		<<Struc: 338.38 - 338.39 dominant foliation>> decent fol'n line									
		<<Struc: 343.4 - 343.41 Weak (Alt) Contact>> alt'n zone contact, perpendicular to core axis									
		<<Struc: 344.5 - 346.65 Strong (Alt) Fault>> also 35°, crushed rock, gouge									
356.55	**370.41**	**RHYvx Quartz and/or feldspar crystal tuff grey-brown**	368.96	369.77	0.81	B00269077	0.5	-0.005	-0.01	-0.01	0.03
		356.55 - 370.41: FP phenos present commonly sausseritized, BI bands t/o, brown to black, minor MU-CL in faults and around veins, GA prophyroblasts locally, MAFi locally, generally narrow, in faults, deformed, BI-rich									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 356.55 - 369.77 0.5% Min: Pyrite>> blebs in QZ vns, in fractures	369.77	370.41	0.64	B00269078	10.9	0.008	0.08	0.08	1.41
		<<Min: 359.55 - 361.5 1% Min: Pyrrhotite>> in QZ vns									
		<<Min: 369.77 - 370.4 0.5% Min: Pyrite>> on fol'n									
		<<Min: 369.77 - 370.41 1% Min: Chalcopyrite>> and blebs in alt'd zone, conc'd at lower contact									
		<<Min: 370.4 - 375.51 0.5% Min: Pyrite>> minor fracture control									
		<<Alt: 363.38 - 368 Moderate (Alt) Garnet>> scattered brown porphyroblasts, fade out in jumbled core									
		<<Alt: 363.38 - 369.77 Moderate (Alt) Chlorite>> in groundmass, lt green									
		<<Alt: 367.77 - 370.44 Weak (Alt) Cordierite>> local CI possibly?									
		<<Alt: 369.77 - 370.41 Strong (Alt) Chlorite>> intense , massive CL alt'n									
		<<Struc: 360.4 - 361.8 Moderate (Alt) Fault>> QZ vns with CL-MU-PO									
370.41	**375.51**	**RHYcf** **Feldspar & feldspar quartz porphyry** **grey**	370.41	371.41	1.00	B00269079	2.6	-0.005	0.02	-0.01	0.18
		370.41 - 375.51: massive to banded, leucocratic, local AC pblasts?, flow banding possible									
		<<Alt: 375.5 - 376.16 Weak (Alt) Biotite>>									
375.51	**389.30**	**RHYvx** **Quartz and/or feldspar crystal tuff** **grey-green**	387.55	388.65	1.10	B00269081	19.4	0.018	0.02	0.07	0.13
		375.51 - 389.3: FP phenos common, CL alt'n locally, RHYc locally?,									
		<<Min: 375.51 - 387.6 1% Min: Pyrrhotite>> in fractures, wisps, bands, and blebs	388.65	389.30	0.65	B00269082	14.4	0.03	0.04	0.07	0.09
		<<Min: 387.6 - 389.3 0.5% Min: Pyrite>>									
		<<Min: 387.6 - 389.3 3% Min: Pyrrhotite>> along fol'n									
		<<Min: 387.6 - 389.3 0.01% Min: Galena>> along fol'n, in fracs									
		<<Min: 387.6 - 389.3 0.5% Min: Chalcopyrite>>									
		<<Alt: 375.51 - 376.16 Moderate (Alt) Chlorite>>									
		<<Alt: 376.16 - 383 Weak (Alt) Garnet>> scattered pblasts, also in groundmass, purplish colour									
		<<Alt: 376.16 - 383 Weak (Alt) Chlorite>> lt green t/o									
		<<Alt: 387.6 - 389.3 Strong (Alt) Muscovite>> strong locally									
		<<Alt: 387.6 - 389.3 Moderate (Alt) Chlorite>>									
389.30	**393.00**	**RHYcf** **Feldspar & feldspar quartz porphyry** **grey-brown** **MG**									
		389.3 - 393: strongly alt'd, from fault?, talc or clay alteration of rock, lt green, very soft, coarse phenos of milky QZ and FP(?), striped BI-MU layeres, TO pblasts?, BI is light brown due to weathering?,									
		<<Min: 389.3 - 393 0.5% Min: Pyrrhotite>> minor bands, very local, leached out?									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 389.3 - 393 Strong (Alt) Muscovite>> mixed with Talc? Soapy or waxy feel on foliation surfaces.

<<Alt: 389.3 - 393 Moderate (Alt) Chlorite>> massive locally, shears?, talcose bands in QZ-FP porphyry

<<Struc: 392.27 - 393 Moderate (Alt) Fault>> clay gouge prominent, alteration around, talc? Or clay?, brown BI

End of Hole @ 393

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-235

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	25-Aug-15
UTM Easting	414930.873	Core Size:	NQ3	Azimuth:	158.8	Date Logging Complete:	25-Aug-15
UTM Northing:	6815550.438	Casing Pulled?:	Yes	Dip:	-63	Drill Company:	Geotech
UTM Elev. (m):	1384.181	Casing Depth (m):	6	Length (m):	47	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	24-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

This hole was drilled to define the resource between historic holes K94-011 & K94-012. The hole was aborted at 47m depth from the original plan of 180m depth, due to significant deviation in dip from 63 degrees (planned azimuth) to 59 degrees. Therefore, pierce point on resource domain was not achieved. The log information for this hole represents a package of felsic coherent and volcaniclastic rocks and a small interval of felsic volcaniclastic dominated mudstones. No massive sulphide intersections are present. Muscovite alteration intensity increases towwards a large quartz vein structure at 22m to 24.8m. Chlorite alteration is weak and disseminated within the biotite-rich mudstones.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-63	159	0	159	APS	David Nuttal	24-Aug-15		☑	
14	-63.3	139.7	22.5	162.2	ReflexEZS	Geotech	24-Aug-15	5761	☑	
30	-59	139.2	22.5	161.7	ReflexEZS	Geotech	24-Aug-15	5716	☑	
47	-59.5	137.2	22.5	159.7	ReflexEZS	Geotech	24-Aug-15	5664	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.00 CASN Casing

<<Min: 4.5 - 14 1% Min: Pyrite>>

<<Min: 4.5 - 14 0.5% Min: Pyrrhotite>>

<<Min: 4.5 - 47 0.1% Min: Calcite>> Occurres within thin, healed fractures.

<<Alt: 0 - 9.8 Weak (Alt) Muscovite>>

6.00 10.27 RHYvl Lapilli tuff medium grey

<<Alt: 9.8 - 16.2 Weak-Moderate (Alt) Muscovite>>

10.27 11.45 RHYcw Curdy textured-flow banded (flows, subvolcanics) medium grey

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

11.45 20.52 RHYv Rhyolite volcaniclastic

11.45 - 20.52: Interval is a package of felsic volcaniclastic rock types. Grain size of clasts ranges from coarse grained to lapilli. Also present are sub-round to round disagregated curdy white quartz phencrysts.

<<Min: 14 - 20 2% Min: Pyrite>>

<<Min: 14 - 20 1% Min: Pyrrhotite>>

<<Min: 20 - 28.5 1% Min: Pyrrhotite>>

<<Min: 20 - 29 2% Min: Pyrite>>

<<Alt: 16.2 - 26 Moderate (Alt) Muscovite>>

<<Struc: 14.1 - 15.47 Weak (Alt) Fault>> Oblique to foliation. Fracture rather than fault. No gouge present.

20.52 29.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) medium grey

<<Min: 28.5 - 43 0.5% Min: Pyrrhotite>>

<<Alt: 26 - 27.2 Weak-Moderate (Alt) Muscovite>>

<<Alt: 27.2 - 45 Weak-Moderate (Alt) Muscovite>>

<<Vein: 22.18 - 24.8 90% Quartz-Sulphide>> Large clots of PO/PY within quartz

29.00 31.20 RHYv Rhyolite volcaniclastic dark grey

29 - 31.2: Quartz phenocrysts/porphyroblasts show as milky white fragmented cores with transparent grey quartz rims. Xtals are are isolated from eachother by fine grained matrix.

<<Min: 29 - 38 1% Min: Pyrite>>

31.20 32.79 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32.79 34.38 RHYv Rhyolite volcaniclastic

34.38 37.42 RHYcw Curdy textured-flow banded (flows, subvolcanics)

37.42 41.05 MDSt Rhyolite tuff dominant mudstone dark grey

<<Min: 38 - 47 0.5% Min: Pyrite>>

<<Alt: 38.7 - 42.5 Weak (Alt) Chlorite>>

41.05 42.55 RHYv Rhyolite volcaniclastic

<<Alt: 42.5 - 44.2 Weak-Moderate (Alt) Chlorite>>

42.55 44.50 MDSt Rhyolite tuff dominant mudstone melanocratic

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 43 - 47 1% Min: Pyrrhotite>>

44.50 47.00 RHYv Rhyolite volcaniclastic medium grey

<<Alt: 45 - 47 Weak (Alt) Muscovite>>

<<Struc: 46.8 - 46.9 Moderate (Alt) Fault>> Foliation parallel with gouge present.

End of Hole @ 47

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-235R

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	27-Aug-15
UTM Easting	414930.879	Core Size:	NQ3	Azimuth:	158.8	Date Logging Complete:	29-Aug-15
UTM Northing:	6815550.423	Casing Pulled?:	Yes	Dip:	-63	Drill Company:	Geotech
UTM Elev. (m):	1384.175	Casing Depth (m):	4.5	Length (m):	176	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	28-Aug-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole is planned to define the resource between historic holes K94-011 & K94-012.
The hole confired sulphide mineralization continuity and characterized structural footwall litho-units. Sulphide mineralization (both massive and heavily disseminated) is present from 130.35m to 137.43m (OI, OB), 159.45m, to 160.35m (OI, OB), 165.85m to 166.4m (OJ) and 169m to 172m (OJ). The structural hanging wall is composed of a package of felsic meta-volcaniclastic rocks. The structural footwall is composed of a mafic dike that is structurally underlain by felsic volanics.
Muscovite alteration is pervasive through both the structural hanging wall and footwall, and increases in intensity towards the massive sulphide interval. O-type sulphide mineralization is associated with strong chlorite alteration/replacement that intesifies towards zones of accumulated sulphides. Cordierite porphyroblasts are rare and occur only proximally to massive sulphide mineralization. Silicification is present in the structural footwall mafic dike and may represent that this hole is in proximity to the felsic aphanitic dike present on adjacent sections to the west of this location.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-63	158.8	0	158.8	APS	David Nuttal	26-Aug-15		☑	
14	-63.3	139.7	22.5	162.2	ReflexEZS	Geotech	26-Aug-15	5761	☑	
35	-63	139.4	22.5	161.9	ReflexEZS	Geotech	26-Aug-15	5765	☑	
47	-59.5	137.2	22.5	159.7	ReflexEZS	Geotech	26-Aug-15	5664	☑	
59	-59	143.2	22.5	165.7	ReflexEZS	Geotech	26-Aug-15	5627	☑	
89	-63	142.5	22.5	165	ReflexEZS	Geotech	26-Aug-15	5681	☑	
119	-62.9	145.4	22.5	167.9	ReflexEZS	Geotech	26-Aug-15	5630	☑	
149	-62.7	147.4	22.5	169.9	ReflexEZS	Geotech	26-Aug-15	5743	☑	
176	-62.6	149.1	22.5	171.6	ReflexEZS	Geotech	26-Aug-15	5732	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
5.60	**9.13**	**RHYvl Lapilli tuff**									
<<Min: 5.6 - 18.7 2% Min: Pyrite>>											
<<Min: 5.6 - 19.53 0.5% Min: Pyrrhotite>>											
<<Min: 5.6 - 32 0.1% Min: Calcite>> trace +/- along fractures											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 5.6 - 12 Trace (Alt) Muscovite>>

9.13 18.36 RHYvx Quartz and/or feldspar crystal tuff

<<Alt: 12 - 65 Weak (Alt) Muscovite>>

18.36 19.53 RHYv Rhyolite volcaniclastic

<<Min: 18.7 - 39.1 1% Min: Pyrite>>

19.53 20.96 MDSt Rhyolite tuff dominant mudstone

19.53 - 20.96: Biotite content used to classify interval. Muscovite alteration is dominant. Trace chlorite alteration, replacing fine grained biotite

<<Min: 19.53 - 35 0.5% Min: Pyrrhotite>>

20.96 21.73 RHYcw Curdy textured-flow banded (flows, subvolcanics)

21.73 23.84 RHYvl Lapilli tuff

23.84 32.04 RHYcw Curdy textured-flow banded (flows, subvolcanics)

23.84 - 32.04: Fine grained mafic intrusive with biotite, chlorite, calcite, from 28.22m to 28.30m.

<<Min: 32 - 44.69 2% Min: Calcite>>

<<Vein: 30.03 - 32.04 96% Quartz>>

32.04 41.87 RHYv Rhyolite volcaniclastic

32.04 - 41.87: Dominantly felsic volcaniclastics with fine-grained biotite partially replaced by chlorite.

<<Min: 35 - 44.69 1% Min: Pyrrhotite>>

<<Min: 39.1 - 62 0.25% Min: Pyrite>>

<<Vein: 39.1 - 40.36 20% Quartz-Carbonate-Sulphide>> PY, PO

41.87 44.69 MDSt Rhyolite tuff dominant mudstone

41.87 - 44.69: Volcaniclastic textures are distinct to convoluted.

44.69 50.78 RHYvl Lapilli tuff

44.69 - 50.78: Trace biotite

<<Min: 44.69 - 64.16 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 44.69 - 86 0.1% Min: Calcite>> Trace +/- along fractures

50.78 51.96 MDSt Rhyolite tuff dominant mudstone

51.96 55.75 RHYvl Lapilli tuff

55.75 64.16 MDSt Rhyolite tuff dominant mudstone

<<Min: 62 - 76.79 0.5% Min: Pyrite>>

64.16 76.35 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 64.16 - 76.35 0.5% Min: Pyrrhotite>>

<<Alt: 65 - 76.3 Weak-Moderate (Alt) Muscovite>>

<<Alt: 76.3 - 97 Moderate (Alt) Muscovite>>

<<Struc: 74.72 - 74.88 Strong (Alt) Fault>>

<<Struc: 75.92 - 75.98 Moderate (Alt) Fault>>

76.35 76.79 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 76.35 - 132 1% Min: Pyrrhotite>>

76.79 82.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 76.79 - 86 1% Min: Pyrite>>

<<Struc: 82.2 - 82.8 Weak (Alt) Fault>>

82.90 85.11 MDSt Rhyolite tuff dominant mudstone

85.11 90.64 RHY undifferentiated rhyolite

<<Min: 86 - 132 0.5% Min: Pyrite>>

<<Min: 86 - 140.4 0.5% Min: Calcite>>

<<Struc: 90.24 - 90.34 Moderate (Alt) Fault>>

90.64 103.46 MDSw Coherent rhyolite flow with carbonaceous content

90.64 - 103.46: interval containscoherent and volcanoclastic textures.

<<Alt: 97 - 107 Moderate-Strong (Alt) Muscovite>>

<<Struc: 103.36 - 103.46 Moderate (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
103.46	**113.05**	**MDSt** **Rhyolite tuff dominant mudstone**									
103.46 - 113.05: chlorite alteration strong at base of interval											
<<Alt: 104 - 116 Trace (Alt) Chlorite>>											
<<Alt: 107 - 116 Moderate (Alt) Muscovite>>											
<<Vein: 103.72 - 105.4 70% Quartz>> Galena, phyrrotite, Chalcopyrite											
113.05	**117.76**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Alt: 116 - 124 Moderate-Strong (Alt) Muscovite>>											
<<Alt: 116.7 - 127 Moderate (Alt) Chlorite>>											
<<Alt: 117.6 - 117.7 Moderate-Strong (Alt) Cordierite>>											
117.76	**130.35**	**RHY** **undifferentiated rhyolite**	127.90	129.40	1.50	B00268572	3	-0.005	0.02	0.03	0.01
117.76 - 130.35: Complex interval with patches of moderate to strong chlorite alteration. Dominant textures are volcanic last in and may contain mudstone/carbonaceous component. Also present are violently fractured/brecciated massive enclaves of dolomite and quartz.											
<<Alt: 124 - 133.5 Strong (Alt) Muscovite>>			129.40	130.88	1.48	B00268573	1.5	0.008	0.03	-0.01	0.02
<<Alt: 127 - 133 Weak-Moderate (Alt) Chlorite>>											
<<Vein: 119.8 - 137.5 12% Quartz>>											
<<Struc: 120.53 - 120.53 dominant foliation>>											
<<Struc: 123.25 - 123.25 dominant foliation>>											
<<Struc: 124.33 - 124.33 dominant foliation>>											
<<Struc: 126.7 - 126.7 dominant foliation>>											
<<Struc: 129 - 129 dominant foliation>>											
130.35	**133.76**	**OI** **Heavilly disseminated sulphides in host schist**	130.88	132.00	1.12	B00268574	23.1	0.311	0.31	0.13	0.44
130.35 - 133.76: 3%CP, 3%Po, 10%Py, 3%SP											
<<Min: 132 - 165 1% Min: Pyrite>>			132.00	133.00	1.00	B00268575	137	2.13	0.25	1.52	2.75
<<Min: 132 - 165 1% Min: Pyrrhotite>>			133.00	133.77	0.77	B00268576	134	2.26	0.47	0.62	1.88
<<Alt: 133 - 135.5 Moderate (Alt) Chlorite>>											
<<Alt: 133.5 - 140.4 Moderate-Strong (Alt) Muscovite>>											
<<Struc: 133.43 - 133.43 dominant foliation>>											

From (m)	To (m)		Rocktype & Description
133.76	**135.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

133.76 - 135.5: SP ~15-20%,

<<Struc: 133.9 - 133.9 dominant foliation>>

135.50	**136.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

135.5 - 136.6: Sulphide content ~10-15%

<<Alt: 135.5 - 140.4 Intense (Alt) Chlorite>>

136.60	**136.85**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
136.85	**137.43**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

136.85 - 137.43: ~15-20% sulphides.

137.43	**140.35**	**RHY**	**undifferentiated rhyolite**

137.43 - 140.35: Interval has remnants of felsic origins, though chlorite alteration is strong to intense and obscures original mineralogy and vocanic textures.

<<Struc: 139.9 - 139.9 dominant foliation>>

140.35	**145.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

140.35 - 145.2: High calcite

<<Min: 140.4 - 145.3 25% Min: Calcite>>

<<Alt: 140.4 - 145.2 Moderate-Strong (Alt) Chlorite>> Mafic dike alteration

<<Alt: 140.4 - 152 Weak (Alt) Muscovite>>

145.20	**159.45**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

145.2 - 159.45: Silicified mafic dike. Felsic intrusion in proximity?

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
133.77	134.77	1.00	B00268577	189	1.42	0.25	3	9.57
134.77	135.50	0.73	B00268578	148	0.466	0.02	4	9.53
135.50	136.44	0.94	B00268579	22.6	0.399	0.63	0.09	0.37
136.44	137.42	0.98	B00268581	46.6	0.208	0.34	1.2	3.17
137.42	138.40	0.98	B00268582	5.1	0.02	0.03	0.02	0.07
138.40	139.80	1.40	B00268583	2.1	0.013	0.07	-0.01	0.08
139.80	140.40	0.60	B00268584	38.5	0.292	0.55	0.81	2.87
140.40	141.90	1.50	B00268585	1.1	-0.005	0.02	0.02	0.11
157.95	159.45	1.50	B00268586	0.4	-0.005	-0.01	-0.01	0.22

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 145.3 - 152 2% Min: Calcite>>									
		<<Min: 152 - 159.4 0.5% Min: Calcite>>									
		<<Min: 159.4 - 165 25% Min: Calcite>>									
		<<Alt: 145.2 - 159.45 Moderate-Strong (Alt) Silicification>>									
		<<Alt: 152 - 176 Weak (Alt) Muscovite>>									
		<<Struc: 148.76 - 148.76 dominant foliation>>									
		<<Struc: 155.85 - 156 Moderate (Alt) Fault>>									
159.45	**159.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	159.45	159.70	0.25	B00268587	62.4	0.12	0.34	1.4	8.12
		<<Alt: 159.45 - 165.6 Moderate-Strong (Alt) Chlorite>> Mafic dike alteration									
159.70	**160.35**	**OI** **Heavilly disseminated sulphides in host schist**	159.70	160.35	0.65	B00268588	45.3	0.287	0.83	0.33	2.26
		159.7 - 160.35: 20-25% sulphides. Dominantly PO, Pyand CP									
160.35	**165.05**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	160.35	161.85	1.50	B00268589	-0.3	-0.005	0.01	-0.01	0.02
		160.35 - 165.05: High calcite									
		<<Min: 165 - 169 1% Min: Chalcopyrite>>	161.85	163.29	1.44	B00265284	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 165 - 176 0.5% Min: Calcite>>	163.29	165.00	1.71	B00265285	0.7	-0.005	-0.01	-0.01	0.05
		<<Struc: 164.3 - 167.3 Moderate (Alt) Fault>> Fault zone. 4 faults ~10-15cm foliation parallel.	165.00	165.88	0.88	B00268591	15.1	0.044	0.31	0.09	0.23
165.05	**165.85**	**RHYcq** **Quartz porphyry**									
		165.05 - 165.85: Heavy chlorite alteration									
		<<Alt: 165.6 - 173 Intense (Alt) Chlorite>> Unexpected strong to intense chlorite alteration accompanied by CP, GL, SP, PO, PY mineralization.									
165.85	**166.40**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	165.88	166.37	0.49	B00268592	316	0.191	0.56	4.12	0.85
		165.85 - 166.4: ~20% sulphides. GL, SP, CP, PY, PO									
			166.37	167.40	1.03	B00268593	22.2	0.073	0.37	0.1	0.41
166.40	**169.00**	**RHY** **undifferentiated rhyolite**	167.40	168.05	0.65	B00265286	7.2	0.023	0.09	0.08	0.13
		166.4 - 169: Heavy chlorite alteration									

From (m)	To (m)	Rocktype & Description
169.00	**172.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
<<Min: 169 - 176 0.5% Min: Pyrite>>		
<<Min: 169 - 176 0.5% Min: Pyrrhotite>>		
<<Struc: 169.6 - 170.4 Weak (Alt) Fault>> 2 faults ~10cm		
172.00	**176.00**	**RHY** **undifferentiated rhyolite**
172 - 176: Possibly associated with felsic dike?		
<<Alt: 173 - 176 Weak-Moderate (Alt) Muscovite>>		
<<Struc: 175.4 - 175.45 Moderate (Alt) Fault>>		

End of Hole @ 176

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
168.05	168.90	0.85	B00268594	7.1	0.029	0.11	0.06	0.61
168.90	170.00	1.10	B00268595	30.9	0.216	0.68	0.18	1.73
170.00	171.00	1.00	B00268596	3.5	0.011	0.02	0.03	0.68
171.00	172.00	1.00	B00268597	29.2	0.134	0.6	0.19	0.75
172.00	173.50	1.50	B00268598	1.1	0.009	-0.01	0.03	0.12
173.50	174.86	1.36	B00265287	-0.3	-0.005	-0.01	-0.01	-0.01
174.86	176.00	1.14	B00265288	-0.3	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-236

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	26-Aug-15
UTM Easting	414750.866	Core Size:	NQ3	Azimuth:	179.69	Date Logging Complete:	27-Aug-15
UTM Northing:	6815498.936	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1406.81	Casing Depth (m):	7	Length (m):	149	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of this whole was to twin the historical hole K94-040. The first 75.97 m of K15-236 consists of a thick package of rhyolitic flows and volcaniclastics +/- carbonaceous material, and carbonaceous mudstones. The shallowest of two massive sulphide intercepts consisting of OA, OB, and OC ore types was intersected between 75.97-89.23 m (13.26 m total thickness). The two massive sulphide intercepts are separated by cordierite altered RHY and a zone of OI from 95.22-97.22 m. The second massive sulphide intercept, consisting of OA, OB, and OI ore types, was intersected between 98.86-110.87 m (12.01 m total thickness). The structural footwall consists of MAFi intruded by RHYi, both of which sit stratigraphically above RHYvx. The footwall was intersected between 110.87-149.0 m. The structural hanging wall felsic volcanics are moderate to strongly MU altered. This syngenetic alteration increases in intensity with proximity to the sulphide zone. A weak CI-CL alteration was logged between 89.23-93.78 m. Syngenetic alteration of the footwall has been eliminated by MAFi and RHYi units. Alteration of the footwall is characterized by a moderate to strong CL-BI overprint as well as intense silicification associated with RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	179.69	0	179.69	APS	Cooper Campbell	23-Aug-15		☑	
29	-69.2	160.7	22.5	183.2	ReflexEZS	Geotech	24-Aug-15	5789	☑	
59	-68.9	162.2	22.5	184.7	ReflexEZS	Geotech	24-Aug-15	5799	☑	
89	-68.8	157.7	22.5	180.2	ReflexEZS	Geotech	24-Aug-15	5603	☑	
119	-68.5	159.8	22.5	182.3	ReflexEZS	Geotech	25-Aug-15	5697	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.20**	**OVBN** **Overburden**									
5.20	**13.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 5.2 - 71.42 0.01% Min: Sphalerite>>											
<<Min: 5.2 - 71.42 0.25% Min: Pyrite>> BL											
<<Min: 5.2 - 71.42 0.1% Min: Pyrrhotite>> BL											
<<Min: 5.2 - 75.6 0.01% Min: Calcite>>											
<<Alt: 5.2 - 71.42 Moderate (Alt) Muscovite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
13.00	**21.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
21.00	**27.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
21 - 27.2: QZ eyes											
27.20	**33.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Struc: 30 - 69.76 Weak (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart. Multiple orientations.											
33.00	**34.23**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
34.23	**36.74**	**MDSc** **Carbonaceous dominant mudstone**									
36.74	**43.60**	**RHYva** **Coarse grained to ash tuff**									
43.60	**47.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
47.50	**55.30**	**MDSt** **Rhyolite tuff dominant mudstone**									
55.30	**65.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Struc: 58.95 - 58.96 dominant foliation>>											
65.00	**66.60**	**MDSc** **Carbonaceous dominant mudstone**									
66.60	**68.20**	**MDSt** **Rhyolite tuff dominant mudstone**									
68.20	**71.80**	**RHYv** **Rhyolite volcaniclastic**									
68.2 - 71.8: possible flow											
<<Min: 71.42 - 75.6 0.01% Min: Sphalerite>>											
<<Min: 71.42 - 75.6 0.01% Min: Pyrite>>											
<<Min: 71.42 - 75.6 1% Min: Pyrrhotite>>											
<<Min: 71.42 - 75.6 0.01% Min: Arsenopyrite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 71.42 - 75.97 Moderate-Strong (Alt) Muscovite>>													
<<Struc: 69.83 - 69.84 dominant foliation>>													
71.80	**75.00**	**RHYvl**	**Lapilli tuff**		72.60	74.10	1.50	B00266618	4	0.006	0.02	0.1	0.18
71.8 - 75: fragments of semi msv sx tops up, if sx frags are rip upos suggests that se-floor sulphide not replacement													
<<Struc: 72.16 - 72.17 dominant foliation>>					74.10	75.60	1.50	B00266619	5.3	0.032	-0.01	0.11	0.15
<<Struc: 73.19 - 73.2 dominant foliation>>													
<<Struc: 74.96 - 74.97 dominant foliation>>													
75.00	**75.60**	**MDSt**	**Rhyolite tuff dominant mudstone**										
75.60	**75.97**	**MDSc**	**Carbonaceous dominant mudstone**		75.60	75.97	0.37	B00266621	61.6	0.844	0.15	1.4	3.59
<<Min: 75.6 - 75.97 0.5% Min: Pyrite>>													
<<Min: 75.6 - 75.97 2% Min: Pyrrhotite>>													
<<Min: 75.6 - 75.97 0.01% Min: Chalcopyrite>>													
<<Struc: 75.61 - 75.62 Contact>> Lith contact.													
75.97	**76.91**	**OA**	**Magnetite bearing sulphides**	**MG**	75.97	76.91	0.94	B00266622	110	1.01	1.1	1.6	5.21
<<Struc: 75.98 - 75.99 Contact>>													
76.91	**77.89**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	76.91	77.89	0.98	B00266623	96.8	1.42	0.49	1.12	9.05
<<Struc: 77.35 - 77.36 dominant foliation>>													
77.89	**82.00**	**OA**	**Magnetite bearing sulphides**	**MG**	77.89	78.50	0.61	B00266624	46.2	0.822	0.62	0.77	13.6
<<Min: 77.89 - 85.8 20% Min: Sphalerite>>					78.50	79.00	0.50	B00266625	93.2	0.935	0.65	1.65	12.7
<<Struc: 78.5 - 78.51 dominant foliation>>					79.00	80.00	1.00	B00266626	139	0.963	0.7	3.26	9.7
<<Struc: 79.1 - 79.11 dominant foliation>>					80.00	81.00	1.00	B00266627	78	0.524	0.53	1.61	9.17
					81.00	82.00	1.00	B00266628	58.1	0.8	1.46	0.44	4.54
82.00	**83.07**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**CG**	82.00	83.00	1.00	B00266629	200	3.56	7.45	0.4	5.91
<<Min: 82 - 83.07 15% Min: Chalcopyrite>>					83.00	84.00	1.00	B00266632	118	1.24	1.95	0.84	4.34
83.07	**85.80**	**OA**	**Magnetite bearing sulphides**	**MG**	84.00	85.00	1.00	B00266633	72.4	0.652	0.58	0.99	5.91
					85.00	85.80	0.80	B00266634	121	1.12	0.5	1.76	7.52

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
85.80	**89.23**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	85.80	86.50	0.70	B00266635	209	1.86	0.59	3.57	9.06
					86.50	87.00	0.50	B00266636	120	1.48	0.48	1.39	8.39
					87.00	88.00	1.00	B00266637	91.9	1.18	0.38	0.81	6.56
					88.00	88.50	0.50	B00266638	47.3	0.842	0.14	0.45	5.45
					88.50	89.23	0.73	B00266639	168	1.78	0.64	1.02	6.76
89.23	**95.22**	**RHY**	**undifferentiated rhyolite**		89.23	90.50	1.27	B00266641	7.7	0.123	0.04	0.05	0.09
<<Min: 89.23 - 98.86 5% Min: Pyrite>> WIS					90.50	92.00	1.50	B00266642	4.6	0.036	-0.01	0.02	0.19
<<Min: 89.23 - 98.86 5% Min: Pyrrhotite>>					92.00	93.50	1.50	B00266643	7.3	0.04	-0.01	0.04	0.11
<<Min: 89.23 - 98.86 0.01% Min: Galena>> DIS					93.50	94.50	1.00	B00266644	6.8	-0.005	0.04	0.07	0.16
<<Min: 89.23 - 98.86 0.5% Min: Chalcopyrite>>					94.50	95.22	0.72	B00266645	4.8	-0.005	0.04	0.01	0.02
<<Min: 89.23 - 98.86 0.25% Min: Calcite>>													
<<Alt: 89.23 - 89.62 Weak (Alt) Cordierite>>													
<<Alt: 89.23 - 93.78 Strong (Alt) Muscovite>>													
<<Alt: 89.23 - 93.78 Weak (Alt) Chlorite>>													
<<Alt: 93.78 - 97.58 Strong (Alt) Silicification>>													
<<Alt: 93.78 - 97.58 Strong (Alt) Muscovite>>													
<<Alt: 93.78 - 97.58 Weak (Alt) Chlorite>>													
<<Vein: 90.32 - 98.62 5% Quartz-Carbonate-Sulphide 48 deg. >> CP, GL, CA, DO, PO, PY, SP													
<<Struc: 89.23 - 89.24 Contact>> Lith contact													
<<Struc: 91.97 - 91.98 dominant foliation>>													
95.22	**97.22**	**OI**	**Heavilly disseminated sulphides in host schist**		95.22	96.22	1.00	B00266646	47.1	0.133	0.17	0.34	1.05
					96.22	97.22	1.00	B00266647	37.1	0.061	0.08	0.52	1.5
97.22	**98.86**	**RHY**	**undifferentiated rhyolite**		97.22	98.00	0.78	B00266648	5.9	0.38	0.05	0.03	0.44
<<Alt: 97.58 - 98.86 Intense (Alt) Muscovite>>					98.00	98.86	0.86	B00266649	10.1	0.122	0.09	0.05	0.2
<<Alt: 97.58 - 98.86 Weak (Alt) Chlorite>>													
98.86	**103.38**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	98.86	99.50	0.64	B00266652	147	1.23	1.41	0.17	0.35
<<Min: 100.27 - 104.58 20% Min: Sphalerite>>					99.50	100.50	1.00	B00266653	102	1.1	0.6	0.84	3.01
<<Struc: 100.76 - 100.77 dominant foliation>>					100.50	101.50	1.00	B00266654	146	1.91	0.54	2.44	9.51

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 101.92 - 101.93 dominant foliation>>					101.50	102.50	1.00	B00266655	132	1.99	0.64	1.43	6.56
<<Struc: 102.79 - 102.8 dominant foliation>>					102.50	103.38	0.88	B00266656	78.3	0.827	0.13	2.32	8.04
<<Struc: 103.2 - 103.21 dominant foliation>>													
103.38	**103.94**	**OA**	**Magnetite bearing sulphides**	**MG**	103.38	103.94	0.56	B00266657	99.3	0.424	0.09	4.5	11.1
103.94	**104.58**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	103.94	104.58	0.64	B00266658	112	1.45	0.35	1.51	7.63
<<Struc: 104.33 - 104.34 dominant foliation>>													
104.58	**105.64**	**OI**	**Heavilly disseminated sulphides in host schist**		104.58	105.08	0.50	B00266659	41	0.327	0.1	0.12	0.39
<<Vein: 104.58 - 105.64 40% Quartz-Carbonate-Sericite 80 deg. >>					105.08	105.64	0.56	B00266661	159	1.01	0.46	1.49	4.02
105.64	**110.87**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	105.64	106.50	0.86	B00266662	265	1.97	0.42	4.16	10.2
<<Min: 105.64 - 110.87 20% Min: Sphalerite>>					106.50	107.50	1.00	B00266663	219	2.13	0.5	1.11	4.37
<<Struc: 107.06 - 107.07 dominant foliation>>					107.50	108.50	1.00	B00266664	198	1.76	0.41	1.76	6.86
<<Struc: 108.37 - 108.38 dominant foliation>>					108.50	109.50	1.00	B00266665	164	1.67	0.43	1.71	5.66
<<Struc: 109.84 - 109.85 dominant foliation>>					109.50	110.05	0.55	B00266666	152	1.73	0.43	2.73	5.86
					110.05	110.87	0.82	B00266667	159	0.954	0.26	3.32	8.52
110.87	**114.51**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		110.87	112.37	1.50	B00266668	4.2	0.015	0.02	0.06	0.09
<<Min: 110.87 - 114.51 0.01% Min: Pyrite>>					112.37	113.87	1.50	B00266669	0.4	-0.005	-0.01	-0.01	0.02
<<Min: 110.87 - 114.51 15% Min: Calcite>>					113.87	114.51	0.64	B00266671	-0.3	0.01	-0.01	-0.01	-0.01
<<Alt: 110.87 - 114.51 Moderate-Strong (Alt) Chlorite>>													
<<Alt: 110.87 - 114.51 Moderate (Alt) Biotite>>													
114.51	**122.56**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										
114.51 - 122.56: MAFi xenoliths													
<<Min: 114.51 - 122.56 1% Min: Sphalerite>> BL													
<<Min: 114.51 - 122.56 0.5% Min: Pyrite>>													
<<Min: 114.51 - 122.56 2% Min: Pyrrhotite>>													
<<Min: 114.51 - 122.56 2% Min: Calcite>>													
<<Min: 120.03 - 121.76 0.01% Min: Galena>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 120.03 - 121.76 0.01% Min: Chalcopyrite>>

<<Alt: 114.51 - 122.56 Intense (Alt) Silicification>>

<<Alt: 114.51 - 122.56 Moderate (Alt) Muscovite>>

<<Alt: 120.03 - 121.76 Weak (Alt) Chlorite>>

<<Vein: 114.51 - 122.56 20% Quartz-Carbonate-Sulphide 70 deg. >> CA, SP, PO, PY, GL

<<Struc: 118.7 - 118.71 dominant foliation>>

122.56 128.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 122.56 - 128 0.01% Min: Pyrite>>

<<Min: 122.56 - 128 15% Min: Calcite>>

<<Alt: 122.56 - 125.59 Weak-Moderate (Alt) Muscovite>>

<<Alt: 122.56 - 128 Moderate (Alt) Chlorite>>

<<Alt: 122.56 - 128 Moderate-Strong (Alt) Biotite>>

<<Alt: 125.59 - 128 Moderate-Strong (Alt) Muscovite>> Patchy zones of Cr mica.

<<Vein: 122.56 - 128 20% Quarzt-Chlorite-Carbonate 74 deg. >>

<<Struc: 125.64 - 126 Moderate (Alt) Fault>> Fault gouge medium to high intensity

128.00 136.35 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 128 - 136.35 1% Min: Sphalerite>>

<<Min: 128 - 136.35 1% Min: Pyrite>>

<<Min: 128 - 136.35 0.01% Min: Galena>>

<<Min: 128 - 136.35 2% Min: Calcite>>

<<Alt: 128 - 136.35 Intense (Alt) Silicification>>

<<Alt: 128 - 136.35 Weak-Moderate (Alt) Muscovite>>

<<Vein: 128 - 136.35 10% Quartz-Carbonate-Sulphide 80 deg. >> CA, SP, PO, PY, GL

136.35 143.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 136.35 - 143 0.01% Min: Pyrite>> CG PY bleb partially replaced by PO

<<Min: 136.35 - 143 0.01% Min: Pyrrhotite>> CG PY bleb partially replaced by PO

<<Min: 136.35 - 143 15% Min: Calcite>>

<<Alt: 136.35 - 141.65 Moderate-Strong (Alt) Chlorite>>

<<Alt: 136.35 - 141.65 Moderate (Alt) Biotite>>

<<Alt: 141.65 - 143 Strong (Alt) Chlorite>>

<<Struc: 136.35 - 141.65 Weak (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart. Multiple orientations.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
143.00	**149.00**	**RHYvx** **Quartz and/or feldspar crystal tuff**									
143 - 149: Trace tourmaline. QZ eyes.											
<<Min: 143 - 149 0.1% Min: Pyrite>>											
<<Min: 143 - 149 0.25% Min: Pyrrhotite>>											
<<Min: 143 - 149 0.01% Min: Chalcopyrite>>											
<<Alt: 143 - 149 Moderate (Alt) Muscovite>>											
End of Hole @ 149											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-237

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	27-Aug-15
UTM Easting	414750.629	Core Size:	HQ3	Azimuth:	179.15	Date Logging Complete:	28-Aug-15
UTM Northing:	6815496.738	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1406.768	Casing Depth (m):	4.5	Length (m):	119	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	25-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	26-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
Comments:						Parent Hole:	K15-236

The purpose of this whole was to twin K15-236 and to provide material for MET 2 and MET 7 domains, both of which were successfully intercepted.
The first 75.26 m of K15-237 consists of a thick package of carbonaceous rhyolite flows and crystal tuffs with thin carbonaceous mudstones throughout. The shallower of two massive sulphide intercepts consists of OA, OB, and OC ore types and was intersected between 75.26-88.60 m (13.34 m total thickness). The two massive sulphide intercepts are separated by undifferentiated RHY between 88.60-96.80 m. The lowermost 2.65 m of the RHY unit contains heavily disseminated PY, PO, SP, CP, and GL and was logged as OI. The deeper of the two massive sulphide intercepts consisting of OB, OA, and OH ore types was intersected between 96.80-109.43 m (12.63 m total thickness). The structural footwall (109.43-119 m) consists of MAFi intruded by RHYi. The planned depth was 122 m but the hole was terminated at 119 m due to a blocking error made by the drill crew.
Syngenetic alteration in the felsic volcanic hanging wall consists of moderate to strong MU alteration within about 7 m of the top of the sulphide zone. Weak to moderate CL alteration is present within 30 cm of the top of the ore zone. From 88.60-96.80 m moderate to strong MU alteration predominates with weak to moderate CL alteration. Syngenetic alteration of the footwall has been eliminated by MAFi and RHYi units. Alteration of the footwall is characterized by a moderate to strong CL, BI overprint and strong to intense silicification associated with RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	179.15	0	179.15	APS	Cooper Campbell	25-Aug-15		☑	
29	-68.7	158.6	22.5	181.1	ReflexEZS	Geotech	26-Aug-15	5758	☑	
59	-68.6	162.7	22.5	185.2	ReflexEZS	Geotech	26-Aug-15	5775	☑	
86	-68.4	150.3	22.5	172.8	ReflexEZS	Geotech	26-Aug-15	5360	☐	Chose not to accept value due to low magnetic field reading
119	-68.4	160.8	22.5	183.3	ReflexEZS	Geotech	27-Aug-15	5649	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.43**	**OVBN Overburden**									
<<Alt: 4.3 - 66 Moderate (Alt) Muscovite>>											
4.43	**13.00**	**MDSw Coherent rhyolite flow with carbonaceous content**									
<<Min: 4.43 - 72.75 0.01% Min: Sphalerite>>											
<<Min: 4.43 - 72.75 0.25% Min: Pyrite>> BL											
<<Min: 4.43 - 72.75 0.01% Min: Pyrrhotite>> BL											

From (m)	To (m)	Rocktype & Description

<<Min: 4.43 - 72.75 0.01% Min: Calcite>>

<<Struc: 4.43 - 66.1 Weak (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart. Multiple orientations.

13.00	**23.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
23.00	**27.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
27.00	**34.27**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

27 - 34.27: QZ eyes

34.27	**45.30**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

<<Vein: 36.95 - 38.75 20% Quartz-Carbonate-Sulphide 80 deg. >> Trace PY

45.30	**60.89**	**MDSt**	**Rhyolite tuff dominant mudstone**

45.3 - 60.89: QZ eyes

60.89	**65.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**
65.00	**66.00**	**MDSc**	**Carbonaceous dominant mudstone**
66.00	**72.75**	**MDSt**	**Rhyolite tuff dominant mudstone**

<<Alt: 66 - 75.26 Moderate-Strong (Alt) Muscovite>>

<<Vein: 72.28 - 72.7 95% Quartz-Carbonate-Sulphide 80 deg. >> Trace GL

<<Struc: 66.1 - 69 Moderate (Alt) Fault>> Broken rock and fault gouge. Fault material accounts for 15% of interval.

72.75	**75.26**	**MDSc**	**Carbonaceous dominant mudstone**

<<Min: 72.75 - 75.26 0.1% Min: Sphalerite>>

<<Min: 72.75 - 75.26 2% Min: Pyrite>> DIS

<<Min: 72.75 - 75.26 1% Min: Pyrrhotite>> DIS

<<Min: 72.75 - 75.26 0.1% Min: Chalcopyrite>>

<<Alt: 74.95 - 75.26 Weak-Moderate (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.75	71.75	1.00						
71.75	72.75	1.00						
72.75	73.75	1.00						
73.75	74.75	1.00						
74.75	75.26	0.51						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
75.26	**76.02**	**OG**	**Chalcopyrite rich sulphides**	**CG**	75.26	76.02	0.76						
75.26 - 76.02: 15% CP													
<<Min: 75.26 - 76.02 15% Min: Chalcopyrite>>													
76.02	**77.18**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	76.02	76.52	0.50						
					76.52	77.18	0.66						
77.18	**78.22**	**OA**	**Magnetite bearing sulphides**	**MG**	77.18	77.68	0.50						
<<Min: 77.18 - 80.2 20% Min: Sphalerite>>					77.68	78.22	0.54						
78.22	**78.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	78.22	78.75	0.53						
78.75	**81.40**	**OA**	**Magnetite bearing sulphides**	**MG**	78.75	79.50	0.75						
					79.50	80.50	1.00						
					80.50	81.40	0.90						
81.40	**82.15**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**CG**	81.40	82.15	0.75						
81.4 - 82.15: 25%CP													
<<Min: 81.4 - 82.15 25% Min: Chalcopyrite>>													
82.15	**85.22**	**OA**	**Magnetite bearing sulphides**	**MG**	82.15	83.15	1.00						
<<Min: 83.89 - 85.22 20% Min: Sphalerite>>					83.15	84.15	1.00						
					84.15	84.72	0.57						
					84.72	85.22	0.50						
85.22	**88.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	85.22	86.00	0.78						
<<Min: 87.95 - 88.6 15% Min: Sphalerite>>					86.00	87.00	1.00						
<<Min: 87.95 - 88.6 2% Min: Galena>>					87.00	88.00	1.00						
					88.00	88.60	0.60						
88.60	**94.15**	**RHY**	**undifferentiated rhyolite**		88.60	89.60	1.00						
88.6 - 94.15: Syngenetic alteration zone													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 88.6 - 94.15 0.25% Min: Sphalerite>>					89.60	90.60	1.00						
<<Min: 88.6 - 94.15 1% Min: Pyrrhotite>>					90.60	91.60	1.00						
<<Min: 88.6 - 94.15 0.1% Min: Galena>>					91.60	92.60	1.00						
<<Min: 88.6 - 94.15 0.01% Min: Chalcopyrite>>					92.60	93.60	1.00						
<<Min: 88.6 - 96.8 2% Min: Calcite>>					93.60	94.15	0.55						
<<Alt: 88.6 - 92.82 Strong (Alt) Muscovite>>													
<<Alt: 88.6 - 92.82 Weak (Alt) Chlorite>>													
<<Alt: 92.82 - 95.42 Moderate-Strong (Alt) Silicification>>													
<<Alt: 92.82 - 96.8 Moderate-Strong (Alt) Muscovite>>													
<<Alt: 92.82 - 96.8 Weak-Moderate (Alt) Chlorite>>													
<<Vein: 89.08 - 96.8 20% Quartz-Carbonate-Sulphide 30 deg. >> 1% Po, 0.25% SP, tr GL, 0.25% PY													
94.15	**96.80**	**OI**	**Heavilly disseminated sulphides in host schist**	**CG**	94.15	95.00	0.85						
					95.00	96.00	1.00						
					96.00	96.80	0.80						
96.80	**97.14**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	96.80	97.54	0.74						
97.14	**97.54**	**OA**	**Magnetite bearing sulphides**	**MG**									
97.54	**98.45**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	97.54	98.45	0.91						
98.45	**101.92**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	98.45	99.00	0.55						
<<Min: 99.13 - 109.43 20% Min: Sphalerite>>					99.00	100.00	1.00						
					100.00	101.00	1.00						
					101.00	101.92	0.92						
101.92	**102.61**	**OA**	**Magnetite bearing sulphides**	**MG**	101.92	102.61	0.69						
102.61	**109.43**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	102.61	103.50	0.89						
					103.50	104.50	1.00						
					104.50	105.50	1.00						

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
105.50	106.50	1.00						
106.50	107.50	1.00						
107.50	108.50	1.00						
108.50	109.43	0.93						
109.43	110.43	1.00						
110.43	111.43	1.00						
111.43	112.43	1.00						
112.43	113.25	0.82						
113.25	114.50	1.25						

109.43 113.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

109.43 - 113.25: MU SI over print from RHYi. Brecciated contact with RHYi.

<<Min: 109.43 - 113.25 0.25% Min: Pyrite>>

<<Min: 109.43 - 113.25 0.01% Min: Pyrrhotite>> PO replacing PY.

<<Min: 109.43 - 113.94 15% Min: Calcite>>

<<Alt: 109.43 - 111.6 Strong (Alt) Silicification>>

<<Alt: 109.43 - 111.6 Moderate-Strong (Alt) Muscovite>>

<<Alt: 109.43 - 111.6 Weak (Alt) Chlorite>>

<<Alt: 109.43 - 111.6 Weak-Moderate (Alt) Biotite>>

<<Alt: 111.6 - 113.94 Weak-Moderate (Alt) Muscovite>>

<<Alt: 111.6 - 113.94 Moderate (Alt) Chlorite>>

<<Alt: 111.6 - 113.94 Moderate-Strong (Alt) Biotite>>

<<Vein: 109.43 - 111.6 25% Quartz-Carbonate 85 deg. >> Tourmaline.

113.25 119.00 RHYi Aphanitic Rhyolite (intrusion)

113.25 - 119: Brecciated boundary with MAFi.

<<Min: 113.25 - 119 3% Min: Sphalerite>>

<<Min: 113.25 - 119 1% Min: Pyrite>>

<<Min: 113.25 - 119 1% Min: Pyrrhotite>>

<<Min: 113.94 - 119 0.25% Min: Calcite>>

<<Alt: 113.94 - 119 Intense (Alt) Silicification>>

<<Alt: 113.94 - 119 Weak-Moderate (Alt) Muscovite>>

<<Vein: 117.85 - 118.02 100% Quartz-Carbonate-Sulphide 50 deg. >> SP, PO, PY, GL

End of Hole @ 119

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-238

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	27-Aug-15
UTM Easting	414901.586	Core Size:	HQ3	Azimuth:	180.17	Date Logging Complete:	29-Aug-15
UTM Northing:	6815741.065	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1388.746	Casing Depth (m):	6	Length (m):	245	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	28-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Hole K15-238 is made up of primarily rhyolitic rock (RHYcw and RHYvl) with two minor mudstone units. The top of the hole is cut by mafic dykes. The massive sulfide was intersected within a shear zone from 179.84 to 181.88, and consists exclusively of the OB domain. The footwall consists of mafic sill crosscut by rhyolitic aphanitic dyke (green/grey alteration associated) and followed by biotite rich and weakly chloritized rhyolitic units.
The hole shows progressive muscovite alteration in the hanging-wall followed by strong to intense proximal alteration from 171m to 177m (cordierite) with wispy laminated PO/PY/AS/SP/GL mineralization.
This drill hole contains a significant shear zone (177m to 185m) hosting massive sulfide as well as multiple minor faults under the mafic intrusion. Multiple strong chlorite alteration zones are present.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.17	0	180.17	APS	Cooper Campbell	25-Aug-15		☑	
26	-58.9	163.8	22.5	186.3	ReflexEZS	Geotech	26-Aug-15	5766	☑	
50	-59.1	164	22.5	186.5	ReflexEZS	Geotech	26-Aug-15	5726	☑	
75	-59.3	164.7	22.5	187.2	ReflexEZS	Geotech	26-Aug-15	5747	☑	
101	-59.9	166.2	22.5	188.7	ReflexEZS	Geotech	26-Aug-15	5795	☑	
125	-60.5	165.3	22.5	187.8	ReflexEZS	Geotech	26-Aug-15	5752	☑	
152	-60.2	169.4	22.5	191.9	ReflexEZS	Geotech	26-Aug-15	5828	☑	
176	-60.5	170	22.5	192.5	ReflexEZS	Geotech	27-Aug-15	5680	☑	
200	-60.7	167.6	22.5	190.1	ReflexEZS	Geotech	27-Aug-15	5782	☑	
227	-60.2	166.4	22.5	188.9	ReflexEZS	Geotech	28-Aug-15	5754	☑	
245	-60.1	167.8	22.5	190.3	ReflexEZS	Geotech	28-Aug-15	5789	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.00 10.91 RHYva Coarse grained to ash tuff grey-green

6 - 10.91: Trace of oxidation, BI at lower contact with mafic dyke.

<<Min: 9 - 66.53 1% Min: Pyrite>> Locally in discontinuous veins, coarse grain.

<<Min: 9 - 66.53 1% Min: Pyrrhotite>> Often elongated along the foliation or in foliation mostly in flow banded zone.

<<Min: 9 - 66.53 1% Min: Chalcopyrite>> Trace

<<Alt: 9 - 66.53 Weak (Alt) Muscovite>> maybe some chlorite,greenish color.

10.91 11.77 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

10.91 - 11.77: Dyke. Foliated. Phenoblasts (feldspar?), few calcite, SP agregate.

11.77 18.45 RHYvl Lapilli tuff grey-green

<<Vein: 14 - 14.5 Tourmaline>> TML in fracture along the core axis

18.45 23.88 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

18.45 - 23.88: Dyke. Silicified mafic dyke, locally RHYvl, few CA, SP at lower contact.

23.88 26.03 RHYvl Lapilli tuff grey-green

26.03 26.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

26.03 - 26.4: Dyke. CA.

26.40 28.40 RHYvl Lapilli tuff grey-green

28.40 32.69 RHYvx Quartz and/or feldspar crystal tuff grey-green

28.4 - 32.69: Probably phenoblats,randomly oriented locally (or RHYvl).

32.69 35.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

32.69 - 35: Flow banded, SI rich.

35.00 36.43 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

35 - 36.43: Dyke. Silicified. Calcite at upper and lower contact.

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

36.43	**41.63**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**
41.63	**44.19**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

41.63 - 44.19: Dyke. CA in matrix, large patch CA/SP and few CL at upper contact (30 cm wide).

<<Min: 41.63 - 41.93 20% Min: Sphalerite>> Patch at contavt with mafic dyke, associated with CA vein.

44.19	**46.51**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**

44.19 - 46.51: Flow banded.

46.51	**48.71**	**RHYvl**	**Lapilli tuff**	**grey-green**
48.71	**53.55**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**

48.71 - 53.55: Flow banded.

53.55	**54.09**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

53.55 - 54.09: Dyke. CA at upper nd lower contact.

54.09	**56.55**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**
56.55	**77.47**	**RHYvl**	**Lapilli tuff**	**dark grey**

56.55 - 77.47: Containing clasts locally. BI.

<<Min: 66.53 - 115 1% Min: Pyrite>> Discontinuous vein, voarse grain, and dissemated

<<Min: 66.53 - 115 2% Min: Pyrrhotite>>

77.47	**98.08**	**RHYcf**	**Feldspar & feldspar quartz porphyry**	**grey-green**

77.47 - 98.08: QZ eyes, blue.

<<Vein: 81 - 81.1 Quartz-Sulphide>> QZ ven, 1cm wide, shallow angle (10 degre),contaning mineralization PO/PY/CP.

<<Vein: 82.4 - 82.44 Quartz>> QZ few CA/CL

98.08	**100.71**	**RHYvl**	**Lapilli tuff**	**medium grey**

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

100.71 113.09 RHYcw Curdy textured-flow banded (flows, subvolcanics) medium grey

100.71 - 113.09: Wavy QZ, folded. BI

113.09 114.23 RHYvl Lapilli tuff medium grey

114.23 117.44 RHYcw Curdy textured-flow banded (flows, subvolcanics) medium grey

114.23 - 117.44: Silicification from 115.95 to 117.46m. Weak MU ateration at proximity of the fault (115.48).

<<Struc: 115.95 - 116 Weak (Alt) Fault>> Fault gouge, minor fault.

117.44 127.38 RHYvl Lapilli tuff medium grey

117.44 - 127.38: Probably carbonaceous. Dyke with wavy contact at 115.20 and 116-20, 35 cm wide, probably the same dyke folded.

127.38 131.85 MDSt Rhyolite tuff dominant mudstone dark grey

131.85 143.67 RHYvl Lapilli tuff medium grey

131.85 - 143.67: Locally fragmental.

<<Alt: 131.85 - 155 Weak (Alt) Muscovite>>

143.67 153.52 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

143.67 - 153.52: Possibly phenoblasts (QZ, tectngular shape).

<<Min: 143.67 - 153.32 1% Min: Pyrite>>

<<Min: 143.67 - 153.32 8% Min: Pyrrhotite>> Coud be selective replacement.

<<Vein: 152.52 - 163.2 Massive Sulphide/Sulphides undifferentiated>> PO/PY/SP/ AS stringers (4 thin veinlets every 10 cm)

153.52 155.32 MDSt Rhyolite tuff dominant mudstone dark grey

153.52 - 155.32: Foliated.

<<Alt: 155 - 162.27 Moderate (Alt) Muscovite>>

155.32 162.27 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

155.32 - 162.27: Folded stringers PO/PY.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 155.52 - 163.2 2% Min: Sphalerite>>

<<Min: 155.52 - 163.2 1% Min: Pyrite>> Associated with other sulfide. Medium to coarse grain.

<<Min: 155.52 - 163.2 2% Min: Pyrrhotite>> Stringers, multi sulfide.

<<Min: 155.52 - 163.2 1% Min: Arsenopyrite>> Associated with other sulfides.

162.27 167.00 MDSw Coherent rhyolite flow with carbonaceous content medium grey

162.27 - 167: Intense MU alteration on both side of SI vein, PY coarse grain associated. This unit could be a silicified mudstone but it apears uncilicified on a 10 cm wide zone.

<<Alt: 162.27 - 186.02 Strong (Alt) Muscovite>>

167.00 171.07 RHY undifferentiated rhyolite grey-green

167 - 171.07: Folded stringers PO/PY.

<<Min: 168.02 - 176.85 3% Min: Sphalerite>>

<<Min: 168.02 - 176.85 3% Min: Pyrite>> Discontinous vening, medium grain.

<<Min: 168.02 - 176.85 2% Min: Galena>> Difficult to estimate. All those minerals are associated most of the time as stringers.

<<Min: 168.02 - 176.85 3% Min: Chalcopyrite>> And patch.

<<Min: 168.02 - 176.85 1% Min: Arsenopyrite>>

<<Alt: 168.02 - 174.29 Moderate (Alt) Cordierite>> Agregated.

171.07 179.84 OJ Heavilly disseminated sulphides in proximal altered rock green-brown

171.07 - 179.84: Could be mudstone too, strong chlorite ateration obscuring the texture. The sheared zone above the massive sulfide is included in this unit but whithout good argument to.

<<Alt: 171.07 - 176.85 Strong (Alt) Chlorite>> Proximal alteration.

<<Struc: 176.83 - 185 Intense (Alt) Fault>> Major fault. Faukt gouge, large sherared zone, including massive sulfide zone.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
171.07	172.50	1.43	B00264725	37.2	0.224	0.64	1.28	2.23
172.50	174.00	1.50	B00264726	8.4	0.092	0.16	0.35	0.8
174.00	175.50	1.50	B00264727	5.3	0.014	0.09	0.16	0.67
175.50	176.84	1.34	B00264728	3.9	0.032	0.12	0.03	0.12
176.84	178.34	1.50	B00264729	7	0.032	0.13	0.03	0.06
178.34	179.84	1.50	B00264731	19	0.287	0.2	0.43	1.01
179.84	180.84	1.00	B00264732	84	0.823	0.05	2.76	7.32

179.84 181.88 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

179.84 - 181.88: OB.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 179.91 - 182.88 15% Min: Sphalerite>>	180.84	181.44	0.60	B00264733	96	1.05	0.54	2.71	6.43
		<<Min: 179.91 - 182.88 80% Min: Pyrite>>	181.44	181.88	0.44	B00264734	50.8	0.395	0.46	0.41	1.64
		<<Min: 179.91 - 182.88 2% Min: Galena>>									
181.88	**196.29**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green**	181.88	183.38	1.50	B00264735	1.5	0.014	0.01	0.09	0.15
		181.88 - 196.29: BI rich, leucoxene. Altered gree/grey (proximity of felsic dyke?).									
		<<Alt: 182.88 - 190 Strong (Alt) Chlorite>> Foliation.	183.38	184.88	1.50	B00264736	-0.3	0.013	-0.01	-0.01	0.01
		<<Alt: 185.1 - 190 Moderate (Alt) Biotite>> High density at contact with faut zone.	184.88	186.38	1.50	B00264737	-0.3	-0.005	-0.01	-0.01	0.01
		<<Alt: 190.58 - 196.29 Moderate (Alt) Silicification>> MU/SI alteration. In Mafi.									
		<<Struc: 183.5 - 183.6 Strong (Alt) Shear>> Average, no orientation line.									
		<<Struc: 190.99 - 191 dominant foliation>>									
		<<Struc: 193.7 - 193.76 Weak (Alt) Fault>> Minor fault. GL/PY in fault gouge.									
196.29	**197.54**	**RHYi Aphanitic Rhyolite (intrusion) beige**									
		196.29 - 197.54: Short unit classified as aphanitic dyke. Tear drop shape QZ.									
		<<Struc: 196.38 - 196.4 Weak (Alt) Fault>> Minor Fault. PY maybe be GL mineralized.									
197.54	**222.50**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green**	209.00	210.00	1.00	B00264738	6.3	0.008	0.31	0.02	0.09
		197.54 - 222.5: Locally altered green/grey, CI apears at 205.75. Obscured by CL alteration from 209 to 210.11m and 219.19 to 222.5m. But real evidence of the primary lithology.									
		<<Min: 209 - 210.1 1% Min: Pyrrhotite>> Striingers	210.00	211.00	1.00	B00264739	15.9	-0.005	0.77	-0.01	0.09
		<<Min: 209 - 210.1 1% Min: Chalcopyrite>> Stringers	211.00	212.00	1.00	B00264741	-0.3	0.011	-0.01	-0.01	0.01
		<<Min: 210.4 - 210.52 5% Min: Pyrrhotite>> Associated with QZ vein.									
		<<Min: 210.4 - 210.52 5% Min: Chalcopyrite>> Associated with QZ vein.									
		<<Alt: 199.13 - 205.1 Moderate (Alt) Silicification>> MU/SI alteration.									
		<<Alt: 205.75 - 245 Moderate (Alt) Cordierite>> Agregate.									
		<<Alt: 209 - 210.1 Strong (Alt) Chlorite>> With CP/PO stringers.									
		<<Alt: 219.19 - 222.5 Strong (Alt) Chlorite>> With PO stringers.									
		<<Vein: 200.04 - 200.21 Quartz-Pyrite>> QZ/SP/PY/GL									
		<<Vein: 217.5 - 218.12 Quartz>> QZ/dolomite massive vein									
		<<Struc: 200.6 - 200.62 dominant foliation>> PY stringer.									
		<<Struc: 202.5 - 202.51 dominant foliation>> PY/GL veinlet in foliation.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 205.38 - 225.27 Moderate (Alt) Shear>> Angle estimated. Broken zone, sandy and clay gouge. Alternate with proximal CL alteration. Missing core. Some fragment of MAFi. Locally brecciated associated with QZ vin and CP/PO mineralization.

<<Struc: 208.1 - 208.12 Weak (Alt) Fault>> Angle estimated. Minor fault.

<<Struc: 208.8 - 208.81 dominant foliation>>

<<Struc: 210.15 - 211.3 Strong (Alt) Shear>> Breaccia, QZ/CP/PO, CL altered MAFi (?).

<<Struc: 215 - 215.05 Strong (Alt) Fault>> No orientation line. Fault gouge.

<<Struc: 220.95 - 220.96 Moderate (Alt) Fault>> Dominante fracture.

<<Struc: 221.3 - 232.3 Moderate (Alt) Fault>> Angle estimated. Fault gouge.

<<Struc: 221.5 - 222.3 Strong (Alt) Fault>> No orientation line. Major shear zone.

222.50 230.00 RHYvl Lapilli tuff grey-green

222.5 - 230: Silicified. Could be RHYcq. QZ eyes.

<<Min: 222.5 - 236.69 3% Min: Pyrrhotite>> Elongated along the foliation.

<<Alt: 222.55 - 227.47 Moderate (Alt) Silicification>> Maybe MU/SI green/grey alteration.

<<Struc: 225.1 - 226.26 Moderate (Alt) Fault>> Fault gouge.

<<Struc: 229.31 - 229.68 Moderate (Alt) Fault>> Fault gouge, clay.

230.00 236.69 RHY undifferentiated rhyolite grey-green

230 - 236.69: QZ eyes. Pick up CL alteration. CA from 231m.

<<Min: 230.72 - 245 2% Min: Calcite>> Along the foliation.

<<Alt: 231.1 - 245 Weak (Alt) Chlorite>> Dark green color intensified by BI concentration. Locally CL replacing lapili. QZ crystal unaffeted by foliation.

<<Struc: 232.7 - 232.71 dominant foliation>>

236.69 245.00 RHYvl Lapilli tuff grey-green

236.69 - 245: Lapili, QZ eyes, locally concentrated, BI and CL. TML as small agregates. 245.00 E.O.H..

<<Vein: 240.51 - 240.57 Quarzt-Chlorite-Tourmaline>> QZ/CL/TML/PY vein

<<Vein: 241.33 - 241.39 Quartz-Sulphide>> QZ/TML/PO/CP

<<Struc: 242.42 - 242.43 dominant foliation>> BI in foliation.

End of Hole @ 245

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-238W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	30-Aug-15
UTM Easting	414901.586	Core Size:	HQ3	Azimuth:	180.17	Date Logging Complete:	31-Aug-15
UTM Northing:	6815741.065	Casing Pulled?:	Yes	Dip:	-58	Drill Company:	Geotech
UTM Elev. (m):	1388.746	Casing Depth (m):	6	Length (m):	194	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	30-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-238

Comments:

Hole K15-238W1 (wedge hole of K15-238 from 154.2m to 194m) was drilled to collect samples of the MET6 domain.
The hanging-wall consists of strongly muscovite altered carbonaceous rhyolite transitioning into wavy sulfide stringers, followed by strong chlorite alteration from 168.04m to 178.87m CP, PY, SP, GL and AS mineralization.
The massive sulfide zone is discontinuous, hosted in a shear zone and is intersected from 181.59m to 187.3m. It is made up of OJ, OI, OB, OH and OD domains. Its thickness is about 4.5m (thicker than in K15-238).
The footwall consists of a strongly sheared mafic sill.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.17	0	180.17	APS	Cooper Campbell	25-Aug-15		☑	Values copied from K15-238
26	-58.9	163.8	22.5	186.3	ReflexEZS	Geotech	26-Aug-15	5766	☑	Values copied from K15-238
50	-59.1	164	22.5	186.5	ReflexEZS	Geotech	26-Aug-15	5726	☑	Values copied from K15-238
75	-59.3	164.7	22.5	187.2	ReflexEZS	Geotech	26-Aug-15	5747	☑	Values copied from K15-238
101	-59.9	166.2	22.5	188.7	ReflexEZS	Geotech	26-Aug-15	5795	☑	Values copied from K15-238
125	-60.5	165.3	22.5	187.8	ReflexEZS	Geotech	26-Aug-15	5752	☑	Values copied from K15-238
152	-60.2	169.4	22.5	191.9	ReflexEZS	Geotech	26-Aug-15	5828	☑	Values copied from K15-238
156.2	-58.4	164	22.5	186.5	ReflexEZS	Geotech	29-Aug-15	5771	☑	Wedge start; value copied from first wedge survey at 164m
164	-58.4	164	22.5	186.5	ReflexEZS	Geotech	29-Aug-15	5771	☑	
176	-58.2	166.7	22.5	189.2	ReflexEZS	Geotech	29-Aug-15	5735	☑	
194	-58.6	167.7	22.5	190.2	ReflexEZS	Geotech	30-Aug-15	5751	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
156.20	**164.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	162.90	163.90	1.00						

156.2 - 164.9: Silicified. PO/PY stringers, CP trace.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 156.2 - 168.04 5% Min: Pyrite>> Stringers, medium grain locally.	163.90	164.90	1.00						
		<<Min: 156.2 - 168.04 5% Min: Pyrrhotite>> Stringers.									
		<<Min: 156.2 - 168.04 2% Min: Arsenopyrite>>									
		<<Alt: 156.2 - 167.1 Strong (Alt) Muscovite>> Very strong close to QZ veins									
		<<Alt: 156.2 - 168.04 Strong (Alt) Silicification>> 20 cm of mudstone non affected by silicication.									
		<<Vein: 159 - 164.9 Pyrite>> PY and PO veinlets, folded (sringers)									
		<<Vein: 164.37 - 164.83 Quartz-Carbonate-Sulphide>> QZ/dolomite vein irregular, PY, GL trace, CL									
164.90	**168.04**	**MDSt** **Rhyolite tuff dominant mudstone**	164.90	165.90	1.00						
		164.9 - 168.04: Silicified. Muscovite rich. Minor mudstone (30 cm).									
		<<Min: 167.91 - 178.87 3% Lith: Cordierite>> Agregated.	165.90	166.90	1.00						
		<<Alt: 167.91 - 174.14 Moderate (Alt) Cordierite>> Agredated.	166.90	168.04	1.14						
168.04	**168.89**	**OI** **Heavilly disseminated sulphides in host schist**	168.04	168.89	0.85						
		168.04 - 168.89: Could be flow banded locally. Texture obscured by CL proximal alteration. Cordierite from 168.04. Wispy and patchy mineralization.									
		<<Min: 168.04 - 178.87 8% Min: Sphalerite>>									
		<<Min: 168.04 - 178.87 5% Min: Pyrite>> Sulfides are associated in patch frequently laminated.									
		<<Min: 168.04 - 178.87 3% Min: Pyrrhotite>>									
		<<Min: 168.04 - 178.87 2% Min: Chalcopyrite>>									
		<<Min: 168.04 - 178.87 3% Min: Arsenopyrite>>									
		<<Alt: 168.04 - 178.87 Strong (Alt) Chlorite>>									
		<<Vein: 168.04 - 178.79 Massive Sulphide/Sulphides undifferentiated>> Stringers, multisulphides (CP, SP, PY, SP, AS)									
168.89	**178.87**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	168.89	169.50	0.61						
		168.89 - 178.87: Wispy mineralization. CI from 168.89 to 174.14m, yellow patina.									
		<<Struc: 172.43 - 172.44 Weak (Alt) Fault>> Minor fault with CL fault gouge..	169.50	170.00	0.50						
			170.00	171.00	1.00						
			171.00	171.77	0.77						
			171.77	172.43	0.66						

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
172.43	173.63	1.20						
173.63	174.14	0.51						
174.14	175.00	0.86						
175.00	176.00	1.00						
176.00	177.00	1.00						
177.00	178.00	1.00						
178.00	178.87	0.87						
178.87	179.87	1.00						
179.87	180.87	1.00						
180.87	181.59	0.72						
181.59	182.28	0.69						
182.28	183.32	1.04						
183.32	184.32	1.00						

178.87 181.59 RHY undifferentiated rhyolite

178.87 - 181.59: Sheared zone, lithology obsecured by sericite/clay alteration.

<<Struc: 178.87 - 181.59 Strong (Alt) Shear>> With yellowish (argilitic?) progressive ateration at upper contact.

181.59 182.28 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides

181.59 - 182.28: Weakly laminated.

<<Min: 181.59 - 182.28 3% Min: Sphalerite>>

<<Min: 181.59 - 182.28 60% Min: Pyrite>>

<<Min: 181.59 - 182.28 2% Min: Galena>> Associated with BA?/SI patch.

182.28 183.32 RHY undifferentiated rhyolite

182.28 - 183.32: Lithology undeterned, could be the mafic raft of mafic intrusion.

<<Alt: 182.28 - 183.32 Strong (Alt) Muscovite>> In shear zone.

<<Struc: 182.28 - 183.32 Moderate (Alt) Shear>> Sheared in schist, intense MU atteration.

183.32 184.32 OD Brecciated sulphides

183.32 - 184.32: BA?/SI in matrix associated with GL.

<<Min: 183.32 - 184.32 5% Min: Sphalerite>>

<<Min: 183.32 - 184.32 40% Min: Pyrite>>

<<Min: 183.32 - 184.32 5% Min: Galena>> Associated with BA?/SI patch.

<<Min: 183.32 - 184.32 5% Min: Chalcopyrite>>

<<Min: 184.2 - 184.32 3% Min: Magnetite>> At contact avec OH.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
184.32	**187.30**	**OH** **Fine grained, megascopically homogeneous pyrite rock**	184.32	185.00	0.68						
184.32 - 187.3: No lamination, poor SP. Brecciated at lower contact with few CP and GL associated with Ba?/SI patch.											
<<Min: 184.32 - 187.32 90% Min: Pyrite>>			185.00	185.80	0.80						
<<Min: 184.32 - 187.32 1% Min: Galena>> In brecciated contact with MAFi.			185.80	186.60	0.80						
<<Min: 184.32 - 187.32 0.5% Min: Chalcopyrite>> In brecciated contact with MAFi.			186.60	187.30	0.70						
187.30	**194.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	187.30	188.30	1.00						
187.3 - 194: Sheared, grey clay and mafic intrusion light green (clay/sericite?). 194.00 E.O.H.											
<<Min: 189.8 - 194 0.5% Min: Calcite>> In foliation of the MAFi.			188.30	189.30	1.00						
<<Struc: 187.3 - 187.32 Strong (Alt) Fault>> Brecciated contact MXSX with MAFi.			189.30	190.30	1.00						
<<Struc: 187.3 - 189.8 Strong (Alt) Fault>> Fault gouge, grey clay. Thickness evaluated, probably core loss by washing the fine.			190.30	191.30	1.00						
<<Struc: 189.8 - 194 Strong (Alt) Shear>> Argilitic, CL and few CA.			191.30	192.30	1.00						
End of Hole @ 194											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-239

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	28-Aug-15
UTM Easting	414751.369	Core Size:	NQ3	Azimuth:	180.82	Date Logging Complete:	31-Aug-15
UTM Northing:	6815544.149	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1407.974	Casing Depth (m):	6	Length (m):	192	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	27-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	29-Aug-15
Local Elev. (m):						Purpose:	Resource Confirmation
Comments:						Parent Hole:	

The purpose of this whole was to twin the historical hole K94-040.
The first 98.2 m of K15-239 consists of a thick package of rhyolitic volcaniclastics (xtl/lpl) and flows (+/- carbonaceous material), and carbonaceous mudstones.
The shallowest of two massive sulphide intercepts consisting of OB, and OI ore types was intersected between 98.24-104.81 m (6.57 m total thickness). The two massive sulphide intercepts are separated by MU-CL-CI altered RHY and RHYcw from 104.81-122.13 m. The lower massive sulphide intercept, consisting of OA, OB, OC, OF, OH and OI ore types, was intersected between 122.13-136.66 m (14.53 m total thickness).
The structural footwall consists of MAFi intruded by RHYi, both of which sit stratigraphically above RHYva and RHYvl. The footwall was intersected between 136.66-192.0 m.
Syngenetic alteration of the structural hanging wall felsic volcanics is characterized by moderate MU alteration over the first 90.58 m. From 90.58-101.94m MU-CL-CI alteration increases with proximity to the sulphide zone becoming very intense from 100.82-101.94m. From 104.0-126.09 m MU-CL alteration is generally moderate and increases in intensity at the upper and lower contact with the sulphide zones. Strong CI alteration was logged between 104-104.81 m and 124.54-126.09 m.

Syngenetic alteration of the footwall has been eliminated by MAFi and RHYi units. Alteration of the footwall is characterized by a moderate to strong CL-BI overprint in MAFi as well as intense silicification associated with RHYi. RHYv units of the footwall are weakly to moderately overprinted by MU-CL-BI.
The most notable mineralized interceptions included: 20 % CP OC 126.09-127.72m, 15 % SP/5% GL OA 134.9-136.66 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.82	0	180.82	APS	Cooper Campbell	27-Aug-15		☑	
33	-71.5	159.1	22.5	181.6	ReflexEZS	Geotech	27-Aug-15	5760	☑	
57	-71.2	161.6	22.5	184.1	ReflexEZS	Geotech	27-Aug-15	5724	☑	
84	-71.3	160.1	22.5	182.6	ReflexEZS	Geotech	28-Aug-15	5666	☑	
111	-70.9	171.4	22.5	193.9	ReflexEZS	Geotech	28-Aug-15	5963	☑	
136	-70.7	146.9	22.5	169.4	ReflexEZS	Geotech	28-Aug-15	5879	☑	
162	-70.6	160.1	22.5	182.6	ReflexEZS	Geotech	29-Aug-15	5808	☑	
192	-70.6	163.3	22.5	185.8	ReflexEZS	Geotech	29-Aug-15	5790	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.49**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description
5.49	**6.33**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 5.49 - 15.43 0.01% Min: Pyrrhotite>>		
<<Min: 5.49 - 59.21 0.5% Min: Calcite>>		
<<Alt: 5.49 - 90.58 Moderate (Alt) Muscovite>>		
6.33	**15.43**	**MDSt** **Rhyolite tuff dominant mudstone**
6.33 - 15.43: QZ eyes		
15.43	**19.87**	**RHYvl** **Lapilli tuff**
<<Min: 15.43 - 19.87 1% Min: Pyrrhotite>>		
<<Alt: 15.43 - 19.87 Trace (Alt) Chlorite>>		
<<Alt: 15.43 - 19.87 Weak (Alt) Biotite>>		
19.87	**20.72**	**MDSc** **Carbonaceous dominant mudstone**
<<Min: 19.87 - 31.81 0.01% Min: Pyrrhotite>>		
20.72	**23.00**	**MDSt** **Rhyolite tuff dominant mudstone**
20.72 - 23: QZ eyes		
23.00	**28.50**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
23 - 28.5: QZ eyes		
28.50	**29.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
29.50	**57.70**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 31.81 - 59.21 0.01% Min: Sphalerite>>		
<<Min: 31.81 - 59.21 3% Min: Pyrite>>		
<<Min: 31.81 - 59.21 1% Min: Pyrrhotite>>		
<<Alt: 31.81 - 57.7 Weak (Alt) Chlorite>>		
<<Alt: 31.81 - 57.7 Trace (Alt) Biotite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)		Rocktype & Description
57.70	**59.21**	**MDSt**	**Rhyolite tuff dominant mudstone**
59.21	**60.66**	**MDSc**	**Carbonaceous dominant mudstone**
<<Min: 59.21 - 90.58 0.5% Min: Pyrite>>			
60.66	**62.82**	**MDSt**	**Rhyolite tuff dominant mudstone**
62.82	**66.00**	**MDSc**	**Carbonaceous dominant mudstone**
66.00	**90.58**	**MDSt**	**Rhyolite tuff dominant mudstone**
66 - 90.58: QZ eyes.			
<<Struc: 87.4 - 87.41 dominant foliation>>			
90.58	**98.24**	**RHY**	**undifferentiated rhyolite**
<<Min: 90.58 - 98.24 3% Min: Sphalerite>>			
<<Min: 90.58 - 98.24 0.5% Min: Pyrite>> PY BL partially replace by PO			
<<Min: 90.58 - 98.24 1% Min: Pyrrhotite>>			
<<Min: 90.58 - 98.24 1% Min: Chalcopyrite>>			
<<Min: 92.1 - 100.18 0.5% Min: Calcite>>			
<<Alt: 90.58 - 101.94 Strong (Alt) Muscovite>>			
<<Alt: 91.69 - 100.82 Weak (Alt) Cordierite>>			
<<Alt: 92.1 - 100.82 Weak (Alt) Chlorite>>			
<<Alt: 92.1 - 100.82 Trace (Alt) Biotite>>			
<<Struc: 93.37 - 93.38 dominant foliation>>			
<<Struc: 94.37 - 94.38 Foliation>>			
<<Struc: 94.91 - 94.92 dominant foliation>>			
<<Struc: 95.92 - 95.93 dominant foliation>>			
<<Struc: 96.76 - 96.77 dominant foliation>>			
<<Struc: 97.02 - 97.03 dominant foliation>>			
<<Struc: 97.23 - 97.24 dominant foliation>>			
<<Struc: 97.88 - 97.89 dominant foliation>>			
<<Struc: 98.08 - 98.09 dominant foliation>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
92.50	94.00	1.50	B00266672	8.5	0.037	0.23	0.35	3.07
94.00	95.50	1.50	B00266673	3.7	0.056	0.17	0.12	0.62
95.50	97.00	1.50	B00266674	4.9	0.085	0.23	0.05	0.31
97.00	98.24	1.24	B00266675	33.2	0.851	0.41	0.14	0.98

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
98.24	**101.94**	**OI**	**Heavilly disseminated sulphides in host schist**		98.24	99.00	0.76	B00266676	12.4	0.276	0.68	0.47	9.99
<<Min: 100.18 - 101.94 10% Min: Calcite>>					99.00	100.00	1.00	B00266677	14.6	0.248	0.31	0.6	6.84
<<Alt: 100.82 - 101.94 Moderate (Alt) Chlorite>>					100.00	101.00	1.00	B00266678	38.8	0.256	0.09	0.59	2.3
<<Alt: 100.82 - 101.94 Strong (Alt) Cordierite>>					101.00	101.94	0.94	B00266679	39.7	0.27	0.48	0.1	1.62
<<Vein: 100.82 - 101.94 100% Quarzt-Chlorite-Carbonate 50 deg. >> QZ, CA, DO, CL, SP, GL, PY, PO, CP													
<<Struc: 98.7 - 98.71 dominant foliation>>													
101.94	**104.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	101.94	102.50	0.56	B00266681	271	2.43	0.62	2.24	7.32
					102.50	103.50	1.00	B00266682	231	0.818	0.32	4.05	9.64
					103.50	104.00	0.50	B00266683	321	16.45	0.44	4.93	11.6
104.00	**104.81**	**OI**	**Heavilly disseminated sulphides in host schist**		104.00	104.81	0.81	B00266684	76	0.049	0.23	1.17	2.49
<<Alt: 104 - 104.81 Weak (Alt) Chlorite>>													
<<Alt: 104 - 104.81 Strong (Alt) Cordierite>>													
<<Alt: 104 - 112.24 Strong (Alt) Muscovite>>													
<<Vein: 104 - 104.81 100% Quarzt-Chlorite-Carbonate 25 deg. >> QZ, CA, DO, CL, SP, GL, PY, PO, CP													
104.81	**112.24**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		104.81	106.00	1.19	B00266685	1.9	0.011	-0.01	0.02	0.02
<<Min: 104.81 - 112.24 0.01% Min: Sphalerite>>					106.00	107.50	1.50	B00266686	3.4	0.036	-0.01	0.06	0.09
<<Min: 104.81 - 112.24 0.5% Min: Pyrite>>					107.50	109.00	1.50	B00266687	4	0.116	0.02	0.02	0.53
<<Min: 104.81 - 112.24 0.5% Min: Pyrrhotite>>													
<<Struc: 105.65 - 105.66 dominant foliation>>													
<<Struc: 106.26 - 106.27 dominant foliation>>													
<<Struc: 107.9 - 107.91 dominant foliation>>													
<<Struc: 108.29 - 108.3 dominant foliation>>													
<<Struc: 109.53 - 109.54 dominant foliation>>													
112.24	**115.72**	**RHY**	**undifferentiated rhyolite**										
<<Min: 112.24 - 115.72 0.5% Min: Sphalerite>>													
<<Min: 112.24 - 115.72 1% Min: Pyrite>>													
<<Min: 112.24 - 115.72 3% Min: Pyrrhotite>>													
<<Min: 112.24 - 115.72 0.01% Min: Galena>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 112.24 - 115.72 1% Min: Chalcopyrite>>													
<<Alt: 112.24 - 115.72 Moderate (Alt) Muscovite>>													
<<Alt: 112.24 - 115.72 Moderate (Alt) Chlorite>>													
<<Alt: 112.24 - 115.72 Weak (Alt) Cordierite>>													
115.72	**119.58**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		118.08	119.58	1.50	B00266688	1.7	0.032	-0.01	0.01	0.05
<<Min: 115.72 - 119.58 1% Min: Pyrite>>													
<<Min: 115.72 - 119.58 0.5% Min: Pyrrhotite>>													
<<Alt: 115.72 - 119.58 Strong (Alt) Muscovite>>													
119.58	**122.13**	**RHY**	**undifferentiated rhyolite**		119.58	120.75	1.17	B00266689	6.7	0.032	0.07	0.08	1.13
<<Min: 119.58 - 122.13 1% Min: Sphalerite>>					120.75	122.13	1.38	B00266691	0.8	0.023	0.01	-0.01	0.07
<<Min: 119.58 - 122.13 1% Min: Pyrite>>													
<<Min: 119.58 - 122.13 2% Min: Pyrrhotite>>													
<<Min: 119.58 - 122.13 0.01% Min: Chalcopyrite>>													
<<Alt: 119.58 - 124.54 Moderate (Alt) Chlorite>>													
<<Alt: 119.58 - 124.54 Moderate (Alt) Cordierite>>													
<<Alt: 119.58 - 124.7 Moderate (Alt) Muscovite>>													
122.13	**126.09**	**OI**	**Heavilly disseminated sulphides in host schist**		122.13	123.13	1.00	B00266692	26.1	0.086	0.64	0.02	4.97
122.13 - 126.09: Likely RHY protolith.													
<<Min: 124 - 126.09 0.01% Min: Calcite>>					123.13	124.13	1.00	B00266693	2.3	0.013	-0.01	0.01	0.25
<<Alt: 124.54 - 126.09 Strong (Alt) Chlorite>>					124.13	125.13	1.00	B00266694	7.8	0.016	0.02	0.13	0.35
<<Alt: 124.54 - 126.09 Strong (Alt) Cordierite>>					125.13	126.09	0.96	B00266695	126	1.51	3.44	0.16	0.42
<<Vein: 123.22 - 123.54 100% Quartz-Carbonate-Sulphide 60 deg. >> CA, GL													
126.09	**127.72**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	126.09	127.09	1.00	B00266696	349	6.14	11.2	0.23	1.11
<<Min: 126.09 - 127.72 20% Min: Chalcopyrite>>					127.09	127.72	0.63	B00266697	277	4.06	9.55	0.12	0.84
<<Struc: 127.01 - 127.02 dominant foliation>>													
<<Struc: 127.53 - 127.54 dominant foliation>>													
127.72	**128.88**	**OA**	**Magnetite bearing sulphides**	**MG**	127.72	128.32	0.60	B00266698	118	1.29	2.82	0.4	0.68
					128.32	128.88	0.56	B00266699	39.4	0.408	0.6	0.53	3.04

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
128.88	**130.41**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	128.88	129.88	1.00	B00266701	58.9	0.431	0.1	1.49	7.14
					129.88	130.41	0.53	B00266702	62.7	0.288	0.15	1.51	4.99
130.41	**132.73**	**OA**	**Magnetite bearing sulphides**	**MG**	130.41	130.91	0.50	B00266703	36.5	0.331	0.43	0.64	6.85
<<Struc: 131.1 - 131.2 dominant foliation>>					130.91	131.91	1.00	B00266704	50.5	0.475	0.4	2.13	10.7
<<Struc: 131.73 - 131.74 dominant foliation>>					131.91	132.73	0.82	B00266705	63.1	0.447	0.57	2.62	11.7
<<Struc: 132.51 - 132.52 dominant foliation>>													
132.73	**134.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	132.73	133.25	0.52	B00266706	136	1.39	0.45	2.05	7.73
					133.25	134.00	0.75	B00266707	130	1.49	0.38	3.29	8.83
					134.00	134.90	0.90	B00266708	137	1.22	0.33	3.33	8.53
134.90	**136.60**	**OF**	**Pyrrhotite rich sulphides**	**MG**	134.90	135.90	1.00	B00266709	62.3	0.23	0.48	3.99	10.2
<<Min: 134.9 - 136.66 15% Min: Sphalerite>>					135.90	136.60	0.70	B00266711	121	0.296	0.41	3.95	12.1
<<Min: 134.9 - 136.66 5% Min: Galena>>													
136.60	**140.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		136.60	138.10	1.50	B00266712	4.2	0.006	0.02	0.12	0.24
<<Min: 136.6 - 140.8 0.01% Min: Pyrite>>					138.10	139.60	1.50	B00266713	-0.3	0.005	-0.01	-0.01	0.33
<<Min: 136.6 - 140.8 15% Min: Calcite>>					139.60	140.80	1.20	B00266714	1	0.014	-0.01	-0.01	0.08
<<Alt: 136.6 - 138.4 Weak (Alt) Muscovite>>													
<<Alt: 136.6 - 138.4 Moderate (Alt) Chlorite>>													
<<Alt: 136.6 - 138.4 Weak (Alt) Biotite>>													
<<Alt: 138.4 - 140.54 Moderate (Alt) Muscovite>>													
<<Alt: 140.54 - 146.82 Strong (Alt) Silicification>>													
<<Alt: 140.54 - 146.82 Weak (Alt) Muscovite>>													
<<Vein: 140.54 - 151.47 5% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CA-SP-PY. Massive to hairline veins roughly parallel to foliation.													
140.80	**146.82**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										
140.8 - 146.82: MAFi xenoliths													
<<Min: 140.8 - 150.2 5% Min: Calcite>>													
<<Min: 140.8 - 151.47 1% Min: Sphalerite>> SP, GL, PO, PY all occur together in foliation parallel wisps.													
<<Min: 140.8 - 151.47 0.01% Min: Pyrite>> SP, GL, PO, PY all occur together in foliation parallel wisps.													
<<Min: 140.8 - 151.47 0.5% Min: Pyrrhotite>> SP, GL, PO, PY all occur together in foliation parallel wisps.													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 140.8 - 151.47 0.01% Min: Galena>> SP, GL, PO, PY all occur together in foliation parallel wisps.

<<Struc: 145.72 - 145.73 Vein>>

<<Struc: 145.74 - 145.75 dominant foliation>>

146.82 165.71 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 150.2 - 165.71 15% Min: Calcite>>

<<Min: 151.47 - 156.78 3% Min: Pyrite>> Partially replaced by PO

<<Min: 151.47 - 156.78 0.01% Min: Pyrrhotite>> Partially replaces PY blebs

<<Min: 156.78 - 165.71 0.01% Min: Pyrite>>

<<Min: 156.78 - 165.71 0.01% Min: Pyrrhotite>>

<<Alt: 146.82 - 151.47 Moderate (Alt) Silicification>>

<<Alt: 146.82 - 156.19 Moderate (Alt) Muscovite>>

<<Alt: 152.57 - 156.19 Moderate (Alt) Biotite>>

<<Alt: 152.57 - 161.2 Weak (Alt) Chlorite>>

<<Alt: 156.19 - 161.2 Strong (Alt) Biotite>>

<<Alt: 161.2 - 165.71 Moderate (Alt) Chlorite>>

<<Alt: 161.2 - 165.71 Weak (Alt) Biotite>>

<<Struc: 152.05 - 152.06 dominant foliation>>

<<Struc: 153.5 - 153.51 dominant foliation>>

<<Struc: 157.5 - 157.51 dominant foliation>>

165.71 169.47 RHYv Rhyolite volcaniclastic

165.71 - 169.47: Heavily chloritized margin at contact with MAFi.

<<Min: 165.71 - 170.35 1% Min: Pyrrhotite>>

<<Min: 165.71 - 178.72 0.01% Min: Calcite>>

<<Alt: 165.71 - 166.19 Strong (Alt) Chlorite>>

<<Alt: 166.19 - 169.47 Moderate (Alt) Muscovite>>

<<Vein: 168.7 - 169.1 100% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-PY

169.47 175.48 MDSt Rhyolite tuff dominant mudstone

169.47 - 175.48: QZ eyes

<<Min: 170.35 - 175.48 0.01% Min: Pyrrhotite>>

<<Alt: 169.47 - 175.48 Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 169.47 - 178.72 Weak (Alt) Muscovite>>

175.48 178.72 RHYva Coarse grained to ash tuff

<<Min: 175.48 - 178.72 0.5% Min: Pyrite>>

<<Min: 175.48 - 178.72 0.5% Min: Pyrrhotite>>

<<Min: 175.48 - 178.72 0.01% Min: Chalcopyrite>>

<<Alt: 175.48 - 178.72 Moderate (Alt) Muscovite>>

178.72 192.00 RHYvl Lapilli tuff

<<Min: 178.72 - 184.88 5% Min: Calcite>>

<<Min: 178.72 - 191.22 0.01% Min: Pyrrhotite>>

<<Min: 184.88 - 192 0.01% Min: Calcite>>

<<Min: 191.22 - 192 0.5% Min: Pyrrhotite>>

<<Min: 191.22 - 192 0.01% Min: Chalcopyrite>>

<<Alt: 178.72 - 187.76 Weak (Alt) Muscovite>>

<<Alt: 178.72 - 187.76 Moderate (Alt) Chlorite>>

<<Alt: 178.72 - 187.76 Trace (Alt) Biotite>>

<<Alt: 187.76 - 191.22 Moderate (Alt) Muscovite>>

<<Alt: 187.76 - 191.22 Trace (Alt) Chlorite>>

<<Alt: 191.22 - 192 Weak (Alt) Muscovite>>

<<Alt: 191.22 - 192 Moderate (Alt) Chlorite>>

End of Hole @ 192

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-240

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	30-Aug-15
UTM Easting	414952.327	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	30-Aug-15
UTM Northing:	6815425.337	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1383.411	Casing Depth (m):	9	Length (m):	110	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	30-Aug-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

This hole is designed to infil and define the resource between historic holes K95-064 & K95-065.
Sulphide intervals with O-type ore classification are present from 45.3m to 53.8m (OA, OB), from 62.34m to 65.5m (OI, OA, OB) and from 72.3m to 74.57m (OJ, OI, OB). Two anomolous OJ intervals are present from 68.84m to 69.28m and from 69.9m to 70.5m.
The structural hanging wall is composed of a package of felsic metavolcaniclastic rocks that exhibit increasing muscovite alteration intensity towards the massive sulphide intervals. Calcite/carbonate content is unusually high in the top of this hole with values ranging from 2% to 10%. The structural footwall is composed of a package of mafic intrusive rocks that exhibit a range of chlorite alteration that intensifies towards the massive sulphide lenses. Silicification is pervasive in discrete intervals within the mafic intrusive rocks. Weak muscovite alteration is also present in the structural footwall rock packages.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.92	0	179.92	APS	David Nuttal	29-Aug-15		☑	
32	-59.2	143.3	22.5	165.8	ReflexEZS	Geotech	29-Aug-15	2328	☐	Chose not to accept values due to very low magnetic field.
62	-59.4	159.8	22.5	182.3	ReflexEZS	Geotech	29-Aug-15	5700	☑	
87	-58.6	160.3	22.5	182.8	ReflexEZS	Geotech	29-Aug-15	5702	☑	
110	-58.8	162.7	22.5	185.2	ReflexEZS	Geotech	29-Aug-15	5719	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN Casing**									
<<Min: 0 - 32 5% Min: Calcite>>											
<<Min: 8.5 - 37.36 2% Min: Pyrite>>											
<<Alt: 8.5 - 21 Weak (Alt) Muscovite>>											
9.00	**37.36**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
9 - 37.36: Large quartz vein from 31.5m to 32.6m											
<<Min: 32 - 51.8 1% Min: Calcite>>											

From (m)	To (m)		Rocktype & Description
<<Alt: 21 - 41 Moderate (Alt) Muscovite>>			
<<Vein: 21.85 - 33.9 10% Quartz>>			
37.36	**39.65**	**MDSt**	**Rhyolite tuff dominant mudstone**
<<Min: 37.36 - 45.3 1% Min: Pyrite>>			
39.65	**45.30**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 44.8 - 45.3 1% Min: Galena>>			
<<Min: 44.8 - 45.3 0.5% Min: Chalcopyrite>>			
<<Alt: 41 - 45.3 Strong (Alt) Muscovite>>			
<<Struc: 40.13 - 40.13 dominant foliation>>			
45.30	**45.47**	**OA**	**Magnetite bearing sulphides**
<<Struc: 45.3 - 45.3 dominant foliation>>			
45.47	**47.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
47.25	**49.82**	**OA**	**Magnetite bearing sulphides**
49.82	**53.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 51.8 - 53.8 5% Min: Calcite>>			
53.80	**58.30**	**RHYvx**	**Quartz and/or feldspar crystal tuff**
53.8 - 58.3: High calcite content (~10%)			
<<Min: 53.8 - 60 10% Min: Calcite>>			
<<Min: 53.8 - 62.34 0.25% Min: Sphalerite>>			
<<Min: 53.8 - 62.34 2% Min: Pyrite>>			
<<Min: 53.8 - 62.34 0.25% Min: Arsenopyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
40.80	42.30	1.50	B00268599	0.3	0.012	-0.01	0.02	0.03
42.30	43.80	1.50	B00268601	0.7	0.017	-0.01	0.05	0.06
43.80	45.30	1.50	B00268602	5.4	0.039	0.12	0.05	0.66
45.30	46.30	1.00	B00268603	95.9	1.66	0.4	1.23	9.05
46.30	47.25	0.95	B00268604	112	2.11	0.57	0.98	10.5
47.25	48.25	1.00	B00268605	65.1	0.496	0.39	1.2	9.37
48.25	49.25	1.00	B00268606	55.6	0.597	0.71	0.56	10.2
49.25	49.82	0.57	B00268607	88.6	0.62	0.75	1.42	10.3
49.82	50.82	1.00	B00268608	227	2.41	0.54	2.97	5.78
50.82	51.82	1.00	B00268609	375	5.79	0.71	0.73	4.63
51.82	52.82	1.00	B00268612	306	8.43	0.31	1.8	6.6
52.82	53.80	0.98	B00268613	297	2.45	0.13	3.47	8.78
53.80	55.30	1.50	B00268614	1	-0.005	-0.01	-0.01	0.02
55.30	56.80	1.50	B00268615	-0.3	-0.005	-0.01	-0.01	-0.01
56.80	58.30	1.50	B00268616	0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 53.8 - 60 Strong (Alt) Muscovite>>													
58.30	**62.34**	**RHY**	**undifferentiated rhyolite**		60.00	60.84	0.84	B00268617	1.4	0.015	-0.01	0.02	0.01
58.3 - 62.34: High calcite (~10 - 15%) and PY/SP sulphide lenses or pods													
<<Min: 60 - 62 20% Min: Calcite>>					60.84	62.34	1.50	B00268618	1	0.006	-0.01	-0.01	-0.01
<<Min: 62 - 74.5 2% Min: Calcite>>													
<<Alt: 60 - 64.11 Moderate (Alt) Muscovite>>													
<<Struc: 58.7 - 58.7 dominant foliation>>													
62.34	**64.11**	**OI**	**Heavilly disseminated sulphides in host schist**		62.34	63.30	0.96	B00268619	42.6	1.3	0.35	0.35	0.99
62.34 - 64.11: PY, SP, CP sulphides concentrated in thick bands or otherwise heavily disseminated.													
					63.30	64.11	0.81	B00268621	51.7	0.796	1.34	0.15	0.86
64.11	**64.82**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		64.11	64.82	0.71	B00268622	456	3.77	0.49	4.89	11.5
<<Alt: 64.11 - 69.9 Weak (Alt) Muscovite>>													
<<Struc: 64.18 - 64.18 dominant foliation>>													
64.82	**65.25**	**OA**	**Magnetite bearing sulphides**		64.82	65.50	0.68	B00268623	439	1.92	1.3	6.63	13.5
<<Struc: 65 - 65.1 Weak (Alt) Fault>>													
65.25	**65.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**										
65.50	**68.84**	**RHYvl**	**Lapilli tuff**	**grey-green**	65.50	67.00	1.50	B00268624	8.9	0.026	0.03	0.13	0.26
65.5 - 68.84: dark matrix													
<<Min: 65.5 - 68.84 0.5% Min: Sphalerite>>					67.00	68.00	1.00	B00268625	3.9	0.018	0.14	0.02	0.53
<<Min: 65.5 - 68.84 1% Min: Pyrite>>					68.00	68.84	0.84	B00268626	3.6	-0.005	0.03	0.03	0.44
<<Min: 65.5 - 68.84 0.5% Min: Chalcopyrite>>													
<<Alt: 65.5 - 68.84 Moderate (Alt) Chlorite>>													
<<Struc: 67.87 - 67.87 dominant foliation>>													

From (m)	To (m)		Rocktype & Description
68.84	**69.28**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
68.84 - 69.28: ~20% CP, PO, PY and SP in strong chlorite altered tuff			
<<Alt: 68.84 - 69.28 Strong (Alt) Chlorite>>			
69.28	**69.90**	**RHYv**	**Rhyolite volcaniclastic**
69.28 - 69.9: strong chloritic alteration			
<<Min: 69.28 - 69.9 1% Min: Pyrite>>			
<<Min: 69.28 - 69.9 1% Min: Pyrrhotite>>			
<<Min: 69.28 - 69.9 0.25% Min: Chalcopyrite>>			
<<Alt: 69.28 - 69.9 Moderate (Alt) Chlorite>>			
69.90	**70.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
69.9 - 70.5: ~20% PY, PO, CP in strong chloritic alteration			
<<Alt: 69.9 - 74.57 Strong (Alt) Chlorite>>			
70.50	**72.93**	**RHY**	**undifferentiated rhyolite**
<<Min: 70.5 - 72.93 3% Min: Sphalerite>>			
<<Min: 70.5 - 72.93 0.25% Min: Chalcopyrite>>			
<<Struc: 71.5 - 71.63 Moderate (Alt) Fault>>			
<<Struc: 72.12 - 72.2 Moderate (Alt) Fault>>			
72.93	**73.48**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
72.93 - 73.48: high SP ~20%			
73.48	**73.86**	**OI**	**Heavilly disseminated sulphides in host schist**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
68.84	69.28	0.44	B00268627	36.5	0.244	1.35	0.06	5.27
69.28	69.90	0.62	B00268628	5.2	-0.005	0.04	0.02	0.6
69.90	70.50	0.60	B00268629	75.8	0.227	0.67	0.36	2.72
70.50	71.50	1.00	B00268631	45.3	0.437	0.19	0.01	3.02
71.50	72.93	1.43	B00268632	18.9	0.19	0.62	0.03	0.19
72.93	73.48	0.55	B00268633	158	0.612	0.43	2.73	10.5
73.48	73.86	0.38	B00268634	71.7	0.093	0.13	1.39	6.21

From (m)	To (m)		Rocktype & Description	
73.86	**74.57**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	

73.86 - 74.57: high CP ~10-15%

<<Min: 74.5 - 80.75 25% Min: Calcite>>

From (m)	To (m)		Rocktype & Description	
74.57	**80.75**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

<<Min: 74.57 - 80.75 0.5% Min: Pyrite>>
<<Alt: 74.57 - 80.75 Moderate (Alt) Chlorite>>
<<Struc: 75.39 - 75.43 Moderate (Alt) Fault>>
<<Struc: 79.15 - 79.15 dominant foliation>>
<<Struc: 79.25 - 79.25 dominant foliation>>

From (m)	To (m)		Rocktype & Description	
80.75	**90.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**

80.75 - 90.8: silicified mafic dike

<<Min: 80.75 - 90.8 0.25% Min: Pyrite>>
<<Min: 80.75 - 90.8 20% Min: Calcite>>
<<Alt: 80.75 - 90.8 Moderate (Alt) Silicification>>
<<Struc: 81.71 - 81.76 Weak (Alt) Fault>>
<<Struc: 82 - 82.13 Weak (Alt) Fault>> Three small foliation parallel faults <2cm diameter
<<Struc: 82.61 - 82.63 Weak (Alt) Fault>>
<<Struc: 85.8 - 85.8 dominant foliation>>
<<Struc: 88.2 - 88.25 Moderate (Alt) Fault>>
<<Struc: 88.9 - 88.9 dominant foliation>>

From (m)	To (m)		Rocktype & Description	
90.80	**92.18**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**melanocratic**

<<Min: 90.8 - 92.18 0.25% Min: Pyrite>>
<<Min: 90.8 - 92.18 0.5% Min: Pyrrhotite>>
<<Min: 90.8 - 92.18 15% Min: Calcite>>
<<Alt: 90.8 - 92.18 Moderate (Alt) Chlorite>>
<<Struc: 91.92 - 91.92 dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.86	74.57	0.71	B00268635	76.9	0.594	2.55	0.14	0.74
74.57	76.17	1.60	B00268636	0.7	-0.005	-0.01	-0.01	0.03
76.17	77.67	1.50	B00268637	0.3	-0.005	0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

92.18 99.82 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

92.18 - 99.82: silicified mafic dike. Bottom contact sharp at fault and massive quartz vein.

<<Min: 92.18 - 99.82 0.5% Min: Pyrite>>

<<Min: 92.18 - 99.82 15% Min: Calcite>>

<<Min: 99.35 - 99.82 1% Min: Sphalerite>>

<<Alt: 92.18 - 99.82 Moderate (Alt) Silicification>>

<<Vein: 99.35 - 101.77 40% Quartz-Carbonate-Sulphide>> Sphalerite, galena

<<Struc: 99.78 - 99.82 Moderate (Alt) Fault>>

99.82 101.77 MAFi Mafic Intrusions (primarily footwall mafic intrusion) salt + pepper

99.82 - 101.77: Mafic dike, distinguished from mafic interval below by high calcite content and mopre speckled biotite texture.

<<Min: 99.82 - 101 20% Min: Calcite>>

<<Min: 99.82 - 110 0.5% Min: Pyrite>>

<<Min: 101 - 110 5% Min: Calcite>>

<<Alt: 99.82 - 110 Moderate (Alt) Chlorite>>

101.77 110.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

101.77 - 110: blebs or pods of biotite in chloritic matrix.

End of Hole @ 110

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-241

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	30-Aug-15
UTM Easting	414952.382	Core Size:	HQ3	Azimuth:	179.85	Date Logging Complete:	01-Sep-15
UTM Northing:	6815425.373	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1383.307	Casing Depth (m):	7.5	Length (m):	35	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	30-Aug-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-240

Comments:

This drill hole was aborted at 35m depth. What little was drilled of this hole is composed of felsic coherent volcanics and does not intersect massive sulphide mineralization.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	179.85	0	179.85	APS	David Nuttal	29-Aug-15		☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.50 CASN Casing

<<Min: 6.5 - 35 2% Min: Pyrite>>

<<Min: 6.5 - 35 3% Min: Calcite>>

<<Alt: 6.5 - 21 Weak (Alt) Muscovite>>

7.50 35.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 21 - 35 Moderate (Alt) Muscovite>>

<<Vein: 9.33 - 9.67 98% Quartz-Carbonate>>

<<Vein: 20.44 - 33 13% Quartz>>

<<Struc: 13.68 - 14 Strong (Alt) Fault>>

<<Struc: 19.65 - 19.9 Weak (Alt) Fault>>

End of Hole @ 35

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-241R

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	01-Sep-15
UTM Easting	414952.057	Core Size:	HQ3	Azimuth:	179.8	Date Logging Complete:	02-Sep-15
UTM Northing:	6815422.013	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1383.379	Casing Depth (m):	7	Length (m):	65	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	30-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	01-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-240

Comments:

Sulphide intervals are present in this hole from 43.42m to 52.5m (containing MET2 and MET7 domains), and from 61.6m to 63.6m (containing MET6 and MET7 domains). The structural hanging wall is composed of a package of felsic metavolcanic rocks dominated by litho-code RHYcw and MDSw (rhyolite flow with carbonaceous component). The structural footwall is also composed of felsic metavolcanic rocks dominated by RHYcw. This hole contains a high modal % calcite/carbonate through the structural hanging wall rocks and through the massive sulphide lenses. Calcite/carbonate mineralization commonly occurs with quartz in veins adjacent to massive sulphide. Muscovite alteration increases in intensity towards the massive sulphide lenses and adjacent to large quartz veins. Weak chlorite alteration is present within the massive sulphide lenses and in trace amounts within veins proximal to massive sulphide.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.8	0	179.8	APS	David Nuttal	30-Aug-15		☐	
14	-64.3	150.9	22.5	173.4	ReflexEZS	Geotech	30-Aug-15	5037	☐	Not accepted values due to low magnetic field.
14.1	-61.5	179.5	0	179.5	ReflexEZS	Geotech	30-Aug-15	5823	☑	
39	-61.4	157.5	22.5	180	ReflexEZS	Geotech	30-Aug-15	5762	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.00**	**CASN Casing**									
7.00	**35.50**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey**									
<<Min: 7 - 36 0.5% Min: Sphalerite>>											
<<Min: 7 - 36 2% Min: Pyrite>>											
<<Min: 7 - 36 3% Min: Calcite>>											
<<Min: 19.8 - 33.8 0.5% Min: Galena>>											
<<Min: 19.8 - 33.8 0.25% Min: Chalcopyrite>>											
<<Alt: 7 - 24 Weak (Alt) Muscovite>>											
<<Alt: 24 - 41 Moderate (Alt) Muscovite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Vein: 9.65 - 10 98% Quartz>>													
<<Vein: 19.77 - 33.5 20% Quartz>> sulphides: Galena, sphalerite, chalcopyrite, pyrite.													
<<Struc: 21.4 - 21.54 Strong (Alt) Fault>>													
<<Struc: 21.9 - 21.96 Moderate (Alt) Fault>>													
<<Struc: 24.35 - 24.41 Moderate (Alt) Fault>>													
<<Struc: 35 - 35.12 Weak (Alt) Fault>>													
35.50	**40.56**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		38.56	39.56	1.00						
<<Min: 36 - 40.56 0.5% Min: Pyrite>>					39.56	40.56	1.00						
<<Min: 36 - 40.56 1% Min: Calcite>>													
40.56	**43.42**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**	40.56	41.56	1.00						
<<Min: 40.56 - 43.42 0.5% Min: Sphalerite>>					41.56	42.56	1.00						
<<Min: 40.56 - 43.42 2% Min: Pyrite>>					42.56	43.42	0.86						
<<Min: 40.56 - 43.42 2% Min: Calcite>>													
<<Alt: 41 - 43.73 Strong (Alt) Muscovite>>													
<<Vein: 43 - 43.73 50% Quartz>> CP, PO, GL, SP													
<<Struc: 42.3 - 42.35 Moderate (Alt) Fault>>													
43.42	**43.73**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**		43.42	43.73	0.31						
43.73	**43.93**	**OA**	**Magnetite bearing sulphides**		43.73	43.93	0.20						
<<Alt: 43.73 - 52.5 Weak (Alt) Chlorite>>													
43.93	**45.62**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		43.93	44.95	1.02						
					44.95	45.62	0.67						
45.62	**48.09**	**OA**	**Magnetite bearing sulphides**		45.62	46.62	1.00						
<<Min: 48 - 52.5 15% Min: Calcite>>					46.62	47.30	0.68						
					47.30	48.09	0.79						
48.09	**52.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		48.09	49.09	1.00						
<<Vein: 49 - 51.84 2% Calcium carbonate/Carbonate>>					49.09	50.09	1.00						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			50.09	51.09	1.00						
			51.09	51.84	0.75						
			51.84	52.50	0.66						
52.50	**61.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	52.50	53.50	1.00						
52.5 - 61.6: Foliation is anastamosing, dominated by sericite, muscovite and calcite/carbonate. Foliation forms oblate domains of quartz with carbonate replacement suspected to have been mobilized along foliation pathways; may easily be mistaken for porphyry.											
<<Min: 52.5 - 61.6 3% Min: Pyrite>>			53.50	54.50	1.00						
<<Min: 52.5 - 61.6 3% Min: Calcite>>			54.50	55.50	1.00						
<<Min: 52.5 - 61.6 1% Min: Arsenopyrite>>			55.50	56.50	1.00						
<<Alt: 52.5 - 61.6 Moderate (Alt) Muscovite>>			56.50	57.50	1.00						
<<Vein: 56 - 57.6 10% Quartz>>			57.50	58.50	1.00						
<<Struc: 58.14 - 58.4 Moderate (Alt) Fault>>			58.50	59.50	1.00						
			59.50	60.50	1.00						
			60.50	61.60	1.10						
61.60	**62.08**	**OI** **Heavilly disseminated sulphides in host schist**	61.60	62.10	0.50						
61.6 - 62.08: High CP (~5%)											
<<Min: 61.6 - 65 3% Min: Calcite>>											
62.08	**63.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	62.10	63.00	0.90						
62.08 - 63: High sphalerite content 10-20% through interval.											
63.00	**63.60**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**	63.00	63.60	0.60						
63 - 63.6: High CP (~20% +/- 5%) high sphalerite (10-20%), galena (3%), Pyrite (50%), PO (~10% +/- 5%)											
63.60	**65.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	63.60	64.60	1.00						
63.6 - 65: Interval intersected by quartz vein that cuts foliation obliquely (near perpendicular)											
<<Min: 63.6 - 65 0.5% Min: Pyrite>>			64.60	65.00	0.40						

Project: **KZK** **Hole Number:** **K15-241R**

From (m)	To (m)	Rocktype & Description
		<<Alt: 63.6 - 65 Weak (Alt) Muscovite>>
		<<Vein: 64 - 65 100% Quartz>> Galena, chalcopyrite, pyrite, pyhrrotite
		End of Hole @ 65

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-242

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	31-Aug-15
UTM Easting	415134.726	Core Size:	NQ3	Azimuth:	167.07	Date Logging Complete:	02-Sep-15
UTM Northing:	6815439.024	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1400.599	Casing Depth (m):	7.5	Length (m):	161	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	30-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Sep-15
Local Elev. (m):						Purpose:	Resource/Met/Hydro
Comments:						Parent Hole:	

The first 92.09 m of K15-242 consists of a thick package of rhyolitic volcaniclastics (xtl/lpl) and flows +/- carbonaceous material, carbonaceous mudstones, and mafic intrusives.

The massive sulphide zone was intersected between 92.09-117.25 m (25.16 m total thickness) consists of OA, OB, and OC ore types. A Cu rich strong proximal CL-CI altered zone of OC indicates the likley presence of the MET 8 domain, though the unit does contain magnetite suggests that it is actually MET 3. There are other zones of OA that have elevated levels of CP that are likely MET 3. The MET 5 domain was confirmed by the presence of OB with visibly high concentrations of GL.

The structural footwall consists of MAFi intruded by RHYi, both of which sit stratigraphically below a thin unit of RHYcw. The bulk of the stratigraphic footwall is a heterogeneous package of rock that largely consists of RHYi with MAFi xenoliths. The footwall was intersected between 117.25-161.0 m.

Syngenetic alteration of the structural hanging wall felsic volcanics progressively increases in intensity with proximity to the sulphide zone. There was a relatively large weak CL-CI alteration zone in the hanging wall from 76.43-92.09 m that increased in intensity to strong from 92.09-94.33 m.

A thin zone of stongly MU altered RHYcw located directly below the sulphide zone was the only evidence of syngenetic alteration in the footwall. Syngenetic alteration of the footwall has largely been eliminated by MAFi and RHYi units. Alteration of the footwall is characterized by a moderate CL and weak BI overprint in MAFi as well a large section of strong silicification associated with RHYi.
Notable mineralized interceptions included: 15 % CP OC (92.09-94.33 m), 5% GL OB (107.41-108.63 m, 111.7-116.02 m), 5% GL OA (116.02-116.74 m), and 20 % SP (94.33-95.88 m, 98.7-100.81 m, 104.09-116.74 m).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	167.07	0	167.07	APS	Cooper Campbell	30-Aug-15		☐	
20	-65.1	148.6	22.5	171.1	ReflexEZS	Geotech	30-Aug-15	5826	☑	
41	-65.3	145.8	22.5	168.3	ReflexEZS	Geotech	31-Aug-15	5830	☑	
65	-64.7	150.2	22.5	172.7	ReflexEZS	Geotech	31-Aug-15	5872	☑	
92	-64	156.9	22.5	179.4	ReflexEZS	Geotech	01-Sep-15	5969	☑	
117	-64.2	139	22.5	161.5	ReflexEZS	Geotech	01-Sep-15	5594	☐	Values not accepted, low magnetic field.
143	-63.6	152.1	22.5	174.6	ReflexEZS	Geotech	01-Sep-15	5739	☑	
161	-63.8	155.6	22.5	178.1	ReflexEZS	Geotech	02-Sep-15	5749	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00	**7.00**	**OVBN**	**Overburden**
7.00	**18.16**	**MDSt**	**Rhyolite tuff dominant mudstone**

7 - 18.16: Heterogeneous package of MDSt with broken crystals, lapilli, and flow banding over short intervals.

<<Min: 7 - 28.3 0.01% Min: Sphalerite>>

<<Min: 7 - 28.3 0.01% Min: Pyrite>>

<<Min: 7 - 28.3 0.01% Min: Pyrrhotite>>

<<Min: 7 - 28.3 1% Min: Calcite>>

<<Alt: 7 - 33.82 Weak (Alt) Muscovite>>

<<Struc: 9.05 - 20.89 Weak (Alt) Fault>> Narrow cm scale faults filled with broken rock and fault gouge. Spaced metres apart.

18.16	**23.57**	**RHYva**	**Coarse grained to ash tuff**
23.57	**33.82**	**RHYvl**	**Lapilli tuff**

<<Min: 28.3 - 39.76 0.01% Min: Pyrite>>

<<Min: 28.3 - 39.76 0.5% Min: Pyrrhotite>>

<<Min: 28.3 - 49 5% Min: Calcite>>

<<Alt: 28.3 - 33.82 Trace (Alt) Chlorite>>

<<Alt: 28.3 - 33.82 Trace (Alt) Biotite>>

<<Struc: 33.05 - 35.57 Weak (Alt) Fault>> Narrow cm scale faults filled with broken rock and fault gouge. Spaced centimetres apart.

33.82	**38.95**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

33.82 - 38.95: RHY xenolith

<<Alt: 33.82 - 38.95 Weak (Alt) Chlorite>>

<<Alt: 33.82 - 38.95 Moderate (Alt) Biotite>>

<<Vein: 36.16 - 36.86 50% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-CL-PO

38.95	**45.20**	**RHYva**	**Coarse grained to ash tuff**

<<Min: 39.76 - 60.99 0.5% Min: Pyrite>>

<<Min: 39.76 - 60.99 1% Min: Pyrrhotite>>

<<Alt: 38.95 - 48.27 Trace (Alt) Chlorite>>

<<Alt: 38.95 - 69.94 Moderate (Alt) Muscovite>>

45.20	**78.69**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

<<Min: 60.99 - 69.94 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 60.99 - 69.94 0.5% Min: Pyrrhotite>>									
		<<Min: 69.94 - 76.43 0.01% Min: Sphalerite>>									
		<<Min: 69.94 - 76.43 5% Min: Pyrite>>									
		<<Min: 69.94 - 76.43 0.5% Min: Pyrrhotite>>									
		<<Min: 69.94 - 76.43 0.01% Min: Galena>>									
		<<Min: 76.43 - 86.73 0.01% Min: Sphalerite>>									
		<<Min: 76.43 - 86.73 3% Min: Pyrrhotite>>									
		<<Min: 76.43 - 86.73 0.01% Min: Chalcopyrite>>									
		<<Alt: 69.94 - 76.43 Strong (Alt) Muscovite>>									
		<<Alt: 76.43 - 89.59 Moderate (Alt) Muscovite>>									
		<<Alt: 76.43 - 92.09 Weak (Alt) Chlorite>>									
		<<Alt: 76.43 - 92.09 Weak (Alt) Cordierite>>									
		<<Alt: 76.43 - 92.09 Trace (Alt) Biotite>>									
		<<Struc: 46.53 - 78.69 Moderate (Alt) Fault>> Narrow cm scale faults filled with broken rock and fault gouge. Spaced metres apart.									
78.69	**86.73**	**MDSc** **Carbonaceous dominant mudstone**									
		<<Min: 79.74 - 85.3 0.01% Min: Calcite>>									
86.73	**92.09**	**MDSw** **Coherent rhyolite flow with carbonaceous content**	87.59	89.09	1.50	B00266715	1.4	0.006	-0.01	-0.01	-0.01
		<<Min: 86.73 - 92.09 0.01% Min: Sphalerite>>	89.09	90.59	1.50	B00266716	1.9	0.047	-0.01	-0.01	0.01
		<<Min: 86.73 - 92.09 0.01% Min: Pyrite>>	90.59	92.09	1.50	B00266717	1.7	0.007	0.02	-0.01	0.04
		<<Min: 86.73 - 92.09 0.01% Min: Pyrrhotite>>									
		<<Min: 91.65 - 93.64 5% Min: Calcite>>									
		<<Alt: 89.59 - 92.09 Strong (Alt) Muscovite>>									
		<<Struc: 89.23 - 89.24 dominant foliation>>									
92.09	**94.33**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **MG**	92.09	92.60	0.51	B00266718	26.4	0.188	0.91	0.12	2.62
		92.09 - 94.33: High CP content. MET 8 domain.									
		<<Min: 92.09 - 94.33 15% Min: Chalcopyrite>>	92.60	93.60	1.00	B00266719	111	1.75	3.81	0.11	0.51
		<<Alt: 92.09 - 94.33 Strong (Alt) Chlorite>>	93.60	94.33	0.73	B00266721	133	1.29	3.98	0.35	3.56
		<<Alt: 92.09 - 94.33 Strong (Alt) Cordierite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 92.12 - 92.13 dominant foliation>>													
<<Struc: 92.43 - 92.44 dominant foliation>>													
<<Struc: 94.15 - 94.16 dominant foliation>>													
94.33	**95.88**	**OA**	**Magnetite bearing sulphides**	**MG**	94.33	95.33	1.00	B00266722	75.7	0.772	1.35	0.7	6.63
<<Min: 94.33 - 95.88 20% Min: Sphalerite>>					95.33	95.88	0.55	B00266723	148	0.314	0.66	3.76	7.03
<<Struc: 95.59 - 95.6 dominant foliation>>													
95.88	**98.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	95.88	96.88	1.00	B00266724	64.2	1.03	0.2	1	4.59
<<Struc: 96.81 - 96.82 dominant foliation>>					96.88	97.88	1.00	B00266725	43.5	0.998	0.48	0.19	4.63
<<Struc: 97.4 - 97.41 dominant foliation>>					97.88	98.70	0.82	B00266726	91.7	0.556	0.42	1.56	5.26
98.70	**100.81**	**OA**	**Magnetite bearing sulphides**	**MG**	98.70	99.25	0.55	B00266727	83	0.535	0.35	1.82	7.06
<<Min: 98.7 - 100.81 20% Min: Sphalerite>>					99.25	100.25	1.00	B00266728	116	0.497	0.23	3.49	9.44
					100.25	100.81	0.56	B00266729	150	4.37	2.77	4.96	10.6
100.81	**104.09**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	100.81	101.50	0.69	B00266732	85.7	1.38	0.36	1.13	4.87
<<Struc: 102.98 - 102.99 dominant foliation>>					101.50	102.50	1.00	B00266733	123	0.431	0.07	4.16	9.25
					102.50	103.50	1.00	B00266734	260	3.47	1	2.17	7.5
					103.50	104.09	0.59	B00266735	82.4	1.07	0.47	1.12	2.71
104.09	**107.41**	**OA**	**Magnetite bearing sulphides**	**MG**	104.09	104.75	0.66	B00266736	124	1.01	0.86	1.79	7.28
<<Min: 104.09 - 116.74 20% Min: Sphalerite>>					104.75	105.75	1.00	B00266737	40.7	0.543	0.47	0.49	6.43
<<Struc: 104.7 - 104.71 dominant foliation>>					105.75	106.75	1.00	B00266738	33.4	0.445	0.49	0.31	12.6
<<Struc: 105.26 - 105.27 dominant foliation>>					106.75	107.41	0.66	B00266739	150	0.952	0.65	3.25	14.2
<<Struc: 105.5 - 105.51 dominant foliation>>													
<<Struc: 106.74 - 106.75 dominant foliation>>													
107.41	**108.63**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	107.41	108.00	0.59	B00266741	260	2.13	0.16	4.3	9.73
<<Min: 107.41 - 108.63 5% Min: Galena>>					108.00	108.63	0.63	B00266742	330	1.76	0.19	5.17	12.1
108.63	**111.70**	**OA**	**Magnetite bearing sulphides**	**MG**	108.63	109.63	1.00	B00266743	35.9	0.501	0.64	0.3	11.1
					109.63	110.63	1.00	B00266744	35.1	0.699	0.83	0.21	13.3
					110.63	111.13	0.50	B00266745	135	0.956	1.56	2.24	12.5

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
					111.13	111.70	0.57	B00266746	190	0.501	0.48	4.96	12.1
111.70	**116.02**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	111.70	112.25	0.55	B00266747	190	2.04	0.33	3.17	12
<<Min: 111.7 - 116.02 5% Min: Galena>>					112.25	113.25	1.00	B00266748	200	2	0.19	3.35	8.98
<<Struc: 114.44 - 114.45 dominant foliation>>					113.25	114.25	1.00	B00266749	180	1.97	0.15	2.94	7.35
<<Struc: 114.8 - 114.81 dominant foliation>>					114.25	115.25	1.00	B00266751	230	1.8	0.17	3.71	11.3
					115.25	116.02	0.77	B00266752	320	2.01	0.25	4.22	10.4
116.02	**116.74**	**OA**	**Magnetite bearing sulphides**	**MG**	116.02	116.74	0.72	B00266753	230	0.522	0.28	7.74	11.4
<<Min: 116.02 - 116.74 5% Min: Galena>>													
<<Struc: 116.55 - 116.56 dominant foliation>>													
116.74	**117.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	116.74	117.25	0.51	B00266754	123	0.396	0.42	2.58	7.69
117.25	**123.12**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		117.25	118.75	1.50	B00266755	13.9	0.013	0.09	0.25	0.69
<<Min: 117.25 - 123.12 0.01% Min: Sphalerite>>					118.75	120.25	1.50	B00266756	1.8	0.007	-0.01	0.04	0.12
<<Min: 117.25 - 123.12 0.5% Min: Pyrite>>					120.25	121.75	1.50	B00266757	4.5	0.008	0.02	0.06	0.28
<<Min: 117.25 - 123.12 0.5% Min: Pyrrhotite>>													
<<Min: 117.25 - 123.12 0.01% Min: Galena>>													
<<Min: 117.25 - 123.12 1% Min: Calcite>>													
<<Min: 120.07 - 124.22 0.01% Min: Galena>>													
<<Alt: 117.25 - 118.82 Strong (Alt) Muscovite>>													
<<Alt: 118.82 - 123.12 Moderate (Alt) Muscovite>>													
<<Vein: 120.07 - 124.22 25% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-CL-GL													
<<Struc: 117.25 - 124.55 Weak (Alt) Fault>> Narrow cm scale faults filled with broken rock and fault gouge. Spaced metres apart.													
123.12	**134.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
<<Min: 123.12 - 129.15 10% Min: Calcite>>													
<<Min: 123.12 - 133.07 0.5% Min: Sphalerite>>													
<<Min: 123.12 - 133.07 0.5% Min: Pyrite>>													
<<Min: 123.12 - 133.07 0.5% Min: Pyrrhotite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 123.12 - 134.7 0.01% Min: Galena>>
<<Min: 129.15 - 134.7 3% Min: Calcite>>
<<Min: 133.07 - 134.7 1% Min: Sphalerite>>
<<Min: 133.07 - 134.7 1% Min: Pyrite>>
<<Min: 133.07 - 134.7 3% Min: Pyrrhotite>>
<<Min: 133.07 - 134.7 0.01% Min: Chalcopyrite>>
<<Alt: 123.12 - 134.7 Trace (Alt) Muscovite>>
<<Alt: 123.12 - 134.7 Moderate (Alt) Chlorite>>
<<Alt: 123.12 - 134.7 Weak (Alt) Biotite>>
<<Alt: 126.41 - 136.67 Moderate (Alt) Silicification>>
<<Vein: 134.17 - 134.65 20% Quarzt-Chlorite-Carbonate 65 deg. >> QZ-CA-CL
<<Struc: 124.55 - 125.05 Intense (Alt) Fault>> Intense fault gauge.
<<Struc: 130.23 - 130.24 dominant foliation>>
<<Struc: 131.91 - 131.92 dominant foliation>>

134.70 159.05 RHYi Aphanitic Rhyolite (intrusion)

134.7 - 159.05: Heterogeneous package of RHYi with abundant MAFi xenoliths. Highly silicified.

<<Min: 134.7 - 141.68 0.01% Min: Calcite>>
<<Min: 134.7 - 155.05 0.5% Min: Pyrite>>
<<Min: 141.68 - 145.59 3% Min: Calcite>>
<<Min: 145.59 - 158.31 1% Min: Calcite>>
<<Min: 155.05 - 161 0.01% Min: Sphalerite>>
<<Min: 155.05 - 161 0.01% Min: Pyrite>> VN
<<Min: 155.05 - 161 0.01% Min: Galena>>
<<Min: 158.31 - 161 2% Min: Calcite>>
<<Alt: 134.7 - 159.45 Weak (Alt) Muscovite>>
<<Alt: 134.7 - 159.45 Trace (Alt) Chlorite>>
<<Alt: 136.67 - 159.45 Strong (Alt) Silicification>>
<<Vein: 134.7 - 161 2% Pyrite 50 deg. >> PY-SP
<<Vein: 156.15 - 156.53 100% Quartz-Carbonate-Sulphide 65 deg. >> QZ-CA-PY-GL

159.05 161.00 RHY undifferentiated rhyolite

159.05 - 161: Original character of rock obscured by alteration associated with adjacent RHYi and brecciation. Possible RHYcw.

<<Alt: 159.45 - 161 Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 161									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-243

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	01-Sep-15
UTM Easting	414801.777	Core Size:	HQ3	Azimuth:	180.04	Date Logging Complete:	04-Sep-15
UTM Northing:	6815776.435	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1403.945	Casing Depth (m):	6	Length (m):	221	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	31-Aug-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of hole K15-243 was to test continuity and the extension of massive sulphide lens (MET7 Domain).
The hole encountered a shear zone from 173.85 to 179.4m within the primary mineralized zone from 165.2 to 185.4m.
The hole shows progressive muscovite alteration in the hanging-wall followed by strong to intense proximal cordierite alteration from 170 to 189.63m. Mineralization consists domiantly of CP (characterized by OC and OG domains), SP/GL/PY mineralization (OB domain) as well as OA, OJ and OI domains on the edge of the unit.
The footwall consists of a strongly chlorite alterated unit with CP stringers below the main massive sulfide zone and, crosscut by a mafic sill at 185.4m and underlain by rhyolite.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.04	0	180.04	APS	Jerome de Pasquale	30-Aug-15		☑	
26	-64.2	161.1	22.5	183.6	ReflexEZS	Geotech	01-Sep-15	5797	☑	
50	-64.4	162.1	22.5	184.6	ReflexEZS	Geotech	01-Sep-15	5660	☑	
75	-64.5	162.5	22.5	185	ReflexEZS	Geotech	02-Sep-15	5724	☑	
77	-64.6	163.8	22.5	186.3	ReflexEZS	Geotech	01-Sep-15	5775	☑	
101	-64.9	164.6	22.5	187.1	ReflexEZS	Geotech	01-Sep-15	5680	☑	
125	-64.6	165	22.5	187.5	ReflexEZS	Geotech	01-Sep-15	5642	☑	
152	-64.8	162.5	22.5	185	ReflexEZS	Geotech	01-Sep-15	5703	☑	
175	-64.9	165	22.5	187.5	ReflexEZS	Geotech	01-Sep-15	5503	☑	
200	-65.3	167.3	22.5	189.8	ReflexEZS	Geotech	02-Sep-15	5788	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN Casing**									
<<Min: 5 - 50 0.5% Min: Calcite>> And at contact with mafic dykes.											
<<Min: 5 - 110.5 1% Min: Pyrrhotite>> Stringers.More concentrated in the flow banded zone. Elongated along the foliation..											
<<Min: 5 - 155 0.1% Min: Pyrite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.00 10.95 RHYvx Quartz and/or feldspar crystal tuff grey-green

6 - 10.95: Fragmental at contact with dyke

10.95 14.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) medium grey

10.95 - 14: Phenos, weakly foliated, CA at contact, BI. Some lapili and flow interbedded.

14.00 17.18 RHY undifferentiated rhyolite grey-green

14 - 17.18: Flow banded locally, QZ eyes. Could be RHY vx.

<<Vein: 14 - 14.08 Quartz>> QZ at lower contact with mafic dyke.

17.18 18.30 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

17.18 - 18.3: Flow banded and lapili tuff interbedded..

18.30 19.40 RHYvx Quartz and/or feldspar crystal tuff grey-green

18.3 - 19.4: QZ eyes.

19.40 27.40 RHYvl Lapilli tuff grey-green

19.4 - 27.4: Narrow phenoblastic dyke (21.07m), flow banded at lower contact.

<<Vein: 24.6 - 27.4 Pyrrhotite>> PY/PO stringers in flow banded ryolithe.

27.40 30.51 RHY undifferentiated rhyolite grey-green

27.4 - 30.51: QZ eyes, trace of CA

30.51 31.78 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey

30.51 - 31.78: Dark green dyke, weakly foliated, with phenosplasts, CA.. Weak CL alteration

31.78 34.01 MDSt Rhyolite tuff dominant mudstone medium grey

31.78 - 34.01: Lapili and few carbonaceous band.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

34.01 37.19 RHYv Rhyolite volcaniclastic grey-green

34.01 - 37.19: Few lapili and ashes. Few PO stringers in the foliation.

37.19 40.21 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

37.19 - 40.21: Flow banded. Dyke BI at upper and probably at lower contact. 2 QZ vein (5cm wide).

<<Vein: 38.18 - 38.24 Quartz>> QZ, CL trace

<<Vein: 39.23 - 39.28 Quartz>> QZ, CL trace, BI, few dolomite.

40.21 50.00 RHYv Rhyolite volcaniclastic grey-green

40.21 - 50: Few lapili and ash. Speck of TML.

50.00 54.33 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

50 - 54.33: Dyke, weakly foliated, with phenoblasts and QZ vein. Few CA. Purple color at upper contact. CL altered. Similar than dyke at 30.51m.

54.33 56.52 RHYvl Lapilli tuff grey-green

54.33 - 56.52: Fracturated along the core axis

56.52 58.16 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

56.52 - 58.16: Mafic dyke, same composition than dyke at 50m. Phenoblats, purple color.

58.16 77.70 RHYvl Lapilli tuff grey-green

58.16 - 77.7: Maybe pseudofragmenetal. Ash from 65.7 to 66.55m. Mafic dyke from 63.05 to 63.94m.

77.70 89.32 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

77.7 - 89.32: Curdy texture. Maybe locally lapilitic or speudofragmental.

<<Alt: 82.36 - 116.58 Weak (Alt) Muscovite>>

<<Vein: 86 - 86.01 Quarzt-Tourmaline-Sulphide>> QZ/TML, PY, CP and GL trace.

<<Struc: 86 - 86.01 Vein>> QZ vein containing TML, few CP, few GL. Lineation: 40 degres/core axis.

<<Struc: 86.43 - 86.44 Vein>> Late vein maybe chlorite crosscuttin the dominant foliation.

<<Struc: 86.55 - 86.56 dominant foliation>> QZ elongated.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

89.32 98.80 RHYcq Quartz porphyry grey-green

89.32 - 98.8: Probably fragmental.

<<Min: 91.3 - 105.5 0.5% Min: Calcite>> in fracture dominantly.

<<Struc: 89.32 - 98 Weak (Alt) Shear>> Fragmental, muscovite rich, broken zone.

<<Struc: 98 - 98.8 Strong (Alt) Fault>> Major fault, gouge (clay/sandy), core loss.

98.80 111.97 RHYvx Quartz and/or feldspar crystal tuff grey-green

98.8 - 111.97: Sheared, broken. Probably altered felspar.

<<Min: 110.5 - 127 1% Min: Pyrrhotite>> Elongated along the foliation.

<<Struc: 105.3 - 110.2 Strong (Alt) Shear>> Major broken zone. Fault gouge (clay) at around 105.35 and 107.0m

111.97 120.87 RHYva Coarse grained to ash tuff medium grey

111.97 - 120.87: BI rich at lower contact, maybe some carbonaceous material. PO in foliation. Weak CL alteration.

<<Struc: 112.92 - 112.95 Weak (Alt) Fault>> Minor fault,

120.87 134.25 RHYvx Quartz and/or feldspar crystal tuff grey-green

120.87 - 134.25: Feldspar and QZ phenos.

<<Min: 127 - 144.1 3% Min: Pyrrhotite>>

<<Vein: 122.9 - 123 Quarzt-Tourmaline-Sulphide 18 deg. >> QZ/TML/PO (see structure)

<<Struc: 122.9 - 123 Vein>> QZTML//PO vein.

134.25 139.73 RHY undifferentiated rhyolite grey-green

134.25 - 139.73: Weak foliation, ghost phenoblasts. MU alteration.

<<Vein: 139 - 139.05 Quartz-Pyrite 15 deg. >> QZ/PY vein offsetting the foliation.

<<Struc: 139.21 - 139.22 dominant foliation>> QZ and PO elongated.

139.73 144.10 MDSt Rhyolite tuff dominant mudstone medium grey

139.73 - 144.1: Dominantly rhyolitic, weakly carbonaceous, folded at lower contact.

<<Struc: 139.73 - 139.74 dominant foliation>> Dark blue, maybe carbonaceous band.

<<Struc: 142 - 144.2 Weak (Alt) Shear>> Carbonaceous, folded, weakly sheared.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.10	**149.07**	**RHY undifferentiated rhyolite grey-green**									
144.1 - 149.07: Texture obscured by MU alteration. PO in disseminated partch.											
<<Min: 144.1 - 155 3% Min: Pyrrhotite>> Stringers in the foliation											
<<Alt: 144.1 - 158.26 Moderate (Alt) Muscovite>> Locally strong.											
<<Struc: 144.4 - 144.41 dominant foliation>>											
149.07	**155.57**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green**									
149.07 - 155.57: Light blue color, maybe du to carbonaceous material. PO/PY stringers in foliation from 144.10m.											
155.57	**165.20**	**RHYvx Quartz and/or feldspar crystal tuff grey-green**	162.20	163.70	1.50	B00264761	5.3	0.015	-0.01	0.23	0.34
155.57 - 165.2: QZ EYES. Strong MU alteration from 159.0 to 168.15. QZ veins, few patch of GL/SP.											
<<Alt: 158.26 - 168.15 Strong (Alt) Muscovite>> In a shear zone.			163.70	165.20	1.50	B00264762	2.7	-0.005	0.04	0.06	0.22
<<Vein: 161.6 - 162.36 Quartz>> QZ											
<<Struc: 159 - 161 Strong (Alt) Shear>> Shear zone, angle estimated., notable folding.											
165.20	**168.15**	**OI Heavilly disseminated sulphides in host schist**	165.20	166.80	1.60	B00264763	69.6	0.353	2.1	0.13	1.74
<<Min: 165.2 - 168.15 2% Min: Sphalerite>>			166.80	168.15	1.35	B00264764	23.8	0.115	0.28	0.13	0.53
<<Min: 165.2 - 168.15 2% Min: Galena>>											
<<Min: 165.2 - 168.15 5% Min: Chalcopyrite>>											
<<Struc: 165.65 - 169.5 Strong (Alt) Shear>> Containing semi-massive sulfide (OB domain).											
168.15	**168.66**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	168.15	168.66	0.51	B00264765	101	1.61	1.96	0.35	1.32
168.15 - 168.66: Semi massive.											
<<Min: 168.15 - 168.66 70% Min: Pyrite>>											
<<Min: 168.15 - 168.66 1% Min: Galena>>											
<<Min: 168.15 - 168.66 2% Min: Chalcopyrite>>											
168.66	**173.85**	**OJ Heavilly disseminated sulphides in proximal altered rock**	168.66	170.00	1.34	B00264766	3.4	0.051	0.03	0.04	0.64
<<Min: 168.66 - 173.85 10% Min: Sphalerite>>			170.00	171.00	1.00	B00264767	8.8	0.16	0.06	0.19	0.31

From (m)	To (m)	Rocktype & Description
		<<Min: 168.66 - 173.85 10% Min: Pyrrhotite>>
		<<Min: 168.66 - 173.85 1% Min: Galena>>
		<<Min: 168.66 - 173.85 3% Min: Chalcopyrite>>
		<<Alt: 170 - 172 Strong (Alt) Cordierite>> Cordierite aggregated.
		<<Alt: 170 - 185.79 Strong (Alt) Chlorite>>
173.85	**174.35**	**OG** **Chalcopyrite rich sulphides**
173.85 - 174.35: MET3		
		<<Min: 173.85 - 174.35 5% Min: Pyrrhotite>>
		<<Min: 173.85 - 174.35 3% Min: Magnetite>>
		<<Min: 173.85 - 174.35 30% Min: Chalcopyrite>>
		<<Min: 173.86 - 174.35 5% Min: Sphalerite>>
		<<Min: 173.86 - 174.35 0.5% Min: Galena>>
174.35	**175.63**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
174.35 - 175.63: MET7		
		<<Min: 174.35 - 175.63 10% Min: Sphalerite>>
		<<Min: 174.35 - 175.63 2% Min: Galena>>
		<<Min: 174.35 - 175.63 2% Min: Chalcopyrite>>
		<<Struc: 175.04 - 175.05 >> Lamination in sulfide zone.
175.63	**178.89**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
175.63 - 178.89: MET5, with CP. CL vein along the core axis, brecciated texture. GL rich-MET7		
		<<Min: 175.63 - 178.89 35% Min: Sphalerite>>
		<<Min: 175.63 - 178.89 40% Min: Pyrite>>
		<<Min: 175.63 - 178.89 3% Min: Galena>>
		<<Min: 175.63 - 178.89 1% Min: Calcite>> In veinlet, irregular.
		<<Min: 175.63 - 188.89 3% Min: Chalcopyrite>>
		<<Struc: 176.27 - 176.28 >> SP lamination

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
171.00	172.00	1.00	B00264768	30.9	0.57	0.54	0.14	1.08
172.00	173.00	1.00	B00264769	42.5	0.971	1.02	0.13	0.37
173.00	173.85	0.85	B00264771	160	2.73	2.36	0.71	1.51
173.85	174.35	0.50	B00264772	297	6.61	5.92	0.82	3.68
174.35	175.63	1.28	B00264773	209	3.92	1.26	0.74	1.89
175.63	177.00	1.37	B00264774	351	2.45	0.34	10.9	16.4
177.00	178.00	1.00	B00264775	241	2.16	0.33	4.82	12.4
178.00	178.89	0.89	B00264776	99	1.35	0.24	1.85	7.33

From (m)	To (m)		Rocktype & Description
178.89	**179.40**	**OA**	**Magnetite bearing sulphides**

178.89 - 179.4: MET2

<<Min: 178.89 - 179.4 10% Min: Magnetite>>

<<Min: 178.89 - 179.4 0.5% Min: Galena>>

<<Struc: 179.21 - 179.22 >> MG lamination.

From (m)	To (m)		Rocktype & Description
179.40	**180.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

179.4 - 180.1: MET6

<<Min: 179.4 - 180.8 8% Min: Sphalerite>>

<<Min: 179.4 - 180.8 0.5% Min: Galena>>

<<Min: 179.4 - 180.8 1% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description
180.10	**183.46**	**OI**	**Heavilly disseminated sulphides in host schist**

180.1 - 183.46: MET8

<<Min: 180.8 - 183.46 10% Min: Sphalerite>>

<<Struc: 182.25 - 182.44 Weak (Alt) Shear>> rumble.

From (m)	To (m)		Rocktype & Description
183.46	**184.39**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**

183.46 - 184.39: MET8 in dark chlorite alteration.

<<Min: 183.46 - 184.39 0.5% Min: Sphalerite>>

<<Min: 183.46 - 184.39 3% Min: Pyrrhotite>>

<<Min: 183.46 - 184.39 30% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description
184.39	**185.00**	**OI**	**Heavilly disseminated sulphides in host schist**

<<Min: 184.39 - 185.07 0.5% Min: Sphalerite>>

<<Min: 184.39 - 185.07 1% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.89	179.40	0.51	B00264777	130	3.75	3.05	0.89	3.42
179.40	180.10	0.70	B00264778	89.1	1.14	2.89	0.17	2.44
180.10	181.00	0.90	B00264779	30.9	0.15	0.93	0.09	0.38
181.00	182.50	1.50	B00264781	99.7	0.921	3.26	0.17	0.71
182.50	183.46	0.96	B00264782	103	0.822	3.19	0.22	0.26
183.46	184.39	0.93	B00264783	186	3.3	7.65	0.2	0.68
184.39	185.00	0.61	B00264784	15.4	0.098	0.37	0.08	0.3

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
185.00	**185.52**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		185.00	185.52	0.52	B00264785	68.5	0.192	0.08	2.28	8.6
185 - 185.52: MET7													
<<Min: 185.07 - 185.4 20% Min: Sphalerite>>													
<<Min: 185.07 - 185.4 3% Min: Galena>>													
185.52	**189.63**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	185.52	187.00	1.48	B00264786	2	-0.005	0.01	0.08	0.19
185.52 - 189.63: Texture obscured by CL alteration.													
<<Alt: 185.79 - 189.63 Moderate (Alt) Chlorite>>					187.00	188.50	1.50	B00264787	2.7	0.008	0.02	0.14	0.39
<<Struc: 186.06 - 186.16 Weak (Alt) Shear>> In host rock (mineralized zone).					188.50	189.63	1.13	B00264788	4.8	-0.005	0.06	0.06	0.13
<<Struc: 187.72 - 187.74 Vein>> Maybe with TML.													
<<Struc: 189.44 - 189.46 Weak (Alt) Fault>> Infilled fracture.													
189.63	**215.15**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	189.63	191.00	1.37	B00264789	-0.3	-0.005	-0.01	-0.01	0.01
189.63 - 215.15: Mafic sill, BI. Fractured quarzt veins, green-grey alteration associated with. Regarding K15-243W1 it might not be aphitic felsic dyke but could be related to.													
<<Min: 189.63 - 215.15 25% Min: Calcite>>													
<<Alt: 189.63 - 215.15 Moderate (Alt) Chlorite>> Mafic sill.													
<<Alt: 200.51 - 201.32 Moderate (Alt) Silicification>> Green-grey alteration (felsic dyke).													
<<Vein: 193.27 - 193.44 Quartz-Pyrite>> QZ and coarse grain PY.													
<<Vein: 209.75 - 213.4 Quartz-Carbonate>> multiple QZ/CA veins.													
<<Struc: 195.88 - 195.89 dominant foliation>> CA.													
<<Struc: 202.01 - 202.2 Weak (Alt) Fault>> Fault Gouge, clay.													
<<Struc: 205.7 - 205.71 Vein>> Set of CA veinlet (crenulated) crosscutting the dominant foliation.													
<<Struc: 205.76 - 205.77 dominant foliation>>													
<<Struc: 207.97 - 207.98 dominant foliation>> BI.													
215.15	**221.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**									
215.15 - 221: QZ eyes. QZ vein irregular. 221.00 E.O.H..													
<<Vein: 218.02 - 218.19 Quartz>> QZ, TML at upper contact, few PY.													
<<Vein: 220 - 221 Quartz-Pyrite>> 3 QZ veins, few PY and Poon the edge.													

Project: **KZK** **Hole Number:** **K15-243**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 221									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-243W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	05-Sep-15
UTM Easting	414801.777	Core Size:	HQ3	Azimuth:	180.4	Date Logging Complete:	06-Sep-15
UTM Northing:	6815776.435	Casing Pulled?:	Yes	Dip:	-63	Drill Company:	Geotech
UTM Elev. (m):	1403.945	Casing Depth (m):	6	Length (m):	200	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	04-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	06-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-243

Comments:

Hole K15-243W1 was wedged in hole K15-243 from 149m to 200m for metallurgical samples (MET7 Domain).
Hole K15-243W1 encountered primarily rhyolite, a massive sulphide zone and a strongly chlorite altered unit. The massive sulfide was intersected from 173.65m to 180.1m with a main mineralized zone from 167.48m to 185.54m.
The hole shows progressive muscovite alteration in the hanging-wall followed by strong to intense proximal alteration from 170 to 190.55m (cordierite). Mineralization consists of SP/GL/PY (OB domain) as well as OA, OJ and OI domains on the edge of the unit.
The footwall consists of strongly chlorite alterated unit with CP stringers below the main massive sulfide zone and a narrow chlorite altered rhyolitic unit crosscut by mafic sill at 190.55m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.04	0	180.04	APS	Jerome de Pasquale	30-Aug-15		☑	Values copied from K15-243
26	-64.2	161.1	22.5	183.6	ReflexEZS	Geotech	01-Sep-15	5797	☑	Values copied from K15-243
50	-64.4	162.1	22.5	184.6	ReflexEZS	Geotech	01-Sep-15	5660	☑	Values copied from K15-243
75	-64.5	162.5	22.5	185	ReflexEZS	Geotech	02-Sep-15	5724	☑	Values copied from K15-243
77	-64.6	163.8	22.5	186.3	ReflexEZS	Geotech	01-Sep-15	5775	☑	Values copied from K15-243
101	-64.9	164.6	22.5	187.1	ReflexEZS	Geotech	01-Sep-15	5680	☑	Values copied from K15-243
125	-64.6	165	22.5	187.5	ReflexEZS	Geotech	01-Sep-15	5642	☑	Values copied from K15-243
149	-63.2	162.3	22.5	184.8	ReflexEZS	Geotech	04-Sep-15	5796	☑	Wedge start; value copied from first wedge survey at 155m
155	-63.2	162.3	22.5	184.8	ReflexEZS	Geotech	04-Sep-15	5796	☑	
176	-63.4	161.7	22.5	184.2	ReflexEZS	Geotech	04-Sep-15	5226	☑	
200	-64.5	167.5	22.5	190	ReflexEZS	Geotech	04-Sep-15	5777	☑	

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
149.00	**149.76**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**									

149 - 149.76: Probably ash, PY elongated.

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
149.76	**165.15**	**RHY**	**undifferentiated rhyolite** **grey-green**	160.15	161.15	1.00						

149.76 - 165.15: Muscovite altered, strong foilation, maybe cabonaceaous, dark band with pyrite might be primarly carbonaceous. Folded locally.

<<Alt: 149.8 - 158.81 Moderate (Alt) Muscovite>>	161.15	162.15	1.00
<<Alt: 158.81 - 167.91 Strong (Alt) Muscovite>>	162.15	163.15	1.00
<<Vein: 149.76 - 165.15 Pyrite>> PY in dark bedm maybe originaly carbonaceous.	163.15	164.15	1.00
<<Vein: 162.26 - 163.8 Quartz-Sulphide>> QZ, few GL	164.15	165.15	1.00

165.15	**165.76**	**OI**	**Heavilly disseminated sulphides in host schist** **grey-green**	165.15	165.76	0.61						

165.15 - 165.76: CP in fracture, brecciated.

<<Min: 165.15 - 165.76 2% Min: Sphalerite>>
<<Min: 165.15 - 165.76 2% Min: Pyrrhotite>>
<<Min: 165.15 - 165.76 1% Min: Galena>>
<<Min: 165.15 - 165.76 15% Min: Chalcopyrite>> Brecciated in schist.
<<Min: 165.75 - 167.48 0.1% Min: Galena>>

165.76	**167.48**	**RHY**	**undifferentiated rhyolite** **grey-green**	165.76	166.76	1.00						

165.76 - 167.48: Sheared.

<<Min: 165.76 - 167.48 0.1% Min: Sphalerite>>	166.76	167.48	0.72
<<Struc: 165.76 - 167.48 Moderate (Alt) Shear>>			

167.48	**168.96**	**OI**	**Heavilly disseminated sulphides in host schist**	167.48	168.96	1.48						

167.48 - 168.96: Locally OB, laminated, faulted with off set.

<<Min: 167.48 - 168.25 2% Min: Sphalerite>>
<<Min: 167.48 - 168.25 30% Min: Pyrite>>
<<Min: 167.48 - 168.25 2% Min: Chalcopyrite>>
<<Min: 168.25 - 173.64 2% Min: Pyrrhotite>>
<<Min: 168.25 - 173.64 3% Min: Galena>>
<<Min: 168.25 - 173.64 0.5% Min: Arsenopyrite>>
<<Min: 168.25 - 173.65 5% Min: Sphalerite>>
<<Alt: 167.48 - 173.64 Strong (Alt) Cordierite>>
<<Alt: 167.48 - 189.86 Strong (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
168.96	**173.64**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	168.96	170.00	1.04						
<<Min: 173.63 - 176.14 50% Min: Pyrite>>				170.00	171.00	1.00						
<<Min: 173.63 - 176.14 5% Min: Magnetite>>				171.00	172.00	1.00						
<<Min: 173.63 - 176.14 3% Min: Galena>>				172.00	173.00	1.00						
<<Min: 173.63 - 176.14 2% Min: Chalcopyrite>>				173.00	173.64	0.64						
173.64	**176.14**	**OA**	**Magnetite bearing sulphides**	173.64	175.00	1.36						
173.64 - 176.14: Semi massive MET2												
				175.00	176.14	1.14						
176.14	**178.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	176.14	177.00	0.86						
176.14 - 178.8: Ca in matrix and veinlet, high SP.												
<<Min: 176.14 - 178.8 30% Min: Sphalerite>>				177.00	178.00	1.00						
<<Min: 176.14 - 178.8 5% Min: Galena>>				178.00	178.80	0.80						
<<Min: 176.14 - 178.8 0.5% Min: Chalcopyrite>>												
178.80	**180.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	178.80	180.10	1.30						
178.8 - 180.1: Contaning MG, MET2 or 4												
<<Min: 178.8 - 180.1 2% Min: Sphalerite>>												
<<Min: 178.8 - 180.1 60% Min: Pyrrhotite>>												
<<Min: 178.8 - 180.1 2% Min: Galena>>												
<<Min: 178.8 - 180.1 3% Min: Chalcopyrite>>												
180.10	**185.86**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	180.10	181.00	0.90						
180.1 - 185.86: MET8. CP stringers.												
<<Min: 180.1 - 185.86 3% Min: Sphalerite>>				181.00	182.00	1.00						
<<Min: 180.1 - 185.86 1% Min: Pyrrhotite>>				182.00	183.00	1.00						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 180.1 - 185.86 2% Min: Galena>>	183.00	184.00	1.00						
		<<Min: 180.1 - 185.86 10% Min: Chalcopyrite>>	184.00	185.00	1.00						
		<<Min: 180.1 - 185.86 0.5% Min: Arsenopyrite>>	185.00	185.86	0.86						
		<<Vein: 180.1 - 185.86 Massive Sulphide/Sulphides undifferentiated>> CP stringers									
185.86	**190.55**	**RHY undifferentiated rhyolite green**	185.86	186.86	1.00						
		185.86 - 190.55: Obscured by CL alteration, could be mudstone.									
		<<Alt: 189.86 - 190.55 Moderate (Alt) Chlorite>>	186.86	187.86	1.00						
			187.86	188.86	1.00						
			188.86	189.86	1.00						
			189.86	190.55	0.69						
190.55	**200.00**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green**									
		190.55 - 200: Locally altered by QZ vein, BI. CL discrease on the last metre of the hole.									
		<<Min: 190.55 - 200 2% Min: Pyrite>> Euhedral, secondary.									
		<<Min: 190.55 - 200 20% Min: Calcite>>									
		<<Alt: 190.55 - 200 Strong (Alt) Chlorite>>									
End of Hole @ 200											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-244

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	03-Sep-15
UTM Easting	415050.949	Core Size:	NQ3	Azimuth:	179.93	Date Logging Complete:	05-Sep-15
UTM Northing:	6815419.589	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.572	Casing Depth (m):	21	Length (m):	119	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	01-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	04-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

This was was designed to infill the resource between historic hole K95-087 & K95-088.
The structural hanging wall is composed of a package of felsic coherent/volcaniclastic rocks and intercalated carbonaceous/tuffaceous mudstones. Sulphide intercepts are from 60.39m to 69.1m and contain OD and OB sulphide mineralization with pervasive calcite (10-20%) and isolated intervals of trace magnetite. The sulphide interval is confirmed to be of the MET7 domain. The structural footwall is a package of felsic coherent/volcaniclastic rocks underlain by a mafic intrusive (Mafi) and cross cut by a felsic/rhyolite glassy dike (Rhyi).
Muscovite alteration is pervasive in the structural hangingwall and footwall and increases in intensity towards the massive sulphide lens. Cordierite porphyroblasts were isolated in the MDS unit adjacent to the massive sulphide in the structural hanging wall. Trace chlorite alteration is observed proximal to the massive sulphide lens. Chlorite overprinting is moderate to strong in the mafic shists. Silicification is moderate to strong and is proximal to the felsic intrusion; the alteration front forms sharp contacts.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.93	0	179.93	APS	David Nuttal	01-Sep-15		☑	
25	-62	159.8	22.5	182.3	ReflexEZS	Geotech	02-Sep-15	5830	☑	
50	-61.2	160.7	22.5	183.2	ReflexEZS	Geotech	03-Sep-15	5753	☑	
77	-61.4	166.9	22.5	189.4	ReflexEZS	Geotech	03-Sep-15	1708	☐	Values not accepted due to very low magnetic field.
107	-61.2	162	22.5	184.5	ReflexEZS	Geotech	03-Sep-15	5720	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**20.70**	**CASN** **Casing**									
20.70	**45.52**	**RHYvl** **Lapilli tuff** **light grey**									

20.7 - 45.52: High pyrite ~3-4%. Large quartz vein intersection 38.77m to 43.25m, MEB changed from RHYc to RHYvl

<<Min: 21 - 29.5 2% Min: Pyrrhotite>>
<<Min: 21 - 48.5 1% Min: Calcite>>
<<Min: 25 - 60.39 3% Min: Pyrite>>
<<Min: 29.5 - 60.39 0.25% Min: Pyrrhotite>>
<<Min: 39 - 44.2 0.25% Min: Galena>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 39.7 - 40.2 4% Min: Sphalerite>>									
			<<Alt: 21 - 60.39 Weak (Alt) Muscovite>> Muscovite alteration intensity does not increase proximal to the massive sulphide interval.									
			<<Vein: 38.77 - 44.33 60% Quartz>> sulphides: galena, chalcopyrite, pyrite.									
			<<Struc: 24.85 - 24.92 Weak (Alt) Fault>>									
			<<Struc: 31.9 - 31.93 Weak (Alt) Fault>>									
			<<Struc: 33.4 - 33.51 Moderate (Alt) Fault>>									
			<<Struc: 37.75 - 37.75 dominant foliation>>									
45.52	**48.88**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
			<<Min: 48.5 - 51 3% Min: Calcite>>									
			<<Vein: 47.8 - 50.8 10% Quartz>>									
			<<Struc: 46.75 - 46.75 dominant foliation>>									
48.88	**52.64**	**MDSc**	**Carbonaceous dominant mudstone** **dark grey**									
			<<Min: 48.88 - 53 0.25% Min: Chalcopyrite>>									
			<<Min: 51 - 60.39 0.25% Min: Calcite>>									
			<<Struc: 52.54 - 52.59 Moderate (Alt) Fault>>									
52.64	**60.39**	**MDS**	**Carbonaceous Mudstone & Tuffaceous Mudstone**	55.90	57.39	1.49	B00268638	2.1	0.076	-0.01	0.03	0.17
			<<Struc: 55.9 - 60.39 Moderate (Alt) Fault>> Fault/fracture interval	57.39	58.89	1.50	B00268639	3.5	0.051	-0.01	0.05	0.05
				58.89	60.39	1.50	B00268641	14.9	0.24	0.27	0.06	0.06
60.39	**61.35**	**OD**	**Brecciated sulphides**	60.39	61.35	0.96	B00268642	109	0.94	1.39	0.66	5.84
			60.39 - 61.35: Pyrite rich brecciated sulphides with approximately 10-15% SP. MET7 domain (patchy Pb/Cu poor massive sulphide).									
			<<Min: 60.39 - 69.1 12% Min: Calcite>> Also present within fractures and veins within massive sulphide interval.									
61.35	**69.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	61.35	62.30	0.95	B00268643	160	1.39	0.35	1.62	8.35
			61.35 - 69.1: MET7 domain: Patchy Pb/Cu poor massive sulphide.									
				62.30	63.30	1.00	B00268644	97.6	1.15	0.11	1.09	6.98
				63.30	64.30	1.00	B00268645	150	1.72	0.61	2.08	7.69
				64.30	65.30	1.00	B00268646	220	1.74	0.3	2.19	7.19

From (m)	To (m)		Rocktype & Description
69.10	**74.00**	**RHY**	**undifferentiated rhyolite**
<<Min: 69.1 - 73 10% Min: Calcite>>			
<<Min: 69.1 - 74 2% Min: Pyrite>>			
<<Min: 73 - 86.5 3% Min: Calcite>>			
<<Alt: 69.1 - 74 Moderate (Alt) Muscovite>>			
<<Vein: 72.64 - 72.92 90% Quartz>> galena			
74.00	**77.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
<<Alt: 74 - 77.7 Moderate (Alt) Cordierite>>			
<<Alt: 76 - 77 Moderate (Alt) Chlorite>>			
<<Alt: 77 - 84 Moderate (Alt) Muscovite>>			
77.70	**80.00**	**RHY**	**undifferentiated rhyolite**
77.7 - 80: Intensely altered interval			
<<Min: 77.7 - 85.5 3% Min: Pyrite>>			
80.00	**80.35**	**OA**	**Magnetite bearing sulphides**
80.35	**82.56**	**RHY**	**undifferentiated rhyolite**
80.35 - 82.56: Flow textures are recognized in small sections of this interval.			
<<Alt: 81.4 - 84.1 Weak (Alt) Chlorite>>			
<<Struc: 81.8 - 82.3 Weak (Alt) Fault>> faulted interval			
82.56	**86.53**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 85.5 - 93.28 0.5% Min: Pyrite>>			
<<Min: 85.5 - 93.28 2% Min: Pyrrhotite>>			
<<Min: 86.5 - 93.28 20% Min: Calcite>>			
<<Alt: 84 - 86 Weak (Alt) Muscovite>>			
<<Struc: 85.95 - 85.95 dominant foliation>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
65.30	66.30	1.00	B00268647	200	1.16	0.19	1.79	5.62
66.30	67.30	1.00	B00268648	200	1.72	0.22	2.9	10.9
67.30	68.30	1.00	B00268649	210	1.74	0.37	4.06	12.2
68.30	69.10	0.80	B00268652	280	1.05	0.15	5.44	10.1
69.10	70.60	1.50	B00268653	73.9	0.326	0.05	0.9	2.47
70.60	72.10	1.50	B00268654	1.5	-0.005	-0.01	0.01	0.04
72.10	73.00	0.90	B00268655	1.3	-0.005	-0.01	-0.01	0.02
73.00	74.00	1.00	B00268656	14.9	0.024	0.04	0.25	0.71
74.00	75.00	1.00	B00268657	31.8	0.367	1.07	0.06	0.73
75.00	76.00	1.00	B00268658	45.5	0.277	0.48	1.02	4.12
76.00	77.00	1.00	B00268659	57.4	0.749	1.77	0.18	1.47
77.00	78.50	1.50	B00268661	18.9	0.247	0.19	0.2	1.36
78.50	80.00	1.50	B00268662	0.7	-0.005	-0.01	-0.01	-0.01
80.00	81.46	1.46	B00268663	104	0.409	0.27	2.24	5.86

From (m)	To (m)	Rocktype & Description
86.53	**93.28**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
86.53 - 93.28: moderate to strong chlorite alteration at top of interval		
<<Alt: 86.53 - 91 Moderate (Alt) Chlorite>>		
<<Alt: 86.53 - 119 Weak (Alt) Muscovite>>		
<<Alt: 91 - 93.28 Weak (Alt) Chlorite>>		
<<Vein: 89.58 - 90.25 30% Quartz>>		
93.28	**98.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 93.28 - 104 3% Min: Calcite>>		
<<Min: 93.28 - 119 2% Min: Pyrite>>		
<<Alt: 93.28 - 94 Strong (Alt) Muscovite>>		
<<Alt: 93.28 - 98.2 Moderate (Alt) Silicification>>		
98.20	**115.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Min: 98.2 - 115 0.5% Min: Sphalerite>>		
<<Min: 104 - 119 0.5% Min: Galena>>		
<<Min: 104 - 119 6% Min: Calcite>>		
<<Alt: 98.2 - 113 Strong (Alt) Silicification>>		
<<Alt: 113 - 119 Moderate (Alt) Silicification>>		
<<Vein: 103.67 - 104 99% Quartz>>		
<<Struc: 102 - 102.08 Weak (Alt) Fault>>		
115.00	**116.00**	**RHYc** **Rhyolite coherant volcanics**
116.00	**119.00**	**RHYv** **Rhyolite volcaniclastic**
<<Struc: 117.7 - 119 Moderate (Alt) Fault>> faulted interval		
End of Hole @ 119		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-245

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	05-Sep-15
UTM Easting	415050.945	Core Size:	HQ3	Azimuth:	180.25	Date Logging Complete:	05-Sep-15
UTM Northing:	6815416.155	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.662	Casing Depth (m):	19.5	Length (m):	70	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	04-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	05-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-244

Comments:

This hole was drilled with the objective of collecting samples of MET7 domain for testing, as a twin of K15-244.
The structural hanging wall is composed of a package of felsic coherent/volcaniclastic rocks intercalated by carbonaceous/tuffaceous mudstones. Sulphide intercepts are from 59.21m to 67.15m and contain OB sulphide mineralization with isolated intervals of trace magnetite (<30cm intervals). The structural footwall is a package of felsic coherent/volcaniclastic rocks. Muscovite alteration is pervasive in the structural hangingwall and footwall, and increases in intensity towards the massive sulphide lens. Cordierite porphyroblasts were isolated in the MDS unit adjacent to the massive sulphide in the structural hanging wall. Trace chlorite alteration is observed proximal to the massive sulphide lens. There is a large fault zone present from 45.5m to 59m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180	0	180	APS	David Nuttal	04-Sep-15		☑	
28	-60.2	158.3	22.5	180.8	ReflexEZS	Geotech	04-Sep-15	5767	☑	
70	-59.8	23.3	22.5	45.8	ReflexEZS	Geotech	05-Sep-15	962	☐	Values not accepted due to very low magnetic field.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 19.50 CASN Casing

19.50 37.00 RHYvl Lapilli tuff

<<Min: 19.5 - 28 1% Min: Pyrite>>

<<Min: 19.5 - 28 5% Min: Pyrrhotite>>

<<Min: 28 - 37 3% Min: Pyrite>>

<<Min: 28 - 37 2% Min: Pyrrhotite>>

<<Alt: 19.5 - 37.8 Weak (Alt) Muscovite>>

<<Struc: 27.12 - 27.2 Moderate (Alt) Fault>>

<<Struc: 29.83 - 30 Moderate (Alt) Fault>>

<<Struc: 31.15 - 31.25 Moderate (Alt) Fault>>

<<Struc: 35.43 - 36.67 Moderate (Alt) Fault>> Fault zone interval. Three faults spaced by less than one meter intervals. Faults are less than 15cm wide.

From (m)	To (m)		Rocktype & Description
37.00	**49.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**

37 - 49: very weakly crb

<<Min: 37 - 59.21 2% Min: Pyrite>>

<<Alt: 37.8 - 59.21 Moderate (Alt) Muscovite>>

<<Vein: 37 - 48 20% Quartz>>

<<Struc: 45.5 - 59 Moderate (Alt) Fault>> Fault zone interval. Rocks have been subjected to a major event resulting in brittle failure across different lithologies.

49.00	**50.50**	**MDSc**	**Carbonaceous dominant mudstone**
50.50	**59.21**	**MDS**	**Carbonaceous Mudstone & Tuffaceous Mudstone**

<<Alt: 58.9 - 59 Moderate (Alt) Cordierite>>

59.21	**67.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

59.21 - 67.15: met7 dfomain

67.15	**70.00**	**RHY**	**undifferentiated rhyolite**

<<Min: 67.15 - 70 4% Min: Pyrite>>

<<Alt: 67.15 - 70 Strong (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.20	55.20	1.00						
55.20	56.20	1.00						
56.20	57.20	1.00						
57.20	58.20	1.00						
58.20	59.21	1.01						
59.21	60.29	1.08						
60.29	61.29	1.00						
61.29	62.29	1.00						
62.29	63.25	0.96						
63.25	64.25	1.00						
64.25	65.25	1.00						
65.25	66.25	1.00						
66.25	67.15	0.90						
67.15	68.15	1.00						
68.15	69.15	1.00						
69.15	70.00	0.85						

End of Hole @ 70

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-246

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	03-Sep-15
UTM Easting	415134.011	Core Size:	HQ3	Azimuth:	167.24	Date Logging Complete:	05-Sep-15
UTM Northing:	6815441.807	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1400.731	Casing Depth (m):	7.5	Length (m):	129	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	02-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-242

Comments:

The purpose of hole K15-246 was to twin K15-242 in order to provide material for sampling MET8, MET 3, and MET 5 domains.

The first 92.09 m of K15-242 consists of a thick package of rhyolitic volcaniclastics (xtl/lpl) and flows +/- carbonaceous material, carbonaceous mudstones, and mafic intrusives.

The massive sulphide zone was intersected between 95.36-120.63 m (25.27 m total thickness) and consists of OA, OB, OC, OH, and OJ ore types. A Cu rich strong proximal CL-CI altered zone of OC may have confirmed the presence of the MET 8 domain. This unit contains magnetite though which may indicate that it is actually MET 3. There are other zones of MG bearing OC that are true massive sulphide that lack the CL-CI alteration and are likely MET 8. The MET 5 domain was confirmed by the presence of OB with visibly high concentrations of GL.

The structural footwall consists of MAFi intruded by RHYi, both of which sit stratigraphically below a thin unit of RHYcw. The footwall was intersected between 120.63-129.0 m.

Syngenetic alteration of the structural hanging wall felsic volcanics progressively increases in intensity with proximity to the sulphide zone. There was a relatively large weak CL-CI alteration zone in the hanging wall from 80.03-96.0 m that increased in intensity to strong from 93.94-96.52 m.

A thin zone of stongly MU altered RHYcw was located directly below the sulphide zone was the only evidence of syngenetic alteration in the footwall. Syngenetic alteration of the footwall has largely been eliminated by MAFi. Alteration of the footwall is characterized by a moderate CL and weak BI overprint in MAFi.

Notable mineralized interceptions included: 15 % CP (96.52-97.22 m, 106.86-107.83 m), 10% CP (109.28-110.24 m, 112.75-113.92 m, 119.43-120.63 m), 5% GL (95.36-96.52 m, 113.92-119.43 m), and 20 % SP (97.22-104 m, 106.86-109.28 m, 106.86-113.92 m).

OC logged in this hole was not logged in the parent hole K15-242. This may be due to subtle changes in mineralogy between OA and OC ore types.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	167.24	0	167.24	APS	Cooper Campbell	02-Sep-15		☑	
36	-65.2	147.4	22.5	169.9	ReflexEZS	Geotech	03-Sep-15	5777	☑	
66	-65.5	146.8	22.5	169.3	ReflexEZS	Geotech	03-Sep-15	5813	☑	
90	-65.4	148.3	22.5	170.8	ReflexEZS	Geotech	03-Sep-15	5956	☑	
114	-65.3	137.5	22.5	160	ReflexEZS	Geotech	03-Sep-15	4975	☐	Values not accepted due to low magnetic field.
129	-65.2	147.9	22.5	170.4	ReflexEZS	Geotech	03-Sep-15	5675	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00	**6.72**	**OVBN**	**Overburden**
6.72	**11.00**	**RHYvl**	**Lapilli tuff**

6.72 - 11: Heterogeneous package of RHYva, vl possible epiclastic beds, broken crystals, lapilli, MAFi, and flow banding over short intervals.

<<Min: 6.72 - 26.63 1% Min: Calcite>>

<<Min: 6.72 - 28.15 0.01% Min: Pyrite>>

<<Min: 6.72 - 28.15 0.01% Min: Pyrrhotite>>

<<Alt: 6.72 - 36.02 Weak (Alt) Muscovite>>

<<Alt: 6.72 - 36.02 Trace (Alt) Chlorite>> Patchy associated with MAFi.

<<Alt: 6.72 - 36.02 Trace (Alt) Biotite>> Patchy associated with MAFi.

11.00	**12.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 11.05 - 12.56 0.01% Min: Sphalerite>>

12.60	**19.00**	**RHYvl**	**Lapilli tuff**

12.6 - 19: Heterogeneous package of RHYva, vl possible epiclastic beds, broken crystals, lapilli, MAFi, and flow banding over short intervals.

<<Struc: 15.8 - 22.29 Weak (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart.

19.00	**20.04**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

19 - 20.04: dyke

20.04	**23.53**	**RHYva**	**Coarse grained to ash tuff**
23.53	**24.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

23.53 - 24.6: dyke

24.60	**36.02**	**RHYvl**	**Lapilli tuff**

<<Min: 26.63 - 58.24 5% Min: Calcite>>

<<Min: 28.15 - 49.04 0.01% Min: Pyrite>>

<<Min: 28.15 - 49.04 0.5% Min: Pyrrhotite>>

36.02	**39.77**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

36.02 - 39.77: Xenoliths of RHYcw

<<Alt: 36.02 - 39.77 Strong (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 36.02 - 39.77 Weak (Alt) Chlorite>>

<<Alt: 36.02 - 39.77 Moderate (Alt) Biotite>>

<<Vein: 37.76 - 38.14 100% Quartz-Carbonate-Sulphide 30 deg. >> QZ-CA-MS-MU-PY. Possible trace talc.

<<Struc: 38.86 - 61 Weak (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart.

39.77 62.50 RHYvl Lapilli tuff

<<Min: 49.04 - 60.14 0.5% Min: Pyrite>>

<<Min: 49.04 - 60.14 1% Min: Pyrrhotite>>

<<Min: 58.24 - 70.64 0.01% Min: Calcite>>

<<Min: 60.14 - 71.61 5% Min: Pyrite>>

<<Min: 60.14 - 71.61 3% Min: Pyrrhotite>>

<<Alt: 39.77 - 49.04 Trace (Alt) Chlorite>>

<<Alt: 39.77 - 71.17 Moderate (Alt) Muscovite>>

<<Vein: 56.7 - 56.91 100% Quarzt-Tourmaline-Sulphide 35 deg. >> Wheat sheaves of tourmaline.

<<Struc: 61 - 61.72 Strong (Alt) Fault>> Zone of highly broken rock and trace gouge.

62.50 71.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

71.00 78.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

71 - 78: 15-20% whispy pyrite interflow bands??

<<Min: 71.61 - 81.02 15% Min: Pyrite>>

<<Min: 71.61 - 81.02 1% Min: Pyrrhotite>>

<<Alt: 71.17 - 81.02 Strong (Alt) Muscovite>>

<<Struc: 76.5 - 93 Strong (Alt) Fault>> Narrow faults filled with broken rock and gouge. Spaced metres apart.

78.00 81.00 MDSw Coherent rhyolite flow with carbonaceous content

<<Alt: 80.03 - 93.94 Weak (Alt) Chlorite>>

<<Alt: 80.03 - 93.94 Trace (Alt) Biotite>>

<<Alt: 80.03 - 96 Weak (Alt) Cordierite>>

81.00 82.20 MDSc Carbonaceous dominant mudstone

<<Min: 81.02 - 89.55 0.01% Min: Sphalerite>>

<<Min: 81.02 - 89.55 3% Min: Pyrrhotite>>

<<Min: 81.02 - 89.55 0.01% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 81.02 - 89.55 Moderate (Alt) Muscovite>>													
82.20	**85.50**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**										
<<Min: 83.06 - 92.95 0.01% Min: Calcite>>													
85.50	**95.36**	**MDSt**	**Rhyolite tuff dominant mudstone**		90.36	91.36	1.00						
<<Min: 89.55 - 95.36 0.01% Min: Sphalerite>>					91.36	92.36	1.00						
<<Min: 89.55 - 95.36 0.01% Min: Pyrite>>					92.36	93.36	1.00						
<<Min: 89.55 - 95.36 1% Min: Pyrrhotite>>					93.36	94.36	1.00						
<<Min: 89.55 - 95.36 0.01% Min: Chalcopyrite>>					94.36	95.36	1.00						
<<Min: 92.95 - 96.52 5% Min: Calcite>>													
<<Alt: 89.55 - 96 Strong (Alt) Muscovite>>													
<<Alt: 93.94 - 96.52 Strong (Alt) Chlorite>>													
<<Alt: 93.94 - 96.52 Moderate (Alt) Biotite>>													
<<Vein: 93.84 - 94.55 25% Quartz-Carbonate-Sulphide 58 deg. >> QZ-DO-CA-PO													
95.36	**96.52**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		95.36	96.00	0.64						
<<Min: 95.36 - 96.52 5% Min: Galena>>					96.00	96.52	0.52						
<<Alt: 96 - 96.52 Strong (Alt) Cordierite>>													
96.52	**97.22**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	96.52	97.22	0.70						
<<Min: 96.52 - 97.22 15% Min: Chalcopyrite>>													
97.22	**101.08**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	97.22	98.22	1.00						
<<Min: 97.22 - 104 20% Min: Sphalerite>>					98.22	99.22	1.00						
					99.22	100.22	1.00						
					100.22	101.08	0.86						
101.08	**104.00**	**OA**	**Magnetite bearing sulphides**	**MG**	101.08	102.08	1.00						
					102.08	103.08	1.00						
					103.08	104.00	0.92						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
104.00	**104.52**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	104.00	104.52	0.52						
<<Min: 104 - 104.52 5% Min: Chalcopyrite>>													
104.52	**106.86**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	104.52	105.25	0.73						
					105.25	106.25	1.00						
					106.25	106.86	0.61						
106.86	**107.83**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	106.86	107.83	0.97						
<<Min: 106.86 - 107.83 15% Min: Chalcopyrite>>													
<<Min: 106.86 - 113.92 20% Min: Sphalerite>>													
107.83	**109.28**	**OA**	**Magnetite bearing sulphides**	**MG**	107.83	108.50	0.67						
					108.50	109.28	0.78						
109.28	**110.24**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	109.28	110.24	0.96						
<<Min: 109.28 - 110.24 10% Min: Chalcopyrite>>													
110.24	**112.75**	**OA**	**Magnetite bearing sulphides**	**MG**	110.24	111.24	1.00						
					111.24	112.75	1.51						
112.75	**113.92**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	112.75	113.25	0.50						
<<Min: 112.75 - 113.92 10% Min: Chalcopyrite>>					113.25	113.92	0.67						
113.92	**119.43**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	113.92	114.92	1.00						
<<Min: 113.92 - 119.43 5% Min: Galena>>					114.92	115.92	1.00						
					115.92	116.92	1.00						
					116.92	117.92	1.00						
					117.92	118.92	1.00						
					118.92	119.43	0.51						
119.43	**120.63**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	119.43	120.00	0.57						
<<Min: 119.43 - 120.63 10% Min: Chalcopyrite>>					120.00	120.63	0.63						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
120.63	**122.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	120.63	121.63	1.00						
<<Min: 120.63 - 125.08 0.5% Min: Pyrite>>			121.63	122.60	0.97						
<<Min: 120.63 - 125.08 1% Min: Calcite>>											
<<Alt: 120.63 - 122.6 Strong (Alt) Muscovite>>											
<<Alt: 120.63 - 124.91 Weak (Alt) Chlorite>>											
<<Struc: 120.63 - 123.7 Moderate (Alt) Fault>> Moderate intensity faults filled with broken rock and gouge space cm apart.											
122.60	**129.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	122.60	123.60	1.00						
<<Min: 125.08 - 129 1% Min: Sphalerite>>			123.60	124.60	1.00						
<<Min: 125.08 - 129 0.5% Min: Pyrite>> BL. Partially replaced by PO.			124.60	125.60	1.00						
<<Min: 125.08 - 129 1% Min: Pyrrhotite>> Partially replacing PY.											
<<Min: 125.08 - 129 0.01% Min: Galena>>											
<<Min: 125.08 - 129 10% Min: Calcite>>											
<<Alt: 124.91 - 129 Moderate (Alt) Chlorite>>											
<<Alt: 124.91 - 129 Weak (Alt) Biotite>>											
<<Vein: 122.6 - 125.08 25% Quartz-Carbonate-Sulphide 65 deg. >> QZ-CA-PO-SP											

End of Hole @ 129

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-247

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	05-Sep-15
UTM Easting	418952.703	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	14-Sep-15
UTM Northing:	6813685.432	Casing Pulled?:	No	Dip:	-85	Drill Company:	Geotech
UTM Elev. (m):	1476.501	Casing Depth (m):	2.3	Length (m):	414	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	03-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	13-Sep-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

This hole intersected a series of altered quartz crystal tuffs, quartz crystal, lithic lapilli tuffs, and minor ash tuffs (335.8m-379.2m). This unit marked the onset of weak to moderate, pervasive, sericite alteration cut by zones (5-20cm) of moderate to locally strong chlorite alteration with fine grained disseminated chalcopyrite (locally up to 1%) and thin (<1cm) bands of sphalerite. Weak mineralization (sphalerite-chalcopyrite) and associated moderate chlorite alteration continued below the quartz crystal tuff (379.2-414.0m). Several quartz-chlorite veins (10-20cm) with trace chalcopyrite were intersected near the bottom of the hole. The hole terminated in biotite-quartz-chlorite, pelitic meta-sediment. Downhole EM did not indicate a significant conductor at the end of the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-85	157.5	22.5	180	ReflexEZS	Geotech	03-Sep-15	5705	☑	
48	-84.8	159.8	22.5	182.3	ReflexEZS	Geotech	05-Sep-15	5714	☑	
75	-84.8	155.6	22.5	178.1	ReflexEZS	Geotech	05-Sep-15	5688	☑	
99	-83.8	156.3	22.5	178.8	ReflexEZS	Geotech	06-Sep-15	5682	☑	
126	-82.7	157.6	22.5	180.1	ReflexEZS	Geotech	06-Sep-15	5702	☑	
150	-82.7	152.2	22.5	174.7	ReflexEZS	Geotech	07-Sep-15	5691	☑	
175	-82.3	152.3	22.5	174.8	ReflexEZS	Geotech	06-Sep-15	5705	☑	
204	-82.3	154.7	22.5	177.2	ReflexEZS	Geotech	08-Sep-15	5689	☑	
228	-81.8	155.3	22.5	177.8	ReflexEZS	Geotech	08-Sep-15	5678	☑	
253	-81.6	159.8	22.5	182.3	ReflexEZS	Geotech	09-Sep-15	5702	☑	
294	-81.3	160.6	22.5	183.1	ReflexEZS	Geotech	10-Sep-15	5766	☑	
321	-81	162	22.5	184.5	ReflexEZS	Geotech	10-Sep-15	5896	☑	
346	-80.6	152.9	22.5	175.4	ReflexEZS	Geotech	11-Sep-15	5786	☑	
384	-80.4	159.1	22.5	181.6	ReflexEZS	Geotech	11-Sep-15	5791	☑	
399	-80.5	160.6	22.5	183.1	ReflexEZS	Geotech	11-Sep-15	5893	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0 - 2.32: Overburden.

2.32 5.60 RHYcq Quartz porphyry grey-brown

2.32 - 5.6: abundant light coloured felsic lenses in MU-rich matrix/partings, probably QZ-FP domains, but also looks like QZ phenos, up to 5 mm diameter.flattened severely. Minor Banding with BI. Oxidized locally

5.60 24.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

5.6 - 24: speckled unit, massive, homogeneous, BI pblasts t/o. CL-BI in groundmass,

<<Min: 5.6 - 24 5% Min: Calcite>> pervasive to fracture and vein control

<<Vein: 14.1 - 14.75 80% Quartz-Carbonate>> QZ-CB

<<Struc: 18 - 25 Strong (Alt) Fault>> broken rock, poor recovery

24.00 32.32 SED undifferentiated Sediment black FG

24 - 32.32: Might be a RHY, quite silica-rich, textures in altered section at bottom look like flow bands, spherules,massive, homogeneous, tiny white specks t/o-leucoxene?, fol'd rock, hard groundmass with BI also BI speckles

<<Min: 24 - 28.15 0.5% Min: Pyrite>>

<<Min: 24 - 28.15 0.5% Min: Pyrrhotite>> along foln

<<Min: 24 - 28.15 1% Min: Calcite>> minor lens

<<Alt: 28.15 - 32.32 Strong (Alt) Silicification>> progressive up to dyke contact, bands near 28.15, QV lenses

<<Alt: 28.15 - 32.32 Weak (Alt) Muscovite>>

<<Struc: 26.1 - 26.11 Moderate (Alt) dominant foliation>>

32.32 37.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

32.32 - 37.2: massive dyke, fg, well fol'd, CA-QZ vns common, planar gnerally i.e. not intensely fol'd. some early deformed QZ-CA vns

<<Min: 32.32 - 37.2 3% Min: Calcite>> and in veins

<<Alt: 32.32 - 37.2 Weak (Alt) Chlorite>> envelopes to veins

<<Vein: 35.7 - 36.3 30% Quartz-Carbonate>> QZ-CB with CL envelopes

37.20 42.56 RHYif feldspar and quartz porphyry intrusions buff VFG

37.2 - 42.56: looks like glassy dyke, may extend above dyke i.e. SI'd SED above

<<Alt: 37.2 - 42.6 Moderate (Alt) Silicification>>

<<Alt: 37.2 - 42.6 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 37.2 - 42.6 Trace (Alt) Garnet>>

<<Struc: 37.2 - 37.21 Moderate (Alt) Contact>>

42.56 74.25 SED undifferentiated Sediment grey FG

42.56 - 74.25: BI bands common, groundmass is QZ-rich, also locally QZ clasts(?) -overall this does not look like igneous rock but locally maybe tuff intervals,?, CL or AC locally, weakly calcareous?, no TO though, - quite broken section, faulted and numerous dykes t/o, faulting increases in lower half of interval, TO along fractures? Or MnOxide?, at upper contact, commonly contains tiny white specks -leucoxene-like?- conc'd in CL-rich dykelets (diamond shaped, beige colour, high relief, no fizz) possibly AK pblasts?

<<Min: 42.56 - 51.5 3% Min: Calcite>> fracs, veins, envelopes to QV's

<<Min: 42.56 - 68.18 0.5% Min: Pyrite>> scattered, locally weathered and exclusive of dykes

<<Min: 51.5 - 68.18 0.01% Min: Pyrite>> blebs in rare QZ-CB veins, with CL locally

<<Min: 51.5 - 71 1% Min: Calcite>> fracs mostly, small sections with 10%

<<Min: 68.18 - 74.25 0.01% Min: Pyrite>>

<<Min: 71 - 74.25 3% Min: Calcite>> contact margin of dyke

<<Min: 72.35 - 73.3 0.5% Min: Ankerite>> AK?, doesn't fizz, rhomboid

<<Alt: 42.6 - 74.25 Trace (Alt) Chlorite>> locally on fractures

<<Alt: 73.68 - 74.25 Moderate (Alt) Muscovite>> bleaches rock, along with CA

<<Struc: 42.9 - 46.25 Moderate (Alt) Fault>> attitde measured on gouge zone

<<Struc: 51 - 63.8 Strong (Alt) Fault>> to 50, measured on slips, gouge contacts, very rough section, lots of crushed and oxidized rock, several small dykes within SED, tough ground, lost core

74.25 82.96 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

74.25 - 82.96: minor RHYcf entrained, also, CL-AC alt'd sed (lt to dark green), QZ-CA veins in fault one

<<Min: 74.25 - 80.73 0.5% Min: Pyrite>> on dry fracs in dyke

<<Min: 74.25 - 80.73 5% Min: Calcite>> fracs, veinlets, MAFi dyke

<<Min: 80.73 - 101.06 0.01% Min: Pyrite>>

<<Alt: 78.92 - 80.73 Weak (Alt) Muscovite>> related to QZ-TO veinlet

<<Vein: 82.9 - 84.5 5% Quartz-Tourmaline 15 deg. >> QZ-CA, QZ-TO veining/altn

<<Struc: 77.4 - 77.41 Moderate (Alt) Foliation>> banding

82.96 100.22 RHYcf Feldspar & feldspar quartz porphyry grey FMG

82.96 - 100.22: variably deformed, strongly strained clasts/boudins of felsic material or phenos, local blue QE's, locally banding due to flow of more massive rhyolite, micaceous groundmass, BI and MU, banding common and locally strongly schistose, blue-grey colour locally due to MU around QZ and QZ-TO veinlets, weak bleaching and oxidation locally.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 98.78 - 101.06 Moderate (Alt) Muscovite>> in groundmass, TO occurs around fractures locally

<<Alt: 98.78 - 101.06 Weak (Alt) Chlorite>> in groundmass and bands after BI

<<Struc: 83.9 - 83.91 Moderate (Alt) Vein>> QZ-TO veinlet, alt,n envelope about 5 cm wide, remains in core over about 1 m

<<Struc: 85.26 - 85.32 Strong (Alt) Vein>> QZ-CA, on fol'n, weakly deformed

<<Struc: 89.9 - 89.91 Strong (Alt) dominant foliation>>

100.22 101.06 RHYvx Quartz and/or feldspar crystal tuff dark grey

100.22 - 101.06: bed? Characterized by blue QZ eyes.

101.06 105.40 SED undifferentiated Sediment black FG

101.06 - 105.4: weakly laminated, black sediment, with BI bands common, wispy sx, CA in groundmass and veins, MAFi cuts, QZ-CA veins common, carbonaceous?

<<Min: 101.06 - 111.4 0.5% Min: Pyrite>> on fol'n, fractures

<<Min: 101.06 - 111.4 0.5% Min: Pyrrhotite>> as PY

<<Min: 101.06 - 111.4 5% Min: Calcite>> in sediment and dyke, more evenly distributed in dyke

<<Struc: 101.3 - 101.31 Moderate (Alt) Contact>>

<<Struc: 105.3 - 114.3 Strong (Alt) Fault>> long section of broken core, gouge, particularly thick stretch of gouge from 11.5-114.3

105.40 114.30 RHYi Aphanitic Rhyolite (intrusion) yellow

105.4 - 114.3: strongly oxidized, fol'd dyke?, coincides with fault zone almost end to end. Small QZ eyes in groundmass (could be QZ grains in sed), generally massive, not laminated like sediment surrounding unit

114.30 118.60 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

114.3 - 118.6: AS above RHYi unit

<<Min: 114.3 - 118.6 0.5% Min: Pyrite>>

<<Min: 114.3 - 133.6 0.01% Min: Calcite>>

118.60 133.60 MDSt Rhyolite tuff dominant mudstone grey

118.6 - 133.6: banded siliceous/micaceous rock, originally Chert/sed?, siliceous, bx'd, muddy matrix, locally mudstone, minor MAFi, possible CI? And fibrous mineral? Alt'd?, granular tx, re-crystallized sed?, there are graphitic slips locally within the unit (graphitic section from 119 to 121 m).

<<Min: 118.6 - 133.6 0.5% Min: Pyrite>> and fractures

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 122.6 - 122.61 Moderate (Alt) Contact>> dykelet, slightly oblique to fol'n

133.60 166.10 MDSc Carbonaceous dominant mudstone dark grey FG

133.6 - 166.1: dark massive MDS bands, commonly graphitic, with lighter coloured layers, silty originally?, locally siliceous with deformed QZ-rich bands, weakly turbiditic?

<<Min: 133.6 - 156.53 0.5% Min: Pyrite>> blebs

<<Min: 133.6 - 156.53 1% Min: Pyrrhotite>> especially in dark MDS sections, reduced?

<<Min: 133.6 - 156.53 10% Min: Calcite>> pervasive and in bands and veins

<<Min: 156.53 - 159.86 0.5% Min: Pyrite>> blebs and coatings

<<Min: 159.86 - 166.1 1% Min: Pyrrhotite>> along fol'n, conc'd in dark bands

<<Min: 159.86 - 166.1 5% Min: Calcite>> in veins, bands, pervasive

<<Alt: 138.1 - 138.7 Weak (Alt) Muscovite>> bleaches core, 142.5

<<Struc: 137.85 - 137.86 Weak (Alt) Shear>> .5 cm gouge

<<Struc: 142.5 - 142.51 Strong (Alt) dominant foliation>>

<<Struc: 150 - 150.9 Moderate (Alt) Fault>> gougy fault, carbonaceous, broken

166.10 170.30 RHYcq Quartz porphyry

166.1 - 170.3: almost equigranular non-foliated with no QZ eyes

<<Min: 166.1 - 170.3 0.01% Min: Pyrite>>

<<Alt: 166.1 - 168.5 Weak (Alt) Biotite>> from dykes?

170.30 175.08 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

170.3 - 175.08: or calc-silicate skarn,

<<Min: 170.3 - 175.08 0.5% Min: Pyrite>>

<<Min: 170.3 - 175.08 0.01% Min: Calcite>>

175.08 177.80 RHYcq Quartz porphyry grey-green FMG

175.08 - 177.8: greenish groundmass due to alt'n? Alt'n increases to lower contact, no QE

<<Min: 175.08 - 185.5 0.5% Min: Pyrite>> and blebs, lenses,

<<Min: 175.08 - 189 0.01% Min: Calcite>>

<<Alt: 175.08 - 182.48 Weak (Alt) Chlorite>> in groundmass, after FP?

177.80 184.00 RHYcq Quartz porphyry

177.8 - 184: QE again visible

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 182.48 - 184 Moderate (Alt) Chlorite>> at contact with RHYcf

<<Struc: 179.01 - 179.02 Weak (Alt) Vein>> QZ-CA-TO-PY veinlet, several, CL alt'n ssoc'd

<<Struc: 180 - 180.1 Moderate (Alt) dominant foliation>>

184.00 192.81 RHYcf Feldspar & feldspar quartz porphyry grey-brown

184 - 192.81: highly strained, phenos or boudins?, tiny diss'd white specks -leucoxene?, grey siliceous and micaceous groundmass, PY/PO as small wisps in groundmass

<<Min: 184 - 187 0.5% Min: Pyrrhotite>> scattered wisps

<<Min: 187 - 200 0.01% Min: Pyrite>>

<<Min: 189 - 193 3% Min: Calcite>>

<<Alt: 192.8 - 225.5 Moderate (Alt) Biotite>>

<<Vein: 190.2 - 190.55 90% Quartz 18 deg. >> 5 cm wide QZ vn with CL in fractures, TO selvedge

<<Struc: 189 - 189.1 Moderate (Alt) dominant foliation>>

192.81 206.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

192.81 - 206.3: distinctive unit ranges from drk brn-gry to medium gry-brn weakly fol equigranular moderately foliatd with prominent drk brown 2-4cm BI rich schlieran that resemble BI-rich dykes, locally 1-2mm diffuse FD phenos, could be intermed-felsic

<<Min: 193 - 225.5 3% Min: Calcite>>

<<Min: 200 - 225.5 0.01% Min: Pyrite>>

206.30 208.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

208.60 225.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

208.6 - 225.55: same as 192-206

<<Min: 225.5 - 241 5% Min: Calcite>>

<<Min: 225.5 - 251 3% Min: Pyrite>>

<<Alt: 225.5 - 229.6 Moderate (Alt) Muscovite>> green sericite associated with SI-CA-PY vein

<<Vein: 225.5 - 261 5% Quartz-Carbonate 25 deg. >> sparse 1-5mm discordand stringers of QZ-CA+/-PY with associated MS alter 20-30 to CA

<<Struc: 211 - 211.1 Moderate (Alt) dominant foliation>>

225.55 234.50 RHYcf Feldspar & feldspar quartz porphyry

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 228 - 228.1 Moderate (Alt) dominant foliation>>

234.50 236.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

234.5 - 236.4: BIAC schist

236.40 251.00 RHYcf Feldspar & feldspar quartz porphyry

<<Min: 241 - 261 3% Min: Calcite>>

<<Alt: 241 - 258 Weak-Moderate (Alt) Muscovite>> green sericite associated with SI-CA-PY vein

<<Struc: 243 - 243.1 Moderate (Alt) dominant foliation>>

251.00 254.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

254.70 265.80 RHYcf Feldspar & feldspar quartz porphyry

<<Min: 254.7 - 261 3% Min: Pyrite>> patchy and late veins and fractures

<<Struc: 258 - 258.1 Moderate (Alt) dominant foliation>>

<<Struc: 263 - 263.1 Moderate (Alt) dominant foliation>>

265.80 267.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

265.8 - 267: Green-brown, well foliated, biotite-chlorite-carbonate schist. Sharp upper and lower contacts. Logged by Gilles Dessureau

<<Min: 265.8 - 267 5% Min: Calcite>>

267.00 279.10 RHYvl Lapilli tuff grey FG

267 - 279.1: Grey, well foliated, fine grained, quartz-muscovite schist/ash tuff to fine crystal lapilli tuff. Trace pyrite. Abundant small (<1mm) euhedral white, wedge shaped porphyroblasts?)

<<Alt: 279 - 286 Moderate (Alt) Muscovite>> muscovite (clay) alteration associatd with fault zone.

<<Struc: 270 - 270.1 Moderate (Alt) dominant foliation>>

279.10 286.00 RHYvl Lapilli tuff grey-green FMG

279.1 - 286: Light grey to greenish grey, faulted, quartz-muscovite schist/fine to medium grained lapilli ash tuff. Well developed fault gouge within broken core. Alteration is pervasive sericite alteration associated with the fault zone.

<<Struc: 279.1 - 286 Strong (Alt) Fault>> well developed fault with abundant faut gouge. Lower contact of fault is parallel to foliation @70o ca. This fault also includes several high angle fractures (@15o ca.).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

286.00 297.00 RHYva Coarse grained to ash tuff grey FMG

286 - 297: Light grey, fine to medium grained, well foliated quartz-muscovite schist/rhyolite ash tuff to lapilli ash tuff. Weakly altered with pervasive sericite-pyrite alteration with locally up to 5% pyrite in narrow bands (5-10cms).

<<Min: 289 - 297 2% Min: Pyrite>> patchy and late vein pyrite

<<Alt: 286 - 297 Weak (Alt) Muscovite>> weak pervaisve muscovite pyrite alteration.

<<Vein: 292 - 293 90% Pyrite 50 deg. >> narrow pyrite veinlets.

297.00 300.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

298.50	299.50	1.00	B00269083	0.6	-0.005	-0.01	-0.01	0.02

297 - 300: Brown to green, fine grained, well foliated, biotite-chlorite-carbonate schist/mafic dyke.

<<Min: 297 - 300.9 5% Min: Calcite>>

299.50	300.00	0.50	B00269084	0.5	-0.005	-0.01	-0.01	0.02

<<Alt: 299 - 302.5 Weak (Alt) Chlorite>> weak pachy chlorite alteration

300.00 310.30 RHYvl Lapilli tuff light grey FMG

300.00	300.90	0.90	B00269085	0.6	0.005	-0.01	-0.01	0.02

300 - 310.3: Light grey, medium grained, well foliated, quartz-muscovite schist/lapilli tuff. Weak to moderate, pervasive, sericite (muscovite), pyrite alteration (locally up to 0.5% very fine. Cut by large quartz vein (301.8-302.4m).

<<Min: 300.75 - 301 10% Min: Pyrrhotite>> two narrow (1-2cm) pyrrhotite veins

<<Alt: 300.9 - 310.3 Weak (Alt) Muscovite>> weak pervasive muscovite pyrite alteration.

<<Vein: 300.75 - 301 10% Pyrrhotite 45 deg. >> two narrow pyrrhotite veins.

<<Vein: 301.8 - 302.4 95% Quartz 50 deg. >> massive quartz vein

<<Struc: 300 - 300.1 Moderate (Alt) dominant foliation>>

<<Struc: 303 - 303.1 Moderate (Alt) dominant foliation>>

<<Struc: 305.8 - 305.9 Moderate-Strong (Alt) dominant foliation>>

310.30 313.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FG

310.3 - 313.7: Dark grey and dark green, fine grained, well foliated biotite-actinolite-chlorite- carbonate schist/mafic intrusion. Cut by abundant carbonate veinlets. Trace to locally 0.5% fine wispy pyrrhotite.

<<Min: 310.3 - 313.7 5% Min: Calcite>> carbonate veins in mafic intrusion.

<<Vein: 310.3 - 313.7 10% Quartz-Carbonate 70 deg. >> quartz carbonate veins

<<Vein: 310.3 - 313.7 5% Calcite 75 deg. >> carbonate veins

313.70 326.60 RHYvl Lapilli tuff grey FMG

313.7 - 326.6: Light grey to light greenish grey, well foliated medium grained, quartz-muscovite schist/rhyolite lapilli tuff. 323.0-326.6m increased pyrite locally up to 5% in narrow 5-10cm bands.

<<Alt: 313.7 - 326.6 Weak (Alt) Muscovite>> weak, pervasive sericite alteration.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 321 - 321.1 Moderate-Strong (Alt) dominant foliation>>

<<Struc: 326.2 - 326.6 Moderate-Strong (Alt) Fault>> fault gouge at contact of mafic dike.

326.60 329.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FG

326.6 - 329.55: Dark grey and dark green, fine grained, well foliated biotite-actinolite-chlorite-carbonate schist/mafic intrusion. Cut by abundant carbonate veinlets. Trace to locally 0.5% fine wispy pyrrhotite.

<<Min: 326.6 - 329.55 5% Min: Calcite>>

<<Vein: 326.6 - 329.55 10% Quartz-Carbonate 70 deg. >> quartz carbnate veins

329.55 334.00 RHYvl Lapilli tuff grey-green FMG

329.55 - 334: Light to medium greenish grey, well foliated, fine to medium grained, quartz-muscovite (chlorite) schist/altered rhyolite lapilli tuff. Alteration is weak pervasive sericite-chlorite alteration.

<<Alt: 329.55 - 335.8 Weak (Alt) Muscovite>> weak, pervsive sericite alteration.

<<Struc: 330 - 330.1 Strong (Alt) dominant foliation>>

<<Struc: 333 - 333.1 Strong (Alt) dominant foliation>>

334.00 335.80 RHYv Rhyolite volcaniclastic light grey FG

334 - 335.8: Light grey, well foliated, fine grained, quartz biotite schist/rhyolite ash tuff or epiclastic sediment. Gradational upper contact with rhyolite lapilli tuff. Quartz vein and possible fault contact at the lower contact.

335.80 342.20 RHYvx Quartz and/or feldspar crystal tuff grey-green FMG

335.8 - 342.2: Green-grey, well foliated, altered, medium grained, quartz-muscovite-chlorite schist/quartz crystal, lapilli tuff or quartz porphyry. Abundant 0.5-1cm blue quartz crystals and occasional 1cm feldspar crystals and/or siliceous lapilli in a fine grained chlorite-muscovite altered matrix. Alteration is weak to moderate, pervasive chlorite-sericite alteration. Cut by abundant quartz veins at upper contact.

<<Alt: 335.8 - 342.2 Weak-Moderate (Alt) Muscovite>> weak to moderate, pervasive, sericite alteration

<<Alt: 335.8 - 342.2 Weak-Moderate (Alt) Chlorite>> weak to moderate, pervasive, chlorite alteration

<<Vein: 335.8 - 336 95% Quartz 75 deg. >> quartz-chlorite vein

<<Vein: 336.8 - 337.3 90% Quartz 70 deg. >> quartz-chlorite vein

<<Struc: 335.8 - 336 Intense (Alt) Vein>> quartz vein

<<Struc: 336.8 - 337.3 Intense (Alt) Vein>> quartz vein

<<Struc: 339.5 - 339.6 Intense (Alt) dominant foliation>>

<<Struc: 342 - 342.1 Intense (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
342.20	**343.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **grey-brown** **FG**									
342.2 - 343.8: Grey-brown, well foliated, fine grained, biotite-actinolite-carbonate schist/mafic dyke.											
<<Min: 342.2 - 343.8 5% Min: Calcite>>											
<<Vein: 342.2 - 343.8 5% Quartz-Carbonate 70 deg. >> quartz carbnate veins											
343.80	**348.60**	**RHYvl** **Lapilli tuff** **grey-green** **MCG**									
343.8 - 348.6: Medium grey to greenish-grey, well foliated, medium to coarse grained, quartz-feldspar-muscovite schist/quartz-feldspar crystal, lapilli tuff. Abundant 1cm elongated siliceous lapilli with occasional <0.5cm quartz (weakly bluish) crystals in an altered matrix. Alteration is weak to moderate sericite-chlorite alteration. No visible mineralization but increasing alteration down hole.											
<<Alt: 343.85 - 355.3 Weak (Alt) Muscovite>> weak, pervasive sericite alteration											
<<Alt: 343.85 - 355.3 Weak (Alt) Chlorite>> weak, pervasive chlorite alteration											
<<Vein: 345.8 - 346 95% Quartz 65 deg. >> quartz vein											
<<Struc: 345 - 345.1 Intense (Alt) dominant foliation>>											
348.60	**355.53**	**RHYvx** **Quartz and/or feldspar crystal tuff** **grey-green** **FMG**	352.40	353.40	1.00	B00269086	0.5	0.007	-0.01	-0.01	0.02
348.6 - 355.53: Medium grey to greenish-grey, well foliated, medium grained, moderately altered, quartz-muscovite schist/rhyolite lapilli, quartz crystal tuff. Alteration is weak to moderate, pervasive sericite and chlorite alteration. Alteration is increasing down hole. This unit is cut by several small fault zones and is commonly broken core with minor gouge.											
<<Alt: 355.3 - 360.15 Moderate (Alt) Muscovite>> weak to moderate pervasive sericite alteration			353.40	354.40	1.00	B00269087	2	-0.005	-0.01	0.01	0.06
<<Alt: 355.3 - 360.15 Strong (Alt) Chlorite>> patchy stringers of strong to intense chlorite alteration.			354.40	355.53	1.13	B00269088	0.5	0.009	-0.01	-0.01	0.02
<<Struc: 348.6 - 348.8 Moderate-Strong (Alt) Fault>> very broken rock in fault zone.											
<<Struc: 350.3 - 350.7 Intense (Alt) Fault>> well developed fault gouge											
<<Struc: 351.3 - 351.6 Strong (Alt) Fault>>											
<<Struc: 352.2 - 352.4 Strong (Alt) Fault>>											
355.53	**360.15**	**RHYvx** **Quartz and/or feldspar crystal tuff** **grey-green** **FMG**	355.53	356.53	1.00	B00269089	1.7	0.01	0.09	-0.01	0.18
355.53 - 360.15: Greenish grey, well foliated, moderately to strongly altered, fine to medium grained, quartz-muscovite schist/quartz crystal tuff. Alteration is patchy stringer zones (up to 20cm) of intense chlorite alteration in a pervasive, moderate, chlorite-sericite alteration. Mineralization is trace to locally 1% fine grained chalcopyrite associated with the intense chlorite altered stringers.											
<<Min: 355.53 - 360.15 0.5% Min: Chalcopyrite>> fine chalcopyrite associated with intense chlorite alteration.			356.53	357.53	1.00	B00269091	0.3	0.005	-0.01	-0.01	0.05
<<Struc: 355.53 - 355.85 Moderate-Strong (Alt) Vein>> quartz-chlorite-chalcpyrite vein.			357.53	358.53	1.00	B00269092	-0.3	-0.005	-0.01	-0.01	0.01
<<Struc: 359 - 359.4 Moderate-Strong (Alt) Fault>>			358.53	359.53	1.00	B00269093	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			359.53	360.15	0.62	B00269094	-0.3	-0.005	-0.01	-0.01	0.01
360.15	**361.00**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	360.15	361.00	0.85	B00269095	-0.3	-0.005	-0.01	-0.01	0.05
360.15 - 361: Grey, strongly altered, strongly faulted, fault zone in quartz-muscovite schist/quartz crystal tuff.											
<<Alt: 360.15 - 361 Moderate-Strong (Alt) Muscovite>> moderate to strong sericite alteration											
<<Struc: 360.15 - 361 Strong (Alt) Fault>>											
361.00	**367.00**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	361.00	362.00	1.00	B00269096	1.2	0.113	0.04	-0.01	0.64
361 - 367: Light to dark greenish-grey, well foliated, moderately to strongly altered, fine to medium grained, quartz-muscovite-chlorite schist/quartz crystal lapilli tuff. Alteration is patchy stringer zones (up to 20cm) of intense chlorite alteration in a pervasive, moderate, chlorite-sericite alteration. Mineralization is trace to locally 1% fine grained chalcopyrite associated with the intense chlorite altered stringers. Chl-cpy stringer at 362.2-362.4m with up to 1% cpy.											
<<Min: 361 - 367 0.25% Min: Sphalerite>> fine sphalerite veinlets associated with intense chlorite alteration.			362.00	363.00	1.00	B00269097	3.5	0.027	0.27	-0.01	0.23
<<Min: 361 - 367 0.5% Min: Chalcopyrite>> fine chalcopyrite associated with intense chlorite alteration.			363.00	364.00	1.00	B00269098	-0.3	-0.005	-0.01	-0.01	0.01
<<Alt: 361 - 367.85 Moderate (Alt) Muscovite>> weak to moderate pervasive sericite alteration			364.00	365.00	1.00	B00269099	-0.3	0.006	-0.01	-0.01	0.01
<<Alt: 361 - 367.85 Intense (Alt) Chlorite>> patchy stringers of chlorite alteration			365.00	366.00	1.00	B00269101	-0.3	-0.005	-0.01	-0.01	-0.01
<<Vein: 361.4 - 361.5 95% Quartz 75 deg. >> quartz vein			366.00	367.00	1.00	B00269102	-0.3	-0.005	-0.01	-0.01	-0.01
<<Struc: 361.4 - 361.5 Strong (Alt) Vein>> quartz vein											
367.00	**368.35**	**RHYi Aphanitic Rhyolite (intrusion) cream FG**	367.00	367.85	0.85	B00269103	-0.3	-0.005	0.02	-0.01	-0.01
367 - 368.35: Light grey to greenish grey, massive to weakly foliated, fine grained, moderately silicified, rhyolite dyke. Cut by 1cm wide quartz vein with silicification.											
<<Alt: 367.85 - 368.35 Weak-Moderate (Alt) Silicification>> silicification associated with quartz vein			367.85	368.35	0.50	B00269104	-0.3	-0.005	0.01	-0.01	-0.01
368.35	**373.10**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	368.35	369.35	1.00	B00269105	-0.3	-0.005	-0.01	-0.01	0.03
368.35 - 373.1: Grey to green, moderately to strongly foliated, fine grained, moderately to strongly altered, quartz-muscovite-chlorite schist/quartz crystal tuff. Alteration is moderate to strong chlorite stringer alteration in a pervasive sericite and weak chlorite alteration. Mineralization is trace to 0.5%, finely disseminated chalcopyrite associated with the chlorite stringers with a few narrow zones (<0.5cm) of sphalerite (and trace galena).											
<<Min: 368.35 - 373 0.25% Min: Sphalerite>> fine sphalerite veinlets associated with intense chlorite alteration.			369.35	370.35	1.00	B00269106	-0.3	-0.005	0.02	-0.01	0.12
<<Min: 368.35 - 373 0.5% Min: Chalcopyrite>> fine chalcopyrite associated with intense chlorite alteration.			370.35	371.35	1.00	B00269107	0.3	-0.005	0.03	-0.01	0.21
<<Alt: 368.35 - 373.1 Moderate (Alt) Muscovite>> moderate pervasive sericite alteration			371.35	372.35	1.00	B00269108	1.2	0.007	0.06	-0.01	0.38
<<Alt: 368.35 - 373.1 Intense (Alt) Chlorite>> patchy chlorite alteration associated with stringers			372.35	373.10	0.75	B00269109	-0.3	-0.005	-0.01	-0.01	0.07

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
373.10	**375.10**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	373.10	374.10	1.00	B00269111	1.1	-0.005	0.04	-0.01	0.22
373.1 - 375.1: Light grey, strongly foliated, strongly altered, fault zone in quartz crystal tuff.											
<<Min: 374.8 - 379.2 0.25% Min: Chalcopyrite>> fine chalcopyrite associated with intense chlorite alteration.			374.10	375.10	1.00	B00269112	0.4	-0.005	0.02	-0.01	0.02
<<Alt: 373.1 - 374.8 Moderate-Strong (Alt) Muscovite>> moderate to strong, pervasive, sericite alteration.											
<<Alt: 373.1 - 374.8 Moderate (Alt) Chlorite>> patchy chlorite alteration associated with stringers											
<<Alt: 374.8 - 379.2 Moderate (Alt) Muscovite>> moderate to strong, pervasive, sericite alteration.											
<<Alt: 374.8 - 379.2 Strong (Alt) Chlorite>> patchy chlorite alteration associated with stringers											
<<Struc: 373.1 - 374.8 Intense (Alt) Fault>> fault zone - core angle varies from 70o at upper contact to 10o at lower contact											
375.10	**379.20**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	375.10	376.10	1.00	B00269113	-0.3	-0.005	-0.01	-0.01	0.03
375.1 - 379.2: Light grey, well foliated, fine grained, weakly to moderately altered, quartz muscovite schist/ quartz crystal tuff. Alteration is weak to moderate pervasive sericite alteration with narrow zones of moderate to intense chlorite alteration (stringers). Mineralization is trace chalcopyrite (+- sphalerite) associated with chlorite alteration.											
			376.10	377.10	1.00	B00269114	1.2	0.013	0.12	-0.01	0.24
			377.10	378.10	1.00	B00269115	-0.3	-0.005	0.02	-0.01	0.19
			378.10	379.20	1.10	B00269116	1.1	-0.005	0.02	-0.01	0.19
379.20	**380.60**	**RHYva Coarse grained to ash tuff grey-green FG**	379.20	380.60	1.40	B00269117	-0.3	-0.005	0.02	-0.01	0.06
379.2 - 380.6: Light grey, well foliated, fine grained, quartz-muscovite-biotite schist/rhyolitic ash tuff. Quartz eyes have disappeared. Alteration is weak to moderate pervasive sericite (muscovite) alteration.											
<<Min: 379.2 - 388.8 0.5% Min: Pyrite>> scattered in stringers											
<<Min: 379.2 - 388.8 0.5% Min: Chalcopyrite>> in stringers with PY											
<<Alt: 379.2 - 380.6 Moderate (Alt) Muscovite>> moderate sericite alteration											
380.60	**381.80**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown FG**	380.60	381.80	1.20	B00269118	-0.3	-0.005	-0.01	-0.01	0.02
380.6 - 381.8: Grey-brown, well foliated, fine grained, biotite-carbonate schist/mafic dyke. Quartz vein at 381.2-381.4m.											
<<Vein: 381.3 - 381.5 95% Quartz 75 deg. >> quartz vein											
<<Struc: 381.3 - 381.5 Intense (Alt) Vein>> quartz vein											

From (m)	To (m)	Rocktype & Description
381.80	**404.40**	**RHYva Coarse grained to ash tuff grey FG**
381.8 - 404.4: Light grey, well foliated, fine grained, quartz-muscovite-biotite schist/rhyolite ash tuff. Alteration is weak to moderate pervasive sericite alteration, with narrow (5-10cm) zones of moderate to intense chlorite alteration associated with stringer zones.		
<<Min: 390.8 - 394.7 3% Min: Pyrite>> along fol'n		
<<Min: 392.5 - 394.7 0.5% Min: Sphalerite>> fine sphalerite veinlets associated with intense chlorite alteration.		
<<Min: 397.35 - 398.65 0.25% Min: Chalcopyrite>> fine chalcopyrite associated with quartz vein		
<<Alt: 381.8 - 392.5 Moderate (Alt) Chlorite>> patchy chlorite alteration associated with stringers		
<<Alt: 381.8 - 408 Moderate (Alt) Muscovite>> moderate sericite alteration		
<<Alt: 392.5 - 394.7 Intense (Alt) Chlorite>> intense CL alt'n		
<<Alt: 402 - 408 Moderate (Alt) Chlorite>> bands of CL-BI alteration		
<<Vein: 385.7 - 385.9 95% Quartz 45 deg. >> quartz vein		
<<Vein: 397.35 - 397.45 95% Quartz-Chalcopyrite 75 deg. >> quartz vein with tr cpy		
<<Vein: 398.5 - 398.65 95% Quartz-Chalcopyrite 60 deg. >> quartz vein with tr cpy		
<<Vein: 402.3 - 402.6 95% Quartz-Chalcopyrite 80 deg. >> quartz vein with tr cpy		
<<Vein: 403 - 403.15 95% Quartz-Chalcopyrite 80 deg. >> quartz vein with tr cpy		
<<Vein: 404.1 - 404.2 95% Quartz-Chalcopyrite 80 deg. >> quartz vein with tr cpy		
<<Vein: 404.1 - 404.3 95% Quartz-Chalcopyrite 80 deg. >> quartz vein with tr cpy		
<<Struc: 385.7 - 385.9 Intense (Alt) Vein>> quartz vein with trace spalerite		
404.40	**407.20**	**MAFt Mafic Volcaniclastics green-brown FG**
404.4 - 407.2: Dark green, weakly foliated, fine grained, chlorite-biotite schist/basalt flow or basalt tuff? Chlorite rich matrix with small porphyroblastic biotite and or actinolite crystals. The chlorite doesn't look like alteration in this rock it looks like a metamorphosed mafic rock (i.e. basalt).		
<<Min: 405 - 408 0.5% Min: Chalcopyrite>> finely disseminated chalcopyrite, also in stringers with PO-PY		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
381.80	382.80	1.00	B00269119	-0.3	-0.005	-0.01	-0.01	0.03
382.80	383.80	1.00	B00269121	-0.3	-0.005	-0.01	-0.01	0.03
383.80	384.80	1.00	B00269122	0.4	-0.005	0.01	-0.01	0.14
384.80	385.80	1.00	B00269123	0.3	-0.005	0.02	0.01	0.21
385.80	386.80	1.00	B00269124	5.6	-0.005	-0.01	0.08	1.67
386.80	387.80	1.00	B00269125	0.6	-0.005	0.01	-0.01	0.1
387.80	388.80	1.00	B00269126	-0.3	-0.005	-0.01	-0.01	0.04
388.80	389.80	1.00	B00269127	-0.3	-0.005	-0.01	-0.01	0.04
389.80	390.80	1.00	B00269128	1.9	-0.005	0.02	0.02	0.03
390.80	391.80	1.00	B00269129	1.3	0.006	0.07	-0.01	0.49
391.80	392.80	1.00	B00269131	-0.3	-0.005	0.01	-0.01	0.22
392.80	393.80	1.00	B00269132	1.3	-0.005	0.03	0.01	0.67
393.80	394.80	1.00	B00269133	0.5	-0.005	-0.01	-0.01	0.05
394.80	395.80	1.00	B00269134	-0.3	-0.005	-0.01	-0.01	0.03
395.80	396.80	1.00	B00269135	-0.3	-0.005	-0.01	-0.01	0.05
396.80	397.80	1.00	B00269136	0.6	-0.005	0.01	-0.01	0.14
397.80	399.00	1.20	B00269137	-0.3	-0.005	0.01	-0.01	0.12
399.00	400.00	1.00	B00269138	-0.3	-0.005	0.02	-0.01	0.08
400.00	401.00	1.00	B00269139	-0.3	-0.005	0.01	-0.01	0.06
401.00	402.00	1.00	B00269141	0.7	-0.005	-0.01	-0.01	0.05
402.00	403.90	1.90	B00269142	0.6	-0.005	0.02	-0.01	0.04
403.90	404.40	0.50	B00269143	1.8	-0.005	0.05	-0.01	0.06
404.40	405.40	1.00	B00269144	2.2	-0.005	0.05	0.01	0.11
405.40	406.40	1.00	B00269145	1.5	-0.005	0.03	0.01	0.16
406.40	407.20	0.80	B00269146	3.8	0.006	-0.01	0.02	0.1

From (m)	To (m)	Rocktype & Description
407.20	**414.00**	**SED undifferentiated Sediment green-brown FG**

407.2 - 414: Dark grey to brown, well foliated, fine grained biotite-quartz-chlorite schist/meta-pelite. This pelitic metasediment is interbedded with several small bands of siliceous siltstone. This unit is cut by several large 10-20cm quartz veins.

<<Min: 413.8 - 414 0.25% Min: Galena>> fine silver mineral within quartz vein (galena?)

<<Alt: 408 - 414 Strong (Alt) Chlorite>> CL-BI SCHS, pervasive alteration, siliceous bands

<<Vein: 413.4 - 413.7 90% Quartz 75 deg. >> quartz vein

<<Vein: 413.8 - 414 90% Quartz 75 deg. >> quartz vein with trace fine silver mineralization (galena?)

End of Hole @ 414

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
407.20	408.20	1.00	B00269147	1.9	0.005	0.09	-0.01	0.04
408.20	409.20	1.00	B00269148	-0.3	-0.005	-0.01	-0.01	0.02
409.20	410.20	1.00	B00269149	1.8	0.007	0.1	-0.01	0.03
410.20	411.20	1.00	B00269151	-0.3	-0.005	-0.01	-0.01	0.02
411.20	412.20	1.00	B00269152	-0.3	-0.005	-0.01	-0.01	0.02
412.20	413.20	1.00	B00269153	-0.3	-0.005	-0.01	-0.01	-0.01
413.20	414.00	0.80	B00269154	-0.3	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-248

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	05-Sep-15
UTM Easting	415203.339	Core Size:	HQ3	Azimuth:	0.53	Date Logging Complete:	12-Sep-15
UTM Northing:	6815282.948	Casing Pulled?:	Yes	Dip:	-75	Drill Company:	Geotech
UTM Elev. (m):	1424.375	Casing Depth (m):	18	Length (m):	278.5	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	04-Sep-15
Local Northing:		Cemented?:	VWP	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Sep-15
Local Elev. (m):						Purpose:	Resource/Hydro
						Parent Hole:	

Comments:

Drill hole DDH K15-248 was drilled to test possible mineralization in a down-dropped fault block to the southeast of the main deposit.
From top to bottom, the hole intersects carbonaceous sediments and tuffs, coarse crystal lithic tuff and felsic tuff. Broken rock and fault gouge sections are common above 156.88m. A strongly disseminated and semi-massive sulphide horizon occurs at the base of the tuff near the contact with the underlying mafic tuff and may correlate with the ore horizon. Three intervals of glassy rhyolite intrude the sequence. The bottom of the hole is composed of felsic tuff and ash, cut by a fault zone marked with strong muscovite alteration and intense brecciation and fault gouge.

20-130m: carbonaceous mudstone/tuff sequence (MDSc and MDSt)
Includes 93-117: Glassy rhyolite dyke (RHYi)

130-134m: mafic dyke or tuff (MAFi).

134-199m: coarse xtal lithic tuff (or fspar porphyry) (RHYif), with local bands of heavy sulphide disseminations, also includes a few mafic intervals (1 to 3m thick).

199-204.7m: glassy rhyolite dyke (RHYi).

204.7-207.5m: Felsic tuff (RHY), loc w bands of heavy sulphide disseminations, including a 25 cm semi- massive band of po-py, possibly a weak expression of the main sulphide horizon.

207.5 - 224m: mafic tuff.
Includes 211.5-217: glassy rhyolite dyke, strongly veined and silicified with silicified selvages. Qtz-po-py-tourm veins.

224m to 278.5m (eoh): felsic lapilli and ash tuff (RHYvl, RHYva and RHY) w 1-4% diss py-po. Short sections of fault gouge are present every 2 to 3m.
Includes 244 to 266.5m: Fault zone marked by intense brecciation, fault gouge, strong sericite and diss pyrite(quartz) (overprint?) alteration.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	0.53	0	0.53	APS	Cooper Campbell	08-Sep-15		☑	
42	-77.3	351.6	22.5	14.1	ReflexEZS	Geotech	05-Sep-15	5746	☑	
69	-77.8	350.7	22.5	13.2	ReflexEZS	Geotech	06-Sep-15	5750	☑	
93	-79.2	347.6	22.5	10.1	ReflexEZS	Geotech	06-Sep-15	5772	☑	
117	-79.3	347.3	22.5	9.8	ReflexEZS	Geotech	07-Sep-15	5744	☑	
141	-79.9	347.3	22.5	9.8	ReflexEZS	Geotech	07-Sep-15	5234	☑	
165	-81.2	347.1	22.5	9.6	ReflexEZS	Geotech	08-Sep-15	5754	☑	

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
195	-81.5	349.8	22.5	12.3	ReflexEZS	Geotech	08-Sep-15	5769	☑	
219	-82.6	348.2	22.5	10.7	ReflexEZS	Geotech	08-Sep-15	5758	☑	
246	-84	347.5	22.5	10	ReflexEZS	Geotech	09-Sep-15	5763	☑	
278.5	-85.6	355.6	22.5	18.1	ReflexEZS	Geotech	08-Sep-15	5751	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 21.00 OVBN Overburden

21.00 25.00 MDU carbonaceous mudstone upper sequence

<<Min: 21 - 38.92 15% Min: Calcite>>

<<Min: 21 - 49.7 0.01% Min: Pyrite>>

<<Min: 21 - 49.7 2% Min: Pyrrhotite>> WIS/VN

<<Alt: 21 - 49.7 Moderate (Alt) Muscovite>>

<<Alt: 21.43 - 211.58 Weak (Alt) Chlorite>>

<<Vein: 21.88 - 48 15% Quartz-Chlorite 50 deg. >> QZ-CA-CL-PO-PY

<<Struc: 21 - 54.3 Strong (Alt) Fault>> Zone with abundant foliation parallel fractures and faults filled with broken rock and gouge. Strong gouge zones up to 50 cm. Faults spaced cm apart.

25.00 30.38 MDU carbonaceous mudstone upper sequence

30.38 49.70 MDU carbonaceous mudstone upper sequence

30.38 - 49.7: Narrow zone of MDSw. Too small for scale of section.

<<Min: 38.92 - 52.16 1% Min: Calcite>>

49.70 93.26 RHYvl Lapilli tuff

49.7 - 93.26: ##################

<<Min: 49.7 - 73.4 0.01% Min: Sphalerite>>

<<Min: 49.7 - 73.4 0.01% Min: Pyrite>> VN

<<Min: 49.7 - 73.4 0.5% Min: Pyrrhotite>> VN

<<Min: 49.7 - 73.4 0.01% Min: Chalcopyrite>>

<<Min: 52.16 - 73.65 5% Min: Calcite>>

<<Min: 73.4 - 93.26 0.01% Min: Pyrite>> VN

<<Min: 73.4 - 93.26 0.01% Min: Pyrrhotite>> VN

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 73.65 - 93.65 10% Min: Calcite>>
<<Alt: 49.7 - 54 Strong (Alt) Muscovite>>
<<Alt: 49.7 - 58.23 Trace (Alt) Chlorite>>
<<Alt: 54 - 73.65 Moderate (Alt) Muscovite>>
<<Alt: 58.23 - 89.36 Weak (Alt) Chlorite>>
<<Alt: 73.65 - 89.36 Weak (Alt) Muscovite>>
<<Alt: 89.36 - 93.26 Moderate (Alt) Muscovite>>
<<Alt: 92.18 - 93.26 Moderate (Alt) Silicification>>
<<Vein: 49.7 - 52.72 75% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-CL-PO-PY-CP
<<Vein: 70.36 - 70.82 20% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-PY-CL-SP
<<Vein: 73.65 - 180.17 15% Quarzt-Tourmaline-Sulphide 50 deg. >> QZ-TO-CA-PY
<<Vein: 92.88 - 93.41 25% Quarzt-Chlorite-Carbonate 60 deg. >> QZ-CL-CA-PY

93.26 116.81 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 93.26 - 118.98 0.01% Min: Pyrite>> FD
<<Min: 93.26 - 118.98 0.01% Min: Pyrrhotite>> FD, VN, FRA
<<Min: 93.65 - 116.81 3% Min: Calcite>>
<<Alt: 93.26 - 116.81 Trace (Alt) Muscovite>>
<<Alt: 93.26 - 118.98 Strong (Alt) Silicification>>

116.81 129.80 MDSt Rhyolite tuff dominant mudstone

116.81 - 129.8: Possible weak proximal alteration zone.

<<Min: 116.81 - 129.8 5% Min: Calcite>> also veins
<<Min: 116.81 - 138.6 0.01% Min: Pyrite>> WIS
<<Min: 116.81 - 138.6 0.01% Min: Pyrrhotite>> WIS
<<Alt: 116.81 - 121.7 Moderate (Alt) Muscovite>>
<<Alt: 118.98 - 121.7 Moderate (Alt) Silicification>>
<<Alt: 121.7 - 134 Weak (Alt) Muscovite>>
<<Alt: 121.7 - 134.61 Weak (Alt) Chlorite>>
<<Alt: 126 - 130.23 Weak (Alt) Cordierite>>
<<Vein: 117.03 - 118.47 10% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-PY-PO
<<Vein: 124.73 - 138.6 10% Quartz-Carbonate-Sulphide 55 deg. >> QZ-CA-CHL-PY
<<Struc: 118.78 - 119.03 Strong (Alt) Fault>> Fault gouge zone. Strong intensity.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

129.80 134.61 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

129.8 - 134.61: Possible weak calcite after CI alteration.

<<Min: 129.8 - 134.61 10% Min: Calcite>> also veins

134.61 138.10 RHYvx Quartz and/or feldspar crystal tuff

134.61 - 138.1: Coarse euhedral feldspar xtals. Includes some lapilli? First logged as fspar porphyry intrusion.

<<Min: 134.61 - 170.1 1% Min: Calcite>>

<<Alt: 134.61 - 138.1 Moderate (Alt) Muscovite>>

<<Struc: 134.87 - 144.9 Strong (Alt) Fault>> Faulted zone with faults measuring up to tens of cm. Faults filled with broken rock and abundant gouge. Strong intensity. Spaced tens of cm apart.

138.10 138.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Alt: 138.1 - 138.6 Weak (Alt) Chlorite>>

138.60 170.10 RHYvx Quartz and/or feldspar crystal tuff

138.6 - 170.1: Coarse euhedral feldspar xtals, w some qtz 'eyes'. Includes some lapilli? First logged as fspar porphyry intrusion.

<<Min: 138.6 - 155.35 0.5% Min: Pyrite>>

<<Min: 138.6 - 155.35 0.01% Min: Pyrrhotite>>

<<Min: 155.35 - 160.54 1% Min: Pyrite>>

<<Min: 160.54 - 170.1 0.5% Min: Pyrite>> FRA, BL

<<Min: 160.54 - 170.1 0.01% Min: Pyrrhotite>>

<<Alt: 138.6 - 173.02 Moderate (Alt) Muscovite>>

<<Vein: 142.2 - 170.3 3% Quartz-Carbonate-Sulphide 55 deg. >> QZ-CA-CHL-PY

<<Struc: 144.9 - 156.88 Strong (Alt) Fault>> Faulted zone with faults measuring up to tens of cm. Faults filled with broken rock and abundant gouge. Strong intensity. Spaced metres apart.

170.10 173.02 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 170.1 - 173.02 0.5% Min: Pyrite>>

<<Min: 171 - 173.02 15% Min: Calcite>>

<<Vein: 170.3 - 173.02 3% Calcite 60 deg. >> CRENULATED

From (m)	To (m)	Rocktype & Description
173.02	**195.32**	**RHYvx** **Quartz and/or feldspar crystal tuff**

173.02 - 195.32: Coarse euhedral feldspar xtals. Includes some lapilli? Fist logged as fspar porphyry intrusion.

<<Min: 173.02 - 181.6 1% Min: Calcite>>
<<Min: 173.02 - 185 5% Min: Pyrrhotite>>
<<Min: 173.02 - 186.4 1% Min: Pyrite>>
<<Min: 181.6 - 182.03 15% Min: Calcite>>
<<Min: 182.03 - 195.32 1% Min: Calcite>>
<<Min: 185 - 186.4 3% Min: Pyrrhotite>>
<<Min: 186.4 - 195.32 1% Min: Pyrite>>
<<Min: 186.4 - 195.32 3% Min: Pyrrhotite>>
<<Min: 194.32 - 204.67 0.01% Min: Pyrrhotite>> FD & VN
<<Alt: 173.24 - 192.67 Moderate (Alt) Muscovite>>
<<Alt: 184.7 - 186.6 Weak (Alt) Chlorite>> Loc CL replacement of groundmass and some fspars?
<<Vein: 184.35 - 185.81 25% Quartz-Carbonate-Sulphide 40 deg. >> QZ-CA-PO-PY
<<Struc: 174.36 - 174.37 dominant foliation>>
<<Struc: 176.04 - 176.05 Foliation>> foliaform sulphide band
<<Struc: 179.64 - 179.65 dominant foliation>>

195.32	**196.44**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 195.32 - 196.44 10% Min: Calcite>>
<<Min: 195.32 - 204.67 0.5% Min: Pyrite>> FD & VN
<<Vein: 195.32 - 196.44 1% Calcite 60 deg. >>

196.44	**198.82**	**RHYvx** **Quartz and/or feldspar crystal tuff**

196.44 - 198.82: more strongly strained, silicified in HW large qtz vein. Coarse euhedral feldspar xtals. Includes some lapilli? First logged as fspar porphyry intrusion.

<<Min: 196.44 - 204.67 2% Min: Calcite>>
<<Alt: 196.44 - 198.82 Weak (Alt) Muscovite>>

198.82	**204.67**	**RHYi** **Aphanitic Rhyolite (intrusion)**

198.82 - 204.67: Fg silicified rx w small diss chl-py flecks and po in veinlets. Glassy dyke. Cut by c.g. qtz-carb-po veins.Tr musc on fractures. No musc in rx.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.20	179.70	1.50	B00266758	0.9	-0.005	-0.01	-0.01	-0.01
184.90	186.40	1.50	B00266759	0.6	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description

<<Alt: 198.82 - 204.67 Strong (Alt) Silicification>> overprint from glassy dyke?

<<Vein: 198.82 - 204.67 30% Quartz-Carbonate-Sulphide 45 deg. >> Variable orientation.

204.67 207.42 RHY undifferentiated rhyolite

204.67 - 207.42: tuffaceous? May include f.g. biot-rich mafic dyke or tuff (0.8 m w carb alt)? Some vuggy sulphide rich bands (1 cm) plus one 20 cm interval of semi-massive sulphide.

<<Min: 204.67 - 207.42 5% Min: Pyrite>> tr semi-massive (15 cm)

<<Min: 204.67 - 207.42 3% Min: Pyrrhotite>> tr semi-massive

<<Min: 204.67 - 209.6 15% Min: Calcite>> Also VN

<<Alt: 204.67 - 207.42 Weak (Alt) Muscovite>>

<<Alt: 204.67 - 207.42 Weak (Alt) Chlorite>>

<<Vein: 204.67 - 211.58 1% Carbonate-Chlorite 50 deg. >> CA-QZ-CL 1=10 mm and py-po stringers and heavy diss 1-15 cm

<<Struc: 207.15 - 207.16 Foliation>> sulphide band approx// to foln. NNW strike, W dip, sl discordant?

<<Struc: 207.4 - 207.4 dominant foliation>>

207.42 211.58 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

207.42 - 211.58: flow, tuff or dyke? Carb veinlets and blebs, loc magnetic. From 209.6-210.4: bleached and musc altered or RHYvl?

<<Min: 207.42 - 209.6 0.5% Min: Pyrite>> Also FDS

<<Min: 207.42 - 209.6 3% Min: Pyrrhotite>> Also FDS

<<Min: 209.6 - 210.9 10% Min: Calcite>> pervasive and veinlets

<<Min: 210.43 - 211.58 1% Min: Pyrite>> also in veinlets

<<Min: 210.43 - 211.58 1% Min: Pyrrhotite>> also in veinlets

<<Min: 210.9 - 216.88 4% Min: Calcite>> in qtz veins

<<Alt: 207.42 - 209.6 Weak (Alt) Muscovite>>

<<Alt: 209.6 - 211.58 Moderate (Alt) Muscovite>>

<<Alt: 211.5 - 217.53 Strong (Alt) Silicification>> Associated w glassy rhy dyke. Alt halo 60 cm into lower contact.

211.58 216.88 RHYi Aphanitic Rhyolite (intrusion)

211.58 - 216.88: greyish aphanitic v siliceous rx w greenish sericite along fractures. Py Po diss and along discontinuous // fractures,sub //w carbonate veins, both cut by qtz-fspar- brown tourm and qtz-po-(py) veins.

<<Min: 211.58 - 216.88 3% Min: Pyrite>> also diss

<<Min: 211.58 - 216.88 3% Min: Pyrrhotite>> also diss

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
204.67	205.42	0.75	B00266761	-0.3	-0.005	-0.01	-0.01	-0.01
205.42	206.92	1.50	B00266762	0.4	-0.005	-0.01	-0.01	-0.01
206.92	207.42	0.50	B00266763	0.7	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 211.58 - 216.88 5% Quartz-Carbonate-Sulphide 60 deg. >> earliest? Mm- to rare cm- sized qtz-po-py-(brown tourm) veins w strong alteration halo. Sulphides appear remobilized and/or deformed: follow vein foliation and are interstitial to deformed gangue grains.

<<Vein: 211.58 - 216.88 2% Quartz-Carbonate 40 deg. >>

<<Vein: 211.58 - 216.88 0.5% Pyrrhotite 30 deg. >> irregular stringers

216.88 223.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

216.88 - 223.8: w carbonate veinlets and blebs, loc poss amygdules, calcareous.

<<Min: 216.88 - 223.5 1% Min: Pyrite>> includes two sections py 2-5% over 20cm

<<Min: 216.88 - 223.5 1% Min: Pyrrhotite>> includes two sections py 2-5% over 20cm

<<Min: 216.88 - 223.8 10% Min: Calcite>> pervasive and in veins

<<Alt: 216.88 - 223.8 Weak (Alt) Muscovite>>

<<Vein: 216.88 - 219.1 1% Quartz-Carbonate 50 deg. >> Planar, rougly foliaform, 1-1.5 cm, from RHYi?

<<Vein: 216.88 - 223.8 2% Quartz-Carbonate 60 deg. >> mostly carbonate

<<Struc: 218.4 - 218.41 dominant foliation>>

223.80 235.25 RHYvl Lapilli tuff

223.8 - 235.25: Faint discontinous fx and/ or bands (lapilli?), rare qtz. (possible altered mafic rx, obscured by sericitic alteration caused by faulting?)

<<Min: 223.8 - 255 1% Min: Calcite>>

<<Min: 231 - 237.45 0.5% Min: Pyrite>> loc 1%

<<Min: 231 - 237.45 0.5% Min: Pyrrhotite>> loc 1%

<<Alt: 223.8 - 243.8 Moderate (Alt) Muscovite>> musc-ser increases w deformation, locintense ass w fault gouge.

235.25 243.80 RHYva Coarse grained to ash tuff

235.25 - 243.8: Finer grained, w short sections of lapilli tuff, w short very flat po seams // to foln (selective replacement of fx (fiamme?) or dismembered veinlet.

<<Min: 237.45 - 243.65 1% Min: Pyrite>> thin flat py-po seams // foln (dismembered?)

<<Min: 237.45 - 243.65 1% Min: Pyrrhotite>> thin flat py-po seams // foln (dismembered?)

<<Min: 243.65 - 278.5 3% Min: Pyrite>> Irregular grey patches of qtz w diss py, ranging between 1 and 3 %, with sort sections of bands of 5% fg diss py.

<<Struc: 239.85 - 239.86 dominant foliation>> E-W strike/ 30N

243.80 278.50 RHY undifferentiated rhyolite

243.8 - 278.5: Strong sericite alteration and faulting obscures textures. Greenish, w common grey patches and bands of fg qtz-sulph

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 255 - 261 3% Min: Calcite>> on fractures

<<Min: 261 - 278.5 0.5% Min: Calcite>>

<<Alt: 247.84 - 271.2 Strong (Alt) Muscovite>> Greenish, associated w fault.

<<Alt: 271.2 - 278.5 Moderate (Alt) Muscovite>> Greenish, associated w fault.

<<Struc: 250.8 - 257.8 Strong (Alt) Fault>> Fault zone, intense gouge, brecciation and core loss, w some sections of competent rock. At approx 253m: 0.4 m of carbonaceous clayey slicked material. Rx more competent from 263 but still core loss and some gouge sections. Lower contact of gouge at 266.5 is discordant at 60 deg CA, i.e.perpendicular to dominant foliation.

<<Struc: 260.4 - 262.2 Strong (Alt) Fault>>

<<Struc: 260.8 - 260.85 dominant foliation>>

<<Struc: 269.7 - 269.71 dominant foliation>> E-W strike/ 40N

<<Struc: 278.25 - 278.26 dominant foliation>>

End of Hole @ 278.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-249

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	06-Sep-15
UTM Easting	415047.545	Core Size:	NQ3	Azimuth:	180.16	Date Logging Complete:	07-Sep-15
UTM Northing:	6815301.286	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1385.397	Casing Depth (m):	9	Length (m):	68	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	07-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

The purpose of this hole is to test the near surface extension of the massive sulphide lens (MET7 Domain). Results confirm the presence of this extension of the massive sulphide lens (MET7) to surface interface. Massive sulphide is present at the top of hole from 10.95m and extends to 14.26m (OA, OB) (MET7), from 17.94m to 18.64m (OB) and from 20.43m to 20.63m (OA). The structural hanging wall is composed of mafic rocks intruded by a grey, glassy felsic dike. Muscovite alteration increases towards the massive sulphide lens. Chlorite alteration is pervasive in the mafic units. Silicification is pervasive in proximity to the felsic intrusive.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.16	0	180.16	APS	David Nuttal	05-Sep-15		☑	
20	-62	157.5	22.5	180	ReflexEZS	Geotech	05-Sep-15	5714	☑	
45	-63.4	160.4	22.5	182.9	ReflexEZS	Geotech	06-Sep-15	5832	☑	
68	-62.9	160.2	22.5	182.7	ReflexEZS	Geotech	06-Sep-15	5743	☑	

From (m)	To (m)	Rocktype & Description
0.00	**9.00**	**CASN Casing**
9.00	**10.95**	**OVBN Overburden**
9 - 10.95: Mafic biotite, chlorite, garnet schist. Unusual to deposit lithologies and considered to be overburden.		
<<Min: 9 - 15 3% Min: Calcite>>		
10.95	**14.26**	**OA Magnetite bearing sulphides**
10.95 - 14.26: MET3 - Magnetite bearing, Pb poor, Cu rich massive sulphide.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
10.95	11.95	1.00	B00268664	196	1.49	2.51	2.46	13
11.95	12.81	0.86	B00268665	195	0.865	0.62	6.83	18.4
12.81	13.40	0.59	B00268666	140	2.28	2.37	1.61	3.62
13.40	14.26	0.86	B00268667	164	1.1	2.58	3.36	10.7

From (m)	To (m)		Rocktype & Description
14.26	**17.94**	**RHY**	**undifferentiated rhyolite**

14.26 - 17.94: Strong Mu/Ms alteration and calcite bands or flattened clots.

<<Min: 14.26 - 17.94 3% Min: Pyrite>>

<<Min: 15 - 20.66 10% Min: Calcite>>

<<Alt: 14.26 - 17.94 Weak (Alt) Muscovite>>

<<Struc: 14.4 - 20 Weak (Alt) Fault>> fracture/fault zone contains 4 gouge locations, each less than 1 meter apart.

From (m)	To (m)		Rocktype & Description
17.94	**18.64**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

17.94 - 18.64: MET7 - Non magnetite bearing, Pb poor, Cu poor

From (m)	To (m)		Rocktype & Description
18.64	**20.43**	**RHYcq**	**Quartz porphyry**

18.64 - 20.43: Calcite bands and minor chlorite present - skeptical about Felsic/Mafic origins.

<<Min: 18.64 - 20.43 3% Min: Pyrite>>

<<Alt: 18.64 - 20.43 Moderate (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description
20.43	**20.63**	**OA**	**Magnetite bearing sulphides**

20.43 - 20.63: MET4 - Cu poor, Pb poor, magnetite bearing.

From (m)	To (m)		Rocktype & Description
20.63	**45.08**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

20.63 - 45.08: From 32.12m to 35.7m possible felsic intercept.

<<Min: 20.66 - 29 20% Min: Calcite>>

<<Min: 20.66 - 45.08 0.5% Min: Pyrite>>

<<Min: 20.66 - 45.08 0.5% Min: Pyrrhotite>>

<<Min: 29 - 32 30% Min: Calcite>>

<<Min: 32 - 45 20% Min: Calcite>>

<<Min: 45 - 60 12% Min: Calcite>>

<<Alt: 20.66 - 30.3 Moderate (Alt) Chlorite>>

<<Alt: 30.3 - 32 Weak (Alt) Chlorite>>

<<Alt: 32 - 35.75 Trace (Alt) Muscovite>>

<<Alt: 32 - 35.75 Trace (Alt) Chlorite>>

<<Alt: 35.75 - 37 Weak (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.26	15.76	1.50	B00268668	3.4	0.017	0.02	0.06	0.12
15.76	17.26	1.50	B00268669	11.2	0.067	0.02	0.02	0.11
17.26	17.94	0.68	B00268671	0.9	0.008	-0.01	-0.01	0.01
17.94	18.64	0.70	B00268672	140	0.608	0.37	2.91	6.85
18.64	19.84	1.20	B00268673	6.7	0.064	0.18	0.04	0.11
19.84	20.43	0.59	B00268674	16.9	0.114	0.14	0.22	0.75
20.43	21.43	1.00	B00268675	57	0.133	0.04	0.9	2.42
21.43	22.93	1.50	B00268676	0.3	0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 37 - 44 Moderate (Alt) Chlorite>>

<<Alt: 44 - 45.08 Weak (Alt) Chlorite>>

<<Struc: 22.6 - 25 Weak (Alt) Fault>> 2 small fractures/faults (<5cm)

<<Struc: 25.88 - 25.88 dominant foliation>>

<<Struc: 30.52 - 30.52 dominant foliation>>

<<Struc: 31.16 - 31.16 dominant foliation>>

<<Struc: 40.55 - 40.55 dominant foliation>>

45.08 68.00 RHYi Aphanitic Rhyolite (intrusion)

45.08 - 68: Red subround to sub angular Fe-oxide altered porphyroblasts, 0.5 - 1mm diameter. Foliation is closely spaced near bottom of the interval adjacent to structurally overlying fault.

<<Min: 45.08 - 68 3% Min: Pyrite>>

<<Alt: 45.08 - 48 Moderate (Alt) Silicification>>

<<Alt: 48 - 53 Strong (Alt) Silicification>>

<<Alt: 50 - 68 Weak (Alt) Muscovite>>

<<Alt: 53 - 68 Moderate (Alt) Silicification>>

<<Vein: 49.7 - 53 20% Quartz>>

<<Struc: 48.3 - 58 Weak (Alt) Fault>> fault zone: rock interval is heavily fractured and abundant with rock gouge.

<<Struc: 66.3 - 66.9 Weak (Alt) Fault>> 2 small faults (<5cm gouge)

End of Hole @ 68

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-250

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	06-Sep-15
UTM Easting	414702.206	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	08-Sep-15
UTM Northing:	6815768.295	Casing Pulled?:	Yes	Dip:	-51	Drill Company:	Geotech
UTM Elev. (m):	1420.535	Casing Depth (m):	6	Length (m):	251	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	05-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Hole K15-250 was drilled to test the continuity and the extension of the lower sulphide lens (MET7).
The upper units are made up coherent and lapilitic rhyolite crosscut by mafic dykes. Above a shear zone, the massive sulphide is intersected from 183.48m to 187.81m within a mineralized zone (PY/CP/PO/SP/MG/GL/AS) extending from 180.42m to 190.90m. Both the hanging-wall and footwalls show strong chlorite alteration with CP/PO stringers. The ore body, made up of OA and Ob as well as OI and OJ domains on the edge, lies direclty above by a narrow rhyolitic unit crosscut by a mafic sill at 205.20m. A short felsic dyke (extending from 207.51m to 208.08m) intrudes this unit.
A mafic unit from 217.20m to 229.80m hosts green-grey alteration associated with a felsic aphanitic dyke (RHYi). Rhyolite, present from 235.63m to EOH at 251.0 is strongly muscovite altered.
The thickness of the green-grey alteration zone is particularly significant in hole K15-250.
Hole K15-250 (dip: 51) is part of a fan including hole K15-253 (dip: 65) and hole K15-257 (dip: 81).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-51	181.06	0	181.06	APS	Jerome de Pasquale	06-Sep-15		☑	
26	-51.4	159.1	22.5	181.6	ReflexEZS	Geotech	06-Sep-15	5757	☑	
50	-52.6	160.2	22.5	182.7	ReflexEZS	Geotech	06-Sep-15	5865	☑	
75	-54	163	22.5	185.5	ReflexEZS	Geotech	06-Sep-15	5775	☑	
101	-54.9	164.1	22.5	186.6	ReflexEZS	Geotech	06-Sep-15	5710	☑	
125	-55.3	163.4	22.5	185.9	ReflexEZS	Geotech	06-Sep-15	5709	☑	
152	-54.9	161.1	22.5	183.6	ReflexEZS	Geotech	06-Sep-15	5740	☑	
176	-54.9	160.8	22.5	183.3	ReflexEZS	Geotech	06-Sep-15	5802	☑	
201	-55.6	166.6	22.5	189.1	ReflexEZS	Geotech	06-Sep-15	5663	☑	
227	-56.1	170.9	22.5	193.4	ReflexEZS	Geotech	06-Sep-15	5817	☑	
251	-56.3	171.2	22.5	193.7	ReflexEZS	Geotech	06-Sep-15	5829	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.60**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.60 26.43 RHYvx Quartz and/or feldspar crystal tuff grey-green

6.6 - 26.43: QZ eyes. Curdy texture and flow locally.

<<Min: 6.6 - 35.53 0.5% Min: Pyrite>>

<<Min: 6.6 - 35.53 0.5% Min: Pyrrhotite>> Elongated, rare veinlets.

<<Min: 6.6 - 83 2% Min: Calcite>> and selective replacement. In MAFi and also in flow banding

<<Vein: 17.24 - 17.52 Quartz-Carbonate>> QZ/CA vein with oxidation trace.

<<Vein: 26.33 - 27.45 Calcite>> CA veinig in MAFi.

<<Struc: 22.8 - 22.81 dominant foliation>>

26.43 28.48 MAFi Mafic Intrusions (primarily footwall mafic intrusion) medium grey

26.43 - 28.48: Two dykes, two different composition. No BI on the margins. CA veining, weak schistosity..

28.48 33.66 RHYvx Quartz and/or feldspar crystal tuff grey-green

28.48 - 33.66: QZ eyes. Flow and curdy. Dyke from 31.84 to 32.07m containing AK.

<<Min: 31.84 - 32.07 10% Min: Ankerite>> Probably also AK in rhyolite.

<<Struc: 29.19 - 29.2 dominant foliation>>

<<Struc: 32.07 - 32.08 Contact>> Between MAFi and RHYcw.

33.66 35.33 RHYvl Lapilli tuff grey-green

33.66 - 35.33: Sharpe upper contact.

<<Struc: 34.77 - 34.78 dominant foliation>>

35.33 38.21 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

35.33 - 38.21: Flow banded.

<<Min: 35.53 - 83 2% Min: Calcite>> Veining and probably selective replacement.

<<Min: 35.53 - 149 2% Min: Pyrrhotite>> Elongated, in the foliation.

38.21 48.94 RHYvx Quartz and/or feldspar crystal tuff grey-green

38.21 - 48.94: QZ eyes.

<<Struc: 42.2 - 44.48 Moderate (Alt) Fault>> Fault gouge, angle estimated. Core loss. Major.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

48.94 67.51 RHYvl Lapilli tuff grey-green

48.94 - 67.51: Strongly lapilitic from 59m or fragmented flow. CL altered, weakly.

<<Alt: 62.49 - 72.27 Weak (Alt) Chlorite>> Stronger at dyke proximity.

<<Vein: 50.15 - 52.3 Quartz-Carbonate>> QZ/CA and brown BI, lower contact vwith mafic dyke.

<<Vein: 57 - 57.05 Tourmaline 20 deg. >> TML veinlet.

<<Struc: 52.85 - 52.86 dominant foliation>>

<<Struc: 56 - 56.01 dominant foliation>>

<<Struc: 61.65 - 61.66 dominant foliation>>

<<Struc: 64.5 - 64.51 Foliation>> Secondary foliation.

<<Struc: 64.6 - 64.61 dominant foliation>>

67.51 72.27 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

67.51 - 72.27: Speudofragmental flow, CL intense at contact with dyke, secondary foliation. Could be lapili.

72.27 79.41 RHYva Coarse grained to ash tuff grey-green

72.27 - 79.41: Including mafic dyke frpm 75.80 ro 76.69m, CL altered.

<<Struc: 73.6 - 73.61 dominant foliation>>

79.41 82.22 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

79.41 - 82.22: With AK, large chill margin, BI. Purple.

<<Min: 79.41 - 82.22 5% Min: Ankerite>> In mafic dyke.

82.22 96.79 RHYv Rhyolite volcaniclastic grey-green

<<Min: 83 - 155 0.1% Min: Calcite>> Local.

<<Vein: 91.45 - 91.5 Quarzt-Tourmaline-Sulphide 25 deg. >> QZ/TML, few PY

<<Struc: 82.65 - 82.66 dominant foliation>>

<<Struc: 91.85 - 91.86 dominant foliation>>

96.79 107.04 RHY undifferentiated rhyolite grey-green

96.79 - 107.04: Dominantly RHYcw. Weak CL.

<<Struc: 104 - 104.21 Weak (Alt) Fault>> Light brown clay.

<<Struc: 104.01 - 104.02 dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

107.04 112.81 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

107.04 - 112.81: Curdy and flow banded. Folded. PY/PO wavy stringers.

<<Vein: 107.04 - 111.6 Pyrite>> Dark wavy veins (4/metre) in flow/curdy RHY, contaning PY.

<<Struc: 107.1 - 107.11 dominant foliation>>

112.81 119.42 RHY undifferentiated rhyolite grey-green

112.81 - 119.42: Dominantly RHYcw, flow.

<<Struc: 113.04 - 113.06 dominant foliation>>

119.42 126.37 RHYvl Lapilli tuff grey-green

<<Struc: 125.1 - 125.11 dominant foliation>>

126.37 136.69 RHYva Coarse grained to ash tuff grey-green

126.37 - 136.69: Locally BI rich (maybe dyke) with whitish QZ eyes at upper contact, vein TML/few CA and PY along the core axis.

<<Vein: 129.4 - 129.45 Tourmaline-Sulphide>> Probably TML/PY, shallow angle<10

<<Struc: 128 - 128.01 dominant foliation>>

136.69 158.16 RHYvl Lapilli tuff grey-green

136.69 - 158.16: Granular texture where sheared and maybe feldspar (whitish mineral) xl. CL in shear zone.and more PY/PO.

<<Min: 149 - 155 3% Min: Pyrite>> Concentrated in shear zone and discontinuous veinlets.

<<Min: 149 - 155 3% Min: Pyrrhotite>> Associated with PY.

<<Alt: 137.38 - 153.38 Weak (Alt) Chlorite>>

<<Alt: 153.38 - 200 Moderate (Alt) Muscovite>> Starting after a shear zone.

<<Struc: 149 - 149.01 Foliation>>

<<Struc: 151.41 - 151.42 Shear>>

<<Struc: 151.51 - 155 Moderate (Alt) Fault>> Multiple fault, Average angle.

<<Struc: 152.5 - 152.51 Strong (Alt) Fault>>

<<Struc: 153 - 153.2 Strong (Alt) Fault>> Fault gouge. Sheared. PyY vein at contact.

<<Struc: 155.2 - 155.21 dominant foliation>>

<<Struc: 156.3 - 157.5 Crenulation cleavage>>

<<Struc: 157.9 - 157.91 dominant foliation>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
158.16	**158.70**	**MDSc**	**Carbonaceous dominant mudstone**										
158.70	**159.50**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green**									
159.50	**169.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**									

159.5 - 169: Locally darker, BI maybe few carbonaceous material. Sheared, texture obscured by alteration. No evidence of the primary lithology.

<<Struc: 161.1 - 161.1 dominant foliation>>

<<Struc: 161.1 - 161.11 dominant foliation>>

<<Struc: 166.5 - 166.8 Intense (Alt) Fault>> Fault gouge, clay. Broken zone (accentuated by strong MU alteration).

<<Struc: 166.65 - 166.66 Intense (Alt) Fault>>

169.00	**169.60**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green**									

169 - 169.6: Locally darker, BI maybe few carbonaceous material. Sheared, texture obscured by alteration. No evidence of the primary lithology.

169.60	**180.42**	**RHY**	**undifferentiated rhyolite**	**grey-green**	176.00	178.00	2.00	B00264809	0.5	-0.005	-0.01	-0.01	-0.01

169.6 - 180.42: Locally darker, BI maybe few carbonaceous material. Sheared, texture obscured by alteration. No evidence of the primary lithology.

<<Vein: 173.1 - 174 Quartz>> QZ vein, core loss.

					178.00	179.00	1.00	B00264811	76.5	0.409	3.28	0.23	0.46

<<Struc: 176 - 178.5 Intense (Alt) Fault>> Major shear zone. Fault gouge sandy clay.

					179.00	180.42	1.42	B00264812	26.1	0.071	0.92	0.08	0.12

<<Struc: 176.1 - 176.11 Intense (Alt) Fault>>

<<Struc: 179 - 180.5 Shear>> Brecciated, strongly silicified.

180.42	**181.60**	**OI**	**Heavilly disseminated sulphides in host schist**		180.42	181.60	1.18	B00264813	84.3	0.33	4.33	0.14	0.36

180.42 - 181.6: In schist.

<<Min: 180.42 - 181.6 2% Min: Pyrrhotite>>

<<Min: 180.42 - 181.6 0.5% Min: Galena>>

<<Min: 180.42 - 181.6 10% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
181.60	**183.48**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		181.60	182.47	0.87	B00264814	67	0.494	2.87	0.12	0.27
181.6 - 183.48: Few CI from 182.95 to 183.40m. CP stringers.													
<<Min: 181.6 - 183.48 2% Min: Sphalerite>>					182.47	183.48	1.01	B00264815	11.2	0.062	0.38	0.03	0.52
<<Min: 181.6 - 183.48 3% Min: Pyrrhotite>>													
<<Min: 181.6 - 183.48 3% Min: Chalcopyrite>>													
<<Alt: 181.6 - 183.6 Strong (Alt) Chlorite>>													
<<Alt: 182.85 - 183.36 Weak (Alt) Cordierite>>													
<<Struc: 182.01 - 182.02 dominant foliation>>													
183.48	**184.66**	**OA**	**Magnetite bearing sulphides**	**FG**	183.48	184.66	1.18	B00264816	25.1	0.128	0.46	0.31	4.61
183.48 - 184.66: Semi-massive													
<<Min: 183.48 - 184.66 10% Min: Sphalerite>>													
<<Min: 183.48 - 184.66 3% Min: Pyrrhotite>>													
<<Min: 183.48 - 184.66 3% Min: Galena>>													
<<Min: 183.48 - 184.66 0.5% Min: Arsenopyrite>>													
184.66	**186.87**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	184.66	185.79	1.13	B00264817	63.3	0.391	0.04	2.5	7.93
184.66 - 186.87: Locally vuggy.													
<<Min: 184.66 - 186.87 10% Min: Sphalerite>>					185.79	186.87	1.08	B00264818	91.4	0.345	0.08	3.63	10.1
<<Min: 184.66 - 186.87 4% Min: Galena>>													
186.87	**187.81**	**OA**	**Magnetite bearing sulphides**	**FG**	186.87	187.81	0.94	B00264819	58.7	0.391	1.02	1.34	7.76
<<Min: 186.87 - 187.81 0.5% Min: Sphalerite>>													
<<Min: 186.87 - 187.81 2% Min: Galena>>													
<<Min: 186.87 - 187.81 0.1% Min: Chalcopyrite>>													
187.81	**190.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		187.81	189.00	1.19	B00264821	37.1	0.394	1.35	0.1	0.23
187.81 - 190: CP stringers													
<<Min: 187.81 - 190 10% Min: Chalcopyrite>>					189.00	190.00	1.00	B00264822	53.1	0.398	3.01	0.07	0.24

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 187.81 - 190 0.5% Min: Arsenopyrite>>										
		<<Alt: 187.81 - 194.51 Strong (Alt) Chlorite>>										
190.00	**201.73**	**RHY** **undifferentiated rhyolite**	**green**	190.00	190.90	0.90	B00264823	18.4	0.058	0.51	0.3	1.06
		190 - 201.73: Texture obscured by CL alteration, no evidence of the lithology.										
		<<Alt: 197.75 - 201.46 Moderate (Alt) Muscovite>> locally strong.		190.90	192.40	1.50	B00264824	1.9	0.006	0.05	0.02	0.07
		<<Struc: 190.95 - 190.96 dominant foliation>>		192.40	193.90	1.50	B00264825	0.5	0.007	0.02	-0.01	0.05
		<<Struc: 196.56 - 196.62 Moderate (Alt) Fault>> Minor fault gouge.		193.90	195.40	1.50	B00264826	0.4	0.007	-0.01	-0.01	0.04
				199.00	200.00	1.00	B00264827	2.6	-0.005	0.05	0.03	1.88
				200.00	201.00	1.00	B00264828	0.5	-0.005	-0.01	0.01	0.06
				201.00	201.73	0.73	B00264829	3.9	0.011	0.02	0.05	0.11
201.73	**202.34**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		201.73	202.34	0.61	B00264831	53.8	0.51	5.55	0.13	0.26
		<<Min: 201.73 - 202.34 1% Min: Sphalerite>>										
		<<Min: 201.73 - 202.34 3% Min: Pyrrhotite>>										
		<<Min: 201.73 - 202.34 15% Min: Chalcopyrite>>										
		<<Alt: 201.73 - 203 Strong (Alt) Chlorite>>										
202.34	**205.20**	**RHY** **undifferentiated rhyolite**	**grey-green**	202.34	203.84	1.50	B00264832	6.1	0.036	0.41	0.04	1.79
		202.34 - 205.2: Texture obscured by aleration.										
		<<Alt: 204.42 - 206.52 Moderate (Alt) Silicification>> Green-grey alteration.		203.84	205.20	1.36	B00264833	1.6	-0.005	0.02	0.08	0.23
205.20	**228.36**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**green**									
		205.2 - 228.36: Locally altered green/grey RHYi from 207.51 to 208.08 associated with QZ vein.										
		<<Min: 205.2 - 228.36 25% Min: Calcite>>										
		<<Alt: 214.5 - 215.5 Moderate (Alt) Biotite>>										
		<<Alt: 215.5 - 217.2 Strong (Alt) Biotite>> Sharpe lower contact, fault with of set.										
		<<Alt: 217.2 - 229.8 Moderate (Alt) Silicification>> Green-grey alteration.										
		<<Vein: 216 - 216.8 Quartz-Carbonate>> QZ/CA										
		<<Struc: 208.08 - 208.09 Contact>> See foliation.										
		<<Struc: 208.9 - 208.91 dominant foliation>>										
		<<Struc: 209.6 - 209.61 dominant foliation>>										
		<<Struc: 220.95 - 220.96 dominant foliation>>										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 227.2 - 227.21 Contact>> contact between strongly baltered BI mafic dyke and gree-grey altered dyke (off set).

<<Struc: 228.35 - 228.36 dominant foliation>>

228.36 247.90 RHY undifferentiated rhyolite grey-green

228.36 - 247.9: Contact blurry by alteration, arbitrary at the limit of the CA in rock composition. QZ eyes at 241.5.

<<Min: 228.36 - 251 2% Min: Pyrite>> Or in discontinuous veins.

<<Min: 228.36 - 251 2% Min: Pyrrhotite>> Elontated along the foliation.

<<Alt: 235.63 - 251 Moderate (Alt) Muscovite>> Locally strong.

<<Struc: 242 - 249.3 Shear>>

<<Struc: 242.05 - 242.06 dominant foliation>> Alpha angle changing, shallower closeto the shear zone.

<<Struc: 246.5 - 246.6 Moderate (Alt) Fault>>

247.90 251.00 RHY undifferentiated rhyolite grey-green

247.9 - 251: QZ eyes. Probably feldspar replaced loocally by green mineral.

End of Hole @ 251

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-251

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	07-Sep-15
UTM Easting	415048.804	Core Size:	NQ3	Azimuth:	179	Date Logging Complete:	08-Sep-15
UTM Northing:	6815338.608	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.006	Casing Depth (m):	9	Length (m):	86	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	07-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-251 was drilled to twin historic hole K95-092 and confirm the resource here.
Overburden was encountered to a depth of 13.5 m, where an undifferentiated, Mu-altered rhyolite unit begins. The rhyolite unit continues to a depth of 17 m. There is a semi-continuous MSXS zone from 17-33 m, consisting of interbedded OI, OB, OA, and OJ. In the footwall, a CL-CA-BI schist (MAFi) cross-cut by an intrusive rhyolite continues to the end of the hole at 86 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179	0	179	APS	David Nuttal	06-Sep-15		☐	
14	-38.9	181.7	22.5	204.2	ReflexEZS	Geotech	06-Sep-15	2048	☐	Values not accepted due to low magnetic field.
14.1	-58.4	175.1	22.5	197.6	ReflexEZS	Geotech	06-Sep-15	3178	☐	Values not accepted due to low magnetic field.
15	-57.7	211.7	22.5	234.2	ReflexEZS	Geotech	07-Sep-15	1984	☐	Values not accepted due to low magnetic field.
38	-58.8	201.8	22.5	224.3	ReflexEZS	Geotech	06-Sep-15	2357	☐	Values not accepted due to low magnetic field.
38.1	-58.6	185.5	0	185.5	ReflexEZS	Geotech	07-Sep-15	5761	☑	
65	-58.7	185.4	0	185.4	ReflexEZS	Geotech	07-Sep-15	5775	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN Casing**									
9.00	**13.50**	**OVBN Overburden**									
13.50	**17.00**	**RHY undifferentiated rhyolite**	13.50	14.00	0.50	B00268677	0.4	0.005	-0.01	-0.01	-0.01
13.5 - 17: No original coherent or volcaniclastic texture is visible due to Mu-alteration											
<<Min: 13.5 - 17 1% Min: Pyrite>>			14.00	15.50	1.50	B00268678	0.5	-0.005	-0.01	-0.01	-0.01
<<Min: 13.5 - 17 1% Min: Pyrrhotite>>			15.50	17.00	1.50	B00268679	1.8	0.021	-0.01	-0.01	-0.01
<<Alt: 13.5 - 17.5 Strong (Alt) Muscovite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.00	**17.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		17.00	17.50	0.50	B00268681	94	0.494	1.17	0.59	1.44
17 - 17.5: Heavily disseminated sulphide (PY+/-SP+/-GL+/-CP) in MU-schist													
17.50	**18.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**	17.50	18.20	0.70	B00268682	365	2.79	9.84	0.29	1.11
17.5 - 18.2: zone with high CP (10%). Maybe OC?													
<<Min: 17.5 - 18.3 10% Min: Chalcopyrite>>													
<<Min: 17.5 - 30.8 5% Min: Calcite>>													
18.20	**19.40**	**OA**	**Magnetite bearing sulphides**	**CG**	18.20	18.80	0.60	B00268683	176	2.19	3.07	0.64	5.58
18.2 - 19.4: Wispy laminated PY+PO+SP+GL+CP with MG-buckshot (cg) texture. ~30 cm zone in the middle without MG.													
					18.80	19.40	0.60	B00268684	142	1.49	2.18	0.93	6.07
19.40	**21.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	19.40	20.30	0.90	B00268685	151	2	0.74	2.07	8.73
19.4 - 21.9: Wispy laminated PY+SP+GL+/-CP. Calcite fracture filling.													
<<Struc: 20.4 - 20.41 dominant foliation>>					20.30	21.20	0.90	B00268686	185	2.24	0.46	1.28	6.25
					21.20	21.90	0.70	B00268687	92.9	1.67	1.5	0.56	4.98
21.90	**22.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	21.90	22.70	0.80	B00268688	147	1.06	1.66	0.66	2.64
21.9 - 22.7: fine wispy laminated PY +/- SP +/- GL with buckshot MG (cg) and minor CA+SI bands.													
22.70	**26.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**CG**	22.70	23.40	0.70	B00268689	187	0.586	0.49	1.4	4.38
22.7 - 26.1: laminated with bands of cg PY+SP+GL and bands of mg PY													
<<Struc: 23.34 - 23.35 dominant foliation>>					23.40	24.40	1.00	B00268692	110	0.548	0.24	0.96	4.33
					24.40	26.10	1.70	B00268693	130	0.64	0.3	4.72	9.89
26.10	**26.50**	**OA**	**Magnetite bearing sulphides**	**CG**	26.10	26.50	0.40	B00268694	180	1.46	1.13	6.02	14.4
26.1 - 26.5: laminated PY+SP+GL+MG with cg buckshot PY													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.50	**28.00**	**OI** **Heavilly disseminated sulphides in host schist**	26.50	28.00	1.50	B00268695	27.7	0.282	0.5	0.27	1.1
26.5 - 28: Heavily disseminated PY+SP+GL in MU schist. Poor recovery in this unit.											
<<Alt: 26.5 - 28 Strong (Alt) Muscovite>>											
28.00	**30.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MCG**	28.00	28.90	0.90	B00268696	166	0.858	0.23	3.73	8.19
28 - 30.3: Wispy laminated PY+SP+GL+/-PO+/-MG with cg PY buckshot texture. Some minor QZ-carb veins that have recrystallized vcg sulphides within.											
			28.90	29.90	1.00	B00268697	182	0.572	0.06	4.09	9.5
			29.90	30.30	0.40	B00268698	109	0.429	0.17	2.28	4.62
30.30	**30.80**	**OA** **Magnetite bearing sulphides** **MCG**	30.30	30.80	0.50	B00268699	172	1.44	0.89	3.89	7.59
30.3 - 30.8: Laminated massive PY with interstitial SP+GL+MG+/-CP with bands containing cg PY. QZ-carb vein with recrystallized vcg CP./											
30.80	**33.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	30.80	31.60	0.80	B00268701	23.9	0.093	0.11	0.43	2.43
30.8 - 33: MU-CL schist with bands of massive to heavily disseminated sulphide. MU appears to be overprinting CL alteration											
<<Alt: 30.8 - 33 Strong (Alt) Muscovite>>			31.60	32.10	0.50	B00268702	0.7	0.009	-0.01	-0.01	-0.01
<<Alt: 30.8 - 33 Moderate (Alt) Chlorite>>			32.10	33.00	0.90	B00268703	71.1	0.338	0.29	1.08	3.87
33.00	**58.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	33.00	34.50	1.50	B00268704	0.4	-0.005	-0.01	-0.01	0.02
33 - 58.6: CL-BI-CA schist. From ~39-55 local zones of less schistosity, that resembles an original porphyritic/gabbroicn texture.											
<<Min: 33 - 55.9 15% Min: Calcite>>			34.50	36.00	1.50	B00268705	0.9	-0.005	-0.01	-0.01	0.03
<<Min: 33 - 58.6 1% Min: Pyrite>>			36.00	37.50	1.50	B00268706	0.4	-0.005	-0.01	-0.01	0.01
<<Min: 55.9 - 58.6 10% Min: Calcite>>											
<<Alt: 33 - 55.9 Strong (Alt) Chlorite>>											
<<Alt: 33 - 55.9 Strong (Alt) Biotite>>											
<<Alt: 55.9 - 58.6 Strong (Alt) Silicification>>											
<<Alt: 55.9 - 58.6 Strong (Alt) Muscovite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 33.66 - 33.67 dominant foliation>>

<<Struc: 34.7 - 34.71 dominant foliation>>

<<Struc: 40.9 - 40.91 dominant foliation>>

<<Struc: 46.37 - 46.38 dominant foliation>>

<<Struc: 48.5 - 48.51 dominant foliation>>

<<Struc: 49.46 - 49.47 dominant foliation>>

<<Struc: 52.8 - 52.81 dominant foliation>>

58.60 82.10 RHYi Aphanitic Rhyolite (intrusion)

58.6 - 82.1: From 58.6~69 m the unit is characterized by dominantely aphanitic, relatively un-schsitose, grey glassy siliceous rock with elongated QZ-phenocrysts. From ~69-82.1 the unit is characterized as a QZ-MU schist with a strong planar schistosity.

<<Min: 58.6 - 64.4 2% Min: Sphalerite>>

<<Min: 58.6 - 64.4 5% Min: Pyrite>>

<<Min: 64.4 - 82.1 2% Min: Pyrite>>

<<Min: 64.4 - 82.1 5% Min: Calcite>>

<<Alt: 64.4 - 84.6 Strong (Alt) Silicification>>

<<Alt: 64.4 - 84.6 Strong (Alt) Muscovite>>

<<Struc: 66.6 - 66.8 Trace (Alt) Fault>> weakly faulted zone

<<Struc: 79.7 - 79.9 Trace (Alt) Fault>> weakly faulted zone

82.10 86.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

82.1 - 86: Locally Mu-QZ-CA schist from 82.1-84.6 m and BI-CL-CA schist from 84.6-86 m.

<<Min: 82.1 - 84.6 10% Min: Calcite>>

<<Min: 82.1 - 86 1% Min: Pyrite>>

<<Min: 84.6 - 86 20% Min: Calcite>>

<<Alt: 84.6 - 86 Strong (Alt) Chlorite>>

<<Alt: 84.6 - 86 Strong (Alt) Biotite>>

<<Struc: 83.6 - 84.1 Trace (Alt) Fault>> weakly faulted zone with minor fault gouge

End of Hole @ 86

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-252

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	08-Sep-15
UTM Easting	415048.949	Core Size:	HQ3	Azimuth:	180.44	Date Logging Complete:	09-Sep-15
UTM Northing:	6815336.681	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.143	Casing Depth (m):	14	Length (m):	41	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	07-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
Comments:						Parent Hole:	K15-251

K15-252 was drilled as a mettalurgical twin of K15-251 in order to collect samples of the MET3 and MET7 domains in the near surface oxidized zone. Overburden was encountered to a depth of 14 m. From 14-16.8 m undifferentiated MU-altered rhyolite was encountered. MSXS was interecepted from 16.8-27.7 and 30-32.1 m with an intercept of strongly MU-altered undifferentiated rhyolite between. The footwall consists of MAFi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.44	0	180.44	APS	Dillon Hume	08-Sep-15		☑	
20	-58.6	183.2	0	183.2	ReflexEZS	Geotech	08-Sep-15	5987	☑	
41	-58.7	183.4	0	183.4	ReflexEZS	Geotech	08-Sep-15	5761	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**13.90**	**OVBN Overburden**									
<<Min: 13.5 - 16.8 0.01% Min: Pyrite>>											
13.90	**16.80**	**RHY undifferentiated rhyolite**	13.90	14.90	1.00						
13.9 - 16.8: Texture completely obscured by alteration											
<<Alt: 13.9 - 16.8 Strong (Alt) Muscovite>>			14.90	15.90	1.00						
			15.90	16.80	0.90						
16.80	**17.70**	**OA Magnetite bearing sulphides MCG**	16.80	17.70	0.90						
16.8 - 17.7: Zone of high CP (5-10%) at the begginning of the intercept (16.8-17.1 m). Bands with MG+PY+/-PO+/-SP. Local cg euhedral PY. Fair amount of oxidized grains.											
<<Min: 16.8 - 17.1 5% Min: Chalcopyrite>>											
<<Min: 16.8 - 32.1 5% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.70	**18.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	17.70	18.10	0.40						
17.7 - 18.1: Oxidized laminated non-magnetic zone with PY+SP+/-GL												
18.10	**19.30**	**OA** **Magnetite bearing sulphides**		18.10	18.70	0.60						
18.1 - 19.3: Wispy laminated PY+MG+SP+/-GL+/-CP with buckshot MG+PY.												
				18.70	19.30	0.60						
19.30	**20.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	19.30	19.90	0.60						
19.3 - 20.5: laminated PY+SP+/-CP+/-GL. Oxidizxed sulphide minerals within zone.												
				19.90	20.50	0.60						
20.50	**21.50**	**OA** **Magnetite bearing sulphides**	**MCG**	20.50	21.50	1.00						
20.5 - 21.5: Massive PY+/-CP+/-SP with buckshot MG												
21.50	**24.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	21.50	22.30	0.80						
21.5 - 24: Laminated PY+SP+GL+CP with minor CA groundmass. High-grade zone of SP and GL.												
<<Min: 21.5 - 24 15% Min: Sphalerite>>				22.30	23.10	0.80						
<<Min: 21.5 - 24 5% Min: Galena>>				23.10	24.00	0.90						
24.00	**27.70**	**OA** **Magnetite bearing sulphides**	**MCG**	24.00	25.00	1.00						
24 - 27.7: laminated PY+MG+SP+/-GL+/-CP with good euhedral PY buckshot texture.												
<<Alt: 27.4 - 30 Strong (Alt) Muscovite>>				25.00	26.00	1.00						
<<Vein: 25.3 - 25.6 95% Quartz>> QZ-vein in massive suphide with recrystallized cg CP				26.00	27.00	1.00						
				27.00	27.70	0.70						
27.70	**30.00**	**RHY** **undifferentiated rhyolite**		27.70	28.70	1.00						
27.7 - 30: Strongly MU-altered rhyolite (?). Poor core recovery in this zone. Texture completely obscured by alteration.												
<<Min: 27.7 - 30 10% Min: Pyrite>>				28.70	29.50	0.80						
<<Struc: 27.7 - 29.3 Moderate (Alt) Fault>> Moderate fault gouge zone with poor core recovery				29.50	30.00	0.50						

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
30.00	**31.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	30.00	31.00	1.00						
30 - 31: laminated PY+SP+GL+CA with cg PY buckshot texture. Small band (~10 cm) magnetite-bearing sulphide.												
31.00	**32.10**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		31.00	32.10	1.10						
31 - 32.1: MU-CL altered rhyolite with patches of semi-to-massive sulphide. The bottom of the unit (21.9-32.1 m) would be better described as OB.												
<<Alt: 31 - 32.1 Strong (Alt) Muscovite>>												
<<Alt: 31 - 32.1 Moderate (Alt) Chlorite>>												
32.10	**41.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		32.10	33.10	1.00						
32.1 - 41: CL-CA-BI mafi schist												
<<Min: 32.1 - 41 20% Min: Calcite>>				33.10	34.10	1.00						
<<Alt: 32.1 - 41 Strong (Alt) Chlorite>>				34.10	35.10	1.00						
<<Alt: 32.1 - 41 Strong (Alt) Biotite>>				35.10	36.60	1.50						

End of Hole @ 41

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-253

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	09-Sep-15
UTM Easting	414702.191	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	10-Sep-15
UTM Northing:	6815768.298	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1420.553	Casing Depth (m):	6	Length (m):	230	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Hole K15-250 was drilled to test the continuity and the extension of the lower sulphide lens (MET7).
The upper units of this hole are coherent and lapilitic rhyolite, crosscut by mafic dykes. Below this, the mineralized unit (OJ domain) is intersected from 182 to 183.42m (hosts PO/PY/CP/SP/GL).
The hole ends at 230m with rhyolitic units crosscut by mafic sill from 202.26 to 216.1m
The hole shows progressive muscovite alteration in the hanging-wall (strong from 150.65 to 179.06m).
The massive sulfide is not intersected but the proximal alteration is observed.
Hole K15-253 (dip: -65) is part of a fan including hole K15-250(dip: -51) and hole K15-257 (dip: -81).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	181.06	0	181.06	APS	Jerome de Pasquale	08-Sep-15		☑	
25	-64.5	160.9	22.5	183.4	ReflexEZS	Geotech	08-Sep-15	5775	☑	
50	-64.3	161.6	22.5	184.1	ReflexEZS	Geotech	08-Sep-15	5738	☑	
75	-64.5	162.5	22.5	185	ReflexEZS	Geotech	08-Sep-15	5724	☑	
101	-65	159.9	22.5	182.4	ReflexEZS	Geotech	08-Sep-15	5719	☑	
125	-64.7	160.5	22.5	183	ReflexEZS	Geotech	08-Sep-15	5715	☑	
150	-65	162.5	22.5	185	ReflexEZS	Geotech	08-Sep-15	5770	☑	
176	-65.3	166.1	22.5	188.6	ReflexEZS	Geotech	08-Sep-15	5710	☑	
200	-65.1	165.9	22.5	188.4	ReflexEZS	Geotech	08-Sep-15	5761	☑	
224	-65.2	166	22.5	188.5	ReflexEZS	Geotech	08-Sep-15	5774	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.50**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.50 18.92 RHYvx Quartz and/or feldspar crystal tuff grey-green

6.5 - 18.92: QZ eyes.

<<Min: 6.5 - 80 1% Min: Calcite>> In vein, mostly associated with mafic dyke.

<<Alt: 11.2 - 106.48 Weak (Alt) Muscovite>>

<<Vein: 17.15 - 17.35 Quartz-Carbonate>> QZ-CA in fracture.

18.92 23.60 RHYvx Quartz and/or feldspar crystal tuff medium grey

18.92 - 23.6: Blue, thin schistosity, maybe due to BI enrichment. Weakly carbonaceous. Qz eyes.

<<Min: 22 - 230 0.1% Min: Galena>>

<<Vein: 18.98 - 19 Quartz-Carbonate>> QZ/CA

<<Struc: 19.7 - 19.71 dominant foliation>>

23.60 24.78 RHYvl Lapilli tuff grey-green

<<Min: 23.6 - 35.2 1% Min: Pyrite>>

<<Min: 23.6 - 35.2 2% Min: Pyrrhotite>> Elongated in foliation.

<<Alt: 23.6 - 63.96 Weak (Alt) Chlorite>>

24.78 27.52 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

24.78 - 27.52: Large chill margin, maybe two dykes.

27.52 29.01 RHYvl Lapilli tuff grey-green

29.01 31.56 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

29.01 - 31.56: Flow banded. Could be due to mafic dyke proximity.

31.56 35.20 RHYvl Lapilli tuff grey-green

31.56 - 35.2: Qz eyes.

35.20 47.00 RHYcf Feldspar & feldspar quartz porphyry light grey

35.2 - 47: Qz eyes. Mafic dyke from 46.49m to 47.00m. QZ eyes and probably feldspar. Light shearing from 41.83 to 42.73m. Mafic dyke also from 41.83 to 42.73m (BI/CA).

<<Min: 35.2 - 118 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 35.2 - 118 2% Min: Pyrrhotite>> Some discontinuous vein and elongated in foliation.

<<Struc: 38 - 40 Shear>> Locally fault gouge.

47.00 49.00 RHY undifferentiated rhyolite grey-brown

47 - 49: Narrow unit, dark color. Could be flow banded but speudo fragmental due to a secondary foliation.

49.00 57.28 RHYva Coarse grained to ash tuff grey-green

49 - 57.28: QZ eyes. Could be RHYvx (ash).

57.28 68.59 RHYvl Lapilli tuff grey-brown

57.28 - 68.59: Could be pseudofragmental (secondary foliation). Locally flow (dyke proximity effect?).

<<Alt: 63.96 - 81.74 Moderate (Alt) Chlorite>>

<<Struc: 61.3 - 61.31 dominant foliation>>

<<Struc: 61.35 - 61.36 Foliation>> Crosscut by Dfol

<<Struc: 61.61 - 61.62 dominant foliation>>

<<Struc: 61.65 - 61.66 Foliation>> Crosscut by Dfol

68.59 69.75 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

68.59 - 69.75: Dyke, large chill margin, CL overprint.

<<Struc: 68.59 - 68.6 Contact>> Mafic dyke upper contact.

69.75 73.55 RHY undifferentiated rhyolite grey-green

69.75 - 73.55: Weakly curdy or strongly lapilitic?

73.55 77.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

73.55 - 77.55: Dyke, purple colored, AK-CA, CL altered.

<<Struc: 75.55 - 75.76 Contact>> Mafic dyke upper contact.

<<Struc: 77.35 - 77.36 Contact>> Mafic dyke lower contact.

77.55 81.74 RHY undifferentiated rhyolite grey-green

77.55 - 81.74: Weakly curdy or strongly lapilitic?

<<Vein: 79 - 79.01 Pyrrhotite 10 deg. >> Late fracture filled.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

81.74 92.64 RHYva Coarse grained to ash tuff grey-green

81.74 - 92.64: Dominantly ash. Speck of TML

92.64 96.33 RHY undifferentiated rhyolite grey-green

92.64 - 96.33: Could be curdy.

<<Vein: 94 - 94.01 Tourmaline-Sulphide 8 deg. >> Late fracture filled. Tml-GL-CA

96.33 106.48 RHYva Coarse grained to ash tuff grey-brown

96.33 - 106.48: Dominantly ash.

106.48 130.13 RHYvl Lapilli tuff grey-brown

106.48 - 130.13: Maybe feldspar xl. Broken, sheared at lower contact. Local xenolith? Granular texture.

<<Min: 118 - 142 2% Min: Pyrite>> Aggregated.

<<Alt: 106.48 - 150.64 Moderate (Alt) Muscovite>>

<<Struc: 107 - 116 Shear>> Core loss, locally fault gouge, accentuated by granular texture of the rock.

<<Struc: 128 - 135.3 Shear>> Locally fault gouge.

130.13 159.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

130.13 - 159: QZ eyes.

<<Min: 142 - 149 5% Min: Pyrite>> and stringers, folded.

<<Alt: 150.65 - 179.05 Strong (Alt) Muscovite>>

<<Alt: 150.65 - 201.8 Moderate (Alt) Silicification>>

<<Vein: 134.05 - 134.2 Quartz>> QZ

<<Vein: 142 - 149 Pyrite>> PY stringers, wavy

159.00 173.43 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

159 - 173.43: Blue color, possibly minor carbonaceous material marked in thin foliation.

<<Min: 164 - 179 3% Min: Sphalerite>> and patch.

<<Min: 164 - 179 5% Min: Pyrrhotite>> Stringers.

<<Min: 164 - 179 0.5% Min: Galena>> Associated with SP.

<<Min: 164 - 179 0.5% Min: Chalcopyrite>>

<<Alt: 173.13 - 179.05 Moderate (Alt) Chlorite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Vein: 165 - 165.01 Tourmaline-Sulphide 10 deg. >> Black vein, maybe TML and PY, creating local deformation of the foliation (late vein).													
<<Struc: 172.8 - 172.81 dominant foliation>>													
173.43	**182.00**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**medium grey**	179.00	180.50	1.50	B00264834	4.1	0.006	0.02	0.03	0.21
173.43 - 182: Silicified.													
<<Min: 179 - 183.43 1% Min: Sphalerite>>					180.50	182.00	1.50	B00264835	5.6	0.017	0.19	0.06	0.61
<<Min: 179 - 183.43 6% Min: Pyrrhotite>>													
<<Min: 179 - 183.43 4% Min: Chalcopyrite>>													
<<Min: 179 - 202.26 1% Min: Sphalerite>> Associatec with PY.													
<<Min: 179 - 202.26 4% Min: Pyrite>> Fine grain, and veinlets.													
<<Min: 179 - 202.26 0.5% Min: Galena>>													
<<Min: 179 - 202.26 0.1% Min: Arsenopyrite>>													
<<Alt: 179.05 - 185.15 Strong (Alt) Chlorite>>													
<<Struc: 177.85 - 177.86 dominant foliation>>													
<<Struc: 178.18 - 178.19 dominant foliation>>													
<<Struc: 181.25 - 181.26 dominant foliation>>													
182.00	**183.48**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**green**	182.00	182.60	0.60	B00264836	24.4	0.066	1.64	0.15	0.29
182 - 183.48: RHY or MDSw unit altered CL and SI.													
					182.60	183.48	0.88	B00264837	19	0.057	1.28	0.11	0.53
183.48	**188.12**	**MDSc**	**Carbonaceous dominant mudstone**	**black**	183.48	184.95	1.47	B00264838	1.6	0.005	0.05	0.02	0.25
183.48 - 188.12: Altered CL and SI. Carbonaceous from 184 to 184.45m. Flow/mudstone sequense sugesting top down.													
<<Alt: 185.15 - 187.93 Moderate (Alt) Chlorite>>					184.95	186.45	1.50	B00264839	4.7	0.019	0.22	0.04	0.26
<<Vein: 187.92 - 188.12 Quartz>> QZ, probably at contact between two units.					186.45	187.93	1.48	B00264841	1.3	-0.005	0.05	0.01	0.06
<<Struc: 186.85 - 186.86 dominant foliation>>													
<<Struc: 187.35 - 187.36 dominant foliation>>													
188.12	**202.26**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
188.12 - 202.26: QZ eyes, patchy PY/AS/SP.													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 201.26 - 213.78 10% Min: Calcite>> Mafic sill.									
		<<Alt: 199.48 - 201.8 Moderate (Alt) Chlorite>>									
		<<Alt: 201.26 - 216.33 Moderate (Alt) Chlorite>>									
		<<Vein: 188.12 - 201 Massive Sulphide/Sulphides undifferentiated>> PY and PO stringers, few SP									
		<<Struc: 193.92 - 193.93 dominant foliation>>									
		<<Struc: 194.21 - 194.22 dominant foliation>>									
		<<Struc: 194.95 - 194.96 dominant foliation>>									
		<<Struc: 199.3 - 199.33 Weak (Alt) Fault>> Minor fault. Fracture filled with PY/SP/GL.									
		<<Struc: 199.89 - 199.9 dominant foliation>>									
202.26	**216.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**	212.10	213.60	1.50	B00264842	2	0.024	-0.01	0.03	0.22
		202.26 - 216.1: Green-grey alteration on the edge, strong BI at upper contact. Mineralized at lower contact. CA.									
		<<Min: 211 - 213.88 1% Min: Sphalerite>> and patch.	213.60	215.10	1.50	B00264843	4.2	0.014	0.02	0.02	0.13
		<<Min: 211 - 230 3% Min: Pyrite>> fine to medium grain.	215.10	216.10	1.00	B00264844	12.4	0.093	0.25	0.05	0.52
		<<Min: 215.1 - 216.1 1% Min: Sphalerite>>									
		<<Min: 215.1 - 216.1 3% Min: Pyrrhotite>>									
		<<Min: 215.1 - 216.1 0.1% Min: Galena>>									
		<<Min: 215.1 - 216.1 2% Min: Chalcopyrite>>									
		<<Alt: 202.26 - 207.58 Moderate (Alt) Silicification>> Green-grey alteration.									
		<<Alt: 207.58 - 215.1 Strong (Alt) Silicification>> Green-grey alteration									
		<<Alt: 215.1 - 216.1 Moderate (Alt) Chlorite>>									
		<<Struc: 203.45 - 203.47 Moderate (Alt) Fault>> At contact with BI alteration patch.									
		<<Struc: 205.95 - 205.96 dominant foliation>>									
		<<Struc: 212.62 - 212.63 dominant foliation>>									
		<<Struc: 213.33 - 213.34 dominant foliation>>									
		<<Struc: 214 - 214.05 Moderate (Alt) Fault>> Minor fault.									
		<<Struc: 215.39 - 215.4 dominant foliation>>									
216.10	**230.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	216.10	217.60	1.50	B00264845	4.9	0.035	0.17	0.04	0.43
		216.1 - 230: QZ eyes, locally folded. From 228.04 to 228.25m, the rock looks different with PO (?).									
		<<Alt: 216.1 - 230 Weak (Alt) Muscovite>> Strong at contact with CL alteration.	217.60	219.10	1.50	B00264846	-0.3	-0.005	-0.01	-0.01	0.01
		<<Struc: 217.6 - 217.8 Weak (Alt) Fault>> Minor broken zone.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 219.69 - 219.7 dominant foliation>>
<<Struc: 220.24 - 220.25 dominant foliation>>
<<Struc: 220.67 - 220.68 dominant foliation>>
<<Struc: 223.95 - 223.96 dominant foliation>>
<<Struc: 227.41 - 227.42 dominant foliation>>

End of Hole @ 230

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-254

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	09-Sep-15
UTM Easting	415050.927	Core Size:	NQ3	Azimuth:	179.86	Date Logging Complete:	10-Sep-15
UTM Northing:	6815377.977	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.875	Casing Depth (m):	12	Length (m):	100	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	09-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-254 was drilled as a resource infill hole between historic holes K94-002 and K95-087.
Overburden was encountered to a depth of 19 m. The hanging wall of the MSXS (19-39.3 m) consists of mixed MU-altered felsic volcanics and minor carbonaceous units. The first MSXS was intercepted from 39.3-40.3 and consisted of the OC ore type. Below this there is an undifferentiated Mu-altered rhyolite unit to a depth of 42.1 m. From 42.1-51.7 m MSXS was encountered, consisting of ore types OB, OA, and OJ. Below this final ore interecpt there was MU-CL+/-CI altered felsic volcanics to a depth of 54.3 m. The footwall consists of MAFi, RHYi, and a minor interval of MU-altered RHYv.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.86	0	179.86	APS	Dillon Hume	09-Sep-15		☑	Rig set-up azimuth
53	-60	172.2	22.5	194.7	ReflexEZS	Geotech	09-Sep-15	5613	☑	
80	-58.4	161.4	22.5	183.9	ReflexEZS	Geotech	09-Sep-15	5691	☑	
100	-58.5	166.1	22.5	188.6	ReflexEZS	Geotech	09-Sep-15	5728	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**19.00**	**OVBN** **Overburden**									
19.00	**21.20**	**MDSt** **Rhyolite tuff dominant mudstone**									
19 - 21.2: minor (~5%) carbonaceous material within the well foliated schist											
<<Min: 19 - 25.1 2% Min: Pyrite>>											
<<Min: 19 - 25.1 1% Min: Pyrrhotite>>											
<<Alt: 19 - 38.3 Strong (Alt) Muscovite>>											
21.20	**25.10**	**RHYv** **Rhyolite volcaniclastic**									
21.2 - 25.1: strongly foliated MU-QZ schist. Very hard to determine the original texture (volcaniclastic vs coherent) due to alteration.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Vein: 23.5 - 24.1 40% Quartz>> Zone with multiple QZ-AK veins									
		<<Struc: 22.93 - 22.94 dominant foliation>>									
25.10	**28.00**	**MDSt Rhyolite tuff dominant mudstone**									
		25.1 - 28: Minor carbonaceous component (~10%) within well foliated MU-schist. Appears to be volcaniclastic.									
		<<Min: 25.1 - 28 5% Min: Pyrite>>									
28.00	**35.60**	**RHYv Rhyolite volcaniclastic**									
		28 - 35.6: Mu-QZ schist. Hard to determine original texture due to MU-alteration, but there appears to be minor volcaniclastic textures present.									
		<<Min: 28 - 39.3 3% Min: Pyrite>>									
		<<Min: 28 - 39.3 2% Min: Pyrrhotite>>									
		<<Struc: 28.7 - 28.71 dominant foliation>>									
		<<Struc: 34.89 - 34.9 dominant foliation>>									
35.60	**37.10**	**MDSt Rhyolite tuff dominant mudstone**	35.60	37.10	1.50	B00268707	0.8	0.014	-0.01	0.01	0.03
		35.6 - 37.1: ~15% carbonaceous material in GR-MU-QZ schist.									
		<<Struc: 35.7 - 35.8 Strong (Alt) Fault>> weak-moderate fault gouge zone									
37.10	**39.30**	**RHYv Rhyolite volcaniclastic**	37.10	38.20	1.10	B00268708	1.7	0.022	0.01	0.02	0.03
		37.1 - 39.3: MU-QZ+/-CA schist from 39.1-39.3 m there appears to be a fg ~equigranular texture possibly related to a dyke (?).									
		<<Min: 39.1 - 39.3 15% Min: Calcite>>	38.20	39.30	1.10	B00268709	10.9	0.078	0.36	0.04	0.14
		<<Alt: 39.2 - 40.5 Strong (Alt) Cordierite>>									
		<<Struc: 37.68 - 37.69 dominant foliation>>									
39.30	**40.30**	**OC Chalcopyrite-pyrrhotite net textured sulphides** **CG**	39.30	40.30	1.00	B00268712	330	3.98	10.2	0.17	1.08
		39.3 - 40.3: Good CP+PO+MG net texture. MU+CI groundmass.									
		<<Min: 39.3 - 40.3 10% Min: Chalcopyrite>> CP-PO net textured rock									
		<<Min: 39.3 - 51.7 5% Min: Calcite>>									
		<<Alt: 39.3 - 40.5 Moderate (Alt) Chlorite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
40.30	**42.10**	**RHY**	**undifferentiated rhyolite**		40.30	41.20	0.90	B00268713	60.7	0.209	1.26	0.28	0.57
40.3 - 42.1: Original texture obscured by alteration. Moderate-heavyily disseminated PY+PO+/-CP near the top and bottom of the unit													
<<Min: 40.3 - 42.1 5% Min: Pyrite>>					41.20	42.10	0.90	B00268714	38.7	0.288	0.91	0.29	0.58
<<Min: 40.3 - 42.1 2% Min: Pyrrhotite>>													
<<Min: 40.3 - 42.1 2% Min: Chalcopyrite>>													
<<Alt: 40.5 - 41.9 Strong (Alt) Muscovite>>													
<<Alt: 41.9 - 42.2 Moderate (Alt) Chlorite>>													
<<Alt: 41.9 - 42.2 Strong (Alt) Cordierite>>													
<<Struc: 41.43 - 41.44 dominant foliation>>													
42.10	**42.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	42.10	42.80	0.70	B00268715	171	1.36	0.91	1.68	10.9
42.1 - 42.8: laminated massive PY+SP. Patchy AP ansd CI from 42.1-42.2 m.													
<<Min: 42.1 - 42.2 2% Min: Arsenopyrite>>													
42.80	**43.40**	**OA**	**Magnetite bearing sulphides**	**MCG**	42.80	43.40	0.60	B00268716	120	0.591	0.22	1.69	8.55
42.8 - 43.4: Laminated PY+SP+MG													
43.40	**48.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	43.40	44.40	1.00	B00268717	233	1.47	0.24	2.36	9.06
43.4 - 48.3: laminated-banded PY+SP+GL+/-CP. High grade SP & GL from 46.7-49.1 m (~20% SP and ~3-4% GL).													
<<Min: 46.6 - 49.1 20% Min: Sphalerite>>					44.40	45.40	1.00	B00268718	152	1.18	0.3	1.78	10.1
<<Min: 46.6 - 49.1 4% Min: Galena>>					45.40	46.40	1.00	B00268719	103	0.813	0.19	0.54	3.62
<<Struc: 43.54 - 43.55 dominant foliation>>					46.40	47.40	1.00	B00268721	295	2.29	0.57	3.87	10.8
<<Struc: 47.33 - 47.34 dominant foliation>>					47.40	48.30	0.90	B00268722	301	1.08	0.31	4.47	13.4
48.30	**49.10**	**OA**	**Magnetite bearing sulphides**	**MCG**	48.30	49.10	0.80	B00268723	128	0.622	0.34	3.41	13.9
48.3 - 49.1: laminated PY+SP+GL+CA with some cg PY buckshot texture mostly confined to SP bands.													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.10	**50.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**	49.10	49.90	0.80	B00268724	74.6	1.38	1.75	0.71	2.89

49.1 - 50.6: Py+/-CP stringers withing CL+MU+CI altered schist

<<Alt: 49.1 - 49.5 Moderate (Alt) Cordierite>>

<<Alt: 49.1 - 50.6 Moderate (Alt) Muscovite>>

<<Alt: 49.1 - 50.6 Moderate (Alt) Chlorite>>

<<Struc: 49.75 - 49.76 dominant foliation>>

<<Struc: 50.3 - 50.4 Strong (Alt) Fault>> weak-moderate fault gouge zone

					49.90	50.60	0.70	B00268725	25.1	0.245	0.18	0.4	2.68
50.60	**51.10**	**OA**	**Magnetite bearing sulphides**	**MCG**	50.60	51.70	1.10	B00268726	98.2	0.619	0.31	1.92	9.35

50.6 - 51.1: Banded/laminated mg PY and cg PY+SP. First ~10 cm has no magnetite (OB).

51.10	**51.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**

51.1 - 51.7: Laminated cg and mg PY and SP. Local PY buckshot texture. Trace patchy AP.

51.70	**54.30**	**RHY**	**undifferentiated rhyolite**		51.70	53.20	1.50	B00268727	17.4	0.09	0.07	0.34	1.26

51.7 - 54.3: Strong Mu-alteration in rhyolite, with a band of OA (52.2-52.3 m) and OJ (53.8-54.1 m). Disseminated PY+/-AP in the MU-schist component.

<<Min: 51.7 - 54.4 10% Min: Calcite>>

<<Min: 52.2 - 52.3 80% Min: Pyrite>> Zone of MSXS (OA)

<<Min: 52.3 - 53.8 5% Min: Pyrite>>

<<Min: 52.3 - 53.8 0.5% Min: Arsenopyrite>>

<<Min: 53.8 - 54.1 5% Min: Sphalerite>>

<<Min: 53.8 - 54.1 15% Min: Pyrite>>

<<Min: 53.8 - 54.1 1% Min: Galena>>

<<Alt: 51.7 - 52.2 Moderate (Alt) Muscovite>>

<<Alt: 51.7 - 52.2 Moderate (Alt) Chlorite>>

<<Alt: 52.3 - 53.8 Strong (Alt) Muscovite>>

<<Alt: 53.8 - 54.1 Moderate (Alt) Chlorite>>

<<Alt: 54.1 - 54.3 Strong (Alt) Muscovite>>

<<Struc: 53.7 - 53.8 Weak (Alt) Fault>> weak-moderate fault gouge zone

					53.20	54.30	1.10	B00268728	26.1	0.137	0.18	0.33	1.67

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.30	55.80	1.50	B00268729	1.4	0.013	-0.01	0.03	0.11

From (m)	To (m)	Rocktype & Description
54.30	**83.00**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

54.3 - 83: CL-BI-CA schsit

<<Min: 54.4 - 80.3 0.01% Min: Pyrrhotite>>
<<Min: 54.4 - 80.3 20% Min: Calcite>>
<<Min: 80.3 - 83 1% Min: Pyrite>>
<<Min: 80.3 - 84 1% Min: Sphalerite>>
<<Min: 80.3 - 84 0.5% Min: Galena>>
<<Min: 80.3 - 84 5% Min: Calcite>>
<<Alt: 54.3 - 80.3 Strong (Alt) Chlorite>>
<<Alt: 54.3 - 80.3 Strong (Alt) Biotite>>
<<Alt: 80.3 - 96.3 Strong (Alt) Silicification>>
<<Alt: 80.3 - 96.3 Strong (Alt) Muscovite>>
<<Struc: 61.8 - 61.81 dominant foliation>>
<<Struc: 65.05 - 65.06 dominant foliation>>
<<Struc: 68.2 - 68.21 dominant foliation>>
<<Struc: 71.37 - 71.38 dominant foliation>>
<<Struc: 80.4 - 82.5 Weak (Alt) Fault>> moderate-strong fault gouge zone with significant core loss

83.00	**84.00**	**RHYi Aphanitic Rhyolite (intrusion)**

83 - 84: mixture of aphanitic rhyolite and QZ-MU schist.

<<Min: 83 - 84 2% Min: Pyrite>>

84.00	**84.50**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

84 - 84.5: MU-CA-CL schist with a similar texture to the CL-BI-CA schist

<<Min: 84 - 84.5 10% Min: Calcite>>
<<Min: 84 - 88.9 1% Min: Pyrite>>

84.50	**85.70**	**RHYi Aphanitic Rhyolite (intrusion)**

84.5 - 85.7: QZ-MU schist

<<Min: 84.5 - 85.7 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
85.70	**88.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
85.7 - 88.9: MU-altered and silicified MAFi, with a 30 cm RHYi from 88-88.3 m		
<<Min: 85.7 - 88.9 10% Min: Calcite>>		
88.90	**95.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
88.9 - 95: Massive aphanitic rhyolite with local zones of QZ-MU schsit and QZ-veining		
<<Min: 88.9 - 96.3 3% Min: Pyrite>>		
<<Min: 88.9 - 100 5% Min: Calcite>>		
<<Vein: 93.7 - 94.3 40% Quartz>> zone with multiple QZ-AK veins		
95.00	**100.00**	**RHYv** **Rhyolite volcaniclastic**
95 - 100: Strong MU-alteration of volcaniclastic rocks		
<<Min: 96.3 - 100 1% Min: Pyrite>>		
<<Alt: 96.3 - 100 Strong (Alt) Muscovite>> Hard to determine wether this is overprint alteration associated with the RHYi or original alteration associated with the mineralizing event		
End of Hole @ 100		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-255

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	10-Sep-15
UTM Easting	415100.618	Core Size:	NQ3	Azimuth:	179.88	Date Logging Complete:	12-Sep-15
UTM Northing:	6815307.336	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1393.177	Casing Depth (m):	12	Length (m):	80	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-255 was drilled to test and confirm the near surface extension of the massive sulphide lens. A metallurgical twin (K15-256) was drilled to test the metallurgical domains.
MSXS occurs directly below overburden (12 m) and continues to 21.7 m depth, consisting of OA and OB ore types. Below the MSXS the MAFi occurs from 21.7-64.9 m. The MAFi has a noticeable change in foliation, from a high angle to the core axis to a very shallow angle to the core axis, starting at ~42 m. Below the MAFi is another mafic unit bounded on either side by a fault zone (64.9-67 m and 77.4-80 m).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	179.88	0	179.88	APS	Dillon Hume	10-Sep-15		☑	Drill rig alignment measurement
20	-51.7	162.6	22.5	185.1	ReflexEZS	Geotech	10-Sep-15	5764	☑	
50	-53.1	162.2	22.5	184.7	ReflexEZS	Geotech	10-Sep-15	5733	☑	
74	-53.3	162.1	22.5	184.6	ReflexEZS	Geotech	10-Sep-15	5747	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**12.00**	**OVBN** **Overburden**										
12.00	**13.20**	**OA** **Magnetite bearing sulphides**	**MG**	12.00	12.60	0.60	B00268731	307	2.78	0.36	2.94	11.4
12 - 13.2: Wispy laminated magnetite-bearing MSXS (PY+SP+GL)												
				12.60	13.20	0.60	B00268732	386	3.95	0.59	3.37	9.73
13.20	**15.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	13.20	14.00	0.80	B00268733	466	6.02	0.86	4.42	13.1
13.2 - 15.9: Laminated PY+SP+GL with cg PY buckshot texture												
				14.00	15.00	1.00	B00268734	234	1.39	0.17	2.54	8.75
				15.00	15.90	0.90	B00268735	278	2	0.23	2.95	7.91

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
15.90	**17.10**	**OA**	**Magnetite bearing sulphides**	**MCG**	15.90	16.50	0.60	B00268736	380	3.15	0.47	4.06	11.8
15.9 - 17.1: laminated PY+SP+GL+MG													
<<Min: 15.9 - 20 20% Min: Sphalerite>> Bands of high-grade SP+GL in MSXS					16.50	17.10	0.60	B00268737	233	2.01	0.39	2.82	12.1
<<Min: 15.9 - 20 5% Min: Galena>> Bands of high-grade SP+GL in MSXS													
17.10	**21.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	17.10	18.00	0.90	B00268738	324	2.5	0.25	4.9	10.1
17.1 - 21.7: laminated PY+SP+GL+/-CA. Many bands of high grade SP+GL. Lower contact with MAFi appears fairly sharp, with the MAFi having minor alteration (?).													
<<Min: 18.7 - 19.4 15% Min: Calcite>>					18.00	19.00	1.00	B00268739	454	4.37	0.45	4.41	9.24
<<Min: 19.4 - 21.7 5% Min: Calcite>>					19.00	20.00	1.00	B00268741	135	1.25	0.11	2.33	8.51
<<Struc: 17.11 - 17.12 dominant foliation>> sulphide lamination					20.00	21.00	1.00	B00268742	133	0.636	0.11	2.69	8.98
<<Struc: 18.52 - 18.53 dominant foliation>> sulphide lamination					21.00	21.70	0.70	B00268743	288	1.4	3.02	4.79	9.62
<<Struc: 19.61 - 19.62 dominant foliation>> sulphide lamination													
<<Struc: 20 - 20.1 Weak (Alt) Fault>> fault gouge zone in MSXS													
21.70	**64.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		21.70	23.20	1.50	B00268744	0.8	0.012	0.02	-0.01	0.03
21.7 - 64.9: From 21.7-25.2 m the unit is the typical CL-BI-CA schist MAFi. There is much less CA from 25.2-64.9 m. Foliation changes from ~perpendicular to the core axis to ~parallel to the core axis, from 42-64.9 m.													
<<Min: 21.7 - 25.2 20% Min: Calcite>>					23.20	24.70	1.50	B00268745	-0.3	0.006	-0.01	-0.01	0.01
<<Min: 21.7 - 80 0.5% Min: Pyrite>> trace PY					24.70	26.20	1.50	B00268746	0.6	0.01	-0.01	-0.01	0.02
<<Min: 25.2 - 63.5 5% Min: Calcite>>													
<<Min: 63.5 - 67 30% Min: Calcite>>													
<<Alt: 21.7 - 64.9 Strong (Alt) Chlorite>>													
<<Alt: 21.7 - 64.9 Strong (Alt) Biotite>>													
<<Struc: 22.95 - 22.96 dominant foliation>> CA band in MAFi													
<<Struc: 34.75 - 34.76 dominant foliation>>													
<<Struc: 40.71 - 40.72 dominant foliation>>													
<<Struc: 42.5 - 42.51 dominant foliation>> BT foliation in MAFi													
<<Struc: 45.9 - 45.91 Foliation>> BT foliation in MAFi													
<<Struc: 48.1 - 48.11 Foliation>> BT foliation in MAFi													
<<Struc: 49.3 - 53 Moderate (Alt) Fault>> moderately broken/faulted rock													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 50 - 50.01 Foliation>>

<<Struc: 53.5 - 53.51 Foliation>> BT foliation in MAFi

<<Struc: 55.8 - 55.81 Foliation>> BT foliation in MAFi

<<Struc: 58.8 - 58.81 Foliation>> BT foliation in MAFi

<<Struc: 60.8 - 60.81 Foliation>> BT foliation in MAFi

<<Struc: 63.8 - 63.81 Foliation>> BT foliation in MAFi

64.90 67.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

64.9 - 67: Strongly faulted MAFi(?). Deformation appears to be between ductile and brittle. Better described as a cataclasite/protomylonite

<<Alt: 64.9 - 74 Moderate (Alt) Chlorite>>

<<Struc: 64.9 - 67 Strong (Alt) Fault>> strongly faulted and healed rock. Appears to be between brittle and ductile deformation.

67.00 77.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

67 - 77.4: QZ-CA-CL schist. Has intrusive granular texture. Appears more dioritic in composition than the typical MAFi. Strong CL-alteration with no mineralization from 74-77.4 m.

<<Min: 67 - 76.8 15% Min: Calcite>>

<<Min: 76.8 - 80 30% Min: Calcite>>

<<Alt: 74 - 77.4 Strong (Alt) Chlorite>>

<<Struc: 67.9 - 67.91 Foliation>> CL foliation in MAFi

<<Struc: 69.8 - 69.81 Foliation>> CL foliation in MAFi

<<Struc: 73.63 - 73.64 dominant foliation>>

<<Struc: 76.9 - 80 Strong (Alt) Fault>> strongly faulted and healed rock. Appears to be between brittle and ductile deformation.

77.40 80.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

77.4 - 80: Strongly faulted MAFi(?). Deformation appears to be between ductile and brittle. Better described as a cataclasite/protomylonite

<<Alt: 77.4 - 80 Moderate (Alt) Chlorite>>

End of Hole @ 80

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-256

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	12-Sep-15
UTM Easting	415100.747	Core Size:	HQ3	Azimuth:	180.76	Date Logging Complete:	12-Sep-15
UTM Northing:	6815309.079	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1393.181	Casing Depth (m):	11.5	Length (m):	32	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-255

Comments:

K15-256 was drilled as a twin of K15-255 (ABM43) in order to collect a sample of and test MET5 domain.
The hole was cased to a depth of 11.5 m, where bedrock is encountered. From 11.5-12.6 m a highly oxidized and Mu-altered rhyolite is encountered. MSXS is intercepted from 12.6-22.6 m, consisting of OI, OA, and OB ore types. The structural footwall consists of a CL-BI+/-CA schist (MAFi) unit.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	180.76	0	180.76	APS	Dillon Hume	11-Sep-15		☑	Drill rig alignment azimuth
17	-49.8	160.9	22.5	183.4	ReflexEZS	Geotech	11-Sep-15	5725	☑	
32	-50.4	161.1	22.5	183.6	ReflexEZS	Geotech	11-Sep-15	5738	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**11.50**	**OVBN** **Overburden**										
11.50	**12.60**	**RHY** **undifferentiated rhyolite**		11.50	12.60	1.10						
11.5 - 12.6: Hard to determine original texture due to alteration and near surface fracturing and oxidation												
<<Alt: 11.5 - 13.2 Strong (Alt) Muscovite>>												
12.60	**13.20**	**OI** **Heavily disseminated sulphides in host schist**		12.60	13.20	0.60						
12.6 - 13.2: Heavily disseminated PY+SP+GL+/-CP in MU-schist												
13.20	**14.20**	**OA** **Magnetite bearing sulphides**	**MCG**	13.20	14.20	1.00						
13.2 - 14.2: laminated PY+SP+GL with cg MG buckshot texture												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.20	**17.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	14.20	15.20	1.00						
14.2 - 17.1: Laminated PY+SP+GL+/-CA. Bands with concentrated SP+GL.													
<<Min: 15.1 - 21.4 20% Min: Sphalerite>>					15.20	16.20	1.00						
<<Min: 15.1 - 21.4 5% Min: Galena>>					16.20	17.10	0.90						
17.10	**18.10**	**OA**	**Magnetite bearing sulphides**	**MG**	17.10	18.10	1.00						
17.1 - 18.1: Laminated PY+SP+GL+MG+CA+/-CP													
<<Min: 17.1 - 22.6 5% Min: Calcite>>													
18.10	**22.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	18.10	19.10	1.00						
18.1 - 22.1: Laminated PY+SP+GL+/-CA+/-. Minor cg PY buckshot texture													
<<Vein: 18.7 - 19 85% Quartz>> QZ-carb vein in MSXS					19.10	20.10	1.00						
					20.10	21.10	1.00						
					21.10	22.10	1.00						
22.10	**22.60**	**OI**	**Heavilly disseminated sulphides in host schist**		22.10	22.60	0.50						
22.1 - 22.6: Heavily disseminated to semi-massive PY+SP+GL+CP in Mu-schist													
<<Alt: 22.1 - 22.6 Strong (Alt) Muscovite>>													
<<Vein: 22.1 - 22.5 50% Quartz>> QZ-carb vein in semi-massive sulphide													
22.60	**32.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
22.6 - 32: Typical CL-BI-CA schist (MAFi) from 22.6-26.6 m. From 26.6-32 m there is only CA in fractures and the schistosity appears less continuous.													
<<Min: 22.6 - 26.6 20% Min: Calcite>>													
<<Min: 22.6 - 32 0.5% Min: Pyrite>>													
<<Min: 26.6 - 32 5% Min: Calcite>>													
<<Alt: 22.6 - 32 Strong (Alt) Chlorite>>													
<<Alt: 22.6 - 32 Strong (Alt) Biotite>>													

Project: KZK **Hole Number:** K15-256

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 32									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-257

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	11-Sep-15
UTM Easting	414702.244	Core Size:	NQ3	Azimuth:	181.06	Date Logging Complete:	13-Sep-15
UTM Northing:	6815768.299	Casing Pulled?:	Yes	Dip:	-81	Drill Company:	Geotech
UTM Elev. (m):	1420.532	Casing Depth (m):	6	Length (m):	218	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	12-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Hole K15-257 was drilled to test the continuity and the extension of the lower sulphide lens (MET7).
Hole K15-257 is made up of primarily rhyolitic units (RHYcw and RHYvl) including two mudstone units. The top of the hole is marked by mafic dykes.
The hole shows progressive muscovite alteration in the hanging-wall, with the footwall intersecting a rhyolite unit.
A narrow chlorite alteration zone from 206.27 to 206.76m hosts PO/CP/PY. The hole shows progressive muscovite alteration in the hanging-wall (strong from 203.52 to 206.27m). This drill hole encountered a significant fault (74.4m to 77.2m) below a mafic dyke. Hole K15-257 ends at 218m with a muscovite altered rhyolite unit.
The massive sulfide is not intersected and the proximal alteration is intersected deeper than expected.
Hole K15-257 (dip: -81) is part of a fan including hole K15-250 (dip: -51) and hole K15-253 (dip: -65).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-81	181.06	0	181.06	APS	Jerome de Pasquale	09-Sep-15		☑	
26	-81.1	160.4	22.5	182.9	ReflexEZS	Geotech	10-Sep-15	5750	☑	
50	-80.2	158.9	22.5	181.4	ReflexEZS	Geotech	10-Sep-15	5764	☑	
74	-79.6	160.6	22.5	183.1	ReflexEZS	Geotech	10-Sep-15	5744	☑	
101	-79.4	162.4	22.5	184.9	ReflexEZS	Geotech	10-Sep-15	5753	☑	
125	-78.9	163.4	22.5	185.9	ReflexEZS	Geotech	10-Sep-15	5684	☑	
150	-78	163.8	22.5	186.3	ReflexEZS	Geotech	10-Sep-15	5775	☑	
175	-77.8	164.2	22.5	186.7	ReflexEZS	Geotech	10-Sep-15	5700	☑	
200	-77.2	163.6	22.5	186.1	ReflexEZS	Geotech	10-Sep-15	5768	☑	
218	-77.2	165.9	22.5	188.4	ReflexEZS	Geotech	10-Sep-15	5740	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**5.75**	**CASN Casing**									
5.75	**9.29**	**RHYva Coarse grained to ash tuff grey-green**									
5.75 - 9.29: QZ eyes.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 6 - 58.95 1% Min: Pyrrhotite>> Elongated in foliation, few stringers.

<<Min: 6 - 63 3% Min: Calcite>>

<<Min: 6 - 100 0.1% Min: Pyrite>>

9.29 10.32 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

9.29 - 10.32: Dyke, foliated.

<<Alt: 9.29 - 61 Trace (Alt) Muscovite>>

<<Struc: 10.3 - 10.31 dominant foliation>>

10.32 14.45 RHYvl Lapilli tuff grey-green

10.32 - 14.45: QZ eyes.

<<Vein: 10.32 - 10.33 Quarzt-Tourmaline-Sulphide 40 deg. >> QZ-probably TML, PY/GL large xtl.

<<Struc: 10.32 - 10.33 Vein>> QZ/GL/PY

14.45 15.47 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

14.45 - 15.47: Dyke, foliated.

15.47 18.02 RHYvl Lapilli tuff grey-green

15.47 - 18.02: QZ eyes. Few sulfide stringers.

<<Struc: 16.16 - 16.17 dominant foliation>>

<<Struc: 16.68 - 16.69 dominant foliation>>

18.02 23.30 MDSt Rhyolite tuff dominant mudstone medium grey

18.02 - 23.3: QZ eyes. Probably carbonaceous, thin foliation, blueish color.

<<Struc: 22.64 - 22.65 dominant foliation>>

23.30 25.52 RHYvl Lapilli tuff

23.3 - 25.52: QZ eyes.

<<Vein: 23.32 - 23.35 Quarzt-Tourmaline-Sulphide 25 deg. >> QZ maybe TML, GL probably reactivated.

<<Struc: 23.3 - 23.31 Vein>> QZ-PY

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

25.52 28.16 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

25.52 - 28.16: 2 dykes? Purple color.Large chill margin.

28.16 40.39 RHYvl Lapilli tuff grey-green

28.16 - 40.39: Crosscut by mafic dyke from 30.41 to 31.00m, CA running until 34.79m, and dyke from 39.53 to 39.89m.

<<Struc: 28.78 - 28.79 dominant foliation>>

<<Struc: 37.2 - 37.24 Weak (Alt) Fault>> minor fault

40.39 58.73 RHYva Coarse grained to ash tuff grey-green

40.39 - 58.73: Dark green RHYcw or chill margin from 47.00 to 48.73m, proximity of dyke. Lighly carbonaceous from 53.15 to 56.08m. Dyke with AK-CA weak CL from 41.66 to 43.00m.

<<Vein: 45.74 - 46.24 Quartz>> QZ

<<Vein: 53.7 - 53.71 Quartz-Sulphide 25 deg. >> QZ, PY

<<Vein: 57.9 - 58.2 Quartz-Sulphide>> QZ vein or pod, incorporating host rock, GL, vuggy.

<<Struc: 43.25 - 43.26 dominant foliation>>

58.73 74.40 RHYvl Lapilli tuff grey-green

58.73 - 74.4: Strongly lapilitic or curdy texture, dyke proximity effect. Dyke from 62.87 to 63.46m and 71.04 to 74.40m (same nature than dyke at 62.87m).

<<Min: 58.95 - 61 2% Min: Pyrrhotite>> And patchy.

<<Min: 58.95 - 61 0.5% Min: Chalcopyrite>> Associated with PO.

<<Min: 63 - 100 1% Min: Calcite>> and associated with mafic dyke, few veins.

<<Alt: 61 - 100 Weak (Alt) Chlorite>> Accentuated close to and in the mafic dyke.

74.40 83.00 MDSt Rhyolite tuff dominant mudstone dark grey

74.4 - 83: Granular texture, white mineral feldspar shape (2 to 5mm) QZ vein/pod incorporating host rock. Missing core from 74.4 to 77.00, fault gouge gone.

<<Vein: 81.5 - 83 Quartz>> QZ pod incorporating host vrock

<<Struc: 74.4 - 77.2 Strong (Alt) Fault>> Major, fault gouge missing about 2.5m of core.

<<Struc: 74.4 - 80 Weak (Alt) Shear>> Shear zone, in carbonaceous unit, QZ pod, sericite in fracture, some facturation along the core axis (10 degres).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

83.00 90.30 RHYcf Feldspar & feldspar quartz porphyry grey-green

83 - 90.3: Could be RHYvl with feldspar xtl. Dominantly coherent curdy or strongly lapilitic.

<<Min: 83 - 90.3 1% Min: Pyrrhotite>> Elongated in foliation.

90.30 92.80 RHYvl Lapilli tuff grey-green

90.3 - 92.8: Dominantly RHYvl.

92.80 97.13 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

92.8 - 97.13: Dominantly curdy texture.

<<Struc: 95.4 - 95.45 Moderate (Alt) Fault>> minor fault.

97.13 130.27 RHYvl Lapilli tuff grey-green

97.13 - 130.27: Feldspar?. Rare QZ eyes, dominantly RHYvl, locally flow banded.

<<Min: 128 - 130 2% Min: Pyrrhotite>> Elongated in foliation.
<<Vein: 103.24 - 103.26 Quartz-Carbonate 85 deg. >> QZ-dolomite or AK
<<Struc: 100.75 - 100.76 dominant foliation>>
<<Struc: 109.92 - 109.93 dominant foliation>> Dominant fracture.
<<Struc: 112.31 - 112.35 Weak (Alt) Fault>> minor.
<<Struc: 114.74 - 114.76 Moderate (Alt) Fault>> minor, few fault gouge.
<<Struc: 115.6 - 115.61 dominant foliation>>
<<Struc: 127.83 - 127.84 dominant foliation>>

130.27 132.10 MDSt Rhyolite tuff dominant mudstone light grey

130.27 - 132.1: QZ eyes.

<<Struc: 130.81 - 130.82 dominant foliation>>

132.10 158.53 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

132.1 - 158.53: QZ eyes. Locally wavy PY stringers.

<<Min: 136.4 - 144.28 1% Min: Sphalerite>>
<<Min: 136.4 - 144.28 3% Min: Pyrite>>
<<Min: 136.4 - 144.28 0.4% Min: Galena>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 136.4 - 174.21 1% Min: Pyrite>>
<<Min: 136.4 - 174.21 1% Min: Pyrrhotite>>
<<Alt: 134.9 - 143 Strong (Alt) Muscovite>>
<<Alt: 143 - 145.42 Moderate (Alt) Muscovite>>
<<Alt: 145.52 - 149.26 Strong (Alt) Muscovite>>
<<Alt: 149.26 - 155 Moderate (Alt) Muscovite>>
<<Vein: 132.1 - 132.58 Quartz-Pyrite>> QZ-cubic PY
<<Struc: 151.25 - 151.28 Weak (Alt) Fault>> minor .
<<Struc: 153.26 - 153.28 Weak (Alt) Fault>> minor.
<<Struc: 153.96 - 153.97 dominant foliation>>

158.53 165.11 MDSw Coherent rhyolite flow with carbonaceous content light grey

158.53 - 165.11: QZ eyes. Could be MDSt. Blue corlor.

<<Struc: 163.95 - 163.96 dominant foliation>> Dominante fracture.

165.11 168.01 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

165.11 - 168.01: Few carbonaceous material from 178,6 to 179.59m.

<<Alt: 167 - 203.52 Moderate (Alt) Muscovite>>
<<Struc: 166.2 - 166.24 Weak (Alt) Fault>> minor.

168.01 174.21 RHYvl Lapilli tuff grey-green

168.01 - 174.21: Thin foliation.

174.21 197.97 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

174.21 - 197.97: Pseudofragmental locally. Whitish, deformed, "gneissic" tecture.

<<Min: 174.21 - 202 2% Min: Pyrite>> or discontinuous veinlets.
<<Min: 174.21 - 202 2% Min: Pyrrhotite>>
<<Vein: 182.26 - 182.35 Quartz-Sulphide>> QZ-GL
<<Struc: 177.2 - 177.24 Weak (Alt) Fault>> minor
<<Struc: 178.82 - 178.83 dominant foliation>>
<<Struc: 181.9 - 181.91 dominant foliation>>
<<Struc: 185.9 - 185.94 Weak (Alt) Fault>> minor

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 189.48 - 189.59 dominant foliation>>										
		<<Struc: 193.65 - 193.66 dominant foliation>>										
		<<Struc: 196.9 - 196.91 dominant foliation>>										
197.97	**206.27**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	201.50	203.00	1.50	B00264847	10.7	0.007	0.02	0.28	0.69
197.97 - 206.27: QZ eyes.												
		<<Min: 202 - 206.27 2% Min: Sphalerite>>		203.00	204.50	1.50	B00264848	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 202 - 206.27 3% Min: Pyrite>>		204.50	206.00	1.50	B00264849	2.4	0.016	0.09	0.02	0.06
		<<Min: 202 - 206.27 2% Min: Pyrrhotite>>		206.00	207.00	1.00	B00264851	5.6	0.013	0.09	0.04	0.13
		<<Min: 202 - 206.27 0.5% Min: Galena>>										
		<<Min: 202 - 206.27 2% Min: Chalcopyrite>> Stringers										
		<<Alt: 203.52 - 206.27 Strong (Alt) Muscovite>>										
		<<Struc: 200.1 - 200.11 dominant foliation>>										
206.27	**206.76**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock** **green**									
206.27 - 206.76: PO/CP stringers, SP, might be proximal alteration with retrograde BI.												
		<<Min: 206.27 - 206.76 1% Min: Pyrite>>										
		<<Min: 206.27 - 206.76 5% Min: Pyrrhotite>> Stringers										
		<<Min: 206.27 - 206.76 0.5% Min: Chalcopyrite>>										
		<<Alt: 206.27 - 206.76 Strong (Alt) Chlorite>>										
206.76	**218.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	207.00	208.50	1.50	B00264852	1.1	0.005	0.01	-0.01	0.02
206.76 - 218: QZ eyes. E.O.H.												
		<<Min: 206.76 - 217 3% Min: Pyrite>>		208.50	210.00	1.50	B00264853	0.4	-0.005	-0.01	-0.01	-0.01
		<<Min: 206.76 - 217 0.5% Min: Pyrrhotite>>										
		<<Min: 217 - 218 0.5% Min: Pyrite>>										
		<<Min: 217 - 218 1% Min: Pyrrhotite>>										
		<<Alt: 207.15 - 218 Moderate (Alt) Muscovite>>										
		<<Vein: 207 - 212 Quartz>> QZ, 2 veins per metre, 3 to 8 cm wide.										
		<<Struc: 208.32 - 208.33 dominant foliation>>										
		<<Struc: 217.64 - 217.65 dominant foliation>>										

Project: **KZK** **Hole Number:** **K15-257**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 218									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-258

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Daniele Heon
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	13-Sep-15
UTM Easting	415203.217	Core Size:	NQ3	Azimuth:	176	Date Logging Complete:	16-Sep-15
UTM Northing:	6815275.085	Casing Pulled?:	Yes	Dip:	-53	Drill Company:	Geotech
UTM Elev. (m):	1424.283	Casing Depth (m):	21	Length (m):	299	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	14-Sep-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

The target of this hole is a deep extension of a sulphide lens on the southeast fault block, interpreted to be down-dropped from main ore body.
This hole collared in upper sequence metasediments: black argillite(MDSc)followed by mafic tuffs till 48m, followed by a thick sequence of felsic lapilli and crystal tuff with some ash-dominant sections till 205.95m. This sequence is unusually dark and silicified from 48 to 73m, possibly due to the altering effect of the rhyolite dyke intruding the sequence below from 73-79.8m. A mafic dyke with porphyroblastic biotite also intrudes this sequence from 103 to 107m.
Dark carbonaceous felsic tuff (MDSt) occurs from 205.95 to 213.5m, followed by strong to intense muscovite-altered generic rhyolite (no primary textures), with intensity of alteration increasing towards its lower contact with the massive sulphide zone (228.64 to 231.24). It consists of 30% fg diss py w 10% galena, 2% sphalerite, and one cm-bleb of cp (total <1%). The average recovery for this zone is very poor at 47%.
Below the sulphides at 231.24, the hole transitions again into rhyolite till 265m. The typical footwall mafic intrusion occurs from 265 to 272.3m, where the contact with the underlying felsic tuff is caught in a large breccia and deformation zone marked by fault gouge and breccia but also by blocky sections with extremely poor recovery but not showing deformation. The rhyolite continues to EOH at 299m, with moderate muscovite alteration.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-53	176	0	176	APS	Daniele Heon	15-Sep-15		☑	
56	-53.4	155.8	22.5	178.3	ReflexEZS	Geotech	12-Sep-15	3785	☑	
89	-54.4	158.4	22.5	180.9	ReflexEZS	Geotech	13-Sep-15	5735	☑	
119	-55	158.4	22.5	180.9	ReflexEZS	Geotech	13-Sep-15	5764	☑	
149	-55.2	160.1	22.5	182.6	ReflexEZS	Geotech	13-Sep-15	5744	☑	
209	-55.8	158.4	22.5	180.9	ReflexEZS	Geotech	14-Sep-15	5789	☑	
239	-55.8	161.5	22.5	184	ReflexEZS	Geotech	14-Sep-15	5752	☑	Azimuth deviates in zone of rubbly rock and core loss.
299	-55.3	165.5	22.5	188	ReflexEZS	Geotech	15-Sep-15	5785	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**20.00**	**OVBN Overburden**									
0 - 20: Depth of start of hole not marked, calculated back from lower blocks.											
<<Min: 11.9 - 120.4 0.05% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

20.00 35.30 MDU carbonaceous mudstone black
upper sequence

20 - 35.3: Sooty argillite, calcareous, tightly folded and crenulated includes few 10-30 cm intervals of greenish ash or sed.

<<Min: 20 - 29.3 15% Min: Calcite>> also pervasive

<<Min: 20 - 91.75 0.5% Min: Pyrite>>

<<Min: 20 - 91.75 0.5% Min: Pyrrhotite>>

<<Alt: 30 - 32 Moderate (Alt) Silicification>> Silicified argillite or cherty argillite

<<Vein: 20 - 28 2% Calcite 70 deg. >> Thin mm cc-qtz veinlets in argillite.

<<Vein: 21.3 - 37.5 10% Quartz 70 deg. >> Coarse grained qtz-cc veins, loc w sericite, 3 to 30 cm thick.

<<Struc: 32 - 32.01 dominant foliation>>

<<Struc: 33.9 - 34 Weak (Alt) Fault>> clayey fault gouge

35.30 48.00 MAFt Mafic Volcaniclastics green-brown

35.3 - 48: Banded mafic tuff or epiclastic sed? Banding defined by variable grain size and varying biotite/ sericite ratio.

<<Min: 35.4 - 45.2 3% Min: Calcite>>

<<Min: 45.2 - 49.1 10% Min: Calcite>>

<<Alt: 35.3 - 42.38 Moderate (Alt) Muscovite>>

<<Alt: 35.3 - 48 Weak (Alt) Chlorite>>

<<Alt: 42.38 - 48 Weak (Alt) Muscovite>>

<<Vein: 39 - 60.4 10% Quarzt-Tourmaline-Chlorite 60 deg. >> Coarse, clear grey qtz-cc-chl veins +/- tourmaline w diss py po up to 1% in veins. One large qtz-tourm vein 41.75- 42.5m.

<<Struc: 46.4 - 47 Moderate (Alt) Fault>> clayey fault gouge, core loss

48.00 73.00 RHYvl Lapilli tuff dark grey

48 - 73: And RHYva. Very dark,siliceous w broken xtals or amydules. Pyritic dk grey sericite foliae, silicified.

<<Min: 49.1 - 54.9 5% Min: Calcite>>

<<Min: 54.9 - 62 2% Min: Calcite>>

<<Min: 62.2 - 73 5% Min: Calcite>>

<<Alt: 48 - 73 Moderate (Alt) Silicification>>

<<Alt: 48 - 73 Muscovite>>

<<Vein: 71.3 - 82.3 Quartz-Carbonate>> Qtz-carb-chl vein at upper contact of RHYi (0.5m I box, core loss) and two 2cm qtz-carb veins, one with large bleb of sphalerite in lower selvage.

<<Struc: 48 - 48.01 dominant foliation>>

<<Struc: 58.45 - 58.46 dominant foliation>> sub-horizontal?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 60.13 - 60.76 Strong (Alt) Fault>> clayey fault gouge

73.00 79.80 RHYi Aphanitic Rhyolite (intrusion) grey

73 - 79.8: grey glassy rhyolite dyke, with thin irregular greenish fractures w sericite pyrite.

<<Min: 73.5 - 79.8 1% Min: Calcite>>

79.80 81.60 RHYva Coarse grained to ash tuff grey

79.8 - 81.6: Grey w faint lapilli? replaced by calcite, in creamy grey sericitic matrix.

<<Min: 79.8 - 81.5 3% Min: Calcite>>

<<Alt: 79.8 - 81.6 Weak (Alt) Chlorite>>

81.60 81.75 RHYi Aphanitic Rhyolite (intrusion) grey

<<Alt: 81.6 - 82.4 Moderate (Alt) Silicification>>

<<Alt: 81.6 - 82.4 Weak (Alt) Muscovite>>

81.75 95.00 RHYva Coarse grained to ash tuff grey

81.75 - 95: And lapilli. Fine grained grey sericitic rx w no to weak porphyroblastic biotite and irregular lensoid calcite lenses and bands interpreted as lapilli. 91.75- 92.5: more abundant calcite patches, and diss po-py 1%. 93-93.5: biot-qtz-rich section: sed?

<<Min: 82.3 - 82.32 10% Min: Sphalerite>> cm-sized sphalerite bleb in 2cm qtz vein in lower silicfed selvage of RHYi

<<Min: 82.4 - 103.05 5% Min: Calcite>> replaces amydulesor xtals and lapilli

<<Min: 91.75 - 92.5 1% Min: Pyrrhotite>> in zone ofabundant mygdules or lapilli

<<Alt: 81.8 - 103.05 Weak (Alt) Chlorite>>

<<Alt: 82.4 - 103.05 Moderate (Alt) Muscovite>> micacous foliation planes

<<Alt: 91.75 - 92.5 Moderate (Alt) Chlorite>>

<<Struc: 91.75 - 91.76 dominant foliation>> flat

95.00 103.05 RHYvx Quartz and/or feldspar crystal tuff grey

95 - 103.05: Also w lapilli. Grey f.g. sericitic rx w 5% 0.5-1 cm fspar xtals, replaced by calcite. Groundmass not calcareous. Weak to no biotite porphyroblasts.

<<Min: 95 - 103.5 1% Min: Pyrite>>

<<Min: 95 - 103.5 1% Min: Pyrrhotite>>

103.05 107.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

103.05 - 107: Weakly foliated greenish weak chl-ser rock peppered w biotite porphyroblasts and small calcite grains (replacing fspars?)

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 103.5 - 111.9 7% Min: Calcite>>

<<Alt: 103.5 - 107 Weak (Alt) Muscovite>>

107.00 109.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

107 - 109.4: Foliated dismembered sericite-altered rhyolite flow? Strong beige sericite, qtz, and weak py-cc veinlets. Lower contact vfg.

<<Alt: 107 - 109.4 Moderate (Alt) Muscovite>>

109.40 111.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

109.4 - 111.9: granular rx w stretched qtz outlined by biot foliae.

111.90 115.40 RHYi Aphanitic Rhyolite (intrusion)

111.9 - 115.4: Ugly version of RHYi (or other granitic intrusion?), cut and altered by qtz-fspar-carb-sulphide-musc +/- tourmaline vein system. Dyke material is bleached at contact w qtz. May include altered footwall rock. Upper contact marked by 10 cm intense chl-ser?

<<Min: 111.9 - 115.4 2% Min: Pyrite>>

<<Min: 111.9 - 115.4 0.5% Min: Pyrrhotite>>

<<Min: 111.9 - 115.4 0.01% Min: Galena>>

<<Min: 111.9 - 123 10% Min: Calcite>>

<<Alt: 111.9 - 115.4 Moderate (Alt) Silicification>>

<<Alt: 111.9 - 119.5 Moderate (Alt) Muscovite>>

<<Vein: 112.25 - 115.08 10% Quartz-Carbonate-Sulphide>> White and grey blocky qtz-carb-chl-py-po vein ass w glassy rhyolite? Tr galena.

115.40 119.55 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

115.4 - 119.55: Foliated sericite-qtz schist w elongate fspathic patches and bands. More massive at UC and smaller fragments(or stronger dismemberment going downhole. Could also be or transition into xtal lapilli tuff.

<<Alt: 119.2 - 119.4 Trace (Alt) Chlorite>>

<<Alt: 119.4 - 166 Weak (Alt) Muscovite>>

119.55 122.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

119.55 - 122: fine grained grey-green silt (?) to coarser qtz-chl-porphyroblastic biotite, gradational contacts.

<<Vein: 119.9 - 123.3 2% Calcite 50 deg. >>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

122.00 135.90 RHYva Coarse grained to ash tuff grey

122 - 135.9: Includes section of f.g. granitic rock, sucrosic, w interpreted wall rock altered, bleached and w foliation disrupted at contacts (123.8-124.1).

<<Min: 123 - 137.4 3% Min: Calcite>>

<<Struc: 127.8 - 128.9 dominant foliation>>

<<Struc: 128 - 128.01 dominant foliation>>

135.90 138.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

135.9 - 138.4: Fine grained reddish brown biotite-rich rock, calcareous.

<<Min: 137.4 - 145.1 5% Min: Calcite>>

138.40 158.00 RHYvl Lapilli tuff medium grey

<<Min: 145.1 - 164 3% Min: Calcite>>

<<Min: 156.1 - 159.2 2% Min: Pyrite>> Foliaform 1-10 cm bands of heavily disseminated py (up to 5%). Corresponds to silicified zone.

<<Alt: 156.1 - 159.2 Moderate (Alt) Silicification>> corresponds to zone of py bands.

<<Struc: 140.8 - 142.2 Fault>> fault gouge 10 cm followed by crackle breccia, recessive matrix (brownish calcareous: siderite?).

<<Struc: 143 - 147 Vein>> fracture coated with slicked calcite w loc py. Almost // to CA.

<<Struc: 145.9 - 145.91 dominant foliation>>

<<Struc: 154.45 - 154.51 dominant foliation>>

158.00 181.35 RHYva Coarse grained to ash tuff

158 - 181.35: Dominantly ash tuff w lapilli (and possibly lithic fx?), varying proportions of each.

<<Min: 158 - 160 1% Min: Pyrite>> silicified

<<Min: 158 - 160 2% Min: Pyrrhotite>> silicified

<<Min: 164 - 170 1% Min: Calcite>>

<<Min: 170 - 236 0.01% Min: Calcite>>

<<Alt: 166 - 167 Moderate (Alt) Muscovite>>

<<Struc: 166.1 - 167.9 Fault>> Zone of broken rock.Some fault gouge w competent rx in clayey groundmass.

<<Struc: 176.9 - 177.35 Fault>> Broken rx, fault gouge.

<<Struc: 180.34 - 181 Fault>> Broken rx, fault gouge.

From (m)	To (m)	Rocktype & Description
181.35	**185.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green-brown**
181.35 - 185.2: Fine grained, muddy green-grey ash or sed. Cutby foliaform calcite veinlets and quartz veinlets, as well as by 0.3m coarse qtz-carb veins. Calcareous.		
<<Vein: 182.95 - 216.2 3.3% Quartz 60 deg. >> grey qtz veins, cm to dcm, loc w py po		
<<Struc: 184.3 - 184.31 dominant foliation>>		
185.20	**189.90**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **grey**
185.2 - 189.9: Siliceous roxk w strong sericite imprint on foliation and strong crenulation, could be competent flow? Or maybe silicified ash. No visible lapilli or xtals.		
<<Alt: 185.5 - 216.2 Strong (Alt) Muscovite>>		
189.90	**199.30**	**RHYv** **Rhyolite volcaniclastic**
189.9 - 199.3: Banded RHYv w dk po-qtz bands and diss po, generrally strongly crenulated and strong sericite on foliae and persvasive. Nose of small fold structure?		
<<Struc: 190.8 - 190.81 dominant foliation>>		
<<Struc: 194 - 194.01 dominant foliation>>		
199.30	**205.95**	**RHYva** **Coarse grained to ash tuff**
199.3 - 205.95: finely dissected felsic tuff, greenish sericite.		
<<Struc: 199.9 - 199.91 dominant foliation>>		
205.95	**213.45**	**MDSt** **Rhyolite tuff dominant mudstone** **dark grey**
205.95 - 213.45: strongly foliated, crenulated and muscovite-altered. Common bands of diss py-po.		
<<Min: 209.5 - 215.7 1% Min: Pyrite>>		
<<Min: 209.5 - 215.7 2% Min: Pyrrhotite>>		
<<Struc: 212.6 - 212.61 dominant foliation>>		
213.45	**228.64**	**RHY** **undifferentiated rhyolite** **grey-green**
213.45 - 228.64: strongly foliated grey rhyolite with strong greenish yellow muscovite partings. Few clayey fault gouges.		
<<Min: 215.7 - 217 0.5% Min: Pyrite>>		
<<Min: 217 - 228.64 0.05% Min: Pyrite>>		
<<Alt: 216.2 - 228.64 Intense (Alt) Muscovite>>		
<<Struc: 223.7 - 224.3 Fault>> Two 30 cm sections of broken rx, fault gouge.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
223.00	224.00	1.00	B00266764	-0.3	-0.005	-0.01	-0.01	-0.01
224.00	225.50	1.50	B00266765	0.5	-0.005	-0.01	-0.01	-0.01
225.50	227.00	1.50	B00266766	-0.3	-0.005	-0.01	-0.01	-0.01
227.00	228.64	1.64	B00266767	0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
228.64	**231.24**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **black**	228.64	229.50	0.86	B00266768	162	1.3	0.49	3.9	9.61

228.64 - 231.24: Very dark massive sulphide horizon, consisting of semi-massive fg diss py in silicate matrix, w some diss sph and galena and one cm-sized bleb of cp. Faintly laminated, but but dominant texture is brecciated, and loc cemented by sulphides and or recessive

<<Min: 228.64 - 231.24 2% Min: Sphalerite>>				229.50	230.00	0.50	B00266769	161	0.792	0.14	3.79	10.7
<<Min: 228.64 - 231.24 30% Min: Pyrite>>				230.00	231.24	1.24	B00266771	122	0.77	0.37	2.47	8.68
<<Min: 228.64 - 231.24 1% Min: Pyrrhotite>> guesstimate based on weak magnetism												
<<Min: 228.64 - 231.24 10% Min: Galena>>												
<<Min: 228.64 - 231.24 0.5% Min: Chalcopyrite>>												
231.24	**265.00**	**RHY**	**undifferentiated rhyolite** **grey**	231.24	232.10	0.86	B00266772	2.4	0.01	-0.01	0.04	0.08

231.24 - 265: Muscovite-qtz schist, variably sheared, faulted and brecciated. Competent blocky section between 237-257 loc has bands of diss py // to foliation and seems to get darker grey towards lowr bounding fault. From 257 to 265: intense breccia gouge.

<<Min: 236 - 265.5 3% Min: Calcite>>				232.10	234.00	1.90	B00266773	1.7	-0.005	-0.01	0.04	0.07
<<Vein: 251.1 - 251.3 100% Pyrite>>				234.00	236.00	2.00	B00266774	1.3	-0.005	-0.01	0.03	0.06
<<Vein: 253.8 - 258 10% Quartz-Carbonate>>												
<<Struc: 232 - 237 Fault>> sections of Broken rx, fault gouge.												
<<Struc: 242 - 242.5 Fault>> Broken rx, fault gouge // CA.												
<<Struc: 242.5 - 257 Fault>> Broken rx, core loss												
<<Struc: 257 - 265.5 Fault>> Breccia, clay gouge,orientation of fx 45-// to CA												
265.00	**272.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **green**									

265 - 272.3: Deformed chl-biot schist w strong carbonate as veining and pervasive alteration. Mostly blocky with core loss until 272.3m, followed by strong breccia gouge consisting of mafic fragments in chloritic matrix till 274.9m, where it transitions into dominantl

<<Min: 265.5 - 272.5 10% Min: Calcite>>												
<<Vein: 267 - 272.2 10% Calcite>>												
272.30	**274.90**	**FBX**	**Fault Breccia**									
<<Struc: 272.3 - 278 Fault>> Intense breccia and clay gouge. Chloritic and/or carbonaceous groundmass. Core loss.												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
274.90	**299.00**	**RHY undifferentiated rhyolite grey-green**									
274.9 - 299: Finely foliated, musc altered granular qtz-musc schist, no framental texture so probably ash. From 273.3-274.9: strong fault gouge continues from above unit with clasts dominantly felsic and carbonaceous groundmass. From 274.9: competent rock finely foli											
End of Hole @ 299											

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-259

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	13-Sep-15
UTM Easting	415100.557	Core Size:	NQ3	Azimuth:	134.82	Date Logging Complete:	14-Sep-15
UTM Northing:	6815372.293	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1391.551	Casing Depth (m):	9	Length (m):	120	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	13-Sep-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-259 was drilled to characterize the geotechnical properties of the East Fault, as well as to attempt to pierce the upper ore lens (ABM) and the proposed down dropped portion of the deposit. However, due to the azimuth deviating during drilling, the hole was abandoned at 120 m. It was re-drilled at an azimuth of 125 degrees and a dip of 45 degrees, with HQ3 drill rods, in order to maintain a straighter drill trace.
Bedrock was encountered below overburden at 9 m. A felsic volcanic package with a few carbonaceous horizons was encountered from 9-49.1 m. MU-alteration began increasing intensity from 33-51.2 m. Strong restrictive alteration was encountered from 48.3-51.2, consisting of a MU+CI+CL+AB assemblage. From 49.1-60.7 m MSXS was encountered, consisting of OJ, OA, and OB ore types. A small unit of MU-altered rhyolite occurs between 60.7-61.4 m. From 61.4-63.6 m MSXS occurs, consisting of the OB ore type. Below the MSXS an undifferentiated rhyolite interlayered with MAFi is encountered from 63.6-66 m. MAFi is encountered from 66-120 m, with local variations in the foliation angle relative to the core axis.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	134.82	0	134.82	APS	Dillon Hume	11-Sep-15		☑	Drill rig alignment azimuth
18	-56.1	112.4	22.5	134.9	ReflexEZS	Geotech	12-Sep-15	5866	☑	
48	-56	117.7	22.5	140.2	ReflexEZS	Geotech	12-Sep-15	5796	☑	
78	-56	122	22.5	144.5	ReflexEZS	Geotech	12-Sep-15	5713	☑	
106	-57.6	125.8	22.5	148.3	ReflexEZS	Geotech	12-Sep-15	5728	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.00 OVBN Overburden

<<Min: 0 - 59.8 1% Min: Calcite>>

9.00 19.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

9 - 19.1: Good curdy texture from 9-15.5 m.

<<Min: 9 - 29.5 3% Min: Pyrite>>

<<Min: 9 - 29.5 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description
19.10	**29.50**	**RHYvl** **Lapilli tuff**
19.1 - 29.5: volcaniclastic texture with QZ and PY+/-PO lpl		
29.50	**36.70**	**MDSt** **Rhyolite tuff dominant mudstone**
29.5 - 36.7: ~15-20% carbonaceous material mainly restricted cleavage domains		
<<Min: 29.5 - 48.3 1% Min: Pyrite>>		
<<Min: 29.5 - 48.3 0.5% Min: Pyrrhotite>>		
<<Alt: 33 - 48.3 Moderate (Alt) Muscovite>>		
<<Vein: 32.7 - 33.5 60% Quartz>> QZ-AK veining in MU schist		
36.70	**43.00**	**RHYv** **Rhyolite volcaniclastic**
36.7 - 43: Strongly developed Mu-cleavage makes the original texture difficult to determine. The texture appears mainly volcaniclastic.		
<<Struc: 38.8 - 41 Strong (Alt) Fault>> Moderately faulted zone with fault gouge		
<<Struc: 41.97 - 41.98 dominant foliation>> MU cleavage		
43.00	**45.00**	**MDSc** **Carbonaceous dominant mudstone**
43 - 45: 80% carbonaceous, black mudstone. Poor core recovery in this run (42-45 m).		
45.00	**46.00**	**MDSt** **Rhyolite tuff dominant mudstone**
45 - 46: ~15-20% carbonaceous material mainly restricted cleavage domains		
46.00	**49.10**	**RHY** **undifferentiated rhyolite**
46 - 49.1: Well developed schistosity. Alteration increases from moderate MU to strong CL+CI+AB in this unit.		
<<Min: 48.3 - 49.1 3% Min: Pyrite>>		
<<Alt: 48.3 - 51.2 Moderate (Alt) Muscovite>>		
<<Alt: 48.3 - 51.2 Strong (Alt) Cordierite>>		
<<Alt: 48.9 - 51.2 Moderate (Alt) Chlorite>>		
<<Alt: 48.9 - 51.2 Moderate (Alt) Albite>> patches of albite		
<<Struc: 48.6 - 48.61 dominant foliation>> MU cleavage		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
45.00	46.00	1.00	B00268747	0.5	-0.005	-0.01	-0.01	0.02
46.00	47.50	1.50	B00268748	1.3	0.057	-0.01	0.02	0.03
47.50	49.10	1.60	B00268749	6.3	0.044	0.21	0.02	0.19

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.10	**51.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		49.10	50.20	1.10	B00268752	149	1.15	4.39	1.05	1.79
49.1 - 51.2: Patchy/blebs of CP+PO and PY (net textured) within strong proximal/restricted alteration													
<<Min: 49.1 - 51.2 5% Min: Chalcopyrite>>					50.20	51.20	1.00	B00268753	113	0.671	3.8	0.14	0.55
<<Struc: 50.87 - 50.88 dominant foliation>> MU cleavage													
51.20	**52.00**	**OA**	**Magnetite bearing sulphides**	**MCG**	51.20	52.00	0.80	B00268754	95.6	0.952	2.37	0.26	0.95
51.2 - 52: laminated PY+MG+/-SP+/-GL+/-CP with minor cg PY buckshot texture													
52.00	**55.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	52.00	53.00	1.00	B00268755	51.5	0.589	0.42	0.49	4.59
52 - 55.2: laminated PY with bands of PY+SP+GL. Minor zones of QZ-carb veining with recrystallized SP+GL													
<<Struc: 53.94 - 53.95 dominant foliation>> SP band					53.00	53.70	0.70	B00268756	191	1.4	0.64	2.15	10.6
					53.70	54.40	0.70	B00268757	386	3.65	0.8	2.35	10.5
					54.40	55.20	0.80	B00268758	129	1.82	0.18	1.77	12
55.20	**55.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	55.20	55.70	0.50	B00268759	223	2.73	0.15	4.07	9.34
55.2 - 55.7: laminated PY+SP+GL with cg MG buckshot texture													
55.70	**59.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	55.70	56.70	1.00	B00268761	178	1.57	0.3	3.02	8.82
55.7 - 59.5: laminated PY+SP+GL+CA with bands of higher concentrated SP+GL													
					56.70	57.70	1.00	B00268762	252	1.48	0.28	3.98	10.7
					57.70	58.70	1.00	B00268763	276	3.21	1.02	3.63	7.59
					58.70	59.50	0.80	B00268764	204	2.68	0.6	2.29	10.6
59.50	**59.80**	**OA**	**Magnetite bearing sulphides**	**MG**	59.50	59.80	0.30	B00268765	168	1.89	0.37	2.24	9.86
59.5 - 59.8: laminated PY+MG+SP+GL													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
59.80	**60.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	59.80	60.70	0.90	B00268766	245	1.97	0.39	3.01	7.39

59.8 - 60.7: Laminated PY+SP+GL with bands of high concentrations of SP and GL. Small zone from 60.3-60.5 m of massive MU+CL and CI porphyroblasts.

<<Min: 59.8 - 60.7 20% Min: Sphalerite>>

<<Min: 59.8 - 63.6 10% Min: Calcite>>

<<Alt: 60.3 - 60.5 Strong (Alt) Muscovite>>

<<Alt: 60.3 - 60.5 Moderate (Alt) Chlorite>>

<<Alt: 60.3 - 60.5 Moderate (Alt) Cordierite>> CI porphyroblasts

60.70	**61.40**	**RHY**	**undifferentiated rhyolite**		60.70	61.40	0.70	B00268767	7.4	0.068	0.02	0.1	0.27

60.7 - 61.4: Original texture is obscured by MU-alteration.

<<Alt: 60.7 - 61.4 Strong (Alt) Muscovite>>

61.40	**63.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	61.40	62.30	0.90	B00268768	387	2.71	0.3	4.64	11.3

61.4 - 63.6: Laminated PY+SP+GL+CA with cg PY buckshot texture. 61.4-62.3 m has high grade SP and GL.

<<Min: 61.4 - 62.3 20% Min: Sphalerite>>

					62.30	63.00	0.70	B00268769	258	1.45	0.1	4.2	7.95

<<Min: 61.4 - 62.3 5% Min: Galena>>

					63.00	63.60	0.60	B00268772	230	0.618	0.18	5.85	8.45

<<Alt: 63.4 - 64.3 Moderate (Alt) Cordierite>> CI porphyroblasts

63.60	**64.90**	**RHY**	**undifferentiated rhyolite**		63.60	64.90	1.30	B00268773	33.4	0.402	0.1	0.79	1.27

63.6 - 64.9: moderate PY+/-CP stringers in MU-CI schist.

<<Min: 63.6 - 64.9 5% Min: Calcite>>

<<Min: 63.6 - 66 10% Min: Pyrite>>

<<Alt: 63.6 - 64.3 Strong (Alt) Muscovite>>

<<Alt: 64.3 - 66.5 Moderate (Alt) Muscovite>>

64.90	**65.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		64.90	65.50	0.60	B00268774	16.1	0.047	0.02	0.41	0.66

64.9 - 65.5: moderately MU-altered CA-CL-BI schist with discontinuous CA schistosity.

<<Min: 64.9 - 74.9 20% Min: Calcite>>

<<Alt: 64.9 - 66.5 Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
65.50	**66.00**	**RHY** **undifferentiated rhyolite**

65.5 - 66: moderate PY+/-CP stringers in MU-CI schist.

From (m)	To (m)	Rocktype & Description
66.00	**74.90**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

66 - 74.9: CL-CL-BI schist with an average foliation 45 degrees to core axis

<<Min: 66 - 120 0.5% Min: Pyrite>>

<<Min: 66 - 120 0.5% Min: Pyrrhotite>>

<<Alt: 66.5 - 74.9 Strong (Alt) Muscovite>>

<<Alt: 66.5 - 74.9 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description
74.90	**75.70**	**RHYvl** **Lapilli tuff**

74.9 - 75.7: MU-altered rhyolite volcaniclastic . Elongated QZ lpl present.

<<Min: 74.9 - 75.7 5% Min: Calcite>>

<<Alt: 74.9 - 75.7 Strong (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
75.70	**120.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

75.7 - 120: From 75.7-82 m and 117.3-120 m the unit is a CL-CA-BI schist with an average foliation at 45 degrees to core axis. From 82-117.3 m the unit is a CL-BI schist (with CA restricted to fractures). From ~92-107 m the foliation angle changes from ~45 degrees to

<<Min: 75.7 - 82 20% Min: Calcite>>

<<Min: 82 - 117.3 5% Min: Calcite>>

<<Min: 117.3 - 120 20% Min: Calcite>>

<<Alt: 75.7 - 120 Strong (Alt) Chlorite>>

<<Alt: 75.7 - 120 Strong (Alt) Biotite>>

<<Struc: 86.9 - 86.91 dominant foliation>> Foliation in MAFi

<<Struc: 92.85 - 92.86 Foliation>> Foliation in MAFi

<<Struc: 96.05 - 96.06 Foliation>> Foliation in MAFi

<<Struc: 100.2 - 100.21 Foliation>> Foliation in MAFi

<<Struc: 100.9 - 100.91 Foliation>> Foliation in MAFi

<<Struc: 101.9 - 101.91 Foliation>> Foliation in MAFi

<<Struc: 107.95 - 107.96 dominant foliation>> Foliation in MAFi

<<Struc: 112.1 - 112.11 dominant foliation>> Foliation in MAFi

<<Struc: 113.8 - 113.81 dominant foliation>> Foliation in MAFi

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
65.50	66.00	0.50	B00268775	20	0.093	0.04	0.45	1.54
66.00	67.50	1.50	B00268776	-0.3	-0.005	0.01	-0.01	0.03

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 117.5 - 117.51 dominant foliation>>		Foliation in MAFi									

End of Hole @ 120

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-260

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	13-Sep-15
UTM Easting	414749.033	Core Size:	HQ3	Azimuth:	180.64	Date Logging Complete:	15-Sep-15
UTM Northing:	6815674.459	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1411.257	Casing Depth (m):	3	Length (m):	227	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	12-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	14-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Hole K15-260 was drilled to intercept the sulfide zone of the historical hole K94-020.
The hole is made up of primarily rhyolitic units including two mudstone units above the ore deposit. The massive sulfide was intercepted from 156.67 to 172.12m and is hosted within a larger mineralized zone from 153.71 to 182.29m.
The hole shows progressive muscovite alteration in the hanging-wall followed by strong to intense proximal alteration from 155.75 to 157.91m (moderate cordierite) mineralized CP/PO. The massive sulfide consists in OA, OB and OH containing CP/SP/GL/PO/PY and minor AS.
The footwall consists of OI and OJ domains. A mafic sill, underlain by quartz-eye bearing rhyolite crosscuts the mineralization at 182.29m. The hole ends at 227.00m in meta-sedimentary unit.
Hole K15-260W1 was wedged at 135.00m for metallurgical samples.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.64	0	180.64	APS	Jerome de Pasquale	12-Sep-15		☑	
26	-70.9	156.3	22.5	178.8	ReflexEZS	Geotech	12-Sep-15	5705	☑	
50	-70	157.5	22.5	180	ReflexEZS	Geotech	12-Sep-15	5775	☑	
75	-71.4	158.2	22.5	180.7	ReflexEZS	Geotech	12-Sep-15	5705	☑	
101	-71.6	157.5	22.5	180	ReflexEZS	Geotech	12-Sep-15	5703	☑	
125	-71.6	163.4	22.5	185.9	ReflexEZS	Geotech	12-Sep-15	5710	☑	
152	-70.9	160	22.5	182.5	ReflexEZS	Geotech	12-Sep-15	5537	☑	
176	-71.1	160.2	22.5	182.7	ReflexEZS	Geotech	12-Sep-15	5703	☑	
200	-71.4	160.7	22.5	183.2	ReflexEZS	Geotech	12-Sep-15	5796	☑	
227	-71.1	161.9	22.5	184.4	ReflexEZS	Geotech	12-Sep-15	5759	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**1.00**	**CASN Casing**									
1.00	**2.09**	**RHYvl Lapilli tuff** **light grey**									
<<Alt: 1 - 35 Moderate (Alt) Silicification>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 1 - 100 Weak (Alt) Muscovite>>

2.09 6.24 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

2.09 - 6.24: Or MAFta. BI.

6.24 8.70 RHYva Coarse grained to ash tuff light grey

6.24 - 8.7: Including narrow MAFi from 8.0 to 8.7m.

8.70 25.36 RHYvl Lapilli tuff light grey

8.7 - 25.36: Flow/ash sequense sugesting top down.

<<Alt: 19.14 - 204.2 Moderate (Alt) Silicification>>

<<Vein: 10.5 - 31 Tourmaline-Sulphide>> Veinlets set, shallow angle (10 to 30 degre), sometimes filled with TML penetrating the foliation, PY-GL-CA.

<<Struc: 19.7 - 19.71 Vein>> Veinlet set also fracture set.

<<Struc: 19.75 - 19.76 dominant foliation>>

25.36 31.42 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

25.36 - 31.42: QZ-CA-CL rounded mineral, late.

<<Struc: 25.8 - 25.81 Foliation>>

31.42 50.48 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

31.42 - 50.48: Curdy texture. Some ash flow locally, folded. Speck of black mineral patchy distributed, could be andalousite ?.

<<Min: 31.42 - 50 0.5% Min: Pyrrhotite>> Seems to be associated with the secondary late foliation.

<<Min: 31.42 - 50 0.1% Min: Chalcopyrite>> With PO.

<<Struc: 41.45 - 41.46 Foliation>>

<<Struc: 41.5 - 41.51 dominant foliation>> Secondary foliation crosscutting DFOL cerating crenulation.

<<Struc: 49.95 - 49.96 dominant foliation>>

50.48 53.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

50.48 - 53: Ash-MAFi alternate sequense.

<<Min: 50.48 - 63.51 3% Min: Pyrrhotite>> Or discontinuous veinlets.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 50.48 - 63.51 0.1% Min: Arsenopyrite>>

<<Min: 50.48 - 110 0.5% Min: Pyrite>>

53.00 63.00 RHYva Coarse grained to ash tuff grey-green

53 - 63: Sequense lapilitic and ash

<<Vein: 58 - 58.01 Pyrrhotite 15 deg. >> Veinlets, shallow angle

<<Vein: 60.4 - 60.41 Pyrrhotite 20 deg. >> Veinlets, shallow angle

<<Struc: 59.14 - 59.16 dominant foliation>>

63.00 63.51 RHYvl Lapilli tuff grey-green

63 - 63.51: Dominantly laplitic.

63.51 64.51 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.51 - 64.51: CA, CL, chill margin at lower contact.

<<Min: 63.51 - 110 2% Min: Pyrrhotite>>

64.51 69.18 RHYvl Lapilli tuff grey-green

64.51 - 69.18: Ash at lower contact

<<Struc: 65.5 - 65.52 Moderate (Alt) Fault>> Fault gouge, grey clay-sand.

<<Struc: 65.53 - 65.55 Moderate (Alt) Fault>> Angle mesure in the fault gouge, Brecciated with QZ clasts.

<<Struc: 67.95 - 67.99 Strong (Alt) Fault>> Fault gouge, Clay. Set of fracture with this angle (3 per metre).

69.18 87.02 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

69.18 - 87.02: Locally lapilitic.

<<Alt: 72 - 120 Moderate (Alt) Silicification>>

<<Vein: 70.67 - 70.68 Quartz-Pyrite 55 deg. >> QZ vein, vuggy tecture, recristalization.

<<Vein: 75.5 - 75.51 Quartz-Pyrrhotite 28 deg. >> QZ vein

87.02 94.00 RHYva Coarse grained to ash tuff grey-green

87.02 - 94: Dominantly ash.

<<Vein: 93.93 - 93.94 Calcite 11 deg. >> Dark vein shallow angle, few CA.

<<Struc: 93.93 - 93.94 Vein>> Shallow angle, part of the veinlet set.

94.00 95.60 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
95.60	**113.00**	**RHYva**	**Coarse grained to ash tuff** **grey-green**									
95.6 - 113: Dominantly ash.												
<<Min: 96 - 96.2 5% Min: Sphalerite>> Patch of SP.												
<<Min: 110 - 148 3% Min: Pyrrhotite>> mostly elongated, sometimes patch.												
<<Min: 110 - 153.71 2% Min: Pyrite>> Some aggregated.												
<<Struc: 107.6 - 107.61 Weak (Alt) Fault>> Minor fault, fault gouge.												
113.00	**122.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**									
113 - 122.8: Locally flow banded.												
122.80	**130.19**	**MDSt**	**Rhyolite tuff dominant mudstone** **light grey**									
122.8 - 130.19: QZ eyes, folded, crenulation.												
<<Min: 128 - 130.3 3% Min: Calcite>> and CA associated with MAFi.												
<<Alt: 122.8 - 133.2 Moderate (Alt) Muscovite>>												
<<Struc: 123 - 128 Weak (Alt) Fault>> Several smal fault gouge in folded MDSt.												
130.19	**153.71**	**MDSw**	**Coherent rhyolite flow with carbonaceous content** **light grey**	149.00	150.50	1.50	B00264854	-0.3	-0.005	-0.01	-0.01	-0.01
130.19 - 153.71: QZ eyes. Thin foliation.												
<<Alt: 133.2 - 154.52 Strong (Alt) Muscovite>>				150.50	152.00	1.50	B00264855	0.6	-0.005	-0.01	-0.01	-0.01
<<Vein: 136.2 - 137 Quartz-Chlorite>> QZ vein, CL and kind of glassy dyke enclave?				152.00	152.71	0.71	B00264856	0.6	0.01	-0.01	0.01	0.02
<<Struc: 132.6 - 132.7 Weak (Alt) Fault>> Vuggy fracture, QZ filled, along the core axis. And tension gouge associated, veinlet set.				152.71	153.71	1.00	B00264857	1.8	0.006	0.05	0.03	0.04
<<Struc: 133.59 - 133.6 Vein>> Veinlet set over 2.50m, associated with fracture along the core axis.												
<<Struc: 137 - 137.55 Shear>> Minor shear zone.												
<<Struc: 139.27 - 139.28 Moderate (Alt) Fault>> Minor. Fault gouge.												
<<Struc: 143.75 - 143.76 Moderate (Alt) Fault>> Minor. Fault gouge.												
<<Struc: 148.95 - 148.96 dominant foliation>>												
153.71	**154.52**	**OI**	**Heavilly disseminated sulphides in host schist**	153.71	154.52	0.81	B00264858	15	0.034	0.51	0.07	0.26
153.71 - 154.52: In MDSw.												
<<Min: 153.71 - 154.52 5% Min: Pyrrhotite>>												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 153.71 - 154.52 5% Min: Chalcopyrite>> And stringers.													
<<Alt: 154.32 - 156.67 Weak (Alt) Cordierite>>													
<<Struc: 154.14 - 154.16 Vein>> Main orientation of the CP/PO stringers.													
154.52	**156.67**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		154.52	155.52	1.00	B00264859	10.7	0.079	0.65	0.02	0.21
154.52 - 156.67: Proximal alteration of probably MDSw. PO/CP stringers.													
<<Min: 154.52 - 156.67 3% Min: Pyrrhotite>> Stringers.					155.52	156.67	1.15	B00264861	31.5	0.191	1.29	0.05	0.19
<<Min: 154.52 - 156.67 3% Min: Chalcopyrite>> Stringers.													
<<Alt: 154.52 - 157.91 Strong (Alt) Chlorite>>													
<<Struc: 154.8 - 154.86 Weak (Alt) Fault>> Oriented along the foliation. Fault gouge.													
156.67	**162.59**	**OA**	**Magnetite bearing sulphides**	**MG**	156.67	157.71	1.04	B00264862	46.4	0.418	1.58	0.11	0.64
156.67 - 162.59: Could be MET 2 if GL underestimated. Brecciated or very coarse grains at upper contact. Laminated MG. QZ and semi massive with coarse grain and CP associated from 156.67 to 158.71m. Recristalization, Buckshot aspect from 159.45 to 161m.													
<<Min: 156.67 - 162.59 2% Min: Sphalerite>>					157.71	158.71	1.00	B00264863	36.7	0.202	0.54	0.15	2.36
<<Min: 156.67 - 162.59 2% Min: Galena>>					158.71	160.16	1.45	B00264864	39.5	0.289	0.72	0.11	12.4
<<Min: 156.67 - 162.59 3% Min: Chalcopyrite>>					160.16	161.00	0.84	B00264865	58.4	0.492	0.68	1.28	12.7
<<Struc: 156.82 - 156.84 Contact>> Contact between coarse grain or brecciated PY/CP/PO and fine lamination in the massive sulfide.					161.00	161.74	0.74	B00264866	69.8	0.938	1.06	1.78	3.44
					161.74	162.59	0.85	B00264867	84.4	0.779	0.94	2.52	4.75
162.59	**164.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	162.59	163.39	0.80	B00264868	67.7	0.594	0.44	0.7	1.1
<<Min: 162.59 - 164 95% Min: Pyrite>> fine grain.					163.39	164.00	0.61	B00264869	31.5	0.43	0.06	0.13	3.71
164.00	**165.43**	**OA**	**Magnetite bearing sulphides**	**FG**	164.00	164.74	0.74	B00264871	29.6	0.529	0.27	0.16	2
<<Min: 164 - 172.12 15% Min: Sphalerite>>					164.74	165.43	0.69	B00264872	46.4	0.675	0.43	0.34	2.21
<<Min: 164 - 172.12 3% Min: Galena>> Could be underestimated.													
<<Min: 164 - 172.12 1% Min: Chalcopyrite>>													
165.43	**169.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	165.43	166.12	0.69	B00264873	84	0.647	0.22	0.86	5.96
					166.12	167.00	0.88	B00264874	113	1.61	0.42	1.55	9.19
					167.00	168.00	1.00	B00264875	120	1.28	0.35	1.94	9.87

From (m)	To (m)		Rocktype & Description		
169.10	**169.43**	**OA**	**Magnetite bearing sulphides**		**MG**
169.1 - 169.43: Buckshot texture with MG.					
169.43	**172.12**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MG**
172.12	**175.83**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		**FG**
172.12 - 175.83: MU-BI-TML at contact..					
<<Min: 172.12 - 182.29 5% Min: Pyrrhotite>>					
<<Min: 172.12 - 182.29 0.1% Min: Galena>>					
<<Min: 172.12 - 182.29 8% Min: Chalcopyrite>>					
<<Min: 172.12 - 182.29 0.5% Min: Arsenopyrite>>					
<<Alt: 172.12 - 182.29 Moderate (Alt) Muscovite>>					
<<Alt: 172.12 - 182.29 Moderate (Alt) Chlorite>>					
175.83	**182.29**	**OI**	**Heavilly disseminated sulphides in host schist**	**light grey**	**FG**
175.83 - 182.29: White contorted lamination, maybe albite. Possibly CI ghost.					
182.29	**200.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	
182.29 - 200: Bleeched, fault proximity-sheared.					

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
168.00	169.00	1.00	B00264876	170	1.96	0.45	3.8	9.86
169.00	169.50	0.50	B00264877	83.8	0.439	0.33	2.19	8.99
169.50	170.10	0.60	B00264878	105	0.985	0.28	1.43	9.6
170.10	171.10	1.00	B00264879	131	0.945	0.22	2.36	13.3
171.10	172.12	1.02	B00264881	161	0.519	0.02	5.01	10.2
172.12	173.00	0.88	B00264882	6.2	0.034	0.04	0.04	0.53
173.00	174.00	1.00	B00264883	105	1.15	1.75	0.18	0.61
174.00	175.00	1.00	B00264884	82.7	0.785	1.83	0.17	0.41
175.00	175.83	0.83	B00264885	104	0.86	2.3	0.24	0.71
175.83	176.85	1.02	B00264886	140	1.25	3.97	0.4	0.44
176.85	177.80	0.95	B00264887	161	2.01	3.54	0.45	0.43
177.80	178.80	1.00	B00264888	85.4	0.66	2.19	0.19	0.43
178.80	179.80	1.00	B00264889	28.4	0.208	1.17	0.07	0.19
179.80	180.80	1.00	B00264892	27.2	0.182	0.96	0.14	0.39
180.80	181.68	0.88	B00264893	4	0.014	0.1	0.08	0.23
181.68	182.29	0.61	B00264894	17.2	0.128	0.93	0.06	0.52
182.29	183.00	0.71	B00264895	-0.3	-0.005	-0.01	-0.01	0.03

From (m)	To (m)	Rocktype & Description
		<<Min: 182.29 - 227 2% Min: Calcite>> Weak CA until E.O.H.
		<<Min: 187 - 190 0.5% Min: Pyrite>>
		<<Min: 187 - 190 1% Min: Pyrrhotite>>
		<<Min: 187 - 190 0.1% Min: Chalcopyrite>>
		<<Min: 193.14 - 203 1% Min: Pyrite>> Locally aggregated.
		<<Min: 193.14 - 203 0.1% Min: Pyrrhotite>> Elongated.
		<<Alt: 182.29 - 193.14 Moderate (Alt) Chlorite>> Bleeched.
		<<Alt: 186 - 190 Weak (Alt) Biotite>>
		<<Alt: 190 - 201 Moderate (Alt) Muscovite>>
		<<Alt: 193.14 - 227 Moderate (Alt) Silicification>>
		<<Struc: 183.15 - 185 Strong (Alt) Fault>> Major. Sheared on the edges, fault gouge.
		<<Struc: 187.53 - 187.55 dominant foliation>>
		<<Struc: 189.4 - 189.41 dominant foliation>>
		<<Struc: 194 - 199.14 Weak (Alt) Fault>> Minor faults, 0ne per metre.
200.00	**207.70**	**RHY undifferentiated rhyolite grey-green**
		200 - 207.7: QZ eyes. Progressive upper and lower contact, .
		<<Alt: 203 - 227 Weak (Alt) Chlorite>>
		<<Vein: 206.4 - 206.41 Tourmaline>> TML, fracturated section over 0.3m. TML penetrating the foliation.
		<<Struc: 203.27 - 203.28 dominant foliation>>
207.70	**227.00**	**RHYvx Quartz and/or feldspar crystal tuff green-brown FG**
		207.7 - 227: Few QZ eyes. Foliated, Silicified. Locally BI rich.
		<<Vein: 210.55 - 210.56 Quarzt-Tourmaline-Sulphide>> QZ/TML/PO
		<<Struc: 208.94 - 208.95 dominant foliation>>
		<<Struc: 211.95 - 211.96 dominant foliation>>
		<<Struc: 221.13 - 221.14 dominant foliation>>
End of Hole @ 227		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
183.00	184.00	1.00	B00264896	-0.3	-0.005	-0.01	-0.01	0.01
184.00	185.00	1.00	B00264897	0.4	-0.005	-0.01	-0.01	0.01
185.00	186.00	1.00	B00264898	-0.3	-0.005	-0.01	-0.01	0.01
186.00	187.00	1.00	B00264899	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-260W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	13-Sep-15
UTM Easting	414749.033	Core Size:	HQ3	Azimuth:	180.64	Date Logging Complete:	15-Sep-15
UTM Northing:	6815674.459	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1411.257	Casing Depth (m):	3	Length (m):	196	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	12-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	14-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-260

Comments:

Hole K15-260W1 is a wedge from K15-260, and was drilled from 135.00m of the parent hole in order to collect samples of MET7 domain.
The massive sulfide (OA, OB and OH domains) was intercepted from 157.92 to 172.48m within a mineralized zone from 154.98 to 183.80m containing PY/PO/CP/GL/ SP and minor AS.
The hanging-wall consists of muscovite altered rhyolitic unit followed by strong to intense proximal chlorite alteration from 155.75 to 157.91m with CP/PO stringers.
The footwall is made up of OJ and OI domains. A mafic sill crosscuts the mineralized rhyolitic unit at 183.80m. The hole ends at 196.00m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.64	0	180.64	APS	Jerome de Pasquale	12-Sep-15		☑	Values copied from K15-260
26	-70.9	156.3	22.5	178.8	ReflexEZS	Geotech	12-Sep-15	5705	☑	Values copied from K15-260
50	-70	157.5	22.5	180	ReflexEZS	Geotech	12-Sep-15	5775	☑	Values copied from K15-260
75	-71.4	158.2	22.5	180.7	ReflexEZS	Geotech	12-Sep-15	5705	☑	Values copied from K15-260
101	-71.6	157.5	22.5	180	ReflexEZS	Geotech	12-Sep-15	5703	☑	Values copied from K15-260
125	-71.6	163.4	22.5	185.9	ReflexEZS	Geotech	12-Sep-15	5710	☑	Values copied from K15-260
135	-69.5	162.9	22.5	185.4	ReflexEZS	Geotech	15-Sep-15	5582	☑	Wedge start; value copied from first wedge survey at 147m
147	-69.5	162.9	22.5	185.4	ReflexEZS	Geotech	15-Sep-15	5582	☑	
171	-69.7	141.4	22.5	163.9	ReflexEZS	Geotech	15-Sep-15	5642	☐	Erratic value.
196	-69.4	159.5	22.5	182	ReflexEZS	Geotech	16-Sep-15	5808	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

135.00 145.45 RHY undifferentiated rhyolite

135 - 145.45: Probably RHYcw.

<<Alt: 135 - 154.98 Strong (Alt) Muscovite>>

<<Vein: 137.25 - 138 Quartz>> QZ massive, iregular

<<Struc: 139.8 - 141 Weak (Alt) Fault>> Minor, with fault gauge, multiple.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 143.3 - 145.45 Weak (Alt) Fault>> Minor, with fault gauge, multiple.									
145.45	**148.32**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
		145.45 - 148.32: QZ eyes.									
		<<Struc: 145.45 - 145.45 Contact>> Sharp contact RHY and MDS.									
148.32	**151.44**	**RHY** **undifferentiated rhyolite**	150.00	150.75	0.75						
		148.32 - 151.44: QZ eyes.									
			150.75	151.44	0.69						
151.44	**152.55**	**MDSw** **Coherent rhyolite flow with carbonaceous content**	151.44	152.55	1.11						
		151.44 - 152.55: QZ eyes, locally folded or crenulated.									
152.55	**154.98**	**RHY** **undifferentiated rhyolite**	152.55	153.15	0.60						
		152.55 - 154.98: Probably RHYcw.									
		<<Struc: 152.65 - 153.45 Weak (Alt) Fault>> Minor, with fault gauge, multiple.	153.15	154.00	0.85						
			154.00	154.98	0.98						
154.98	**155.75**	**OI** **Heavilly disseminated sulphides in host schist**	154.98	155.75	0.77						
		154.98 - 155.75: In RHY(cw?).									
		<<Min: 154.98 - 155.75 5% Min: Pyrite>>									
		<<Min: 154.98 - 155.75 3% Min: Pyrrhotite>>									
		<<Min: 154.98 - 155.75 1% Min: Chalcopyrite>>									
		<<Min: 154.98 - 155.75 0.1% Min: Arsenopyrite>>									
		<<Alt: 154.98 - 158.3 Moderate (Alt) Cordierite>>									
155.75	**157.92**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	155.75	156.87	1.12						
		155.75 - 157.92: PO/CP stringers.									
		<<Min: 155.75 - 157.92 3% Min: Pyrite>>	156.87	157.92	1.05						
		<<Min: 155.75 - 157.92 5% Min: Pyrrhotite>>									
		<<Min: 155.75 - 157.92 3% Min: Chalcopyrite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 155.75 - 157.91 Strong (Alt) Chlorite>>													
157.92	**160.16**	**OA**	**Magnetite bearing sulphides**	**FMG**	157.92	158.47	0.55						
157.92 - 160.16: QZ patch and PO. Coarse grain at upper contact (breccia) and associated with QZ.													
<<Min: 157.92 - 160.12 1% Min: Sphalerite>>					158.47	159.00	0.53						
<<Min: 157.92 - 160.12 2% Min: Galena>>					159.00	159.54	0.54						
<<Min: 157.92 - 160.12 3% Min: Chalcopyrite>>					159.54	160.16	0.62						
<<Min: 157.92 - 160.16 75% Min: Pyrite>>													
<<Min: 157.92 - 160.16 7% Min: Pyrrhotite>>													
<<Min: 157.92 - 160.16 6% Min: Magnetite>>													
<<Min: 160.12 - 164.05 3% Min: Sphalerite>>													
<<Min: 160.12 - 164.05 75% Min: Pyrite>>													
<<Min: 160.12 - 164.05 3% Min: Pyrrhotite>>													
<<Min: 160.12 - 164.05 3% Min: Galena>>													
<<Min: 160.12 - 164.05 0.5% Min: Chalcopyrite>> At 162.30, patch CP.													
160.16	**164.05**	**OA**	**Magnetite bearing sulphides**	**FMG**	160.16	161.00	0.84						
					161.00	162.00	1.00						
					162.00	163.00	1.00						
					163.00	164.05	1.05						
164.05	**165.76**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	164.05	165.00	0.95						
<<Min: 164.05 - 167 0.1% Min: Galena>>					165.00	165.70	0.70						
<<Min: 164.05 - 167 0.1% Min: Chalcopyrite>>					165.70	166.20	0.50						
165.76	**166.16**	**OA**	**Magnetite bearing sulphides**	**FG**									
165.76 - 166.16: Containing MG.													
166.16	**167.00**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	166.20	167.00	0.80						
167.00	**169.59**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	167.00	168.00	1.00						
<<Min: 167 - 169.59 4% Min: Sphalerite>>					168.00	169.00	1.00						
<<Min: 167 - 169.59 2% Min: Galena>>					169.00	169.59	0.59						
<<Min: 167 - 169.59 0.1% Min: Chalcopyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
169.59	**170.91**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	169.59	170.18	0.59						
<<Min: 169.59 - 170.76 4% Min: Sphalerite>>					170.18	170.76	0.58						
<<Min: 169.59 - 170.76 5% Min: Galena>>					170.76	171.26	0.50						
<<Min: 170.76 - 171.26 4% Min: Sphalerite>>													
<<Min: 170.76 - 171.26 3% Min: Galena>>													
<<Min: 170.76 - 171.26 6% Min: Chalcopyrite>>													
170.91	**171.26**	**OA**	**Magnetite bearing sulphides**	**FMG**									
171.26	**172.48**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	171.26	171.85	0.59						
<<Min: 171.26 - 172.48 3% Min: Sphalerite>>					171.85	172.48	0.63						
<<Min: 171.26 - 172.48 5% Min: Galena>>													
172.48	**175.85**	**OI**	**Heavilly disseminated sulphides in host schist**		172.48	173.30	0.82						
172.48 - 175.85: Probably in RHY(cw?).													
<<Min: 172.48 - 174.2 4% Min: Pyrite>>					173.30	174.20	0.90						
<<Min: 172.48 - 174.2 4% Min: Pyrrhotite>>					174.20	174.92	0.72						
<<Min: 172.48 - 174.2 0.1% Min: Chalcopyrite>>					174.92	175.85	0.93						
<<Min: 174.2 - 174.92 4% Min: Sphalerite>>													
<<Min: 174.2 - 174.92 20% Min: Pyrite>>													
<<Min: 174.2 - 174.92 4% Min: Galena>>													
<<Min: 174.92 - 183.1 2% Min: Sphalerite>>													
<<Min: 174.92 - 183.1 4% Min: Pyrite>>													
<<Min: 174.92 - 183.1 2% Min: Galena>>													
<<Min: 174.92 - 183.1 3% Min: Chalcopyrite>>													
<<Min: 174.92 - 183.1 0.1% Min: Arsenopyrite>>													
<<Alt: 172.48 - 173.9 Moderate (Alt) Chlorite>>													
<<Alt: 172.48 - 175.85 Moderate (Alt) Chlorite>>													
175.85	**177.12**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		175.85	176.50	0.65						

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 175.85 - 177.12 Strong (Alt) Chlorite>>		176.50	177.12	0.62						
177.12	**183.10**	**OI** **Heavilly disseminated sulphides in host schist**		177.12	178.00	0.88						
		177.12 - 183.1: Probably in RHY(cw?).										
		<<Alt: 177.12 - 183.1 Moderate (Alt) Chlorite>>		178.00	179.00	1.00						
				179.00	180.00	1.00						
				180.00	181.00	1.00						
				181.00	181.67	0.67						
				181.67	182.28	0.61						
				182.28	183.10	0.82						
183.10	**183.80**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**FG**	183.10	183.80	0.70						
		183.1 - 183.8: Coarse grain at lower contact and QZ vein.										
		<<Min: 183.1 - 183.8 5% Min: Pyrite>>										
		<<Min: 183.1 - 183.8 1% Min: Pyrrhotite>>										
		<<Min: 183.1 - 183.8 0.1% Min: Chalcopyrite>>										
		<<Alt: 183.1 - 183.8 Strong (Alt) Chlorite>>										
183.80	**196.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		183.80	185.30	1.50						
		183.8 - 196: Bleeched in the shear zone. Few BI at from 195m, Ca poor. E.O.H.										
		<<Min: 183.8 - 196 2% Min: Calcite>>		185.30	186.80	1.50						
		<<Alt: 183.8 - 187.85 Moderate (Alt) Chlorite>>		186.80	188.00	1.20						
		<<Alt: 187.85 - 192.77 Strong (Alt) Muscovite>> Fushite 4.										
		<<Alt: 192.77 - 196 Moderate (Alt) Chlorite>> Fushite 2.										
		<<Struc: 187.85 - 192.77 Strong (Alt) Fault>> Major, fault corridor. 189.3 to 190.28m, fault gauge.										

End of Hole @ 196

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-261

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Gilles Dessureau
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	15-Sep-15
UTM Easting	419650.76	Core Size:	HQ	Azimuth:	180	Date Logging Complete:	19-Sep-15
UTM Northing:	6813231.17	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1311.2	Casing Depth (m):	9	Length (m):	302	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	14-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Sep-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

This hole was drilled to test the eastern extension of the GP4F horizon. This hole intersected rhyolite lapilli tuffs and pelitic metasediments (similar to the hanging wall of the GP4F deposit) from 0-99m including a quartz crystal tuff/porphyry with bluish quartz eyes, which is commonly associated with the GP4F/R15 horizon. A fault at approximately 99m appears to cut-off the lower part of the stratigraphy, including the mineralized horizon. Below the fault zone, this hole intersects quartz-feldspar lapilli tuffs and a quartz feldspar porphyry similar to the quartz porphyries in the hanging wall approximately 100-200m above the GP4F deposit. Very fine grained disseminated sphalerite (narrow bands up to 10% sphalerite) was intersected between 117.15 and 178.3m above intense chlorite+garnet alteration zone (178.3-187.3m) with fine, banded to disseminated sphalerite-galena-pyrrhotite(+/-trace chalcopyrite) mineralization. GP4F style massive sulphide (sphalerite-pyrrhotite-galena-chalcopyrite) mineralization and vein style (sphalerite-pyrrhotite-galena-chalcopyrite) mineralization were intersected at 214.45-214.9m and 214.1-224.3m respectfully. Below the mineralization this hole intersected carbonaceous siltstone and mudstone (and minor mafic intrusive) and heavily faulted ground.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	157.5	22.5	180	ReflexEZS	Geotech	14-Sep-15		☑	
42	-58.2	158.6	22.5	181.1	ReflexEZS	Geotech	14-Sep-15	5789	☑	
67	-57.9	159.1	22.5	181.6	ReflexEZS	Geotech	14-Sep-15	5818	☑	
92	-58	159.8	22.5	182.3	ReflexEZS	Geotech	14-Sep-15	5752	☑	
132	-58.2	157.3	22.5	179.8	ReflexEZS	Geotech	15-Sep-15	5926	☑	
160	-58.1	162.5	22.5	185	ReflexEZS	Geotech	16-Sep-15	5739	☑	
186	-58.2	160	22.5	182.5	ReflexEZS	Geotech	16-Sep-15	5746	☑	
213	-58.8	156.7	22.5	179.2	ReflexEZS	Geotech	17-Sep-15	5806	☑	
246	-58.4	161.1	22.5	183.6	ReflexEZS	Geotech	17-Sep-15	5786	☑	
270	-59.1	162.7	22.5	185.2	ReflexEZS	Geotech	17-Sep-15	5778	☑	
294	-58.4	164.9	22.5	187.4	ReflexEZS	Geotech	17-Sep-15	5790	☑	
302	-58.5	164.2	22.5	186.7	ReflexEZS	Geotech	18-Sep-15	5772	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN Casing**									
0 - 9: Casing to 9m.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.00 12.30 OVBN Overburden

9 - 12.3: Overburden. Large granite boulders with small rhyolite lapilli tuff boulders.

12.30 12.80 RHYvl Lapilli tuff light grey FMG

12.3 - 12.8: Light grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff.

12.80 14.10 INT undifferentiated (granitic) intrusive rocks light grey CG

12.8 - 14.1: Light grey, massive to weakly foliated, coarse grained granitic rock. Intrusive lower contact with rhyolite lapilli tuff, sharp upper contact. Granitic dyke.

14.10 15.60 RHYvl Lapilli tuff grey FMG

14.1 - 15.6: Grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Abundant 1-2cm rhyolite lapilli (70-80%) in a tuffaceous matrix. Very weak, pervasive sericite alteration. Dominant foliation 50o to ca.

15.60 18.00 SED undifferentiated Sediment brown FG

15.6 - 18: Dark grey to dark brown, well foliated, fine grained, biotite-quartz schist/metapelite. Weakly to moderately calcareous.

18.00 23.90 RHYvl Lapilli tuff light grey FMG

18 - 23.9: Light grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Abundant (~80%), densely packed, 1-2cm rhyolite lapilli. Weak pervasive sericite alteration with very weak silicification. Broken rock between 20-23m.

<<Struc: 20 - 20.1 Moderate (Alt) dominant foliation>>

<<Struc: 20 - 23 Weak (Alt) Fault>> weak fault, with broken core. No gouge.

23.90 24.90 SED undifferentiated Sediment brown FG

23.9 - 24.9: Dark grey to dark brown, well foliated, fine grained, biotite-chlorite-quartz-carbonate schist/metapelite with chlorite rich bands (mafic tuffaceous interbeds?). Weakly to moderately calcareous.

24.90 30.60 RHYvl Lapilli tuff grey FMG

24.9 - 30.6: Grey, well foliated, fine to medium grained, quartz-muscovite-biotite schist/rhyolite tuff-fine lapilli tuff. Generally finer grained with <1cm lapilli in a fine matrix. Could be a siliceous siltstone or epiclastic.

30.60 33.30 SED undifferentiated Sediment brown FG

30.6 - 33.3: Dark grey to dark brown, well foliated, fine grained, biotite-quartz schist/metapelite. Weakly to moderately calcareous.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

33.30 39.40 RHYvl Lapilli tuff grey FMG

33.3 - 39.4: Light to medium grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli (possible feldspar crystals) tuff. Abundant 1-2cm elongated rhyolite lapilli in a fine ash matrix. Several 'fragments' look boxy and could be 2-5mm feldspar crystals. Alteration is weak to very weak, pervasive sericite alteration. Cut by occasional narrow (1-2mm) quartz-tourmaline(?) veinlets at very shallow angles to core axis (10-20o ca.).

<<Struc: 36.5 - 37 Moderate (Alt) Vein>> narrow 1-2mm quartz tourmaline(?) vein.

<<Struc: 38.4 - 39 Moderate (Alt) Fault>> weak fault zone.

39.40 41.45 SED undifferentiated Sediment brown FMG

39.4 - 41.45: Dark grey to dark brown, well foliated, fine grained, biotite-quartz-chlorite-carbonate schist/metapelite with chlorite rich bands (mafic tuffaceous interbeds?). Weakly to moderately calcareous.

41.45 45.20 RHYvl Lapilli tuff light grey FG

41.45 - 45.2: Light grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Abundant 1-2cm rhyolite lapilli decreasing down hole from 50% at the top of the interval to less than 10% down hole with a general fining sequence down hole to coarse ash at the bottom of the interval.

45.20 45.90 SED undifferentiated Sediment brown FG

45.2 - 45.9: Dark grey to dark brown, well foliated, fine grained, biotite-chlorite-quartz-carbonate schist/metapelite with chlorite rich bands (mafic tuffaceous interbeds?). Weakly to moderately calcareous. Gradational lower contact, broken upper contact.

45.90 58.90 RHYvl Lapilli tuff light grey FG

45.9 - 58.9: Light grey, well foliated, weakly to moderately altered, fine grained, quartz-muscovite schist/rhyolite ash tuff. Alteration is weak to locally moderate, pervasive to patchy, sericite alteration with very fine disseminated pyrite. Cut by occasional 1-10cm quartz veins.

<<Alt: 45.9 - 58.9 Weak (Alt) Muscovite>> weak pervasive sericite alteration

<<Vein: 52.55 - 52.8 100% Quartz 55 deg. >> quartz-sericite vein

58.90 59.90 SED undifferentiated Sediment brown FG

58.9 - 59.9: Dark grey to dark brown, well foliated, fine grained, biotite-quartz-carbonate schist/metapelite. Weakly to moderately calcareous.

59.90 67.50 RHYva Coarse grained to ash tuff light grey FG

59.9 - 67.5: Light grey, well foliated, moderately altered, fine grained, quartz-muscovite schist/rhyolite ash tuff. Alteration is moderate, pervasive, sericite alteration with very fine disseminated pyrite (locally up to 1% in 5-10 cm bands). Alteration is increasing in intensity down hole. Cut by occasional 1-10cm quartz veins.

<<Min: 59.9 - 67.9 1% Min: Pyrite>>

<<Alt: 59.9 - 67.5 Weak-Moderate (Alt) Muscovite>> weak to moderate pervasive sericite alteration.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.50	**69.60**	**SED undifferentiated Sediment brown FG**									
67.5 - 69.6: Dark grey to dark brown, well foliated, fine grained, biotite-quartz-carbonate schist/metapelite. More quartz than previous, could almost be considered a tuffaceous metapelite. Weakly to moderately calcareous.											
69.60	**74.80**	**RHYva Coarse grained to ash tuff beige FG**									
69.6 - 74.8: Light grey to beige, well foliated, moderately altered, fine grained, quartz-muscovite schist/rhyolite ash tuff. Alteration is moderate to locally strong, pervasive sericite alteration with abundant fine disseminated pyrite (locally up to 30-40% in 10-20 cm bands). Quartz-chlorite vein at 72.0-72.1m.											
<<Min: 69.6 - 74.8 5% Min: Pyrite>>											
<<Alt: 69.6 - 74.8 Moderate (Alt) Muscovite>> weak to moderate pervasive sericite alteration.											
<<Vein: 72 - 72.2 100% Quartz 55 deg. >> quartz-chlorite vein											
74.80	**80.95**	**RHYva Coarse grained to ash tuff grey-brown FG**									
74.8 - 80.95: Light grey, brown, and beige, well foliated, fine grained, interbedded quartz-muscovite schist/rhyolite ash tuff and biotite-quartz schist/ pelitic metasediment. Alteration is patchy to pervasive moderate to strong sericite alteration with trace to locally 1% fine grained disseminated pyrite.											
<<Min: 74.8 - 80.95 0.5% Min: Pyrite>>											
<<Alt: 74.8 - 80.8 Moderate (Alt) Muscovite>> weak to moderate pervasive sericite alteration.											
80.95	**95.60**	**RHYvx Quartz and/or feldspar crystal tuff grey-green FMG**	80.95	82.00	1.05	B00269155	0.4	0.007	-0.01	0.05	0.29
80.95 - 95.6: Medium grey to greenish grey, well foliated, moderately altered, fine to medium grained quartz-muscovite-chlorite schist/rhyolite quartz crystal tuff (with bluish quartz-eyes). Alteration is moderate to locally strong, pervasive sericite alteration with weak to locally moderate pervasive and patchy chlorite alteration. Mineralization is finely disseminated pyrite. 88.5-88.55m - narrow vein (~5cm) with quartz-pyrite-galena. 90-90.4m narrow (1-2mm) wispy spalerite bands.											
<<Min: 80.95 - 95.6 0.5% Min: Sphalerite>>			82.00	83.00	1.00	B00269156	0.4	-0.005	0.01	0.02	0.23
<<Min: 80.95 - 95.6 5% Min: Pyrite>>			83.00	84.00	1.00	B00269157	2.6	-0.005	-0.01	0.26	1.03
<<Min: 80.95 - 95.6 0.5% Min: Galena>>			84.00	85.00	1.00	B00269158	-0.3	-0.005	-0.01	-0.01	0.03
<<Alt: 80.95 - 94 Moderate (Alt) Chlorite>> moderate patchy chlorite alteration			85.00	86.00	1.00	B00269159	-0.3	-0.005	-0.01	-0.01	0.02
<<Alt: 80.95 - 95.6 Moderate-Strong (Alt) Muscovite>> moderate pervasive sericite alteration.			86.00	87.00	1.00	B00269161	-0.3	-0.005	-0.01	-0.01	0.05
<<Alt: 94 - 178.3 Weak (Alt) Muscovite>> weak patchy sericite alteration, with moderate to strong sericite alteration around fault zones.			87.00	88.00	1.00	B00269162	2.2	0.005	0.01	0.03	0.17
<<Vein: 88.5 - 88.55 90% Pyrite 55 deg. >> galena and pyrite vein with quartz vein			88.00	89.00	1.00	B00269163	40.6	0.025	0.06	0.8	0.57
<<Vein: 92.3 - 92.55 100% Quartz 75 deg. >> quartz vein			89.00	90.00	1.00	B00269164	1.7	-0.005	0.01	0.06	0.27
<<Struc: 91.3 - 91.7 Strong (Alt) Vein>> quartz vein											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

95.60 99.00 SED undifferentiated Sediment brown FG

95.6 - 99: Dark grey to dark brown, well foliated, fine grained, biotite-quartz-carbonate schist/metapelite or tufaceous metapelite. Weakly to moderately calcareous. Very altered lower fault contact.

99.00 99.80 SED undifferentiated Sediment light grey FG

99 - 99.8: Light grey, unconsolidated fault gouge with intense sericite alteration. 99.6-99.8m is quartz vein. Heavily sericite altered halo around fault zone.

<<Struc: 99 - 99.8 Intense (Alt) Fault>> fault gouge.

99.80 100.10 SED undifferentiated Sediment grey-brown FG

99.8 - 100.1: Dark grey to dark brown, well foliated, moderately altered, fine grained, biotite-quartz-carbonate schist/metapelite or tufaceous metapelite. Weakly to moderately calcareous. Very altered lower contact with large quartz vein.

100.10 109.60 SED undifferentiated Sediment grey-brown FG

100.1 - 109.6: Light grey to dark brown, well foliated, moderately altered, quartz-biotite schist/metapelite interbedded with quartz muscovite schist/rhyolite lapilli-ash tuff. Dominantly biotite-quartz schist. Alteration is patchy, moderate sericite alteration. Mineralization is trace to locally 1% fine grained disseminated pyrite associated with sericite alteration. 100.1-100.6m quartz vein.

<<Vein: 100.9 - 101.5 100% Quartz 70 deg. >> quartz vein

<<Struc: 100.9 - 101.6 Strong (Alt) Vein>> quartz vein

109.60 114.60 RHYvl Lapilli tuff grey FMG

109.6 - 114.6: Grey, well foliated, fine to medium grained, quartz-muscovite-biotite schist/rhyolite quartz crystal, lapilli tuff. This unit maybe an epiclastic sediment or a tuffaceous sediment with up to 10% foliated biotite within the rock and interbedded with small bands (up to 30cm) of biotite rich metapelite. Alteration is weak pervasive sericite alteration.

<<Vein: 109.8 - 110 80% Quartz 50 deg. >> quartz vein

<<Struc: 109.6 - 110 Strong (Alt) Vein>> quartz vein

114.60 120.00 RHYcf Feldspar & feldspar quartz porphyry grey FMG

114.6 - 120: Light to medium grey, weakly foliated to massive, quartz-feldspar-muscovite schist/rhyolite quartz-feldspar porphyry. Abundant 0.5-1cm feldspar crystals and abundant 0.5cm quartz crystals in a fine grained matrix. This unit is more foliated in the margins and less foliated in the core. In the core feldspar crystals are still subhedral.

120.00 121.15 RHYvl Lapilli tuff grey FMG

120 - 121.15: Grey to greenish grey, well foliated, fine to medium grained, quartz-muscovite-biotite-chlorite schist/rhyolite lapilli tuff. Abundant 0.5cm quartz and feldspar crystals along with 1cm siliceous lithic lapilli in a biotite rich, chlorite-sericite altered matrix. Possibly an epiclastic unit.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

121.15 122.10 SED undifferentiated Sediment brown FG

121.15 - 122.1: Light grey to dark brown, well foliated, biotite-quartz schist/metapelite. Locally zones of moderate sericite alteration.

122.10 124.40 RHYcf Feldspar & feldspar quartz porphyry grey FMG

122.1 - 124.4: Grey to greenish grey, well foliated, fine to medium grained, quartz-muscovite-biotite-chlorite schist/rhyolite lapilli tuff. Abundant 0.5cm quartz and feldspar crystals along with 1cm siliceous lithic lapilli in a biotite rich, chlorite-sericite altered matrix. Possibly an epiclastic unit. Small zones (5-10cm) of moderate sericite alteration.

<<Vein: 122.1 - 122.3 100% Quartz 80 deg. >> quartz vein

<<Struc: 122.1 - 122.3 Strong (Alt) Vein>> quartz vein

124.40 125.30 SED undifferentiated Sediment grey-brown FG

124.4 - 125.3: Light grey to dark brown, well foliated, biotite-quartz schist/metapelite.

125.30 132.00 RHYvl Lapilli tuff grey-brown FMG

125.3 - 132: Grey to greenish grey, well foliated, fine to medium grained, quartz-muscovite-biotite-chlorite schist/rhyolite lapilli tuff. Abundant 0.5cm quartz and feldspar crystals along with 1cm siliceous lithic lapilli in a biotite rich, chlorite-sericite altered matrix. Possibly an epiclastic unit. Small zones (5-10cm) of moderate sericite alteration. Coarser lapilli at the lower contact which is likely faulted with broken rock.

<<Struc: 127 - 128 Moderate (Alt) Fault>> fault zone - broken core

<<Struc: 130.5 - 131.5 Moderate (Alt) Fault>> fault zone - broken core

132.00 133.70 SED undifferentiated Sediment brown FG

132 - 133.7: Light grey to dark brown, well foliated, biotite-quartz schist/metapelite.

133.70 156.60 RHYcf Feldspar & feldspar quartz porphyry grey FMG

133.7 - 156.6: Light to medium grey, weakly to moderately foliated, fine to course grained, quartz-feldspar-muscovite schist/rhyolite quartz-feldspar porphyry. Abundant 0.5-1.0cm, euhedral to subhedral feldspar crystals with abundant 0.5-1cm euhedral, rounded quartz crystals in a fine grained sericite matrix. Looks a little like a lapilli tuff at the top, but the core looks like a porphyry.

<<Vein: 151.2 - 151.3 100% Quartz 70 deg. >> quartz vein

156.60 157.70 RHYvl Lapilli tuff grey FMG

156.6 - 157.7: Light to medium grey, well foliated, weakly altered, quartz-muscovite schist/rhyolite lapilli tuff. Densely packed 2-3cm elongated rhyolite lapilli in a sericite-chlorite matrix. Alteration is weak pervasive sericite alteration.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

157.70 162.30 SED undifferentiated Sediment brown FG

157.7 - 162.3: Dark brown, well foliated, fine grained, biotite-quartz schist/metapelite. Locally broken core, beginning of a fault zone.

<<Struc: 161 - 162 Strong (Alt) Fault>> fault zone.

162.30 165.00 RHYvl Lapilli tuff grey FMG

162.3 - 165: Light to medium grey, strongly altered, fault zone, with fault gouge.

<<Struc: 162.3 - 165 Intense (Alt) Fault>> fault gouge.

165.00 167.70 SED undifferentiated Sediment grey FG

165 - 167.7: Light grey to brown, well foliated, quartz-biotite-sericite schist/metapelite interbedded with epiclastic sediments. Broken core and likely still in fault zone.

167.70 173.30 RHYvl Lapilli tuff grey FMG

167.7 - 173.3: Light to medium grey, strongly altered, fault zone with well developed fault gouge and rubble core. Alteration is pervasive sericite alteration, likely associated with faulting.

<<Struc: 167.7 - 171.3 Strong (Alt) Fault>> strong fault zone

173.30 176.40 SED undifferentiated Sediment green-brown FG

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
173.30	174.40	1.10	B00269216	0.5	-0.005	-0.01	-0.01	0.03

173.3 - 176.4: Brown, green and white, well foliated, fine grained, biotite-chlorite-carbonate schist/interbedded mafic tuff and pelitic sediment?

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
174.40	175.40	1.00	B00269217	0.5	-0.005	-0.01	-0.01	-0.01
175.40	176.40	1.00	B00269218	1	-0.005	-0.01	-0.01	0.02

176.40 177.15 RHYi Aphanitic Rhyolite (intrusion) light grey FG

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
176.40	177.15	0.75	B00269219	-0.3	-0.005	-0.01	-0.01	-0.01

176.4 - 177.15: Light grey, massive to weakly foliated, fine grained to aphanitic rhyolite dyke (flow?). Sharp upper contact. Very thin, wispy flow bands? Or fragment margins. If fragmental, it is densely packed 'welded' lapilli tuff.

177.15 178.30 SED undifferentiated Sediment brown FG

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
177.15	178.30	1.15	B00269221	12	0.012	0.06	0.11	6.43

177.15 - 178.3: Brown to grey to green, well foliated, fine to medium grained, mineralized, biotite-chlorite-garnet-quartz-carbonate schist. Could be interbedded pelitic sediment with mafic tuffs. Small (1-10cm) biotite rich bands interbedded with small (1-10cm) chlorite and/or actinolite bands. Cut by occasional carbonate veinlets. Mineralization is fine grained, disseminated, sphalerite (+/- galena) occurring within narrow (5-10cm) bands.

<<Min: 177.15 - 178.3 5% Min: Sphalerite>> finely disseminated, weakly laminated sphalerite. Narrow bands up to 10% sphalerite.

From (m)	To (m)	Rocktype & Description
178.30	**187.10**	**SED undifferentiated Sediment green FG**
178.3 - 187.1: Green, well foliated, intensely altered, mineralized, chlorite-garnet schist cutting biotite-chlorite-quartz schist. Footwall stringer zone with intensely chlorite stringers altering a biotite-chlorite-actinolite schist (metapelite interbedded with mafic tuff). Large (up to 2cm) garnet porphyroblasts, occur in the strongest alteration (and smaller ones occur outside the alteration zones). Mineralization is patchy fine grained disseminated pyrrhotite, galena, pyrite with trace chalcopyrite associated with the most altered zones.		
<<Min: 178.3 - 187.3 0.5% Min: Sphalerite>>		
<<Min: 178.3 - 187.3 1% Min: Pyrrhotite>>		
<<Min: 178.3 - 187.3 0.5% Min: Galena>>		
<<Min: 178.3 - 187.3 0.5% Min: Chalcopyrite>>		
<<Alt: 178.3 - 187.1 Intense (Alt) Chlorite>> Intense, pathcy, stringer zone, chlorite-garnet alteration.		
187.10	**192.50**	**SEDc calcareous Sediment brown FG**
187.1 - 192.5: Brown to grey to green, well foliated, fine to medium grained, biotite-chlorite-quartz-carbonate schist. Could be interbedded pelitic sediment with mafic tuffs. Small (1-10cm) biotite rich bands interbedded with small (1-10cm) chlorite and/or actinolite bands. Cut by occasional carbonate veinlets.		
<<Alt: 187.1 - 192.5 Weak (Alt) Muscovite>> weak sericite alteration		
192.50	**205.10**	**SED undifferentiated Sediment light grey FG**
192.5 - 205.1: Light grey, well foliated, moderately altered, quartz-muscovite-biotite schist/rhyolite ash tuff or siliceous siltstone. Core is broken with narrow (1-10cm) zones of fault gouge. Alteration is patchy to pervasive, moderate sericite alteration (possibly associated with faulting).		
<<Alt: 192.5 - 206 Moderate-Strong (Alt) Muscovite>> moderate sericite alteration. Possiby oveprinting alteration asociated with fault zone, possible original sericite alteration associated with VMS mineralization.		
<<Vein: 192.5 - 193.7 100% Quartz 70 deg. >> quartz vein		
<<Struc: 192.5 - 193.7 Strong (Alt) Vein>> quartz vein		
<<Struc: 199 - 201.8 Intense (Alt) Vein>> fault zone.		
<<Struc: 201.8 - 202 Strong (Alt) Vein>> quartz vein		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.30	179.30	1.00	B00269165	2.6	0.005	0.03	0.12	0.74
179.30	180.30	1.00	B00269166	7.6	0.012	0.04	0.26	2.72
180.30	181.30	1.00	B00269167	4.3	0.009	0.03	0.51	1.61
181.30	182.30	1.00	B00269168	13.9	0.035	0.19	4.05	5.11
182.30	183.30	1.00	B00269169	6.5	0.022	0.1	1.84	5.03
183.30	184.10	0.80	B00269171	0.4	0.005	-0.01	0.03	0.11
184.10	185.10	1.00	B00269172	2.9	0.059	0.07	0.45	1.65
185.10	186.10	1.00	B00269173	9.7	0.024	0.14	0.33	4.61
186.10	187.10	1.00	B00269174	1.9	0.015	0.09	0.01	2.78
187.10	188.10	1.00	B00269175	0.5	-0.005	-0.01	-0.01	0.05
188.10	189.10	1.00	B00269176	1.3	-0.005	0.03	0.02	0.45
189.10	190.10	1.00	B00269177	1	0.007	0.08	-0.01	1.12
190.10	192.50	2.40	B00269178	-0.3	-0.005	-0.01	-0.01	0.06
192.50	193.50	1.00	B00269179	-0.3	-0.005	-0.01	-0.01	0.04
193.50	194.50	1.00	B00269181	0.4	0.025	-0.01	0.02	0.04
194.50	195.50	1.00	B00269182	0.7	0.006	-0.01	0.02	0.1
195.50	196.50	1.00	B00269183	0.4	-0.005	-0.01	0.01	0.04
196.50	197.50	1.00	B00269184	-0.3	-0.005	-0.01	-0.01	0.02
197.50	198.50	1.00	B00269185	-0.3	-0.005	-0.01	-0.01	-0.01
198.50	199.50	1.00	B00269186	-0.3	-0.005	-0.01	-0.01	0.01
199.50	201.50	2.00	B00269187	-0.3	-0.005	-0.01	-0.01	0.01
201.50	202.00	0.50	B00269188	0.6	-0.005	-0.01	-0.01	-0.01
202.00	203.00	1.00	B00269189	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
205.10	**214.45**	**RHYvl Lapilli tuff grey-brown FMG**
205.1 - 214.45: Medium grey to brownish grey to locally greenish brown, well foliated, fine to medium grained, quartz-muscovite-biotite schist/rhyolite lapilli tuff and rhyolite ash tuff interbedded with metapelite. Could be epiclastic sediment unit as well with several biotite rich bands. Very mottled texture, Alteration is pervasive sericite-pyrite-silica alteration. (very competent core).		
<<Alt: 206 - 214.45 Weak-Moderate (Alt) Muscovite>>		weak sericite alteration
<<Vein: 206.9 - 207 100% Quartz 75 deg. >>		quartz vein
<<Struc: 206.8 - 207 Strong (Alt) Vein>>		quartz vein
214.45	**214.90**	**MXSX Massive Sulphide dark grey VFG**
214.45 - 214.9: Massive sulphide and quartz vein. Sulphide mineralization is 10cm of massive pyrrhotite/sphalerite with sub-rounded quartz fragments (very similar texture to GP4F and R15) and quartz vein hosted sulphides including pyrrhotite, galena, pyrite and trace chalcopyrite. Upper contact of massive sulphide is sharp and lower contact is convoluted.		
<<Min: 214.45 - 214.9 1% Min: Sphalerite>>		
<<Min: 214.45 - 214.9 1% Min: Pyrrhotite>>		
<<Min: 214.45 - 214.9 1% Min: Galena>>		
<<Min: 214.45 - 214.9 0.5% Min: Chalcopyrite>>		
<<Alt: 214.45 - 214.9 Intense (Alt) Silicification>>		quartz vein associated with mineralization
<<Vein: 214.45 - 214.9 100% Quartz-Pyrrhotite 75 deg. >>		quartz-pyrrhotite-chalcopyrite-galena vein
<<Struc: 214.45 - 214.9 Strong (Alt) Vein>>		pyrrhotite-galena-chalcopyrite-quartz vein/massive sulphide horizon
214.90	**222.90**	**RHYv Rhyolite volcaniclastic light grey FG**
214.9 - 222.9: Light grey, foliated, moderately altered, faulted, quartz-muscovite schist/rhyolite ash tuff. Alteration is moderate, pervasive, sericite alteration. Cut by occasional quartz vein with trace galena.		
<<Alt: 214.9 - 222.9 Strong (Alt) Muscovite>>		strong sericite ltration
<<Struc: 216 - 222.9 Strong (Alt) Fault>>		fault zone with several smaller gouge zones.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
203.00	204.00	1.00	B00269191	0.6	-0.005	-0.01	-0.01	-0.01
204.00	205.10	1.10	B00269192	0.7	-0.005	-0.01	-0.01	-0.01
205.10	207.00	1.90	B00269193	1.3	0.006	-0.01	-0.01	0.04
207.00	208.00	1.00	B00269194	1.9	0.008	-0.01	0.03	0.04
208.00	209.00	1.00	B00269195	1.6	-0.005	-0.01	0.03	0.17
209.00	210.00	1.00	B00269196	1.2	-0.005	-0.01	0.02	0.34
210.00	211.00	1.00	B00269197	0.7	-0.005	-0.01	-0.01	0.04
211.00	212.00	1.00	B00269198	0.9	-0.005	0.01	-0.01	0.12
212.00	213.00	1.00	B00269199	0.6	-0.005	-0.01	-0.01	0.02
213.00	213.80	0.80	B00269201	0.6	0.031	-0.01	-0.01	0.01
213.80	214.45	0.65	B00269202	1.1	-0.005	0.02	-0.01	0.01
214.45	214.90	0.45	B00269203	117	0.036	0.26	2.57	3.91
214.90	215.90	1.00	B00269204	11.6	0.041	-0.01	0.36	0.52
215.90	216.90	1.00	B00269205	7.6	0.018	-0.01	0.37	0.31
216.90	219.00	2.10	B00269206	2.8	-0.005	-0.01	0.13	0.13
219.00	220.00	1.00	B00269207	1.4	-0.005	-0.01	0.17	0.14
220.00	222.00	2.00	B00269208	0.5	-0.005	-0.01	0.04	0.08

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
					222.00	222.90	0.90	B00269209	1.5	-0.005	-0.01	0.1	0.17
222.90	**224.30**	**RHYva** **Coarse grained to ash tuff**	**grey**	**FG**	222.90	224.30	1.40	B00269211	18.5	-0.005	0.1	0.98	1.36

222.9 - 224.3: Grey, to dark grey, strongly altered, quartz-muscovite schist/ rhyolite lapilli tuff. Cut by quartz-galena-chalcopyrite-pyrrhotite vein. Alteration is strong pervasive chlorite-sericite alteration. Associated with the vein.

<<Min: 224.1 - 224.3 1% Min: Pyrrhotite>>

<<Min: 224.1 - 224.3 1% Min: Galena>>

<<Min: 224.1 - 224.3 1% Min: Chalcopyrite>>

<<Alt: 222.9 - 224.3 Moderate-Strong (Alt) Silicification>> strong quartz sericite alteration associted with mineralization

<<Vein: 224.1 - 224.3 100% Quartz-Pyrrhotite 75 deg. >> quartz-pyrrhotite-chalcopyrite-galena vein

<<Struc: 224.1 - 224.3 Moderate-Strong (Alt) Vein>> quartz-galena-pyrrhotite-chalcopyrite vein

224.30	**233.20**	**RHYvl** **Lapilli tuff**	**grey**	**FMG**	224.30	225.30	1.00	B00269212	1.6	-0.005	-0.01	0.08	0.09

224.3 - 233.2: Grey, foliated, fine grained, weakly carbonaceous, quartz-muscovite schist/carbonaceous rhyolite ash-lapilli tuff.

<<Alt: 224.3 - 237 Moderate (Alt) Silicification>> moderate silica alteration

<<Alt: 224.3 - 237 Moderate (Alt) Muscovite>> moderate sericite alteration

<<Vein: 232.7 - 233.1 100% Quartz-Chlorite 35 deg. >> quartz chlorite vein

<<Struc: 232.7 - 233.1 Intense (Alt) Vein>> quartz vein

					225.30	226.30	1.00	B00269213	0.8	-0.005	-0.01	0.03	0.06
					226.30	227.30	1.00	B00269214	0.3	-0.005	-0.01	-0.01	0.06
					227.30	228.30	1.00	B00269215	0.8	-0.005	-0.01	-0.01	0.04

233.20	**237.00**	**SED**	**undifferentiated Sediment**	**grey**	**FG**

233.2 - 237: Medium to dark grey, foliated, fine grained, carbonaceous siltstone interbedded with biotite rich carbonaceous mudstone. Alteration is weak pervasive sericite alteration.

237.00	**243.00**	**MDSc**	**Carbonaceous dominant mudstone**	**dark grey**	**FG**

237 - 243: Dark grey, foliated, fine grained, carbonaceous mudstone and siltstone fault zone and fault gouge. Carbonaceous sand, gravel, and fault gouge. Narrow zones of quartz vein material sand and gravel.

<<Struc: 237 - 243 Intense (Alt) Fault>> fault zone.

243.00	**269.00**	**MDSc**	**Carbonaceous dominant mudstone**	**dark grey**	**FG**

243 - 269: Dark grey, foliated, fine grained, carbonaceous mudstone and siltstone. Interbedded bands of biotite-quartz schist, quartz-carbonaceous schist and narrow 10-20cm bands of biotite-chlorite-carbonate schist. Cut by occasional quartz veins. Broken core 243-249m.

<<Vein: 243 - 252 10% Quartz 55 deg. >> quartz veins

<<Vein: 262.2 - 262.3 100% Quartz 60 deg. >> quartz vein

From (m)	To (m)	Rocktype & Description										
			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 263.2 - 263.5 100% Quartz 70 deg. >> quartz vein

<<Struc: 248.9 - 249.2 Strong (Alt) Vein>> quartz vein

<<Struc: 262.2 - 262.3 Moderate-Strong (Alt) Vein>> quartz vein

<<Struc: 263.2 - 263.5 Intense (Alt) Vein>> quartz vein

269.00 272.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey FMG

269 - 272.2: Medium green, fine to medium grained, equigranular, weakly foliated, biotite-chlorite-actinolite schist/mafic intrusion (flow?). Sharp upper and lower contacts.

272.20 288.00 MDSc Carbonaceous dominant mudstone dark grey FG

272.2 - 288: Dark grey, foliated, fine grained, carbonaceous mudstone and biotite-rich siltstone. Interbedded bands of biotite-quartz schist, quartz-carbonaceous schist and narrow 10-20cm bands of biotite-chlorite-carbonate schist. Cut by occasional quartz veins.

288.00 291.50 MDSc Carbonaceous dominant mudstone dark grey FG

288 - 291.5: Dark grey, foliated, fine grained, carbonaceous mudstone. Locally weakly graphitic. Cut by occasional quartz veins.

291.50 302.00 MDSc Carbonaceous dominant mudstone dark grey FG

291.5 - 302: Dark grey, foliated, fine grained, carbonaceous mudstone and biotite-rich siltstone. Interbedded bands of biotite-quartz schist, quartz-carbonaceous schist and narrow 10-20cm bands of biotite-chlorite-carbonate schist. Cut by occasional quartz veins.

<<Struc: 292 - 293 Moderate (Alt) Fault>> fault zone with broken core with minor gouge.

End of Hole @ 302

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-262

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	15-Sep-15
UTM Easting	415101.047	Core Size:	HQ3	Azimuth:	125.25	Date Logging Complete:	20-Sep-15
UTM Northing:	6815372.083	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1391.439	Casing Depth (m):	6	Length (m):	348	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	13-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Sep-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-262 was drilled to characterize the geotechnical properties of the East Fault, as well as attempt to pierce the upper ore lens (ABM) and the proposed down dropped portion of the deposit. It was drilled from the same pad as the abandoned K15-259, at a modified azimuth and dip in order to have a better intersection of the fault.
The casing was installed to a depth of 6 m. From 6-58.6 m a mixed sequence of felsic volcanics and carbonaceous horizons occur, with MU-alteration increasing from 36-62 m. CI-alteration becomes intense from 58.6-62 m, which coincides with OJ mineralization. MSXS occurs from 58.6-75.4 m, consisting of OJ, OB, OA, and OI. Below the massive sulphide there is a ~3.5 m intercept of MU-altered rhyolite, overlying a large intercept of CL-BI+/-CA schist (MAFi) from 78.8-125.8 m. The foliation within the MAFi unit varies from being a high angle to the core axis to being a low angle to the core axis. The lower contact of the MAFi is an intense ~10 m wide fault consisting of a polylithic fault breccia (East fault?). Below the fault is a sequence of mixed felsic volcanics, mafic dykes and two carbonaceous horizons. No significant mineralization was encountered in the footwall (of the fault) stratigraphy. However, moderate MU-alteration with two bands (~5-10 cm wide) of semi-massive PY+/-SP was encountered between 306-328.4 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	125.25	0	125.25	APS	Dillon Hume	13-Sep-15		☐	
15	-44.8	104.2	22.5	126.7	ReflexEZS	Geotech	14-Sep-15	5842	☑	
45	-44.7	108.2	22.5	130.7	ReflexEZS	Geotech	14-Sep-15	5852	☑	
75	-44.3	108.9	22.5	131.4	ReflexEZS	Geotech	15-Sep-15	5704	☑	
105	-44.4	108.1	22.5	130.6	ReflexEZS	Geotech	15-Sep-15	5728	☑	
138	-44.4	108.2	22.5	130.7	ReflexEZS	Geotech	15-Sep-15	5706	☑	
165	-44.3	110.6	22.5	133.1	ReflexEZS	Geotech	16-Sep-15	5763	☑	
195	-44.2	110.3	22.5	132.8	ReflexEZS	Geotech	16-Sep-15	5754	☑	
225	-44.1	110.6	22.5	133.1	ReflexEZS	Geotech	17-Sep-15	5751	☑	
255	-44	110.9	22.5	133.4	ReflexEZS	Geotech	17-Sep-15	5749	☑	
285	-43.8	114.9	22.5	137.4	ReflexEZS	Geotech	17-Sep-15	5761	☑	
315	-44	116.8	22.5	139.3	ReflexEZS	Geotech	19-Sep-15	5770	☑	
345	-44.1	117.2	22.5	139.7	ReflexEZS	Geotech	19-Sep-15	5774	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.00 24.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

6 - 24: Good curdy of flow banded texture.

<<Min: 6 - 34.1 2% Min: Pyrite>>

<<Min: 6 - 34.1 2% Min: Pyrrhotite>>

24.00 34.10 RHYvl Lapilli tuff

24 - 34.1: fgr grained ash groundmass with PY+/-PO or CA replaced lpl

<<Struc: 32.6 - 33.2 Strong (Alt) Fault>> wet fault gouge zone

34.10 38.00 MDSt Rhyolite tuff dominant mudstone

34.1 - 38: Grades (from bottom of the unit to the top) from a MDSc to a volcaniclastic rhyolite with minor carbonaceous material.

<<Min: 34.1 - 38 1% Min: Pyrite>>

38.00 40.80 RHYv Rhyolite volcaniclastic

38 - 40.8: volcaniclastic rhyolite with minor (~5%) carbonaceous material. QZ-carb vein from ~38-39.3 m. relatively sharp contact with MDSc below.

<<Min: 38 - 49.7 2% Min: Pyrite>>

<<Min: 38 - 49.7 2% Min: Pyrrhotite>>

<<Alt: 38 - 49.7 Weak (Alt) Muscovite>>

<<Vein: 38 - 39.2 80% Quartz>> Massive QZ-AK veining

<<Struc: 39.7 - 40 Moderate (Alt) Fault>> moderately fault zone

40.80 43.60 MDSt Rhyolite tuff dominant mudstone

40.8 - 43.6: From 40.8-41 m the unit can be defined as a carbonaceous mudstone. From 41-43.6 m the unit is volcaniclastic rhyolite with ~10% carbonaceous material.

43.60 49.70 RHYv Rhyolite volcaniclastic

43.6 - 49.7: Well laminated Mu-altered volcaniclastic rhyolite

<<Struc: 43.96 - 43.97 dominant foliation>> Carbonaceous cleavage

<<Struc: 45 - 45.01 dominant foliation>> MU cleavage

<<Struc: 48.15 - 48.16 dominant foliation>> Carbonaceous cleavage

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.70	**52.50**	**MDSc** **Carbonaceous dominant mudstone**									
49.7 - 52.5: carbonaceous mudstone with minor siliceous and carbonate laminations.											
<<Min: 49.7 - 58.6 1% Min: Pyrite>>											
<<Struc: 51 - 51.01 dominant foliation>> lamination in MDSc											
52.50	**56.40**	**RHYvl** **Lapilli tuff**	53.60	54.60	1.00						
52.5 - 56.4: Well laminated volcaniclastic rhyolite with PO replaced lpl. Minor carbonaceous material (>5%).											
<<Alt: 52.5 - 57.3 Moderate (Alt) Muscovite>>			54.60	56.10	1.50						
<<Struc: 52.77 - 52.78 dominant foliation>> carbonaceous/MU cleavage			56.10	57.60	1.50						
<<Struc: 53.5 - 53.9 Moderate (Alt) Fault>> wet fault gouge zone											
<<Struc: 54.2 - 56.4 Strong (Alt) Fault>> moderately-strongly faulted zone with poor core recovery											
56.40	**57.30**	**MDSt** **Rhyolite tuff dominant mudstone**									
56.4 - 57.3: Tuffaceous rhyolite with ~30% carbonaceous material. Well laminated.											
<<Struc: 56.97 - 56.98 dominant foliation>> carbonaceous cleavage											
57.30	**58.60**	**RHYv** **Rhyolite volcaniclastic**	57.60	58.60	1.00						
57.3 - 58.6: strongly MU altered volcaniclastic rhyolite											
<<Alt: 57.3 - 62 Strong (Alt) Muscovite>>											
<<Struc: 58 - 58.1 dominant foliation>> MU cleavage											
58.60	**62.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	58.60	59.20	0.60						
58.6 - 62: Semi-massive PY+PO+GL+SP+/-CP with CI porphyroblasts and MU+SI groundmass											
<<Min: 58.8 - 59.1 20% Min: Sphalerite>>			59.20	60.00	0.80						
<<Min: 58.8 - 59.1 20% Min: Pyrite>>			60.00	61.00	1.00						
<<Min: 58.8 - 59.1 40% Min: Pyrrhotite>>			61.00	62.00	1.00						
<<Min: 58.8 - 59.1 10% Min: Galena>>											
<<Min: 59.5 - 60.6 15% Min: Pyrrhotite>>											
<<Alt: 58.6 - 62 Strong (Alt) Cordierite>> Heavily disseminated CI-porphyroblasts											
<<Struc: 59.4 - 59.41 dominant foliation>> MU cleavage											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
62.00	**64.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	62.00	63.00	1.00						
62 - 64.1: Laminated PY+SP+GL+/-CA. Minor CI porphyroblasts													
<<Min: 62 - 67.8 1% Min: Calcite>>					63.00	64.10	1.10						
<<Struc: 62.47 - 62.48 dominant foliation>> SP lamination													
64.10	**64.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**	64.10	64.50	0.40						
64.1 - 64.5: Semi-massive PY+SP+GL with CI-porphyroblasts in a MU+CL+SI groundmass													
<<Alt: 64.1 - 64.5 Strong (Alt) Muscovite>>													
<<Alt: 64.1 - 64.5 Moderate (Alt) Chlorite>>													
<<Alt: 64.1 - 64.5 Strong (Alt) Cordierite>> Heavily disseminated CI-porphyroblasts													
64.50	**66.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	64.50	65.50	1.00						
64.5 - 66.5: Laminated PY+SP+GL with patchy AS													
<<Min: 66.2 - 66.4 5% Min: Arsenopyrite>>					65.50	66.50	1.00						
<<Struc: 64.97 - 64.98 dominant foliation>> sulphide lamination													
<<Struc: 66.31 - 66.32 dominant foliation>> sulphide lamination													
66.50	**67.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	66.50	67.10	0.60						
66.5 - 67.7: Laminated PY+SP+GL+MG with minor PY buckshot texture													
<<Struc: 67.69 - 67.7 dominant foliation>> sulphide lamination					67.10	67.70	0.60						
67.70	**71.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	67.70	68.30	0.60						
67.7 - 71: Laminated PY+SP+GL with minor MU+SI groundmass													
<<Min: 67.8 - 71 5% Min: Calcite>>					68.30	69.00	0.70						
<<Alt: 67.7 - 69 Strong (Alt) Muscovite>>					69.00	70.00	1.00						
<<Alt: 67.7 - 69 Strong (Alt) Cordierite>> Disseminated CI-porphyroblasts					70.00	71.00	1.00						
<<Struc: 70.02 - 70.03 dominant foliation>> sulphide lamination													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
71.00	**73.00**	**OI**	**Heavilly disseminated sulphides in host schist**	71.00	72.00	1.00						
71 - 73: Heavily disseminated PY in MU-schist												
<<Alt: 71 - 73 Intense (Alt) Muscovite>> Completely altered to MU				72.00	73.00	1.00						
<<Struc: 72 - 73 Moderate (Alt) Fault>> Moderately faulted MU schist												
73.00	**75.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	73.00	73.80	0.80						
MCG												
73 - 75.4: Laminated PY+SP+GL. Locally crosscut by vuggy CA veins. From 74.7-75.4 m there is visible oxidation of sulphide grains (related to fault at 75.4 m). Unit is relatively low grade sulphide.												
<<Min: 73 - 75.4 10% Min: Calcite>>				73.80	74.60	0.80						
				74.60	75.40	0.80						
75.40	**78.80**	**RHY**	**undifferentiated rhyolite**	75.40	76.40	1.00						
75.4 - 78.8: Very strongly faulted from 75.4-78 m. From 78-78.8 m the unit is a QZ-MU schist. The original texture is difficult to determine due to alteration and deformation.												
<<Min: 75.4 - 78.8 3% Min: Pyrite>>				76.40	77.40	1.00						
<<Min: 75.4 - 78.8 2% Min: Calcite>>				77.40	78.20	0.80						
<<Alt: 75.4 - 78.8 Strong (Alt) Muscovite>>				78.20	78.80	0.60						
<<Struc: 75.4 - 78 Moderate (Alt) Fault>> Strongly faulted (wet fault gouge) zone with poor core recovery												
78.80	**125.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	78.80	79.80	1.00						
78.8 - 125.8: CA-CL-BI schist from 78.8-92.6 m. CL-BI+/-actinolite schist from 92.6-125.8 m. The dominant foliation varies from ~45 degree angle to the core axis from 78.8-125.8 m to near parallel to the core axis ~113-121 m. The variation in foliation appears to be as												
<<Min: 78.8 - 85.3 20% Min: Calcite>>												
<<Min: 78.8 - 125.8 0.5% Min: Pyrite>>												
<<Min: 78.8 - 125.8 0.5% Min: Pyrrhotite>>												
<<Min: 85.3 - 92.6 10% Min: Calcite>>												
<<Min: 92.6 - 125.8 2% Min: Calcite>>												
<<Alt: 78.8 - 125.8 Strong (Alt) Chlorite>>												
<<Alt: 78.8 - 125.8 Moderate (Alt) Biotite>>												
<<Struc: 82.5 - 82.51 dominant foliation>> CA band in MAFi												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 86.4 - 89.4 Strong (Alt) Fault>> moderately faulted rocks with some wet fault gouge

<<Struc: 91 - 91.01 Foliation>> CL-cleavage in MAFi

<<Struc: 91.65 - 91.66 Foliation>> CL-cleavage in MAFi

<<Struc: 98.6 - 98.61 Foliation>> CL-cleavage in MAFi

<<Struc: 105.8 - 105.81 Foliation>> CL-cleavage in MAFi

<<Struc: 108.3 - 108.31 Foliation>> CL-cleavage in MAFi

<<Struc: 110.8 - 110.81 Foliation>> CL-cleavage in MAFi

<<Struc: 123.45 - 123.46 dominant foliation>> CL-cleavage

<<Struc: 124.5 - 124.51 dominant foliation>> CL-cleavage

125.80 133.90 FBX Fault Breccia

125.8 - 133.9: Polylithic fault breccia. Very strong faulting. Faulted material contains broken/fractured clasts of MAFi, RHY, MDS, and MSXS. The groundmass is a mix of fault gouge containing MU, CL, QZ… There is evidence for strong brittle faulting, including micro-fra

<<Min: 125.8 - 133.9 1% Min: Pyrite>> ~1 cm clasts of massive pyrite in FBX

<<Min: 125.8 - 133.9 3% Min: Calcite>> Blebs of CA in FBX

<<Struc: 125.8 - 133.9 Intense (Alt) Fault>> Large fault with a polylithic fault breccia over ~8 m

133.90 139.70 RHYvl Lapilli tuff

133.9 - 139.7: QZ-eye bearing lpl tuff with abundant rhyolitic lpl clasts.

<<Min: 133.9 - 139.7 1% Min: Pyrrhotite>>

<<Min: 133.9 - 139.7 2% Min: Calcite>>

<<Struc: 137.95 - 137.96 dominant foliation>> MU-cleavage in RHYv

139.70 142.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

139.7 - 142.9: BI+CL+CA+QZ schist (metapelite). Continuous foliation defined by aligned BI grains. Fg CL+CA+QZ groundmass. Assemblage resembles a pelitic mudstone. Symmetric gradational or chilled margin contacts (?).

<<Min: 139.7 - 142.9 1% Min: Pyrite>>

<<Min: 139.7 - 142.9 1% Min: Pyrrhotite>>

<<Min: 139.7 - 142.9 20% Min: Calcite>>

142.90 146.70 RHYvl Lapilli tuff

142.9 - 146.7: QZ-eye bearing with rhyolite lapilli and a local granitic bomb. Groundmass is dominantly MU+QZ.

<<Min: 142.9 - 146.7 1% Min: Pyrite>>

<<Min: 142.9 - 148.1 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 144.15 - 144.16 dominant foliation>> MU-cleavage in RHYv

146.70 149.70 RHYvx Quartz and/or feldspar crystal tuff

146.7 - 149.7: Crystal tuff containing QZ-eyes, FD crystals and elongated rhyolitic lpl. Unit becomes silicified from 148.1 to the bottom, possibly due to contact with RHYi.

<<Min: 146.7 - 162.4 0.5% Min: Pyrite>>

<<Alt: 148.1 - 153.4 Strong (Alt) Silicification>> Silcification of volcaniclastic rhyolite

149.70 152.60 RHYi Aphanitic Rhyolite (intrusion)

149.7 - 152.6: Patches of light grey aphanitic massive rhyolite. Original FD-crystals and QZ-eyes (from RHYvx?) are preserved within the massive rhyolite. Minor rounded QZ patches occur throughout the unit. Contacts appear gradational and are hard to distinguish form si

<<Struc: 149.8 - 149.81 dominant foliation>> Cleavage in SI-altered RHYv

152.60 162.40 RHYvx Quartz and/or feldspar crystal tuff

152.6 - 162.4: Subhedral-euhedral FD crystals and QZ-eyes in silica+MU groundmass. Continuous foliation defined by MU and elongated FD. Gradational upper (with RHYi) and lower (with RHYvl xtl) contacts.

<<Min: 153.4 - 166.8 1% Min: Calcite>>

162.40 165.90 RHYvl Lapilli tuff

162.4 - 165.9: Lithic (?) lpl, subhedral FD crystals, and QZ eyes in a silca+MU groundmass with local 1mm-2cm bands of semi-massive PY+/-PO.

<<Min: 162.4 - 165.9 3% Min: Pyrite>> Bands of semi-massive PO+PY

<<Min: 162.4 - 165.9 5% Min: Pyrrhotite>> Bands of semi-massive PO+PY

165.90 166.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

165.9 - 166.8: QZ-eye bearing curdy rhyolite. Gradational lower contact with SED. Transitions from strongly curdy rhyolite to QE tuffaceous (?) rhyolite to BT+CL+QZ+CA schist (metapelite).

<<Min: 165.9 - 174.5 1% Min: Pyrite>>

166.80 167.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

166.8 - 167.3: BI+CL+CA+QZ schist (metapelite). Continuous foliation defined by aligned BI grains. Fg CL+CA+QZ groundmass. Assemblage resembles a pelitic mudstone. Symmetric gradational or chilled margin contacts (?).

<<Min: 166.8 - 167.3 20% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

167.30 172.00 RHYvl Lapilli tuff

167.3 - 172: Light grey, tuffaceous rhyolite with rhyolitic and lithic lpl, subhedral FD-crystals, and QZ eyes in a Silica+MUgroundmass. Unit varies from FD-crystal rich (167.3- ~168.8 m) to lithic lpl rich (~170-172 m).

<<Min: 167.3 - 174.5 1% Min: Calcite>>

172.00 174.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

172 - 174.5: Good curdy textured rhyolite with fg MU anastomosing cleavage

174.50 178.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

174.5 - 178: BI+CL+CA+QZ schist (metapelite). Continuous foliation defined by aligned BI grains. Fg CL+CA+QZ groundmass. Assemblage resembles a pelitic mudstone. Symmetric gradational or chilled margin contacts (?).

<<Min: 174.5 - 178 3% Min: Pyrite>>

<<Min: 174.5 - 178 20% Min: Calcite>>

178.00 182.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

178 - 182.3: Good curdy textured rhyolite with disseminated QZ eyes and an anastomosing MU-cleavage

<<Min: 178 - 182.3 1% Min: Calcite>>

<<Min: 178 - 194.5 1% Min: Pyrite>>

182.30 183.40 RHYvl Lapilli tuff

182.3 - 183.4: light grey micaceous rhyolite tuff with moderate concentrations of altered lpl. Grades into RHYva at the bottom contact.

<<Min: 182.3 - 194.5 5% Min: Calcite>>

183.40 194.50 RHYva Coarse grained to ash tuff

183.4 - 194.5: Fine grained MU+Silica ashy tuff, with local patches of altered lpl.

194.50 203.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

194.5 - 203.2: Brownish-black, BI-CL-CA schist. Fg BI in an olive green CL-CA+/-QZ matrix with CA (after-FD?) crystals. Different than the other two MAFis in this hole. Originally logged as MAFi but the fly camp believes it to be intrusive.

<<Min: 194.5 - 203.2 3% Min: Pyrite>>

<<Min: 194.5 - 203.2 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 194.5 - 203.2 20% Min: Calcite>>

203.20 218.90 RHY undifferentiated rhyolite

203.2 - 218.9: Large QZ-Carb vein with completely CL-altered wallrock. Minor zone (211.9-212.2 m) with a light grey colour that resembles rhyolite.

<<Min: 203.2 - 218.9 5% Min: Calcite>>

<<Alt: 203.2 - 218.9 Intense (Alt) Chlorite>> CL-alteration completely obliterates any texture or composition of original rock.

<<Vein: 203.2 - 209.1 90% Quartz>> QZ-carb veining that has completely altered the wallrock to CL

<<Vein: 209.1 - 214 30% Quartz>> QZ-carb veining in strongly CL-altered wallrock

<<Vein: 214 - 218.9 90% Quartz>> QZ-carb veining that has completely altered the wallrock to CL

<<Struc: 218.5 - 224.9 Strong (Alt) Fault>> Highly fractured and moderately faulted zone. Local 20-50 cm zones of wet fault gouge.

218.90 224.90 RHYvl Lapilli tuff

218.9 - 224.9: Highly fractured and moderately faulted, medium grey-green, rhyolite lapilli, MU-QZ schist. 0.5-1 cm long rhyolitic lapilli. Fine grained MU+QZ groundmass. Zones of strong fault gouge.

<<Min: 218.9 - 234.1 1% Min: Pyrite>>

<<Min: 218.9 - 247 5% Min: Calcite>>

224.90 234.10 RHYv Rhyolite volcaniclastic

224.9 - 234.1: Strongly faulted zone consisting mostly of fault gouge and/or fault breccia, with RHY clasts. Minor un-faulted blocks show volcaniclastic rhyolite texture.

<<Struc: 224.9 - 234.1 Strong (Alt) Fault>> Strongly faulted zone with high proportion of fault gouge and fault breccia, consisting of RHY clasts.

234.10 247.00 RHYvl Lapilli tuff

234.1 - 247: ~20% rhyolitic lpl with minor PY-replaced lpl in MU+QZ groundmass.

<<Min: 234.1 - 283.4 1% Min: Pyrite>>

<<Min: 234.1 - 283.4 5% Min: Pyrrhotite>>

<<Struc: 245 - 245.9 Moderate (Alt) Fault>> Moderately faulted rhyolite with some wet fault gouge.

247.00 283.40 RHYv Rhyolite volcaniclastic

247 - 283.4: Light grey-yellowish green, fine grained, PY+MU+QZ schist. ~5% disseminated mm-scale PO+/-PY blebs within a continuous foliation defined by MU. From ~256-270 m there are cm-scale contorted bands of PY+/-PO composing ~10% of the rock. Hard to determine the

<<Min: 247 - 266 1% Min: Calcite>>

<<Min: 256 - 270.5 5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 266 - 270.5 5% Min: Calcite>>

<<Min: 270.5 - 295.7 1% Min: Calcite>>

<<Struc: 265.3 - 265.7 Moderate (Alt) Fault>> weak-moderate fault with minor fault gouge

<<Struc: 267.1 - 267.8 Strong (Alt) Fault>> Moderately faulted rhyolite with wet fault gouge

283.40 291.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

283.4 - 291.1: Apparent contorted silica bands that are crosscut by MU-cleavage (axial planar to contortions). ~5-10% mm to cm-scale blebs of PO elongated with foliation.

<<Min: 283.4 - 291.1 10% Min: Pyrrhotite>>

291.10 295.70 RHYv Rhyolite volcaniclastic

291.1 - 295.7: Light grey-yellowish green, fine grained, PY+MU+QZ schist. ~5% disseminated mm-scale PO+/-PY blebs within a continuous foliation defined by MU. Hard to determine the original texture due to the pervasive nature of the MU cleavage. Gradational lower bounda

<<Min: 291.1 - 295.7 5% Min: Pyrrhotite>>

295.70 298.50 MDSc Carbonaceous dominant mudstone

295.7 - 298.5: Rhyolitic tuffaceous material in a carbonaceous continuous foliation. Carbonaceous material ~50%. Minor diagenetic (?) PY.

<<Min: 295.7 - 298.5 2% Min: Pyrite>>

<<Min: 295.7 - 298.5 1% Min: Pyrrhotite>>

<<Min: 295.7 - 338.9 1% Min: Calcite>>

298.50 317.90 RHYvl Lapilli tuff

298.5 - 317.9: Abundant (~20-30%) rhyolitic lpl within a QZ+MU+/-PY groundmass.

<<Min: 298.5 - 322.5 2% Min: Pyrite>>

<<Alt: 306 - 328.4 Moderate (Alt) Muscovite>>

<<Vein: 303.6 - 306 65% Quartz>> Massive QZ-CA vein in rhyolite

<<Struc: 305 - 305.4 Strong (Alt) Fault>> moderately faulted zone with milled fault gouge/breccia

<<Struc: 308.47 - 308.48 dominant foliation>> MU-cleavage

<<Struc: 312.06 - 312.07 dominant foliation>> MU-cleavage

<<Struc: 312.47 - 312.48 dominant foliation>>

<<Struc: 313.25 - 313.26 dominant foliation>> MU-cleavage

<<Struc: 314.75 - 314.76 dominant foliation>> MU-cleavage

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 315.68 - 315.69 dominant foliation>> MU-cleavage									
317.90	**330.20**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	318.00	319.50	1.50	B00268777	0.5	0.01	-0.01	-0.01	-0.01
		317.9 - 330.2: Silica banding or good curdy siliceous texture with in MU-schist. Minor bands of semi-massive PY+SP+/-GL from 322.5-324.2 m.									
		<<Min: 322.5 - 324.4 0.5% Min: Sphalerite>>	319.50	321.00	1.50	B00268778	0.4	-0.005	-0.01	-0.01	-0.01
		<<Min: 322.5 - 324.4 5% Min: Pyrite>> disseminated and thin bands of sulphide	321.00	322.50	1.50	B00268779	0.7	0.011	-0.01	-0.01	0.02
		<<Min: 323.7 - 323.8 5% Min: Sphalerite>> band of semi-massive PY+SP	322.50	323.50	1.00	B00268781	1.3	0.02	0.02	0.02	0.2
		<<Min: 323.7 - 323.8 40% Min: Pyrite>> band of semi-massive PY+SP	323.50	324.50	1.00	B00268782	14.2	0.099	0.08	0.46	1.25
		<<Min: 324.1 - 324.2 5% Min: Sphalerite>> band of semi-massive PY+SP+GL	324.50	326.00	1.50	B00268783	0.8	0.017	0.01	0.01	0.08
		<<Min: 324.1 - 324.2 40% Min: Pyrite>> band of semi-massive PY+SP+GL	326.00	327.50	1.50	B00268784	0.7	0.008	-0.01	-0.01	0.02
		<<Min: 324.1 - 324.2 2% Min: Galena>> band of semi-massive PY+SP+GL	327.50	329.00	1.50	B00268785	0.7	0.008	-0.01	0.02	0.03
		<<Min: 324.4 - 330.2 3% Min: Pyrite>>									
		<<Alt: 328.4 - 330.9 Weak (Alt) Muscovite>>									
		<<Struc: 318.77 - 318.78 dominant foliation>> MU-cleavage									
		<<Struc: 320 - 320.01 dominant foliation>> MU-cleavage									
		<<Struc: 321.14 - 321.15 dominant foliation>> MU-cleavage									
		<<Struc: 325.6 - 325.61 dominant foliation>> MU-cleavage									
		<<Struc: 328.08 - 328.09 dominant foliation>> MU-cleavage									
		<<Struc: 329 - 329.01 dominant foliation>> MU-cleavage									
330.20	**332.40**	**MDSc Carbonaceous dominant mudstone**									
		330.2 - 332.4: Gradational boundary with overlying RHYcw, from MDSt to argillite (330.8-332.4 m). Disseminated cg PY (diagenetic?).									
		<<Min: 330.2 - 332.4 10% Min: Pyrite>> Diagenetic PY in MDSc									
332.40	**338.90**	**RHYv Rhyolite volcaniclastic**	334.40	335.90	1.50	B00268786	0.7	0.008	-0.01	-0.01	-0.01
		332.4 - 338.9: QZ-MU schist. Hard to determine original texture.									
		<<Min: 332.4 - 338.9 0.5% Min: Pyrite>>	335.90	337.40	1.50	B00268787	0.7	0.009	-0.01	-0.01	-0.01
		<<Min: 332.4 - 338.9 0.5% Min: Chalcopyrite>>	337.40	338.90	1.50	B00268788	8.1	0.013	0.02	0.04	0.01
		<<Alt: 332.4 - 341.1 Moderate (Alt) Muscovite>>									

From (m)	To (m)	Rocktype & Description
338.90	**340.50**	**RHY** **undifferentiated rhyolite**

338.9 - 340.5: MU+BI+CA schist with disseminated PY+SP+GL+CP. Locally the texture moderately resembles MU-altered CL+BI+CA schist (MAFi). Core is very fractured.

<<Min: 338.9 - 340.5 1% Min: Sphalerite>> Minor bands of concentrated PY+SP+GL+/-CP

<<Min: 338.9 - 340.5 5% Min: Pyrite>> Minor bands of concentrated PY+SP+GL+/-CP

<<Min: 338.9 - 340.5 0.5% Min: Galena>> Minor bands of concentrated PY+SP+GL+/-CP

<<Min: 338.9 - 340.5 0.5% Min: Chalcopyrite>> Minor bands of concentrated PY+SP+GL+/-CP

<<Min: 338.9 - 340.5 10% Min: Calcite>>

<<Alt: 338.9 - 340.5 Moderate (Alt) Biotite>> Disseminated biotite within unit. Not sure whether it is alteration.

340.50	**345.70**	**RHYvl** **Lapilli tuff**

340.5 - 345.7: Medium grey, volcaniclastic with moderate rhyolitic lpl

<<Min: 340.5 - 345.7 1% Min: Pyrite>>

<<Min: 340.5 - 345.7 5% Min: Calcite>>

345.70	**347.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

345.7 - 347.6: Green, CL+CA+BI schist

<<Min: 345.7 - 347.6 1% Min: Pyrrhotite>>

<<Min: 345.7 - 347.6 20% Min: Calcite>>

347.60	**348.00**	**RHY** **undifferentiated rhyolite**

347.6 - 348: Highly fractured/brecciated rhyolite with sericite in fractures.

<<Min: 347.6 - 348 1% Min: Calcite>>

End of Hole @ 348

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
338.90	339.90	1.00	B00268789	35.7	0.17	0.54	0.03	0.65
339.90	340.50	0.60	B00268791	7.5	0.029	0.06	0.03	0.35
340.50	342.00	1.50	B00268792	1.8	0.01	-0.01	-0.01	0.01
342.00	343.50	1.50	B00268793	1.1	0.009	-0.01	-0.01	-0.01
343.50	345.00	1.50	B00268794	0.9	0.008	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-263

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Daniele Heon
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	17-Sep-15
UTM Easting	415206.483	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	20-Sep-15
UTM Northing:	6815595.644	Casing Pulled?:	Yes	Dip:	-75	Drill Company:	Geotech
UTM Elev. (m):	1423.973	Casing Depth (m):	25	Length (m):	254	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	18-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	180	0	180	APS	Daniele Heon	17-Sep-15		☑	
25.5	-72.3	165.3	22.5	187.8	ReflexEZS	Geotech	17-Sep-15		☑	
32	-72.9	165.3	22.5	187.8	ReflexEZS	Geotech	17-Sep-15	5852	☑	
62	-72.6	163.3	22.5	185.8	ReflexEZS	Geotech	17-Sep-15	5736	☑	
89	-72.5	167.7	22.5	190.2	ReflexEZS	Geotech	17-Sep-15	5774	☑	
116	-72.8	166.3	22.5	188.8	ReflexEZS	Geotech	17-Sep-15	5754	☑	
146	-72.7	168.8	22.5	191.3	ReflexEZS	Geotech	17-Sep-15	5772	☑	
170	-72.7	170.1	22.5	192.6	ReflexEZS	Geotech	17-Sep-15	5824	☑	
200	-72.6	171.2	22.5	193.7	ReflexEZS	Geotech	17-Sep-15	5784	☑	
230	-72.6	173.6	22.5	196.1	ReflexEZS	Geotech	18-Sep-15	5810	☑	
254	-72.6	171.1	22.5	193.6	ReflexEZS	Geotech	18-Sep-15	5807	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 20.00 OVBN Overburden

0 - 20: Cored rock in HQ casing starts around 20m, NQ core starts at 24m.

20.00 26.88 RHYvl Lapilli tuff

<<Min: 20 - 21.5 1% Min: Pyrrhotite>> in cased top of hole (HQ),oxidized, po-py heavily disseminated in qtz-rich bands // to foln.

<<Min: 21.5 - 28.65 0.5% Min: Pyrrhotite>> Po in short flat seams // to foln.

<<Min: 25.2 - 27 0.01% Min: Galena>> specks of galena in selvage of 1 cm shallow angle quartz vein.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 21.62 - 21.67 100% Quartz 25 deg. >> discordant

<<Vein: 25.2 - 27 30% Quartz 10 deg. >> Dark qtz and brown fg material (tourmaline?), galena in selvage

<<Struc: 20.55 - 23.4 Moderate (Alt) Fault>> Four sections of rusty clayey gouge, 3 to 30 cm wide.

26.88 53.92 RHYva Coarse grained to ash tuff

<<Min: 27.95 - 31.1 3% Min: Calcite>>

<<Min: 28.65 - 33.45 1% Min: Pyrite>> po-py heavily disseminated in qtz-rich bands // to foln.

<<Min: 28.65 - 33.45 1% Min: Pyrrhotite>> po-py heavily disseminated in qtz-rich bands // to foln.

<<Min: 33.45 - 48.15 0.5% Min: Pyrrhotite>> Po in short flat seams // to foln.

<<Min: 47.1 - 51.95 3% Min: Calcite>>

<<Min: 52.35 - 53.05 0.5% Min: Pyrrhotite>> Po in short flat seams // to foln.

<<Min: 53.5 - 56.85 10% Min: Calcite>>

<<Vein: 49 - 49.2 40% Quartz 15 deg. >> 2 cm qtz- brown tourmaline vein w tourm in selvage also.

<<Struc: 49 - 49.2 Vein>> qtz brown tourmaline (?) vein. E-W strike, subvertical?

<<Struc: 49.8 - 49.81 dominant foliation>> NE strike/ SE dip?

53.92 54.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

53.92 - 54.4: or RHY vl. White siliceous bands dissected by sericite, once a competent flow?

54.40 56.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

54.4 - 56.7: fine grained,banded maroon (biot) and green f.g rx, peppered w f.g. stubby tourm or hbl?

56.70 58.25 RHYcw Curdy textured-flow banded (flows, subvolcanics)

56.7 - 58.25: or RHY vl. White siliceous bands dissected by sericite, once a competent flow?

<<Min: 56.85 - 63.95 5% Min: Calcite>>

58.25 63.95 RHYva Coarse grained to ash tuff

<<Vein: 63.4 - 139 0.06% Quartz-Tourmaline 15 deg. >> Total of 9 thin shallow angle mm-scale veins +/- py, po, cc, displaced by S2 foln but cuts coarse qtz-carb veins. Loc tourm halo in wallrock upto 2 cm. Up to 45 deg CA.

<<Struc: 59.2 - 59.21 >> 2nd foliation?

63.95 64.75 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.95 - 64.75: Very f.g. green rx (chl) w 1-3mm calcite porphyroblasts? Calcite veining.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 63.95 - 65.05 15% Min: Calcite>>

<<Vein: 63.95 - 64.75 5% Calcite 80 deg. >>

64.75 72.00 RHYva Coarse grained to ash tuff

<<Struc: 65.1 - 65.11 dominant foliation>>

<<Struc: 66.1 - 66.11 Vein>> thinqtz-brown tourm vein? E- strike, steep south dip.

72.00 73.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

72 - 73.45: Very f.g. green rx (chl) w small hbl or tourmaline xtals? Calcite veining.

<<Min: 72.15 - 74.1 10% Min: Calcite>>

<<Vein: 72.15 - 73 5% Quartz 85 deg. >> 2 veins, 4-6 cm

73.45 76.40 RHYva Coarse grained to ash tuff

76.40 78.80 RHYva Coarse grained to ash tuff

78.80 82.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

78.8 - 82.6: Very f.g. green rx (chl) w small hbl or tourmaline xtals? Calcite veining. Sharp contacts.

<<Min: 78.8 - 82.6 10% Min: Calcite>>

<<Vein: 81 - 82.6 2% Calcite 85 deg. >>

<<Struc: 81 - 99 dominant foliation>>

82.60 86.80 RHYvl Lapilli tuff

<<Min: 83.5 - 84.3 0.5% Min: Pyrrhotite>> Po in short flat seams // to foln and diss in band // to foln

86.80 88.85 RHYvx Quartz and/or feldspar crystal tuff

88.85 91.90 RHYvl Lapilli tuff grey

88.85 - 91.9: w faint lapilli shapes

<<Struc: 89.25 - 89.4 Strong (Alt) Fault>> small breccia fault gouge w fold in footwall w axial plane // to contact w fault gouge. Suggests reverse displacement.

91.90 96.00 RHYvl Lapilli tuff grey-green

91.9 - 96: includes 0.5m mafic dyke at UC consisting of f.g. greenish grey rx w biotite porphyroblasts at UC. Rest of interval is slightly greenish, rel hard (due to qtz veining?), w loc flecks of carbonate xtals,

<<Min: 95 - 96 0.5% Min: Pyrrhotite>>

<<Alt: 92.5 - 95.5 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 92.4 - 94.85 8% Quartz 85 deg. >> 1 cm qtz veins slightly discordant to foln

<<Vein: 94.8 - 94.95 100% Quartz-Tourmaline 80 deg. >>

96.00 108.25 RHYva Coarse grained to ash tuff grey-brown

96 - 108.25: Mottled texture, sl sericite and chl altered groundmass, w some lapilli. Tightly folded qtz veins shows tight structure but rx not strongly foliated. 107.2-108.1: Xtal tuff (?) w ankerite-altered (?) broken xtals.

<<Min: 98.8 - 105 0.5% Min: Calcite>>

<<Min: 105 - 106.1 3% Min: Calcite>>

<<Vein: 99.2 - 166.2 0.02% Chlorite 5 deg. >> Few shallow angle fractures w chlorite coating.

<<Struc: 103.4 - 103.45 Weak (Alt) Fault>> fault gouge breccia

108.25 109.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

108.25 - 109.2: Irregular mottled siliceous bands in sericitic groundmass, once coherent rhyolite? Or RH?Yvl silicified by qtz veining?

109.20 121.67 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

109.2 - 121.67: Strongly mottled and striped rx showing granular chl-biot-qtz domains strongly dissected by creamy sericite foliae. Loc calcareous.Texturally destructive creamy pale pinkish sericite along S1 (dom) and S2.

<<Min: 111.6 - 123.6 0.5% Min: Pyrrhotite>> also in few heavily diss bands.

<<Min: 120.75 - 121.6 1% Min: Calcite>>

<<Min: 121.6 - 123.6 10% Min: Calcite>>

<<Alt: 109.2 - 121.67 Weak (Alt) Muscovite>> beige sericite overprinting chloritic overprint?

<<Alt: 109.2 - 121.67 Weak (Alt) Chlorite>> chloritic groundmass is dissected and overprinted by beige sericite.

<<Struc: 116.15 - 116.16 dominant foliation>> Dominant foln (S1) is later folded by axial planar S2 foln. Dom foln is E-W strike, N dip.

<<Struc: 116.17 - 116.18 >> Later axial planar S2 foln folds and crenulates dominant foln (S1). S2 has Nw Strike/ NE dip.

121.67 123.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

121.67 - 123.6: fg brownish biotite-rich rx, dyke? Sharp UC (or alteration front), gradual LC, calcareous, w numerous folded carbonate veins. Could also be sed?

<<Alt: 123.26 - 135.65 Moderate (Alt) Muscovite>> beigey sericite replacing along foliations and overprinting chl.

<<Alt: 123.26 - 135.65 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

123.60 135.65 RHYvl Lapilli tuff

123.6 - 135.65: Strongly mottled and striped rx showing granular chl-biot-qtz domains strongly dissected by creamy sericite foliae. Loc calcareous.Texturally destructive creamy pale pinkish sericite along foln. Some tightly folded bands of heavily diss po bands. 129-132.

<<Min: 123.6 - 134 1% Min: Calcite>>

<<Min: 123.6 - 153 1% Min: Pyrite>> approx 1% py mostly disseminated but also loc in heavily diss bands w dominant po. Some short sections where diss py > po.

<<Min: 123.6 - 153 3% Min: Pyrrhotite>> Approx 2% po, diss in core and in heavily disseminated folded bands. Some short sections po<1%. 152.75-152.85: 2-5% po py in bands.

<<Struc: 133.9 - 133.91 dominant foliation>> E-W/N

135.65 169.20 RHYvl Lapilli tuff

135.65 - 169.2: light greenish grey sericitic felsic rx w fragmental texture, w folded bands of heavily diss po +/- py. 160.35-160.95: MDSt. Maybe RHYc in places? 162.85-163.4: interbanded grey sericitic/ and chl-biot bands w stubby black mineral diss along foliae (limy

<<Min: 156.1 - 169.8 1% Min: Pyrrhotite>> in flat foliaform stringers and diss.

<<Min: 166 - 168 2% Min: Pyrrhotite>> po 1-2 % in flat foliaform seams

<<Min: 168 - 177 0.5% Min: Pyrrhotite>>

<<Alt: 135.65 - 145 Moderate (Alt) Muscovite>> light greenish grey sericite on foliae, loc strong?

<<Alt: 145 - 169.8 Moderate (Alt) Muscovite>> silvery grey sericite on foliae.

<<Alt: 168.6 - 168.9 Weak (Alt) Chlorite>>

<<Struc: 163.95 - 163.96 dominant foliation>> NW strike/ SE dip

<<Struc: 166.9 - 166.91 dominant foliation>> NE strike/ SE dip. Po in hole may affect mag reading?

169.20 175.00 MDSt Rhyolite tuff dominant mudstone dark grey

			170.40	171.80	1.40	B00266775	0.8	0.006	-0.01	0.01	0.11

169.2 - 175: Black to dark grey to grey tuff, w dark grey sericite talc-y on foliation planes, w loc bands of diss po. Includes 0.2m interval w possible cordierite (~ 3-4 mm) and two sections w crenulated cp blebs. (approaching proximal alteration?)

<<Min: 171.9 - 172.5 0.5% Min: Chalcopyrite>> in two foliaform blebs disrupted by crenulaion

			171.80	172.85	1.05	B00266776	2.1	0.061	0.21	0.02	0.05

<<Min: 172.85 - 173 15% Min: Calcite>>

			172.85	173.90	1.05	B00266777	0.7	0.005	0.01	0.01	0.04

<<Min: 173 - 177.4 1% Min: Calcite>>

<<Alt: 169.2 - 177.5 Moderate (Alt) Muscovite>> drk grey sericite and graphitic partings.

<<Alt: 169.2 - 177.5 Strong (Alt) Chlorite>> black chlorite in alteration breccia.

<<Vein: 172.85 - 173.6 95% Quartz-Sericite/White mica 45 deg. >>

<<Struc: 169.9 - 169.91 dominant foliation>> NW/NE

175.00 177.40 RHY undifferentiated rhyolite medium grey

From (m)	To (m)		Rocktype & Description	
177.40	**188.50**	**RHY**	**undifferentiated rhyolite**	

177.4 - 188.5: Dark blue and white sheared and brecciated rx consisting of greyish fragments of (?) MDSt or RHY, cordierite, qtz veining and carbonate veining outlined/cut by or in groundmass of greasy dark chlorite and serpentine, altered to talc on fractures. Variably

<<Min: 177.4 - 182.6 2% Min: Calcite>>

<<Min: 182 - 185 1% Min: Sphalerite>> orangy red flecks

<<Min: 182.6 - 186 15% Min: Calcite>>

<<Min: 184.33 - 185 0.01% Min: Chalcopyrite>>

<<Min: 184.33 - 188.5 0.01% Min: Pyrrhotite>>

<<Min: 185 - 188.5 0.01% Min: Pyrite>>

<<Min: 186 - 188.5 1% Min: Calcite>> also ankerite?

<<Alt: 177.5 - 188.5 Weak-Moderate (Alt) Talc-serpentine>>

<<Alt: 177.5 - 188.5 Moderate (Alt) Muscovite>> grey silvery sericite

<<Alt: 177.5 - 188.5 Strong (Alt) Chlorite>> black and khaki massive greasy chlorite and/ or serpentine, talcose

<<Alt: 177.5 - 188.5 Strong (Alt) Cordierite>>

From (m)	To (m)		Rocktype & Description	
188.50	**189.80**	**RHYc**	**Rhyolite coherant volcanics**	**grey**

188.5 - 189.8: grey siliceous bands cut by grey silvery muscovite. Muscovite increases downwards into next unt.

<<Alt: 188.5 - 201 Strong (Alt) Muscovite>> grey muscovote

From (m)	To (m)		Rocktype & Description	
189.80	**193.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**	**dark grey**

189.8 - 193.2: Grey rhyolite as above but with stronger musc-carbonaceous foliation.

<<Struc: 190.25 - 190.26 dominant foliation>> NW strike/ NE dip

<<Struc: 193 - 193.3 Strong (Alt) Fault>> Dark grey fault gouge

From (m)	To (m)		Rocktype & Description	
193.20	**193.85**	**MDSt**	**Rhyolite tuff dominant mudstone**	**black**

193.2 - 193.85: as above, increase in mica and carbonaceous content.

From (m)	To (m)		Rocktype & Description	
193.85	**199.05**	**RHYc**	**Rhyolite coherant volcanics**	**grey**

193.85 - 199.05: grey siliceous bands cut by grey silvery muscovite.

<<Min: 199 - 201 0.5% Min: Pyrrhotite>>

<<Struc: 198.65 - 198.75 Strong (Alt) Fault>> clay gouge

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
177.40	179.00	1.60	B00266778	-0.3	-0.005	-0.01	-0.01	0.01
179.00	180.40	1.40	B00266779	-0.3	-0.005	-0.01	-0.01	0.01
180.40	182.00	1.60	B00266781	-0.3	-0.005	-0.01	-0.01	0.02
182.00	183.50	1.50	B00266782	-0.3	-0.005	-0.01	-0.01	-0.01
183.50	185.00	1.50	B00266783	1.3	0.006	-0.01	0.19	0.27
185.00	186.20	1.20	B00266784	-0.3	-0.005	-0.01	-0.01	0.01
186.20	187.35	1.15	B00266785	-0.3	-0.005	-0.01	-0.01	-0.01
187.35	188.50	1.15	B00266786	0.4	-0.005	-0.01	-0.01	0.01
188.50	189.38	0.88	B00266787	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		
199.05	**207.20**	**RHY**	**undifferentiated rhyolite**	**grey**

199.05 - 207.2: Micture of RHYc and vl? Some strongly foliated sections w po along fln, tuff?, intercalated with some massive sections.

<<Alt: 201 - 225 Moderate (Alt) Muscovite>>

<<Struc: 201.4 - 201.41 dominant foliation>> NW/NE

207.20	**208.90**	**MDSt**	**Rhyolite tuff dominant mudstone**	**dark grey**

207.2 - 208.9: Carbonaceous tuff? Flinely banded dk grey to black rock, w clasts? Strongly crenulated.

208.90	**216.65**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey**

208.9 - 216.65: Discontinuous bands of c in grey -green sericite, breccia texture from siliceous vs micaceous domains.

<<Min: 214 - 216 1% Min: Pyrrhotite>>

<<Min: 215.5 - 216 0.5% Min: Chalcopyrite>>

<<Min: 216 - 225 1% Min: Pyrrhotite>>

<<Struc: 212 - 212.5 Moderate (Alt) Fault>> brecciated qtz vein and cw in sericitic groundmass

216.65	**225.00**	**RHYvl**	**Lapilli tuff**	

216.65 - 225: Granular foliated rock w diss po. Some sections of curdy RHY. Blocky and clayey lower contact.

<<Min: 220 - 224 2% Min: Calcite>>

<<Min: 224 - 239 10% Min: Calcite>>

<<Struc: 220.9 - 220.91 dominant foliation>> NW/ NE

225.00	**254.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**

225 - 254: loc cg (gabbro/pxenite), abundant calcite lenses and veins from 246m to eoh. Tr po-cp.

<<Min: 225 - 254 0.05% Min: Pyrrhotite>>

<<Min: 225 - 254 0.05% Min: Chalcopyrite>>

<<Min: 239 - 245 3% Min: Calcite>>

<<Min: 245 - 254 15% Min: Calcite>>

<<Vein: 225.3 - 225.9 100% Quartz-Tourmaline>> silicified hanging wall.

<<Struc: 225.01 - 225.02 Weak (Alt) Fault>> clay gouge

<<Struc: 228.75 - 228.76 dominant foliation>> SW strike, NW dip

<<Struc: 229.8 - 229.81 dominant foliation>> in mafic intrusion. NW/SE.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
214.00	215.10	1.10	B00266788	0.7	-0.005	-0.01	-0.01	-0.01
215.10	216.00	0.90	B00266789	2.1	0.023	0.11	-0.01	0.07
216.00	216.65	0.65	B00266791	0.4	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 241.85 - 241.86 dominant foliation>>									
		End of Hole @ 254									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-264

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	17-Sep-15
UTM Easting	414800.261	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	20-Sep-15
UTM Northing:	6815624.607	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1401.87	Casing Depth (m):	2	Length (m):	218	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	16-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	18-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.12	0	180.12	APS	Geotech	16-Sep-15	0	☐	
26	-65.5	160.8	22.5	183.3	ReflexEZS	Geotech	16-Sep-15	5697	☑	
50	-65.6	160.7	22.5	183.2	ReflexEZS	Geotech	16-Sep-15	5681	☑	
74	-65.6	160.1	22.5	182.6	ReflexEZS	Geotech	16-Sep-15	5752	☑	
101	-65.7	164.4	22.5	186.9	ReflexEZS	Geotech	17-Sep-15	5683	☑	
125	-65.7	162.7	22.5	185.2	ReflexEZS	Geotech	17-Sep-15	5664	☑	
152	-65.7	152	22.5	174.5	ReflexEZS	Geotech	17-Sep-15	5598	☐	Low magnetic field likely resulting in erratic corrected azimuth
176	-65.9	161.1	22.5	183.6	ReflexEZS	Geotech	17-Sep-15	5819	☑	
200	-66.1	160.9	22.5	183.4	ReflexEZS	Geotech	18-Sep-15	5775	☑	
218	-66	160.7	22.5	183.2	ReflexEZS	Geotech	18-Sep-15	5790	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 4.00 OVBN Overburden

0 - 4: Overburden

4.00 7.20 RHYvl Lapilli tuff

4 - 7.2: Light grey, moderately foliated, < 10% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

7.20 8.93 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

7.2 - 8.93: Mafic ash tuff or mafic intrusive unit, fine to medium grained, equigranular, dark color. Moderately biotite altered (pervasive), moderate to strongly CA altered (Associated with subconcordant qtz veinlets and also pervasive). 3-4 % of thin qtz-fsp-+/-c

<<Min: 7.2 - 8.93 1% Min: Pyrrhotite>> Disseminated within the matrix.

<<Min: 7.2 - 8.93 2% Min: Calcite>> Associated with MAFta/MAFi, pervasive and thin qtz-fsp-cal veinlets.

<<Alt: 7.2 - 8.93 Moderate (Alt) Biotite>> Biotite pervasive, fine grained, within MAFta/MAFi

8.93 10.60 RHYvl Lapilli tuff

8.93 - 10.6: Light grey, moderately foliated, < 10% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff.

<<Min: 8.93 - 13 0.1% Min: Pyrrhotite>>

10.60 11.05 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

10.6 - 11.05: Mafic ash tuff or mafic intrusive unit, fine to medium grained, equigranular, dark color. Moderately biotite altered (pervasive), moderate to strongly CA altered (Associated with subconcordant qtz veinlets and also pervasive). 3-4 % of thin qtz-fsp-+/-c

<<Min: 10.6 - 11.05 3% Min: Calcite>> Associated with MAFta/MAFi, pervasive and thin qtz-fsp-cal veinlets.

<<Alt: 10.6 - 11.05 Moderate (Alt) Biotite>> Biotite pervasive, fine grained, within MAFta/MAFi

11.05 14.55 RHYvl Lapilli tuff

11.05 - 14.55: Light grey, moderately foliated, < 10% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff.

<<Min: 13 - 17.27 1% Min: Pyrrhotite>>

<<Struc: 13.43 - 13.44 dominant foliation>>

14.55 17.27 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

14.55 - 17.27: Mafic ash tuff or mafic intrusive unit, fine to medium grained, equigranular, dark color. Moderately biotite altered (pervasive), moderate to strongly CA altered (Associated with subconcordant qtz veinlets and also pervasive). 3-4 % of thin qtz-fsp-+/-c

<<Min: 14.55 - 17.27 6% Min: Calcite>> Associated with MAFta/MAFi, pervasive and thin qtz-fsp-cal veinlets.

<<Alt: 14.55 - 17.27 Moderate (Alt) Biotite>> Biotite pervasive, fine grained, within MAFta/MAFi

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

17.27 19.35 RHYvl Lapilli tuff

17.27 - 19.35: Light grey, moderately foliated, < 15% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff.

<<Min: 17.27 - 19.35 1% Min: Calcite>>

<<Min: 17.27 - 27.3 0.1% Min: Pyrite>>

<<Min: 17.27 - 27.3 0.1% Min: Pyrrhotite>>

19.35 27.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

19.35 - 27.3: Mafic ash tuff or mafic intrusive unit, fine to medium grained, equigranular, dark color. Moderately biotite altered (pervasive), moderate to strongly CA altered (Associated with subconcordant qtz veinlets and also pervasive). 6 % of thin qtz-fsp-+/-cal

<<Min: 19.35 - 27.3 5% Min: Calcite>> Associated with MAFta/MAFi, pervasive and thin qtz-fsp-cal veinlets.

<<Alt: 19.35 - 27.3 Moderate (Alt) Biotite>> Biotite pervasive, fine grained, within MAFta/MAFi

<<Vein: 26.8 - 26.82 30% Tourmaline>> TML, irregular, in MAFt, few CA.

<<Struc: 22.76 - 22.77 dominant foliation>>

27.30 33.70 RHYva Coarse grained to ash tuff

27.3 - 33.7: Light/medium grey, massive, fine to coarse grained. Weakly foliated. Matrix weakly (Mu) altered (pervasive).<3% felsic fragments, lapilli sized, oriented within foliation. Qtz eyes, <2mm, disseminated within the matrix, weakly stretched. Ash tuff unit?

<<Min: 27.3 - 33.7 1% Min: Pyrrhotite>> Very small wisps distributed within the matrix.

<<Min: 27.3 - 44 1% Min: Calcite>>

<<Vein: 27.3 - 27.35 Quartz>> QZ vein at lower contact with MAFt.

33.70 36.70 RHYvl Lapilli tuff

33.7 - 36.7: Light grey, moderately foliated, < 15% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Locally similar "curdy" texture were observed. Probably lapilli

<<Min: 33.7 - 43.5 0.1% Min: Pyrite>>

<<Min: 33.7 - 43.5 0.1% Min: Pyrrhotite>>

36.70 53.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

36.7 - 53.6: light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy" texture well conserved. Weakly/moderately MU altered.

44-49m: Siliceous bands are more fragmented, dismembered. Lapilli tuff or

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 43.5 - 44.1 0.1% Min: Sphalerite>> Associated with bands of PO.

<<Min: 43.5 - 44.1 2% Min: Pyrrhotite>> Occuring as bands of disseminated coarse grained PO.

<<Min: 43.5 - 44.1 0.1% Min: Galena>> Associated with bands of Po/Sp

<<Min: 44.1 - 59.25 0.1% Min: Sphalerite>> Associated with bands of Po/Py

<<Min: 44.1 - 59.25 2% Min: Pyrite>> Associated with qtz veins/veinlets, occuring as cm bands

<<Min: 44.1 - 59.25 2% Min: Pyrrhotite>> Associated with qtz veins/veinlets, occuring as cm bands

<<Struc: 49.75 - 49.76 dominant foliation>>

53.60 55.45 RHYvl Lapilli tuff

53.6 - 55.45: Light grey, moderately foliated, < 15% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff sequence.

55.45 63.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

55.45 - 63.6: light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy'' texture locally well conserved. Some intervals seem more lapillitic, no strong evidence of flow texture. Weakly/moderately MU alter

<<Min: 59.25 - 65.85 0.1% Min: Pyrite>>

<<Min: 59.25 - 65.85 2% Min: Pyrrhotite>>

63.60 67.50 RHYva Coarse grained to ash tuff

63.6 - 67.5: Light grey, medium grained, moderately foliated, < 5% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu altered). Ash tuff sequence comprinsing some fragments lapilli size

<<Min: 65.85 - 67.65 7% Min: Pyrrhotite>> Occuring as bands/stringers. Seem associated with interval of qtz veining.

<<Alt: 66.7 - 67.5 Strong (Alt) Muscovite>> Associated with interval of qtz veining (margins).

<<Vein: 66.7 - 77.5 30% Quartz>> Interval comprinsing qtz veins, strongly deformed, folded, irregular, 5-20 cm wide. Po and Py disseminated at the margins.

67.50 73.35 RHYcw Curdy textured-flow banded (flows, subvolcanics)

67.5 - 73.35: light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy'' texture well conserved. Weakly/moderately MU altered.

<<Min: 67.65 - 72.35 0.1% Min: Pyrite>>

<<Min: 67.65 - 72.35 3% Min: Pyrrhotite>> Occuring as stringers/wisps

<<Min: 72.35 - 76.85 3% Min: Pyrrhotite>> Occuring as wisps/stringers and also disseminated.

<<Struc: 70.71 - 70.71 dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

73.35 76.85 RHYva Coarse grained to ash tuff

73.35 - 76.85: Light grey, medium grained, moderately foliated, < 5% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu altered). Ash tuff sequence comprinsing some fragments lapilli size

<<Struc: 73.94 - 73.95 dominant foliation>>

76.85 84.75 RHYcw Curdy textured-flow banded (flows, subvolcanics)

76.85 - 84.75: light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy'' texture well conserved. Weakly/moderately MU altered.

<<Min: 76.85 - 82.25 1% Min: Pyrite>>

<<Min: 80.37 - 82.15 4% Min: Calcite>> Associated with fault/fractured interval.

<<Min: 82.25 - 82.9 1% Min: Pyrite>>

<<Min: 82.25 - 82.9 5% Min: Pyrrhotite>>

<<Min: 82.9 - 86 3% Min: Pyrite>> Associated with qtz veinlets, also disseminated.

<<Alt: 80.37 - 82.15 Strong (Alt) Muscovite>> Associated with interval fractured/fault.

<<Struc: 80.37 - 82.15 Moderate (Alt) Fault>> Interval moderately to strongly fractured, comprinsing short clay gauge intervals.

<<Struc: 83.54 - 83.55 dominant foliation>>

84.75 88.70 RHYvl Lapilli tuff

84.75 - 88.7: Light grey, medium grained, moderately foliated, < 5% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu altered). Ash tuff sequence comprinsing some fragments lapilli size

<<Min: 86 - 93.55 0.1% Min: Pyrite>>

<<Min: 86 - 93.55 2% Min: Pyrrhotite>> Disseminated.

<<Struc: 85.78 - 88.77 Moderate (Alt) Fault>> Interval moderately/strongly fractured.

88.70 94.38 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.7 - 94.38: light grey, fine to medium grained, comprinsing siliceous bands, milky, deformed,folded and locally dismembered, '' curdy'' texture locally developped. Weakly/moderately MU altered.

<<Min: 93.55 - 94.2 6% Min: Pyrrhotite>> Occuring as thin bands.

<<Min: 94.2 - 99 4% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

94.38 100.60 RHYvl Lapilli tuff

94.38 - 100.6: Light grey, moderately foliated, < 15% of siliceous fragments/dismembered bands, deformed and folded, locally flattered within the foliation, within fine/medium matrix (Mu and CL altered). Probably lapilli tuff sequence.

<<Min: 99 - 100.6 2% Min: Pyrrhotite>>

100.60 119.20 MDSw Coherent rhyolite flow with carbonaceous content

100.6 - 119.2: Dark grey, fine grained, moderate to strongly foliated/sheared (intervals with crenulation and fault gauge). Alternation with thin carbonacious bands (mudstone), very fine grained, and flow rhyolite bands. Banded texture. The foliation is locally folded

<<Min: 100.6 - 102.9 1% Min: Pyrite>>

<<Min: 100.6 - 102.9 3% Min: Pyrrhotite>> Also occuring as thin stringers.

<<Min: 102.9 - 105 2% Min: Pyrrhotite>> Also occuring as thin stringers.

<<Min: 105 - 120 0.5% Min: Pyrrhotite>> Also occuring as thin stringers.

<<Min: 106.6 - 114 1% Min: Calcite>> Mainly associated with thin veinlets/fracture filling.

<<Alt: 105 - 119.2 Moderate (Alt) Muscovite>> Associated with foliation (fracture surface)

<<Struc: 105.35 - 108.15 Moderate (Alt) Fault>> Interval moderately fractured comprinsing some short gouge intervals.

<<Struc: 110.1 - 110.11 Foliation>>

<<Struc: 111.3 - 113 Strong (Alt) Fault>> 112-113m: gouge fault, lost core.

<<Struc: 113.4 - 119 Weak (Alt) Fault>> Interval comprinsing few short gauge faults (5 cm wide)

<<Struc: 119 - 119.01 Foliation>>

119.20 131.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

119.2 - 131.5: light grey greenish, fine to medium grained, comprinsing siliceous bands, deformed,folded and locally dismembered, " curdy"/banding texture locally well developped.moderate to strongly MU altered associated with moderate/strong foliation.
120-123.5m: I

<<Min: 120 - 129.35 3% Min: Pyrite>> Occuring as discordant veins/veinlets (qtz),0.5-2 cm wide, folded/deformed.

<<Min: 120 - 129.35 1% Min: Pyrrhotite>>

<<Min: 129.35 - 131.05 1% Min: Pyrrhotite>>

<<Min: 129.35 - 131.05 0.1% Min: Arsenopyrite>> locally finely disseminated.

<<Min: 131.05 - 133.55 0.1% Min: Pyrite>>

<<Min: 131.05 - 133.55 1% Min: Pyrrhotite>>

<<Alt: 119.2 - 146.85 Moderate-Strong (Alt) Muscovite>> Moderate to strong MU alteration, pervasive, associated with foliation.Intensity increases gradually.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Vein: 120.77 - 122.35 40% Quartz>> Interval of massive qtz veining, light grey, decimetric, discordant. Associated with interval strongly Mu altered (Margins) and foliated. Irregular oriented.									
		<<Struc: 124.75 - 125.2 Moderate (Alt) Fault>> Interval moderately fractured comprinsing short gauge fault.									
131.50	**134.15**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
		131.5 - 134.15: Dark grey, fine grained, moderate to strongly foliated/sheared (intervals with crenulation and fault gauge). Alternation with thin carbonacious bands (mudstone), very fine grained, and flow rhyolite bands. Banded texture. The foliation is locally folded									
		<<Min: 133.55 - 137 0.5% Min: Pyrite>>									
		<<Min: 133.55 - 137 1% Min: Pyrrhotite>>									
		<<Min: 133.55 - 137 0.1% Min: Ankerite>>									
134.15	**146.85**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	140.85	142.35	1.50	B00264946	0.8	-0.005	-0.01	0.02	0.08
		134.15 - 146.85: light grey greenish, fine to medium grained, comprinsing siliceous bands, deformed,folded and locally dismembered, " curdy"/banded texture locally well developped.moderate to strongly MU altered associated with moderate/strong foliation.The protolith is									
		<<Min: 137 - 140.15 0.5% Min: Pyrite>>	142.35	143.85	1.50	B00264947	1.3	-0.005	-0.01	0.04	0.07
		<<Min: 137 - 140.15 2% Min: Pyrrhotite>>	143.85	145.35	1.50	B00264948	1.2	-0.005	-0.01	0.04	0.17
		<<Min: 140.15 - 145.2 1% Min: Pyrrhotite>>	145.35	146.85	1.50	B00264949	3.6	-0.005	-0.01	0.07	0.34
		<<Min: 145.2 - 146.85 1% Min: Sphalerite>> Occuring as thin veinlets/bands deformed.									
		<<Min: 145.2 - 146.85 0.5% Min: Pyrite>>									
		<<Min: 145.2 - 146.85 0.5% Min: Pyrrhotite>>									
		<<Vein: 134.15 - 134.44 95% Quartz 85 deg. >> Massive grey qtz vein, subconcordant, unmineralized.									
		<<Struc: 135.4 - 135.6 Strong (Alt) Fault>> Gauge fault.									
		<<Struc: 146.3 - 146.85 Moderate (Alt) Fault>> Associated with fracturation.									
146.85	**148.50**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **CG**	146.85	147.85	1.00	B00264951	40.7	0.209	1.7	0.01	0.13
		146.85 - 148.5: Marked by strong back TL alteration, occuring as centimetric bands composed by acicular crystals. >5% of cordierite.									
		<<Min: 146.85 - 148.5 1% Min: Pyrrhotite>> Aggregates/patchy.	147.85	148.50	0.65	B00264952	33	0.163	1.39	-0.01	0.09
		<<Min: 146.85 - 148.5 5% Min: Chalcopyrite>> Aggregates/patchy.									
		<<Alt: 146.85 - 148.5 Weak (Alt) Chlorite>> Associated with interval brecciated and mineralised.									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 146.85 - 148.5 Strong (Alt) Cordierite>> Occuring as phenocrystals porphyroblastic, cm, distributed within matrix (CL altered).										
			<<Alt: 146.85 - 148.5 Moderate (Alt) Biotite>> Associated with interval brecciated and mineralised.										
148.50	**149.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**FG**	148.50	149.20	0.70	B00264953	300	2.93	12.6	0.09	0.9
			148.5 - 149.9: Strong Cp/Po mineralisation within interval strongly CL altered.										
			<<Min: 148.5 - 149.9 15% Min: Pyrrhotite>>		149.20	149.90	0.70	B00264954	190	3.41	9.3	0.05	0.6
			<<Min: 148.5 - 149.9 15% Min: Chalcopyrite>> Large aggregate associated with Po										
			<<Alt: 148.5 - 151.75 Strong (Alt) Chlorite>>										
			<<Alt: 148.5 - 152.55 Moderate (Alt) Cordierite>> Occuring as phenocrystals porphyroblastic, cm, distributed within matrix (CL altered).										
			<<Struc: 149 - 149.01 Foliation>> Cp bands.										
149.90	**151.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**FCG**	149.90	150.40	0.50	B00264955	79.5	0.9	3.01	0.06	0.29
			149.9 - 151: Marked by strong pervasive CL associated with cordierite. 8% Cp.										
			<<Min: 149.9 - 151 2% Min: Pyrite>>		150.40	151.00	0.60	B00264956	121	1.43	4.96	0.05	0.33
			<<Min: 149.9 - 151 6% Min: Pyrrhotite>>										
			<<Min: 149.9 - 151 8% Min: Chalcopyrite>> Large aggregate associated with Po										
151.00	**151.75**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**	151.00	151.75	0.75	B00264957	62.7	0.86	2.49	0.06	0.16
			151 - 151.75: 5% of magnetite. Py coarse grained to cm aggregates.										
			<<Min: 151 - 151.75 50% Min: Pyrite>>										
			<<Min: 151 - 151.75 4% Min: Pyrrhotite>>										
			<<Min: 151 - 151.75 5% Min: Magnetite>> Very fine disseminated, difficult to distinguish.										
			<<Min: 151 - 151.75 3% Min: Chalcopyrite>>										
151.75	**155.76**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	151.75	152.75	1.00	B00264958	240	1.39	0.97	2.29	7.85
			151.75 - 155.76: Moderate pervasive calcite between 152.9-155m										
			<<Min: 151.75 - 153 4% Min: Sphalerite>> Occuring as bands, cm, subcordant.		152.75	153.75	1.00	B00264959	86.7	0.769	0.3	1.42	5.95

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 151.75 - 153 70% Min: Pyrite>>		153.75	154.75	1.00	B00264961	82.1	0.956	0.31	1.55	5.69
			<<Min: 151.75 - 153 5% Min: Galena>> Associated with dismembered qtz/cordierite veins		154.75	155.76	1.01	B00264962	143	1.44	0.48	2.4	7.41
			<<Min: 151.75 - 153 1% Min: Chalcopyrite>>										
			<<Min: 153 - 155.5 3% Min: Sphalerite>> Occuring as bands, cm, subcordant.										
			<<Min: 153 - 155.5 80% Min: Pyrite>>										
			<<Min: 153 - 155.5 0.5% Min: Galena>>										
			<<Min: 154.8 - 154.95 2% Min: Pyrrhotite>> fine grained within massive sulphides										
			<<Min: 155.5 - 157.75 5% Min: Sphalerite>> Occuring as bands, cm, subcordant.										
			<<Min: 155.5 - 157.75 80% Min: Pyrite>> Laminated										
			<<Min: 155.5 - 157.75 10% Min: Magnetite>> Very fine disseminated, difficult to distinguish.										
			<<Min: 155.5 - 157.75 1% Min: Galena>>										
155.76	**157.75**	**OA**	**Magnetite bearing sulphides**	**MCG**	155.76	156.75	0.99	B00264963	80	0.31	0.46	2.32	11.7
155.76 - 157.75: Marked by ~10% of magnetite.													
					156.75	157.75	1.00	B00264964	49.6	0.197	0.05	2.18	8.78
157.75	**164.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	157.75	158.75	1.00	B00264965	95.3	0.586	0.15	2.53	6.23
157.75 - 164.3: 162.5m to163.2m: Calcite associated with porphyroblats of cordierite?													
			<<Min: 157.75 - 164.3 3% Min: Sphalerite>> Occuring as bands, cm, subcordant.		158.75	159.75	1.00	B00264966	71	0.44	0.23	1.65	7.72
			<<Min: 157.75 - 164.3 80% Min: Pyrite>>		159.75	160.75	1.00	B00264967	190	0.989	0.51	2.15	7.02
			<<Min: 157.75 - 164.3 1% Min: Galena>>		160.75	161.75	1.00	B00264968	118	1.05	0.38	1.14	6.48
			<<Min: 162.5 - 163.2 5% Min: Calcite>>		161.75	162.75	1.00	B00264969	29.2	0.246	0.13	0.44	5.93
					162.75	163.50	0.75	B00264971	122	1.12	0.36	2.64	9.42
					163.50	164.30	0.80	B00264972	115	0.341	0.09	2.17	8.95
164.30	**167.30**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**	164.30	165.30	1.00	B00264973	45.3	0.982	0.83	0.61	1.43
164.3 - 167.3: 165.5m to 166.4m: Strong CA alteration.													
			<<Min: 164.3 - 166.4 6% Min: Chalcopyrite>>		165.30	166.40	1.10	B00264974	124	1.26	2.65	1.52	2.85
			<<Min: 165.5 - 166.4 10% Min: Calcite>> Pervasive and associated with veinlets.		166.40	167.30	0.90	B00264975	16.5	0.215	0.21	0.33	0.94
			<<Min: 166.4 - 167.3 7% Min: Pyrite>> Coarse grained and bands semi-massive.										
			<<Min: 166.4 - 167.3 0.5% Min: Chalcopyrite>>										

From (m)	To (m)	Rocktype & Description

<<Alt: 164.3 - 167.6 Strong (Alt) Chlorite>> Associated with mineralisation.

<<Vein: 164.7 - 165.3 80% Quartz-Chalcopyrite>> Massive irregular qtz vein, grey, deformed and discordant. Comprinsing 10 % of Cp (fracture filling).

167.30 171.22 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FG

167.3 - 171.22: Green, fine grained, large interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong). Locally centimetric biotite bands (porphyroblasts,small flakes). > 15% of Qtz-Cal veinlets/bands, concordant.

<<Min: 167.3 - 176.31 0.5% Min: Pyrrhotite>>

<<Min: 167.3 - 180.84 10% Min: Calcite>> Pervasive, porphyroblats and associated with subconcordant veinlets.

<<Alt: 167.6 - 171.22 Moderate (Alt) Chlorite>> MAFi

<<Struc: 169.3 - 169.31 Foliation>> Marqued by calcite porphyroblasts.

171.22 172.00 RHYi Aphanitic Rhyolite (intrusion)

171.22 - 172: Interval comprinsing >50 % of decimetric felsic dykes, aphanitic, banded, subconcordant. Diffused margins. Associated with MU.

<<Alt: 171.22 - 173.2 Weak (Alt) Muscovite>> Associated with RHYi interval.

172.00 176.31 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

172 - 176.31: Green to brownish, fine grained, large interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong), locally biotite altered (small flakes disseminated, occuring as bands) > 10% of Qtz-Cal veinlets/bands,

<<Alt: 173.2 - 174.65 Moderate (Alt) Biotite>> MAFi altered by biotite (small flakes,mm, distributed within matrix)

<<Alt: 174.65 - 176.31 Moderate (Alt) Silicification>> Fuschite?

<<Alt: 174.65 - 176.31 Moderate (Alt) Muscovite>> Fuschite?

<<Vein: 175.5 - 176.12 20% Quartz-Carbonate>> Interval comprinsing qtz-cal veins, grey/milky, irregular oriented, deformed.Trace of Po and Sp at the margins.

<<Struc: 176.3 - 178.4 Moderate (Alt) Fault>> Interval moderately fractured, irregular oriented.

176.31 176.82 RHYi Aphanitic Rhyolite (intrusion)

176.31 - 176.82: decimetric felsic dykes, aphanitic, banded, subconcordant. Diffused margins. Associated with MU. Comprinsing irregular qtz-Cal veins, dm, mineralised (Sp and Py at the edges).

<<Min: 176.31 - 176.82 2% Min: Sphalerite>> Occuring as thin stringer and small aggregates

<<Min: 176.31 - 176.82 2% Min: Pyrrhotite>> Occuring as thin stringer and small aggregates.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
167.30	167.90	0.60	B00264976	-0.3	-0.005	-0.01	-0.01	0.02
167.90	169.40	1.50	B00264977	0.8	0.031	-0.01	0.03	0.06
169.40	170.90	1.50	B00264978	-0.3	-0.005	-0.01	-0.01	0.01
176.31	176.82	0.51	B00264979	0.9	-0.005	-0.01	0.01	0.66

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

176.82 180.84 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

176.82 - 180.84: Light green, fine grained,Interval of mafic intrusive, moderately/strongly sheared/foliated. Mainly MU altered (pervasive, moderate/strong), from Rhyi? > 15% of Qtz-Cal veinlets/bands, concordant. Alo pervasive calcite.

<<Min: 178.12 - 180.84 1% Min: Pyrite>> cm subheudral crystals

180.84 187.10 RHYi Aphanitic Rhyolite (intrusion)

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
182.50	184.00	1.50	B00264981	1.1	0.01	-0.01	0.01	0.32

180.84 - 187.1: Beige to light green, aphanitic to very fine grained, locally banding texture, moderately Mu altered. Unit comprinsing large interval of qtz-+/-cal veins associated with Sp and Py at the selvages.

<<Min: 181.1 - 187.1 2% Min: Sphalerite>> Occuring as aggregates and thin stringers

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
184.00	185.50	1.50	B00264982	-0.3	-0.005	-0.01	-0.01	0.06

<<Min: 181.1 - 187.1 1% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
185.50	187.00	1.50	B00264983	0.5	0.006	-0.01	-0.01	1.06

<<Alt: 181.1 - 187.1 Moderate (Alt) Muscovite>>

<<Vein: 182.6 - 187.1 40% Quartz>> Large interval of veining, qtz-+/-cal, decimetric, irregular oriented and deformed. 1-2% Sp et Po at the selvages, occuring as thin stringers and agregates/patchy.

187.10 195.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

187.1 - 195.9: Green to brownish, fine grained, large interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong), Partially biotite altered (small flakes disseminated, occuring as bands) > 10% of Qtz-Cal veinlets/band

<<Min: 187.1 - 189.1 1% Min: Pyrite>> Phenocrystal subheudral.

<<Min: 187.1 - 189.7 1% Min: Pyrrhotite>> Mineralised at the margins of phenocrystals of PY.

<<Min: 187.1 - 195.4 12% Min: Calcite>> Pervasive, porphyroblats and associated with subconcordant veinlets.

<<Min: 189.7 - 197.5 0.1% Min: Pyrite>>

<<Min: 189.7 - 197.5 0.1% Min: Pyrrhotite>>

<<Alt: 187.1 - 189.7 Moderate (Alt) Chlorite>> MAFi

<<Alt: 187.1 - 189.7 Weak (Alt) Biotite>> MAFi altered by biotite (small flakes,mm, distributed within matrix)

<<Alt: 189.7 - 193.25 Moderate (Alt) Biotite>> MAFi altered by biotite (small flakes,mm, distributed within matrix)

<<Alt: 193.25 - 195.9 Moderate (Alt) Chlorite>>

<<Vein: 192.52 - 192.95 60% Quartz-Carbonate>> Group of cal-qtz veins, dm, discordant. Unmineralised.

195.90 211.45 RHYc Rhyolite coherant volcanics

195.9 - 211.45: Light grey, strongly foliated, banding texture with locally "curdy" texture, marked by siliceous bands. < 2% of quartz eyes.

<<Min: 197.5 - 203 1% Min: Pyrrhotite>> Veinlets hosted

<<Min: 197.5 - 205.6 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 205.6 - 212.12 3% Min: Pyrite>>									
		<<Alt: 205.05 - 210.65 Moderate-Strong (Alt) Muscovite>>									
		<<Vein: 197.75 - 199.25 50% Quartz 80 deg. >> interval comprinsing large regular grey qtz veins.									
		<<Struc: 202.16 - 202.6 Strong (Alt) Fault>> Fault gauge.									
211.45	**216.80**	**RHYvl** **Lapilli tuff** 211.45 - 216.8: Moderately to strongly sheared, > 10% of siliceous fragments/dismembered bands, deformed and folded, 0.5-2 cm sized, flattered within the foliation, within fine/medium matrix (Mu and CL altered). Quartz eyes locally disseminated. Probably lapilli tuff.	212.12	213.50	1.38	B00264984	-0.3	-0.005	-0.01	-0.01	0.09
		<<Min: 212.12 - 216.8 1% Min: Sphalerite>> Occuring as brownish bands.	213.50	215.00	1.50	B00264985	1.1	-0.005	-0.01	0.05	0.61
		<<Min: 212.12 - 216.8 1% Min: Pyrite>>									
		<<Min: 212.12 - 216.8 3% Min: Pyrrhotite>>									
		<<Struc: 216.27 - 216.42 Strong (Alt) Fault>> Fault gauge.									
216.80	**218.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** 216.8 - 218: Brownish, mafic intrusive unit, medium grained, +/- homogeneous. Moderate biotite altered (pervasive and small flakes disseminated), moderate to strongly CA altered (Thin veinlets, concordant, and also locally pervasive).									

End of Hole @ 218

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-264W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	20-Sep-15
UTM Easting	414800.261	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	21-Sep-15
UTM Northing:	6815624.607	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1401.87	Casing Depth (m):	2	Length (m):	176.7	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-264

Comments:

Wedge of hole K15-264 to get another cut of the ore zone for metallurgical purposes.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.12	0	180.12	APS	Geotech	16-Sep-15	0	☐	Values copied from K15-264
26	-65.5	160.8	22.5	183.3	ReflexEZS	Geotech	16-Sep-15	5697	☑	Values copied from K15-264
50	-65.6	160.7	22.5	183.2	ReflexEZS	Geotech	16-Sep-15	5681	☑	Values copied from K15-264
74	-65.6	160.1	22.5	182.6	ReflexEZS	Geotech	16-Sep-15	5752	☑	Values copied from K15-264
101	-65.7	164.4	22.5	186.9	ReflexEZS	Geotech	16-Sep-15	5683	☑	Values copied from K15-264
122	-63.8	161	22.5	183.5	ReflexEZS	Geotech	19-Sep-15	5870	☑	Wedge start; value copied from first wedge survey at 146m
146	-63.8	161	22.5	183.5	ReflexEZS	Geotech	19-Sep-15	5870	☑	
176	-63.8	161.5	22.5	184	ReflexEZS	Geotech	19-Sep-15	5830	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

122.00 131.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

122 - 131.9: light grey greenish, fine to medium grained, comprinsing siliceous bands, deformed,folded and locally dismembered, " curdy"/banding texture locally well developped.moderately MU altered associated with moderate/strong foliation.

<<Min: 122 - 131.9 3% Min: Pyrite>> mm to centimetric sized, deformed and folded.

<<Min: 122 - 131.9 2% Min: Pyrrhotite>> mm to centimetric sized, deformed and folded.

<<Min: 126.1 - 126.46 0.5% Min: Sphalerite>> Associated with qtz veins.

<<Alt: 122 - 148.9 Moderate-Strong (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 126.1 - 126.46 50% Quartz 60 deg. >> Group of regular grey qtz veins, cm, discordant, deformed and fragmented, Po and Sp at the selvages

131.90 135.00 MDSw Coherent rhyolite flow with carbonaceous content

131.9 - 135: Dark grey, fine grained, moderate to strongly foliated/sheared (intervals with crenulation). Alternation with thin carbonacious bands (mudstone), very fine grained, and flow rhyolite bands. Banding texture. The foliation is locally folded and irregular.

<<Min: 131.9 - 135 1% Min: Pyrrhotite>>

135.00 148.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Width
141.15	142.65	1.50

135 - 148.9: light grey , fine to medium grained, comprinsing siliceous bands +/- dismembered, deformed and folded, " curdy"/banded texture locally well developped. Moderate to strongly MU altered associated with moderate/strong foliation.The protolith isn't well co

	From (m)	To (m)	Width
<<Min: 135 - 145.65 1% Min: Pyrite>>	142.65	144.15	1.50
<<Min: 135 - 145.65 1% Min: Pyrrhotite>>	144.15	145.65	1.50
<<Min: 145.65 - 148.9 3% Min: Pyrrhotite>>	145.65	146.65	1.00
<<Min: 145.65 - 148.9 4% Min: Chalcopyrite>> Aggregates distributed within matrix.	146.65	147.65	1.00
<<Alt: 145.65 - 147.1 Strong (Alt) Cordierite>> Occuring as phenocrystals disseminated, cm.	147.65	148.30	0.65
<<Alt: 145.65 - 148.9 Moderate (Alt) Chlorite>>	148.30	148.90	0.60

<<Alt: 147.1 - 148.9 Strong (Alt) Cordierite>> Occuring as phenocrystals disseminated, cm, associated with silica rich hydrothermal flow.

<<Alt: 147.1 - 148.9 Moderate (Alt) Biotite>> Fracture filling within hydrotherml flow interval.

<<Vein: 135 - 135.25 80% Quartz 70 deg. >> Group of regular grey qtz veins, dm, discordant, deformed. Mu and CL at the selvages.

<<Struc: 145.75 - 146.3 Weak (Alt) Fault>>

148.90 151.75 OC Chalcopyrite-pyrrhotite net textured sulphides CG

From (m)	To (m)	Width
148.90	149.90	1.00

148.9 - 151.75: Interval strongly chlorite altered (pervasive),comprinsing strong Cp/Po mineralisation, occuring as bands, subparallel, laminated texture, +/- deformed, fine grained. Last 50 cm, Py increases (aggregates subheudral).

	From (m)	To (m)	Width
<<Min: 148.9 - 151.28 4% Min: Pyrite>> Subheudral aggregates, increases at the end of interval.	149.90	150.75	0.85
<<Min: 148.9 - 151.28 15% Min: Pyrrhotite>> Coarse grained associated with Cp, occuring as irregular bands +/- subparallel.	150.75	151.75	1.00

<<Min: 148.9 - 151.28 12% Min: Chalcopyrite>> Coarse grained associated with Po, occuring as irregular bands +/- subparallel.

<<Min: 151.28 - 151.75 25% Min: Pyrite>> Occuring as medium grained bands.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 151.28 - 151.75 8% Min: Pyrrhotite>>										
			<<Min: 151.28 - 151.75 2% Min: Chalcopyrite>> Coarse grained.										
			<<Alt: 148.9 - 151.75 Strong (Alt) Chlorite>>										
			<<Alt: 148.9 - 152.85 Moderate (Alt) Cordierite>> Occuring as phenocrystals disseminated, cm.										
151.75	**155.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	151.75	152.75	1.00						
			<<Min: 151.75 - 152.85 60% Min: Pyrite>> Medium grained.		152.75	153.75	1.00						
			<<Min: 151.75 - 152.85 5% Min: Galena>>		153.75	154.75	1.00						
			<<Min: 152.85 - 155.9 7% Min: Sphalerite>> Occuring as bands,fine grained.		154.75	155.40	0.65						
			<<Min: 152.85 - 155.9 70% Min: Pyrite>>		155.40	155.90	0.50						
			<<Min: 152.85 - 155.9 3% Min: Galena>>										
155.90	**156.50**	**OA**	**Magnetite bearing sulphides**	**MG**	155.90	156.50	0.60						
			155.9 - 156.5: Laminated texture										
			<<Min: 155.9 - 156.5 10% Min: Sphalerite>> Laminated texture, fine bands.										
			<<Min: 155.9 - 156.5 40% Min: Pyrite>>										
			<<Min: 155.9 - 156.5 10% Min: Pyrrhotite>> Laminated texture, fine bands.										
			<<Min: 155.9 - 156.5 10% Min: Magnetite>> Laminated texture, fine bands.										
156.50	**165.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	156.50	157.50	1.00						
			<<Min: 156.5 - 165.2 10% Min: Sphalerite>> Occuring as bands,fine grained.		157.50	158.50	1.00						
			<<Min: 156.5 - 165.2 70% Min: Pyrite>>		158.50	159.50	1.00						
			<<Min: 156.5 - 165.2 2% Min: Galena>>		159.50	160.50	1.00						
			<<Min: 165 - 167.8 5% Min: Calcite>> Associated with veinlets and also as porphyroblats, pervasive.		160.50	161.50	1.00						
			<<Alt: 158.1 - 159.05 Weak (Alt) Chlorite>> Occuring as cm aggregates, enclave?		161.50	162.50	1.00						
			<<Alt: 158.1 - 159.05 Moderate (Alt) Cordierite>> Occuring as phenocrystals disseminated, cm. Associated with CL alteration.		162.50	163.50	1.00						
			<<Alt: 165 - 168 Strong (Alt) Chlorite>>		163.50	164.50	1.00						
					164.50	165.20	0.70						

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
165.20	**168.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**	165.20	166.20	1.00						

165.2 - 168: Comprinsing some OC bands.

<<Min: 165.2 - 168 1% Min: Sphalerite>> | 166.20 | 167.00 | 0.80 |

<<Min: 165.2 - 168 3% Min: Pyrite>> | 167.00 | 168.00 | 1.00 |

<<Min: 165.2 - 168 4% Min: Pyrrhotite>>

<<Min: 165.2 - 168 1% Min: Galena>>

<<Min: 165.2 - 168 3% Min: Chalcopyrite>>

<<Min: 167.8 - 171.51 20% Min: Calcite>> Associated with veinlets and also as porphyroblats, pervasive.

<<Vein: 165.2 - 165.55 90% Quartz-Chalcopyrite>> Massive irregular qtz vein, grey, deformed and discordant. Comprinsing 10 % of Cp (fracture filling).

168.00	**171.51**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	168.00	169.50	1.50						

168 - 171.51: Green, fine grained, interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong). > 15% of Qtz-Cal veinlets/bands, concordant.

<<Alt: 168 - 171.51 Moderate (Alt) Chlorite>> | 169.50 | 171.00 | 1.50 |

	171.00	171.51	0.51

171.51	**172.50**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	171.51	172.50	0.99						

171.51 - 172.5: Interval comprinsing 30 % of felsic intrusive, aphanitic to very fine grained, banding texture. Associated with Mu alteration, Cr rich. Fuschite?

<<Min: 171.51 - 174.75 0.5% Min: Pyrite>>

<<Min: 171.51 - 174.75 0.5% Min: Pyrrhotite>>

172.50	**176.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

172.5 - 176.5: Green to brownish, fine grained,interval of mafic intrusive, moderately sheared/foliated. Mainly chlorite altered (pervasive, moderate/strong), Partially biotite altered (small flakes disseminated, occuring as bands), also interval fuschite altered? > 15%

<<Min: 174.5 - 176.5 2% Min: Sphalerite>> Occuring as bands.

<<Min: 174.75 - 176.5 2% Min: Pyrrhotite>>

<<Alt: 172.9 - 173.67 Weak (Alt) Silicification>> Fuschite alteration?

<<Alt: 172.9 - 173.67 Weak (Alt) Muscovite>> Fuschite alteration?

<<Alt: 174.95 - 176.5 Weak (Alt) Silicification>> Fuschite alteration?

From (m)	To (m)	Rocktype & Description

<<Alt: 174.95 - 176.5 Weak (Alt) Muscovite>> Fuschite alteration?

<<Struc: 176.3 - 176.5 Weak (Alt) Fault>> Fault gauge.

176.50 176.70 RHYi Aphanitic Rhyolite (intrusion)

176.5 - 176.7: Hole finish in aphanitic RHYi.

End of Hole @ 176.7

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-265

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Daniele Heon
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	20-Sep-15
UTM Easting	415206.697	Core Size:	NQ3	Azimuth:	181	Date Logging Complete:	23-Sep-15
UTM Northing:	6815594.549	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1423.992	Casing Depth (m):	24	Length (m):	285	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	18-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	21-Sep-15
Local Elev. (m):						Purpose:	Resource/Hydro
Comments:						Parent Hole:	

The purpose of this hole was to test for eastern extent of main ABM lens. A prior hole from this pad (K15-263, at -75 deg dip) did not intersect massive sulphide but did intersect a zone of strong cordierite- greasy chlorite- talc alteration, showing brecciated textures. The top of this hole (-265) consists of a succession of lapilli tuff and ash tuff (RHYvl and va), intercalated with mafic tuffs and cut by mafic dykes, and also cut by RHYi (127.8-128.4 and 171-172.2). This hole (265, -55 dip) did intersect massive sulphide mineralization at the expected depth, topped and cored by strong cord-chl-talc alteration. A few copper rich zones were observed. The whole zone spans 172-199 m with the main massive sulphide horizon occuring between 184.15 and 199.4m. The footwall to the masive sulphides consists of felsic volcaniclastics, cut by the footwall mafic intrusion from 213 to 270.15. Its lower contact is intruded by RHYi and is marked by strong py veinlets +/- sphalerite. The hole ends in silica and musc-altered RHYv.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	181	0	181	APS	Daniele Heon	19-Sep-15	N/A	☑	
36	-55.8	162.9	22.5	185.4	ReflexEZS	Geotech	19-Sep-15	5814	☑	1st downhole test. Second hole on pad and drill not re-ligned up so probably off-azimuth right from start.
66	-56.1	162.9	22.5	185.4	ReflexEZS	Geotech	19-Sep-15	5777	☑	
96	-55.5	165.8	22.5	188.3	ReflexEZS	Geotech	19-Sep-15	5818	☑	
126	-55.8	166.1	22.5	188.6	ReflexEZS	Geotech	19-Sep-15	5775	☑	
156	-56.4	168.4	22.5	190.9	ReflexEZS	Geotech	20-Sep-15	5736	☑	
186	-55.9	161.5	22.5	184	ReflexEZS	Geotech	20-Sep-15	5848	☐	Erratic azimuth reading
216	-55.5	169.4	22.5	191.9	ReflexEZS	Geotech	20-Sep-15	5769	☑	
246	-55.6	171.1	22.5	193.6	ReflexEZS	Geotech	21-Sep-15	5791	☑	
285	-54	174.7	22.5	197.2	ReflexEZS	Geotech	21-Sep-15	5831	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**25.00**	**OVBN**	**Overburden**									
25.00	**44.40**	**RHYvl**	**Lapilli tuff**									
			grey									
<<Min: 25 - 34.8 0.05% Min: Pyrrhotite>>			diss and in few foliaform qtz-rich bands									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 30.8 - 31.2 0.5% Min: Pyrrhotite>> coarse po in selvage of qtz-tourm vein

<<Min: 30.8 - 31.2 0.5% Min: Galena>> galena in qtz tourm vein

<<Min: 34.8 - 44.4 0.5% Min: Pyrrhotite>> po on flat seams // to foln

<<Vein: 30.1 - 160.6 0.6% Quartz-Carbonate 65 deg. >> Foliaform qtz-carb-chl veining

<<Vein: 30.3 - 78.9 0.4% Quartz-Tourmaline 15 deg. >> Mm to cm qtz-brown tourmaline veins, at shallow angle to CA, loc stockwork, w loc wide selvage of brown tourmaline. Wider veins at 31 and 54.4m contain sulphides (po-py +/- galena, different vein type>). Cuts all other vein types as well as RHYi.

<<Struc: 38.8 - 38.81 dominant foliation>> NE/SE

<<Struc: 41.6 - 41.61 dominant foliation>> NE/SE

<<Struc: 43.7 - 43.73 Vein>>

44.40 48.85 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

44.4 - 48.85: Biot-qtz-rich bands interbanded w finer grained light green bands, sericite on foliae. Granular. Some small orangy flecks, leucoxene or carbonate? Few biot porphyroblasts.Gradational UC. LC bleached from qtz-tourm veining.

<<Min: 44.4 - 48.85 5% Min: Calcite>>

<<Min: 44.4 - 80.8 0.01% Min: Pyrite>>

<<Min: 44.4 - 80.8 0.01% Min: Pyrrhotite>>

<<Struc: 44.85 - 44.86 dominant foliation>> NE/SE

<<Struc: 47.6 - 47.61 dominant foliation>>

<<Struc: 47.9 - 47.91 Vein>> qtz-tourm vein: NW-SE strike/ vert dip

48.85 57.10 RHYva Coarse grained to ash tuff grey

48.85 - 57.1: few biot-qtz layers, intercalated mafic tuff?

<<Min: 48.85 - 68.7 1% Min: Calcite>>

<<Min: 54.35 - 54.7 2% Min: Pyrrhotite>> in 1 cm shallow angle qtz vein

<<Min: 54.35 - 54.7 0.5% Min: Galena>> in 1 cm shallow angle qtz vein

<<Struc: 50.9 - 50.91 dominant foliation>> NE strike/ shallow dip to SE

<<Struc: 54.5 - 54.51 Vein>> qtz-po-ga vein, 2 cm, E-W strike/ steep south dip.

57.10 58.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

57.1 - 58.4: Lower contact bleached? Or gradational?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

58.40 60.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

58.4 - 60.2: white siliceous bands w thin olive beige sericite seams, contorted, every half-centimeter. Rob interprets as pepperite: rhyolite dyke intruding wet tuffs. Lower contact: 0.5m mass qtz-ser: chill margin or altered mafic tuff?

<<Vein: 59.5 - 105.3 0.8% Quartz-Carbonate-Sulphide>> qtz- carb +/- py-po veins, discordant, ass w RHYCw?

60.20 61.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

60.2 - 61.9: khaki green, granular, w some calcareous biot-rich bands.

61.90 63.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

61.9 - 63.2: contorted siliceous bands, beige sericite, pepperite?

63.20 69.35 RHYva Coarse grained to ash tuff grey

<<Min: 68.7 - 69.35 3% Min: Calcite>>

<<Struc: 65.95 - 65.96 dominant foliation>> NE/ mod dipto SE

<<Struc: 68.85 - 68.86 dominant foliation>> flat

69.35 70.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 69.35 - 70.3 3% Min: Calcite>>

70.30 76.75 RHYva Coarse grained to ash tuff grey

<<Min: 70.3 - 76 0.5% Min: Calcite>>

<<Min: 76 - 84 5% Min: Calcite>>

76.75 77.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Struc: 77.5 - 77.55 Weak (Alt) Fault>> clay gouge/ 5cm

77.55 79.00 RHYvl Lapilli tuff

<<Struc: 77.95 - 77.96 dominant foliation>> NE/ Shallow SE dip

79.00 79.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

79.50 79.85 RHYvl Lapilli tuff

79.85 80.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

80.80 84.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

80.8 - 84.6: Dominantly mafic tuffs w some short lapilli tuff intervals? Or fg mafic dyke intrudes vl?

<<Min: 80.8 - 84 0.5% Min: Pyrrhotite>> diss in qtz-rich bands and loc blebby

<<Min: 84 - 86 1% Min: Calcite>>

<<Min: 84 - 94 0.01% Min: Pyrrhotite>>

84.60 88.65 RHYvl Lapilli tuff

<<Min: 86 - 91.18 5% Min: Calcite>>

<<Alt: 85.8 - 88.64 Weak (Alt) Chlorite>>

<<Struc: 86.95 - 86.96 dominant foliation>> E-W, south dip,orientation of stretched lapilli.

88.65 91.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 91.18 - 101.35 1% Min: Calcite>>

91.80 101.35 RHYvl Lapilli tuff

91.8 - 101.35: Dominantly lapilli tuff, w some ash-dominant sections.

<<Min: 94 - 96 0.5% Min: Pyrrhotite>>

<<Alt: 91.8 - 101.35 Weak (Alt) Chlorite>>

101.35 105.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 101.35 - 105.2 2% Min: Calcite>> carb is ankertie?

<<Struc: 101.45 - 101.5 Moderate (Alt) Fault>> broken, clay gouge.

105.25 114.40 RHYvl Lapilli tuff dark grey

105.25 - 114.4: Dark, loc very siliceous, mixture of lapilli tuff, some ash, and some intervals w prominent siliceous bands or contorted blebs (RHYcw?, 105.3-105.6, 110.8-114).

<<Alt: 105.6 - 114.4 Weak (Alt) Chlorite>>

<<Vein: 109 - 127.1 0.01% Quartz-Tourmaline 5 deg. >>

114.40 117.00 RHYvl Lapilli tuff grey

117.00 119.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

117 - 119: very sileceosu rx w bands and disrupted bands of silica. Silicified and w bands of diss py in qtz..

<<Min: 117.3 - 121 3% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 117.9 - 121 Moderate (Alt) Silicification>>

<<Alt: 117.9 - 121 Moderate (Alt) Muscovite>>

<<Vein: 118.8 - 164 0.1% Quartz-Carbonate 40 deg. >> discordant qtz-carb veins, 2-5 cm

119.00 121.55 RHYvl Lapilli tuff

<<Min: 121 - 125 0.5% Min: Pyrite>>

121.55 125.30 RHYva Coarse grained to ash tuff

<<Min: 121.55 - 125 0.5% Min: Pyrrhotite>> flat foliaform seams

<<Min: 125 - 127.3 1% Min: Pyrite>>

<<Min: 125 - 127.3 1% Min: Pyrrhotite>>

<<Alt: 125 - 130.65 Moderate (Alt) Muscovite>>

<<Alt: 125 - 131.65 Moderate (Alt) Silicification>>

125.30 127.80 RHYvl Lapilli tuff grey

127.20	127.80	0.60	B00266792	14.3	0.034	0.03	0.54	1.55

125.3 - 127.8: musc and py alteration increase downhole.

<<Min: 127.3 - 128.4 0.5% Min: Sphalerite>>

<<Min: 127.3 - 128.4 3% Min: Pyrite>>

<<Min: 127.3 - 128.4 3% Min: Pyrrhotite>>

<<Min: 127.3 - 128.4 0.01% Min: Galena>>

<<Struc: 125.95 - 125.96 dominant foliation>> NW/NE

127.80 128.40 RHYi Aphanitic Rhyolite (intrusion) light grey

127.80	128.40	0.60	B00266793	1.9	0.008	0.01	0.06	0.31

127.8 - 128.4: w thin sulphide veinlets, x-cut by thin qtz-tourm veinlets.

128.40 130.50 RHY undifferentiated rhyolite

128.40	129.50	1.10	B00266794	1.3	0.01	-0.01	0.03	0.05

128.4 - 130.5: Green and grey musc-silica-altered felsic rx w abundant bands of diss qtz-py. No primary textures.

<<Min: 128.4 - 130.6 1% Min: Pyrite>> disseminated in qtz-rich bands

130.50 148.65 RHYvl Lapilli tuff

130.5 - 148.65: Lapilli and/or siliceous fragment size and amount increase down-hole, loc xtal-lithic tuff?.

<<Min: 130.6 - 154.4 0.5% Min: Pyrite>> in irregular sulphide seams dissected by foliation

<<Min: 130.6 - 154.4 0.5% Min: Pyrrhotite>>

<<Min: 147.5 - 149.1 3% Min: Calcite>>

<<Alt: 131 - 146.5 Weak (Alt) Silicification>>

<<Alt: 138.2 - 146.5 Weak (Alt) Chlorite>>

<<Alt: 138.2 - 170 Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 131.9 - 131.91 dominant foliation>> e-w/ n									
		<<Struc: 134.95 - 134.96 dominant foliation>> NE/ shallow SE									
		<<Struc: 143.3 - 143.31 Weak (Alt) Fault>> 1 cm fault gouge									
148.65	**157.30**	**RHYva Coarse grained to ash tuff grey-green**									
		<<Min: 154.4 - 154.5 10% Min: Pyrite>>									
		<<Min: 154.5 - 163.7 1% Min: Pyrite>> in sulph-qtz seams									
		<<Min: 154.5 - 170.55 1% Min: Pyrrhotite>> in sulph-qtz seams									
157.30	**163.70**	**RHYvl Lapilli tuff grey-green**									
		157.3 - 163.7: Fragment-rich xtal-lapilli tuff, (loc up to CW) w contorted qtz veins and fragments (of cw?) and qtz-sulph bands.Looks brecciated.									
163.70	**169.60**	**RHYva Coarse grained to ash tuff grey**	168.50	169.60	1.10	B00266795	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 163.7 - 170.55 3% Min: Pyrite>>									
169.60	**171.00**	**RHY undifferentiated rhyolite medium grey**	169.60	171.00	1.40	B00266796	0.7	-0.005	-0.01	0.01	0.02
		169.6 - 171: Darkish grey siliceous foliated rx w grey-green sericite on partings. Grey but not really carbonaceous. Cw?									
		<<Alt: 170 - 184.15 Strong (Alt) Muscovite>>									
171.00	**172.20**	**RHYi Aphanitic Rhyolite (intrusion) beige**	171.00	172.20	1.20	B00266797	3.2	-0.005	0.03	0.04	0.03
		171 - 172.2: actually white, blocky, strongly fractured, abundant qtz veins and strong mica/talc alteration. Includes some blocks of strongly musc/ clay-altered RHY. Poor recovery so meterage approximate.									
172.20	**175.60**	**OJ Heavilly disseminated sulphides in proximal altered rock grey-brown**	172.20	172.90	0.70	B00266798	54.8	0.094	0.32	0.76	3.43
		172.2 - 175.6: mottled zone of strong cordierite-chl alteration,w sulphides 5 to 20%. Altered RHY w knots of dark or light-coloured cordierite, in groundmass of greasy chlorite and grey muscovite. Cordierite loc altered to dark biot/chl? Diss and stringers of py, cp, sp									
		<<Alt: 172.2 - 175.6 Strong (Alt) Chlorite>>	172.90	173.90	1.00	B00266799	13.2	0.124	0.44	0.08	0.08
		<<Alt: 172.2 - 175.6 Strong (Alt) Cordierite>>	173.90	174.95	1.05	B00266801	25.1	0.079	0.31	0.32	1.61
			174.95	175.60	0.65	B00266802	22.1	0.037	0.34	0.27	1.07
175.60	**178.15**	**RHY undifferentiated rhyolite**	175.60	176.75	1.15	B00266803	1.6	-0.005	0.05	0.02	0.06
		<<Min: 178 - 180 5% Min: Calcite>>	176.75	178.15	1.40	B00266804	0.4	-0.005	-0.01	-0.01	0.02
		<<Alt: 176.75 - 178.15 Strong (Alt) Talc-serpentine>>									
		<<Struc: 177.5 - 177.6 dominant foliation>>									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.15	**180.00**	**RHY**	**undifferentiated rhyolite**	178.15	180.00	1.85	B00266805	1.2	-0.005	-0.01	0.03	0.11
178.15 - 180: White, green and grey, brecciated/ fractured appearance, w coalescing white cordierites in groundmass of greasy greenish chlorite, talc-y on fractures.												
<<Alt: 178.15 - 181 Moderate (Alt) Talc-serpentine>>												
<<Alt: 178.2 - 180 Strong (Alt) Chlorite>>												
<<Alt: 178.2 - 180 Strong (Alt) Cordierite>>												
180.00	**184.15**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	180.00	182.00	2.00	B00266806	0.8	-0.005	-0.01	0.02	0.15
180 - 184.15: or RHY												
<<Alt: 183.9 - 184.15 Moderate (Alt) Talc-serpentine>>				182.00	184.15	2.15	B00266807	2.1	0.008	0.02	0.03	0.09
<<Alt: 184 - 184.15 Strong (Alt) Chlorite>>												
<<Alt: 184 - 184.15 Strong (Alt) Cordierite>>												
<<Struc: 183.1 - 183.2 Strong (Alt) Fault>> broken, gouge												
184.15	**186.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	184.15	185.20	1.05	B00266808	200	0.781	0.39	4.25	6.63
184.15 - 186: last 0.3m is OA												
<<Min: 184.15 - 187.55 2% Min: Chalcopyrite>>				185.20	186.00	0.80	B00266809	150	0.468	0.27	4.51	9.76
<<Min: 184.15 - 199.4 2% Min: Sphalerite>>												
<<Min: 184.15 - 199.4 3% Min: Galena>>												
<<Min: 185.2 - 187.55 15% Min: Pyrite>>												
<<Min: 185.2 - 191.6 10% Min: Pyrrhotite>>												
186.00	**186.90**	**OA**	**Magnetite bearing sulphides**	186.00	186.90	0.90	B00266812	148	1.05	0.51	4.81	10.5
186.90	**187.55**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	186.90	187.55	0.65	B00266813	250	1.59	0.09	5.56	8.2
187.55	**191.55**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	187.55	188.95	1.40	B00266814	39	0.139	0.65	0.47	1.17
187.55 - 191.55: 189.9-190.5: semi-massive cordierite, sulphide poor. 192-191.55: sulphide rich, could be classed as OC. 187.85-188: musc-altered RHY.												
<<Min: 187.55 - 190.4 5% Min: Pyrite>>				188.95	190.40	1.45	B00266815	14	0.059	0.31	0.05	0.2

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 187.55 - 192.5 5% Min: Chalcopyrite>> diss from 192.2-192.5	190.40	191.55	1.15	B00266816	58.2	0.279	0.87	0.51	1.91
			<<Min: 190.4 - 191.8 15% Min: Pyrite>>									
			<<Alt: 187.55 - 191.55 Moderate (Alt) Talc-serpentine>>									
			<<Alt: 187.55 - 191.55 Strong (Alt) Chlorite>>									
			<<Alt: 187.55 - 191.55 Strong (Alt) Cordierite>>									
			<<Vein: 189.25 - 189.35 Quartz 35 deg. >> py on selvage. E-W, subvertical.									
			<<Struc: 189.25 - 189.26 Vein>> E_W/									
			<<Struc: 190.8 - 190.9 dominant foliation>> NW-SE/subvert. In cordierite alteration zone.									
191.55	**193.50**	**OA**	**Magnetite bearing sulphides**	191.55	192.50	0.95	B00266817	78.8	0.507	1.76	0.27	1.46
			191.55 - 193.5: good magnetite banding.									
			<<Min: 191.8 - 199.4 30% Min: Pyrite>>	192.50	193.50	1.00	B00266818	46.8	0.434	1.05	0.1	0.44
			<<Min: 192.5 - 198.25 3% Min: Chalcopyrite>>									
			<<Struc: 192.6 - 192.61 dominant foliation>> magnetite banding. NW/ NE dip.									
193.50	**194.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	193.50	194.15	0.65	B00266819	18.1	0.363	0.34	0.05	1.66
194.15	**194.80**	**OA**	**Magnetite bearing sulphides**	194.15	194.80	0.65	B00266821	109	1.02	0.36	1.78	7.67
			<<Struc: 194.7 - 194.71 dominant foliation>> NW/NE									
194.80	**196.05**	**OA**	**Magnetite bearing sulphides**	194.80	195.25	0.45	B00266822	290	2.49	0.13	4.05	8.79
			194.8 - 196.05: cp									
				195.25	196.05	0.80	B00266823	280	2.61	0.18	4.46	8.06
196.05	**197.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	196.05	196.90	0.85	B00266824	300	2.18	0.11	4.73	9.42
			196.05 - 197.75: massive									
				196.90	197.75	0.85	B00266825	290	2.05	0.25	3.55	11.6
197.75	**199.40**	**OA**	**Magnetite bearing sulphides**	197.75	198.50	0.75	B00266826	141	1.19	1.35	1.66	10.2
			197.75 - 199.4: mostly OA w some short sections of OB and ~ 10cm blebby cp.									
			<<Min: 198.25 - 198.4 15% Min: Chalcopyrite>>	198.50	199.40	0.90	B00266827	202	1.91	0.3	2.99	10.4
			<<Min: 199.24 - 213 1% Min: Sphalerite>> in veinlets/bands up to 1 cm									
			<<Min: 199.24 - 213 0.5% Min: Pyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 199.24 - 213 1% Min: Pyrrhotite>>									
		<<Min: 199.24 - 213 0.5% Min: Chalcopyrite>> in veinlets/bands up to 1 cm									
199.40	**213.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	199.40	200.90	1.50	B00266828	5.3	0.061	0.02	0.17	0.28
		199.4 - 213: or RHYva									
		<<Alt: 199.4 - 213 Moderate (Alt) Muscovite>> greenish	200.90	202.50	1.60	B00266829	3	0.036	0.01	0.12	0.17
		<<Vein: 206 - 210 5% Quartz 80 deg. >> 3 veins 5-10 cmm									
213.00	**270.15**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	269.40	270.15	0.75	B00266831	5.8	0.097	0.02	0.02	0.02
		213 - 270.15: m to cg chloritic intrusion, w biot (replacing hbl?) in bands defining foliation, tr sulphides, w common carbonate veinlets and pods.Gabbro to pxenite composition. Last meter is fg, spotted by leucoxene (?), and w mm-thin biot-py stringers: chillled margi									
		<<Min: 213 - 223 10% Min: Calcite>>									
		<<Min: 213 - 270.15 0.01% Min: Pyrrhotite>>									
		<<Min: 213 - 270.15 0.01% Min: Chalcopyrite>> at edge of po grains.									
		<<Min: 223 - 236 5% Min: Calcite>>									
		<<Min: 236 - 242 15% Min: Calcite>>									
		<<Min: 242 - 268.7 2% Min: Calcite>>									
		<<Min: 269.4 - 274.1 1% Min: Pyrite>> in veinlets 70-90 deg CA									
		<<Min: 269.4 - 285 0.01% Min: Sphalerite>>									
		<<Vein: 247.15 - 247.25 100% Quarzt-Tourmaline-Sulphide 40 deg. >> qtz-tourm-po-asp vein.									
		<<Struc: 218.44 - 218.45 dominant foliation>>									
		<<Struc: 218.98 - 218.99 dominant foliation>>									
		<<Struc: 221.5 - 221.6 dominant foliation>>									
		<<Struc: 221.87 - 221.88 Vein>> carbonate vein									
		<<Struc: 233.97 - 233.98 dominant foliation>>									
		<<Struc: 247.15 - 247.16 Vein>> NW-SE/ steep									
270.15	**271.80**	**RHYi** **Aphanitic Rhyolite (intrusion)**	270.15	271.00	0.85	B00266832	3.4	0.025	-0.01	0.01	0.02
		270.15 - 271.8: py diss and in mm to cm seams									
		<<Alt: 270.15 - 275 Moderate (Alt) Silicification>>	271.00	271.80	0.80	B00266833	4.2	0.05	-0.01	0.02	0.07
		<<Alt: 270.15 - 275 Moderate (Alt) Muscovite>>									

From (m)	To (m)	Rocktype & Description
271.80	**273.70**	**RHYva Coarse grained to ash tuff**
271.8 - 273.7: strongly foliated, siliceous, w same py seams as in RHYi.		
273.70	**274.55**	**RHYi Aphanitic Rhyolite (intrusion)**
273.7 - 274.55: py diss and in mm to cm seams		
<<Min: 274.1 - 284.1 0.01% Min: Pyrrhotite>>		
<<Min: 274.1 - 285 0.5% Min: Pyrite>> py quite bright yellow (w cp?)		
274.55	**276.20**	**RHYva Coarse grained to ash tuff**
274.55 - 276.2: silicified? Greenish, foliated, w dark qtz-sulph lenses and seams.		
<<Alt: 275 - 285 Strong (Alt) Silicification>>		
276.20	**276.30**	**RHYi Aphanitic Rhyolite (intrusion)**
276.30	**282.00**	**RHYva Coarse grained to ash tuff**
276.3 - 282: silicified? Greenish, foliated, w dark qtz-sulph lenses and seams.		
<<Struc: 280 - 280.01 dominant foliation>>		
282.00	**285.00**	**RHYv Rhyolite volcaniclastic**
282 - 285: blue-grey, siliceous musc-rich rx, granular groundmass w some fragmental texture and maybe clasts of cw? Qtz eyes or qtz clasts?		
<<Min: 284.1 - 285 0.5% Min: Pyrrhotite>>		
<<Vein: 284 - 284.1 100% Quarzt-Chlorite-Carbonate 80 deg. >> qtz-carb-chl		
<<Struc: 284.1 - 284.15 Strong (Alt) Fault>> clay breccia gouge.		
<<Struc: 284.8 - 284.9 >> crenulation		
End of Hole @ 285		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
271.80	273.00	1.20	B00266834	3.6	0.03	-0.01	0.03	0.19
273.00	273.70	0.70	B00266835	2.8	0.014	-0.01	0.03	0.06
273.70	274.00	0.30	B00266836	2.8	0.034	-0.01	0.02	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-266

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	21-Sep-15
UTM Easting	414698.867	Core Size:	HQ3	Azimuth:	180.2	Date Logging Complete:	21-Sep-15
UTM Northing:	6815466.42	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1418.903	Casing Depth (m):	7.5	Length (m):	110	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	20-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-272

Comments:

This hole is an HQ-size Metallurgical twin of K15-272. The hole encountered continuous and discontinuous masive sulphide lenses near top of hole from 38.85 to 41.4 (OB+OC continuous) and 52.4 to 55 (OI, discontinuous) within a stringer zone from 37.7 to 62.2m. Main ABM Massive sulphide intersected (OA and OB) from 62.2 to 104.17 with interveining wall rock totalling 3.5m dilution (RHYv).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	181	0	181	APS	Geotech	19-Sep-15	N/A	☐	
26	-59.6	160.7	22.5	183.2	ReflexEZS	Geotech	19-Sep-15	5790	☑	
50	-59.5	160.4	22.5	182.9	ReflexEZS	Geotech	20-Sep-15	5737	☑	
74	-59.7	159.8	22.5	182.3	ReflexEZS	Geotech	20-Sep-15	5752	☑	
74.01	-61.6	156.7	22.5	179.2	ReflexEZS	Geotech	21-Sep-15	5684	☐	Repeat reading
98	-59.6	159.6	22.5	182.1	ReflexEZS	Geotech	21-Sep-15	5819	☑	
110	-59.9	162.6	22.5	185.1	ReflexEZS	Geotech	21-Sep-15	5639	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 8.00 OVBN Overburden

0 - 8: Casing to 7.5m and cave from 7.5m to 8m

8.00 11.50 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 10.1 - 12.8 3% Min: Pyrite>> diss. Aggregates

11.50 12.80 MDSc Carbonaceous dominant mudstone

11.5 - 12.8: heterolithic, gradational contacts, weakly carbonaceous.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

12.80 14.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

12.8 - 14.3: Strongly disrupted MDSw, pinched out Z-folds (upper limb?) with fold noses throughout, folds are highlighted by graphitic folia. Folds are isoclinal to very tight with E-W fold axis and plunging to the south.

14.30 30.00 MDSw Coherent rhyolite flow with carbonaceous content

14.3 - 30: Strongly disrupted MDSw, pinched out Z-folds (upper limb?) with fold noses throughout, folds are highlighted by graphitic folia. Folds are isoclinal to very tight with E-W fold axis and plunging to the south.

<<Alt: 23.5 - 30 Weak-Moderate (Alt) Muscovite>>

<<Vein: 25.14 - 30 Quartz>>

<<Struc: 19.8 - 20.2 Weak (Alt) Fault>>

30.00 32.80 MDSc Carbonaceous dominant mudstone

30 - 32.8: weakly graphitic, heterolithic appearance. Sharp UCT and LCT.

<<Alt: 30 - 32.8 Weak (Alt) Muscovite>>

<<Struc: 30.5 - 32.8 Weak-Moderate (Alt) Fault>>

32.80 38.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

From (m)	To (m)	Width
33.85	34.85	1.00

32.8 - 38.8: gradational LCT into RHYv

	From (m)	To (m)	Width
<<Min: 37.7 - 38.85 0.5% Min: Pyrite>>	34.85	35.85	1.00
<<Min: 37.7 - 38.85 0.5% Min: Pyrrhotite>>	35.85	36.85	1.00
<<Min: 37.7 - 38.85 0.5% Min: Chalcopyrite>>	36.85	37.85	1.00
<<Min: 37.77 - 38.85 2% Min: Sphalerite>> isolated banded aggregates	37.85	38.85	1.00

<<Min: 37.77 - 38.85 1% Min: Arsenopyrite>>

<<Alt: 32.8 - 38.85 Moderate (Alt) Muscovite>>

<<Vein: 36 - 37.85 Quartz>>

38.80 41.40 OC Chalcopyrite-pyrrhotite net textured sulphides **MG**

From (m)	To (m)	Width
38.85	39.85	1.00

38.8 - 41.4: sharp UCT, LCT gradational over 20cm. Cpy poor over gradational LCT. 45cm dilution (qtz vein + RHY). Cpy+sph+gl

	From (m)	To (m)	Width
<<Min: 38.85 - 41.4 5% Min: Sphalerite>>	39.85	40.85	1.00

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 38.85 - 41.4 5% Min: Pyrrhotite>> net txt, coasre graiuned in qz vein		40.85	41.40	0.55						
		<<Min: 38.85 - 41.4 1% Min: Galena>>										
		<<Min: 38.85 - 41.4 1.5% Min: Chalcopyrite>>										
		<<Alt: 38.85 - 41.4 Weak (Alt) Muscovite>>										
		<<Vein: 39.6 - 40.2 Quartz>> +cpy										
41.40	**45.25**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		41.40	42.40	1.00						
		41.4 - 45.25: strongly altered, txt destructive.										
		<<Min: 41.4 - 46.9 5% Min: Calcite>>		42.40	43.40	1.00						
		<<Alt: 41.4 - 45.2 Intense (Alt) Muscovite>>		43.40	44.40	1.00						
		<<Alt: 45.2 - 55 Strong (Alt) Muscovite>>		44.40	45.25	0.85						
45.25	**46.75**	**OI** **Heavilly disseminated sulphides in host schist**	**FMG**	45.25	46.25	1.00						
		45.25 - 46.75: Stringer mineralization, convoluted OC veins and disseminated f.g. po+gn+cpy										
		<<Min: 45.75 - 46.75 3% Min: Sphalerite>>		46.25	46.75	0.50						
		<<Min: 45.75 - 46.75 3% Min: Pyrrhotite>> net txt + diss										
		<<Min: 45.75 - 46.75 1.5% Min: Chalcopyrite>> complex intergrowths withg po (net text.)										
46.75	**47.75**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		46.75	47.75	1.00						
		46.75 - 47.75: pervasive Mu altered RHYv										
		<<Min: 47.7 - 49 3% Min: Calcite>>										
47.75	**50.20**	**OI** **Heavilly disseminated sulphides in host schist**	**FG**	47.75	48.75	1.00						
		47.75 - 50.2: Stringer mineralization, convoluted OC veins and disseminated f.g. po+gn+cpy										
		<<Min: 47.75 - 50 5% Min: Sphalerite>>		48.75	49.75	1.00						
		<<Min: 47.75 - 50 5% Min: Pyrrhotite>>		49.75	50.20	0.45						
		<<Min: 47.75 - 50 1% Min: Chalcopyrite>>										
		<<Struc: 50 - 50.4 Weak (Alt) Fault>>										
50.20	**52.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		50.20	51.20	1.00						
		50.2 - 52.4: int. Mu alt Rhyv.laminated throughout.										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 51.2 - 55 2% Min: Calcite>>					51.20	52.40	1.20						
52.40	**55.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	52.40	53.40	1.00						
52.4 - 55: discrete sulphide lenses <15cm (stringer mineralization)													
<<Min: 52.4 - 55 3% Min: Sphalerite>>					53.40	54.40	1.00						
<<Min: 52.4 - 55 7% Min: Pyrite>>					54.40	55.00	0.60						
<<Min: 52.4 - 55 1% Min: Galena>>													
55.00	**62.20**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		55.00	56.00	1.00						
55 - 62.2: fg whispy stringers and <5cm bands of py-po-sp + diss. Throughout													
<<Min: 57.3 - 62.2 0.5% Min: Chalcopyrite>>					56.00	57.00	1.00						
<<Min: 57.53 - 62.2 1.5% Min: Sphalerite>>					57.00	58.00	1.00						
<<Min: 57.53 - 62.2 2% Min: Pyrite>>					58.00	59.20	1.20						
<<Min: 57.53 - 62.2 0.5% Min: Galena>>					59.20	60.20	1.00						
<<Alt: 55 - 62.2 Strong (Alt) Muscovite>>					60.20	62.20	2.00						
<<Struc: 60.2 - 61.5 Strong (Alt) Fault>> weakly healed gouge and intact core (<20cm) with cataclastic overprint. Lost core (0.9m)													
62.20	**64.90**	**OA**	**Magnetite bearing sulphides**	**FG**	62.20	63.20	1.00						
<<Min: 62.2 - 65 15% Min: Sphalerite>>					63.20	64.20	1.00						
<<Min: 62.2 - 65 60% Min: Pyrite>>					64.20	64.90	0.70						
<<Min: 62.2 - 65 3% Min: Galena>>													
<<Min: 62.2 - 65 1% Min: Chalcopyrite>>													
64.90	**65.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	64.90	65.90	1.00						
<<Min: 65 - 76 10% Min: Sphalerite>>													
<<Min: 65 - 76 55% Min: Pyrite>>													
<<Min: 65 - 76 2% Min: Galena>>													
<<Min: 65 - 76 0.5% Min: Chalcopyrite>>													
65.90	**67.40**	**OA**	**Magnetite bearing sulphides**	**FG**	65.90	66.90	1.00						
					66.90	67.40	0.50						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.40	**68.85**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	67.40	67.90	0.50						
					67.90	68.85	0.95						
68.85	**70.90**	**OA**	**Magnetite bearing sulphides**	**FMG**	68.85	69.90	1.05						
					69.90	70.90	1.00						
70.90	**72.22**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	70.90	71.40	0.50						
					71.40	72.22	0.82						
72.22	**75.00**	**OA**	**Magnetite bearing sulphides**	**FG**	72.22	73.20	0.98						
					73.20	74.20	1.00						
					74.20	75.00	0.80						
75.00	**77.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	75.00	76.00	1.00						
<<Min: 76 - 78 15% Min: Sphalerite>>					76.00	77.00	1.00						
<<Min: 76 - 78 50% Min: Pyrite>>													
<<Min: 76 - 78 0.5% Min: Galena>>													
77.00	**78.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	77.00	78.00	1.00						
<<Min: 77 - 78 2% Min: Magnetite>>													
<<Min: 77.6 - 79.5 5% Min: Calcite>>													
78.00	**79.20**	**RHYv**	**Rhyolite volcaniclastic**		78.00	79.20	1.20						
<<Alt: 78 - 79.2 Strong (Alt) Muscovite>>													
79.20	**82.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	79.20	80.20	1.00						
<<Min: 79.2 - 82.3 10% Min: Sphalerite>>					80.20	81.20	1.00						
<<Min: 79.2 - 82.3 60% Min: Pyrite>>					81.20	82.30	1.10						
<<Min: 79.2 - 82.3 3% Min: Galena>>													
<<Min: 79.5 - 84.5 2% Min: Calcite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
82.30	**84.50**	**RHYva**	**Coarse grained to ash tuff**		82.30	83.30	1.00						
82.3 - 84.5: mg chl replaced xtals, perv MU alteration with sel. Repl chl													
<<Min: 82.3 - 84.5 0.25% Min: Sphalerite>>					83.30	84.50	1.20						
<<Min: 82.3 - 84.5 0.5% Min: Pyrite>> local startiform aggregates													
<<Alt: 82.3 - 84.5 Strong (Alt) Muscovite>>													
<<Vein: 82.3 - 82.7 Quartz>>													
84.50	**86.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	84.50	85.50	1.00						
<<Min: 84.5 - 87.25 10% Min: Sphalerite>>					85.50	86.30	0.80						
<<Min: 84.5 - 87.25 50% Min: Pyrite>>													
<<Min: 84.5 - 87.25 5% Min: Galena>>													
86.30	**87.25**	**OA**	**Magnetite bearing sulphides**	**FG**	86.30	87.25	0.95						
87.25	**88.30**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FG**	87.25	88.30	1.05						
<<Min: 87.25 - 88.4 70% Min: Pyrite>>													
88.30	**90.30**	**OA**	**Magnetite bearing sulphides**	**FMG**	88.30	89.30	1.00						
<<Min: 88.4 - 90.95 15% Min: Sphalerite>>					89.30	90.30	1.00						
<<Min: 88.4 - 90.95 50% Min: Pyrite>>													
<<Min: 88.4 - 90.95 2% Min: Chalcopyrite>>													
90.30	**90.95**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	90.30	90.95	0.65						
90.95	**92.34**	**RHYv**	**Rhyolite volcaniclastic**		90.95	92.34	1.39						
<<Min: 90.95 - 92.4 1% Min: Sphalerite>>													
<<Min: 90.95 - 92.4 5% Min: Pyrite>>													
<<Min: 90.95 - 92.4 0.5% Min: Galena>>													
<<Alt: 90.95 - 92.4 Strong (Alt) Muscovite>>													
92.34	**95.34**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	92.34	93.34	1.00						
<<Min: 92.4 - 98.2 2% Min: Calcite>>					93.34	94.34	1.00						

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 92.4 - 104.17 20% Min: Sphalerite>>					94.34	95.34	1.00						
<<Min: 92.4 - 104.17 60% Min: Pyrite>>													
<<Min: 92.4 - 104.17 5% Min: Galena>>													
<<Min: 92.4 - 104.17 1% Min: Chalcopyrite>>													
95.34	**96.25**	**OA**	**Magnetite bearing sulphides**	**MG**	95.34	96.25	0.91						
96.25	**101.17**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	96.25	97.25	1.00						
<<Min: 98.4 - 104.8 5% Min: Calcite>>					97.25	98.25	1.00						
					98.25	99.25	1.00						
					99.25	100.25	1.00						
					100.25	101.17	0.92						
101.17	**102.65**	**RHYv**	**Rhyolite volcaniclastic**		101.17	101.75	0.58						
<<Struc: 101.17 - 101.75 Moderate-Strong (Alt) Shear>> protomylonite to str cataclastic txt					101.75	102.65	0.90						
<<Struc: 101.75 - 102.65 Moderate-Strong (Alt) Fault>> consolidated healed gouge, cataclastic txt throughout, flt bx txt.													
102.65	**107.90**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		102.65	103.85	1.20						
<<Min: 104.8 - 107.9 5% Min: Calcite>>					103.85	104.40	0.55						
<<Vein: 103.2 - 105.3 Quartz>>					104.40	105.40	1.00						
					105.40	106.80	1.40						
107.90	**110.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
<<Min: 107.9 - 110 10% Min: Calcite>>													
<<Alt: 107.9 - 110 Intense (Alt) Biotite>> bi after cl?													
<<Struc: 108.53 - 108.57 Moderate-Strong (Alt) Fault>> soft unconsolidated gouge													

End of Hole @ 110

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-267

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	20-Sep-15
UTM Easting	415151.403	Core Size:	NQ3	Azimuth:	179.67	Date Logging Complete:	22-Sep-15
UTM Northing:	6815554.372	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1402.897	Casing Depth (m):	15	Length (m):	218	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	21-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-267 was drilled as a resource infill between historic holes K95-134 and K94-016. K15-270 was drilled as a twin to collect samples of MET3 and MET5 domains.
The hanging wall stratigraphy consists of mixed felsic and mafic volcanics/intrusives from 15-136.4 m. Noticeable MU-alteration in the hanging wall occurred from ~85.5-134.9 m, where the alteration increased to CL+CI near the MSXS. MSXS was encountered from 136.4-161.1 m, consisting of OJ, OB, OA, OH, OI. The footwall consists of volcaniclastic rhyolite from 161.1-165.3 m, with strong CL+CI alteration proximal to the MSXS. From 165.3-218 m (EOH) a CL-BI-CA schist (MAFi) was encountered.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	179.67	0	179.67	APS	Dillon Hume	19-Sep-15		☑	
20	-65.7	160.7	22.5	183.2	ReflexEZS	Geotech	19-Sep-15	5783	☑	
50	-65.8	186	22.5	208.5	ReflexEZS	Geotech	19-Sep-15	593	☐	Values not accepted due to very low magnetic field. Repeat reading at 50.10 m.
50.1	-66	163.9	22.5	186.4	ReflexEZS	Geotech	21-Sep-15	5752	☑	
80	-65.9	165.4	22.5	187.9	ReflexEZS	Geotech	19-Sep-15	5949	☑	
110	-65.2	167.2	22.5	189.7	ReflexEZS	Geotech	20-Sep-15	5734	☑	
140	-65	169.2	22.5	191.7	ReflexEZS	Geotech	20-Sep-15	5766	☑	
170	-65.3	170.6	22.5	193.1	ReflexEZS	Geotech	20-Sep-15	5815	☑	
200	-65.1	173.2	22.5	195.7	ReflexEZS	Geotech	20-Sep-15	5802	☑	
218	-65.3	172.6	22.5	195.1	ReflexEZS	Geotech	21-Sep-15	5795	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**15.00**	**CASN**	**Casing**								
15.00	**17.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**								
15 - 17.1: CL+CA+/-BI schist with relatively sharp lower contact.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 15 - 17.1 20% Min: Calcite>>

<<Min: 15 - 72 1% Min: Pyrite>>

<<Min: 15 - 72 1% Min: Pyrrhotite>>

17.10 23.60 RHYva Coarse grained to ash tuff

17.1 - 23.6: fine grained ash tuff with minor rhyolite and mafic lpl. Local ~3 cm bands with chloritic groundmass.

<<Min: 17.1 - 23.6 2% Min: Calcite>>

23.60 24.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

23.6 - 24.3: Banded BI and CL with fine grained CA crystals. Sharp lower and upper contact.

<<Min: 23.6 - 24.3 20% Min: Calcite>>

24.30 26.90 RHYva Coarse grained to ash tuff

24.3 - 26.9: Medium green-grey, fine grained MU+QZ+CL+/-bi ash tuff with minor rhyolitic lpl

<<Min: 24.3 - 26.9 2% Min: Calcite>>

26.90 32.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

26.9 - 32: CL+CA+/-BI schist. CA bands and fine grain crystals. CL+/-BI makes up the foliated groundmass.

<<Min: 26.9 - 36.8 20% Min: Calcite>>

32.00 32.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32 - 32.7: Curdy rhyolite with interstitial MAFi. Pepperitic texture?

32.70 36.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.7 - 36.8: BI+CA+CL schist, with poorly developed foliation. CA crystals rimmed with BI. Gradational lower boundary from 36.1-36.8 m.

36.80 38.90 RHYvl Lapilli tuff

36.8 - 38.9: Unit grades from rhyolitic lpl in a MU+QZ groundmass at the top to CL+CA lpl in a MU+QZ+CL groundmass at the bottom.

<<Min: 36.8 - 38.9 2% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

38.90 39.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

38.9 - 39.5: BI+CL+CA schist with gradational upper and lower contacts.

<<Min: 38.9 - 39.5 20% Min: Calcite>>

39.50 44.20 RHYvl Lapilli tuff

39.5 - 44.2: Unit is dominated by well foliated rhyolitic lpl within a MU+QZ groundmass. Small intersection of RHYva from 40.7-41.4 m, which lacks lpl.

<<Min: 39.5 - 44.2 2% Min: Calcite>>

44.20 44.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

44.2 - 44.8: banded CL-BI-CA schist with sharp upper and lower contacts

<<Min: 44.2 - 46.4 1% Min: Calcite>>

44.80 46.40 RHYvl Lapilli tuff

44.8 - 46.4: rhyolitic lpl within a MU+QZ groundmass. Fracture sets with tourmaline growths in the fracture and on the selvages.

46.40 47.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

46.4 - 47.3: CA porphyroblastic, CL+CA+MU+/-BI schist. Sharp upper and lower contacts.

<<Min: 46.4 - 47.3 20% Min: Calcite>>

47.30 50.00 RHYvl Lapilli tuff

47.3 - 50: Unit is dominated by rhyolitic lpl within a MU+QZ groundmass. Locally displays coherent flow banded texture.

<<Min: 47.3 - 50 2% Min: Calcite>>

50.00 63.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

50 - 63.5: CL+BI+CA schist. CA blebs resemble fragmental lpl. Upper and lower contact are relatively sharp.

<<Min: 50 - 55.3 30% Min: Calcite>>

<<Min: 55.3 - 68 5% Min: Calcite>>

63.50 65.80 RHYc Rhyolite coherant volcanics

63.5 - 65.8: Good coherent siliceous banded texture with a MU+QZ groundmass. Local volcaniclastic textures (lpl).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

65.80 67.40 RHYvl Lapilli tuff

65.8 - 67.4: BI+CL+CA lpl within a MU+QZ groundmass

67.40 72.00 RHYvl Lapilli tuff

67.4 - 72: Rhyolite lpl within a MU-QZ groundmass. Local ~10 cm zone of flow banded rhyolite.

<<Min: 68 - 72 2% Min: Calcite>>

72.00 78.20 RHYvl Lapilli tuff

72 - 78.2: BI+CL+CA lpl within a MU+QZ groundmass

<<Min: 72 - 78.2 10% Min: Calcite>>

<<Min: 72 - 132.9 2% Min: Pyrite>>

<<Min: 72 - 132.9 2% Min: Pyrrhotite>>

78.20 79.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

78.2 - 79.4: BI+CL+CA schist. Poorly developed foliation. CA is confined mainly to bands rimmed by BI.

<<Min: 78.2 - 79.4 20% Min: Calcite>>

79.40 85.50 RHYvl Lapilli tuff

79.4 - 85.5: BI+CL+CA lpl within a MU+QZ groundmass

<<Min: 79.4 - 85.3 10% Min: Calcite>>

85.50 89.60 RHYvl Lapilli tuff

85.5 - 89.6: rhyolite and PY (after-lithic?) lpl within a yellow-green MU-altered MU-QZ groundmass

<<Min: 85.5 - 101.6 5% Min: Calcite>>

<<Alt: 85.5 - 91.4 Weak (Alt) Muscovite>>

89.60 91.80 RHYv Rhyolite volcaniclastic

89.6 - 91.8: Yellow-green MU-altered, fine grained MU+PO+QZ schist. Hard to determine whether originally RHYva or RHYvl.

<<Alt: 91.4 - 101.6 Moderate (Alt) Muscovite>>

91.80 101.60 RHYvl Lapilli tuff

91.8 - 101.6: yellow-green, cm-scale rhyolite lpl and mm-scale lithic/sulphide lpl within a well foliated MU+QZ groundmass.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
101.60	**103.20**	**RHYvl Lapilli tuff**									
101.6 - 103.2: yellow-green, cm-scale PO+/-rhyolite blebs (lpl) within a moderately foliated MU+QZ+CL(?) groundmass											
		<<Min: 101.6 - 132.9 1% Min: Calcite>>									
		<<Alt: 101.6 - 110.9 Weak (Alt) Muscovite>>									
103.20	**110.90**	**RHYvl Lapilli tuff**									
103.2 - 110.9: yellow-green, cm-scale rhyolite and PO+/-PY lpl within a moderately foliated MU+QZ groundmass											
110.90	**132.90**	**RHYv Rhyolite volcaniclastic**	128.40	129.90	1.50	B00268795	-0.3	-0.005	-0.01	-0.01	0.02
110.9 - 132.9: Medium grey, heterogeneous volcaniclastic, with local lpl and fine grained (ash) texture.											
		<<Alt: 126.9 - 130.1 Moderate (Alt) Muscovite>>	129.90	131.40	1.50	B00268796	0.9	0.024	-0.01	0.01	0.07
		<<Alt: 130.1 - 134.9 Strong (Alt) Muscovite>>	131.40	132.90	1.50	B00268797	1.4	0.021	-0.01	0.01	0.02
		<<Struc: 113.48 - 113.49 dominant foliation>> MU-PY cleavage									
132.90	**136.40**	**RHY undifferentiated rhyolite**	132.90	133.80	0.90	B00268798	21.6	0.072	0.32	0.42	1.32
132.9 - 136.4: MU+CL+CI schist with local blebs of albite near the bottom of the unit. Disseminated blebs of PO+PY+CP+/-SP+/-GL.											
		<<Min: 132.9 - 136.4 2% Min: Sphalerite>>	133.80	134.70	0.90	B00268799	20.4	0.039	0.26	0.36	0.69
		<<Min: 132.9 - 136.4 4% Min: Pyrite>>	134.70	135.60	0.90	B00268801	3	0.015	-0.01	0.03	0.31
		<<Min: 132.9 - 136.4 5% Min: Pyrrhotite>>	135.60	136.40	0.80	B00268802	4.1	-0.005	0.05	0.04	0.21
		<<Min: 132.9 - 136.4 0.5% Min: Galena>>									
		<<Min: 132.9 - 136.4 2% Min: Chalcopyrite>>									
		<<Min: 132.9 - 161.1 0.5% Min: Calcite>>									
		<<Alt: 132.9 - 137 Moderate (Alt) Chlorite>>									
		<<Alt: 132.9 - 137 Strong (Alt) Cordierite>>									
		<<Alt: 134.9 - 136 Strong (Alt) Albite>>									
136.40	**137.00**	**OJ Heavilly disseminated sulphides in proximal altered rock** **CG**	136.40	137.00	0.60	B00268803	26.9	0.125	0.36	0.38	1.83
136.4 - 137: Semi-massive PO+PY+CP with a CL+CI groundmass.											
		<<Min: 136.4 - 137 40% Min: Pyrrhotite>>									
		<<Struc: 136.63 - 136.64 dominant foliation>> PO cleavage									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
137.00	**138.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	137.00	137.60	0.60	B00268804	55.3	0.799	0.8	0.42	1.57
137 - 138.3: Massive PY+PO+/-SP+/-GL with cg MG buckshot texture													
<<Struc: 137.94 - 137.95 dominant foliation>> PY band					137.60	138.30	0.70	B00268805	86.2	0.992	0.23	1.18	3.55
138.30	**141.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	138.30	139.30	1.00	B00268806	320	2.37	0.26	4.74	11.2
138.3 - 141.1: High grade banded PY+SP+GL+CA. Grades between 20-30% SP and 5-10% GL.													
<<Min: 138.3 - 140 20% Min: Sphalerite>>					139.30	140.10	0.80	B00268807	350	3.36	0.69	4.22	7.86
<<Min: 138.3 - 140 5% Min: Galena>>					140.10	141.10	1.00	B00268808	290	1.34	0.34	5.68	14.2
<<Min: 140 - 141.1 30% Min: Sphalerite>>													
<<Min: 140 - 141.1 10% Min: Galena>>													
<<Struc: 138.9 - 138.91 dominant foliation>> PY band													
<<Struc: 139.75 - 139.76 dominant foliation>> SP band													
<<Struc: 140.65 - 140.66 dominant foliation>> PY-SP band													
141.10	**142.30**	**OI**	**Heavilly disseminated sulphides in host schist**		141.10	141.70	0.60	B00268809	190	1.48	0.9	0.36	1.55
141.1 - 142.3: Heavily disseminated to semi-massive PY+SP+GL in a MU groundmass with CI porphyroblasts													
<<Alt: 141.1 - 142.3 Intense (Alt) Muscovite>>					141.70	142.30	0.60	B00268812	65.1	0.415	0.17	0.4	0.93
<<Alt: 141.1 - 142.3 Moderate (Alt) Cordierite>>													
142.30	**143.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	142.30	143.30	1.00	B00268813	280	2.37	0.29	4.42	11.6
142.3 - 143.3: Banded PY+SP+GL+/-MG. Local zone of OA (142.5-142.7 m). High grade SP+GL (~20% SP and ~3% GL).													
<<Min: 142.3 - 143.3 20% Min: Sphalerite>>													
<<Min: 142.3 - 143.3 3% Min: Galena>>													
143.30	**145.10**	**OA**	**Magnetite bearing sulphides**	**MCG**	143.30	144.20	0.90	B00268814	59.8	0.568	0.47	0.58	3.61
143.3 - 145.1: Massive PY+MG+/-SP+/-GL with cg MG buckshot texture													
					144.20	145.10	0.90	B00268815	48.9	0.655	0.58	0.28	2.95

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
145.10	**145.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	145.10	145.70	0.60	B00268816	76.4	0.745	0.34	1	5.88
145.1 - 145.7: Unit begins with intensely CL altered zone with vcg CP (145.1-145.4 m). Transitions into massive PY+SP+GL to 145.7 m.													
<<Struc: 145.45 - 145.46 dominant foliation>> PY band													
145.70	**148.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	145.70	146.70	1.00	B00268817	108	1.12	1.72	0.48	2.32
145.7 - 148.7: Massive PY+PO+MG+/-CP+/-SP+/-GL with cg MG buckshot texture													
<<Min: 145.7 - 150 10% Min: Pyrrhotite>>					146.70	147.70	1.00	B00268818	110	1.07	1.94	0.28	3.86
<<Struc: 146.6 - 146.61 dominant foliation>> MG band					147.70	148.70	1.00	B00268819	130	1.44	2.42	0.81	2.76
<<Struc: 147.73 - 147.74 dominant foliation>> PY-MG band													
148.70	**149.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	148.70	149.20	0.50	B00268821	125	1.62	1.58	0.9	2.77
148.7 - 149.2: Massive PY													
149.20	**150.00**	**OA**	**Magnetite bearing sulphides**	**MCG**	149.20	150.00	0.80	B00268822	149	0.597	1.2	1.47	7.44
149.2 - 150: Massive PY+PO+MG+/-CP+/-SP+/-GL with cg MG buckshot texture													
<<Struc: 149.98 - 149.99 dominant foliation>> PY-MG band													
150.00	**150.70**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	150.00	150.70	0.70	B00268823	141	2.07	1.22	1.64	4.79
150 - 150.7: Massive PY													
150.70	**151.50**	**OA**	**Magnetite bearing sulphides**	**MCG**	150.70	151.50	0.80	B00268824	67.7	0.847	0.97	0.37	4.11
150.7 - 151.5: Massive PY+MG+/-CP+/-SP+/-GL with cg MG buckshot texture													
151.50	**152.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	151.50	152.00	0.50	B00268825	160	1.39	0.25	1.13	8.9
151.5 - 152: Banded PY+SP+GL													
152.00	**152.80**	**OA**	**Magnetite bearing sulphides**	**MCG**	152.00	152.80	0.80	B00268826	59.8	0.652	0.4	0.72	5.3
152 - 152.8: Massive PY+MG+/-CP+/-SP+/-GL with cg MG buckshot texture													

From (m)	To (m)		Rocktype & Description	
152.80	**160.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**

152.8 - 160.6: Banded PY+SP+GL

<<Alt: 160.5 - 161.1 Strong (Alt) Chlorite>>

<<Alt: 160.5 - 161.1 Strong (Alt) Cordierite>>

<<Struc: 159.4 - 159.41 dominant foliation>> SP-GL band

<<Struc: 160.1 - 160.11 dominant foliation>> SP-PY band

160.60	**161.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**

160.6 - 161.1: CL-CI altered schist with net textured to stringers of PO+CP

161.10	**165.30**	**RHYvl**	**Lapilli tuff**

161.1 - 165.3: Buff grey, rhyolite with some lpl apparent. Hard to distinguish mineralogy and original texture.

<<Min: 161.1 - 165.3 1% Min: Pyrite>>

<<Min: 161.1 - 165.3 1% Min: Pyrrhotite>>

<<Min: 161.1 - 165.3 2% Min: Calcite>>

<<Alt: 161.1 - 165.3 Weak (Alt) Muscovite>>

165.30	**218.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

165.3 - 218: CL+BI+CA schist with varying quantities of BI. Locally MU+SI altered.

<<Min: 165.3 - 218 0.5% Min: Pyrrhotite>>

<<Min: 165.3 - 218 15% Min: Calcite>>

<<Alt: 165.3 - 218 Strong (Alt) Chlorite>>

<<Alt: 165.3 - 218 Strong (Alt) Biotite>>

<<Alt: 187.3 - 189.4 Moderate (Alt) Silicification>>

<<Alt: 187.3 - 189.4 Moderate (Alt) Muscovite>>

<<Struc: 167.95 - 167.96 dominant foliation>> CA band

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
152.80	153.80	1.00	B00268827	160	1.36	0.25	2.74	9.62
153.80	154.80	1.00	B00268828	96.4	0.873	0.17	1.31	7.98
154.80	155.80	1.00	B00268829	105	1.1	0.3	0.7	5.17
155.80	156.80	1.00	B00268832	144	1.02	0.16	2.33	6.01
156.80	157.80	1.00	B00268833	147	1.02	0.19	2.89	6.64
157.80	158.80	1.00	B00268834	330	3.87	0.63	4.1	11.3
158.80	159.80	1.00	B00268835	148	0.65	0.15	3.36	10.9
159.80	160.60	0.80	B00268836	160	0.584	0.51	3.16	16.1
160.60	161.10	0.50	B00268837	115	0.563	2.47	1.19	11
161.10	162.60	1.50	B00268838	4.3	0.034	-0.01	0.09	0.24
162.60	164.10	1.50	B00268839	3.1	0.102	-0.01	0.02	0.04
164.10	165.30	1.20	B00268841	1.5	-0.005	-0.01	0.01	0.02

From (m)	To (m)	Rocktype & Description
		<<Struc: 168.9 - 168.91 dominant foliation>> CL band
		<<Struc: 170.1 - 170.11 dominant foliation>> CL band
		<<Struc: 171.05 - 171.06 dominant foliation>> CA band
		<<Struc: 172.3 - 172.31 dominant foliation>> CL band
		<<Struc: 173.64 - 173.65 dominant foliation>> BI band
		<<Struc: 174.75 - 174.76 dominant foliation>> BI foliation
		<<Struc: 175.9 - 175.91 dominant foliation>> CA band
		<<Struc: 176.98 - 176.99 dominant foliation>> continuous BI foliation
		<<Struc: 178.9 - 178.91 dominant foliation>> continuous BI foliation
		<<Struc: 180.3 - 180.31 dominant foliation>> continuous BI foliation
		<<Struc: 182.8 - 182.81 dominant foliation>> continuous BI foliation
		<<Struc: 185.34 - 185.35 dominant foliation>> continuous BI foliation

End of Hole @ 218

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-268

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Gilles Dessureau
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	22-Sep-15
UTM Easting	418753.272	Core Size:	HQ	Azimuth:	180	Date Logging Complete:	26-Sep-15
UTM Northing:	6814106.691	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1493.377	Casing Depth (m):	3	Length (m):	355	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	21-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	26-Sep-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

This hole was drilled to test a gravity high associated with an EM high, northwest of the GP4F deposit. This hole intersected rhyolite lapilli tuffs, ash tuffs, and crystal tuffs, and pelitic metasediments and carbonaceous sediments. This hole cuts a higher ratio of pelitic metasediments to felsic volcanic compared to the holes drilled in the immediate vicinity of the GP4F deposit. This hole intersected a quartz-feldspar phyric rhyolite crystal tuff (281.45-291.55m) which may be the lateral equivalent of the quartz-feldspar crystal tuff encountered around the GP4F horizon. This unit was relatively un-altered and showed no mineralization. Below this quartz-feldspar phyric unit this hole intersected carbonaceous and siliceous mudstones, which mark the transition from a volcaniclastic/sedimentary sequence to a dominantly sedimentary sequence. No significant mineralization or alteration was intersected in this hole. No samples were taken.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180	0	180	APS	Gilles Dessureau	21-Sep-15		☑	
12	-69.5	298	24.5	322.5	ReflexEZS	Geotech	21-Sep-15	5959	☐	Bad survey, values not accepted
36	-69.4	159.4	24.5	183.9	ReflexEZS	Geotech	22-Sep-15	5797	☑	
61	-68.7	160	24.5	184.5	ReflexEZS	Geotech	22-Sep-15	5796	☑	
86	-68.6	164	24.5	188.5	ReflexEZS	Geotech	22-Sep-15	5797	☑	
111	-69	163.8	24.5	188.3	ReflexEZS	Geotech	22-Sep-15	5796	☑	
132	-69	161.4	24.5	185.9	ReflexEZS	Geotech	23-Sep-15	5783	☑	
157	0	4.7	24.5	29.2	ReflexEZS	Geotech	23-Sep-15	5810	☐	Bad survey, values not accepted
192	-68.5	168	24.5	192.5	ReflexEZS	Geotech	23-Sep-15	5801	☑	
219	-67.8	168.8	24.5	193.3	ReflexEZS	Geotech	24-Sep-15	5783	☑	
249	-67.6	168.5	24.5	193	ReflexEZS	Geotech	24-Sep-15	5818	☑	
273	-67.6	172.3	24.5	196.8	ReflexEZS	Geotech	24-Sep-15	5793	☑	
303	-67.5	165.2	24.5	189.7	ReflexEZS	Geotech	25-Sep-15	5788	☑	
330	-67	174.3	24.5	198.8	ReflexEZS	Geotech	25-Sep-15	5790	☑	
354	-66.2	170.6	24.5	195.1	ReflexEZS	Geotech	25-Sep-15	5782	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0 - 1: Overburden.

1.00 8.90 RHYvl Lapilli tuff grey FMG

1 - 8.9: Grey, to brown (where oxidized), foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli-ash tuff. Matrix supported, ash tuff with 20-30% small (1-2cm) siliceous lapilli. Several graded contacts with fining up hole. Abundant 1-2mm biotite crystals in the finer sequences. Weak to moderate oxidation along fractures.

8.90 9.85 SED undifferentiated Sediment dark grey FG

8.9 - 9.85: Dark grey to brownish grey, foliated, fine grained, biotite-quartz schist/metapelite.

9.85 32.00 RHYvl Lapilli tuff grey FMG

9.85 - 32: Grey, to brown (where oxidized), foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli-ash tuff. Matrix supported, ash tuff with 20-30% small (1-2cm) siliceous lapilli. Several graded contacts with fining-up up hole. Abundant 1-2mm biotite crystals in the finer sequences. Weak to moderate oxidation along fractures with vuggy textures associated with the strongest oxidation.

<<Struc: 22.6 - 23.6 Weak-Moderate (Alt) Fault>> Broken core.

32.00 41.90 RHYvl Lapilli tuff light grey FMG

32 - 41.9: Grey to light grey, and brown (where oxidized), foliated, fine to medium grained, quartz-muscovite schist/rhyolite, feldspar crystal, lapilli tuff. Could be feldspar porphyry; with ghosts of possible feldspar crystals although some still look like siliceous lapilli. Much more massive and homogenous unit. Oxidation continues along fractures and up to 10-20 cm from fractures.

<<Vein: 39.6 - 39.75 90% Quartz-Carbonate 80 deg. >> quartz-carbonate vein.

<<Struc: 33 - 33.5 Weak-Moderate (Alt) Fault>> Broken core.

41.90 46.70 RHYva Coarse grained to ash tuff light grey FG

41.9 - 46.7: Light grey, foliated, fine grained, quartz-muscovite schist/rhyolite ash tuff. Occasional small (10-15cm) bands with up to 10% lapilli. Cut by occasional small quartz veins, and weakly oxidized on fractures.

46.70 50.00 RHYvl Lapilli tuff light grey FMG

46.7 - 50: Light grey, well foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. This sequence fines down hole from clast supported, lapilli dominated tuff to ash dominant tuff.

50.00 57.55 RHYva Coarse grained to ash tuff light grey FG

50 - 57.55: Light grey, foliated, fine grained, quartz-muscovite-(amphibole) schist/rhyolite ash tuff. Abundant (locally up to 10%) fine (1mm) biotite porphyroblasts(?).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

57.55 62.80 SED undifferentiated Sediment brown FG

57.55 - 62.8: Brown to grey, well foliated, fine grained, biotite-quartz schist/metapelite. Cut by small quartz-carbonate veinlets.

62.80 67.30 RHYva Coarse grained to ash tuff light grey FMG

62.8 - 67.3: Light grey, foliated, fine to locally medium grained, quartz-muscovite schist/rhyolite ash tuff interbedded with small zone (20-50cm) of rhyolite lapilli tuff with gradational contacts. Abundant small (<1mm) biotite porphyroblasts.

67.30 70.70 RHYvx Quartz and/or feldspar crystal tuff light grey FMG

67.3 - 70.7: Light grey, well foliated, fine and medium grained, quartz-muscovite schist/rhyolite crystal-lapilli tuff. A fine grained matrix supported tuff with large (1-2cm) elongated altered feldspar crystals (or lapilli or both). Looks like porphyry although it appears to grade outward to a lapilli tuff and an ash tuff. No sharp contacts. Contains abundant (1mm) biotite porphyroblasts and abundant (<1mm) white porphyroblasts (leucoxene?).

70.70 73.30 SED undifferentiated Sediment grey-brown FG

70.7 - 73.3: Grey-brown, foliated, fine grained, biotite-quartz schist/metapelite. Gradational upper and lower contacts. Abundant small (1mm) white, hard, sub angular to sub rounded, porphyroblasts (leucoxene?) Cut by small quartz-carbonate veinlets.

73.30 76.75 RHYvl Lapilli tuff grey-brown FMG

73.3 - 76.75: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite ash tuff interbedded with rhyolite lapilli tuff.

76.75 77.55 SED undifferentiated Sediment grey-brown FG

76.75 - 77.55: Grey-brown, foliated, fine grained, biotite-quartz schist/metapelite. Gradational contacts. Cut by small quartz-carbonate veinlets.

77.55 85.95 RHYvx Quartz and/or feldspar crystal tuff light grey FMG

77.55 - 85.95: Light grey, foliated, fine to medium to coarse grained, quartz-muscovite schist/rhyolite crystal-lapilli tuff. Excellent preservation of primary textures within this unit. Very obvious feldspar crystals (0.5cm) and large (1-2cm) lithic lapilli with visible feldspar crystals (<1mm) with in the lithic fragment. Gradational variation within this unit with variable lapilli/ash/crystal content. Gradational upper and lower contacts. Locally abundant 1mm biotite crystals (could be phenocrsyts or could be porphyroblasts).

85.95 89.60 SED undifferentiated Sediment grey-brown FG

85.95 - 89.6: Dark brown and grey, foliated, fine grained, quartz-biotite schist/metapelite interbedded with quartz-muscovite schist/rhyolite ash tuff. Both gradational contacts and sharp.

<<Min: 89 - 90.5 1% Min: Pyrite>> narrow bands (up to 5cm) with up to 5% diseminated pyrite and pyrrhotite.

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

89.60 94.30 RHYvx Quartz and/or feldspar crystal tuff light grey FMG

89.6 - 94.3: Grey, foliated, fine to medium to coarse grained, quartz muscovite schist/rhyolite lapilli tuff. Abundant, densely packed, large (1-2cm) lithic lapilli in a fine ash matrix.

94.30 96.80 SED undifferentiated Sediment grey-brown FG

94.3 - 96.8: Brown and grey, foliated, fine grained biotite-quartz schist/metapelite interbedded with quartz muscovite schist/rhyolite ash-lapilli tuff. Sharp contacts.

96.80 103.90 RHYva Coarse grained to ash tuff light grey FMG

96.8 - 103.9: Light grey, foliated (to massive), fine to medium grained, quartz-muscovite tuff/ rhyolite ash tuff. Dominantly ash tuff with minor lapilli component locally up to 10% lapilli over 10-20cm. Very small crystals visible within some of the lithic lapilli fragments.

103.90 105.10 SED undifferentiated Sediment brown FG

103.9 - 105.1: Brown, weakly foliated, fine grained, biotite-quartz schist/metapelite. Small zones with graded beds (cross bedding??), otherwise massive, equigranular quartz-biotite schist. Cut by occasional small quartz-carbonate veins.

105.10 108.50 RHYva Coarse grained to ash tuff light grey FMG

105.1 - 108.5: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite ash tuff. Dominantly ash tuff with minor lapilli component locally up to 10% lapilli over 10-20cm. Abundant 1mm biotite crystals.

108.50 111.10 SED undifferentiated Sediment brown FG

108.5 - 111.1: Brown, weakly foliated, fine grained, biotite-quartz schist/metapelite.Sharp lower contact, gradational upper contact. Cut by occasional small quartz-carbonate veins.

111.10 123.00 RHYva Coarse grained to ash tuff light grey FMG

111.1 - 123: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite ash tuff. Dominantly ash tuff with minor lapilli component locally up to 10% lapilli over 10-20cm. Abundant 1mm biotite crystals.

<<Vein: 115.5 - 119 5% Quartz 0 deg. >> 1 cm wide quartz-pyrite-tourmaline vein parallel to core axis.

123.00 127.10 RHYi Aphanitic Rhyolite (intrusion) beige VFG

123 - 127.1: Light grey to beige, massive to brecciated, very fine grained, rhyolite dyke (flow?). Large (123.0m 124.3m) quartz vein at upper contact containing pyrite and pyrrhotite. Lower contact is brecciated with quartz viening and several phases of intrusion (finer grained and coarse grained).

<<Min: 123 - 124 1% Min: Pyrrhotite>> pyrrhotite veinlets.

<<Min: 123 - 124.3 1% Min: Pyrite>> pyrite veinlets.

<<Vein: 123 - 124.3 80% Quartz 80 deg. >> large quartz-pyrite-pyrrhotite vein.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

127.10 127.65 RHYva Coarse grained to ash tuff grey FMG

127.1 - 127.65: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite ash tuff. Dominantly ash tuff with minor lapilli component locally up to 10% lapilli over 10-20cm. Gradational lower contact.

127.65 128.60 SED undifferentiated Sediment brown FG

127.65 - 128.6: Brown, weakly foliated, fine grained, biotite-quartz schist/metapelite. Gradational contacts. Cut by occasional small quartz-carbonate (+/-pyrite) veins.

128.60 130.40 RHYva Coarse grained to ash tuff light grey FG

128.6 - 130.4: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite ash tuff. Abundant small biotite xls. Gradational upper contact.

<<Struc: 130 - 130.1 Weak-Moderate (Alt) dominant foliation>>

130.40 135.50 RHYvl Lapilli tuff grey FMG

130.4 - 135.5: Grey, foliated, fine to medium grained, quartz-muscovite-biotite schist/rhyolite lapilli tuff interbedded with narrow (10-20cm) bands of pelitic sediments (biotite schist).

135.50 138.10 SED undifferentiated Sediment grey-brown FG

135.5 - 138.1: Brown, foliated, fine grained, biotite schist/pelitic metasediment. Sharp upper contact, gradational lower contact. Cut by occasional quartz carbonate veins. Relatively homogeneous otherwise.

138.10 140.70 RHYva Coarse grained to ash tuff grey FMG

138.1 - 140.7: Grey, weakly foliated to massive, fine grained, quartz-muscovite-biotite schist/rhyolite ash tuff. The bottom 40cm of this unit is a biotite-rich lapilli tuff. The tuffaceous unit is weakly silicified with weak, patchy sericite alteration.

<<Alt: 138.1 - 140.7 Weak (Alt) Silicification>> Weak quartz-sericite alteration.

<<Alt: 138.1 - 140.7 Weak (Alt) Muscovite>> Weak quartz-sericite alteration.

<<Struc: 140 - 140.1 Weak-Moderate (Alt) dominant foliation>>

140.70 144.40 SED undifferentiated Sediment grey-brown FG

140.7 - 144.4: Grey-brown, foliated, fine grained, biotite and biotite-quartz schist/metapelite. Cut by occasional quartz carbonate veins.

<<Vein: 140.7 - 141 95% Quartz 70 deg. >> quartz vein

144.40 145.80 RHYva Coarse grained to ash tuff

144.4 - 145.8: Grey, weakly foliated to massive, fine grained to medium grained, quartz-muscovite-biotite schist/rhyolite ash tuff with up to 5% lapilli locally. Abundant fine grained biotite in this unit (up to 25%).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

145.80 148.05 SED undifferentiated Sediment grey-brown FG

145.8 - 148.05: Grey-brown, foliated, fine grained, biotite schist/metapelite. Cut by occasional quartz carbonate veins.

148.05 149.00 RHYva Coarse grained to ash tuff grey FMG

148.05 - 149: Grey, moderately foliated, fine grained, quartz-muscovite-biotite schist/rhyolite ash tuff. This unit could be an epiclastic sediment with small quartz 'grains' in a quartz-biotite matrix.

149.00 150.00 SED undifferentiated Sediment green-brown FG

149 - 150: Grey to brown and weakly green, foliated, fine grained, quartz-biotite-chlorite schist/pelitic metasediment with minor mafic component. Cut by occasional quartz-carbonate veins.

150.00 157.05 RHYva Coarse grained to ash tuff grey FG

150 - 157.05: Grey, weakly foliated to massive, fine grained, quartz-muscovite-biotite schist/rhyolite ash tuff with abundant biotite (locally up to 20%). The biotite content could suggest an epiclastic sediment in places with a high component of pelitic clays in the original rock.

<<Vein: 153.7 - 153.8 95% Quartz 80 deg. >> quartz vein

<<Struc: 150 - 150.1 Weak-Moderate (Alt) dominant foliation>>

157.05 159.60 SED undifferentiated Sediment grey-brown FG

157.05 - 159.6: Grey to brown, foliated to massive, fine grained, biotite and quartz biotite schist/pelitic metasediment interbedded with possible epiclastic sediments.

159.60 176.40 RHYva Coarse grained to ash tuff grey FG

159.6 - 176.4: Light to medium grey, foliated, relatively homogenous, fine to very fine grained, quartz-muscovite, schist/rhyolite ash tuff. Up to 10% small (<0.5cm) lithic lapilli. Cut by occasional quartz veins, and cut by occasional, tightly folded, convoluted, carbonate veins. 65-65.5m broken core - weak fault zone.

<<Vein: 160.3 - 160.4 95% Quartz 80 deg. >> quartz vein

<<Vein: 164.5 - 165.1 20% Quartz-Carbonate 80 deg. >> quartz carbonate veins

<<Struc: 160 - 160.1 Weak-Moderate (Alt) dominant foliation>>

<<Struc: 170 - 170.1 Moderate (Alt) dominant foliation>>

176.40 177.00 SED undifferentiated Sediment brown FG

176.4 - 177: Brown, foliated, fine grained, biotite schist/metapelite, with rhyolite ash tuff above and rhyolite lapilli tuff below.

<<Vein: 176.4 - 176.6 60% Quartz 60 deg. >> quartz vein

177.00 177.90 RHYvl Lapilli tuff grey FMG

177 - 177.9: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 177.7 - 177.8 90% Quartz 70 deg. >> quartz vein

177.90 178.40 SED undifferentiated Sediment brown FG

177.9 - 178.4: Brown, foliated, fine grained, biotite schist/metapelite.

178.40 181.30 RHYvl Lapilli tuff grey FMG

178.4 - 181.3: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff.

<<Struc: 180 - 180.1 Moderate (Alt) dominant foliation>>

181.30 183.15 SED undifferentiated Sediment brown FG

181.3 - 183.15: Brown, foliated, fine grained, biotite schist/metapelite. Cut by occasional, cms scale quartz veins.

<<Vein: 182.2 - 182.4 80% Quartz 80 deg. >> quartz vein

183.15 188.00 RHYva Coarse grained to ash tuff grey FG

183.15 - 188: Light to medium grey, foliated, fine to very fine grained, quartz-muscovite, schist/rhyolite ash tuff. Up to 10% small (<0.5cm) lithic lapilli. Interbeded with narrow (10-20cm) biotite rich bands of metapelite. Cut by occasional quartz veins.

188.00 190.60 RHYva Coarse grained to ash tuff light grey FG

188 - 190.6: Light grey, foliated, moderately altered, faulted, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff and fault zone. Contains partially healed breccia, broken rock and weak gouge development. Alteration is moderate, pervasive sericite alteration overprint associated with the fault zone.

<<Struc: 188 - 190.6 Moderate (Alt) Fault>> moderately sericite altered fault zone with minor fault gouge.

190.60 193.90 SED undifferentiated Sediment grey-brown FG

190.6 - 193.9: Light grey to brown, foliated, fine grained, quartz-muscovite schist/rhyolite ash tuff grading up hole to a biotite-quartz schist to a biotite schist/metapelite. Excellent example of an ash tuff grading up hole to a pelitic sediment.

<<Struc: 192 - 192.1 Moderate (Alt) dominant foliation>>

193.90 199.60 RHYva Coarse grained to ash tuff grey FG

193.9 - 199.6: Light to medium grey, foliated, fine to very fine grained, quartz-muscovite, schist/rhyolite ash tuff. Up to 10% small (<0.5cm) lithic lapilli. Cut by occasional quartz veins. Narrow bands (up to 20cm) of biotite-rich metapelite.

199.60 201.10 SED undifferentiated Sediment grey-brown FG

199.6 - 201.1: Brown, foliated, fine grained, biotite schist. Upper contact is gradational with ash tuff.

<<Struc: 200 - 200.1 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

201.10 207.30 RHYvl Lapilli tuff grey FMG

201.1 - 207.3: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Abundant <1cm siliceous lithic lapilli in a quartz-muscovite matrix. Some 'fragments' could be ghosts of feldspar crystals and are sub rectangular. Abundant small (1-2mm) white, sub rounded to sub angular (subhedral diamond shaped) porphyroblasts (cordierite?) exist near the lower contact (within 50cm of contact).

207.30 209.85 SED undifferentiated Sediment grey-brown FMG

207.3 - 209.85: Brown to grey, foliated, fine grained, biotite schist/metapelite interbedded with a fine to medium grained quartz-muscovite schist/rhyolite lapilli tuff. Excellent examples of gradational contacts between a rhyolite lapilli tuff (down hole) grading up to an ash tuff and finally a biotite-rich metapelite.

209.85 213.55 RHYi Aphanitic Rhyolite (intrusion) light grey VFG

209.85 - 213.55: Light grey, weakly foliated to massive, very fine grained to aphanitic, siliceous, rhyolite intrusion (rhyolite flow? Or silicified ash tuff), gradational contacts seem to suggest silicified ash tuff. Possible gradational contact up hole into lapilli tuff. Rare 2-5mm ghosts of feldspar phenocrsyts.

<<Alt: 209.85 - 213.55 Weak-Moderate (Alt) Silicification>> pervasive silicification.

<<Struc: 210 - 210.1 Moderate (Alt) dominant foliation>>

213.55 214.70 SED undifferentiated Sediment brown FG

213.55 - 214.7: Brown, foliated, fine grained, biotite-quartz schist/metapelite. Gradational contacts with the rhyolite below.

214.70 224.30 RHYi Aphanitic Rhyolite (intrusion) light grey VFG

214.7 - 224.3: Light grey, massive, fine grained to aphanitic, rhyolite intrusion (flow? Silicified ash?). Gradational contacts.

<<Alt: 214.7 - 222.999 Weak-Moderate (Alt) Silicification>> pervasive silicification

224.30 226.15 RHYvl Lapilli tuff grey FMG

224.3 - 226.15: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Matrix supported, 1-2cm siliceous lithic lapilli in a fine quartz muscovite matrix with 2-5% biotite porphyroblasts. Gradational contact with the upper aphyric rhyolite.

226.15 227.60 SED undifferentiated Sediment brown FG

226.15 - 227.6: Brown, foliated, fine grained biotite schist/metapelite. Cut by occasional quartz-carbonate vein (up to 5cm).

227.60 231.80 RHYvl Lapilli tuff grey FMG

227.6 - 231.8: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Matrix supported, 1-2cm siliceous lithic lapilli in a fine quartz muscovite matrix with 1-2% biotite porphyroblasts.

231.80 232.90 SED undifferentiated Sediment brown FG

231.8 - 232.9: Brown, foliated, fine grained biotite schist/metapelite. Cut by occasional quartz-carbonate veins (up to 5cm).

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 231.8 - 232.5 80% Quartz 80 deg. >> quartz veins.

232.90 239.60 RHYvl Lapilli tuff light grey FMG

232.9 - 239.6: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Matrix supported, 1-2cm siliceous lithic lapilli in a fine quartz muscovite matrix with 1-2% biotite porphyroblasts. 239.15-239.6 quartz vein with pyrite and pyrrhotite.

<<Vein: 239.15 - 239.6 90% Quartz 80 deg. >> quartz-pyrite-pyrrhotite.

239.60 245.65 SED undifferentiated Sediment brown FG

239.6 - 245.65: Brown, foliated, fine grained biotite schist/metapelite. Cut by occasional quartz-carbonate veins (up to 5cm).

245.65 254.60 SED undifferentiated Sediment grey-brown FG

245.65 - 254.6: Grey and brown, foliated, fine grained, biotite schist/metapelite interbedded with quartz-muscovite schist/rhyolite ash tuff. Several ~1m bands of metapelite interbedded with several ~1m bands of rhyolite ash tuff with up to 10% biotite.

254.60 259.50 RHYvl Lapilli tuff light grey FMG

254.6 - 259.5: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff grading into rhyolite ash tuff. Abundant 1-2cm siliceous lithic lapilli in a fine grained quartz-muscovite ash matrix.

259.50 262.45 RHYvl Lapilli tuff light grey FG

259.5 - 262.45: Dominantly quartz vein in a light grey, altered rhyolite lapilli tuff.

<<Vein: 259.5 - 262.45 90% Quartz 20 deg. >> quartz vein

262.45 263.75 RHYvl Lapilli tuff light grey FMG

262.45 - 263.75: Light grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff.

263.75 270.00 RHYvl Lapilli tuff grey-brown FMG

263.75 - 270: Medium grey, foliated, banded, fine to medium grained, quartz-muscovite schist and quartz biotite schist. Banded rhyolite lapilli tuff and epiclastic sediments.

270.00 272.60 SED undifferentiated Sediment brown FG

270 - 272.6: Brown, foliated, fine grained, biotite schist/metapelite. Gradational lower contact. Cut by occasional quartz-carbonate veinlets.

272.60 281.45 RHYvl Lapilli tuff grey FMG

272.6 - 281.45: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff interbedded with small zones of rhyolite ash tuff and small zones of biotite-rich metapelite. The base of this unit is a densely packed coarse rhyolite lapilli tuff that grades up to an ash tuff over 1m.

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

281.45 291.55 RHYvx Quartz and/or feldspar crystal tuff grey FMG

281.45 - 291.55: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite crystal-lapilli tuff. Rare 2-4mm bluish quartz crystals, with abundant 1-5mm sub rectangular feldspar crystals in a fine quartz-muscovite-biotite matrix. Cut by occasional quartz veins. Fine grained disseminated pyrite and pyrrhotite in bands up to 5cm.

291.55 295.15 MDSc Carbonaceous dominant mudstone dark grey VFG

291.55 - 295.15: Dark grey, finely laminated, very fine grained, carbonaceous mudstone. Very fine bands (0.1-1cm) of carbonaceous material and more siliceous material.

295.15 295.50 RHYva Coarse grained to ash tuff cream VFG

295.15 - 295.5: Light grey to off white, finely laminated, very fine grained, aphanitic rhyolite ash tuff. Gradational upper contact with carbonaceous sediment and sharp lower contact.

295.50 303.50 RHYvl Lapilli tuff grey FMG

295.5 - 303.5: Grey, foliated, fine to medium grained, quartz-muscovite-biotite schist/epiclastic or sedimentary rock (wacke?). May still contain some lapilli but more 'primary' biotite than previous lapilli tuffs. Grades downhole to a lapilli tuff.

303.50 310.50 RHYvl Lapilli tuff beige FG

303.5 - 310.5: LIght grey to beige, weakly laminated, moderately to strongly altered, quartz-muscovite schist/altered rhyolite lapilli tuff and/or ash tuff. Alteration is moderte to strong, pervsive sericite-quartz-pyrite alteration, making the rock beige in color. Cut by several small (mm scale), concordant and discordant, pyrite veinlets and small (1-2cm) quartz veins. Small (2-5cm) fracture zones with clay alteration. Alteration starts as patchy zones with less altered patches of rhyolite lapilli tuff similar to th ebove unit.

<<Alt: 303.5 - 310.5 Moderate-Strong (Alt) Muscovite>> pervasive sericite-muscovite-pyrite alteration.

310.50 313.10 MDSc Carbonaceous dominant mudstone dark grey VFG

310.5 - 313.1: Dark grey, finely laminated, folded, very fine grained, carbonceous mudstone. 1-2% fien to medium grained disseminated pyrite and 1-2% narrow pyrite veinlets. Cut by occasional narrow quartz veins.

<<Min: 310.5 - 313.1 2% Min: Pyrite>> disseminated pyrite

313.10 314.45 RHYva Coarse grained to ash tuff light grey VFG

313.1 - 314.45: Light grey to beige, foliated, very fine grained, siliceous siltstone/rhyolite very fine ash tuff. Gradational upper contact, sharp lower contact. This unit fines upwards from coarse ash to very fine ash at the top. Cut by occasional narrow quartz veinlet. Weak pervasiove silicification.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

314.45 317.10 MDSc Carbonaceous dominant mudstone grey VFG

314.45 - 317.1: Light to medium grey, finely laminated, very fine grained, siliceous, carbonaceous mudstone. Silicification increases down hole towards abundant quartz veining.

<<Alt: 314.45 - 317.1 Moderate (Alt) Silicification>> pervasive silicification

317.10 318.20 SED undifferentiated Sediment green-brown FG

317.1 - 318.2: Light brown and green, foliated, altered, biotite-chlorite-carbonate schist. Dominantly biotite with narrow zones of chlorite, that could represent a mafic component in the pelite. Cut by abundant quartz veins (up to 10cm).

<<Alt: 317.1 - 318.2 Moderate-Strong (Alt) Silicification>> patchy silicification.

<<Vein: 317.1 - 318.2 50% Quartz-Carbonate 80 deg. >> quartz-carbonate veins

318.20 321.70 MDSc Carbonaceous dominant mudstone light grey VFG

318.2 - 321.7: Light grey, finely laminated, very fine grained, siliceous, carbonaceous mudstone. Silicification increases down hole.

<<Alt: 318.2 - 321.7 Moderate-Strong (Alt) Silicification>> pervasive silicification.

321.70 323.95 SED undifferentiated Sediment brown FG

321.7 - 323.95: Brown, foliated, fine grained, biotite schist. Cut by abundant, large (up to 30cm) deformed quartz veins.

<<Alt: 321.7 - 323.95 Moderate-Strong (Alt) Silicification>> patchy silicification.

<<Vein: 321.7 - 323.95 40% Quartz 80 deg. >> quartz veins

323.95 326.80 RHYvl Lapilli tuff light grey FMG

323.95 - 326.8: Light grey to white, foliated, stronlgly altered, quartz-muscovite schist/rhyolite lapilli tuff. Cut by quartz vein (80% of interval). Strongly sericite-quartz altered groundmass around quartz vein.

<<Alt: 323.95 - 326.8 Intense (Alt) Silicification>> intense solicitation and quartz veining.

<<Vein: 323.95 - 326.8 80% Quartz 80 deg. >> quartz veins

326.80 355.00 MDSc Carbonaceous dominant mudstone dark grey VFG

326.8 - 355: Dark to medium grey and light grey, finely laminated, very fine grained, carbonaceous mudstone interbedded with siliceous mudstone. Convolutly folded and disrupted beds. Abundant (up to 5%) fine grained, disseminated pyrite in the more carbonaceous bands. Cut by occasional brittle quartz-carbonate veins and stockwork with jigsaw fit breccia fragments of carbonaceous mudstone (349-351m).

<<Min: 326.8 - 355 5% Min: Pyrite>> disseminated pyrite

<<Alt: 326.8 - 328.6 Moderate-Strong (Alt) Silicification>> pervasive silicification.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 345.8 - 347 Moderate (Alt) Silicification>> pervasive silicification.

<<Alt: 350 - 355 Moderate-Strong (Alt) Silicification>> pervasive silicification.

<<Vein: 349 - 351 20% Quartz-Carbonate 25 deg. >> quartz-carbonate veins and stockwork.

End of Hole @ 355

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-269

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	22-Sep-15
UTM Easting	414698.872	Core Size:	NQ3	Azimuth:	180.2	Date Logging Complete:	22-Sep-15
UTM Northing:	6815466.422	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1418.874	Casing Depth (m):	9	Length (m):	72.72	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	21-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	22-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
						Parent Hole:	

Comments:

This hole is the parent hole of K15-266 (completed metallurgical hole), though it was abandoned due to intersecting a sub-parallel historic drillhole (K94-036) at 71.25m. Hole encountered similar geology as K15-266 with lenses of massive sulphide (OI and OB) uphole from main ABM massive sulphide. This hole was only quicklogged as it was redrilled as K15-271 from the same pad at -55 deg inclination. Hole not sampled.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.2	0	180.2	APS	Trevor Rabb	21-Sep-15		☑	
50	-60.2	162.9	22.5	185.4	ReflexEZS	Geotech	21-Sep-15	5927	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.00**	**OVBN** **Overburden**									
8.00	**9.40**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 9.38 - 10.8 3% Min: Pyrite>>		diss. Aggregates									
9.40	**10.00**	**MDSc** **Carbonaceous dominant mudstone**									
10.00	**15.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
15.20	**17.90**	**MDSc** **Carbonaceous dominant mudstone**									
17.90	**28.55**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Vein: 24.2 - 24.7 Quartz>>											

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 20.4 - 20.7 Weak (Alt) Fault>>

28.55 31.70 MDSc Carbonaceous dominant mudstone

<<Struc: 28.55 - 32.23 Weak-Moderate (Alt) Fault>>

31.70 35.10 MDSw Coherent rhyolite flow with carbonaceous content

31.7 - 35.1: weakly graphitic, RHYc

<<Min: 33.15 - 38.2 2% Min: Sphalerite>> isolated banded aggregates

<<Min: 33.15 - 38.2 0.5% Min: Pyrite>>

<<Min: 33.15 - 38.2 0.5% Min: Pyrrhotite>>

<<Min: 33.15 - 38.2 0.5% Min: Chalcopyrite>>

<<Alt: 34.9 - 38.2 Moderate (Alt) Muscovite>>

35.10 38.20 RHYvx Quartz and/or feldspar crystal tuff

<<Vein: 35.1 - 37.1 Quartz>>

38.20 39.00 OC Chalcopyrite-pyrrhotite net textured sulphides

<<Min: 38.2 - 39 5% Min: Sphalerite>>

<<Min: 38.2 - 39 10% Min: Pyrite>>

<<Min: 38.2 - 39 5% Min: Pyrrhotite>> net txt, coasre graiuned in qz vein

<<Min: 38.2 - 39 1% Min: Galena>>

<<Min: 38.2 - 39 1.5% Min: Chalcopyrite>>

<<Vein: 38.75 - 39.63 Quartz>> +cpy

39.00 41.50 RHYvl Lapilli tuff

<<Alt: 39 - 52.2 Moderate-Strong (Alt) Muscovite>>

41.50 43.40 OI Heavilly disseminated sulphides in host schist

<<Min: 42.5 - 46.5 5% Min: Calcite>>

43.40 44.93 RHYv Rhyolite volcaniclastic

<<Min: 44.9 - 47 3% Min: Sphalerite>>

<<Min: 44.9 - 47 3% Min: Pyrrhotite>> net txt + diss

<<Min: 44.9 - 47 1.5% Min: Chalcopyrite>> complex intergrowths withg po (net text.)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

44.93 47.10 OI Heavilly disseminated sulphides in host schist

44.93 - 47.1: RHYv host

47.10 48.45 RHYv Rhyolite volcaniclastic

<<Min: 47.5 - 48.5 3% Min: Calcite>>

<<Struc: 47.6 - 47.7 Weak (Alt) Fault>>

48.45 49.20 OI Heavilly disseminated sulphides in host schist

<<Min: 48.45 - 50.7 5% Min: Sphalerite>>

<<Min: 48.45 - 50.7 5% Min: Pyrrhotite>>

<<Min: 48.45 - 50.7 1% Min: Chalcopyrite>>

49.20 52.10 RHYvl Lapilli tuff

<<Min: 50.9 - 54 2% Min: Calcite>>

52.10 54.20 OI Heavilly disseminated sulphides in host schist

52.1 - 54.2: Sulphide mineralization intesnifies into massive sulphide (<0.3m) towards middle of interval.

<<Min: 52.2 - 54.25 3% Min: Sphalerite>>

<<Min: 52.2 - 54.25 7% Min: Pyrite>>

<<Min: 52.2 - 54.25 1% Min: Galena>>

<<Alt: 52.2 - 56 Moderate (Alt) Muscovite>>

54.20 61.50 MDSw Coherent rhyolite flow with carbonaceous content

54.2 - 61.5: discontinuous stringer mineralization throughout

<<Min: 56.75 - 58.04 1.5% Min: Sphalerite>>

<<Min: 56.75 - 58.04 2% Min: Pyrite>>

<<Min: 56.75 - 58.04 0.5% Min: Galena>>

<<Min: 56.75 - 58.04 0.5% Min: Chalcopyrite>>

<<Alt: 56 - 61.45 Strong (Alt) Muscovite>>

<<Alt: 58.6 - 61.5 Moderate-Strong (Alt) Cordierite>>

<<Alt: 58.6 - 61.5 Moderate-Strong (Alt) Albite>>

<<Struc: 59 - 60.8 Strong (Alt) Fault>> weakly healed gouge and intact core (<20cm) with cataclastic overprint. Lost core (0.9m)

From (m)	To (m)	Rocktype & Description
61.50	**64.10**	**OA** **Magnetite bearing sulphides**
<<Min: 61.5 - 66.7 15% Min: Sphalerite>>		
<<Min: 61.5 - 66.7 60% Min: Pyrite>>		
<<Min: 61.5 - 66.7 3% Min: Galena>>		
<<Min: 61.5 - 66.7 1% Min: Chalcopyrite>>		
64.10	**65.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
65.20	**67.20**	**OA** **Magnetite bearing sulphides**
<<Min: 66.7 - 72.72 10% Min: Sphalerite>>		
<<Min: 66.7 - 72.72 55% Min: Pyrite>>		
<<Min: 66.7 - 72.72 2% Min: Galena>>		
<<Min: 66.7 - 72.72 0.5% Min: Chalcopyrite>>		
<<Alt: 66.7 - 69.3 Moderate (Alt) Cordierite>>		
67.20	**68.28**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
68.28	**70.34**	**OA** **Magnetite bearing sulphides**
70.34	**71.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
71.70	**72.72**	**OA** **Magnetite bearing sulphides**

End of Hole @ 72.72

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-270

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	22-Sep-15
UTM Easting	415151.29	Core Size:	HQ3	Azimuth:	180.09	Date Logging Complete:	23-Sep-15
UTM Northing:	6815552.105	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1402.992	Casing Depth (m):	12	Length (m):	170	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	21-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-267

Comments:

K15-270 was drilled as a metallurgical twin of K15-267, in order to collect samples of the MET3 and MET5 domains.
The hanging wall stratigraphy consists of mixed felsic and mafic volcanics/intrusives, from 12-136.1 m. Noticeable MU-alteration in the hanging wall occurred from ~64.9-136.3 m. Alteration increased to CL+CI near the MSXS. MSXS was encountered from 136.1-161.2 m, consisting of OJ, OB, OA, and OI. The footwall consists of volcaniclastic rhyolite from 161.2-161.9 m, with strong CL+CI alteration proximal to the MSXS. From 161.9-170 m (EOH) a CL-BI-CA schist (MAFi) was encountered. The MAFi was locally Mu-altered from 161.9-164.9 m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.09	0	180.09	APS	Dillon Hume	21-Sep-15		☑	
20	-65.2	156.3	22.5	178.8	ReflexEZS	Geotech	21-Sep-15	5793	☑	
50	-66.4	161	22.5	183.5	ReflexEZS	Geotech	21-Sep-15	5755	☑	
80	-66	163.6	22.5	186.1	ReflexEZS	Geotech	21-Sep-15	5725	☑	
110	-66.4	166.4	22.5	188.9	ReflexEZS	Geotech	22-Sep-15	5721	☑	
140	-66.7	165.7	22.5	188.2	ReflexEZS	Geotech	22-Sep-15	5490	☑	
170	-67	166.4	22.5	188.9	ReflexEZS	Geotech	22-Sep-15	5788	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**12.00**	**CASN** **Casing**									
12.00	**16.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

12 - 16.4: Good flow banded textured rhyolite

<<Min: 12 - 16.4 0.5% Min: Calcite>>

<<Min: 12 - 17.6 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

16.40 17.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

16.4 - 17.6: Banded CL-CA-BI schist with chilled margins (?)

<<Min: 16.4 - 17.6 20% Min: Calcite>>

17.60 23.20 RHYva Coarse grained to ash tuff

17.6 - 23.2: Fine grained ash tuff with disseminated mm-scale blebs of PO. Grades into lpl tuff at the lower contact.

<<Min: 17.6 - 30.9 2% Min: Pyrite>>

<<Min: 17.6 - 30.9 1% Min: Pyrrhotite>>

<<Min: 17.6 - 30.9 2% Min: Calcite>>

23.20 24.10 RHYvl Lapilli tuff

23.2 - 24.1: CL-CA-Silica lpl within a MU+QZ+CL groundmass. Small ~5 cm of MAFi from 23.9-23.95 m.

24.10 24.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

24.1 - 24.6: Olive green to light brown, fine grained CL+BI+CA schist.

24.60 27.30 RHYvl Lapilli tuff

24.6 - 27.3: Siliceous lpl in a MU+QZ+CL+BI groundmass

27.30 28.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

27.3 - 28: Green, CL-CA-BI schist with relatively sharp boundaries

28.00 30.10 RHY undifferentiated rhyolite

28 - 30.1: Banded CL+QZ and MU with lpl sized clasts (?) of CL+QZ. Hard to determine whether texture is coherent or volcaniclastics.

30.10 30.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

30.1 - 30.9: Olive green to light brown, fine grained CL+BI+CA schist.

30.90 31.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

30.9 - 31.3: Good curdy textured rhyolite with MU groundmass

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 30.9 - 37.4 20% Min: Calcite>>

<<Min: 30.9 - 52.2 0.5% Min: Pyrite>>

<<Min: 30.9 - 52.2 0.5% Min: Pyrrhotite>>

31.30 37.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

31.3 - 37.4: CA porphyroblastic (euhedral), CL-BI-CA schist with well developed foliation.

37.40 44.00 RHYvl Lapilli tuff

37.4 - 44: Rhyolitic lpl with lesser CL lpl within a MU+QZ groundmass

<<Min: 37.4 - 44 1% Min: Calcite>>

44.00 45.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

44 - 45.2: Olive green to light brown, fine grained CL+BI+CA schist.

<<Min: 44 - 48.3 15% Min: Calcite>>

45.20 47.00 RHYv Rhyolite volcaniclastic

45.2 - 47: Banded MU and QZ+CL with local rhyolitic lpl

47.00 48.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

47 - 48.3: CA porphyroblastic (euhedral), BI-CA-CL schist with well developed foliation.

48.30 54.10 RHYvl Lapilli tuff

48.3 - 54.1: Rhyolitic and CL+BI+CA lpl within a MU+QZ groundmass. Core from 53-59 m had been dropped by drillers. From and To measurements are not accurate.

<<Min: 48.3 - 54.1 2% Min: Calcite>>

<<Min: 52.2 - 130.6 2% Min: Pyrite>>

<<Min: 52.2 - 130.6 2% Min: Pyrrhotite>>

54.10 55.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

54.1 - 55.7: CA porphyroblastic, CL-BI-CA schist with well developed foliation. Core from 53-59 m had been dropped by drillers. From and To measurements are not accurate.

<<Min: 54.1 - 55.7 20% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

55.70 62.00 RHYvl Lapilli tuff

55.7 - 62: Rhyolitic lpl within a dark MU+QZ+BI groundmass. Core from 53-59 m had been dropped by drillers. From and To measurements are not accurate.

<<Min: 55.7 - 103.6 2% Min: Calcite>>

62.00 63.60 RHYc Rhyolite coherant volcanics

62 - 63.6: Banded silica and MU

63.60 68.20 RHYvl Lapilli tuff

63.6 - 68.2: Rhyolitic lpl with MU+QZ+/-CL+/-BI groundmass.

<<Alt: 64.9 - 84.3 Weak (Alt) Muscovite>>

68.20 69.60 RHYcw Curdy textured-flow banded (flows, subvolcanics)

68.2 - 69.6: QZ+MU schist with good rhyolitic flow banded texture

69.60 84.30 RHYvl Lapilli tuff

69.6 - 84.3: Rhyolitic and QZ+CL lpl within a MU+QZ groundmass

84.30 90.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

84.3 - 90.1: Good white rhyolitic curdy and flow banded texture within a greenish-yellow MU groundmass. Continuous foliation defined by MU.

<<Alt: 84.3 - 108.4 Moderate (Alt) Muscovite>>

90.10 103.60 RHYvl Lapilli tuff

90.1 - 103.6: greenish-yellow lpl rhyolite. ~.5 cm sized rhyolitic lpl and mm-scale blebs of PY+/-PO within a well foliated MU+QZ groundmass.

103.60 108.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

103.6 - 108.4: Good white rhyolitic curdy and flow banded texture within a greenish-yellow MU groundmass. Continuous foliation defined by MU.

<<Min: 103.6 - 152 0.5% Min: Calcite>>

108.40 126.20 RHYvl Lapilli tuff

108.4 - 126.2: Medium grey, rhyolite lpl tuff. CL, PO, and rhyolite lpl within a MU+QZ groundmass.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 108.4 - 130.6 Weak (Alt) Muscovite>>

126.20 130.00 RHY undifferentiated rhyolite

126.2 - 130: Moderately faulted and healed rock with clasts of CL, rhyolite, MSXS, and MDS.

<<Struc: 126.2 - 130 Strong (Alt) Fault>> Moderately faulted and healed fault breccia, with clasts of rhyolite, CL, MSXS and MDS.

130.00 136.10 RHY undifferentiated rhyolite

From (m)	To (m)	Width
131.10	132.10	1.00

130 - 136.1: Strongly altered rhyolite. Alteration varies in concentrations of MU, CI, AB, and CL.

<<Min: 130.6 - 136.1 2% Min: Pyrite>>

From (m)	To (m)	Width
132.10	133.10	1.00

<<Min: 130.6 - 136.1 3% Min: Pyrrhotite>>

From (m)	To (m)	Width
133.10	134.10	1.00

<<Min: 130.6 - 136.1 1% Min: Chalcopyrite>>

From (m)	To (m)	Width
134.10	135.10	1.00

<<Alt: 130.6 - 136.3 Strong (Alt) Muscovite>>

From (m)	To (m)	Width
135.10	136.10	1.00

<<Alt: 132.3 - 136.1 Moderate-Strong (Alt) Cordierite>>

<<Alt: 132.3 - 136.7 Moderate (Alt) Chlorite>>

<<Alt: 133.4 - 136.1 Moderate (Alt) Albite>>

136.10 136.60 OJ Heavilly disseminated sulphides in proximal altered rock

From (m)	To (m)	Width
136.10	136.60	0.50

136.1 - 136.6: Semi-massive PY+PO+/-GL+/-SP in strongly-intensely altered schist with large cm-scale CI porphyroblasts

<<Min: 136.1 - 137.9 10% Min: Pyrrhotite>>

<<Alt: 136.1 - 136.7 Strong (Alt) Cordierite>> Very large CI porphyroblasts

136.60 137.90 OA Magnetite bearing sulphides MCG

From (m)	To (m)	Width
136.60	137.30	0.70

136.6 - 137.9: Massive PY+PO+MG with cg MG buckshot texture

From (m)	To (m)	Width
137.30	137.90	0.60

137.90 142.40 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MCG

From (m)	To (m)	Width
137.90	138.80	0.90

137.9 - 142.4: Banded PY+SP+GL+AB

<<Min: 137.9 - 142.4 20% Min: Sphalerite>> rusty orange-brown and darker purple-brown sphalerite

From (m)	To (m)	Width
138.80	139.70	0.90

<<Min: 137.9 - 142.4 5% Min: Galena>>

From (m)	To (m)	Width
139.70	140.60	0.90
140.60	141.50	0.90
141.50	142.40	0.90

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
142.40	**143.90**	**OA**	**Magnetite bearing sulphides**	**MCG**	142.40	143.10	0.70						
142.4 - 143.9: Massive PY+MG with cg MG buckshot texture													
					143.10	143.90	0.80						
143.90	**144.20**	**OI**	**Heavilly disseminated sulphides in host schist**		143.90	144.50	0.60						
143.9 - 144.2: Heavily disseminated PY in MU+CL+CI schist													
144.20	**144.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
144.2 - 144.5: Banded PY+SP+GL													
144.50	**149.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	144.50	145.40	0.90						
144.5 - 149.3: Massive PY+PO+MG with cg MG buckshot texture													
<<Min: 144.5 - 148 5% Min: Pyrrhotite>>					145.40	146.40	1.00						
					146.40	147.40	1.00						
					147.40	148.40	1.00						
					148.40	149.30	0.90						
149.30	**149.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	149.30	149.80	0.50						
149.3 - 149.8: Banded PY+SP+GL													
149.80	**150.50**	**OA**	**Magnetite bearing sulphides**	**MCG**	149.80	150.50	0.70						
149.8 - 150.5: Massive PY+PO+MG with cg MG buckshot texture													
150.50	**150.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	150.50	151.30	0.80						
150.5 - 150.8: Banded PY+SP+GL													
150.80	**151.00**	**OA**	**Magnetite bearing sulphides**	**MCG**									
150.8 - 151: Massive PY+PO+MG with cg MG buckshot texture													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
151.00	**151.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
151 - 151.3: Banded PY+SP+GL													
151.30	**152.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	151.30	152.30	1.00						
151.3 - 152.3: Massive PY+PO+MG with cg MG buckshot texture													
<<Min: 152 - 158.1 2% Min: Calcite>>													
152.30	**160.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	152.30	153.30	1.00						
152.3 - 160.6: Banded PY+SP+GL+AB													
<<Min: 158.1 - 160.4 10% Min: Calcite>>					153.30	154.30	1.00						
					154.30	155.30	1.00						
					155.30	156.30	1.00						
					156.30	157.20	0.90						
					157.20	158.10	0.90						
					158.10	159.00	0.90						
					159.00	159.80	0.80						
					159.80	160.60	0.80						
160.60	**161.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**	160.60	161.20	0.60						
160.6 - 161.2: CP+PO net texture with cg GL+/-SP in strongly altered CI+MU schist													
<<Min: 160.6 - 161.2 10% Min: Pyrrhotite>>													
<<Min: 160.6 - 161.2 10% Min: Galena>>													
<<Min: 160.6 - 161.2 20% Min: Chalcopyrite>>													
<<Min: 160.6 - 161.2 0.5% Min: Calcite>>													
<<Alt: 160.6 - 161.2 Strong (Alt) Cordierite>>													
<<Alt: 160.6 - 164.9 Moderate (Alt) Muscovite>>													
161.20	**161.90**	**RHY**	**undifferentiated rhyolite**		161.20	161.90	0.70						
161.2 - 161.9: Strongly MU-altered schist													

From (m)	To (m)	Rocktype & Description

<<Min: 161.2 - 164.9 3% Min: Pyrite>>

<<Min: 161.2 - 164.9 5% Min: Calcite>>

161.90 164.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

161.9 - 164.9: MU+CA+BI schist (MU-alteration) Texturally resembles the blebby texture of the CL+BI+CA MAFi

164.90 170.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

164.9 - 170: CL+BI+CA schist with blebby-banded texture

<<Min: 164.9 - 170 0.5% Min: Pyrrhotite>>

<<Min: 164.9 - 170 20% Min: Calcite>>

<<Alt: 164.9 - 170 Strong (Alt) Chlorite>>

<<Alt: 164.9 - 170 Strong (Alt) Biotite>>

End of Hole @ 170

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
161.90	162.90	1.00						
162.90	163.90	1.00						
163.90	164.90	1.00						
164.90	165.90	1.00						

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-271

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Daniele Heon
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	24-Sep-15
UTM Easting	415249.612	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	26-Sep-15
UTM Northing:	6815584.132	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1437.556	Casing Depth (m):	12	Length (m):	258	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	22-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Sep-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

The target of this hole is eastern step out to extend ABM main lens. No massive sulphide was intersected but strong alteration, trace disseminated sphalerite and a 3m run with no core were intersected around the target depth of 195-200m. The hole deviated by 17 degrees from planned azimuth, the biggest deviation occuring around a zone of broken rock with associated core loss. The top of the hole alternated between carbonaceous argillite (MDSc) and mafic tuffs and or dykes till 32.65m, followed by a sequence of alternating RHYcw, vl and va with a few mafic units till 118.4. This includes a short siliceous, silicified, broken and veined section from 76-78m, associated with a short interval of RHYi dyke. From 118.4m to 193.65m, the sequence alternates between RHYcw, vl and va with a few mafic units, becomes very siliceous(or silicified?), and is logged mainly as RHYcw with increasing sericite alteration downhole and local fragmental or pseudo-fragmental textures. From 193-200, dark chl-sericite partings are interpreted as MDSw, and contain trace sp and cp on either side of the interval (195-198) where no core was recovered (possible friable mineralized horizon?). Strong muscovite- cordierite- chlorite alteration marks the footwall of this missing interval. The hole then continues in siliceous RHYc untill its lower contact with the footwall mafic intrusion at 242.6, with some disseminated sp and cp in foliaform stringers for 1-2 m intervals from 229 to 242m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180	0	180	APS	Geotech	22-Sep-15		☑	
21	-65.5	160.4	22.5	182.9	ReflexEZS	Geotech	22-Sep-15	5813	☑	
51	-65.8	161.2	22.5	183.7	ReflexEZS	Geotech	22-Sep-15	5758	☑	
81	-65.8	164.2	22.5	186.7	ReflexEZS	Geotech	23-Sep-15	5788	☑	
111	-65.2	166.3	22.5	188.8	ReflexEZS	Geotech	23-Sep-15	5770	☑	
141	-64.3	168	22.5	190.5	ReflexEZS	Geotech	23-Sep-15	5793	☑	
171	-63.6	168.9	22.5	191.4	ReflexEZS	Geotech	24-Sep-15	5826	☑	
201	-62.5	170.5	22.5	193	ReflexEZS	Geotech	24-Sep-15	5746	☑	
228	-62.3	171.1	22.5	193.6	ReflexEZS	Geotech	25-Sep-15	5793	☑	
258	-61.8	174.9	22.5	197.4	ReflexEZS	Geotech	25-Sep-15	5795	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.17**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

8.17 8.40 MDSc Carbonaceous dominant mudstone

8.40 14.65 MAFt Mafic Volcaniclastics

8.4 - 14.65: f.g.,dark green, calcareous mafic tuff or dyke,

<<Min: 12 - 32.65 10% Min: Calcite>> Core stacked outside before calcite logged. Estimate done from litho log.

<<Vein: 12 - 63 3% Quartz-Chlorite-Sulphide 80 deg. >> 5-10 cm

<<Vein: 12 - 124 1% Calcite 65 deg. >>

14.65 14.95 MDSc Carbonaceous dominant mudstone

14.95 16.95 MAFt Mafic Volcaniclastics

16.95 22.50 MDSc Carbonaceous dominant mudstone

16.95 - 22.5: good banded carbonaceous argillite, folded and crenulated.

22.50 26.85 MDSt Rhyolite tuff dominant mudstone

22.5 - 26.85: coarse ash?, crenulated. Texture reminiscent of portion of rx type at 119.75-124.65.

<<Min: 22.5 - 26.85 1% Min: Pyrrhotite>>

26.85 31.00 MDSc Carbonaceous dominant mudstone

26.85 - 31: strongly veined, folded and crenulated.

31.00 32.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

32.65 33.35 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 32.65 - 72 0.5% Min: Calcite>> Core stacked outside before calcite logged. Estimate done from litho log.

33.35 33.60 MAFta Coarse grained to ash tuff

33.35 - 33.6: or dyke

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

33.60 38.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

33.6 - 38.3: or coarse RHYvl

38.30 42.20 RHYvl Lapilli tuff

38.3 - 42.2: Coarse siliceous lapilli tuff or CW

<<Min: 40 - 41.6 3% Min: Pyrrhotite>> in heavy diss bands

42.20 42.90 RHYvl Lapilli tuff

42.2 - 42.9: finer grained groundmass and lapilli, less siliceous

42.90 49.75 MAFt Mafic Volcaniclastics

42.9 - 49.75: maroon and green, f.g. loc banded,, includes 20 cm of cw strongly dissected by sericite. Loc amygdules?

<<Vein: 44 - 120 0.05% Quarzt-Tourmaline-Sulphide 10 deg. >> deformed by crenulation gen 1cm wide, shallow CA, w commom tourmaline halo. Tr po, galena and sp

49.75 52.45 RHYcw Curdy textured-flow banded (flows, subvolcanics)

49.75 - 52.45: or c.g. and crowded lapilli tuff. Fines gradually into RHYvl below.

52.45 54.20 RHYvl Lapilli tuff

54.20 66.30 RHYva Coarse grained to ash tuff

54.2 - 66.3: few lapilli

66.30 68.40 MAFt Mafic Volcaniclastics

66.3 - 68.4: f.g. ash? Mafic? Sed?

68.40 72.00 RHYva Coarse grained to ash tuff

72.00 76.35 MAFt Mafic Volcaniclastics

72 - 76.35: banded, maroon. Lower contact strongly veined and altered (looks clayey).

<<Min: 72 - 76 10% Min: Calcite>>

<<Vein: 76 - 150 1% Quartz-Chlorite-Sulphide 20 deg. >>

76.35 77.45 RHYcw Curdy textured-flow banded (flows, subvolcanics)

76.35 - 77.45: Intense qtz veining and sericite alteration.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 76.35 - 82.3 Moderate (Alt) Muscovite>> ass w RHYi and qtz veining? Loc strong.

<<Alt: 76.35 - 85.6 Weak (Alt) Silicification>>

77.45 78.35 RHY undifferentiated rhyolite

77.45 - 78.35: strongly veined and broken, w srong khaki sericite altered-bands and broken qtz veins. Some qtz-tourm veining sub// to CA. Quartz in veins, as bands and as clasts? UC may include some bleached mafic tuff sections. Poore recovery.

<<Min: 77.5 - 82 2% Min: Calcite>>

<<Min: 78.3 - 82.3 0.5% Min: Pyrite>> in po-qtz bands.

<<Min: 78.3 - 82.3 1% Min: Pyrrhotite>> heavy diss in qtz-rich bands.

78.35 78.70 RHYi Aphanitic Rhyolite (intrusion)

78.35 - 78.7: crackled, veined and altered. Poor recovery.

78.70 82.55 RHYc Rhyolite coherant volcanics

78.7 - 82.55: poker chips partings w greenish sericite. Few lapilli or silica bands. Diss po in qtz-rich bands.

<<Min: 82 - 97.2 1% Min: Calcite>>

<<Min: 82.3 - 84.8 0.5% Min: Pyrite>>

82.55 83.50 RHYvl Lapilli tuff

82.55 - 83.5: silicified?

83.50 97.20 RHYva Coarse grained to ash tuff

83.5 - 97.2: w small tourmaline porphyroblasts

<<Alt: 90 - 97.2 Moderate (Alt) Muscovite>> dark greenish-blue hue

<<Alt: 96 - 96.5 Weak (Alt) Chlorite>>

<<Struc: 85.5 - 85.8 Moderate (Alt) Fault>> clay gouge

<<Struc: 87.5 - 87.6 Strong (Alt) Fault>> clay gouge, broken rock.

<<Struc: 89.85 - 89.86 dominant foliation>> NW/SE

<<Struc: 94.65 - 94.7 Moderate (Alt) Fault>> dicrete and competent clay gouge zone.

97.20 97.95 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 97.2 - 99.4 5% Min: Calcite>>

97.95 98.10 RHYvl Lapilli tuff

98.10 99.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

99.45 106.80 RHYvl Lapilli tuff

<<Min: 106.7 - 108.65 10% Min: Calcite>>

<<Alt: 101 - 106.8 Weak (Alt) Muscovite>>

<<Alt: 101 - 106.8 Weak (Alt) Chlorite>>

<<Alt: 105 - 106.8 Weak (Alt) Silicification>>

106.80 108.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

106.8 - 108.65: or MAFt?

108.65 118.40 RHYvl Lapilli tuff

108.65 - 118.4: w small tourmaline porphyroblasts

<<Min: 111.7 - 111.9 2% Min: Pyrite>> in vein and diss

<<Min: 117 - 129 0.5% Min: Calcite>>

<<Alt: 108.65 - 148 Moderate (Alt) Muscovite>>

118.40 119.75 RHYcw Curdy textured-flow banded (flows, subvolcanics)

118.4 - 119.75: or coarse and silicified lapilli tuff? Mottled,very siliceous, maroon and grey (biot-sericite alteration) w white silica blebs (dismembered lapilli or cw), w gradual appearance of dolom/ank crystals. Tourmaline porphyroblasts, diss po. Hornfels/altered from carb-bearing dyke below?

<<Min: 118.4 - 124 0.5% Min: Pyrite>>

<<Min: 118.4 - 124 0.5% Min: Pyrrhotite>>

<<Alt: 119.5 - 123.4 Moderate (Alt) Cordierite>> carbonat replacing cordierite?

119.75 124.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

119.75 - 124.65: strong pophyroblastic dolomite or ankerite replacing cordierite? Carbonate xtals in dk sericite- chlorite-biot groundmass. Intrusive texture. Chl loc greasy. Diss po. Chl-cordierite alteration zone or altered mafic dyke?

124.65 128.80 RHYvl Lapilli tuff grey

124.65 - 128.8: small tourmaline porphyroblasts.

128.80 136.30 RHYcw Curdy textured-flow banded (flows, subvolcanics)

128.8 - 136.3: gradual UC? Brownish grey sericite separates siliceous domains. Gets lumpy: lapilli?

<<Struc: 129.6 - 130.1 Moderate (Alt) Fault>> weak broken rx and fault gouge, discordant to foln.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

136.30 144.10 RHYvl Lapilli tuff

136.3 - 144.1: finer grained and darker matrix than above, more fragmental or pseudo-fragmental texture, could be RHYcw. Muscovite colour and intensity varies.

144.10 174.00 RHYc Rhyolite coherant volcanics

144.1 - 174: very siliceous, variably fragmental or pseudo-fragmental, some sections could be coarse lapilli. Few possible qtz xtals? Pervasive greenish sericite. Stronger fg ankerite alteration. 146-151 and 155-169.5 : dislocated py-po bands and blebs.

<<Min: 146.8 - 150.8 1% Min: Pyrite>> in qtz-rich bands

<<Min: 146.8 - 150.8 1% Min: Pyrrhotite>> in qtz-rich bands

<<Min: 155 - 159.5 2% Min: Pyrrhotite>> heavily disseminated in dislocated qtz-rich bands or blebs.

<<Min: 155 - 169.5 2% Min: Pyrite>> heavily disseminated in dislocated qtz-rich bands or blebs.

<<Alt: 148 - 187 Strong (Alt) Muscovite>> till end of boxes Thursday

<<Alt: 172.35 - 177 Weak (Alt) Chlorite>>

<<Struc: 160 - 165 Vein>> fracture sub// to CA

<<Struc: 161.9 - 161.91 dominant foliation>>

174.00 177.00 MAFt Mafic Volcaniclastics

174 - 177: Mafic tuff or chl-altered felsic tuff? Stripy maroon and green rx. More intense and pervasive sericite alteration?

177.00 187.20 RHYc Rhyolite coherant volcanics

177 - 187.2: loc lumpy (lapilli?). Some dark amorphous soft mineral interstitial to the sulphides in qtz-po bands (chloritoid).

<<Min: 177.2 - 186 2% Min: Pyrite>> heavily disseminated in dislocated qtz-rich bands or blebs.

<<Min: 177.2 - 186 1% Min: Pyrrhotite>> heavily disseminated in dislocated qtz-rich bands or blebs.

<<Min: 186 - 195 1% Min: Pyrite>>

<<Alt: 187 - 213 Intense (Alt) Muscovite>>

<<Struc: 185.9 - 185.91 dominant foliation>>

187.20 193.50 RHY undifferentiated rhyolite

187.2 - 193.5: Strongly sericite-altered cw (?) (lt grey, clayey on poker chips partings till 190.5m). Segregations between silica vs sericite bands increase downhole and poker chips decrease. Dk grey-green, loc bleached. Small squarish greenish soft mineral w fuzzy outline rimmed by ankerite (breakdown of py?) (chloritoid?).

<<Vein: 191.9 - 193.15 10% Quartz-Kspar-Sulphide 65 deg. >> w po

<<Vein: 192.35 - 208 0.5% Quartz 60 deg. >>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
193.50	195.10	1.60	B00266837	0.3	-0.005	-0.01	-0.01	0.04
198.00	199.60	1.60	B00266838	2.6	-0.005	-0.01	0.12	0.13

193.50 195.10 MDSw Coherent rhyolite flow with carbonaceous content

193.5 - 195.1: Siliceous rx w dk sericite partings, sph<1% and one 10 cm band of 5-7% po and 1-2% py.

<<Min: 193.5 - 195 0.05% Min: Sphalerite>>

<<Alt: 194.2 - 198.99 Strong (Alt) Chlorite>> some greasy black chl on foln, maybe mixed in w dark sericite.

195.10 198.00 No Core No Core

195.1 - 198: run washed away. Only 10cm of rubble recovered. Trace sph and 10cm band of qtz-po in previous run and <1% diss sp in following run.

<<Min: 195.25 - 195.4 7% Min: Pyrrhotite>> in qtz-rich band

198.00 200.00 MDSw Coherent rhyolite flow with carbonaceous content

198 - 200: Siliceous rx w dk sericite partings. Sph diss in narrow stringers, <1% til 199.6m.

<<Min: 198 - 199.6 1% Min: Sphalerite>> ?

200.00 209.00 RHY undifferentiated rhyolite

200 - 209: Light grey, blocky, very strongly sericite altered, no recognizeable primary textures, spotted w dark squarish ouline of amorphous brown mineral w fuzzy grain outline(0.5cm), loc containing small py cubes (altered chloritoid?). Some irregular bands of whitish cordierite // to foln.

<<Alt: 201 - 204 Weak (Alt) Talc-serpentine>> soapy feel on clayey partings.

<<Struc: 201 - 208 Weak (Alt) Fault>> few sections of broken rx wclayey matrix in zoe of strong sericite/ clayey alteration.

209.00 210.25 RHYc Rhyolite coherant volcanics

209 - 210.25: w tabular sericitic partings.

<<Min: 209 - 228 0.5% Min: Pyrrhotite>>

210.25 213.75 RHY undifferentiated rhyolite dark grey

210.25 - 213.75: Dark grey, vfg rx pervasively altered to grey sericite, w diss po and pervasive dusting of vfg py. Alteration front? Bleached mudstone? Ash? Or dyke?

<<Alt: 213 - 230 Strong (Alt) Muscovite>>

<<Vein: 210.65 - 212 0.1% Quartz 70 deg. >> qtz veins,

<<Struc: 212.9 - 212.91 dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
213.75	**220.75**	**RHYv Rhyolite volcaniclastic**									
213.75 - 220.75: Sericite still strong on partings but not as abundant so overall less altered. If primary textures: then ash. Flat po seams on foln.											
<<Vein: 215 - 215.35 Quartz-Chlorite 70 deg. >>											
<<Struc: 214.2 - 214.4 Strong (Alt) Fault>> section of finely broken rx,											
220.75	**221.15**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**									
221.15	**225.40**	**RHY undifferentiated rhyolite**									
221.15 - 225.4: grey, spotted w greenish square to diamond shape fuzzy xtals (chloritoid?), sililiceous, finely foliated											
225.40	**235.40**	**RHYc Rhyolite coherant volcanics**	227.10	228.40	1.30	B00266839	1.2	0.006	-0.01	0.01	0.12
225.4 - 235.4: light greenish-grey siliceous rx w platy lamellar foln defined by light green musc. Loc contorted. Mineralized mostly w bright py. Approx 2m w diss sp and cp along foln.											
<<Min: 228 - 232 2% Min: Pyrite>>			228.40	229.35	0.95	B00266841	1.4	-0.005	-0.01	0.01	0.18
<<Min: 228 - 232 1% Min: Pyrrhotite>>			229.35	230.15	0.80	B00266842	3.3	0.011	0.05	0.11	0.3
<<Min: 229.35 - 231.5 0.5% Min: Sphalerite>>			230.15	231.00	0.85	B00266843	1.3	0.005	-0.01	0.04	0.04
<<Min: 229.35 - 231.5 0.5% Min: Chalcopyrite>>			231.00	232.53	1.53	B00266844	1	0.006	0.01	0.04	0.13
<<Min: 232 - 235.4 0.01% Min: Sphalerite>>											
<<Min: 232 - 235.4 0.5% Min: Pyrite>>											
<<Min: 232 - 235.4 0.5% Min: Pyrrhotite>>											
<<Min: 235.2 - 235.8 3% Min: Calcite>>											
<<Struc: 228 - 228.4 Moderate (Alt) Fault>> small zones of finely broken core,core loss.											
<<Struc: 230.35 - 230.38 >> Small kink fold. No cleavage developed. Measurement of curviplanar AP.											
235.40	**235.90**	**MAFi Mafic Intrusions (primarily green footwall mafic intrusion)**									
<<Min: 235.8 - 242 0.5% Min: Calcite>>											
235.90	**242.60**	**RHYc Rhyolite coherant volcanics**	238.33	239.30	0.97	B00266845	0.4	0.007	-0.01	-0.01	-0.01
235.9 - 242.6: siliceous bands dissected by bands of light green sericite. Diss py and po throughout and some sp cp diss in bands for last 2m.											
<<Min: 235.9 - 242.5 0.5% Min: Pyrite>>			239.30	240.40	1.10	B00266846	-0.3	-0.005	-0.01	-0.01	0.04
<<Min: 235.9 - 242.5 0.5% Min: Pyrrhotite>>			240.40	241.60	1.20	B00266847	2.7	-0.005	0.01	0.05	0.1
<<Min: 241.2 - 242.4 0.5% Min: Sphalerite>>			241.60	242.60	1.00	B00266848	5.5	-0.005	0.03	0.1	0.24
<<Min: 241.2 - 242.4 0.5% Min: Chalcopyrite>>											

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
242.60	244.00	1.40	B00266849	-0.3	-0.005	-0.01	-0.01	0.03

<<Min: 242 - 247 10% Min: Calcite>>

<<Alt: 242.3 - 242.5 Weak (Alt) Chlorite>>

<<Vein: 242.5 - 242.6 100% Quartz-Tourmaline 75 deg. >>

242.60 258.00 MAFi **Mafic Intrusions (primarily footwall mafic intrusion)**

242.6 - 258: footwall intrusion. UC altered by qtz-tourmaline vein. Rusty fractures and slicked planes in blocky ground with core loss between 251 and 252m

<<Min: 247 - 254.4 2% Min: Calcite>>

End of Hole @ 258

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-272

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	23-Sep-15
UTM Easting	414699.175	Core Size:	NQ3	Azimuth:	180.2	Date Logging Complete:	23-Sep-15
UTM Northing:	6815465.295	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1418.911	Casing Depth (m):	6	Length (m):	128	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	22-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
						Parent Hole:	

Comments:

Parent hole to K15-266 (metallurgical HQ hole) and redrill of K15-269 (Abandoned). Orientation marks were found to be inconsistent throughout hole, with few consecutive orientation marks. When consecutive orientation marks were present, only one run was marked with a solid line (62-68m). Mafic dike near OI (41.7-51) and fault makes this twin significantly less representative of original HQ Met hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180.2	0	180.2	APS	Trevor Rabb	22-Sep-15		☐	
26	-55.2	160.1	22.5	182.6	ReflexEZS	Geotech	22-Sep-15	5780	☑	
50	-53	163.9	22.5	186.4	ReflexEZS	Geotech	22-Sep-15	5609	☐	
74	-53.1	159.9	22.5	182.4	ReflexEZS	Geotech	22-Sep-15	5826	☑	
101	-53.1	162.1	22.5	184.6	ReflexEZS	Geotech	22-Sep-15	5645	☑	
125	-53.4	160.8	22.5	183.3	ReflexEZS	Geotech	22-Sep-15	5681	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.00**	**OVBN** **Overburden**									
7.00	**8.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 8 - 12.1 2% Min: Pyrite>>											
8.20	**12.10**	**MDSc** **Carbonaceous dominant mudstone**									
12.10	**16.10**	**RHYc** **Rhyolite coherant volcanics**									
16.10	**20.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 17 - 18.7 2% Min: Pyrite>>													
<<Min: 18.7 - 28 0.5% Min: Pyrite>>													
20.50	**23.90**	**MDSc**	**Carbonaceous dominant mudstone**										
<<Vein: 23.1 - 29.7 Quartz>>													
<<Struc: 21.5 - 22.4 Trace (Alt) Fault>>													
23.90	**27.85**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**										
<<Alt: 23.9 - 27.4 Weak (Alt) Muscovite>>													
<<Struc: 25.7 - 26 Weak-Moderate (Alt) Fault>> lost core, soft unconsolidated gouge													
<<Struc: 27.2 - 27.9 Weak (Alt) Fault>> local gouge zones													
27.85	**29.15**	**MDSc**	**Carbonaceous dominant mudstone**										
<<Min: 28 - 29.15 1% Min: Pyrite>>													
29.15	**34.80**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**		29.15	30.15	1.00	B00268098	0.3	0.005	-0.01	-0.01	0.01
<<Min: 29.15 - 34.8 0.5% Min: Pyrite>>					30.15	31.15	1.00	B00268099	0.7	0.007	-0.01	0.02	0.03
<<Alt: 29.25 - 34.8 Weak-Moderate (Alt) Muscovite>>					31.15	32.15	1.00	B00268101	0.4	0.006	-0.01	-0.01	0.02
<<Struc: 29.91 - 31 Weak (Alt) Fault>> local gouge intervals					32.15	33.15	1.00	B00268102	0.8	-0.005	-0.01	-0.01	0.02
					33.15	34.80	1.65	B00268103	22.9	0.074	1.72	0.03	0.17
34.80	**35.50**	**OI**	**Heavilly disseminated sulphides in host schist**	**MCG**	34.80	35.50	0.70	B00268104	58.1	0.194	4.79	0.05	0.33
34.8 - 35.5: Approaches massive sulphide towards LCT.													
<<Min: 34.8 - 35.5 10% Min: Pyrite>>													
<<Min: 34.8 - 35.5 2% Min: Pyrrhotite>>													
<<Min: 34.8 - 35.5 5% Min: Chalcopyrite>>													
35.50	**39.20**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		35.50	37.00	1.50	B00268105	0.5	0.005	-0.01	-0.01	-0.01
<<Alt: 35.5 - 39.2 Moderate (Alt) Muscovite>>					37.00	38.00	1.00	B00268106	0.3	-0.005	-0.01	0.01	-0.01
					38.00	39.20	1.20	B00268107	0.4	-0.005	0.02	-0.01	0.01
39.20	**41.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**FMG**	39.20	40.20	1.00	B00268108	53.4	0.24	1.4	1.66	14

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 39.2 - 41.7 10% Min: Sphalerite>>					40.20	40.70	0.50	B00268109	23	0.142	0.49	1.42	13.3
<<Min: 39.2 - 41.7 10% Min: Pyrite>>					40.70	41.70	1.00	B00268111	38.8	0.136	0.41	2.54	13.1
<<Min: 39.2 - 41.7 3% Min: Galena>>													
<<Min: 39.2 - 41.7 1.5% Min: Chalcopyrite>>													
41.70	**43.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		41.70	43.00	1.30	B00268112	1.5	-0.005	0.02	0.03	0.11
41.7 - 43: could be ash tuff, fine laminated													
<<Min: 42.9 - 43.9 10% Min: Sphalerite>>													
<<Min: 42.9 - 43.9 10% Min: Pyrite>>													
<<Min: 42.9 - 43.9 5% Min: Pyrrhotite>>													
<<Min: 42.9 - 43.9 3% Min: Galena>>													
<<Min: 42.9 - 43.9 1.5% Min: Chalcopyrite>>													
<<Alt: 41.7 - 43 Moderate (Alt) Cordierite>> Chlorites after CI													
<<Vein: 41.7 - 41.9 Quartz>>													
<<Struc: 42.5 - 42.5 Foliation>> chlorite mineral alignment													
43.00	**43.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**FMG**	43.00	43.40	0.40	B00268113	35.5	0.157	0.45	1.68	11.4
<<Vein: 43.8 - 43.9 Quartz>>					43.40	43.90	0.50	B00268114	25.7	0.124	0.5	0.89	13
<<Struc: 43.87 - 43.87 Vein>> qz-cb vein													
43.90	**45.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		43.90	45.50	1.60	B00268115	2	0.014	0.07	0.02	0.05
43.9 - 45.6: Mixing with RHYv, strongly convoluted contacts													
<<Alt: 43.9 - 51 Moderate (Alt) Cordierite>> Chlorites after CI					45.50	46.00	0.50	B00268116	25.5	0.164	0.82	0.43	3.88
<<Vein: 44.25 - 45.1 Quartz>> irreg. contatcs													
<<Struc: 43.9 - 43.9 Contact>>													
45.60	**45.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**									
<<Min: 45.6 - 46.1 5% Min: Pyrite>>													
<<Min: 45.6 - 46.1 15% Min: Pyrrhotite>>													
<<Min: 45.6 - 46.1 5% Min: Chalcopyrite>>													
<<Vein: 45.8 - 46.1 Quartz>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
45.90	**47.40**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		46.00	47.50	1.50	B00268117	2.7	0.015	0.02	0.05	0.1
45.9 - 47.4: could be ash tuff, fine laminated													
<<Min: 46.75 - 50.5 1% Min: Pyrrhotite>> associated with cpy													
<<Min: 46.75 - 50.5 1% Min: Chalcopyrite>>													
47.40	**50.20**	**RHY**	**undifferentiated rhyolite**		47.50	49.00	1.50	B00268118	7.3	0.044	0.41	0.03	0.3
					49.00	50.50	1.50	B00268119	22.2	0.03	0.89	0.11	0.21
50.20	**50.90**	**RHY**	**undifferentiated rhyolite**		50.50	52.00	1.50	B00268121	6.5	0.005	0.01	0.08	0.54
50.90	**53.45**	**RHY**	**undifferentiated rhyolite**		52.00	53.45	1.45	B00268122	31	0.011	0.64	0.15	0.62
<<Min: 53 - 55.4 5% Min: Sphalerite>>													
<<Min: 53 - 55.4 5% Min: Pyrrhotite>> assoc. with cpy													
<<Min: 53 - 55.4 2% Min: Chalcopyrite>>													
<<Vein: 52.15 - 52.35 Quartz>>													
<<Vein: 52.8 - 53.4 Quartz>>													
53.45	**54.50**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	53.45	54.50	1.05	B00268123	330	1.37	0.75	4.87	9.62
54.50	**55.40**	**RHYv**	**Rhyolite volcaniclastic**		54.50	55.40	0.90	B00268124	1.4	0.031	-0.01	0.02	0.04
<<Alt: 54.9 - 62.27 Strong (Alt) Muscovite>>													
55.40	**57.30**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**		55.40	56.30	0.90	B00268125	2.4	0.035	0.02	-0.01	0.05
55.4 - 57.3: weakly disseminated and rare narrow (<2cm) fg stringer intervals													
<<Min: 55.4 - 57.8 1% Min: Pyrite>> locally up to 20% as fg whispy veins					56.30	57.30	1.00	B00268126	14.2	0.092	0.23	0.2	0.62
<<Min: 55.4 - 57.8 0.5% Min: Chalcopyrite>>													
<<Struc: 57 - 57 Foliation>>													
57.30	**62.27**	**RHYv**	**Rhyolite volcaniclastic**		57.30	58.80	1.50	B00268127	2.5	0.018	0.08	-0.01	0.04
<<Min: 57.8 - 62.27 0.5% Min: Pyrite>>					58.80	60.30	1.50	B00268128	0.9	0.011	-0.01	0.01	0.03
<<Alt: 59.4 - 62.27 Moderate (Alt) Albite>>					60.30	61.30	1.00	B00268129	0.8	0.006	-0.01	-0.01	0.02
<<Struc: 57.85 - 57.85 Vein>> QZ vein					61.30	62.27	0.97	B00268131	2.6	0.038	-0.01	0.04	0.11
<<Struc: 59.4 - 59.4 Crenulation cleavage>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
62.27	**76.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	62.27	63.30	1.03	B00268132	78.5	0.746	0.23	0.86	8.04
<<Min: 62.27 - 69.3 10% Min: Sphalerite>>					63.30	64.30	1.00	B00268133	204	1.46	0.12	3.73	11.6
<<Min: 62.27 - 69.3 60% Min: Pyrite>>					64.30	65.30	1.00	B00268134	91.3	1.06	0.21	1.34	7.07
<<Min: 62.27 - 69.3 2% Min: Galena>>					65.30	66.30	1.00	B00268135	126	1.38	0.39	1.29	4.45
<<Min: 62.27 - 69.3 1.5% Min: Chalcopyrite>>					66.30	67.30	1.00	B00268136	115	1.61	0.2	2.25	5.54
<<Min: 62.75 - 63.3 4% Min: Magnetite>> anhedral mt blebs					67.30	68.30	1.00	B00268137	179	1.61	0.14	2.51	5.5
<<Min: 67.85 - 71.07 6% Min: Magnetite>> discontinuous throughout					68.30	69.30	1.00	B00268138	140	2.59	0.27	1.4	9.05
<<Min: 69.93 - 72.33 2% Min: Sphalerite>>					69.30	70.30	1.00	B00268139	115	1.34	0.27	0.94	3.14
<<Min: 69.93 - 72.33 70% Min: Pyrite>>					70.30	71.30	1.00	B00268142	99.7	1.4	0.51	0.68	2.85
<<Min: 69.93 - 72.33 0.5% Min: Galena>>					71.30	72.30	1.00	B00268143	147	1.8	0.34	0.91	2.8
<<Min: 72.33 - 73.75 6% Min: Magnetite>> anhedral mt blebs					72.30	73.30	1.00	B00268144	217	2.25	0.2	1.06	6.66
<<Min: 72.33 - 76.3 5% Min: Sphalerite>>					73.30	74.30	1.00	B00268145	136	2.01	0.29	0.86	4.72
<<Min: 72.33 - 76.3 50% Min: Pyrite>>					74.30	75.30	1.00	B00268146	341	2.86	0.35	2	5.79
<<Min: 72.33 - 76.3 1.5% Min: Galena>>					75.30	76.30	1.00	B00268147	583	3.59	0.32	2.49	4.09
<<Min: 72.33 - 76.3 0.5% Min: Chalcopyrite>>													
<<Min: 75.8 - 76.3 10% Min: Magnetite>> anhedral mt blebs													
<<Struc: 62.6 - 62.6 Vein>> sphalerite banding													
<<Struc: 65.1 - 65.1 Vein>>													
<<Struc: 66.9 - 66.9 Vein>> qz-ab+/-cb													
76.30	**79.00**	**RHYc**	**Rhyolite coherant volcanics**		76.30	77.50	1.20	B00268148	6	0.09	0.01	0.03	0.08
<<Alt: 76.3 - 79 Moderate-Strong (Alt) Muscovite>>					77.50	79.00	1.50	B00268149	47.6	0.221	0.1	0.06	0.15
<<Alt: 76.3 - 79 Moderate (Alt) Albite>>													
79.00	**80.22**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	79.00	80.22	1.22	B00268151	448	3.28	0.38	6.12	11.9
<<Min: 79 - 80.22 15% Min: Sphalerite>> bands 1-2cm													
<<Min: 79 - 80.22 50% Min: Pyrite>>													
<<Min: 79 - 80.22 4% Min: Galena>>													
<<Min: 79 - 80.22 1.5% Min: Chalcopyrite>>													
<<Alt: 79 - 86.6 Strong (Alt) Muscovite>>													
80.22	**85.20**	**RHYva**	**Coarse grained to ash tuff**		80.22	81.70	1.48	B00268152	18.8	0.089	0.01	0.27	0.63

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 80.22 - 81.05 1% Min: Sphalerite>>					81.70	83.20	1.50	B00268153	0.4	0.02	-0.01	-0.01	-0.01
<<Min: 80.22 - 81.05 2% Min: Pyrite>> bands 1-2cm					83.20	84.70	1.50	B00268154	2.2	0.023	-0.01	0.02	0.05
<<Min: 80.22 - 81.05 0.2% Min: Galena>>					84.70	86.00	1.30	B00268155	3.2	0.013	-0.01	0.07	0.22
85.20	**86.60**	**RHYc**	**Rhyolite coherant volcanics**		86.00	86.60	0.60	B00268156	0.5	0.006	-0.01	-0.01	0.01
86.60	**90.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	86.60	87.60	1.00	B00268157	183	1.79	0.43	3.48	9.21
<<Min: 86.6 - 90.1 3% Min: Sphalerite>>					87.60	88.60	1.00	B00268158	107	1.36	0.4	1.65	10.1
<<Min: 86.6 - 90.1 60% Min: Pyrite>>					88.60	89.60	1.00	B00268159	83	1.32	0.42	0.69	7.02
<<Min: 86.6 - 90.1 2% Min: Galena>>					89.60	90.10	0.50	B00268161	72.2	1.15	0.21	0.75	10.9
<<Min: 86.6 - 90.1 2% Min: Chalcopyrite>>													
<<Min: 88.5 - 90.1 15% Min: Magnetite>>													
90.10	**91.30**	**OA**	**Magnetite bearing sulphides**	**MG**	90.10	90.95	0.85	B00268162	72.1	1.27	0.59	1.5	9.36
<<Min: 90.1 - 92 1% Min: Sphalerite>>					90.95	91.45	0.50	B00268163	59.3	0.239	0.21	2.15	9.33
<<Min: 90.1 - 92 40% Min: Pyrite>>													
<<Min: 90.1 - 92 5% Min: Pyrrhotite>>													
<<Min: 90.1 - 92 2% Min: Galena>>													
<<Min: 90.1 - 92 3% Min: Chalcopyrite>>													
91.30	**92.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	91.45	92.45	1.00	B00268164	159	1.25	0.42	2.49	9.13
92.00	**93.20**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**MG**	92.45	93.45	1.00	B00268165	135	1.19	0.35	2.23	9.37
92 - 93.2: non-magnetic, OB with cataclatsic txt overprint (mortar texture)													
<<Min: 92 - 95.5 80% Min: Pyrite>>													
<<Struc: 92 - 95.8 Strong (Alt) Fault>>													
93.20	**98.03**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	93.45	95.00	1.55	B00268166	115	0.662	0.21	2.7	10.1
<<Min: 95.5 - 98.03 5% Min: Sphalerite>>					95.00	95.45	0.45	B00268167	135	1.13	0.37	3.34	8.6
<<Min: 95.5 - 98.03 60% Min: Pyrite>>					95.45	96.45	1.00	B00268168	106	0.71	0.19	2.76	8.2
<<Min: 95.5 - 98.03 3% Min: Galena>>					96.45	97.45	1.00	B00268169	97.6	0.634	0.16	2.6	6.23
<<Min: 95.5 - 98.03 3% Min: Chalcopyrite>>					97.45	98.03	0.58	B00268171	526	5.63	1.64	3.16	8.53

From (m)	To (m)		Rocktype & Description

<<Vein: 95.6 - 97.7 Quartz-Carbonate>> associated with fault bx texture - forms mosaic bx.

98.03	**100.40**	**RHYvl**	**Lapilli tuff**

<<Min: 98.03 - 101 0.5% Min: Sphalerite>>

<<Min: 98.03 - 101 1% Min: Pyrite>>

<<Min: 98.03 - 101 0.2% Min: Galena>>

<<Alt: 98.03 - 101 Weak-Moderate (Alt) Muscovite>>

<<Struc: 98.03 - 98.3 Moderate (Alt) Fault>>

100.40	**102.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
102.50	**103.70**	**RHYvl**	**Lapilli tuff**

<<Vein: 103 - 103.2 Quartz>>

103.70	**105.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
105.60	**107.50**	**RHYvl**	**Lapilli tuff**

<<Vein: 105.95 - 107.2 Quartz>>

<<Struc: 105.6 - 105.6 Foliation>>

<<Struc: 106.6 - 106.6 Foliation>>

107.50	**111.80**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Vein: 111.1 - 111.75 Quartz>>

111.80	**113.36**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

111.8 - 113.36: blk-grn /w euhedral c.g. diss py.Bi after cl.

<<Min: 111.8 - 113.3 5% Min: Pyrite>> coarse grained euhedral py

<<Min: 111.8 - 113.3 1% Min: Chalcopyrite>>

<<Min: 113.3 - 116.2 0.5% Min: Pyrite>>

<<Min: 113.3 - 116.2 0.5% Min: Galena>>

<<Vein: 113 - 116.15 Quartz>>

113.36	**117.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

<<Min: 116.2 - 128 0.5% Min: Sphalerite>> bands of sphalerite and galena

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
98.03	99.00	0.97	B00268172	10.3	0.08	0.01	0.18	0.31
99.00	100.50	1.50	B00268173	11.2	0.041	-0.01	0.11	0.13
100.50	102.00	1.50	B00268174	4.5	0.019	-0.01	0.02	0.04
102.00	103.50	1.50	B00268175	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description
		<<Min: 116.2 - 128 0.5% Min: Pyrite>>
117.50	**121.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Struc: 119.54 - 119.54 Foliation>>
		<<Struc: 120.7 - 120.7 Foliation>>
121.00	**126.60**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
		121 - 126.6: Diffuse upper and lower contacts. Cr mica throughout.
		<<Struc: 122.2 - 122.2 Foliation>>
		<<Struc: 123.23 - 123.23 Foliation>>
		<<Struc: 124.6 - 124.6 Vein>>
126.60	**128.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		End of Hole @ 128

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-273

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	24-Sep-15
UTM Easting	415051.003	Core Size:	NQ3	Azimuth:	179.13	Date Logging Complete:	25-Sep-15
UTM Northing:	6815507.074	Casing Pulled?:	Yes	Dip:	-77	Drill Company:	Geotech
UTM Elev. (m):	1382.272	Casing Depth (m):	15	Length (m):	149	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

K15-273 was drilled to confirm the resource intercept of historic hole K95-070. Metallurgical twin hole K15-275 was drilled to collect samples of MET3, MET8, and MET8 domains. Overburden was encountered to a depth of 14.7 m. The hanging wall stratigraphy (14.7-91.2 m) consists of mixed felsic volcanics with one carbonaceous horizon. Moderate to strong MU alteration is present from 50-91.2 m and is associated with disseminated CI porphyroblasts proximal to the MSXS. MSXS was encountered from 91.2-111.4 m, consisting of OG, OA, OB, OI, OC, and OJ ore types. The CL-CA-BI schist (MAFi) occurs from 111.4-117.3 m. MAFi is MU-altered proximal to the MSXS and has local CL+PO+CP stringer zones from 116.6-117 m. The lower contact of the MAFi is MU+SI altered from the later RHYi, which is encountered from 117.3-149 m (EOH).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-77	179.13	0	179.13	APS	Dillon Hume	23-Sep-15		☑	
20	-75	161.2	22.5	183.7	ReflexEZS	Geotech	23-Sep-15	5852	☑	
50	-73.9	156.7	22.5	179.2	ReflexEZS	Geotech	23-Sep-15	5765	☑	
80	-73.4	162.4	22.5	184.9	ReflexEZS	Geotech	23-Sep-15	5606	☑	
110	-73	159.1	22.5	181.6	ReflexEZS	Geotech	24-Sep-15	6068	☑	
140	-73	359.9	22.5	22.4	ReflexEZS	Geotech	24-Sep-15	5204	☐	Values not accepted, low magnetic field
149	-72.8	167.9	22.5	190.4	ReflexEZS	Geotech	25-Sep-15	5780	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**14.70**	**OVBN** **Overburden**									
14.70	**16.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									

14.7 - 16.8: Good curdy rhyolite

<<Min: 14.7 - 41.1 2% Min: Pyrite>>

<<Min: 14.7 - 41.1 1% Min: Pyrrhotite>>

<<Min: 14.7 - 103 0.5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
16.80	**41.10**	**RHYvl** **Lapilli tuff**									
16.8 - 41.1: Unit dominated by felsic and PY lpl within a MU+QZ groundmass. Local coherent textures (curdy or flow banded).											
41.10	**44.10**	**MDSt** **Rhyolite tuff dominant mudstone**									
41.1 - 44.1: rhyolitic tuff with ~30% carbonaceous material											
<<Min: 41.1 - 44.1 5% Min: Pyrrhotite>>											
44.10	**50.00**	**RHYvl** **Lapilli tuff**									
44.1 - 50: rhyolitic and PY lpl within a MU+QZ groundmass											
<<Min: 44.1 - 90.2 2% Min: Pyrite>>											
<<Min: 44.1 - 90.2 2% Min: Pyrrhotite>>											
50.00	**91.20**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	85.70	87.20	1.50	B00268842	-0.3	-0.005	-0.01	-0.01	-0.01
50 - 91.2: siliceous banding within a MU+QZ groundmass. Unit has flow banded texture. Strongly altered (obscuring the texture) from 86.2-91.2 m.											
<<Min: 90.2 - 91.2 5% Min: Pyrrhotite>>			87.20	88.70	1.50	B00268843	-0.3	0.01	-0.01	-0.01	0.02
<<Min: 90.2 - 91.2 3% Min: Chalcopyrite>>			88.70	90.20	1.50	B00268844	2.1	-0.005	-0.01	0.04	0.06
<<Alt: 50 - 76.5 Moderate (Alt) Muscovite>>			90.20	91.20	1.00	B00268845	20.7	0.048	0.52	0.03	0.17
<<Alt: 76.5 - 91.2 Strong (Alt) Muscovite>>											
<<Alt: 84 - 91.2 Weak (Alt) Chlorite>>											
<<Alt: 86.2 - 86.3 Moderate (Alt) Cordierite>>											
<<Alt: 90.2 - 90.9 Strong (Alt) Albite>>											
<<Alt: 90.7 - 91.2 Strong (Alt) Cordierite>>											
<<Struc: 63.1 - 63.7 Moderate (Alt) Fault>> moderately faulted with local fault gouge											
<<Struc: 83.01 - 83.02 dominant foliation>>											
91.20	**93.00**	**OG** **Chalcopyrite rich sulphides** **CG**	91.20	92.20	1.00	B00268846	240	4.51	12.2	0.05	2.53
91.2 - 93: CP+PO+PY net texture with cg disseminated MG. (CP ~40%)											
<<Min: 91.2 - 93 40% Min: Chalcopyrite>>			92.20	93.00	0.80	B00268847	265	2.52	10.7	0.09	2
<<Min: 91.2 - 100 10% Min: Pyrrhotite>>											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.00	**97.80**	**OA**	**Magnetite bearing sulphides**	**MCG**	93.00	94.00	1.00	B00268848	115	1.09	3.27	0.18	4.46
93 - 97.8: Massive PY+PO+CP+MG. Locally the grain size is increased associated with bands of CL.													
<<Min: 93 - 100 5% Min: Chalcopyrite>>					94.00	95.00	1.00	B00268849	220	1.86	4.18	0.37	3.04
<<Struc: 94.1 - 94.11 dominant foliation>> sulphide lamination					95.00	96.00	1.00	B00268852	161	2.07	5.14	0.3	1.56
<<Struc: 94.7 - 94.71 dominant foliation>> sulphide lamination					96.00	97.00	1.00	B00268853	140	2.04	4.51	0.21	2.35
<<Struc: 97.6 - 97.61 dominant foliation>> sulphide lamination					97.00	97.80	0.80	B00268854	112	1.65	3.93	0.09	1.45
97.80	**108.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	97.80	98.80	1.00	B00268855	38.3	0.556	1.21	0.13	2.1
97.8 - 108: Unit grades from massive PY+/-MG+/-PO+/-CP+/-SP near the top to massive PY+SP+GL+CA near the bottom.													
<<Min: 103 - 109.3 2% Min: Calcite>>					98.80	99.80	1.00	B00268856	79.6	0.881	1.67	0.45	1.67
<<Min: 106.4 - 107.2 30% Min: Sphalerite>>					99.80	100.80	1.00	B00268857	69.3	0.528	0.63	0.63	1.26
<<Min: 106.4 - 107.2 10% Min: Galena>>					100.80	101.80	1.00	B00268858	50.3	0.553	0.65	0.3	1.21
					101.80	102.60	0.80	B00268859	47.8	0.626	0.74	0.22	2.25
					102.60	103.50	0.90	B00268861	78.9	0.723	0.41	0.95	2.2
					103.50	104.40	0.90	B00268862	93.4	1.44	0.29	0.69	5.59
					104.40	105.40	1.00	B00268863	148	2.77	0.36	1.2	6.2
					105.40	106.40	1.00	B00268864	46.9	1.39	0.14	0.74	5.59
					106.40	107.20	0.80	B00268865	340	2.3	0.45	5.75	15.5
					107.20	108.00	0.80	B00268866	300	2.64	0.75	2.14	6.98
108.00	**108.70**	**OI**	**Heavilly disseminated sulphides in host schist**		108.00	108.70	0.70	B00268867	101	1.13	0.29	0.37	1.94
108 - 108.7: Heavily disseminated PY+SP+GL within intensely altered Mu schist													
<<Alt: 108 - 108.7 Intense (Alt) Muscovite>>													
108.70	**109.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	108.70	109.30	0.60	B00268868	184	0.427	0.17	4.46	15.2
108.7 - 109.3: laminated PY+SP+GL with cg PY buckshot texture													
<<Min: 108.7 - 109.3 20% Min: Sphalerite>>													
<<Min: 108.7 - 109.3 5% Min: Galena>>													
<<Struc: 108.85 - 108.86 dominant foliation>> sulphide lamination													

From (m)	To (m)		Rocktype & Description
109.30	**109.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**

109.3 - 109.9: Massive PO net textured with blebs of CP+/-AS+/-TT with disseminated cg MG

<<Min: 109.3 - 109.9 60% Min: Pyrrhotite>>
<<Min: 109.3 - 109.9 5% Min: Chalcopyrite>>
<<Min: 109.3 - 109.9 5% Min: Arsenopyrite>>
<<Alt: 109.6 - 111.4 Moderate (Alt) Chlorite>>

109.90	**111.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**

109.9 - 111.4: Dark green-black CL+Talc (?) schist with stringers of PY+SP+/-GL

111.40	**117.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

111.4 - 117.3: CL+CA+BI schist with pervasive foliation

<<Min: 111.4 - 116.6 0.5% Min: Pyrrhotite>>
<<Min: 111.4 - 117.3 20% Min: Calcite>>
<<Min: 116.6 - 117.1 5% Min: Pyrrhotite>>
<<Min: 116.6 - 117.1 3% Min: Chalcopyrite>>
<<Min: 117.1 - 149 1% Min: Sphalerite>>
<<Min: 117.1 - 149 2% Min: Pyrite>>
<<Alt: 111.4 - 111.7 Moderate (Alt) Muscovite>>
<<Alt: 111.7 - 117 Strong (Alt) Chlorite>>
<<Alt: 111.7 - 117 Strong (Alt) Biotite>>
<<Alt: 116.6 - 117 Strong (Alt) Chlorite>> Bands of intense CL-alteration associated with PO+CP mineralization
<<Alt: 117 - 117.3 Strong (Alt) Silicification>> alteration associated with RHYi
<<Alt: 117 - 117.3 Strong (Alt) Muscovite>> alteration associated with RHYi
<<Struc: 113.1 - 113.11 dominant foliation>> continuous foliation defined by elongated CA+CL+BI

117.30	**149.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

117.3 - 149: Light grey QZ+MU schist with continuous MU foliation from 117.3- ~125 m. From 125-149 m the unit is a light grey massive aphanitic rhyolite, with QZ amygdules. Fractures containing PY+SP throughout the unit.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.30	109.90	0.60	B00268869	137	2.58	1.04	2.6	8.52
109.90	110.80	0.90	B00268872	12.4	-0.005	0.08	0.23	1.38
110.80	111.40	0.60	B00268873	29.7	0.013	0.14	0.81	4.33
111.40	112.90	1.50	B00268874	1.9	0.008	0.02	0.09	0.2
112.90	114.40	1.50	B00268875	0.5	-0.005	-0.01	-0.01	0.02
114.40	115.90	1.50	B00268876	0.3	-0.005	-0.01	-0.01	0.02
115.90	116.60	0.70	B00268877	-0.3	-0.005	-0.01	0.02	0.05
116.60	117.00	0.40	B00268878	13.6	0.071	0.89	0.01	0.31
117.00	118.50	1.50	B00268879	4.2	0.015	-0.01	0.08	0.11
118.50	120.00	1.50	B00268881	6.7	0.042	-0.01	0.04	0.09

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 117.3 - 149 5% Min: Calcite>>

<<Vein: 127.5 - 127.7 90% Quartz>> Massive QZ-carb vein with cg recrystallized SP

<<Vein: 133.4 - 133.9 95% Quartz>> Massive QZ vein

<<Struc: 118 - 118.01 dominant foliation>> continuous MU foliation

<<Struc: 124.4 - 124.41 dominant foliation>> continuous MU foliation

End of Hole @ 149

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-274

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Trevor Rabb
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	24-Sep-15
UTM Easting	414675.436	Core Size:	NQ3	Azimuth:	180.5	Date Logging Complete:	25-Sep-15
UTM Northing:	6815455.273	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1425.019	Casing Depth (m):	7.5	Length (m):	128	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

Parent hole for K15-276 (metallurgical twin hole). Upper portion of hole contains MDSw and MDSc and grades into RHYv and RHYc. Prior to intersecting the main ABM massive sulphide body, hole intersected perched lenses of massive sulphides and also stringer style mineralization (sub-economic?). MAFi was also intersected in footwall - similar to K15-272.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.5	0	180.5	APS	Trevor Rabb	23-Sep-15		☐	
26	-69.6	156.3	22.5	178.8	ReflexEZS	Geotech	23-Sep-15	5822	☑	
50	-69.3	166.6	22.5	189.1	ReflexEZS	Geotech	23-Sep-15	6109	☐	Values not accepted, high magnetic field
74	-69.2	157.4	22.5	179.9	ReflexEZS	Geotech	24-Sep-15	5728	☑	
101	-69.6	158.2	22.5	180.7	ReflexEZS	Geotech	24-Sep-15	5646	☑	
125	-69.3	158.1	22.5	180.6	ReflexEZS	Geotech	24-Sep-15	5730	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.50**	**OVBN** **Overburden**									
7.50	**14.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
14.00	**16.60**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 14 - 16.6 5% Min: Pyrite>> euhedral (diagenetic) py											
<<Struc: 14 - 16 Strong (Alt) Fault>> lost core, unconsolidated fault gouge.											
16.60	**18.60**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
18.60	**22.80**	**RHYc** **Rhyolite coherant volcanics**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 19 - 22.8 Weak (Alt) Muscovite>>									
22.80	**24.00**	**MDSc** **Carbonaceous dominant mudstone**									
		22.8 - 24: interbedded MDSt with MDSc. Two deformed sequences of fining upward grading from MDSc (<30cm) to MDSt (majority of interval).									
24.00	**24.80**	**MDSc** **Carbonaceous dominant mudstone**									
24.80	**26.80**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
		24.8 - 26.8: Flow textures become more dominant downhole. Significant carbonaceous component (15%) and whispy carbonaceous controlled sulphides.									
		<<Min: 26 - 27 2% Min: Pyrite>>									
26.80	**30.53**	**RHYc** **Rhyolite coherant volcanics**									
30.53	**34.10**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
		<<Min: 32 - 34.9 2% Min: Pyrite>>									
		<<Min: 32 - 34.9 2% Min: Pyrrhotite>>									
		<<Alt: 33.8 - 39.7 Weak-Moderate (Alt) Muscovite>>									
34.10	**34.80**	**RHYc** **Rhyolite coherant volcanics**	34.10	35.60	1.50	B00268176	1.6	0.011	-0.01	0.01	0.09
34.80	**39.70**	**RHYv** **Rhyolite volcaniclastic**	35.60	37.10	1.50	B00268177	1	0.006	-0.01	-0.01	-0.01
		<<Min: 39.5 - 42 2% Min: Calcite>>	37.10	38.60	1.50	B00268178	1.3	0.007	-0.01	-0.01	-0.01
		<<Vein: 39.6 - 46.8 30% Quartz-Carbonate>> late quartz veining, interstitial to wall rock. Vein selvages and wallrock boundaries show early cpy mantled by po.	38.60	39.60	1.00	B00268179	1.1	-0.005	-0.01	-0.01	0.01
			39.60	40.60	1.00	B00268181	29.3	0.021	0.98	0.03	0.09
39.70	**40.00**	**OI** **Heavilly disseminated sulphides in host schist**									
		<<Min: 39.7 - 44.7 1% Min: Pyrite>>									
		<<Min: 39.7 - 44.7 1% Min: Pyrrhotite>>									
		<<Min: 39.7 - 44.7 0.2% Min: Galena>> associated with cp+po									
		<<Min: 39.7 - 44.7 1% Min: Chalcopyrite>> hosted in quartz veins and margins of intruded massive sulphides (xenoliths?)									
40.00	**42.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	40.60	41.60	1.00	B00268182	13.3	0.017	0.45	0.03	0.05

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 42 - 46.5 10% Min: Calcite>> calcite after cordierite	41.60	42.40	0.80	B00268183	8.4	0.009	0.29	0.01	0.05
			<<Struc: 41.8 - 41.81 dominant foliation>>									
			<<Struc: 41.81 - 41.82 Foliation>>									
42.40	**43.80**	**OI**	**Heavilly disseminated sulphides in host schist**	42.40	43.80	1.40	B00268184	37.2	0.102	1.5	0.21	0.52
			<<Alt: 42.4 - 43.8 Moderate (Alt) Cordierite>> calcite after cordierite, patchy coarse grained throughout.									
			<<Struc: 43.09 - 43.1 Vein>>									
43.80	**44.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	43.80	44.70	0.90	B00268185	36.2	0.149	0.77	0.8	1.9
44.30	**44.70**	**OI**	**Heavilly disseminated sulphides in host schist**									
44.70	**46.50**	**RHY**	**undifferentiated rhyolite**	44.70	45.70	1.00	B00268186	7.8	0.036	0.39	0.02	0.07
			<<Min: 44.7 - 46.5 0.1% Min: Pyrite>>	45.70	46.50	0.80	B00268187	6.1	0.031	0.2	0.03	0.06
			<<Min: 44.7 - 46.5 0.5% Min: Pyrrhotite>>									
			<<Min: 44.7 - 46.5 0.1% Min: Galena>>									
			<<Min: 44.7 - 46.5 0.2% Min: Chalcopyrite>>									
			<<Alt: 44.7 - 46.5 Moderate-Strong (Alt) Chlorite>>									
46.50	**49.10**	**RHYv**	**Rhyolite volcaniclastic**	46.50	47.50	1.00	B00268188	1.1	0.006	-0.01	0.01	0.02
			<<Min: 46.5 - 51 2% Min: Calcite>>	47.50	48.50	1.00	B00268189	0.8	-0.005	-0.01	-0.01	-0.01
			<<Alt: 46.5 - 59 Moderate (Alt) Muscovite>>	48.50	50.00	1.50	B00268191	0.7	0.025	-0.01	-0.01	0.01
49.10	**49.30**	**OI**	**Heavilly disseminated sulphides in host schist**									
49.30	**52.35**	**RHYv**	**Rhyolite volcaniclastic**	50.00	51.50	1.50	B00268192	48.8	0.31	0.17	0.02	0.04
				51.50	52.55	1.05	B00268193	0.8	0.01	-0.01	-0.01	-0.01
52.35	**52.55**	**MDSc**	**Carbonaceous dominant mudstone**									
			52.35 - 52.55: discrete interval of graphitic MDSc. Sharp LCT, convoluted UCT.									
52.55	**56.20**	**MDSt**	**Rhyolite tuff dominant mudstone**	52.55	54.00	1.45	B00268194	2.3	0.015	-0.01	0.01	0.02
			<<Alt: 54.5 - 59 Strong (Alt) Albite>>	54.00	56.00	2.00	B00268195	1.8	0.012	-0.01	-0.01	-0.01
			<<Struc: 54.75 - 56.25 Weak-Moderate (Alt) Fault>> unconsolidated fault gouge	56.00	57.50	1.50	B00268196	1.7	0.012	-0.01	0.01	0.02
56.20	**57.30**	**RHYc**	**Rhyolite coherant volcanics**									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 57 - 57.5 Weak (Alt) Fault>> consolidated fault gouge													
57.30	**59.00**	**RHYv**	**Rhyolite volcaniclastic**		57.50	59.00	1.50	B00268197	8.3	0.057	0.27	0.07	0.43
59.00	**60.10**	**OA**	**Magnetite bearing sulphides**	**FMG**	59.00	60.10	1.10	B00268198	88.6	0.898	1.3	1.12	10
<<Min: 59 - 60.1 4% Min: Sphalerite>>													
<<Min: 59 - 60.1 2% Min: Chalcopyrite>>													
<<Min: 59 - 61 40% Min: Pyrite>>													
<<Min: 59 - 61 10% Min: Pyrrhotite>>													
60.10	**61.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	60.10	61.00	0.90	B00268199	70.8	0.296	0.26	0.91	11.4
<<Min: 60.1 - 61 2% Min: Galena>>													
61.00	**62.80**	**OA**	**Magnetite bearing sulphides**	**FG**	61.00	62.00	1.00	B00268202	62.3	0.675	0.99	0.67	5.52
<<Min: 61 - 62.8 2% Min: Sphalerite>>					62.00	62.80	0.80	B00268203	97.6	0.662	0.52	1.74	5.56
<<Min: 61 - 62.8 30% Min: Pyrite>>													
<<Min: 61 - 62.8 10% Min: Pyrrhotite>>													
<<Min: 61 - 62.8 0.5% Min: Chalcopyrite>>													
62.80	**64.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	62.80	64.00	1.20	B00268204	138	1.32	0.61	0.94	6.63
<<Min: 62.8 - 63.5 5% Min: Magnetite>> 1-5mm aggregates of mt. wains towards end of interval.					64.00	65.00	1.00	B00268205	269	3.73	0.6	2.92	11.1
<<Min: 62.8 - 66 8% Min: Sphalerite>>													
<<Min: 62.8 - 66 3% Min: Galena>>													
<<Min: 62.8 - 66 2% Min: Chalcopyrite>>													
<<Struc: 64.12 - 64.13 dominant foliation>>													
64.70	**66.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	65.00	66.00	1.00	B00268206	350	2.61	0.4	3.1	10
<<Struc: 65.58 - 65.59 dominant foliation>>													
66.00	**74.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		66.00	67.50	1.50	B00268207	30.5	0.466	0.06	0.19	0.69
<<Min: 66 - 81.05 5% Min: Sphalerite>> vein controlled					67.50	69.00	1.50	B00268208	18	0.2	0.08	0.02	0.08
<<Min: 66 - 81.05 0.2% Min: Chalcopyrite>>					69.00	70.50	1.50	B00268209	6.5	0.136	0.16	0.02	0.21
<<Alt: 66 - 74.1 Strong (Alt) Muscovite>>					70.50	72.00	1.50	B00268211	8.1	0.097	0.18	0.03	0.03

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 72.6 - 74.1 Moderate-Strong (Alt) Cordierite>>					72.00	73.50	1.50	B00268212	0.7	0.034	-0.01	-0.01	0.03
<<Vein: 66.5 - 68.8 10% Quartz>> irregular quartz carbonate veining					73.50	74.10	0.60	B00268213	0.4	-0.005	-0.01	-0.01	0.02
<<Vein: 66.5 - 74.1 60% Quartz-Carbonate>>													
<<Vein: 72.03 - 72.3 100% Quartz>>													
<<Struc: 66.8 - 66.9 Weak (Alt) Fault>> consolidated fault gouge													
74.10	**81.05**	**RHY**	**undifferentiated rhyolite**		74.10	75.50	1.40	B00268214	9.2	0.119	0.19	0.01	0.03
74.1 - 81.05: dk-med green - tan, pervasive chlorite altered, pervasive cordierite porphyroblasts (coarse grained, anhedral), variably mixed with underlying rock type towards LCT and UCT (RHYc + RHYv). Chaotic texture throughout.													
<<Alt: 74.1 - 80.2 Strong (Alt) Cordierite>>					75.50	77.00	1.50	B00268215	1.2	0.012	0.01	0.01	0.03
<<Alt: 74.1 - 84.4 Moderate-Strong (Alt) Muscovite>>					77.00	78.50	1.50	B00268216	2.8	0.012	0.02	0.02	0.05
<<Alt: 74.1 - 84.4 Moderate-Strong (Alt) Chlorite>> Pervasive chlorite alteration, wains uphole and downhole					78.50	80.00	1.50	B00268217	0.8	-0.005	-0.01	0.01	0.03
<<Vein: 75.8 - 76.35 100% Quartz>>					80.00	81.50	1.50	B00268218	0.5	-0.005	-0.01	-0.01	0.02
<<Vein: 77.3 - 78.2 100% Quartz>>													
<<Struc: 77.1 - 77.11 dominant foliation>>													
<<Struc: 78.24 - 78.25 dominant foliation>>													
<<Struc: 78.43 - 78.44 dominant foliation>>													
<<Struc: 78.49 - 78.5 dominant foliation>>													
<<Struc: 78.68 - 78.69 dominant foliation>>													
<<Struc: 80.34 - 80.35 dominant foliation>>													
81.05	**84.40**	**RHYvl**	**Lapilli tuff**		81.50	83.00	1.50	B00268219	1	0.013	-0.01	-0.01	0.01
<<Vein: 83.9 - 84.4 85% Quartz>>					83.00	84.40	1.40	B00268221	0.5	0.341	-0.01	-0.01	0.02
<<Struc: 82.76 - 82.77 dominant foliation>>													
<<Struc: 83.12 - 83.13 dominant foliation>>													
84.40	**94.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	84.40	85.40	1.00	B00268222	165	3.42	0.52	1.67	10.6
<<Min: 84.4 - 86.5 3% Min: Sphalerite>>					85.40	86.40	1.00	B00268223	149	1.94	0.39	2	14.1
<<Min: 84.4 - 86.5 60% Min: Pyrite>>					86.40	87.40	1.00	B00268224	209	1.85	0.31	5.04	13.9
<<Min: 84.4 - 86.5 2% Min: Galena>>					87.40	88.40	1.00	B00268225	293	2.08	0.5	7.28	14.3
<<Min: 86.5 - 90.5 15% Min: Sphalerite>>					88.40	89.40	1.00	B00268226	181	2.06	0.26	4.22	8.68
<<Min: 86.5 - 90.5 5% Min: Galena>>					89.40	90.40	1.00	B00268227	154	2.1	1.44	3.87	18.7
<<Min: 86.5 - 90.5 5% Min: Chalcopyrite>>					90.40	91.40	1.00	B00268228	122	1.15	0.29	4.05	7.87
<<Min: 86.5 - 90.6 50% Min: Pyrite>>					91.40	92.40	1.00	B00268229	128	1.56	0.52	3.05	8.93

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 90.6 - 96 5% Min: Sphalerite>>					92.40	93.40	1.00	B00268231	82.5	0.934	0.35	1.79	8.86
<<Min: 90.6 - 96 65% Min: Pyrite>>					93.40	94.40	1.00	B00268232	108	1.38	0.56	1.66	4.97
<<Min: 90.6 - 96 2% Min: Galena>>													
<<Min: 90.6 - 96 1% Min: Chalcopyrite>>													
<<Struc: 87.72 - 87.73 dominant foliation>>													
<<Struc: 88.73 - 88.74 dominant foliation>>													
<<Struc: 89.9 - 89.91 dominant foliation>>													
<<Struc: 91.96 - 91.97 dominant foliation>>													
<<Struc: 93.86 - 93.87 dominant foliation>>													
94.40	**95.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	94.40	95.50	1.10	B00268233	211	2.54	0.89	2.06	3.56
95.50	**98.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	95.50	96.50	1.00	B00268234	112	0.92	0.34	3.3	8.42
<<Min: 95.5 - 98.8 5% Min: Calcite>> veinlets					96.50	97.50	1.00	B00268235	124	1.28	0.39	3.69	8.81
<<Min: 96 - 98.8 10% Min: Sphalerite>>					97.50	98.25	0.75	B00268236	149	1.12	0.36	3.35	8.01
<<Min: 96 - 98.8 40% Min: Pyrite>>					98.25	98.80	0.55	B00268237	136	0.684	0.1	3.17	9.79
<<Min: 96 - 98.8 5% Min: Galena>>													
<<Min: 96 - 98.8 1% Min: Chalcopyrite>>													
<<Struc: 96.72 - 96.73 dominant foliation>>													
<<Struc: 97.92 - 97.93 dominant foliation>>													
98.80	**102.90**	**RHYv**	**Rhyolite volcaniclastic**	**VFG**	98.80	101.00	2.20	B00268238	17.4	0.087	0.01	0.25	0.93
<<Alt: 98.8 - 107.65 Weak (Alt) Muscovite>>					101.00	102.50	1.50	B00268239	1.7	0.012	-0.01	0.03	0.07
<<Struc: 98.8 - 99 Weak-Moderate (Alt) Fault>> soft unconsolidated gouge					102.50	104.00	1.50	B00268241	1	0.009	-0.01	0.02	0.05
<<Struc: 101.3 - 101.5 Moderate (Alt) Fault>> soft unconolsidated gouge													
102.90	**105.20**	**RHYc**	**Rhyolite coherant volcanics**		104.00	105.50	1.50	B00268242	1.1	0.007	-0.01	0.01	0.02
<<Min: 105 - 105.8 5% Min: Pyrite>>													
<<Vein: 103.3 - 106.86 20% Quartz-Carbonate>>													
105.20	**107.40**	**RHYv**	**Rhyolite volcaniclastic**		105.50	107.00	1.50	B00268243	8.4	0.052	-0.01	0.1	0.16
<<Struc: 106.97 - 106.98 dominant foliation>>													
107.40	**107.65**	**RHYi**	**Aphanitic Rhyolite (intrusion)**										

From (m)	To (m)	Rocktype & Description
107.65	**108.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 107.65 - 116.5 10% Min: Calcite>>
108.30	**111.20**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		<<Vein: 111 - 111.2 85% Quartz>> qz+wallrock
		<<Struc: 108.3 - 108.31 dominant foliation>>
		<<Struc: 110.8 - 110.81 dominant foliation>>
111.20	**111.75**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Alt: 111.2 - 111.75 Moderate (Alt) Chlorite>>
111.75	**114.60**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		<<Alt: 111.75 - 114.6 Weak (Alt) Muscovite>> patchy cr-mica, becomes str towards LCT
		<<Struc: 112.69 - 112.7 dominant foliation>>
114.60	**115.85**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Alt: 114.6 - 115.85 Moderate (Alt) Chlorite>>
115.85	**116.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**
116.50	**128.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		<<Min: 116.5 - 128 20% Min: Calcite>>
		<<Alt: 116.5 - 117.7 Moderate (Alt) Chlorite>>
		<<Alt: 117.7 - 118.6 Moderate (Alt) Muscovite>> cr-mica
		<<Alt: 118.6 - 119.35 Moderate (Alt) Chlorite>>
		<<Alt: 119.35 - 121.5 Moderate (Alt) Muscovite>> cr-mica
		<<Alt: 121.5 - 128 Moderate (Alt) Chlorite>>
		<<Vein: 125.13 - 125.5 90% Chlorite>>
		<<Struc: 118.32 - 118.33 dominant foliation>>

End of Hole @ 128

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-275

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	27-Sep-15
UTM Easting	415051.127	Core Size:	HQ3	Azimuth:	180.75	Date Logging Complete:	29-Sep-15
UTM Northing:	6815507.001	Casing Pulled?:	Yes	Dip:	-71.5	Drill Company:	Geotech
UTM Elev. (m):	1382.274	Casing Depth (m):	9	Length (m):	122	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	25-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	29-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-273

Comments:

K15-275 was drilled as a metallurgical twin of K15-273 in order to collect samples of the MET8, MET3, and MET7 domains.
The hanging wall package (9.7-91.1 m) consists of mixed felsic volcanics with a mudstone horizon from 41.8-43.7 m. Strong MU-alteration became visible at ~47.5 m and graded into stronger CL+CI in the ore zone. MSXS was encountered from 91.1-109 m, consisting of OJ, OC, OA, OF, and OB. In the footwall there is a rhyolitic volcaniclastic unit from 109-110.4, a CL-CA-BI schist (MAFi) from 110.4-116.8 m, and RHYi from 116.8-122 m (EOH). A local band of CL-alteration with SP and PO+PY+CP stringers is present within the MAFi unit.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-71.5	180.75	0	180.75	APS	Dillon Hume	25-Aug-15		☑	
17	-72	157.3	22.5	179.8	ReflexEZS	Geotech	25-Aug-15	5803	☑	
47	-71.3	157.2	22.5	179.7	ReflexEZS	Geotech	26-Aug-15	5724	☑	
77	-70.9	161.1	22.5	183.6	ReflexEZS	Geotech	26-Aug-15	5725	☑	
107	-70.4	177.3	22.5	199.8	ReflexEZS	Geotech	28-Aug-15	5713	☑	
122	-70.7	163.8	22.5	186.3	ReflexEZS	Geotech	28-Aug-15	5821	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.70 OVBN Overburden

9.70 14.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

9.7 - 14.4: Medium grey, flow banded rhyolite with MU+QZ groundmass

<<Min: 9.7 - 41.8 3% Min: Pyrite>>

<<Min: 9.7 - 41.8 1% Min: Pyrrhotite>>

<<Min: 9.7 - 98.8 0.5% Min: Calcite>> trace CA

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

14.40 15.70 RHYvl Lapilli tuff

14.4 - 15.7: rhyolitic and minor lithic lpl within a QZ+MU groundmass

15.70 24.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

15.7 - 24.4: Good curdy and flow banded rhyolite with local zones of volcaniclastic textures

<<Alt: 15.7 - 33.3 Weak (Alt) Muscovite>>

24.40 29.00 RHYvl Lapilli tuff

24.4 - 29: Unit is dominated by rhyolitic and lithic lpl within a QZ+MU groundmass, but locally displays flow banded or curdy textures

29.00 29.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

29 - 29.8: Good curdy and flow banded rhyolite

29.80 35.20 RHYvl Lapilli tuff

29.8 - 35.2: Unit is dominated by rhyolitic and lithic lpl within a MU+QZ groundmass

<<Alt: 33.3 - 47.5 Moderate (Alt) Muscovite>>

35.20 41.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

35.2 - 41.8: Good curdy and flow banded rhyolite with local volcaniclastic textures (lpl)

41.80 43.70 MDSc Carbonaceous dominant mudstone

41.8 - 43.7: Carbonaceous mudstone with ~40-50% tuffaceous material

<<Min: 41.8 - 43.7 4% Min: Pyrrhotite>>

43.70 47.50 RHYv Rhyolite volcaniclastic

43.7 - 47.5: Tuffaceous rhyolite with minor rhyolitic lpl

<<Min: 43.7 - 91.1 2% Min: Pyrite>>

<<Min: 43.7 - 91.1 3% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
47.50	**91.10**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		86.10	87.10	1.00						

47.5 - 91.1: Unit is dominated by rhyolitic flow bands with yellow-green MU cleavages

<<Alt: 47.5 - 91.1 Strong (Alt) Muscovite>>	87.10	88.10	1.00
<<Vein: 77.5 - 78.2 25% Quartz>> QZ-TML vein at a high angle to core axis	88.10	89.10	1.00
<<Vein: 87.1 - 88.8 30% Quartz>> Zone of QZ veining	89.10	90.10	1.00
<<Struc: 54.6 - 57 Fault>> weak-moderately fractured rhyolite	90.10	91.10	1.00

91.10	**92.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		91.10	92.00	0.90						

91.1 - 92: Heavily disseminated to blebby CP+PO+PY within dark CI-porphyroblastic CL+MU groundmass.

<<Min: 91.1 - 92 10% Min: Pyrrhotite>>

<<Min: 91.1 - 92 10% Min: Chalcopyrite>>

<<Alt: 91.1 - 92 Weak (Alt) Chlorite>>

<<Alt: 91.1 - 92.1 Weak (Alt) Cordierite>>

92.00	**92.90**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MCG**	92.00	92.90	0.90						

92 - 92.9: banded PO and CP+PY+PO with cg MG disseminated throughout

<<Min: 92 - 92.9 10% Min: Pyrrhotite>>

<<Min: 92 - 92.9 7% Min: Magnetite>>

<<Min: 92 - 92.9 20% Min: Chalcopyrite>>

92.90	**98.80**	**OA**	**Magnetite bearing sulphides**	**MCG**	92.90	94.00	1.10						

92.9 - 98.8: Banded MG+SP+PO and PY+CP+PO with cg MG disseminated throughout. Unit grades from banded MG to disseminated MG (from top to bottom).

<<Min: 92.9 - 98.8 10% Min: Pyrrhotite>>	94.00	95.00	1.00
	95.00	96.00	1.00
	96.00	97.00	1.00
	97.00	98.00	1.00
	98.00	98.80	0.80

98.80	**99.20**	**OF**	**Pyrrhotite rich sulphides**	**MCG**	98.80	99.20	0.40						

98.8 - 99.2: Massive PO with disseminated mg-cg CP+MG

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 98.8 - 99.2 90% Min: Pyrrhotite>>										
			<<Min: 98.8 - 99.2 5% Min: Magnetite>>										
			<<Min: 98.8 - 99.2 2% Min: Chalcopyrite>>										
99.20	**100.60**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**	**FMG**	99.20	100.00	0.80						
			99.2 - 100.6: Fine to medium grained massive PY with 1-10 cm bands of cg PY+MG+CP+SP+PO										
			<<Min: 99.2 - 100.6 1% Min: Pyrrhotite>>		100.00	100.60	0.60						
100.60	**102.90**	**OA**	**Magnetite bearing sulphides**	**MCG**	100.60	101.50	0.90						
			100.6 - 102.9: Disseminated to laminated MG+/-SP+/-PO in massive PY										
			<<Min: 100.6 - 102.9 5% Min: Pyrrhotite>>		101.50	102.40	0.90						
			<<Min: 102.6 - 110.4 0.5% Min: Calcite>>		102.40	102.90	0.50						
102.90	**108.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	102.90	103.80	0.90						
			102.9 - 108.3: Bands of SP+PY+GL and PY. Local disseminated MG and semi-massive PO										
			<<Min: 102.9 - 108.3 20% Min: Sphalerite>>		103.80	104.70	0.90						
			<<Min: 102.9 - 108.3 5% Min: Pyrrhotite>>		104.70	105.60	0.90						
			<<Alt: 106.6 - 106.9 Moderate (Alt) Chlorite>> CL in groundmass of MSXS		105.60	106.50	0.90						
			<<Alt: 108.1 - 108.4 Moderate (Alt) Chlorite>> CL-after-CI porphyroblasts		106.50	107.40	0.90						
					107.40	108.30	0.90						
108.30	**109.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		108.30	109.00	0.70						
			108.3 - 109: Heavily disseminated to blebby PY+PO+CP+GL+SP in a CL+MS+QZ+/-CI schist										
			<<Min: 108.3 - 108.4 10% Min: Chalcopyrite>>										
			<<Min: 108.3 - 110.4 2% Min: Pyrite>>										
			<<Min: 108.3 - 110.4 2% Min: Pyrrhotite>>										
			<<Min: 108.4 - 109 5% Min: Galena>>										
			<<Alt: 108.4 - 110.4 Moderate (Alt) Muscovite>>										
			<<Alt: 108.4 - 110.4 Weak (Alt) Chlorite>> Weak CL alteration. Maybe overprinted?										

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.00	**110.40**	**RHYvl**	**Lapilli tuff**	109.00	109.80	0.80						
109 - 110.4: MU+QZ+CL schist with local lpl textures												
<<Vein: 109.2 - 109.8 30% Quartz>> Zone of QZ-AK veining				109.80	110.40	0.60						
110.40	**110.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	110.40	110.90	0.50						
<<Min: 110.4 - 116.8 20% Min: Calcite>>												
<<Alt: 110.4 - 110.9 Strong (Alt) Chlorite>>												
<<Alt: 110.4 - 110.9 Moderate (Alt) Biotite>>												
<<Struc: 110.7 - 111 Fault>> Weak-moderately faulted zone												
110.90	**111.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	110.90	111.40	0.50						
110.9 - 111.4: Bands of strongly CL-altered MAFi with SP stringers												
<<Min: 110.9 - 111.4 5% Min: Sphalerite>>												
<<Alt: 110.9 - 111.4 Moderate (Alt) Chlorite>> Banded CL-alteration in MAFi												
111.40	**115.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	111.40	112.40	1.00						
111.4 - 115.8: CL+CA+BI schist with a discontinuous foliation defined by CA blebs												
<<Min: 111.4 - 115.8 0.5% Min: Pyrrhotite>>				112.40	113.40	1.00						
<<Alt: 111.4 - 115.8 Strong (Alt) Chlorite>>				113.40	114.40	1.00						
<<Alt: 111.4 - 115.8 Strong (Alt) Biotite>>				114.40	115.10	0.70						
				115.10	115.80	0.70						
115.80	**116.20**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	115.80	116.20	0.40						
115.8 - 116.2: Bands of moderately CL-altered MAFi with blebby PO+/-PY+/-CP												
<<Min: 115.8 - 116.2 1% Min: Pyrite>>												
<<Min: 115.8 - 116.2 5% Min: Pyrrhotite>>												
<<Min: 115.8 - 116.2 0.5% Min: Chalcopyrite>>												
<<Alt: 115.8 - 116.2 Weak (Alt) Chlorite>> Banded CL-alteration in MAFi												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
116.20	**116.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	116.20	116.80	0.60						

116.2 - 116.8: CL+CA+BI schist

<<Alt: 116.2 - 116.8 Strong (Alt) Chlorite>>

<<Alt: 116.2 - 116.8 Strong (Alt) Biotite>>

116.80	**122.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**	116.80	117.80	1.00						

116.8 - 122: Well foliated MU+QZ schist with fg CA porphyroblasts and QZ amygdules

<<Min: 116.8 - 122 2% Min: Pyrite>> 117.80 118.80 1.00

<<Min: 116.8 - 122 2% Min: Calcite>>

<<Alt: 116.8 - 122 Strong (Alt) Silicification>>

<<Alt: 116.8 - 122 Strong (Alt) Muscovite>>

End of Hole @ 122

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-276

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	26-Sep-15
UTM Easting	414675.458	Core Size:	HQ3	Azimuth:	180.22	Date Logging Complete:	28-Sep-15
UTM Northing:	6815453.463	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1425.014	Casing Depth (m):	7.5	Length (m):	110	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	25-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	26-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-274

Comments:

This hole is a daughter hole for K15-274 (metallurgical twin hole). Upper portion of hole contains RHYc, RHYcw, MDSw and MDSc and grades into RHYc and RHYv. Prior to intersecting the main ABM massive sulphide body, hole intersected perched lenses of massive sulphides and stringer style mineralization. The two lenses of massive sulphide were separated by strongly CI, CL altered RHYcw. Below the perched lenses the hole intersected RHYv, and MDSt and MAFi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.22	0	180.22	APS	Trevor Rabb	25-Sep-15		☑	
26	-69.9	162.7	22.5	185.2	ReflexEZS	Geotech	25-Sep-15	5781	☑	
74	-69.8	160.9	22.5	183.4	ReflexEZS	Geotech	26-Sep-15	5698	☑	
101	-69.9	158.2	22.5	180.7	ReflexEZS	Geotech	26-Sep-15	5621	☑	
110	-69.7	159.8	22.5	182.3	ReflexEZS	Geotech	26-Sep-15	5645	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.38**	**OVBN** **Overburden**									
6.38	**15.95**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
15.95	**16.84**	**MDSc** **Carbonaceous dominant mudstone**									
<<Min: 15.95 - 31.67 0.5% Min: Pyrite>>											
16.84	**20.30**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Alt: 16.84 - 20.3 Weak (Alt) Muscovite>>											
<<Vein: 19.23 - 19.52 90% Quartz-Carbonate 20 deg. >>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
20.30	**20.60**	**MDSc** **Carbonaceous dominant mudstone**									
20.60	**22.20**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
22.20	**23.40**	**MDSc** **Carbonaceous dominant mudstone**									
23.40	**32.93**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 31.67 - 35.07 4% Min: Pyrite>>											
<<Struc: 24.72 - 25 Moderate (Alt) Fault>> Narrow faults filled with broken rock and trace gouge. Spaced cm's apart. Low intensity.											
<<Struc: 31.02 - 31.32 Weak (Alt) Fault>> Narrow faults filled gouge and broken rock. Spaced cm's apart. Moderate intensity.											
32.93	**35.07**	**RHYc** **Rhyolite coherant volcanics**									
<<Alt: 32.93 - 43.57 Moderate (Alt) Muscovite>>											
35.07	**43.34**	**RHYv** **Rhyolite volcaniclastic**	38.50	39.50	1.00						
<<Min: 35.07 - 41.73 0.5% Min: Pyrite>>			39.50	40.50	1.00						
<<Min: 39.74 - 45.44 1% Min: Calcite>>			40.50	41.50	1.00						
<<Min: 41.73 - 43.34 5% Min: Pyrite>>			41.50	42.50	1.00						
<<Alt: 37.07 - 41.73 Weak (Alt) Chlorite>>			42.50	43.34	0.84						
<<Alt: 41.73 - 45.22 Moderate (Alt) Chlorite>>											
<<Vein: 39.74 - 43.34 7% Quartz-Carbonate-Sulphide 15 deg. >> QZ-CA-CL-PY-PO-SP-CP-GL											
43.34	**43.57**	**OI** **Heavilly disseminated sulphides in host schist**	43.34	44.33	0.99						
<<Min: 43.34 - 43.57 0.01% Min: Sphalerite>>											
<<Min: 43.34 - 43.57 2% Min: Pyrrhotite>>											
<<Min: 43.34 - 43.57 5% Min: Chalcopyrite>>											
<<Vein: 43.34 - 45.82 10% Quartz-Carbonate-Sulphide 60 deg. >> QZ-CA-CP-PO-SP-CL-GL. 5% CP											
43.57	**43.75**	**OF** **Pyrrhotite rich sulphides**									
<<Min: 43.57 - 43.75 70% Min: Pyrrhotite>>											
43.75	**44.33**	**OI** **Heavilly disseminated sulphides in host schist**									
<<Min: 43.75 - 44.33 2% Min: Pyrrhotite>>											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 43.75 - 44.33 4% Min: Chalcopyrite>>												
<<Alt: 43.75 - 45.36 Weak (Alt) Cordierite>>												
44.33	**44.65**	**OF**	**Pyrrhotite rich sulphides**	44.33	45.22	0.89						
44.33 - 44.65: MG?												
<<Min: 44.33 - 44.65 80% Min: Pyrrhotite>>												
<<Min: 44.33 - 44.65 2% Min: Magnetite>>												
44.65	**44.94**	**OI**	**Heavilly disseminated sulphides in host schist**									
<<Min: 44.65 - 44.94 4% Min: Pyrrhotite>>												
44.94	**45.22**	**OF**	**Pyrrhotite rich sulphides**									
44.94 - 45.22: MG?												
<<Min: 44.94 - 45.22 60% Min: Pyrrhotite>>												
45.22	**45.82**	**OI**	**Heavilly disseminated sulphides in host schist**	45.22	45.82	0.60						
<<Min: 45.22 - 45.82 2% Min: Pyrrhotite>>												
<<Min: 45.44 - 45.71 10% Min: Calcite>>												
<<Min: 45.71 - 46.6 1% Min: Calcite>>												
<<Alt: 45.22 - 45.82 Strong (Alt) Chlorite>>												
<<Alt: 45.22 - 51.11 Strong (Alt) Muscovite>>												
45.82	**51.77**	**RHYv**	**Rhyolite volcaniclastic**	45.82	46.50	0.68						
<<Min: 45.82 - 51.77 4% Min: Pyrite>>				46.50	47.50	1.00						
<<Min: 45.82 - 51.77 0.01% Min: Chalcopyrite>>				47.50	48.50	1.00						
<<Alt: 51.11 - 53.82 Moderate (Alt) Muscovite>>				48.50	49.50	1.00						
<<Vein: 45.82 - 46.6 4% Quartz-Carbonate-Sulphide 60 deg. >> QZ-CA-CP-PO. 0.01%CP				49.50	50.50	1.00						
51.77	**53.82**	**MDSt**	**Rhyolite tuff dominant mudstone**									
<<Min: 51.77 - 57.11 1% Min: Pyrite>>												
<<Min: 51.77 - 57.11 0.01% Min: Pyrrhotite>>												
53.82	**55.30**	**RHYc**	**Rhyolite coherant volcanics**	53.82	54.50	0.68						
<<Alt: 53.82 - 55.3 Strong (Alt) Muscovite>>				54.50	55.30	0.80						
55.30	**57.52**	**RHYv**	**Rhyolite volcaniclastic**	55.30	56.00	0.70						
<<Min: 57.11 - 57.52 0.01% Min: Pyrite>>				56.00	57.00	1.00						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 57.11 - 57.52 1% Min: Pyrrhotite>>				57.00	57.52	0.52						
<<Alt: 55.3 - 57.52 Moderate (Alt) Muscovite>>												
<<Alt: 56.98 - 57.52 Weak (Alt) Chlorite>>												
<<Alt: 56.98 - 57.52 Trace (Alt) Cordierite>>												
57.52	**57.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	57.52	58.50	0.98						
<<Min: 57.52 - 59.02 10% Min: Pyrrhotite>> Locally SMAS												
<<Alt: 57.52 - 57.6 Moderate (Alt) Chlorite>>												
57.60	**59.02**	**OA**	**Magnetite bearing sulphides**	58.50	59.02	0.52						
<<Min: 57.6 - 62.4 20% Min: Magnetite>>												
59.02	**60.17**	**OA**	**Magnetite bearing sulphides**	59.02	59.50	0.48						
				59.50	60.17	0.67						
60.17	**62.40**	**OA**	**Magnetite bearing sulphides**	60.17	60.75	0.58						
				60.75	61.50	0.75						
				61.50	62.40	0.90						
62.40	**64.98**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	62.40	63.00	0.60						
<<Min: 62.4 - 64.98 0.01% Min: Magnetite>>				63.00	64.00	1.00						
				64.00	64.98	0.98						
64.98	**66.09**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	64.98	65.50	0.52						
<<Alt: 64.98 - 66.09 Moderate (Alt) Chlorite>>				65.50	66.09	0.59						
<<Alt: 64.98 - 66.09 Weak (Alt) Cordierite>>												
66.09	**74.09**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	66.09	67.00	0.91						
<<Min: 66.09 - 73.48 0.01% Min: Chalcopyrite>> DIS				67.00	68.00	1.00						
<<Min: 66.09 - 74.09 0.01% Min: Sphalerite>> VN, BL				68.00	69.00	1.00						
<<Min: 66.09 - 74.09 2% Min: Pyrite>> FD				69.00	70.00	1.00						
<<Min: 66.09 - 74.09 0.01% Min: Pyrrhotite>>				70.00	71.00	1.00						
<<Min: 66.09 - 74.09 0.01% Min: Galena>> DIS												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 73.48 - 73.77 1% Min: Chalcopyrite>>									
		<<Alt: 66.09 - 71.54 Weak (Alt) Chlorite>>									
		<<Alt: 71.54 - 74.09 Moderate (Alt) Chlorite>>									
		<<Alt: 71.54 - 74.09 Strong (Alt) Cordierite>>									
		<<Vein: 66.09 - 74.09 40% Quartz-Carbonate-Sulphide 30 deg. >> QZ-AK-PY-SP-GL-CP									
74.09	**80.67**	**RHY undifferentiated rhyolite**	79.67	80.67	1.00						
		<<Min: 74.09 - 76.55 0.01% Min: Sphalerite>>									
		<<Min: 74.09 - 76.55 0.01% Min: Pyrite>>									
		<<Min: 74.09 - 76.55 0.01% Min: Galena>>									
		<<Min: 74.09 - 76.55 0.01% Min: Chalcopyrite>>									
		<<Min: 76.55 - 80.67 2% Min: Pyrite>>									
		<<Min: 76.55 - 80.67 0.5% Min: Pyrrhotite>>									
		<<Alt: 75.58 - 75.9 Strong (Alt) Muscovite>>									
		<<Alt: 75.58 - 75.9 Moderate (Alt) Chlorite>>									
		<<Alt: 75.58 - 75.9 Strong (Alt) Cordierite>>									
		<<Alt: 76.55 - 77.89 Strong (Alt) Chlorite>>									
		<<Alt: 76.55 - 80.67 Strong (Alt) Cordierite>>									
		<<Alt: 76.55 - 83.99 Strong (Alt) Muscovite>>									
		<<Alt: 77.89 - 80.67 Moderate (Alt) Chlorite>>									
		<<Vein: 74.09 - 76.63 90% Quartz-Carbonate-Sulphide 55 deg. >> QZ-AK-GL-PY-CP-SP									
80.67	**83.99**	**RHYva Coarse grained to ash tuff**	80.67	81.50	0.83						
		<<Min: 80.67 - 83.99 0.5% Min: Pyrite>> SF	81.50	82.00	0.50						
		<<Min: 80.67 - 83.99 0.01% Min: Arsenopyrite>>	82.00	83.00	1.00						
		<<Alt: 80.67 - 83.99 Trace (Alt) Chlorite>>	83.00	83.99	0.99						
		<<Alt: 80.67 - 83.99 Weak (Alt) Cordierite>>									
83.99	**97.94**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	83.99	84.99	1.00						
		<<Min: 83.99 - 89.26 0.5% Min: Magnetite>>	84.99	85.99	1.00						
		<<Min: 84.37 - 84.73 3% Min: Calcite>>	85.99	86.99	1.00						
		<<Min: 85.84 - 85.94 2% Min: Calcite>>	86.99	87.99	1.00						
		<<Min: 88.62 - 88.9 1% Min: Calcite>>	87.99	88.99	1.00						
		<<Min: 89.26 - 89.97 15% Min: Sphalerite>>	88.99	89.99	1.00						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 89.26 - 89.97 4% Min: Magnetite>>	89.99	90.99	1.00						
		<<Min: 89.26 - 89.97 5% Min: Chalcopyrite>>	90.99	91.99	1.00						
		<<Min: 91.55 - 91.73 10% Min: Calcite>>	91.99	92.99	1.00						
		<<Min: 91.73 - 92.35 5% Min: Calcite>>	92.99	93.99	1.00						
		<<Min: 93.27 - 93.61 3% Min: Calcite>>	93.99	94.99	1.00						
		<<Min: 93.61 - 95.05 0.01% Min: Calcite>>	94.99	95.99	1.00						
		<<Min: 95.05 - 97.06 10% Min: Calcite>>	95.99	96.99	1.00						
		<<Min: 97.06 - 100.47 3% Min: Calcite>>	96.99	97.94	0.95						
97.94	**102.48**	**RHYv** **Rhyolite volcaniclastic**	97.94	98.50	0.56						
		<<Min: 97.94 - 98.07 2% Min: Sphalerite>>	98.50	99.50	1.00						
		<<Min: 97.94 - 110 0.5% Min: Pyrite>> WIS	99.50	100.50	1.00						
		<<Min: 100.47 - 104.7 1% Min: Calcite>>	100.50	101.50	1.00						
		<<Alt: 97.94 - 107.1 Weak (Alt) Muscovite>>	101.50	102.48	0.98						
		<<Struc: 98 - 100.42 Moderate (Alt) Fault>> Narrow faults filled with gouge and broken rock. Spaced tens of cm's apart. Moderate intensity.									
102.48	**104.99**	**RHYvl** **Lapilli tuff**									
		<<Min: 104.7 - 104.99 10% Min: Calcite>>									
		<<Vein: 104 - 106.74 2% Quartz-Carbonate 70 deg. >> QZ-CA									
104.99	**107.10**	**RHYv** **Rhyolite volcaniclastic**									
		<<Min: 104.99 - 105.7 1% Min: Calcite>>									
		<<Min: 105.7 - 106.44 5% Min: Calcite>>									
		<<Min: 106.44 - 107.1 2% Min: Calcite>>									
107.10	**107.48**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
		<<Min: 107.1 - 110 15% Min: Calcite>>									
		<<Alt: 107.1 - 107.48 Weak (Alt) Chlorite>>									
		<<Vein: 107.27 - 109.91 7% Quartz-Carbonate 80 deg. >> CA-QZ									
107.48	**107.68**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
		<<Alt: 107.48 - 108.38 Strong (Alt) Silicification>>									
		<<Alt: 107.48 - 108.38 Weak (Alt) Muscovite>>									
107.68	**108.38**	**RHYc** **Rhyolite coherant volcanics**									
108.38	**109.76**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 108.38 - 109.76 Weak (Alt) Chlorite>>

109.76 110.00 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 109.76 - 110 0.01% Min: Sphalerite>>

<<Alt: 109.76 - 110 Moderate (Alt) Silicification>>

<<Alt: 109.76 - 110 Weak (Alt) Muscovite>>

End of Hole @ 110

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-277

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Daniele Heon
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	28-Sep-15
UTM Easting	415248.9	Core Size:	NQ3	Azimuth:	190	Date Logging Complete:	01-Oct-15
UTM Northing:	6815348.359	Casing Pulled?:	Yes	Dip:	-68	Drill Company:	Geotech
UTM Elev. (m):	1442.245	Casing Depth (m):	21	Length (m):	357.8	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Sep-15
Local Northing:		Cemented?:	No	Core Storage Loc.:	KZK Camp	Drill Completed:	01-Oct-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

The target of this hole is a sulphide lens offset by a fault block.
The top of the hole intersected interbanded argillite and mafic dyke or tuff (both crenulated); core was very block with poor recovery. The argillite unit is very dark and carbonaceous, and is strongly folded and crenulated. Foliations are bent into brittle fault zones from 23 to 30m and 38 to 50m. Metaseds transition into a felsic volcaniclastic sequence from 83 to 97.5m below which thick RHYva is present down to160m, intruded and silicified by two RHYi units. From 160-202, the hole is mainly RHYva with some tuffaceous sections (either mafic or biot-carb altered felsic). From 302-303.4 the showed a flulted texture and stronger clay alteration. From 103.5-313.8 and 326-333.95 is semi-massive and massive sulphide, mostly OB,with some OJ. One section may be altered mafic tuff or intrusive. From 333.95 - 357.8 (EOH) is the footwall mafic intrusion, with the contact marked by 15cm of massive biotite underlain by 15cm of intense carbonate alteration, which is in turn underlain by units of gradually coarsening grain size. This zone includes two sections (total 30 cm) with heavy py-sp-cp associated with silicate gangue.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-68	190	0	190	APS	Daniele Heon	28-Sep-15		☑	
41	-70.5	172.1	22.5	194.6	ReflexEZS	Geotech	27-Sep-15	5799	☑	
68	-70.5	171.2	22.5	193.7	ReflexEZS	Geotech	27-Sep-15	5747	☑	
98	-68.5	173.5	22.5	196	ReflexEZS	Geotech	28-Sep-15	5625	☑	
122	-67.6	173	22.5	195.5	ReflexEZS	Geotech	28-Sep-15	5713	☑	
152	-67.3	171.6	22.5	194.1	ReflexEZS	Geotech	28-Sep-15	5784	☑	
182	-67.1	173.2	22.5	195.7	ReflexEZS	Geotech	28-Sep-15	5791	☑	
209	-67	175.8	22.5	198.3	ReflexEZS	Geotech	29-Sep-15	5754	☑	
242	-67.1	174	22.5	196.5	ReflexEZS	Geotech	29-Sep-15	5772	☑	
272	-66.9	175.9	22.5	198.4	ReflexEZS	Geotech	30-Sep-15	5768	☑	
302	-65.5	179	22.5	201.5	ReflexEZS	Geotech	30-Sep-15	5790	☑	
332	-64.2	180.7	22.5	203.2	ReflexEZS	Geotech	01-Oct-15	5675	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**21.00**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

21.00 22.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

21 - 22.5: bleached, poor recovery.

<<Min: 21 - 28 5% Min: Calcite>>

22.50 23.00 MDSc Carbonaceous dominant mudstone

23.00 24.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

24.20 25.00 MDSc Carbonaceous dominant mudstone

<<Struc: 24.2 - 27.7 Moderate (Alt) Fault>> Argillite broken, brecciated and gouged, foliations and brecciated contacts 0 to 15 deg CA

25.00 25.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

25.45 27.00 MDSc Carbonaceous dominant mudstone

25.45 - 27: strongly carbonaceous,broken

27.00 28.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 28 - 35.4 25% Min: Calcite>>

<<Struc: 27.7 - 29.4 Strong (Alt) Shear>>

<<Struc: 28 - 29.4 dominant foliation>> crenulation

28.10 34.80 MDSc Carbonaceous dominant mudstone

<<Struc: 29.4 - 32.2 dominant foliation>> crenulation

34.80 40.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 35.4 - 39.1 5% Min: Calcite>>

<<Min: 39.1 - 40.9 3% Min: Calcite>>

<<Struc: 37.3 - 37.31 dominant foliation>> crenulation (displaces earlier fabric)

40.90 62.30 MDSc Carbonaceous dominant mudstone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 40.9 - 50 7% Min: Calcite>>

<<Min: 50 - 54 40% Min: Calcite>> poor recovery

<<Min: 54 - 62.5 10% Min: Calcite>>

<<Vein: 61.52 - 61.82 100% Quartz-Carbonate-Sulphide 70 deg. >> coarse py bleb

<<Struc: 42 - 42.01 dominant foliation>> crenulation

<<Struc: 43 - 43.71 dominant foliation>> crenulation

<<Struc: 48 - 48.01 dominant foliation>> crenulation

<<Struc: 50.15 - 50.16 dominant foliation>>

<<Struc: 60.95 - 61.05 Strong (Alt) Fault>> finely broken, decomposed core

62.30 62.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 62.5 - 67 3% Min: Calcite>>

<<Vein: 62.52 - 81.8 0.8% Quarzt-Chlorite-Carbonate>> some veins brecciated or fragmented.

62.55 63.70 MDSc Carbonaceous dominant mudstone

63.70 63.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.90 64.94 MDSc Carbonaceous dominant mudstone

64.94 67.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 67 - 69.3 10% Min: Calcite>>

67.45 69.33 MDSc Carbonaceous dominant mudstone

<<Min: 69.3 - 71 3% Min: Calcite>>

69.33 71.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

69.33 - 71.2: veined

<<Min: 71 - 73.85 10% Min: Calcite>>

<<Struc: 70.4 - 71 Moderate (Alt) Fault>> qtz-carb vein as breccia fx in chloritic grounmass, some argillite caught up

71.20 71.80 MDSc Carbonaceous dominant mudstone

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 71.35 - 71.36 >> axial planar cleavage in FW of qtz-car-chl vein

71.80 72.23 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

72.23 82.30 MDSc Carbonaceous dominant mudstone

<<Min: 73.85 - 80.3 20% Min: Calcite>>

<<Struc: 73.8 - 73.81 dominant foliation>> crenulation

<<Struc: 74.4 - 74.45 Weak (Alt) Fault>> clayey fault gouge

<<Struc: 78.75 - 78.76 dominant foliation>> axial planar crenulation

<<Struc: 80.8 - 80.82 Weak (Alt) Fault>> finely broken, decomposed core

82.30 83.10 MDSc Carbonaceous dominant mudstone

82.3 - 83.1: poker chip pieces

83.10 86.65 RHYva Coarse grained to ash tuff

83.1 - 86.65: siliceous,grey, w some carbonaceous sections. Could be RHYc? Pyritic.Some dark blueish seams, hard: cherty argillite chips?)

<<Vein: 83.1 - 83.15 20% Quartz-Carbonate 15 deg. >> 1 cm

86.65 87.05 MAFt Mafic Volcaniclastics

86.65 - 87.05: Banded, light green (chlorite?), beige (sericite), cream (carbonate) and reddish brown (biotite) w biot rimming carbonate grains.

87.05 89.00 RHYvl Lapilli tuff

87.05 - 89: siliceous, sugary, grey, w some carbonaceous sections. Pyritic. Some dark blueish seams, hard: cherty argillite chips? Distinct oval-shaped clasts: lapilli and stretched out argillite clasts. LC gradually more carbonaceous.

<<Min: 88.8 - 90.45 15% Min: Calcite>>

89.00 90.45 MAFt Mafic Volcaniclastics

89 - 90.45: light green, sugary, w diss py, includes short chloritized sections w diss mt xtals in halo.

90.45 92.10 MDSc Carbonaceous dominant mudstone

92.10 94.10 RHYva Coarse grained to ash tuff

92.1 - 94.1: lt grey,sugary, weakly banded ash.Could be logged as RHYc.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

94.10 95.17 MDSc Carbonaceous dominant mudstone

95.17 95.43 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 95.2 - 96.1 15% Min: Calcite>>

95.43 96.00 MDSc Carbonaceous dominant mudstone

96.00 97.45 RHYvl Lapilli tuff

96 - 97.45: lapilli tuff w dark sericitic/ carbonaceous partings. Could also be logged as MDSt.

97.45 105.40 RHYva Coarse grained to ash tuff

97.45 - 105.4: creamy brown sericitic groundmass.

<<Min: 97.6 - 105 5% Min: Calcite>>

<<Vein: 98.45 - 98.55 100% Quarzt-Tourmaline-Sulphide 80 deg. >>

<<Vein: 98.6 - 118.15 2% Quarzt-Chlorite-Carbonate 70 deg. >>

<<Struc: 104.85 - 105 Moderate (Alt) Fault>> clay gouge.

<<Struc: 105.3 - 105.4 Strong (Alt) Fault>> clay gouge.

105.40 106.10 RHYvl Lapilli tuff

105.4 - 106.1: grey-beige groundmass s light beige lapilli or pseudo fx

106.10 107.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

106.1 - 107.45: banded reddish brown biotite-rich rock wporphritic texture given by carbonate xtals, porphyroblastic?

<<Min: 106.1 - 106.35 1% Min: Pyrite>>

<<Min: 106.1 - 106.35 1% Min: Pyrrhotite>>

<<Min: 106.4 - 107.45 20% Min: Calcite>>

<<Vein: 106.1 - 106.35 100% Quarzt-Tourmaline-Sulphide 80 deg. >> broken core, contacts unclear but looks like steep CA.

<<Struc: 106.91 - 106.92 dominant foliation>> mafi

107.45 114.55 RHYva Coarse grained to ash tuff

107.45 - 114.55: finely banded, granular, biot pophyroblasts none to moderate, creamy beige sericitic groundmass banded w chl-carb-rich bands or veins.

<<Min: 107.45 - 121 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 109.91 - 109.92 dominant foliation>>

<<Struc: 113.95 - 113.96 dominant foliation>>

114.55 115.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

115.00 116.10 RHYva Coarse grained to ash tuff

115 - 116.1: grey, siliceous, granular, could also be logged as RHY©?

<<Min: 115 - 116.3 1% Min: Pyrite>>

116.10 125.60 RHYva Coarse grained to ash tuff

116.1 - 125.6: creamy grey sericitic groundmass.few lapilli.

<<Min: 119.2 - 120 0.5% Min: Pyrite>>

<<Min: 121 - 128.8 1% Min: Calcite>>

<<Vein: 119.2 - 120 Quartz-Sericite/White mica-Chlorite>>

<<Struc: 121.95 - 121.96 dominant foliation>>

125.60 130.65 RHYvl Lapilli tuff

125.6 - 130.65: UC contact brecciated. Some siliceous rx that could be logged as RHYcw (128.5-128.75m). W some pyriticbands.

<<Min: 128.8 - 133.75 5% Min: Calcite>>

<<Vein: 127.8 - 128.1 100% Quartz>> broken by fault

<<Struc: 125.6 - 128 Moderate (Alt) Fault>> breccia and broken core

<<Struc: 128.75 - 128.8 Weak (Alt) Fault>> brecciated

130.65 137.50 RHYvl Lapilli tuff

130.65 - 137.5: gradually more siliceous/silicified going down hole. Contact with underlying RHYi unclear, may be in this interval (@135.9m?). Some pyritic bands.

<<Min: 132 - 132.7 1% Min: Pyrite>> heavy disseminations in qtz-rich foliaform bands.

<<Min: 133.75 - 142.2 1% Min: Calcite>>

<<Min: 134 - 143.3 0.5% Min: Pyrite>> fine stringers an diss and in veins.

<<Alt: 134.6 - 143.8 Moderate (Alt) Silicification>>

<<Alt: 134.6 - 143.8 Moderate (Alt) Muscovite>>

137.50 143.35 RHYi Aphanitic Rhyolite (intrusion)

137.5 - 143.35: cherty, beige, highly siliceous, fractured, ass w qtz veining. Lower section may be silicified RHYvl.

<<Min: 137.9 - 138.3 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 140.1 - 141.1 0.5% Min: Pyrite>>

<<Min: 142.2 - 146 5% Min: Calcite>>

<<Vein: 137.9 - 146.6 10% Quartz-Sericite/White mica-Sulphides 65 deg. >>

<<Struc: 139.4 - 139.45 Moderate (Alt) Fault>> breccia gouge in area of veining and silicification

<<Struc: 142.25 - 142.3 Strong (Alt) Fault>> narrow breccia clay gouge

143.35 143.85 RHYvl Lapilli tuff

143.35 - 143.85: silicified RHYvl in whole or in part. Banded for last 30cm.

143.85 146.25 RHYva Coarse grained to ash tuff

143.85 - 146.25: strong musc alteration at LC.

<<Min: 143.9 - 144.8 1% Min: Pyrrhotite>> flat seams// to foln

<<Min: 146 - 151.65 1% Min: Calcite>>

<<Alt: 146.05 - 148.6 Moderate (Alt) Silicification>>

<<Alt: 146.05 - 148.6 Moderate (Alt) Muscovite>>

<<Struc: 146.05 - 146.08 Weak (Alt) Fault>> narrow breccia gouge

146.25 147.55 RHYi Aphanitic Rhyolite (intrusion)

146.25 - 147.55: cherty, featureless except few fractures. Could be/ or include veined and silicified va/ vl.

<<Min: 146.35 - 146.4 0.05% Min: Galena>>

147.55 149.90 RHYvl Lapilli tuff

147.55 - 149.9: siliceous, finely banded:stretched out lapilli or cw?

<<Struc: 148.9 - 149.91 dominant foliation>> shallow

149.90 160.34 RHYva Coarse grained to ash tuff

149.9 - 160.34: fine biotite porphyroblasts.

<<Min: 151.65 - 160.3 5% Min: Calcite>>

<<Min: 160.3 - 160.95 15% Min: Calcite>>

<<Struc: 154.2 - 154.35 Weak (Alt) Fault>> breccia gouge

<<Struc: 154.9 - 154.91 dominant foliation>> weak second foln? NW/NE.

160.34 166.28 MAFt Mafic Volcaniclastics

160.34 - 166.28: first 45 cm f.g. biot (pelitic sed?) grading into greenish, sl calcareous rx w small carbonate porphyroblasts and 0.5-1mm biot porphyroblasts of varying proportions. Slight greenish cast but mainly sericite in groundmass. Looks like mostly felsic composition but mapped as mafic tuff for consistency with other loggers. Some chl alt at contact w mafic dyke below.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 160.95 - 167.07 10% Min: Calcite>>

<<Alt: 161.3 - 163.8 Moderate (Alt) Biotite>> in area of biotite porphyroblasts, increase in size and abundance of porphyroblasts near carbonate veining.

<<Alt: 166 - 166.28 Moderate (Alt) Chlorite>>

<<Struc: 164.3 - 164.4 Strong (Alt) Fault>> broken rx, gouge, poor recovery.

<<Struc: 165.95 - 165.99 Strong (Alt) Fault>> clay gouge at bottom of blocky run.

166.28 169.07 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

166.28 - 169.07: f.g, green, weak biot porphyroblasts. Texture looks tuffaceous but sharp contacts.

<<Min: 167.07 - 168.3 2% Min: Calcite>>

<<Min: 168.3 - 184.5 5% Min: Calcite>>

169.07 172.35 RHYva Coarse grained to ash tuff

169.07 - 172.35: Greenish, sl calcareous rx w small carbonate pophyroblasts and 0.5-1mm biot porphyroblasts of varying proportions. Slight greenish cast but mainly sericite in groundmass. Looks like mostly felsic composition but mapped as mafic tuff for consistency. Size of carbonate pophyroblasts increase after 168m, and short sections show greener groundmass, sl chloritic alteration or more mafic intervals?

<<Alt: 170.1 - 171.2 Moderate (Alt) Biotite>> Increase in size and amount of biot porphyroblasts w increase in carbonate porphyroblasts and carbonate veining.

172.35 176.00 RHYvl Lapilli tuff

<<Vein: 173.95 - 174.35 50% Quartz-Tourmaline 0 deg. >>

176.00 176.90 RHYva Coarse grained to ash tuff

176.90 187.95 RHYvl Lapilli tuff

176.9 - 187.95: shear at top of interval

<<Min: 184.5 - 188.6 10% Min: Calcite>>

<<Vein: 180.2 - 181 0.1% Tourmaline 5 deg. >>

<<Struc: 176.9 - 178.2 Strong (Alt) Fault>> breccia/sheared fx

<<Struc: 185 - 185.1 dominant foliation>>

187.95 192.72 RHYva Coarse grained to ash tuff

187.95 - 192.72: w fine biot porphyroblasts.

<<Min: 188.6 - 191.5 3% Min: Calcite>>

<<Min: 191.5 - 202.05 15% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

192.72 199.85 MAFt Mafic Volcaniclastics

192.72 - 199.85: Reddish-brown porphyroblastic- biot-rich rx consisting of sericitic groundmass w varying proportion of augen-shaped carbonate porphyroblasts rimmed by biotite, loc coalescing into bands and/or veins. Biotote stronger around carbonate patches and veins. Mapped as mafic tuff for consistency but suggest felsic composition w strong biot-carb alteration. Sharp UC and gradational LC.

<<Min: 199 - 202 0.5% Min: Pyrite>> in carbonate veinlets

<<Alt: 192.72 - 199.85 Strong (Alt) Biotite>> Strong biotite associated with strong carbonate veining and augens (porphyroblasts). Biotite lines carbonate blebs and carbonate veins.

199.85 200.50 RHYva Coarse grained to ash tuff grey

200.50 202.05 MAFt Mafic Volcaniclastics

200.5 - 202.05: same rx as above (?) but with rapid increase in biotite porphyroblasts to give appearance of mafic tuff. Reddish-brown porphyroblastic- biot-rich rx consisting of sericitic groundmass w 25 cm of coarse augen-shaped carbonate porphyroblasts rimmed by biotite, loc coalescing into bands and/or veins. Biotote stronger around carbonate patches and veins. Mapped as mafic tuff for consistency but suggest felsic composition w strong biot-carb alteration. Rapid UC and sharp but broken LC.

<<Min: 202 - 218 0.5% Min: Pyrite>> f.g diss and in fine stringers and inqtz veins

202.05 211.00 RHYi Aphanitic Rhyolite (intrusion)

202.05 - 211: Siliceous, grey-green, massive, w irregular pyritic fractures. Internally "brecciated" and stronly-sericite-altered 207.8-208.6m. Includes total 2.95m of massive qtz veins, some // to CA. Rutile or sulphosalt needles in qtz vein.

<<Min: 202.05 - 209.5 3% Min: Calcite>>

<<Min: 206.6 - 207.2 0.01% Min: Sulphosalts>> fg metallic grey-blue needles,strited // to long axis, stibnite? Boulangerite?

<<Min: 209.5 - 218 0.01% Min: Calcite>>

<<Alt: 202.5 - 218 Strong (Alt) Silicification>> associated w RHYi

<<Alt: 202.5 - 218 Strong (Alt) Muscovite>> associated w RHYi

<<Vein: 206 - 207.45 100% Quartz-Carbonate-Sulphide 65 deg. >> associated w RHYi

<<Vein: 210.1 - 220.95 15% Quartz-Carbonate-Sulphide>> qtz veins from 2 cm to 0.7m, 0 to 80 deg CA, stockwork? Associated w RHYi dyke.

211.00 212.75 RHYv Rhyolite volcaniclastic

211 - 212.75: enclave of tuff in RHYi dyke and associated alteration and veining. Strongly sericite-altered. One 2cm qtz vein shows orange coating on fractures (?).

212.75 218.00 RHYi Aphanitic Rhyolite (intrusion)

212.75 - 218: probably includes strongly altered RHYv (for first 2m?)

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

218.00 219.25 RHYvl Lapilli tuff

218 - 219.25: w foliaform pyritic bands.

<<Min: 218 - 219.3 3% Min: Calcite>>

<<Min: 218 - 230 1% Min: Pyrite>> heavy disseminations in crenulated bands and in tabular foliaform bands.

<<Alt: 218 - 221.4 Moderate (Alt) Muscovite>> associated w RHYi?

<<Struc: 218.3 - 218.31 dominant foliation>>

219.25 221.40 RHY undifferentiated rhyolite

219.25 - 221.4: altered tuff and/or dyke, banded and mottled sericite alteration overprinted by patches of chloritic alteration, some very siliceous patches: RHYi or alteration from RHYi?

<<Min: 219.3 - 224.9 1% Min: Calcite>>

<<Alt: 219.25 - 221 Moderate (Alt) Chlorite>>

<<Alt: 219.25 - 221.4 Moderate (Alt) Silicification>> associated w RHYi?

<<Struc: 221.3 - 221.4 Moderate (Alt) Fault>> small sericite-clay altered gouge. Core loss.

221.40 239.00 RHYvl Lapilli tuff

221.4 - 239: mod to strong greenish sericite alteration, often clayey on partings, w rx strongly to intensely dissected by sericitic foliation/crenulation, loc creating brecciated textures (isolated siliceous domains in sericitic matrix). Fine grained, darker grey, undeformed, less chewed up 228-229.2 (more ash component or weaker sericite-alteration).

<<Min: 224.9 - 229.85 5% Min: Calcite>>

<<Min: 229.85 - 277.4 1% Min: Calcite>> end of boxes

<<Min: 230 - 257 5% Min: Pyrite>> heavly disseminated in folded and crenulated bands and finely diss throughout.

<<Min: 237 - 282.2 1% Min: Pyrrhotite>> diss and in small flat seams // to foln

<<Alt: 221.4 - 229 Weak (Alt) Muscovite>>

<<Alt: 229 - 259 Moderate (Alt) Muscovite>> greyish green, clayey.

<<Alt: 232 - 232.2 Weak (Alt) Chlorite>> some chloritized fx in small fault breccia

<<Struc: 222.7 - 222.9 Moderate (Alt) Fault>> clayey broken rx, gouge. Core loss.

<<Struc: 229.8 - 230.8 Strong (Alt) Fault>> clayey broken rx, clay gouge

<<Struc: 232 - 232.2 Strong (Alt) Fault>> breccia w siliceous fx in sericitic groundmass plus small interval of fault gouge.

<<Struc: 233.9 - 234.1 Moderate (Alt) Fault>> clayey breccia

<<Struc: 235.9 - 236.1 Moderate (Alt) Fault>> clayey broken rx, clay gouge

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
280.66	282.10	1.44	B00266851	0.4	0.013	-0.01	-0.01	0.01
282.10	283.00	0.90	B00266852	0.3	-0.005	-0.01	-0.01	0.01
283.00	284.00	1.00	B00266853	0.5	0.012	-0.01	-0.01	-0.01
284.00	285.70	1.70	B00266854	0.4	0.012	-0.01	-0.01	0.02
298.75	300.00	1.25	B00266855	-0.3	0.007	-0.01	-0.01	-0.01
300.00	302.00	2.00	B00266856	1.8	0.024	-0.01	0.04	0.06
302.00	303.70	1.70	B00266857	1.9	0.017	-0.01	0.02	0.06

239.00 282.10 RHY undifferentiated rhyolite

239 - 282.1: probably still lapilli but too chewed up to recognize textures. mod to strong greenish to white sericite alteration, often clayey on partings, w rx strongly to intensely dissected by sericitic foliation/crenulation, loc creating brecciated textures (isolated siliceous domains in sericitic matrix).

<<Min: 257 - 262 1% Min: Pyrite>>

<<Min: 262 - 271.8 3% Min: Pyrite>> py in irregular diss, crenulated stringers and in bands, varies 1-5%

<<Min: 271.8 - 282.2 1% Min: Pyrite>>

<<Min: 277.4 - 277.95 3% Min: Calcite>>

<<Min: 277.95 - 280.1 1% Min: Calcite>>

<<Min: 280.1 - 281.15 3% Min: Calcite>>

<<Min: 281.15 - 286.75 1% Min: Calcite>>

<<Alt: 259 - 299 Strong (Alt) Muscovite>> white to greenish; clayey, greasy partings.

<<Struc: 242 - 244.2 Strong (Alt) Fault>> clayey broken rx, clay gouge, severe core loss

<<Struc: 251.6 - 251.63 Moderate (Alt) Fault>> narrow clayey breccia gouge

<<Struc: 253.1 - 253.16 Strong (Alt) Fault>> narrow clayey breccia gouge

<<Struc: 256.3 - 256.37 Moderate (Alt) Fault>> narrow clayey breccia gouge

<<Struc: 256.43 - 256.47 Moderate (Alt) Fault>> narrow clayey breccia gouge

<<Struc: 261.2 - 261.25 Weak (Alt) Fault>> narrow clayey breccia gouge

<<Struc: 263 - 263.15 Moderate (Alt) Fault>> clayey broken rx

<<Struc: 280.22 - 280.28 Moderate (Alt) Fault>> breccia gouge, in place

282.10 285.70 RHY undifferentiated rhyolite

282.1 - 285.7: fine banding caused by strong dissecting sericite bands and strong foliaform py.

<<Min: 282.2 - 285.15 5% Min: Pyrite>> finely diss and in finely diss bands.

<<Min: 282.2 - 285.15 3% Min: Pyrrhotite>>

<<Min: 285.15 - 299 0.5% Min: Pyrrhotite>> po in flat seams

285.70 303.70 RHYc Rhyolite coherent volcanics

285.7 - 303.7: mostly white siliceous domains w fine regular but strong yellow-greenish sericitic partings, loc 'poker chip' partings.

<<Min: 286.75 - 287.8 3% Min: Calcite>>

<<Min: 287.8 - 292.8 1% Min: Calcite>>

<<Min: 292.8 - 295.1 3% Min: Calcite>>

<<Min: 295.1 - 302 1% Min: Calcite>>

<<Min: 299 - 303.7 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 299 - 303.7 1% Min: Pyrrhotite>>									
		<<Min: 302 - 302.5 5% Min: Calcite>>									
		<<Min: 302.5 - 308.3 1% Min: Calcite>>									
		<<Alt: 299 - 310.8 Intense (Alt) Muscovite>>									
		<<Struc: 290.35 - 290.5 Strong (Alt) Fault>> breccia gouge									
		<<Struc: 301.3 - 302.25 Strong (Alt) Fault>> strong									
		<<Struc: 303 - 303.55 Strong (Alt) Fault>> strong									
303.70	**312.85**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	303.70	305.25	1.55	B00266858	142	1.17	0.65	1.38	2.29
		303.7 - 312.85: semi-massive to massive sulphide, dominantly crystalline pyrite (0.5-1mm) w bands of diss sph and patches of diss cp. Some visible interstitial galena. 303.7-305.25m: 10-20% diss sulph in felsic rx. 305.25-306.85: massive py bands interbanded w variably pyritic silky yellow-khaki sericite bands. 306.85-308.25: same as above, but faulted. 308.25-309.8m: massive py w diss sp, and few bands of gangue w cp sp. 309.8-311: massive xtalline py interbanded w pyrite/sericite bands, both brecciated. 311- 312.85m: massive xtalline py w faintly banded sphalerite, few gangue sections mineralized w cp, sp, ga.									
		<<Min: 303.7 - 305.25 7% Min: Pyrite>>	305.25	306.05	0.80	B00266859	183	0.636	0.25	1.58	5.38
		<<Min: 303.7 - 305.25 0.01% Min: Sphalerite>>	306.05	306.85	0.80	B00266861	114	0.727	0.11	1.62	3.69
		<<Min: 303.7 - 305.25 0.5% Min: Chalcopyrite>>	306.85	308.25	1.40	B00266862	223	1.38	0.41	2.28	6.24
		<<Min: 304.3 - 308.25 0.5% Min: Chalcopyrite>>	308.25	309.10	0.85	B00266863	299	2.28	0.83	2.8	8.88
		<<Min: 305.25 - 306.85 20% Min: Pyrite>>	309.10	309.80	0.70	B00266864	184	1.7	0.21	2.17	5.84
		<<Min: 305.25 - 308.25 2% Min: Sphalerite>>	309.80	311.00	1.20	B00266865	262	1.64	0.58	2.94	6.84
		<<Min: 306.85 - 307.4 50% Min: Pyrite>>	311.00	312.00	1.00	B00266866	282	2.39	0.1	2.72	7.68
		<<Min: 307.4 - 307.85 15% Min: Pyrite>>	312.00	312.85	0.85	B00266867	258	2.72	0.22	3.26	9.25
		<<Min: 307.85 - 312.85 50% Min: Pyrite>>									
		<<Min: 308.25 - 312.85 1% Min: Chalcopyrite>>									
		<<Min: 308.25 - 312.85 5% Min: Sphalerite>>									
		<<Min: 308.3 - 309.25 3% Min: Calcite>>									
		<<Min: 309.25 - 309.8 10% Min: Calcite>>									
		<<Min: 309.8 - 311.3 1% Min: Calcite>>									
		<<Min: 311 - 313.75 2% Min: Galena>>									
		<<Min: 311.3 - 314.25 10% Min: Calcite>>									
		<<Struc: 307 - 308.25 Strong (Alt) Fault>> discontinuous sections of breccia: sulphide and mineralized gangue clasts in greenish yellow sericitic groundmass.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 310 - 311 Moderate (Alt) Fault>> discontinuous breccia intervals consisting of sulphide clasts and sericitized wall rx clasts in greenish-yellow sericitic and/or sulphide groundmass.									
312.85	**313.75**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	312.85	313.75	0.90	B00266868	268	1.69	1.47	3.47	5.62
		312.85 - 313.75: 312.85-313.35:massive py po w green cordierite xtals, magnetite, and blebs of cp. 313.35- 313.75: 20-40% sulph, py,po, cp and sp w weak chl, continuation of OJ?									
		<<Min: 312.85 - 313.7 30% Min: Pyrite>>									
		<<Min: 312.85 - 313.75 5% Min: Pyrrhotite>>									
		<<Min: 312.85 - 313.75 3% Min: Chalcopyrite>>									
		<<Min: 313.7 - 326 1% Min: Pyrite>>									
		<<Min: 313.7 - 327.8 2% Min: Galena>>									
		<<Alt: 313.5 - 326 Intense (Alt) Muscovite>>									
313.75	**326.00**	**RHY** **undifferentiated rhyolite**	313.75	314.90	1.15	B00266869	2.6	0.013	-0.01	0.03	0.04
		313.75 - 326: folded and crenulated, strong to intense sericite alteration. Grey and pyritic for first meter.									
		<<Min: 314.25 - 314.8 3% Min: Calcite>>	314.90	315.90	1.00	B00266871	3.6	0.015	-0.01	0.03	0.07
		<<Min: 314.8 - 326 1% Min: Calcite>>	315.90	317.00	1.10	B00266872	0.9	0.007	-0.01	-0.01	-0.01
		<<Struc: 316.3 - 316.85 Strong (Alt) Fault>> breccia, gouge, core loss.	317.00	318.50	1.50	B00266873	0.8	0.009	-0.01	-0.01	-0.01
		<<Struc: 320 - 324.3 Strong (Alt) Fault>> broken rx, extensive clay gouge, core loss. Deformation continues for approx 1m w brecciated qtz and intense folding and crenulation.	318.50	320.00	1.50	B00266874	2.6	0.014	0.01	0.03	0.04
			320.00	323.00	3.00	B00266875	0.5	0.01	-0.01	-0.01	-0.01
			323.00	324.30	1.30	B00266876	7.7	0.054	0.02	0.03	0.09
			324.30	326.00	1.70	B00266877	65.5	1.53	0.1	0.04	0.12
326.00	**326.50**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	326.00	326.50	0.50	B00266878	142	0.745	0.01	2.07	8.18
		326 - 326.5: Re-ordered core. Mostly xtalline pyrite w some sph with gangue clots w ga-sph. No sig cp.									
		<<Min: 326 - 327 5% Min: Calcite>>									
		<<Min: 326 - 327.8 2% Min: Sphalerite>>									
		<<Min: 326 - 333.9 50% Min: Pyrite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
326.50	**327.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	326.50	327.00	0.50	B00266879	133	0.701	0.03	2.27	4.45
326.5 - 327: mostly py-cord w weak chl, weak cp											
<<Min: 326.5 - 327 3% Min: Chalcopyrite>>											
327.00	**327.80**	**OA** **Magnetite bearing sulphides**	327.00	327.80	0.80	B00266881	244	2.15	0.41	3.93	7.68
327 - 327.8: coarsely xtalline py-mt in gangue w sp-ga.											
<<Min: 327 - 329 10% Min: Calcite>>											
327.80	**330.35**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	327.80	329.00	1.20	B00266882	140	0.978	0.15	2.09	0.36
327.8 - 330.35: heresy I know. Banded light brown (biot) and bluish grey (cordierite? Not clear.) altered MAFi or MAFt? W some heavy py stringers and some galena and cp. Could be seen as weak OJ. Strong biotite schist for first 25cm and at UC of 25cm calcite-py-cp vein. Includes 40cm of massive py-sp.											
<<Min: 327.8 - 329 2% Min: Chalcopyrite>>			329.00	330.35	1.35	B00266883	170	0.883	0.19	2.02	5.61
<<Min: 329 - 330.9 20% Min: Calcite>>											
<<Min: 329 - 332.9 2% Min: Sphalerite>>											
<<Min: 330.1 - 330.35 1% Min: Chalcopyrite>>											
<<Vein: 330 - 330.35 100% Carbonate-Sulphide 70 deg. >>											
330.35	**332.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	330.35	331.65	1.30	B00266884	122	0.651	0.03	1	4.26
330.35 - 332.9: mostly OB w some magnetite sections, some weakly banded, and some sections w dark chlorite.											
<<Min: 330.9 - 332.9 5% Min: Calcite>>			331.65	332.90	1.25	B00266885	131	1.25	0.19	0.95	3.71
332.90	**357.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	332.90	333.90	1.00	B00266886	32.9	0.13	0.03	0.32	0.14
<<Min: 332.9 - 339 15% Min: Calcite>>			333.90	335.30	1.40	B00266887	11.3	0.062	0.02	0.13	0.08
<<Min: 340 - 344 20% Min: Calcite>>			335.30	336.90	1.60	B00266888	10.8	0.082	0.02	0.12	0.1
<<Min: 341.75 - 342.03 10% Min: Sphalerite>>			340.20	341.00	0.80	B00266889	22.9	0.092	0.01	0.25	0.06
<<Min: 341.75 - 342.03 10% Min: Pyrite>>			341.00	341.75	0.75	B00266891	43.2	0.665	0.04	0.45	1.05
<<Min: 342.58 - 342.66 5% Min: Sphalerite>>			341.75	342.70	0.95	B00266892	194	3.1	0.71	1.37	4.27
<<Min: 342.58 - 342.66 20% Min: Pyrite>>			342.70	344.00	1.30	B00266893	19.9	0.18	-0.01	0.23	0.07
<<Min: 342.58 - 342.66 5% Min: Chalcopyrite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 344 - 352 10% Min: Calcite>>

<<Min: 352 - 357.8 5% Min: Calcite>>

<<Min: 355.7 - 355.8 3% Min: Galena>>

<<Vein: 355.7 - 357 1% Quartz-Carbonate-Sulphide 45 deg. >>

End of Hole @ 357.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-278

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	28-Sep-15
UTM Easting	414625.354	Core Size:	HQ3	Azimuth:	180.14	Date Logging Complete:	30-Sep-15
UTM Northing:	6815538.706	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1437.145	Casing Depth (m):	6.5	Length (m):	197.26	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	28-Sep-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of this hole was to confirm the continuity of the lower sulphide lens (MET 4 Domain).
The upper portion of this hole contains RHYvl, RHYva, MAFt, MDSt, MDSc, and RHYcw intruded by MAFi. One major lens of massive sulphide was intersected between 131.95-145.38. OA and OJ ore types were intersected. RHYcw, RHYv, RHYvl, and RHYvx intruded by MAFi was intersected below the sulphide lens. Volcaniclastic rhyolites were intersected below the MAFi unit.
CI-CL zones were intersected above, within, and below the sulphide lens. CI-CL intersections were found at: 127.17-129.28m, 131.95-141.2m, 144.96-145.38m. Narrow AB zones were also intersected between 131.95-132.7m and 144.96-145.38m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.14	0	180.14	APS	Cooper Campbell	26-Sep-15		☑	
26	-70	160.9	22.5	183.4	ReflexEZS	Geotech	26-Sep-15	5722	☑	
53	-70.5	162.1	22.5	184.6	ReflexEZS	Geotech	27-Sep-15	5713	☑	
74	-70.5	160.1	22.5	182.6	ReflexEZS	Geotech	27-Sep-15	5694	☑	
101	-70.8	162.9	22.5	185.4	ReflexEZS	Geotech	27-Sep-15	5729	☑	
125	-70.4	164.2	22.5	186.7	ReflexEZS	Geotech	27-Sep-15	5714	☑	
152	-70	175.2	22.5	197.7	ReflexEZS	Geotech	27-Sep-15	5822	☑	
179	-70.6	165.4	22.5	187.9	ReflexEZS	Geotech	27-Sep-15	5767	☑	
191	-70.4	165.2	22.5	187.7	ReflexEZS	Geotech	28-Sep-15	5739	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.34**	**OVBN** **Overburden**									
6.34	**8.52**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

6.34 - 8.52: Gradational contact with RHYvl.

<<Min: 6.34 - 8.52 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 6.34 - 8.52 15% Min: Calcite>>

<<Alt: 6.34 - 8.52 Trace (Alt) Chlorite>>

<<Struc: 6.34 - 19.8 Fault>> Very narrow faults filled with broken rock. Spaced metres apart. Low intensity.

8.52 23.87 RHYvl Lapilli tuff

8.52 - 23.87: Local flow banding.

<<Min: 8.52 - 16.32 5% Min: Calcite>>

<<Min: 8.52 - 67.33 0.5% Min: Pyrite>> VN

<<Min: 8.52 - 67.33 1% Min: Pyrrhotite>> VN

<<Min: 16.32 - 23.87 2% Min: Calcite>>

<<Alt: 8.52 - 48.39 Moderate (Alt) Muscovite>>

23.87 31.20 MDSt Rhyolite tuff dominant mudstone

<<Min: 23.87 - 31.2 0.5% Min: Calcite>>

31.20 32.74 MDSc Carbonaceous dominant mudstone

<<Min: 31.2 - 32.74 2% Min: Calcite>>

<<Min: 31.2 - 46.87 1% Min: Calcite>>

32.74 35.14 RHYva Coarse grained to ash tuff

35.14 36.07 MDSt Rhyolite tuff dominant mudstone

36.07 40.19 RHYvl Lapilli tuff

40.19 41.73 MDSt Rhyolite tuff dominant mudstone

41.73 67.33 RHYvl Lapilli tuff

<<Min: 46.87 - 56.51 5% Min: Calcite>>

<<Min: 54 - 55 0.01% Min: Sphalerite>>

<<Min: 56.51 - 66.61 2% Min: Calcite>>

<<Min: 66.61 - 73.63 20% Min: Calcite>>

<<Alt: 46.87 - 66.79 Trace (Alt) Biotite>>

<<Alt: 48.39 - 67.33 Weak (Alt) Muscovite>>

<<Alt: 66.79 - 73.77 Trace (Alt) Chlorite>>

<<Alt: 66.79 - 73.77 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 48.77 - 49.82 10% Quartz-Carbonate-Sulphide 15 deg. >> QZ-CA-SP-PY

67.33 69.03 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 67.33 - 69.03 0.01% Min: Pyrrhotite>>

<<Vein: 67.33 - 73.51 4% Calcite 60 deg. >> CA-trQZ

69.03 69.93 RHYvl Lapilli tuff

<<Min: 69.03 - 69.93 1% Min: Pyrrhotite>>

<<Alt: 69.03 - 69.93 Weak (Alt) Muscovite>>

69.93 73.51 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 69.93 - 73.51 0.01% Min: Pyrrhotite>>

73.51 88.10 RHYvl Lapilli tuff

<<Min: 73.51 - 78.39 0.01% Min: Pyrite>>

<<Min: 73.51 - 78.39 0.5% Min: Pyrrhotite>>

<<Min: 73.63 - 90.21 0.5% Min: Calcite>>

<<Min: 78.39 - 88.1 2% Min: Pyrite>>

<<Min: 78.39 - 88.1 1% Min: Pyrrhotite>>

<<Alt: 73.51 - 96.14 Weak (Alt) Muscovite>>

88.10 90.21 RHYva Coarse grained to ash tuff

<<Min: 88.1 - 92.63 0.5% Min: Pyrrhotite>>

90.21 93.41 MDSt Rhyolite tuff dominant mudstone

<<Min: 90.21 - 94.74 0.01% Min: Calcite>>

<<Min: 92.63 - 95.39 0.01% Min: Pyrrhotite>>

<<Struc: 93.06 - 93.07 dominant foliation>>

<<Struc: 93.14 - 93.15 Foliation>>

93.41 96.47 RHYv Rhyolite volcaniclastic

93.41 - 96.47: Trace crb.

<<Min: 94.71 - 97 10% Min: Calcite>>

<<Min: 95.39 - 98.51 0.01% Min: Pyrite>>

<<Alt: 96.14 - 128 Moderate (Alt) Muscovite>>

<<Struc: 93.43 - 93.44 dominant foliation>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 93.44 - 93.45 Foliation>>									
96.47	**100.44**	**MDSt**	**Rhyolite tuff dominant mudstone**									
			<<Min: 97 - 124.57 0.01% Min: Calcite>>									
			<<Min: 98.51 - 113.64 0.5% Min: Pyrite>>									
			<<Vein: 96.47 - 103.62 1% Quartz-Carbonate-Sulphide 55 deg. >> QZ-CA-PY									
100.44	**111.91**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**									
			100.44 - 111.91: Trace crb.									
			<<Struc: 103.85 - 106.87 Fault>> Narrow faults (cm's) filled with broken rock and gouge. Spaced tens of cm's apart. Moderate intensity.									
111.91	**112.08**	**MDSc**	**Carbonaceous dominant mudstone**									
112.08	**124.57**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
			<<Min: 113.64 - 124.57 1% Min: Pyrite>>									
			<<Struc: 114.7 - 115.24 Fault>> Healed fault zone. Moderate intensity.									
			<<Struc: 115.71 - 115.72 dominant foliation>>									
			<<Struc: 121.64 - 121.65 dominant foliation>>									
			<<Struc: 122.27 - 122.28 dominant foliation>>									
124.57	**128.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	127.00	128.50	1.50	B00268244	3.8	-0.005	0.02	0.18	0.43
			<<Min: 124.57 - 126.49 0.5% Min: Pyrite>>									
			<<Min: 124.57 - 126.49 0.5% Min: Pyrrhotite>> BL									
			<<Min: 124.57 - 129.28 0.5% Min: Calcite>>									
			<<Min: 126.49 - 131.95 1% Min: Sphalerite>>									
			<<Min: 126.49 - 131.95 2% Min: Pyrite>> WIS									
			<<Min: 126.49 - 131.95 1% Min: Pyrrhotite>> FD									
			<<Min: 126.49 - 131.95 0.5% Min: Chalcopyrite>>									
			<<Alt: 127.17 - 129.28 Weak (Alt) Chlorite>>									
			<<Alt: 127.17 - 129.28 Weak (Alt) Cordierite>>									
			<<Alt: 128 - 131.95 Strong (Alt) Muscovite>>									
128.50	**131.95**	**RHY**	**undifferentiated rhyolite**	128.50	129.69	1.19	B00268245	9.1	0.038	0.39	0.1	3.52

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 129.28 - 132.51 2% Min: Calcite>>	129.69	131.00	1.31	B00268246	2.1	-0.005	0.04	0.06	0.56
		<<Vein: 129.69 - 134.56 10% Quartz-Carbonate-Sulphide 10 deg. >> Large vuggy bladed calcite veins.	131.00	131.95	0.95	B00268247	3.6	0.008	-0.01	0.04	0.05
		<<Struc: 129.03 - 129.04 dominant foliation>>									
		<<Struc: 129.39 - 132.11 Fault>> cm scale faults filled with gouge and broken rock. Partially healed in places. Spaced tens of cm's apart. Moderate to strong intensity.									
131.95	**133.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	131.95	132.50	0.55	B00268248	18.7	0.247	1.55	0.03	0.09
		131.95 - 133: Ab alteration also?									
		<<Min: 131.95 - 133 5% Min: Pyrrhotite>>	132.50	133.00	0.50	B00268249	23.4	0.52	1.94	0.02	0.18
		<<Min: 131.95 - 133 10% Min: Magnetite>>									
		<<Min: 131.95 - 133 3% Min: Chalcopyrite>>									
		<<Min: 132.51 - 134 25% Min: Calcite>>									
		<<Alt: 131.95 - 132.7 Moderate (Alt) Albite>>									
		<<Alt: 131.95 - 133 Moderate (Alt) Chlorite>>									
		<<Struc: 132.8 - 132.81 dominant foliation>>									
133.00	**136.81**	**OA** **Magnetite bearing sulphides**	133.00	134.00	1.00	B00268251	19.1	0.442	1.58	0.01	0.14
		133 - 136.81: Logged as OD by Cominco. 20%MG, 5% PO, 10% SP, 5% CP									
		<<Min: 133 - 136.81 10% Min: Sphalerite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	134.00	135.00	1.00	B00268252	13.3	0.279	0.98	0.02	0.28
		<<Min: 133 - 136.81 10% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	135.00	136.00	1.00	B00268253	8.8	0.242	0.75	0.02	4.97
		<<Min: 133 - 136.81 20% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	136.00	136.81	0.81	B00268254	15.8	0.398	1.1	0.03	4.17
		<<Min: 133 - 136.81 5% Min: Chalcopyrite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Min: 134 - 145.17 1% Min: Calcite>>									
		<<Struc: 135.4 - 135.41 dominant foliation>>									
136.81	**139.31**	**OA** **Magnetite bearing sulphides**	136.81	137.81	1.00	B00268255	12.6	0.278	0.59	0.08	6.44
		136.81 - 139.31: Classic laminated OA. 20%SP, 10%PO, 15%MG.									
		<<Min: 136.81 - 139.31 20% Min: Sphalerite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	137.81	138.81	1.00	B00268256	33.6	0.204	0.4	0.68	14.2
		<<Min: 136.81 - 139.31 10% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	138.81	139.31	0.50	B00268257	13	0.185	0.19	0.15	10.4

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 136.81 - 139.31 20% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
139.31	**140.58**	**OA Magnetite bearing sulphides**	139.31	140.00	0.69	B00268258	12.7	0.179	0.47	0.08	8.07
		139.31 - 140.58: Logged as OD by Cominco. 20%MG, 15%PO, 10%SP.									
		<<Min: 139.31 - 140.58 10% Min: Sphalerite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	140.00	140.58	0.58	B00268259	61.7	0.257	0.22	0.47	3.64
		<<Min: 139.31 - 140.58 15% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Min: 139.31 - 140.58 20% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Struc: 139.36 - 139.37 dominant foliation>>									
140.58	**141.20**	**OJ Heavilly disseminated sulphides in proximal altered rock**	140.58	141.20	0.62	B00268261	11.2	0.166	0.93	-0.01	0.12
		140.58 - 141.2: 22.6% recovery for this lithology interval. AK alteration.									
		<<Min: 140.58 - 141.2 1% Min: Pyrrhotite>>									
		<<Min: 140.58 - 141.2 1% Min: Chalcopyrite>>									
		<<Alt: 140.58 - 141.2 Moderate (Alt) Chlorite>>									
		<<Alt: 140.58 - 141.2 Moderate (Alt) Cordierite>>									
		<<Alt: 140.58 - 141.2 Moderate (Alt) Biotite>>									
		<<Vein: 140.58 - 145.3 4% Carbonate-Biotite 70 deg. >> AK-BI-CL-PO-PY-CP									
141.20	**141.52**	**OA Magnetite bearing sulphides**	141.20	141.70	0.50	B00268262	14.5	0.202	0.16	0.07	0.66
		141.2 - 141.52: 5% MG, 3%PO.									
		<<Min: 141.2 - 141.52 3% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Min: 141.2 - 141.52 5% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
141.52	**144.38**	**OA Magnetite bearing sulphides**	141.70	142.70	1.00	B00268263	11.6	0.222	0.42	0.03	0.6
		141.52 - 144.38: Logged as OD by Cominco. 30%SP, 15% PO, 20%MG.									
		<<Min: 141.52 - 144.38 30% Min: Sphalerite>>	142.70	143.25	0.55	B00268264	11.1	0.133	0.36	0.04	9.64
		<<Min: 141.52 - 144.38 15% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	143.25	143.75	0.50	B00268265	23.4	0.563	0.37	0.51	12.6
		<<Min: 141.52 - 144.38 20% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.	143.75	144.38	0.63	B00268266	40.6	0.191	0.2	1.04	11.7

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 144.28 - 144.29 dominant foliation>>									
144.38	**144.96**	**OA** **Magnetite bearing sulphides**	144.38	144.96	0.58	B00268267	50.2	0.2	0.22	0.42	6.55
		144.38 - 144.96: 10%MG, 5%PO									
		<<Min: 144.38 - 144.96 5% Min: Pyrrhotite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Min: 144.38 - 144.96 10% Min: Magnetite>> Part of the massive sulphide mineralization. Individual mineral species does not account for enough of total rock to be considered massive mineralization.									
		<<Struc: 144.58 - 144.59 dominant foliation>>									
144.96	**145.38**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	144.96	145.38	0.42	B00268268	25.4	0.125	0.35	0.09	0.72
		144.96 - 145.38: 3%MG, 3%PO. AK alteration.									
		<<Min: 144.96 - 145.38 3% Min: Pyrrhotite>>									
		<<Min: 144.96 - 145.38 3% Min: Magnetite>>									
		<<Min: 145.17 - 145.38 5% Min: Calcite>>									
		<<Alt: 144.96 - 145.38 Moderate (Alt) Chlorite>>									
		<<Alt: 144.96 - 145.38 Weak (Alt) Cordierite>>									
		<<Alt: 144.96 - 145.38 Moderate (Alt) Biotite>>									
		<<Alt: 144.96 - 145.38 Moderate (Alt) Albite>>									
145.38	**148.87**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	145.38	146.38	1.00	B00268269	2.2	-0.005	-0.01	0.02	0.04
		145.38 - 148.87: Uncertain on lithology. May be a MAF rock.									
		<<Min: 145.38 - 148.87 0.01% Min: Sphalerite>>	146.38	147.38	1.00	B00268271	1	-0.005	-0.01	0.02	0.07
		<<Min: 145.38 - 148.87 0.5% Min: Pyrite>> VN	147.38	148.87	1.49	B00268272	0.7	0.01	-0.01	-0.01	0.03
		<<Min: 145.38 - 148.87 0.01% Min: Pyrrhotite>> FD									
		<<Min: 145.38 - 148.87 3% Min: Calcite>>									
		<<Alt: 145.38 - 149.41 Moderate (Alt) Muscovite>>									
		<<Vein: 146.09 - 149.4 5% Quartz-Carbonate-Sulphide 60 deg. >> QZ-CA-BI-PY-PO-SP									
148.87	**171.12**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									
		<<Min: 148.87 - 153.12 20% Min: Calcite>>									
		<<Min: 148.87 - 155.3 0.01% Min: Pyrrhotite>> VN									

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 148.87 - 171.12 0.01% Min: Pyrite>>									
			<<Min: 153.12 - 166.73 3% Min: Calcite>>									
			<<Min: 166.73 - 171.58 30% Min: Calcite>>									
			<<Alt: 148.87 - 171.12 Moderate (Alt) Chlorite>>									
			<<Alt: 148.87 - 171.12 Moderate (Alt) Biotite>>									
			<<Vein: 149.4 - 171.12 20% Quartz-Carbonate 70 deg. >> CA-QZ									
			<<Struc: 154.57 - 154.58 Vein>> Anomalous veinlet orientation.									
			<<Struc: 154.76 - 154.77 dominant foliation>>									
171.12	**174.72**	**RHYv**	**Rhyolite volcaniclastic**	173.22	174.72	1.50	B00268273	1.7	0.013	-0.01	0.03	0.1
			<<Min: 171.12 - 174.72 0.01% Min: Pyrite>>									
			<<Min: 171.58 - 174.52 10% Min: Calcite>>									
			<<Min: 174.52 - 195 0.01% Min: Calcite>>									
			<<Alt: 171.12 - 174.72 Moderate (Alt) Muscovite>>									
			<<Vein: 171.12 - 174.72 2% Quartz-Carbonate 70 deg. >> QZ-CA									
174.72	**175.93**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	174.72	175.43	0.71	B00268274	19.2	0.235	0.61	0.14	0.23
			174.72 - 175.93: 1%CP, 1%PO.									
			<<Min: 174.72 - 175.93 1% Min: Pyrrhotite>>	175.43	175.93	0.50	B00268275	0.5	-0.005	0.04	-0.01	0.05
			<<Min: 174.72 - 175.93 1% Min: Chalcopyrite>>									
			<<Alt: 174.72 - 175.93 Strong (Alt) Chlorite>>									
175.93	**178.21**	**RHYvl**	**Lapilli tuff**									
			<<Min: 175.93 - 183.34 0.01% Min: Pyrite>>									
			<<Min: 175.93 - 183.34 0.01% Min: Pyrrhotite>>									
			<<Alt: 175.93 - 187.78 Moderate (Alt) Muscovite>>									
178.21	**181.74**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									
181.74	**183.77**	**RHYvl**	**Lapilli tuff**									
			181.74 - 183.77: Possible RHYcw.									
			<<Min: 183.34 - 188 0.5% Min: Pyrrhotite>>									
			<<Alt: 181.74 - 186.79 Trace (Alt) Chlorite>>									
183.77	**188.00**	**RHYvx**	**Quartz and/or feldspar crystal tuff**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 187.78 - 191.45 Strong (Alt) Muscovite>> OP associated with veining over interval.

188.00 197.26 RHYvl Lapilli tuff

188 - 197.26: CL overprint from 194.11 onward.

<<Min: 188 - 191.45 0.01% Min: Sphalerite>>
<<Min: 188 - 191.45 0.5% Min: Pyrite>>
<<Min: 188 - 191.45 0.01% Min: Galena>>
<<Min: 191.45 - 197.26 0.01% Min: Sphalerite>>
<<Min: 191.45 - 197.26 1% Min: Pyrite>> FD, BL
<<Min: 191.45 - 197.26 2% Min: Pyrrhotite>> FD, VN
<<Min: 195 - 197.26 3% Min: Calcite>>
<<Alt: 191.45 - 194.11 Moderate (Alt) Muscovite>>
<<Alt: 194.11 - 197.25 Weak (Alt) Muscovite>>
<<Alt: 194.11 - 197.25 Weak (Alt) Chlorite>>
<<Vein: 189.48 - 190.75 20% Quartz-Sulphide 15 deg. >> QZ-PY-SP-GL
<<Vein: 195.02 - 195.08 100% Quartz-Carbonate-Sulphide 60 deg. >> QZ-AK-CA-PO-SP

End of Hole @ 197.26

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-278W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	30-Sep-15
UTM Easting	414625.354	Core Size:	HQ3	Azimuth:	180.14	Date Logging Complete:	01-Oct-15
UTM Northing:	6815538.706	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1437.145	Casing Depth (m):	6.5	Length (m):	161	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	28-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	29-Sep-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-278

Comments:

The purpose of this hole was to sample the lower sulphide lens (MET 4 Domain) for metallurgical testing.

The upper portion of this hole contains MDSw and RHYcw. One major lens of massive sulphide was intersected between 132.17-145.81 m. OA and OJ ore types were intersected. RHYcw intruded by MAFi was intersected below the sulphide lens.

CI-CL alteration zones were intersected above, within, and below the sulphide lens. CI-CL intersections were found at: 126.2-133.85m, 141.37-141.54m, 145.3-145.81m. A narrow AB zone was also intersected between 132.15-133.1m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.14	0	180.14	APS	Cooper Campbell	26-Sep-15		☑	Values copied from K15-278
26	-70	160.9	22.5	183.4	ReflexEZS	Geotech	26-Sep-15	5722	☑	Values copied from K15-278
53	-70.5	162.1	22.5	184.6	ReflexEZS	Geotech	27-Sep-15	5713	☑	Values copied from K15-278
74	-70.5	160.1	22.5	182.6	ReflexEZS	Geotech	27-Sep-15	5694	☑	Values copied from K15-278
101	-70.8	162.9	22.5	185.4	ReflexEZS	Geotech	27-Sep-15	5729	☑	Values copied from K15-278
116	-69	163.6	22.5	186.1	ReflexEZS	Geotech	28-Sep-15	5796	☑	Wedge start; value copied from first wedge survey at 126.5m
126.5	-69	163.6	22.5	186.1	ReflexEZS	Geotech	28-Sep-15	5796	☑	
143	-68.8	172.5	22.5	195	ReflexEZS	Geotech	28-Sep-15	5583	☑	
161	-68.3	169.9	22.5	192.4	ReflexEZS	Geotech	28-Sep-15	5840	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
116.00	**125.00**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									
<<Min: 116 - 125 1% Min: Pyrite>>											
<<Min: 116 - 129.49 0.01% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 116 - 126.2 Moderate (Alt) Muscovite>>									
125.00	**128.90**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	127.90	128.90	1.00						
		<<Min: 125 - 126.61 0.5% Min: Pyrite>> WIS									
		<<Min: 125 - 126.61 0.5% Min: Pyrrhotite>> WIS									
		<<Min: 126.61 - 132.17 1% Min: Sphalerite>>									
		<<Min: 126.61 - 132.17 2% Min: Pyrite>> WIS									
		<<Min: 126.61 - 132.17 1% Min: Pyrrhotite>> FD									
		<<Min: 126.61 - 132.17 0.5% Min: Galena>>									
		<<Min: 126.61 - 132.17 0.01% Min: Chalcopyrite>>									
		<<Alt: 126.2 - 132.15 Strong (Alt) Muscovite>>									
		<<Alt: 126.2 - 132.15 Weak (Alt) Chlorite>>									
		<<Alt: 127.58 - 130.7 Weak (Alt) Cordierite>>									
		<<Vein: 126.61 - 132.17 5% Chlorite-Sulphides 80 deg. >> PY-SP-PO-GL-CP									
128.90	**132.17**	**RHY undifferentiated rhyolite**	128.90	129.50	0.60						
		<<Min: 129.49 - 133.17 3% Min: Calcite>>	129.50	130.17	0.67						
		<<Alt: 132.15 - 133.1 Moderate (Alt) Chlorite>>	130.17	131.17	1.00						
		<<Alt: 132.15 - 133.1 Moderate (Alt) Albite>>	131.17	132.17	1.00						
		<<Vein: 129.92 - 134.18 3% Quartz-Carbonate-Sulphide 65 deg. >> QZ-PY-CA-PO-CP-SP									
		<<Struc: 129.5 - 131.63 Fault>> Narrow healed faults spaced tens of cm's apart.									
132.17	**133.17**	**OJ Heavilly disseminated sulphides in proximal altered rock**	132.17	133.17	1.00						
		<<Min: 132.17 - 133.17 5% Min: Pyrrhotite>> DIS, BL									
		<<Min: 132.17 - 133.17 3% Min: Chalcopyrite>> FRA									
		<<Alt: 133.1 - 133.85 Strong (Alt) Chlorite>>									
		<<Alt: 133.1 - 133.85 Moderate (Alt) Cordierite>>									
133.17	**136.87**	**OA Magnetite bearing sulphides**	133.17	134.17	1.00						
		133.17 - 136.87: Logged as OD by Cominco.									
		<<Min: 133.17 - 136.87 10% Min: Pyrrhotite>>	134.17	135.17	1.00						
		<<Min: 133.17 - 136.87 3% Min: Chalcopyrite>>	135.17	136.17	1.00						
		<<Min: 133.17 - 145.81 0.01% Min: Calcite>>	136.17	136.87	0.70						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
136.87	**139.83**	**OA Magnetite bearing sulphides**	136.87	137.87	1.00						
136.87 - 139.83: Classic laminated OA.											
<<Min: 136.87 - 139.83 20% Min: Sphalerite>>			137.87	138.87	1.00						
<<Min: 136.87 - 139.83 10% Min: Pyrrhotite>>			138.87	139.83	0.96						
<<Min: 136.87 - 139.83 20% Min: Magnetite>>											
139.83	**140.60**	**OA Magnetite bearing sulphides**	139.83	140.60	0.77						
<<Min: 139.83 - 140.6 1% Min: Pyrrhotite>>											
<<Min: 139.83 - 140.6 1% Min: Magnetite>>											
140.60	**141.37**	**OA Magnetite bearing sulphides**	140.60	141.37	0.77						
140.6 - 141.37: Logged as OD by Cominco.											
<<Min: 140.6 - 141.37 15% Min: Sphalerite>>											
<<Min: 140.6 - 141.37 10% Min: Pyrrhotite>>											
<<Min: 140.6 - 141.37 20% Min: Magnetite>>											
141.37	**141.54**	**OJ Heavilly disseminated sulphides in proximal altered rock**	141.37	141.54	0.17						
141.37 - 141.54: AK alteration.											
<<Min: 141.37 - 141.55 5% Min: Pyrrhotite>>											
<<Min: 141.37 - 141.55 3% Min: Magnetite>>											
<<Alt: 141.37 - 141.54 Moderate (Alt) Chlorite>>											
<<Alt: 141.37 - 141.54 Moderate (Alt) Cordierite>>											
<<Alt: 141.37 - 141.54 Moderate (Alt) Biotite>>											
141.54	**142.32**	**OA Magnetite bearing sulphides**	141.54	142.32	0.78						
<<Min: 141.54 - 142.32 20% Min: Sphalerite>>											
<<Min: 141.54 - 142.32 20% Min: Pyrrhotite>>											
<<Min: 141.54 - 142.32 10% Min: Magnetite>>											
142.32	**144.66**	**OA Magnetite bearing sulphides**	142.32	143.32	1.00						
142.32 - 144.66: Logged as OD by Cominco.											
<<Min: 142.32 - 144.66 30% Min: Sphalerite>>			143.32	144.00	0.68						
<<Min: 142.32 - 144.66 20% Min: Pyrrhotite>>			144.00	144.66	0.66						
<<Min: 142.32 - 144.66 10% Min: Magnetite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.66	**145.30**	**OA** **Magnetite bearing sulphides**	144.66	145.30	0.64						
144.66 - 145.3: Classic OA with a small lens of OA dmg from 145.14-145.3m.											
<<Min: 144.66 - 145.3 10% Min: Sphalerite>>											
<<Min: 144.66 - 145.3 15% Min: Pyrrhotite>>											
<<Min: 144.66 - 145.3 15% Min: Magnetite>>											
145.30	**145.81**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	145.30	145.81	0.51						
145.3 - 145.81: AK alteration.											
<<Min: 145.3 - 145.81 3% Min: Pyrrhotite>>											
<<Alt: 145.3 - 145.81 Moderate (Alt) Chlorite>>											
<<Alt: 145.3 - 145.81 Weak (Alt) Cordierite>>											
<<Alt: 145.3 - 145.81 Moderate (Alt) Biotite>>											
<<Vein: 145.79 - 149.63 10% Quartz-Carbonate-Sulphide 65 deg. >> QZ-CA-PY-PO-SP-GL											
145.81	**149.63**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	145.81	146.81	1.00						
145.81 - 149.63: Uncertain on lithology. May be a MAF rock.											
<<Min: 145.81 - 149.63 0.01% Min: Sphalerite>>			146.81	147.81	1.00						
<<Min: 145.81 - 149.63 0.01% Min: Galena>>			147.81	148.81	1.00						
<<Min: 145.81 - 149.63 5% Min: Calcite>>			148.81	149.63	0.82						
<<Min: 145.81 - 161 0.01% Min: Pyrite>>											
<<Min: 145.81 - 161 0.01% Min: Pyrrhotite>>											
<<Alt: 145.81 - 149.63 Moderate (Alt) Muscovite>>											
<<Struc: 147.13 - 150.81 Fault>> Narrow (2-5cm) faults filled with broken rock and gouge. Moderate intensity. Spaced metres apart.											
149.63	**161.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	149.63	150.63	1.00						
<<Min: 149.63 - 161 15% Min: Calcite>>											
<<Alt: 149.63 - 161 Moderate (Alt) Chlorite>>											
<<Alt: 149.63 - 161 Moderate (Alt) Biotite>>											
<<Vein: 149.63 - 161 20% Quartz-Carbonate 50 deg. >> CA-QZ											

Project: KZK **Hole Number:** K15-278W1

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 161									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-279

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	30-Sep-15
UTM Easting	415026.332	Core Size:	NQ3	Azimuth:	340	Date Logging Complete:	03-Oct-15
UTM Northing:	6815454.26	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1383.082	Casing Depth (m):	16.5	Length (m):	275	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Oct-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of this hole is to confirm a historic sulphide intercept in K95-076 and investigate the potential of a hanging wall stockwork feeder zone.
Drilling confirms existence of the sulphide intercept in K95-076 and encounters rocks that could potentially represent a stockwork feeder zone at the top of the sulphide intercept. The structural hanging wall is composed of a package of intercalated coherent/volcaniclastic felsic rocks and carbonaceous mudstones. Massive sulphide is present from 121.36m to 132.87m (OI, OG, OA, OH ore types respectively), 134.72m to 135.2m (OF, OI, OB, OI, OF ore types respectively), 144.81m to 168m (OB, OH, OB, OA, OC, OB ore types respectively), 169.16m to 175.04m (OI, OB ore types respectively) and from 191.52m to 193.6m (OI ore type). The structural footwall is composed of a package of volcaniclastic felsic rocks adjacent to the massive sulphides, underlain by chlorite altered mafics (MAFi unit) and a silicified rhyolite dike (unit RHYi), followed by a 3m fault zone underlain by MAFi, and a package of weakly chlorite altered RHYvl rocks.
Muscovite alteration intensifies towards the massive sulphide lenses in both the structural hanging wall and foot wall rocks. Chlorite alteration is pervasive in the MET 8 domain (top of massive sulphide lens) and in the foot wall mafics. Cordierite porphyroblasts occur throughout the massive sulphide lenses as well as proximal in the immediate hanging wall and footwall felsic rock packages. The RHYi unit is strongly silicified and rocks proximal to the RHYi unit exhibit moderate to weak silicification.
This hole is significant due to well developed CP mineralization throughout the massive sulphide lenses proximally in altered/quartz veined rock packages.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	340	0	340	APS	Geotech	29-Sep-15		☑	
23	-49.3	314.7	22.5	337.2	ReflexEZS	Geotech	29-Sep-15	5749	☑	
53	-48.9	316	22.5	338.5	ReflexEZS	Geotech	29-Sep-15	5770	☑	
83	-48.4	318.8	22.5	341.3	ReflexEZS	Geotech	30-Sep-15	5772	☑	
113	-47.9	313.1	22.5	335.6	ReflexEZS	Geotech	30-Sep-15	6275	☑	
143	-47.3	319.2	22.5	341.7	ReflexEZS	Geotech	30-Sep-15	5583	☑	
173	-46.9	337.6	22.5	0.1	ReflexEZS	Geotech	30-Sep-15	5775	☐	Erratic value, possible bad survey.
203	-46.6	328.4	22.5	350.9	ReflexEZS	Geotech	30-Sep-15	5775	☑	
233	-45.9	328.2	22.5	350.7	ReflexEZS	Geotech	01-Oct-15	5771	☑	
263	-44.8	330.3	22.5	352.8	ReflexEZS	Geotech	01-Oct-15	5765	☑	
275	-44.7	330.7	22.5	353.2	ReflexEZS	Geotech	02-Oct-15	5774	☐	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**16.50**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

16.50 28.18 RHYc Rhyolite coherant volcanics

<<Min: 16.5 - 28.18 2% Min: Pyrrhotite>>

<<Min: 16.5 - 28.18 0.5% Min: Calcite>>

<<Min: 16.5 - 37.4 2% Min: Pyrite>>

<<Alt: 16.5 - 44 Weak (Alt) Muscovite>>

28.18 37.40 MDSw Coherent rhyolite flow with carbonaceous content

28.18 - 37.4: Carbonate content increases towards base of interval.

<<Min: 28.18 - 31.25 1% Min: Calcite>>

<<Min: 28.18 - 41.7 2% Min: Pyrrhotite>>

<<Min: 31.25 - 47.3 0.5% Min: Calcite>>

37.40 48.73 RHY undifferentiated rhyolite

37.4 - 48.73: Textures in this interval can be seen as (primary) fragmental and as pseudo fragmental disaggregation of coherent rhyolite by foliation widening. Cross section interpretation should consider both possibilities for correlation.

<<Min: 37.4 - 41.7 0.5% Min: Pyrite>>

<<Min: 41.7 - 44 2% Min: Pyrite>>

<<Min: 41.7 - 44 1% Min: Pyrrhotite>>

<<Min: 44 - 49.8 3% Min: Pyrrhotite>>

<<Min: 44 - 53 1% Min: Pyrite>>

<<Min: 47.3 - 56.4 1% Min: Calcite>>

<<Alt: 37.4 - 40 Trace (Alt) Chlorite>>

<<Alt: 44 - 56.4 Moderate (Alt) Muscovite>>

48.73 49.95 RHYc Rhyolite coherant volcanics

<<Min: 49.8 - 53 4% Min: Pyrrhotite>>

49.95 56.40 RHY undifferentiated rhyolite

49.95 - 56.4: Possibly volcaniclastic or coherent felsics with pseudo-fragmental texture.

<<Min: 53 - 61.4 3% Min: Pyrrhotite>>

<<Min: 53 - 68.7 0.5% Min: Pyrite>>

56.40 121.36 RHYc Rhyolite coherant volcanics

56.4 - 121.36: weak carbonaceous component from 104m to 110m

<<Min: 56.4 - 101 0.5% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
118.50	120.00	1.50	B00268882	7.1	0.008	0.02	0.34	1.39
120.00	121.50	1.50	B00268883	2.6	0.006	0.07	0.04	0.75

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 61.4 - 65.5 4% Min: Pyrrhotite>>									
		<<Min: 65.5 - 68.7 1% Min: Pyrrhotite>>									
		<<Min: 68.7 - 76.8 0.5% Min: Pyrrhotite>>									
		<<Min: 68.7 - 99 1% Min: Pyrite>>									
		<<Min: 76.8 - 121.36 1% Min: Pyrrhotite>>									
		<<Min: 99 - 101 3% Min: Pyrite>>									
		<<Min: 101 - 121.36 2% Min: Pyrite>>									
		<<Min: 101 - 121.36 1% Min: Calcite>>									
		<<Alt: 56.4 - 65.5 Weak-Moderate (Alt) Muscovite>>									
		<<Alt: 61.5 - 65 Trace (Alt) Chlorite>>									
		<<Alt: 65.5 - 118 Moderate (Alt) Muscovite>>									
		<<Alt: 118 - 122.9 Strong (Alt) Muscovite>>									
		<<Alt: 121 - 122.99 Moderate (Alt) Cordierite>>									
		<<Alt: 121 - 127.75 Moderate (Alt) Chlorite>>									
		<<Vein: 67.4 - 67.61 99% Quartz>>									
		<<Vein: 78.31 - 79.28 94% Quartz>> sulphides: Spalerite, pyrite, pyrrhotite.									
		<<Struc: 69.5 - 71 Fault>> Fault zone, gouge present from 70m to 70.25m.									
		<<Struc: 89.7 - 91.7 Fault>>									
		<<Struc: 95 - 99.5 Fault>> interval of sheared up rock, fault gouge present at base of interval (~20cm)									
		<<Struc: 115.5 - 122 Fault>> Interval of brittle failure and faulting with gouge present locally.									
121.36	**122.99**	**OI** **Heavily disseminated sulphides in host schist**	121.50	122.99	1.49	B00268884	65.9	0.313	1.92	0.17	0.75
		121.36 - 122.99: CP 5-10%, SP 8%, GL2%									
		<<Min: 121.36 - 122.99 3% Min: Calcite>>									
		<<Struc: 121.8 - 121.8 dominant foliation>>									
122.99	**127.75**	**OG** **Chalcopyrite rich sulphides**	122.99	124.00	1.01	B00268885	316	2.93	18	0.15	1.49
		122.99 - 127.75: Interval is 40-60% CP, net textured with PO. Isolated patches of chlorite present and porphyroblastic cordierite									
		<<Min: 122.99 - 135.85 0.5% Min: Calcite>>	124.00	125.00	1.00	B00268886	359	4.94	15.8	0.21	1.36
			125.00	126.00	1.00	B00268887	287	3.7	17.4	0.09	1.58
			126.00	127.00	1.00	B00268888	342	4.44	17.3	0.1	1.57
			127.00	127.75	0.75	B00268889	370	4.71	16.7	0.16	1.6

From (m)	To (m)		Rocktype & Description
127.75	**131.72**	**OA**	**Magnetite bearing sulphides**
127.75 - 131.72: laminated and heavily disseminated magnetite. Cu poor interval.			
<<Struc: 129.65 - 129.65 dominant foliation>>			
131.72	**132.87**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
132.87	**134.72**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 132.87 - 134.72 1% Min: Pyrite>>			
<<Min: 132.87 - 175.04 1% Min: Pyrrhotite>>			
<<Alt: 132.87 - 134.72 Strong (Alt) Muscovite>>			
<<Alt: 132.87 - 134.72 Trace (Alt) Chlorite>>			
<<Alt: 132.87 - 134.72 Strong (Alt) Cordierite>>			
<<Struc: 133.51 - 133.51 dominant foliation>>			
134.72	**135.20**	**OF**	**Pyrrhotite rich sulphides**
135.20	**135.85**	**OI**	**Heavilly disseminated sulphides in host schist**
135.2 - 135.85: complex interval, with abundant quartz, GL, SP, minor CP, and chlorite			
135.85	**141.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
<<Min: 135.85 - 141.2 3% Min: Calcite>>			
<<Min: 141.2 - 200.6 0.5% Min: Calcite>>			
<<Struc: 141.05 - 141.05 dominant foliation>>			
141.25	**142.44**	**OI**	**Heavilly disseminated sulphides in host schist**
142.44	**143.51**	**OF**	**Pyrrhotite rich sulphides**
<<Struc: 142.44 - 142.44 dominant foliation>>			
143.51	**144.81**	**RHY**	**undifferentiated rhyolite**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
127.75	128.75	1.00	B00268892	89.3	0.765	1.97	0.36	13.4
128.75	129.75	1.00	B00268893	111	0.286	0.36	1.5	16.6
129.75	130.75	1.00	B00268894	118	0.293	0.47	3.12	15.6
130.75	131.72	0.97	B00268895	94.7	0.332	0.61	2.39	19.5
131.72	132.87	1.15	B00268896	55	0.516	0.9	0.6	2.41
132.87	133.81	0.94	B00268897	1.6	0.015	0.03	0.02	0.08
133.81	134.72	0.91	B00268898	6.1	0.022	0.13	0.06	0.44
134.72	135.20	0.48	B00268899	35	0.066	0.47	0.64	4.05
135.20	135.85	0.65	B00268901	17.3	0.01	0.15	0.17	3.21
135.85	136.85	1.00	B00268902	169	1.05	0.93	0.56	4.64
136.85	137.85	1.00	B00268903	197	1.7	1.12	0.63	2.56
137.85	138.85	1.00	B00268904	215	2.05	1.2	1.66	3.25
138.85	139.85	1.00	B00268905	316	2.51	1.33	2.66	6.28
139.85	140.85	1.00	B00268906	347	1.52	0.88	3.73	8.8
140.85	141.25	0.40	B00268907	297	1.15	1.06	2.12	8.15
141.25	142.44	1.19	B00268908	126	0.648	0.35	1.09	3.47
142.44	143.51	1.07	B00268909	121	0.378	0.45	2.73	8.35
143.51	144.81	1.30	B00268911	1.8	0.023	0.03	0.03	0.06

From (m)	To (m)		Rocktype & Description
<<Alt: 143.51 - 144.81 Moderate (Alt) Muscovite>>			
<<Alt: 143.51 - 144.81 Weak (Alt) Chlorite>>			
<<Alt: 143.51 - 144.81 Moderate (Alt) Cordierite>>			
144.81	**145.59**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
145.59	**146.50**	**OH**	**Fine grained, megascopically homogeneous pyrite rock**
146.50	**151.23**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
146.5 - 151.23: CP ~5-8%			
151.23	**152.00**	**OA**	**Magnetite bearing sulphides**
152.00	**153.50**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**
<<Alt: 152 - 163.5 Weak (Alt) Cordierite>>			
153.50	**163.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.81	145.26	0.45	B00268912	57.5	1.02	2.03	0.13	1.96
145.26	145.59	0.33	B00268913	114	1.25	4.72	0.15	1.26
145.59	146.50	0.91	B00268914	41.5	0.548	1.08	0.14	0.61
146.50	147.50	1.00	B00268915	58.8	0.51	1.1	0.28	2.66
147.50	148.50	1.00	B00268916	72.6	0.594	1.09	0.54	2.3
148.50	149.50	1.00	B00268917	30.2	0.318	0.24	0.19	3.41
149.50	150.50	1.00	B00268918	36.2	0.28	0.25	0.34	3.8
150.50	151.23	0.73	B00268919	91.1	0.493	0.2	0.74	5.62
151.23	152.00	0.77	B00268921	228	3.25	4.32	1.06	2.49
152.00	153.00	1.00	B00268922	140	1.16	6.47	0.27	0.99
153.00	153.50	0.50	B00268923	134	2.84	5.6	0.2	1.07
153.50	154.50	1.00	B00268924	99.5	0.809	1.98	0.38	3.04
154.50	155.50	1.00	B00268925	85.2	1.01	1.54	0.29	3.35
155.50	156.50	1.00	B00268926	201	1.37	3.73	0.8	1.48
156.50	157.50	1.00	B00268927	198	2.66	5.15	0.61	0.84
157.50	158.50	1.00	B00268928	122	1.41	3.33	0.33	1.89
158.50	159.50	1.00	B00268929	61.7	0.627	0.75	0.26	1.36
159.50	160.50	1.00	B00268932	77.6	0.703	1.96	0.22	1.01
160.50	161.50	1.00	B00268933	46.8	0.491	0.79	0.17	1.87
161.50	162.50	1.00	B00268934	24.3	0.492	0.78	0.11	1.25
162.50	163.50	1.00	B00268935	55.6	1.23	2.41	0.07	0.72

From (m)	To (m)		Rocktype & Description
163.50	**168.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
168.00	**169.16**	**RHY**	**undifferentiated rhyolite**

<<Min: 168 - 169.16 0.5% Min: Sphalerite>>

<<Min: 168 - 169.16 1% Min: Pyrite>>

<<Alt: 168 - 170.62 Moderate (Alt) Muscovite>>

<<Alt: 168 - 170.62 Moderate (Alt) Cordierite>>

From (m)	To (m)		Rocktype & Description
169.16	**170.62**	**OI**	**Heavilly disseminated sulphides in host schist**

169.16 - 170.62: Interval contains thick sulphide band ~20cm at 170.1m - 170.3m could be classified as OB

From (m)	To (m)		Rocktype & Description
170.62	**175.04**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

<<Struc: 173 - 173 dominant foliation>>

<<Struc: 174.52 - 174.52 dominant foliation>>

From (m)	To (m)		Rocktype & Description
175.04	**176.70**	**RHY**	**undifferentiated rhyolite**

175.04 - 176.7: CP bearing (~4%), could be considered OI

<<Min: 175.04 - 176 4% Min: Chalcopyrite>>

<<Min: 175.04 - 191.52 2% Min: Pyrrhotite>>

<<Min: 175.04 - 204 1% Min: Pyrite>>

<<Alt: 175.04 - 175.6 Weak (Alt) Chlorite>>

<<Alt: 175.04 - 200.6 Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.50	164.50	1.00	B00268936	124	0.923	1.57	0.54	6.18
164.50	165.50	1.00	B00268937	34.1	0.124	0.09	0.26	1.84
165.50	166.50	1.00	B00268938	96.9	0.536	0.25	0.74	4.49
166.50	167.50	1.00	B00268939	149	1.66	1.06	0.48	5.13
167.50	168.00	0.50	B00268941	128	1.88	1.78	0.67	2.54
168.00	169.16	1.16	B00268942	10.5	0.117	0.12	0.07	0.12
169.16	170.16	1.00	B00268943	54.3	2.06	1.8	0.32	1.07
170.16	170.62	0.46	B00268944	53.6	1.47	1.06	0.43	1.47
170.62	171.62	1.00	B00268945	65.1	0.859	0.99	0.71	3.68
171.62	172.62	1.00	B00268946	88	1.18	0.19	0.73	5.92
172.62	173.62	1.00	B00268947	129	1.52	0.46	0.95	4.07
173.62	174.62	1.00	B00268948	153	1.63	0.39	1.62	6.84
174.62	175.04	0.42	B00268949	181	1.64	0.2	2.37	6.61
175.04	176.50	1.46	B00268951	38	0.448	0.78	0.09	0.17
176.50	178.00	1.50	B00268952	25.9	0.346	0.59	0.05	0.08

From (m)	To (m)	Rocktype & Description
176.70	**180.32**	**RHYv** **Rhyolite volcaniclastic**
176.7 - 180.32: Coarse graine sized clasts, subrounded, siliceous. Coarse grained volcaniclastic rhyolite should be considered.		
180.32	**191.52**	**RHY** **undifferentiated rhyolite**
180.32 - 191.52: Texturally complex interval of dominantly felsic composition with overprinted chlorite/muscovite alteration. Evidence of healed brecia, ribboned siliceous banding, fine-coarse grained clastics. Interval is intersected by mafic dikes at 188.15m to 188.23m		
<<Alt: 184.65 - 195 Trace (Alt) Chlorite>>		
<<Vein: 180.32 - 182.08 98% Quartz>>		
<<Vein: 184.14 - 186.7 15% Quartz>>		
<<Vein: 190.3 - 196.65 30% Quartz>> CP, PO in vein adjacent/within OI unit at 191.52 - 192.2m		
191.52	**193.60**	**OI** **Heavilly disseminated sulphides in host schist**
191.52 - 193.6: PO-rich, with minor CP, PY, SP.		
193.60	**198.92**	**RHY** **undifferentiated rhyolite**
193.6 - 198.92: Interval Is predominantly quartz veining and primary textures have been obliterated by alteration and replacement.		
<<Min: 193.6 - 200.6 3% Min: Pyrrhotite>>		
<<Alt: 198.9 - 200.6 Moderate (Alt) Chlorite>>		
198.92	**200.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
198.92 - 200.6: Interval is moderate to strongly chlorite and muscovite altered and contains wisps and clots of CP (~4%) in association with (net-textured) PO (~4%). Interval may be a failed or less altered OJ. Grain sizes are not discernable in host rock; due to pervasi		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
178.00	179.50	1.50	B00268953	0.3	-0.005	-0.01	-0.01	0.01
179.50	181.00	1.50	B00265295	0.7	-0.005	-0.01	-0.01	0.01
181.00	182.50	1.50	B00265296	-0.3	-0.005	-0.01	-0.01	0.04
182.50	184.00	1.50	B00265297	0.9	-0.005	-0.01	-0.01	0.09
184.00	185.50	1.50	B00265298	0.5	-0.005	-0.01	-0.01	0.09
185.50	187.00	1.50	B00265299	-0.3	-0.005	-0.01	-0.01	0.02
187.00	188.00	1.00	B00265301	0.3	-0.005	-0.01	-0.01	0.02
188.00	188.80	0.80	B00265302	0.5	-0.005	0.01	-0.01	0.03
188.80	190.30	1.50	B00268954	16.8	0.277	0.16	0.14	0.4
190.30	191.52	1.22	B00268955	-0.3	0.01	-0.01	-0.01	0.03
191.52	192.52	1.00	B00268956	41.9	0.361	0.91	0.33	1.95
192.52	193.60	1.08	B00268957	17.4	0.207	0.51	0.06	0.13
193.60	195.10	1.50	B00268958	0.3	-0.005	0.02	-0.01	0.03
195.10	196.65	1.55	B00268959	-0.3	-0.005	-0.01	-0.01	0.01
196.65	198.83	2.18	B00265303	-0.3	-0.005	-0.01	-0.01	0.01
198.83	200.00	1.17	B00265304	1.8	0.027	0.09	-0.01	0.06
200.00	200.60	0.60	B00265305	0.6	-0.005	0.05	-0.01	0.06

From (m)	To (m)	Rocktype & Description
200.60	**227.07**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

200.6 - 227.07: Mafic intrusive package. Chlorite alteration ranges from 2 (weak) to 4 (moderate). Abundant calcite in foliation parallel bands as well as finely disseminated throughout. Mafic rocks encounter siliceous alteration and Rhyi unit at base of interval.

<<Min: 200.6 - 203.32 15% Min: Calcite>>
<<Min: 200.6 - 204.4 2% Min: Pyrrhotite>>
<<Min: 203.32 - 209.25 25% Min: Calcite>>
<<Min: 204 - 221 0.5% Min: Pyrite>>
<<Min: 204.4 - 209.2 4% Min: Pyrrhotite>>
<<Min: 209.2 - 221 0.5% Min: Pyrrhotite>>
<<Min: 209.25 - 221.46 12% Min: Calcite>>
<<Min: 221 - 225.3 1% Min: Pyrrhotite>>
<<Min: 221 - 235.3 1% Min: Pyrite>>
<<Min: 221.46 - 225.28 20% Min: Calcite>>
<<Min: 225.28 - 227.5 25% Min: Calcite>>
<<Min: 225.3 - 263.5 0.5% Min: Pyrrhotite>>
<<Alt: 203.4 - 204.33 Weak (Alt) Chlorite>>
<<Alt: 204.33 - 221.26 Moderate (Alt) Chlorite>>
<<Alt: 221.26 - 225.28 Weak (Alt) Chlorite>>
<<Alt: 225.28 - 227.07 Weak (Alt) Silicification>>
<<Alt: 225.28 - 227.07 Trace (Alt) Chlorite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
200.60	202.00	1.40	B00265306	2.7	0.011	0.03	0.01	0.04
202.00	203.00	1.00	B00265307	0.3	-0.005	-0.01	-0.01	0.02

227.07	**259.18**	**RHYi** **Aphanitic Rhyolite (intrusion)**

227.07 - 259.18: Presence of (possible) leucocine found intermittantly through interval. If leucocine is retained exclusively in mafic rocks then portions of this interval may be of mafic origins and have subsequently been intensely silicified.

<<Min: 227.5 - 259.2 8% Min: Calcite>>
<<Min: 235.2 - 259.2 1% Min: Sphalerite>>
<<Min: 235.2 - 259.2 0.5% Min: Galena>>
<<Min: 235.2 - 259.2 0.1% Min: Chalcopyrite>>
<<Min: 235.3 - 259.2 3% Min: Pyrite>>
<<Alt: 227.07 - 259.2 Moderate (Alt) Silicification>>
<<Alt: 227.07 - 259.2 Trace (Alt) Muscovite>>
<<Struc: 229.85 - 229.9 Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 243.22 - 243.28 Fault>>

259.18 260.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 259.2 - 260.65 20% Min: Calcite>>

<<Min: 259.2 - 263.5 2% Min: Pyrite>>

<<Alt: 259.2 - 260.65 Moderate (Alt) Chlorite>>

<<Struc: 259.2 - 263.5 Fault>> Interval contains 6 faults (5cm - 50cm thickness). Base of fault zone is a 5cm piece of core with semi-massive sulphide (CP, PO, PY) that is juxtaposed to adjacent RHYvl unit below.

260.65 263.50 RHYc Rhyolite coherant volcanics

<<Min: 260.65 - 263.5 5% Min: Calcite>>

<<Alt: 260.65 - 275 Weak-Moderate (Alt) Muscovite>>

263.50 268.50 RHYvl Lapilli tuff

<<Min: 263.5 - 275 3% Min: Pyrite>>

<<Min: 263.5 - 275 3% Min: Pyrrhotite>>

<<Min: 263.5 - 275 0.5% Min: Calcite>>

<<Alt: 263.5 - 268.5 Weak (Alt) Chlorite>>

268.50 275.00 RHYvl Lapilli tuff

End of Hole @ 275

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-280

Prospect:	GP4F	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	28-Sep-15
UTM Easting	419661.849	Core Size:	HQ	Azimuth:	180	Date Logging Complete:	05-Oct-15
UTM Northing:	6813561.684	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1325.275	Casing Depth (m):	9	Length (m):	408	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	27-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	04-Oct-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

This hole was drilled to test the north-east extension of the GP4F horizon. Familiar GP4F stratigraphy is present, progressing from sediment/mafic/felsic layers at the top through a broad section of rhyolite, lapilli and quartz eye tuff to coherent flow, and the mineralized sequence of hanging wall QE tuff to altered and mineralized felsic tuff to footwall lapilli tuff (FP porphyry). Mineralization likely equivalent to the GP4F horizon was encountered from about 275 to 287 m. A second mineralized interval, narrow and higher grade, was hit between 364 and 366 m. The lower interval was associated with strong cordierite mineralization that extended well into the footwall (~380 m). This alteration was acommpanied by MU and talc alteration (retrograde?). The hole was pushed to the carbonaceous sediments in the footwall seen in K95-261.

Overall, the mineralization encountered was not significant although the zone at 364-366 is possibly ore grade. It appears that the GP4F does not extend into this area.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	157.5	22.5	180	APS	Geotech	27-Sep-15		☑	
14	-69.1	160.8	22.5	183.3	ReflexEZS	Geotech	27-Sep-15	5850	☑	
45	-68.5	163.6	22.5	186.1	ReflexEZS	Geotech	28-Sep-15	5777	☑	
90	-68.6	162.5	22.5	185	ReflexEZS	Geotech	28-Sep-15	5767	☑	
120	-68	160.4	22.5	182.9	ReflexEZS	Geotech	29-Sep-15	5808	☑	
150	-67.9	162.5	22.5	185	ReflexEZS	Geotech	29-Sep-15	5783	☑	
192	-68	166.3	22.5	188.8	ReflexEZS	Geotech	30-Sep-15	5043	☑	
222	-67.8	165.6	22.5	188.1	ReflexEZS	Geotech	30-Sep-15	5775	☑	
252	-67.7	169.2	22.5	191.7	ReflexEZS	Geotech	30-Sep-15	5797	☑	
282	-66.8	169.3	22.5	191.8	ReflexEZS	Geotech	30-Sep-15	5714	☑	
312	-65.6	171	22.5	193.5	ReflexEZS	Geotech	30-Sep-15	5804	☑	
342	-65.2	173.5	22.5	196	ReflexEZS	Geotech	30-Sep-15	5791	☑	
372	-63.6	175.3	22.5	197.8	ReflexEZS	Geotech	30-Sep-15	5854	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.50**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0 - 9.5: Overburden - pelitic metasediment, rhyolite, and granite boulders.

9.50 21.00 RHYva Coarse grained to ash tuff grey-brown FG

9.5 - 21: Brown and grey, partially oxidized to locally completely oxidized, foliated, fine grained, quartz-muscovite(-biotite) schist/rhyolite ash tuff. Locally contains up to 5% porphyroblastic biotite. Interbedded with narrow (5-10cm) zones of biotite rich pelitic metasediments. Narrow zones (10-30cm) contain up to 10% lapilli sized fragments. Oxidation seems to prefer quartz-muscovite zones. 8-9m broken core.

<<Struc: 12 - 13 Moderate (Alt) Fault>>

21.00 23.90 RHYif feldspar and quartz porphyry intrusions grey FMG

21 - 23.9: Light grey, massive, fine to medium grained, quartz-feldspar porphyry. Several 1-2mm bluish quartz crystals, with abundant 1-2mm feldspar crystals. No lapilli fragments interpreted. Sharp upper contact with possible alteration halo, broken core at lower contact.

<<Struc: 21 - 21.1 Moderate (Alt) dominant foliation>>

23.90 32.45 RHYv Rhyolite volcaniclastic grey-brown FMG

23.9 - 32.45: Dark grey to greenish grey, foliated, fine to medium grained, heterogeneous, biotite-quartz-chlorite schist/epiclastic rock with minor felsic component. Narrow (1-10cm) zones with higher chlorite content could be mafic tuffaceous material. Bottom 50cm are biotite rich and could be pelitic sediment dominated.

<<Struc: 30 - 30.1 Moderate (Alt) dominant foliation>>

<<Struc: 30.6 - 31 Moderate (Alt) Fault>>

32.45 36.70 MAFta Coarse grained to ash tuff brown FMG

32.45 - 36.7: Green, grey, and brown, foliated and mottled, fine to medium grained, biotite-quartz-chlorite-schist/mafic tuff interbedded with minor metapelite. Could be peperite textures. This unit looks more fragmental towards the margins and more massive and irregular in the core.

36.70 38.10 RHYvl Lapilli tuff grey-brown FMG

36.7 - 38.1: Grey to brownish grey, foliated, fine to medium grained, quartz-biotite-muscovite schist/felsic fragmental?. Dominantly siliceous fragments with thin (<1mm) wispy biotite bands between fragments.

38.10 44.30 SED undifferentiated Sediment grey-brown FG

38.1 - 44.3: Grey to greenish grey, foliated, fine grained, biotite schist/pelitic metasediment. Locally up to 5% tufaceous component. Locally weakly carbonaceous associated with the finest grained beds.

44.30 46.98 MAFta Coarse grained to ash tuff green-brown FG

44.3 - 46.98: Green, brown, and grey, foliated with irregular, mottled banding, fine grained, chlorite-biotite-carbonate schist/mafic tuff interbedded with pelitic sediments.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

46.98 48.25 RHYvl Lapilli tuff grey FMG

46.98 - 48.25: Grey, weakly foliated, fine to medium grained, feldspar-quartz-biotite schist/rhyolite feldspar crystal lapilli tuff with up to 10% fine grained foliated biotite.

48.25 81.10 SED undifferentiated Sediment grey-brown FG

48.25 - 81.1: Light grey, and brown, foliated and banded, fine grained, quartz-biotite schist/metapelite. Small zones (up to 30cm) with higher chlorite content, which may have a mafic component. Locally weakly carbonaceous in the finer grained bands. Locally weakly siliceous. Cut by occasional quartz vein.

<<Vein: 51.35 - 51.45 90% Quartz 70 deg. >> quartz vein

<<Vein: 54.1 - 54.2 90% Quartz 70 deg. >> quartz vein

<<Vein: 70.5 - 70.7 90% Quartz 80 deg. >> quartz vein

81.10 86.20 RHYva Coarse grained to ash tuff light grey MG

81.1 - 86.2: Light grey, massive to weakly foliated, equigranular, quartz-muscovite-biotite ash crystal tuff (?) with small (~1-2mm) quartz eyes. Sharp lower contact, gradational upper contact. Very massive, homogeneous, medium grained unit. Could be intrusion, since it is medium grained.

86.20 86.90 SED undifferentiated Sediment green-brown FG

86.2 - 86.9: Green, brown, and grey, foliated and banded, fine grained, chlorite-biotite-carbonate schist/pelitic sediment with mafic tuffaceous component.

86.90 92.80 MAFta Coarse grained to ash tuff green-brown FG

86.9 - 92.8: Green and brown, foliated and weakly banded, fine grained, biotite-chlorite-actinolite schist/mafic tuff. Small (<2mm) actinolite porphyroblasts.

92.80 104.80 RHYva Coarse grained to ash tuff light grey FG

92.8 - 104.8: Light grey, weakly foliated to massive, fine grained, quartz-muscovite schist/rhyolite ash tuff with rare, small (1mm) bluish quartz crystals. Very similar composition to the above felsic unit although finer grained.

<<Vein: 95 - 96 10% Quartz 5 deg. >> quartz-tourmaline vein

104.80 105.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FG

104.8 - 105.65: Brown, foliated, fine grained, biotite schist/mafic intrusion. Sharp upper and lower contacts and the lower contact appears to altered the unit below.

105.65 114.20 RHYvl Lapilli tuff light grey FMG

105.65 - 114.2: Light to medium grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli and ash tuff. Abundant 2-4cm flat elongated siliceous lapilli in a fine grained, quartz-muscovite matrix. May contain feldspar crystals but no quartz eyes. Several bands of interbedded fine grained ash.

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

114.20 114.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FG

114.2 - 114.5: Brown, foliated, fine grained, biotite schist/mafic intrusion(?).

114.50 115.50 RHYvl Lapilli tuff light grey FMG

114.5 - 115.5: Light to medium grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli and ash tuff. Abundant 2-4cm flat elongated siliceous lapilli in a fine grained, quartz-muscovite matrix. May contain feldspar crystals but no quartz eyes.

115.50 117.10 RHYvx Quartz and/or feldspar crystal tuff light grey FG

115.5 - 117.1: Light grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite quartz-feldspar crystal tuff with common small 1-2mm bluish quartz eyes.

117.10 117.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

117.1 - 117.9: Greenish-brown, foliated, fine grained, biotite-actinolite schist/mafic dyke.

117.90 122.80 RHYva Coarse grained to ash tuff grey FG

117.9 - 122.8: Grey, weakly foliated, fine grained, quartz-muscovite schist/rhyolite ash tuff. The base of this unit is a lapilli tuff that fines up hole to ash tuff that is overlain (with a narrow structural contact) by weakly carbonaceous schist (pelitic sediment).

122.80 126.00 MAFta Coarse grained to ash tuff green-brown FG

122.8 - 126: Brown to greenish brown, weakly foliated to massive, biotite-chlorite schist/mafic intrusion. Narrow bands (1-5cm) are chlorite-rich. Sharp upper and lower contact. Cut by occasional quartz carbonate veins.

<<Vein: 125.47 - 125.61 100% Quartz 70 deg. >> quartz vein

126.00 130.20 RHYvx Quartz and/or feldspar crystal tuff grey FMG

126 - 130.2: Grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite feldspar crystal lapilli tuff. Abundant 1-2cm flat stretched lapilli with abundant <1cm blocky feldspar crystals in a fine quartz-muscovite-biotite matrix.

130.20 131.90 SED undifferentiated Sediment brown FG

130.2 - 131.9: Brown, foliated, fine grained, quartz-biotite schist/metapelite or mafic dyke.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

131.90 138.80 RHYvx Quartz and/or feldspar crystal tuff grey FMG

131.9 - 138.8: Grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite feldspar crystal, lapilli tuff. Abundant 1-2cm flat stretched lapilli with abundant <1cm blocky feldspar crystals in a fine quartz-muscovite-biotite matrix.

<<Struc: 135.4 - 138 Moderate-Strong (Alt) Fault>> fault zone with minor gouge development

138.80 139.60 SED undifferentiated Sediment brown FG

138.8 - 139.6: Brown, foliated, fine grained, biotite schist/metapelite.

139.60 149.60 RHYvl Lapilli tuff grey FMG

139.6 - 149.6: Grey, foliated, fine to medium grained, quartz-muscovite-biotite schist/rhyolite lapilli tuff with minor pelitic component. Several beds (20-50cm) of biotite rich pelitic sediments interbedded with rhyolite lapilli tuff. Some of the tuffaceous horizons are very biotite rich. Moderately sericite altered zone associated with small fault zone (49.0-40.5m)

<<Alt: 149 - 149.6 Moderate (Alt) Muscovite>> fault hosted sericite alteration.

<<Struc: 149 - 149.6 Moderate-Strong (Alt) Fault>> sericite altered fault zone.

149.60 154.10 RHYvl Lapilli tuff grey-green FMG

149.6 - 154.1: Greenish grey, weakly foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Abundant small (<1cm), locally densely packed, siliceous, lapilli within a weakly altered quartz-muscovite (sericite) matrix. Light green color to this unit could be weak pervasive, sericite (or very weak chlorite) alteration. Cut by occasional very narrow (1mm), fine grained, pyrite veinlets. Abundant fractures at 30-40o ca.

<<Alt: 149.6 - 154.1 Weak-Moderate (Alt) Muscovite>> fault hosted sericite alteration.

154.10 154.80 SED undifferentiated Sediment brown FG

154.1 - 154.8: Brown, foliated, fine grained biotite schist/metapelite. Cut by abundant quartz veins.

154.80 156.80 RHYvl Lapilli tuff grey FMG

154.8 - 156.8: Grey, foliated, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Cut by occasional quartz veins.

156.80 157.30 SED undifferentiated Sediment brown FG

156.8 - 157.3: Brown, foliated, fine grained biotite schist/metapelite. Cut by narrow carbonate veins.

157.30 171.37 RHYvl Lapilli tuff grey FMG

157.3 - 171.37: Grey, foliated, weakly altered, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Alteration is weak, pervasive sericite alteration with rare, narrow (1-2cm) bands with fine grained disseminated pyrite. Cut by occasional (10-20cm) quartz veins with trace pyrite.

<<Alt: 157.3 - 171.37 Weak-Moderate (Alt) Muscovite>> weak pervasive sericite alteration

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 164.2 - 164.4 80% Quartz-Sericite/White mica 70 deg. >> quartz sericite vein

<<Vein: 169.6 - 170 90% Quartz-Sericite/White mica 70 deg. >> quartz sericite vein

<<Struc: 164.2 - 164.4 Moderate (Alt) Vein>> quartz sericite vein.

<<Struc: 165.5 - 165.8 Weak-Moderate (Alt) Fault>> broken core associated with fault zone

<<Struc: 169.6 - 170 Moderate-Strong (Alt) Vein>> quartz sericite vein.

171.37 173.10 SED undifferentiated Sediment brown FG

171.37 - 173.1: Brown, foliated and faulted, fine grained biotite schist. 171.9-172.2m well developed fault gouge.

<<Struc: 171.9 - 172.2 Strong (Alt) Fault>> well developed fault gouge.

173.10 179.50 RHYvl Lapilli tuff grey FMG

173.1 - 179.5: Grey, weakly to moderately altered, fine to medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Alteration is weak to moderate, pervasive, sericite alteration with trace fine grained disseminated pyrite. From 174-179m faulted, broken rock, contains a mixture of biotite schist and muscovite schist in the fault zone.

<<Alt: 173.1 - 179.5 Weak-Moderate (Alt) Muscovite>> weak pervasive sericite alteration

<<Struc: 174 - 174.7 Weak-Moderate (Alt) Fault>> broken core associated with fault zone

<<Struc: 178 - 179 Moderate-Strong (Alt) Fault>> fault zone.

179.50 181.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FMG

179.5 - 181.8: Brown, weakly foliated, fine to medium grained, biotite-(actinolite) schist/mafic dyke. Cut by rare quartz veins.

181.80 189.00 RHYvl Lapilli tuff grey FMG

181.8 - 189: Grey, foliated, medium grained, quartz-muscovite schist/rhyolite lapilli tuff. Alteration is weak to moderate pervasive, sericite alteration. This unit may contain feldspar crystals however alteration makes it difficult to determine.

<<Vein: 183.2 - 183.5 80% Quartz 30 deg. >> quartz vein

<<Vein: 183.8 - 184.9 5% Tourmaline 20 deg. >> tourmaline vein.

<<Struc: 183.2 - 183.5 Strong (Alt) Vein>> quartz vein

189.00 194.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

189 - 194.9: Brown to greenish brown, fine grained, weakly foliated, biotite-actinolite schist/mafic intrusion. Locally massive and locally actinolite-rich bands.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

194.90 200.40 RHYvl Lapilli tuff grey FMG

194.9 - 200.4: Grey, weakly foliated, fine to medium grained, weakly altered, quartz-muscovite schist/rhyolite lapilli tuff. Alteration is weak, pervasive sericite (plus pyrite) alteration. Trace fine grained disseminated pyrite. Broken core for the bottom 1m of this interval.

<<Alt: 194.9 - 200.4 Weak-Moderate (Alt) Muscovite>> weak pervasive sericite alteration

<<Struc: 199.8 - 200.4 Weak-Moderate (Alt) Fault>> fault zone.

200.40 202.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

200.4 - 202.6: Brown to greenish brown, fine grained, weakly foliated, biotite-actinolite schist/mafic intrusion. Locally massive and locally actinolite-rich bands.

202.60 212.90 RHYvl Lapilli tuff grey FG

202.6 - 212.9: Grey to greenish grey, weakly foliated, fine to medium grained, weakly to moderately altered, quartz-muscovite schist/rhyolite lapilli tuff (feldspar crystal tuff). The majority of 'fragments' are lithic lapilli with visible igneous textures in the lapilli. Alteration is weak to locally moderate, pervasive, sericite alteration with trace pyrite associated with the moderate alteration.

<<Alt: 202.6 - 212.9 Weak-Moderate (Alt) Muscovite>> weak pervasive sericite alteration

212.90 213.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FG

212.9 - 213.5: Brown to greenish brown, fine grained, weakly foliated, biotite-actinolite schist/mafic intrusion.

213.50 228.20 RHYvl Lapilli tuff grey FG

213.5 - 228.2: Grey to greenish grey, weakly foliated, fine to medium grained, weakly to moderately altered, quartz-muscovite schist/rhyolite lapilli tuff (feldspar crystal tuff). The majority of 'fragments' are lithic lapilli with visible igneous textures in the lapilli. Alteration is weak to locally moderate, pervasive, sericite alteration with trace pyrite associated with the moderate alteration.

<<Min: 213.5 - 228.2 2% Min: Pyrite>>

<<Alt: 213.5 - 228.2 Moderate (Alt) Muscovite>> moderate sericite alteration

<<Alt: 213.5 - 228.2 Weak (Alt) Chlorite>> weak, patchy chlorite alteration

<<Vein: 227.8 - 228 90% Quartz 75 deg. >> quartz vein

228.20 230.40 RHYva Coarse grained to ash tuff grey FG

228.2 - 230.4: Grey, foliated, fine grained, weakly to moderately altered, quartz-muscovite schist/rhyolite ash tuff. Alteration is weak to moderate, pervasive sericite alteration with fine grained disseminated pyrite associated with the moderate alteration zones, QE locally? -rare

<<Min: 228.2 - 230.4 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 228.2 - 230.4 Weak-Moderate (Alt) Muscovite>> weak pervasive sericite alteration

230.40 232.40 SED undifferentiated Sediment brown FG

230.4 - 232.4: Brown, foliated, fine grained, biotite schist. Alteration is weak to mdoerate pervaive sericite alteration with fine grained disseminated pyrite.

<<Min: 230.4 - 230.9 2% Min: Pyrite>>

<<Min: 230.9 - 232 1% Min: Pyrite>> wisps in a CL alt'd zone

<<Min: 230.9 - 232 1% Min: Calcite>>

<<Min: 232 - 234.2 1% Min: Pyrrhotite>> and in fracs

<<Min: 232 - 234.2 5% Min: Calcite>> MAFi

<<Alt: 230.4 - 230.9 Moderate (Alt) Muscovite>> moderate pervasive sericite alteration

<<Alt: 230.4 - 231.45 Weak-Moderate (Alt) Chlorite>> weak pervasive chlorite alteration

<<Alt: 231.8 - 234.2 Moderate (Alt) Chlorite>> bands to pervasive

232.40 234.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown MG

233.18	234.18	1.00	B00269222	-0.3	-0.005	-0.01	-0.01	0.04

232.4 - 234.2: medium grained green to brown, AC in bands, QZ-CA vns, gradational contacts

234.18	235.40	1.22	B00269223	0.4	0.007	0.02	0.01	0.36

234.20 241.70 RHYva Coarse grained to ash tuff grey FG

235.40	236.80	1.40	B00269224	1.1	-0.005	0.01	0.04	0.09

234.2 - 241.7: Grey, foliated, fine grained, weakly to moderately altered, quartz-muscovite schist/rhyolite ash tuff. Alteration is weak to moderate, pervasive sericite alteration with fine grained disseminated pyrite associated with the moderate alteration zones.

<<Min: 234.2 - 237.2 0.5% Min: Sphalerite>> wisps in narrow bands

<<Min: 234.2 - 237.2 5% Min: Pyrite>> bands and streaks, in fractures

<<Min: 234.2 - 237.2 0.5% Min: Chalcopyrite>> blebs with PY bands

<<Min: 234.2 - 237.9 3% Min: Calcite>> throughout

<<Min: 237.2 - 247.9 1% Min: Pyrite>> in bands, fine diss'ns and fractures

<<Min: 237.2 - 247.9 0.5% Min: Pyrrhotite>> also in bands with PO

<<Alt: 234.2 - 237.2 Moderate (Alt) Chlorite>> in bands with PY and or CP, cut RHY

<<Alt: 234.2 - 237.2 Moderate (Alt) Biotite>> fades with depth

<<Alt: 234.2 - 238.95 Weak (Alt) Garnet>> scattered pblasts

<<Alt: 237.2 - 246.95 Weak (Alt) Biotite>> with SI and PY, original?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
241.70	**255.10**	**RHYv Rhyolite volcaniclastic grey-green FCG** 241.7 - 255.1: ash to lapilli tuff, very well defined beds, sharp contacts, thin beds, 0.3 to several metres, lapilli are white, felsic, granular, QE's are bluish up to 5 mm, conc'n changes bed to bed, minor BI in groundmass, locally lapilli almost coalesce suggesting RHYc origins <<Min: 252.5 - 253.3 10% Min: Calcite>> <<Min: 253.3 - 267.6 1% Min: Calcite>> and diss'd blebs <<Alt: 241.7 - 255.1 Moderate (Alt) Muscovite>> in RHY, but coating fractures <<Vein: 246.95 - 247.9 85% Quartz>> QZ-CB(?) vns <<Struc: 252 - 254.5 Strong (Alt) Fault>> several zones of gouge, shattered core, weathered core									
255.10	**265.00**	**RHYva Coarse grained to ash tuff grey-brown FMG** 255.1 - 265: ash with discrete lapilli beds, MAFi with BI envelopes or SED, darken ore, <<Min: 260 - 261.4 5% Min: Pyrite>> forms bands <<Min: 260 - 261.4 3% Min: Pyrrhotite>> in bands with PY <<Min: 261.4 - 265 3% Min: Pyrite>> fractures, diss'ns <<Min: 261.4 - 270 1% Min: Pyrrhotite>> t/o <<Alt: 255.1 - 265.1 Weak (Alt) Muscovite>> and coating fractures, crystalline, not greasy <<Alt: 260 - 261.4 Moderate (Alt) Chlorite>> Bands and patches, with PY/PO <<Alt: 264.6 - 277.8 Moderate (Alt) Chlorite>> in and out a bit, in fractures in the RHYc, on fol'n, looks like there is alt'n of the BI-rich units <<Alt: 264.8 - 293.2 Moderate (Alt) Biotite>> with CL usually <<Struc: 256.15 - 256.16 Strong (Alt) dominant foliation>> shearing and local gouge zones along fol'n	260.13	261.40	1.27	B00269225	1	-0.005	0.02	-0.01	0.03
265.00	**276.73**	**RHYv Rhyolite volcaniclastic grey-green FG** 265 - 276.73: very mixed section, short stretches of white, aphanitic RHYc(?), curdy to flow banded, mixed with med grey-green ash to lapilli tuff, and BI-rich MAFI or SED. SX mineralization is picking up and MU alt'n strengthening. QV's common. Flow band margins replaced by Cl, TO, sx in RHYc sections <<Min: 265 - 268.9 5% Min: Pyrite>> along fol'n <<Min: 267.6 - 277.7 5% Min: Calcite>> up to 10% locally, pervasive to fractures <<Min: 268.9 - 277.8 3% Min: Sphalerite>> bands and blebs in fol'n, and veins? <<Min: 268.9 - 277.8 10% Min: Pyrite>> blebs and diss'ns along fol'n, in veins, definitely con'd bands with SP, GL, PO <<Min: 268.9 - 277.8 0.5% Min: Galena>> scattered in sx bands, in QZ veins <<Min: 270 - 282 3% Min: Pyrrhotite>> local narrow bands, minor blebs, small masses <<Alt: 265.1 - 268.9 Moderate (Alt) Muscovite>> in fractures, faults, in bands along fol'n	267.60	268.90	1.30	B00269226	0.5	0.005	-0.01	0.01	0.02
			268.90	270.00	1.10	B00269227	3.8	0.016	-0.01	0.2	0.39
			270.00	270.75	0.75	B00269228	2.6	0.012	-0.01	0.14	0.26
			270.75	271.75	1.00	B00269229	6.1	0.012	-0.01	0.42	0.57
			271.75	272.85	1.10	B00269231	0.7	-0.005	-0.01	0.03	0.04
			272.85	274.00	1.15	B00269232	3	0.01	-0.01	0.17	0.54
			274.00	275.50	1.50	B00269233	1.7	0.007	-0.01	0.12	0.37
			275.50	276.73	1.23	B00269234	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description

<<Alt: 268.9 - 277.8 Strong (Alt) Muscovite>> generally strong, locally intense, so much MU in bands that they are soft, almost gouge-like. What was weathere out? There appars to be the possibility of a yellowy green overprint (MS or EP?) patches, bleaches the BI-rich sections

<<Struc: 273.2 - 273.21 Moderate (Alt) Foliation>>

276.73 293.20 RHYvl Lapilli tuff grey-green FG

276.73 - 293.2: still mixed section, ash, lapilli tuff and SED/MAFi, faulting picks up in lower half, heavy MU makes the core soft and friable locally, sx content strong.

Late(?) overprint of EP(?) gives yellowish green colour, some SI associated, in bands and around veins, fractures, seems to reduce the sulphide content.CA is present through most of the section.

<<Min: 277.8 - 282 3% Min: Sphalerite>> in bands, veinlets, stringers

<<Min: 277.8 - 282 10% Min: Pyrite>> bands and lenses

<<Min: 277.8 - 282 1% Min: Galena>> with SP, PY

<<Min: 282 - 283.75 5% Min: Sphalerite>> bands, masses, 3 cm wide massive band at 283.5

<<Min: 282 - 283.75 15% Min: Pyrite>> bands, lenses

<<Min: 282 - 283.75 3% Min: Pyrrhotite>> small masses, diss'd lenses

<<Min: 282 - 283.75 3% Min: Galena>> blebs, wisps in sx bands, veins

<<Min: 283.75 - 287.37 3% Min: Sphalerite>> lenses, bands, wisps

<<Min: 283.75 - 287.37 5% Min: Pyrite>> in groundmass, blebs and pods in veins, fractures, faults

<<Min: 283.75 - 287.37 3% Min: Pyrrhotite>> throughout, wisps

<<Min: 283.75 - 287.37 1% Min: Galena>> in veins, diss'ns in groundmass

<<Min: 287.37 - 293.2 3% Min: Sphalerite>> and diss'd lenses

<<Min: 287.37 - 293.2 5% Min: Pyrite>> diss'd bands, blebs, small masses in veins, MU zones

<<Min: 287.37 - 293.2 0.5% Min: Galena>> with SP

<<Alt: 277.8 - 293.2 Strong (Alt) Chlorite>> narrow bands and patches in groundmass, usually with PY, minor SP, GL. Not pervasive like strong proximal alt'n. BI usually present.

<<Alt: 277.8 - 297.2 Intense (Alt) Muscovite>> possibly overprint, too, with EP? In the soft intervals, MU dominates in faults gouge, glitters!, minor CL as well

<<Vein: 285.25 - 285.5 20% Quartz-Sulphide 10 deg. >> 2 cm wide QZ-Sx vein with GL, PY, SP blebs, in fractures

<<Struc: 279.9 - 280.2 Weak (Alt) Fault>> 1.5 cm CA vein/bx included

<<Struc: 280.58 - 280.65 Weak (Alt) Fault>> gouge, broken core

<<Struc: 285.25 - 285.5 Moderate (Alt) Vein>> hosted by fault

<<Struc: 287.7 - 287.94 Strong (Alt) Fault>> gouge, broken core

<<Struc: 291.2 - 293.3 Moderate (Alt) Fault>> measured in gouge

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
276.73	277.80	1.07	B00269235	2.4	0.022	-0.01	0.15	1.23
277.80	279.30	1.50	B00269236	5.5	0.013	-0.01	0.48	3.09
279.30	280.80	1.50	B00269237	3.9	0.007	-0.01	0.35	1.77
280.80	282.00	1.20	B00269238	2.2	0.009	-0.01	0.13	0.65
282.00	283.00	1.00	B00269239	4.6	0.005	0.02	0.51	0.59
283.00	283.75	0.75	B00269241	24	0.016	0.02	2.35	2.54
283.75	285.00	1.25	B00269242	1.4	-0.005	0.01	0.09	0.27
285.00	286.00	1.00	B00269243	7.5	0.007	0.01	0.42	0.4
286.00	287.37	1.37	B00269244	6.7	0.008	0.02	0.23	0.36
287.37	289.15	1.78	B00269245	1.8	-0.005	0.02	0.03	0.07
289.15	290.00	0.85	B00269246	1.2	-0.005	-0.01	0.02	0.06
290.00	291.00	1.00	B00269247	1.9	-0.005	0.02	0.09	0.49
291.00	293.20	2.20	B00269248	2.6	-0.005	-0.01	0.21	0.98

From (m)	To (m)		Rocktype & Description		
293.20	**297.25**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	**FMG**

293.2 - 297.25: mostly homogeneous, altered patches and margins, realted to late EP-MS?, CA-rich where unaltered

<<Alt: 297.2 - 300.5 Weak (Alt) Muscovite>> interstices?

297.25	**299.71**	**RHYc**	**Rhyolite coherant volcanics**	**leucocratic**	**FG**

297.25 - 299.71: BI mixed with the MU, strong BI approaching the MAFi at bottom

<<Min: 299.33 - 300.5 20% Min: Calcite>>

299.71	**300.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	

299.71 - 300.5: mottled, altered

300.50	**316.01**	**RHYva**	**Coarse grained to ash tuff**	**grey-green**	**FG**

300.5 - 316.01: well fol'd, siliceous layers,locally rotten due to weathering and heavy MU content, significant MAFi component, strong faulting with MU-rich gouge

<<Min: 300.5 - 304.2 0.5% Min: Pyrite>>
<<Min: 300.5 - 304.2 3% Min: Pyrrhotite>> narrow bands, blebs in veins
<<Min: 300.5 - 308.46 1% Min: Calcite>>
<<Min: 304.2 - 305.9 0.5% Min: Pyrrhotite>> blebs
<<Min: 305.9 - 308.46 0.01% Min: Sphalerite>> possibly?, tace blebs in fault
<<Min: 305.9 - 308.46 5% Min: Pyrite>> in fault zones
<<Min: 308.46 - 310.58 0.5% Min: Pyrite>>
<<Min: 308.46 - 310.58 0.5% Min: Pyrrhotite>> local
<<Min: 308.46 - 315.9 3% Min: Calcite>> 1% in main lithologies, 10% in MAFi
<<Min: 310.58 - 329.1 1% Min: Pyrite>> blebs, veins, associated with faults and shears, not much in host rock
<<Min: 310.58 - 329.1 0.5% Min: Pyrrhotite>> in lenses, groundmass
<<Min: 315.9 - 329.1 1% Min: Calcite>>
<<Alt: 300.5 - 314.9 Strong (Alt) Muscovite>> strong in faults, between dykes
<<Alt: 300.5 - 314.9 Moderate (Alt) Chlorite>> darkens core in fault and heavy MU zones, with SX commonly
<<Alt: 314.9 - 329.1 Weak (Alt) Chlorite>> minor in shears, associated with MAFi
<<Struc: 302.98 - 303.66 Strong (Alt) Fault>> measured at top contact, gouge wit MU, broken core

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
293.20	294.70	1.50	B00269249	-0.3	-0.005	-0.01	-0.01	0.02
294.70	295.85	1.15	B00269252	0.3	-0.005	-0.01	-0.01	0.01
295.85	297.00	1.15	B00269253	-0.3	-0.005	-0.01	-0.01	0.01
297.00	298.00	1.00	B00269254	-0.3	-0.005	-0.01	-0.01	0.01
298.00	299.33	1.33	B00269255	-0.3	-0.005	-0.01	-0.01	-0.01
299.33	300.50	1.17	B00269256	0.5	-0.005	-0.01	-0.01	0.03
300.50	302.00	1.50	B00269257	1.9	-0.005	-0.01	0.03	0.07
302.00	303.00	1.00	B00269258	1.6	-0.005	-0.01	0.01	0.02
303.00	304.20	1.20	B00269259	1.8	-0.005	-0.01	-0.01	0.03
304.20	305.00	0.80	B00269261	-0.3	-0.005	-0.01	-0.01	-0.01
305.00	306.00	1.00	B00269262	-0.3	-0.005	-0.01	-0.01	0.01
306.00	307.50	1.50	B00269263	2.2	-0.005	-0.01	0.02	0.05
307.50	308.50	1.00	B00269264	3.5	-0.005	0.01	0.02	0.24

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 306.05 - 308.46 Moderate (Alt) Fault>> gouge, veining, broken core,

<<Struc: 312 - 313.9 Weak (Alt) Fault>> broken core, minor gouge

<<Struc: 314.2 - 314.9 Moderate (Alt) Fault>> broken, gouge, measured on gouge/rock contact, slicks present

316.01 320.70 RHYvl Lapilli tuff grey-brown

316.01 - 320.7: not well defined

320.70 329.10 SED undifferentiated Sediment grey-green

320.7 - 329.1: soft, micaceous, with intervals of more quartzose rock-Tuff?, might be RHYva but difficult to distinguish, MS-CL locally, TO or BI pblasts

<<Struc: 328.25 - 330 Strong (Alt) Fault>> gouge, 25 cm lost core

329.10 333.15 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

329.1 - 333.15: encloses a couple short RHYv intervals

<<Struc: 331.15 - 334 Moderate (Alt) Fault>> broken mostly

333.15 348.60 RHYv Rhyolite volcaniclastic grey-green

333.15 - 348.6: heterogeneous, banded rock, mottled, greenish bands with calc-silicate minerals?, local alt'n from MAFi, CL-AC? In bands, with sx locally

<<Min: 333.15 - 346.1 0.5% Min: Pyrite>>

<<Min: 333.15 - 346.1 1% Min: Pyrrhotite>> and wisps along fol'n

<<Min: 346.1 - 348.6 1% Min: Sphalerite>> in alt'd schist

<<Min: 346.1 - 348.6 3% Min: Pyrite>> in fault and veins

<<Alt: 333.15 - 342.15 Moderate (Alt) Chlorite>> scattered, lenses to bands, with SI?, AC?, medium green clour,

<<Alt: 333.15 - 348.5 Weak (Alt) Muscovite>> occurs in fault zones, also bands in host but scattered

<<Alt: 346.1 - 348.6 Moderate (Alt) Chlorite>> in schist within faut zone

<<Alt: 348.5 - 354 Moderate (Alt) Muscovite>> to bands, approaching fault, lost core

<<Struc: 337.5 - 337.8 Moderate (Alt) Fault>> irregular gouge

<<Struc: 345.3 - 347.6 Strong (Alt) Fault>> big gouge at end, 0.6 m lost core

348.60 352.70 RHYvl Lapilli tuff grey-brown CG

348.6 - 352.7: banded, mottled appearance due to variable alt'n of BI, MU in fracs, shears and interstitial in groundmass.

<<Min: 348.6 - 354.52 0.5% Min: Pyrrhotite>>

<<Min: 348.6 - 354.52 3% Min: Calcite>> minor diss'd in groundmass

<<Min: 352.54 - 357.82 0.5% Min: Pyrite>> late veinlets, minor diss'ns

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 352.5 - 354.52 Strong (Alt) Fault>> 1.3 m lost core, above 354 mostly									
352.70	**363.56**	**RHYva Coarse grained to ash tuff grey-brown FG**	362.10	363.60	1.50	B00269265	1.6	-0.005	-0.01	-0.01	0.03
		352.7 - 363.56: lapilli layers within finer schistose RHYva, BI in groundmass, bands and layers, wisps, MU ocurs in soft seams in fractures, talcose feel, late QZ-TO veins with bleached envelopes,									
		<<Min: 354.52 - 357.82 3% Min: Pyrrhotite>> in CL bands especially									
		<<Min: 354.52 - 357.82 0.5% Min: Calcite>>									
		<<Min: 357.82 - 363.9 0.5% Min: Calcite>> minor fracs									
		<<Min: 357.82 - 364.25 1% Min: Pyrrhotite>> in bands									
		<<Alt: 354.52 - 357.82 Moderate (Alt) Chlorite>> weakly pervasive and narrow intensley altered bands, with cse BI, and PO									
		<<Alt: 357.82 - 363.9 Moderate (Alt) Muscovite>> weak pervasive but mostly in narrow seams, bands									
363.56	**383.25**	**RHYvx Quartz and/or feldspar crystal tuff green-brown FCG**	363.60	364.25	0.65	B00269266	19.9	0.119	0.02	0.02	-0.01
		363.56 - 383.25: strongly sheared and altered, CI, MU, talc?, BI occurs in groundmass in bands and patches, blue QE's t/o, minor MAFi (BI-AC), CL is not readily apparent, clay(?) alteration of micas results in soft, gouge-like zones, locally mineralized									
		<<Min: 364.25 - 365.75 15% Min: Sphalerite>> masses, bands, fracs	364.25	365.75	1.50	B00269267	492	0.798	0.27	3.45	6.8
		<<Min: 364.25 - 365.75 5% Min: Pyrrhotite>> scattered in sx	365.75	367.00	1.25	B00269268	21.8	0.071	0.02	0.06	0.02
		<<Min: 364.25 - 365.75 5% Min: Galena>> interstitial with CP	367.00	368.14	1.14	B00269269	4.2	-0.005	0.01	-0.01	0.01
		<<Min: 364.25 - 365.75 5% Min: Chalcopyrite>> in sx and QV									
		<<Min: 365.75 - 367.32 0.01% Min: Pyrrhotite>>									
		<<Min: 368.14 - 372.65 0.5% Min: Pyrite>> focused around MU alt'n									
		<<Min: 368.14 - 372.65 1% Min: Pyrrhotite>>									
		<<Min: 372.65 - 377.52 5% Min: Calcite>> strong in TA(?) alt'd sections, veins									
		<<Min: 372.65 - 379.1 0.5% Min: Pyrite>> sattered, small blebs, patchy, in preserved rock									
		<<Min: 379.1 - 383.25 1% Min: Pyrrhotite>> and diss'ns									
		<<Min: 382.32 - 383.25 3% Min: Pyrite>> lenses along fol'n									
		<<Alt: 363.9 - 365.99 Strong (Alt) Muscovite>> local fault zones									
		<<Alt: 364.25 - 365.78 Moderate (Alt) Chlorite>> in QV, in sx zones, with CI									
		<<Alt: 365.53 - 365.99 Intense (Alt) Cordierite>> masses, in patches at top of interval, mixed with SI clasts the rest of the way?									
		<<Alt: 365.78 - 366.05 Strong (Alt) Silicification>> bx'd clasts?, with very fine grained diss'd and laminated sx									
		<<Alt: 365.99 - 367.32 Moderate (Alt) Cordierite>>									
		<<Alt: 365.99 - 368.14 Intense (Alt) Muscovite>> anastomosing fol'n around bx'd silica									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 367.32 - 368.14 Strong (Alt) Silicification>> bx'd clasts 367.32

<<Alt: 367.32 - 368.14 Strong (Alt) Cordierite>> scattered pblasts in MU matrix, SI clasts?

<<Alt: 368.14 - 372.65 Moderate (Alt) Muscovite>> on fol'n, narrow zones

<<Alt: 372.65 - 378.22 Strong (Alt) Cordierite>> intense CI alt'n in short patches of preserved rock i.e. not completely gone to talc or clay Talc(?, or some white clay) is probably after the Mg-rich alt'n that resulted in cordierite

<<Alt: 372.65 - 379.1 Strong (Alt) Muscovite>> altered to clay?

<<Alt: 372.65 - 379.1 Strong (Alt) Talc-serpentine>> sections of core, in veins with CA, QZ, magnesite

<<Alt: 379.1 - 382.03 Moderate (Alt) Muscovite>>

<<Alt: 382.32 - 383.25 Strong (Alt) Biotite>> to diss'd pblasts

<<Alt: 382.32 - 383.25 Strong (Alt) Chlorite>> to pervasive

<<Alt: 382.35 - 385.25 Weak (Alt) Muscovite>> in RHYc

<<Vein: 364.36 - 365.5 60% Quartz-Sulphide 30 deg. >> QZ-sx vein, irregular, boudinaged, sulphides in fracs, flow around vein

<<Vein: 373 - 373.3 90% Quartz-Carbonate 60 deg. >> QZ-CA-magnesite? Vein, Talc included?,

<<Struc: 365 - 365.5 Moderate (Alt) Fault>> 0.5 m lost core in the middle of mineralized zone?, hard to place core loss exactly

<<Struc: 369.4 - 369.41 Moderate (Alt) dominant foliation>> planar

383.25 385.25 RHYc Rhyolite coherant volcanics grey-brown FG

383.25 - 385.25: schistoce, siliceous? Rock, disaggregated silicic bands, no QE apparent except in schistose interstitial layers

<<Struc: 383.3 - 383.31 Moderate (Alt) dominant foliation>>

385.25 393.00 RHYvl Lapilli tuff grey-brown

385.25 - 393: well fol'd, fine to coarse whitish pseudo-lapilli variable BI content and alteration, sheared and gougy close to underlying fault.strong talcose feel on fol'n, minor MAFi dyke -altered

<<Min: 385.25 - 389.54 0.5% Min: Pyrite>> and diss'ns

<<Min: 385.25 - 389.54 0.01% Min: Galena>> rare

<<Min: 385.25 - 393 1% Min: Calcite>> minor patches

<<Min: 389.54 - 393 0.5% Min: Pyrrhotite>> in bands

<<Min: 389.54 - 393 0.01% Min: Galena>> with CP, SP?

<<Min: 389.54 - 393 0.5% Min: Chalcopyrite>> small zones to fault contact with seds, related to CL alt'n, cuts MAFi?

<<Alt: 385.25 - 389.54 Moderate (Alt) Muscovite>> generally weak but short sections of intense alteration (gougy)

<<Alt: 389.54 - 393 Moderate (Alt) Chlorite>> possibly some MAFi, cut by CP-GL-SP minlz'n

<<Alt: 389.54 - 393 Moderate (Alt) Biotite>> alternates with CL

<<Vein: 390.42 - 391.1 70% Quartz 55 deg. >> QZ vein, broken core

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 388.8 - 388.81 Moderate (Alt) dominant foliation>>

<<Struc: 391.8 - 402 Intense (Alt) Fault>> graphitic slickenslided surface

393.00 408.00 MDSc Carbonaceous dominant mudstone black FG

393 - 408: laminated bedding, CA common, in lenses with QZ, extremely faulted rock, fault at upper contact. Faulting is locally sub parallel to core axis,

<<Min: 393 - 408 1% Min: Pyrite>> minor blebs along fol'n, small lenses or bands along laminations in sed

<<Min: 393 - 408 5% Min: Calcite>> in seds

<<Alt: 406.8 - 408 Weak (Alt) Garnet>> rare pblasts noted at bottom of hole

<<Vein: 407.2 - 407.44 100% Quartz-Carbonate 70 deg. >> QZ-CA-PO, bx'd,

<<Struc: 402.15 - 406.8 Intense (Alt) Fault>> black sticky gouge wanders along core axis

<<Struc: 403.9 - 403.91 Moderate (Alt) dominant foliation>> flaser banding

End of Hole @ 408

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-281

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Cooper Campbell	Date Logging Start:	01-Oct-15
UTM Easting	414594	Core Size:	HQ3	Azimuth:	181.38	Date Logging Complete:	04-Oct-15
UTM Northing:	6815656	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1447.51	Casing Depth (m):	4.5	Length (m):	260	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Sep-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Oct-15
Local Elev. (m):						Purpose:	Resource/Met
						Parent Hole:	

Comments:

The purpose of this hole was to sample the lower Pb poor magnetite sulphide lens (MET 4 Domain).

The upper portion of this hole contains RHYcw, RHYvx, RHYv, and RHYvl intruded by MAFi. One major lens of massive sulphide was intersected between 179.27-183.23 m. OA, OC, and OJ ore types were intersected. An interval of OJ was intersected from 192.31-193.87 m. RHYcw, and RHYvl sit structurally below the sulphide zone and are intruded by RHYi and MAFi. RHYvx, MDSt, and RHYvl were intersected below the RHYi and MAFi unit.

CI-CL zones were intersected above, within, and below the sulphide lens. Albite alteration was intersected in the structural hanging wall.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	181.38	0	181.38	APS	Cooper Campbell	29-Sep-15		☑	
29	-55.7	162.3	22.5	184.8	ReflexEZS	Geotech	29-Sep-15	5801	☑	
50	-55.8	160.4	22.5	182.9	ReflexEZS	Geotech	29-Sep-15	5807	☑	
74	-55.9	159.3	22.5	181.8	ReflexEZS	Geotech	30-Sep-15	5822	☑	
101	-56.3	161.7	22.5	184.2	ReflexEZS	Geotech	30-Sep-15	5697	☑	
125	-56.2	160.7	22.5	183.2	ReflexEZS	Geotech	30-Sep-15	5811	☑	
152	-57.1	160.3	22.5	182.8	ReflexEZS	Geotech	30-Sep-15	5789	☑	
176	-57.9	161.3	22.5	183.8	ReflexEZS	Geotech	02-Oct-15	5837	☑	
203	-57.9	168.8	22.5	191.3	ReflexEZS	Geotech	02-Oct-15	5772	☑	
227	-58.7	167.4	22.5	189.9	ReflexEZS	Geotech	02-Oct-15	5812	☑	
251	-58.6	165.4	22.5	187.9	ReflexEZS	Geotech	02-Oct-15	5822	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.50**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description
4.50	**7.33**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
4.5 - 7.33: Core dropped from 6.0-7.58 m		
<<Min: 4.5 - 7.33 15% Min: Calcite>>		
<<Min: 4.8 - 21.78 0.01% Min: Sphalerite>>		
<<Min: 4.8 - 21.78 3% Min: Pyrite>> FD		
<<Min: 4.8 - 21.78 0.01% Min: Pyrrhotite>> DIS		
<<Alt: 4.5 - 7.33 Moderate (Alt) Chlorite>> Ankerite also		
<<Vein: 4.5 - 7.33 15% Quartz-Carbonate 55 deg. >> QZ-CA		
7.33	**21.78**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 7.33 - 23.47 1% Min: Calcite>>		
<<Alt: 7.33 - 23.69 Moderate (Alt) Muscovite>>		
<<Vein: 7.33 - 9.2 2% Quartz-Carbonate 50 deg. >> QZ-CA		
21.78	**23.69**	**RHYvx** **Quartz and/or feldspar crystal tuff**
<<Min: 21.78 - 27.41 0.01% Min: Pyrrhotite>>		
<<Min: 23.47 - 24.58 15% Min: Calcite>>		
<<Vein: 23.47 - 24.58 15% Quartz-Carbonate 60 deg. >> CA-QZ		
23.69	**24.58**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 23.69 - 24.58 Moderate (Alt) Chlorite>>		
24.58	**35.75**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 24.58 - 35.75 1% Min: Calcite>>		
<<Min: 27.41 - 31.83 0.01% Min: Sphalerite>>		
<<Min: 27.41 - 31.83 0.01% Min: Pyrrhotite>> DIS		
<<Min: 27.41 - 31.83 0.01% Min: Chalcopyrite>>		
<<Min: 31.83 - 35 0.01% Min: Pyrite>>		
<<Min: 31.83 - 35 0.01% Min: Pyrrhotite>>		
<<Min: 35 - 42.19 0.5% Min: Sphalerite>>		
<<Min: 35 - 42.19 0.5% Min: Pyrrhotite>>		
<<Min: 35 - 42.19 0.5% Min: Galena>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 24.58 - 35.75 Weak (Alt) Muscovite>>

<<Vein: 31.64 - 35 0.5% Quartz-Carbonate-Sulphide 20 deg. >> QZ-CA-PO-SP-GL

35.75 36.85 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 35.75 - 36.85 15% Min: Calcite>>

<<Alt: 35.75 - 48.03 Trace (Alt) Chlorite>>

<<Vein: 36.23 - 42.18 0.5% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CA-BI-CL-PO-SP-GL

36.85 40.09 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 36.85 - 40.09 2% Min: Calcite>>

<<Alt: 36.85 - 40.09 Trace (Alt) Muscovite>>

40.09 41.15 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 40.09 - 42.29 5% Min: Calcite>>

41.15 48.03 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 42.18 - 59.14 0.01% Min: Sphalerite>>

<<Min: 42.18 - 59.14 0.5% Min: Pyrrhotite>> WIS

<<Min: 42.18 - 59.14 0.01% Min: Galena>>

<<Min: 42.18 - 59.14 0.01% Min: Chalcopyrite>>

<<Min: 42.29 - 59.14 1% Min: Calcite>>

<<Alt: 41.15 - 53 Weak (Alt) Muscovite>>

48.03 53.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

48.03 - 53: Trace MAFi in interval. RHYcw has CL overprint.

<<Alt: 48.03 - 56 Weak (Alt) Chlorite>>

53.00 53.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

53.60 59.14 RHYv Rhyolite volcaniclastic

53.6 - 59.14: 0.01% TO DIS

<<Alt: 53.6 - 59.14 Moderate (Alt) Muscovite>>

<<Alt: 57.26 - 59.14 Trace (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

59.14 60.02 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 59.14 - 60.02 5% Min: Calcite>>

<<Min: 59.14 - 69.12 0.01% Min: Pyrite>>

<<Min: 59.14 - 69.12 0.01% Min: Pyrrhotite>>

<<Min: 59.14 - 69.12 0.01% Min: Chalcopyrite>>

<<Alt: 59.14 - 60.02 Moderate (Alt) Chlorite>>

60.02 63.15 RHYv Rhyolite volcaniclastic

60.02 - 63.15: CL overeprint

<<Min: 60.02 - 63.57 1% Min: Calcite>>

<<Alt: 60.02 - 63.15 Trace (Alt) Muscovite>>

<<Alt: 60.02 - 65.13 Weak (Alt) Chlorite>>

63.15 67.07 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 63.57 - 67.07 20% Min: Calcite>>

<<Alt: 65.13 - 66.25 Moderate (Alt) Chlorite>>

<<Alt: 66.25 - 69.12 Weak (Alt) Chlorite>>

<<Vein: 66.25 - 69.12 2% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CACL-PY. Talc? Very soft light green mineral.

67.07 69.12 RHYv Rhyolite volcaniclastic

67.07 - 69.12: Possible lpl.

<<Min: 67.07 - 69.12 2% Min: Calcite>>

<<Alt: 67.07 - 80.71 Moderate (Alt) Muscovite>>

69.12 80.71 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 69.12 - 92.05 1% Min: Pyrite>> WIS

<<Min: 69.12 - 92.05 2% Min: Pyrrhotite>>

<<Min: 69.12 - 92.05 0.01% Min: Chalcopyrite>>

<<Min: 69.12 - 116.03 0.01% Min: Calcite>>

<<Struc: 73.17 - 73.24 Fault>> Narrow fault filled with broken rock. Low intensity.

80.71 86.61 RHYvl Lapilli tuff

<<Alt: 80.71 - 116.03 Trace (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

86.61 92.92 RHYcw Curdy textured-flow banded (flows, subvolcanics)

86.61 - 92.92: Trace MAFi.

<<Min: 92.05 - 108.42 0.5% Min: Pyrite>> WIS, FD

<<Min: 92.05 - 108.42 0.5% Min: Pyrrhotite>> WIS, FD

<<Vein: 87.67 - 88.6 2% Quartz-Carbonate-Sulphide 40 deg. >> QZ--AK-CA-PY

92.92 104.38 RHYvl Lapilli tuff

104.38 108.51 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 108.42 - 110.05 0.01% Min: Sphalerite>>

<<Min: 108.42 - 110.05 0.5% Min: Pyrrhotite>> FD, WIS

108.51 114.31 RHYvl Lapilli tuff

<<Min: 110.05 - 116.03 0.5% Min: Pyrite>>

<<Min: 110.05 - 116.03 0.5% Min: Pyrrhotite>> FD

<<Min: 110.05 - 116.03 0.01% Min: Galena>>

<<Vein: 109.79 - 110.05 100% Quartz-Carbonate-Sulphide 20 deg. >> QZ-CA-PO-SP

114.31 116.97 RHYcw Curdy textured-flow banded (flows, subvolcanics)

114.31 - 116.97: Moderate albite alteration at end of interval.

<<Min: 116.03 - 120.51 0.01% Min: Pyrite>> BL

<<Min: 116.03 - 124.17 0.5% Min: Calcite>>

<<Alt: 116.03 - 116.97 Moderate (Alt) Albite>>

116.97 124.17 RHYvx Quartz and/or feldspar crystal tuff

116.97 - 124.17: Weak albite alteration at the top of the interval.

<<Min: 120.51 - 124.17 0.01% Min: Pyrrhotite>> WIS

<<Alt: 116.97 - 118.12 Strong (Alt) Albite>>

<<Alt: 118.12 - 120.5 Weak (Alt) Albite>>

124.17 124.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 124.17 - 124.65 30% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 124.17 - 124.65 Trace (Alt) Chlorite>>

124.65 131.13 RHYv Rhyolite volcaniclastic

<<Min: 124.65 - 127.69 0.5% Min: Pyrite>>

<<Min: 124.65 - 127.69 0.5% Min: Pyrrhotite>>

<<Min: 124.65 - 131.13 1% Min: Calcite>>

<<Min: 127.69 - 131.13 1% Min: Pyrrhotite>> VN

<<Alt: 124.65 - 125.56 Weak (Alt) Chlorite>>

<<Alt: 124.65 - 131.47 Moderate (Alt) Muscovite>>

<<Alt: 125.56 - 132.04 Trace (Alt) Chlorite>>

<<Vein: 125.46 - 131.47 3% Quartz-Carbonate-Sulphide 50 deg. >> QZ-AK-CL-CA-PO-PY

<<Struc: 124.83 - 126.05 Fault>> Narrow faults (1-4cm) filled with broken rock and gouge. Spaced tens of cm's apart. Moderate intensity.

131.13 137.31 MDSc Carbonaceous dominant mudstone

<<Min: 131.13 - 139.59 15% Min: Calcite>>

<<Min: 131.13 - 139.95 0.01% Min: Pyrite>> VN

<<Min: 131.13 - 139.95 0.5% Min: Pyrrhotite>>

<<Struc: 134.9 - 141.75 Fault>> Narrow faults up to 10 cm thick filled with broken rock and gouge. Spaced metres apart. Moderate intensity.

137.31 144.13 MDSt Rhyolite tuff dominant mudstone

<<Min: 139.59 - 179.27 0.01% Min: Calcite>>

<<Min: 139.95 - 146.08 2% Min: Pyrite>> Concentrated in carbonaceous laminations.

<<Alt: 137.31 - 139.59 Moderate (Alt) Muscovite>>

<<Alt: 139.59 - 152.16 Strong (Alt) Muscovite>>

144.13 168.41 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 146.08 - 155 0.5% Min: Pyrite>> WIS

<<Min: 155 - 158.37 1% Min: Pyrite>> FD

<<Min: 158.37 - 176.5 0.5% Min: Pyrite>> FD

<<Alt: 152.16 - 174.95 Moderate (Alt) Muscovite>>

<<Struc: 149.85 - 154.13 Fault>> Narrow faults (1cm) filled with broken rock and gouge. Spaced tens of cm's apart. Low intensity.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 154.13 - 154.83 Fault>> Moderate to high intensity fault zone. Broken rock and gouge. Gouge zone 7cm thick.

<<Struc: 154.83 - 159.77 Fault>> Narrow faults (<1cm) filled with brocken rock and gouge. Spaced metres apart. Zones of high fracture density up to 25 cm. Low intensity.

<<Struc: 160.54 - 160.55 Foliation>>

<<Struc: 160.62 - 160.63 dominant foliation>>

<<Struc: 163.67 - 163.68 dominant foliation>>

168.41	**179.27**	**RHYc**	**Rhyolite coherant volcanics**	174.77	176.27	1.50	B00268276	0.6	-0.005	-0.01	-0.01	-0.01

168.41 - 179.27: Strong MU alt. Strong foliation. Fold nose.

<<Min: 176.5 - 179.27 0.01% Min: Sphalerite>>

				176.27	177.77	1.50	B00268277	2	0.008	0.03	0.12	0.26

<<Min: 176.5 - 179.27 0.5% Min: Pyrite>>

				177.77	179.27	1.50	B00268278	4	0.044	0.07	0.11	0.15

<<Min: 176.5 - 179.27 0.5% Min: Pyrrhotite>>

<<Min: 176.5 - 179.27 0.01% Min: Chalcopyrite>>

<<Alt: 174.95 - 179.14 Strong (Alt) Muscovite>>

<<Alt: 178.07 - 179.14 Weak (Alt) Chlorite>>

<<Alt: 179.14 - 180.76 Moderate (Alt) Chlorite>>

<<Alt: 179.14 - 180.76 Strong (Alt) Cordierite>>

<<Vein: 174.95 - 178.67 1% Quartz-Carbonate-Sulphide 60 deg. >> QZ-AK-CA-PY-SP

<<Struc: 168.54 - 168.57 Fault>> Narrow fault filled with broken rock and gouge. Low intensity.

<<Struc: 170 - 170.01 dominant foliation>>

<<Struc: 175.54 - 175.55 dominant foliation>>

<<Struc: 178.17 - 178.18 dominant foliation>>

179.27	**180.16**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides** **CG**	179.27	180.16	0.89	B00268279	15.3	0.119	1.27	0.07	1.32

179.27 - 180.16: Contains a large proportion of PO 40%PO. Also contains CI-CL. Could be logged as OF or OJ.

<<Min: 179.27 - 180.16 50% Min: Pyrrhotite>>

<<Min: 179.27 - 180.16 3% Min: Magnetite>>

<<Min: 179.27 - 180.16 3% Min: Chalcopyrite>> FRA

<<Min: 179.27 - 182.88 0.01% Min: Calcite>>

<<Vein: 179.27 - 182.64 0.5% Quartz-Chlorite-Sulphide 65 deg. >> QZ-CL-PO-PY-CP-SP-CA. Sulphide envelope.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
180.16	**180.84**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**	180.16	180.84	0.68	B00268281	47.8	0.953	5.58	0.02	0.52
180.16 - 180.84: Interval dominated by CI-CL but also semi massive PO-CP mineralization.													
<<Min: 180.16 - 180.84 10% Min: Pyrrhotite>>													
<<Min: 180.16 - 180.84 2% Min: Magnetite>>													
<<Min: 180.16 - 180.84 5% Min: Chalcopyrite>> FRA													
180.84	**181.91**	**OA**	**Magnetite bearing sulphides**	**MG**	180.84	181.34	0.50	B00268282	27.9	0.391	1.53	0.21	5.05
<<Min: 180.84 - 181.91 5% Min: Pyrrhotite>>					181.34	181.91	0.57	B00268283	8.6	0.088	0.41	0.06	7.11
<<Min: 180.84 - 181.91 10% Min: Magnetite>>													
<<Min: 180.84 - 181.91 3% Min: Chalcopyrite>> FRA													
181.91	**182.64**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**CG**	181.91	182.64	0.73	B00268284	51.9	0.974	4.86	0.02	0.77
181.91 - 182.64: 10% CP, 10%PO.													
<<Min: 181.91 - 182.64 10% Min: Pyrrhotite>>													
<<Min: 181.91 - 182.64 10% Min: Chalcopyrite>>													
<<Alt: 181.91 - 182.64 Moderate (Alt) Chlorite>>													
<<Alt: 181.91 - 182.87 Weak (Alt) Cordierite>>													
<<Struc: 182 - 182.13 Fault>> High intensity fault filled with broken rock and gouge. Orientation uncertain due to grinding during drilling. May have been produced mechanically.													
182.64	**183.23**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**	182.64	183.23	0.59	B00268285	12.6	0.166	1.05	0.04	0.16
<<Min: 182.64 - 183.23 3% Min: Pyrrhotite>>													
<<Min: 182.88 - 187.73 0.01% Min: Calcite>>													
<<Alt: 182.64 - 183.81 Strong (Alt) Chlorite>>													
<<Struc: 182.67 - 182.68 >> Trace of axial plane of parasitic fold.													
<<Struc: 182.68 - 182.69 Contact>>													
183.23	**187.73**	**RHY**	**undifferentiated rhyolite**		183.23	184.73	1.50	B00268286	-0.3	-0.005	-0.01	-0.01	0.04
183.23 - 187.73: Likely RHYcw. Seems to have flow banding texture. Original character of rock obscured by CL alteration.													
<<Min: 183.23 - 187.73 0.01% Min: Pyrite>>					184.73	186.23	1.50	B00268287	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 183.23 - 187.73 0.01% Min: Arsenopyrite>>					186.23	187.73	1.50	B00268288	-0.3	-0.005	-0.01	-0.01	0.08

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 183.81 - 187.71 Moderate (Alt) Muscovite>>													
<<Alt: 183.81 - 187.71 Moderate (Alt) Chlorite>>													
<<Struc: 183.77 - 183.78 >>													
<<Struc: 183.77 - 183.78 >> Trace of axial plane of parasitic fold.													
<<Struc: 183.78 - 183.79 >> Orientation of folded interpretted flow banding.													
<<Struc: 183.78 - 183.79 >> Orientation of folded interpretted flow banding.													
<<Struc: 183.86 - 183.87 >>													
<<Struc: 183.86 - 183.87 >>													
<<Struc: 183.88 - 183.89 >> Orientation of folded interpretted flow banding.													
<<Struc: 183.88 - 183.89 >> Orientation of folded interpretted flow banding.													
<<Struc: 186.13 - 186.14 >>													
<<Struc: 186.13 - 186.14 >> Trace of axial plane of parasitic fold.													
<<Struc: 186.18 - 186.19 >> Orientation of folded interpretted flow banding.													
<<Struc: 186.18 - 186.19 >>													
<<Struc: 187.13 - 189.52 Fault>> Narrow faults up to 17 cm. Filled with broken rock and gouge. Spaced tens of cm's apart. Moderate intensity.													
187.73	**192.31**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		187.81	189.31	1.50	B00268289	1	-0.005	0.01	0.02	0.1
<<Min: 187.73 - 192.31 0.01% Min: Pyrite>>					189.31	190.81	1.50	B00268291	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 187.73 - 192.31 0.5% Min: Pyrrhotite>>					190.81	192.31	1.50	B00268292	0.7	-0.005	0.03	-0.01	0.02
<<Min: 187.73 - 192.31 0.01% Min: Chalcopyrite>>													
<<Min: 187.73 - 210.61 0.01% Min: Calcite>>													
<<Alt: 187.73 - 192.31 Strong (Alt) Muscovite>>													
<<Alt: 191.86 - 192.21 Weak (Alt) Chlorite>>													
<<Alt: 191.86 - 192.21 Weak (Alt) Cordierite>>													
<<Alt: 192.21 - 193.87 Moderate (Alt) Cordierite>>													
192.31	**193.87**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**	192.31	193.06	0.75	B00268293	5.4	0.052	0.52	0.02	0.1
192.31 - 193.87: RHYcw likely protolith. Strong CI-CL alt obscures protolith.													
<<Min: 192.31 - 193.87 3% Min: Pyrrhotite>>					193.06	193.87	0.81	B00268294	4.9	0.054	0.43	0.02	0.13
<<Min: 192.31 - 197.25 1% Min: Chalcopyrite>>													
<<Alt: 192.31 - 193.87 Moderate (Alt) Chlorite>>													

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 193.37 - 193.38 dominant foliation>>									
			<<Struc: 193.48 - 193.49 dominant foliation>>									
193.87	**195.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	193.87	195.37	1.50	B00268295	2.1	-0.005	0.05	0.03	0.16
			<<Min: 193.87 - 197.25 0.01% Min: Sphalerite>>									
			<<Min: 193.87 - 197.25 0.5% Min: Pyrite>> DIS									
			<<Min: 193.87 - 197.25 3% Min: Pyrrhotite>>									
			<<Min: 193.87 - 197.25 0.5% Min: Chalcopyrite>> VN									
			<<Alt: 193.87 - 197.25 Moderate (Alt) Muscovite>>									
			<<Alt: 193.87 - 197.25 Weak (Alt) Chlorite>>									
195.00	**200.55**	**RHYvl**	**Lapilli tuff**	195.37	196.87	1.50	B00268296	4.6	0.027	0.22	0.04	0.14
			<<Min: 197.25 - 210.92 0.01% Min: Sphalerite>> VN	196.87	198.37	1.50	B00268297	0.7	-0.005	0.01	0.02	0.07
			<<Min: 197.25 - 210.92 2% Min: Pyrite>> DIS. PY-PO selectively replaces some lapilli	198.37	199.37	1.00	B00268298	0.3	-0.005	-0.01	0.01	0.04
			<<Min: 197.25 - 210.92 0.5% Min: Pyrrhotite>> PY-PO selectively replaces some lapilli	199.37	200.55	1.18	B00268299	1.5	0.009	0.02	0.03	0.15
			<<Alt: 197.25 - 213.53 Moderate (Alt) Muscovite>>									
			<<Struc: 197.23 - 197.24 dominant foliation>>									
			<<Struc: 199.92 - 199.93 dominant foliation>>									
200.55	**202.56**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	200.55	201.55	1.00	B00268301	6.2	0.02	0.21	0.06	0.24
			<<Min: 200.68 - 201.27 0.5% Min: Chalcopyrite>>	201.55	202.56	1.01	B00268302	0.9	-0.005	-0.01	0.01	0.02
202.56	**210.92**	**RHYvl**	**Lapilli tuff**									
			<<Min: 210.61 - 213.59 3% Min: Calcite>>									
			<<Alt: 210.88 - 213.53 Moderate (Alt) Silicification>>									
			<<Vein: 208.01 - 208.19 100% Quartz-Carbonate-Sulphide 75 deg. >> QZ-AK-PY-SP									
			<<Struc: 205.92 - 205.93 dominant foliation>>									
			<<Struc: 207.17 - 208.18 Vein>>									
			<<Struc: 210.12 - 210.27 Fault>> Narrow faults (<1cm). Filled with broken rock and gouge. Spaced cm's apart. Low intensity.									
210.92	**213.47**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
			<<Min: 210.92 - 213.47 1% Min: Pyrite>> FD									
			<<Vein: 210.92 - 224.75 15% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CA-PY-SP									
213.47	**214.73**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 213.47 - 214.73 0.5% Min: Pyrrhotite>>

<<Min: 213.59 - 230.88 5% Min: Calcite>>

<<Alt: 213.53 - 214.65 Weak (Alt) Chlorite>>

<<Alt: 214.65 - 217.17 Moderate (Alt) Silicification>>

<<Alt: 214.65 - 217.17 Moderate (Alt) Muscovite>>

214.73 224.75 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 214.73 - 224.75 1% Min: Sphalerite>> VN

<<Min: 214.73 - 224.75 3% Min: Pyrite>> FD

<<Alt: 217.17 - 224.75 Strong (Alt) Silicification>>

<<Alt: 217.17 - 224.75 Weak (Alt) Muscovite>>

224.75 230.88 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 224.75 - 230.2 0.01% Min: Pyrite>>

<<Min: 224.75 - 230.2 0.01% Min: Pyrrhotite>>

<<Min: 230.2 - 230.88 0.01% Min: Sphalerite>>

<<Min: 230.2 - 230.88 0.5% Min: Pyrite>>

<<Min: 230.2 - 230.88 0.01% Min: Pyrrhotite>>

<<Min: 230.2 - 230.88 0.01% Min: Galena>>

<<Alt: 224.75 - 229.74 Moderate (Alt) Muscovite>>

<<Alt: 229.74 - 240.6 Strong (Alt) Muscovite>>

<<Vein: 230.2 - 230.88 90% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CA-PY-PO-GL-SP

230.88 238.21 RHYvx Quartz and/or feldspar crystal tuff

<<Min: 230.88 - 238.21 0.5% Min: Pyrite>> FD

<<Min: 230.88 - 238.21 0.5% Min: Pyrrhotite>> FD

<<Min: 230.88 - 250.71 0.01% Min: Calcite>>

<<Struc: 230.88 - 234.78 Fault>> Narrow faults (<3cm). Filled with broken rock and gouge. Spaced metres apart. Low intensity.

<<Struc: 237.02 - 238.21 Fault>> Narrow faults (<7cm). Filled with broken rock and gouge. Spaced tens of cm's apart. Moderate intensity.

238.21 238.89 MDSt Rhyolite tuff dominant mudstone

<<Min: 238.21 - 238.89 3% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 238.21 - 238.89 Fault>> Strongly faulted zone. Filled with broken rock and gouge. Multiple orientations. Conjugate set.

238.89 260.00 RHYvl Lapilli tuff

<<Min: 238.89 - 247.56 0.5% Min: Pyrite>>

<<Min: 238.89 - 247.56 0.01% Min: Pyrrhotite>>

<<Min: 247.56 - 260 1% Min: Pyrite>> FD

<<Min: 247.56 - 260 0.5% Min: Pyrrhotite>>

<<Min: 250.71 - 260 1% Min: Calcite>>

<<Alt: 240.6 - 260 Moderate (Alt) Muscovite>>

<<Vein: 240.69 - 240.83 100% Quartz-Carbonate-Sulphide 60 deg. >> QZ-AK-PY

<<Struc: 238.89 - 248.61 Fault>> Narrow faults (<5cm). Filled with broken rock and gouge. Low intensity. Spaced metres apart.

<<Struc: 242.65 - 251.11 Fault>> Very narrow faults (<2mm). Filled with trace gouge. Foliation deflected into fault plane.

<<Struc: 254.18 - 254.87 Fault>> Narrow faults (<1cm). Filled with broken rock and gouge. Moderate intensity. Spaced cm's apart.

End of Hole @ 260

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-281W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Cooper Campbell	Date Logging Start:	04-Oct-15
UTM Easting	414594	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	05-Oct-15
UTM Northing:	6815656	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1447.51	Casing Depth (m):	4.5	Length (m):	199.6	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	03-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	04-Oct-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-281

Comments:

The purpose of this hole was to sample the lower Pb poor magnetite sulphide lens (MET 4 Domain) for metallurgical testing.

The upper portion of this hole contains RHYvx, and RHYc. One major lens of massive sulphide was intersected between 178.63-183.56 m. OA, OC, and OJ ore types were intersected. Two intervals of OJ were intersected from 192.23-194.1 m and 195.32-196.64 m. RHYcw, and RHYvl sit structurally below the sulphide zone.

CI-CL zones were intersected above, within, and below the sulphide lens.

The drill bit completely wore out at 199.6 m. Instructed drill crew to pull out and replace bit. Upon reaming during re-entry the reaming shoe broke. The hole was terminated after the attempted re-entry.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	181.38	0	181.38	APS	Cooper Campbell	29-Sep-15		☑	Values taken from K15-281
29	-55.7	162.3	22.5	184.8	ReflexEZS	Geotech	29-Sep-15	5801	☑	Values taken from K15-281
50	-55.8	160.4	22.5	182.9	ReflexEZS	Geotech	29-Sep-15	5807	☑	Values taken from K15-281
74	-55.9	159.3	22.5	181.8	ReflexEZS	Geotech	30-Sep-15	5822	☑	Values taken from K15-281
101	-56.3	161.7	22.5	184.2	ReflexEZS	Geotech	30-Sep-15	5697	☑	Values taken from K15-281
125	-56.2	160.7	22.5	183.2	ReflexEZS	Geotech	30-Sep-15	5811	☑	Values taken from K15-281
152	-57.1	160.3	22.5	182.8	ReflexEZS	Geotech	30-Sep-15	5789	☑	Values taken from K15-281
161.5	-55.6	161.3	22.5	183.8	ReflexEZS	Geotech	03-Oct-15	5774	☑	Wedge start; value copied from first wedge survey at 170m
170	-55.6	161.3	22.5	183.8	ReflexEZS	Geotech	03-Oct-15	5774	☑	
198.5	-56.4	172	22.5	194.5	ReflexEZS	Geotech	04-Oct-15	5804	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
161.50	**166.40**	**RHYvx** **Quartz and/or feldspar crystal tuff**									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 161.5 - 178.63 0.5% Min: Pyrite>> FD													
<<Min: 161.5 - 178.63 0.01% Min: Calcite>>													
<<Alt: 161.5 - 175.76 Moderate (Alt) Muscovite>>													
166.40	**178.63**	**RHYc**	**Rhyolite coherant volcanics**		173.63	174.63	1.00						
<<Min: 176.44 - 178.63 0.5% Min: Sphalerite>>					174.63	175.63	1.00						
<<Min: 176.44 - 178.63 0.01% Min: Pyrrhotite>>					175.63	176.63	1.00						
<<Alt: 175.76 - 179.32 Strong (Alt) Muscovite>>					176.63	177.63	1.00						
<<Vein: 177.5 - 179.32 25% Quarzt-Tourmaline-Sulphide 80 deg. >> QZ-TO-AK-CL-CP-PY-CA					177.63	178.63	1.00						
178.63	**179.32**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		178.63	179.32	0.69						
178.63 - 179.32: QZ-TO VN with CP. Soft green mineral, possibly talc. Scratches with fingernail.													
<<Min: 178.63 - 179.32 0.01% Min: Pyrrhotite>>													
<<Min: 178.63 - 179.32 0.01% Min: Chalcopyrite>>													
<<Min: 178.63 - 179.32 0.01% Min: Calcite>>													
<<Alt: 178.63 - 179.32 Weak (Alt) Chlorite>>													
<<Struc: 178.82 - 179 Fault>> Could have been generated mechanically during drilling. Possible strong fault gouge zone. Occurs right at the end of a drill run. Suspect.													
179.32	**181.31**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	179.32	180.32	1.00						
<<Min: 179.32 - 181.31 50% Min: Pyrrhotite>>					180.32	181.31	0.99						
<<Min: 179.32 - 181.31 3% Min: Magnetite>>													
<<Min: 179.32 - 181.31 3% Min: Chalcopyrite>> FRA													
<<Min: 179.32 - 182.7 0.01% Min: Calcite>>													
<<Alt: 179.32 - 181.31 Moderate (Alt) Chlorite>>													
<<Alt: 179.32 - 181.31 Moderate (Alt) Cordierite>>													
181.31	**182.06**	**OA**	**Magnetite bearing sulphides**	**MG**	181.31	182.06	0.75						
<<Min: 181.31 - 182.06 5% Min: Pyrrhotite>>													
<<Min: 181.31 - 182.06 10% Min: Magnetite>>													
<<Min: 181.31 - 182.06 1% Min: Chalcopyrite>>													
182.06	**182.70**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	182.06	182.70	0.64						
<<Min: 182.06 - 182.7 5% Min: Pyrrhotite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 182.06 - 182.7 3% Min: Magnetite>>									
		<<Min: 182.06 - 182.7 5% Min: Chalcopyrite>> DIS									
		<<Alt: 182.06 - 182.7 Moderate (Alt) Chlorite>>									
		<<Alt: 182.06 - 183.16 Weak (Alt) Cordierite>>									
182.70	**183.56**	**OJ Heavilly disseminated sulphides in proximal altered rock**	182.70	183.56	0.86						
		<<Min: 182.7 - 183.16 0.01% Min: Calcite>>									
		<<Min: 182.7 - 183.56 1% Min: Pyrrhotite>>									
		<<Alt: 182.7 - 187.93 Strong (Alt) Chlorite>>									
		<<Vein: 182.7 - 187.93 10% Quartz-Carbonate 60 deg. >> QZ-AK									
183.56	**187.93**	**RHY undifferentiated rhyolite**	183.56	184.56	1.00						
		183.56 - 187.93: Original character of rock obscured by proximal alteration. Ankerite crystals and QZ-AK veining.									
		<<Min: 183.56 - 187.93 0.01% Min: Pyrrhotite>>	184.56	185.56	1.00						
		<<Min: 183.56 - 187.93 0.01% Min: Chalcopyrite>>	185.56	186.56	1.00						
		<<Struc: 186.27 - 188.7 Fault>> Narrow faults (<2cm). Locally high fracture density. Filled with gouge and broken rock. Variable fault orientations. Moderate intensity.	186.56	187.24	0.68						
			187.24	187.93	0.69						
187.93	**192.23**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	187.93	188.93	1.00						
		<<Min: 187.93 - 192.23 0.01% Min: Sphalerite>>	188.93	189.93	1.00						
		<<Min: 187.93 - 192.23 0.5% Min: Pyrite>>	189.93	190.93	1.00						
		<<Min: 187.93 - 192.23 1% Min: Pyrrhotite>>	190.93	191.58	0.65						
		<<Min: 187.93 - 192.23 0.01% Min: Chalcopyrite>>	191.58	192.23	0.65						
		<<Min: 187.93 - 194.56 0.01% Min: Calcite>>									
		<<Alt: 187.93 - 192.23 Strong (Alt) Muscovite>>									
192.23	**194.10**	**OJ Heavilly disseminated sulphides in proximal altered rock**	192.23	193.17	0.94						
		<<Min: 192.23 - 194.1 0.5% Min: Sphalerite>>	193.17	194.10	0.93						
		<<Min: 192.23 - 194.1 3% Min: Pyrrhotite>> BL									
		<<Min: 192.23 - 194.1 3% Min: Chalcopyrite>> BL									
		<<Alt: 192.23 - 194.1 Moderate (Alt) Chlorite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 192.23 - 194.1 Moderate (Alt) Cordierite>>									
194.10	**195.32**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	194.10	194.82	0.72						
		<<Min: 194.1 - 195.32 1% Min: Sphalerite>>	194.82	195.32	0.50						
		<<Min: 194.1 - 195.32 0.01% Min: Pyrite>>									
		<<Min: 194.1 - 195.32 3% Min: Pyrrhotite>>									
		<<Min: 194.1 - 195.32 0.5% Min: Chalcopyrite>>									
		<<Min: 194.56 - 196.64 0.01% Min: Calcite>>									
		<<Alt: 194.1 - 195.32 Moderate (Alt) Muscovite>>									
		<<Alt: 194.1 - 195.32 Weak (Alt) Chlorite>>									
		<<Vein: 194.56 - 196.4 5% Quarzt-Tourmaline-Sulphide 20 deg. >> QZ-TO-AK-CL-CP-PY-CA									
195.32	**196.64**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	195.32	195.97	0.65						
		195.32 - 196.64: QZ-TO VN with CP.									
		<<Min: 195.32 - 196.64 0.01% Min: Sphalerite>>	195.97	196.64	0.67						
		<<Min: 195.32 - 196.64 0.5% Min: Pyrite>> FRA									
		<<Min: 195.32 - 196.64 1% Min: Pyrrhotite>>									
		<<Min: 195.32 - 196.64 3% Min: Chalcopyrite>> WIS. TO VN.									
		<<Alt: 195.32 - 196.64 Moderate (Alt) Chlorite>>									
		<<Alt: 195.32 - 196.64 Moderate (Alt) Cordierite>>									
196.64	**199.60**	**RHYvl** **Lapilli tuff**	196.64	197.64	1.00						
		<<Min: 196.64 - 199.6 3% Min: Pyrite>>	197.64	198.64	1.00						
		<<Min: 196.64 - 199.6 0.5% Min: Pyrrhotite>>	198.64	199.60	0.96						
		<<Min: 196.64 - 199.6 0.01% Min: Galena>>									
		<<Min: 196.64 - 199.6 0.5% Min: Chalcopyrite>>									
		<<Alt: 196.64 - 197.32 Trace (Alt) Chlorite>>									
		<<Alt: 196.64 - 199.6 Moderate (Alt) Muscovite>>									
		<<Vein: 197.53 - 197.66 100% Quartz-Carbonate-Sulphide 70 deg. >> QZ-AK-PO-PY-GL									

End of Hole @ 199.6

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-282

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	02-Oct-15
UTM Easting	415242.113	Core Size:	NQ3	Azimuth:	189.58	Date Logging Complete:	07-Oct-15
UTM Northing:	6815246.944	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1440.363	Casing Depth (m):	9	Length (m):	340	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	01-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	06-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

Hole K15-282 is an exploration hole drilled to test the continuity of the lens intersected in K97-173 and to look for proximal alteration suggesting vicinity to sulphide lens.
The upper units of this hole are composed of mafic tuff and mudstone underlain by rhyolite crosscut by aphanitic felsic and intermediate mafic dykes.
The hole intersects a lens of massive sulphide zone from 243.72 to 245.37m, containing MG-PY-CP-SP-GL, OB and OA domains. The hole shows progressive muscovite alteration surrounding the mineralization from 197.58 to 256.73m. At this depth, the hole is cut by a mafic intrusion.
From 299.30 to 314.40m, two massive sulphide lenses, separated by a 1.66m interval of mafic rock, are intersected. No proximal chlorite alteration is observed.
The hole ends in the mafic intrusion at 340m.
Note: due to a combination of run block errors, zones of poor recovery and general lackof diligence during the drilling, the massive sulfide core boxes had to be reorganized and rebuilt. There is a high level of confidence in the accuraccy of this rebuilding.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	189.58	0	189.58	APS	Daniele Heon	05-Oct-15		☑	
35	-69.8	165.2	22.5	187.7	ReflexEZS	Geotech	02-Oct-15	5805	☑	
62	-69.4	164.2	22.5	186.7	ReflexEZS	Geotech	03-Oct-15	5774	☑	
89	-69.3	165.4	22.5	187.9	ReflexEZS	Geotech	03-Oct-15	5785	☑	
119	-69.4	165	22.5	187.5	ReflexEZS	Geotech	03-Oct-15	5778	☑	
146	-69.9	167.4	22.5	189.9	ReflexEZS	Geotech	03-Oct-15	5779	☑	
175	-69.3	167.7	22.5	190.2	ReflexEZS	Geotech	04-Oct-15	5790	☑	
200	-69.2	170	22.5	192.5	ReflexEZS	Geotech	04-Oct-15	5771	☑	
227	-67.7	170.2	22.5	192.7	ReflexEZS	Geotech	05-Oct-15	5813	☑	
251	-66	168.2	22.5	190.7	ReflexEZS	Geotech	05-Oct-15	5763	☑	
281	-65.9	168.5	22.5	191	ReflexEZS	Geotech	05-Oct-15	5763	☑	
308	-66.2	204.6	22.5	227.1	ReflexEZS	Geotech	05-Oct-15	2316	☐	Values not accepted due to low magnetic field
340	-66.8	172.8	22.5	195.3	ReflexEZS	Geotech	05-Oct-15	5796	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.00 12.80 MAFt Mafic Volcaniclastics grey-green

9 - 12.8: Few BI, CA veinlets, locally argiliic

<<Min: 9 - 32.5 8% Min: Calcite>>

<<Min: 9 - 65 2% Min: Pyrite>>

<<Min: 9 - 65 2% Min: Pyrrhotite>> Elongated and veinlets

<<Alt: 9 - 64 Weak (Alt) Chlorite>>

<<Alt: 9 - 65 Trace (Alt) Muscovite>>

<<Vein: 9 - 32.5 Calcite>> CA veinlets associated with mafic rock.

<<Struc: 9 - 35 Trace (Alt) Fault>> Rubble, broken zone. Poor recovery and highly fractured.

12.80 19.55 MDSc Carbonaceous dominant mudstone black

12.8 - 19.55: CA veining, vuggy texture locally.

19.55 25.00 MAFt Mafic Volcaniclastics green-brown

19.55 - 25: Weak chlorite, weak muscovite

25.00 37.00 MDSc Carbonaceous dominant mudstone black

<<Min: 32.5 - 71 4% Min: Calcite>>

<<Alt: 34.5 - 36.5 Moderate (Alt) Silicification>> In MDSc, probably associated with QZ veins

<<Vein: 32.5 - 38.5 Quartz>> QZ veins, 3cm to 50 cm, deformed.

37.00 71.22 RHYva Coarse grained to ash tuff light grey

37 - 71.22: Highly fractured, fault gaoue from 55 to 55.6m.

<<Min: 65 - 122 0.5% Min: Pyrrhotite>>

<<Min: 65 - 129.5 0.5% Min: Pyrite>> And patch.

<<Alt: 65 - 129.82 Weak (Alt) Muscovite>> Locally moderate.

<<Alt: 71 - 72.66 Moderate (Alt) Silicification>> Green-grey alterationassociated with RHYi.

<<Struc: 54.9 - 55.5 Moderate (Alt) Fault>> Fault gouge contaning grey clay, Qz clasts, CA.

71.22 86.89 RHYi Aphanitic Rhyolite (intrusion) beige

71.22 - 86.89: Brecciated upper contact, stockwork texture, PY veining at lower contact. Probably albite in foliation at upper contact, flow aspect.

<<Min: 84.2 - 126.62 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 84.2 - 97.42 Moderate (Alt) Silicification>> Green-grey alteration, bleeched.

86.89 106.27 RHYv Rhyolite volcaniclastic grey-green

86.89 - 106.27: Few QZ eyes. Dominantly ash, bleech alteration patchy due to RHYi proximity,BI patch from 96.70 to 97.90m. AK or dolomite replacing lapili.

<<Alt: 96.7 - 97.9 Weak (Alt) Biotite>>

106.27 110.52 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

106.27 - 110.52: Dyke. Brown mica, CA contrated at lower contact.

110.52 126.60 RHYv Rhyolite volcaniclastic grey-green

110.52 - 126.6: Few QE at upper contact, dominantly ash.

<<Min: 122 - 178.64 1% Min: Pyrrhotite>>

<<Vein: 112.8 - 112.9 Quartz>> QZ vein.

<<Struc: 122 - 124 Weak (Alt) Shear>> Shear zone, crenulation with QZ veining or local flow banding.

126.60 129.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

126.6 - 129.5: Dyke. Few PO, CA. BI phenoblasts at lower contact, chill margin at upper contact.

<<Min: 126.62 - 129.5 8% Min: Calcite>> In MAFi.

<<Struc: 127 - 164 Weak (Alt) Fault>> Multiple minor fault accentuated by fragmental texture and muscovite alteration.

129.50 136.00 RHYvx Quartz and/or feldspar crystal tuff grey-green

129.5 - 136: porphyritic texture. Foliaition well marked locally with felspar (?) flow texture. Ash in matrix. Could be felspar crystal or fragments. Locally QZ rich-veining.

<<Min: 129.5 - 157.81 2% Min: Calcite>> and replacement.

<<Min: 129.5 - 178.64 1% Min: Pyrite>> Associated with QZ.

<<Alt: 129.82 - 197.58 Moderate (Alt) Muscovite>> Locally strong alteration.

136.00 139.50 RHYva Coarse grained to ash tuff light grey

136 - 139.5: Local flow could be large clasts. QZ veins.

139.50 157.81 RHYvx Quartz and/or feldspar crystal tuff grey-green

139.5 - 157.81: Crystal tuff, locally lapilitic rich. Ash in soft matrix. AK or dolomite replacing clasts.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 146.65 - 160 Weak (Alt) Chlorite>>

<<Vein: 140.25 - 140.8 Quartz-Chlorite>> multiple 10 cm wide QZ-CL veins.

157.81 167.80 RHYvl Lapilli tuff grey-green

157.81 - 167.8: With local fragmental zone.

<<Min: 157.81 - 178.64 1% Min: Calcite>>

167.80 178.64 RHY undifferentiated rhyolite grey-green

167.8 - 178.64: Banded dark QZ/MU, PY associated with QZ bands. Texture obscured by green-grey alteration.

<<Alt: 170 - 196 Moderate (Alt) Silicification>> Green-grey alteration, QZ dyke proximity (?).

178.64 182.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

178.64 - 182: Dyke, unfoliated, containing CA, PY and PO patch, maybe MG. The dyke in crosscut by QZ and RHYi (probably xenolith).

<<Min: 178.64 - 182 5% Min: Pyrite>> and patchy.

<<Min: 178.64 - 182 5% Min: Pyrrhotite>> in Mafi dyke.

<<Min: 178.64 - 182 15% Min: Calcite>> In MAFi dyke.

182.00 191.58 RHYi Aphanitic Rhyolite (intrusion) beige

182 - 191.58: Large QZ vein containing RHYi xenolith.

<<Min: 182 - 243.72 1% Min: Pyrite>>

<<Min: 182 - 243.72 1% Min: Pyrrhotite>>

<<Vein: 184.9 - 191 Quartz-Chlorite>> Massive QZ vein associated with RHYi intruding MAFi dyke, .

<<Struc: 182 - 194.2 Strong (Alt) Shear>> Sheared and broken zone. QZ-RHYi intruding mafic dyke. Fractured massive QZ vein,filled by TML. Strongly sheared at lower contact.

191.58 193.13 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

191.58 - 193.13: Sheared lower contact of the dyke intruded by QZ vein and/or RHYi.

193.13 199.38 RHY undifferentiated rhyolite grey-green

193.13 - 199.38: Strongly altered RHY probably RHYv.

<<Min: 193.13 - 243.72 1% Min: Calcite>>

<<Alt: 197.58 - 243.72 Strong (Alt) Muscovite>> Less marked in the MUDt.

<<Vein: 194.24 - 194.26 Tourmaline>> TML veinpenetrating foliation, shallow angle

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
199.38	**211.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**									

199.38 - 211: Strongly altered RHY, could be RHYcw dislocated or volcaniclastic fragmental. SI rich.

<<Vein: 200 - 208 Quartz-Sulphide>> Dark QZ veining or bands, 3/10cm, PY associated.

<<Struc: 205.4 - 218 Weak (Alt) Shear>> Highly broken zone due to nature of rock and strong MU alteration.

211.00	**235.90**	**MDSt**	**Rhyolite tuff dominant mudstone**	**light grey**									

211 - 235.9: Probably ash dominant. Gradational contact, interbedding. PO needle and few PY disseminated.

<<Struc: 230 - 235 Moderate (Alt) Shear>>

235.90	**243.72**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	239.22	240.72	1.50	B00266894	-0.3	-0.005	-0.01	-0.01	-0.01

235.9 - 243.72: Probably ash dominant.

					240.72	242.22	1.50	B00266895	-0.3	-0.005	-0.01	-0.01	-0.01
					242.22	243.72	1.50	B00266896	2	0.02	0.02	-0.01	0.1
243.72	**245.37**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	243.72	244.55	0.83	B00266897	218	2.93	0.36	3.81	9.07

243.72 - 245.37: Sharpe contact, no proximalalteration, locally MG.

<<Min: 243.72 - 245.37 10% Min: Sphalerite>>
<<Min: 243.72 - 245.37 77% Min: Pyrite>>
<<Min: 243.72 - 245.37 3% Min: Magnetite>>
<<Min: 243.72 - 245.37 2% Min: Galena>>
<<Min: 243.72 - 245.93 5% Min: Calcite>>

					244.55	245.37	0.82	B00266898	100	0.733	0.13	2.86	10.7
245.37	**245.93**	**OA**	**Magnetite bearing sulphides**	**MG**	245.37	245.93	0.56	B00266899	105	1.31	2.22	1.22	9.53

245.37 - 245.93: Locally coarse grai PY.

<<Min: 245.37 - 245.93 2% Min: Sphalerite>>
<<Min: 245.37 - 245.93 70% Min: Pyrite>>
<<Min: 245.37 - 245.93 5% Min: Pyrrhotite>>
<<Min: 245.37 - 245.93 10% Min: Magnetite>>
<<Min: 245.37 - 245.93 2% Min: Galena>>
<<Min: 245.37 - 245.93 2% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description		
245.93	**256.73**	**RHY**	**undifferentiated rhyolite**	**grey-green**

245.93 - 256.73: Probably RHYcw, disaggregated flow.

<<Min: 245.93 - 256.73 0.5% Min: Pyrite>> And aggregated.

<<Alt: 245.93 - 256.73 Strong (Alt) Muscovite>>

<<Struc: 253 - 255.5 Strong (Alt) Fault>> Fault gouge, brecciated. Could be minor fault but lot of core loss.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
245.93	247.43	1.50	B00266901	6.4	0.033	0.03	0.07	0.51
247.43	248.93	1.50	B00266902	-0.3	0.006	-0.01	-0.01	-0.01
248.93	250.00	1.07	B00266903	-0.3	-0.005	-0.01	-0.01	-0.01
250.00	251.50	1.50	B00266904	-0.3	0.008	-0.01	0.01	0.02
251.50	253.00	1.50	B00266905	-0.3	0.006	-0.01	-0.01	-0.01
253.00	254.00	1.00	B00266906	0.9	0.013	-0.01	-0.01	-0.01
254.00	256.00	2.00	B00266907	1.6	0.034	-0.01	0.02	0.07
256.00	257.00	1.00	B00266908	150	0.752	0.48	2.33	6.43

From (m)	To (m)	Rocktype & Description		
256.73	**257.00**	**OA**	**Magnetite bearing sulphides**	**MG**

256.73 - 257: Fault at upper contact.

<<Min: 256.73 - 257 3% Min: Sphalerite>>

<<Min: 256.73 - 257 2% Min: Galena>>

<<Min: 256.73 - 257 1% Min: Chalcopyrite>>

<<Min: 256.73 - 257 1% Min: Calcite>>

From (m)	To (m)	Rocktype & Description		
257.00	**299.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**

257 - 299.3: Large QZ veins on top of the unit. Strong CA at upper contact decreasing downhole. CA in veins.

<<Min: 259.7 - 263.6 15% Min: Calcite>>

<<Min: 263.6 - 299.3 2% Min: Calcite>> Dominantly in vein. CA increase contact with MXSX.

<<Alt: 259.7 - 299.25 Strong (Alt) Chlorite>>

<<Vein: 257 - 259.7 Quartz-Chlorite>> QZ-CL and/or talc massive vein.

<<Vein: 286.25 - 286.26 Quartz-Chalcopyrite>> QZ vein with CP and PY

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
257.00	259.70	2.70	B00266909	4.5	0.021	0.02	0.06	0.13
259.70	261.20	1.50	B00266911	8.1	0.027	0.12	0.03	0.25
261.20	262.70	1.50	B00266912	1.6	0.009	0.01	0.03	0.06
294.80	296.30	1.50	B00266913	0.9	0.009	-0.01	-0.01	0.01
296.30	297.80	1.50	B00266914	2.6	0.016	-0.01	0.02	0.01
297.80	299.30	1.50	B00266915	5.7	0.023	-0.01	0.06	0.03

From (m)	To (m)	Rocktype & Description		
299.30	**299.90**	**OA**	**Magnetite bearing sulphides**	**MG**

299.3 - 299.9: Couldbe OB (buckshot tecture and SP lamination with MG. CA in matrix. Fine grain in MAFi at contact, could be chill margin.

<<Min: 299.3 - 299.9 15% Min: Sphalerite>>

<<Min: 299.3 - 299.9 64% Min: Pyrite>>

<<Min: 299.3 - 299.9 3% Min: Magnetite>>

<<Min: 299.3 - 299.9 3% Min: Galena>>

<<Min: 299.3 - 299.9 15% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
299.30	299.90	0.60	B00266916	241	1.34	0.03	3.35	9.58

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
299.90	**302.08**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	299.90	301.04	1.14	B00266917	313	2.8	0.4	2.43	8.62
299.9 - 302.08: Weak lamination.													
<<Min: 299.9 - 302.08 9% Min: Sphalerite>>					301.04	302.08	1.04	B00266918	242	3.16	0.4	2.78	8.5
<<Min: 299.9 - 302.08 75% Min: Pyrite>>													
<<Min: 299.9 - 302.08 1% Min: Galena>>													
<<Min: 299.9 - 302.08 15% Min: Calcite>>													
302.08	**303.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	302.08	302.79	0.71	B00266919	184	1.41	0.31	2.28	15.8
302.08 - 303.75: CA, probably BA-SI in matrix.													
<<Min: 302.08 - 303.75 25% Min: Sphalerite>>					302.79	303.75	0.96	B00266921	135	1.13	1.67	0.96	23.1
<<Min: 302.08 - 303.75 45% Min: Pyrite>>													
<<Min: 302.08 - 303.75 5% Min: Galena>>													
<<Min: 302.08 - 303.75 5% Min: Chalcopyrite>>													
<<Min: 302.08 - 303.75 10% Min: Calcite>>													
303.75	**305.22**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	303.75	305.22	1.47	B00266922	99.3	0.817	0.28	1.96	6.33
<<Min: 303.75 - 305.22 5% Min: Sphalerite>>													
<<Min: 303.75 - 305.22 83% Min: Pyrite>>													
<<Min: 303.75 - 305.22 1% Min: Galena>>													
<<Min: 303.75 - 305.22 1% Min: Chalcopyrite>>													
<<Min: 303.75 - 305.22 10% Min: Calcite>>													
305.22	**305.86**	**OA**	**Magnetite bearing sulphides**	**FG**	305.22	305.86	0.64	B00266923	105	0.711	0.54	2.69	6.94
305.22 - 305.86: Could be MET4													
<<Min: 305.22 - 305.86 5% Min: Sphalerite>>													
<<Min: 305.22 - 305.86 80% Min: Pyrite>>													
<<Min: 305.22 - 305.86 1% Min: Pyrrhotite>>													
<<Min: 305.22 - 305.86 5% Min: Magnetite>>													
<<Min: 305.22 - 305.86 3% Min: Galena>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 305.22 - 305.86 0.1% Min: Chalcopyrite>>													
<<Min: 305.22 - 305.86 5% Min: Calcite>>													
305.86	**306.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	305.86	306.50	0.64	B00266924	134	0.649	0.15	3.77	8.05
<<Min: 305.86 - 306.5 3% Min: Sphalerite>>													
<<Min: 305.86 - 306.5 85% Min: Pyrite>>													
<<Min: 305.86 - 306.5 3% Min: Galena>>													
<<Min: 305.86 - 306.5 5% Min: Calcite>>													
306.50	**308.34**	**OA**	**Magnetite bearing sulphides**	**FG**	306.50	307.54	1.04	B00266925	102	0.357	0.43	2.68	7.97
<<Min: 306.5 - 308.34 3% Min: Sphalerite>>					307.54	308.34	0.80	B00266926	62.4	0.316	0.49	0.85	5.63
<<Min: 306.5 - 308.34 69% Min: Pyrite>>													
<<Min: 306.5 - 308.34 10% Min: Pyrrhotite>>													
<<Min: 306.5 - 308.34 5% Min: Magnetite>>													
<<Min: 306.5 - 308.34 3% Min: Galena>>													
<<Min: 306.5 - 308.34 0.5% Min: Chalcopyrite>>													
<<Min: 306.5 - 308.34 10% Min: Calcite>>													
308.34	**310.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		308.34	308.90	0.56	B00266927	2.3	0.007	0.02	0.05	0.1
<<Min: 308.34 - 310 10% Min: Calcite>>					308.90	310.00	1.10	B00266928	-0.3	-0.005	-0.01	0.01	0.07
310.00	**312.80**	**OA**	**Magnetite bearing sulphides**	**FMG**	310.00	311.00	1.00	B00266929	118	0.625	0.43	2.62	4.9
310 - 312.8: Or OB with MG. Could be MET3													
<<Min: 310 - 312.8 2% Min: Sphalerite>>					311.00	311.90	0.90	B00266932	139	0.921	0.27	3.04	5.46
<<Min: 310 - 312.8 82% Min: Pyrite>>					311.90	312.80	0.90	B00266933	135	0.901	0.45	2.65	7.84
<<Min: 310 - 312.8 3% Min: Magnetite>>													
<<Min: 310 - 312.8 1% Min: Galena>>													
<<Min: 310 - 312.8 2% Min: Chalcopyrite>>													
<<Min: 310 - 312.8 10% Min: Calcite>>													
<<Min: 312 - 312.8 2% Min: Sphalerite>>													
312.80	**314.40**	**OA**	**Magnetite bearing sulphides**	**FG**	312.80	313.70	0.90	B00266934	80.1	1.12	0.25	1.28	3.51
312.8 - 314.4: Or OB with MG.													
<<Min: 312.8 - 314.4 3% Min: Sphalerite>>					313.70	314.40	0.70	B00266935	115	1.16	0.28	1.21	3.56

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 312.8 - 314.4 90% Min: Pyrite>>									
		<<Min: 312.8 - 314.4 2% Min: Magnetite>>									
		<<Min: 312.8 - 314.4 5% Min: Calcite>>									
314.40	**340.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	314.40	315.50	1.10	B00266936	1.4	0.013	0.01	0.02	0.05
		314.4 - 340: Locally amphibole (gabbroide?). Hematite in fracture, irregular CA concentration average 10 per cent., intense at contact with MXSX. E.O.H..									
		<<Min: 314.4 - 340 10% Min: Calcite>> Irregular repartition, strong at contact with MxSx	315.50	317.00	1.50	B00266937	1.9	0.019	-0.01	0.03	0.04
		<<Alt: 314.4 - 340 Strong (Alt) Chlorite>>	317.00	318.50	1.50	B00266938	1.6	0.009	-0.01	0.02	0.03
		<<Alt: 314.4 - 340 Weak (Alt) Biotite>>	318.50	320.00	1.50	B00266939	1.1	0.013	-0.01	0.01	0.02
		<<Struc: 314.7 - 315 Moderate (Alt) Fault>> Brecciated fault, PY-CA vein at lower contact.									

End of Hole @ 340

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-283

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	04-Oct-15
UTM Easting	415026.341	Core Size:	HQ3	Azimuth:	340	Date Logging Complete:	06-Oct-15
UTM Northing:	6815454.157	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1382.958	Casing Depth (m):	16.25	Length (m):	190.7	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	03-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	05-Oct-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-279

Comments:

This hole was drilled as a twin of K15-279 to collect sample of MET8 & MET7 Domains.
The structural footwall is composed of a package of RHYc and MDSw. Sulphide intercepts are 111.45m to 115.1m (OI, OJ, OC, OG ore types within MET7 and MET8 domains), 116.34m to 119.25m (OI, OJ, OB, OG ore types within MET6, MET7 and MET8 domains), 145.41m to 160.83m (OA, OB, OJ ore types within MET3, MET4, MET7 and MET8 domains), and from 163.87m to 169.52m (OA, OB, OI ore types within MET4, MET6, MET7, MET8 domains. The structural footwall is composed of felsic volcaniclastics. Muscovite and chlorite alteration intensifies towards the sulphide lenses.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	340	0	340	APS	David Nuttal	04-Oct-15		☑	
26	-50.2	4.1	22.5	26.6	ReflexEZS	Geotech	03-Oct-15	504	☐	Values not accepted due to low magnetic field
53	-51.2	318.2	22.5	340.7	ReflexEZS	Geotech	03-Oct-15	5725	☑	
83	-50.6	319.7	22.5	342.2	ReflexEZS	Geotech	04-Oct-15	5780	☑	
113	-50.3	323.2	22.5	345.7	ReflexEZS	Geotech	04-Oct-15	5749	☑	
143	-49.6	324	22.5	346.5	ReflexEZS	Geotech	04-Oct-15	5461	☑	
173	-49.6	326.8	22.5	349.3	ReflexEZS	Geotech	05-Oct-15	5766	☑	
190.7	-49.7	325.3	22.5	347.8	ReflexEZS	Geotech	05-Oct-15	5799	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**16.25**	**CASN Casing**									
16.25	**27.32**	**RHYc Rhyolite coherant volcanics**									

<<Min: 16.25 - 18.9 2% Min: Pyrrhotite>>
<<Min: 16.25 - 27.32 2.5% Min: Pyrite>>
<<Min: 16.25 - 49 0.25% Min: Calcite>>
<<Min: 18.9 - 48.7 3% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 16.25 - 70 Weak (Alt) Muscovite>>

<<Struc: 20.3 - 20.3 dominant foliation>>

<<Struc: 21.68 - 21.68 dominant foliation>>

<<Struc: 24.8 - 26.28 Moderate (Alt) Fault>> Sheared interval.

27.32 37.45 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 27.32 - 48.7 1% Min: Pyrite>>

<<Alt: 27.32 - 33 Trace (Alt) Chlorite>>

<<Struc: 29.1 - 29.1 dominant foliation>>

<<Struc: 29.5 - 29.5 dominant foliation>>

<<Struc: 30.3 - 30.3 dominant foliation>>

<<Struc: 31.7 - 31.7 dominant foliation>>

<<Struc: 32.2 - 32.2 dominant foliation>>

<<Struc: 33.2 - 33.2 dominant foliation>>

<<Struc: 35.32 - 35.32 dominant foliation>>

<<Struc: 36.42 - 36.42 dominant foliation>>

37.45 48.70 RHY undifferentiated rhyolite

<<Struc: 38.17 - 38.17 dominant foliation>>

<<Struc: 38.57 - 38.57 dominant foliation>>

<<Struc: 40.25 - 40.25 dominant foliation>>

<<Struc: 40.9 - 40.9 dominant foliation>>

<<Struc: 42.6 - 42.6 dominant foliation>>

<<Struc: 45.64 - 45.64 dominant foliation>>

<<Struc: 47.15 - 47.15 dominant foliation>>

48.70 65.54 RHYc Rhyolite coherant volcanics

48.7 - 65.54: Textures vary within interval, though dominantly devoid of volcaniclastic characteristics. Long convoluted banded domains of silica accompanied by ribboned foliation parallel pyrite domains. Interval from 53m to 56m lacks strong coherent rhyolite textures

<<Min: 48.7 - 53 5% Min: Pyrrhotite>>

<<Min: 48.7 - 59.3 2% Min: Pyrite>>

<<Min: 49 - 104.8 0.5% Min: Calcite>>

<<Min: 53 - 65.54 4% Min: Pyrrhotite>>

<<Min: 59.3 - 62 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description
		<<Min: 62 - 71.5 2% Min: Pyrite>>
		<<Min: 63.54 - 95.5 2% Min: Pyrrhotite>>
		<<Struc: 51.85 - 51.85 dominant foliation>>
		<<Struc: 52.3 - 52.3 dominant foliation>>
		<<Struc: 57.64 - 58.2 Weak (Alt) Fault>>
		<<Struc: 59.3 - 59.35 Weak (Alt) Fault>>
		<<Struc: 59.35 - 59.35 dominant foliation>>
		<<Struc: 60 - 60 dominant foliation>>
		<<Struc: 62.1 - 62.1 dominant foliation>>
		<<Struc: 64 - 64 dominant foliation>>
		<<Struc: 64.5 - 64.5 dominant foliation>>
65.54	**67.34**	**MDSw Coherent rhyolite flow with carbonaceous content**
67.34	**111.45**	**RHYc Rhyolite coherant volcanics**
		<<Min: 71.5 - 89.5 1% Min: Pyrite>>
		<<Min: 89.5 - 100.75 3% Min: Pyrite>>
		<<Min: 95.5 - 98 1% Min: Pyrrhotite>>
		<<Min: 98 - 111.45 2% Min: Pyrrhotite>>
		<<Min: 100.75 - 111.45 2% Min: Pyrite>>
		<<Min: 104.8 - 111.45 2% Min: Calcite>>
		<<Min: 105.6 - 111.45 0.25% Min: Sphalerite>>
		<<Min: 105.6 - 111.45 0.25% Min: Galena>>
		<<Alt: 70 - 105.48 Weak-Moderate (Alt) Muscovite>>
		<<Alt: 105.48 - 111.45 Trace (Alt) Chlorite>>
		<<Alt: 105.48 - 125 Moderate (Alt) Muscovite>>
		<<Vein: 69.28 - 70.05 70% Quartz>>
		<<Vein: 90.8 - 97.54 10% Quartz>> sulphides: galena, sphalerite
		<<Vein: 105.48 - 106.46 20% Quartz>> galena and sphalerite
		<<Struc: 68.74 - 68.84 Fault>>
		<<Struc: 69.1 - 69.1 dominant foliation>>
		<<Struc: 70.67 - 70.67 dominant foliation>>
		<<Struc: 72.5 - 72.5 dominant foliation>>
		<<Struc: 73.63 - 74.2 Weak (Alt) Fault>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
107.00	108.00	1.00						
108.00	109.00	1.00						
109.00	110.00	1.00						
110.00	111.00	1.00						
111.00	111.45	0.45						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 74.3 - 74.3 dominant foliation>>												
<<Struc: 75.9 - 75.9 dominant foliation>>												
<<Struc: 80.7 - 81 Weak (Alt) Fault>>												
<<Struc: 84.45 - 84.45 dominant foliation>>												
<<Struc: 87.8 - 87.8 dominant foliation>>												
<<Struc: 89.7 - 89.7 dominant foliation>>												
<<Struc: 96.6 - 96.6 dominant foliation>>												
<<Struc: 100.15 - 100.15 dominant foliation>>												
<<Struc: 101.2 - 101.2 dominant foliation>>												
<<Struc: 102.1 - 102.1 dominant foliation>>												
<<Struc: 105.18 - 105.18 dominant foliation>>												
<<Struc: 111.2 - 111.2 dominant foliation>>												
111.45	**112.05**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	111.45	112.05	0.60						
<<Min: 111.45 - 121.44 3% Min: Calcite>>												
<<Alt: 111.45 - 114.9 Moderate (Alt) Cordierite>> localized to outer margins of heavily disseminated sulphide margins												
<<Alt: 111.45 - 119.25 Moderate (Alt) Chlorite>> localized to outer margins of heavily disseminated sulphide margins												
112.05	**112.68**	**OI**	**Heavilly disseminated sulphides in host schist**	112.05	112.68	0.63						
112.68	**115.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	112.68	113.66	0.98						
<<Struc: 114 - 114 dominant foliation>>				113.66	114.66	1.00						
				114.66	115.10	0.44						
115.10	**116.34**	**RHYc**	**Rhyolite coherant volcanics**	115.10	116.34	1.24						
<<Struc: 115.33 - 116.34 Moderate (Alt) Fault>> Alpha angle is approximate												
116.34	**118.08**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	116.34	117.34	1.00						
				117.34	118.08	0.74						
118.08	**118.43**	**OI**	**Heavilly disseminated sulphides in host schist**	118.08	118.43	0.35						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
118.43	**118.74**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	118.43	118.74	0.31						
<<Struc: 118.54 - 118.54 dominant foliation>>											
118.74	**118.92**	**OI Heavilly disseminated sulphides in host schist**	118.74	118.92	0.18						
118.92	**119.25**	**OG Chalcopyrite rich sulphides**	118.92	119.25	0.33						
119.25	**121.44**	**RHYv Rhyolite volcaniclastic**	119.25	119.90	0.65						
<<Min: 119.25 - 130.64 1% Min: Sphalerite>>			119.90	120.44	0.54						
<<Min: 119.25 - 130.64 1% Min: Pyrite>>			120.44	121.44	1.00						
<<Min: 119.25 - 130.64 0.5% Min: Chalcopyrite>>											
<<Min: 119.25 - 132.8 1% Min: Pyrrhotite>>											
<<Min: 119.25 - 145.41 0.25% Min: Galena>>											
<<Alt: 119.25 - 130.62 Weak (Alt) Chlorite>> Localized in lapilli											
121.44	**130.53**	**RHYvl Lapilli tuff**	121.81	123.00	1.19						
121.44 - 130.53: Lapilli replaced by chlorite/sulphide											
<<Min: 121.44 - 134.8 0.25% Min: Calcite>>			123.00	124.00	1.00						
<<Alt: 125 - 147 Weak-Moderate (Alt) Muscovite>>			124.00	125.00	1.00						
<<Struc: 121.44 - 121.44 dominant foliation>>											
<<Struc: 123.06 - 123.1 Weak (Alt) Fault>> Alpha angle is approximate											
<<Struc: 125 - 125 dominant foliation>>											
130.53	**132.80**	**RHYc Rhyolite coherant volcanics**									
<<Min: 130.64 - 132.8 1% Min: Pyrrhotite>>											
<<Min: 130.64 - 145.41 0.5% Min: Sphalerite>>											
<<Min: 130.64 - 145.41 0.5% Min: Pyrite>>											
<<Min: 130.64 - 145.41 0.25% Min: Pyrrhotite>>											
<<Struc: 131.3 - 131.3 dominant foliation>>											
132.80	**142.00**	**RHYvl Lapilli tuff**	140.00	141.00	1.00						
132.8 - 142: Lapilli replaced by chlorite/sulphide											
<<Min: 134.8 - 139 2% Min: Calcite>>			141.00	142.00	1.00						
<<Min: 139 - 145.41 1% Min: Calcite>>											
<<Struc: 133.9 - 133.9 dominant foliation>>											

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 135 - 135 dominant foliation>>												
<<Struc: 139 - 139 dominant foliation>>												
142.00	**145.41**	**RHYc**	**Rhyolite coherant volcanics**									
<<Alt: 143 - 147 Moderate (Alt) Cordierite>>												
<<Struc: 143.5 - 145.5 Moderate (Alt) Fault>> (Faulted zone) gouge and gravel present, 3 faults ~15-30cm wide, spaced 10's of cm apart.												
145.41	**146.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	145.41	145.93	0.52						
<<Min: 145.41 - 153.27 1% Min: Calcite>>				145.93	147.15	1.22						
<<Struc: 145.41 - 145.41 dominant foliation>>												
146.00	**147.15**	**OG**	**Chalcopyrite rich sulphides**									
146 - 147.15: High CP (~30-40%), present with abundant PO. Unit could also be classified as OC												
147.15	**147.45**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	147.15	147.45	0.30						
147.15 - 147.45: High CP (~15%)												
147.45	**148.00**	**OA**	**Magnetite bearing sulphides**	147.45	148.00	0.55						
147.45 - 148: High CP (~15%) with laminated magnetite (~15%)												
148.00	**153.27**	**OA**	**Magnetite bearing sulphides**	148.00	149.00	1.00						
148 - 153.27: Laminated magnetite (~7-12%)												
				149.00	150.00	1.00						
				150.00	151.00	1.00						
				151.00	152.00	1.00						
				152.00	152.80	0.80						
				152.80	153.27	0.47						
153.27	**157.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	153.27	154.27	1.00						
<<Min: 153.27 - 160.83 2% Min: Calcite>>				154.27	155.27	1.00						
				155.27	156.27	1.00						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
				156.27	157.00	0.73						
157.00	**159.69**	**OA**	**Magnetite bearing sulphides**	157.00	158.00	1.00						
157 - 159.69: Laminated magnetite (~5-10%)												
				158.00	159.00	1.00						
				159.00	159.69	0.69						
159.69	**160.83**	**OA**	**Magnetite bearing sulphides**	159.69	160.83	1.14						
159.69 - 160.83: Minor component of economic mineralization visible.												
160.83	**163.87**	**RHYc**	**Rhyolite coherant volcanics**	160.83	161.70	0.87						
<<Min: 160.83 - 163.87 0.25% Min: Sphalerite>>				161.70	163.00	1.30						
<<Min: 160.83 - 163.87 1% Min: Pyrite>>				163.00	163.87	0.87						
<<Min: 160.83 - 163.87 0.25% Min: Chalcopyrite>>												
<<Min: 160.83 - 163.87 0.25% Min: Calcite>>												
<<Alt: 160.83 - 163.87 Weak-Moderate (Alt) Muscovite>>												
<<Alt: 163.4 - 165.86 Weak (Alt) Chlorite>> with cordierite												
<<Struc: 161.7 - 163.7 Moderate (Alt) Fault>> (Faulted zone) parallel with foliation, intensity 4-6. Alpha angle is approximate												
163.87	**164.62**	**OA**	**Magnetite bearing sulphides**	163.87	164.62	0.75						
<<Min: 163.87 - 169.52 1% Min: Calcite>>												
<<Alt: 163.87 - 165.86 Weak (Alt) Cordierite>>												
164.62	**165.00**	**OI**	**Heavilly disseminated sulphides in host schist**	164.62	165.00	0.38						
164.62 - 165: 4%CP, 3%PO, 12%PY, 3%SP												
165.00	**165.86**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	165.00	165.86	0.86						
165.86	**168.90**	**OI**	**Heavilly disseminated sulphides in host schist**	165.86	166.86	1.00						
165.86 - 168.9: Interval is largely composed of quartz veining. ~7-10%CP, 5% PO, 4%PY, 4%PY, 1%SP												
<<Alt: 165.86 - 168.9 Moderate-Strong (Alt) Muscovite>> Association with quartz veining?				166.86	167.86	1.00						
<<Vein: 165.86 - 169.5 80% Quartz>> In main lithology this interval is entered as OI. Sulphides include CP, PO, PY, SP				167.86	168.90	1.04						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 167 - 167.1 Weak (Alt) Fault>> Alpha angle is approximate

<<Struc: 168.15 - 168.8 Strong (Alt) Fault>> (Faulted zone) gravel/sand/gouge present. Alpha is approximate (no orientation)

168.90 169.52 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides | 168.90 | 169.52 | 0.62

168.9 - 169.52: Small lense of massive sulphide (OB), with margins containing quartz veining, CP, PO and Sp sulphides.

<<Alt: 168.9 - 190.7 Weak-Moderate (Alt) Muscovite>>

<<Alt: 169.45 - 172.7 Trace (Alt) Chlorite>>

169.52 187.75 RHYva Coarse grained to ash tuff grey-green | 169.52 | 172.00 | 2.48

169.52 - 187.75: Rock texture and sulphide mineralization is consistent through interval. From top of interval to bottom chlorite alteration increases from trace (1) to moderate (4). Calcite increases from trace (0.25%) at top of interval to ~3% at base. Not clear as to w

<<Min: 169.52 - 185 0.25% Min: Calcite>> | 172.00 | 173.00 | 1.00

<<Min: 169.52 - 187.75 0.25% Min: Pyrite>> | 173.00 | 174.00 | 1.00

<<Min: 169.52 - 187.75 4% Min: Pyrrhotite>> | 174.00 | 175.00 | 1.00

<<Min: 173 - 182 0.5% Min: Tetrahedrite>>

<<Min: 185 - 188.81 3% Min: Calcite>>

<<Alt: 172.7 - 174 Weak (Alt) Chlorite>>

<<Alt: 174 - 188.81 Moderate (Alt) Chlorite>>

<<Vein: 175.41 - 177.1 10% Quartz>> Galena and sphalerite

<<Struc: 171.6 - 171.6 dominant foliation>>

<<Struc: 175.2 - 175.2 dominant foliation>>

<<Struc: 177.5 - 177.5 dominant foliation>>

<<Struc: 187.25 - 187.25 dominant foliation>>

<<Struc: 187.38 - 187.62 Moderate (Alt) Fault>> Gouge present. Alpha angle is approximate

187.75 188.81 OJ Heavilly disseminated sulphides in proximal altered rock | 187.75 | 188.81 | 1.06

187.75 - 188.81: CP 2-3%, PO 4%, PY 4%.

188.81 190.70 RHYva Coarse grained to ash tuff grey-green

<<Min: 188.81 - 190.7 3% Min: Pyrrhotite>>

<<Min: 188.81 - 190.7 0.25% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 188.81 - 190.7 Weak (Alt) Chlorite>>									
		End of Hole @ 190.7									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-284

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	05-Oct-15
UTM Easting	414653.695	Core Size:	HQ3	Azimuth:	180.1	Date Logging Complete:	09-Oct-15
UTM Northing:	6815652.409	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1430.397	Casing Depth (m):	6.5	Length (m):	224	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	04-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	07-Oct-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

The purpose of this hole was to provide resource information for the space between historic holes K94-006 and K94-024. This hole was also designed to sample rocks of the MET 4 domain. This hole seemed like it may be verging on MET 2 but it seems the Pb mineralization appears to be in the form of remobilized galena in veins. This mineralization is not representative of the zone. Mineralization in this hole is characteristic of MET 4 domain.

The upper portion of this hole contains minor RHYcw and RHYvl intruded by MAFi. A unit of MDSt separates these rocks from a package of RHYcw with lesser RHYvl and RHYva. The MDSt intersected at 66.02 m suggests continuity of the upper PY MU MDS horizon depicted on the 414650 mE cross section. This package has also been intruded by MAFi. Below this MDSt, MDSw, and RHYcw were intersected. One major lens of massive sulphide was intersected between 167.26-182.61m. OA, OC, and OJ ore types were intersected. RHYcw, and RHYvl sit structurally below the sulphide zone and are intruded by MAFi and minor RHYi. A quartz eye RHY sits below the MAFi footwall unit.

CI-CL zones were intersected above, within, and below the sulphide lens.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.1	0	180.1	APS	Cooper Campbell	04-Oct-15		☑	
26	-59.5	154.2	22.5	176.7	ReflexEZS	Geotech	04-Oct-15	5864	☑	
50	-59.6	157.8	22.5	180.3	ReflexEZS	Geotech	05-Oct-15	5829	☑	
74	-60.3	156.8	22.5	179.3	ReflexEZS	Geotech	05-Oct-15	5693	☑	
101	-60.2	162.7	22.5	185.2	ReflexEZS	Geotech	05-Oct-15	5716	☑	
125	-60.6	156.7	22.5	179.2	ReflexEZS	Geotech	05-Oct-15	5888	☑	
152	-61.1	160.2	22.5	182.7	ReflexEZS	Geotech	06-Oct-15	5873	☑	
176	-61.3	165.4	22.5	187.9	ReflexEZS	Geotech	06-Oct-15	3308	☑	
200	-61.1	167.5	22.5	190	ReflexEZS	Geotech	06-Oct-15	5784	☑	
224	-61.4	163.8	22.5	186.3	ReflexEZS	Geotech	06-Oct-15	5925	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.50**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.50 12.88 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 6.5 - 12.66 0.01% Min: Calcite>>

<<Min: 6.5 - 12.88 0.5% Min: Pyrite>>

<<Min: 6.5 - 12.88 1% Min: Pyrrhotite>> WIS

<<Min: 6.5 - 21.45 0.01% Min: Chalcopyrite>>

<<Min: 12.66 - 16.2 30% Min: Calcite>> DIS

<<Alt: 6.5 - 12.88 Weak (Alt) Muscovite>>

<<Vein: 12.65 - 12.88 100% Quartz-Carbonate-Sulphide 30 deg. >> QZ-AK-CA-PO-CP

12.88 16.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

12.88 - 16.1: Euhedral CA crystals.

<<Min: 12.88 - 16.1 0.01% Min: Sphalerite>>

<<Min: 12.88 - 16.1 0.5% Min: Pyrrhotite>> VN

<<Min: 12.88 - 16.1 0.01% Min: Chalcopyrite>>

<<Alt: 12.88 - 16.1 Weak (Alt) Chlorite>>

<<Vein: 12.88 - 16.1 20% Quartz-Carbonate-Sulphide 50 deg. >> CA-QZ-SP-PO

16.10 21.45 RHYvl Lapilli tuff

16.1 - 21.45: QE and TO DIS at top of interval.

<<Min: 16.1 - 21.45 0.01% Min: Sphalerite>> WIS

<<Min: 16.1 - 21.45 0.01% Min: Chalcopyrite>> VN

<<Min: 16.1 - 44.45 1% Min: Pyrrhotite>> VN

<<Min: 16.2 - 21.45 0.5% Min: Calcite>>

<<Alt: 16.1 - 27.78 Weak (Alt) Muscovite>>

<<Vein: 16.1 - 17.51 3% Quartz-Carbonate-Sulphide 50 deg. >> QZ-AK-CA-PY-PO-SP-CP

21.45 27.78 RHYvl Lapilli tuff

<<Min: 21.45 - 23.47 5% Min: Calcite>>

<<Min: 23.47 - 27.78 1% Min: Calcite>>

<<Alt: 21.45 - 24.84 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

27.78 34.01 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

27.78 - 34.01: Amygdules locally? Short intervals of RHYvl (QE) dispersed throughout dyke swarm.

<<Min: 27.78 - 34.01 10% Min: Calcite>> DIS

<<Min: 30.18 - 30.54 0.01% Min: Galena>>

<<Alt: 27.78 - 46.86 Trace (Alt) Chlorite>>

<<Vein: 30.18 - 30.54 50% Quartz-Carbonate-Sulphide 65 deg. >> QZ-AK-CA-SP-GL

34.01 44.45 RHYvl Lapilli tuff

<<Min: 34.01 - 44.45 3% Min: Calcite>>

<<Min: 37.9 - 40.7 0.01% Min: Sphalerite>> WIS

<<Min: 37.9 - 40.7 0.01% Min: Pyrite>>

<<Min: 40.7 - 44.45 0.01% Min: Chalcopyrite>>

<<Min: 40.7 - 44.45 0.5% Min: Arsenopyrite>>

<<Alt: 34.01 - 44.45 Weak (Alt) Muscovite>>

44.45 55.06 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

44.45 - 55.06: Short intervals of RHYvl (QE) dispersed throughout dyke swarm.

<<Min: 44.45 - 55.06 0.5% Min: Pyrite>>

<<Min: 44.45 - 55.06 3% Min: Pyrrhotite>>

<<Min: 44.45 - 55.06 0.01% Min: Chalcopyrite>>

<<Min: 44.45 - 55.06 30% Min: Calcite>> DIS

<<Alt: 46.86 - 57.77 Weak (Alt) Chlorite>>

<<Vein: 44.45 - 55.06 10% Quartz-Carbonate 65 deg. >> CA-QZ

55.06 60.82 RHYvl Lapilli tuff

<<Min: 55.06 - 60.95 0.5% Min: Pyrrhotite>>

<<Min: 55.06 - 60.95 0.01% Min: Galena>>

<<Min: 55.06 - 60.95 0.01% Min: Chalcopyrite>> VN

<<Min: 55.06 - 61.9 3% Min: Calcite>> VN

<<Alt: 55.06 - 95.27 Weak (Alt) Muscovite>>

<<Alt: 57.77 - 62.09 Trace (Alt) Chlorite>>

<<Vein: 57.71 - 57.77 100% Quartz-Carbonate-Sulphide 70 deg. >> QZ-CA-CL-BI-GL-SP

60.82 66.02 RHYvl Lapilli tuff

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 60.95 - 66.02 0.5% Min: Pyrite>>

<<Min: 60.95 - 66.02 1% Min: Pyrrhotite>> WIS

<<Min: 60.95 - 66.02 0.01% Min: Chalcopyrite>>

<<Min: 61.9 - 72.05 1% Min: Calcite>>

<<Struc: 63.74 - 64.38 Weak (Alt) Fault>> Rubble and gouge zone. Poor recovery. Potential for mechanical comminution.

66.02 69.28 MDSt Rhyolite tuff dominant mudstone

<<Min: 66.02 - 69.28 0.5% Min: Pyrite>> DIS

<<Min: 66.02 - 69.28 0.5% Min: Pyrrhotite>> DIS

69.28 74.46 RHYvl Lapilli tuff

<<Min: 69.28 - 73.93 1% Min: Sphalerite>>

<<Min: 69.28 - 73.93 0.01% Min: Pyrite>>

<<Min: 69.28 - 73.93 3% Min: Pyrrhotite>> BL

<<Min: 72.05 - 74.82 0.5% Min: Calcite>>

<<Min: 73.93 - 88.59 0.5% Min: Pyrite>> DIS

<<Min: 73.93 - 88.59 1% Min: Pyrrhotite>> FD

<<Alt: 72.05 - 111.82 Trace (Alt) Chlorite>>

74.46 88.59 RHYvl Lapilli tuff

74.46 - 88.59: BI overprint. MAFi intrudes RHYvl throughout interval.

<<Min: 74.82 - 99 10% Min: Calcite>>

88.59 92.73 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.59 - 92.73: BI overprint.

<<Min: 88.59 - 99.95 0.5% Min: Pyrite>>

<<Min: 88.59 - 99.95 1% Min: Pyrrhotite>>

92.73 95.27 RHYvl Lapilli tuff

92.73 - 95.27: BI overprint.

95.27 96.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

95.27 - 96.8: BI overprint.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

96.80 99.95 RHYcw Curdy textured-flow banded (flows, subvolcanics)

96.8 - 99.95: BI overprint.

<<Min: 99 - 112.13 5% Min: Calcite>>

<<Alt: 96.8 - 124.16 Weak (Alt) Muscovite>>

99.95 102.98 RHYvl Lapilli tuff

99.95 - 102.98: BI overprint.

<<Min: 99.95 - 125.4 0.5% Min: Pyrite>>

<<Min: 99.95 - 125.4 1% Min: Pyrrhotite>>

102.98 111.55 RHYva Coarse grained to ash tuff

102.98 - 111.55: BI overprint.

111.55 122.28 RHYvl Lapilli tuff

<<Min: 112.13 - 128.95 0.5% Min: Calcite>>

122.28 128.95 RHYva Coarse grained to ash tuff

<<Min: 125.4 - 132.72 0.01% Min: Pyrite>>

<<Min: 125.4 - 132.72 3% Min: Pyrrhotite>> VN

<<Min: 125.4 - 132.72 0.01% Min: Galena>>

<<Alt: 124.16 - 127.5 Moderate (Alt) Muscovite>>

<<Alt: 127.5 - 128.94 Strong (Alt) Muscovite>>

<<Alt: 128.94 - 131.42 Moderate (Alt) Muscovite>>

<<Vein: 125.4 - 132.72 20% Quartz-Carbonate-Sulphide 55 deg. >> QZ-CA-PO-PY-GL

128.95 132.95 MDSt Rhyolite tuff dominant mudstone

<<Min: 128.95 - 132.95 5% Min: Calcite>>

<<Min: 132.72 - 149.9 3% Min: Pyrite>> WIS

<<Min: 132.72 - 149.9 0.01% Min: Pyrrhotite>>

<<Alt: 131.42 - 135.6 Strong (Alt) Muscovite>>

132.95 149.90 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 132.95 - 149 0.5% Min: Calcite>>

<<Min: 149 - 181.89 0.01% Min: Calcite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 135.6 - 149.9 Moderate (Alt) Muscovite>>													
149.90	**161.32**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**										
<<Min: 149.9 - 165.25 1% Min: Pyrite>> WIS													
<<Min: 149.9 - 165.25 0.01% Min: Pyrrhotite>>													
<<Alt: 149.9 - 170.87 Strong (Alt) Muscovite>>													
<<Struc: 155.88 - 155.89 dominant foliation>>													
<<Struc: 160.62 - 160.63 dominant foliation>>													
161.32	**163.72**	**MDSt**	**Rhyolite tuff dominant mudstone**										
163.72	**167.26**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		163.72	164.76	1.04	B00268303	0.6	0.01	-0.01	-0.01	0.01
<<Min: 165.25 - 167.26 0.01% Min: Sphalerite>>					164.76	165.76	1.00	B00268304	1.3	0.011	-0.01	-0.01	0.02
<<Min: 165.25 - 167.26 0.5% Min: Pyrite>>					165.76	167.26	1.50	B00268305	1.2	0.007	0.04	0.02	0.1
<<Min: 165.25 - 167.26 1% Min: Pyrrhotite>> FD													
<<Min: 165.25 - 167.26 0.5% Min: Chalcopyrite>> DIS													
<<Struc: 167.23 - 167.24 >>													
<<Struc: 167.23 - 167.24 >>													
167.26	**170.87**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**	167.26	168.26	1.00	B00268306	8.2	0.023	0.4	0.19	1.12
<<Min: 167.26 - 170.87 5% Min: Sphalerite>> Locally SMAS					168.26	169.26	1.00	B00268307	0.8	0.008	0.02	-0.01	0.04
<<Min: 167.26 - 170.87 3% Min: Pyrrhotite>> WIS					169.26	170.26	1.00	B00268308	18.2	0.048	0.16	0.88	2.5
<<Min: 167.26 - 170.87 1% Min: Galena>>					170.26	170.87	0.61	B00268309	128	0.222	1.42	4.8	9.16
<<Min: 167.26 - 170.87 3% Min: Chalcopyrite>>													
<<Alt: 167.26 - 168.72 Weak (Alt) Chlorite>>													
<<Alt: 167.26 - 168.72 Weak (Alt) Cordierite>>													
<<Alt: 168.72 - 169.9 Moderate (Alt) Chlorite>>													
<<Alt: 168.72 - 170.23 Moderate (Alt) Cordierite>>													
<<Alt: 169.9 - 170.23 Strong (Alt) Chlorite>>													
<<Alt: 170.23 - 171.65 Moderate (Alt) Chlorite>>													
<<Alt: 170.23 - 171.65 Strong (Alt) Cordierite>>													
<<Vein: 170.49 - 170.87 100% Quartz-Carbonate-Sulphide 40 deg. >> QZ-AK-CI-CL-PO-CP-SP-GL													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 169.46 - 169.47 >>													
<<Struc: 169.48 - 169.49 >>													
<<Struc: 169.48 - 169.49 >>													
170.87	**171.71**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	170.87	171.71	0.84	B00268312	77.8	0.506	3.39	0.38	2.88
<<Min: 170.87 - 171.71 10% Min: Pyrrhotite>> BL													
<<Min: 170.87 - 171.71 5% Min: Chalcopyrite>> BL													
<<Struc: 170.87 - 170.88 Vein>>													
<<Struc: 170.9 - 170.91 Contact>>													
171.71	**179.50**	**OA**	**Magnetite bearing sulphides**	**MG**	171.71	172.71	1.00	B00268313	21.4	0.095	0.36	0.57	9.95
<<Min: 171.71 - 179.5 20% Min: Sphalerite>>					172.71	173.71	1.00	B00268314	23.8	0.08	0.13	0.66	10.2
<<Min: 171.71 - 179.5 5% Min: Pyrrhotite>> DIS					173.71	174.71	1.00	B00268315	30.2	0.114	0.24	1.09	8.66
<<Min: 171.71 - 179.5 15% Min: Magnetite>>					174.71	175.71	1.00	B00268316	13.9	0.097	0.23	0.26	4.25
<<Alt: 178.08 - 180.4 Moderate (Alt) Cordierite>>					175.71	176.71	1.00	B00268317	18.4	0.097	0.21	0.46	7.77
<<Alt: 178.08 - 182.15 Moderate (Alt) Chlorite>>					176.71	177.71	1.00	B00268318	13.2	0.092	0.22	0.2	5.33
<<Struc: 171.71 - 171.72 dominant foliation>>					177.71	178.71	1.00	B00268319	13.1	0.099	0.48	0.08	10.3
<<Struc: 171.72 - 171.73 Contact>>					178.71	179.50	0.79	B00268321	18	0.142	0.56	0.08	7.89
<<Struc: 174.64 - 174.65 dominant foliation>>													
179.50	**180.40**	**OA**	**Magnetite bearing sulphides**		179.50	180.40	0.90	B00268322	17.4	0.146	0.46	0.08	0.72
<<Min: 179.5 - 180.4 3% Min: Pyrrhotite>>													
<<Min: 179.5 - 180.4 5% Min: Magnetite>>													
<<Struc: 179.5 - 179.51 dominant foliation>>													
<<Struc: 179.5 - 179.51 Contact>>													
180.40	**182.00**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**		180.40	181.40	1.00	B00268323	13.2	0.034	0.44	0.05	0.96
180.4 - 182: Contains >10% PO+CP, therefore OC. Also contains strong CI alteration and 10% MG. Decided that PO+CP content was more important than alteration or MG content. Chose not to use OJ or OA.													
<<Min: 180.4 - 182 10% Min: Pyrrhotite>> SMAS locally					181.40	182.00	0.60	B00268324	19.5	0.045	0.55	0.18	4.2
<<Min: 180.4 - 182 10% Min: Magnetite>>													
<<Min: 180.4 - 182 3% Min: Chalcopyrite>> BL													
<<Min: 181.89 - 186.28 15% Min: Calcite>> VEN													
<<Alt: 180.4 - 182.15 Strong (Alt) Cordierite>>													
<<Struc: 180.42 - 180.43 dominant foliation>>													

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 180.42 - 180.43 Contact>>									
			<<Struc: 181.71 - 181.72 dominant foliation>>									
182.00	**182.61**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	182.00	182.61	0.61	B00268325	3.5	0.015	0.06	0.03	0.24
			182 - 182.61: Weak CI-CL alteration with PO-CP mineralization <10%.									
			<<Min: 182 - 182.61 5% Min: Pyrrhotite>>									
			<<Alt: 182 - 189.37 Strong (Alt) Muscovite>>									
			<<Alt: 182.15 - 186.28 Weak (Alt) Chlorite>>									
			<<Alt: 182.15 - 186.28 Weak (Alt) Cordierite>>									
			<<Struc: 182 - 182.01 dominant foliation>>									
			<<Struc: 182 - 182.01 Contact>>									
182.61	**186.28**	**RHY**	**undifferentiated rhyolite**	182.61	184.11	1.50	B00268326	5.6	0.037	0.04	0.07	0.13
			182.61 - 186.28: Protolith obscured by strong MU alteration.									
			<<Min: 182.61 - 197.34 0.5% Min: Sphalerite>>	184.11	185.61	1.50	B00268327	2	0.005	0.01	0.02	0.11
			<<Min: 182.61 - 197.34 3% Min: Pyrite>> WIS	185.61	186.28	0.67	B00268328	1.2	-0.005	-0.01	0.03	0.03
			<<Min: 182.61 - 197.34 3% Min: Pyrrhotite>> WIS									
			<<Min: 182.61 - 197.34 0.5% Min: Chalcopyrite>>									
186.28	**189.37**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	186.28	187.78	1.50	B00268329	1.7	0.006	0.03	0.02	0.02
			<<Min: 186.28 - 197.34 0.01% Min: Calcite>>	187.78	188.78	1.00	B00268331	0.4	-0.005	-0.01	-0.01	-0.01
			<<Struc: 187.07 - 191.61 Weak (Alt) Fault>> Faults filled with gouge and broken rock. Spaced tens of cm's apart.	188.78	189.37	0.59	B00268332	1.5	-0.005	0.02	0.01	0.26
189.37	**190.02**	**RHY**	**undifferentiated rhyolite**	189.37	190.02	0.65	B00268333	17.7	0.044	0.4	0.11	0.09
			189.37 - 190.02: Strong CL altered zone. Interpretted as proximal ateration of RHY. Protolith obscured by alteration. Could be MAFi but similar interceptions deeper in the hole don't make sense in terms of timing. Further down hole unit cuts green-grey alteration associat									
			<<Alt: 189.37 - 190.02 Strong (Alt) Chlorite>>									
190.02	**192.88**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	190.02	191.52	1.50	B00268334	1.6	-0.005	0.03	0.01	0.06
			<<Alt: 190.02 - 197.34 Strong (Alt) Muscovite>>	191.52	192.88	1.36	B00268335	3.5	-0.005	0.05	0.06	0.29
			<<Alt: 190.02 - 197.34 Weak (Alt) Chlorite>>									
			<<Struc: 192.77 - 192.78 dominant foliation>>									

From (m)	To (m)	Rocktype & Description
192.88	**197.34**	**RHYvl** **Lapilli tuff**
197.34	**200.24**	**RHY** **undifferentiated rhyolite**

197.34 - 200.24: Moderate CL altered zone. Interpretted as proximal ateration of RHY. Protolith obscured by alteration. Could be MAFi but appears to have a sharp lower contact with MAFi. CP-PO mineralization.

<<Min: 197.34 - 200.24 0.01% Min: Sphalerite>>

<<Min: 197.34 - 200.24 0.5% Min: Pyrite>> WIS, DIS

<<Min: 197.34 - 200.24 0.5% Min: Pyrrhotite>>

<<Min: 197.34 - 200.24 0.5% Min: Chalcopyrite>> WIS

<<Min: 197.34 - 212.5 30% Min: Calcite>> DIS, BL

<<Alt: 197.34 - 200.24 Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
200.24	**212.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

200.24 - 212.5: CL-BI. Cr mica. Trace RHYi with foliation parallel wisps of SP-PY.

<<Min: 200.24 - 212.5 0.01% Min: Sphalerite>>

<<Min: 200.24 - 212.5 0.01% Min: Pyrite>>

<<Min: 200.24 - 212.5 0.5% Min: Pyrrhotite>>

<<Min: 200.24 - 212.5 0.01% Min: Chalcopyrite>>

<<Alt: 200.24 - 204.03 Moderate (Alt) Chlorite>>

<<Alt: 204.03 - 213.95 Moderate (Alt) Muscovite>> Green-grey alteration. Cr mica locally.

<<Alt: 210.14 - 210.78 Weak (Alt) Silicification>>

<<Struc: 203.32 - 203.33 dominant foliation>>

<<Struc: 211.5 - 211.51 dominant foliation>>

From (m)	To (m)	Rocktype & Description
212.50	**214.63**	**RHY** **undifferentiated rhyolite**

212.5 - 214.63: MU-SI alteration. Possible short RHYi intercept over interval.

<<Min: 212.5 - 220.96 1% Min: Pyrite>> DIS, WIS

<<Min: 212.5 - 220.96 0.01% Min: Pyrrhotite>>

<<Min: 212.5 - 220.96 15% Min: Calcite>>

<<Alt: 213.76 - 214.63 Moderate (Alt) Silicification>>

<<Alt: 214.26 - 217.4 Moderate (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
195.84	197.34	1.50	B00268336	1.8	-0.005	-0.01	0.02	0.14
197.34	198.34	1.00	B00268337	6.4	0.021	0.12	0.06	0.07
198.34	199.34	1.00	B00268338	1.9	0.01	0.03	0.02	0.07
199.34	200.24	0.90	B00268339	9.9	0.081	0.19	0.1	0.13
200.24	201.74	1.50	B00268341	-0.3	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description
214.63	**220.96**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

214.63 - 220.96: Wispy sulphides.

<<Alt: 217.4 - 220.96 Strong (Alt) Muscovite>> May be OR alteration. Looks like late MU overprint associated with RHYi.

<<Struc: 218.35 - 218.36 dominant foliation>>

From (m)	To (m)	Rocktype & Description
220.96	**221.69**	**RHY** **undifferentiated rhyolite**

220.96 - 221.69: Strong CL altered zone. Interpretted as proximal ateration of RHY. Protolith obscured by alteration. Could be MAFi but doesn't make sense in terms of timing. Cuts green-grey alteration associated with RHYi. MAFi should be pre-RHYi. Has some kind of alumin

<<Min: 220.96 - 221.69 0.01% Min: Sphalerite>>

<<Min: 220.96 - 221.69 0.01% Min: Pyrite>>

<<Min: 220.96 - 221.69 0.5% Min: Pyrrhotite>>

<<Min: 220.96 - 221.69 0.5% Min: Chalcopyrite>>

<<Min: 220.96 - 224 0.5% Min: Calcite>>

<<Alt: 220.96 - 221.69 Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
221.69	**224.00**	**RHY** **undifferentiated rhyolite**

221.69 - 224: Strong MU overprint.

<<Min: 221.69 - 224 1% Min: Pyrite>> WIS

<<Min: 221.69 - 224 0.01% Min: Pyrrhotite>>

<<Alt: 221.69 - 224 Strong (Alt) Muscovite>> May be OR alteration. Looks like late MU overprint associated with RHYi.

End of Hole @ 224

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
219.46	220.96	1.50	B00268342	0.6	-0.005	-0.01	-0.01	0.02
220.96	221.69	0.73	B00268343	7.2	0.047	0.16	0.05	0.23
221.69	223.19	1.50	B00268344	1.1	-0.005	-0.01	0.02	0.14

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-284W1

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	09-Oct-15
UTM Easting	414653.695	Core Size:	HQ3	Azimuth:	180.1	Date Logging Complete:	10-Oct-15
UTM Northing:	6815652.409	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1430.397	Casing Depth (m):	6.5	Length (m):	191	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	07-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	07-Oct-15
Local Elev. (m):						Purpose:	Metallurgical Wedge
						Parent Hole:	K15-284

Comments:

The purpose of this hole was to collect rock from the MET4 domain for metallurgical testing and to increase MET spatial coverage. This hole had less Pb mineralization than the parent hole, which further solidifies its place in the MET4 domain. Mineralization in this hole is characteristic of MET 4 domain.

The upper portion of this hole contains RHYcw and MDSt. One major lens of massive sulphide was intersected between 167.72-184.29m. OA, OC, OF ,and OJ ore types were intersected. RHYcw, and RHY(protolith obscured by alteration) sit structurally below the sulphide zone.

CI-CL zones were intersected above, within, and below the sulphide lens.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.1	0	180.1	APS	Cooper Campbell	04-Oct-15		☑	Values copied from K15-284
26	-59.5	154.2	22.5	176.7	ReflexEZS	Geotech	04-Oct-15	5864	☑	Values copied from K15-284
50	-59.6	157.8	22.5	180.3	ReflexEZS	Geotech	05-Oct-15	5829	☑	Values copied from K15-284
74	-60.3	156.8	22.5	179.3	ReflexEZS	Geotech	05-Oct-15	5693	☑	Values copied from K15-284
101	-60.2	162.7	22.5	185.2	ReflexEZS	Geotech	05-Oct-15	5716	☑	Values copied from K15-284
125	-60.6	156.7	22.5	179.2	ReflexEZS	Geotech	05-Oct-15	5888	☑	Values copied from K15-284
144	-59.1	156.1	22.5	178.6	ReflexEZS	Geotech	07-Oct-15	5993	☑	Wedge start; value copied from first wedge survey at 152m
152	-59.1	156.1	22.5	178.6	ReflexEZS	Geotech	07-Oct-15	5993	☑	
170	-59.5	175.4	22.5	197.9	ReflexEZS	Geotech	07-Oct-15	6523	☑	
191	-59.3	160.4	22.5	182.9	ReflexEZS	Geotech	07-Oct-15	5963	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
144.00	**162.80**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**									
<<Min: 144 - 149.24 0.5% Min: Calcite>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 144 - 167.08 0.5% Min: Pyrrhotite>>												
<<Min: 144 - 167.08 1% Min: Pyrite>>												
<<Min: 149.24 - 183.16 0.01% Min: Calcite>>												
<<Alt: 144 - 150.44 Moderate (Alt) Muscovite>>												
<<Alt: 150.44 - 170.05 Strong (Alt) Muscovite>>												
162.80	**164.11**	**MDSt** **Rhyolite tuff dominant mudstone**		163.11	164.11	1.00						
164.11	**167.72**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**		164.11	164.72	0.61						
<<Min: 167.08 - 167.72 0.5% Min: Sphalerite>>				164.72	165.72	1.00						
<<Min: 167.08 - 167.72 1% Min: Pyrrhotite>>				165.72	166.72	1.00						
<<Min: 167.08 - 167.72 0.01% Min: Chalcopyrite>>				166.72	167.72	1.00						
167.72	**171.79**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		167.72	168.72	1.00						
<<Min: 167.72 - 171.06 3% Min: Sphalerite>>				168.72	169.72	1.00						
<<Min: 167.72 - 171.06 3% Min: Pyrrhotite>>				169.72	170.72	1.00						
<<Min: 167.72 - 171.06 1% Min: Chalcopyrite>>				170.72	171.22	0.50						
<<Min: 171.06 - 171.79 1% Min: Pyrrhotite>>				171.22	171.79	0.57						
<<Min: 171.06 - 171.79 3% Min: Chalcopyrite>>												
<<Alt: 167.72 - 170.05 Moderate (Alt) Chlorite>>												
<<Alt: 167.72 - 170.05 Moderate (Alt) Cordierite>>												
<<Alt: 170.05 - 171.79 Strong (Alt) Chlorite>>												
<<Alt: 170.05 - 171.79 Strong (Alt) Cordierite>>												
<<Vein: 171.06 - 171.79 100% Quartz-Chlorite-Sulphide 55 deg. >> QZ-CI-CL-CP-PO-SP												
171.79	**175.26**	**OA** **Magnetite bearing sulphides**	**MG**	171.79	172.29	0.50						
171.79 - 175.26: 26 cm zone of OC at the very top of this interval.												
<<Min: 171.79 - 175.26 20% Min: Sphalerite>>				172.29	173.29	1.00						
<<Min: 171.79 - 175.26 5% Min: Pyrrhotite>>				173.29	174.29	1.00						
<<Min: 171.79 - 175.26 15% Min: Magnetite>> BL				174.29	175.26	0.97						
<<Min: 171.79 - 175.26 1% Min: Chalcopyrite>>												
<<Alt: 171.79 - 172.05 Moderate (Alt) Chlorite>>												
<<Alt: 171.79 - 172.05 Moderate (Alt) Cordierite>>												

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
175.26	**176.00**	**OA Magnetite bearing sulphides**	**MG**	175.26	176.00	0.74						
<<Min: 175.26 - 176 1% Min: Pyrrhotite>>												
<<Min: 175.26 - 176 5% Min: Magnetite>> BL												
176.00	**176.61**	**OA Magnetite bearing sulphides**	**MG**	176.00	176.61	0.61						
<<Min: 176 - 176.61 5% Min: Pyrrhotite>>												
<<Min: 176 - 176.61 10% Min: Magnetite>> BL												
176.61	**177.11**	**OA Magnetite bearing sulphides**	**MG**	176.61	177.11	0.50						
<<Min: 176.61 - 177.11 1% Min: Pyrrhotite>>												
<<Min: 176.61 - 177.11 5% Min: Magnetite>>												
177.11	**180.79**	**OA Magnetite bearing sulphides**	**MG**	177.11	178.11	1.00						
177.11 - 180.79: Interval contains short zones of mineralization that have CI-CL alteration and CP-PO mineralization. These short zones are OC but are not long enough to be broken out.												
<<Min: 177.11 - 180.79 20% Min: Sphalerite>>				178.11	179.11	1.00						
<<Min: 177.11 - 180.79 5% Min: Pyrrhotite>> BL				179.11	180.11	1.00						
<<Min: 177.11 - 180.79 15% Min: Magnetite>>				180.11	180.79	0.68						
<<Min: 177.11 - 180.79 3% Min: Chalcopyrite>>												
<<Alt: 178.61 - 180.99 Moderate (Alt) Cordierite>>												
<<Alt: 178.61 - 183.2 Moderate (Alt) Chlorite>>												
180.79	**182.42**	**OC Chalcopyrite-pyrrhotite net textured sulphides**	**MG**	180.79	181.79	1.00						
<<Min: 180.79 - 182.42 10% Min: Pyrrhotite>> WIS				181.79	182.42	0.63						
<<Min: 180.79 - 182.42 10% Min: Magnetite>>												
<<Min: 180.79 - 182.42 3% Min: Chalcopyrite>> DIS												
<<Alt: 180.99 - 183.2 Strong (Alt) Cordierite>>												
182.42	**183.16**	**OF Pyrrhotite rich sulphides**	**MG**	182.42	183.16	0.74						
<<Min: 182.42 - 183.16 5% Min: Sphalerite>>												
<<Min: 182.42 - 183.16 50% Min: Pyrrhotite>>												
<<Min: 182.42 - 183.16 3% Min: Chalcopyrite>> VN												
183.16	**184.29**	**OJ Heavilly disseminated sulphides in proximal altered rock**		183.16	183.72	0.56						
<<Min: 183.16 - 184.29 3% Min: Pyrrhotite>>				183.72	184.29	0.57						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 183.16 - 184.29 0.5% Min: Chalcopyrite>>									
		<<Min: 183.16 - 186.79 20% Min: Calcite>> DIS									
		<<Alt: 183.2 - 185.39 Weak (Alt) Chlorite>>									
		<<Alt: 183.2 - 189.94 Strong (Alt) Muscovite>>									
		<<Alt: 183.96 - 185.29 Weak (Alt) Cordierite>>									
		<<Vein: 183.2 - 183.92 60% Quartz-Carbonate-Sulphide 50 deg. >> QZ-CA-CL-PO-SP-CP									
		<<Vein: 183.43 - 185.68 25% Carbonate-Chlorite 45 deg. >> CA-CL-TO									
184.29	**187.12**	**RHY undifferentiated rhyolite**	184.29	185.29	1.00						
		<<Min: 184.29 - 191 1% Min: Pyrite>> WIS	185.29	186.29	1.00						
		<<Min: 184.29 - 191 0.5% Min: Pyrrhotite>> WIS	186.29	187.12	0.83						
		<<Min: 184.29 - 191 0.5% Min: Chalcopyrite>> DIS									
		<<Min: 186.79 - 191 0.01% Min: Calcite>>									
		<<Alt: 185.39 - 186.54 Moderate (Alt) Chlorite>>									
		<<Alt: 185.39 - 186.54 Moderate (Alt) Cordierite>>									
		<<Alt: 186.54 - 187.12 Weak (Alt) Cordierite>>									
		<<Struc: 187.03 - 188.7 Trace (Alt) Fault>> Narrow faults <1cm. Very weak continuity of fault between parent and daughter hole.									
187.12	**189.94**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	187.12	188.12	1.00						
			188.12	189.12	1.00						
189.94	**191.00**	**RHY undifferentiated rhyolite**									
		<<Alt: 189.94 - 190.71 Moderate (Alt) Chlorite>>									
		<<Alt: 189.94 - 190.71 Weak (Alt) Cordierite>>									
		<<Alt: 190.71 - 191 Strong (Alt) Muscovite>>									
		<<Alt: 190.71 - 191 Weak (Alt) Chlorite>>									

End of Hole @ 191

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-285

Prospect:	GP4F	Hole Type:	DD	Survey Type:	APS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Murray Jones	Date Logging Start:	06-Oct-15
UTM Easting	419650	Core Size:	HQ3	Azimuth:	179	Date Logging Complete:	11-Oct-15
UTM Northing:	6813355	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1320	Casing Depth (m):	8	Length (m):	306	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	05-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	11-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

This hole was drilled to fill in a gap on Section 419650E; it is a step out 170 m east of 1998 Section 9450E.

The hole intersected mineralization equivalent to the GP4F horizon but did not intersect significant massive sulphides. The stratigraphy is fairly typical of the GP4F section, an upper felsic volcanic and sediment section followed by the mineralized sequence with quartz porphyry overlying RHYva. Mineralization was encountered from 225 to 243 consisting of a few bands of massive SP-PO-PY-GL-CP up to 20 cm wide along with widely dispersed stringers and wisps of SP-PY-GL. The mineralization is associated with patchy MU and CL-BI-GA alteration. A second significant mineralized zone was encountered from about 280-281.4 m, consisting of a semi-massive PO with SP-CP-GL-PY and associated with CL-BI-GA alteration with stringer CP mineralization to 302 m. Downhole EM did not indicate a significant conductor below the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	179	0	179	APS	Murray Jones	05-Oct-15		☑	
24	-70.4	159.8	22.5	182.3	ReflexEZS	Geotech	05-Oct-15	5723	☑	
54	-70.4	159.1	22.5	181.6	ReflexEZS	Geotech	05-Oct-15	5699	☑	
84	-70.6	161.9	22.5	184.4	ReflexEZS	Geotech	05-Oct-15	5702	☑	
114	-71.4	157.5	22.5	180	ReflexEZS	Geotech	05-Oct-15	5649	☑	
156	-70.9	161.5	22.5	184	ReflexEZS	Geotech	05-Oct-15	5697	☑	
186	-70.5	163	22.5	185.5	ReflexEZS	Geotech	05-Oct-15	5672	☑	
216	-70.3	167	22.5	189.5	ReflexEZS	Geotech	05-Oct-15	5694	☑	
246	-70.4	168.2	22.5	190.7	ReflexEZS	Geotech	05-Oct-15	5679	☑	
276	-69.3	173	22.5	195.5	ReflexEZS	Geotech	09-Oct-15	5686	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.00**	**OVBN** **Overburden**									
0 - 8: Casing depth											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

8.00 12.70 SED undifferentiated Sediment dark grey FG

8 - 12.7: fine grained, dark grey, BI speckled sediment?, possibly tuff, relatively homogeneous, weathered strongly, minor MAFi included

<<Min: 8 - 28.9 0.01% Min: Pyrite>> scattered in groundmass

12.70 27.94 RHYvx Quartz and/or feldspar crystal tuff grey FG

12.7 - 27.94: fine grained,siliceous tuff, minor local lapilli, bluish QE scattered t/o, poker chip foliation, 80° TCA

<<Alt: 12.7 - 27.44 Weak (Alt) Muscovite>> narrow zones of MU

<<Alt: 12.7 - 27.44 Weak (Alt) Chlorite>> green colour in groundmass locally, clots,

<<Struc: 15 - 24.6 Strong (Alt) Fault>> broken core, lost core, some gouge

27.94 76.40 RHYvl Lapilli tuff grey-brown FCG

27.94 - 76.4: variable texture, lapilli content from 3 to 30%, lapilli from 2 to 25mm, elongate, white to grey and minor lt green, siliceous, in QZ-MU-BI groundmass, no phenos visible, MAFi dykes common

<<Min: 28.9 - 29.25 10% Min: Pyrite>> bands, blebs along fol'n

<<Min: 29.25 - 76.4 0.5% Min: Pyrite>> and scattered blebs in groundmass

<<Alt: 28.9 - 29.25 Weak (Alt) Muscovite>>

<<Alt: 28.9 - 29.25 Moderate (Alt) Chlorite>> associated with PY bands, veins

<<Alt: 30.01 - 35.4 Weak (Alt) Muscovite>> 2-3 cm wide alt'n envelope to QZ-TO vein, TO in wall rock too

<<Alt: 47.1 - 51.85 Moderate (Alt) Muscovite>> EP alt'n, plus TO-MU alt'n adjacent to QZ-TO-PY vein

<<Alt: 54.72 - 57.65 Moderate (Alt) Muscovite>> related to fault? Or dyke, bleaching, possible silicification?

<<Vein: 28.91 - 28.96 100% Quartz-Pyrite 65 deg. >> PY-QZ vein, in minl'zd zone

<<Vein: 35.01 - 35.35 20% Quartz-Tourmaline 10 deg. >> 2 cm wide QZ-TO vein, TO-MU alt'n envelope

<<Vein: 48.1 - 51.85 30% Quarzt-Tourmaline-Sulphide 0 deg. >> 2-4 cm wide, multi-stage QZ-TO-PY vein, parallels core axis

<<Struc: 30.2 - 30.32 Weak (Alt) Vein>> QZ-CA vein, gouge zone adjacent

<<Struc: 42.51 - 42.52 Moderate (Alt) Vein>> CA-QZ veinlet

<<Struc: 42.76 - 42.77 Moderate (Alt) Contact>> small MAFi dykelet

<<Struc: 71.6 - 71.65 Weak (Alt) Fault>> small gouge, measured on contact

76.40 80.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown MG

76.4 - 80.1: homogeneous,

<<Min: 76.4 - 80.1 10% Min: Calcite>> and veins

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

80.10 86.03 RHYvl Lapilli tuff grey-brown FCG

80.1 - 86.03: white granular to grey siliceous clasts, 2-30 mm, flattened, mixed BI and MU in groundmass, no phenos apparent, percentage of clasts varies

<<Min: 80.1 - 86.03 0.5% Min: Pyrite>> and scattered fine diss'ns

<<Struc: 81.2 - 81.8 Weak (Alt) Fault>> broken core

86.03 89.35 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown MG

86.03 - 89.35: banded to patchy green-brown with varying CL and BI, not alt'n, weak CA

<<Min: 86.03 - 89.35 5% Min: Calcite>>

89.35 99.00 RHYvl Lapilli tuff grey-brown FG

89.35 - 99: dark colour generally, MU alt'n near fault, BI? Patches, lapilli similar to interval above, elongate but still rounded

<<Min: 89.35 - 95.25 0.5% Min: Pyrrhotite>> trace to .1%

<<Min: 89.35 - 99 0.5% Min: Pyrite>> and fine diss'ns

<<Alt: 95.25 - 99 Weak (Alt) Muscovite>>

<<Alt: 95.25 - 99 Weak (Alt) Chlorite>>

99.00 106.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

99 - 106.7: Fault zone, abundant lost core, depths are approximations at best, MAFi occurs in small sections, mixed with QV's, CL alt'n present, Coarse mafic crystals-AC? After PX? On the margins of the QV's, PY in fracs

<<Min: 99 - 106.7 1% Min: Pyrite>> along fol'n in CL alt'n

<<Min: 99 - 106.7 0.01% Min: Galena>> ocurs in QV in one place, fracture

<<Alt: 99 - 106.7 Moderate (Alt) Chlorite>> intense? Locally

<<Vein: 99 - 106.7 Quartz>> QZ veining in intense fault, CL, PY, GL in fracs

<<Struc: 99 - 112.92 Intense (Alt) Fault>> big fault zone, lots of lost core, like ~10 m lost core

106.70 146.72 RHYvl Lapilli tuff grey FMG

131.10	132.50	1.40	B00269271	1.2	-0.005	-0.01	0.02	0.04

106.7 - 146.72: lapilli in this section are much more flattened, siliceous, no granular tx, MU partings more pronounced and planar,

<<Min: 106.7 - 123.7 3% Min: Pyrite>> primarily but also along fractures

132.50	133.50	1.00	B00269272	3.7	0.009	-0.01	0.12	0.25

<<Min: 123.7 - 137 5% Min: Pyrite>> as bands, lenses, also blebs in veins, fractures

133.50	134.50	1.00	B00269273	6.6	0.02	-0.01	0.15	0.17

<<Min: 126.5 - 130 1% Min: Calcite>> in fault zone

134.50	135.61	1.11	B00269274	4.5	0.014	-0.01	0.17	0.37

<<Min: 131 - 137 0.5% Min: Sphalerite>> in bands with PY

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 131 - 137 0.01% Min: Galena>> in sx bands

<<Min: 137 - 147.7 1% Min: Calcite>> minor conc'ns in MAFI to 5%

<<Min: 137 - 157.12 0.5% Min: Pyrite>> also in fracs

<<Alt: 106.7 - 129 Weak (Alt) Silicification>> in layers, pseudo-lapilli

<<Alt: 106.7 - 137 Moderate (Alt) Muscovite>> bands.

<<Alt: 126.5 - 132 Weak (Alt) Chlorite>> and bands, weak alt'n in addition to MU

<<Vein: 145.8 - 146.1 40% Quarzt-Tourmaline-Sulphide 0 deg. >> QZ-TO-PY vn/bx, continues as PY filled fracture below

<<Struc: 121.4 - 130 Strong (Alt) Fault>> broken core, minor gouge, measure in small gougy zone

<<Struc: 122 - 122.1 Moderate (Alt) Shear>> actually brittle fault, gouge zone

<<Struc: 127.5 - 129.7 Strong (Alt) Fault>> no recovery, small gouge above, broken core below

<<Struc: 142 - 143.9 Strong (Alt) Fault>> several sections of gouge, lost core

146.72 147.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown

146.72 - 147.7: bands of CL-AC-rich and BI-rich rock

147.70 157.12 RHYcq Quartz porphyry grey-brown

147.7 - 157.12: lge bluish QE to 5 mm, felsic pseudo-lapilli, flattened but not severely, some granular texture, from 152-152.9m sediment mixed with unit?, BI-rich, well foliate, but QE's locally

<<Min: 153.9 - 167.6 1% Min: Calcite>> small patches

<<Vein: 152.7 - 155.8 25% Quartz-Carbonate>> QZ-CB, multiple veins in sediment(?) section

157.12 168.60 RHYvx Quartz and/or feldspar crystal tuff grey FG

157.12 - 168.6: abdt BI-rich layers

<<Min: 157.12 - 160.49 5% Min: Pyrite>> bands and fractures

<<Min: 157.12 - 168.6 5% Min: Calcite>> conc'd in BI-rich zones

<<Min: 160.49 - 165.82 3% Min: Pyrite>> in veins, bands in MU alt'n, wisps in BI zones, trace SP, GL in Qv's

<<Min: 165.82 - 168.6 5% Min: Pyrite>> bands, fractures

<<Alt: 157.12 - 160.49 Weak (Alt) Muscovite>>

<<Alt: 163.1 - 164.88 Moderate (Alt) Muscovite>> slightly yellowish green colour

<<Struc: 157.12 - 158 Moderate (Alt) Fault>> structure in wall rock

<<Struc: 165.8 - 166.7 Moderate (Alt) Fault>> gouge, fault bx, 50 cm lost core

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
168.60	**200.25**	**RHYvl Lapilli tuff grey-brown MCG**	198.80	200.25	1.45	B00269275	4.6	0.014	-0.01	0.04	0.1
168.6 - 200.25: mottled, variably textured, abdt QE's, and white lapilli, coalescing pseudo-lapilli could have been flow?, MAFi scattered t/o											
<<Min: 168.6 - 190 0.5% Min: Calcite>>											
<<Min: 168.6 - 198.8 0.01% Min: Pyrite>>											
<<Min: 190 - 190.56 3% Min: Pyrrhotite>> scattered in strongly alt'd RHY											
<<Min: 190 - 190.56 5% Min: Calcite>>											
<<Min: 190.56 - 198.8 0.5% Min: Calcite>>											
<<Min: 198.8 - 206.3 5% Min: Pyrite>> bands and patches, blebs and wisps, with SP/GL in conc'd zones											
<<Min: 198.8 - 210 1% Min: Calcite>> and in fractures											
<<Min: 199.9 - 206.3 5% Min: Sphalerite>> in bands, patches. Between 205.8 and 206.1, 30 cm lost core, coincides with best mineralization and alteration											
<<Min: 199.9 - 206.3 1% Min: Galena>> in conc'd bands of sx											
<<Min: 199.9 - 206.3 0.5% Min: Chalcopyrite>> in conc'd bands of sx											
<<Alt: 184.92 - 192.72 Weak (Alt) Muscovite>> bleaching related to gougy fractures and QZ-CA vnlts, becomes strongly bleached in core of interval, w/PO											
<<Alt: 198.8 - 210.95 Moderate (Alt) Muscovite>> masked by CL locally											
<<Vein: 170.6 - 170.85 5% Quartz-Tourmaline 8 deg. >> QZ-TO vnlt, 2-3 cm wide TO-MU envelope											
<<Struc: 171.53 - 171.531 Strong (Alt) Contact>> upper contact of dyke, planar											
<<Struc: 172.079 - 172.08 Strong (Alt) Contact>> lower contact of dyke, sharp, planar contact											
<<Struc: 200.23 - 200.24 Moderate (Alt) Vein>> diss'd PY band in porphyry, bedding?											
200.25	**210.95**	**RHYif feldspar and quartz porphyry intrusions grey FCG**	200.25	200.90	0.65	B00269276	29.5	0.08	-0.01	0.53	0.2
200.25 - 210.95: intrusion? Or QZ-FP porphyry version of unit above, blocky, broken FP(?) xtals scattered t/o, also small pseudo-lapilli, quickly into mineralized zone at top, strong silicification at lower contact with MAFI, porphyritic tx gone, RHYva?											
<<Min: 205.8 - 206.3 10% Min: Pyrite>> in bands, masses			200.90	201.94	1.04	B00269277	17.8	0.06	0.01	0.42	0.94
<<Min: 206.3 - 210.95 3% Min: Sphalerite>> scattered bands, diss'ns			201.94	203.44	1.50	B00269278	8.6	0.021	-0.01	0.2	0.43
<<Min: 206.3 - 210.95 5% Min: Pyrite>> in bands, small lenses.			203.44	204.44	1.00	B00269279	9.9	0.015	-0.01	0.13	0.39
<<Min: 206.65 - 210.95 3% Min: Calcite>> and around phenos/bx'd clasts			204.44	205.44	1.00	B00269281	4.9	0.011	-0.01	0.06	0.24
<<Alt: 200.25 - 203.44 Moderate (Alt) Chlorite>> to pervasive bands/patches, associated with apperance of GL/SP			205.44	206.30	0.86	B00269282	50.7	0.016	0.02	0.92	1.73
<<Alt: 203.44 - 206.65 Strong (Alt) Chlorite>> pervasive locally, seems to wane a bit locally			206.30	207.30	1.00	B00269283	2.5	0.019	-0.01	0.02	0.05
<<Alt: 206.65 - 209.1 Strong (Alt) Silicification>> lenses and pervasive in groundmass, fills intersties to bx'd clasts and phenos			207.30	208.60	1.30	B00269284	2	0.019	-0.01	0.04	0.15

From (m)	To (m)		Rocktype & Description		
			<<Alt: 210.1 - 210.95 Strong (Alt) Silicification>> strong, texturally destructive?		
			<<Struc: 205.9 - 206.1 Moderate (Alt) Fault>> 30 cm missing core in the middle of heavy sx mineralization		
210.95	**217.15**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	**FG**
			210.95 - 217.15: massive BI, CA veining and minor patches of pervasive CA		
			<<Min: 210.95 - 217.15 1% Min: Calcite>> local pervasive patches		
			<<Struc: 210.98 - 211 Moderate (Alt) Vein>> vein/slip, bx'd, CL rich gouge		
217.15	**225.00**	**RHYvx**	**Quartz and/or feldspar crystal tuff**	**brown**	**MCG**
			217.15 - 225: partially weathered but not oxidized. Abundant bluish QE, small white lapilli, sheared,		
			<<Min: 217.15 - 222 0.01% Min: Pyrite>> is the RHYvl here a dyke?		
			<<Min: 218.65 - 224.8 15% Min: Calcite>> in altered wall rock to QV		
			<<Min: 222 - 225 5% Min: Sphalerite>> bands, masses in the altered RHY, also on edge of QV		
			<<Min: 222 - 225 5% Min: Pyrite>> fracs in QV, but small lenses, masses in altered RHY		
			<<Min: 222 - 225 3% Min: Galena>> similar to SP		
			<<Min: 224.8 - 240.05 0.5% Min: Calcite>> fractures		
			<<Alt: 217.15 - 222 Moderate (Alt) Biotite>> on fol'n, after CL?		
			<<Alt: 222 - 225 Moderate (Alt) Chlorite>> patches in QV, RHY, such poor recovery difficult to determine the alt'n style, associated with sx		
			<<Alt: 222 - 225.5 Moderate (Alt) Muscovite>> in gouge, RHYva		
			<<Vein: 219 - 220 100% Quartz-Sulphide>> rough interval, QZ-SX vn in fault, blebs of SP, GL-PY		
			<<Vein: 224 - 224.8 25% Quartz-Carbonate>> QZ-CA-CL? Vn/bx		
			<<Struc: 218.85 - 225 Intense (Alt) Fault>> measured on gouge contact		
225.00	**229.90**	**RHYva**	**Coarse grained to ash tuff**	**grey**	**FG**
			225 - 229.9: fg, homogeneous, tuff or sediment, QE in upper metre, minor SI lenses but mostly micaeous with quartz grains, mineralized and altered, banded sx in groundmass along fol'n		
			<<Min: 225 - 229.52 5% Min: Pyrite>> in conc'd bands, lenses, minor fracs and veins		
			<<Min: 225.5 - 226.1 5% Min: Sphalerite>> bands, massive layer at 206.05-206.10		
			<<Min: 225.5 - 228.2 3% Min: Pyrrhotite>> along fol'n, in sx zones		
			<<Min: 226.1 - 226.77 0.5% Min: Galena>> late CA-QZ vein		
			<<Min: 226.77 - 228.2 10% Min: Sphalerite>>		
			<<Min: 226.77 - 228.2 3% Min: Galena>> in sx bands		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
208.60	210.10	1.50	B00269285	3.2	0.01	0.01	0.18	0.48
210.10	210.95	0.85	B00269286	-0.3	-0.005	-0.01	0.01	0.04
222.00	225.00	3.00	B00269287	39	0.305	0.02	0.71	1.22
225.00	225.50	0.50	B00269288	6.7	0.07	-0.01	0.09	0.3
225.50	226.10	0.60	B00269289	51.2	1.32	0.05	0.68	2.03
226.10	226.75	0.65	B00269292	2.8	0.026	-0.01	0.09	0.11
226.75	228.00	1.25	B00269293	29.4	0.197	0.01	1.99	3.5
228.00	229.50	1.50	B00269294	2.9	0.025	0.03	0.08	0.15
229.50	230.50	1.00	B00269295	100	0.382	0.12	1.79	3.34

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 228.2 - 229.52 10% Min: Pyrite>> bands, masses									
		<<Min: 229.52 - 230.5 10% Min: Sphalerite>> masses in sx bnds, wisps									
		<<Min: 229.52 - 230.5 20% Min: Pyrite>> in sx bnds, diss'ns in host									
		<<Min: 229.52 - 230.5 20% Min: Pyrrhotite>> in bands									
		<<Min: 229.52 - 230.5 3% Min: Galena>> in sx bands									
		<<Min: 229.52 - 230.5 3% Min: Chalcopyrite>> in sx bands, diss'd in host									
		<<Alt: 225.5 - 228.2 Moderate (Alt) Silicification>> in bands, groundmass									
		<<Alt: 225.5 - 228.2 Moderate (Alt) Muscovite>> in RHYva									
		<<Alt: 227.9 - 229.52 Moderate (Alt) Chlorite>> local bands, mixed with MU									
		<<Alt: 227.9 - 237 Moderate (Alt) Garnet>> occurs locally, scattered blebs, not really pblasts									
		<<Alt: 228.2 - 229.9 Intense (Alt) Muscovite>>									
		<<Alt: 229.52 - 230.5 Moderate (Alt) Cordierite>> pblasts occur in narrow bands locally, cordierite?									
		<<Alt: 229.52 - 237 Strong (Alt) Chlorite>> to patchy, very strong locally									
		<<Alt: 229.52 - 237 Moderate (Alt) Biotite>> cse grained clots to bands along fol'n, with heavy CL commonly									
229.90	**233.50**	**RHYvl** **Lapilli tuff** **grey-brown**	230.50	231.75	1.25	B00269296	23.4	0.217	-0.01	0.45	0.64
		229.9 - 233.5: quite heterogeneous, altered and mineralized									
		<<Min: 230.5 - 233.1 3% Min: Sphalerite>> along fol'n	231.75	232.16	0.41	B00269297	1.6	0.013	-0.01	0.04	0.2
		<<Min: 230.5 - 233.1 10% Min: Pyrite>> and blebs along fol'n	232.16	233.10	0.94	B00269298	11.2	0.128	0.1	0.17	2.1
		<<Min: 230.5 - 233.1 1% Min: Chalcopyrite>> in CL sections	233.10	234.00	0.90	B00269299	14.1	0.128	0.14	0.44	1.8
		<<Min: 233.1 - 237 5% Min: Sphalerite>> bands, masses, stringers									
		<<Min: 233.1 - 237 3% Min: Pyrite>> local									
		<<Min: 233.1 - 237 1% Min: Galena>> in veins, sx bands									
		<<Min: 233.1 - 237 3% Min: Chalcopyrite>> fractures									
		<<Alt: 229.9 - 235.5 Weak (Alt) Muscovite>> mostly overprinted by CL-BI									
233.50	**240.05**	**RHYv** **Rhyolite volcaniclastic** **grey** **FG**	234.00	235.00	1.00	B00269301	5.3	0.028	0.15	0.16	1.21
		233.5 - 240.05: homogeneous but disrupted/altered by faulting,									
		<<Min: 237 - 247.9 1% Min: Pyrite>>	235.00	236.00	1.00	B00269302	12.1	0.041	0.15	0.64	3.33
		<<Min: 237 - 247.9 1% Min: Pyrrhotite>>	236.00	237.00	1.00	B00269303	0.6	0.01	0.13	-0.01	0.14
		<<Alt: 237 - 240.05 Moderate (Alt) Muscovite>>	237.00	240.05	3.05	B00269304	0.5	-0.005	0.02	0.01	0.07
		<<Alt: 237 - 240.05 Weak (Alt) Chlorite>> scattered clots									
		<<Alt: 237 - 240.05 Moderate (Alt) Biotite>> along fol'n									
		<<Struc: 233.5 - 245.5 Intense (Alt) Fault>> numerous gouge, broken core and lost core zones in soft clay-altered rock, angle measure near top of interval									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 239.85 - 240 Strong (Alt) Fault>> gouge									
240.05	**266.93**	**SED undifferentiated Sediment green-brown FG**	240.05	241.20	1.15	B00269305	0.9	-0.005	0.03	-0.01	0.33
		240.05 - 266.93: banded sed, MU-BI, but also, greenish bands with AC?, possibly calc-silicate minerals?, MAFI occurs in small dykelets commonly faulted and altered as well									
		<<Min: 240.05 - 245 10% Min: Calcite>>	241.20	242.30	1.10	B00269306	6.8	0.008	0.05	0.33	2.12
		<<Min: 242.2 - 242.6 5% Min: Sphalerite>> bands with PO, GL, CP	242.30	243.30	1.00	B00269307	1.6	-0.005	0.04	0.11	0.11
		<<Min: 242.2 - 242.6 1% Min: Galena>> with PO, CP									
		<<Min: 242.2 - 242.6 1% Min: Chalcopyrite>> with PO									
		<<Min: 245 - 246 20% Min: Calcite>> pervasive									
		<<Min: 246 - 255 10% Min: Calcite>> pervasive									
		<<Min: 247.9 - 266.93 0.01% Min: Sphalerite>> in QV's									
		<<Min: 247.9 - 266.93 0.5% Min: Pyrite>> xtals, blebs									
		<<Min: 247.9 - 266.93 3% Min: Pyrrhotite>> diss'd along fol'n, in cm sized patches.									
		<<Min: 247.9 - 266.93 0.01% Min: Galena>> in QV's									
		<<Min: 255 - 268.2 1% Min: Calcite>>									
		<<Alt: 240.05 - 266.93 Moderate (Alt) Muscovite>> scattered bands, of strong MU, narrow, weathered, overprints BI									
		<<Alt: 240.05 - 266.93 Moderate (Alt) Chlorite>> usually in patches, some calc-silicates?									
		<<Vein: 257.4 - 258.95 75% Quartz>> QZ vn zone, several veins, minor CL-PY included									
		<<Vein: 261.22 - 261.75 60% Quartz-Carbonate>> QZ-CA-CL									
		<<Struc: 240.4 - 240.43 Moderate (Alt) Vein>> folows slip with gouge									
		<<Struc: 253.5 - 253.65 Moderate (Alt) Fault>> gouge/bx zone, sharp contact									
		<<Struc: 259.15 - 259.16 Strong (Alt) dominant foliation>>									
		<<Struc: 262.25 - 263.2 Moderate (Alt) Fault>> measured at upper contact									
266.93	**279.40**	**RHYvl Lapilli tuff grey-brown FG**	278.10	279.40	1.30	B00269308	-0.3	-0.005	-0.01	-0.01	-0.01
		266.93 - 279.4: banded brown and grey, MU vs BI?, bedded with small lapilli and ash layers, locally BI-rich MAFi, minor narrow CL-rich bands (<1 cm) with PO occur locally, late CA vnlts common, bleaching associated and with PY									
		<<Min: 266.93 - 279.76 0.5% Min: Pyrite>> minor diss'd blebs									
		<<Min: 266.93 - 279.76 3% Min: Pyrrhotite>> diss'ns and blebs,									
		<<Min: 268.2 - 269.1 10% Min: Calcite>>									
		<<Min: 269.1 - 279.76 1% Min: Calcite>>									
		<<Alt: 269.1 - 272.1 Strong (Alt) Muscovite>> soft bands, tan colour, waxy feel									
		<<Alt: 269.1 - 272.1 Moderate (Alt) Chlorite>> small patches, minor bands with PO									
		<<Alt: 278.14 - 279.76 Moderate (Alt) Muscovite>>									

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
279.40	**287.15**	**RHYva**	**Coarse grained to ash tuff**	**grey-brown** **FG**	279.40	280.02	0.62	B00269309	2.7	-0.005	0.05	-0.01	0.06
279.4 - 287.15: possibly sediment, especially in upper portion, strongly faulted, sx mineralization included													
<<Min: 279.76 - 280.86 3% Min: Pyrite>> and diss'd blebs					280.02	280.86	0.84	B00269311	12	0.016	0.08	0.37	0.21
<<Min: 279.76 - 280.86 3% Min: Pyrrhotite>> in bands and lenses					280.86	281.40	0.54	B00269312	79.7	0.022	0.19	3.12	5.35
<<Min: 279.76 - 280.86 3% Min: Chalcopyrite>> blebs, diss'ns					281.40	282.15	0.75	B00269313	4.4	0.006	-0.01	0.21	0.5
<<Min: 279.76 - 282.15 3% Min: Calcite>> scattered and in fracs					282.15	283.65	1.50	B00269314	2	0.007	0.1	0.06	0.24
<<Min: 280.86 - 281.4 10% Min: Sphalerite>> small masses, lenses, wisps with other sx					283.65	285.00	1.35	B00269315	16.7	0.102	1.32	0.03	0.35
<<Min: 280.86 - 281.4 25% Min: Pyrrhotite>> thick band at top, in fractures, masses					285.00	286.50	1.50	B00269316	1.2	-0.005	0.12	-0.01	0.44
<<Min: 280.86 - 281.4 1% Min: Galena>> in SX zones					286.50	287.15	0.65	B00269317	3.1	0.015	0.15	0.02	1.72
<<Min: 280.86 - 281.4 3% Min: Chalcopyrite>> through zone, fractures													
<<Min: 282.15 - 287.15 1% Min: Sphalerite>> in lenses, veins													
<<Min: 282.15 - 287.15 1% Min: Pyrite>> fractures													
<<Min: 282.15 - 287.15 5% Min: Pyrrhotite>> in veins, bands, lenses													
<<Min: 282.15 - 287.15 0.01% Min: Galena>> in sx zones, in late CA vnlts													
<<Min: 282.15 - 287.15 3% Min: Chalcopyrite>> with PO, CL, in fractures in QV's.													
<<Min: 282.15 - 287.15 1% Min: Calcite>>													
<<Alt: 279.76 - 281.4 Strong (Alt) Muscovite>> grungy looking rock from heavy MU with Cl													
<<Alt: 279.76 - 287.15 Strong (Alt) Chlorite>> small clots to patches, on fol'n, in fractures, with SX													
<<Struc: 281.45 - 282.15 Moderate (Alt) Fault>> strong gouge, in dyke, cuts sx zone													
<<Struc: 285 - 286.8 Strong (Alt) Fault>> broken, gouge													
287.15	**290.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown** **FMG**	287.15	288.45	1.30	B00269318	2.2	-0.005	0.02	0.09	0.14
287.15 - 290.4: faulting continues, cut by late CA vnlts with PY, bleaching associated.													
<<Min: 287.15 - 290.4 0.5% Min: Pyrite>> CA vns													
<<Min: 287.15 - 290.4 3% Min: Calcite>> small patches, conc'd in fault gouge													
<<Min: 290.2 - 290.4 5% Min: Chalcopyrite>> in strongly CY altered, fault gouge/ dyke?, of CL-BI alt'n,													
<<Struc: 289.6 - 289.61 Strong (Alt) dominant foliation>>													
<<Struc: 289.7 - 290.4 Strong (Alt) Shear>> 30° on adjacent fol'n													
290.40	**306.00**	**MDSc**	**Carbonaceous dominant mudstone**	**dark grey** **FG**	294.77	295.58	0.81	B00269319	3.5	-0.005	0.07	0.3	0.81
290.4 - 306: anastomosing fol'n, faulting at top, carbonaceous partings, several MAFi dykes included, MDSc?													
<<Min: 294.77 - 295.58 3% Min: Sphalerite>> lensy to narrow bands,blebs n QV's					295.58	297.03	1.45	B00269321	0.8	-0.005	0.01	0.04	0.1

Project: KZK **Hole Number:** K15-285

From (m)	To (m)	Rocktype & Description
		<<Min: 295.58 - 297.03 3% Min: Pyrite>> and in fracs, veins.
		<<Min: 297.3 - 306 0.5% Min: Pyrite>> and bleb along fol'n
		<<Min: 299.43 - 300.9 1% Min: Sphalerite>>
		<<Min: 299.43 - 300.9 0.01% Min: Galena>>
		<<Min: 299.43 - 300.9 3% Min: Chalcopyrite>> and wis along fol'n, fracture filling
		<<Alt: 299.43 - 300.9 Moderate (Alt) Silicification>> locally, dark bluish grey, pervasive
		<<Alt: 299.43 - 300.9 Moderate (Alt) Garnet>> both purple and brown GA pblasts, small masses
		<<Alt: 299.43 - 300.9 Strong (Alt) Chlorite>> partings are combination of CL-BI
		<<Alt: 299.43 - 306 Moderate (Alt) Biotite>> usually with CL
		<<Vein: 298.1 - 298.7 70% Quartz 65 deg. >> QZ-CA vn, broken
		<<Struc: 290.85 - 290.86 Strong (Alt) dominant foliation>> dragged in fault?
		<<Struc: 291 - 293.1 Strong (Alt) Fault>> slickenslides on gouge surface
		<<Struc: 300.75 - 306 Strong (Alt) Fault>> sand seam at bottom, 1.2 m missing core

End of Hole @ 306

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
297.03	297.85	0.82	B00269322	-0.3	-0.005	-0.01	-0.01	0.04
298.70	299.43	0.73	B00269323	-0.3	-0.005	-0.01	-0.01	0.04
299.43	300.90	1.47	B00269324	3.4	0.027	0.29	-0.01	0.25

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-286

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	08-Oct-15
UTM Easting	415149.864	Core Size:	NQ3	Azimuth:	180.46	Date Logging Complete:	10-Oct-15
UTM Northing:	6815496.371	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1405.517	Casing Depth (m):	20	Length (m):	200	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-286 is a resource infill hole drilled between historic K15-015 and K15-134.
The upper units are made up of rhyolitic volcaniclastic units crosscut by mafic dykes.
The hole intersects a lens of massive sulfide zone from 123.92 to 157.50m, containing PY-CP-SP-GL, dominantly OG, OA and OB domains. The hole shows progressive muscovite alteration surrounding the mineralization from 54.65m to 170m with green grey alteration (MU-SI) under the mineralization. The hanging-wall consists in mineralized rhyolite(CP-PO, OI domains) followed by proximal CL alteration and moderate cordierite alteration. The footwall shows muscovite alteration in rhyolitic unit. The mafic intrusion intersected at 154.44m is locally altered MU-SI suggesting the proximity of a rhyolitic aphanitic dyke.
The hole ends on the mafic intrusion at 200m.
Note: between the woodblocks 125m to 128m, 1.07m of core is measured. There is no evidence of core loss and the pieces seem to match together therefore there might be something wrong in the marker position. However, a rod count asked at 179m was correct. 179m is a depth we can trust but we have to figure out how to recover the right depth of the massive sulfide and its width (overestimated if we maintain the block where they are now). The run between 128m and 131m is also short (1.48m) which lead me to consider that marker 128 is definitely at the wrong place. No shoulder samples have been taken above the mineralization due to poor recovery but sampling can be done later if required.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.46	0	180.46	APS	Jerome de Pasquale	06-Oct-15		☑	
44	-64.4	159.4	22.5	181.9	ReflexEZS	Geotech	07-Oct-15	5782	☑	
74	-64.6	164.8	22.5	187.3	ReflexEZS	Geotech	07-Oct-15	5760	☑	
104	-64.7	163.9	22.5	186.4	ReflexEZS	Geotech	07-Oct-15	5703	☑	
134	-64.5	175.2	22.5	197.7	ReflexEZS	Geotech	08-Oct-15	6194	☐	Values not accepted due to high magnetic field
164	-64.2	166.2	22.5	188.7	ReflexEZS	Geotech	08-Oct-15	5960	☑	
200	-64.7	167.1	22.5	189.6	ReflexEZS	Geotech	08-Oct-15	5782	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**20.00**	**CASN**	**Casing**									
20.00	**24.57**	**RHY**	**undifferentiated rhyolite**	**grey-green**								
20 - 24.57: Overburden, fractured.												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

24.57 29.10 RHYvl Lapilli tuff grey-green

24.57 - 29.1: PO elongated.

<<Min: 24.57 - 29.1 1% Min: Calcite>>

<<Min: 24.57 - 43.27 0.5% Min: Pyrrhotite>>

<<Min: 24.57 - 77 0.1% Min: Pyrite>>

29.10 30.33 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

29.1 - 30.33: Dyke, CA veins, altered chlorite. Foliated.

<<Min: 29.1 - 30.33 10% Min: Calcite>> Dyke

<<Alt: 30.32 - 43.27 Weak (Alt) Chlorite>> Dyke proximity.

30.33 40.62 RHYv Rhyolite volcaniclastic grey-green

30.33 - 40.62: Ash and lapilli, CA replacement of lapili, weakly CL altered, TML trace.

<<Min: 30.33 - 43.27 1% Min: Calcite>>

40.62 43.27 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

40.62 - 43.27: AK-CL, non-foliated.

43.27 53.10 RHYvl Lapilli tuff grey-green

43.27 - 53.1: Two foliations visible locally.

<<Min: 43.27 - 53.1 0.1% Min: Pyrrhotite>>

<<Min: 43.27 - 71.75 0.1% Min: Calcite>> Replacement or veinlets.

<<Alt: 43.27 - 54.65 Weak (Alt) Muscovite>> maybe original too.

53.10 54.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

53.1 - 54.65: Dyke, BI, AK-PO-PY. Foliated.

<<Min: 53.1 - 54.65 10% Min: Ankerite>> Dyke

<<Min: 53.1 - 77 0.5% Min: Pyrrhotite>>

<<Min: 53.1 - 87.15 1% Min: Pyrite>>

<<Min: 53.1 - 87.15 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.65	**71.75**	**RHYv**	**Rhyolite volcaniclastic** **grey-green**									
54.65 - 71.75: AK.												
<<Alt: 54.65 - 82.05 Moderate (Alt) Muscovite>>												
<<Struc: 62.68 - 62.73 Weak (Alt) Fault>> Sandy-clay oxydized fault gouge.												
71.75	**78.72**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)** **grey-green**									
71.75 - 78.72: Locally curdy texture.												
78.72	**88.83**	**RHYva**	**Coarse grained to ash tuff** **grey-green**									
<<Min: 87.15 - 109.28 2% Min: Pyrrhotite>>												
<<Min: 87.15 - 119.2 0.5% Min: Pyrite>>												
<<Alt: 82.05 - 123 Strong (Alt) Muscovite>>												
88.83	**103.93**	**RHY**	**undifferentiated rhyolite** **grey-green**									
88.83 - 103.93: Could be RHYcw.												
<<Struc: 90.64 - 103.8 Weak (Alt) Fault>> Broken zone accentuated by muscovite alteration												
103.93	**122.20**	**MDSc**	**Carbonaceous dominant mudstone** **black**									
103.93 - 122.2: AS locally, TML or andalousite (?).												
<<Min: 109 - 109.8 1% Min: Arsenopyrite>>												
<<Min: 109.28 - 122.2 0.5% Min: Pyrrhotite>>												
122.20	**123.00**	**OI**	**Heavily disseminated sulphides in host schist**	122.20	123.00	0.80	B00266941	72.8	0.822	3.27	0.05	0.17
122.2 - 123: In RHY.												
<<Min: 122.2 - 123 3% Min: Pyrite>>												
<<Min: 122.2 - 123 3% Min: Chalcopyrite>>												
<<Alt: 122.47 - 133.63 Strong (Alt) Chlorite>> And replacement of cordierite.												
123.00	**123.88**	**OJ**	**Heavily disseminated sulphides in proximal altered rock**	123.00	123.88	0.88	B00266942	85.9	0.839	3.21	0.11	0.17
<<Min: 123 - 123.88 5% Min: Pyrrhotite>>												
<<Min: 123 - 123.88 10% Min: Chalcopyrite>>												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 123 - 128.98 Moderate (Alt) Cordierite>> Replaced locally.													
<<Struc: 123.68 - 123.69 dominant foliation>>													
123.88	**126.92**	**OI**	**Heavilly disseminated sulphides in host schist**		123.88	125.00	1.12	B00266943	12.9	0.145	0.54	0.01	0.05
<<Min: 123.88 - 126.92 5% Min: Chalcopyrite>>					125.00	126.00	1.00	B00266944	121	1.23	4.19	0.17	0.29
					126.00	126.92	0.92	B00266945	128	1	4.94	0.13	0.5
126.92	**128.98**	**OG**	**Chalcopyrite rich sulphides**	**FG**	126.92	127.90	0.98	B00266946	237	2.29	8.62	0.29	0.83
126.92 - 128.98: Could be OC.													
<<Min: 126.92 - 128.98 10% Min: Pyrrhotite>>					127.90	128.98	1.08	B00266947	178	4.1	8.21	0.18	0.97
<<Min: 126.92 - 128.98 30% Min: Chalcopyrite>>													
128.98	**131.00**	**OA**	**Magnetite bearing sulphides**	**FG**	128.98	130.00	1.02	B00266948	92.9	0.825	2.1	0.53	2.52
<<Min: 128.98 - 131 5% Min: Magnetite>>					130.00	131.00	1.00	B00266949	96.6	0.496	1.49	1.1	4.65
<<Min: 128.98 - 131 2% Min: Chalcopyrite>> One patch contained in sample B00266949.													
131.00	**134.04**	**OA**	**Magnetite bearing sulphides**	**FMG**	131.00	131.97	0.97	B00266952	79.8	0.909	2.51	0.16	1
131 - 134.04: Brecciated locally, could be OD.													
<<Min: 131 - 134.04 3% Min: Pyrrhotite>>					131.97	132.83	0.86	B00266953	95.3	1.69	3.29	0.09	1.22
<<Min: 131 - 134.04 10% Min: Magnetite>>					132.83	133.43	0.60	B00266954	73.8	0.921	2.48	0.1	4.94
<<Min: 131 - 134.04 10% Min: Chalcopyrite>>					133.43	134.04	0.61	B00266955	133	2.64	5.35	0.14	2.93
134.04	**134.56**	**OA**	**Magnetite bearing sulphides**	**FMG**	134.04	134.56	0.52	B00266956	139	0.798	1.06	2.05	11.7
<<Min: 134.04 - 134.46 10% Min: Magnetite>>													
<<Min: 134.46 - 135.1 3% Min: Sphalerite>>													
<<Min: 134.46 - 135.1 0.5% Min: Galena>>													
<<Min: 134.46 - 135.1 0.5% Min: Chalcopyrite>>													
134.56	**135.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	134.56	135.10	0.54	B00266957	83.6	0.845	0.16	1.22	8.54
135.10	**136.00**	**OA**	**Magnetite bearing sulphides**	**FG**	135.10	136.00	0.90	B00266958	69.1	0.399	0.35	0.97	6.55
<<Min: 135.1 - 136 5% Min: Magnetite>>													

From (m)	To (m)		Rocktype & Description	
136.00	**146.72**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**

136 - 146.72: 143 to 144.30, large dolomite patch or veins, and QZ with well developed SP crystals.

<<Min: 136 - 146.72 15% Min: Sphalerite>>

<<Min: 136 - 146.72 2% Min: Galena>>

<<Min: 136 - 146.72 1% Min: Chalcopyrite>>

<<Vein: 143.21 - 143.62 Quartz-Sulphide>> QZ-CA veins with GL well developed cristals, PY and SP.

<<Struc: 136.94 - 136.95 dominant foliation>> Lamination in MxSx.

<<Struc: 140.77 - 140.78 dominant foliation>> Lamination in MxSx.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
136.00	137.00	1.00	B00266959	115	2.07	0.44	1.14	7.56
137.00	138.00	1.00	B00266961	136	1.39	0.29	0.54	6.17
138.00	139.00	1.00	B00266962	139	1.55	0.47	0.3	2.77
139.00	140.00	1.00	B00266963	124	1.17	0.19	0.73	3.41
140.00	141.00	1.00	B00266964	144	2.75	0.21	0.8	3.51
141.00	142.00	1.00	B00266965	314	3.86	0.15	3.83	8.83
142.00	143.00	1.00	B00266966	144	1.3	0.1	2.22	7.22
143.00	144.00	1.00	B00266967	96.7	0.609	0.01	1.76	3.81
144.00	145.00	1.00	B00266968	115	0.697	0.03	2.04	4.86
145.00	146.00	1.00	B00266969	91.2	1.28	0.12	1.38	5.2
146.00	146.72	0.72	B00266972	341	1.77	0.41	3.92	7.43

146.72	**147.50**	**OA**	**Magnetite bearing sulphides**	**FMG**

<<Min: 146.72 - 147.5 10% Min: Sphalerite>>

<<Min: 146.72 - 147.5 5% Min: Magnetite>>

<<Min: 146.72 - 147.5 2% Min: Galena>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
146.72	147.50	0.78	B00266973	231	0.434	0.3	7.41	14.2

147.50	**154.44**	**RHYvl**	**Lapilli tuff**	**grey-green**

147.5 - 154.44: Large QZ vein at contact with MxSx, blurry texture.

<<Alt: 149 - 170 Moderate (Alt) Muscovite>> Locally strong, related to green-grey alteration (?).

<<Vein: 147.84 - 148.97 Quartz-Sulphide>> QZ veins, SP cristals, PY, CP trace contained and PY at lower contact.

<<Vein: 149.9 - 151.58 Quartz>> QZ vein.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
147.50	149.00	1.50	B00266974	29.8	0.114	0.1	0.45	1.75
149.00	151.00	2.00	B00266975	8.3	0.045	0.03	0.13	0.29
151.00	152.50	1.50	B00266976	2.5	0.009	-0.01	0.06	0.13

154.44	**170.47**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**

154.44 - 170.47: Green-grey alteration and strong silicification locally, aphanitic dyke possibly (log as a unit bellow even if narrow) from 170.47 to 170.87m. Large BI patch surrounding the green-grey alteration. Leucoxene.

<<Min: 157 - 170 1% Min: Sphalerite>>

<<Min: 157 - 170 2% Min: Pyrite>> In foliation, discontinuous veinlets.

<<Min: 157 - 170 0.5% Min: Galena>>

<<Min: 170 - 184 10% Min: Calcite>>

<<Alt: 154.44 - 179 Moderate (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 156.9 - 174.08 Strong (Alt) Silicification>> Green-grey alteration

<<Struc: 154.81 - 154.82 dominant foliation>>

<<Struc: 158.4 - 158.41 dominant foliation>>

170.47 170.87 RHYi Aphanitic Rhyolite (intrusion)

170.47 - 170.87: Or strong silicification.

170.87 200.00 MAFi Mafic Intrusions (primarily green footwall mafic intrusion)

170.87 - 200: Strong BI alteration locally or bleaching. E.O.H.

<<Min: 184 - 200 3% Min: Calcite>>

<<Alt: 174.08 - 179 Strong (Alt) Biotite>> And patchy.

<<Alt: 179 - 200 Strong (Alt) Chlorite>>

<<Struc: 171.4 - 179.5 Moderate (Alt) Fault>> Broken zone, locally fault gouge (grey clay).

<<Struc: 189.3 - 189.31 dominant foliation>>

<<Struc: 196.55 - 196.56 dominant foliation>>

End of Hole @ 200

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-287

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Challenger_Survey	Date Logging Start:	07-Oct-15
UTM Easting	414800.584	Core Size:	NQ3	Azimuth:	179.98	Date Logging Complete:	08-Oct-15
UTM Northing:	6815438.876	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1400.207	Casing Depth (m):	6	Length (m):	131	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Oct-15
Local Elev. (m):						Purpose:	Resource/Met
Comments:						Parent Hole:	

This hole is designed to be resource infill between historic holes K94-045 & K94-041.
The structural hanging wall is composed of RHYc, RHYvl and MDSt intervals. Massive sulphide is present in small lenses intercalated with host schists from 30.5m to 67.32m (predominantly OA with OB and OI ore types within MET3 and MET7 domains). The structural footwall is composed of the MAFi unit. Mu alteration intensifies towards sulphide mineralization/quartz veins. Chlorite alteration is moderate to strong in mafics and patchy within the massive sulphides. Green/grey alteration (green muscovite with silicification) is present in large portions of the MAFi unit.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.98	0	179.98	APS	David Nuttal	06-Oct-15		☑	
23	-58	159.7	22.5	182.2	ReflexEZS	Geotech	06-Oct-15	5839	☑	
53	-57.6	168.2	22.5	190.7	ReflexEZS	Geotech	06-Oct-15	6227	☐	Values not accepted, high magnetic field
83	-57	77.5	22.5	100	ReflexEZS	Geotech	06-Oct-15	1944	☐	Values not accepted, low magnetic field
113	-56.7	163.9	22.5	186.4	ReflexEZS	Geotech	06-Oct-15	5704	☑	
131	-56.7	163.9	22.5	186.4	ReflexEZS	Geotech	07-Oct-15	5710	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN** **Casing**									
9.00	**14.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**									

9 - 14.5: Minor carbonaceous component.

<<Min: 9 - 14.5 10% Min: Ankerite>> Oxidized
<<Min: 9 - 21.7 2% Min: Pyrite>>
<<Min: 9 - 39.64 0.25% Min: Calcite>>
<<Alt: 9 - 33 Weak (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.50	**15.08**	**MDSc**	**Carbonaceous dominant mudstone**									
14.5 - 15.08: Can also be MDSt												
<<Min: 14.5 - 38.8 0.5% Min: Pyrrhotite>>												
15.08	**21.70**	**MDSw**	**Coherent rhyolite flow with carbonaceous content**									
<<Min: 15.08 - 21.7 0.25% Min: Sphalerite>>												
<<Struc: 18.39 - 18.49 Weak (Alt) Fault>>												
<<Struc: 19 - 19.19 Weak (Alt) Fault>>												
21.70	**30.50**	**RHYc**	**Rhyolite coherant volcanics**	28.80	29.80	1.00	B00268961	15.9	0.016	0.1	0.22	0.68
21.7 - 30.5: Texturally this interval is convincing as both coherent and volcaniclastic rhyolite. Sulphide mineralization occurs as stringers as well as in clots similar to lapilli shaped clasts. Siliceous domains are prevalent and commonly appear as convoluted bands												
<<Min: 21.7 - 38.8 1% Min: Sphalerite>>				29.80	31.30	1.50	B00268962	124	0.686	0.13	1.38	2.81
<<Min: 21.7 - 38.8 3% Min: Pyrite>> foliation parallel stringers												
<<Min: 21.7 - 38.8 0.5% Min: Galena>>												
<<Min: 21.7 - 38.8 0.25% Min: Chalcopyrite>>												
30.50	**30.66**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
30.5 - 30.66: High sphalerite.												
30.66	**38.80**	**RHYc**	**Rhyolite coherant volcanics**	31.30	32.80	1.50	B00268963	1.3	0.02	-0.01	0.02	0.03
<<Alt: 33 - 39 Moderate (Alt) Muscovite>>				32.80	34.30	1.50	B00268964	0.8	0.013	-0.01	-0.01	0.02
<<Struc: 33.12 - 33.52 Moderate (Alt) Fault>>				34.30	35.80	1.50	B00268965	1.1	0.015	-0.01	0.01	0.02
<<Struc: 37.42 - 37.42 dominant foliation>>				35.80	37.30	1.50	B00268966	1.5	0.03	-0.01	0.03	0.04
				37.30	38.80	1.50	B00268967	1.4	0.033	-0.01	0.02	0.02
38.80	**39.64**	**OI**	**Heavilly disseminated sulphides in host schist**	38.80	39.64	0.84	B00268968	119	0.549	0.12	2.17	5.32
<<Alt: 39 - 41.66 Strong (Alt) Muscovite>>												
39.64	**39.74**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	39.64	40.59	0.95	B00268969	269	1.12	1.28	2.87	5.16

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 39.64 - 39.74 5% Min: Calcite>>												
39.74	**40.04**	**RHYv**	**Rhyolite volcaniclastic**									
40.04	**40.23**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**									
<<Min: 40.04 - 40.23 8% Min: Calcite>>												
40.23	**40.59**	**OI**	**Heavilly disseminated sulphides in host schist**									
40.59	**47.14**	**RHYv**	**Rhyolite volcaniclastic**	40.59	42.00	1.41	B00268971	53.7	0.667	0.24	0.05	0.08
<<Min: 40.59 - 47.14 2% Min: Pyrite>> stringers foliation parallel				42.00	42.95	0.95	B00268972	5	0.015	0.07	0.03	0.07
<<Min: 40.59 - 47.14 10% Min: Calcite>>				42.95	43.50	0.55	B00268973	1.1	0.007	0.02	-0.01	-0.01
<<Min: 41.15 - 41.66 1% Min: Sphalerite>>				43.50	45.00	1.50	B00268974	4.7	0.044	0.01	0.07	0.14
<<Min: 41.15 - 41.66 1% Min: Galena>>				45.00	47.14	2.14	B00268975	2.6	0.014	0.03	0.07	0.11
<<Min: 41.15 - 41.66 1% Min: Chalcopyrite>>												
<<Alt: 41.66 - 47.14 Moderate (Alt) Muscovite>>												
<<Vein: 41.15 - 41.66 100% Quartz>> CP, GL, SP												
<<Struc: 41.75 - 41.75 dominant foliation>>												
<<Struc: 44.81 - 44.95 Weak (Alt) Fault>>												
<<Struc: 45.31 - 45.7 Moderate (Alt) Fault>>												
47.14	**48.08**	**OA**	**Magnetite bearing sulphides**	47.14	48.14	1.00	B00268976	127	1.26	2.29	1.64	17.7
<<Min: 47.14 - 56.18 3% Min: Calcite>>												
<<Alt: 47.14 - 56.18 Trace (Alt) Chlorite>>												
<<Struc: 47.2 - 47.2 dominant foliation>>												
48.08	**50.45**	**OA**	**Magnetite bearing sulphides**	48.14	49.08	0.94	B00268977	152	2.61	4.48	1.44	4.75
48.08 - 50.45: laminated mg												
				49.08	49.58	0.50	B00268978	119	3.19	4.7	0.46	3.29
				49.58	50.45	0.87	B00268979	99.8	1.75	2.81	0.73	5.65
50.45	**54.73**	**OA**	**Magnetite bearing sulphides**	50.45	51.45	1.00	B00268981	93.8	1.11	2.19	0.65	8.24
50.45 - 54.73: small (<10cm) intervals with laminated mg in unit.												
				51.45	52.45	1.00	B00268982	123	1.1	1.71	1.54	9.39
				52.45	53.45	1.00	B00268983	90.9	0.944	1.01	1.06	8.63
				53.45	54.45	1.00	B00268984	146	0.787	0.95	2.75	13.7

From (m)	To (m)		Rocktype & Description
54.73	**56.18**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
54.73 - 56.18: High sphalerite			
56.18	**57.00**	**RHYv**	**Rhyolite volcaniclastic**
56.18 - 57: ~30cm interval of RHYi at 57m			
<<Min: 56.18 - 57.5 0.5% Min: Pyrite>>			
<<Min: 56.18 - 63.87 10% Min: Calcite>>			
<<Alt: 56.18 - 63.87 Moderate (Alt) Muscovite>>			
<<Struc: 56.75 - 56.75 dominant foliation>>			
57.00	**57.30**	**RHYi**	**Aphanitic Rhyolite (intrusion)**
57.30	**63.87**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 57.5 - 63.87 3% Min: Pyrite>> stringers foliation parallel			
<<Struc: 57.5 - 57.5 Fault>>			
<<Struc: 59 - 63.87 Strong (Alt) Fault>>			
63.87	**64.60**	**OA**	**Magnetite bearing sulphides**
<<Min: 63.87 - 67.32 1% Min: Calcite>>			
64.60	**65.28**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 64.6 - 65.28 3% Min: Pyrite>> stringers foliation parallel			
<<Alt: 64.6 - 65.28 Moderate (Alt) Muscovite>>			
65.28	**65.64**	**OA**	**Magnetite bearing sulphides**
65.28 - 65.64: low Cu and Pb			
65.64	**66.88**	**OA**	**Magnetite bearing sulphides**
66.88	**67.32**	**OA**	**Magnetite bearing sulphides**
67.32	**67.80**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 67.32 - 76.1 0.25% Min: Sphalerite>>			
<<Min: 67.32 - 76.1 2% Min: Pyrite>>			
<<Min: 67.32 - 81.7 8% Min: Calcite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.45	54.78	0.33	B00268985	180	0.929	0.18	4.46	12
54.78	55.78	1.00	B00268986	398	2.87	0.64	4.66	8.14
55.78	56.18	0.40	B00268987	370	1.13	0.2	5.93	10
56.18	57.68	1.50	B00268988	3.1	0.01	-0.01	0.03	0.04
57.68	59.18	1.50	B00268989	1.8	0.019	-0.01	-0.01	0.04
59.18	60.68	1.50	B00268991	2.6	0.05	-0.01	0.01	0.07
60.68	62.18	1.50	B00268992	3.5	0.035	-0.01	0.07	0.31
62.18	63.87	1.69	B00268993	42.2	0.353	0.36	0.28	1.07
63.87	64.60	0.73	B00268994	69.1	0.34	0.08	3.27	7.63
64.60	65.28	0.68	B00268995	17.1	0.359	0.06	0.19	0.36
65.28	65.64	0.36	B00268996	112	0.929	0.14	2.55	5.59
65.64	66.00	0.36	B00268997	107	0.837	0.12	2.16	5.08
66.00	66.88	0.88	B00268998	168	1.3	0.42	2.77	8.3
66.88	67.32	0.44	B00268999	154	0.791	0.11	3.55	10.7
67.32	68.82	1.50	B00269501	14.4	0.4	0.07	0.03	0.09

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 67.32 - 88.6 Moderate (Alt) Muscovite>>									
67.80	**71.13**	**RHYc Rhyolite coherant volcanics**	68.82	70.32	1.50	B00269502	0.6	-0.005	-0.01	0.01	0.04
			70.32	71.82	1.50	B00269503	-0.3	0.005	-0.01	-0.01	0.01
71.13	**73.00**	**RHYv Rhyolite volcaniclastic**									
		71.13 - 73: Alteration lithology, adjacent to massive sulphide mineralization. Main components are silica and muscovite/sericite. High calcite content and calcite banding makes this unit interpretable as a mafic protolith. Absence of leucocine.									
		<<Struc: 72.3 - 72.3 Weak (Alt) Fault>>									
73.00	**73.20**	**RHYi Aphanitic Rhyolite (intrusion)**									
73.20	**76.10**	**RHYv Rhyolite volcaniclastic**	75.10	76.10	1.00	B00269504	3.1	0.03	0.02	0.19	0.21
		<<Struc: 73.9 - 73.9 dominant foliation>>									
		<<Struc: 75.5 - 75.63 Moderate (Alt) Fault>>									
76.10	**81.57**	**OI Heavilly disseminated sulphides in host schist**	76.10	77.10	1.00	B00269505	8.7	0.108	0.17	0.25	0.15
		76.1 - 81.57: sulphide mineralization is anomolously high in this interval. Concentration of mineralization is heavily disseminated locally within interval. Mostly pyrite, sphalerite									
		<<Struc: 78.41 - 79.11 Strong (Alt) Fault>>	77.10	78.10	1.00	B00269506	66.9	0.331	0.43	1.24	6.96
		<<Struc: 79.62 - 79.62 dominant foliation>>	78.10	79.10	1.00	B00269507	37.3	0.509	0.07	0.86	1.92
		<<Struc: 80.75 - 81.4 Moderate (Alt) Fault>>	79.10	80.10	1.00	B00269508	71	0.479	0.12	1.48	3.57
			80.10	80.75	0.65	B00269509	2.1	0.022	0.01	0.05	0.07
			80.75	81.57	0.82	B00269511	3.5	0.08	-0.01	0.1	0.28
81.57	**84.80**	**RHYv Rhyolite volcaniclastic**	81.57	82.57	1.00	B00269512	1	0.17	-0.01	0.06	0.08
		81.57 - 84.8: Contains coherent and non coherent textures.									
		<<Min: 81.57 - 88.63 0.25% Min: Sphalerite>>									
		<<Min: 81.57 - 88.63 3% Min: Pyrite>>									
		<<Min: 81.57 - 88.63 0.25% Min: Galena>>									
		<<Min: 81.57 - 88.63 0.25% Min: Chalcopyrite>>									
		<<Min: 81.7 - 84.4 2% Min: Calcite>>									
		<<Min: 84.4 - 88 8% Min: Calcite>>									
		<<Struc: 82.95 - 82.95 dominant foliation>>									

From (m)	To (m)	Rocktype & Description
84.80	**109.27**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

84.8 - 109.27: Complex interval due to alteration. RHYi is suspected to be in proximity.

<<Min: 88 - 88.63 10% Min: Calcite>>

<<Min: 88.63 - 92.2 25% Min: Calcite>>

<<Min: 88.63 - 97 1% Min: Pyrite>>

<<Min: 92.2 - 96 8% Min: Calcite>>

<<Min: 96 - 99 5% Min: Calcite>>

<<Min: 97.5 - 101.9 5% Min: Sphalerite>>

<<Min: 99 - 102 6% Min: Calcite>>

<<Min: 101.9 - 105 0.5% Min: Chalcopyrite>>

<<Min: 101.9 - 107 0.5% Min: Pyrite>>

<<Min: 102 - 105.6 15% Min: Calcite>>

<<Min: 105 - 105.3 0.5% Min: Pyrrhotite>>

<<Min: 105 - 107 2% Min: Sphalerite>>

<<Min: 105.6 - 107.9 10% Min: Calcite>>

<<Min: 107 - 109.27 5% Min: Chalcopyrite>>

<<Min: 107 - 109.27 3% Min: Pyrite>>

<<Min: 107.9 - 109.63 20% Min: Calcite>>

<<Alt: 89 - 92.2 Moderate (Alt) Chlorite>>

<<Alt: 92.2 - 97.42 Weak (Alt) Silicification>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 92.2 - 97.9 Moderate (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 97.42 - 101 Moderate (Alt) Silicification>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 97.9 - 98.25 Trace (Alt) Chlorite>> chlorite alteration of fine grained biotite-rich host rock

<<Alt: 98.25 - 99.15 Strong (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 99.15 - 101 Moderate (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 101 - 102.2 Strong (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 101.4 - 101.85 Strong (Alt) Silicification>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
107.00	107.77	0.77	B00269513	2.3	0.088	0.1	0.01	0.04
107.77	109.27	1.50	B00269514	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 101.65 - 102.85 Moderate (Alt) Silicification>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 102.2 - 102.85 Moderate (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 102.85 - 105.82 Weak (Alt) Chlorite>>

<<Alt: 105.82 - 107 Moderate (Alt) Muscovite>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 105.82 - 107 Moderate (Alt) Silicification>> Green-grey alteration, abundant quartz + sericite/muscovite. Fuchsite present/chromandine muscovite. RHYi suspected to be in proximity.

<<Alt: 107 - 109.27 Weak (Alt) Silicification>>

<<Alt: 107 - 109.27 Weak (Alt) Muscovite>>

<<Struc: 92 - 92 dominant foliation>>

<<Struc: 97.14 - 97.38 Weak (Alt) Fault>>

<<Struc: 97.6 - 97.6 dominant foliation>>

<<Struc: 101.24 - 101.24 dominant foliation>>

<<Struc: 104.5 - 104.5 Foliation>> 2nd foliation.

<<Struc: 104.5 - 104.5 dominant foliation>>

<<Struc: 107.05 - 107.05 dominant foliation>>

109.27	**109.63**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	109.27	109.63	0.36	B00269515	21.7	0.072	1.6	-0.01	0.09

109.27 - 109.63: Small interval. Chlorite alteration intensity is 4. CP is predominant sulphide mineral (~5%) forming foliation parallel lenses/clots. Host schist is very fine grained.

<<Alt: 109.27 - 116.4 Moderate (Alt) Chlorite>>

109.63	**117.21**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	109.63	110.47	0.84	B00269516	-0.3	-0.005	0.01	-0.01	0.02

<<Min: 109.63 - 116.3 0.5% Min: Pyrite>>

<<Min: 109.63 - 118 15% Min: Calcite>>

<<Min: 116.3 - 117.5 0.5% Min: Chalcopyrite>>

<<Min: 116.3 - 119.2 1% Min: Pyrite>>

<<Min: 116.3 - 129.63 2% Min: Sphalerite>>

<<Min: 116.3 - 129.63 4% Min: Pyrite>>

<<Min: 116.3 - 131 5% Min: Pyrrhotite>>

<<Min: 116.3 - 131 0.25% Min: Chalcopyrite>> with PO

<<Alt: 116.4 - 119.2 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 112 - 112 Foliation>> 2nd foliation

<<Struc: 112 - 112 dominant foliation>>

<<Struc: 113.6 - 113.6 dominant foliation>>

117.21 129.63 RHYv Rhyolite volcaniclastic

117.21 - 129.63: Coarse grained to ash tuff, with angular to sub rounded crystals.

<<Min: 118 - 131 0.5% Min: Calcite>>

<<Alt: 119.2 - 131 Weak (Alt) Muscovite>>

<<Struc: 119.1 - 119.1 dominant foliation>>

<<Struc: 121.2 - 121.2 Foliation>> 2nd foliation

<<Struc: 121.2 - 121.2 dominant foliation>>

<<Struc: 127.9 - 127.9 dominant foliation>>

129.63 130.26 MDSt Rhyolite tuff dominant mudstone

130.26 131.00 RHYv Rhyolite volcaniclastic

<<Struc: 130.7 - 130.7 dominant foliation>>

End of Hole @ 131

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-288

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	08-Oct-15
UTM Easting	414800.352	Core Size:	HQ3	Azimuth:	179.61	Date Logging Complete:	09-Oct-15
UTM Northing:	6815436.95	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1400.507	Casing Depth (m):	6	Length (m):	86	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	09-Oct-15
Local Elev. (m):						Purpose:	Metallurgical Twin
						Parent Hole:	K15-287

Comments:

This hole is a twin of K15-287 to collect sample of MET3 & MET7 Domains.
The structural hanging wall is composed of RHYc, MDSw and MDSc intervals. Massive sulphide occurs in lenses intercalated with host schists from 28.63m to 55.52m and from 62.5m to 65.95m (predominantly OA with OB and OI ore types within MET3 and MET7 domains). The structural footwall is composed of a package of RHYv, RHYi, MAFi, and small lenses of OI. Mu alteration intensifies towards sulphide mineralization/quartz veins. Chlorite alteration is patchy within the massive sulphides.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.61	0	179.61	APS	Geotech	08-Oct-15		☑	
26	-59.1	159.5	22.5	182	ReflexEZS	Geotech	08-Oct-15	5798	☑	
53	-58.7	157.1	22.5	179.6	ReflexEZS	Geotech	08-Oct-15	5158	☑	
74	-58.9	161.7	22.5	184.2	ReflexEZS	Geotech	08-Oct-15	5706	☑	
86	-58.5	159.3	22.5	181.8	ReflexEZS	Geotech	09-Oct-15	5699	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.00 CASN Casing

6.00 14.26 RHYc Rhyolite coherant volcanics

6 - 14.26: minor carbonaceous component

<<Min: 6 - 14.71 15% Min: Ankerite>>

<<Min: 6 - 21.52 2% Min: Pyrite>>

<<Min: 6 - 21.52 1% Min: Pyrrhotite>>

<<Alt: 6 - 47.3 Moderate (Alt) Muscovite>> intensity varies from weak moderate- moderate to moderate strong. Weak and strong (2, 6) not to be used.

<<Struc: 11.3 - 13.5 Strong (Alt) Fault>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
14.26	**14.71**	**MDSc**	**Carbonaceous dominant mudstone**										
14.71	**21.52**	**RHYc**	**Rhyolite coherant volcanics**										
14.71 - 21.52: Trace carbonaceous component													
<<Min: 14.71 - 21.52 0.25% Min: Sphalerite>>													
<<Struc: 17.65 - 17.82 Moderate (Alt) Fault>>													
<<Struc: 18.85 - 19 Weak (Alt) Fault>>													
<<Struc: 20 - 20.2 Moderate (Alt) Fault>>													
21.52	**28.63**	**RHYc**	**Rhyolite coherant volcanics**		27.63	28.63	1.00						
<<Min: 21.52 - 28.62 2% Min: Sphalerite>>													
<<Min: 21.52 - 37.84 3% Min: Pyrite>>													
<<Struc: 28.5 - 28.63 Moderate (Alt) Fault>>													
28.63	**29.55**	**OI**	**Heavilly disseminated sulphides in host schist**		28.63	29.52	0.89						
28.63 - 29.55: OB type mineralization. High sphalerite (~10%)													
<<Min: 29.53 - 37.84 1% Min: Pyrrhotite>>					29.52	30.52	1.00						
29.55	**37.84**	**RHYc**	**Rhyolite coherant volcanics**		30.52	37.84	7.32						
<<Struc: 29.75 - 29.9 Moderate (Alt) Fault>>													
<<Struc: 32.36 - 32.5 Moderate (Alt) Fault>>													
37.84	**39.93**	**OI**	**Heavilly disseminated sulphides in host schist**		37.84	38.90	1.06						
<<Struc: 37.84 - 37.9 Weak (Alt) Fault>>					38.90	39.93	1.03						
39.93	**47.30**	**RHYv**	**Rhyolite volcaniclastic**	**CG**	39.93	40.93	1.00						
39.93 - 47.3: Small ~10cm interval of RHYi ? At 47m													
<<Min: 39.93 - 47.3 2% Min: Pyrite>>					40.93	41.70	0.77						
<<Vein: 40.53 - 41.2 100% Quartz>>					41.70	42.30	0.60						
<<Struc: 44.6 - 44.82 Moderate (Alt) Fault>>					42.30	43.30	1.00						
<<Struc: 45.32 - 45.67 Moderate (Alt) Fault>>					43.30	44.30	1.00						
<<Struc: 47 - 47.25 Weak (Alt) Fault>>					44.30	45.30	1.00						
					45.30	46.30	1.00						
					46.30	47.30	1.00						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
47.30	**48.37**	**OA**	**Magnetite bearing sulphides**	47.30	48.37	1.07						
47.3 - 48.37: CP ~ 8%-10%. Mt ~ 10%, medium grain mxsx												
<<Alt: 47.3 - 49.7 Weak (Alt) Chlorite>>												
48.37	**49.70**	**OA**	**Magnetite bearing sulphides**	48.37	49.70	1.33						
48.37 - 49.7: laminated mt ~10%, medium grain mxsx												
<<Struc: 49.28 - 49.58 Moderate (Alt) Fault>>												
49.70	**53.25**	**OA**	**Magnetite bearing sulphides**	49.70	50.70	1.00						
49.7 - 53.25: mt ~15%, cp ~5-7%, medium grain mxsx												
<<Struc: 53 - 53.15 Moderate (Alt) Fault>>				50.70	51.70	1.00						
				51.70	52.70	1.00						
				52.70	53.25	0.55						
53.25	**54.41**	**OA**	**Magnetite bearing sulphides**	53.25	54.00	0.75						
53.25 - 54.41: laminated mt ~10-15%, medium grain mxsx												
				54.00	54.41	0.41						
54.41	**55.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	54.41	55.00	0.59						
54.41 - 55.5: Low values for economic sulphides, medium grain mxsx												
<<Min: 55.47 - 62.5 4% Min: Pyrite>>				55.00	55.50	0.50						
<<Alt: 55.47 - 62.5 Moderate (Alt) Silicification>>												
<<Alt: 55.47 - 62.5 Moderate (Alt) Muscovite>>												
55.50	**57.00**	**RHY**	**undifferentiated rhyolite**	55.50	56.50	1.00						
55.5 - 57: coarse grained sub angular crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.												
<<Struc: 55.55 - 56 Moderate (Alt) Fault>>				56.50	57.50	1.00						
57.00	**57.25**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
57.25	**59.00**	**RHY**	**undifferentiated rhyolite**	57.50	58.50	1.00						
57.25 - 59: coarse grained sub angular crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.												
<<Struc: 58.75 - 59.2 Moderate (Alt) Fault>>				58.50	59.50	1.00						
59.00	**62.50**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	59.50	60.50	1.00						

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 59.6 - 60 Moderate (Alt) Fault>>	60.50	62.50	2.00						
		<<Struc: 61 - 62.5 Strong (Alt) Fault>>									
62.50	**63.35**	**OA Magnetite bearing sulphides**	62.50	63.35	0.85						
		62.5 - 63.35: laminated mt ~ 8%, medium grain mxsx									
63.35	**63.67**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	63.35	64.36	1.01						
		63.35 - 63.67: Sp 10%, medium grain mxsx									
63.67	**64.36**	**RHYi Aphanitic Rhyolite (intrusion)**									
		63.67 - 64.36: Small fragment of RHYi at base of interval; cut off by fault at lower contact.									
		<<Min: 63.67 - 64.36 2% Min: Sphalerite>>									
		<<Min: 63.67 - 64.36 2% Min: Pyrite>>									
		<<Alt: 63.67 - 64.36 Moderate (Alt) Silicification>>									
		<<Alt: 63.67 - 64.36 Moderate (Alt) Muscovite>>									
		<<Struc: 64 - 64.36 Moderate (Alt) Fault>>									
64.36	**64.71**	**OA Magnetite bearing sulphides**	64.36	64.71	0.35						
		64.36 - 64.71: mt ~8%, medium grain mxsx									
64.71	**65.95**	**OA Magnetite bearing sulphides**	64.71	65.50	0.79						
		64.71 - 65.95: laminated mt ~ 10-12%, medium grain mxsx									
			65.50	65.95	0.45						
65.95	**67.80**	**RHYv Rhyolite volcaniclastic**	65.95	67.36	1.41						
		65.95 - 67.8: coarse grained sub angular crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.									
		<<Min: 65.95 - 66.2 1% Min: Chalcopyrite>>	67.36	68.36	1.00						
		<<Min: 67.36 - 74.96 3% Min: Pyrite>>									
		<<Alt: 65.95 - 86 Moderate (Alt) Silicification>>									
		<<Alt: 65.95 - 86 Moderate (Alt) Muscovite>>									
		<<Struc: 66.2 - 67.36 Intense (Alt) Fault>>									
67.80	**70.50**	**RHYc Rhyolite coherant volcanics**	68.36	69.36	1.00						
		<<Struc: 67.85 - 68.1 Weak (Alt) Fault>>	69.36	70.36	1.00						
		<<Struc: 69 - 69.3 Weak (Alt) Fault>>	70.36	71.36	1.00						

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
70.50	**72.41**	**RHYv**	**Rhyolite volcaniclastic**	71.36	72.36	1.00						
70.5 - 72.41: coarse grained sub angular crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.												
<<Struc: 70.5 - 71.3 Strong (Alt) Fault>>				72.36	73.36	1.00						
<<Struc: 71.68 - 71.72 Weak (Alt) Fault>>												
72.41	**72.70**	**RHYi**	**Aphanitic Rhyolite (intrusion)**									
<<Min: 72.41 - 74.96 1% Min: Sphalerite>>												
72.70	**74.96**	**RHYv**	**Rhyolite volcaniclastic**	73.36	74.36	1.00						
72.7 - 74.96: coarse grained sub angular - sub rounded crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.												
<<Vein: 73.39 - 74.66 90% Quartz>>				74.36	75.36	1.00						
74.96	**75.20**	**OI**	**Heavilly disseminated sulphides in host schist**									
75.20	**77.90**	**RHYv**	**Rhyolite volcaniclastic**	75.36	76.76	1.40						
75.2 - 77.9: coarse grained sub angular crystals present (locally). Highly altered lithology due to proximal RHYi intrusion.												
<<Struc: 76.85 - 77.4 Strong (Alt) Fault>>				76.76	78.13	1.37						
<<Struc: 77.6 - 78.44 Strong (Alt) Fault>>												
77.90	**79.13**	**OI**	**Heavilly disseminated sulphides in host schist**	78.13	79.13	1.00						
79.13	**86.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	79.13	80.13	1.00						
<<Min: 79.13 - 86 2% Min: Pyrite>>			Also disseminated	80.13	81.13	1.00						
				81.13	82.13	1.00						
				82.13	83.13	1.00						
				83.13	84.13	1.00						

End of Hole @ 86

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-289

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Cooper Campbell	Date Logging Start:	11-Oct-15
UTM Easting	414598	Core Size:	NQ3	Azimuth:	180.7	Date Logging Complete:	13-Oct-15
UTM Northing:	6815652	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1445.64	Casing Depth (m):	4.5	Length (m):	236	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of this hole was to test the continuity/extension of the lower MET 4 magnetite sulphide lens. No significant sulphide lens was intersected in this hole.

The upper portion of this hole consists primarily of intercalated RHYcw, RHYvx, and RHYvl intruded by MAFi. The upper package of volcaniclastics and flows grades into MDSt, MDSc, and MDSw . A major lens of massive sulphide was not intersected. RHYi was intersected from 181.65-194.28m. This is where the massive sulphide zone was anticipated. A very thin unit of MAFi was intersected below RHYi. Two narrow (<21cm) semi-massive sulphide intervals were intersected below RHYi. Weak SP mineralization was logged over these intervals. RHYc, MDSc, RHYcw, RHYvx, and RHYvl were intersected below the MAFi unit.

A small zone of what is interpreted as a weak CI-CL zone was intersected above RHYi. A weak CL zone straddles the weakly mineralized zone below RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.7	0	180.7	APS	Cooper Campbell	08-Oct-15		☑	
26	-68.7	161.6	22.5	184.1	ReflexEZS	Geotech	09-Oct-15	5822	☑	
50	-68.8	163.6	22.5	186.1	ReflexEZS	Geotech	09-Oct-15	5751	☑	
77	-69	162.5	22.5	185	ReflexEZS	Geotech	09-Oct-15	5751	☑	
101	-69.2	164.4	22.5	186.9	ReflexEZS	Geotech	09-Oct-15	5754	☑	
125	-69.2	162.5	22.5	185	ReflexEZS	Geotech	09-Oct-15	5773	☑	
150	-69	165.8	22.5	188.3	ReflexEZS	Geotech	09-Oct-15	5775	☑	
176	-68.9	169.2	22.5	191.7	ReflexEZS	Geotech	09-Oct-15	5615	☑	
200	-68.8	172.4	22.5	194.9	ReflexEZS	Geotech	10-Oct-15	5794	☑	
224	-68.7	170.5	22.5	193	ReflexEZS	Geotech	10-Oct-15	5775	☑	
236	-68.5	169.7	22.5	192.2	ReflexEZS	Geotech	10-Oct-15	5795	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**4.50**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description
4.50	**5.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 4.5 - 20.69 3% Min: Pyrite>>

<<Min: 4.5 - 20.69 0.01% Min: Pyrrhotite>>

<<Min: 4.5 - 63.39 5% Min: Calcite>>

<<Alt: 4.5 - 5.8 Moderate (Alt) Chlorite>>

5.80	**20.69**	**RHYvl** **Lapilli tuff**

5.8 - 20.69: ash locally.

<<Alt: 5.8 - 41.26 Weak (Alt) Muscovite>>

20.69	**27.03**	**RHYvx** **Quartz and/or feldspar crystal tuff**

20.69 - 27.03: MAFi locally

<<Min: 20.69 - 39.34 0.01% Min: Sphalerite>>

<<Min: 20.69 - 39.34 0.01% Min: Pyrite>>

<<Min: 20.69 - 39.34 0.5% Min: Pyrrhotite>>

<<Min: 20.69 - 39.34 0.01% Min: Galena>>

27.03	**27.58**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
27.58	**28.95**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
28.95	**34.39**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

28.95 - 34.39: Great example of crenulation cleavage creating pseudofragmental texture in RHYcw.

34.39	**35.55**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Alt: 34.39 - 60.76 Weak (Alt) Chlorite>>

35.55	**39.34**	**RHYv** **Rhyolite volcaniclastic**
39.34	**40.51**	**RHYc** **Rhyolite coherent volcanics**

39.34 - 40.51: RHYv host rock., could be RHYi

<<Min: 39.34 - 43.47 0.5% Min: Sphalerite>> VN

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 39.34 - 43.47 0.5% Min: Pyrrhotite>> VN

<<Min: 39.34 - 43.47 0.01% Min: Galena>>

<<Alt: 39.34 - 40.51 Weak (Alt) Silicification>>

40.51 41.26 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

41.26 43.47 RHYc Rhyolite coherent volcanics

41.26 - 43.47: RHYv host rock.could be RHYi

<<Alt: 41.26 - 43.65 Moderate (Alt) Silicification>>

<<Alt: 41.26 - 43.65 Moderate (Alt) Muscovite>>

43.47 47.00 RHYvl Lapilli tuff

43.47 - 47: Weak chlorite overprint.

<<Min: 43.47 - 64.84 0.01% Min: Sphalerite>>

<<Min: 43.47 - 64.84 0.01% Min: Pyrite>>

<<Min: 43.47 - 64.84 1% Min: Pyrrhotite>> WIS

<<Min: 43.47 - 64.84 0.01% Min: Chalcopyrite>>

<<Alt: 43.65 - 135.99 Weak (Alt) Muscovite>>

47.00 50.46 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

47 - 50.46: MAFi dyke swarm in RHYv with CL overprint.

50.46 55.74 RHYvl Lapilli tuff

50.46 - 55.74: Toppo

55.74 56.73 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

56.73 60.76 RHYvl Lapilli tuff

60.76 63.39 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Alt: 60.76 - 63.39 Moderate (Alt) Chlorite>>

63.39 66.29 RHYvl Lapilli tuff

<<Min: 63.39 - 84.86 0.5% Min: Calcite>>

<<Min: 64.94 - 72.53 1% Min: Sphalerite>> WIS

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 64.94 - 72.53 0.01% Min: Pyrite>>

<<Min: 64.94 - 72.53 1% Min: Pyrrhotite>>

<<Min: 64.94 - 72.53 0.01% Min: Chalcopyrite>>

<<Alt: 63.39 - 66.29 Weak (Alt) Chlorite>>

<<Alt: 63.39 - 66.29 Weak (Alt) Cordierite>>

66.29 68.83 RHYcw Curdy textured-flow banded (flows, subvolcanics)

68.83 71.66 RHYvl Lapilli tuff

71.66 72.53 RHYcw Curdy textured-flow banded (flows, subvolcanics)

72.53 83.05 RHYvl Lapilli tuff

72.53 - 83.05: Trace fine grained MAFi up to 15cm.

<<Min: 72.53 - 107.13 0.01% Min: Sphalerite>>

<<Min: 72.53 - 107.13 0.5% Min: Pyrite>> FD

<<Min: 72.53 - 107.13 1% Min: Pyrrhotite>> VN

<<Min: 72.53 - 107.13 0.01% Min: Chalcopyrite>>

<<Vein: 81.26 - 84.86 5% Carbonate-Kaolinite/White clay 50 deg. >> AK veinlets with white kaolinite? core.

<<Struc: 76.87 - 76.88 Contact>>

83.05 84.86 RHYcw Curdy textured-flow banded (flows, subvolcanics)

84.86 88.26 RHYvl Lapilli tuff

<<Min: 84.86 - 97.72 5% Min: Calcite>>

88.26 91.39 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.26 - 91.39: Weak CL overprint with CL filled fractures.

<<Alt: 90.42 - 97.72 Weak (Alt) Chlorite>>

<<Vein: 89.41 - 97.72 1% Chlorite 70 deg. >> Chlorite stringers. Slickensided.

91.39 107.13 RHYvl Lapilli tuff

91.39 - 107.13: Weak CL overprint with CL filled fractures.

<<Min: 97.72 - 122.13 1% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
107.13	**122.13**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
107.13 - 122.13: Trace BI overprint. Trace MAFi.		
<<Min: 107.13 - 122.82 1% Min: Pyrite>> FD		
<<Min: 107.13 - 122.82 1% Min: Pyrrhotite>> WIS		
122.13	**131.21**	**RHYvl** **Lapilli tuff**
<<Min: 122.13 - 135.99 10% Min: Calcite>>		
<<Min: 122.82 - 135.99 1% Min: Pyrrhotite>>		
<<Alt: 124.83 - 131.21 Weak (Alt) Silicification>>		
131.21	**135.07**	**MDSt** **Rhyolite tuff dominant mudstone**
135.07	**135.99**	**MDSc** **Carbonaceous dominant mudstone**
135.99	**146.50**	**MDSw** **Coherent rhyolite flow with carbonaceous content**
<<Min: 135.99 - 139.59 0.01% Min: Sphalerite>>		
<<Min: 135.99 - 139.59 0.01% Min: Pyrrhotite>> DIS		
<<Min: 135.99 - 148.51 3% Min: Pyrite>> FD		
<<Min: 135.99 - 156.83 1% Min: Calcite>> DIS		
<<Alt: 135.99 - 144.04 Moderate (Alt) Muscovite>>		
<<Alt: 144.04 - 150.37 Strong (Alt) Muscovite>>		
<<Vein: 135.99 - 148.51 75% Quartz-Carbonate-Sulphide 65 deg. >> QZ-CA-SP-PO		
<<Struc: 135.99 - 136.59 Moderate (Alt) Fault>>		
146.50	**157.14**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 148.51 - 170.76 0.01% Min: Sphalerite>>		
<<Min: 148.51 - 170.76 1% Min: Pyrite>> FD		
<<Min: 148.51 - 170.76 0.01% Min: Pyrrhotite>>		
<<Min: 156.83 - 159.74 3% Min: Calcite>>		
<<Alt: 150.37 - 181.45 Moderate (Alt) Muscovite>>		
157.14	**161.84**	**RHYvx** **Quartz and/or feldspar crystal tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 159.74 - 181.65 0.01% Min: Calcite>>									
161.84	**162.49**	**MDSc Carbonaceous dominant mudstone**									
		<<Min: 161.84 - 162.49 0.5% Min: Sphalerite>>									
162.49	**178.37**	**MDSt Rhyolite tuff dominant mudstone**	176.87	178.37	1.50	B00268345	3.6	-0.005	0.04	0.02	0.17
		<<Min: 170.76 - 178.37 0.5% Min: Sphalerite>>									
		<<Min: 170.76 - 178.37 1% Min: Pyrrhotite>> WIS									
		<<Min: 170.76 - 178.37 0.01% Min: Chalcopyrite>>									
		<<Alt: 170.76 - 177.51 Weak (Alt) Chlorite>>									
		<<Alt: 177 - 177.13 Weak (Alt) Cordierite>> Interpretted as CI									
178.37	**181.65**	**RHY undifferentiated rhyolite**	178.37	179.37	1.00	B00268346	9.5	0.008	0.02	0.24	0.07
		178.37 - 181.65: Protolith obscured due to strong sericitization and faulting.									
		<<Min: 178.37 - 181.65 0.5% Min: Sphalerite>> WIS	179.37	180.37	1.00	B00268347	5.5	0.01	0.16	0.03	0.27
		<<Min: 178.37 - 181.65 3% Min: Pyrite>> DIS	180.37	181.00	0.63	B00268348	2.9	-0.005	0.05	0.1	0.65
		<<Min: 178.37 - 181.65 0.01% Min: Galena>>	181.00	181.65	0.65	B00268349	1.1	-0.005	-0.01	0.02	0.39
		<<Min: 178.37 - 181.65 0.01% Min: Chalcopyrite>>									
		<<Alt: 181.45 - 182.2 Moderate (Alt) Muscovite>>									
		<<Alt: 181.45 - 194.31 Strong (Alt) Silicification>>									
		<<Struc: 178.37 - 180.52 Moderate (Alt) Fault>>									
		<<Struc: 180.52 - 181.45 Strong (Alt) Fault>>									
181.65	**194.28**	**RHYi Aphanitic Rhyolite (intrusion)**	181.65	183.15	1.50	B00268351	2.8	0.171	-0.01	0.02	0.44
		<<Min: 181.65 - 194.28 0.5% Min: Sphalerite>>									
		<<Min: 181.65 - 194.28 3% Min: Pyrite>> FD									
		<<Min: 181.65 - 194.28 3% Min: Calcite>>									
		<<Alt: 182.2 - 193.89 Weak (Alt) Muscovite>>									
		<<Alt: 193.89 - 196.86 Moderate (Alt) Muscovite>>									
		<<Vein: 181.65 - 194.28 5% Quartz-Carbonate-Sulphide 50 deg. >> QZ-PY-CA-SP									
194.28	**196.86**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**									
		194.28 - 196.86: May be RHY. Protolith obscured by SI-MU overprint from RHYi.									
		<<Min: 194.28 - 198.41 10% Min: Calcite>> DIS									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 194.28 - 203.3 0.5% Min: Sphalerite>> FD,VN

<<Min: 194.28 - 203.3 3% Min: Pyrite>> FD

<<Min: 194.28 - 203.3 0.5% Min: Pyrrhotite>>

<<Alt: 194.31 - 194.95 Moderate (Alt) Silicification>>

196.86 198.41 RHY undifferentiated rhyolite

196.86 - 198.41: Protolith obscured by SI-MS-MU overprint from RHYi and QZ-CA veining.

<<Alt: 196.86 - 198.41 Strong (Alt) Muscovite>>

<<Vein: 197.12 - 198.96 20% Quartz-Carbonate-Sulphide 75 deg. >> CA-QZ-PY-SP

198.41 206.05 RHYc Rhyolite coherant volcanics

<<Min: 198.41 - 220.94 0.01% Min: Calcite>>

<<Min: 203.3 - 212.46 0.5% Min: Pyrite>> WIS

<<Min: 203.3 - 212.46 0.01% Min: Pyrrhotite>>

<<Alt: 198.41 - 198.96 Moderate (Alt) Muscovite>>

<<Alt: 198.96 - 212.46 Strong (Alt) Muscovite>>

<<Struc: 199.44 - 199.45 dominant foliation>>

<<Struc: 205.7 - 205.71 dominant foliation>>

206.05 207.09 MDSc Carbonaceous dominant mudstone

<<Min: 206.05 - 207.09 0.01% Min: Arsenopyrite>>

207.09 212.46 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Struc: 211.67 - 211.68 dominant foliation>>

212.46 224.19 RHYvx Quartz and/or feldspar crystal tuff

212.73	214.23	1.50	B00268352	0.5	-0.005	-0.01	0.02	0.02

212.46 - 224.19: QE

<<Min: 212.46 - 214.23 1% Min: Pyrite>>

214.23	214.73	0.50	B00268353	6.9	0.015	-0.01	0.33	1.31

<<Min: 212.46 - 214.23 0.5% Min: Pyrrhotite>>

214.73	216.23	1.50	B00268354	-0.3	-0.005	-0.01	-0.01	0.02

<<Min: 214.23 - 214.27 1% Min: Magnetite>>

217.94	219.44	1.50	B00268355	0.9	0.005	0.01	-0.01	0.01

<<Min: 214.23 - 214.27 15% Min: Pyrite>>

219.44	219.94	0.50	B00268356	1.2	0.018	0.03	0.01	0.7

<<Min: 214.23 - 214.27 5% Min: Sphalerite>>

219.94	221.44	1.50	B00268357	-0.3	-0.005	-0.01	-0.01	-0.01

<<Min: 214.27 - 219.73 0.5% Min: Sphalerite>>

<<Min: 214.27 - 219.73 0.01% Min: Chalcopyrite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 214.27 - 219.73 1% Min: Pyrrhotite>>
<<Min: 214.27 - 219.73 3% Min: Pyrite>> DIS
<<Min: 219.73 - 219.94 1% Min: Magnetite>>
<<Min: 219.73 - 219.94 0.5% Min: Pyrrhotite>>
<<Min: 219.73 - 219.94 15% Min: Pyrite>>
<<Min: 219.73 - 219.94 3% Min: Sphalerite>>
<<Min: 219.73 - 219.94 0.01% Min: Chalcopyrite>>
<<Min: 219.94 - 236 0.01% Min: Pyrrhotite>>
<<Min: 219.94 - 236 0.01% Min: Pyrite>>
<<Min: 220.94 - 224.11 10% Min: Calcite>>
<<Min: 224.11 - 236 1% Min: Calcite>>
<<Alt: 212.46 - 214.18 Moderate (Alt) Muscovite>>
<<Alt: 214.18 - 227.95 Weak (Alt) Chlorite>>
<<Alt: 214.18 - 236 Weak (Alt) Muscovite>>
<<Struc: 216.27 - 216.28 dominant foliation>>

224.19 230.34 RHYvx Quartz and/or feldspar crystal tuff

224.19 - 230.34: Resembles a MAFi. Coarse BI. Definitely contains QE though.

<<Struc: 226.78 - 226.79 dominant foliation>>

230.34 236.00 RHYvl Lapilli tuff

<<Struc: 235.92 - 235.93 dominant foliation>>

End of Hole @ 236

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-290

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Jerome de Pasquale	Date Logging Start:	09-Oct-15
UTM Easting	415151	Core Size:	NQ3	Azimuth:	180.5	Date Logging Complete:	11-Oct-15
UTM Northing:	6815395	Casing Pulled?:	Yes	Dip:	-65	Drill Company:	Geotech
UTM Elev. (m):	1403.9	Casing Depth (m):	9	Length (m):	142	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	08-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-290 is a resource infill hole drilled between historic holes K94-015 and K95-134.
The top of the hole is made up of rhyolitic units, dominantly volcaniclastic ashes, and carbonaceous mudstone. The hole intersects mineralization from 75.00 to 89.90m (massive and semi massive sulfide). The ore zone consists in OA, OB and OI domains containing PY-SP-MG-GL-CP.
The hanging-wall shows a progressive muscovite alteration (moderate to strong from 54.85m to 75.00m) followed by a narrow moderate CL-CI proximal alteration (0.8 metre). The footwall consists of mafic CL-CA-BI schist.
At 137.80m, a rhyolitic aphanitic dyke is intersected. The hole ends at 142.00m on this unit.
K15-290 does not show the green-grey alteration usually associated with the RHYi; sulfide assemblages are observed in the mafic sill (PY-GL-SP-CP trace, PO trace) as well as rhyolitic xenoliths.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-65	180.5	0	180.5	APS	Jerome de Pasquale	08-Oct-15		☑	
18	-64	159.3	22.5	181.8	ReflexEZS	Geotech	08-Oct-15	5838	☑	
51	-64.2	164.2	22.5	186.7	ReflexEZS	Geotech	08-Oct-15	5873	☑	
78	-63.2	154.5	22.5	177	ReflexEZS	Geotech	09-Oct-15	6479	☐	Values not accepted, high magnetic field
108	-62.6	165.6	22.5	188.1	ReflexEZS	Geotech	09-Oct-15	5690	☑	
142	-62.9	166.9	22.5	189.4	ReflexEZS	Geotech	09-Oct-15	5731	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 9.00 CASN Casing

9.00 25.10 RHYv Rhyolite volcaniclastic grey-green

9 - 25.1: Dominantly RHYva. Weak CL alteration from 10 to 19.0m (dark color)

<<Min: 9 - 39 0.5% Min: Pyrite>>

<<Min: 9 - 39 0.5% Min: Pyrrhotite>>

<<Min: 9 - 78 0.1% Min: Calcite>> and vein veins.

<<Alt: 12 - 19.2 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 19.2 - 54.85 Moderate (Alt) Muscovite>>												
25.10	**30.85**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**									
25.1 - 30.85: Curdy texture locally.												
30.85	**58.70**	**RHYva** **Coarse grained to ash tuff**	**grey-green**									
<<Min: 39 - 54.85 0.5% Min: Pyrite>>												
<<Min: 39 - 54.85 1% Min: Pyrrhotite>>												
<<Min: 54.85 - 75 2% Min: Pyrite>> and aggregated.												
<<Min: 54.85 - 75 2% Min: Pyrrhotite>> and stringers.												
<<Alt: 40 - 50 Weak (Alt) Chlorite>>												
<<Alt: 54.85 - 75 Strong (Alt) Muscovite>>												
58.70	**65.70**	**RHY** **undifferentiated rhyolite**	**grey-green**									
58.7 - 65.7: Possibly RHYcw. Locally MDSw.												
65.70	**72.70**	**MDSc** **Carbonaceous dominant mudstone**	**black**	70.50	72.00	1.50	B00266977	4.2	0.034	0.03	0.02	0.47
65.7 - 72.7: PY patch, PO stringers and needles.												
				72.00	73.50	1.50	B00266978	1.2	0.018	0.01	0.03	0.12
72.70	**75.00**	**RHY** **undifferentiated rhyolite**	**grey-green**	73.50	75.00	1.50	B00266979	0.8	0.006	-0.01	-0.01	0.02
72.7 - 75: Possibly RHYcw												
<<Alt: 73.66 - 76.5 Moderate (Alt) Cordierite>>												
75.00	**75.81**	**OI** **Heavilly disseminated sulphides in host schist**	**grey-green**	75.00	75.81	0.81	B00266981	60.7	0.35	1.53	0.26	2.41
75 - 75.81: Mineralization in RHY.												
<<Min: 75 - 75.81 2% Min: Sphalerite>>												
<<Min: 75 - 75.81 0.5% Min: Pyrrhotite>>												
<<Min: 75 - 75.81 2% Min: Galena>>												
<<Min: 75 - 75.81 5% Min: Chalcopyrite>>												
<<Alt: 75 - 75.81 Moderate (Alt) Chlorite>>												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
75.81	**76.62**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	75.81	76.62	0.81	B00266982	81.3	1.26	1.84	0.49	8.71
<<Min: 75.81 - 76.62 10% Min: Sphalerite>>													
<<Min: 75.81 - 76.62 3% Min: Galena>>													
<<Min: 75.81 - 76.62 0.5% Min: Chalcopyrite>>													
76.62	**78.00**	**OA**	**Magnetite bearing sulphides**	**FG**	76.62	77.33	0.71	B00266983	102	1.01	0.1	1.85	17.4
<<Min: 76.62 - 78 10% Min: Sphalerite>>					77.33	78.00	0.67	B00266984	63.3	0.404	0.49	0.75	14.5
<<Min: 76.62 - 78 5% Min: Magnetite>>													
<<Min: 76.62 - 78 2% Min: Galena>>													
<<Struc: 77.43 - 77.44 dominant foliation>> SP lamination in MxSx.													
78.00	**82.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	78.00	79.00	1.00	B00266985	282	3.54	0.4	3.87	8.81
78 - 82: Brecciated from 78.9m to 79.15m. Fractured. Medium grain locally. QZ-CL banded.													
<<Min: 78 - 89.9 15% Min: Sphalerite>>					79.00	80.00	1.00	B00266986	320	4.76	0.8	4.2	9.81
<<Min: 78 - 89.9 0.5% Min: Magnetite>>					80.00	81.00	1.00	B00266987	426	3.23	0.75	3.53	7.94
<<Min: 78 - 89.9 3% Min: Galena>>					81.00	82.00	1.00	B00266988	390	3.02	0.8	2.81	6.75
<<Min: 78 - 89.9 0.1% Min: Chalcopyrite>>													
<<Min: 78 - 89.9 1% Min: Calcite>>													
82.00	**87.00**	**OI**	**Heavilly disseminated sulphides in host schist**		82.00	83.00	1.00	B00266989	364	2.5	0.28	5.22	8.34
82 - 87: In RHY, almost OB.													
<<Alt: 84 - 87 Moderate (Alt) Chlorite>> OI mixed with SI-CL bands and RHY, almost OI.					83.00	84.00	1.00	B00266992	244	1.53	0.13	3.36	6.19
					84.00	85.50	1.50	B00266993	87.8	0.609	0.1	2.23	5.08
					85.50	87.00	1.50	B00266994	265	2.2	0.25	2.33	5.94
87.00	**89.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		87.00	88.50	1.50	B00266995	418	3.4	0.41	3.25	8.77
87 - 89.9: Core loss at lower contact. MU alteration, maybe some cordierite. Weakly faulted, RHY mixed with sulfides.													
<<Alt: 88.5 - 92 Weak (Alt) Muscovite>>					88.50	89.90	1.40	B00266996	148	0.757	0.27	1.73	5.23

From (m)	To (m)		Rocktype & Description	
89.90	**99.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**

<<Min: 89.9 - 114 10% Min: Calcite>>

<<Vein: 89.9 - 90.6 Quartz>> QZ vein at lower contact of the MxSx.

From (m)	To (m)		Rocktype & Description	
99.20	**100.20**	**RHY**	**undifferentiated rhyolite**	**grey-green**

99.2 - 100.2: Probably xenolith. Mu alteration in RHY, associated with large QZ vein at lower contact.

<<Vein: 100.05 - 100.15 Quartz-Pyrrhotite>> QZ vein cotaining PO, CL, maybe CI, TM. At contact between RHY altered MU and MAFi.

From (m)	To (m)		Rocktype & Description	
100.20	**126.03**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**

100.2 - 126.03: Orientation of the foliation changing (shallower).

<<Min: 114 - 132 5% Min: Calcite>>

<<Struc: 103.3 - 103.6 Fault>> With CL gouge.

<<Struc: 107.88 - 107.89 dominant foliation>>

<<Struc: 119.93 - 119.94 dominant foliation>>

<<Struc: 122.95 - 122.96 dominant foliation>>

From (m)	To (m)		Rocktype & Description	
126.03	**127.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**

126.03 - 127: Probably xenolith. Sharpe contact (upper and lower).

From (m)	To (m)		Rocktype & Description	
127.00	**137.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**

127 - 137.8: Texture changing at 132.50m, patch of mineralization PY-GL-SP, PO and CP trace.

<<Min: 132 - 137.8 10% Min: Calcite>>

<<Min: 132.5 - 137.8 0.5% Min: Sphalerite>>

<<Min: 132.5 - 137.8 1% Min: Pyrite>>

<<Min: 132.5 - 137.8 0.1% Min: Pyrrhotite>>

<<Min: 132.5 - 137.8 0.5% Min: Galena>>

<<Min: 132.5 - 137.8 0.1% Min: Chalcopyrite>>

<<Struc: 129.5 - 132 Fault>> Sheared and folded. Locally sandy-clay fault gouge.

From (m)	To (m)		Rocktype & Description	
137.80	**142.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**beige**

137.8 - 142: PY veins, few GL, few SP.

<<Min: 137.8 - 142 0.5% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
89.90	91.40	1.50	B00266997	26.6	0.072	-0.01	0.37	0.89
91.40	92.90	1.50	B00266998	1.5	0.011	-0.01	0.01	0.03
92.90	94.40	1.50	B00266999	0.5	0.013	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description
		<<Min: 137.8 - 142 2% Min: Pyrite>>
		<<Min: 137.8 - 142 0.5% Min: Galena>>
		End of Hole @ 142

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-291

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	David Nuttal	Date Logging Start:	10-Oct-15
UTM Easting	415073.1	Core Size:	NQ3	Azimuth:	216	Date Logging Complete:	13-Oct-15
UTM Northing:	6815745.6	Casing Pulled?:	Yes	Dip:	-50	Drill Company:	Geotech
UTM Elev. (m):	1387.57	Casing Depth (m):	21	Length (m):	242	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	09-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	12-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

This hole was planned to test the continuity/extension of massive sulphide lens.
Drilling of hole K15-291 was successful in intersecting massive sulphide intervals, which confirm continuity/extension of the massive sulphide lens, down dip towards the north from previous intersections. The structural hanging wall is composed of a package of felsic volcaniclastic/coherent rocks, graphitic tuffaceous/coherent mudstones and foliation parallel mafic intrusives. Massive sulphide occurs from 218.34m to 221.24m (OB and OI style mineralization). The massive sulphide lens and hanging-wall shoulder lithologies are anomolously high in sphalerite content. The structural footwall is composed of felsic volcaniclastic/coherent rocks (adjacent to MXSX) underlain by chlorite altered mafics. Muscovite alteration intensifies towards the massive sulphide lens, though the intensity was not observed to reach strong or intense (6 - 7 on intensity scale). Chlorite alteration is trace to weak and is ubiquitously patchy throughout the hanging wall felsic volcaniclastic and mudstone units. Chlorite alteration is moderate (4) in mafic footwall.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-50	216.02	0	216.02	APS	David Nuttal	09-Oct-15		☑	
32	-50.4	192.7	22.5	215.2	ReflexEZS	Geotech	10-Oct-15	5708	☑	
59	-59	196.8	22.5	219.3	ReflexEZS	Geotech	10-Oct-15	5813	☑	
83	-50.1	195.5	22.5	218	ReflexEZS	Geotech	10-Oct-15	5693	☑	
107	-49.1	197.7	22.5	220.2	ReflexEZS	Geotech	10-Oct-15	5744	☑	
134	-49.3	200.2	22.5	222.7	ReflexEZS	Geotech	11-Oct-15	5800	☑	
158	-48.9	198	22.5	220.5	ReflexEZS	Geotech	11-Oct-15	5705	☑	
182	-48.6	199.4	22.5	221.9	ReflexEZS	Geotech	11-Oct-15	5690	☑	
209	-48.8	200.4	22.5	222.9	ReflexEZS	Geotech	12-Oct-15	5732	☑	
233	-48.4	201.5	22.5	224	ReflexEZS	Geotech	12-Oct-15	5767	☑	
242	-48	200.8	22.5	223.3	ReflexEZS	Geotech	12-Oct-15	5773	☑	

From (m)	To (m)	Rocktype & Description
0.00	**21.45**	**CASN Casing**
21.45	**23.16**	**RHYvl Lapilli tuff**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 21.45 - 23.16 3% Min: Pyrite>>

<<Min: 21.45 - 23.16 2% Min: Calcite>>

<<Min: 21.45 - 24.76 1% Min: Pyrrhotite>>

<<Alt: 21.45 - 93 Weak (Alt) Muscovite>>

23.16 24.76 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

23.16 - 24.76: Fine grained margins and thin banded calcite.

<<Min: 23.16 - 24.76 30% Min: Calcite>>

24.76 35.15 RHYvl Lapilli tuff

<<Min: 24.76 - 35.15 3% Min: Calcite>>

<<Min: 24.76 - 45 2% Min: Pyrrhotite>>

<<Alt: 24.76 - 52.8 Trace (Alt) Chlorite>> Trace in felsic tuffs, patchy in mafic dikes.

<<Vein: 33.02 - 33.08 25% Quartz>>

<<Struc: 30 - 30.2 Weak (Alt) Fault>>

35.15 35.73 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 35.15 - 35.73 30% Min: Calcite>>

35.73 36.93 RHYvl Lapilli tuff

<<Min: 35.73 - 36.93 12% Min: Calcite>>

36.93 39.35 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

36.93 - 39.35: Swarm of mafic dikes intercalated with rhyolite tuff.

<<Min: 36.93 - 39.35 30% Min: Calcite>>

39.35 52.80 RHYvl Lapilli tuff

39.35 - 52.8: Interval is mixed coarse grain - lapilli felsic tuff. Several small mafic dikes intersect the felsic tuffs, each <20cm spaced less than 1m apart between 44.27m to 46.5m

<<Min: 39.95 - 52.8 4% Min: Calcite>>

<<Min: 42 - 45 1% Min: Pyrite>>

<<Min: 45 - 52.8 3% Min: Pyrite>>

<<Min: 45 - 55.85 1% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description
52.80	**55.85**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

52.8 - 55.85: chlorite alteration is moderate (4)

<<Min: 52.8 - 55.85 0.25% Min: Pyrite>>

<<Min: 52.8 - 58 10% Min: Calcite>>

<<Alt: 52.8 - 55.85 Moderate (Alt) Chlorite>>

55.85	**57.15**	**RHYv**	**Rhyolite volcaniclastic**

<<Min: 55.85 - 86 2% Min: Pyrite>>

<<Min: 55.85 - 108 2% Min: Pyrrhotite>>

57.15	**57.61**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Alt: 57.15 - 57.61 Weak (Alt) Chlorite>>

57.61	**58.90**	**RHYvl**	**Lapilli tuff**

<<Min: 58 - 62.3 1% Min: Calcite>>

58.90	**62.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Alt: 58.9 - 62 Moderate (Alt) Chlorite>>

62.00	**68.14**	**RHYvl**	**Lapilli tuff**

<<Min: 62.3 - 68.14 3% Min: Calcite>>

68.14	**71.15**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 68.14 - 78.38 10% Min: Calcite>>

71.15	**78.38**	**RHYvl**	**Lapilli tuff**
78.38	**78.88**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 78.38 - 78.88 20% Min: Calcite>>

78.88	**91.11**	**RHYvl**	**Lapilli tuff**

<<Min: 78.88 - 91.11 3% Min: Calcite>>

<<Min: 86 - 91.11 1% Min: Pyrite>>

91.11	**93.66**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 91.11 - 95 12% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 91.11 - 93.66 Weak (Alt) Chlorite>>

<<Alt: 93 - 100 Moderate (Alt) Muscovite>> OR?

93.66 95.00 OI Heavilly disseminated sulphides in host schist

95.00 98.50 RHYvl Lapilli tuff

<<Min: 95 - 102 1% Min: Calcite>>

<<Min: 95 - 104.8 2% Min: Pyrite>>

<<Alt: 97.4 - 98 Trace (Alt) Chlorite>>

98.50 98.90 OI Heavilly disseminated sulphides in host schist

98.90 122.61 RHYvl Lapilli tuff

<<Min: 102 - 106 3% Min: Calcite>>

<<Min: 104.8 - 108 0.25% Min: Pyrite>>

<<Min: 106 - 122.61 1% Min: Calcite>>

<<Min: 108 - 114.5 2% Min: Pyrite>>

<<Min: 108 - 122 1% Min: Pyrrhotite>>

<<Min: 122 - 133.8 2% Min: Pyrrhotite>>

<<Alt: 100 - 178 Weak (Alt) Muscovite>>

122.61 128.00 MDSt Rhyolite tuff dominant mudstone

<<Min: 122.61 - 136.2 2% Min: Calcite>>

128.00 160.38 RHYvl Lapilli tuff

<<Min: 133.8 - 147.6 3% Min: Pyrrhotite>>

<<Min: 136.2 - 141.7 3% Min: Calcite>>

<<Min: 141.7 - 150.5 6% Min: Calcite>>

<<Min: 147.6 - 155.7 1% Min: Pyrrhotite>>

<<Min: 150.5 - 171.4 8% Min: Calcite>>

<<Min: 155.7 - 160.38 4% Min: Pyrrhotite>>

<<Alt: 136.6 - 142 Trace (Alt) Chlorite>>

<<Alt: 147.6 - 155.7 Trace (Alt) Chlorite>>

160.38 176.15 MDSt Rhyolite tuff dominant mudstone

<<Min: 160.38 - 176.15 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

<<Min: 171.4 - 176.15 5% Min: Calcite>>

<<Alt: 160.38 - 176.15 Trace (Alt) Chlorite>>

176.15 178.00 RHYvl Lapilli tuff

<<Min: 176.15 - 182.25 3% Min: Pyrrhotite>>

<<Min: 176.15 - 193.4 2% Min: Calcite>>

178.00 182.25 MDSt Rhyolite tuff dominant mudstone

<<Alt: 178 - 227.13 Moderate (Alt) Muscovite>>

182.25 186.58 RHYc Rhyolite coherant volcanics

<<Min: 182.25 - 186.58 2% Min: Pyrite>>

<<Min: 182.25 - 198.23 2% Min: Pyrrhotite>>

186.58 188.00 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 186.58 - 202.4 1% Min: Pyrite>>

188.00 193.40 RHYc Rhyolite coherant volcanics

<<Struc: 190 - 193.17 Moderate (Alt) Fault>> large faulted interval with small (<10cm) sections of fault gouge within broken rock, gravel and sand.

193.40 196.44 MDSw Coherent rhyolite flow with carbonaceous content

<<Min: 193.4 - 203 2% Min: Sphalerite>>

<<Min: 193.4 - 212.26 0.5% Min: Calcite>>

196.44 197.92 RHYc Rhyolite coherant volcanics

197.92 198.23 OI Heavilly disseminated sulphides in host schist

197.92 - 198.23: Disseminated sulphides (SP, CP, PY, PO) in RHYc

198.23 202.40 RHYc Rhyolite coherant volcanics

198.23 - 202.4: Sphalerite/PO ribbons

<<Min: 198.23 - 212.26 1% Min: Pyrrhotite>>

<<Struc: 200.31 - 200.31 dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
196.44	196.92	0.48	B00269517	1.6	0.007	-0.01	0.07	0.12
196.92	197.92	1.00	B00269518	3	0.014	0.01	0.13	0.4
197.92	198.23	0.31	B00269519	3	0.022	0.02	0.12	0.27
198.23	199.23	1.00	B00269521	1.7	-0.005	-0.01	0.05	0.23
199.23	200.73	1.50	B00269522	1.8	-0.005	0.03	0.06	0.48
200.73	202.40	1.67	B00269523	1.2	-0.005	0.03	0.03	0.48

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
202.40	**203.00**	**OI**	**Heavilly disseminated sulphides in host schist**		202.40	203.00	0.60	B00269524	10.1	0.035	0.03	0.44	5.84
202.4 - 203: Heavily disseminated SP, PO, PY, CP													
<<Alt: 202.4 - 208.69 Weak (Alt) Chlorite>>													
203.00	**208.69**	**RHYc**	**Rhyolite coherant volcanics**		203.00	204.50	1.50	B00269525	3	-0.005	0.02	0.16	0.51
203 - 208.69: Disseminated sulphides (CP,Sp,PO)													
<<Min: 203 - 208.69 2% Min: Sphalerite>>													
<<Struc: 206.11 - 206.11 dominant foliation>>													
208.69	**213.84**	**MDS**	**Carbonaceous Mudstone & Tuffaceous Mudstone**										
<<Min: 208.69 - 212.26 0.25% Min: Chalcopyrite>>													
<<Alt: 208.69 - 213 Moderate (Alt) Chlorite>>													
<<Struc: 212.05 - 212.05 dominant foliation>>													
213.84	**218.34**	**RHY**	**undifferentiated rhyolite**		213.84	215.34	1.50	B00269526	0.8	-0.005	-0.01	-0.01	0.01
213.84 - 218.34: high sp disseminated/wispy													
<<Min: 215 - 218.34 3% Min: Pyrite>>					215.34	216.84	1.50	B00269527	5.9	0.031	0.1	0.03	0.31
<<Min: 216 - 218.34 0.25% Min: Chalcopyrite>>					216.84	218.34	1.50	B00269528	6.2	0.026	0.11	0.05	0.38
<<Min: 216.5 - 218.34 4% Min: Sphalerite>>													
<<Min: 216.5 - 218.34 1% Min: Galena>>													
218.34	**220.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	218.34	219.36	1.02	B00269529	143	0.707	0.23	5.49	13.5
218.34 - 220.2: PO ~1-2%													
					219.36	220.20	0.84	B00269532	128	0.795	0.26	4.21	7.28
220.20	**220.50**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	220.20	220.50	0.30	B00269533	76.8	0.557	2.16	0.81	1.31
220.2 - 220.5: PO ~1%													

From (m)	To (m)		Rocktype & Description
220.50	**221.24**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
220.5 - 221.24: PO ~1-2%			
221.24	**224.10**	**RHYv**	**Rhyolite volcaniclastic**
<<Min: 221.24 - 227.13 1% Min: Pyrite>>			
<<Struc: 223.9 - 223.9 dominant foliation>>			
224.10	**227.13**	**RHYc**	**Rhyolite coherant volcanics**
227.13	**240.66**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 227.13 - 242 0.25% Min: Pyrite>>			
<<Min: 227.13 - 242 2% Min: Pyrrhotite>>			
<<Alt: 227.13 - 240.66 Moderate (Alt) Chlorite>>			
<<Struc: 227.55 - 227.55 dominant foliation>>			
<<Struc: 232.06 - 232.06 dominant foliation>>			
<<Struc: 237.52 - 237.52 dominant foliation>>			
<<Struc: 240 - 240.3 Moderate (Alt) Fault>>			
240.66	**242.00**	**RHYc**	**Rhyolite coherant volcanics**

End of Hole @ 242

FMG

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
220.50	221.24	0.74	B00269534	124	0.664	0.39	3.45	7.65
221.24	221.54	0.30	B00269535	0.9	-0.005	-0.01	-0.01	0.01
221.54	223.04	1.50	B00269536	0.7	-0.005	-0.01	-0.01	0.01
223.04	224.10	1.06	B00269537	1	-0.005	-0.01	0.01	0.04
224.10	225.51	1.41	B00269538	0.7	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-292

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Jerome de Pasquale	Date Logging Start:	12-Oct-15
UTM Easting	415157	Core Size:	HQ3	Azimuth:	219.81	Date Logging Complete:	16-Oct-15
UTM Northing:	6815158	Casing Pulled?:	Yes	Dip:	-80	Drill Company:	Geotech
UTM Elev. (m):	1411.79	Casing Depth (m):	18	Length (m):	312	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-292 (fault block) was drilled in order to target TTK4 and EM conductor.
The upper units are made up of volcaniclastic rhyolite crosscut by mafic and intermediate dykes. From 124.12m to 170.48m, the hole intercepted a fault and shear zone. This major structure is followed two massive sulfide lens (OB domains, from 170.48m to 171.48m and 174.64m to 176.50m). The footwall consists of folded muscovite altered rhyolite followed by a CL-BI-CA altered mafic sill at 181.13m.
In the mafic unit, the drill hole intercepts a third massive sulfide lens, mineralized PY-SP-CP-GL-MG, from 217.15m to 243.00m (OA, OB, OG, and OI domains) and a narrow one from 247.25m to 248.41m (OB and OF domains) immediately followed by a felsic sequence (rhyolite).
A fault is encountered approximately where the intercept of the upper lens of hole K15-282 was projected. The two upper massive sulfide lenses could be the same one, crosscut twice due to offset (repetition of the sequence).
The interval in between the upper and the lower lenses in K15-292 is about the same than observed in K15-282 (around 50 metres).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-80	219.81	0	219.81	APS	Jerome de Pasquale	10-Oct-15		☑	
27	-80.1	197.3	22.5	219.8	ReflexEZS	Geotech	10-Oct-15	5791	☑	
55	-79.4	194.8	22.5	217.3	ReflexEZS	Geotech	11-Oct-15	5795	☑	
81	-79.5	195.2	22.5	217.7	ReflexEZS	Geotech	11-Oct-15	5876	☑	
111	-80	192	22.5	214.5	ReflexEZS	Geotech	11-Oct-15	5746	☑	
141	-80.6	190.4	22.5	212.9	ReflexEZS	Geotech	11-Oct-15	5782	☑	
171	-80.4	196.8	22.5	219.3	ReflexEZS	Geotech	12-Oct-15	5775	☑	
204	-79.9	198.9	22.5	221.4	ReflexEZS	Geotech	13-Oct-15	5798	☑	
237	-79.9	197.3	22.5	219.8	ReflexEZS	Geotech	13-Oct-15	5802	☑	
264	-79.7	197	22.5	219.5	ReflexEZS	Geotech	13-Oct-15	5874	☑	
297	-78.5	192	22.5	214.5	ReflexEZS	Geotech	13-Oct-15	5742	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.50**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 0 - 17.2 Weak (Alt) Fault>> Sheared and fracturated near surface, sandy gouge, oxidized.

8.50 23.90 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

8.5 - 23.9: Folded, MU altered.

<<Min: 18 - 111.3 1% Min: Pyrite>> Locally aggregated.

<<Min: 18 - 111.3 1% Min: Pyrrhotite>> Locally aggregated

23.90 35.00 RHYva Coarse grained to ash tuff grey-green

<<Min: 23.9 - 44.06 5% Min: Calcite>> and veinlets.

35.00 37.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige

35 - 37: Could be large blocks

37.00 39.50 RHYvl Lapilli tuff grey-green

39.50 41.50 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

39.5 - 41.5: Could be large blocks

<<Struc: 40 - 41 Moderate (Alt) Shear>> Faulyt breccia, PY, crenulation. Zone of multiple unit contact.

41.50 44.06 RHYvl Lapilli tuff grey-green

<<Vein: 43.08 - 43.57 Quartz>> QZ

<<Struc: 41.96 - 41.97 dominant foliation>>

44.06 45.09 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

44.06 - 45.09: Dyke, CA rich.

<<Min: 44.06 - 45.09 15% Min: Calcite>>

45.09 48.00 RHYvl Lapilli tuff grey-green

<<Min: 45.09 - 48 5% Min: Calcite>>

48.00 50.28 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

48 - 50.28: Dyke, chill margin.

<<Min: 48 - 50.28 10% Min: Calcite>>

50.28 54.78 RHYvl Lapilli tuff grey-green

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 50.28 - 54.78 3% Min: Calcite>>

54.78 56.78 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

54.78 - 56.78: Dyke, CA rich. Could be mafic tuff.

<<Min: 54.78 - 56.97 15% Min: Calcite>>

56.78 62.38 RHYvl Lapilli tuff grey-green

56.78 - 62.38: Shear zone, flow mixed with RHYvl, fault gouge. Probably peperitic texture.

<<Min: 56.97 - 62.38 3% Min: Calcite>>

<<Struc: 56.97 - 60 Moderate (Alt) Shear>> Fault breaccia, same type than at 41m. Almost the same context, contact flow and volcaiclastic unit. Could be considered as strong structure because repeated.

62.38 63.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

62.38 - 63.1: CA rich.

<<Min: 62.38 - 63.1 5% Min: Calcite>>

63.10 78.83 RHYva Coarse grained to ash tuff grey-green

<<Min: 63.1 - 78.83 3% Min: Calcite>>

<<Vein: 75.62 - 76.45 Quartz-Pyrite 20 deg. >> veinlet set, PY-QZ

<<Struc: 71.24 - 71.8 Weak (Alt) Fault>> Fault breccia, clasts up to 1 cm.

<<Struc: 71.8 - 71.81 Fault>> Fracture atcontact with fault gouge.

78.83 79.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

78.83 - 79.6: CA rich. Upper contact blurry, could be the edge of the dyke (mixed with rhyolite).

<<Min: 78.83 - 79.6 10% Min: Calcite>>

79.60 85.50 RHYva Coarse grained to ash tuff grey-green

<<Min: 79.6 - 111.3 1% Min: Calcite>>

85.50 109.03 RHYvl Lapilli tuff grey-green

<<Alt: 87.49 - 114.26 Weak (Alt) Muscovite>> Locally moderate.

<<Vein: 87.65 - 87.68 Tourmaline-Sulphide 30 deg. >> PY-TML, penetrating foliation

<<Vein: 91.2 - 91.21 Quartz-Tourmaline 28 deg. >> QZ, probably TML

<<Struc: 90 - 102 Weak (Alt) Fault>> Multiple minor faults and broken zone.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.03	**111.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**light grey**									
109.03 - 111.3: Mineralized PY-PO, CA in matrix,													
111.30	**115.40**	**RHY**	**undifferentiated rhyolite**		111.30	112.30	1.00	B00265101	0.9	-0.005	-0.01	-0.01	-0.01
111.3 - 115.4: Could be RHYi. QZ veins or local silicification, PY-PO veinlets, could be relic of the highest mineralized lens (pitching).													
<<Min: 111.3 - 115.4 2% Min: Pyrite>>					112.30	113.30	1.00	B00265102	0.3	-0.005	-0.01	-0.01	0.04
<<Min: 111.3 - 115.4 2% Min: Pyrrhotite>>					113.30	114.30	1.00	B00265103	1.2	-0.005	-0.01	-0.01	-0.01
<<Alt: 111.3 - 115.4 Strong (Alt) Chlorite>> Could be related totheupper mineralized lens or just CL comingwiththe QZ veins.					114.30	115.30	1.00	B00265104	0.4	-0.005	-0.01	-0.01	-0.01
<<Alt: 114.26 - 124.12 Moderate (Alt) Muscovite>>													
<<Vein: 111.3 - 115.4 Quartz>> Multiple QZ vein. Could be associated with CL.													
115.40	**124.12**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**									
115.4 - 124.12: PO patch at lower contact.													
<<Min: 115.4 - 169.2 1% Min: Calcite>>													
<<Alt: 115.4 - 117.77 Moderate (Alt) Silicification>> Green-grey alteration.													
<<Struc: 124.1 - 135.1 Strong (Alt) Fault>> Fault gouge dominantly containing PY fragments, RHY, grey and dark grey clay. Quartz fragments up to 5cm,													
124.12	**135.10**	**FBX**	**Fault Breccia**										
124.12 - 135.1: Grey-black clay containing sulfide clasts and rhyolite, few CA.													
<<Struc: 134.8 - 134.81 Fault>> Main angle of te shear zone (avarage).													
135.10	**159.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**									
135.1 - 159: Deformed, shear fabric. Relic of QZ-TML veinlets penetrating foliation, shallow angle, confirming RHY unit.													
<<Alt: 135.1 - 170.48 Strong (Alt) Muscovite>> Locally moderate.													
<<Vein: 145.7 - 145.75 Quartz-Tourmaline>> QZ-TML vein deformed and sheared In the fault zone. CL.													
<<Struc: 135.1 - 159 Strong (Alt) Shear>> In RHY.													
159.00	**165.00**	**FBX**	**Fault Breccia**		163.50	165.00	1.50	B00265105	0.4	0.008	-0.01	-0.01	-0.01
159 - 165: Probably mostly rhyolitic clasts.													
<<Struc: 159 - 164.85 Strong (Alt) Fault>> Fault breccia.													
<<Struc: 164.85 - 170.48 Strong (Alt) Shear>> In RHY.													

From (m)	To (m)		Rocktype & Description		
165.00	**170.48**	**RHY**	**undifferentiated rhyolite**	**grey-green**	

165 - 170.48: MxSx preserved in QZ vein, QZ-CL at lower contact.

<<Min: 169.2 - 170.48 3% Min: Calcite>>

170.48	**171.48**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**

<<Min: 170.48 - 171.48 8% Min: Sphalerite>>

<<Min: 170.48 - 171.48 60% Min: Pyrite>>

<<Min: 170.48 - 171.48 2% Min: Galena>>

<<Min: 170.48 - 171.48 10% Min: Calcite>>

<<Struc: 170.48 - 170.49 Contact>> RHY/MxSx

171.48	**173.54**	**RHY**	**undifferentiated rhyolite**	**grey-green**	

171.48 - 173.54: Could be flow banded. Folded, crenulations, locally fault gouge.

<<Min: 171.48 - 173.54 3% Min: Calcite>>

<<Min: 173.29 - 173.37 3% Min: Pyrrhotite>> Elongated in the primary foliation and crosscutting the secondary foliation.

<<Struc: 171.48 - 171.49 Contact>> MxSx/RHY

173.54	**174.64**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	

<<Min: 173.54 - 174.54 10% Min: Calcite>> And vein in MAFi.

<<Min: 174.54 - 176.5 3% Min: Galena>>

<<Min: 174.54 - 176.5 15% Min: Calcite>>

<<Alt: 173.54 - 174 Moderate (Alt) Biotite>>

174.64	**175.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**

174.64 - 175.2: Interbedded with probably MAFi.

<<Min: 174.64 - 176.5 5% Min: Sphalerite>>

<<Min: 174.64 - 176.5 60% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
165.00	167.50	2.50	B00265106	1.2	0.011	-0.01	-0.01	-0.01
167.50	169.00	1.50	B00265107	36.3	0.106	0.01	0.52	0.87
169.00	170.48	1.48	B00265108	1	0.011	-0.01	-0.01	-0.01
170.48	171.48	1.00	B00265109	317	1.34	0.22	4.87	8.72
171.48	172.48	1.00	B00265112	21	0.163	0.06	0.27	0.65
172.48	173.54	1.06	B00265113	4	0.019	-0.01	0.03	0.01
173.54	174.64	1.10	B00265114	1.4	0.007	-0.01	0.02	0.05
174.64	175.20	0.56	B00265115	264	1.01	0.15	3.81	5.86

From (m)	To (m)		Rocktype & Description		
175.20	**176.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FG**
175.2 - 176.5: Faulted lower contact. Could be the same lens than at 170.48 (off set and same sequence).					
176.50	**181.13**	**RHY**	**undifferentiated rhyolite**	**grey-green**	
176.5 - 181.13: Probably flow, QZ rich, locally folded and sulfide rich.					
<<Min: 180.52 - 186 10% Min: Calcite>>					
<<Alt: 180.13 - 217.15 Strong (Alt) Chlorite>>					
<<Vein: 179.24 - 182 Quartz>> Multiple QZ veins.					
181.13	**217.15**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	
181.13 - 217.15: Sharp upper contact. CA decreasing. BI rich at lower contact.					
<<Min: 186 - 208.55 1% Min: Calcite>>					
<<Min: 208.55 - 217.15 3% Min: Calcite>> Increase at lower contact.					
<<Alt: 210 - 217.15 Strong (Alt) Biotite>>					
217.15	**225.30**	**OA**	**Magnetite bearing sulphides**		**FMG**
<<Min: 217.15 - 225.3 15% Min: Sphalerite>>					
<<Min: 217.15 - 225.3 30% Min: Pyrite>>					
<<Min: 217.15 - 225.3 0.5% Min: Pyrrhotite>>					
<<Min: 217.15 - 225.3 10% Min: Magnetite>>					
<<Min: 217.15 - 225.3 5% Min: Galena>>					
<<Min: 217.15 - 225.3 1% Min: Chalcopyrite>>					
<<Min: 217.15 - 225.3 0.5% Min: Calcite>>					
225.30	**225.81**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FG**
<<Min: 225.3 - 225.81 2% Min: Sphalerite>>					
<<Min: 225.3 - 225.81 60% Min: Pyrite>>					
<<Min: 225.3 - 225.81 0.5% Min: Galena>>					

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
175.20	175.79	0.59	B00265116	330	3.09	1.52	4.83	8.59
175.79	176.50	0.71	B00265117	262	0.986	0.73	3.31	8.05
176.50	178.95	2.45	B00265118	4.5	0.025	-0.01	0.03	0.05
178.95	179.45	0.50	B00265119	2.4	0.011	-0.01	0.02	0.04
179.45	180.45	1.00	B00265121	11.2	0.039	-0.01	0.1	0.02
212.65	214.15	1.50	B00265122	-0.3	-0.005	-0.01	-0.01	0.01
214.15	215.65	1.50	B00265123	-0.3	0.007	-0.01	-0.01	0.01
215.65	217.15	1.50	B00265124	2.5	0.011	-0.01	0.04	0.02
217.15	218.00	0.85	B00265125	271	1.17	0.81	6.17	9.08
218.00	219.00	1.00	B00265126	266	2.18	0.48	6.97	8.02
219.00	220.00	1.00	B00265127	242	0.666	0.13	6.43	8.56
220.00	221.00	1.00	B00265128	294	0.848	0.09	6.61	8.14
221.00	222.00	1.00	B00265129	341	1.2	0.09	5.7	6.93
222.00	223.00	1.00	B00265132	257	1.1	0.06	6.01	6.98
223.00	224.00	1.00	B00265133	218	1.13	0.42	6.28	7.92
224.00	224.59	0.59	B00265134	258	1.04	0.35	6.53	8.26
224.59	225.30	0.71	B00265135	254	1.54	0.68	5.67	7.41
225.30	225.81	0.51	B00265136	217	1.15	0.01	4.61	5.36

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
225.81	**226.70**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	225.81	226.70	0.89	B00265137	282	1.9	0.37	5.07	5.84
<<Min: 225.81 - 226.7 5% Min: Sphalerite>>													
<<Min: 225.81 - 226.7 25% Min: Pyrite>>													
<<Min: 225.81 - 226.7 5% Min: Magnetite>>													
<<Min: 225.81 - 226.7 1% Min: Galena>>													
<<Min: 225.81 - 226.7 2% Min: Chalcopyrite>>													
226.70	**227.55**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	226.70	227.55	0.85	B00265138	325	1.96	0.31	4.89	6.13
<<Min: 226.7 - 227.55 3% Min: Sphalerite>>													
<<Min: 226.7 - 227.55 20% Min: Pyrite>> DIS and wispy bands around lithic clasts													
<<Min: 226.7 - 227.55 3% Min: Galena>>													
<<Min: 226.7 - 227.55 0.5% Min: Chalcopyrite>>													
<<Min: 226.7 - 227.55 1% Min: Calcite>>													
227.55	**232.01**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	227.55	228.17	0.62	B00265139	375	2.53	1.31	4.73	14.5
227.55 - 232.01: Locally brecciated. MAFi fabric visible.													
<<Min: 227.55 - 232.01 20% Min: Sphalerite>>					228.17	229.00	0.83	B00265141	433	1.61	0.64	5.4	13.7
<<Min: 227.55 - 232.01 40% Min: Pyrite>>					229.00	230.00	1.00	B00265142	400	1.66	0.38	5.01	8.53
<<Min: 227.55 - 232.01 5% Min: Galena>>					230.00	231.00	1.00	B00265143	348	1.48	0.07	5.36	9.2
<<Min: 227.55 - 232.01 3% Min: Chalcopyrite>>					231.00	231.50	0.50	B00265144	222	1.91	0.47	3.05	6.21
<<Min: 227.55 - 232.01 3% Min: Calcite>>					231.50	232.01	0.51	B00265145	329	2.18	0.59	4.53	8.8
232.01	**232.51**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	232.01	232.51	0.50	B00265146	355	2.32	1.14	4.68	11.3
<<Min: 232.01 - 232.51 15% Min: Sphalerite>>													
<<Min: 232.01 - 232.51 35% Min: Pyrite>>													
<<Min: 232.01 - 232.51 5% Min: Magnetite>>													
<<Min: 232.01 - 232.51 5% Min: Galena>>													
<<Min: 232.01 - 232.51 2% Min: Chalcopyrite>>													
<<Min: 232.01 - 232.51 2% Min: Calcite>>													
<<Min: 232.01 - 234.98 5% Lith: Graphite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 232.01 - 234.98 10% Min: Calcite>>													
232.51	**234.98**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	232.51	233.01	0.50	B00265147	309	1.94	1.13	4.19	14.1
<<Min: 232.51 - 234.98 30% Min: Sphalerite>>					233.01	234.00	0.99	B00265148	421	2.08	2.15	5.03	12.7
<<Min: 232.51 - 234.98 40% Min: Pyrite>>					234.00	234.98	0.98	B00265149	322	1.78	1.09	4.08	10.7
<<Min: 232.51 - 234.98 3% Min: Chalcopyrite>>													
234.98	**235.57**	**OG**	**Chalcopyrite rich sulphides**	**FG**	234.98	235.57	0.59	B00265152	286	4.76	5.1	2.1	8.29
<<Min: 234.98 - 235.57 10% Min: Sphalerite>>													
<<Min: 234.98 - 235.57 30% Min: Pyrite>>													
<<Min: 234.98 - 235.57 1% Min: Galena>>													
<<Min: 234.98 - 235.57 30% Min: Chalcopyrite>>													
<<Min: 234.98 - 235.57 10% Min: Calcite>>													
235.57	**237.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	235.57	236.27	0.70	B00265153	225	1.46	0.72	3.15	9.79
<<Min: 235.57 - 237 25% Min: Sphalerite>>					236.27	237.00	0.73	B00265154	222	2.72	1.13	3.12	10.3
<<Min: 235.57 - 237 35% Min: Pyrite>>													
<<Min: 235.57 - 237 1% Min: Galena>>													
<<Min: 235.57 - 237 0.1% Min: Chalcopyrite>>													
<<Min: 235.57 - 237 5% Min: Calcite>>													
237.00	**237.56**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	237.00	237.56	0.56	B00265155	328	2.3	1.25	5.01	17.7
<<Min: 237 - 237.56 40% Min: Sphalerite>>													
<<Min: 237 - 237.56 20% Min: Pyrite>>													
<<Min: 237 - 237.56 5% Min: Galena>>													
<<Min: 237 - 237.56 5% Min: Chalcopyrite>>													
<<Min: 237 - 237.56 10% Min: Calcite>>													
237.56	**238.50**	**OG**	**Chalcopyrite rich sulphides**	**FMG**	237.56	238.50	0.94	B00265156	319	3.49	3.1	4.64	15.2
<<Min: 237.56 - 238.5 30% Min: Sphalerite>>													
<<Min: 237.56 - 238.5 25% Min: Pyrite>>													
<<Min: 237.56 - 238.5 1% Min: Magnetite>>													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 237.56 - 238.5 5% Min: Galena>>												
<<Min: 237.56 - 238.5 25% Min: Chalcopyrite>>												
<<Min: 237.56 - 238.5 10% Min: Calcite>>												
238.50	**239.65**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	238.50	239.11	0.61	B00265157	284	1.48	1.03	6.45	18
<<Min: 238.5 - 239.65 40% Min: Sphalerite>>				239.11	239.65	0.54	B00265158	311	2.6	1.06	5.57	12.1
<<Min: 238.5 - 239.65 20% Min: Pyrite>> Wispy bands												
<<Min: 238.5 - 239.65 5% Min: Galena>>												
<<Min: 238.5 - 239.65 2% Min: Chalcopyrite>>												
<<Min: 238.5 - 239.65 3% Min: Calcite>>												
<<Min: 239.5 - 240.35 3% Min: Calcite>>												
239.65	**240.35**	**OG** **Chalcopyrite rich sulphides**	**FMG**	239.65	240.35	0.70	B00265159	343	3.98	6.54	3.36	9.56
<<Min: 239.65 - 240.35 5% Min: Sphalerite>>												
<<Min: 239.65 - 240.35 10% Min: Pyrite>>												
<<Min: 239.65 - 240.35 10% Min: Pyrrhotite>>												
<<Min: 239.65 - 240.35 1% Min: Galena>>												
<<Min: 239.65 - 240.35 30% Min: Chalcopyrite>>												
240.35	**241.75**	**OI** **Heavilly disseminated sulphides in host schist**	**FMG**	240.35	241.00	0.65	B00265161	207	1.71	1.33	2.84	8.37
<<Min: 240.35 - 241.75 5% Min: Sphalerite>>				241.00	241.75	0.75	B00265162	241	1.95	0.23	2.89	6.89
<<Min: 240.35 - 241.75 30% Min: Pyrite>>												
<<Min: 240.35 - 241.75 5% Min: Pyrrhotite>>												
<<Min: 240.35 - 241.75 1% Min: Magnetite>>												
<<Min: 240.35 - 241.75 2% Min: Galena>>												
<<Min: 240.35 - 241.75 0.5% Min: Chalcopyrite>>												
<<Min: 240.35 - 241.75 5% Min: Calcite>>												
241.75	**243.00**	**OI** **Heavilly disseminated sulphides in host schist**	**FG**	241.75	242.30	0.55	B00265163	49.4	1.67	0.23	0.43	3.86
<<Min: 241.75 - 243 10% Min: Sphalerite>>				242.30	243.00	0.70	B00265164	197	1.24	0.07	3.29	8.15
<<Min: 241.75 - 243 10% Min: Pyrite>> Diss in wispy bands												
<<Min: 241.75 - 243 10% Min: Pyrrhotite>> Diss in wispy bands												
<<Min: 241.75 - 243 2% Min: Magnetite>>												

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 241.75 - 243 2% Min: Galena>>														
<<Min: 241.75 - 243 0.5% Min: Chalcopyrite>>														
<<Min: 241.75 - 243 3% Min: Calcite>>														
243.00	**247.25**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**			243.00	244.00	1.00	B00265165	3.8	0.066	-0.01	0.05	0.09
<<Min: 243 - 247.25 15% Min: Calcite>>						244.00	245.00	1.00	B00265166	4.1	0.034	-0.01	0.04	0.07
						245.00	246.25	1.25	B00265167	2.8	0.026	-0.01	0.04	0.07
						246.25	247.25	1.00	B00265168	3.5	0.025	-0.01	0.06	0.05
247.25	**247.91**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**		247.25	247.91	0.66	B00265169	45.2	0.16	0.28	0.59	2.86
<<Min: 247.25 - 247.91 10% Min: Sphalerite>>														
<<Min: 247.25 - 247.91 55% Min: Pyrite>>														
<<Min: 247.25 - 247.91 3% Min: Magnetite>>														
<<Min: 247.25 - 247.91 0.5% Min: Galena>>														
<<Min: 247.25 - 247.91 0.1% Min: Chalcopyrite>>														
247.91	**248.41**	**OF**	**Pyrrhotite rich sulphides**			247.91	248.41	0.50	B00265171	68.4	0.174	1.01	0.39	8.3
<<Min: 247.91 - 248.41 2% Min: Sphalerite>>														
<<Min: 247.91 - 248.41 70% Min: Pyrrhotite>>														
<<Min: 247.91 - 248.41 2% Min: Chalcopyrite>>														
248.41	**257.92**	**RHYvl**	**Lapilli tuff**	**grey-green**		248.41	249.90	1.49	B00265172	2.2	0.008	0.03	0.02	0.29
248.41 - 257.92: With AK, PY(sometime euhedral) and PO patch, few TML.														
<<Min: 248.41 - 273 2% Min: Pyrite>>						249.90	251.40	1.50	B00265173	0.7	0.006	0.01	-0.01	0.02
<<Min: 248.41 - 273 1% Min: Pyrrhotite>> Elongated.						251.40	252.90	1.50	B00265174	0.6	-0.005	-0.01	-0.01	0.03
<<Min: 255.5 - 282 2% Min: Calcite>>														
<<Alt: 248.41 - 261 Moderate (Alt) Muscovite>>														
<<Struc: 251.6 - 251.72 Moderate (Alt) Fault>> Fault breccia, minor.														
257.92	**259.31**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**black**										
257.92 - 259.31: Probably foliated dyke interbedded with RHY.CA in matrix, altered CL.														
<<Struc: 258.09 - 258.1 dominant foliation>>														

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

259.31 286.45 RHYvl Lapilli tuff grey-green

259.31 - 286.45: BI-sulfide rich bands from 273 to 276m. Few TML. Sheared locally. CL-BI. Strongly sericitic.

<<Min: 273 - 276 1% Min: Pyrrhotite>>

<<Min: 273 - 288 0.5% Min: Pyrrhotite>>

<<Min: 273 - 296 3% Min: Pyrite>>

<<Min: 282 - 312 2% Min: Calcite>>

<<Alt: 261 - 312 Weak (Alt) Muscovite>>

<<Alt: 279.35 - 287.45 Moderate (Alt) Chlorite>>

<<Struc: 264.14 - 264.15 dominant foliation>>

<<Struc: 272.6 - 272.61 dominant foliation>>

<<Struc: 274.65 - 274.66 dominant foliation>>

<<Struc: 275.95 - 275.96 dominant foliation>>

<<Struc: 278.94 - 278.95 dominant foliation>>

<<Struc: 279.66 - 279.67 dominant foliation>>

<<Struc: 282.28 - 282.29 dominant foliation>>

<<Struc: 283.35 - 286.15 Moderate (Alt) Fault>> Sheared over 1 metre, fault gouge.

286.45 296.60 RHY undifferentiated rhyolite grey-green

286.45 - 296.6: Probably RHYva. Few TML. Fractured from 299.50m to 312m.

<<Min: 288 - 303 2% Min: Pyrite>>

<<Alt: 294.9 - 305.1 Moderate (Alt) Silicification>>

<<Struc: 293.4 - 293.4 dominant foliation>>

296.60 312.00 RHYvl Lapilli tuff grey-green

296.6 - 312: Fractured from 299.50m to 312m. Few TML.

<<Min: 303 - 312 0.5% Min: Pyrrhotite>>

<<Alt: 305.1 - 312 Moderate (Alt) Silicification>>

<<Alt: 305.1 - 312 Moderate (Alt) Chlorite>>

<<Struc: 299 - 312 Moderate (Alt) Fault>> Multiple high density fracture and fault gouge up to 30 cm wide. Minor to moderate.

End of Hole @ 312

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-293

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Cooper Campbell
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Cooper Campbell	Date Logging Start:	14-Oct-15
UTM Easting	414598	Core Size:	NQ3	Azimuth:	180.7	Date Logging Complete:	16-Oct-15
UTM Northing:	6815652	Casing Pulled?:	Yes	Dip:	-86	Drill Company:	Geotech
UTM Elev. (m):	1445.64	Casing Depth (m):	3.7	Length (m):	239	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	13-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of this hole was to test the continuity/extension of the lower MET 4 magnetite sulphide lens. No significant sulphide lens was intersected in this hole. Low grade OI and OJ ore types were intercepted.

The upper portion of this hole consists primarily of intercalated RHYcw, RHYvx, RHYva, and RHYvl intruded by MAFi. The mudstone units intersected in ABM4 (K15-289) become very narrow in this hole and consist only of MDSt. A major lens of massive sulphide was not intersected. Low grade OI and OJ was intersected from 147.09-148.10m, and 149.23-155.3m. RHYi was intersected from 180.7-198.15m. This is close to where the massive sulphide zone was anticipated. The weakly mineralized zone of OI, and OJ could represent the down dip expression of the massive sulphide zone. RHYc, RHYcw, and RHYvl were intersected below the weakly mineralized zone.

A small zone of weak to moderate CI-CL zone was intersected above RHYi. There was associated pervasive MU-alteration surrounding the occurrences of heavily disseminated sulphide.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-86	180.7	0	180.7	APS	Cooper Campbell	11-Oct-15		☑	
26	-85.4	162.9	22.5	185.4	ReflexEZS	Geotech	11-Oct-15	5788	☑	
50	-85	172.1	22.5	194.6	ReflexEZS	Geotech	11-Oct-15	5783	☑	
77	-85.3	167.9	22.5	190.4	ReflexEZS	Geotech	11-Oct-15	5807	☑	
101	-85.5	165.5	22.5	188	ReflexEZS	Geotech	11-Oct-15	5775	☑	
125	-83.4	161.9	22.5	184.4	ReflexEZS	Geotech	12-Oct-15	5693	☑	
152	-83.2	169.8	22.5	192.3	ReflexEZS	Geotech	12-Oct-15	5759	☑	
176	-82.9	169.1	22.5	191.6	ReflexEZS	Geotech	13-Oct-15	5746	☑	
200	-82.4	167.1	22.5	189.6	ReflexEZS	Geotech	13-Oct-15	5781	☑	
224	-81.9	172.9	22.5	195.4	ReflexEZS	Geotech	13-Oct-15	5717	☑	
239	-81.2	175.1	22.5	197.6	ReflexEZS	Geotech	13-Oct-15	5779	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.70**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description
3.70	**6.77**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 3.7 - 76.15 5% Min: Calcite>>		
<<Min: 4.5 - 23.65 3% Min: Pyrite>>		
<<Min: 4.5 - 23.65 0.01% Min: Pyrrhotite>>		
<<Alt: 3.7 - 5.97 Moderate (Alt) Chlorite>>		
<<Alt: 3.7 - 63.82 Weak (Alt) Muscovite>>		
6.77	**18.13**	**RHYvl** **Lapilli tuff**
18.13	**23.71**	**RHYvl** **Lapilli tuff**
<<Min: 23.65 - 24.59 0.5% Min: Sphalerite>>		
<<Min: 23.65 - 24.59 0.01% Min: Pyrrhotite>>		
<<Alt: 18.13 - 18.78 Moderate (Alt) Chlorite>>		
<<Vein: 23.65 - 24.59 50% Quartz-Carbonate-Sulphide 60 deg. >> QZ-CA-SP-PO		
23.71	**27.22**	**RHYvx** **Quartz and/or feldspar crystal tuff**
<<Min: 24.59 - 51.82 0.01% Min: Sphalerite>> FD		
<<Min: 24.59 - 51.82 0.01% Min: Pyrite>>		
<<Min: 24.59 - 51.82 0.5% Min: Pyrrhotite>> VN		
<<Min: 24.59 - 51.82 0.01% Min: Chalcopyrite>> FD		
27.22	**27.54**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 27.22 - 27.54 Weak (Alt) Chlorite>>		
27.54	**31.99**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
27.54 - 31.99: Looks like the pseudo-fragmental RHYcw from K15-289.		
31.99	**34.24**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Alt: 31.99 - 34.24 Weak (Alt) Chlorite>>		
34.24	**40.42**	**RHYv** **Rhyolite volcaniclastic**
<<Vein: 35.81 - 36.07 100% Quartz-Carbonate-Sulphide 80 deg. >> QZ-CA-PO-PY-SP-CP		
40.42	**41.59**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

41.59 52.18 RHYvl Lapilli tuff

41.59 - 52.18: Trace MAFi.

<<Min: 51.82 - 67.24 0.5% Min: Pyrite>>

<<Min: 51.82 - 67.24 3% Min: Pyrrhotite>> WIS

<<Alt: 41.59 - 53.53 Weak (Alt) Chlorite>>

52.18 52.51 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

52.51 53.23 RHYvl Lapilli tuff

53.23 62.00 RHYvl Lapilli tuff

<<Alt: 57.43 - 63.82 Weak (Alt) Chlorite>>

62.00 63.82 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

63.82 67.26 RHYvl Lapilli tuff

63.82 - 67.26: Trace Cippo? Toppo

<<Min: 63.82 - 73 0.01% Min: Sphalerite>> FD

<<Min: 63.82 - 73 0.5% Min: Pyrite>> VN

<<Min: 63.82 - 73 3% Min: Pyrrhotite>> VN

<<Min: 63.82 - 73 0.5% Min: Galena>> VN

<<Min: 63.82 - 73 0.01% Min: Chalcopyrite>>

<<Alt: 63.82 - 64.67 Trace (Alt) Chlorite>>

<<Alt: 63.82 - 64.82 Trace (Alt) Cordierite>>

<<Alt: 63.82 - 67.26 Weak (Alt) Muscovite>>

67.26 73.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

67.26 - 73: Trace RHYvl

<<Alt: 67.26 - 78.97 Weak (Alt) Muscovite>>

<<Alt: 70.08 - 73 Moderate (Alt) Muscovite>>

<<Vein: 70.17 - 73 90% Quartz-Carbonate-Sulphide 25 deg. >> QZ-AK-CA-TO-PY-PO-SP-GL-CP

73.00 74.58 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 73 - 83.01 0.5% Min: Sphalerite>> WIS

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 73 - 83.01 1% Min: Pyrite>> WIS

<<Min: 73 - 83.01 3% Min: Pyrrhotite>> DIS, VEN

<<Min: 73 - 83.01 0.01% Min: Galena>>

<<Min: 73 - 83.01 0.01% Min: Chalcopyrite>>

<<Alt: 73 - 78.05 Weak (Alt) Chlorite>>

74.58 78.97 RHYcf Feldspar & feldspar quartz porphyry

74.58 - 78.97: Trace MAFi.

<<Min: 76.15 - 89.41 0.5% Min: Calcite>>

78.97 83.01 RHYvl Lapilli tuff

			81.51	83.01	1.50	B00268358	0.7	-0.005	0.01	0.02	0.02

78.97 - 83.01: Trace RHYcw

<<Alt: 78.97 - 88.43 Weak (Alt) Muscovite>>

83.01 83.76 OI Heavilly disseminated sulphides in host schist

			83.01	83.76	0.75	B00268359	9	-0.005	0.04	0.4	1.02

<<Min: 83.01 - 83.76 3% Min: Sphalerite>>

<<Min: 83.01 - 83.76 1% Min: Pyrite>>

<<Min: 83.01 - 83.76 3% Min: Pyrrhotite>>

<<Min: 83.01 - 83.76 0.01% Min: Chalcopyrite>>

83.76 86.97 RHYvl Lapilli tuff

			83.76	85.26	1.50	B00268361	4.4	-0.005	0.03	0.08	0.1

<<Min: 83.76 - 88.43 0.5% Min: Sphalerite>> WIS

<<Min: 83.76 - 88.43 1% Min: Pyrite>> WIS

<<Min: 83.76 - 88.43 3% Min: Pyrrhotite>> DIS, VN

<<Min: 83.76 - 88.43 0.01% Min: Chalcopyrite>> VN

<<Alt: 84.84 - 86.97 Weak (Alt) Chlorite>>

86.97 88.43 RHYcw Curdy textured-flow banded (flows, subvolcanics)

88.43 94.43 RHYvl Lapilli tuff

88.43 - 94.43: Potentially pseudo-fragmental RHYcw.

<<Min: 88.43 - 96.51 0.01% Min: Sphalerite>>

<<Min: 88.43 - 96.51 0.5% Min: Pyrite>>

<<Min: 88.43 - 96.51 1% Min: Pyrrhotite>> BL

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 88.43 - 96.51 0.01% Min: Chalcopyrite>>

<<Min: 89.41 - 104.99 0.01% Min: Calcite>>

<<Alt: 88.43 - 130.96 Weak (Alt) Muscovite>>

94.43 96.51 RHYcw Curdy textured-flow banded (flows, subvolcanics)

94.43 - 96.51: Driller inserted "Dropped Core" block at 96.19m.

96.51 104.99 RHYvl Lapilli tuff

<<Min: 96.51 - 104.99 0.01% Min: Sphalerite>>

<<Min: 96.51 - 104.99 3% Min: Pyrite>> DIS

<<Min: 96.51 - 104.99 0.5% Min: Pyrrhotite>>

<<Min: 96.51 - 104.99 0.01% Min: Galena>>

<<Min: 96.51 - 104.99 0.01% Min: Chalcopyrite>>

<<Vein: 104.2 - 104.46 90% Carbonate-Sulphide 60 deg. >> AK-CA-CL-PY-PO-SP

104.99 108.51 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 104.99 - 112 0.01% Min: Pyrite>>

<<Min: 104.99 - 112 3% Min: Pyrrhotite>> VN

<<Min: 104.99 - 112 0.01% Min: Chalcopyrite>> Trace malachite on one joint.

<<Min: 104.99 - 112 30% Min: Calcite>>

<<Vein: 107.92 - 108.23 100% Carbonate-Chlorite 85 deg. >> CA-AK-CL-TO-BI-PO-PY-CP

108.51 110.58 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Alt: 108.96 - 112.43 Weak (Alt) Chlorite>>

110.58 112.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

112.00 115.93 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 112 - 123.16 20% Min: Calcite>> VN

<<Min: 112 - 123.78 0.01% Min: Sphalerite>> VN

<<Min: 112 - 123.78 0.5% Min: Pyrite>> WIS, FD

<<Min: 112 - 123.78 1% Min: Pyrrhotite>>

<<Min: 112 - 123.78 0.01% Min: Galena>>

From (m)	To (m)		Rocktype & Description
115.93	**116.53**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
116.53	**117.89**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
117.89	**119.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Vein: 118.96 - 123.27 20% Quartz-Carbonate-Sulphide 40 deg. >> QZ-CA-PO-SP-GL

119.00	**123.78**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 123.16 - 181 0.01% Min: Calcite>>

123.78	**129.90**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**

123.78 - 129.9: cm spaced cleavage typical of RHYcw. May be a RHYv.

<<Min: 123.78 - 130.96 1% Min: Pyrite>>

<<Min: 123.78 - 130.96 0.01% Min: Pyrrhotite>>

<<Min: 123.78 - 130.96 0.01% Min: Arsenopyrite>>

129.90	**130.96**	**MDSt**	**Rhyolite tuff dominant mudstone**

129.9 - 130.96: Strong fault gouge.

<<Struc: 129.92 - 130.96 Strong (Alt) Fault>>

130.96	**142.02**	**RHYvx**	**Quartz and/or feldspar crystal tuff**

<<Min: 130.96 - 142.02 3% Min: Pyrite>>

<<Alt: 130.96 - 138.91 Moderate (Alt) Muscovite>>

<<Alt: 138.91 - 142.75 Strong (Alt) Muscovite>>

<<Vein: 139 - 142.1 20% Quartz>> A zone with massive QZ veining

<<Struc: 130.96 - 132.77 Weak (Alt) Fault>>

<<Struc: 136.05 - 137.88 Weak (Alt) Fault>>

<<Struc: 140.9 - 141 Weak-Moderate (Alt) Fault>>

142.02	**147.09**	**RHYva**	**Coarse grained to ash tuff**

<<Min: 142.02 - 147.09 0.5% Min: Sphalerite>>

<<Min: 142.02 - 147.09 3% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
142.60	144.10	1.50	B00268362	1.9	-0.005	0.01	0.06	0.39
144.10	145.60	1.50	B00268363	15.9	0.005	-0.01	0.31	0.26
145.60	147.09	1.49	B00268364	1.1	-0.005	0.01	-0.01	0.23

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 142.02 - 147.09 0.01% Min: Chalcopyrite>>											
<<Alt: 142.75 - 147.09 Moderate (Alt) Muscovite>>											
<<Struc: 145.23 - 145.24 dominant foliation>>											
147.09	**148.10**	**OJ Heavilly disseminated sulphides in proximal altered rock**	147.09	148.10	1.01	B00268365	11.3	0.039	0.25	0.04	3.63
<<Min: 147.09 - 148.1 3% Min: Pyrrhotite>>											
<<Alt: 147.09 - 148.44 Moderate (Alt) Chlorite>>											
<<Alt: 147.09 - 148.44 Weak (Alt) Cordierite>>											
148.10	**149.23**	**RHYva Coarse grained to ash tuff**	148.10	149.23	1.13	B00268366	1.1	-0.005	0.02	-0.01	0.17
<<Min: 148.1 - 149.23 0.5% Min: Sphalerite>>											
<<Min: 148.1 - 149.23 1% Min: Pyrite>>											
<<Alt: 148.44 - 149.23 Weak (Alt) Muscovite>>											
149.23	**151.00**	**OJ Heavilly disseminated sulphides in proximal altered rock**	149.23	150.00	0.77	B00268367	18	0.06	0.4	0.05	4.37
<<Min: 149.23 - 151 5% Min: Sphalerite>>			150.00	151.00	1.00	B00268368	3.3	-0.005	0.05	0.01	1.55
<<Min: 149.23 - 151 1% Min: Pyrite>>											
<<Min: 149.23 - 151 2% Min: Pyrrhotite>>											
<<Min: 149.23 - 151 1% Min: Galena>>											
<<Min: 149.23 - 151 1% Min: Chalcopyrite>>											
<<Alt: 149.23 - 150.7 Moderate (Alt) Muscovite>>											
<<Alt: 149.23 - 150.7 Moderate (Alt) Chlorite>>											
<<Alt: 149.23 - 150.7 Weak (Alt) Cordierite>>											
<<Alt: 150.7 - 151 Weak (Alt) Chlorite>>											
<<Alt: 150.7 - 175.05 Moderate (Alt) Muscovite>>											
151.00	**155.30**	**OI Heavilly disseminated sulphides in host schist**	151.00	152.00	1.00	B00268369	1.7	-0.005	0.06	0.01	1.94
<<Min: 151 - 155.3 3% Min: Sphalerite>>			152.00	152.90	0.90	B00268371	2.1	-0.005	0.07	0.02	2.8
<<Min: 151 - 155.3 1% Min: Pyrite>>			152.90	153.80	0.90	B00268372	3	-0.005	0.05	0.08	1.11
<<Min: 151 - 155.3 2% Min: Pyrrhotite>>			153.80	154.60	0.80	B00268373	3.2	-0.005	0.05	0.08	0.39
<<Min: 151 - 155.3 1% Min: Galena>>			154.60	155.30	0.70	B00268374	14.2	0.005	0.02	0.44	0.97
<<Alt: 154.95 - 156.9 Moderate (Alt) Chlorite>>											

From (m)	To (m)		Rocktype & Description
155.30	**162.20**	**RHYvl**	**Lapilli tuff**
<<Min: 155.3 - 159.1 2% Min: Sphalerite>>			
<<Min: 155.3 - 159.1 1% Min: Pyrrhotite>>			
<<Min: 159.1 - 160 0.5% Min: Pyrrhotite>>			
<<Min: 160 - 164.35 1% Min: Sphalerite>>			
<<Min: 160 - 164.35 1% Min: Pyrrhotite>>			
<<Min: 160 - 164.35 0.5% Min: Chalcopyrite>>			
<<Alt: 160 - 164.35 Weak (Alt) Chlorite>>			
162.20	**180.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**
<<Min: 164.35 - 172.5 2% Min: Sphalerite>>			
<<Min: 164.35 - 172.5 1% Min: Pyrrhotite>>			
<<Min: 172.5 - 175.05 0.5% Min: Sphalerite>>			
<<Min: 172.5 - 175.05 1% Min: Pyrrhotite>>			
<<Min: 175.05 - 180.7 3% Min: Pyrite>>			
<<Min: 175.05 - 180.7 1% Min: Pyrrhotite>>			
<<Alt: 172.5 - 175.05 Weak (Alt) Chlorite>>			
<<Alt: 175.05 - 179 Strong (Alt) Muscovite>>			
<<Alt: 179 - 180.7 Weak (Alt) Muscovite>>			
<<Struc: 175.75 - 175.76 dominant foliation>>			
180.70	**198.15**	**RHYi**	**Aphanitic Rhyolite (intrusion)**
<<Min: 180.7 - 198.15 2% Min: Sphalerite>>			
<<Min: 180.7 - 198.15 2% Min: Pyrite>>			
<<Min: 180.7 - 198.15 2% Min: Pyrrhotite>>			
<<Min: 181 - 194 5% Min: Calcite>>			
<<Min: 194 - 198.15 20% Min: Calcite>>			
<<Alt: 180.7 - 201.3 Moderate (Alt) Silicification>>			
<<Alt: 180.7 - 201.3 Moderate (Alt) Muscovite>>			
<<Struc: 181.34 - 181.35 dominant foliation>>			
<<Struc: 183.19 - 183.2 dominant foliation>>			
<<Struc: 189.02 - 189.03 dominant foliation>>			
198.15	**213.40**	**RHYc**	**Rhyolite coherant volcanics**
<<Min: 198.15 - 213.4 2% Min: Pyrite>>			

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
155.30	156.80	1.50	B00268375	1.6	-0.005	-0.01	0.04	0.3
156.80	158.30	1.50	B00268376	4	0.005	0.04	0.29	0.56
158.30	159.80	1.50	B00268377	1	-0.005	-0.01	0.03	0.09
159.80	161.30	1.50	B00268378	2.2	-0.005	0.03	0.06	0.48
161.30	162.20	0.90	B00268379	0.6	-0.005	-0.01	-0.01	0.02
162.20	163.20	1.00	B00268381	2.3	-0.005	0.05	0.06	0.5
163.20	164.35	1.15	B00268382	7	-0.005	0.01	0.17	0.82

From (m)	To (m)	Rocktype & Description

<<Min: 198.15 - 239 0.5% Min: Calcite>>
<<Struc: 198.16 - 198.17 dominant foliation>>
<<Struc: 202.87 - 202.88 dominant foliation>>
<<Struc: 205.18 - 205.19 dominant foliation>>

213.40 239.00 RHYvl Lapilli tuff

213.4 - 239: Rhyolitic lpl in a green CL+QZ+/-MU groundmass

<<Min: 213.4 - 239 2% Min: Pyrite>>
<<Min: 213.4 - 239 2% Min: Pyrrhotite>>
<<Alt: 213.4 - 239 Weak (Alt) Chlorite>>
<<Vein: 236.2 - 236.7 70% Quartz>> 2 QZ+CL+CA veins
<<Struc: 217.29 - 217.3 dominant foliation>>
<<Struc: 220.74 - 220.75 dominant foliation>>
<<Struc: 223.79 - 223.8 Vein>> Small CA-CL veinlet
<<Struc: 227.13 - 227.14 Vein>> Small CA veinlet
<<Struc: 229.72 - 229.73 dominant foliation>>

End of Hole @ 239

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-294

Prospect:	GP4F	Hole Type:	DD	Survey Type:	APS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Murray Jones	Date Logging Start:	12-Oct-15
UTM Easting	419406	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	17-Oct-15
UTM Northing:	6813500	Casing Pulled?:	Yes	Dip:	-85	Drill Company:	Geotech
UTM Elev. (m):	1377	Casing Depth (m):	0.3	Length (m):	306	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	16-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole was designed fill in a gap on Section 9450E. No massive sulphide was encountered but lesser sulphide mineralization was intersected at the GP4F horizon.

K15-294 intersected a dark sedimentary unit over the first 12m and then primarily felsic volcanic rocks, rhyolite lapilli tuff and coherenet rhyolite commonly with bluish quartz eyes, with minor MAFi and sediment to about 294 m depth. A short stretch of darkly coloured, BI-rich sediment occurs in a fault zone at the bottom of the hole but it is difficult to determine if this is the carbonaceous sediments seen at depth in hole K15-261 and K15-280.

Moderate to intense chlorite, biotite, cordierite and garnet alteration is present from approximately 223 to 254 m. This is accompanied by pyrrhotite-pyrite and strong stringer to wispy-style sphalerite-galena and chalcopyrite mineralization from 226m to 246 metres. Another zone of primarily pyrrhotite-pyrite mineralization occurs from 267 to 269 m, along with cordierite-biotite alteration.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-85	180	0	180	APS	Murray Jones	11-Oct-15		☑	
30	-83.3	159.6	22.4	182	ReflexEZS	Geotech	12-Oct-15	5753	☑	
60	-82.2	152.5	22.4	174.9	ReflexEZS	Geotech	12-Oct-15	5752	☐	
90	-82.1	159.8	22.4	182.2	ReflexEZS	Geotech	12-Oct-15	5710	☑	
120	-82.1	158.7	22.4	181.1	ReflexEZS	Geotech	13-Oct-15	5757	☑	
150	-81.5	153.5	22.4	175.9	ReflexEZS	Geotech	13-Oct-15	5733	☐	
180	-81.1	161.1	22.4	183.5	ReflexEZS	Geotech	13-Oct-15	5749	☑	
210	-79.3	159.4	22.4	181.8	ReflexEZS	Geotech	13-Oct-15	5694	☑	
240	-77.9	297.2	22.4	319.6	ReflexEZS	Geotech	13-Oct-15	2421	☐	Value not accepted due, low magnetic field
270	-75.4	154	22.4	176.4	ReflexEZS	Geotech	13-Oct-15	5759	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**0.30**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.30 12.00 SED undifferentiated Sediment dark grey

0.3 - 12: ragged laminated black and lt grey coloured SED, not carbonaceous, quartzose in lenses, contorted locally, lt brown laminae after BI, cut by BIAC MAFi, CA lenses and wisps t/o

<<Min: 0.3 - 12 10% Min: Calcite>> CA in lenses with QZ? Interlayered with BI-rich layers in meta-sediment

12.00 13.88 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

12 - 13.88: faulted, gouge

<<Struc: 12 - 13.75 Moderate (Alt) Fault>> mostly gouge, fault hosts MAFi

13.88 51.61 RHYvx Quartz and/or feldspar crystal tuff dark grey FMG

13.88 - 51.61: dark grey to tan-green locally, RHYv with 1-4mm crystals of QZ and possibly FP (small, blocky), very dark locally due to varying BI content, BI as speckles and pervasive in groundmass, also as envelopes to fractures, BI-rich clasts locally, groundmass is well indurated, tan to grey, feldspathic, leucoxene(?) locally as well.

Unit is somewhat variable volcaniclastic rhyolite, with varying amounts of lapilli t/o, generally low concentrations, lt coloured, and small phenos present normally. Dark BI-rich clasts occur locally, e.g. between 31 and 35 m.

<<Min: 40.27 - 42.38 5% Min: Calcite>> in fractures, groundmass

<<Alt: 13.88 - 24 Weak (Alt) Silicification>> bleaching of groundmass around fractures

<<Alt: 50.3 - 51.61 Moderate (Alt) Silicification>> fractured zone a lower contact of RHYv

<<Alt: 50.3 - 51.61 Moderate (Alt) Muscovite>> bleaches rock

<<Alt: 50.3 - 51.61 Weak (Alt) Chlorite>> patchy in groundmass

<<Struc: 23.8 - 25.6 Moderate (Alt) Fault>> mostly broken, weathered core, minor gouge mixed in

51.61 55.08 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown MCG

51.61 - 55.08: BI to BI-AC rich, unit, strongly faulted and weathered, CA focused in weathered sections

55.08 67.66 RHYvx Quartz and/or feldspar crystal tuff grey FG

55.08 - 67.66: small bluish QE, continues from section above dyke, lapili appear at base below 66.9, in and out of unit

<<Min: 60 - 65.5 3% Min: Calcite>> or fractures and small patches

<<Min: 60 - 67.66 0.01% Min: Pyrite>> fine diss'ns

<<Min: 65.5 - 76.3 1% Min: Calcite>>

<<Alt: 60 - 65.7 Moderate (Alt) Muscovite>> almost silvery grey in sections

From (m)	To (m)	Rocktype & Description

<<Struc: 58.65 - 58.9 Moderate (Alt) Fault>> narrow gouge zone, overall not badly broken

<<Struc: 61.1 - 63.1 Moderate (Alt) Fault>> measured on QZ vein, oxidized section, hosts Dyke

67.66 80.10 RHYvl Lapilli tuff grey-green

67.66 - 80.1: scattered intervals of lapilli, generally <2 cm long, altered around large fault in lower half

<<Min: 67.66 - 80.1 0.5% Min: Pyrite>> and in fractures

<<Alt: 72.43 - 76.8 Moderate (Alt) Muscovite>> schistose partings more prevalent

<<Alt: 73.9 - 77.2 Moderate (Alt) Chlorite>> and bands, fades at fault boundary

<<Alt: 76.8 - 77.2 Moderate (Alt) Silicification>>

<<Alt: 76.8 - 79.75 Strong (Alt) Muscovite>> locally intense in fault between 77.20 and 79.75

<<Alt: 79.75 - 80.4 Weak (Alt) Garnet>> scattered pblasts adjacent to alt'n in fault zone

<<Struc: 69 - 70.8 Moderate (Alt) Fault>> about 1.2 m lost core

<<Struc: 77.2 - 79.75 Strong (Alt) Fault>> low angle fault, results in wide zone of alt'n in fault envelope

80.10 87.90 SEDc calcareous Sediment grey

80.1 - 87.9: patchy, speckled with TO pblast, greenish patches with calc-silicate(?), possible AC, minor RHYvl intervals, variable appearance partly due to proxiity of altered fault zone, and MAFI that wanders in an out of the core trace e.g. at bottom of section

<<Min: 80.1 - 87.9 0.5% Min: Pyrrhotite>> scattered

<<Struc: 81.6 - 81.8 Moderate (Alt) Vein>> TO vnlt with wide bleached alt'n envelope

87.90 115.38 RHYvl Lapilli tuff grey-brown MG

87.9 - 115.38: variable texture from conc'd lapilli to scattered lapilli to ash(?) locally, minor leucoxene locally, RHYc appears, disaggregated silicic bands from 104 to 110.4

<<Min: 87.9 - 106.61 0.5% Min: Pyrite>> minor fine diss'ns

<<Min: 104.1 - 106.61 1% Min: Pyrrhotite>> scattered, small diss'd patches

<<Min: 106.61 - 112.44 3% Min: Pyrite>> and in fractures

<<Min: 106.61 - 112.44 0.5% Min: Pyrrhotite>> in PY bands but local

<<Alt: 104.1 - 109.22 Moderate (Alt) Muscovite>> waxes and wanes a bit, stronger around QV's

<<Alt: 106.61 - 108.2 Moderate (Alt) Chlorite>> in fractures, discolours QV

<<Alt: 107.52 - 109.22 Moderate (Alt) Biotite>> fractures and with CL

<<Alt: 108.2 - 109.22 Strong (Alt) Chlorite>> with BI

<<Alt: 109.22 - 110.38 Strong (Alt) Muscovite>>

<<Alt: 110.38 - 112.44 Moderate (Alt) Muscovite>>

<<Alt: 110.38 - 112.44 Strong (Alt) Chlorite>> with BI

<<Alt: 110.38 - 112.44 Moderate (Alt) Biotite>> with CL

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
106.61	108.00	1.39	B00269325	-0.3	-0.005	-0.01	-0.01	-0.01
108.00	109.22	1.22	B00269326	0.4	-0.005	-0.01	-0.01	-0.01
109.22	110.38	1.16	B00269327	-0.3	-0.005	-0.01	-0.01	-0.01
110.38	111.40	1.02	B00269328	-0.3	-0.005	0.02	-0.01	0.01
111.40	112.44	1.04	B00269329	0.4	-0.005	0.02	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 91.6 - 91.74 10% Quartz-Tourmaline 10 deg. >> QZ-TO-CB gash vein, weak envelope,

<<Vein: 94.47 - 95.48 60% Quartz-Chalcopyrite 10 deg. >> QZ-CB, TO selvedges, CL-PY in fractures

<<Vein: 107.52 - 110.38 25% Quartz-Chalcopyrite>> QZ-CB? Veining, disaggregated, MU-CL-sx in fracs

115.38 121.80 RHYc Rhyolite coherant volcanics grey-brown FG

115.38 - 121.8: curdy texture more than flow banded, lapilli sections?

<<Min: 120.8 - 123.31 10% Min: Calcite>> and veins

121.80 123.31 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

121.8 - 123.31: calcareous

123.31 133.09 RHYvl Lapilli tuff grey-brown FMG

123.31 - 133.09: bluish to grey QE's, BI in groundmass, locally MU partings, siliceous, light coloured sections, Lapilli conc'd, fairly homogeneous section, minor QV's with EP? In fractures

<<Min: 126.6 - 129.91 3% Min: Pyrite>> as lenses, bands, in fractures

<<Min: 126.6 - 129.91 0.5% Min: Pyrrhotite>> scattered

<<Min: 129.91 - 131.4 10% Min: Calcite>> lenses and veins

<<Min: 133.01 - 135.38 25% Min: Calcite>> pervasive blebs,

133.09 137.38 SEDc calcareous Sediment brown FG

133.09 - 137.38: brownish to tan colour, bands, BI-MU in groundmass, siliceous lenses, well fol'd,

<<Alt: 137.2 - 140.5 Moderate (Alt) Muscovite>>

<<Struc: 136.6 - 136.9 Moderate (Alt) Fault>> gouge, broken core, CA veinlets

137.38 159.46 RHYvl Lapilli tuff grey-brown FG

137.38 - 159.46: lapilli generally <1 cm, sparse crystals, whitish QE?, locally ash tuff, TO pblasts scattered but common - fracture related?, looks sedimentary locally, bleached around faults, dykes.

<<Min: 137.38 - 158.67 1% Min: Pyrrhotite>> wisps and blebs scattered

<<Min: 151.4 - 156.77 10% Min: Calcite>>

<<Alt: 139 - 140.1 Moderate (Alt) Chlorite>> adjacent to MU altered fault

<<Struc: 153.4 - 155 Moderate (Alt) Fault>> broken core, weak measurement

159.46 181.08 RHYc Rhyolite coherant volcanics grey

159.46 - 181.08: RHYi?,scattered QE's (White to grey to blue) locally, rock has silicified appearance, MU/BI in groundmass as patches,bands, curdy or lapilli tx common, also massive silica, QE occur locally, not common, MU increases around faults, veins

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 159.46 - 173.5 0.01% Min: Pyrite>> rare
<<Min: 159.46 - 181.08 0.5% Min: Pyrrhotite>> diss'd
<<Min: 173.5 - 176 3% Min: Pyrite>> in bnds with CL
<<Alt: 159.46 - 164.9 Weak (Alt) Silicification>> glassy rock,
<<Alt: 164.9 - 167.52 Intense (Alt) Muscovite>> local bands of strong MU, interstitial to siliceous rock
<<Alt: 167.52 - 168.2 Moderate (Alt) Muscovite>>
<<Alt: 167.52 - 180 Weak (Alt) Silicification>> glassy
<<Alt: 169.1 - 175.75 Moderate (Alt) Muscovite>> focused around fault
<<Alt: 173.5 - 174.9 Moderate (Alt) Chlorite>> clots and minor bands, fracture coatings, with PY in bands
<<Vein: 166.6 - 167.1 30% Quartz>> QZ vns, trace PO, CL on margins
<<Vein: 169.1 - 169.3 5% Quarzt-Tourmaline-Sulphide 13 deg. >> TO-SI-PO vnlt,
<<Struc: 170 - 173.6 Moderate (Alt) Fault>> small gouge in broken rock

181.08 187.02 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

181.08 - 187.02: calcareous, cut by late QZ-CL-CB-PY veins

<<Min: 181.08 - 187.02 10% Min: Calcite>> in dyke primarily

187.02 209.80 RHYva Coarse grained to ash tuff grey-brown FG

187.02 - 209.8: silicfied locally?, schistose, MU or MU/BI in groundmass,

<<Min: 187.02 - 198 5% Min: Calcite>> in groundmass, associated with fault, in fractures
<<Min: 187.75 - 192.42 3% Min: Pyrite>> in bands, blebs, fractures and in fault gouge
<<Min: 192.42 - 198 0.5% Min: Pyrite>>
<<Min: 198 - 199.17 20% Min: Calcite>>
<<Min: 199.17 - 204.12 1% Min: Pyrrhotite>> scattered
<<Min: 199.17 - 209.8 3% Min: Calcite>> diss'd blebs
<<Min: 206.12 - 206.76 5% Min: Pyrite>> in bands
<<Min: 206.76 - 214.6 1% Min: Pyrrhotite>> scattered, also diss'ns in lenses
<<Alt: 187.75 - 195.5 Strong (Alt) Muscovite>> surrounds fault
<<Alt: 202.14 - 204.12 Moderate (Alt) Silicification>>
<<Alt: 204.12 - 206.12 Strong (Alt) Muscovite>>
<<Alt: 206.12 - 206.76 Moderate (Alt) Chlorite>> with PY
<<Alt: 206.76 - 208.8 Moderate (Alt) Muscovite>> minor BI bands
<<Struc: 187.75 - 196 Strong (Alt) Fault>> several strands, abundant lost core, gouge

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
209.80	**214.60**	**SED** **undifferentiated Sediment**	**grey-brown**	**FG**	210.60	212.10	1.50	B00269331	2.1	0.008	0.02	0.04	0.38
209.8 - 214.6: banded, schistose rock, BI-MU layers													
<<Min: 209.8 - 214.6 1% Min: Sphalerite>> in fractures, scattered diss'ns along fol'n					212.10	213.60	1.50	B00269332	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 209.8 - 214.6 5% Min: Calcite>> in sediment					213.60	214.60	1.00	B00269333	0.4	-0.005	-0.01	0.02	0.09
<<Alt: 209.8 - 211.7 Moderate (Alt) Muscovite>>													
214.60	**216.04**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	**MCG**	214.60	216.04	1.44	B00269334	2.3	0.017	0.05	0.16	0.65
214.6 - 216.04: recrystallized, calc-silicate, SX locally, dark margins in surrounding rocks, CL-BI alt'n													
<<Min: 214.6 - 216.04 3% Min: Pyrite>> along fol'n, in fracs													
<<Min: 214.6 - 216.04 5% Min: Pyrrhotite>> with PY, in fracs,veins													
<<Min: 214.6 - 216.04 3% Min: Calcite>>													
<<Alt: 214.6 - 216.04 Moderate (Alt) Chlorite>>													
<<Alt: 214.6 - 216.54 Moderate (Alt) Biotite>>													
216.04	**224.65**	**RHYvx** **Quartz and/or feldspar crystal tuff**	**grey-brown**	**FG**	216.04	217.50	1.46	B00269335	-0.3	-0.005	-0.01	-0.01	0.01
216.04 - 224.65: local zones of lapilli, and some RHYc?, alt'n is in and out, dark intervals with strong BI, SED layers?													
<<Min: 216.04 - 220.94 0.01% Min: Pyrite>>					217.50	219.00	1.50	B00269336	1.1	-0.005	-0.01	0.02	0.11
<<Min: 216.04 - 220.94 1% Min: Calcite>>					219.00	220.00	1.00	B00269337	-0.3	-0.005	0.01	-0.01	0.98
<<Min: 220.94 - 223.9 1% Min: Pyrite>>					220.00	220.94	0.94	B00269338	-0.3	-0.005	-0.01	-0.01	0.17
<<Min: 220.94 - 223.9 3% Min: Pyrrhotite>> along fol'n					220.94	222.44	1.50	B00269339	-0.3	0.045	-0.01	-0.01	0.15
<<Min: 220.94 - 223.9 3% Min: Calcite>> in alt'n zone?					222.44	223.90	1.46	B00269341	-0.3	0.006	-0.01	-0.01	-0.01
<<Min: 223.9 - 226.78 5% Min: Pyrite>> along fol'n					223.90	224.65	0.75	B00269342	0.5	0.01	0.12	-0.01	0.84
<<Min: 223.9 - 226.78 5% Min: Pyrrhotite>> and blebs in veins													
<<Min: 223.9 - 226.78 0.5% Min: Chalcopyrite>> in QV's with TO, PO													
<<Alt: 220.94 - 222.1 Moderate (Alt) Chlorite>> patches, mixed with BI													
<<Alt: 220.94 - 222.1 Strong (Alt) Biotite>> in bands, groundmass, dark colour													
<<Alt: 223.9 - 226.78 Moderate (Alt) Chlorite>> patchy													
<<Alt: 223.9 - 226.78 Strong (Alt) Biotite>>													
224.65	**240.00**	**RHY** **undifferentiated rhyolite**	**green-brown**	**FMG**	224.65	225.75	1.10	B00269343	0.4	0.02	0.06	-0.01	0.2
224.65 - 240: heavily altered lithology, seems to be islands of RHYvl(?) remaining but also looks like SED or BI-AC MAFI locally, CL t/o pervasive, massive locally, clots in lenses with MU(?), MU in background and appears in lesser CL zones. Banding prominent locally and also massive rock													

From (m)	To (m)	Rocktype & Description
		<<Min: 226.78 - 230.03 1% Min: Galena>> and in fractures
		<<Min: 226.78 - 230.03 10% Min: Pyrrhotite>> wisps, lenses, blebs
		<<Min: 226.78 - 230.03 5% Min: Pyrite>> blebs, xtals along fol'n
		<<Min: 226.78 - 230.03 3% Min: Sphalerite>> stringers
		<<Min: 226.78 - 230.03 3% Min: Chalcopyrite>> with PO, in fracs, veins
		<<Min: 226.78 - 235.1 3% Min: Magnetite>> scattered throughout, conc'd in CL zones
		<<Min: 230.03 - 231.55 15% Min: Sphalerite>> masses and lenses, stringers
		<<Min: 230.03 - 231.55 1% Min: Chalcopyrite>> with PO?
		<<Min: 230.03 - 231.55 3% Min: Galena>> with SP
		<<Min: 230.03 - 231.55 5% Min: Pyrrhotite>> and stringers
		<<Min: 230.03 - 232.77 5% Min: Pyrite>> and stringers, blebs in veins
		<<Min: 231.55 - 233.23 0.5% Min: Chalcopyrite>>
		<<Min: 231.55 - 233.23 1% Min: Galena>>
		<<Min: 231.55 - 233.23 1% Min: Pyrrhotite>> scattered
		<<Min: 231.55 - 233.23 5% Min: Sphalerite>> stringers
		<<Min: 233.23 - 235.1 1% Min: Galena>>
		<<Min: 233.23 - 235.1 5% Min: Sphalerite>> wisps, and stringers
		<<Min: 233.23 - 239.8 5% Min: Pyrite>> and veins, fractures
		<<Min: 233.23 - 239.8 3% Min: Chalcopyrite>> with PO masses, in fractures
		<<Min: 233.23 - 239.8 10% Min: Pyrrhotite>> wispy lenses, masses, along fol'n
		<<Alt: 225.7 - 235.1 Moderate (Alt) Garnet>> scattered, conc'd in short intervals
		<<Alt: 226.78 - 230.03 Strong (Alt) Chlorite>> bands, locally intense
		<<Alt: 226.78 - 232.77 Moderate (Alt) Biotite>> patchy
		<<Alt: 230.03 - 231.55 Strong (Alt) Cordierite>> occurs in conc'd zones it seems
		<<Alt: 230.03 - 231.55 Intense (Alt) Chlorite>>
		<<Alt: 231.55 - 232.77 Moderate (Alt) Muscovite>> patches
		<<Alt: 231.55 - 232.77 Moderate (Alt) Chlorite>> and clots
		<<Alt: 232.77 - 234.06 Intense (Alt) Chlorite>> fg, black rock
		<<Alt: 232.77 - 234.06 Intense (Alt) Biotite>> fg
		<<Alt: 234.06 - 235.1 Moderate (Alt) Chlorite>> fractures
		<<Alt: 234.06 - 236.1 Moderate (Alt) Muscovite>>
		<<Alt: 234.06 - 239.8 Moderate (Alt) Biotite>>
		<<Alt: 235.1 - 239.8 Strong (Alt) Chlorite>>
		<<Alt: 236.1 - 239.8 Strong (Alt) Muscovite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
225.75	226.78	1.03	B00269344	1.6	-0.005	0.03	0.01	0.03
226.78	227.80	1.02	B00269345	4	0.006	0.04	0.35	0.9
227.80	229.00	1.20	B00269346	10.3	0.013	0.05	1.85	2.22
229.00	230.00	1.00	B00269347	3.7	0.015	0.09	0.21	2.23
230.00	230.75	0.75	B00269348	17.5	0.055	0.33	1.05	4.99
230.75	231.55	0.80	B00269349	2.6	0.005	-0.01	0.17	0.2
231.55	232.66	1.11	B00269351	5.8	0.021	0.12	0.42	1.47
232.66	233.23	0.57	B00269352	4	0.009	0.04	0.23	1.09
233.23	234.06	0.83	B00269353	10.5	0.042	0.18	0.56	6.06
234.06	235.10	1.04	B00269354	20.4	0.262	0.57	0.29	3.5
235.10	236.20	1.10	B00269355	3	0.008	0.04	0.13	0.66
236.20	237.00	0.80	B00269356	2.7	0.007	0.03	0.13	1.91
237.00	240.00	3.00	B00269357	5.5	0.016	0.2	0.07	0.53

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 237 - 239.8 Strong (Alt) Cordierite>>									
		<<Alt: 239.8 - 246 Moderate (Alt) Muscovite>>									
		<<Struc: 229.6 - 229.61 Strong (Alt) dominant foliation>>									
		<<Struc: 235.1 - 239.8 Moderate (Alt) Fault>> gouge and lost core									
240.00	**243.00**	**No Core No Core**									
		240 - 243: mislatch, leaves about 1.6 m of rubble, including 0.35m of RHYc, relatively unaltered									
243.00	**272.50**	**RHY undifferentiated rhyolite green-brown**	243.00	244.20	1.20	B00269358	6.1	0.005	0.01	0.07	0.63
		243 - 272.5: highly broken section, overall poor recovery, highly altered rock, generally, locally can see RHYl tx, also RHYva, maybe SED?,									
		<<Min: 243 - 244.2 1% Min: Pyrrhotite>> along fol'n	244.20	245.00	0.80	B00269359	19.3	0.019	0.05	0.03	0.03
		<<Min: 243 - 244.2 1% Min: Pyrite>> in fractures	245.00	245.65	0.65	B00269361	3.6	0.008	-0.01	0.03	0.07
		<<Min: 243 - 244.2 5% Min: Sphalerite>>	245.65	247.00	1.35	B00269362	9	0.015	0.02	0.03	0.02
		<<Min: 243 - 244.2 1% Min: Galena>> scattered	247.00	248.00	1.00	B00269363	5.6	0.008	-0.01	0.02	0.1
		<<Min: 244.2 - 245 0.5% Min: Chalcopyrite>>	248.00	248.90	0.90	B00269364	9.2	0.013	-0.01	0.06	0.03
		<<Min: 244.2 - 245 20% Min: Pyrrhotite>> wisps, irregular lenses	248.90	250.20	1.30	B00269365	1.3	0.008	-0.01	-0.01	0.01
		<<Min: 244.2 - 245 10% Min: Pyrite>> blebs with PO	250.20	251.20	1.00	B00269366	11	0.042	0.04	0.1	0.09
		<<Min: 245 - 249.9 3% Min: Sphalerite>>	251.20	252.03	0.83	B00269367	6.9	0.025	0.02	0.15	0.09
		<<Min: 245 - 252.03 5% Min: Pyrite>> blebs, veins	252.03	253.10	1.07	B00269368	33.4	0.058	0.01	1.54	1.45
		<<Min: 245 - 252.03 5% Min: Pyrrhotite>> scattered, diss'ns in lenses, conc'd bands	253.10	254.23	1.13	B00269369	13.8	-0.005	-0.01	0.91	0.78
		<<Min: 252.03 - 255.2 0.5% Min: Galena>> blebs in fracs in QV	255.00	258.00	3.00	B00269371	2.2	0.011	0.01	0.05	0.38
		<<Min: 252.03 - 256 1% Min: Pyrite>> with TO in fault	258.00	259.00	1.00	B00269372	1.8	-0.005	0.02	0.02	0.52
		<<Min: 252.03 - 258.8 3% Min: Pyrrhotite>> along fol'n, with BI/CI, MG present?	259.00	259.80	0.80	B00269373	3.4	-0.005	0.03	0.07	1.36
		<<Min: 258.8 - 267.3 0.5% Min: Pyrrhotite>> rare diss'ns, blebs in fault near bottom	259.80	260.75	0.95	B00269374	2.1	-0.005	-0.01	0.02	0.42
		<<Min: 258.8 - 267.3 0.5% Min: Pyrite>> wisps, in fractures, faults	267.00	268.00	1.00	B00269375	9.6	-0.005	0.2	0.29	1.41
		<<Min: 267.3 - 268 30% Min: Pyrrhotite>>	268.00	270.00	2.00	B00269376	2	-0.005	0.02	0.03	0.2
		<<Min: 267.3 - 268 15% Min: Pyrite>>	270.00	271.00	1.00	B00269377	1	-0.005	0.02	-0.01	0.12
		<<Min: 267.3 - 268 3% Min: Sphalerite>> present?, hard to distinguish from PO in messed up core									
		<<Min: 268 - 271 3% Min: Pyrrhotite>> in BI bands									
		<<Min: 268 - 271 1% Min: Pyrite>>									
		<<Min: 271 - 282 10% Min: Calcite>>									
		<<Alt: 243 - 248.9 Strong (Alt) Chlorite>> fractures, blebs									
		<<Alt: 245.65 - 248.9 Moderate (Alt) Cordierite>> conc'd in bands and lenses, small masses									
		<<Alt: 245.65 - 252 Strong (Alt) Muscovite>> intense bands that disintegrate-weathered?, CY after?									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 250.3 - 254.23 Moderate (Alt) Chlorite>> patches and bands

<<Alt: 252 - 259.8 Strong (Alt) Cordierite>> bands and small masses

<<Alt: 252 - 259.8 Strong (Alt) Biotite>> massive bands, groundmass, with Cordierite

<<Alt: 258.8 - 267.3 Weak (Alt) Biotite>> metamorphic?

<<Alt: 267.3 - 268 Moderate (Alt) Chlorite>> in sx zone

<<Alt: 267.3 - 271 Strong (Alt) Cordierite>> small masses, pblasts through zone

<<Alt: 268 - 271 Moderate (Alt) Muscovite>> locally massive bands

<<Alt: 268 - 271 Strong (Alt) Biotite>> to patches

<<Alt: 271 - 276.3 Moderate (Alt) Chlorite>> in groundmass

<<Vein: 252.03 - 255.2 25% Quartz-Carbonate-Sulphide 48 deg. >> QZ-CB-sx, veins

<<Struc: 248.4 - 248.9 Moderate (Alt) Fault>> gouge

<<Struc: 254.23 - 257.9 Strong (Alt) Fault>> gouge with TO-PY vein

<<Struc: 269.75 - 269.76 Moderate (Alt) dominant foliation>>

<<Struc: 270.7 - 272.5 Moderate (Alt) Fault>> gouge, broken core

272.50 294.00 RHYcf Feldspar & feldspar quartz porphyry grey-brown FMG

272.5 - 294: altered at top, bluish QE most distinguishing feature, lapilli or FP phenos/domains give tx,

<<Min: 282 - 288 0.5% Min: Pyrite>>

<<Min: 282 - 288 1% Min: Pyrrhotite>> along fol'n

<<Min: 282 - 288 3% Min: Calcite>> and patches

<<Min: 288 - 291.5 10% Min: Calcite>>

<<Min: 291.5 - 306 3% Min: Calcite>> and veins

<<Alt: 279 - 282 Moderate (Alt) Muscovite>> fault, CY after MU, weathered rock?

<<Struc: 274.8 - 295 Intense (Alt) Fault>> big fault zone, multiple strong gouge zones, lots of lost core, and broken to bottom of hole

294.00 297.40 SED undifferentiated Sediment dark grey

294 - 297.4: layered, siliceous bands, mixed with MAFi, BI pervasive but black, not brown that is typical of MAFi

<<Min: 294 - 297.5 0.5% Min: Pyrite>>

297.40 303.00 RHYvl Lapilli tuff grey-brown

297.4 - 303: small blue and white QE's, lapilli, or FP domains, more schistose than RHYcf above SED

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
303.00	**306.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**									

green-brown

303 - 306: banded rock, weakly magnetic locally (PO?),

<<Min: 303 - 306 1% Min: Pyrrhotite>>

End of Hole @ 306

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-295

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	David Nuttal	Date Logging Start:	13-Oct-15
UTM Easting	415049.2	Core Size:	NQ3	Azimuth:	179.97	Date Logging Complete:	16-Oct-15
UTM Northing:	6815664	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1381.92	Casing Depth (m):	10.5	Length (m):	201.5	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	12-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole is intended as a resource infill between historic holes K95-071 & K94-033.
The structural hanging wall is composed of a package of RHYvl / RHYc and foliation parallel MAFi, underlain by MDSt, RHYv and RHYc units. The hole lacks a massive sulphide intercept, though abundant disseminated sulphides are present between 134m to 150m in rocks with strong muscovite, chlorite and cordierite alteration. The structural footwall is composed of a package of RHYv / RHYc and MDSt, underlain by MAFi and RHYi. Intensity of muscovite, chlorite and cordierite alteration increases towards interval of heavily disseminated sulphide mineralization. Silicification is present at contact between MAFi and RHYi in footwall rocks. Green grey (Mu + Si alteration) is absent in contact between MAFi and RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.97	0	179.97	APS	David Nuttal	13-Oct-15		☑	
32	-60.9	158.9	22.5	181.4	ReflexEZS	Geotech	13-Oct-15	5696	☑	
59	-61.1	163	22.5	185.5	ReflexEZS	Geotech	13-Oct-15	5768	☑	
83	-61.2	163.6	22.5	186.1	ReflexEZS	Geotech	13-Oct-15	5718	☑	
107	-61.4	163.7	22.5	186.2	ReflexEZS	Geotech	14-Oct-15	5729	☑	
134	-61.9	164.6	22.5	187.1	ReflexEZS	Geotech	14-Oct-15	5789	☑	
155	-61.5	165	22.5	187.5	ReflexEZS	Geotech	14-Oct-15	5766	☑	
185	-62.2	153.6	22.5	176.1	ReflexEZS	Geotech	15-Oct-15	6372	☐	Value not accepted, low magnetic field
200	-61.9	165.1	22.5	187.6	ReflexEZS	Geotech	15-Oct-15	5797	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**17.12**	**OVBN Overburden**									
<<Min: 0 - 26 1% Min: Pyrite>>											
<<Min: 0 - 33.55 1% Min: Pyrrhotite>>											
<<Min: 10.5 - 26 5% Min: Calcite>>											
17.12	**18.50**	**RHYvl Lapilli tuff**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 17.15 - 94 Weak (Alt) Muscovite>> Variable intensity, 2-3 is more accurate

18.50 18.68 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

18.68 24.58 RHYvl Lapilli tuff

24.58 26.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

26.00 32.68 RHYvl Lapilli tuff

<<Min: 26 - 33.55 0.25% Min: Pyrite>>

<<Min: 26 - 62.4 2% Min: Calcite>>

32.68 33.55 RHYc Rhyolite coherant volcanics

33.55 58.50 RHYvl Lapilli tuff

33.55 - 58.5: Several small intervals resemble pseudo-fragmental textures (~54m to 63m and 68m to 75m and again from 81m to 83m). Difficult to confirm that rock was originally coherent in nature. Small intervals of carbonaceous MDSt intercalated with RHYvl (53.2m to 53

<<Min: 33.55 - 50 3% Min: Pyrite>>

<<Min: 33.55 - 50.4 2% Min: Pyrrhotite>>

<<Min: 50 - 61 1% Min: Pyrite>>

<<Min: 50.4 - 57.5 3% Min: Pyrrhotite>>

<<Min: 57.5 - 110 1% Min: Pyrrhotite>>

<<Alt: 45.5 - 47 Trace (Alt) Chlorite>>

58.50 63.50 RHYc Rhyolite coherant volcanics

<<Min: 61 - 62.1 0.5% Min: Pyrite>>

<<Min: 62.1 - 83.43 2% Min: Pyrite>>

<<Min: 62.4 - 68 3% Min: Calcite>>

63.50 73.96 RHYvl Lapilli tuff

<<Min: 68 - 74.5 1% Min: Calcite>>

<<Vein: 64.75 - 65.17 98% Quartz>> PO

73.96 74.56 RHYc Rhyolite coherant volcanics

<<Min: 74.5 - 77.3 3% Min: Calcite>>

74.56 80.32 RHYvl Lapilli tuff

<<Min: 77.3 - 92 0.5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description
80.32	**80.65**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
80.65	**82.10**	**RHY** **undifferentiated rhyolite**
80.65 - 82.1: Siliceous +/- flow textures.		
82.10	**85.50**	**RHYc** **Rhyolite coherant volcanics**
82.1 - 85.5: Siliceous +/- flow textures.		
<<Min: 83.43 - 92 0.25% Min: Pyrite>>		
85.50	**89.59**	**RHYvl** **Lapilli tuff**
85.5 - 89.59: Trace chlorite and biotite alteration (patchy) within lapilii. Indicator of proximity to MXSX?		
89.59	**90.17**	**RHYc** **Rhyolite coherant volcanics**
90.17	**119.02**	**RHYvl** **Lapilli tuff**
<<Min: 92 - 104 1% Min: Pyrite>>		
<<Min: 92 - 105 3% Min: Calcite>>		
<<Min: 104 - 120.8 0.1% Min: Pyrite>>		
<<Min: 105 - 124.39 5% Min: Calcite>>		
<<Min: 110 - 119 2% Min: Pyrrhotite>>		
<<Min: 119 - 128 0.5% Min: Pyrrhotite>>		
<<Alt: 94 - 136 Moderate (Alt) Muscovite>>		
<<Alt: 105.6 - 124.39 Trace (Alt) Chlorite>>		
<<Struc: 115.8 - 115.8 dominant foliation>>		
119.02	**120.95**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Min: 120.8 - 127.7 0.25% Min: Pyrite>>		
120.95	**124.39**	**RHYv** **Rhyolite volcaniclastic**
124.39	**127.70**	**RHYc** **Rhyolite coherant volcanics**
<<Min: 124.39 - 143 1% Min: Calcite>>		
127.70	**134.19**	**RHYv** **Rhyolite volcaniclastic**
<<Min: 128 - 146.02 2% Min: Pyrrhotite>>		
<<Min: 134.18 - 146.02 0.5% Min: Pyrite>>		
<<Alt: 132.5 - 134.19 Trace (Alt) Chlorite>>		
<<Struc: 129.3 - 129.3 dominant foliation>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
130.00	131.50	1.50	B00269539	0.8	-0.005	-0.01	-0.01	0.04
131.50	133.00	1.50	B00269541	0.7	-0.005	-0.01	0.01	0.02
133.00	134.19	1.19	B00269542	1	-0.005	-0.01	0.04	0.06

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
134.19	**138.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	134.19	135.19	1.00	B00269543	5	0.018	0.02	0.5	0.62
134.19 - 138.5: PO 5%												
<<Alt: 134.19 - 138.5 Weak (Alt) Chlorite>>				135.19	136.19	1.00	B00269544	1	-0.005	-0.01	0.05	0.05
<<Alt: 134.19 - 139 Moderate (Alt) Cordierite>>				136.19	137.19	1.00	B00269545	2.6	-0.005	0.01	0.14	0.23
<<Alt: 136 - 164 Strong (Alt) Muscovite>> variable intensity 4-6				137.19	138.19	1.00	B00269546	8.2	0.014	0.05	0.39	1.47
<<Struc: 136.8 - 136.8 dominant foliation>> possible second foliation as azimuth is significantly different				138.19	138.50	0.31	B00269547	32.4	1.2	0.65	0.96	0.78
138.50	**142.30**	**RHYv**	**Rhyolite volcaniclastic**	138.50	140.00	1.50	B00269548	0.9	-0.005	0.03	-0.01	0.07
				140.00	141.30	1.30	B00269549	0.7	-0.005	-0.01	-0.01	0.01
				141.30	142.30	1.00	B00269551	1.1	-0.005	0.01	-0.01	0.03
142.30	**146.02**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	142.30	143.30	1.00	B00269552	25.3	0.107	0.06	0.66	7.6
142.3 - 146.02: PO 4%												
<<Min: 143 - 176.26 1% Min: Calcite>>				143.30	144.30	1.00	B00269553	2.8	0.013	0.02	0.05	1.09
<<Alt: 142.3 - 146.02 Weak (Alt) Chlorite>>				144.30	145.30	1.00	B00269554	3.4	-0.005	-0.01	0.13	0.33
<<Alt: 142.3 - 146.02 Moderate (Alt) Cordierite>>				145.30	146.02	0.72	B00269555	12.2	0.018	0.02	0.27	1.78
<<Struc: 143.6 - 143.6 dominant foliation>>												
<<Struc: 144 - 144 dominant foliation>>												
<<Struc: 144.55 - 144.55 dominant foliation>>												
<<Struc: 145.4 - 145.4 dominant foliation>>												
146.02	**146.65**	**RHYc**	**Rhyolite coherant volcanics**	146.02	146.65	0.63	B00269556	4.9	-0.005	0.01	0.17	0.24
<<Min: 146.02 - 186.28 1% Min: Pyrrhotite>>												
146.65	**149.53**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	146.65	147.65	1.00	B00269557	5.4	-0.005	0.03	0.1	0.47
146.65 - 149.53: po4%												
<<Alt: 149.1 - 149.53 Weak (Alt) Chlorite>>				147.65	148.65	1.00	B00269558	3.2	0.031	0.02	0.12	1.58
				148.65	149.53	0.88	B00269559	1.9	0.012	0.01	0.03	1.7

From (m)	To (m)	Rocktype & Description
149.53	**157.63**	**RHYv** **Rhyolite volcaniclastic**
149.53 - 157.63: Texturally similar to MDS t unit below. Carbonaceous component absent.		
157.63	**164.28**	**MDSt** **Rhyolite tuff dominant mudstone**
<<Alt: 157.63 - 160 Weak (Alt) Chlorite>>		
<<Alt: 163 - 170 Moderate (Alt) Chlorite>>		
<<Alt: 164 - 176.26 Moderate (Alt) Muscovite>>		
164.28	**164.45**	**MDSc** **Carbonaceous dominant mudstone**
164.45	**170.25**	**MDSt** **Rhyolite tuff dominant mudstone**
170.25	**174.98**	**RHYv** **Rhyolite volcaniclastic**
<<Alt: 173.3 - 188 Moderate (Alt) Chlorite>>		
<<Struc: 173.15 - 173.45 Weak (Alt) Fault>>		
174.98	**176.26**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**
174.98 - 176.26: PO ~3%		
176.26	**188.38**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
<<Min: 176.26 - 188.38 0.5% Min: Pyrite>>		
<<Min: 176.26 - 188.38 15% Min: Calcite>>		
<<Min: 186.28 - 186.58 12% Min: Pyrrhotite>>		
<<Min: 186.58 - 188.38 5% Min: Pyrrhotite>>		
<<Alt: 176.26 - 201.5 Trace (Alt) Muscovite>>		
<<Alt: 188 - 188.38 Moderate (Alt) Silicification>>		
188.38	**201.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**
<<Min: 188.38 - 195 8% Min: Calcite>>		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
149.53	150.53	1.00	B00269561	0.5	-0.005	-0.01	-0.01	0.01
150.53	152.00	1.47	B00269562	0.5	-0.005	-0.01	-0.01	0.01
152.00	153.50	1.50	B00269563	0.4	-0.005	-0.01	-0.01	0.02
153.50	155.00	1.50	B00269564	0.4	-0.005	-0.01	-0.01	0.01
174.98	175.50	0.52	B00269565	10	0.048	0.43	0.06	0.19
175.50	176.26	0.76	B00269566	4.6	0.149	0.17	0.04	0.07
176.26	177.26	1.00	B00269567	-0.3	-0.005	-0.01	-0.01	0.02
177.26	178.26	1.00	B00269568	0.3	-0.005	0.01	-0.01	0.02
184.78	186.28	1.50	B00269569	0.8	-0.005	0.02	-0.01	0.02
186.28	187.28	1.00	B00269571	37.8	0.163	0.44	0.4	2.07
187.28	188.38	1.10	B00269572	22.4	0.076	0.48	0.34	2.35
188.38	189.88	1.50	B00269573	0.6	0.006	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 188.38 - 201.5 4% Min: Pyrite>> <<Min: 195 - 201.5 2% Min: Calcite>> <<Alt: 188.38 - 201.5 Strong (Alt) Silicification>> **End of Hole @ 201.5**									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-296

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Cooper Campbell	Date Logging Start:	17-Oct-15
UTM Easting	414840	Core Size:	NQ3	Azimuth:	180.02	Date Logging Complete:	17-Oct-15
UTM Northing:	6815378	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1394.75	Casing Depth (m):	3.7	Length (m):	62	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	14-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-296 was collared directly into MSXS (OB) from 3.7-5.3 m. Below this RHYi occurs from 5.3-17.1 m, where semi-massive sulphide (OI) occurs from 17.1-17.6 m. From 17.6-18.6 m a MU-altered coherent rhyolite occurs. MSXS was intercepted again from 18.6-25.2, consiting of OI, OA, and OB. The footwall package consists of MU-altered volcaniclastic rhyolite, underlain by RHYi, and interlayered volcaniclastic rhyolite and CL-CA-BI MAFi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.02	0	180.02	APS	Cooper Campbell	14-Oct-15		☑	
26	-57.4	340.1	22.5	2.6	ReflexEZS	Geotech	14-Oct-15	3575	☐	Magnetic field too low
30	-57.6	160.4	22.5	182.9	ReflexEZS	Geotech	14-Oct-15	5723	☑	
50	-57.8	159.4	22.5	181.9	ReflexEZS	Geotech	14-Oct-15	5730	☑	
62	-58	160.1	22.5	182.6	ReflexEZS	Geotech	14-Oct-15	5865	☑	

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**3.70**	**OVBN**	**Overburden**									
3.70	**5.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MCG**	3.70	4.30	0.60	B00268383	174	1.59	0.94	3.15	9.39
3.7 - 5.3: Banded PY and PY+SP+GL with minor local disseminated MG												
				4.30	5.30	1.00	B00268384	154	1.29	0.35	3.45	9.57
5.30	**17.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	5.30	6.80	1.50	B00268385	21.7	0.102	0.12	0.26	2.12
<<Min: 5.3 - 17.1 3% Min: Pyrite>>				6.80	8.30	1.50	B00268386	1.9	0.011	-0.01	0.02	0.04
<<Min: 5.3 - 17.1 4% Min: Calcite>>				8.30	9.80	1.50	B00268387	1.2	0.01	-0.01	0.02	0.03
<<Alt: 5.3 - 15.4 Moderate (Alt) Muscovite>>				12.60	14.10	1.50	B00268388	7.3	0.062	0.02	0.07	0.17

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 5.3 - 17.1 Strong (Alt) Silicification>>					14.10	15.60	1.50	B00268389	24.3	0.249	0.08	0.22	0.57
<<Alt: 15.4 - 17.1 Strong (Alt) Muscovite>>					15.60	17.10	1.50	B00268391	0.9	0.01	-0.01	-0.01	0.01
17.10	**17.60**	**OI**	**Heavilly disseminated sulphides in host schist**		17.10	17.60	0.50	B00268392	283	0.772	0.11	6.05	10.9
17.1 - 17.6: Semi-massive PY+SP+GL in a MU+CL groundmass													
<<Min: 17.1 - 17.6 20% Min: Sphalerite>>													
<<Min: 17.1 - 17.6 5% Min: Galena>>													
<<Min: 17.1 - 23.6 1% Min: Calcite>>													
<<Alt: 17.1 - 17.6 Weak (Alt) Chlorite>>													
<<Alt: 17.1 - 19.2 Moderate (Alt) Muscovite>>													
17.60	**18.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		17.60	18.60	1.00	B00268393	2.8	0.021	-0.01	0.04	0.06
<<Min: 17.6 - 18.6 1% Min: Pyrite>>													
18.60	**19.20**	**OI**	**Heavilly disseminated sulphides in host schist**		18.60	19.20	0.60	B00268394	66.4	1.06	2.08	0.22	0.98
18.6 - 19.2: Heavily disseminated CP+PY+SP+GL in MU-RHYcw													
<<Min: 18.6 - 19.2 4% Min: Chalcopyrite>>													
19.20	**20.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	19.20	20.30	1.10	B00268395	64	1.15	0.86	0.78	4.05
19.2 - 20.3: Massive PY+/-SP+/-CP with disseminated cg MG													
20.30	**23.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	20.30	21.00	0.70	B00268396	106	1.92	0.55	0.92	5.97
20.3 - 23: Massive PY with minor bands of SP+GL and trace disseminated CP													
					21.00	22.00	1.00	B00268397	124	2.13	0.49	1.16	5.66
					22.00	23.00	1.00	B00268398	192	3.08	0.79	1.53	7.71
23.00	**23.60**	**OA**	**Magnetite bearing sulphides**	**MCG**	23.00	23.60	0.60	B00268399	52	1.53	0.26	0.84	9.59
23 - 23.6: Massive PY+/-SP with laminated MG													

From (m)	To (m)		Rocktype & Description	
23.60	**25.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**

23.6 - 25.2: Banded PY+SP+GL with disseminated CA gangue (~10%)

<<Min: 23.6 - 25.2 10% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
23.60	24.20	0.60	B00268401	219	2.97	0.81	0.9	10.2
24.20	25.20	1.00	B00268402	410	4.76	0.63	4.53	9.26

From (m)	To (m)		Rocktype & Description
25.20	**35.00**	**RHYv**	**Rhyolite volcaniclastic**

25.2 - 35: Unclear contact due to faulting

<<Min: 25.2 - 35 1% Min: Pyrite>>

<<Min: 25.2 - 35 15% Min: Calcite>>

<<Alt: 25.2 - 35 Moderate (Alt) Muscovite>>

<<Struc: 29 - 34.4 Weak (Alt) Fault>> Moderately fractured core with local ~1-5 cm intervals of fault gouge

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
25.20	26.70	1.50	B00268403	1.9	0.01	-0.01	0.01	0.08
26.70	28.20	1.50	B00268404	1.4	0.008	-0.01	0.01	0.07
28.20	29.70	1.50	B00268405	1.2	0.008	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description
35.00	**50.20**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

35 - 50.2: Interlayered RHYi and RHYv dominated by RHYi

<<Min: 35 - 50.2 0.5% Min: Sphalerite>>

<<Min: 35 - 50.2 3% Min: Pyrite>>

<<Min: 35 - 50.2 5% Min: Calcite>>

<<Alt: 35 - 50.2 Strong (Alt) Silicification>>

<<Alt: 35 - 53.65 Strong (Alt) Muscovite>>

From (m)	To (m)		Rocktype & Description
50.20	**53.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

50.2 - 53.4: MU-altered MAFi with CA blebs

<<Min: 50.2 - 53.4 15% Min: Calcite>>

<<Min: 50.2 - 53.65 2% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description
53.40	**54.40**	**RHYvl**	**Lapilli tuff**

53.4 - 54.4: volcaniclastic rhyolite with QZ-lpl. Zone of CL-CA-BI MAFi from 53.65-54 m.

<<Min: 53.4 - 53.65 2% Min: Calcite>>

<<Min: 53.65 - 54 20% Min: Calcite>>

<<Min: 53.65 - 62 0.5% Min: Pyrrhotite>>

<<Min: 54 - 54.4 1% Min: Calcite>>

<<Alt: 53.65 - 54 Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 53.65 - 54 Strong (Alt) Biotite>>

<<Alt: 54 - 54.4 Moderate (Alt) Muscovite>>

54.40 60.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

54.4 - 60.7: CL-CA-BI mafic schist

<<Min: 54.4 - 60.7 20% Min: Calcite>>

<<Alt: 54.4 - 60.7 Strong (Alt) Chlorite>>

<<Alt: 54.4 - 60.7 Strong (Alt) Biotite>>

<<Struc: 56.54 - 56.55 dominant foliation>> CA band in MAFi

<<Struc: 58.94 - 58.95 dominant foliation>> CA band in MAFi

60.70 61.45 RHYv Rhyolite volcaniclastic

60.7 - 61.45: Blebs to bands of QZ with yellowish-green Mu cleavages

<<Min: 60.7 - 61.45 1% Min: Calcite>>

<<Alt: 60.7 - 61.45 Strong (Alt) Muscovite>> Unsure whether original or overprint

61.45 62.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

61.45 - 62: CL-CA-BI mafic schist

<<Min: 61.45 - 62 20% Min: Calcite>>

<<Alt: 61.45 - 62 Strong (Alt) Chlorite>>

<<Alt: 61.45 - 62 Strong (Alt) Biotite>>

End of Hole @ 62

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-297

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	17-Oct-15
UTM Easting	415055	Core Size:	HQ3	Azimuth:	144.97	Date Logging Complete:	21-Oct-15
UTM Northing:	6815303	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1386.07	Casing Depth (m):	15	Length (m):	350	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	20-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-297 was drilled to test the up-dip resource extension of the ABM deposit, gain geotechnical and structural data from the East fault, as well as test the resource extension of the newly discovered mafic-hosted/associated massive sulphide lens.
K15-297 drilled through the main ABM deposit, consisting of OJ, OA, OI, and OB, from 104-17.3 m. The ABM deposit was overlain by MU-altered rhyolite from 10.9-14 m. The footwall of the ABM deposit (17.3-96 m) consists of MU-altered rhyolite, followed by mixed MAFi, RHYcw, and RHYi. From 96-101.4 m the East fault was encountered, characterized by ~5 m of fault breccia. The structural footwall of the East fault consisted of MU-altered rhyolite from 101.4-208.5 m, where heavily disseminated to massive sulphide (~40 cm lenses) were encountered sporadically to a depth of 229.15 m. These sulphide occurrences were hosted within MU-altered rhyolite. Below this MAFi was encountered from 229.15-285.1 m, directly followed by massive sulphide, consisting of OA, OI, and OB. The mafic showed a bleached contact from ~284.7-285.1 m. Below the massive sulphide occurrence, another MAFi occurs from 302.7-309.7 m. Followed by another 2 m occurrence of massive sulphide, consisting of OA and OF. The footwall of this lowest sulphide lens consists of progressively less MU-altered rhyolite, from 311.7-350 m (EOH).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	144.97	0	144.97	APS	Sean Suttie	15-Oct-15		☑	
26	-44.4	122.2	22.5	144.7	ReflexEZS	Geotech	15-Oct-15	5763	☑	
50	-44.9	121.5	22.5	144	ReflexEZS	Geotech	19-Oct-15	5785	☑	
77	-46	120.2	22.5	142.7	ReflexEZS	Geotech	16-Oct-15	5782	☑	
101	-46.6	121.7	22.5	144.2	ReflexEZS	Geotech	16-Oct-15	5790	☑	
125	-47.5	121.7	22.5	144.2	ReflexEZS	Geotech	17-Oct-15	5775	☑	
152	-48.8	121.8	22.5	144.3	ReflexEZS	Geotech	17-Oct-15	5787	☑	
176	-49.5	125.2	22.5	147.7	ReflexEZS	Geotech	17-Oct-15	5808	☑	
200	-50.9	123.1	22.5	145.6	ReflexEZS	Geotech	17-Oct-15	5737	☑	
226	-51.6	125.1	22.5	147.6	ReflexEZS	Geotech	18-Oct-15	5786	☑	
251	-52.5	126.3	22.5	148.8	ReflexEZS	Geotech	18-Oct-15	5792	☑	
275	-53.7	127.4	22.5	149.9	ReflexEZS	Geotech	18-Oct-15	5870	☑	
299	-54.3	128.6	22.5	151.1	ReflexEZS	Geotech	18-Oct-15	5570	☑	
326	-55.1	126.6	22.5	149.1	ReflexEZS	Geotech	19-Oct-15	5826	☑	
350	-55.3	125.4	22.5	147.9	ReflexEZS	Geotech	19-Oct-15	5775	☑	

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.90**	**OVBN**	**Overburden**										
10.90	**14.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		11.00	12.50	1.50	B00268406	8	0.038	-0.01	0.11	0.15
<<Min: 10.9 - 14 2% Min: Pyrite>>					12.50	14.00	1.50	B00268407	16.1	0.053	-0.01	0.43	0.75
<<Min: 10.9 - 14 0.5% Min: Calcite>>													
<<Alt: 10.9 - 13.7 Moderate (Alt) Muscovite>>													
<<Alt: 13.7 - 14.7 Weak (Alt) Muscovite>>													
<<Alt: 13.7 - 14.7 Moderate (Alt) Chlorite>>													
<<Struc: 13.2 - 13.7 Moderate (Alt) Fault>> fault gouge consisting of sulphide+Mu+CL													
14.00	**14.70**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		14.00	14.70	0.70	B00268408	81.7	1.89	2.31	0.3	2.15
14 - 14.7: Heavily disseminated PY+CP in MU-CL schist													
<<Min: 14 - 14.7 2% Min: Chalcopyrite>>													
14.70	**15.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	14.70	15.30	0.60	B00268409	128	1.54	2.73	0.53	4.14
14.7 - 15.3: Massive PY+CP with disseminated MG													
<<Min: 14.7 - 15.3 15% Min: Magnetite>>													
15.30	**16.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**MCG**	15.30	16.00	0.70	B00268412	114	1.63	3.82	0.19	1.48
15.3 - 16: heavily disseminated PY+MG+PO+CP in AB-MU schist													
<<Min: 15.3 - 16 10% Min: Magnetite>>													
<<Min: 15.3 - 16 1% Min: Calcite>>													
<<Alt: 15.3 - 16 Moderate (Alt) Muscovite>>													
<<Alt: 15.3 - 16 Strong (Alt) Albite>>													
16.00	**16.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	16.00	16.70	0.70	B00268413	181	0.706	1.4	3.67	11.3
16 - 16.7: Banded/laminated PY+MG+SP+/-CP													
<<Min: 16 - 16.2 30% Min: Chalcopyrite>>													
<<Min: 16 - 16.7 10% Min: Pyrrhotite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
16.70	**17.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	16.70	17.30	0.60	B00268414	67.1	0.321	0.3	1.4	5.84

16.7 - 17.3: Banded PY and PY+SP+GL

<<Min: 16.7 - 17.3 5% Min: Calcite>>

17.30	**21.00**	**RHYv**	**Rhyolite volcaniclastic**		17.30	18.80	1.50	B00268415	1.1	0.008	-0.01	-0.01	0.01

17.3 - 21: Strongly foliated MU-QZ schist

<<Min: 17.3 - 21 1% Min: Pyrite>>

					18.80	19.90	1.10	B00268416	0.6	0.007	-0.01	-0.01	0.01

<<Min: 17.3 - 21 10% Min: Calcite>>

					19.90	21.00	1.10	B00268417	0.6	0.01	-0.01	-0.01	-0.01

<<Alt: 17.3 - 21 Strong (Alt) Muscovite>>

<<Struc: 18.75 - 19.1 Weak (Alt) Fault>> Foliated/faulted RHYv

<<Struc: 20 - 20.8 Weak (Alt) Fault>> Foliated/faulted RHYv

21.00	**40.50**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		21.00	22.50	1.50	B00268418	25.2	0.068	0.02	0.4	0.28

21 - 40.5: CL-CA-BI schist from 21-27.3 m, CL-BI schist from 27.3-36 m, BI-CL-CA schist from 36-40.5 m.

<<Min: 21 - 27.3 20% Min: Calcite>>

<<Min: 27.3 - 36 5% Min: Calcite>>

<<Min: 36 - 40.5 20% Min: Calcite>>

<<Alt: 21 - 36 Strong (Alt) Chlorite>>

<<Alt: 21 - 36 Moderate (Alt) Biotite>>

<<Alt: 36 - 40.5 Moderate (Alt) Chlorite>>

<<Alt: 36 - 40.5 Strong (Alt) Biotite>>

<<Struc: 29.2 - 29.21 dominant foliation>> CL-BI band in MAFi

<<Struc: 34.66 - 34.67 dominant foliation>> CL-BI band in MAFi

<<Struc: 37.45 - 37.46 dominant foliation>> CL-BI band in MAFi

40.50	**49.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	

<<Min: 40.5 - 49.3 0.5% Min: Pyrite>>

<<Min: 40.5 - 49.7 1% Min: Calcite>>

<<Alt: 40.5 - 43 Strong (Alt) Muscovite>> overprint or original?

<<Alt: 43 - 49.7 Weak (Alt) Muscovite>> overprint or original?

<<Vein: 45.8 - 46.2 90% Quartz>> Massive QZ+CA+/-GL vein

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 49.1 - 49.4 Weak (Alt) Fault>> fractured with some fault gouge

49.70 67.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

49.7 - 67.4: BI-CL-CA schist with Mu-alteration (overprint) from 65.4-67.4 m

<<Min: 49.7 - 67.4 20% Min: Calcite>>

<<Alt: 49.7 - 65.4 Moderate (Alt) Chlorite>>

<<Alt: 49.7 - 65.4 Strong (Alt) Biotite>>

<<Alt: 65.4 - 67.4 Moderate (Alt) Muscovite>>

<<Alt: 65.4 - 67.4 Weak (Alt) Chlorite>>

<<Alt: 65.4 - 67.4 Moderate (Alt) Biotite>>

<<Struc: 54.1 - 54.6 Weak (Alt) Fault>> Fractured with some fault gouge

67.40 93.30 RHYi Aphanitic Rhyolite (intrusion)

<<Min: 67.4 - 93.3 2% Min: Sphalerite>> Fractures contain PY+SP

<<Min: 67.4 - 93.3 5% Min: Pyrite>>

<<Min: 67.4 - 93.3 2% Min: Calcite>>

<<Alt: 67.4 - 93.3 Strong (Alt) Silicification>>

<<Alt: 67.4 - 93.3 Weak (Alt) Muscovite>>

<<Vein: 78.2 - 79.5 50% Quartz>> Zone with massive QZ veins

<<Vein: 82.5 - 84.9 50% Quartz>> Zone with massive QZ+CL+/-SP+/-GL+/-PY

<<Struc: 76.8 - 77.5 Moderate (Alt) Fault>> Healed fault gouge breccia

<<Struc: 88.8 - 92.6 Moderate (Alt) Fault>> Strongly fractured with fault gouge and local poor core recovery

93.30 96.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

93.3 - 96: Strongly deformed CL-BI-CA schist

<<Min: 93.3 - 94.4 20% Min: Calcite>>

<<Min: 94.4 - 96 5% Min: Calcite>>

<<Alt: 93.3 - 94.4 Moderate (Alt) Chlorite>>

<<Alt: 93.3 - 94.4 Strong (Alt) Biotite>>

<<Alt: 94.4 - 96 Strong (Alt) Chlorite>>

<<Alt: 94.4 - 96 Weak (Alt) Biotite>>

<<Struc: 93.3 - 94.4 Strong (Alt) Shear>> Sheared MAFi with strong variation in foliation direction with shear bands at a high angle to foliation/core axis

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

96.00 101.40 FBX Fault Breccia

96 - 101.4: Polylithic fault gouge breccia

<<Min: 96 - 101.4 1% Min: Pyrite>> Minor massive PY clasts in FBX

<<Min: 96 - 101.4 3% Min: Calcite>>

<<Struc: 96 - 101.4 Intense (Alt) Fault>> alpha of foliation developed in fault gouge varies from ~25-60 degrees

101.40 102.60 RHYvl Lapilli tuff

101.4 - 102.6: Grey volcaniclastic rhyolite with CA+clay lpl and ash matrix

<<Min: 101.4 - 116.7 1% Min: Pyrite>>

<<Min: 101.4 - 116.7 3% Min: Pyrrhotite>>

<<Min: 101.4 - 116.7 10% Min: Calcite>>

102.60 105.40 RHYva Coarse grained to ash tuff

102.6 - 105.4: Grey ash tuff

105.40 116.70 RHYvl Lapilli tuff

105.4 - 116.7: Grey volcaniclastic rhyolite with CA+clay lpl and ash matrix

116.70 125.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

116.7 - 125.7: Olive green CL-BI-CA schist

<<Min: 116.7 - 125.7 0.5% Min: Pyrrhotite>>

<<Min: 116.7 - 125.7 15% Min: Calcite>>

<<Alt: 116.7 - 125.7 Strong (Alt) Chlorite>>

<<Alt: 116.7 - 125.7 Moderate (Alt) Biotite>>

125.70 129.90 RHYcf Feldspar & feldspar quartz porphyry

125.7 - 129.9: FD porphyry, QE-bearing rhyolite. Locally the FD are altered to CL with bands of semi-massive PO+PY.

<<Min: 125.7 - 127.1 1% Min: Pyrite>>

<<Min: 125.7 - 129.9 2% Min: Calcite>>

<<Min: 127.1 - 129.9 3% Min: Pyrite>> Bands of semi-massive PO+PY

<<Min: 127.1 - 129.9 10% Min: Pyrrhotite>> Bands of semi-massive PO+PY

<<Alt: 127.1 - 129.9 Weak (Alt) Chlorite>> CL-altered FD porphyries

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

129.90 132.00 RHYva Coarse grained to ash tuff

129.9 - 132: Light grey volcaniclastic rhyolite with local lpl. Small unit of MAFi within from 131.15-131.55 m.

<<Min: 129.9 - 131.15 2% Min: Calcite>>

<<Min: 131.15 - 131.55 20% Min: Calcite>>

<<Min: 131.55 - 139.8 2% Min: Calcite>>

132.00 137.00 RHYvl Lapilli tuff

132 - 137: Medium grey rhyolite lpl tuff

<<Struc: 133.43 - 133.44 dominant foliation>> elongated lpl forming a foliation

137.00 139.80 RHYc Rhyolite coherant volcanics

137 - 139.8: Silica and MU banded rhyolite

<<Struc: 139.55 - 139.56 dominant foliation>> Discontinuous BI foliation

139.80 140.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

139.8 - 140.2: Light purple-green BI-CL schist

<<Min: 139.8 - 140.2 20% Min: Calcite>>

140.20 142.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

140.2 - 142.4: Good flow banded rhyolite with olive green sericite groundmass

<<Min: 140.2 - 142.4 1% Min: Calcite>>

<<Struc: 140.7 - 140.71 dominant foliation>> Discontinuous BI foliation

142.40 142.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

142.4 - 142.8: Light purple-green BI-CL schist

<<Min: 142.4 - 142.8 20% Min: Calcite>>

142.80 195.75 RHYvl Lapilli tuff

142.8 - 195.75: Heterogeneous volcaniclastic lpl-tuff. Varying from abundant ~1-2 cm sized CL+QZ+BI+CA lpl within a well foliated MU groundmass to ~2 mm sized PO+PY lpl within a well foliated MU+QZ groundmass.

<<Min: 142.8 - 176.8 7% Min: Calcite>>

<<Min: 142.8 - 194.2 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Min: 142.8 - 194.2 2% Min: Pyrrhotite>>

<<Min: 176.8 - 185.4 2% Min: Calcite>>

<<Min: 185.4 - 194.2 5% Min: Calcite>>

<<Min: 194.2 - 197 8% Min: Pyrrhotite>>

<<Min: 194.2 - 220.6 1% Min: Calcite>>

<<Alt: 142.8 - 171.1 Weak (Alt) Muscovite>>

<<Alt: 171.1 - 189.8 Moderate (Alt) Muscovite>>

<<Alt: 189.8 - 229.15 Strong (Alt) Muscovite>>

<<Vein: 172.9 - 175 50% Quartz>> Zone of QZ+CA+TML veining in fault zone

<<Vein: 178.8 - 179.4 50% Quartz>> Zone of QZ+carbonate veining

<<Vein: 192.7 - 193.3 90% Quartz>> Massive QZ+carbonate vein

<<Vein: 194.2 - 195.75 80% Quartz>> Zone of QZ+carbonate veining

<<Struc: 171.1 - 175 Moderate (Alt) Fault>> Fault zone with deformed MU-schist and local fault gouge

<<Struc: 179 - 181.2 Moderate (Alt) Fault>> Fault zone with local highly fractured and healed MU-schist and QZ-veining

<<Struc: 187.28 - 187.29 dominant foliation>> MU cleavage

195.75 198.50 RHYc Rhyolite coherant volcanics

195.75 - 198.5: QZ+MU schist, with MU cleavages and siliceous microlithons

<<Min: 197 - 208.6 2% Min: Pyrite>>

<<Min: 197 - 208.6 3% Min: Pyrrhotite>>

<<Vein: 196.6 - 197 90% Quartz>> Massive QZ+carbonate vein

198.50 200.00 FBX Fault Breccia

198.5 - 200: Strongly faulted polylithic fault breccia

<<Vein: 198.5 - 199.1 70% Quartz>> Zone of massive QZ+carbonate veining in fault zone with minor cg PO

<<Struc: 198.5 - 200.2 Moderate-Strong (Alt) Fault>> Fault gouge breccia

200.00 202.20 RHYc Rhyolite coherant volcanics

200 - 202.2: QZ+MU schist, with MU cleavages and siliceous microlithons

202.20 208.60 RHY undifferentiated rhyolite

202.2 - 208.6: QZ-MU schist

<<Struc: 205.5 - 212.3 Moderate (Alt) Fault>> Highly fractured with local fault gouge and fault breccia

<<Struc: 207.9 - 208.25 Moderate (Alt) Fault>> Fault gouge breccia

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
204.10	205.60	1.50	B00268419	0.4	0.006	-0.01	-0.01	0.01
205.60	207.10	1.50	B00268421	-0.3	0.01	-0.01	-0.01	0.01
207.10	208.60	1.50	B00268422	-0.3	0.005	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description
208.60	**212.00**	**OI**	**Heavilly disseminated sulphides in host schist**

208.6 - 212: Heavily disseminated to locally semi-massive PY+PO in QZ+MU schist

<<Min: 208.6 - 209.2 10% Min: Pyrite>>
<<Min: 208.6 - 209.2 3% Min: Pyrrhotite>>
<<Min: 209.2 - 209.45 35% Min: Pyrite>>
<<Min: 209.2 - 209.45 5% Min: Pyrrhotite>>
<<Min: 209.45 - 212 15% Min: Pyrite>>
<<Min: 209.45 - 212 3% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description
212.00	**213.00**	**RHYc**	**Rhyolite coherent volcanics**

212 - 213: Silica bands with MU cleavages

<<Min: 212 - 213 0.5% Min: Sphalerite>>
<<Min: 212 - 213 5% Min: Pyrite>>

From (m)	To (m)		Rocktype & Description
213.00	**213.70**	**OI**	**Heavilly disseminated sulphides in host schist**

213 - 213.7: Heavily disseminated PY+PO in QZ+MU schist

<<Min: 213 - 213.7 25% Min: Pyrite>>
<<Min: 213 - 213.7 1% Min: Pyrrhotite>>

From (m)	To (m)		Rocktype & Description
213.70	**220.60**	**RHYc**	**Rhyolite coherent volcanics**

213.7 - 220.6: Siliceous bands with MU cleavages and local MU crenulation cleavage

<<Min: 213.7 - 215.2 3% Min: Pyrite>>
<<Min: 213.7 - 215.2 5% Min: Pyrrhotite>>
<<Min: 215.2 - 220.6 3% Min: Pyrite>>
<<Min: 215.2 - 220.6 1% Min: Pyrrhotite>>
<<Vein: 218.3 - 220.9 50% Quartz>> Zone with massive QZ+carbonate veining
<<Struc: 217.65 - 217.66 dominant foliation>> MU cleavage

From (m)	To (m)		Rocktype & Description
220.60	**221.10**	**OI**	**Heavilly disseminated sulphides in host schist**

220.6 - 221.1: Heavily disseminated to locally massive PY+/-SP in QZ+MU schist

<<Min: 220.6 - 221.7 5% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
208.60	209.60	1.00	B00268423	1.4	0.035	-0.01	-0.01	0.02
209.60	210.50	0.90	B00268424	0.8	0.024	-0.01	0.01	0.01
210.50	211.40	0.90	B00268425	0.7	0.032	-0.01	0.01	-0.01
211.40	212.00	0.60	B00268426	1.5	0.039	-0.01	0.02	-0.01
212.00	213.00	1.00	B00268427	2	0.01	-0.01	0.03	0.16
213.00	213.70	0.70	B00268428	2.1	0.04	-0.01	0.02	0.03
213.70	215.20	1.50	B00268429	3.9	0.025	0.01	0.03	0.13
215.20	216.70	1.50	B00268431	1.3	0.01	-0.01	-0.01	-0.01
216.70	218.20	1.50	B00268432	1.3	0.008	-0.01	-0.01	-0.01
218.20	219.20	1.00	B00268433	6.7	0.047	-0.01	0.03	0.02
219.20	220.60	1.40	B00268434	8.4	0.033	0.02	0.03	0.18
220.60	221.70	1.10	B00268435	146	1.08	0.09	1.08	3.46

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
221.10	**221.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**									
221.1 - 221.5: Massive PY+SP with wispy CA													
<<Struc: 221.15 - 221.16 dominant foliation>> Sulphide lamination													
221.50	**221.70**	**OI**	**Heavilly disseminated sulphides in host schist**										
221.5 - 221.7: Heavily disseminated PY+SP in QZ+MU schist													
221.70	**227.30**	**RHY**	**undifferentiated rhyolite**		221.70	223.20	1.50	B00268436	20	0.135	0.03	0.03	0.1
221.7 - 227.3: QZ+MU schist													
<<Min: 221.7 - 227.3 2% Min: Pyrite>>					223.20	224.50	1.30	B00268437	3.7	0.032	-0.01	0.02	0.07
<<Min: 221.7 - 227.3 0.5% Min: Pyrrhotite>>					224.50	225.80	1.30	B00268438	0.9	0.011	-0.01	-0.01	-0.01
<<Min: 221.7 - 227.3 1% Min: Calcite>>					225.80	227.30	1.50	B00268439	3.4	0.02	-0.01	0.03	0.05
<<Struc: 222.8 - 222.81 dominant foliation>> MU cleavage													
<<Struc: 225.1 - 225.3 Weak-Moderate (Alt) Fault>> Strongly fractured with some fault gouge													
<<Struc: 226.7 - 226.71 dominant foliation>> MU cleavage													
<<Struc: 227.2 - 227.3 Weak (Alt) Fault>> Fault gouge breccia													
227.30	**227.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	227.30	227.90	0.60	B00268441	128	0.473	0.03	1.69	8.47
227.3 - 227.9: Two lenses of massive PY+SP+/-GL with a ~10 cm section of rhyolite (227.55-227.65 m) between.													
<<Min: 227.3 - 227.9 10% Min: Calcite>>													
227.90	**228.80**	**RHY**	**undifferentiated rhyolite**		227.90	228.80	0.90	B00268442	5.6	0.079	-0.01	0.06	0.11
227.9 - 228.8: QZ+MU schist													
<<Min: 227.9 - 228.9 1% Min: Pyrite>>													
<<Min: 227.9 - 228.9 1% Min: Calcite>>													
228.80	**229.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	228.80	229.15	0.35	B00268443	572	6.56	0.48	3.91	6.34
228.8 - 229.15: semi-massive to massive PY+SP+/-GL in MU+QZ+CA groundmass													

From (m)	To (m)	Rocktype & Description
		<<Min: 228.9 - 229.15 15% Min: Calcite>>
229.15	**285.10**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		229.15 - 285.1: CL+BI+CA schist from 229.15-232.3 m, CL+BI schist from 232.3-257.2 m, CL+EP+AC+BI+CA schist from 257.2-259.1 m, CL+BI schist from 259.1-279.5 m, CL+BI+CA schist from 279.5-285.1 m. Minor bleaching (Green to green-grey) from 284.6-285.1 m.
		<<Min: 229.15 - 232.2 20% Min: Calcite>>
		<<Min: 229.15 - 285.1 0.5% Min: Pyrite>>
		<<Min: 229.15 - 285.1 0.5% Min: Pyrrhotite>>
		<<Min: 232.2 - 257.2 2% Min: Calcite>>
		<<Min: 257.2 - 259.1 2% Min: Pyrrhotite>>
		<<Min: 257.2 - 259.1 8% Min: Calcite>>
		<<Min: 259.1 - 279.5 2% Min: Calcite>>
		<<Min: 279.5 - 282.3 10% Min: Calcite>> Increasing disseminated and fracture-hosted calcite from 279.5-282.3 m
		<<Min: 282.3 - 285.1 20% Min: Calcite>> Disseminated and fracture-hosted CA
		<<Alt: 229.15 - 285.1 Strong (Alt) Chlorite>>
		<<Alt: 231 - 282.9 Moderate (Alt) Biotite>>
		<<Alt: 284.5 - 284.9 Strong (Alt) Biotite>>
		<<Struc: 230.8 - 230.81 dominant foliation>> Discontinuous BI foliation
		<<Struc: 231.95 - 231.96 dominant foliation>> Discontinuous BI foliation
		<<Struc: 232.2 - 232.21 dominant foliation>> Discontinuous BI foliation
		<<Struc: 237.6 - 237.61 dominant foliation>> Discontinuous BI foliation
		<<Struc: 241.8 - 241.81 dominant foliation>> Discontinuous BI foliation
		<<Struc: 242.5 - 243.2 Moderate (Alt) Shear>> Sheared MAFi with foliation wrapping into the shear on either side
		<<Struc: 242.88 - 242.89 Foliation>> BI band in sheared MAFi
		<<Struc: 243.5 - 243.51 dominant foliation>> Discontinuous BI foliation
		<<Struc: 243.9 - 243.91 dominant foliation>> Discontinuous BI foliation
		<<Struc: 244.9 - 244.91 dominant foliation>> Discontinuous BI foliation
		<<Struc: 246.2 - 246.21 dominant foliation>> Discontinuous BI foliation
		<<Struc: 247.9 - 247.91 dominant foliation>> Discontinuous BI foliation
		<<Struc: 249.3 - 249.31 dominant foliation>> Discontinuous BI foliation
		<<Struc: 251.15 - 251.16 dominant foliation>> Discontinuous BI foliation
		<<Struc: 253.35 - 253.36 dominant foliation>> Discontinuous BI foliation
		<<Struc: 256.75 - 256.76 dominant foliation>> Discontinuous BI foliation

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
229.15	230.60	1.45	B00268444	-0.3	0.007	-0.01	-0.01	0.02
230.60	232.10	1.50	B00268445	-0.3	-0.005	-0.01	-0.01	-0.01
232.10	233.60	1.50	B00268446	0.7	0.017	-0.01	-0.01	0.02
280.60	282.10	1.50	B00268447	1	0.011	-0.01	-0.01	0.01
282.10	283.60	1.50	B00268448	2	0.016	-0.01	0.01	0.02
283.60	285.10	1.50	B00268449	2.8	0.051	0.01	0.02	0.02

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Struc: 259.65 - 259.66 dominant foliation>> Discontinuous BI foliation													
<<Struc: 262.2 - 262.21 dominant foliation>> Discontinuous BI foliation													
<<Struc: 267.48 - 267.49 dominant foliation>> Discontinuous BI foliation													
<<Struc: 272.12 - 272.13 dominant foliation>> Discontinuous BI foliation													
<<Struc: 274.37 - 274.38 dominant foliation>> Discontinuous BI foliation													
<<Struc: 278.64 - 278.65 dominant foliation>> Discontinuous BI foliation													
<<Struc: 281.45 - 281.46 dominant foliation>> Discontinuous BI foliation													
<<Struc: 282.82 - 282.83 dominant foliation>> Discontinuous BI foliation													
285.10	**286.70**	**OA**	**Magnetite bearing sulphides**	**MCG**	285.10	285.90	0.80	B00268452	560	1.72	0.34	6.66	8.35
285.1 - 286.7: Banded PY+PO+MG+/-CP and QZ+CA with local disseminated CL													
<<Min: 285.1 - 286.7 5% Min: Pyrrhotite>>					285.90	286.70	0.80	B00268453	448	2.48	0.27	5.39	7.63
<<Min: 285.1 - 286.7 15% Min: Magnetite>>													
<<Min: 285.1 - 286.7 15% Min: Calcite>>													
<<Alt: 285.9 - 286.2 Strong (Alt) Chlorite>> CL in the groundmass of MSXS													
286.70	**288.90**	**OI**	**Heavilly disseminated sulphides in host schist**	**MG**	286.70	287.80	1.10	B00268454	187	1.21	0.12	1.7	3.2
286.7 - 288.9: Heavily disseminated to semi-massive PY+SP+/-GL in a QZ+MU+/-CA+/-chloritoid schist													
<<Min: 286.7 - 288.9 1% Min: Pyrite>>					287.80	288.90	1.10	B00268455	169	1.87	0.16	1.16	2.4
<<Min: 286.7 - 288.9 1% Min: Pyrrhotite>>													
<<Min: 286.7 - 288.9 5% Min: Calcite>>													
<<Alt: 286.7 - 288.9 Strong (Alt) Muscovite>>													
<<Struc: 287.25 - 287.26 dominant foliation>> CA+PY lamination													
288.90	**293.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	288.90	289.90	1.00	B00268456	384	4.31	0.48	4.6	10.3
288.9 - 293.7: Semi-massive to massive PY+SP+/-GL in CA matrix. Local bands of PY+PO+CP with disseminate MG (OA) from 290.25-290.55 m and 291.4-291.8 m.													
<<Min: 288.9 - 290.25 5% Min: Calcite>>					289.90	290.90	1.00	B00268457	307	1.67	0.95	3.72	8.59
<<Min: 288.9 - 290.55 5% Min: Magnetite>>					290.90	291.90	1.00	B00268458	315	2.72	1.38	3.94	9.39
<<Min: 290.25 - 290.55 30% Min: Pyrrhotite>>					291.90	292.70	0.80	B00268459	323	1.71	0.19	4.56	9.09
<<Min: 290.25 - 290.55 5% Min: Calcite>>					292.70	293.70	1.00	B00268461	4.9	1.08	0.07	5.5	10.5
<<Min: 290.55 - 293.7 20% Min: Calcite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 291.4 - 292.3 5% Min: Magnetite>>													
293.70	**294.90**	**OA**	**Magnetite bearing sulphides**	**MCG**	293.70	294.40	0.70	B00268462	250	3.06	4.18	2.63	8.36
293.7 - 294.9: Massive PY+CP+/-SP+/-PO with disseminated MG													
<<Min: 293.7 - 294.9 2% Min: Pyrrhotite>>					294.40	294.90	0.50	B00268463	325	4.11	5.61	2.47	10.2
<<Min: 293.7 - 294.9 10% Min: Magnetite>>													
<<Min: 293.7 - 296.3 5% Min: Calcite>>													
294.90	**301.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	294.90	295.60	0.70	B00268464	167	1.47	0.6	2.38	8.99
294.9 - 301.7: Banded PY+SP+/-GL+/-CP with QZ+CA matrix													
<<Min: 294.9 - 301.7 2% Min: Magnetite>>					295.60	296.30	0.70	B00268465	301	1.01	0.61	4.07	13.9
<<Min: 296.3 - 301.7 20% Min: Calcite>>					296.30	297.30	1.00	B00268466	360	2.36	2.51	3.94	6.78
<<Struc: 301.47 - 301.48 dominant foliation>> Sulphide lamination					297.30	298.30	1.00	B00268467	333	2.12	1.09	4.11	9.6
					298.30	299.30	1.00	B00268468	199	1.69	0.28	2.14	8.37
					299.30	300.30	1.00	B00268469	180	2.69	0.29	1.57	6.3
					300.30	301.00	0.70	B00268472	215	2.78	0.21	2.22	7.07
					301.00	301.70	0.70	B00268473	285	2.78	0.13	3.51	8.02
301.70	**302.70**	**OA**	**Magnetite bearing sulphides**	**MG**	301.70	302.70	1.00	B00268474	229	1.59	0.18	2.92	6.01
301.7 - 302.7: 3 lenses of PY+SP+MG+/-PO+/-GL in a CL+CA matrix, with sections of CL+BI+CA (MAFi) schist between. The MAFi shows grain size increase and high BI-concentrations within ~5 cm of the MSXS.													
<<Min: 301.7 - 302.2 10% Min: Magnetite>>													
<<Min: 301.7 - 302.2 10% Min: Calcite>>													
<<Min: 302.2 - 302.6 15% Min: Calcite>>													
<<Min: 302.6 - 302.7 10% Min: Calcite>>													
<<Alt: 302.2 - 302.25 Intense (Alt) Biotite>> Very high concentrations of BI next to MSXS													
<<Alt: 302.25 - 302.6 Strong (Alt) Chlorite>>													
<<Alt: 302.25 - 302.6 Moderate (Alt) Biotite>>													
<<Struc: 302.45 - 302.46 dominant foliation>> Discontinuous BI foliation													
302.70	**309.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		302.70	304.20	1.50	B00268475	5.9	0.04	0.02	0.05	0.08
302.7 - 309.7: CL+BI+CA schist with local BI-rich layer (~1cm wide) on upper contact.													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 302.7 - 309.7 0.5% Min: Pyrite>>		304.20	305.70	1.50	B00268476	2.2	0.025	-0.01	0.02	0.05
		<<Min: 302.7 - 309.7 20% Min: Calcite>>		305.70	306.70	1.00	B00268477	2.4	0.018	-0.01	0.04	0.06
		<<Alt: 302.7 - 309.7 Strong (Alt) Chlorite>>		306.70	308.20	1.50	B00268478	1.3	0.018	-0.01	0.02	0.03
		<<Alt: 302.7 - 309.7 Moderate (Alt) Biotite>>		308.20	309.70	1.50	B00268479	1.1	0.01	-0.01	0.02	0.04
		<<Struc: 304.92 - 304.93 dominant foliation>> Discontinuous BI foliation										
		<<Struc: 307.67 - 307.68 dominant foliation>> Discontinuous BI foliation										
309.70	**311.45**	**OA** **Magnetite bearing sulphides**	**MCG**	309.70	310.70	1.00	B00268481	78.7	0.404	0.69	1.29	4.85
309.7 - 311.45: Massive PY+MG+/-SP+/-GL. MG banded to heavily disseminated.												
		<<Min: 309.7 - 311.45 25% Min: Magnetite>>		310.70	311.45	0.75	B00268482	102	0.208	0.37	1.64	6.75
		<<Min: 309.7 - 311.45 1% Min: Calcite>>										
		<<Struc: 311.23 - 311.24 dominant foliation>> MG lamination										
311.45	**311.70**	**OF** **Pyrrhotite rich sulphides**	**MCG**	311.45	311.70	0.25	B00268483	26.1	0.102	1.25	0.1	5.38
311.45 - 311.7: Massive PO with disseminated PY+MG+/-CP												
		<<Min: 311.45 - 311.7 90% Min: Pyrrhotite>>										
		<<Min: 311.45 - 311.7 5% Min: Magnetite>>										
311.70	**340.50**	**RHYvl** **Lapilli tuff**		311.70	313.20	1.50	B00268484	5.9	0.01	0.06	0.04	1.7
311.7 - 340.5: QZ+MU+CL+BI+CA schist. CL+BI+CA+QZ blebs resemble lpl with a MU+QZ groundmass displaying a continuous foliation.												
		<<Min: 311.7 - 313.5 3% Min: Pyrite>>		313.20	314.70	1.50	B00268485	0.9	0.006	-0.01	0.02	0.05
		<<Min: 311.7 - 313.5 2% Min: Pyrrhotite>>		314.70	316.20	1.50	B00268486	-0.3	0.007	-0.01	-0.01	0.02
		<<Min: 311.7 - 350 1% Min: Calcite>>										
		<<Min: 312.8 - 312.85 90% Min: Pyrrhotite>>										
		<<Min: 313.5 - 340.5 2% Min: Pyrite>>										
		<<Min: 313.5 - 340.5 2% Min: Pyrrhotite>>										
		<<Alt: 311.7 - 318.1 Moderate (Alt) Muscovite>>										
		<<Alt: 318.1 - 350 Weak (Alt) Muscovite>>										
		<<Vein: 320.9 - 321 90% Quartz>> Massive QZ vein										
		<<Struc: 325.5 - 325.51 dominant foliation>> Discontinuous foliation defined by elongated lpl										
		<<Struc: 330.75 - 330.76 dominant foliation>> Discontinuous foliation defined by elongated lpl										
340.50	**350.00**	**RHYvl** **Lapilli tuff**										
340.5 - 350: Rhyolitic lpl within a QZ+MU schist												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 340.5 - 350 4% Min: Pyrite>>									
		<<Struc: 341.7 - 341.71 dominant foliation>> Discontinuous foliation defined by elongated lpl									
		<<Struc: 346.8 - 350 Moderate (Alt) Fault>> Strongly fractured with moderate fault gouge and minor fault breccia									
		End of Hole @ 350									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-298

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Jerome de Pasquale	Date Logging Start:	16-Oct-15
UTM Easting	415151	Core Size:	NQ3	Azimuth:	179.74	Date Logging Complete:	17-Oct-15
UTM Northing:	6815341	Casing Pulled?:	Yes	Dip:	-75	Drill Company:	Geotech
UTM Elev. (m):	1405.56	Casing Depth (m):	30	Length (m):	114	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	17-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

K15-298 is a resource infill drill hole between historic holes K95-121 and 94-028.
The hanging-wall is made up of moderate to strongly muscovite altered rhyolite and mudstone.
The ore zone (PY-SP-GL-CP-MG), is intercepted from 54.40m to 67.20m (OB, OA and OI domains).
The footwall consists of a mafic sill (CL-CA-BI) which shows close-spaced variations in the orientation of foliation.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	179.74	0	179.74	APS	Jerome de Pasquale	15-Oct-15		☑	Rig at 11 m from the collar. Dip changed from -65 to -75.
48	-73.3	162.1	22.5	184.6	ReflexEZS	Geotech	16-Oct-15	5824	☑	
78	-73.5	161.9	22.5	184.4	ReflexEZS	Geotech	16-Oct-15	5772	☑	
114	-73.5	163.1	22.5	185.6	ReflexEZS	Geotech	16-Oct-15	5755	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 15.00 CASN Casing

0 - 15: Overburden

15.00 44.50 RHY undifferentiated rhyolite grey-green

15 - 44.5: Strongly MU altered, strongly foliated. PY disseminated, PO elongated.

<<Min: 15 - 44.5 2% Min: Pyrite>>

<<Min: 15 - 54.4 3% Min: Pyrrhotite>> Elongated and stringers in MDSc.

<<Alt: 18 - 54.15 Strong (Alt) Muscovite>>

<<Struc: 26 - 34 Moderate (Alt) Fault>> Lots of core loss. Fault gouge sandy-clay (subsurface).

<<Struc: 37.3 - 37.6 Weak (Alt) Fault>> Faulltgouge, grey clay.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
44.50	**47.80**	**MDSt**	**Rhyolite tuff dominant mudstone**	**grey-green**									
44.5 - 47.8: Or MDScw.													
<<Min: 44.5 - 54.4 2% Min: Pyrrhotite>> Discontinuous vein or patch.													
47.80	**54.40**	**MDSc**	**Carbonaceous dominant mudstone**		48.00	49.50	1.50	B00265175	2.7	0.089	0.02	0.02	0.22
47.8 - 54.4: PY and PO stringers. MU altered, fault gouge and QZ vein at lower contact.													
<<Vein: 54.2 - 54.3 Quartz>> QZ					49.50	51.00	1.50	B00265176	0.6	-0.005	-0.01	-0.01	0.1
<<Struc: 50.94 - 50.95 dominant foliation>>					51.00	54.40	3.40	B00265177	0.9	-0.005	-0.01	-0.01	0.04
<<Struc: 51 - 54 Fault>> Core loss.Nearby contact with MxSx. Intensity non-estimated.													
54.40	**55.65**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	54.40	54.90	0.50	B00265178	507	1.48	4.11	3.95	11.6
54.4 - 55.65: Large CP patch at upper contact, sharp. Too narrow for OG domain. Maybe RHY on top of the MxSx, fault upper and QZ vein containing muscovite altered rhyolite.													
<<Min: 54.4 - 55.65 10% Min: Sphalerite>>					54.90	55.65	0.75	B00265179	141	1.28	0.13	1.97	13.2
<<Min: 54.4 - 55.65 0.5% Min: Galena>>													
<<Min: 54.4 - 55.65 3% Min: Chalcopyrite>> One 10 cm patch at lower contact.													
<<Min: 54.4 - 67.2 3% Min: Calcite>>													
55.65	**57.15**	**OA**	**Magnetite bearing sulphides**	**FG**	55.65	56.43	0.78	B00265181	119	0.892	0.19	1.53	9.54
<<Min: 55.65 - 57.15 3% Min: Sphalerite>>					56.43	57.15	0.72	B00265182	144	1.53	1.06	1.71	9.56
<<Min: 55.65 - 57.15 5% Min: Magnetite>>													
<<Min: 55.65 - 57.15 0.5% Min: Galena>>													
<<Min: 55.65 - 57.15 0.5% Min: Chalcopyrite>>													
57.15	**58.85**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	57.15	58.00	0.85	B00265183	238	1.79	0.4	3.08	7.4
<<Min: 57.15 - 58.85 10% Min: Sphalerite>>					58.00	58.85	0.85	B00265184	180	1.96	0.44	1.8	6.93
<<Min: 57.15 - 58.85 5% Min: Magnetite>>													
<<Min: 57.15 - 58.85 2% Min: Galena>>													
58.85	**59.33**	**OA**	**Magnetite bearing sulphides**	**FG**	58.85	59.33	0.48	B00265185	134	0.711	0.08	1.91	13.6
<<Min: 58.85 - 59.35 10% Min: Sphalerite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 58.85 - 59.35 1% Min: Galena>>													
59.33	**59.91**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	59.33	59.91	0.58	B00265186	236	0.891	0.01	4.63	10.1
<<Min: 59.35 - 59.91 10% Min: Sphalerite>>													
<<Min: 59.35 - 59.91 5% Min: Magnetite>>													
<<Min: 59.35 - 59.91 1% Min: Galena>>													
59.91	**61.28**	**OA**	**Magnetite bearing sulphides**	**FG**	59.91	60.53	0.62	B00265187	182	0.828	0.32	3.59	10.3
59.91 - 61.28: Maybe cordierite TML replaced.													
<<Min: 59.91 - 61.25 15% Min: Sphalerite>>					60.53	61.28	0.75	B00265188	149	2.21	1.5	2.68	9.33
<<Min: 59.91 - 61.25 5% Min: Magnetite>>													
<<Min: 59.91 - 61.25 3% Min: Galena>>													
<<Min: 59.91 - 61.25 2% Min: Chalcopyrite>>													
<<Min: 61.25 - 63.44 5% Min: Sphalerite>>													
<<Min: 61.25 - 63.44 3% Min: Galena>>													
<<Min: 61.25 - 63.44 1% Min: Chalcopyrite>>													
61.28	**63.44**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	61.28	62.00	0.72	B00265189	148	1.03	0.72	3.61	6.92
61.28 - 63.44: in RHY.													
					62.00	62.74	0.74	B00265192	147	0.647	0.25	3.7	6.5
					62.74	63.44	0.70	B00265193	312	1.44	0.42	5.13	8.56
63.44	**67.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	63.44	64.00	0.56	B00265194	534	3.84	0.17	6.74	9.9
63.44 - 67.2: CA increase in veining and matrix. QZ veins. Fault gouge at lower contact.													
<<Min: 63.44 - 67.2 15% Min: Sphalerite>>					64.00	65.00	1.00	B00265195	275	1.69	0.14	2.72	6.96
<<Min: 63.44 - 67.2 3% Min: Galena>>					65.00	66.00	1.00	B00265196	232	1.74	0.19	1.91	6.34
<<Min: 63.44 - 67.2 0.1% Min: Chalcopyrite>> Mostly in OB domains (matrix) and increasing around contact with					66.00	67.20	1.20	B00265197	342	1.98	0.26	2.62	7.05
<<Vein: 64.8 - 66.5 Quartz-Carbonate>> QZ-CA veins in massive sulfide.													

From (m)	To (m)	Rocktype & Description
67.20	**114.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**

67.2 - 114: Foliation angle progressive changing, locally along the core axis. Could be ductile deformation or due to multiple blocks in disorder. E.O.H.

<<Min: 67.2 - 114 10% Min: Calcite>> Average, irregular.

<<Alt: 67.2 - 114 Strong (Alt) Chlorite>>

<<Struc: 68.64 - 68.65 dominant foliation>>

<<Struc: 74.94 - 74.95 dominant foliation>>

<<Struc: 83.84 - 83.85 dominant foliation>>

<<Struc: 89.7 - 90 Weak (Alt) Fault>> Sandy-clay fault gouge.

<<Struc: 92.95 - 92.96 dominant foliation>>

<<Struc: 95.94 - 95.95 dominant foliation>>

<<Struc: 99.92 - 99.93 dominant foliation>>

<<Struc: 113.94 - 113.95 dominant foliation>>

End of Hole @ 114

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.20	68.70	1.50	B00265198	3.7	0.013	-0.01	0.04	0.1
68.70	70.20	1.50	B00265199	7.6	0.025	-0.01	0.06	0.16
70.20	71.70	1.50	B00265201	3	0.013	-0.01	0.04	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-299

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	David Nuttal	Date Logging Start:	17-Oct-15
UTM Easting	415074	Core Size:	NQ3	Azimuth:	205	Date Logging Complete:	18-Oct-15
UTM Northing:	6815570	Casing Pulled?:	Yes	Dip:	-63	Drill Company:	Geotech
UTM Elev. (m):	1383.43	Casing Depth (m):	12	Length (m):	170	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	16-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	17-Oct-15
Local Elev. (m):						Purpose:	Resource Confirmation
Comments:						Parent Hole:	

This hole was drilled as resource confirmation of sulphide intercept in historic hole K94-014.
The structural hanging wall is composed of a package of RHYc, RHYv and MDS (t/c) with foliation parallel MAFi intrusives. Massive sulphide is observed from 99.08m to 124.8m (composed mostly of OA (dmg) and OB ore types; high amounts of CP are noted from 113.23m to 114.53m). The structural footwall is composed of a package of undifferentiated RHY and carbonaceous sediments (MDS) underlain by MAFi and RHYi. A 33cm interval of OB is present at the contact between MDS and MAFi (140.28m depth). Muscovite, chlorite and cordierite alteration intensify proximally to the sulphide body. Chlorite alteration is moderate in the footwall MAFi unit, and Si alteration is moderate to strong throughout the RHYi interval.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-63	205	0	205	APS	David Nuttal	17-Oct-15		☑	
53	-63.7	178.7	22.5	201.2	ReflexEZS	Geotech	16-Oct-15	5755	☑	
77	-64.6	178.6	22.5	201.1	ReflexEZS	Geotech	16-Oct-15	5763	☑	
101	-65.1	185.4	22.5	207.9	ReflexEZS	Geotech	17-Oct-15	5368	☐	Survey rejected because of out of place mag field.
125	-64.5	177	22.5	199.5	ReflexEZS	Geotech	17-Oct-15	5742	☑	
152	-64.9	182.3	22.5	204.8	ReflexEZS	Geotech	17-Oct-15	5775	☑	
170	-65.2	181.2	22.5	203.7	ReflexEZS	Geotech	17-Oct-15	5792	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**13.89**	**OVBN** **Overburden**									
13.89	**17.53**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**									

<<Min: 13.89 - 17.53 25% Min: Calcite>>

<<Min: 13.89 - 97 1% Min: Pyrrhotite>>

<<Alt: 13.89 - 83.64 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

17.53 19.31 RHYcw Curdy textured-flow banded (flows, subvolcanics)

<<Min: 17.53 - 19.31 8% Min: Calcite>>

19.31 21.22 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 19.31 - 21.22 25% Min: Calcite>>

<<Vein: 19.4 - 19.77 98% Quartz>>

21.22 28.15 RHYc Rhyolite coherant volcanics

21.22 - 28.15: Portions of this interval are texturally similar to RHYi. Felsic, aphanitic, coherent rhyolite with hich calcite content and pyrite stringers. Though, no angular - subrounded translucent crystals and not in a locality known to host RHYi.

<<Min: 21.22 - 28.15 5% Min: Calcite>>

<<Min: 25 - 77.62 2% Min: Pyrite>>

<<Vein: 25.67 - 29 85% Quartz>>

28.15 43.72 RHYc Rhyolite coherant volcanics

<<Min: 28.15 - 44.82 2% Min: Calcite>>

<<Min: 28.15 - 69.52 0.25% Min: Sphalerite>>

<<Min: 28.15 - 69.52 0.1% Min: Galena>>

43.72 44.82 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

44.82 57.60 RHY undifferentiated rhyolite

44.82 - 57.6: Coherent rhyolite texture is present throughout this interval.

<<Min: 44.82 - 69.52 3% Min: Calcite>>

57.60 60.98 RHYcw Curdy textured-flow banded (flows, subvolcanics)

60.98 69.52 RHYcw Curdy textured-flow banded (flows, subvolcanics)

60.98 - 69.52: Likely to be the same unit as RHYcw structurally above.

69.52 76.43 RHY undifferentiated rhyolite

69.52 - 76.43: Alteration obscures primary textures. No coherent textures observed.

<<Min: 69.52 - 97 0.25% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 69.52 - 81 Trace (Alt) Chlorite>>									
76.43	**77.62**	**MDS Carbonaceous Mudstone & Tuffaceous Mudstone**									
77.62	**83.06**	**RHY undifferentiated rhyolite**									
		<<Min: 77.62 - 83.64 1% Min: Pyrite>>									
		<<Struc: 78.9 - 78.9 dominant foliation>>									
		<<Struc: 80.25 - 80.25 dominant foliation>>									
		<<Struc: 81.5 - 82.7 Weak (Alt) Fault>>									
83.06	**83.64**	**MDSc Carbonaceous dominant mudstone**									
		83.06 - 83.64: Carbonaceous component present. Protolith uncertain.									
83.64	**99.08**	**RHYc Rhyolite coherant volcanics**	94.58	96.08	1.50	B00269574	2.6	0.011	0.02	0.13	0.57
		83.64 - 99.08: Brittle deformation and alteration obscure primary textures. High silica content and sulphide stringer mineralization support coherent felsic lithology.									
		<<Min: 83.64 - 104.18 2% Min: Pyrite>>	96.08	97.58	1.50	B00269575	0.7	-0.005	-0.01	0.03	0.03
		<<Alt: 83.64 - 95 Moderate (Alt) Muscovite>>	97.58	99.08	1.50	B00269576	12.1	0.019	0.02	0.34	0.41
		<<Alt: 95 - 104.18 Strong (Alt) Muscovite>>									
		<<Alt: 99 - 120.38 Moderate (Alt) Chlorite>>									
		<<Vein: 88 - 88.25 90% Quartz>>									
		<<Struc: 88.7 - 88.9 Weak (Alt) Fault>>									
		<<Struc: 92.1 - 92.5 Moderate (Alt) Fault>>									
		<<Struc: 94.65 - 94.65 dominant foliation>>									
		<<Struc: 96.1 - 96.85 Moderate (Alt) Fault>>									
99.08	**104.18**	**OJ Heavilly disseminated sulphides in proximal altered rock**	99.08	100.08	1.00	B00269577	18.2	0.028	0.05	0.56	1.43
		99.08 - 104.18: Abundant CP and SP. Brittle deformation and alteration obscure primary textures. High silica content and sulphide stringer mineralization support coherent felsic lithology.									
		<<Alt: 99.08 - 104.18 Moderate (Alt) Cordierite>>	100.08	101.08	1.00	B00269578	15.9	0.043	0.39	0.12	1.65
		<<Struc: 102.5 - 102.8 Weak (Alt) Fault>>	101.08	102.08	1.00	B00269579	107	0.418	1.86	2.27	6.82
		<<Struc: 103.47 - 103.47 dominant foliation>>	102.08	103.08	1.00	B00269581	117	3.42	3.42	1.09	7.45
			103.08	104.18	1.10	B00269582	7.6	0.06	0.34	-0.01	0.96

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
104.18	**105.23**	**OA**	**Magnetite bearing sulphides**	**FMG**	104.18	105.23	1.05	B00269583	136	1.32	2.5	1.4	9.18
104.18 - 105.23: Magnetite 10-15%, SP 10%, CP 3-5%, PO 2-5%													
105.23	**108.55**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	105.23	106.23	1.00	B00269584	148	1.22	0.69	1.35	7.22
105.23 - 108.55: Sp ~10%													
					106.23	107.23	1.00	B00269585	138	1.08	0.5	1.87	5.25
					107.23	107.73	0.50	B00269586	169	1.73	0.31	2.59	6.67
					107.73	108.55	0.82	B00269587	173	1.7	0.24	1.67	6.84
108.55	**108.86**	**OA**	**Magnetite bearing sulphides**	**FMG**	108.55	108.86	0.31	B00269588	70.9	1.26	0.51	1.01	9.62
108.55 - 108.86: Magnetite ~5-7%, PO 1%													
108.86	**110.86**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	108.86	109.86	1.00	B00269589	288	1.87	0.33	3.7	9.06
108.86 - 110.86: po ~2 %													
					109.86	110.86	1.00	B00269592	201	1.72	0.35	2.28	6.89
110.86	**111.44**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		110.86	111.44	0.58	B00269593	87.3	0.2	-0.01	1.8	4.42
110.86 - 111.44: PO ~ 5%													
111.44	**113.23**	**OA**	**Magnetite bearing sulphides**	**FMG**	111.44	112.44	1.00	B00269594	132	0.863	0.39	1.53	7.74
111.44 - 113.23: magnetite ~10%, PO ~ 5%, SP ~15%													
<<Struc: 112.75 - 112.75 dominant foliation>>					112.44	113.23	0.79	B00269595	104	0.56	0.44	1.4	5.74
113.23	**114.53**	**OG**	**Chalcopyrite rich sulphides**	**FMG**	113.23	114.00	0.77	B00269596	316	5.91	9.28	0.36	1.64
113.23 - 114.53: Mt ~5-8%, CP ~25%, PO 7-10%													
					114.00	114.53	0.53	B00269597	249	3.19	7.95	0.34	1.22
114.53	**114.80**	**OA**	**Magnetite bearing sulphides**	**FMG**	114.53	114.80	0.27	B00269598	123	0.986	1.74	0.49	3.43
114.53 - 114.8: mt ~10%, po~3-5%													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
114.80	**120.58**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	114.80	115.80	1.00	B00269599	131	0.831	0.24	1.59	8.25
114.8 - 120.58: Sp 10-15%, PO 3-5%													
<<Min: 120.38 - 123.14 2% Min: Pyrite>>					115.80	116.80	1.00	B00269601	291	2.31	0.41	3.8	10.1
<<Alt: 120.38 - 136 Strong (Alt) Muscovite>>					116.80	117.80	1.00	B00269602	314	2.66	0.46	3.92	13
<<Struc: 115.08 - 115.25 Weak (Alt) Fault>>					117.80	118.80	1.00	B00269603	281	1.7	0.24	4.18	10.6
					118.80	119.80	1.00	B00269604	104	0.692	0.12	1.6	6.33
					119.80	120.38	0.58	B00269605	98.6	0.889	0.11	1.09	8.98
					120.38	121.88	1.50	B00269606	6.8	0.026	-0.01	0.09	0.18
120.58	**123.14**	**RHYv**	**Rhyolite volcaniclastic**		121.88	123.14	1.26	B00269607	7	0.016	-0.01	0.1	0.77
<<Vein: 122.06 - 122.57 85% Quartz>>													
123.14	**124.98**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	123.14	124.14	1.00	B00269608	109	1.12	2.66	0.63	2.22
123.14 - 124.98: PO ~5%													
<<Alt: 124.14 - 124.98 Moderate (Alt) Cordierite>>					124.14	124.98	0.84	B00269609	71.7	0.539	1.32	0.38	1.83
<<Alt: 124.14 - 140.28 Moderate (Alt) Chlorite>>													
124.98	**132.45**	**RHY**	**undifferentiated rhyolite**		124.98	126.48	1.50	B00269611	27.1	0.224	0.54	0.08	0.34
<<Min: 125 - 132.45 1% Min: Pyrrhotite>>					126.48	127.98	1.50	B00269612	2.3	-0.005	-0.01	0.01	0.06
<<Vein: 124.98 - 126 98% Quartz>>					127.98	129.48	1.50	B00269613	0.6	-0.005	-0.01	-0.01	0.02
<<Vein: 127.66 - 127.75 95% Quartz>>													
<<Struc: 124.98 - 124.98 Contact>>													
<<Struc: 127.88 - 127.88 dominant foliation>>													
<<Struc: 130.5 - 130.5 dominant foliation>>													
132.45	**140.28**	**MDSt**	**Rhyolite tuff dominant mudstone**		135.00	136.00	1.00	B00265289	-0.3	-0.005	-0.01	-0.01	0.02
132.45 - 140.28: chlorite alteration. Very fine grain size.													
<<Min: 136 - 140.28 1% Min: Pyrite>>					136.00	137.50	1.50	B00265291	0.6	0.006	0.02	-0.01	0.19
<<Alt: 136 - 140.28 Moderate (Alt) Muscovite>>					137.50	138.78	1.28	B00265292	0.5	-0.005	-0.01	-0.01	0.03
<<Struc: 136.85 - 136.85 dominant foliation>>					138.78	140.28	1.50	B00269614	2.6	0.015	0.03	0.02	0.28
<<Struc: 139.97 - 140.1 Weak (Alt) Fault>>													

From (m)	To (m)		Rocktype & Description	
140.28	**140.51**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

140.28 - 140.51: PO ~5%

<<Alt: 140.28 - 147.05 Moderate (Alt) Chlorite>>

<<Alt: 140.28 - 170 Weak (Alt) Muscovite>>

<<Struc: 140.28 - 140.28 Contact>>

From (m)	To (m)		Rocktype & Description
140.51	**170.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**

<<Min: 140.51 - 147.05 1% Min: Pyrite>>

<<Min: 140.51 - 147.05 0.5% Min: Pyrrhotite>>

<<Min: 147.05 - 170 2% Min: Sphalerite>>

<<Min: 147.05 - 170 4% Min: Pyrite>>

<<Alt: 147.05 - 170 Moderate (Alt) Silicification>>

<<Struc: 143.23 - 143.23 dominant foliation>>

<<Struc: 151.6 - 151.6 dominant foliation>>

<<Struc: 159.75 - 159.75 dominant foliation>>

<<Struc: 166.5 - 166.6 Weak (Alt) Fault>>

End of Hole @ 170

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
140.28	140.51	0.23	B00269615	95.8	0.254	0.59	1.38	5.17
140.51	142.01	1.50	B00269616	0.9	-0.005	-0.01	0.02	0.05
142.01	143.50	1.49	B00265293	-0.3	-0.005	-0.01	-0.01	0.01
143.50	145.00	1.50	B00265294	-0.3	-0.005	-0.01	-0.01	-0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-300

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	18-Oct-15
UTM Easting	415250	Core Size:	HQ3	Azimuth:	125.25	Date Logging Complete:	21-Oct-15
UTM Northing:	6815495	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1447.67	Casing Depth (m):	3	Length (m):	200.1	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	20-Oct-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-300 was drilled in order to collect geotechnical data on the east side of the ABM deposit.
The upper units of K15-300 are made up of a felsic sequence (coherent and volcaniclastic rhyolite) crosscut by mafic dykes until the hole intercepts a fault from 131.10m to 143.66m (fault gouge, fault breccia and shearing).
The structure is underlain by a strongly foliated and QZ-CA veined graphitic mudstone.
The hole ends at 200.1m in highly fractured graphitic mudstone.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	125.25	0	125.25	APS	Sean Suttie	17-Oct-15		☑	
17	-44.2	98.8	22.5	121.3	ReflexEZS	Geotech	17-Oct-15	5834	☑	
47	-48.8	103.2	22.5	125.7	ReflexEZS	Geotech	18-Oct-15	5788	☑	
77	-50	106.3	22.5	128.8	ReflexEZS	Geotech	18-Oct-15	5762	☑	
107	-50.6	109	22.5	131.5	ReflexEZS	Geotech	18-Oct-15	5768	☑	
155	-51	110.6	22.5	133.1	ReflexEZS	Geotech	19-Oct-15	5769	☑	
185	-50.5	110.7	22.5	133.2	ReflexEZS	Geotech	20-Oct-15	5766	☑	
200	-50.2	109.4	22.5	131.9	ReflexEZS	Geotech	20-Oct-15	5761	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 3.00 CASN Casing

3.00 11.45 OVBN Overburden

3 - 11.45: Boulders.

<<Min: 8.5 - 14.28 15% Min: Calcite>> In matrix and veining.

<<Vein: 9.5 - 9.65 Quartz-Carbonate>> QZ vein.

<<Struc: 10 - 72.01 dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 11 - 73.01 dominant foliation>>

11.45 14.28 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

11.45 - 14.28: Foliated, CA in matrix and veining.

<<Struc: 14 - 14.01 Vein>> CA.

14.28 19.33 RHYvl Lapilli tuff grey-green

14.28 - 19.33: Mid strain. AK replacement of lapilli.

<<Min: 14.28 - 59.76 0.5% Min: Pyrite>> Associated with QZ-CA veining.
<<Min: 14.28 - 59.76 5% Min: Calcite>> Veining and replacement.
<<Min: 14.28 - 200 0.1% Min: Pyrrhotite>> With PY and in dykes.
<<Alt: 14.28 - 41.4 Weak (Alt) Muscovite>> Locally moderate.
<<Struc: 15.7 - 15.71 dominant foliation>>
<<Struc: 18 - 18.01 dominant foliation>>

19.33 22.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

19.33 - 22: Including QZ vein.

<<Vein: 20.95 - 21.25 Quartz-Tourmaline>> QZ vein- TML at lower contact.In oxydized zone.
<<Struc: 21.16 - 21.31 Weak (Alt) Fault>> Fault gouge

22.00 35.46 RHYvl Lapilli tuff grey-green

22 - 35.46: Moderate to strong strain.

<<Struc: 24.5 - 24.51 dominant foliation>>
<<Struc: 25.8 - 25.83 Weak (Alt) Fault>> minor fault gouge.
<<Struc: 33.27 - 33.28 dominant foliation>>

35.46 36.52 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

35.46 - 36.52: CA rich. PY/PO . Foliated

36.52 39.98 RHYvl Lapilli tuff grey-green

36.52 - 39.98: mid strain.

<<Struc: 38 - 38.01 dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

39.98 43.57 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

39.98 - 43.57: CA rich. Amygdaloidal. CA/PO veining.

<<Alt: 41.4 - 143.66 Moderate (Alt) Muscovite>> Could overprint silicification locally.

<<Struc: 40.2 - 41 Vein>> Black colored. QZ, few CA, PY.

<<Struc: 43.5 - 43.51 dominant foliation>>

43.57 55.56 RHYva Coarse grained to ash tuff grey-green

43.57 - 55.56: Mid strain.

<<Vein: 53.68 - 200 Quartz-Carbonate-Sulphide>> QZ/CA and often PY stringers.

<<Struc: 47.5 - 47.51 dominant foliation>>

<<Struc: 48.7 - 48.71 dominant foliation>>

<<Struc: 54.82 - 54.83 dominant foliation>>

55.56 56.16 RHYvl Lapilli tuff grey-green

55.56 - 56.16: High strain. PY/dark QZ veining or pods

<<Struc: 55.9 - 55.91 dominant foliation>>

56.16 59.36 RHY undifferentiated rhyolite grey-green

56.16 - 59.36: Mix of RHYc and RHYva crosscut by MAFi dyke (light grey) from 57.0m to 57.43m). Probably peperitic texture.

<<Struc: 57.2 - 57.21 dominant foliation>>

59.36 69.95 RHYcf Feldspar & feldspar quartz porphyry light grey

59.36 - 69.95: Silica rich. Glassy.

<<Min: 59.76 - 87.78 3% Min: Calcite>> Higher concentrated in mafic dyke.

<<Min: 59.76 - 113.02 1% Min: Pyrite>> In dark QZ stringers.

<<Struc: 62.45 - 62.46 dominant foliation>>

<<Struc: 63.75 - 63.76 dominant foliation>>

<<Struc: 67.1 - 67.11 dominant foliation>>

69.95 73.26 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

69.95 - 73.26: Trace of hematite?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 72.36 - 72.37 dominant foliation>>

<<Struc: 73.06 - 73.07 dominant foliation>>

73.26 74.48 MAFt Mafic Volcaniclastics

73.26 - 74.48: Maybe ash. Look volcaniclastic but could be intrusive.

74.48 75.57 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

74.48 - 75.57: Silica rich.

75.57 78.46 RHYva Coarse grained to ash tuff grey-green

75.57 - 78.46: MU rich, locally flow banded, peperitic texture, QE aggregated.

<<Struc: 75.87 - 75.88 dominant foliation>>

78.46 79.44 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

78.46 - 79.44: CA rich.

79.44 81.31 RHYva Coarse grained to ash tuff grey-green

79.44 - 81.31: Lapilli, silica rich.

81.31 84.59 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

81.31 - 84.59: QZ vein at lower contact.

<<Vein: 84.5 - 84.64 Quartz>> QZ vein at lower contact of MAFi

84.59 87.78 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

84.59 - 87.78: MU/SI banded, PY/QZ veining, folded/crenulations.

87.78 92.22 RHYvl Lapilli tuff grey-green

87.78 - 92.22: or RHYcf, MU altered.

<<Min: 87.78 - 131 1% Min: Calcite>>

<<Struc: 87.78 - 87.79 dominant foliation>>

<<Struc: 88 - 88.01 dominant foliation>>

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

92.22 93.14 RHYva Coarse grained to ash tuff grey-green

92.22 - 93.14: MU/QZ/PY banded.

93.14 93.49 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

93.14 - 93.49: CA rich

<<Struc: 93.4 - 95 Weak (Alt) Fault>> Accentuated by MU alteration.

93.49 111.41 RHY undifferentiated rhyolite grey-green

93.49 - 111.41: RHYvl with fragment of lapilli but SI rich and texture of RHYc with possibly xtl. Could also be identify as RHYvx. QE heterogeneous.

<<Struc: 94 - 94.01 Vein>> CA.

<<Struc: 94.85 - 94.86 dominant foliation>>

<<Struc: 95 - 95.01 Fault>> Fault gouge.

<<Struc: 96.8 - 96.81 Vein>> PY?

<<Struc: 97.5 - 97.51 dominant foliation>>

<<Struc: 100.3 - 100.31 dominant foliation>>

<<Struc: 104 - 104.01 dominant foliation>>

<<Struc: 107 - 107.01 dominant foliation>>

111.41 112.27 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

111.41 - 112.27: Could be clastic (MAFt).

<<Struc: 111.5 - 111.75 Weak (Alt) Fault>> Fault gouge.

112.27 113.02 RHYvl Lapilli tuff grey-green

<<Struc: 112.85 - 112.86 Vein>> CA fracture filling.

113.02 113.83 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

113.02 - 113.83: Or ashes.

<<Min: 113.02 - 131 0.5% Min: Pyrite>>

<<Struc: 113.7 - 117.71 Weak (Alt) Fault>> Fault gouge.

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

113.83 116.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

113.83 - 116: CA rich.

116.00 117.15 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

116 - 117.15: Locally flow banded, maybe xtl fragments.

117.15 118.86 RHYva Coarse grained to ash tuff grey-green

117.15 - 118.86: With lapilli.

<<Struc: 117.6 - 117.61 Weak (Alt) Fault>> Cemented joints.

118.86 122.00 RHYvl Lapilli tuff grey-green

118.86 - 122: Peperitic texture at lower contact. Angular clasts (fragments?), heterogeneous.

<<Struc: 120.6 - 120.61 dominant foliation>>

122.00 124.80 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

122 - 124.8: Curdy texture.

124.80 131.10 RHYvl Lapilli tuff grey-green

124.8 - 131.1: Angular fragments (or xtl). Brecciated texture.

131.10 135.52 FBX Fault Breccia

131.1 - 135.52: Fault gouge (grey clay) and QZ vein up to 40 cm. Clasts of MAFt (?).

<<Vein: 131.4 - 134 Quartz>> QZ vein preserved in fault zone.

<<Struc: 131.1 - 135.52 Strong (Alt) Fault>> Fault gouge, rubble zone.

135.52 137.51 FBX Fault Breccia

135.52 - 137.51: Fault breccia with clasts (1mm to 10 cm). QZ/CA and RHY.

<<Struc: 135.52 - 137.51 Strong (Alt) Fault>> Fault breccia.

137.51 139.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) light grey

137.51 - 139.5: Or MAFt or ashes. Highly fractured.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

139.50 143.66 FBX Fault Breccia light grey

139.5 - 143.66: Fault breccia containing QZ vein, PY clasts (vein?), locally silicified (from 142 to 143m). Subangular fragments.

<<Struc: 139.5 - 143.66 Strong (Alt) Shear>> and fault breccia.

143.66 148.84 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

143.66 - 148.84: Strongly graphitic. CA veinlets, fractured. QZ veins up to 10cm wide).

<<Min: 143.66 - 200.1 0.5% Min: Pyrite>> Euhedral in highly graphitic zone.

<<Min: 143.66 - 200.1 0.1% Min: Pyrrhotite>>

<<Min: 143.66 - 200.1 2% Min: Calcite>>

148.84 152.23 RHY undifferentiated rhyolite light grey

148.84 - 152.23: Highly silicified., could be aplitic or ashes. PY veins.

<<Alt: 149.7 - 157 Strong (Alt) Silicification>>

<<Struc: 151.6 - 151.61 dominant foliation>>

152.23 159.84 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

152.23 - 159.84: Strongly graphitic. QZ/CA veinlets set. Locally fault gouge. Strong sericite. PY in vein and fracture. QZ vein at lower contact. Strong foliation, shallow angle.

<<Alt: 157 - 200.1 Moderate (Alt) Muscovite>>

<<Vein: 159.4 - 159.84 Quartz-Carbonate>> QZ vein in MDS.

<<Struc: 158 - 158.01 dominant foliation>>

159.84 172.30 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

159.84 - 172.3: Strongly graphitic. Highly graphitic, highly foliated. QZ/CA veinlets set. Foliation along the core axis.

<<Vein: 163.67 - 164 Quartz-Carbonate>> QZ-CA vein.

<<Vein: 169 - 177 Calcite>> Strong CA veining.

<<Struc: 166.95 - 166.96 dominant foliation>>

<<Struc: 167.75 - 167.76 dominant foliation>>

172.30 174.08 MAFt Mafic Volcaniclastics light grey

172.3 - 174.08: Greenish color. Fractured, strong QZ/CA veining.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
174.08	**200.10**	**MDS** **Carbonaceous Mudstone & Tuffaceous Mudstone** **black**									

174.08 - 200.1: Highly foliated dominantly along the core axis, QZ/CA veining, folded. Mightbe apiltic from 191.2 to 191.6 and possiblyMAFt from 196.3to 197.00m

<<Struc: 179.3 - 179.31 dominant foliation>>

<<Struc: 188 - 196 Moderate (Alt) Fault>> Fault gouge, highly fracture, folded, locally desaggregated.

<<Struc: 197.8 - 197.81 dominant foliation>>

End of Hole @ 200.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-301

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Sean Suttie	Date Logging Start:	18-Oct-15
UTM Easting	415049	Core Size:	NQ3	Azimuth:	180.36	Date Logging Complete:	20-Oct-15
UTM Northing:	6815467	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1385.55	Casing Depth (m):	18	Length (m):	140.1	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole is designed to infil the gap and confirm resource between historic hole K95-088 & K94-013.
The structural hanging wall is composed of a package of RHYc/RHYcw and MDSw/MDSc units. Massive sulphide interception is from 78.1m to 90.9m. Additional sulphide mineralization is present, heavily disseminated within a package of strongly altered (muscovite, chlorite, cordierite) felsic volcaniclastic rocks beneath the main sulphide lens and above the footwall MAFi. The structural foot wall is composed of MAFi truncated by RHYi. Muscovite, chlorite and cordierite intensify in proximity to the massive sulphide ore body. Silicification is present in proximity to the RHYi unit. Heavily disseminated sulphides observed beneath the main sulphide ore body are not present in adjacent historic holes K95-088 and K94-013.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180.36	0	180.36	APS	Sean Suttie	17-Oct-15		☑	
26	-60.2	162.8	22.5	185.3	ReflexEZS	Geotech	18-Oct-15	5778	☑	
53	-60.1	165.6	22.5	188.1	ReflexEZS	Geotech	18-Oct-15	5771	☑	
77	-59.7	173.7	22.5	196.2	ReflexEZS	Geotech	18-Oct-15	5703	☑	
101	-59.8	166	22.5	188.5	ReflexEZS	Geotech	18-Oct-15	5614	☑	
125	-59.7	166.4	22.5	188.9	ReflexEZS	Geotech	19-Oct-15	5686	☑	
140	-60	166.3	22.5	188.8	ReflexEZS	Geotech	19-Oct-15	5701	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**18.00**	**CASN** **Casing**									
18.00	**47.10**	**RHYv** **Rhyolite volcaniclastic**									

18 - 47.1: PY/PO mineralized ribbons and clots. Very siliceous.; MEB changed fro RHYc-RHYv

<<Min: 18 - 47.1 3% Min: Pyrite>>
<<Min: 18 - 47.1 2% Min: Pyrrhotite>>
<<Min: 18 - 62.52 1% Min: Calcite>>
<<Alt: 18 - 56 Weak (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
		<<Struc: 23.84 - 24.12 Weak (Alt) Fault>>
		<<Struc: 24.9 - 25.05 Weak (Alt) Fault>>
		<<Struc: 27.75 - 27.8 Weak (Alt) Fault>>
		<<Struc: 31 - 31.2 Weak (Alt) Fault>>
		<<Struc: 37.12 - 38 Weak (Alt) Fault>>
		<<Struc: 38.58 - 38.9 Moderate (Alt) Fault>>
		<<Struc: 42.11 - 42.15 Weak (Alt) Fault>>
		<<Struc: 42.71 - 42.81 Weak (Alt) Fault>>
		<<Struc: 45.52 - 45.62 Weak (Alt) Fault>>
47.10	**60.36**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**
		<<Min: 47.1 - 64.23 2% Min: Pyrite>>
		<<Min: 47.1 - 75.64 1% Min: Pyrrhotite>>
		<<Alt: 56 - 78.04 Moderate (Alt) Muscovite>>
60.36	**61.23**	**MDSw Coherent rhyolite flow with carbonaceous content**
		<<Struc: 61 - 61.05 Weak (Alt) Fault>>
61.23	**62.52**	**MDSc Carbonaceous dominant mudstone**
		<<Min: 61.23 - 75.64 1% Min: Pyrite>>
62.52	**66.64**	**RHYc Rhyolite coherant volcanics**
		62.52 - 66.64: Contains traces of carbonaceous component.
		<<Min: 62.52 - 78 0.25% Min: Calcite>>
		<<Struc: 64.28 - 64.36 Weak (Alt) Fault>>
		<<Struc: 64.52 - 65.44 Moderate (Alt) Fault>> Cross cuts foliation
66.64	**76.61**	**MDSw Coherent rhyolite flow with carbonaceous content**
		66.64 - 76.61: >10 % carbonaceous component.
		<<Struc: 67.85 - 67.85 dominant foliation>>
		<<Struc: 70.8 - 70.8 dominant foliation>>
76.61	**78.10**	**RHYc Rhyolite coherant volcanics**
		<<Min: 78 - 100 3% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
73.61	75.11	1.50	B00269617	0.8	0.01	-0.01	-0.01	0.06
75.11	76.61	1.50	B00269618	1.1	0.009	-0.01	0.02	0.02
76.61	78.10	1.49	B00269619	3.8	0.081	-0.01	0.03	0.03

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 78.04 - 78.89 Strong (Alt) Muscovite>>													
<<Alt: 78.04 - 78.89 Moderate (Alt) Chlorite>>													
<<Alt: 78.04 - 78.89 Moderate (Alt) Cordierite>>													
78.10	**78.89**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		78.10	78.89	0.79	B00269621	22.8	0.072	0.69	0.09	0.9
78.1 - 78.89: Rhy host													
78.89	**81.95**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	78.89	79.89	1.00	B00269622	82.5	0.894	2.2	0.44	2.97
78.89 - 81.95: PO ~5%													
					79.89	80.89	1.00	B00269623	254	0.977	0.18	3.61	10.1
					80.89	81.95	1.06	B00269624	147	0.96	0.21	1.82	8.33
81.95	**82.82**	**OA**	**Magnetite bearing sulphides**	**FMG**	81.95	82.82	0.87	B00269625	164	0.65	0.6	3.75	13.4
81.95 - 82.82: PO1-3%, MT8-10%													
82.82	**90.27**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	82.82	83.82	1.00	B00269626	134	1.09	0.17	2.05	10.1
82.82 - 90.27: Disseminated magnetite at 85m, PO~1-3%													
					83.82	84.70	0.88	B00269627	58.8	0.718	0.18	0.67	7.7
					84.70	85.70	1.00	B00269628	104	1.75	0.7	0.49	6.33
					85.70	86.70	1.00	B00269629	168	1.85	0.28	0.99	3.85
					86.70	87.70	1.00	B00269632	194	2.23	0.11	1.99	5.03
					87.70	88.70	1.00	B00269633	188	2.01	0.2	1.08	5.57
					88.70	89.70	1.00	B00269634	262	2.12	0.27	1.7	4.67
					89.70	90.27	0.57	B00269635	412	2.27	0.33	3.27	7.86
90.27	**90.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MG**	90.27	90.90	0.63	B00269636	159	0.328	0.03	2.63	7.05
90.27 - 90.9: disseminated magnetite at 91.6m, PO1-3%													
90.90	**97.60**	**RHY**	**undifferentiated rhyolite**		90.90	92.40	1.50	B00269637	2.8	0.016	-0.01	0.02	0.04

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 91.27 - 115.9 1% Min: Sphalerite>>	92.40	93.90	1.50	B00269638	0.4	-0.005	-0.01	-0.01	-0.01
			<<Min: 91.27 - 115.9 2% Min: Pyrite>>	93.90	95.40	1.50	B00269639	1.1	0.014	-0.01	-0.01	0.05
			<<Min: 91.27 - 115.9 1% Min: Pyrrhotite>>	95.40	96.90	1.50	B00269641	4.8	0.051	0.04	0.05	0.23
			<<Min: 91.27 - 115.9 1% Min: Galena>>	96.90	97.60	0.70	B00269642	2.1	0.026	0.07	0.02	0.03
			<<Alt: 91.27 - 92 Weak (Alt) Chlorite>>									
			<<Alt: 91.27 - 92 Moderate (Alt) Cordierite>>									
			<<Alt: 91.27 - 97.6 Moderate (Alt) Muscovite>>									
			<<Vein: 92.5 - 99.7 5% Quartz>>									
			<<Struc: 91.27 - 91.33 Weak (Alt) Fault>>									
			<<Struc: 92.46 - 92.5 Weak (Alt) Fault>>									
			<<Struc: 94.5 - 94.5 dominant foliation>>									
			<<Struc: 94.6 - 94.6 Foliation>>									
			<<Struc: 97.26 - 97.3 Weak (Alt) Fault>>									
97.60	**100.60**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	97.60	98.60	1.00	B00269643	20.5	0.162	0.64	0.18	1.37
			97.6 - 100.6: High spalerite at 99.2m to 100m (~25%), PO3-5%									
			<<Min: 100 - 113 1% Min: Calcite>>	98.60	99.60	1.00	B00269644	10.5	0.037	0.08	0.3	0.46
			<<Alt: 97.6 - 100.6 Moderate (Alt) Cordierite>>	99.60	100.60	1.00	B00269645	59.4	0.219	0.19	4.78	5.69
			<<Alt: 97.6 - 101.8 Strong (Alt) Muscovite>>									
			<<Alt: 97.6 - 102.57 Weak (Alt) Chlorite>>									
100.60	**101.80**	**RHY**	**undifferentiated rhyolite**	100.60	101.80	1.20	B00269646	5.3	0.601	0.03	0.48	0.73
			<<Vein: 101.39 - 101.53 98% Quartz>>									
101.80	**102.57**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	101.80	102.57	0.77	B00269647	6.6	0.11	0.06	0.56	0.87
			<<Alt: 101.8 - 115.9 Moderate (Alt) Muscovite>>									
102.57	**103.41**	**RHY**	**undifferentiated rhyolite**	102.57	103.41	0.84	B00269648	0.3	-0.005	-0.01	0.02	0.04
103.41	**104.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	103.41	104.80	1.39	B00269649	20.3	0.181	0.23	2.61	6.41
			103.41 - 104.8: High sphalerite ~10%									

From (m)	To (m)		Rocktype & Description
			<<Alt: 103.41 - 107 Moderate (Alt) Chlorite>>
104.80	**110.00**	**RHY**	**undifferentiated rhyolite**
			<<Struc: 106.78 - 107 Moderate (Alt) Fault>>
110.00	**113.00**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**
			110 - 113: Dominantly PY/PO in host Rhyolite
			<<Alt: 110 - 115.9 Weak (Alt) Chlorite>>
			<<Vein: 110.35 - 112.3 30% Quartz>>
113.00	**115.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			113 - 115.9: Highly altered, cut by quartz veins
			<<Min: 113 - 116 5% Min: Calcite>>
			<<Vein: 113.2 - 115.9 80% Quartz>>
115.90	**139.58**	**RHYi**	**Aphanitic Rhyolite (intrusion)**
			<<Min: 115.9 - 139.6 1% Min: Sphalerite>>
			<<Min: 115.9 - 140.1 3% Min: Pyrite>>
			<<Min: 116 - 140.1 3% Min: Calcite>>
			<<Alt: 115.9 - 140.1 Moderate (Alt) Silicification>>
			<<Alt: 115.9 - 140.1 Weak (Alt) Muscovite>>
			<<Vein: 117.35 - 117.6 99% Quartz>>
			<<Vein: 126.03 - 126.45 100% Quartz>>
			<<Vein: 128 - 128.5 98% Quartz>>
			<<Struc: 124.7 - 124.7 dominant foliation>>
139.58	**140.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**
			<<Alt: 139.58 - 140.1 Trace (Alt) Chlorite>>

End of Hole @ 140.1

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
104.80	106.30	1.50	B00269651	2.5	0.006	0.03	0.02	0.2
106.30	107.80	1.50	B00269652	1.4	0.006	-0.01	0.03	0.12
107.80	109.30	1.50	B00269653	0.8	-0.005	-0.01	-0.01	0.02
109.30	110.00	0.70	B00269654	4.1	0.01	-0.01	0.07	0.25
110.00	111.00	1.00	B00269655	24.1	0.14	0.14	0.37	1.15
111.00	112.00	1.00	B00269656	12.8	0.041	0.04	0.19	0.45
112.00	113.00	1.00	B00269657	29.9	0.052	0.1	0.48	1.29
113.00	114.50	1.50	B00269658	0.4	0.006	0.01	-0.01	0.11
114.50	116.00	1.50	B00269659	-0.3	-0.005	-0.01	-0.01	0.02
116.00	117.50	1.50	B00269661	0.5	-0.005	-0.01	-0.01	0.02

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-302

Prospect:	GP4F	Hole Type:	DD	Survey Type:	APS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Murray Jones	Date Logging Start:	18-Oct-15
UTM Easting	419500	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	20-Oct-15
UTM Northing:	6813355	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1340	Casing Depth (m):	9	Length (m):	210	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	17-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	19-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

Collar location not surveyed by Challenger, spotted after survey completed.

The hole started near the top of the upper felsic sequence, cutting rhyolite lapilli tuff and coherent rhyolite with minor sediment and mafic dykes. The mineralized sequence starts at 135.68 with a quartz eye rhyolite followed by rhyolite tuff from 143.53 to 155.15. The GP4F mineralized zone occurs from 145.61 to 155.15 associated with strong chlorite-biotite-garnet-cordierite alteration. Several small sections of semi-massive pyrrhotite-pyrite-sphalerite are interspersed with stringer and blebby sphalerite-galena-chalcopyriote mineralization. The hole continued into the footwall, with another quartz porphyry lapilli tuff unit and rhyolite tuff. A weaker mineralized zone was encountered from 189 to 195 m, although core recovery in this interval was quite bad. This zone contains only a few percent of sphalerite and chalcopyrite with narrow bands of pyrrhotite and pyrite in biotite-garnet altered tuff.

Overall, a good intersection of GP4F style mineralization was intersected but the lower mineralized zone was much weaker here than in hole K98-196, down dip.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	180	0	180	APS	Murray Jones	17-Oct-15		☑	
30	-56.9	158.6	22.4	181	ReflexEZS	Geotech	18-Oct-15	5765	☑	
60	-56	161.7	22.4	184.1	ReflexEZS	Geotech	18-Oct-15	5756	☑	
90	-55.6	159.1	22.4	181.5	ReflexEZS	Geotech	19-Oct-15	5752	☑	
120	-54.8	163.8	22.4	186.2	ReflexEZS	Geotech	19-Oct-15	5770	☑	
150	-54.5	164.1	22.4	186.5	ReflexEZS	Geotech	19-Oct-15	5694	☑	
180	-55	170.8	22.4	193.2	ReflexEZS	Geotech	19-Oct-15	5748	☐	
210	-53.9	168.3	22.4	190.7	ReflexEZS	Geotech	19-Oct-15	5753	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**8.70**	**OVBN Overburden**									
0 - 8.7: Casing depth? Surficial clasts in box between 6 and 9 m. Rubble to 12 m.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

8.70 51.36 RHYvx Quartz and/or feldspar crystal tuff grey-green FG

8.7 - 51.36: massive looking rock, variably weathered so colouring inconsistent, dark grey and lt green patches, faulting?, generally quite fine grained, small QE and possibly FP phenos visible (up to 2 mm), MU in groundmass locally, minor QZ-TO veining at low angle to core, minor TO pblasts below 27m.

<<Min: 9.35 - 15.7 5% Min: Calcite>> and in veinlets

<<Min: 21.25 - 27.25 5% Min: Calcite>> fractures, diss'ns

<<Alt: 9.35 - 15.7 Moderate (Alt) Muscovite>> related to faulting and CA veinlets

<<Struc: 9.35 - 15.7 Moderate (Alt) Fault>> broken and lost core, includes vein/bx zone sub parallel to Core Axis

<<Struc: 23.85 - 23.86 Moderate (Alt) Foliation>> in dyke

<<Struc: 29.5 - 31.5 Moderate (Alt) Fault>> broken, oxidized core, minor gouge

<<Struc: 32.25 - 32.26 Weak (Alt) Foliation>> relatively massive RHYvx

<<Struc: 50.95 - 51 Moderate (Alt) Fault>> small gouge zone, small shears in rocks around for 2 metres

51.36 69.10 RHYc Rhyolite coherant volcanics grey-green

51.36 - 69.1: massive to banded rock, lighter coloured domains, siliceous? Aphanitic to fine grained groundmass, not really much flow banding or curdy texture, just homogeneous, massive appearance. Faulted locally.

<<Min: 51.36 - 73.15 0.5% Min: Pyrite>> and fine diss'ns

<<Min: 53.5 - 71.75 1% Min: Calcite>> with CL alt'n

<<Min: 63 - 71.75 0.5% Min: Pyrrhotite>> and minor fractures

<<Vein: 57.47 - 57.85 95% Quartz 55 deg. >> QZ vn, Cl and PY in fractures, TO?

<<Struc: 58 - 64 Strong (Alt) Fault>> gouge, broken and lost core, dykes locally

69.10 73.15 RHYva Coarse grained to ash tuff grey

69.1 - 73.15: weakly banded near top -SED?, fine grained homogeneous, takes up alteration -MS?, yellowish green colour.

<<Min: 71.75 - 73.15 5% Min: Calcite>> to prevasive diss'ns

<<Alt: 71.75 - 73.15 Moderate (Alt) Muscovite>> marginal to unit below?, looks like MS or possibly EP alt'n

73.15 80.84 RHYc Rhyolite coherant volcanics grey-green

73.15 - 80.84: Dyke? mottled, patchy lt green to cream colour, variable alteration, seems to be clay and chlorite, although rock is still generally quite hard, QE present, PY diss'd as blebs with reaction rims, dark CL? Specks, weathered out, becomes banded towards bottom, massive cream coloured lenses with CL partings

<<Min: 73.15 - 79.06 1% Min: Pyrite>> diss'd, with white reaction rims

<<Min: 79.06 - 82.94 10% Min: Calcite>> fractures, lenses

<<Min: 79.06 - 87.7 0.01% Min: Pyrite>> diss'd

<<Alt: 73.15 - 79.06 Strong (Alt) Muscovite>> actually MS and/or CY, late alteration - is this an altered dyke?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 73.15 - 79.06 Moderate (Alt) Chlorite>> occurs in groundmass in patches, also on fractures

<<Alt: 79.06 - 82.94 Moderate (Alt) Muscovite>> CY?

80.84 87.70 RHYvl Lapilli tuff grey-green FG

80.84 - 87.7: quartz eyes appear in lower half, upper half still altered (CY, CL), grey stretch in middle with QE's and lapilli texture, then RHYc (or conc'd lapilli) over last metre?,

<<Min: 82.94 - 87.7 5% Min: Calcite>> lenses, patches, fractures

<<Alt: 82.94 - 85.8 Weak (Alt) Chlorite>> minor bands in groundmass, envelopes to fractures

<<Alt: 85.8 - 87.7 Moderate (Alt) Chlorite>> alters micaceous partings in RHYc rock

87.70 90.72 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FG

87.7 - 90.72: becoming green-brown banded below 89 m.

<<Min: 87.7 - 90.72 15% Min: Calcite>> pervasive

90.72 96.22 RHYc Rhyolite coherant volcanics grey-brown FG

90.72 - 96.22: silica lenses and bands in schistose groundmass, lapilli tx locally?, QE possible, Silica envelopes to fractures/veinlets preserved -is this patchy silicification of schist?, MU after BI in groundmass, QE vague, faintly blue to grey

<<Min: 90.72 - 94.4 3% Min: Calcite>> in MU partings

<<Min: 90.72 - 105 1% Min: Pyrrhotite>> scattered in volcanic rock, not MAFi

<<Min: 94.4 - 95.8 10% Min: Calcite>> pervasive

<<Min: 95.8 - 100.6 3% Min: Calcite>> lenses,

<<Min: 95.8 - 102 1% Min: Pyrite>> scattered

<<Alt: 95.8 - 102 Moderate (Alt) Muscovite>> greasy feel on fol'n faces

96.22 135.68 RHYvl Lapilli tuff grey-brown FG

96.22 - 135.68: schistose, ash layers common, lapilli small,not strongly banded, possible FP phenos locally, micaceous groundmass, MU after BI, patchy colours, bleached around faults, locally siliceous lenses,

<<Min: 102 - 123 0.5% Min: Pyrite>>

<<Min: 102 - 123 3% Min: Pyrrhotite>> wisps and bands in shist

<<Min: 102 - 135.68 0.01% Min: Galena>> in QV's

<<Min: 102 - 137.94 0.01% Min: Sphalerite>> in QV's

<<Min: 109 - 116.1 3% Min: Calcite>> up to 10% in MAFi, in fracs, diss'ns in RHY

<<Min: 123 - 128.14 3% Min: Pyrite>> and bands

<<Min: 123 - 128.14 0.5% Min: Pyrrhotite>> in bands, small lenses

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 128.14 - 135.68 5% Min: Pyrite>> diss'd in bands, lenses and as fine diss'ns									
		<<Min: 128.14 - 135.68 1% Min: Pyrrhotite>> scattered									
		<<Alt: 116.1 - 119.23 Strong (Alt) Muscovite>> greasy, pervasive alt'n of schist, not silvery but with PY throughout									
		<<Alt: 128.14 - 135.68 Moderate (Alt) Muscovite>> alt'n of tuff, pervasive in groundmass									
		<<Struc: 98.5 - 99.3 Strong (Alt) Fault>> gouge, lost core,									
		<<Struc: 107.65 - 109 Strong (Alt) Fault>> completely gouge filled, mostly recovered, contact measurement									
135.68	**143.53**	**RHYvl Lapilli tuff grey-green MG**	136.40	137.90	1.50	B00269378	9.2	0.082	0.47	0.03	0.22
		135.68 - 143.53: coarser lapilli tuff, to coherent RHY?, bluish QE prominent, BI in and out, MAFi locally, some split out in Secondary lithology									
		<<Min: 135.68 - 139.4 0.01% Min: Pyrrhotite>> with CP	137.90	139.40	1.50	B00269379	11	0.043	0.21	0.36	2.04
		<<Min: 135.68 - 139.4 0.5% Min: Chalcopyrite>> blebs in fractures in host and in veins	139.40	140.74	1.34	B00269381	0.6	-0.005	-0.01	0.07	0.08
		<<Min: 135.68 - 139.4 3% Min: Calcite>> patchy and in fractures	140.74	141.45	0.71	B00269382	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 135.68 - 143.53 0.5% Min: Pyrite>> minor in fracs	141.45	142.18	0.73	B00269383	-0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 139.4 - 145.61 0.01% Min: Sphalerite>> with PY, GL?	142.18	143.53	1.35	B00269384	0.8	0.01	0.02	-0.01	0.35
		<<Min: 139.4 - 145.61 1% Min: Pyrite>> and diss'd bands									
		<<Min: 139.4 - 145.61 5% Min: Calcite>> patches, fractures, lenses, diss'ns									
		<<Alt: 139.4 - 142.16 Weak (Alt) Chlorite>> with sx commonly									
		<<Alt: 142.16 - 143.53 Strong (Alt) Chlorite>> in groundmass, massive in fault									
143.53	**155.15**	**RHYva Coarse grained to ash tuff green-brown MCG**	143.53	144.40	0.87	B00269385	0.5	-0.005	-0.01	0.02	0.04
		143.53 - 155.15: highly altered RHY, through mineralized section, small intervals of intensely MU altered schist between intense CL-BI-CI-GA altered mineralized sections, TO common in groundmass of rock									
		<<Min: 145.61 - 147.22 3% Min: Galena>> scattered with SP	144.40	145.61	1.21	B00269386	2.6	-0.005	0.04	0.14	0.64
		<<Min: 145.61 - 149.1 3% Min: Chalcopyrite>> stringers, fractures and blebs in CL alt'd rock	145.61	146.61	1.00	B00269387	32.4	0.095	0.21	3.61	6.76
		<<Min: 145.61 - 149.1 5% Min: Pyrrhotite>> small masses, blebs in lenses of sx	146.61	147.22	0.61	B00269388	26.4	0.11	0.16	2.81	2.81
		<<Min: 145.61 - 149.1 5% Min: Pyrite>> blebs, wisps, small masses, in fractures	147.22	148.28	1.06	B00269389	11.2	0.064	0.06	1.42	2.17
		<<Min: 145.61 - 150.59 10% Min: Sphalerite>> semi-mx bands, wisps, stringers, patches of conc'd blebs, some stretches of weak mineralization included	148.28	149.10	0.82	B00269392	6.6	0.031	-0.01	0.72	0.68
		<<Min: 145.61 - 153.71 3% Min: Magnetite>> scattered in sx sections particularly	149.10	149.86	0.76	B00269393	-0.3	-0.005	0.01	-0.01	0.06
		<<Min: 149.1 - 150.1 3% Min: Pyrite>>	149.86	150.59	0.73	B00269394	47.8	0.275	0.18	3.36	4.37
		<<Min: 150.4 - 150.49 10% Min: Pyrrhotite>> with SP	150.59	151.40	0.81	B00269395	-0.3	-0.005	-0.01	-0.01	0.04
		<<Min: 150.4 - 150.59 5% Min: Pyrite>>	151.40	151.92	0.52	B00269396	2.5	0.012	0.03	0.07	0.16
		<<Min: 150.59 - 151.94 1% Min: Pyrite>>	151.92	152.87	0.95	B00269397	142	1.05	0.19	3.81	6.97
		<<Min: 151.94 - 153.71 1% Min: Galena>> stringers, bands, blebs	152.87	153.71	0.84	B00269398	87.6	0.959	0.16	2.46	2.31

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 151.94 - 153.71 5% Min: Pyrrhotite>> small masses	153.71	154.51	0.80	B00269399	0.9	0.016	0.02	0.01	0.03
		<<Min: 151.94 - 153.71 5% Min: Pyrite>> scattered, wisps	154.51	155.15	0.64	B00269401	17	1.35	0.12	5.08	7.02
		<<Min: 151.94 - 153.71 15% Min: Sphalerite>> scattered blebs, stringers to massive bands									
		<<Min: 151.94 - 153.71 3% Min: Chalcopyrite>> in groundmass, fractures too									
		<<Min: 153.71 - 154.82 3% Min: Pyrrhotite>> in bands near top and botom									
		<<Min: 153.71 - 154.82 0.5% Min: Pyrite>>									
		<<Min: 154.25 - 188 0.5% Min: Pyrite>>									
		<<Min: 154.82 - 155.25 5% Min: Sphalerite>> in groundmass?, blebs									
		<<Min: 154.82 - 155.25 3% Min: Chalcopyrite>>									
		<<Min: 154.82 - 155.25 30% Min: Pyrrhotite>>									
		<<Min: 154.82 - 155.25 15% Min: Pyrite>> diss'd blebs to masses									
		<<Alt: 143.53 - 145.61 Weak (Alt) Chlorite>> bands									
		<<Alt: 143.9 - 145.61 Intense (Alt) Muscovite>> intense alt'n of tuff, beige colour									
		<<Alt: 145.61 - 150.59 Strong (Alt) Biotite>> coarse grained									
		<<Alt: 145.61 - 150.59 Strong (Alt) Cordierite>> conc'd bands of pblasts									
		<<Alt: 145.61 - 150.59 Intense (Alt) Chlorite>> massive to bands, patches									
		<<Alt: 145.61 - 150.59 Strong (Alt) Garnet>> scattered pblasts, brown GA									
		<<Alt: 150.4 - 151.92 Strong (Alt) Muscovite>> sed layers?									
		<<Alt: 150.59 - 151.92 Moderate (Alt) Chlorite>>									
		<<Alt: 150.59 - 151.92 Moderate (Alt) Biotite>>									
		<<Alt: 151.92 - 153.71 Strong (Alt) Cordierite>> scattered									
		<<Alt: 151.92 - 153.71 Strong (Alt) Chlorite>>									
		<<Alt: 151.92 - 153.71 Strong (Alt) Garnet>> fairly conc'd									
		<<Alt: 153.71 - 154.29 Moderate (Alt) Chlorite>> schistose layers									
		<<Alt: 153.71 - 154.29 Strong (Alt) Muscovite>>									
		<<Alt: 154.29 - 155.25 Strong (Alt) Chlorite>>									
		<<Alt: 154.29 - 155.25 Strong (Alt) Biotite>>									
155.15	**182.50**	**RHYvl Lapilli tuff grey-brown MG**	155.15	156.00	0.85	B00269402	26.8	0.024	-0.01	0.1	0.33
		155.15 - 182.5: lapilli and massive sections, generally schistose supporting volcaniclastic origin									
		<<Min: 155.15 - 159.17 5% Min: Calcite>> in felsic unit	156.00	157.50	1.50	B00269403	5.4	0.032	0.01	0.24	0.37
		<<Min: 155.25 - 172 0.01% Min: Sphalerite>> rare stringers	157.50	159.00	1.50	B00269404	0.4	-0.005	-0.01	0.01	0.02
		<<Min: 155.25 - 172 0.5% Min: Pyrite>> also as stringers	173.90	174.90	1.00	B00269405	4.7	-0.005	-0.01	0.11	0.39
		<<Min: 172 - 179 1% Min: Sphalerite>> stringers and scattered wisps									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 172 - 179 0.5% Min: Pyrite>>									
		<<Min: 172 - 179 0.01% Min: Chalcopyrite>> stringers									
		<<Min: 179 - 187.5 1% Min: Pyrite>> in bands									
		<<Alt: 155.25 - 159.17 Moderate (Alt) Muscovite>>									
		<<Alt: 155.25 - 159.17 Moderate (Alt) Chlorite>> small stringer alt'n zones cut porphyry									
		<<Alt: 155.25 - 159.17 Moderate (Alt) Biotite>> around veins, in groundmass, different than host rock BI									
		<<Alt: 172 - 179 Moderate (Alt) Chlorite>> clots, and bands, vein envelopes									
		<<Alt: 179 - 189 Weak (Alt) Garnet>> scattered, metamorphic only, or related to alteration?									
		<<Struc: 161.9 - 164.2 Moderate (Alt) Fault>> in gouge zone									
		<<Struc: 165.3 - 172.5 Moderate (Alt) Fault>> numerous gouge and broken zones,lost core									
182.50	**210.00**	**RHYva Coarse grained to ash tuff grey-green FG**	189.00	192.00	3.00	B00269406	22.4	0.087	0.02	0.65	1.32
		182.5 - 210: QE persist into ash tuff,minor lapilli locally, Alt'n locally,primarily MU, diss'd PY									
		<<Min: 187.5 - 194 5% Min: Pyrite>> blebs, bands, fractures	192.00	195.00	3.00	B00269407	26.3	0.067	0.02	0.74	1.49
		<<Min: 188.98 - 194 3% Min: Sphalerite>> in sx bands, small masses, with PY locally	195.00	198.00	3.00	B00269408	0.8	0.016	-0.01	-0.01	0.02
		<<Min: 188.98 - 194 0.5% Min: Galena>> scattered	198.00	201.00	3.00	B00269409	1.3	0.012	-0.01	-0.01	0.03
		<<Min: 192 - 201 1% Min: Pyrrhotite>> in small lenses, fractures, independent of PY-SP?									
		<<Min: 194 - 205.68 5% Min: Pyrite>> frac, diss'ns in bands, along fol'n									
		<<Min: 205.68 - 207.2 0.5% Min: Sphalerite>> scattered, or BI?									
		<<Min: 205.68 - 210 1% Min: Pyrite>> some diss'ns along fol'n									
		<<Alt: 187.5 - 205.68 Strong (Alt) Muscovite>> intense, MU bands locally									
		<<Alt: 189 - 194 Moderate (Alt) Chlorite>> with MU									
		<<Alt: 194 - 195 Strong (Alt) Chlorite>> upper contact is approximate, lost core									
		<<Alt: 194 - 203.75 Weak (Alt) Garnet>> very local									
		<<Alt: 195 - 203.75 Moderate (Alt) Chlorite>>									
		<<Alt: 207.87 - 208.98 Strong (Alt) Muscovite>> overprint?, around fault									
		<<Struc: 195 - 197.9 Strong (Alt) Fault>> gouge, broken core, lost core, measured at margin of gouge zone on core									

End of Hole @ 210

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-303

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	20-Oct-15
UTM Easting	415075	Core Size:	HQ3	Azimuth:	89.83	Date Logging Complete:	25-Oct-15
UTM Northing:	6815150	Casing Pulled?:	Yes	Dip:	-75	Drill Company:	Geotech
UTM Elev. (m):	1386.05	Casing Depth (m):	4	Length (m):	247.8	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Oct-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

The purpose of DDH K15-303 was to test for the up-dip extension of the recently discovered Krakatoa sulfide lens hosted in Mafi.
DDH K15-303 was succeeded in cutting the lens from 198.0-219.25m (21.75m core width) which consists of mostly OB with several sphalerite rich (20%+) sections and several smaller more discrete Cu rich (OI, OG) sections. In addition, almost continuous massive sulphide lenses were intersected from 134.0 -142.7m (8.7m core width) and two thin MSX horizons between 154.9-158.1m of similar type mineralization. Two smaller horizons of OJ were encountered at 148.7 - 149.8m and 232.30-234.05m, both located between MAFi and RHY contact zones. Nearby DDH K15-304 intersected a similar mineralized stratigraphic sequence. Nearby DDH K15-305 also intersected a similar stratigraphic - mineralized package down to the Krakatoa lens, below it, where the lower OJ horizon would lie (in K15-303), a thicker massive sulphide lens (of OI and OB?) was intersected. This might indicate that mineralization thickens to the SE (at least for the lower lens). Of note, in K15-303, compared to the mineralization and wallrock at the ABM deposit, mineralization and wallrock at the Krakatowa lens is calcite rich. Alteration is mostly subtle, usual muscovite in hanging wall of upper lens and below the lowermost OJ horizon. Prominent chlorite alteration is restricted to OJ horizons and MAFi unit above lowermost OJ horizon. DDH K15-303 succeeded in extending the sulphide lens(s) updip.
A summary of the intersected mineralized stratigraphic package follows.
0-4.5m OVBN
4.5-132.4m RHY volcanic package, minor mafic(?) dykes
132.4-134.0m No Core except for 7cm of OA
134.0-142.7m MSX and minor RHY
142.7-148.7m MAFi
148.7-149.8m OJ
149.8-154.9m RHY
154.9-158.1m MSX and RHY
158.1-198.0m MAFi
198.0-219.25m MSX
219.25-232.3m MAFi
232.3-234.05m OJ
234.05-247.8m RHY
EOH

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-75	89.83	0	89.83	APS	Sean Suttie	20-Oct-15		☑	
17	-75.9	71.5	22.5	94	ReflexEZS	Geotech	20-Oct-15	5711	☑	suspect Az reading
20	-76.1	72.7	22.5	95.2	ReflexEZS	Geotech	23-Oct-15	5757	☑	Retest of previous test at 17m. Driller was aware of possible problem with first test when retest was done.
44	-76.6	76.4	22.5	98.9	ReflexEZS	Geotech	23-Oct-15	5745	☑	

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
68	-76.4	81.9	22.5	104.4	ReflexEZS	Geotech	23-Oct-15	5749	☑	
92	-75.9	80.8	22.5	103.3	ReflexEZS	Geotech	23-Oct-15	5721	☑	
119	-77	89.9	22.5	112.4	ReflexEZS	Geotech	21-Oct-15	57	☑	
143	-77.1	90.6	22.5	113.1	ReflexEZS	Geotech	21-Oct-15	5834	☑	
167	-78.1	92.8	22.5	115.3	ReflexEZS	Geotech	22-Oct-15	5747	☑	
191	-78.8	94.5	22.5	117	ReflexEZS	Geotech	22-Oct-15	5699	☑	
217	-79.1	101.4	22.5	123.9	ReflexEZS	Geotech	23-Oct-15	2204	☑	low mag field
242	-79.9	99.8	22.5	122.3	ReflexEZS	Geotech	23-Oct-15	5784	☑	
247.8	-80.1	101.8	22.5	124.3	ReflexEZS	Geotech	23-Oct-15	5745	☑	EOH

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 4.50 OVBN Overburden

4.50 8.50 RHYva Coarse grained to ash tuff grey

<<Min: 4.5 - 8.5 1% Min: Pyrite>>

<<Min: 4.5 - 8.5 5% Min: Calcite>> and disseminated

8.50 13.00 RHYvl Lapilli tuff grey

8.5 - 13: calcareous lapilli .5-1cm rounded but locally angular and fractured - alt feldspar phenocrysts? Minor dis sphalerite at lower contact where calcite lapilli - phenocrysts are replaced by chlorite. Rare (1) blue qtz phenocryst.

<<Min: 8.5 - 13 2% Min: Pyrite>>

<<Min: 8.5 - 13 10% Min: Calcite>>

<<Min: 12.9 - 13 0.1% Min: Sphalerite>> patchy disseminations

<<Alt: 12.7 - 13 Weak (Alt) Chlorite>> chlorite altered 'lapilli' (or clasts or feldspar crystals) - elsewhere in section lapilli are calcareous

<<Struc: 8.5 - 11 Strong (Alt) Fault>> approx 80% missing core (might be driller error?), broken core. <10cm sandy gouge or ground core

<<Struc: 11 - 13 Moderate (Alt) dominant foliation>>

13.00 23.40 RHYva Coarse grained to ash tuff grey

13 - 23.4: sections up to 1 m long with abundant (<15%) calcite altered lapilli - feldspar crystal, similar to 8.5-13m.

<<Min: 13 - 23.4 1% Min: Pyrite>>

<<Min: 13 - 23.4 5% Min: Calcite>>

<<Vein: 23.1 - 23.15 20% Quartz-Tourmaline>> tourmaline

<<Struc: 18.6 - 19 Moderate (Alt) Fault>> broken core

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 21.8 - 21.9 Strong (Alt) Fault>> sandy micaceous 'gouge'

<<Struc: 22.9 - 23.2 Moderate (Alt) Fault>> broken core

23.40 24.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

<<Min: 23.4 - 24.1 1% Min: Pyrrhotite>>

<<Min: 23.4 - 24.2 20% Min: Calcite>> mafic dyke

<<Struc: 23.4 - 23.5 Contact>> mafic dyke

24.10 29.80 RHYva Coarse grained to ash tuff grey-brown

24.1 - 29.8: <10% calcite altered strained lappilli

<<Min: 24.1 - 28 1% Min: Pyrite>> and wispy

<<Min: 24.2 - 32.1 10% Min: Calcite>>

<<Min: 28 - 29 3% Min: Pyrrhotite>> and dis

<<Min: 29 - 32 1% Min: Pyrrhotite>>

<<Struc: 24.1 - 29 Moderate (Alt) dominant foliation>>

<<Struc: 27 - 27.2 Strong (Alt) Fault>> sandy, core rubble

29.80 46.90 RHYvl Lapilli tuff grey-brown

29.8 - 46.9: variably silicified, locally unit is predominently ash tuff. Rare blue qtz phenos.

<<Min: 31.5 - 36 0.5% Min: Pyrite>>

<<Min: 32 - 36 3% Min: Pyrrhotite>> dis in poorly developed stringerveinlets

<<Min: 32 - 36 1% Min: Calcite>>

<<Min: 36 - 46.9 3% Min: Pyrite>> also dis and minor qtz-py+/- po stringer veinlets

<<Min: 36 - 46.9 5% Min: Calcite>>

<<Min: 43 - 44.2 0.5% Min: Pyrrhotite>>

<<Alt: 32.2 - 35.1 Weak (Alt) Chlorite>>

<<Alt: 32.27 - 38 Strong (Alt) Silicification>>

<<Alt: 38 - 46.9 Weak (Alt) Silicification>>

<<Alt: 38 - 46.9 Weak (Alt) Muscovite>>

<<Vein: 32.9 - 34.1 10% Quartz>> QTZ veining related to nearby RHYi

<<Vein: 36.3 - 46.3 3% Quartz-Albite>> irregular qtz veins

<<Struc: 34 - 35 Moderate (Alt) dominant foliation>>

<<Struc: 37.9 - 38.4 Strong (Alt) Fault>> sandy gouge, core rubble

<<Struc: 40.1 - 40.3 Strong (Alt) Fault>> sandy gouge, core rubble

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 40.9 - 41 Moderate (Alt) Fault>> broken core, <1cm gouge

<<Struc: 42 - 43 Moderate (Alt) dominant foliation>>

<<Struc: 42.8 - 43 Moderate (Alt) Fault>> broken core, <1cm gouge

46.90 51.70 RHYi Aphanitic Rhyolite (intrusion) grey

46.9 - 51.7: aphanitic rhyolite, minor sections (10's cm) bleached - silicified possibe ash tuff. Minor late stage clays in fractures.

<<Min: 46.9 - 52.7 0.5% Min: Pyrite>>

<<Min: 46.9 - 52.7 3% Min: Calcite>>

<<Vein: 46.9 - 56.4 12% Quartz>> irregular qtz veining associated with RHYi

51.70 53.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

51.7 - 53.3: Finely banded calcareous, pyritized dyke?

<<Min: 52.7 - 53.3 2% Min: Pyrite>>

<<Min: 52.7 - 53.3 3% Min: Pyrrhotite>>

<<Min: 52.7 - 53.3 15% Min: Calcite>>

<<Alt: 52.7 - 78.7 Weak (Alt) Muscovite>>

<<Struc: 52 - 52.4 Moderate (Alt) Fault>> broken core, sandy 'gouge'

<<Struc: 52.7 - 53.3 Moderate (Alt) dominant foliation>>

<<Struc: 52.7 - 53.3 Contact>> mafic dyke

53.30 55.90 RHYif feldspar and quartz porphyry intrusions grey

53.3 - 55.9: flow banding over 30cm at lower contact.

<<Min: 53.3 - 55.9 0.5% Min: Pyrite>>

<<Min: 53.3 - 55.9 1% Min: Pyrrhotite>>

<<Min: 53.3 - 55.9 3% Min: Calcite>>

<<Struc: 55 - 55.8 Contact>> RHYi flow banded contact

55.90 58.30 RHY undifferentiated rhyolite grey

55.9 - 58.3: weakly brecciated and disaggregated, jigsaw texture

<<Min: 55.9 - 60 5% Min: Pyrite>>

<<Min: 55.9 - 65 5% Min: Calcite>> and as bands and fracture filling

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

58.30 58.70 RHYi Aphanitic Rhyolite (intrusion) grey

58.3 - 58.7: weakly brecciated, qtz-py fracture filling

58.70 62.30 RHYvl Lapilli tuff grey

58.7 - 62.3: locally weakly brecciated, disaggregation textures, siliceous sections and minor RHYi, local 'almost' slic bands,

<<Min: 60 - 62.3 2% Min: Pyrite>>

62.30 63.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green

62.3 - 63: Bleached, pyritized, sericite altered, Likely a MAFi

<<Min: 62.3 - 63 7% Min: Pyrite>>

<<Struc: 62.3 - 63 Moderate (Alt) dominant foliation>> mafic dyke

<<Struc: 62.9 - 63 Contact>> mafic dyke

63.00 65.00 RHYvl Lapilli tuff grey

63 - 65: white calicte lapilli, rounded to subrounded.

<<Min: 63 - 65 3% Min: Pyrite>>

<<Min: 63 - 65 0.5% Min: Pyrrhotite>>

<<Alt: 63.3 - 65 Weak (Alt) Chlorite>> chlorite rimming clasts

<<Struc: 64 - 65 Moderate (Alt) dominant foliation>>

65.00 67.50 RHYi Aphanitic Rhyolite (intrusion) grey-green

65 - 67.5: 50% qtz vein, 20% RHY

<<Min: 65 - 66.3 3% Min: Pyrrhotite>>

<<Min: 65 - 67.5 1% Min: Calcite>>

<<Min: 66.3 - 72.3 3% Min: Pyrite>> in qtz - cal bands, dis and racture filling

<<Vein: 65.5 - 67 70% Quartz>>

67.50 72.30 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

67.5 - 72.3: Flow banded, strong sericite alteration, unit is soft. Locally RHYvl and RHYa.

<<Min: 67.5 - 72.3 5% Min: Calcite>> and calcite in this bands - wisps

<<Struc: 70 - 72 Moderate (Alt) dominant foliation>>

<<Struc: 72.1 - 72.3 Strong (Alt) Fault>> crushed schist and gouge

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

72.30 78.60 RHYvl Lapilli tuff grey-green

72.3 - 78.6: minor flow banded rhyolite near upper contact, tuff ash sections,

<<Min: 72.3 - 75.4 3% Min: Pyrite>> in qtz - cal bands, dis and racture filling
<<Min: 72.3 - 78.6 8% Min: Calcite>> and calcite in this bands - wisps
<<Min: 75.4 - 78.6 1% Min: Pyrite>>
<<Min: 75.4 - 82 1% Min: Pyrrhotite>>
<<Vein: 73.5 - 75 8% Quartz>>
<<Struc: 75.1 - 75.4 Moderate (Alt) Fault>> broken core, minor gouge

78.60 82.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

78.6 - 82: 50% MAFi and 50% RHYvl. Both Bio-chl altered

<<Min: 78.6 - 82 0.1% Min: Pyrite>>
<<Min: 78.6 - 82 15% Min: Calcite>> and calcite in this bands - wisps
<<Struc: 79 - 79.2 Weak (Alt) Fault>> broken core

82.00 92.90 RHYvl Lapilli tuff grey

82 - 92.9: Mottled bio-chl texture to 89.5m. Lapilli and ash tuff.

<<Min: 82 - 87.5 0.5% Min: Pyrite>>
<<Min: 82 - 88 1% Min: Pyrrhotite>> po within islands of remnant chl-bio alteration
<<Min: 82 - 92.9 5% Min: Calcite>>
<<Min: 87.5 - 95 0.5% Min: Pyrite>>
<<Min: 88 - 95 0.1% Min: Pyrrhotite>>
<<Struc: 82 - 82.1 Weak (Alt) Fault>> broken core, trace gouge
<<Struc: 83 - 86 Moderate (Alt) Fault>> approx 60% missing core, broken core, trace gouge
<<Struc: 87.9 - 88.3 Moderate (Alt) Fault>> broken core, sandy 'gouge', parallel tp fol
<<Struc: 90 - 91 Moderate (Alt) dominant foliation>>

92.90 93.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey

92.9 - 93.3: fine grained, very calcareous

<<Min: 92.9 - 93.3 10% Min: Calcite>>
<<Struc: 92.9 - 93.3 Contact>> mafic dyke

From (m)	To (m)	Rocktype & Description
93.30	**132.40**	**RHYv Rhyolite volcaniclastic grey-green**

93.3 - 132.4: Thick unit of with few discernable textures over any distance. Massive featureless RHY to RHYva and RHYvl

<<Min: 93.3 - 128 3% Min: Calcite>> and as fracture filling

<<Min: 95 - 96 1% Min: Pyrite>>

<<Min: 95 - 97 0.5% Min: Pyrrhotite>>

<<Min: 97 - 100.9 1% Min: Pyrrhotite>>

<<Min: 100.9 - 101.8 3% Min: Pyrite>>

<<Min: 101.8 - 103.6 1% Min: Pyrite>>

<<Min: 103.6 - 105 1% Min: Pyrrhotite>>

<<Min: 105 - 107.5 2% Min: Pyrite>>

<<Min: 105 - 117 1% Min: Pyrrhotite>>

<<Min: 107.5 - 117 0.5% Min: Pyrite>>

<<Min: 117 - 122 2% Min: Pyrrhotite>>

<<Min: 122 - 132.4 1% Min: Pyrite>>

<<Min: 122 - 132.4 0.1% Min: Pyrrhotite>>

<<Min: 128 - 130 2% Min: Calcite>>

<<Alt: 107 - 117 Weak (Alt) Muscovite>> Mu intensity increases near minor fault zones.

<<Alt: 117 - 120 Moderate (Alt) Muscovite>>

<<Alt: 120 - 131 Strong (Alt) Muscovite>>

<<Vein: 101.6 - 101.7 Carbonate-Sulphide 65 deg. >> Mostly calcite with 5% dis py and py on margins.

<<Vein: 106.3 - 106.5 55% Quartz>>

<<Vein: 107.8 - 110 10% Quartz>> number of irregular 5 - 10cm qtz veins and qtz flooding

<<Vein: 117.7 - 132.4 8% Quartz 55 deg. >> also veins parallel discordant to foliation in/adjacent to faults.

<<Struc: 94.9 - 95 Weak (Alt) Fault>> broken core, trace gouge

<<Struc: 97.8 - 98 Moderate (Alt) Fault>> broken core, missing core between meter blocks

<<Struc: 101 - 103.6 Strong (Alt) Fault>> broken core, gouge on foliation and within brecciated zones.

<<Struc: 104 - 106 Moderate (Alt) dominant foliation>>

<<Struc: 106.6 - 107.9 Moderate (Alt) Fault>> broken core, several narrow <1cm gouge zones

<<Struc: 108.5 - 109.5 Moderate (Alt) Fault>> several <1cm gouge fracture zones 30-65 deg CA

<<Struc: 110 - 116 Moderate (Alt) dominant foliation>>

<<Struc: 112.9 - 113.4 Moderate (Alt) Fault>> fracture zone

<<Struc: 115.4 - 115.5 Moderate (Alt) Fault>>

<<Struc: 121.7 - 124 Strong (Alt) Fault>> 45-75 deg to CA, approx 30% core rec'y

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
125.00	128.00	3.00	B00269662	0.5	0.005	-0.01	-0.01	-0.01
128.00	130.50	2.50	B00269663	1.3	0.033	0.02	-0.01	0.03
130.50	131.00	0.50	B00269664	0.4	0.009	-0.01	-0.01	-0.01
131.00	132.40	1.40	B00269665	0.4	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 125 - 129 Moderate (Alt) dominant foliation>>

<<Struc: 125 - 132.4 Strong (Alt) Fault>> poor core rec'y, broken and crushed core, 'fault gravel', minor gouge.

132.40 133.10 No Core No Core

133.10 133.20 OA Magnetite bearing sulphides MG

133.1 - 133.2: 7cm recovered core in 1.6m core drilled interval. Too small to sample.

133.20 134.00 No Core No Core

134.00	**134.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	134.00	134.80	0.80	B00269666	197	2.16	0.64	2.05	7.83

<<Min: 134 - 134.8 8% Min: Sphalerite>>

<<Min: 134 - 134.8 65% Min: Pyrite>>

<<Min: 134 - 134.8 0.5% Min: Magnetite>> in one 2cm band at 134.7m

<<Min: 134 - 134.8 2% Min: Chalcopyrite>>

<<Min: 134 - 134.8 5% Min: Calcite>>

134.80	**135.40**	**RHY**	**undifferentiated rhyolite green**	134.80	135.40	0.60	B00269667	11.2	0.086	0.1	0.02	0.03

134.8 - 135.4: 70% qtz, 5% flt gouge, 25% chloritized schist with 5% cpy blebs - diss

<<Min: 134.8 - 135.4 0.1% Min: Pyrite>>

<<Min: 134.8 - 135.4 0.25% Min: Chalcopyrite>> In qtz vein stringers in grey-green schist

<<Min: 134.8 - 135.4 2% Min: Calcite>> In schist

<<Alt: 134.8 - 135.4 Moderate (Alt) Chlorite>> interval is mostly qtz vein but <10cm pieces of schist are strongly chloritized (talcose?)

<<Vein: 134.8 - 135.3 75% Quartz>> white qtz vein, 10 cm chlorite altered schist at lower contact.

<<Struc: 134.8 - 135 Moderate (Alt) Fault>> 5 cm crushed altered schist and gouge

135.40	**136.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	135.40	136.30	0.90	B00269668	136	1.3	0.15	1.54	5.74

<<Min: 135.4 - 136.3 5% Min: Sphalerite>>

<<Min: 135.4 - 136.3 70% Min: Pyrite>>

<<Min: 135.4 - 136.3 5% Min: Calcite>>

136.30	**137.00**	**RHY**	**undifferentiated rhyolite**	136.30	137.00	0.70	B00269669	9.8	0.086	-0.01	0.15	0.06

136.3 - 137: soft, strongly fractured, includes 10cm gouge zone,

<<Min: 136.3 - 137 2% Min: Pyrite>> In schist

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 136.3 - 137 5% Min: Calcite>> In schist									
		<<Alt: 136.3 - 137 Moderate (Alt) Muscovite>> more sericite than real muscovite									
		<<Vein: 136.3 - 137 25% Quartz-Carbonate-Sericite>> section of fractured sericite altered rhyolite backeted by gouge and crushed qtz-calcite veining.									
		<<Struc: 136.3 - 137 Moderate (Alt) Fault>> fractured zone, brecciated veins, gouge zones.									
137.00	**141.40**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	137.00	138.00	1.00	B00269672	90.1	0.886	0.15	1.76	6.97
		137 - 141.4: calcite, sphalerite and possible barite content increase downhole. Chlorite after corderite at 138m									
		<<Min: 137 - 141.4 20% Min: Sphalerite>>	138.00	139.00	1.00	B00269673	164	1.14	0.36	1.9	7.44
		<<Min: 137 - 141.4 60% Min: Pyrite>>	139.00	140.00	1.00	B00269674	163	0.703	0.03	2.08	5.98
		<<Min: 137 - 141.4 5% Min: Calcite>> and patchy	140.00	141.00	1.00	B00269675	147	0.893	0.06	2.31	6.2
		<<Min: 139.3 - 140.6 3% Min: Magnetite>>	141.00	141.40	0.40	B00269676	129	1.08	0.04	1.83	10.3
		<<Alt: 137.9 - 138 Moderate (Alt) Cordierite>> angular 0.5 cm crystals replaced by dolomite and dark grey chlorite and clays									
141.40	**141.80**	**RHY** **undifferentiated rhyolite**	141.40	141.80	0.40	B00269677	23	0.098	-0.01	0.28	0.54
		141.4 - 141.8: NOT RHY! 40cm of banded qtz - calcite within massive sulphide unit									
		<<Min: 141.4 - 141.8 5% Min: Pyrite>>									
		<<Min: 141.4 - 141.8 60% Min: Calcite>> vein or bed									
		<<Vein: 141.4 - 141.8 100% Quartz-Carbonate-Sericite 25 deg. >> folded Laminated and banded clacite-minor qtz-sercite bed or vein									
141.80	**142.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	141.80	142.70	0.90	B00269678	167	0.931	0.02	2.66	9.98
		<<Min: 141.8 - 142.7 25% Min: Sphalerite>>									
		<<Min: 141.8 - 142.7 15% Min: Calcite>> and diss									
		<<Struc: 141.8 - 141.8 Moderate (Alt) Contact>>									
142.70	**148.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**	142.70	144.00	1.30	B00269679	1.6	0.012	-0.01	0.02	0.06
		<<Min: 142.7 - 148.7 20% Min: Calcite>> and diss	144.00	145.50	1.50	B00269681	0.9	0.011	0.01	-0.01	0.01
		<<Min: 143.1 - 143.4 0.5% Min: Pyrrhotite>>	145.50	147.00	1.50	B00269682	0.7	-0.005	-0.01	-0.01	0.01
		<<Min: 143.3 - 148.5 1% Min: Pyrrhotite>>	147.00	148.00	1.00	B00269683	1.4	0.005	-0.01	-0.01	0.01
		<<Alt: 142.8 - 143.1 Moderate (Alt) Chlorite>> blends in with OP chl	148.00	148.70	0.70	B00269684	-0.3	-0.005	-0.01	-0.01	0.03

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 143.1 - 148.5 Strong (Alt) Chlorite>> blends in with Chl adjacent to MSx													
<<Alt: 148.5 - 148.7 Moderate (Alt) Chlorite>> blends in with OP chl													
<<Struc: 142.7 - 142.8 Moderate (Alt) Contact>> laminated calcite at contact													
<<Struc: 143 - 144 Moderate (Alt) dominant foliation>>													
<<Struc: 146 - 148.7 Moderate (Alt) dominant foliation>>													
148.70	**149.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**dark grey**	148.70	149.80	1.10	B00269685	113	0.447	1.02	0.73	3.18
<<Min: 148.7 - 149.8 10% Min: Sphalerite>>													
<<Min: 148.7 - 149.8 8% Min: Pyrite>> coarse grained													
<<Min: 148.7 - 149.8 10% Min: Pyrrhotite>> coarse grained													
<<Min: 148.7 - 149.8 3% Min: Magnetite>>													
<<Min: 148.7 - 149.8 15% Min: Chalcopyrite>> coarse grained													
<<Min: 148.7 - 149.8 5% Min: Calcite>> coarse grained													
<<Alt: 148.7 - 149.8 Strong (Alt) Chlorite>>													
<<Alt: 148.8 - 154.9 Moderate (Alt) Silicification>>													
<<Alt: 148.8 - 154.9 Moderate (Alt) Muscovite>>													
<<Struc: 148.7 - 149.8 Moderate (Alt) dominant foliation>>													
149.80	**154.90**	**RHY**	**undifferentiated rhyolite**	**grey**	149.80	151.00	1.20	B00269686	1	0.008	-0.01	-0.01	0.01
<<Min: 149.8 - 154.9 0.2% Min: Sphalerite>>					151.00	152.50	1.50	B00269687	1.4	0.018	-0.01	0.02	0.04
<<Min: 149.8 - 154.9 1% Min: Pyrite>>					152.50	154.00	1.50	B00269688	1.1	0.018	-0.01	0.02	0.03
<<Min: 149.8 - 154.9 5% Min: Calcite>>					154.00	154.90	0.90	B00269689	1.2	0.016	-0.01	0.01	0.01
<<Struc: 154 - 154.9 Moderate (Alt) dominant foliation>>													
154.90	**155.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		154.90	155.30	0.40	B00269692	125	1.87	0.51	1.5	10.6
<<Min: 154.9 - 155.9 3% Min: Calcite>>													
155.30	**155.60**	**OA**	**Magnetite bearing sulphides**		155.30	155.60	0.30	B00269693	233	1.31	0.21	3.1	8.55
155.60	**155.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		155.60	155.90	0.30	B00269694	346	4.48	0.43	2.43	6.73
155.90	**157.70**	**RHY**	**undifferentiated rhyolite**	**grey**	155.90	157.00	1.10	B00269695	26.7	0.286	0.02	0.14	0.58
<<Min: 155.9 - 156.7 2% Min: Pyrite>>					157.00	157.70	0.70	B00269696	3.8	0.024	-0.01	0.02	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 155.9 - 157.7 1% Min: Calcite>>									
		<<Min: 156.7 - 156.8 10% Min: Pyrite>> 3 cm py band									
		<<Min: 156.8 - 157.7 1% Min: Pyrite>>									
		<<Alt: 155.9 - 157.7 Moderate (Alt) Muscovite>>									
		<<Struc: 155.9 - 155.9 Moderate (Alt) Contact>>									
157.70	**158.10**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	157.70	158.10	0.40	B00269697	281	2.17	0.1	3.66	6.73
		157.7 - 158.1: 10cm pyrrhotite rich section at lower contact.									
		<<Min: 157.7 - 158.1 15% Min: Sphalerite>>									
		<<Min: 157.7 - 158.1 40% Min: Pyrite>>									
		<<Min: 157.7 - 161 10% Min: Calcite>>									
		<<Struc: 157.7 - 157.9 Moderate (Alt) Contact>>									
		<<Struc: 158 - 158.1 Moderate (Alt) Contact>>									
158.10	**198.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** green	158.10	159.00	0.90	B00269698	7.9	0.023	0.02	0.15	0.21
		158.1 - 198: 167.0-173.0: gabbroic textures. 196.1-198.0m bleached and sericite altered, fresh biotite, pseudo leucoxene last 0.5m.									
		<<Min: 158.1 - 158.9 1% Min: Pyrrhotite>> & patchy	159.00	160.50	1.50	B00269699	0.9	0.007	-0.01	0.01	0.02
		<<Min: 158.1 - 162.4 0.1% Min: Pyrite>>	160.50	162.00	1.50	B00269701	-0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 158.9 - 162.4 0.1% Min: Pyrrhotite>>	162.00	163.50	1.50	B00269702	-0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 161 - 163.7 5% Min: Calcite>>	193.50	195.00	1.50	B00269703	-0.3	0.005	-0.01	-0.01	-0.01
		<<Min: 163.7 - 173.5 2% Min: Calcite>>	195.00	196.50	1.50	B00269704	-0.3	-0.005	0.01	-0.01	0.02
		<<Min: 173.5 - 175.4 10% Min: Calcite>>	196.50	198.00	1.50	B00269705	2.6	0.045	0.06	-0.01	0.03
		<<Min: 175.4 - 190.3 5% Min: Calcite>> and veinlets									
		<<Min: 178.8 - 180 0.1% Min: Pyrite>>									
		<<Min: 178.8 - 180 0.1% Min: Pyrrhotite>>									
		<<Min: 178.8 - 180 0.1% Min: Chalcopyrite>>									
		<<Min: 190.3 - 198 10% Min: Calcite>> and diss									
		<<Min: 196.1 - 197.2 2% Min: Pyrrhotite>>									
		<<Min: 197 - 198 1% Min: Pyrite>>									
		<<Alt: 158.1 - 159 Moderate (Alt) Biotite>>									
		<<Alt: 159 - 162 Moderate (Alt) Chlorite>> bands of chlorite = OR verses blebby patches = OP									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 159 - 198 Moderate (Alt) Biotite>>									
		<<Alt: 162 - 195.5 Moderate (Alt) Chlorite>>									
		<<Alt: 178 - 180.3 Weak (Alt) Chlorite>> original ?									
		<<Alt: 191.5 - 198 Moderate (Alt) Biotite>>									
		<<Vein: 173.6 - 175.4 20% Quarzt-Chlorite-Carbonate 20 deg. >>									
		<<Struc: 158.1 - 160 Moderate (Alt) dominant foliation>>									
		<<Struc: 160 - 162 Moderate (Alt) dominant foliation>>									
		<<Struc: 162 - 164 Moderate (Alt) dominant foliation>>									
		<<Struc: 172 - 173.5 Moderate (Alt) dominant foliation>>									
		<<Struc: 179.5 - 182 Moderate (Alt) dominant foliation>>									
		<<Struc: 186 - 188 Moderate (Alt) dominant foliation>>									
		<<Struc: 192.5 - 193.5 Moderate (Alt) dominant foliation>>									
		<<Struc: 195.4 - 196.3 Weak (Alt) Fault>> Minor (<1cm) gouge on fracture faces approx parallel to dominent foliation									
		<<Struc: 197.6 - 197.8 Weak (Alt) Fault>> crushed, minor clay - chlorite gouge									
198.00	**199.60**	**OG** **Chalcopyrite rich sulphides** **FMG**	198.00	199.00	1.00	B00269706	294	4.29	2.41	4.3	8.03
		198 - 199.6: approx 20% cpy. Minor fine grained pyrrhotite - magnetite									
		<<Min: 198 - 199.6 15% Min: Sphalerite>>	199.00	199.60	0.60	B00269707	242	2.69	1.69	3.6	6.85
		<<Min: 198 - 199.6 25% Min: Pyrite>> intergrown with CP									
		<<Min: 198 - 199.6 12% Min: Chalcopyrite>> Banded and diss									
		<<Min: 198 - 199.6 10% Min: Calcite>> and diss									
		<<Min: 199.4 - 199.6 3% Min: Magnetite>>									
		<<Struc: 198 - 198 Moderate (Alt) Contact>> on fracture face									
		<<Struc: 198.5 - 199.4 Moderate (Alt) dominant foliation>> sulfide banding									
199.60	**200.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	199.60	200.00	0.40	B00269708	285	1.25	0.6	5.29	11.6
		199.6 - 200: classic OB, 5%+ galena, minor (weak) fine grained Pyrrhotite									
		<<Min: 199.6 - 201 12% Min: Chalcopyrite>>									
		<<Min: 199.6 - 203.2 5% Min: Magnetite>>									
		<<Min: 199.6 - 205 10% Min: Sphalerite>>									
		<<Min: 199.6 - 205 20% Min: Pyrite>> Content varies 15-40%, abundant rhy crackle brecciated clasts									
		<<Min: 199.6 - 205 12% Min: Calcite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
200.00	**201.40**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	200.00	201.00	1.00	B00269709	272	2.8	1.46	4.95	8.34

200 - 201.4: Net textured cpy (5-10% total) & minor pyrrhotite cutting altered siliceous crackle brecciated rhyolite (?). Unit includes sections of OB.

<<Min: 201 - 203 5% Min: Chalcopyrite>>					201.00	201.40	0.40	B00269712	266	2.19	2.5	3.6	11.2
201.40	**207.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	201.40	202.00	0.60	B00269713	368	1.56	0.62	5.3	14.8

201.4 - 207.8: 201.5-203.0 and 204.6-207.3: <2% diss mag. 20%+ sphalerite (and 3%+ galena) in bands. 202.-206:approx 30-40% <1cm size milled - rounded wallrock (rhyolite?) clasts that are partly replaced by sulfides.

<<Min: 203 - 205 3% Min: Chalcopyrite>>					202.00	203.00	1.00	B00269714	431	1.93	0.33	6.47	10.7
<<Min: 205 - 207 20% Min: Sphalerite>> Banded - laminated					203.00	204.00	1.00	B00269715	178	3.37	0.33	1.86	7.03
<<Min: 205 - 207 20% Min: Pyrite>>					204.00	205.00	1.00	B00269716	135	1.76	0.26	1.01	6.79
<<Min: 205 - 207 5% Min: Chalcopyrite>>					205.00	206.00	1.00	B00269717	228	3.89	0.49	2.06	10.8
<<Min: 205 - 207.8 15% Min: Calcite>>					206.00	207.00	1.00	B00269718	222	1.45	0.14	3.52	11.8
<<Min: 207 - 208.2 10% Min: Sphalerite>> Locally banded and laminated					207.00	207.80	0.80	B00269719	142	0.886	0.14	2.3	5.8
<<Min: 207 - 208.2 50% Min: Pyrite>> and dis and banded													
<<Min: 207 - 208.2 3% Min: Chalcopyrite>> And rare blebs													
<<Struc: 204 - 208 Moderate (Alt) Foliation>> sulfide laminations													
207.80	**208.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	207.80	208.20	0.40	B00269721	124	1.89	1.97	1.06	3.96

207.8 - 208.2: 5% diss mag, getting close to being called OA

<<Min: 207.8 - 208.2 5% Min: Magnetite>>													
<<Min: 207.8 - 208.2 2% Min: Calcite>>													
208.20	**209.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	208.20	209.00	0.80	B00269722	203	1.36	0.08	3.79	8.32
<<Min: 208.2 - 209.75 7% Min: Sphalerite>>					209.00	209.75	0.75	B00269723	203	1.93	0.39	3.19	8.13
<<Min: 208.2 - 209.75 60% Min: Pyrite>>													
<<Min: 208.2 - 209.75 2% Min: Chalcopyrite>>													
<<Min: 208.2 - 209.75 15% Min: Calcite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
209.75	**210.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	209.75	210.15	0.40	B00269724	263	1.22	1.81	4.07	9.49

209.75 - 210.15: 10 cm section of weak OA, 5% mag overall. Unit includes 5cm wide qtz vein with remobilized, coarse grained, cpy (5%).

<<Min: 209.75 - 210.25 5% Min: Calcite>>

<<Min: 209.75 - 211.7 4% Min: Chalcopyrite>>

<<Min: 209.75 - 213 25% Min: Sphalerite>>

<<Min: 209.75 - 213 30% Min: Pyrite>> Laminated

<<Min: 209.75 - 213 5% Min: Galena>>

210.15	**211.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	210.15	211.00	0.85	B00269725	182	0.92	0.42	3.51	12.5

210.15 - 211.7: 210.7-211.7: sphalerite bands and lam - 20% overall, 5% galena, 5% cpy..

<<Min: 210.25 - 211.7 15% Min: Calcite>>

					211.00	211.70	0.70	B00269726	301	1.69	0.09	6.21	16.9

<<Struc: 210.15 - 212.5 Moderate (Alt) dominant foliation>> sulfide laminations

211.70	**212.52**	**OG**	**Chalcopyrite rich sulphides**	**FMG**	211.70	212.52	0.82	B00269727	366	3.61	4.49	5.68	19.8

211.7 - 212.52: approx 20 % cpy but looks like OG. 15% sphalerite.

<<Min: 211.7 - 213 10% Min: Chalcopyrite>> And as patchy blebs and wisps and rare bands.

<<Min: 211.7 - 219.25 5% Min: Calcite>> diss, blebs, wisps

212.52	**214.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	212.52	213.00	0.48	B00269728	350	2.04	1.04	7.95	23.4

212.52 - 214: 15% sphalerite, 5% cpy, 5% galena in bands

<<Min: 213 - 215.9 15% Min: Sphalerite>>

					213.00	214.00	1.00	B00269729	275	1.45	0.6	6.29	15.9

<<Min: 213 - 215.9 35% Min: Pyrite>>

<<Min: 213 - 215.9 5% Min: Pyrrhotite>>

<<Min: 213 - 215.9 2% Min: Magnetite>>

<<Min: 213 - 215.9 3% Min: Galena>>

<<Min: 213 - 215.9 5% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
214.00	**214.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	214.00	214.40	0.40	B00269732	187	2.4	3.39	1.87	11.5
214 - 214.4: mostly remobilized cpy,sph, with qtz and minor chlorite flanked by OB with minor mag/pyrrhotite.													
214.40	**215.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	214.40	215.00	0.60	B00269733	161	2	0.75	2.52	10
214.4 - 215.9: patches of diss mag (<1% overall).													
<<Struc: 214.4 - 215 Moderate (Alt) dominant foliation>> sulfide laminations					215.00	215.90	0.90	B00269734	132	2.16	0.42	2.09	10.7
215.90	**216.30**	**OG**	**Chalcopyrite rich sulphides**	**FMG**	215.90	216.30	0.40	B00269735	191	4.01	3.32	2.05	14.3
215.9 - 216.3: core appears mixed up due to possible driller error. 25cm section of good OG, flanked by OB													
<<Min: 215.9 - 216.3 25% Min: Sphalerite>>													
<<Min: 215.9 - 216.3 5% Min: Pyrite>>													
<<Min: 215.9 - 216.3 5% Min: Pyrrhotite>>													
<<Min: 215.9 - 216.3 5% Min: Magnetite>>													
<<Min: 215.9 - 216.3 1% Min: Galena>>													
<<Min: 215.9 - 216.3 25% Min: Chalcopyrite>>													
216.30	**217.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	216.30	217.00	0.70	B00269736	225	0.957	0.35	3.77	13.1
216.3 - 217.6: 20% sph, 5% cpy & 5% galena, inter banded - laminated with fine grained qtz.													
<<Min: 216.3 - 217.6 17% Min: Sphalerite>>					217.00	217.60	0.60	B00269737	210	1.18	1.16	2.91	11
<<Min: 216.3 - 217.6 20% Min: Pyrite>>													
<<Min: 216.3 - 217.6 0.5% Min: Pyrrhotite>>													
<<Min: 216.3 - 217.6 0.5% Min: Magnetite>>													
<<Min: 216.3 - 217.6 2% Min: Galena>>													
<<Min: 216.3 - 217.6 5% Min: Chalcopyrite>>													
<<Struc: 216.5 - 217 Moderate (Alt) dominant foliation>> sulfide laminations													
217.60	**218.20**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	217.60	218.20	0.60	B00269738	199	2.62	1.82	1.11	3.98
217.6 - 218.2: unit includes 20cm of fractured RHY & fault gouge up against 5 cm OG followed by 30cm of OI													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 217.6 - 225 10% Min: Sphalerite>>													
<<Min: 217.6 - 225 15% Min: Pyrite>>													
<<Min: 217.6 - 225 1% Min: Pyrrhotite>>													
<<Min: 217.6 - 225 1% Min: Magnetite>>													
<<Min: 217.6 - 225 2% Min: Galena>>													
<<Min: 217.6 - 225 3% Min: Chalcopyrite>>													
<<Struc: 217.6 - 217.8 Strong (Alt) Fault>> gouge													
218.20	**218.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	218.20	218.60	0.40	B00269739	108	1.38	0.48	1.21	9.6
218.2 - 218.6: includes 10cm of RHY with diss sulfides													
218.60	**219.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	218.60	219.25	0.65	B00269741	180	0.991	0.33	2.54	8.01
218.6 - 219.25: includes 10cm of RHY with diss sulfides, 10% lam - banded and dis sph.													
<<Struc: 218.6 - 219 Moderate (Alt) dominant foliation>> sulfide laminations													
219.25	**232.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	219.25	220.50	1.25	B00269742	6	0.039	0.03	0.08	0.31
<<Min: 219.3 - 224 20% Min: Calcite>>					220.50	222.00	1.50	B00269743	0.7	0.009	-0.01	-0.01	0.03
<<Min: 224 - 228.2 10% Min: Calcite>>					222.00	223.50	1.50	B00269744	1.9	0.015	-0.01	0.04	0.06
<<Min: 228.2 - 232.3 20% Min: Calcite>>					228.00	229.50	1.50	B00269745	0.8	-0.005	-0.01	0.02	0.03
<<Min: 232.2 - 234.05 5% Min: Calcite>>					229.50	231.00	1.50	B00269746	0.9	0.012	-0.01	0.03	0.03
<<Min: 232.2 - 234.5 5% Min: Sphalerite>>					231.00	232.30	1.30	B00269747	3.3	0.014	-0.01	0.05	0.06
<<Min: 232.2 - 234.5 5% Min: Pyrite>> CP-PO bands													
<<Min: 232.2 - 234.5 15% Min: Pyrrhotite>>													
<<Min: 232.2 - 234.5 2% Min: Galena>>													
<<Min: 232.2 - 234.5 15% Min: Chalcopyrite>>													
<<Alt: 219.25 - 226.25 Moderate (Alt) Biotite>> intensity decreases downhole													
<<Alt: 222 - 226.25 Weak (Alt) Chlorite>> intensity increases downhole.													
<<Alt: 226.25 - 232.3 Moderate (Alt) Chlorite>> Diss but forms bands similar to chl bands in OJ. Intensity increases downhole													
<<Struc: 219.25 - 219.25 Moderate (Alt) Contact>> fracture face and parallel chlorite bands mark contact													
<<Struc: 222 - 224 Moderate (Alt) dominant foliation>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 225 - 227 Moderate (Alt) dominant foliation>>									
		<<Struc: 229 - 231 Moderate (Alt) dominant foliation>>									
		<<Struc: 231 - 232 Moderate (Alt) dominant foliation>>									
232.30	**234.05**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	232.30	233.00	0.70	B00269748	174	2.23	4.67	1.24	4.53
		232.3 - 234.05: includes 15cm OB at upper contact									
		<<Min: 232.3 - 234.05 5% Min: Chalcopyrite>> patchy, crude bands and blebs	233.00	234.05	1.05	B00269749	118	2.82	5.01	0.12	3.87
		<<Alt: 232.3 - 234.05 Strong (Alt) Chlorite>>									
		<<Alt: 232.5 - 234.1 Moderate (Alt) Cordierite>>									
		<<Struc: 232.3 - 232.3 Moderate (Alt) Contact>>									
		<<Struc: 233 - 234 Moderate (Alt) dominant foliation>>									
234.05	**237.00**	**RHYc** **Rhyolite coherant volcanics**	234.05	235.50	1.45	B00269752	2.6	0.012	0.02	0.03	0.08
		234.05 - 237: silic bands, weak-poor curdy texture									
		<<Min: 234.05 - 237 0.1% Min: Sphalerite>> concentrated in sulphide bands.	235.50	237.00	1.50	B00269753	1.2	0.047	-0.01	0.02	0.05
		<<Min: 234.05 - 237 2% Min: Pyrite>> and concentrated in bands									
		<<Alt: 234.2 - 240 Strong (Alt) Muscovite>> strongest on fracture faces									
		<<Struc: 234.05 - 234.05 Moderate (Alt) Contact>>									
		<<Struc: 234.2 - 235.8 Moderate (Alt) dominant foliation>>									
		<<Struc: 236 - 237 Fault>> multiple thin, <1-10cm zones with crushed schist, minor gouge - clay.									
237.00	**247.80**	**RHY** **undifferentiated rhyolite**	237.00	238.50	1.50	B00269754	-0.3	0.006	-0.01	-0.01	-0.01
		<<Min: 237 - 240.7 0.1% Min: Pyrite>>									
		<<Min: 237 - 240.7 1% Min: Pyrrhotite>>									
		<<Min: 240 - 243 3% Min: Calcite>>									
		<<Min: 240.7 - 247.3 0.5% Min: Pyrite>> py rimmed (being replaced) by po.									
		<<Min: 240.7 - 247.3 3% Min: Pyrrhotite>>									
		<<Min: 244.5 - 244.6 0.1% Min: Chalcopyrite>>									
		<<Alt: 240 - 247 Weak (Alt) Muscovite>>									
		<<Vein: 243.4 - 246 5% Quartz-Tourmaline 30 deg. >> numerous <1cm qtz tour veins, +/- calcite, with tournaline envelope									
		<<Struc: 237.9 - 239.6 Weak (Alt) Fault>> numerous small gouge - clay zones, mostly parallel to foliation									
		<<Struc: 238.15 - 240 Moderate (Alt) dominant foliation>>									
		<<Struc: 239.7 - 239.8 Weak (Alt) Fault>> 0.5cm wide cross cutting fracture with clay.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 241 - 243 Moderate (Alt) dominant foliation>>

<<Struc: 245 - 247 Moderate (Alt) dominant foliation>>

<<Struc: 247.3 - 247.8 Moderate (Alt) Fault>> 247.30-247.80m: 0.45m missing core, core rubble, minor clay

<<Struc: 247.3 - 247.8 Moderate (Alt) dominant foliation>> not parrallel to foliation.

End of Hole @ 247.8

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-304

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	21-Oct-15
UTM Easting	415149	Core Size:	HQ3	Azimuth:	234.72	Date Logging Complete:	24-Oct-15
UTM Northing:	6815074	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1406.33	Casing Depth (m):	6	Length (m):	254	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	20-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-304 was drilled as an exploration hole to test the continuity of the down-dropped and mafic hosted/associated massive sulphide lenses (Krakatoa lens).
The hanging wall package (4.9-125 m) consisted of mixed rhyolite, RHYi, BI+CA schists (dykes?), and a minor mudstone horizon. MU-alteration becomes apparent at 85.5 m and increases in intensity toward the upper massive sulphide lens at 125 m. The upper lens (125-127.8 m) consists of OA ore type. Below this lens MU-altered rhyolite continues to a depth of 130.6 m. From 130.6-161.8 m a CL+BI+/-CA schist (MAFi) occurs, with no apparent alteration near either contact. Below the mafic unit, MSXS occurs from 161.8-171.6 m, consisting of OA and OB ore types. The footwall of this lens consists of strongly MU-altered rhyolite cross-cut by RHYi. From 203-206.25 m, there is another CL+BI+CA schist, with ~.5 m of OJ mineralization below (Lowest lens). The footwall of this lowest lens consists of MU-altered rhyolites to the end of the hole (254 m).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	234.72	0	234.72	APS	Sean Suttie	20-Oct-15		☑	
5	-59.7	216.2	22.5	238.7	ReflexEZS	Geotech	20-Oct-15	5800	☑	
26	-60	215.6	22.5	238.1	ReflexEZS	Geotech	20-Oct-15	5787	☑	
77	-60.1	217.5	22.5	240	ReflexEZS	Geotech	21-Oct-15	5797	☑	
101	-60.5	216.2	22.5	238.7	ReflexEZS	Geotech	21-Oct-15	5816	☑	
125	-60.7	215.9	22.5	238.4	ReflexEZS	Geotech	21-Oct-15	5570	☑	
152	-60.9	215.4	22.5	237.9	ReflexEZS	Geotech	21-Oct-15	5794	☑	
175	-61.1	212.2	22.5	234.7	ReflexEZS	Geotech	22-Oct-15	5806	☑	
200	-61.5	214.8	22.5	237.3	ReflexEZS	Geotech	22-Oct-15	5820	☑	
227	-61.8	216	22.5	238.5	ReflexEZS	Geotech	22-Oct-15	5840	☑	
250	-62.4	213.4	22.5	235.9	ReflexEZS	Geotech	23-Oct-15	5805	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**OVBN Overburden**									
<<Min: 4.9 - 10.4 5% Min: Calcite>>											
<<Min: 4.9 - 12 0.5% Min: Pyrrhotite>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.00 10.40 RHYva Coarse grained to ash tuff

6 - 10.4: Medium grey, fine grained ash tuff with ~5% felsic lpl and ~5% disseminated euhedral BI.

10.40 11.40 RHYvl Lapilli tuff

10.4 - 11.4: rhyolitic lpl with medium grey groundmass. Grades from ~10% lpl to ~flow banded texture.

<<Min: 10.4 - 11.4 10% Min: Calcite>>

11.40 12.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

11.4 - 12: BI+CA schist. Mafic dyke?

<<Min: 11.4 - 12 20% Min: Calcite>>

12.00 27.90 RHYi Aphanitic Rhyolite (intrusion)

12 - 27.9: Light grey aphanitic rhyolite intrusion with abundant healed fractures. Contacts appear to grade from fine grained to flow banded texture to typical aphanitic RHYi over ~1 m.

<<Min: 12 - 27.9 2% Min: Pyrite>>

<<Min: 12 - 27.9 2% Min: Calcite>>

<<Vein: 14.4 - 14.8 40% Quartz>> 2 massive QZ+/-CA veins

<<Vein: 18.2 - 18.3 95% Quartz>> Massive QZ+CA vein

27.90 31.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

27.9 - 31.4: BI+CA schist. Mafic dyke with ~.4 m of flow banded rhyolite from 29-29.4 m.

<<Min: 27.9 - 31.4 2% Min: Pyrite>>

<<Min: 27.9 - 31.4 20% Min: Calcite>>

31.40 56.80 RHYi Aphanitic Rhyolite (intrusion)

31.4 - 56.8: Pinkish-grey aphanitic siliceous dyke. High density of healed fractures. Contacts appear to grade from fine grained to flow banded texture to typical aphanitic RHYi over ~1 m.

<<Min: 31.4 - 56.8 2% Min: Pyrite>>

<<Min: 31.4 - 56.8 2% Min: Calcite>>

<<Struc: 31.44 - 31.45 dominant foliation>> Discontinuous foliation defined by siliceous blebs

<<Struc: 33.4 - 33.41 dominant foliation>> Spaced MU cleavage

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

56.80 59.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

56.8 - 59.1: BI+CA+/-CL schist

<<Min: 56.8 - 59.1 2% Min: Pyrite>>

<<Min: 56.8 - 59.1 0.5% Min: Pyrrhotite>>

<<Min: 56.8 - 59.1 20% Min: Calcite>>

59.10 61.40 RHYc Rhyolite coherant volcanics

59.1 - 61.4: Siliceous banding with MU+CL cleavages. Maybe more sheared RHYi?

<<Min: 59.1 - 61.4 5% Min: Calcite>>

<<Struc: 59.4 - 59.85 Weak (Alt) Fault>> Faulted and fractured zone with local fault gouge

61.40 62.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

61.4 - 62.3: BI+CL+CA schist

<<Min: 61.4 - 62.3 2% Min: Pyrite>>

<<Min: 61.4 - 62.3 0.5% Min: Pyrrhotite>>

<<Min: 61.4 - 62.3 20% Min: Calcite>>

62.30 63.30 RHYi Aphanitic Rhyolite (intrusion)

62.3 - 63.3: Highly fractured aphanitic rhyolite

<<Min: 62.3 - 64.4 0.5% Min: Pyrite>>

<<Min: 62.3 - 64.4 10% Min: Calcite>>

63.30 64.40 RHYvl Lapilli tuff

63.3 - 64.4: felsic lpl within a MU groundmass

64.40 66.80 RHYva Coarse grained to ash tuff

64.4 - 66.8: Medium grey fine grained ash tuff

<<Min: 64.4 - 88.2 1% Min: Pyrite>>

<<Min: 64.4 - 88.2 1% Min: Pyrrhotite>>

<<Min: 64.4 - 98.1 5% Min: Calcite>>

<<Struc: 64.8 - 64.85 Weak (Alt) Fault>> Fault gouge zone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

66.80 69.50 RHYvl Lapilli tuff

66.8 - 69.5: Medium grey CL+BI+MU+QZ schist. Lpl are composed of CL+BI+/-CA within a MU+QZ ash groundmass

69.50 71.80 RHYvl Lapilli tuff

69.5 - 71.8: Felsic clasts/lpl within a medium grey MU+QZ groundmass

<<Struc: 69.8 - 70.2 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

71.80 76.20 RHYvl Lapilli tuff

71.8 - 76.2: Medium grey CL+BI+MU+QZ schist. Lpl are composed of CL+BI+/-CA within a MU+QZ ash groundmass

<<Struc: 75.7 - 76.4 Weak-Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge

76.20 77.20 RHYcw Curdy textured-flow banded (flows, subvolcanics)

76.2 - 77.2: Siliceous banding in MU+QZ groundmass

77.20 88.20 RHYva Coarse grained to ash tuff

77.2 - 88.2: Medium grey fine grained ash tuff with local lpl

<<Alt: 85.5 - 102.4 Weak (Alt) Muscovite>>

<<Vein: 82.05 - 82.1 90% Quartz>> Massive QZ vein

<<Vein: 86.2 - 86.3 40% Quartz>> Deformed QZ vein

<<Struc: 81.2 - 81.35 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 83.2 - 83.8 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 86 - 86.3 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

88.20 91.70 RHYv Rhyolite volcaniclastic

88.2 - 91.7: MU+QZ schist with some ~5% sulphide lpl

<<Min: 88.2 - 98.1 1% Min: Pyrite>>

<<Min: 88.2 - 98.1 3% Min: Pyrrhotite>>

<<Vein: 89.1 - 89.5 10% Quartz>> Zone with a few ~2 cm massive QZ veins

<<Struc: 89 - 89.7 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

91.70 95.80 RHYva Coarse grained to ash tuff

91.7 - 95.8: Medium grey fine grained ash tuff with local lpl

<<Struc: 91.7 - 92 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 94.3 - 94.5 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 95.75 - 95.8 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge										
95.80	**98.10**	**RHYv**	**Rhyolite volcaniclastic**										
95.8 - 98.1: MU+QZ schist with some ~5% sulphide lpl													
			<<Struc: 96.7 - 97.3 Weak-Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge										
98.10	**98.90**	**MDSc**	**Carbonaceous dominant mudstone**										
98.1 - 98.9: Argillitic mudstone													
			<<Min: 98.1 - 98.9 10% Min: Pyrite>>										
			<<Min: 98.1 - 98.9 2% Min: Calcite>>										
			<<Min: 98.1 - 98.9 2% Min: Arsenopyrite>>										
98.90	**113.10**	**RHYv**	**Rhyolite volcaniclastic**										
98.9 - 113.1: MU+QZ schist with some ~5% sulphide lpl													
			<<Min: 98.9 - 120.7 3% Min: Pyrite>>										
			<<Min: 98.9 - 125 3% Min: Calcite>>										
			<<Alt: 102.4 - 120.7 Moderate (Alt) Muscovite>>										
			<<Struc: 99 - 100.7 Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge										
			<<Struc: 107.6 - 108.4 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge										
113.10	**125.00**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**		120.50	122.00	1.50	B00268487	-0.3	0.006	-0.01	-0.01	0.01
113.1 - 125: Wavy siliceous banding in MU+QZ foliated groundmass													
			<<Min: 120.7 - 125 1% Min: Pyrite>>		122.00	123.50	1.50	B00268488	-0.3	0.006	-0.01	-0.01	-0.01
			<<Alt: 120.7 - 125 Strong (Alt) Muscovite>>		123.50	125.00	1.50	B00268489	0.5	0.048	-0.01	-0.01	0.05
			<<Vein: 124.5 - 125.05 30% Quartz>> Zone with blebby/massive-deformed QZ+CA veins										
			<<Struc: 120.43 - 120.44 dominant foliation>> MU cleavage										
125.00	**127.80**	**OA**	**Magnetite bearing sulphides**	**MCG**	125.00	126.00	1.00	B00268492	83	0.376	0.22	1.83	8.52
125 - 127.8: Massive laminated PY+PO+SP+/-GL with heavily disseminated MG+CL+BI													
			<<Min: 125 - 126 10% Min: Sphalerite>>		126.00	127.00	1.00	B00268493	115	0.512	0.4	2.57	9.67
			<<Min: 125 - 126 30% Min: Pyrite>>		127.00	127.80	0.80	B00268494	74	0.437	0.56	1.23	10.9
			<<Min: 125 - 126 1% Min: Chalcopyrite>>										
			<<Min: 125 - 127.8 10% Min: Pyrrhotite>>										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 125 - 127.8 10% Min: Magnetite>>									
		<<Min: 125 - 127.8 10% Min: Calcite>>									
		<<Min: 126 - 127 3% Min: Sphalerite>>									
		<<Min: 126 - 127 25% Min: Pyrite>>									
		<<Min: 126 - 127 2% Min: Chalcopyrite>>									
		<<Min: 127 - 127.8 10% Min: Pyrite>>									
		<<Min: 127 - 127.8 5% Min: Chalcopyrite>>									
		<<Alt: 125 - 127.8 Moderate-Strong (Alt) Chlorite>> CL-altered BI and CI? porphyroblasts with in MSXS, as well as CL-groundmass									
		<<Struc: 125.15 - 125.16 dominant foliation>> sulphide lamination									
		<<Struc: 126.32 - 126.33 dominant foliation>> sulphide lamination									
		<<Struc: 127.2 - 127.21 dominant foliation>> sulphide lamination									
127.80	**130.60**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	127.80	129.30	1.50	B00268495	0.3	0.005	-0.01	0.01	0.07
		127.8 - 130.6: BI+CA+CL schist									
		<<Min: 127.8 - 130.6 20% Min: Calcite>>	129.30	130.60	1.30	B00268496	4.4	0.018	-0.01	0.08	0.04
		<<Alt: 127.8 - 130.4 Strong (Alt) Biotite>> Overprint or original?									
		<<Alt: 130.4 - 143.1 Strong (Alt) Muscovite>>									
		<<Struc: 129 - 129.3 Weak-Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge									
		<<Struc: 130.4 - 130.75 Weak-Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge									
130.60	**143.10**	**RHYv** **Rhyolite volcaniclastic**	130.60	132.10	1.50	B00268497	0.3	0.016	0.01	-0.01	0.02
		130.6 - 143.1: MU+QZ schist with elongated CA clasts (lpl?)									
		<<Min: 130.6 - 132.1 5% Min: Pyrite>>									
		<<Min: 130.6 - 132.1 1% Min: Pyrrhotite>>									
		<<Min: 130.6 - 132.1 15% Min: Calcite>>									
		<<Min: 132.1 - 143.1 2% Min: Pyrite>>									
		<<Min: 132.1 - 143.1 5% Min: Calcite>>									
		<<Vein: 130.75 - 130.95 60% Quartz>> 2 massive QZ+CA veins									
		<<Vein: 131.8 - 132.3 50% Calcite>> Zone with massive CA+QZ veining									
		<<Struc: 132.9 - 133.1 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge									
		<<Struc: 136.2 - 138 Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge									
		<<Struc: 140.4 - 143.1 Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
143.10	**161.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		157.30	158.80	1.50	B00268498	0.5	0.007	-0.01	0.01	0.02

143.1 - 161.8: From 143.1-158.15 m, the unit is a mottled CL+BI schist with minor CA blebs and fractures. From 158.15-161.8 m, the unit is a CL+BI+CA schist, with a discontinuous foliation defined by CA+BI.

<<Min: 143.1 - 158.15 2% Min: Calcite>>					158.80	160.30	1.50	B00268499	-0.3	0.009	-0.01	-0.01	0.02
<<Min: 143.1 - 161.8 0.5% Min: Pyrite>>					160.30	161.80	1.50	B00233101	-0.3	0.009	-0.01	-0.01	0.02
<<Min: 158.15 - 160.1 8% Min: Calcite>>													
<<Min: 160.1 - 161.8 20% Min: Calcite>>													
<<Alt: 143.1 - 161.4 Moderate (Alt) Biotite>>													
<<Alt: 143.1 - 161.8 Strong (Alt) Chlorite>>													
<<Alt: 161.4 - 161.8 Strong (Alt) Biotite>>													
<<Vein: 152 - 152.3 90% Calcite>> Massive CA+QZ vein													
<<Struc: 154.85 - 154.86 dominant foliation>> Discontinuous BI foliation													
<<Struc: 158.56 - 158.57 dominant foliation>> Discontinuous BI foliation													
<<Struc: 160.7 - 161 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge													
161.80	**162.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	161.80	162.70	0.90	B00233102	128	0.753	0.07	5.75	8.45

161.8 - 162.7: Laminated massive PY+SP+GL

<<Min: 161.8 - 162.7 1% Min: Calcite>>													
<<Min: 161.8 - 172.7 7% Min: Sphalerite>>													
<<Min: 161.8 - 172.7 60% Min: Pyrite>>													
<<Min: 161.8 - 172.7 2% Min: Galena>>													
162.70	**163.30**	**OA**	**Magnetite bearing sulphides**	**MCG**	162.70	163.30	0.60	B00233103	146	1.25	0.73	6.94	9.31

162.7 - 163.3: laminated massive PY+PO+SP+GL with heavily disseminated MG

<<Min: 162.7 - 163.3 3% Min: Sphalerite>>													
<<Min: 162.7 - 163.3 25% Min: Pyrite>>													
<<Min: 162.7 - 163.3 10% Min: Pyrrhotite>>													
<<Min: 162.7 - 163.3 10% Min: Magnetite>>													
<<Min: 162.7 - 163.3 2% Min: Galena>>													
<<Min: 162.7 - 163.3 10% Min: Chalcopyrite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.30	**171.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MCG**	163.30	164.00	0.70	B00233104	134	1.93	0.21	4.99	6.78

163.3 - 171.6: Laminated massive PY+SP+CP+GL with blebby and disseminated CA. Disseminated tetrahedrite(?) near the bottom of the unit.

<<Min: 163.3 - 165 10% Min: Sphalerite>>			164.00	165.00	1.00	B00233105	123	2.95	0.28	4.16	5.9
<<Min: 163.3 - 165 40% Min: Pyrite>>			165.00	166.00	1.00	B00233106	133	4.03	0.31	4.71	6.24
<<Min: 163.3 - 165 3% Min: Galena>>			166.00	167.00	1.00	B00233107	147	2.68	0.89	4.88	7.04
<<Min: 163.3 - 165 1% Min: Chalcopyrite>> and as diss			167.00	168.00	1.00	B00233108	143	2.15	0.46	4.68	7.96
<<Min: 163.3 - 171.6 15% Min: Calcite>> Blebs of CA, as well as, finely disseminated CA in the matrix			168.00	168.90	0.90	B00233109	120	1.89	0.11	3.67	5.84
<<Min: 165 - 171.6 12% Min: Sphalerite>>			168.90	169.80	0.90	B00233112	138	2.22	0.39	3.67	6.17
<<Min: 165 - 171.6 40% Min: Pyrite>>			169.80	170.70	0.90	B00233113	142	1.53	0.11	4.31	6.3
<<Min: 165 - 171.6 4% Min: Galena>>			170.70	171.60	0.90	B00233114	273	3.54	0.68	4.46	6.04
<<Min: 165 - 171.6 3% Min: Chalcopyrite>> And as diss											
<<Min: 165.6 - 171.6 2% Min: Chalcopyrite>> Associated with CA blebs and tetrahedrite(?)											
171.60	**176.00**	**RHY** **undifferentiated rhyolite**	171.60	172.20	0.60	B00233115	136	2.78	0.6	0.15	0.23

171.6 - 176: MU+CA+QZ schist with blebby CA texture that resembles MAFi.

<<Min: 171.6 - 176 1% Min: Pyrite>>			172.20	173.70	1.50	B00233116	0.5	0.014	-0.01	-0.01	-0.01
<<Min: 171.6 - 176 20% Min: Calcite>>			173.70	175.20	1.50	B00233117	0.8	0.008	-0.01	-0.01	-0.01
<<Min: 171.7 - 171.8 5% Min: Tetrahedrite>> Tetrahedrite band in QZ vein			175.20	176.00	0.80	B00233118	0.5	0.007	-0.01	-0.01	-0.01
<<Alt: 171.6 - 176 Strong (Alt) Muscovite>> Original from MSXS or overprint from RHYi?											
<<Vein: 171.6 - 172.2 90% Quartz>> Massive QZ vein with a band of tetrahedrite+CP											
<<Struc: 174.75 - 175 Weak-Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge											
<<Struc: 175.7 - 175.71 dominant foliation>> Discontinuous QZ foliation											
176.00	**177.10**	**RHYi** **Aphanitic Rhyolite (intrusion)**	176.00	177.10	1.10	B00233119	0.8	0.011	-0.01	-0.01	-0.01

176 - 177.1: Dark grey glassy aphanitic rhyolite

<<Min: 176 - 177.1 1% Min: Pyrite>>

<<Min: 176 - 177.1 1% Min: Pyrrhotite>>

<<Min: 176 - 177.1 5% Min: Calcite>>

177.10 **177.85** **RHY** **undifferentiated rhyolite**

177.1 - 177.85: MU+CA+QZ schist

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 177.1 - 177.85 2% Min: Pyrite>>

<<Min: 177.1 - 177.85 5% Min: Calcite>>

<<Alt: 177.1 - 177.85 Strong (Alt) Muscovite>> Original from MSXS or overprint from RHYi?

177.85 197.30 RHYi Aphanitic Rhyolite (intrusion)

177.85 - 197.3: Dark grey glassy aphanitic rhyolite

<<Min: 177.85 - 197.3 2% Min: Pyrite>>

<<Min: 177.9 - 197.3 5% Min: Calcite>>

197.30 203.00 RHY undifferentiated rhyolite

197.3 - 203: yellow-green MU+QZ+CA schist with continuous MU foliation and disaggregated QZ+CA blebs

<<Min: 197.3 - 203 2% Min: Pyrite>>

<<Min: 197.3 - 203 5% Min: Calcite>>

<<Alt: 197.3 - 203 Strong (Alt) Muscovite>> Original form MSXS or overprint from RHYi?

<<Vein: 202.8 - 203 90% Quartz>> Massive QZ vein

<<Struc: 201.5 - 201.7 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 202.7 - 202.9 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

203.00 206.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

			203.30	204.80	1.50	B00233121	0.9	0.008	-0.01	0.01	0.03

203 - 206.25: Green CL+BI+CA schist, with discontinuous BI and CA foliation. 2 distinct colours of chlorite (dark forest green and brighter forest green), with the brighter colour possibly related to original hydrothermal alteration.

<<Min: 203 - 206.25 20% Min: Calcite>>

			204.80	206.25	1.45	B00233122	6.8	0.014	0.01	0.16	0.04

<<Alt: 203 - 206.25 Weak (Alt) Chlorite>> Two distinct colour of CL (dark forest green and brighter forest green), with the brighter of the two representing hydrothermal alteration and the darker one metamorphic chlorite.

<<Alt: 203 - 206.25 Strong (Alt) Biotite>>

206.25 206.80 OJ Heavilly disseminated sulphides in proximal altered rock **MG**

			206.25	206.80	0.55	B00233123	20	0.075	0.21	0.5	2.38

206.25 - 206.8: Disseminated to heavily disseminated PO+PY+/-SP within strongly chloritized RHYc (lower unit)

<<Min: 206.25 - 206.8 5% Min: Pyrite>>

<<Min: 206.25 - 206.8 10% Min: Pyrrhotite>>

<<Min: 206.25 - 206.8 5% Min: Calcite>>

<<Alt: 206.25 - 206.8 Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description
206.80	**212.60**	**RHYc Rhyolite coherant volcanics**

206.8 - 212.6: Wavy siliceous banding with MU cleavage

<<Min: 206.8 - 212.6 1% Min: Pyrite>>

<<Min: 206.8 - 212.6 2% Min: Pyrrhotite>>

<<Alt: 206.8 - 216.4 Moderate (Alt) Muscovite>>

<<Struc: 208.7 - 209.4 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 211.5 - 211.51 dominant foliation>> Spaced MU cleavage

212.60	**215.40**	**RHYc Rhyolite coherant volcanics**

212.6 - 215.4: Wavy siliceous banding with MU or carbonaceous cleavage

<<Min: 212.6 - 215.4 1% Min: Pyrite>>

<<Min: 212.6 - 215.4 5% Min: Pyrrhotite>>

<<Min: 212.6 - 215.4 1% Min: Calcite>>

<<Min: 212.6 - 215.4 0.5% Min: Arsenopyrite>>

215.40	**219.10**	**RHYc Rhyolite coherant volcanics**

215.4 - 219.1: Wavy siliceous banding with MU cleavage

<<Min: 215.4 - 219.1 1% Min: Pyrite>>

<<Min: 215.4 - 219.1 2% Min: Pyrrhotite>>

<<Min: 215.4 - 219.1 5% Min: Calcite>>

<<Alt: 216.4 - 236 Weak (Alt) Muscovite>>

219.10	**254.00**	**RHYvl Lapilli tuff**

219.1 - 254: BI+CL and sulphide lpl within MU+QZ groundmass with continuous foliation

<<Min: 219.1 - 254 2% Min: Pyrite>>

<<Min: 219.1 - 254 3% Min: Pyrrhotite>>

<<Min: 219.1 - 254 2% Min: Calcite>>

<<Vein: 230.85 - 231.1 10% Tourmaline>> Hairline tourmaline vein with radiating tourmaline envelope perpendicular to the vein

<<Vein: 234 - 234.2 80% Quartz>> Quartz-tourmaline-calcite veining

<<Vein: 239.7 - 241 5% Tourmaline>> Zone of hairline tourmaline veining with radiating tourmaline envelopes perpendicular to the veins

<<Vein: 245.15 - 246.8 5% Tourmaline>> Zone of hairline tourmaline veining with radiating tourmaline envelopes perpendicular to the veins

<<Struc: 219.1 - 219.2 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
206.80	208.30	1.50	B00233124	1.8	0.008	0.03	0.02	0.02
208.30	209.80	1.50	B00233125	0.7	0.006	-0.01	0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 222 - 223.8 Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 226.2 - 226.4 Moderate (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 232.05 - 232.06 dominant foliation>> Continuous MU foliation

<<Struc: 232.8 - 232.81 dominant foliation>> Continuous MU foliation

<<Struc: 233.55 - 233.6 Weak (Alt) Fault>> Fractured and faulted zone with local fault gouge

<<Struc: 251.2 - 251.6 Moderate (Alt) Fault>> Wrapped foliation with local fault gouge

<<Struc: 252.6 - 252.75 Moderate (Alt) Fault>> Wrapped foliation with local fault gouge

End of Hole @ 254

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-305

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	21-Oct-15
UTM Easting	415157	Core Size:	HQ3	Azimuth:	234.82	Date Logging Complete:	25-Oct-15
UTM Northing:	6815159	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1411.855	Casing Depth (m):	18	Length (m):	300	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	20-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Oct-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-305 is an exploration hole drilled in order to intersect two massive sulfide lenses, including the Krakatoa ore body.
The upper units are made up of volcaniclastic rhyolite crosscut by mafic and intermediate dykes. The hole intercepts two major structures marked by fault breccia and shear zones from 78.00m to 102.00m and 138.00m to 146.00m.
The first mineralized zone is intersected from 182.65m to 197.30m, containing OB domains (PY-SP-GL-CP and MG locally) followed by a rhyolitic unit and a narrow massive sulfide lens (0.63 metre) at contact with the mafic sill unit. The hanging wall shows a strong pervasive muscovite alteration.
A second lens is intersected from 228.80m to 246.98m containing PY-SP-GL-CP-MG (OB, OA, OI, and OD). Note that even though classified as OI, this classification does not really match with the observations. It contains about 25 percent of laminated sulfide and a dominant matrix probably BA rich (to be confirmed by the assay results) and magnetite. The host rock has not yet been determined.
Below this unit, a minor fault zone is observed showing strongly altered rhyolite (possibly green-grey alteration), massive QZ vein and aphanitic rhyolite.
A third lens mineralized PY-SP-GL-CP-MG-PO is intersected from 258.50m to 264.50m (OA, OB, OI, OG domains) followed by felsic units. The hole ends at 300.00m.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	234.82	0	234.82	APS	Sean Suttie	20-Oct-15		☐	
24	-44.7	216.8	22.5	239.3	ReflexEZS	Geotech	21-Oct-15	5779	☑	
60	-46.2	214.4	22.5	236.9	ReflexEZS	Geotech	21-Oct-15	5756	☑	
84	-47.2	213.1	22.5	235.6	ReflexEZS	Geotech	21-Oct-15	5766	☑	
114	-48.4	214	22.5	236.5	ReflexEZS	Geotech	22-Oct-15	5766	☑	
144	-49.8	211.5	22.5	234	ReflexEZS	Geotech	22-Oct-15	5775	☑	
174	-50.5	205.2	22.5	227.7	ReflexEZS	Geotech	23-Oct-15	5736	☑	
204	-51.6	204.7	22.5	227.2	ReflexEZS	Geotech	23-Oct-15	5771	☑	
234	-52.1	205.4	22.5	227.9	ReflexEZS	Geotech	23-Oct-15	5807	☑	
264	-52.5	201.8	22.5	224.3	ReflexEZS	Geotech	23-Oct-15	5976	☑	
294	-53.4	203	22.5	225.5	ReflexEZS	Geotech	24-Oct-15	5785	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**7.50**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

7.50 20.50 RHY undifferentiated rhyolite grey-green

7.5 - 20.5: Gouge in fracture, fault breccia and cemented fractures in RHY.

<<Struc: 9 - 20.5 Weak (Alt) Fault>> Subsurface cimented fractures.

20.50 48.00 RHYva Coarse grained to ash tuff grey-green

20.5 - 48: Lapilli CA replacement. From 44.7 to xxx, cemented fractures and QZ veins.

<<Min: 32 - 66.45 3% Min: Calcite>> Lapilli replacement.

<<Min: 32 - 102.6 0.1% Min: Pyrrhotite>>

<<Min: 32 - 103.6 0.1% Min: Pyrite>> and rare veinlets.

<<Vein: 44.3 - 47.7 Quartz-Carbonate>> QZ-CA vein, brecciated, cimented in muscovite altered ash matrix.

48.00 51.70 RHYvl Lapilli tuff grey-green

48 - 51.7: Locally flow banded with crenulations.

51.70 52.81 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

51.7 - 52.81: Could be clastic. CA.

52.81 58.80 RHYvl Lapilli tuff grey-green

52.81 - 58.8: With ashes.

<<Struc: 53.95 - 53.96 dominant foliation>>

58.80 61.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-brown

58.8 - 61.5: BI, CA. Faulted lower contact.

61.50 66.45 RHYva Coarse grained to ash tuff grey-green

61.5 - 66.45: and some lapilli.

66.45 77.00 RHY undifferentiated rhyolite beige

66.45 - 77: QZ vein at upper contact. Faulted RHY, fault gouge, probably mafic dyke interbedded.

<<Min: 66.45 - 182.65 1% Min: Calcite>> Locally patchy in MAFi clasts.

<<Vein: 66.45 - 66.95 Quartz 30 deg. >> Cimenetd QZ vein at upper contact with fault zone.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

77.00 102.60 FBX Fault Breccia beige

77 - 102.6: Fault breccia and sheared RHY, few PY veinlets. Sericitic. Average foliation about 40 degrees. PY clasts or vein relics. CA composition in fault clay fault gouge. Folded/crenulated RHY at lower contact.

<<Alt: 78 - 141.2 Weak (Alt) Muscovite>> In fault zone.

<<Struc: 78 - 102 Strong (Alt) Fault>> Alpha angle estimated from upper QZ vein contact. Containing fault breccia and fault gouge.as well as sheared zone of RHY. MDS at lower contact.

102.60 105.79 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

102.6 - 105.79: With clasts.

<<Min: 102.6 - 105.79 2% Min: Pyrite>> or stringers.

<<Min: 102.6 - 105.79 0.1% Min: Pyrrhotite>> Associated with PY

<<Struc: 102.6 - 102.61 Contact>>

105.79 130.06 RHY undifferentiated rhyolite grey-green

105.79 - 130.06: Shear zone. No strong evidence to argue between volcaniclastic or coherent rhyolite. Mafic dykes crosscutting the units tend to confirm that it is the felsic sequence.

<<Min: 105.79 - 144 0.5% Min: Pyrite>>

<<Min: 105.79 - 182.65 0.5% Min: Pyrrhotite>> and associated with MAFi.

<<Struc: 122.48 - 123.85 Moderate (Alt) Shear>> Alpha angle drifting from 42 to 25 degres,and back to 54.

<<Struc: 124.7 - 124.71 dominant foliation>>

<<Struc: 125.5 - 125.51 dominant foliation>> Fold nose in between those 124.5m to 126m measurements.

<<Struc: 125.9 - 125.91 dominant foliation>>

130.06 133.53 RHYi Aphanitic Rhyolite (intrusion) beige

130.06 - 133.53: Aphanitic texture, mixed with schist and late QZ vein.

<<Struc: 132.5 - 133.53 Strong (Alt) Crenulation cleavage>> QZ vein, PY-TML veinlets,

133.53 134.48 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

134.48 138.41 RHY undifferentiated rhyolite grey-green

134.48 - 138.41: Sheared, locally fault gouge. Sheared,

<<Struc: 136 - 138.21 Strong (Alt) Shear>> Sheared with locally fault gouge.

<<Struc: 138.21 - 140.8 Strong (Alt) Shear>> Shear zone including MAFi dyke sheared alog the core axis. QZ veinsand chorite aletration, britle locally.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
138.41	**139.79**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
<<Alt: 139 - 150 Weak (Alt) Chlorite>> Associated with QZ.													
139.79	**142.90**	**RHY**	**undifferentiated rhyolite**	**grey-green**									
139.79 - 142.9: Sheared, green MU.QZ veins.													
<<Alt: 141.2 - 142.91 Moderate (Alt) Muscovite>> Green muscovite													
142.90	**143.15**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**										
<<Alt: 142.91 - 152.5 Weak (Alt) Muscovite>>													
143.15	**165.00**	**RHY**	**undifferentiated rhyolite**	**grey-green**									
143.15 - 165: Sheared, MU altered. Folded PY stringers.													
<<Min: 144 - 182.65 1% Min: Pyrite>> and dissemintaed.Associated with QZ-CA veinlets.													
<<Alt: 152.5 - 174 Strong (Alt) Muscovite>>													
<<Vein: 143.5 - 144 Quartz-Tourmaline 15 deg. >> QZ-TML, shallow angle vein													
<<Struc: 144.64 - 148 Strong (Alt) Shear>> Ductile deformation. Fold nose. Axis about perpendicular to the core axis.													
<<Struc: 153 - 153.1 Moderate (Alt) Crenulation cleavage>>													
<<Struc: 154.5 - 156 Vein>> Folded PY veinlets or stringers.													
<<Struc: 161.8 - 161.81 dominant foliation>>													
165.00	**168.38**	**MDSt**	**Rhyolite tuff dominant mudstone**	**light grey**									
165 - 168.38: Or MDSw, with PY stringers.													
<<Struc: 167.7 - 167.71 dominant foliation>>													
168.38	**174.30**	**RHYc**	**Rhyolite coherant volcanics**	**grey-green**									
168.38 - 174.3: Strong MU alteration.													
<<Alt: 174 - 182.65 Intense (Alt) Muscovite>>													
174.30	**182.65**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**grey-green**	178.15	179.65	1.50	B00265202	5.3	0.077	0.02	-0.01	-0.01
174.3 - 182.65: Intense MU alteration.													
					179.65	181.15	1.50	B00265203	3.9	0.084	0.02	-0.01	-0.01
					181.15	182.65	1.50	B00265204	1.2	0.018	-0.01	-0.01	0.03

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
182.65	**183.77**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	182.65	183.20	0.55	B00265205	149	0.693	0.95	1.77	3.56

182.65 - 183.77: Or OI. RHY hosted. Probably BA in matrix.

<<Min: 182.65 - 183.2 3% Min: Sphalerite>>
<<Min: 182.65 - 183.2 25% Min: Pyrite>>
<<Min: 182.65 - 183.2 2% Min: Pyrrhotite>>
<<Min: 182.65 - 183.2 5% Min: Magnetite>>
<<Min: 182.65 - 183.2 0.5% Min: Galena>>
<<Min: 182.65 - 183.2 8% Min: Chalcopyrite>>
<<Min: 182.65 - 183.2 3% Min: Calcite>>
<<Min: 183.2 - 183.77 8% Min: Sphalerite>>
<<Min: 183.2 - 183.77 25% Min: Pyrite>>
<<Min: 183.2 - 183.77 0.5% Min: Galena>>
<<Min: 183.2 - 183.77 5% Min: Chalcopyrite>>
<<Min: 183.2 - 183.77 3% Min: Calcite>>

					183.20	183.77	0.57	B00265206	135	1.7	0.34	1.27	3.51
183.77	**186.07**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	183.77	184.74	0.97	B00265207	249	2.17	0.52	2.22	6.74
					184.74	185.36	0.62	B00265208	222	1.76	0.27	2.43	8.1
					185.36	186.07	0.71	B00265209	141	1.29	0.38	2.09	5.83

<<Min: 183.77 - 184.74 12% Min: Sphalerite>>
<<Min: 183.77 - 184.74 50% Min: Pyrite>>
<<Min: 183.77 - 184.74 0.25% Min: Magnetite>>
<<Min: 183.77 - 184.74 1% Min: Galena>>
<<Min: 183.77 - 184.74 2% Min: Chalcopyrite>>
<<Min: 184.74 - 185.36 10% Min: Sphalerite>>
<<Min: 184.74 - 185.36 50% Min: Pyrite>>
<<Min: 184.74 - 185.36 1% Min: Galena>>
<<Min: 184.74 - 185.36 3% Min: Chalcopyrite>>
<<Min: 185.36 - 186.07 15% Min: Sphalerite>>
<<Min: 185.36 - 186.07 60% Min: Pyrite>>
<<Min: 185.36 - 186.07 0.5% Min: Galena>>
<<Min: 185.36 - 186.07 4% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
186.07	**187.52**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	186.07	186.78	0.71	B00265211	222	1.77	2.49	2.64	4.38
186.07 - 187.52: Or OI. RHY hosted.													
<<Min: 186.07 - 186.78 7% Min: Sphalerite>>					186.78	187.52	0.74	B00265212	169	2.56	0.91	2.54	5.97
<<Min: 186.07 - 186.78 30% Min: Pyrite>>													
<<Min: 186.07 - 186.78 5% Min: Pyrrhotite>>													
<<Min: 186.07 - 186.78 0.5% Min: Galena>>													
<<Min: 186.07 - 186.78 10% Min: Chalcopyrite>>													
<<Min: 186.07 - 186.78 5% Min: Calcite>>													
<<Min: 186.07 - 186.78 0.2% Min: Arsenopyrite>>													
<<Min: 186.78 - 187.52 8% Min: Sphalerite>>													
<<Min: 186.78 - 187.52 25% Min: Pyrite>>													
<<Min: 186.78 - 187.52 10% Min: Pyrrhotite>>													
<<Min: 186.78 - 187.52 5% Min: Magnetite>> DISS													
<<Min: 186.78 - 187.52 2% Min: Galena>>													
<<Min: 186.78 - 187.52 8% Min: Chalcopyrite>>													
<<Min: 186.78 - 187.52 5% Min: Calcite>>													
<<Alt: 186.07 - 187.42 Strong (Alt) Chlorite>>													
187.52	**188.43**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	187.52	188.43	0.91	B00265213	281	2.71	0.97	2.44	8.85
<<Min: 187.52 - 188.43 4% Min: Sphalerite>>													
<<Min: 187.52 - 188.43 40% Min: Pyrite>>													
<<Min: 187.52 - 188.43 2% Min: Galena>>													
<<Min: 187.52 - 188.43 2% Min: Chalcopyrite>>													
<<Min: 187.52 - 188.43 2% Min: Calcite>>													
188.43	**190.65**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	188.43	189.00	0.57	B00265214	201	1.75	0.34	2.72	11.3
<<Min: 188.43 - 189 8% Min: Sphalerite>>					189.00	190.00	1.00	B00265215	343	3.02	0.84	2.21	8.89
<<Min: 188.43 - 189 60% Min: Pyrite>>					190.00	190.65	0.65	B00265216	318	2.36	0.57	2.94	9.11
<<Min: 188.43 - 189 1% Min: Galena>>													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 188.43 - 189 1% Min: Chalcopyrite>>										
		<<Min: 188.43 - 189 1% Min: Calcite>>										
		<<Min: 189 - 190 10% Min: Sphalerite>>										
		<<Min: 189 - 190 65% Min: Pyrite>>										
		<<Min: 189 - 190 1% Min: Galena>>										
		<<Min: 189 - 190 3% Min: Chalcopyrite>>										
		<<Min: 190 - 190.65 15% Min: Sphalerite>>										
		<<Min: 190 - 190.65 50% Min: Pyrite>>										
		<<Min: 190 - 190.65 2% Min: Galena>>										
		<<Min: 190 - 190.65 1% Min: Chalcopyrite>>										
		<<Alt: 188.75 - 197.3 Moderate (Alt) Cordierite>> Probably replaced Cl.										
190.65	**191.86**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	190.65	191.28	0.63	B00265217	418	2.76	0.79	2.35	7.24
		<<Min: 190.65 - 191.28 10% Min: Sphalerite>>		191.28	191.86	0.58	B00265218	558	4.77	1.35	2.13	6.14
		<<Min: 190.65 - 191.28 50% Min: Pyrite>>										
		<<Min: 190.65 - 191.28 1% Min: Chalcopyrite>>										
		<<Min: 191.28 - 193.86 12% Min: Sphalerite>>										
		<<Min: 191.28 - 193.86 40% Min: Pyrite>>										
		<<Min: 191.28 - 193.86 3% Min: Galena>>										
		<<Min: 191.28 - 193.86 2% Min: Chalcopyrite>>										
		<<Min: 191.28 - 193.86 3% Min: Calcite>>										
191.86	**193.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	191.86	192.48	0.62	B00265219	240	2.85	0.49	2.14	7.17
				192.48	193.20	0.72	B00265221	307	3.1	0.61	3.78	9.78
193.20	**195.78**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	193.20	193.86	0.66	B00265222	296	1.7	0.28	7.01	16.9
		<<Min: 193.86 - 194.86 20% Min: Sphalerite>>		193.86	194.86	1.00	B00265223	229	1.4	0.31	3.46	14.1
		<<Min: 193.86 - 194.86 35% Min: Pyrite>>		194.86	195.78	0.92	B00265224	303	1.51	0.08	6.52	14.1
		<<Min: 193.86 - 194.86 5% Min: Galena>>										
		<<Min: 193.86 - 194.86 3% Min: Chalcopyrite>>										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 193.86 - 194.86 2% Min: Calcite>>													
<<Min: 194.86 - 197.3 15% Min: Sphalerite>>													
<<Min: 194.86 - 197.3 50% Min: Pyrite>>													
<<Min: 194.86 - 197.3 1% Min: Galena>>													
<<Min: 194.86 - 197.3 1% Min: Chalcopyrite>>													
<<Min: 194.86 - 197.3 20% Min: Calcite>>													
195.78	**197.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	195.78	196.52	0.74	B00265225	73.5	0.849	0.1	1.05	5.28
<<Struc: 195.98 - 195.99 Foliation>> SP lamination in MxSx					196.52	197.30	0.78	B00265226	119	1.33	0.24	1.24	6.41
197.30	**205.15**	**RHY**	**undifferentiated rhyolite**		197.30	198.80	1.50	B00265227	2.5	0.019	-0.01	0.01	0.02
197.3 - 205.15: Silicic bands													
<<Min: 197.3 - 205.15 5% Min: Pyrite>>					198.80	200.30	1.50	B00265228	2	0.019	-0.01	0.02	0.04
<<Alt: 197.3 - 205.15 Strong (Alt) Muscovite>>					200.30	201.80	1.50	B00265229	1.7	0.021	-0.01	0.01	0.04
					201.80	203.00	1.20	B00265231	0.9	0.011	-0.01	-0.01	-0.01
					203.00	204.00	1.00	B00265232	1.9	0.02	-0.01	0.02	0.02
					204.00	205.15	1.15	B00265233	20.1	0.054	0.04	0.13	0.13
205.15	**205.78**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	205.15	205.78	0.63	B00265234	45.2	0.347	0.16	0.42	8.64
205.15 - 205.78: Sharp contact. QZ vein at upper contact and RHY folded. Replacement style mineralisation in MAFi.													
<<Min: 205.15 - 205.78 10% Min: Sphalerite>>													
<<Min: 205.15 - 205.78 10% Min: Magnetite>>													
<<Min: 205.15 - 205.78 0.5% Min: Galena>>													
<<Min: 205.15 - 205.78 5% Min: Calcite>>													
<<Vein: 205.45 - 205.65 Quartz>> QZ													
<<Struc: 205.15 - 205.16 Contact>> upper contact RHY/MxSx													
205.78	**228.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	205.78	207.28	1.50	B00265235	2.8	0.015	-0.01	0.03	0.04
205.78 - 228.8: CA at contact upper and lower contact with MxSx but mainly low to very low CA.													
<<Min: 205.78 - 207.28 1% Min: Pyrite>>					207.28	208.78	1.50	B00265236	0.5	0.01	-0.01	-0.01	0.03
<<Min: 205.78 - 228.8 1% Min: Calcite>>					208.78	210.28	1.50	B00265237	0.5	0.008	-0.01	-0.01	0.05

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 205.78 - 210.81 Strong (Alt) Biotite>>					224.30	225.80	1.50	B00265238	0.4	0.007	-0.01	-0.01	0.01
<<Alt: 205.78 - 228.8 Strong (Alt) Chlorite>> Bleeched at contact with MxSx.					225.80	227.30	1.50	B00265239	0.6	0.007	-0.01	-0.01	0.01
<<Struc: 205.78 - 205.79 Contact>> lower contact MxSx/MAFi					227.30	228.80	1.50	B00265241	2.1	0.02	0.03	0.03	0.03
<<Struc: 213.08 - 213.09 dominant foliation>>													
<<Struc: 221.69 - 221.7 dominant foliation>>													
<<Struc: 222 - 222.01 dominant foliation>>													
<<Struc: 225.15 - 225.16 dominant foliation>>													
228.80	**229.40**	**OD**	**Brecciated sulphides**	**FMG**	228.80	229.40	0.60	B00265242	137	0.641	0.04	4.89	9.29
<<Min: 228.8 - 229.4 15% Min: Sphalerite>>													
<<Min: 228.8 - 229.4 40% Min: Pyrite>>													
<<Min: 228.8 - 229.4 3% Min: Galena>>													
<<Min: 228.8 - 229.4 1% Min: Chalcopyrite>>													
<<Min: 228.8 - 229.4 15% Min: Calcite>> and on FRA													
<<Struc: 228.8 - 228.81 Contact>> Upper contact MAFi/MxSx													
229.40	**231.21**	**OA**	**Magnetite bearing sulphides**	**FMG**	229.40	230.44	1.04	B00265243	135	1.08	0.44	6.21	9.79
<<Min: 229.4 - 231.21 12% Min: Sphalerite>>					230.44	231.21	0.77	B00265244	179	0.9	0.42	6.42	10
<<Min: 229.4 - 231.21 60% Min: Pyrite>>													
<<Min: 229.4 - 231.21 15% Min: Magnetite>> and as diss													
<<Min: 229.4 - 231.21 3% Min: Galena>>													
231.21	**232.65**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	231.21	232.00	0.79	B00265245	158	0.698	0.16	5.09	7.87
<<Min: 231.21 - 233.5 10% Min: Sphalerite>>					232.00	232.65	0.65	B00265246	228	1.06	0.21	5.34	9.42
<<Min: 231.21 - 233.5 60% Min: Pyrite>>													
<<Min: 231.21 - 233.5 3% Min: Magnetite>>													
<<Min: 231.21 - 233.5 1% Min: Galena>>													
<<Min: 231.21 - 233.5 1% Min: Chalcopyrite>>													
<<Min: 231.21 - 233.5 1% Min: Calcite>>													
232.65	**233.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	232.65	233.50	0.85	B00265247	254	1.37	0.12	5.11	10.8

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
233.50	**240.08**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	233.50	234.00	0.50	B00265248	303	2.19	0.34	3.44	4.72
233.5 - 240.08: Semi-massive. No domain really match with. No more than 30 percent of sulfide. Matrix probably BA.													
<<Min: 233.5 - 240.08 3% Min: Sphalerite>>					234.00	235.07	1.07	B00265249	396	2.32	0.15	3.1	3.93
<<Min: 233.5 - 240.08 20% Min: Pyrite>>					235.07	236.00	0.93	B00265251	387	1.82	0.13	2.74	3.69
<<Min: 233.5 - 240.08 8% Min: Magnetite>>					236.00	237.00	1.00	B00265252	414	2.4	0.25	2.88	4.19
<<Min: 233.5 - 240.08 2% Min: Galena>>					237.00	238.00	1.00	B00265253	372	2.22	0.22	2.42	3.26
<<Min: 233.5 - 240.08 3% Min: Chalcopyrite>>					238.00	239.00	1.00	B00265254	425	2.82	0.28	3.38	4.69
<<Struc: 234.01 - 234.02 Foliation>> SP lamination.					239.00	240.08	1.08	B00265255	335	2.32	0.27	3.85	5.5
240.08	**241.88**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	240.08	241.00	0.92	B00265256	472	5.86	0.47	4.81	5.93
<<Min: 240.08 - 241.88 12% Min: Sphalerite>>					241.00	241.88	0.88	B00265257	380	2.59	0.2	5.47	10.9
<<Min: 240.08 - 241.88 40% Min: Pyrite>>													
<<Min: 240.08 - 241.88 3% Min: Magnetite>>													
<<Min: 240.08 - 241.88 6% Min: Galena>>													
<<Min: 240.08 - 241.88 2% Min: Chalcopyrite>> and as diss													
<<Struc: 240.1 - 240.11 Foliation>> SP lamination.													
241.88	**243.78**	**OD**	**Brecciated sulphides**	**FMG**	241.88	242.70	0.82	B00265258	265	3.75	0.25	2.35	6.79
241.88 - 243.78: QZ-CA pods, GL-SP remobilized (large crystals)													
<<Min: 241.88 - 246.98 10% Min: Sphalerite>>					242.70	243.78	1.08	B00265259	418	4.48	0.46	3.16	7.36
<<Min: 241.88 - 246.98 30% Min: Pyrite>>													
<<Min: 241.88 - 246.98 3% Min: Galena>>													
<<Min: 241.88 - 246.98 2% Min: Chalcopyrite>>													
<<Min: 241.88 - 246.98 15% Min: Calcite>>													
<<Struc: 241.88 - 243.78 Shear>> Brecciated and fractured MxSx.													
243.78	**246.98**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**	243.78	244.60	0.82	B00265261	221	1.6	0.04	2.91	5.05
					244.60	245.80	1.20	B00265262	243	4.42	0.31	2.2	5.17
					245.80	246.98	1.18	B00265263	262	1.64	0.1	3.06	5.27

From (m)	To (m)		Rocktype & Description	
246.98	**250.50**	**RHY**	**undifferentiated rhyolite**	**light grey**

246.98 - 250.5: Faulted. No strong evidence of felsic composition but good assumption.

<<Min: 246.98 - 258.5 1% Min: Pyrite>>

<<Alt: 246.98 - 254.5 Strong (Alt) Muscovite>> Possibly green-grey alteration associated with RHYi.

<<Struc: 246.98 - 254.5 Moderate (Alt) Fault>> Core loss, fault gouge, strong MU alteration, fractured.

From (m)	To (m)		Rocktype & Description	
250.50	**254.00**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	

250.5 - 254: Intruded by late massive QZ vein.

<<Vein: 252 - 255 Quartz>> Multiple fractured massive QZ veins, usually encoutered in RHY very rare in mafic unit.

From (m)	To (m)		Rocktype & Description	
254.00	**258.50**	**RHY**	**undifferentiated rhyolite**	

254 - 258.5: Strongly altered.

From (m)	To (m)		Rocktype & Description	
258.50	**260.83**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**

258.5 - 260.83: BA in matrix.

<<Min: 258.5 - 260 30% Min: Pyrite>>

<<Min: 258.5 - 260 10% Min: Pyrrhotite>>

<<Min: 258.5 - 260 1% Min: Magnetite>>

<<Min: 258.5 - 260 1% Min: Chalcopyrite>>

<<Min: 258.5 - 260.83 30% Min: Sphalerite>>

<<Min: 258.5 - 260.83 3% Min: Galena>>

<<Min: 260 - 260.8 15% Min: Pyrite>>

<<Min: 260 - 260.8 2% Min: Magnetite>>

<<Min: 260 - 260.8 2% Min: Chalcopyrite>> And as blebs

<<Min: 260 - 260.8 30% Min: Calcite>>

<<Min: 260.8 - 263.79 8% Min: Calcite>>

<<Struc: 260 - 260.01 Foliation>> Sulphide lamination.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
246.98	248.00	1.02	B00265264	119	0.914	0.17	0.07	0.11
248.00	249.00	1.00	B00265265	0.4	-0.005	-0.01	-0.01	0.02
249.00	250.50	1.50	B00265266	3	0.014	-0.01	0.03	0.04
250.50	252.00	1.50	B00265267	1.1	0.007	-0.01	-0.01	-0.01
252.00	254.00	2.00	B00265268	0.4	-0.005	-0.01	-0.01	-0.01
254.00	255.50	1.50	B00265269	2.8	0.02	-0.01	0.02	0.02
255.50	257.00	1.50	B00265271	3347	26.86	5.57	0.48	0.66
257.00	258.50	1.50	B00265272	33.5	0.253	0.02	0.24	0.44
258.50	259.41	0.91	B00265273	611	3.01	0.25	7.27	10.9
259.41	260.20	0.79	B00265274	448	2.08	0.11	6.78	10.1
260.20	260.83	0.63	B00265275	461	2.99	0.06	6.64	11.8

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
260.83	**262.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FG**	260.83	262.00	1.17	B00265276	380	1.96	0.43	5.97	6.5

260.83 - 262: Semi massive, containing MG but can not be considered as OA domain. .

<<Min: 260.83 - 262 10% Min: Sphalerite>>
<<Min: 260.83 - 262 10% Min: Magnetite>>
<<Min: 260.83 - 262 3% Min: Galena>>
<<Min: 260.83 - 263.79 0.1% Min: Chalcopyrite>>

262.00	**263.79**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	262.00	263.20	1.20	B00265277	306	1.3	0.02	4.68	9.13

262 - 263.79: Maybe AS.

<<Min: 262 - 263.79 10% Min: Sphalerite>>
<<Min: 262 - 263.79 0.5% Min: Galena>>

					263.20	263.79	0.59	B00265278	203	0.757	0.1	2.32	6.78
263.79	**264.50**	**OG**	**Chalcopyrite rich sulphides**	**FG**	263.79	264.50	0.71	B00265279	133	2.72	5.43	0.12	8.6

263.79 - 264.5: CP/MG/PO

<<Min: 263.79 - 264.5 3% Min: Sphalerite>>
<<Min: 263.79 - 264.5 15% Min: Pyrrhotite>>
<<Min: 263.79 - 264.5 10% Min: Magnetite>>
<<Min: 263.79 - 264.5 50% Min: Chalcopyrite>>

264.50	**270.10**	**RHY**	**undifferentiated rhyolite**		264.50	266.00	1.50	B00265281	1.3	0.027	0.03	-0.01	0.02

264.5 - 270.1: Containing PO and PY. At 267, fault gouge followed by 15 cm of MDSc. Speck of tourmaline.

<<Min: 264.5 - 300 1% Min: Pyrite>>					266.00	267.50	1.50	B00265282	0.6	-0.005	-0.01	-0.01	0.02
<<Min: 264.5 - 300 1% Min: Pyrrhotite>> Elongated in the foliation.					267.50	269.00	1.50	B00265283	0.6	-0.005	-0.01	-0.01	0.03

<<Min: 264.5 - 300 0.5% Min: Calcite>>
<<Alt: 264.5 - 270 Moderate (Alt) Muscovite>> Locally strong.
<<Alt: 270 - 300 Moderate (Alt) Muscovite>>
<<Alt: 270 - 300 Moderate (Alt) Chlorite>> and replacement.

270.10	**271.46**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	

270.1 - 271.46: Intermediate composition, altered CL, PO. CA in matrix.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

271.46 300.00 RHY undifferentiated rhyolite

271.46 - 300: No strong evidence but probably mostly volcaniclastic, zebra texture could be related to highly strained lapilli. E.O.H.

<<Struc: 272.95 - 272.96 dominant foliation>>

<<Struc: 282.2 - 282.21 dominant foliation>>

<<Struc: 285 - 285.01 dominant foliation>>

<<Struc: 293.65 - 293.66 dominant foliation>>

<<Struc: 299.8 - 299.81 dominant foliation>>

End of Hole @ 300

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-306

Prospect:	GP4F	Hole Type:	DD	Survey Type:	APS	Logged By:	Murray Jones
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Murray Jones	Date Logging Start:	21-Oct-15
UTM Easting	419500	Core Size:	NQ3	Azimuth:	180	Date Logging Complete:	23-Oct-15
UTM Northing:	6813355	Casing Pulled?:	Yes	Dip:	-85	Drill Company:	Geotech
UTM Elev. (m):	1339.5	Casing Depth (m):	8.75	Length (m):	246	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	20-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

Note: elevation taken from hand drawn section

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-85	180	0	180	APS	Murray Jones	20-Oct-15		☑	Rig initially set up for K15-302, verified for 306
7	-78.1	154.9	22.5	177.4	ReflexEZS	Geotech	22-Oct-15	4854	☑	
15	-83.1	157.6	22.5	180.1	ReflexEZS	Geotech	20-Oct-15	5859	☑	
45	-82.7	160.6	22.5	183.1	ReflexEZS	Geotech	20-Oct-15	5760	☑	
180	-79.5	151.5	22.5	174	ReflexEZS	Geotech	22-Oct-15	5728	☑	
243	-77.6	159	22.5	181.5	ReflexEZS	Geotech	23-Oct-15	5789	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 8.75 OVBN Overburden

0 - 8.75: Mixed lithologies to 8.75, start of consistent core pieces, fit together

8.75 59.70 RHYva Coarse grained to ash tuff dark grey FG

8.75 - 59.7: relatively massive, variable and mottled colouring, RHYv, ash primarily, or flow banded, crystals not readily apparent as in updip hole, TO pblast present, QZ-TO veinlets, MAFi usually in faulted ground, bleaching occurs around faults as well, with MU(?), CA, CA veining, sporadic QZ veining in host is quite planar, not stronglyschistose,

<<Min: 8.75 - 19.35 5% Min: Calcite>> pervasive, diss'ns, fractures

<<Min: 8.75 - 51.9 0.01% Min: Pyrite>> minor in fractures, QV's

<<Min: 11.71 - 127.3 3% Min: Pyrrhotite>> diss'd bands, lenses common, also scattered in groundmass

<<Min: 19.35 - 28.3 1% Min: Calcite>>

<<Min: 28.3 - 38.5 5% Min: Calcite>> pervasive, fractures

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 51.9 - 81 1% Min: Pyrite>> small masses locally

<<Min: 57 - 63.75 1% Min: Calcite>>

<<Struc: 27.25 - 27.35 Weak (Alt) Vein>> QZ-TO veinlet, bleaching associated

<<Struc: 28.5 - 28.51 Moderate (Alt) Contact>> contact of MAFi dykelet

<<Struc: 33 - 34.6 Weak (Alt) Fault>> hosts dyke

<<Struc: 38.5 - 40.2 Weak (Alt) Fault>> broken core, minimal gouge

<<Struc: 54.8 - 56.7 Moderate (Alt) Fault>> broken, gouge, lost core

59.70 81.00 RHYc Rhyolite coherant volcanics grey-green VFG

59.7 - 81: massive, aphanitic, RHYc, aphyric?, fractures marked by CL, alt'n zone dominates. Focused on CY alt'n zone frm 81m. Locally, this rock is glassy, looks like RHYi, and the alteration is simialr to grey-green alteration possibly.

<<Min: 61.4 - 81 0.5% Min: Pyrrhotite>> wisps and fine diss'ns throughout

<<Alt: 61.4 - 81 Moderate (Alt) Muscovite>> core is bleached, irregularly, increasing slightly in intensity downhole,

<<Alt: 70.05 - 81 Moderate (Alt) Chlorite>> conc'd in fractures, patches/clots associated with QZ-CB veins, seems to be hand-in-hand with MU

<<Vein: 64 - 64.6 95% Quartz>> QZ vn, CL-TO-PY in fracs,

<<Struc: 79.5 - 81 Strong (Alt) Fault>> mostly broken, lost core, gouge locally, contact between alt'n zones,

81.00 92.42 RHYc Rhyolite coherant volcanics cream FG

81 - 92.42: dyke?, looks very CY altered, tiny QE's (<1 mm) in groundmass. CL on fractures, diss'd PY, altered margins

<<Min: 81 - 91.67 3% Min: Pyrite>> small masses, in fractures

<<Min: 81 - 92.75 3% Min: Calcite>> patches and fractures

<<Alt: 81 - 92.75 Moderate (Alt) Muscovite>> CY after MU?, bleached white, still hard, 1 mm QZ eyes scattered in groundmass

<<Alt: 81 - 92.75 Weak (Alt) Chlorite>> fractures

92.42 111.71 RHYvl Lapilli tuff grey-brown FMG

92.42 - 111.71: heterogeneous unit, widely scattered QE's, local ash layers?, lapilli generally rounded, scattered, locally conc'd, cut by numerous MAFi dykes, local bleaching, gradational lower contact to ash tuff.

<<Min: 92.75 - 96 3% Min: Calcite>> minor lenses

<<Min: 96 - 101.8 10% Min: Calcite>> pervasive in dykes, fractures, lenses elsewhere

<<Min: 101.8 - 111.71 1% Min: Pyrrhotite>> minor lenses, bands

<<Min: 105.65 - 107.55 10% Min: Calcite>> in groundmass, CA veins

<<Alt: 92.75 - 96 Moderate (Alt) Chlorite>>

<<Alt: 96.3 - 199 Moderate (Alt) Garnet>> in bands with BI

<<Alt: 96.3 - 199 Moderate (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 93 - 98.14 Strong (Alt) Fault>> gouge, broken and lost core, especially between 93 and 96, dykes

111.71 127.30 RHYva Coarse grained to ash tuff grey-brown FG

111.71 - 127.3: minor lapilli locally, QE scattered, BI rich locally, more than RHYvl above, MAFi included

<<Min: 111.71 - 127.3 0.5% Min: Pyrite>> diss'd blebs

<<Min: 111.71 - 127.3 3% Min: Pyrrhotite>> lenses, bands,

<<Min: 111.71 - 127.3 1% Min: Calcite>> diss'ns

<<Alt: 126.98 - 131.81 Moderate (Alt) Muscovite>>

<<Struc: 115.7 - 117.5 Strong (Alt) Fault>> mostly gouge, breccia

127.30 148.67 RHYva Coarse grained to ash tuff grey-green FG

130.00	131.50	1.50	B00269411	1.5	-0.005	-0.01	0.03	0.2

127.3 - 148.67: lapilli in and out, scattered, flattened more in ths unit?

<<Min: 127.3 - 131.81 3% Min: Pyrite>> in bands, fractures

<<Min: 127.3 - 152.5 0.5% Min: Calcite>>

<<Min: 130 - 131.81 1% Min: Sphalerite>> stringers, veinlets, wisps, diss'ns, scattered

<<Min: 131.81 - 143.7 3% Min: Pyrite>> scattered blebs, diss'ns, fractures

<<Min: 131.81 - 143.7 0.5% Min: Pyrrhotite>> scattered

<<Min: 143.7 - 148.67 3% Min: Pyrrhotite>> in groundmass, blebs, in veins

<<Alt: 137.98 - 143.7 Moderate (Alt) Muscovite>> pervasive but also in conc'd bands, soft, weathered?

<<Struc: 127.3 - 130 Moderate (Alt) Fault>> gouge, broken

<<Struc: 144.2 - 145.2 Moderate (Alt) Fault>> gouge parallel fol'n

<<Struc: 145.86 - 145.87 Moderate (Alt) Foliation>> BI band

148.67 157.56 RHYvl Lapilli tuff grey-brown FCG

148.67	149.67	1.00	B00269412	1	0.017	0.04	-0.01	0.05

148.67 - 157.56: abundant QE's in this unit, locally >10%, sharp contacts with fine grained RHYv at top and bottom with no mixing of QE's, lapilli coarsen and get more conc'd downhole, to being mixed with RHYc below154m,weak MU locally.

Is this unit a sill? Weak alteration within it only means it came before the mineralization.

<<Min: 148.67 - 152.7 1% Min: Sphalerite>> stringers, with PY

149.67	151.00	1.33	B00269413	5.2	0.017	0.07	0.28	0.52

<<Min: 148.67 - 152.7 1% Min: Chalcopyrite>> scattered in fractures, weak CL zones

151.00	152.50	1.50	B00269414	3.3	0.008	0.05	0.23	0.34

<<Min: 148.67 - 157.56 0.5% Min: Pyrite>>

<<Min: 148.67 - 157.56 1% Min: Pyrrhotite>> in lenses, bands,

<<Min: 152.5 - 157.56 3% Min: Calcite>> and fracture

<<Alt: 148.67 - 151.5 Moderate (Alt) Chlorite>> original?, dyke at upper contact, seems to be darkening of core associated with dyke in general

<<Alt: 156.91 - 158.2 Moderate (Alt) Chlorite>> locally pervasive near contact, related to stringer of proximal alt'n?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
157.56	**170.00**	**RHYva Coarse grained to ash tuff grey-brown FG**	158.41	159.91	1.50	B00269415	4.2	0.006	0.01	0.02	0.31
157.56 - 170: possibly SED component, lot of BI in bands, dykes?, BI increasing toward mineralized zone, local deformation with PO/PY conc'ns, siliceous sections bx'd with sx stringers, TO common in groundmass in alteration zone											
<<Min: 157.56 - 162.05 0.5% Min: Pyrite>> in fracs, bands			159.91	160.91	1.00	B00269416	15.4	0.015	0.05	0.25	2.11
<<Min: 157.56 - 162.05 5% Min: Pyrrhotite>> diss'd lenses, bands			160.91	162.05	1.14	B00269417	0.6	0.007	0.01	-0.01	0.06
<<Min: 162.05 - 164.07 3% Min: Sphalerite>> wisps?			162.05	163.10	1.05	B00269418	13.9	0.026	0.07	0.91	2.39
<<Min: 162.05 - 164.7 10% Min: Pyrrhotite>> small masses, bands, interstices			163.10	163.93	0.83	B00269419	10.5	0.101	0.07	0.78	1.77
<<Min: 162.05 - 167 0.5% Min: Galena>>			163.93	164.70	0.77	B00269421	51.1	0.662	0.16	3.22	6
<<Min: 162.05 - 168.3 5% Min: Pyrite>> fractures, small blebs			164.70	166.03	1.33	B00269422	34.9	0.224	0.13	0.85	6.31
<<Min: 162.05 - 168.3 1% Min: Chalcopyrite>> wisps along fol'n, in frac, with PO			166.03	167.22	1.19	B00269423	94.1	0.899	0.17	2.48	8.52
<<Min: 164.07 - 168.3 20% Min: Sphalerite>> and blebs along fol'n, stringers, fractures			167.22	168.02	0.80	B00269424	230	1.68	0.21	4.96	8.77
<<Min: 164.7 - 168.3 1% Min: Galena>> scattered blebs, diss'ns			168.02	168.58	0.56	B00269425	336	2.85	0.09	4.72	7.8
<<Min: 167.27 - 168.58 10% Min: Pyrrhotite>> small masses in groundmass			169.86	170.50	0.64	B00269426	13.9	0.121	0.03	0.19	0.18
<<Min: 168.3 - 168.58 20% Min: Sphalerite>> OB mxsx											
<<Min: 168.3 - 168.58 50% Min: Pyrite>> OB buckshot tx											
<<Min: 169.86 - 170.76 1% Min: Pyrite>>											
<<Min: 169.86 - 170.76 5% Min: Pyrrhotite>> frac											
<<Min: 169.86 - 170.76 3% Min: Chalcopyrite>>											
<<Alt: 158.2 - 162.05 Moderate (Alt) Biotite>> conc'd bands, speckle in schist											
<<Alt: 162.05 - 164.7 Strong (Alt) Garnet>> scattered pblasts											
<<Alt: 162.05 - 164.7 Intense (Alt) Chlorite>>											
<<Alt: 162.05 - 164.7 Strong (Alt) Biotite>>											
<<Alt: 164.7 - 167.27 Strong (Alt) Muscovite>> in host where it shows up											
<<Alt: 164.7 - 170 Strong (Alt) Chlorite>> fracture controlled											
<<Alt: 164.7 - 170 Strong (Alt) Cordierite>> conc'd in bands or zones											
<<Alt: 164.7 - 170 Moderate (Alt) Biotite>>											
<<Alt: 168.58 - 171.5 Moderate (Alt) Muscovite>>											
<<Struc: 158.7 - 158.71 Moderate (Alt) Foliation>>											
<<Struc: 163.2 - 163.9 Moderate (Alt) Fault>> some gouge recovered but about 40 cm of core was lost											
<<Struc: 168.58 - 169.86 Moderate (Alt) Fault>> lost core											
170.00	**171.50**	**RHY undifferentiated rhyolite grey-brown FG**	170.50	171.00	0.50	B00269427	417	0.377	0.42	4.71	7.32
170 - 171.5: strongly altered, includes sx section											
<<Min: 170.76 - 171 10% Min: Sphalerite>>			171.00	173.53	2.53	B00269428	3	1.97	0.02	0.02	0.04

From (m)	To (m)	Rocktype & Description

<<Min: 170.76 - 171 60% Min: Pyrrhotite>> CP fringing, Sp in stringers?

<<Min: 170.76 - 171 3% Min: Galena>>

<<Min: 170.76 - 171 5% Min: Chalcopyrite>> net texture?

<<Min: 171 - 173.53 3% Min: Pyrite>> fracture controlled

<<Alt: 170 - 171.5 Moderate (Alt) Chlorite>>

<<Alt: 170 - 171.5 Strong (Alt) Biotite>> in tuff and porphyry

<<Struc: 171 - 173.53 Strong (Alt) Fault>> heavy gouge, broken core, lost core

171.50 173.53 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown

171.5 - 173.53: strong fault, hosts MAKi dyke, completely rotted an broken, transition from altered and mineralized tuff to QE porphyry unit below.

173.53 201.90 RHYvl Lapilli tuff grey-brown MG

173.53 - 201.9: conc'n of lapilli varies, they are white, rounded and flattened into fol'n, small intervals of flow banded rock apparent, QZ eyes are prominent, FP present?, narrow, sporadic, BI-GA-weak CL bands wth PO-PY and trace CP cut unit, stringer alteration related to mineralization? At btm cnt 201.9-202.9 90% core loss

<<Min: 173.53 - 187.98 1% Min: Pyrite>>

<<Min: 173.53 - 187.98 3% Min: Pyrrhotite>> in bands with BI-GA alt'n

<<Min: 173.53 - 187.98 1% Min: Calcite>> and in bands with BI-GA

<<Min: 187.98 - 192 3% Min: Calcite>> in fractures and veins

<<Min: 187.98 - 199 1% Min: Pyrite>> diss'd in groundmass, Minor fractures, in bands with BI-GA

<<Min: 192 - 199 1% Min: Calcite>>

<<Alt: 173.53 - 187.98 Moderate (Alt) Muscovite>> grey, massive

<<Alt: 173.53 - 187.98 Weak (Alt) Garnet>> in bands with BI, SX

<<Alt: 173.53 - 187.98 Moderate (Alt) Biotite>> in bands with GA, sx

<<Alt: 187.88 - 192 Moderate (Alt) Biotite>>

<<Alt: 187.98 - 192 Moderate (Alt) Chlorite>> strong CL core to zone, associated with fault

<<Alt: 196.3 - 199 Weak (Alt) Garnet>> scattered pblasts in BI bnads

<<Alt: 196.3 - 199 Moderate (Alt) Biotite>> stringer zones?

<<Struc: 189 - 194 Moderate (Alt) Fault>> mostly broken and lost core, alt'n associated

<<Struc: 198 - 199.7 Moderate (Alt) Fault>> broken core and lost core

<<Struc: 201.8 - 202.9 Strong (Alt) Fault>> gouge, broken core, core loss

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
173.53	174.60	1.07	B00269429	2.5	0.006	0.02	0.02	0.08
198.00	201.00	3.00	B00269431	1.5	-0.005	-0.01	0.04	0.12
201.00	202.90	1.90	B00269432	6.8	0.015	-0.01	0.27	0.51

From (m)	To (m)	Rocktype & Description
201.90	**228.60**	**RHYva Coarse grained to ash tuff green FG**

201.9 - 228.6: Minz interval CL BI alt oblit most of primary text, where less alt fg massive QZ-MS groundmass with disseminated PO after dissem mineral grains. Could fine grained tuff or perhaps RHYc, Alt often totally replaces primary rk type

<<Min: 202.9 - 204 5% Min: Pyrrhotite>>
<<Min: 202.9 - 204 2% Min: Pyrite>>
<<Min: 202.9 - 204 5% Min: Sphalerite>>
<<Min: 202.9 - 204 3% Min: Galena>>
<<Min: 204 - 205.9 4% Min: Pyrrhotite>>
<<Min: 204 - 205.9 2% Min: Pyrite>>
<<Min: 204 - 205.9 0.5% Min: Sphalerite>>
<<Min: 205.9 - 211.8 5% Min: Pyrrhotite>>
<<Min: 205.9 - 212.4 2% Min: Chalcopyrite>>
<<Min: 205.9 - 212.4 1% Min: Galena>>
<<Min: 205.9 - 212.4 1% Min: Pyrite>>
<<Min: 205.9 - 212.4 7% Min: Sphalerite>>
<<Min: 211.8 - 214.9 10% Min: Sphalerite>>
<<Min: 211.8 - 214.9 2% Min: Galena>>
<<Min: 211.8 - 214.9 10% Min: Pyrite>>
<<Min: 211.8 - 214.9 1% Min: Pyrrhotite>>
<<Min: 214.9 - 217.2 0.5% Min: Chalcopyrite>>
<<Min: 214.9 - 217.2 2% Min: Pyrrhotite>>
<<Min: 214.9 - 217.2 2% Min: Pyrite>>
<<Min: 214.9 - 217.2 5% Min: Sphalerite>>
<<Min: 217.2 - 218.7 5% Min: Pyrite>>
<<Min: 218.7 - 223.8 1% Min: Chalcopyrite>>
<<Min: 218.7 - 223.8 3% Min: Galena>>
<<Min: 218.7 - 223.8 5% Min: Pyrite>>
<<Min: 218.7 - 223.8 10% Min: Sphalerite>>
<<Min: 223.8 - 227.1 0.5% Min: Chalcopyrite>>
<<Min: 223.8 - 227.1 0.5% Min: Galena>>
<<Min: 223.8 - 227.1 5% Min: Pyrrhotite>>
<<Min: 223.8 - 227.1 3% Min: Sphalerite>>
<<Min: 227.1 - 228.6 4% Min: Pyrrhotite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
202.90	204.00	1.10	B00269433	18.4	0.022	0.07	1.12	1.48
204.00	205.00	1.00	B00269434	4.6	0.019	0.01	0.16	0.24
205.00	207.40	2.40	B00269435	18.7	0.031	0.06	0.69	2.02
207.40	208.90	1.50	B00269436	19	-0.005	0.09	0.88	2.69
208.90	210.40	1.50	B00269437	7.6	0.014	0.12	0.45	2.96
210.40	211.80	1.40	B00269438	6.6	-0.005	0.1	0.34	2.95
211.80	213.30	1.50	B00269439	7.5	0.02	0.2	0.3	4.08
213.30	214.90	1.60	B00269441	6.3	0.031	0.24	0.15	3.25
214.90	216.40	1.50	B00269442	5.5	0.047	0.27	0.06	2.48
216.40	217.20	0.80	B00269443	2.7	0.006	0.13	0.04	2.5
217.20	218.70	1.50	B00269444	1.1	-0.005	0.03	0.03	0.05
218.70	220.20	1.50	B00269445	16.7	0.043	0.29	1.02	4.03
220.20	221.70	1.50	B00269446	13.2	-0.005	0.1	1	5.28
221.70	222.70	1.00	B00269447	10.6	0.014	0.1	0.27	9.25
222.70	223.80	1.10	B00269448	36.2	0.031	0.12	1.77	7.89
223.80	225.30	1.50	B00269449	5.7	-0.005	0.07	0.28	2.45
225.30	226.80	1.50	B00269451	2.8	-0.005	0.03	0.06	0.83
226.80	228.30	1.50	B00269452	1.7	-0.005	-0.01	0.08	0.85

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 202.9 - 205.9 Weak (Alt) Muscovite>>
<<Alt: 202.9 - 205.9 Moderate (Alt) Chlorite>>
<<Alt: 202.9 - 205.9 Moderate (Alt) Biotite>>
<<Alt: 204 - 215 Weak (Alt) Garnet>>
<<Alt: 205.9 - 215.2 Intense (Alt) Chlorite>>
<<Alt: 205.9 - 215.2 Strong (Alt) Biotite>>
<<Alt: 208.9 - 209.2 Moderate (Alt) Cordierite>>
<<Alt: 215 - 220.5 Moderate (Alt) Garnet>>
<<Alt: 215.2 - 223.8 Strong (Alt) Chlorite>>
<<Alt: 215.2 - 223.8 Moderate (Alt) Biotite>>
<<Alt: 219.5 - 221.3 Strong (Alt) Cordierite>>
<<Alt: 222 - 228.6 Weak (Alt) Muscovite>>
<<Alt: 223.8 - 227.1 Weak (Alt) Chlorite>>
<<Alt: 223.8 - 227.1 Weak (Alt) Biotite>>
<<Struc: 214.5 - 218.5 Moderate (Alt) Fault>> gouge, broken core, core loss

228.60 236.20 RHYvl Lapilli tuff grey-brown MCG

228.6 - 236.2: variable text ranges from fine grained massive QZ-BI schist to lapilli/porphyry-like texture with 30-40% white-light green felsic lapilli (feldspars?) with diffuse boundaries (fuzzy). Potentially a feldspar porphyry. Variable strain causes flattening and streaking of the lapilli texture to create a more massive and featureless schist

236.20 237.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FG

237.30 243.10 RHYvl Lapilli tuff grey-brown MCG

237.3 - 243.1: same unit as above dyke

243.10 246.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FG

End of Hole @ 246

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-307

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	25-Oct-15
UTM Easting	415080.4	Core Size:	HQ3	Azimuth:	210	Date Logging Complete:	30-Oct-15
UTM Northing:	6815123.2	Casing Pulled?:	Yes	Dip:	-85	Drill Company:	Geotech
UTM Elev. (m):	1385	Casing Depth (m):	7.5	Length (m):	277	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	24-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	29-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

APS unit used for UTM N & E. LiDAR DEM used for elevation. Handheld UTM coordinates standing within 1m of collar are:415081E/6815122N.
DDH K15-307 was successful in intersecting the Krakatoa sulfide lens. The stratigraphic section above the Krakatoa is similar to that intersected by other nearby drill holes. The hanging wall to the Krakatoa lens consists of a felsic volcanigenic package with two thin mudstone units and two OB sulfide horizons (at 131.3 - 133.28m and 136.45 - 138.80m) which are overlain and separated by RHYcw. The Krakatoa lens at 182.75 - 203.0 (20.25m) is overlain by 36.25m of MAFi and has a footwall of FBX and sheared RHY from 203.0m to 212.05m followed by a thin unit of OB and minor internal rhyolite (212.05 - 214.05). The Krakatoa lens consists of OB from 182.75-193.0m with 5-15% sphalerite, minor galena and chalcopyrite (<5%) followed by OA to 189.9 with <5% sphalerite, up to 5% galena - possible sulphosalts. The OA is followed by OB from 189.9 - 203.0m. The remainder of the hole consists of felsic rocks with RHYc from 214.05 to 217.2m and RHY and RHYvl to EOH. In the upper part of the DDH significant faulting was encountered at 37.0-46.5m and 66.4-93.25m. Drill Hole lithology summary:
0 – 7.5m Casing
7.5 – 37.0m RHY/MAFi dykes
37.0m – 46.5m FBX, RHY and lesser Mafi clasts
46.5 – 49.4m RHY
49.4 – 53.0m MDSt & MDSc
53.0 – 66.4m RHY
66.4 – 93.25m FBX (composed of mostly RHY and gouge) & lesser sections of more competent RHY
93.25 – 115.0m RHY
115.0 – 116.78m MDSt and MDSc
116.78 – 127.5m RH
127.5 – 131.3m RHYcw
131.3 – 133.28m OB, 10-20% sphalerite
133.28 – 136.45m RHYcw
136.45 – 138.80m OB locally 10-20 sphalerite and minor disseminated magnetite
138.8 – 146.5m RHY with moderate chlorite alteration and minor disseminated sulfides.
146.5 - 193m OB 10-15+% sphalerite
199 - 203.2m OA galena bearing
203.2 - 212.1m FBX (mainly sheared RHY and some MAFi clasts)
212.1 - 214.05m OB, includes some minor massive Pyrrhotite sections
214.05 - 217.2m RHYc
217.2 - 246.0m RHY likely is RHYva
246.0 – 269.4m RHYvl
269.4 – 273.45m RHYvl (Bi-Chl alt)
273.45 – 276.75m MAFi and lessor RHYvl
276.75 – 277.0m RHYvl

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-85	209.84	0	209.84	APS	Roger Hulstein	24-Oct-15		☑	measured approx +4 m elev.
19	-84.1	178.5	22.5	201	ReflexEZS	Geotech	25-Oct-15	5758	☑	
46	-84.1	173.9	22.5	196.4	ReflexEZS	Geotech	25-Oct-15	5758	☑	
70	-83.2	166.5	22.5	189	ReflexEZS	Geotech	25-Oct-15	5758	☑	
94	-83.5	173.8	22.5	196.3	ReflexEZS	Geotech	25-Oct-15	5754	☑	
119	-83.2	171.9	22.5	194.4	ReflexEZS	Geotech	25-Oct-15	5762	☑	
148	-82.2	168	22.5	190.5	ReflexEZS	Geotech	25-Oct-15	5691	☑	
169	-82.1	162.4	22.5	184.9	ReflexEZS	Geotech	25-Oct-15	5692	☑	
194	-82.4	158.8	22.5	181.3	ReflexEZS	Geotech	25-Oct-15	5661	☑	
220	-82.2	164.5	22.5	187	ReflexEZS	Geotech	25-Oct-15	5846	☑	
250	-79	172.5	22.5	195	ReflexEZS	Geotech	25-Oct-15	5799	☑	
277	-77.3	174.9	22.5	197.4	ReflexEZS	Geotech	25-Oct-15	5818	☑	E.O.H. at 277m

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.50 CASN Casing

7.50 9.80 RHYva Coarse grained to ash tuff

<<Min: 7.5 - 9.8 3% Min: Calcite>>

<<Alt: 7.5 - 9.8 Weak (Alt) Biotite>>

9.80 10.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 9.8 - 10.4 15% Min: Calcite>> mafic dyke

<<Alt: 9.8 - 10.4 Moderate (Alt) Biotite>> mafic dyke

10.40 24.62 RHYva Coarse grained to ash tuff

<<Min: 10.4 - 20.6 5% Min: Calcite>>

<<Min: 10.4 - 24.68 0.1% Min: Pyrite>>

<<Min: 13 - 24.68 0.1% Min: Pyrrhotite>>

<<Min: 20.6 - 22.4 10% Min: Calcite>>

<<Min: 22.4 - 28.15 5% Min: Calcite>> dis and

<<Vein: 21.3 - 24.65 5% Quartz-Tourmaline 20 deg. >>

<<Struc: 10.6 - 10.8 Moderate (Alt) Fault>> gouge and brx on foliation

<<Struc: 12.9 - 13 Moderate (Alt) Fault>>

<<Struc: 16 - 16.6 Moderate (Alt) Fault>> broken core, minor gouge

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 19.7 - 20.7 Moderate (Alt) Fault>> broken core, minor gouge, lower fault contact with parallel 20cm mafic dyke

<<Struc: 21.1 - 21.25 Moderate (Alt) dominant foliation>> poorly developed foliation

<<Struc: 21.25 - 21.65 Moderate (Alt) Vein>> 1-2 cm wide qtz tour vein

<<Struc: 21.25 - 21.65 Moderate (Alt) dominant foliation>>

<<Struc: 21.65 - 22 Moderate (Alt) dominant foliation>>

<<Struc: 22.4 - 23 Moderate (Alt) Fault>> broken core, minor gouge, along foliation

24.62 28.15 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

24.62 - 28.15: sericite altered, flow banded, 'peperite' like textures

<<Min: 24.67 - 28.18 1% Min: Pyrrhotite>>

<<Min: 24.68 - 28.18 1% Min: Pyrite>>

28.15 29.70 RHYva Coarse grained to ash tuff grey

<<Min: 28.15 - 29 5% Min: Calcite>>

<<Min: 28.18 - 29.7 3% Min: Pyrite>> and dis

<<Min: 28.18 - 29.7 2% Min: Pyrrhotite>> and dis

<<Min: 29 - 34 0.5% Min: Pyrrhotite>>

<<Min: 29 - 34 20% Min: Calcite>> mafic dyke

<<Alt: 29.6 - 34 Moderate (Alt) Biotite>> mafic dyke

<<Struc: 29 - 30 Moderate (Alt) dominant foliation>>

29.70 34.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

29.7 - 34: calcareous - 20%?

<<Struc: 29.7 - 29.7 Moderate (Alt) Contact>>

<<Struc: 33.7 - 37 Moderate (Alt) Fault>> broken core, minor gouge on both low and high angle fractures

34.00 37.00 RHY undifferentiated rhyolite grey

34 - 37: Sheeared and broken, sections with silic bands - could have been a RHYc or RHYcw.

<<Min: 34 - 40.5 0.25% Min: Pyrrhotite>> patchy diss

<<Min: 34 - 41.5 10% Min: Calcite>> most calcite in mafic clasts in fault zone

<<Min: 34 - 46.5 0.25% Min: Pyrite>> patchy diss

<<Alt: 34 - 53 Weak (Alt) Muscovite>> sericite

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

37.00 46.50 FBX Fault Breccia grey-green

37 - 46.5: Fault Zone; brecciated and sheared at low angles to CA. RHY and MAFi clasts. Strong sericite alteration and clay on fractures shears nand in matrix.

<<Min: 41.5 - 46.5 3% Min: Calcite>>

<<Struc: 37 - 46 Strong (Alt) Fault>> gouge zones and shear planes at low angles (00-30 deg) to CA

<<Struc: 40 - 40.1 Weak (Alt) Fault>> approximates MAFi dyke 'clast' contact as well

<<Struc: 46 - 49 Moderate (Alt) dominant foliation>> low angle fracture -shear planes with clay and sericite cosscutting foliation

46.50 49.40 RHY undifferentiated rhyolite

46.5 - 49.4: uncertain protolith, cut by <20cm mafic dyke.

<<Min: 46.5 - 49 5% Min: Calcite>>

<<Min: 46.5 - 51.7 0.5% Min: Pyrite>>

<<Min: 49 - 54.6 3% Min: Calcite>>

<<Struc: 49 - 50 Moderate (Alt) Fault>>

49.40 51.70 MDSt Rhyolite tuff dominant mudstone dark grey

49.4 - 51.7: original protolith uncertain - couild have been MDSw

<<Struc: 50 - 60 Moderate (Alt) dominant foliation>> Foliation with parallel spaced (0.5-1cm) fractures with clay - sericite coatings. Cross cut by low angle fractures and shears.

<<Struc: 50 - 66 Weak (Alt) Shear>> fracture - shear planes with clay - sericite - gouge cross cutting foliation at low angles (00 - <45 deg to CA).

51.70 53.00 MDSc Carbonaceous dominant mudstone dark grey

51.7 - 53: missing core so exact contacts uncertain, lower 30cm is MDSt.

<<Min: 51.7 - 53 2% Min: Pyrite>> and blebs

53.00 66.40 RHY undifferentiated rhyolite grey

53 - 66.4: dominently foliated at ~60 deg with parallel shear - gouge planes, locally crosscut by low angle 15-30 degree shear - gouge planes.

<<Min: 53 - 54 1% Min: Pyrite>>

<<Min: 53 - 61 1% Min: Pyrrhotite>>

<<Min: 54.6 - 70 5% Min: Calcite>>

<<Min: 61 - 69.2 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 53 - 73 Moderate (Alt) Muscovite>> sericite associated with faulting

<<Vein: 53.5 - 53.7 50% Quartz-Tourmaline>>

<<Vein: 57.1 - 57.5 20% Quartz-Tourmaline 20 deg. >>

<<Struc: 66 - 93.25 Strong (Alt) Fault>> Broad fault zone, numerous gouge zones, sections less faulted but still strongly fractured, sheared and or brecciated.

66.40 72.00 FBX Fault Breccia grey-green

69.20	70.70	1.50	B00269755	-0.3	-0.005	-0.01	-0.01	-0.01

66.4 - 72: Fault zone, brecciated strongly sheared at low angles to CA with clay gouge and strong green sericite alteration. 69.2-72.6 Pyritic clasts and pyritic grey clay gouge

<<Min: 69.2 - 73.8 5% Min: Pyrite>> pyritic gouge bands, pyrite stringers and pyritic clasts (OB?)

<<Min: 70 - 74 1% Min: Calcite>>

70.70	72.00	1.30	B00269756	0.5	-0.005	-0.01	-0.01	-0.01

72.00 76.60 RHY undifferentiated rhyolite grey-green

72.00	72.60	0.60	B00269757	1.3	-0.005	0.02	-0.01	-0.01

72 - 76.6: sheared (approx 45-60 degree to CA) strong sericite alteration.

<<Min: 73.8 - 89.5 1% Min: Pyrite>> rare pyritic rhyolite clasts, trace diss fine grained pyrite.

<<Min: 74 - 89.5 5% Min: Calcite>> and diss

<<Alt: 73 - 93.25 Moderate (Alt) Muscovite>> sericite associated with faulting

72.60	73.80	1.20	B00269758	-0.3	-0.005	-0.01	-0.01	-0.01

76.60 89.50 FBX Fault Breccia grey-green

76.6 - 89.5: Brecciated and sheaRED MAFi dyke 80.27-80.5m. Almost all gouge zones 80-88m. Poor recovery throughout.

89.50 90.20 FBX Fault Breccia dark grey

89.50	90.20	0.70	B00269759	1.3	0.033	-0.01	0.01	0.03

89.5 - 90.2: Brecciated pyritic (10% fine gr diss py) sericite altered rhyolite(?). Jigsaw type brx with sericite clay on shear partings and fractures. Looks like a sheared crackle breccia….

<<Min: 89.5 - 90.2 10% Min: Pyrite>> approaching appearance of weak OI.

<<Min: 89.5 - 90.2 0.5% Min: Calcite>>

90.20 93.25 FBX Fault Breccia grey-green

90.2 - 93.25: Sheared (10-15 deg to CA) clay gouge and crushed schist.

<<Min: 90.2 - 93.25 1% Min: Pyrite>>

<<Min: 90.2 - 93.25 3% Min: Calcite>>

93.25 115.00 RHY undifferentiated rhyolite grey-green

93.25 - 115: 100.5-102.5: silic bands. Unit strongly sheared along foliation (approx 55 deg) and cross cutting shear planes - faults (avg 45 deg). Lowermost 20cm has weak MDS. Lower contact is a 10cm gougy fault zone. Fuchsite (teal colored) altered clasts.

<<Min: 93.25 - 96.08 2% Min: Pyrite>> diss in patches and bands

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 96.08 - 101 1% Min: Pyrite>> and FD

<<Min: 101 - 104 0.5% Min: Pyrite>>

<<Min: 101 - 104 0.5% Min: Pyrrhotite>>

<<Min: 104 - 105 5% Min: Pyrite>> dis in patches and bands.

<<Min: 104 - 105.5 2% Min: Pyrite>> diss in patches

<<Min: 105.5 - 107 1% Min: Pyrrhotite>>

<<Min: 106 - 110.62 3% Min: Calcite>>

<<Min: 107 - 115 1% Min: Pyrrhotite>>

<<Min: 110.62 - 114.5 5% Min: Calcite>>

<<Alt: 93.25 - 118 Weak (Alt) Muscovite>> sericite

<<Vein: 98 - 98.12 100% Quartz 70 deg. >> crushed qtz with shear contacts at approx 60 deg

<<Vein: 100.8 - 101.6 30% Quartz>>

<<Struc: 93.25 - 98.65 Weak (Alt) Fault>> Intensity varies 2-4, narrow zones of clay gouge (6). Most shearing parallel to foliation at approx 45 deg but curvilinear and shears at 00 - 25 deg to CA also abundant.

<<Struc: 99 - 102 Moderate (Alt) dominant foliation>>

<<Struc: 102 - 103 Weak (Alt) Fault>> broken core, missing core

<<Struc: 104 - 104.68 Weak (Alt) Fault>> broken core. Missing core

<<Struc: 105.9 - 107.5 Weak (Alt) dominant foliation>>

<<Struc: 114.8 - 115.5 Weak (Alt) Fault>> gouge along foliation, broken core

115.00 116.15 MDSt Rhyolite tuff dominant mudstone dark grey

115 - 116.15: good MDSt

<<Min: 115 - 118 5% Min: Pyrrhotite>> diss, diss in bands

<<Struc: 115 - 121 Moderate (Alt) dominant foliation>>

116.15 116.30 MDSc Carbonaceous dominant mudstone black

116.30 116.78 MDSt Rhyolite tuff dominant mudstone dark grey

116.3 - 116.78: good MDSt

116.78 127.50 RHY undifferentiated rhyolite grey-green

126.00	127.50	1.50	B00269797	0.4	-0.005	-0.01	-0.01	-0.01

116.78 - 127.5: 124.0-126.6m: silic bands

<<Min: 118 - 131.5 2% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 122 - 125 5% Min: Calcite>>									
		<<Min: 125 - 130.5 3% Min: Calcite>>									
		<<Alt: 118 - 126 Moderate (Alt) Muscovite>>									
		<<Alt: 126 - 131.3 Weak (Alt) Muscovite>>									
		<<Vein: 117.3 - 118.2 50% Quartz>>									
		<<Struc: 117 - 121.9 Moderate (Alt) Fault>> numerous zone of missing core, broken core, gouge along foliation,									
		<<Struc: 121 - 126 Moderate (Alt) dominant foliation>>									
		<<Struc: 123.9 - 124 Moderate (Alt) dominant foliation>> narrow (<1cm) gouge zones on fol									
127.50	**131.30**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	127.50	128.50	1.00	B00269778	1	0.022	0.01	-0.01	-0.01
		<<Min: 131.2 - 132.3 5% Min: Calcite>> patchy, in laminations	128.50	130.00	1.50	B00269779	1	0.011	-0.01	-0.01	-0.01
		<<Struc: 128.6 - 128.9 Moderate (Alt) dominant foliation>> gouige - crush zone	130.00	131.30	1.30	B00269781	1.3	0.01	-0.01	0.01	0.03
		<<Struc: 130 - 131 Moderate (Alt) >> spaced cleavage crenulating banded RHY, APC likely parallel to DFOL									
131.30	**133.28**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **CG**	131.30	132.30	1.00	B00269782	125	0.467	0.41	3.05	9.12
		131.3 - 133.28: 131.3-132.3m: up to 30+% Sp, averages 20%?, approx 5% dis galena. 132.3-133.0m: 5-15% sphalerite, 1-3% gn, up to 1% chalcopyrite. 133-133.28m: OI, heavy diss py along DFOL, minor sp&gl. 132.9-133.0m approc 20% cpy, 1-5% po.									
		<<Min: 131.3 - 132.3 20% Min: Sphalerite>>	132.30	133.28	0.98	B00269783	130	1.17	0.85	3.02	8.66
		<<Min: 131.3 - 132.3 40% Min: Pyrite>>									
		<<Min: 131.3 - 132.3 5% Min: Galena>>									
		<<Min: 132.2 - 133.28 5% Min: Chalcopyrite>> blebs and dis									
		<<Min: 132.3 - 133.28 15% Min: Sphalerite>>									
		<<Min: 132.3 - 133.28 50% Min: Pyrite>>									
		<<Min: 132.3 - 133.3 3% Min: Galena>>									
		<<Struc: 133 - 133.28 Moderate (Alt) dominant foliation>> lamin sulfides									
133.28	**136.45**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **grey-green**	133.28	134.50	1.22	B00269784	6.2	0.032	0.02	0.1	0.44
		<<Min: 133.28 - 133.9 5% Min: Pyrite>>	134.50	136.00	1.50	B00269785	0.6	0.005	-0.01	-0.01	0.01
		<<Min: 133.7 - 136.3 5% Min: Calcite>>	136.00	136.45	0.45	B00269786	2	0.015	-0.01	0.05	0.06
		<<Min: 133.9 - 136.45 2% Min: Pyrite>>									
		<<Alt: 133.28 - 136.45 Weak (Alt) Muscovite>>									
		<<Struc: 133.28 - 133.28 Strong (Alt) Contact>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 133.28 - 133.5 Moderate (Alt) dominant foliation>> banded rhyolite										
			<<Struc: 133.6 - 133.65 Weak (Alt) Fault>> minor gouge on shear plane										
			<<Struc: 134 - 136 Moderate (Alt) dominant foliation>>										
136.45	**138.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	136.45	137.20	0.75	B00269787	220	1.26	0.17	3.68	10.2
			136.45 - 138.8: 137.2-137.8: two 15-20cm sections with diss magnetite. 136.45-138.8: Unit averages 15% dis sph.										
			<<Min: 136.45 - 137.2 1% Min: Calcite>>		137.20	138.80	1.60	B00269788	171	1.17	0.12	4.12	12.7
			<<Min: 136.45 - 138.8 20% Min: Sphalerite>>										
			<<Min: 136.45 - 138.8 55% Min: Pyrite>>										
			<<Min: 136.45 - 138.8 3% Min: Galena>>										
			<<Min: 136.45 - 138.8 1% Min: Chalcopyrite>> and as blebs										
			<<Min: 137 - 137.8 8% Min: Magnetite>>										
			<<Min: 137.2 - 138.8 5% Min: Calcite>> and as blebs										
138.80	**145.30**	**RHY**	**undifferentiated rhyolite**	**grey-green**	138.80	140.00	1.20	B00269789	1	0.037	-0.01	-0.01	0.03
			138.8 - 145.3: Highly strained.										
			<<Min: 138.8 - 142 3% Min: Calcite>>		140.00	141.50	1.50	B00269791	2	0.014	-0.01	0.03	0.08
			<<Min: 138.8 - 145.3 2% Min: Pyrite>>		141.50	142.00	0.50	B00269792	0.5	0.005	-0.01	-0.01	0.01
			<<Min: 142.7 - 142.75 1% Min: Sphalerite>> 1-2 qtz - calcite vein with diss sp, gl and py		142.00	144.00	2.00	B00269793	2.4	0.007	-0.01	0.02	0.06
			<<Alt: 138.8 - 142.25 Weak (Alt) Muscovite>>		144.00	145.30	1.30	B00269794	0.7	-0.005	-0.01	-0.01	0.02
			<<Vein: 143.55 - 145.6 40% Quartz>> Trace diss coarse grained sphalerite.										
			<<Struc: 140 - 143 Moderate (Alt) dominant foliation>>										
			<<Struc: 144.9 - 145 Moderate (Alt) Foliation>> parallel to foliaform qtz vein										
			<<Struc: 145.15 - 145.25 Moderate (Alt) Foliation>>										
145.30	**181.75**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	145.30	146.50	1.20	B00269795	16	0.114	0.1	0.15	1.05
			145.3 - 181.75: Locally more coarse grained gabbroic textures, ie. 159.7-166m.										
			<<Min: 145.3 - 146.6 5% Min: Pyrite>> heavy diss bands		146.50	148.00	1.50	B00269796	3.1	0.01	-0.01	0.04	0.03
			<<Min: 145.3 - 146.6 0.2% Min: Chalcopyrite>> In qtz veinlets		176.50	178.00	1.50	B00269798	1	-0.005	-0.01	-0.01	0.03
			<<Min: 146.5 - 152.75 10% Min: Calcite>> and veinlets		178.00	179.84	1.84	B00269799	1.1	0.007	-0.01	0.02	0.02
			<<Min: 150 - 155.25 0.1% Min: Pyrite>>		179.84	181.00	1.16	B00269801	9.5	0.034	-0.01	0.18	0.02
			<<Min: 152.75 - 155.25 2% Min: Calcite>>		181.00	181.75	0.75	B00269802	12.9	0.047	0.01	0.19	0.04

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 155.25 - 159.7 5% Min: Calcite>> plus diss and filling

<<Min: 156.5 - 159.7 2% Min: Pyrrhotite>> 0.2-1cm blebs po< locally replacaing cubic pyrite. Po restricted to chl-epidote altered zone

<<Min: 159.7 - 163.8 2% Min: Calcite>>

<<Min: 163.8 - 167.15 5% Min: Calcite>> plus diss and filling

<<Min: 167.15 - 168.9 2% Min: Calcite>>

<<Min: 168.9 - 173 5% Min: Calcite>> plus as veinlets and fracture filling

<<Min: 173 - 181.75 15% Min: Calcite>> plus as blebs, veinlets and fracture filling

<<Min: 181.25 - 184 10% Min: Barite>> and as matrix to sulphides, mixed with qtz

<<Alt: 145.3 - 146.5 Moderate (Alt) Chlorite>> and diss, altered contact with Mafi

<<Alt: 145.3 - 146.5 Moderate (Alt) Biotite>>

<<Alt: 146.5 - 150.75 Moderate (Alt) Biotite>>

<<Alt: 146.5 - 150.75 Moderate (Alt) Chlorite>>

<<Alt: 150.75 - 152.75 Moderate (Alt) Chlorite>>

<<Alt: 150.75 - 152.75 Weak (Alt) Muscovite>> sericite-clay alt with late qtz-calcite veining and fracturing

<<Alt: 152.75 - 155.25 Moderate (Alt) Biotite>>

<<Alt: 152.75 - 155.25 Moderate (Alt) Chlorite>>

<<Alt: 155.25 - 159.7 Moderate (Alt) Silicification>>

<<Alt: 155.25 - 159.7 Moderate (Alt) Epidote>>

<<Alt: 155.25 - 159.7 Weak (Alt) Talc-serpentine>> with qtz

<<Alt: 155.25 - 159.7 Moderate (Alt) Chlorite>> not strained, with epidote

<<Alt: 159.7 - 167.15 Moderate (Alt) Biotite>>

<<Alt: 159.7 - 167.15 Moderate (Alt) Chlorite>>

<<Alt: 167.15 - 168.55 Weak (Alt) Biotite>>

<<Alt: 167.15 - 168.55 Moderate (Alt) Chlorite>> not strained, with epidote and minor actinolite

<<Alt: 167.15 - 168.55 Moderate (Alt) Epidote>>

<<Alt: 168.55 - 178.5 Weak (Alt) Biotite>>

<<Alt: 168.55 - 181.75 Moderate (Alt) Chlorite>>

<<Vein: 150.75 - 152.75 10% Calcite>> brecciated, calcite-qtz filling fractures.

<<Vein: 154.1 - 154.12 100% Carbonate-Biotite 65 deg. >> banded calcite-chlorite?-biotite? Veinlet

<<Vein: 155.25 - 159.7 10% Quartz-Chlorite 70 deg. >> irregular qtz-chl-talc? Vein-flooding - not strained

<<Vein: 167.15 - 168.55 3% Quartz>> minor qtz stringers with Chl-epidote alteration

<<Vein: 169 - 181.75 5% Quartz>> irregular calcite (minor qtz) stringers and infilling

<<Struc: 154 - 154.12 Moderate (Alt) Vein>> finely banded calcite-biotite?-chlorite? Vein

From (m)	To (m)	Rocktype & Description

<<Struc: 155 - 155.25 Weak (Alt) Foliation>>

<<Struc: 155.25 - 155.25 Moderate (Alt) Contact>> contact between strained and unstrained Mafi

<<Struc: 159.3 - 159.35 Moderate (Alt) Vein>>

<<Struc: 164.6 - 164.65 Weak (Alt) Vein>> qtz chl vein

<<Struc: 170.6 - 170.7 Moderate (Alt) Fault>> 1cm wide gouge

<<Struc: 173.6 - 175 Weak (Alt) Foliation>>

<<Struc: 176.2 - 180.5 Weak (Alt) Fault>> numerous fracture and narrow gouge zones with variable orientations, 10-65 deg

181.75 193.00 OB **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**

181.75 - 193: Variable % (30-70%) fine to medium grained pyrite with variable % diss sphalerite and minor galena. 181.75-187.6; approx. average 10-15% diss and diss bands of sphalerite, and 2+(?) diss galena, rare chalcopyrite. 187.6 - 191.5m stronger bands of diss sphalerite and galena, overall 15-20% and 5% respectively, diss chalcopyrite more common. Gangue of silica (altered rhy and suspected barite. Suspected barite forms light grey wisps and irregular bands <1 - 2 cm throughout and as almost massive qtz - barite(?) at: 188.3-188.5m and 189.05-189.3m. Qtz- barite(?) locally contains coarse grained galena and visible medium grained chalcopyrite (both likely remobilized with soupy looking qtz-barite(?) veins - and filling. 181.75-189.3m; < or = 40% total sulphides, gangue of silica-rhy-clacite-barite. 86.8-187.6m; 40% Rounded stretched lithic clasts (RHY?) - approaching OI.

<<Min: 181.75 - 187.6 10% Min: Sphalerite>>

<<Min: 181.75 - 187.6 30% Min: Pyrite>>

<<Min: 181.75 - 187.6 2% Min: Galena>>

<<Min: 181.75 - 191.75 5% Min: Calcite>>

<<Min: 184 - 189.3 20% Min: Barite>> light grey, hardness similar to calcite but no efferese, mixed with quartz?

<<Min: 187.6 - 193 15% Min: Sphalerite>>

<<Min: 187.6 - 193 30% Min: Pyrite>>

<<Min: 187.6 - 193 5% Min: Galena>>

<<Min: 187.6 - 193 3% Min: Chalcopyrite>> questionable percentage estimate!

<<Min: 191.75 - 193 5% Min: Calcite>>

<<Alt: 189 - 200.5 Weak (Alt) Chlorite>> chl blebs - likley replacing scattered cordierite

<<Struc: 183.3 - 184 Moderate (Alt) dominant foliation>> banded sulphides

<<Struc: 187 - 187.6 Moderate (Alt) dominant foliation>> banded sulphides

<<Struc: 189.5 - 189.8 Weak (Alt) dominant foliation>> banded sulphides

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
181.75	182.20	0.45	B00269803	148	2.15	0.2	2.36	8.99
182.20	183.00	0.80	B00269804	180	1.96	0.24	2.51	8.16
183.00	184.00	1.00	B00269805	142	2.15	0.27	2.44	8.21
184.00	185.00	1.00	B00269806	140	1.94	0.14	2.96	6.82
185.00	186.00	1.00	B00269807	208	2.08	0.12	4.16	8.19
186.00	187.00	1.00	B00269808	185	6.1	0.15	2.23	6.2
187.00	187.60	0.60	B00269809	244	3.93	0.36	2.1	5.04
187.60	188.60	1.00	B00269812	530	4.97	0.37	5.45	7.74
188.60	189.60	1.00	B00269813	373	3.91	0.29	4.98	6.29
189.60	190.15	0.55	B00269814	305	4.82	0.29	4.03	5.95
190.15	191.00	0.85	B00269815	457	2.2	0.25	9.44	12.4
191.00	192.00	1.00	B00269816	197	0.916	0.09	5.68	10.8
192.00	193.00	1.00	B00269817	221	1.28	0.33	4.53	7.33

From (m)	To (m)		Rocktype & Description	
193.00	**195.58**	**OA**	**Magnetite bearing sulphides**	**FMG**

193 - 195.58: 193-195.58: OA and DMG instead of all banded magetite OA. Approx 10% diss magnetite, average 10% pyrrhotite (greater % at upper contact).

<<Min: 193 - 195.58 5% Min: Sphalerite>>

<<Min: 193 - 195.58 30% Min: Pyrite>>

<<Min: 193 - 195.58 10% Min: Pyrrhotite>>

<<Min: 193 - 195.58 10% Min: Magnetite>>

<<Min: 193 - 195.58 5% Min: Chalcopyrite>> and as blebs

<<Min: 193 - 198.9 2% Min: Calcite>>

From (m)	To (m)		Rocktype & Description	
195.58	**195.94**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

195.58 - 195.94: massive py with 1cm bands of higher grade sphalerite and minor galena. <5% dis blebs nof chlorite. Siliceous gangue.

<<Min: 195.58 - 195.94 15% Min: Sphalerite>>

<<Min: 195.58 - 195.94 50% Min: Pyrite>>

<<Min: 195.58 - 195.94 5% Min: Galena>>

From (m)	To (m)		Rocktype & Description	
195.94	**198.90**	**OA**	**Magnetite bearing sulphides**	**FMG**

195.94 - 198.9: Approx. 70% banded py-mag-silica gangue, 15% po, 5% galena, 5% chalcopyrite, no visible sphalerite…

<<Min: 195.94 - 198.9 50% Min: Pyrite>>

<<Min: 195.94 - 198.9 15% Min: Pyrrhotite>>

<<Min: 195.94 - 198.9 10% Min: Magnetite>>

<<Min: 195.94 - 198.9 5% Min: Galena>>

<<Min: 195.94 - 198.9 5% Min: Chalcopyrite>>

<<Struc: 196.1 - 196.3 Moderate (Alt) dominant foliation>> banded sulfides

<<Struc: 196.5 - 198.9 Moderate (Alt) dominant foliation>> banded sulphides

From (m)	To (m)		Rocktype & Description	
198.90	**200.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

198.9 - 200.2: 20% dis py, 5% cp blebs and dis, 5% mag, 5-10% dis po, 5% sp % 1% galena in silica gangue. Local qtz-clacite zones with rmobilized coarse grained sulfides - cp & po.

<<Min: 198.9 - 200.2 5% Min: Sphalerite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
193.00	194.00	1.00	B00269818	81.9	0.739	0.33	1.41	8.43
194.00	195.00	1.00	B00269819	112	1.17	0.82	1.85	8.39
195.00	195.58	0.58	B00269821	129	0.866	0.84	2.55	8.71
195.58	195.94	0.36	B00269822	154	0.795	0.24	3.21	8.59
195.94	197.00	1.06	B00269823	69.8	0.37	0.29	1.22	9.3
197.00	198.00	1.00	B00269824	86	0.534	0.57	1.34	6.25
198.00	198.90	0.90	B00269825	88.2	0.514	0.52	1.34	6.21
198.90	199.50	0.60	B00269826	72.7	0.549	0.6	1.37	5.26
199.50	200.20	0.70	B00269827	118	0.925	1.51	1.96	4.83

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 198.9 - 200.2 20% Min: Pyrite>> locally semi massive													
<<Min: 198.9 - 200.2 10% Min: Pyrrhotite>>													
<<Min: 198.9 - 200.2 5% Min: Magnetite>>													
<<Min: 198.9 - 200.2 1% Min: Galena>>													
<<Min: 198.9 - 200.2 5% Min: Chalcopyrite>>													
<<Min: 198.9 - 201.8 2% Min: Calcite>>													
200.20	**203.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	200.20	201.20	1.00	B00269828	88.2	0.863	0.07	1.55	4.93
200.2 - 203: Massive and diss py and other sulfides in silica - calcite gangue. Blebs cp with qtz-calcite vein and fracture filling.													
<<Min: 200.2 - 203 10% Min: Sphalerite>>					201.20	202.00	0.80	B00269829	95.2	1.17	0.34	0.68	3.02
<<Min: 200.2 - 203 50% Min: Pyrite>>					202.00	203.00	1.00	B00269832	99.6	0.993	0.16	0.81	3.86
<<Min: 200.2 - 203 2% Min: Chalcopyrite>> and as dis													
<<Min: 201.8 - 203 5% Min: Calcite>>													
203.00	**205.35**	**FBX**	**Fault Breccia**		203.00	204.00	1.00	B00269833	20	0.105	0.04	0.17	1.24
203 - 205.35: sheared at 25-55 deg to CA with gouge on lower angle shear. 203.0-203.4; chloritic and silicified FBX with minor py and cpy - cpy is qtz vein -n qtz filling. 203.4-205.35; mostly ground up RHY and gouge.													
<<Min: 203 - 203.4 5% Min: Pyrite>> and as blebs					204.00	205.35	1.35	B00269834	0.7	-0.005	-0.01	-0.01	0.01
<<Min: 203 - 208 2% Min: Calcite>>													
<<Min: 203.4 - 205.35 2% Min: Pyrite>>													
<<Alt: 203 - 203.4 Weak (Alt) Silicification>>													
<<Alt: 203 - 203.4 Weak (Alt) Chlorite>>													
<<Alt: 203.4 - 211.7 Moderate (Alt) Muscovite>> sericite in fault zone													
<<Struc: 203 - 203 Moderate (Alt) Contact>> banded sulphide and contact with healed FBX													
<<Struc: 203 - 211.9 Intense (Alt) Shear>> Shear - gouge bands average between 25-50 deg.													
205.35	**207.90**	**RHY**	**undifferentiated rhyolite**		205.35	206.92	1.57	B00269835	-0.3	-0.005	-0.01	-0.01	0.01
205.35 - 207.9: strongly sheared RHY and minor gouge on lower angle (15-25 deg) shears. Upper and lower contacts gradational and all part of the same fault zone from 203.5 - 212.05m.													
<<Min: 205.35 - 207.9 2% Min: Pyrite>> and as blebs					206.92	207.90	0.98	B00269836	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
207.90	**212.05**	**FBX** **Fault Breccia**	207.90	209.00	1.10	B00269837	0.9	0.007	-0.01	-0.01	0.03
207.9 - 212.05: Similar to above units from 203 - 207.88m.Mostly strongly sheared (at low angles 20-45%) RHY, brecciated rhy, often weakly chlorite altered, bands of clay gouge. 211.75-212.05; Sheared MAFi clast with pseudo leucoxene for last 10cm.											
<<Min: 207.9 - 210.2 2% Min: Pyrite>>			209.00	210.50	1.50	B00269838	1.7	0.017	-0.01	0.01	0.05
<<Min: 208 - 211.75 5% Min: Calcite>>			210.50	211.50	1.00	B00269839	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 210.2 - 211.6 5% Min: Pyrrhotite>> and as blebs			211.50	212.05	0.55	B00269841	2.9	0.019	0.01	0.04	0.11
<<Min: 211.6 - 212.05 1% Min: Pyrite>>											
<<Alt: 211.7 - 212.05 Moderate (Alt) Chlorite>>											
<<Struc: 212 - 212 Strong (Alt) Shear>> shear contact											
212.05	**212.45**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	212.05	212.45	0.40	B00269842	122	0.43	0.39	2.76	9.27
212.05 - 212.45: Massive pyrite, calcite gangue, 15% dis sp, 2% diss cp, 50% diss py											
<<Min: 212.05 - 213.6 2% Min: Calcite>>											
<<Min: 212.05 - 217.4 1% Min: Pyrite>>											
<<Alt: 212.05 - 213.4 Weak (Alt) Chlorite>> Chl likely replacing cordierite.											
<<Alt: 212.1 - 213.6 Weak (Alt) Cordierite>> chlorite replacing Cord.											
<<Struc: 212.05 - 212.05 Moderate (Alt) Contact>> qtz sulphide contact											
212.45	**213.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **FMG**	212.45	213.00	0.55	B00269843	65.9	0.353	0.5	1.63	10.6
212.45 - 213.6: Massive pyrite, similar to previous unit but contains approx 10% po and 10% mg, locally weakly banded - approaching OA. Approx 5% chlorite blebs (chl after cordierite?). Lower contact over 10cm consists of banded pyrrhotie, muscovite - qtz and chloriter. Not an abrupt fault contact!											
<<Alt: 213.4 - 213.9 Moderate (Alt) Muscovite>>			213.00	213.60	0.60	B00269844	70.6	0.134	0.46	1.64	10.3
213.60	**213.90**	**RHYc** **Rhyolite coherant volcanics**	213.60	214.05	0.45	B00269845	21.7	0.014	0.18	0.33	5.5
213.6 - 213.9: Silica bands with clay - sericite partings, sharp lower contact with 0.5cm bleached rhyolite.											
<<Struc: 213.6 - 213.9 Moderate (Alt) dominant foliation>> sericite - clay partings in RHYc											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
213.90	**214.05**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **dark grey** **FMG**									
213.9 - 214.05: Massive fine grained py - po with calcite gangue. Pyrite partly replacing 2cm size chloritized cordierite. Sharp contact at 50 deg with gougy FBX.											
<<Struc: 213.9 - 213.9 Moderate (Alt) Contact>> RHYc - OB contact											
<<Struc: 213.9 - 217.2 Moderate (Alt) dominant foliation>> sericite partings in RHYc											
214.05	**217.20**	**RHYc** **Rhyolite coherant volcanics**	214.05	215.57	1.52	B00269846	6.9	0.006	0.04	0.1	1.12
214.05 - 217.2: silic bands with clay-sericite partings.											
<<Alt: 215 - 222 Moderate (Alt) Muscovite>> should be intensity five!			215.57	216.50	0.93	B00269847	0.4	-0.005	-0.01	-0.01	0.02
			216.50	217.20	0.70	B00269848	0.4	-0.005	-0.01	-0.01	0.02
217.20	**246.00**	**RHY** **undifferentiated rhyolite**	217.20	218.50	1.30	B00269849	-0.3	-0.005	-0.01	-0.01	0.02
217.2 - 246: likely RHYva with minor sections of RHYvl. 233.6-240.0m diss tourmaline and minor cross cutting qtz-tourmaline veinlets.											
<<Min: 217.4 - 229 4% Min: Pyrrhotite>>											
<<Min: 220 - 233 2% Min: Calcite>> and fracture fill											
<<Min: 229 - 231.5 1% Min: Pyrite>>											
<<Min: 231.5 - 246 1% Min: Pyrrhotite>>											
<<Min: 233 - 235 5% Min: Calcite>>											
<<Min: 235 - 241.3 3% Min: Calcite>>											
<<Min: 241.3 - 257 5% Min: Calcite>>											
<<Alt: 222 - 231 Weak (Alt) Muscovite>>											
<<Alt: 223 - 231 Weak (Alt) Chlorite>> Original ?											
<<Alt: 223 - 231 Weak (Alt) Biotite>> Original?											
<<Alt: 231 - 253 Weak (Alt) Muscovite>>											
<<Vein: 233.6 - 233.8 50% Quartz-Tourmaline 28 deg. >> crosscutting qtz - tourmaline vein											
<<Vein: 237.6 - 241.2 3% Quartz-Tourmaline 40 deg. >> irregular crosscutiing qtz - tour veinlets											
<<Vein: 239.2 - 239.25 75% Quartz-Pyrite 20 deg. >>											
<<Struc: 217.2 - 223 Moderate (Alt) dominant foliation>>											
<<Struc: 225 - 226 Moderate (Alt) dominant foliation>>											
<<Struc: 236.1 - 237.6 Moderate (Alt) Fault>> broken core, crush zones, minor gouge											
<<Struc: 239.9 - 241.1 Weak (Alt) Fault>> broken core, minor gouge											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 243.1 - 243.2 Weak (Alt) Fault>> broken core, minor gouge, parallel to foliation.

246.00 269.40 RHYvl Lapilli tuff

246 - 269.4: rare blue qtz phenocrysts

<<Min: 246 - 261.5 3% Min: Pyrrhotite>>

<<Min: 252 - 269.4 3% Min: Pyrite>> diss and diss in bands

<<Min: 257 - 263 3% Min: Calcite>>

<<Min: 261.3 - 273.45 0.5% Min: Pyrrhotite>> patches of diss

<<Min: 269 - 273.45 5% Min: Calcite>>

<<Alt: 253 - 273.45 Weak (Alt) Muscovite>> intensity should be a three and muscovite looks more like original than Metamorphic type.

<<Struc: 250 - 260 Moderate (Alt) dominant foliation>>

<<Struc: 254 - 260 Moderate (Alt) dominant foliation>>

269.40 273.45 RHYvl Lapilli tuff

269.4 - 273.45: Still dominently Qtz-mucs shist, but contains more mafic(?) clasts (gradational contact with above RHYvl), calcite blebs rimmed by chlorite and biotite are likely altered lapilli. Unit has a mottled grey- green - maroon hue.

<<Alt: 269.6 - 273.45 Weak (Alt) Chlorite>> replacing clasts

<<Alt: 269.6 - 273.45 Weak (Alt) Biotite>>

<<Struc: 270.7 - 271.6 Moderate (Alt) dominant foliation>>

273.45 276.75 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

273.45 - 276.75: 4 narrow mafic dykes with intervening RHYvl

<<Min: 273.45 - 277 3% Min: Pyrrhotite>>

<<Min: 273.5 - 277 20% Min: Calcite>>

<<Alt: 273.45 - 277 Weak (Alt) Chlorite>>

<<Alt: 273.45 - 277 Weak (Alt) Biotite>>

<<Struc: 273.9 - 273.9 Moderate (Alt) Contact>> contact parallel to dominent foliation

<<Struc: 273.9 - 274 Moderate (Alt) dominant foliation>>

276.75 277.00 RHYvl Lapilli tuff

276.75 - 277: Qtz-musc-biotite

End of Hole @ 277

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-308

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	24-Oct-15
UTM Easting	415158.8	Core Size:	HQ	Azimuth:	210.22	Date Logging Complete:	27-Oct-15
UTM Northing:	6815053.6	Casing Pulled?:	Yes	Dip:	-79	Drill Company:	Geotech
UTM Elev. (m):	1407.012	Casing Depth (m):	6	Length (m):	194	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	26-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-308 was drilled to test the up-dip extension of the Krakatoa lenses. Rods became stuck at ~194 m. ~60 m of the drill string was left down the hole, including the core barrel.
K15-308 drilled into a felsic hanging wall sequence, consisting of rhyolitic volcaniclastics, with minor ~1-5 m BI+CA schist layers, an apahanitic rhyolite intrusion, and a mudstone horizon from 88.9-90.5 m. Weak muscovite alteration became apparent at ~80 m. At ~94.7 m there was a major fault structure encountered that persisted to the end of the hole (194 m), with clasts and blocks of rhyolite, MAFi, and RHYi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-79	210.22	0	210.22	APS	Geotech	23-Oct-15		☑	
26	-79.7	188.1	22.5	210.6	ReflexEZS	Geotech	23-Oct-15	5827	☑	
53	-76.6	191.6	22.5	214.1	ReflexEZS	Geotech	24-Oct-15	5880	☑	
101	-76.4	184.1	22.5	206.6	ReflexEZS	Geotech	24-Oct-15	5810	☑	
128	-75.6	189.4	22.5	211.9	ReflexEZS	Geotech	25-Oct-15	5817	☑	
176	-74.8	186.1	22.5	208.6	ReflexEZS	Geotech	26-Oct-15	5813	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 6.00 CASN Casing

6.00 8.30 RHYva Coarse grained to ash tuff

6 - 8.3: Medium grey fine grained ash tuff with local CA lpl and disseminated BI

<<Min: 6 - 8.3 5% Min: Calcite>>

8.30 9.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

8.3 - 9.1: BI+CA schist. Either a meta-pelite or a lamprophyre. Minor BI cleavages in the wallrock on either side.

<<Min: 8.3 - 9.1 15% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.10 11.80 RHYva Coarse grained to ash tuff

9.1 - 11.8: Medium grey fine grained ash tuff with local CA lpl and disseminated euhedral BI

<<Min: 9.1 - 11.8 5% Min: Calcite>>

<<Min: 9.1 - 15.5 0.5% Min: Pyrite>>

<<Min: 9.1 - 15.5 3% Min: Pyrrhotite>>

11.80 15.50 RHYvl Lapilli tuff

11.8 - 15.5: Light grey MS+CA+QZ schist, with CA+QZ lpl.

<<Min: 11.8 - 15.5 10% Min: Calcite>>

15.50 19.50 RHYc Rhyolite coherant volcanics

15.5 - 19.5: Light grey aphanitic rhyolite with pepperitic texture

<<Min: 15.5 - 21.8 2% Min: Calcite>>

<<Min: 15.5 - 22.3 1% Min: Pyrite>>

<<Vein: 18.7 - 19.4 40% Quartz>> Massive QZ+CA veining

19.50 21.80 RHYc Rhyolite coherant volcanics

19.5 - 21.8: Light grey banded siliceous QZ+MU schist

21.80 22.30 RHYva Coarse grained to ash tuff

21.8 - 22.3: Medium grey fine grained ash tuff with local CA lpl

<<Min: 21.8 - 22.3 5% Min: Calcite>>

22.30 24.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

22.3 - 24.9: BI+CA schist with ~90% BI. Either a metapelite or a lamprophyre. Sharp upper contact and a gradational lower contact, with BI-cleavages in wallrock.

<<Min: 22.3 - 24.9 4% Min: Pyrite>>

<<Min: 22.3 - 24.9 1% Min: Pyrrhotite>>

<<Min: 22.3 - 24.9 5% Min: Calcite>>

<<Struc: 23 - 23.3 Weak (Alt) Fault>> Highly fractured rock

24.90 32.40 RHYva Coarse grained to ash tuff

24.9 - 32.4: Medium grey fine grained ash tuff with local CA lpl and disseminated euhedral BI

<<Min: 24.9 - 32.1 3% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 24.9 - 32.4 5% Min: Calcite>>

<<Min: 32.1 - 34.1 1% Min: Pyrite>>

32.40 34.10 RHYcw Curdy textured-flow banded (flows, subvolcanics)

32.4 - 34.1: Medium grey QZ+MU+CA schist. Locally silica banded. Locally lpl tuff texture.

<<Min: 32.4 - 34.1 10% Min: Calcite>>

34.10 50.70 RHYi Aphanitic Rhyolite (intrusion)

34.1 - 50.7: Pink to grey aphanitic rhyolite with abundant healed fractures. Lower contact grades from aphanitic rhyolite to silica banded rhyolite to fine grained matrix with local clasts of QZ+CA (Grading occurs from ~50-50.7 m).

<<Min: 34.1 - 50.7 3% Min: Pyrite>>

<<Min: 34.1 - 50.7 2% Min: Calcite>>

<<Vein: 34.9 - 35.4 80% Quartz>> Massive QZ vein with disseminated blebs of CA

<<Vein: 40.8 - 41.7 60% Quartz>> Massive QZ veins with disseminated blebs of MS, CA, PY, and GL.

<<Struc: 34.1 - 34.8 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 40.3 - 40.6 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

50.70 55.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

50.7 - 55.6: BI+QZ+CA schist. Fairly sharp contacts. Two layers of RHY from 51.3-51.65 m and 53.8-54.4 m.

<<Min: 50.7 - 51.3 15% Min: Calcite>>

<<Min: 50.7 - 71.3 0.5% Min: Pyrite>>

<<Min: 51.3 - 51.65 5% Min: Calcite>>

<<Min: 51.65 - 53.8 15% Min: Calcite>>

<<Min: 53.8 - 54.4 5% Min: Calcite>>

<<Min: 54.4 - 55.6 15% Min: Calcite>>

<<Struc: 50.7 - 50.8 Weak (Alt) Fault>> Fault gouge

<<Struc: 53.75 - 53.8 Weak (Alt) Fault>> Fault gouge

55.60 57.20 RHYc Rhyolite coherant volcanics

55.6 - 57.2: Silica banding to lpl within greenish-grey QZ+MU groundmass

<<Min: 55.6 - 71.3 3% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

57.20 71.30 RHYv Rhyolite volcaniclastic

57.2 - 71.3: Medium-dark grey tuffaceous rhyolite. Locally defined as ash tuff and locally as lpl tuff, with either felsic clasts or BI+CL+QZ clasts.

<<Struc: 59 - 60.5 Moderate (Alt) Fault>> Fault gouge breccia

71.30 72.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

71.3 - 72: BI+CA+/-CL schist

<<Min: 71.3 - 72 2% Min: Pyrrhotite>>

<<Min: 71.3 - 72 15% Min: Calcite>>

72.00 88.90 RHYv Rhyolite volcaniclastic

72 - 88.9: Medium-dark grey tuffaceous rhyolite. Locally defined as ash tuff and locally as lpl tuff, with either felsic clasts or BI+CL+QZ clasts. Local BI+CA schist from 74.1-74.3 m.

<<Min: 72 - 83.7 1% Min: Pyrrhotite>>

<<Min: 72 - 88.9 3% Min: Calcite>>

<<Min: 83.7 - 88.9 5% Min: Pyrrhotite>>

<<Alt: 80 - 94.7 Weak (Alt) Muscovite>>

<<Struc: 75.1 - 77 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 80 - 83 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 85.3 - 85.6 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

88.90 90.50 MDSt Rhyolite tuff dominant mudstone

88.9 - 90.5: Dark grey graphitic schist. Poor core recovery.

<<Min: 88.9 - 90.5 2% Min: Pyrite>> Highly fractured core makes it difficult to determine form

<<Min: 88.9 - 90.5 1% Min: Calcite>>

90.50 136.20 RHY undifferentiated rhyolite

90.5 - 136.2: From 90.5-94.7 m, the unit is defined as a QZ+MU schist, with a spaced MU cleavage and strongly fractured. From 94.7-136.2 m, the unit is a strongly faulted QZ+MU schist with some cataclastic fabrics and highly variable foliation. Locally, there are fault

<<Min: 90.5 - 94.7 3% Min: Pyrite>>

<<Min: 90.5 - 94.7 3% Min: Calcite>>

<<Min: 94.7 - 136.2 5% Min: Calcite>>

<<Min: 94.7 - 188.6 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 94.7 - 136.2 Strong (Alt) Muscovite>>

<<Vein: 115.8 - 115.9 20% Quartz>> Clast of massive QZ vein within fault zone

<<Vein: 116.3 - 117.3 20% Quartz>> Clasts of massive QZ+/-CA veins within fault zone

<<Vein: 118.5 - 118.6 30% Quartz>> Clast of massive QZ vein within fault zone

<<Struc: 92 - 94.7 Weak-Moderate (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 94.7 - 194 Strong (Alt) Fault>> Large fault/shear zone. Locally there are ductile and brittle textures.

<<Struc: 106.5 - 106.51 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 112.8 - 112.81 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 121 - 121.11 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 125.1 - 125.11 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 130.6 - 130.61 Foliation>> Foliation developed from brittle-ductile deformation

136.20 137.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

136.2 - 137.6: Strongly faulted/sheared CL+BI+CA schist. A block within the larger fault zone. The upper and lower contacts show strong brittle/ductile fabrics, with a less sheared center.

<<Min: 136.2 - 137.6 15% Min: Calcite>>

<<Alt: 136.2 - 137.6 Strong (Alt) Chlorite>>

137.60 139.60 RHY undifferentiated rhyolite

137.6 - 139.6: Strongly faulted rhyolite, with local clasts of MAFi. Variable foliation.

<<Min: 137.6 - 188.6 5% Min: Calcite>>

<<Alt: 137.6 - 188.6 Strong (Alt) Muscovite>>

139.60 141.20 RHYi Aphanitic Rhyolite (intrusion)

139.6 - 141.2: Medium grey aphanitic block within larger fault structure. Strongly faulted unit.

141.20 155.60 RHY undifferentiated rhyolite

141.2 - 155.6: Strongly faulted unit dominated by MU matrix supported and felsic clasts, with local chloritic matrix.

<<Struc: 141.8 - 141.81 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 146.1 - 146.11 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 149.4 - 149.41 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 155.45 - 155.46 Foliation>> Foliation developed from brittle-ductile deformation

155.60 165.50 RHYi Aphanitic Rhyolite (intrusion)

155.6 - 165.5: Strongly faulted RHYi

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 156.3 - 156.5 80% Quartz>> Clast of massive QZ vein within fault zone

<<Vein: 160.9 - 161 60% Calcite>> Clast of massive CA vein within fault zone

165.50 188.60 RHY undifferentiated rhyolite

165.5 - 188.6: Strongly faulted with rhyolitic clasts in matrix supported green MU

<<Vein: 173.3 - 175.2 20% Quartz>> Clasts of massive QZ vein within fault zone

<<Struc: 170.8 - 170.81 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 178.6 - 178.61 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 178.8 - 178.81 Foliation>> Foliation developed from brittle-ductile deformation

<<Struc: 185.5 - 185.51 Foliation>> Foliation developed from brittle-ductile deformation

188.60 194.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

188.6 - 194: Strongly faulted/sheared CL+K-Spar+CA schist

<<Min: 188.6 - 194 15% Min: Calcite>>

<<Alt: 188.6 - 194 Strong (Alt) Chlorite>>

<<Struc: 190.95 - 190.96 Foliation>> Foliation developed from brittle-ductile deformation

End of Hole @ 194

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-309

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	26-Oct-15
UTM Easting	415154	Core Size:	HQ3	Azimuth:	210.08	Date Logging Complete:	01-Nov-15
UTM Northing:	6815159	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1410.5	Casing Depth (m):	9	Length (m):	306	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	25-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	31-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
						Parent Hole:	

Comments:

This hole was drilled to test up dip continuity of Krakatoa lens from K15-292.
Drilling succesfully intersected upper lens (DT block) and lower krakatoa lens hosted with the mafic sill. Total mineralized width is ~17.6m. Unusual upper and lower contact wall rocks look similar to fine grained RHY, although intensely altered and hard to discern. Massive sulphide is dominated by OB, with abundant gangue throughout, including calcite, quartz, chlorite, dolomite and quartz +/- barite, +/- albite. Sulphide modal percentages are estimated within both lenses. Hole kept going because of extensive mafic sill in footwall, and patchy, uneconomic disseminated sulphides. Quartz eye bearing RHY in the footwall is consistent with other Krak holes and could be considered a lower marker horizon. Hangingwall succsession is consistent with that of ABM with MAFi interbedded with RHYv+RHYc, with a gradation into more flow (RHYcw) dominated subunits downhole within proximity to the host MAFi.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	210.08	0	210.08	APS	Sean Suttie	25-Oct-15		☑	
24	-61.2	189.9	22.5	212.4	ReflexEZS	Geotech	25-Oct-15		☑	
54	-62.2	190.3	22.5	212.8	ReflexEZS	Geotech	28-Oct-15	5763	☑	
84	-62.8	188.8	22.5	211.3	ReflexEZS	Geotech	28-Oct-15	5765	☑	
114	-62.5	187.8	22.5	210.3	ReflexEZS	Geotech	29-Oct-15	5771	☑	
144	-62.5	189.8	22.5	212.3	ReflexEZS	Geotech	29-Oct-15	5779	☑	
174	-61.9	187.6	22.5	210.1	ReflexEZS	Geotech	29-Oct-15	5746	☑	
204	-61.1	188.8	22.5	211.3	ReflexEZS	Geotech	30-Oct-15	5795	☑	
234	-60	191.5	22.5	214	ReflexEZS	Geotech	30-Oct-15	5902	☑	
264	-61.1	192.3	22.5	214.8	ReflexEZS	Geotech	30-Oct-15	5872	☑	
294	-57.1	189.4	22.5	211.9	ReflexEZS	Geotech	31-Oct-15	5759	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.00**	**CASN Casing**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.00 12.00 FBX Fault Breccia

9 - 12: Oxydized until 10.75m, QZ vein and heterogeneous RHY clasts.

<<Struc: 9 - 12 Strong (Alt) Fault>> Fault breccia, oxidized.

12.00 19.00 RHYva Coarse grained to ash tuff grey-green

19.00 23.36 RHY undifferentiated rhyolite grey-green

19 - 23.36: RHYva/RHYcw interbedded. Folded flow bands (crenulations), lapilli , peperitic texture. Repeated sequence.

23.36 33.32 RHYva Coarse grained to ash tuff grey-green

23.36 - 33.32: and lapilli. Narrow MAFi dyke from 39.30 to 29.54m, more lapillitic from 27.80 to 28.60 (weakly crenulated). QZ-CA vein, PY in fracture.

<<Min: 23.36 - 57.38 0.5% Min: Pyrite>> and few patch.

<<Min: 23.36 - 57.38 0.5% Min: Pyrrhotite>>

<<Struc: 24.72 - 27.4 Moderate (Alt) Fault>> Multiple minor faults with clay gouge, poor recovery.

33.32 38.40 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

33.32 - 38.4: Few QE. Folded, deformed, probably peperitic.

38.40 39.54 RHYvl Lapilli tuff grey-green

38.4 - 39.54: Strained,deformed. QZ veins.

39.54 43.70 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green

39.54 - 43.7: Fractured, PY veinlets fracture filled.

43.70 45.37 RHYva Coarse grained to ash tuff grey-green

43.7 - 45.37: Few lapilli.

45.37 46.37 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

45.37 - 46.37: Dyke. BI phenos.

46.37 47.48 RHYva Coarse grained to ash tuff grey-green

46.37 - 47.48: Few lapilli.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

47.48 49.54 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

47.48 - 49.54: BI, probably same composition than dyke at 45.37m.

49.54 57.38 RHYvl Lapilli tuff grey-green

49.54 - 57.38: with ashes, CA replacement. Possibly RHYc, xtl locally (from 50 to 51.05m. QZ vein at lower contact.

57.38 62.00 RHY undifferentiated rhyolite

57.38 - 62: RHY clasts. Fault gouge (grey clay), mostly gouge.

<<Struc: 57.38 - 60.77 Strong (Alt) Fault>> Fault gouge, fault breccia, dominantly RHY clasts.

62.00 64.87 RHYva Coarse grained to ash tuff grey-green

62 - 64.87: Few fault gouge..

<<Struc: 64.67 - 71 Strong (Alt) Fault>> Fault breccia. MU/CL.

<<Struc: 64.8 - 64.81 Vein>> Calcite vein.

64.87 89.75 RHY undifferentiated rhyolite

64.87 - 89.75: Fault gouge and fault breccia, dominantly RHY. Mafic dyke preserved. Very fine grain PY vein. Brecciated RHY at upper contact. Could be silicic banded from 80.50 to 84.50m.

<<Struc: 65 - 65.01 Crenulation cleavage>> Dominante fracture above major fault.

<<Struc: 71 - 79.8 Strong (Alt) Fault>> Fault gouge dominantly.

<<Struc: 79.8 - 86.2 Strong (Alt) Fault>> Fault breccia.

<<Struc: 86.2 - 88.3 Strong (Alt) Fault>> Fault gouge.

<<Struc: 88.3 - 89.75 Moderate (Alt) Fault>> Brecciated RHY.

89.75 94.64 RHYva Coarse grained to ash tuff grey-green

89.75 - 94.64: Containing narrow mafic dyke CA rich. CA lapilli replacement. And in fracture.

94.64 96.64 MDSt Rhyolite tuff dominant mudstone

94.64 - 96.64: Weakly carbonaceous.

<<Min: 94.64 - 140.72 0.5% Min: Pyrite>>

<<Min: 94.64 - 140.72 0.5% Min: Pyrrhotite>>

<<Struc: 96.25 - 102 Weak (Alt) Fault>> Multiple minor faults and narrow gouge.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
96.64	**103.12**	**RHYvl Lapilli tuff**									
96.64 - 103.12: Very rare QE so not notified as modifier. Locally angular lapilli,few PY patch or vein.CL in fracture.											
103.12	**112.76**	**RHYv Rhyolite volcaniclastic**									
103.12 - 112.76: Probably RHYvl with CL/MS halo arround lapilli. Mafic dyke from 108.65 to 108.90m.											
112.76	**129.71**	**RHYvl Lapilli tuff**	114.61	115.58	0.97	B00265308	4.5	-0.005	-0.01	0.02	-0.01
112.76 - 129.71: Sericite/chlorite altered lapilli.											
<<Min: 125 - 140.72 6% Min: Calcite>> Ca +/- pervasive and associated with qtz-ca veinlets. 6-8%			115.58	116.58	1.00	B00265309	-0.3	-0.005	-0.01	-0.01	-0.01
<<Alt: 121.8 - 152 Moderate (Alt) Muscovite>>			116.58	117.41	0.83	B00265311	-0.3	-0.005	-0.01	-0.01	0.01
<<Struc: 117.41 - 121.91 Moderate (Alt) Fault>> Multiple fault with gouge sandy-clay.											
<<Struc: 125.95 - 125.96 dominant foliation>>											
<<Struc: 129.3 - 129.31 dominant foliation>>											
<<Struc: 129.45 - 129.46 dominant foliation>>											
129.71	**140.72**	**RHYva Coarse grained to ash tuff light grey**									
129.71 - 140.72: Light grey, homogeneous, coarse grained. Unit moderately foliated and weakly MU altered. Locally, we observe intervals comprinsing dismembered siliceous bands/ fragments, lapilli? 0.5-1% of Po, disseminated.											
<<Struc: 131.9 - 131.91 dominant foliation>>											
<<Struc: 133.3 - 133.31 Moderate (Alt) dominant foliation>>											
140.72	**143.90**	**MDSw Coherent rhyolite flow with carbonaceous content dark grey**	140.72	142.00	1.28	B00265312	0.4	0.026	-0.01	0.02	0.01
140.72 - 143.9: Sequence of carbonacious mudstone within coherent rhy flow. Alternation of thin carbonaceous bands, very fine grained, with siliceous bands. Unit microfolded and moderately crenulated. 5-6 % of Py (thin stringers and aggregates).											
<<Min: 140.72 - 143.5 5% Min: Pyrite>> Distributed as small aggregates, stringers, and also finely disseminated.			142.00	143.50	1.50	B00265313	1.6	0.017	-0.01	0.02	0.1
<<Min: 140.72 - 143.5 0.5% Min: Pyrrhotite>>											
<<Min: 140.72 - 150.1 2% Min: Calcite>> Small blebs distributed within the matrix, also associated with siliceous bands and veinlets.											
<<Min: 143.5 - 155.5 0.5% Min: Pyrite>> Occuring as small aggregates and wisps.											
143.90	**148.35**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey**									
143.9 - 148.35: Light grey, unit moderate to strongly foliated and MU altered. Moderately fractured. Comprinsing irregular and deformed siliceous bands, flow banded? 1% of PO disseminated within the matrix.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 143.9 - 144 Strong (Alt) Fault>> Minor fault with clay gouge.

<<Struc: 147.55 - 148.35 Strong (Alt) Fault>> Fault with clay gouge.

148.35 156.00 RHY undifferentiated rhyolite grey

148.35 - 156: Light grey, unit moderate to strongly foliated and MU altered. Moderately fractured. Comprinsing irregular and deformed siliceous bands, flow banded? No strong evidence of flow banded texture, could be RHYcw.
148.35-152.2m: interval weakly carbonacious,

<<Min: 150.1 - 155.3 4% Min: Calcite>> Small blebs distributed within the matrix, also associated with siliceous bands and veinlets.

<<Min: 155.3 - 166.3 2% Min: Calcite>> Small blebs distributed within the matrix, also associated with siliceous bands and veinlets.

<<Min: 155.5 - 160 2% Min: Pyrite>> Occuring as small aggregates and wisps.

<<Alt: 150.1 - 166.3 Strong (Alt) Muscovite>> Associated with strong foliation.

<<Struc: 149.6 - 149.61 dominant foliation>>

<<Struc: 150.5 - 156 Moderate (Alt) Fault>> Interval comprising multiple fault with clay gouge associated with moderate fracturation.

156.00 166.30 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

			160.50	162.00	1.50	B00265314	1	0.015	0.01	-0.01	0.06

156 - 166.3: Light grey, unit strongly foliated and MU altered. Moderately fractured. Comprising siliceous bands, parallel to the foliation, folded (crenulations). Flow banded texture well conserved.
160.05-160.42m: Interval crosscut by small RHYi, grey, aphanitic,

<<Min: 160 - 166.3 0.5% Min: Pyrite>>

			162.00	163.47	1.47	B00265315	1.1	-0.005	0.01	-0.01	0.05

<<Struc: 163 - 163.47 Strong (Alt) Fault>> Gouge fault.

			163.47	164.80	1.33	B00265316	1.7	0.016	0.01	-0.01	0.03
			164.80	166.30	1.50	B00265317	1.7	0.009	0.02	-0.01	0.02

166.30 167.90 OA Magnetite bearing sulphides MCG

			166.30	167.40	1.10	B00265318	104	0.353	0.51	1.5	11.5

166.3 - 167.9: Massive sulphides lens within RHYcw, sharp contact, magnetic. OA-MET4

<<Min: 166.3 - 167.9 3% Min: Sphalerite>> Small aggregates/blebs distributed as irregular bands/patchs.

			167.40	167.90	0.50	B00265319	130	0.367	0.71	2.12	9.82

<<Min: 166.3 - 167.9 70% Min: Pyrite>> Massive sulphides.

<<Min: 166.3 - 167.9 0.5% Min: Chalcopyrite>> Disseminated as small blebs.

<<Min: 166.3 - 167.9 4% Min: Calcite>> Thin veinlets subconcordant.

167.90 180.20 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

			167.90	169.25	1.35	B00265321	27.2	0.055	0.04	0.46	1.5

167.9 - 180.2: Light grey, fine grained, +/- homogeneous, strongly foliated and locally crenuled. Unit characterised by deformed siliceous banded parallel with foliation, which marked flow banded texture. Interval moderately MU altered. Weakly mineralised.

From (m)	To (m)	Rocktype & Description

<<Min: 167.9 - 180.2 1% Min: Pyrite>>

<<Min: 167.9 - 180.2 0.1% Min: Pyrrhotite>>

<<Min: 167.9 - 180.2 2% Min: Calcite>> Thin veinlets subconcordant.

<<Alt: 167.9 - 180.2 Moderate (Alt) Muscovite>> moderate to strong alteration, associated with strong foliation.

<<Vein: 176.93 - 177.35 90% Quartz>> Massive qtz veins, grey, unmineralized.

<<Struc: 168 - 169.25 Strong (Alt) Fault>> Gouge fault

<<Struc: 169.9 - 171 Moderate (Alt) Fault>> Interval comprising multiple fault with clay gouge associated with moderate fracturation.

<<Struc: 172.85 - 175.5 Moderate (Alt) Fault>> Interval comprising multiple fault with clay gouge associated with moderate fracturation.

<<Struc: 177.6 - 178.1 Weak (Alt) Fault>> Minor faults with clay gouge.

180.20 214.25 MAFi Mafic Intrusions (primarily green footwall mafic intrusion)

180.2 - 214.25: Large interval of mafic unit, massive, moderately foliated. Marked by porphyroblast of biotite and chlorite (clots), mm to cm, distributed and oriented within fine grained matrix moderately chlorite altered. Strong calcite alteration, occuring as thin sub

<<Min: 180.2 - 187 10% Min: Calcite>> Occuring as thin subconcordant veinlets and porphyroblats/blebs.

<<Min: 180.2 - 212.85 0.1% Min: Pyrite>> Trace, aggregates distributed within matrix.

<<Min: 180.2 - 212.85 0.1% Min: Pyrrhotite>> Mineralized at the edges of py aggregates.

<<Min: 187 - 207 5% Min: Calcite>> Occuring as thin subconcordant veinlets and porphyroblats/blebs.

<<Min: 207 - 214.4 10% Min: Calcite>> Occuring as thin subconcordant veinlets and porphyroblats/blebs.

<<Min: 212.85 - 213.3 2% Min: Pyrite>> Associated with fault interval comprising dismembered qtz-cal veins.

<<Min: 212.85 - 213.3 2% Min: Pyrrhotite>> Associated with fault interval comprising dismembered qtz-cal veins.

<<Min: 212.85 - 213.3 0.1% Min: Galena>>

<<Min: 212.85 - 213.3 0.5% Min: Chalcopyrite>> veins selvages

<<Min: 213.3 - 214.25 0.1% Min: Pyrite>>

<<Alt: 180.2 - 214.4 Moderate (Alt) Chlorite>>

<<Alt: 180.2 - 214.4 Moderate (Alt) Biotite>> Oriented with foliation.

<<Struc: 181.7 - 182.15 Strong (Alt) Fault>> Gouge fault

<<Struc: 183 - 183.01 Moderate (Alt) dominant foliation>>

<<Struc: 194.5 - 194.51 Moderate (Alt) dominant foliation>>

<<Struc: 203.5 - 203.51 Moderate (Alt) dominant foliation>>

<<Struc: 212.85 - 213.3 Strong (Alt) Fault>> Fault gouge comprising dismembered qtz-ca veins (mineralized).

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
169.25	170.00	0.75	B00265322	0.6	-0.005	-0.01	-0.01	0.02
170.00	171.50	1.50	B00265323	0.8	-0.005	-0.01	0.02	0.08
171.50	173.00	1.50	B00265324	-0.3	-0.005	-0.01	-0.01	-0.01
209.00	210.50	1.50	B00265325	1.5	0.006	-0.01	0.01	0.02
210.50	212.00	1.50	B00265326	1	0.007	-0.01	-0.01	0.02
212.00	213.30	1.30	B00265327	0.4	-0.005	0.02	-0.01	0.02
213.30	214.25	0.95	B00265328	0.3	-0.005	-0.01	-0.01	0.03

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
214.25	**214.40**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**	214.25	214.75	0.50	B00265329	21.7	0.041	0.13	0.07	0.88

214.25 - 214.4: Small OI lens between MAFi and RHY(?).

<<Min: 214.25 - 214.4 2% Min: Sphalerite>> Associated with OI interval.

<<Min: 214.25 - 214.4 30% Min: Pyrite>> Associated with OI interval.

<<Min: 214.25 - 214.4 5% Min: Pyrrhotite>> Associated with OI interval.

<<Min: 214.25 - 214.4 0.5% Min: Chalcopyrite>> Associated with OI interval.

214.40	**215.73**	**RHY**	**undifferentiated rhyolite**		214.75	215.80	1.05	B00265331	2.9	0.017	0.03	-0.01	0.07

214.4 - 215.73: Light grey, fine to medium grained, comprising irregular and deformed siliceous bands. OI at the upper contact and massive sulphides at the lower contact. Moderately MU altered and associated with weak chlorite. Felsic unit between 2 MAFi, which hosted

<<Min: 214.4 - 215.73 1% Min: Pyrrhotite>>

<<Min: 214.4 - 216.5 4% Min: Calcite>>

<<Alt: 214.4 - 216.5 Moderate (Alt) Muscovite>>

215.73	**215.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**

<<Min: 215.73 - 215.8 30% Min: Pyrite>> Associated with OI interval.

215.80	**216.50**	**RHY**	**undifferentiated rhyolite**		215.80	216.50	0.70	B00265332	12.9	0.029	0.02	0.29	1.23

215.8 - 216.5: Light grey, fine to medium grained, comprising irregular and deformed siliceous bands. OI at the upper contact and massive sulphides at the lower contact. Moderately MU altered and associated with weak chlorite. Felsic unit between 2 MAFi, which hosted

<<Min: 215.8 - 216.5 1% Min: Pyrrhotite>>

216.50	**217.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	216.50	217.20	0.70	B00265333	113	0.831	0.42	3.5	8.39

216.5 - 217.75: Homogeneous interval. Sharp upper contact with RHY, 80 ac.

<<Min: 216.5 - 221.78 10% Min: Calcite>> Associated with breccia.

					217.20	217.75	0.55	B00265334	136	0.82	0.35	4.15	9.48

<<Min: 216.5 - 222.7 4% Min: Sphalerite>>

<<Min: 216.5 - 222.7 70% Min: Pyrite>>

<<Min: 216.5 - 222.7 4% Min: Galena>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 216.5 - 222.7 1.5% Min: Chalcopyrite>> Distributed within matrix and at the edges of ca veins.										
			<<Struc: 216.5 - 216.51 Contact>> Sharp contact between RHY and MS.										
217.75	**221.78**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	217.75	218.60	0.85	B00265335	120	1.14	0.38	3.89	6.48
			217.75 - 221.78: Interval brecciated, filling by calcite. Homogeneous texture.										
					218.60	219.60	1.00	B00265336	94.3	0.744	0.11	3.8	6.87
					219.60	220.60	1.00	B00265337	68.9	0.372	0.12	2.74	5.69
					220.60	221.78	1.18	B00265338	78.2	0.696	0.37	2.48	5.62
221.78	**222.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	221.78	222.70	0.92	B00265339	113	1.21	0.1	3.35	7.49
			<<Min: 221.78 - 233.5 5% Min: Calcite>> Veinlets and also patchy.										
222.70	**224.95**	**OA**	**Magnetite bearing sulphides**	**FMG**	222.70	223.70	1.00	B00265341	88.1	0.737	0.4	1.78	9.8
			222.7 - 224.95: Laminated texture marked by thin magnetite bands.										
			<<Min: 222.7 - 224.95 6% Min: Magnetite>> Occuring as thin bands.		223.70	224.24	0.54	B00265342	141	1.72	1.02	5.08	7.21
			<<Min: 222.7 - 226.15 1% Min: Sphalerite>>		224.24	224.95	0.71	B00265343	90.5	1.85	0.89	3.25	6.97
			<<Min: 222.7 - 226.15 70% Min: Pyrite>>										
			<<Min: 222.7 - 226.15 4% Min: Galena>>										
			<<Min: 222.7 - 226.15 0.5% Min: Chalcopyrite>>										
224.95	**226.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	224.95	225.50	0.55	B00265344	102	0.674	0.11	3.47	9.18
					225.50	226.15	0.65	B00265345	120	0.447	0.22	2.92	9.17
226.15	**227.75**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	226.15	227.00	0.85	B00265346	64.8	0.156	0.18	1.86	5.44
			226.15 - 227.75: Interval brecciated by Qtz-Ca-Dol veins, cm to dm.										
			<<Min: 226.15 - 227.75 2% Min: Sphalerite>> Breccia interval.		227.00	227.75	0.75	B00265347	48.3	0.155	0.12	1.75	3.54
			<<Min: 226.15 - 227.75 40% Min: Pyrite>> Breccia interval.										
			<<Min: 226.15 - 227.75 1% Min: Galena>>										
			<<Min: 226.15 - 227.75 0.5% Min: Chalcopyrite>>										

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
227.75	**228.35**	**OA**	**Magnetite bearing sulphides**		**MG**	227.75	228.35	0.60	B00265348	87.3	0.349	0.39	2.5	6.93

227.75 - 228.35: Laminated texture marked by thin magnetite bands.

<<Min: 227.75 - 228.35 2% Min: Sphalerite>>

<<Min: 227.75 - 228.35 60% Min: Pyrite>>

<<Min: 227.75 - 228.35 8% Min: Magnetite>> Thin bands, laminated texture.

<<Min: 227.75 - 228.35 2% Min: Galena>>

<<Min: 227.75 - 228.35 1% Min: Chalcopyrite>>

228.35	**233.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**	228.35	229.00	0.65	B00265349	103	1.05	0.19	3.91	5.78

<<Min: 228.35 - 230.7 3% Min: Galena>>

						229.00	230.00	1.00	B00265351	126	0.837	0.22	5.2	7.23

<<Min: 228.35 - 230.7 0.5% Min: Chalcopyrite>>

						230.00	231.00	1.00	B00265352	277	1.78	0.76	4.2	7.85

<<Min: 228.35 - 233.5 5% Min: Sphalerite>>

						231.00	231.80	0.80	B00265353	83	0.283	0.18	2.36	5.05

<<Min: 228.35 - 233.5 70% Min: Pyrite>>

						231.80	232.80	1.00	B00265354	209	1.32	0.2	3.92	8.25

<<Min: 230.7 - 231 5% Min: Galena>> Associated with qtz-+/-ca veins, strongly deformed and dismembered.

						232.80	233.50	0.70	B00265355	144	0.691	0.14	2.88	8.05

<<Min: 230.7 - 231 5% Min: Chalcopyrite>> Associated with qtz-+/-ca veins, strongly deformed and dismembered.

<<Min: 231 - 233.5 3% Min: Galena>>

<<Min: 231 - 233.5 0.5% Min: Chalcopyrite>>

233.50	**234.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FG**	233.50	234.00	0.50	B00265356	3	0.05	0.01	0.08	0.18

233.5 - 234: Short MAFi interval between the massive sulphides and OI.

<<Min: 233.5 - 234 0.5% Min: Pyrite>>

<<Min: 233.5 - 237.4 2% Min: Calcite>>

<<Struc: 233.5 - 233.51 Contact>> Sharp contact between MS and MAFi.

234.00	**234.35**	**OI**	**Heavilly disseminated sulphides in host schist**		**FG**	234.00	234.35	0.35	B00265357	126	0.74	0.2	2.54	3.74

234 - 234.35: Strong Py/GL mineralisation, fine to medium grained, occuring as concordant bands semi-massive to massive, 1-5 cm wide.

<<Min: 234 - 234.35 30% Min: Pyrite>> Occuring as concordant bands, semi-massive to massive, associated with GL.

<<Min: 234 - 234.35 10% Min: Galena>> Associated with semi-massive bands (Py).

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
234.35	**236.97**	**RHY**	**undifferentiated rhyolite**	**light grey**	234.35	235.50	1.15	B00265358	21.4	0.094	0.05	0.3	0.66

234.35 - 236.97: Light grey/greenish, fine to medium grained, strongly foliated . Comprising from 236.15 to 236.97m, irregular and deformed grey siliceous bands, aphanitic, homogeneous, 1-4 cm wide, RHYi? . Strongly MU altered and associated with weak chlorite.
Felsic u

<<Min: 234.35 - 236.97 0.1% Min: Pyrite>>

<<Min: 234.35 - 236.97 0.1% Min: Pyrrhotite>>

<<Alt: 234.35 - 236.97 Strong (Alt) Muscovite>> Associated with strong foliation

235.50	236.97	1.47	B00265359	3.4	0.027	-0.01	0.05	0.19

236.97	**237.40**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**FG**	236.97	237.40	0.43	B00265361	222	0.215	0.66	7.24	9.64

236.97 - 237.4: Narrow of massive sulphides, massive PO associated with Cp (1-2% and patchy). Sharp upper (RHY) and lower (MAFi) contacts.

<<Min: 236.97 - 237.4 60% Min: Pyrite>> OC, band of massive PO associated with Cp and GL.

<<Min: 236.97 - 237.4 1% Min: Galena>>

<<Min: 236.97 - 237.4 2% Min: Chalcopyrite>>

237.40	**243.80**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	237.40	238.50	1.10	B00265362	0.8	0.007	0.01	0.02	0.04

237.4 - 243.8: Interval of mafic unit, massive, moderately foliated. Marked by porphyroblast of biotite and chlorite (clots), mm to cm, distributed and oriented within fine grained matrix, which is moderately chlorite altered. Strong calcite alteration, occuring as thin

<<Min: 237.4 - 243.8 1% Min: Pyrite>> Aggregates centimetric.

238.50	240.00	1.50	B00265363	2.4	0.009	0.01	0.07	0.1

<<Min: 237.4 - 243.8 0.5% Min: Pyrrhotite>> Mineralized around Py aggregates, as an envelope.

240.00	241.50	1.50	B00265364	1.2	-0.005	-0.01	0.03	0.05

<<Min: 237.4 - 243.8 10% Min: Calcite>>

<<Alt: 237.4 - 243.8 Moderate (Alt) Chlorite>> MAFi.

<<Alt: 237.8 - 239.6 Moderate (Alt) Biotite>> Porphyroblasts/flakes distributed within the matrix.

<<Alt: 239.6 - 247.9 Strong (Alt) Muscovite>> Associated with strong foliation/shear.

<<Struc: 243 - 245.5 Moderate (Alt) Fault>> Interval comprising minor faults, cm, with clay gouge.

243.80	**247.50**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**

243.8 - 247.5: Light grey, fine grained, strongly foliated and locally crenuled. Unit characterised by deformed siliceous banded parallel with foliation, which marked flow banded texture. Interval strongly MU altered. Weakly mineralised. RHYcw?

<<Min: 243.8 - 255 1% Min: Pyrrhotite>> Distributed within matrix.

From (m)	To (m)	Rocktype & Description

<<Min: 243.8 - 306 2% Min: Calcite>> Generally associated with thin veinlets and also as porphyroblasts within the matrix. 2-4 %

<<Struc: 246.2 - 247.9 Strong (Alt) Fault>> Fault/breccia, polymectic, composed by RHY and MDST fragments, heterogeneous size, within clay gouge.

247.50 278.60 RHYva Coarse grained to ash tuff light grey FG

247.5 - 278.6: Light grey, +/- homogeneous, fine grained. Unit weakly/moderately foliated and MU altered. We observe irregular and stretched bands/fragments, oriented with foliation, similar to lapilli relics. Comprising multiple fractured intervals with clay gouge fau

<<Min: 255 - 259.8 2% Min: Pyrite>>

<<Min: 255 - 259.8 1% Min: Pyrrhotite>>

<<Min: 259.8 - 270.7 0.5% Min: Pyrrhotite>>

<<Min: 270.7 - 278.6 1% Min: Pyrite>>

<<Min: 270.7 - 278.6 1% Min: Pyrrhotite>>

<<Struc: 265.25 - 265.7 Moderate (Alt) Fault>> Gouge fault

278.60 282.65 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

278.6 - 282.65: Light grey, fine grained, strongly foliated and locally crenuled. Unit characterised by deformed siliceous banded parallel with foliation, which marked flow banded texture. Interval moderately/strongly MU altered. Weakly mineralised.

<<Min: 278.6 - 300 0.5% Min: Pyrite>>

<<Min: 278.6 - 300 0.5% Min: Pyrrhotite>>

<<Struc: 280.5 - 282.55 Strong (Alt) Fault>> Fault/breccia, composed by Rhy clasts.

282.65 303.75 RHYvl Lapilli tuff light grey

282.65 - 303.75: Light grey, fine grained. Unit moderately foliated and MU altered. We observe irregular and deformed fragments, oriented with foliation, similar to lapilli relics. Difficult to determinate cause of the strong foliation/alteration. Comprising multiple fra

<<Min: 300 - 303 5% Min: Pyrite>> Occuring as concordant bands, 1-3 cm wide, medium grained.

<<Min: 303 - 306 1% Min: Pyrite>>

<<Vein: 292.1 - 292.2 90% Quartz>> Regular qtz vein, milky to grey, fractured.

<<Vein: 293.03 - 293.4 15% Tourmaline 30 deg. >> Thin discordant tourmaline vein.

<<Struc: 298.5 - 299.2 Strong (Alt) Fault>> Fault/breccia, composed by Rhy clasts.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
299.50	301.00	1.50	B00265365	-0.3	-0.005	-0.01	-0.01	-0.01
301.00	302.00	1.00	B00265366	-0.3	-0.005	-0.01	-0.01	-0.01
302.00	303.00	1.00	B00265367	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
303.75	**304.25**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)** **brown**									
303.75 - 304.25: Brownish, fine to medium grained, strongly Ca alterated (pervasive+veinlets). Sharp upper and lower contacts.												
304.25	**306.00**	**RHY**	**undifferentiated rhyolite** **light grey**									

End of Hole @ 306

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-310

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	28-Oct-15
UTM Easting	415158	Core Size:	HQ3	Azimuth:	210.22	Date Logging Complete:	30-Oct-15
UTM Northing:	6815049	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1405.94	Casing Depth (m):	6	Length (m):	191	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	27-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	29-Oct-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-310 was drilled to test the up-dip continuity of the Krakatoa lenses.
K15-310 encountered the felsic hanging wall package to a depth of ~88.5 m, consisting of mixed volcaniclastic and coherent rhyolites and BI+CA schists. Strong faulting begins at 88.5 m and carries throughout the remainder of the hole (to 191 m), with the exception of two lesser faulted blocks within the larger fault structure. The first block was from ~120 m to ~125 m, consisting of CL+BI+CA schist with a small lens of massive sulphide from 123.9-124.9 m. The bottom of this massive sulphide was strongly brecciated and faulted. The second block was from ~144 m to ~170 m, consisting of rhyolite from 144-159.6 m, massive sulphide from 159.6-160.8 m, and argillitic mudstone to ~170 m. Below this block, intense faulting began again, displayed as a polymictic fault gouge breccia.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	210.22	0	210.22	APS	Dillon Hume	27-Oct-15		☑	
26	-45.3	193.7	22.5	216.2	ReflexEZS	Geotech	27-Oct-15	5742	☑	
50	-44.6	197.6	22.5	220.1	ReflexEZS	Geotech	27-Oct-15	5684	☑	
75	-45.8	195.4	22.5	217.9	ReflexEZS	Geotech	27-Oct-15	5775	☑	
110	-45.3	192.7	22.5	215.2	ReflexEZS	Geotech	28-Oct-15	5744	☑	
125	-45.5	193	22.5	215.5	ReflexEZS	Geotech	28-Oct-15	5767	☑	
149	-45.6	193.4	22.5	215.9	ReflexEZS	Geotech	28-Oct-15	5738	☑	
179	-45.9	192.5	22.5	215	ReflexEZS	Geotech	28-Oct-15	5736	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN Casing**									
6.00	**17.00**	**RHYva Coarse grained to ash tuff**									

6 - 17: Medium grey fine grained ash tuff with disseminated euhedral BI.

<<Min: 6 - 17 0.5% Min: Pyrite>>

<<Min: 6 - 17 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 6 - 17 2% Min: Calcite>>

17.00 18.10 RHYvl Lapilli tuff

17 - 18.1: CA+QZ lpl within medium grey MU groundmass

<<Min: 17 - 18.1 1% Min: Pyrrhotite>>

<<Min: 17 - 18.1 10% Min: Calcite>>

18.10 21.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

18.1 - 21.8: Siliceous flow banded rhyolite with local pepperitic texture

<<Min: 18.1 - 21.8 1% Min: Calcite>>

<<Min: 18.1 - 32.5 0.5% Min: Pyrite>>

<<Vein: 18.9 - 19 60% Quartz>> Deformed QZ+CA vein

21.80 25.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

21.8 - 25.7: BI+CA schist

<<Min: 21.8 - 25.7 15% Min: Calcite>>

<<Struc: 25.5 - 25.8 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

25.70 32.50 RHYva Coarse grained to ash tuff

25.7 - 32.5: Medium grey fine grained ash tuff with disseminated subhedral BI and lpl

<<Min: 25.7 - 32.5 3% Min: Calcite>>

32.50 34.40 RHYc Rhyolite coherant volcanics

32.5 - 34.4: Silica banded rhyolite

<<Min: 32.5 - 50.8 2% Min: Pyrite>>

<<Min: 32.5 - 50.8 2% Min: Calcite>>

34.40 50.30 RHYi Aphanitic Rhyolite (intrusion)

34.4 - 50.3: Coherent aphanitic rhyolite

<<Struc: 43 - 43.2 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

50.30 50.80 RHYcw Curdy textured-flow banded (flows, subvolcanics)

50.3 - 50.8: Silica banded rhyolite with MU groundmass

From (m)	To (m)	Rocktype & Description
50.80	**51.30**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
50.8 - 51.3: BI+CA schist		
<<Min: 50.8 - 51.3 10% Min: Calcite>>		
<<Struc: 51.2 - 51.3 Weak (Alt) Fault>> Highly fractured rock with local fault gouge		
51.30	**52.00**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
51.3 - 52: Silica banded rhyolite with medium grey MU groundmass		
<<Min: 51.3 - 52 2% Min: Calcite>>		
52.00	**53.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
52 - 53: BI+CA schist		
<<Min: 52 - 53 15% Min: Calcite>>		
53.00	**53.40**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**
53 - 53.4: Silica banded rhyolite with medium grey MU groundmass		
<<Min: 53 - 58.8 2% Min: Pyrite>>		
<<Min: 53 - 58.8 2% Min: Calcite>>		
53.40	**58.80**	**RHYi** **Aphanitic Rhyolite (intrusion)**
53.4 - 58.8: Siliceous aphanitic rhyolite		
<<Vein: 53.5 - 54 100% Quartz>> Massive QZ vein with patchy BI		
<<Vein: 56.5 - 56.85 80% Quartz>> Massive QZ+CA with patchy BI		
58.80	**63.40**	**RHYvl** **Lapilli tuff**
58.8 - 63.4: Felsic lpl within medium grey MU groundmass		
<<Min: 58.8 - 91.3 1% Min: Pyrite>>		
<<Min: 58.8 - 91.3 0.5% Min: Pyrrhotite>>		
<<Min: 58.8 - 91.3 5% Min: Calcite>>		
<<Struc: 58.8 - 58.9 Weak (Alt) Fault>> Highly fractured rock with local fault gouge		
<<Struc: 60.9 - 61.3 Weak (Alt) Fault>> Highly fractured rock with local fault gouge		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

63.40 91.30 RHYva Coarse grained to ash tuff

63.4 - 91.3: Medium grey fine grained ash tuff with local felsic and CL+BI+CA+QZ lpl

<<Alt: 69.8 - 91.3 Weak (Alt) Muscovite>>

<<Vein: 68.3 - 68.6 90% Quartz>> Massive QZ vein with patchy CL

<<Struc: 67.1 - 67.4 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 75.5 - 76.5 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 80.9 - 81 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 81.5 - 82.4 Weak (Alt) Fault>> Highly fractured rock with local fault gouge

<<Struc: 87.85 - 90.75 Moderate-Strong (Alt) Fault>> Strongly faulted with fault gouge

91.30 96.10 RHY undifferentiated rhyolite

91.3 - 96.1: Strongly faulted rhyolite

<<Min: 91.3 - 92 10% Min: Pyrite>>

<<Min: 91.3 - 96.1 2% Min: Calcite>>

<<Min: 92 - 96.1 1% Min: Pyrite>>

<<Alt: 91.3 - 128.9 Strong (Alt) Muscovite>> Faulted related alteration?

<<Struc: 91.3 - 121.7 Strong (Alt) Fault>> Strongly faulted with variable foliation. Felsic clasts within gouge matrix.

96.10 101.10 MDSc Carbonaceous dominant mudstone

96.1 - 101.1: Strongly faulted carbonaceous mudstone

<<Min: 96.1 - 101.1 10% Min: Pyrite>>

<<Min: 96.1 - 101.1 1% Min: Calcite>>

101.10 121.70 RHY undifferentiated rhyolite

101.1 - 121.7: Strongly faulted rhyolite

<<Min: 101.1 - 121.7 5% Min: Calcite>>

<<Min: 101.1 - 128.9 2% Min: Pyrite>>

<<Vein: 118.4 - 119 40% Quartz>> Clasts of massive QZ+CA veins in fault

121.70 122.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

121.7 - 122.6: BI+CA schist. Moderately faulted

<<Min: 121.7 - 122.6 15% Min: Calcite>>

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 121.7 - 122.6 Moderate (Alt) Fault>> Highly fractured rock with local fault gouge										
122.60	**128.90**	**RHY**	**undifferentiated rhyolite**										
122.6 - 128.9: Strongly faulted rhyolite													
			<<Min: 122.6 - 128.9 5% Min: Calcite>>										
			<<Struc: 122.6 - 128.9 Strong (Alt) Fault>> Strongly faulted with variable foliation. Felsic clasts within gouge matrix.										
128.90	**133.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		129.50	131.00	1.50	B00233126	0.6	-0.005	-0.01	-0.01	0.02
128.9 - 133.9: CL+BI+CA schist with local zones of fault gouge													
			<<Min: 128.9 - 133.9 10% Min: Calcite>>		131.00	132.50	1.50	B00233127	-0.3	-0.005	0.01	-0.01	0.01
			<<Alt: 128.9 - 133.9 Strong (Alt) Chlorite>>		132.50	133.90	1.40	B00233128	4.5	0.058	0.06	0.13	0.2
			<<Alt: 128.9 - 133.9 Strong (Alt) Biotite>>										
			<<Struc: 132.7 - 132.8 Weak (Alt) Fault>> Highly fractured rock with local fault gouge										
			<<Struc: 133.8 - 134 Moderate (Alt) Fault>> Fault gouge zone										
133.90	**134.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	133.90	134.60	0.70	B00233129	136	2.18	0.16	2.94	3.83
133.9 - 134.6: Massive PY+GL+/-SP with CA groundmass. Brecciated and faulted lower contact with cm scale angular clasts of CA.													
			<<Min: 133.9 - 134.6 1% Min: Tetrahedrite>>										
			<<Min: 133.9 - 134.6 3% Min: Sphalerite>>										
			<<Min: 133.9 - 134.6 63% Min: Pyrite>>										
			<<Min: 133.9 - 134.6 2% Min: Galena>>										
			<<Min: 133.9 - 134.6 30% Min: Calcite>>										
			<<Min: 133.9 - 134.6 1% Min: Barite>>										
134.60	**136.00**	**FBX**	**Fault Breccia**		134.60	136.00	1.40	B00233132	17.2	0.121	0.03	0.11	0.19
134.6 - 136: Polymictic fault gouge breccia. Clasts of MSXS and rhyolite in gouge matrix.													
			<<Min: 134.6 - 136 10% Min: Pyrite>> Clasts of MSXS in fault gouge breccia										
			<<Min: 134.6 - 136 5% Min: Calcite>>										
			<<Struc: 134.6 - 136 Intense (Alt) Fault>> Polymictic fault gouge breccia										
136.00	**140.10**	**RHY**	**undifferentiated rhyolite**		136.00	137.50	1.50	B00233133	1	0.015	-0.01	-0.01	-0.01
136 - 140.1: Strongly faulted rhyolite													

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 136 - 159.5 3% Min: Pyrite>>		137.50	139.00	1.50	B00233134	1.7	0.017	-0.01	-0.01	-0.01
		<<Min: 136 - 159.5 5% Min: Calcite>>										
		<<Struc: 136 - 154.5 Moderate (Alt) Fault>> Highly fractured rock with local fault gouge										
140.10	**141.10**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
140.1 - 141.1: Strongly faulted, light grey, aphanitic rhyolite with QZ amygdules												
141.10	**142.30**	**RHY** **undifferentiated rhyolite**										
141.1 - 142.3: Strongly faulted rhyolite with CA lpl												
142.30	**143.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
142.3 - 143: Strongly faulted, light grey, aphanitic rhyolite with QZ amygdules												
143.00	**148.20**	**RHY** **undifferentiated rhyolite**										
143 - 148.2: Grey-green highly fractured, MU+QZ schist, showing local silica bands.												
		<<Alt: 143 - 150.8 Weak (Alt) Muscovite>>										
		<<Struc: 145.98 - 145.99 dominant foliation>> MU cleavage										
148.20	**148.80**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
148.2 - 148.8: Grey aphanitic rhyolite												
148.80	**152.50**	**RHYv** **Rhyolite volcaniclastic**										
148.8 - 152.5: Green-grey MU+QZ schist with local CA and rhyolitic lpl												
		<<Alt: 150.8 - 159.5 Moderate (Alt) Muscovite>>										
152.50	**155.40**	**RHYi** **Aphanitic Rhyolite (intrusion)**										
152.5 - 155.4: Grey aphanitic rhyolite												
155.40	**159.50**	**RHYvl** **Lapilli tuff**		155.40	156.50	1.10	B00233135	0.5	-0.005	-0.01	-0.01	-0.01
155.4 - 159.5: QZ+MU schist with CA and PY lpl												
				156.50	158.00	1.50	B00233136	-0.3	-0.005	-0.01	-0.01	-0.01
				158.00	159.50	1.50	B00233137	0.5	0.008	-0.01	-0.01	-0.01
159.50	**160.60**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	159.50	160.60	1.10	B00233138	205	1.53	0.28	3.54	11.6
159.5 - 160.6: Banded PY+CA+SP+/-GL												

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 159.5 - 160.6 10% Min: Sphalerite>>										
		<<Min: 159.5 - 160.6 60% Min: Pyrite>>										
		<<Min: 159.5 - 160.6 2% Min: Galena>>										
		<<Min: 159.5 - 160.6 23% Min: Calcite>>										
160.60	**160.80**	**OC** **Chalcopyrite-pyrrhotite net textured sulphides**	**MCG**	160.60	160.80	0.20	B00233139	137	2.51	5.83	0.48	5.65
		160.6 - 160.8: Massive PO+PY+CP (net-textured) with disseminated MG porphyroblasts										
		<<Min: 160.6 - 160.8 20% Min: Pyrite>>										
		<<Min: 160.6 - 160.8 60% Min: Pyrrhotite>>										
		<<Min: 160.6 - 160.8 5% Min: Magnetite>>										
		<<Min: 160.6 - 160.8 15% Min: Chalcopyrite>>										
160.80	**162.90**	**RHY** **undifferentiated rhyolite**		160.80	161.30	0.50	B00233141	17.5	0.254	0.19	0.16	0.25
		160.8 - 162.9: Sheared MU+QZ schist. CL-altered from 160.8-161 m and silicified from 161-161.3 m.										
		<<Min: 160.8 - 161 2% Min: Chalcopyrite>>		161.30	162.90	1.60	B00233142	0.7	0.007	-0.01	-0.01	0.02
		<<Min: 160.8 - 161 5% Min: Calcite>>										
		<<Min: 161 - 161.3 10% Min: Pyrite>>										
		<<Min: 161.3 - 162.9 2% Min: Pyrite>>										
		<<Min: 161.3 - 162.9 5% Min: Calcite>>										
		<<Alt: 160.8 - 161 Moderate (Alt) Chlorite>>										
		<<Alt: 161 - 161.3 Strong (Alt) Silicification>>										
		<<Alt: 161.3 - 162.9 Moderate (Alt) Muscovite>>										
162.90	**164.80**	**MDSc** **Carbonaceous dominant mudstone**		162.90	164.40	1.50	B00233143	2.9	0.035	0.07	0.04	1.53
		162.9 - 164.8: Argillitic mudstone										
		<<Min: 162.9 - 164.8 1% Min: Pyrite>>										
		<<Min: 162.9 - 164.8 1% Min: Pyrrhotite>>										
		<<Min: 162.9 - 164.8 1% Min: Calcite>>										
164.80	**191.00**	**FBX** **Fault Breccia**										
		164.8 - 191: Polymictic fault gouge breccia. Clasts include RHY, MDS, MSXS (CP+PO and PY), and MAFi. Gouge includes QZ, CL, MU, and GR.										
		<<Min: 164.8 - 191 5% Min: Pyrite>> Clasts of MSXS in fault gouge breccia										

From (m)	To (m)	Rocktype & Description
		<<Min: 164.8 - 191 0.5% Min: Pyrrhotite>> Clasts of MSXS in fault gouge breccia
		<<Min: 164.8 - 191 1% Min: Chalcopyrite>> Clasts of MSXS in fault gouge breccia
		<<Min: 164.8 - 191 2% Min: Calcite>> Clasts of CA in fault gouge breccia
		<<Struc: 164.8 - 191 Intense (Alt) Fault>> Polymictic fault gouge breccia
		End of Hole @ 191

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-311

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	31-Oct-15
UTM Easting	415158	Core Size:	HQ3	Azimuth:	29.71	Date Logging Complete:	03-Nov-15
UTM Northing:	6815051	Casing Pulled?:	Yes	Dip:	-80	Drill Company:	Geotech
UTM Elev. (m):	1406.21	Casing Depth (m):	6	Length (m):	263	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	30-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-311 was drilled as an exploration hole to test the continuity of the Krakatoa zone to the south east. Mineralization was anticipated to occur at ~170, ~195, and ~210 m.
K15-311 intersected the felsic hanging wall package to a depth of ~99 m, consisting of mixed volcanic rhyolites, BI+CA schists, and rhyolite intrusions. From 99.2-160.8 m, there was strong faulting, mainly composed of faulted rhyolite. Below this fault, a less faulted CL+BI+CA schist (MAFi) occur to a depth of 237.2 m. This unit was followed by strongly MU-altered rhyolite to a depth of 261.1 m, where a fault breccia occurs the end of hole (263 m).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-80	29.71	0	29.71	APS	Dillon Hume	30-Oct-15		☑	
17	-79.9	9.8	22.5	32.3	ReflexEZS	Geotech	30-Oct-15	5804	☑	
50	-80.8	5.5	22.5	28	ReflexEZS	Geotech	30-Oct-15	5775	☑	
74	-81.5	4.5	22.5	27	ReflexEZS	Geotech	30-Oct-15	5703	☑	
101	-82.8	18.3	22.5	40.8	ReflexEZS	Geotech	31-Oct-15	5747	☑	
125	-83.6	17.8	22.5	40.3	ReflexEZS	Geotech	31-Oct-15	5744	☑	
152	-84.1	17.5	22.5	40	ReflexEZS	Geotech	31-Oct-15	5739	☑	
158	-84.1	15.6	22.5	38.1	ReflexEZS	Geotech	01-Nov-15	5732	☑	
188	-84.8	13.7	22.5	36.2	ReflexEZS	Geotech	01-Nov-15	5732	☑	
200	-85	18.5	22.5	41	ReflexEZS	Geotech	01-Nov-15	5775	☑	
227	-85.3	21.7	22.5	44.2	ReflexEZS	Geotech	01-Nov-15	5736	☑	
263	-86.7	9.6	22.5	32.1	ReflexEZS	Geotech	02-Nov-15	5680	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.00**	**CASN**	**Casing**								
6.00	**7.30**	**RHYva**	**Coarse grained to ash tuff**								
6 - 7.3: Light grey, fine grained ash tuff with local CA lpl and disseminated subhedral to euhedral BI.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 6 - 7.3 5% Min: Calcite>>

7.30 8.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

7.3 - 8.9: BI+CA schist with local tuffaceous material. Metapelite?

<<Min: 7.3 - 8.9 15% Min: Calcite>>

8.90 11.40 RHYva Coarse grained to ash tuff

8.9 - 11.4: Light-medium grey fine grained ash tuff with local CA lpl. Disseminated subhedral to euhedral BI decreasing in abundance (10-1%) from 8.9-10.3 m.

<<Min: 8.9 - 11.4 5% Min: Calcite>>

11.40 14.90 RHYvl Lapilli tuff

11.4 - 14.9: Medium grey, lpl tuff, with ash matrix and PO, CA, and rhyolitic lpl

<<Min: 11.4 - 14.9 1% Min: Pyrite>>

<<Min: 11.4 - 14.9 5% Min: Pyrrhotite>>

<<Min: 11.4 - 14.9 10% Min: Calcite>>

14.90 24.10 RHYc Rhyolite coherant volcanics

14.9 - 24.1: Silica banded with MU cleavages on the top and bottom of the unit, with a more massive siliceous core with MU filled fractures.

<<Min: 14.9 - 24.1 2% Min: Pyrite>>

<<Min: 14.9 - 24.1 5% Min: Calcite>>

<<Vein: 23.9 - 24.1 90% Quartz>> Massive QZ vein

24.10 27.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

24.1 - 27.2: BI+CA schist. Appears to have some ash material in the matrix from 24.4-25.2 m. Metapelite?

<<Min: 24.1 - 27.2 15% Min: Calcite>>

<<Min: 24.1 - 28.8 1% Min: Pyrite>>

<<Min: 24.1 - 28.8 3% Min: Pyrrhotite>>

27.20 28.60 RHYvl Lapilli tuff

27.2 - 28.6: Fine grained ash matrix with rhyolitic lpl and minor BI cleavages.\

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

28.60 28.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

28.6 - 28.8: BI+CA schist (~98% BI). Sharp upper contact with a gradational lower contact. Metapelite?

<<Min: 28.6 - 28.8 2% Min: Calcite>>

28.80 35.85 RHYva Coarse grained to ash tuff

28.8 - 35.85: Light to medium grey fine grained ash tuff with local disseminated subhedral to euhedral BI, CA and rhyolitic lpl, and silica banding.

<<Min: 28.8 - 35.85 2% Min: Pyrite>>

<<Min: 28.8 - 35.85 1% Min: Pyrrhotite>>

<<Min: 28.8 - 35.85 5% Min: Calcite>>

35.85 37.80 RHYc Rhyolite coherant volcanics

35.85 - 37.8: Silica banded to massive siliceous rhyolite. Local FD? Porphyries.

<<Min: 35.85 - 37.8 5% Min: Calcite>>

<<Min: 35.85 - 62.9 2% Min: Pyrite>>

<<Min: 35.85 - 62.9 0.5% Min: Pyrrhotite>>

37.80 62.90 RHYi Aphanitic Rhyolite (intrusion)

37.8 - 62.9: Light grey to pink massive aphanitic siliceous rhyolite with QZ porphyries/amygdules and highly variable healed fractures.

<<Min: 37.8 - 64 3% Min: Calcite>>

<<Vein: 49.55 - 50.35 95% Quartz>> Massive QZ+CA vein

<<Vein: 52.7 - 52.95 80% Quartz>> Massive QZ+CA vein

62.90 64.00 RHYc Rhyolite coherant volcanics

62.9 - 64: Medium blue-grey, silica banded, QZ+MU schist.

<<Min: 62.9 - 66.4 1% Min: Pyrite>>

64.00 65.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

64 - 65: BI+CA schist with CA bands. Metapelite?

<<Min: 64 - 65 15% Min: Calcite>>

65.00 66.40 RHYc Rhyolite coherant volcanics

65 - 66.4: Medium grey, silica banded, QZ+MU schist

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 65 - 66.4 5% Min: Calcite>>

66.40 70.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

66.4 - 70.6: Black, BI+CA schist with local CA bands. Metapelite?

<<Min: 66.4 - 70.6 2% Min: Pyrite>>

<<Min: 66.4 - 70.6 10% Min: Calcite>>

<<Struc: 70.4 - 70.8 Weak (Alt) Fault>> Highly fractured with local fault gouge

70.60 71.70 RHYc Rhyolite coherant volcanics

70.6 - 71.7: Medium grey, silica banded, QZ+MU schist

<<Min: 70.6 - 72.6 15% Min: Calcite>>

<<Struc: 71.3 - 71.6 Weak (Alt) Fault>> Highly fractured with local fault gouge

71.70 72.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

71.7 - 72.6: Purplish-black, BI+CA schist, with local olive green matrix (CL?).

<<Struc: 72.4 - 72.6 Weak (Alt) Fault>> Highly fractured with local fault gouge

72.60 78.30 RHYvl Lapilli tuff

72.6 - 78.3: Dark grey, QZ and CL+QZ lpl within fine grained ash tuff.

<<Min: 72.6 - 96.5 0.5% Min: Pyrrhotite>>

<<Min: 72.6 - 96.5 5% Min: Calcite>>

<<Struc: 73.5 - 74 Weak (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 76.94 - 76.95 dominant foliation>> Elongated lpl

<<Struc: 78 - 78.2 Weak (Alt) Fault>> Highly fractured with local fault gouge

78.30 80.90 RHYvl Lapilli tuff

78.3 - 80.9: Dark grey ash tuff matrix with cream coloured rhyolitic lpl. Shows elongation of lpl.

<<Struc: 79.82 - 79.83 dominant foliation>> Elongated lpl

<<Struc: 80.4 - 80.8 Weak (Alt) Fault>> Highly fractured with local fault gouge

80.90 96.50 RHYvl Lapilli tuff

80.9 - 96.5: Dark grey ash matrix with QZ, rhyolitic, and CL+QZ lpl.

<<Alt: 92.3 - 98.8 Weak (Alt) Muscovite>> Fault related? Or original?

<<Vein: 86.8 - 87.6 90% Quartz>> Massive QZ+/-CA vein

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 96.4 - 96.6 70% Quartz>> Deformed massive QZ+CA vein with blebs of PY

<<Struc: 83.35 - 84 Moderate (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 85.6 - 85.8 Weak (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 88.96 - 88.97 dominant foliation>> Elongated lpl

<<Struc: 92.9 - 93.1 Moderate (Alt) Shear>> Variable foliation with local fault gouge

<<Struc: 95.4 - 95.7 Moderate (Alt) Shear>> Variable foliation with local fault gouge

96.50 160.80 RHY undifferentiated rhyolite

96.5 - 160.8: Moderately to strongly faulted rhyolite. Strongly MU-altered cleavages display slip, as well as local gouge zones that cross-cut foliation. Local heavily disseminated sulphide (OI) in clasts of local fault breccia from 104.7-105 m.

<<Min: 96.5 - 101 2% Min: Pyrite>>

<<Min: 96.5 - 160.8 2% Min: Calcite>>

<<Min: 101 - 106.6 5% Min: Pyrite>>

<<Min: 106.6 - 160.8 2% Min: Pyrite>>

<<Alt: 98.8 - 107.5 Strong (Alt) Muscovite>> Fault related?

<<Alt: 107.5 - 121.5 Moderate (Alt) Muscovite>> Fault related?

<<Alt: 121.5 - 160.8 Strong (Alt) Muscovite>> Fault related?

<<Vein: 97.2 - 97.6 80% Quartz>> Massive QZ+CA vein with blebs of Tourmaline and PY

<<Vein: 116.5 - 116.6 90% Quartz>> Fractured massive QZ vein

<<Vein: 157 - 157.2 80% Quartz>> Massive QZ vein

<<Struc: 99.2 - 143 Strong (Alt) Fault>> Strongly faulted and sheared. Signs of slip along Mu-cleavages/foliation as well as local fault gouge zones that cross-cut the foliation.

<<Struc: 102.2 - 102.21 Fault>> Gouged fracture

<<Struc: 103.2 - 103.21 Fault>> Gouged fracture

<<Struc: 112.3 - 112.31 Foliation>> Foliation in fault zone

<<Struc: 116.75 - 116.76 Foliation>> Faulted foliation in fault zone

<<Struc: 119.2 - 119.21 Fault>> Fracture cross-cutting foliation in fault zone

<<Struc: 121.45 - 121.46 Foliation>> Foliation in fault zone

<<Struc: 133.8 - 133.81 Fault>> Fracture (minor gouge) cross-cutting foliation in fault zone

<<Struc: 139 - 139.01 Fault>> Fracture (minor gouge) cross-cutting foliation in fault zone

<<Struc: 142.6 - 142.61 Fault>> Foliation in gouge zone

<<Struc: 143 - 160.8 Moderate (Alt) Fault>> Strongly faulted and sheared. Signs of slip along Mu-cleavages/foliation as well as local fault gouge zones that cross-cut the foliation.

<<Struc: 145 - 145.01 Foliation>> Foliation in fault zone

<<Struc: 146.1 - 146.11 Foliation>> Foliation in fault zone

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 149.1 - 149.11 Foliation>> Foliation in fault zone

<<Struc: 152.45 - 152.46 Foliation>> Foliation in fault zone

160.80 164.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

160.8 - 164.3: CL+BI+CA+AK schist

<<Min: 160.8 - 164.3 20% Min: Calcite>>

164.30 167.30 RHY undifferentiated rhyolite

164.3 - 167.3: Grey aphanitic rhyolite with low angle (TCA) fractures

<<Min: 164.3 - 167.3 3% Min: Calcite>>

<<Alt: 164.3 - 167.3 Moderate (Alt) Muscovite>>

<<Struc: 164.3 - 167.3 Moderate (Alt) Fault>> Highly fractured with slip along foliation as well as local fault gouge/breccia zones.

167.30 237.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

167.3 - 237.2: Green, patchy, CL+BI+CA schist.

<<Min: 167.3 - 178.3 20% Min: Calcite>>

<<Min: 167.3 - 237.2 0.1% Min: Pyrrhotite>>

<<Min: 178.3 - 229.1 5% Min: Calcite>>

<<Min: 229.1 - 237.2 20% Min: Calcite>>

<<Alt: 167.3 - 178.3 Strong (Alt) Biotite>>

<<Alt: 167.3 - 237.2 Strong (Alt) Chlorite>>

<<Alt: 178.3 - 237.2 Moderate (Alt) Biotite>>

<<Struc: 176.2 - 176.21 dominant foliation>> Continuous BI foliation

<<Struc: 179.6 - 179.61 dominant foliation>> Discontinuous BI foliation

<<Struc: 199.8 - 200.2 Weak (Alt) Fault>> Strongly fractured with minor fault gouge

<<Struc: 229.7 - 229.71 dominant foliation>> CL cleavage

<<Struc: 233.07 - 233.08 dominant foliation>> Discontinuous CA foliation

<<Struc: 235.9 - 235.91 dominant foliation>> Discontinuous CA foliation

237.20 261.10 RHYvl Lapilli tuff

237.2 - 261.1: MU-altered lpl tuff, with rhyolitic, CA, and PY lpl in a QZ+MU matrix.

<<Min: 237.2 - 244.1 0.5% Min: Sphalerite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 237.2 - 244.1 3% Min: Pyrite>>
<<Min: 237.2 - 263 3% Min: Calcite>>
<<Min: 244.1 - 244.8 15% Min: Pyrite>>
<<Min: 244.8 - 250.4 3% Min: Pyrite>>
<<Min: 250.4 - 250.9 10% Min: Pyrite>>
<<Min: 250.9 - 263 2% Min: Pyrite>>
<<Min: 250.9 - 263 1% Min: Pyrrhotite>>
<<Alt: 237.2 - 253.2 Strong (Alt) Muscovite>>
<<Alt: 253.2 - 261.1 Moderate (Alt) Muscovite>>
<<Vein: 237.3 - 240.1 60% Quartz>> Zone of massive QZ+/-CA veining in RHY
<<Vein: 242.3 - 242.45 70% Quartz>> Massive QZ+/-CA vein
<<Vein: 244 - 244.1 90% Quartz>> Massive QZ+/-CA vein
<<Vein: 244.85 - 244.9 90% Quartz>> Massive QZ+/-CA vein
<<Vein: 253.5 - 253.7 90% Quartz>> Massive QZ+CA vein
<<Struc: 237.2 - 240.1 Moderate (Alt) Fault>> Strongly fractured with local fault gouge
<<Struc: 246.7 - 251.9 Moderate (Alt) Fault>> Highly fractured with local fault gouge
<<Struc: 255.5 - 258.2 Weak-Moderate (Alt) Fault>> Strongly fractured with local fault gouge
<<Struc: 259.9 - 261.1 Moderate (Alt) Fault>> Strongly fractured with local fault gouge

261.10 263.00 FBX Fault Breccia

261.1 - 263: Highly faulted zone with clasts of MAFi, massive PY, MDS, and RHY within a gouge matrix.

<<Struc: 261.1 - 263 Strong (Alt) Fault>> Highly faulted with polymictic clasts in gouge matrix

End of Hole @ 263

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-312

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	01-Nov-15
UTM Easting	415036.1	Core Size:	HQ3	Azimuth:	209.97	Date Logging Complete:	03-Nov-15
UTM Northing:	6814952	Casing Pulled?:	Yes	Dip:	-48	Drill Company:	Geotech
UTM Elev. (m):	1387.217	Casing Depth (m):	39	Length (m):	110	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	30-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of the drill hole was to test for the presence of the up dip extension of the Krakatoa lens on cross section SE1.
The drill hole was successful in intersecting the Krakatoa lens, consisting of three separate bodies of OB type mineralization from 58.46 – 68.43m totalling 4.87 m of sulphides separated by muscovite – sericite altered Mafi (or possibly RHY?) and RHYi. The RHYi and later quartz veining 65.2 – 67.33 m may possibly displace or replace the sulphides. Mineralization is not strong with only a few narrow sections containing >10% sphalerite with chalcopyrite and galena percentages being generally low. The middle and lower Krakatoa lens are estimated to contain up to 25% and 10% barite respectively as gangue. Below the lower Krakatoa lens (from 67.33 m) the drill hole intersected RHYi with lesser sections of silicified RHY to EOH at 110m. From 99.3-104.9 a fault zone with sheared and altered RHYi, possible RHY and gouge zones were intersected.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-48	209.97	0	209.97	APS	Sean Suttie	30-Oct-15		☑	
47	-47.4	187	22.5	209.5	ReflexEZS	Geotech	01-Nov-15	5768	☑	
77	-47	186.7	22.5	209.2	ReflexEZS	Geotech	01-Nov-15	5748	☑	
101	-46.3	186.3	22.5	208.8	ReflexEZS	Geotech	01-Nov-15	5739	☑	
110	-46.6	188.8	22.5	211.3	ReflexEZS	Geotech	01-Nov-15	5735	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**38.00**	**OVBN Overburden**									
0 - 38: Overburden log provided by N/S driller Matt ?? 0-2.5m soil and organics (marsh) 2.5-4.0m small gravel, course sand, trace silt 4.0 – 7.0m fine sand/silt, no gravel 7.0-7.8m fine sand/silt/small boulder patch 7.8-10m silty sand 10.0-10.7m boulders 10.7-15.0m silty sand 15.0 – 15.5 boulders 15.5-18.5m Boulder 18.5 – 21m sand/gravel 21.0- 23.0m sand 23.0 – 26.25m no record										

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		26.25 – 32m clay, soil, gravel, boulders – looks like glacial till 32 – 39m no record Casing to 39m									
38.00	**39.00**	**CASN Casing**									
39.00	**40.08**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green** 39 - 40.08: No blebby calcite <<Min: 39 - 40.1 5% Min: Calcite>> <<Min: 39 - 48.33 0.1% Min: Pyrite>> <<Alt: 39 - 40 Moderate (Alt) Chlorite>> <<Alt: 39 - 40 Moderate (Alt) Biotite>> <<Alt: 40 - 40.6 Trace (Alt) Biotite>> associated with RHYi <<Alt: 40 - 41.8 Strong (Alt) Silicification>> RHYi and silicified wallrock									
40.08	**41.80**	**RHYi Aphanitic Rhyolite (intrusion)** 40.08 - 41.8: Dominently silicified MAFi cut by narrow RHYi dykes - lumped altogether. Contains diss biotite. <<Min: 41.1 - 50 5% Min: Calcite>> <<Min: 41.7 - 41.8 0.1% Min: Galena>> in fractured RHYi									
41.80	**48.45**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green** 41.8 - 48.45: pseudo leucoxene at lower contact. <<Min: 41.8 - 44.4 5% Min: Calcite>> veins blebs and diss <<Min: 44.4 - 47 15% Min: Calcite>> <<Min: 47 - 48.33 3% Min: Calcite>> <<Alt: 42 - 47.3 Moderate (Alt) Chlorite>> <<Alt: 42 - 47.3 Moderate (Alt) Biotite>> <<Alt: 47.3 - 48.45 Weak (Alt) Chlorite>> <<Alt: 47.3 - 48.45 Moderate (Alt) Biotite>> looks similar to 40.0-40.6m <<Struc: 42 - 45.5 Moderate (Alt) dominant foliation>> <<Struc: 45.7 - 45.8 Moderate-Strong (Alt) Fault>> brittle fault with crushed MAFi (alpha at 30-55 deg).	44.00	45.50	1.50	B00269851	0.4	-0.005	0.01	-0.01	0.01
			45.50	47.00	1.50	B00269852	-0.3	-0.005	-0.01	-0.01	0.01
			47.00	48.45	1.45	B00269853	1.3	0.026	0.01	0.01	0.02
48.45	**48.80**	**OI Heavilly disseminated sulphides in host schist** <<Min: 48.45 - 48.8 2% Min: Sphalerite>>	48.45	48.80	0.35	B00269854	141	0.65	0.25	2.35	6.27

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 48.45 - 48.8 10% Min: Pyrite>>									
		<<Min: 48.45 - 48.8 7% Min: Pyrrhotite>> bands and as diss									
		<<Min: 48.45 - 48.8 1% Min: Galena>>									
		<<Min: 48.45 - 48.8 0.2% Min: Chalcopyrite>>									
		<<Min: 48.6 - 54.2 5% Min: Calcite>>									
		<<Alt: 48.45 - 48.8 Moderate (Alt) Chlorite>>									
		<<Alt: 48.45 - 48.8 Moderate (Alt) Biotite>>									
48.80	**50.15**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **grey-green**	48.80	50.15	1.35	B00269855	11.2	0.039	0.02	0.1	0.38
		48.8 - 50.15: Light green, strongly sericite altered, minor gouge (20 cm total) in zone of poor recovery.									
		<<Alt: 48.8 - 50.15 Strong (Alt) Muscovite>> sericite and clay									
		<<Struc: 48.8 - 50 Moderate (Alt) dominant foliation>> mostly missing core									
		<<Struc: 48.8 - 50.15 Strong (Alt) Fault>> mostly missing core but some gouge and crushed sericite altered - clay rich wallrock (MAFi?).									
		<<Struc: 50 - 65.2 Moderate (Alt) dominant foliation>> 75-80 deg foliation and banding in sulfides									
50.15	**50.55**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	50.15	50.55	0.40	B00269856	98.5	0.205	0.95	0.61	5.78
		50.15 - 50.55: Zone of poor recovery, OI unit is actual length measured from 50.15m.									
		<<Min: 50.15 - 50.55 15% Min: Pyrite>>									
		<<Min: 50.15 - 50.55 3% Min: Pyrrhotite>>									
		<<Min: 50.15 - 50.55 0.5% Min: Galena>>									
		<<Min: 50.15 - 50.55 3% Min: Chalcopyrite>>									
		<<Min: 50.15 - 50.55 0.1% Min: Arsenopyrite>>									
		<<Alt: 50.15 - 50.55 Strong (Alt) Chlorite>>									
		<<Alt: 50.15 - 50.55 Strong (Alt) Biotite>> original?									
50.55	**54.20**	**RHY** **undifferentiated rhyolite** **grey-green**	50.55	53.00	2.45	B00269857	69.5	0.043	0.85	0.04	0.16
		50.55 - 54.2: Original protolith difficult to determine, now a sericite - clay schist. Could easily be altered MAFi and not RHY.									
		<<Min: 50.55 - 53 0.5% Min: Pyrite>>	53.00	54.20	1.20	B00269858	1.3	-0.005	-0.01	-0.01	0.03
		<<Min: 50.55 - 53 0.5% Min: Chalcopyrite>> in sulfide clast at 55.60									
		<<Alt: 50.55 - 54.2 Strong (Alt) Muscovite>> sericite and clay									
		<<Struc: 50.55 - 54.2 Strong (Alt) Fault>> missing core, sericite-clay altered, minor (15cm) gouge zones recovered									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.20	**58.46**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	54.20	55.50	1.30	B00269859	0.5	-0.005	-0.01	-0.01	0.03

54.2 - 58.46: Sharp contact at 54.2m with MAFi against CP rich section of OB.

<<Min: 54.2 - 58.46 0.5% Min: Pyrite>>

<<Min: 54.2 - 58.46 10% Min: Calcite>> Veins blebs and diss

<<Min: 54.2 - 58.46 0.1% Min: Arsenopyrite>>

<<Alt: 54.2 - 58.46 Moderate (Alt) Chlorite>>

<<Alt: 54.2 - 58.46 Moderate (Alt) Biotite>>

<<Alt: 58.2 - 58.46 Moderate (Alt) Chlorite>>

<<Alt: 58.2 - 58.46 Moderate (Alt) Biotite>>

					55.50	57.00	1.50	B00269861	-0.3	-0.005	-0.01	-0.01	0.01
					57.00	58.46	1.46	B00269862	4.8	0.015	0.03	0.07	0.06
58.46	**58.98**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		58.46	58.98	0.52	B00269863	182	0.613	0.37	3.94	5.92

<<Min: 58.46 - 58.98 1% Min: Sphalerite>>

<<Min: 58.46 - 58.98 35% Min: Pyrite>>

<<Min: 58.46 - 58.98 1% Min: Pyrrhotite>> with CP in 1cm band a 58.46m contact

<<Min: 58.46 - 58.98 0.5% Min: Galena>>

<<Min: 58.46 - 58.98 2% Min: Chalcopyrite>> In 1 cm band with Pyrrhotite at 58.46m contact.

<<Min: 58.46 - 59.05 20% Min: Calcite>>

58.98	**61.63**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**	58.98	60.20	1.22	B00269864	1.2	0.009	-0.01	-0.01	0.04

58.98 - 61.63: Banded, sericite altered. Unit could also be altered RHY as it has silic bands with sericite partings. Unit is calcareous, both diss and as bands (stonger near the upper contact), low (1% diss py) and possible remnant texture of MAFi unit.

<<Min: 58.98 - 61.63 1% Min: Pyrite>> and as wisps and fracture filling

					60.20	61.63	1.43	B00269865	7.6	0.036	0.02	0.06	0.23

<<Min: 59.05 - 60.3 5% Min: Calcite>>

<<Min: 60.03 - 78.2 1% Min: Calcite>> fracture fillings, rare vein;lets and minor blebs - diss.

<<Alt: 58.98 - 61.63 Moderate-Strong (Alt) Silicification>>

<<Alt: 58.98 - 61.63 Moderate (Alt) Muscovite>> sericite

<<Struc: 59 - 60.8 Moderate (Alt) dominant foliation>> silic bands with sericite partings.

<<Struc: 60.9 - 61.4 Moderate (Alt) Fault>> crushed and broken core, mostly along 30 deg to CA.

From (m)	To (m)	Rocktype & Description
61.63	**64.13**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
61.63 - 64.13: Overall approximately 25% sulfides, zone of massive sulfides at: 62.4 - 63.1m. Bands of heavily disseminated sulfides with calcite - barite? (grey-soft, no fizz) - qtz and minor cholite gangue.		
<<Min: 61.63 - 62 1% Min: Galena>>		
<<Min: 61.63 - 62 30% Min: Pyrite>>		
<<Min: 61.63 - 62 3% Min: Sphalerite>>		
<<Min: 61.63 - 62 1% Min: Chalcopyrite>>		
<<Min: 62 - 62.4 5% Min: Sphalerite>>		
<<Min: 62 - 62.4 2% Min: Galena>>		
<<Min: 62 - 62.4 25% Min: Pyrite>>		
<<Min: 62.15 - 64.13 25% Min: Barite>>		gangue
<<Min: 62.4 - 63.1 5% Min: Galena>>		
<<Min: 62.4 - 63.1 30% Min: Pyrite>>		
<<Min: 62.4 - 63.1 15% Min: Sphalerite>>		
<<Min: 62.4 - 63.1 1% Min: Chalcopyrite>>		
<<Min: 63.1 - 63.4 3% Min: Magnetite>>		
<<Min: 63.1 - 64.13 7% Min: Sphalerite>>		
<<Min: 63.1 - 64.13 1% Min: Galena>>		
<<Min: 63.1 - 64.13 20% Min: Pyrite>>		
<<Struc: 63.9 - 64.13 Moderate (Alt) Foliation>>		banded sulfides
64.13	**65.20**	**RHY** **undifferentiated rhyolite**
64.13 - 65.2: Silicified with diss biotite (not present in OB or RHYi). Unit could also be silicified MAFi.		
<<Min: 64.14 - 65.67 3% Min: Pyrite>>		
<<Alt: 64.13 - 65.2 Weak (Alt) Biotite>>		similar to 40-40.6m
<<Alt: 64.13 - 65.7 Intense (Alt) Silicification>>		protolith uncertatin but now silicified
<<Struc: 64.5 - 65.3 Moderate (Alt) Foliation>>		Banding and poor foliation
65.20	**67.33**	**RHYi** **Aphanitic Rhyolite (intrusion)**
65.2 - 67.33: Extremely siliceous, locally brecciated and silica healed, clasts/sections of silicified RHY or MAFi. 65.7-67m; White qtz vein, clasts of qtz-feldspar-chlorite (possible altered MAFi?), minor diss sphalerite and galena - end fraction member of RHYi or late metamorphic vein of remobilized qtz? Irregular ragged contact at 67.33 with sulfide clasts and wisps from 67.23 - 67.33. Difficult to say which one is cutting the other.		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
61.63	62.00	0.37	B00269866	540	2.14	0.88	3.85	5.15
62.00	62.40	0.40	B00269867	430	4.6	0.51	3.59	4.88
62.40	63.10	0.70	B00269868	698	2.16	0.06	8.74	11.7
63.10	64.13	1.03	B00269869	565	4.44	0.22	3.1	4.1
64.13	65.20	1.07	B00269872	31.4	0.239	-0.01	0.12	0.29
65.20	65.67	0.47	B00269873	122	0.484	0.05	0.47	0.38

From (m)	To (m)	Rocktype & Description
		<<Min: 65.67 - 66.95 0.2% Min: Pyrite>>
		<<Min: 65.67 - 66.95 0.1% Min: Galena>>
		<<Min: 66.95 - 67.33 0.2% Min: Sphalerite>>
		<<Min: 66.95 - 67.33 3% Min: Pyrite>>
		<<Min: 66.95 - 67.33 0.2% Min: Galena>>
		<<Vein: 65.3 - 67 100% Quartz>> White qtz vein with 1 - 2% irregular clasts or zenoliths of possible altered MAFi (qtz-fled-chl). Trace diss blebs galena and sphalerite.
67.33	**68.43**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**
		67.33 - 68.43: 67.33-67.80m; Approx 25% total diss and wispy sulfides, concentrated in bands, Gangue of qtz-dolomite-barite(?). 67.80-68.43; Massive sulphide with 5-10% diss magnetite from 67.80-68.10m and approximately 20% pyrrhotite and 5% galena from 68.1-68.43m.
		<<Min: 67.33 - 67.75 8% Min: Sphalerite>>
		<<Min: 67.33 - 67.75 20% Min: Pyrite>>
		<<Min: 67.33 - 67.75 0.5% Min: Galena>>
		<<Min: 67.33 - 68.2 10% Min: Barite>>
		<<Min: 67.75 - 68.1 25% Min: Pyrite>>
		<<Min: 67.75 - 68.43 5% Min: Sphalerite>>
		<<Min: 67.75 - 68.43 3% Min: Magnetite>> in patches
		<<Min: 67.75 - 68.43 3% Min: Chalcopyrite>> and as blebs at lower contact
		<<Min: 68.1 - 68.43 50% Min: Pyrrhotite>> in bands
		<<Alt: 68.1 - 68.43 Moderate (Alt) Chlorite>>
		<<Struc: 68.4 - 68.43 Moderate (Alt) Contact>> MxSx _schist contact
68.43	**110.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**
		68.43 - 110: Dominently RHYi, minor sections of silicified RHY(?) pr ??. 68.43-95.3m; Massive brittle fractured RHYi, local faint pink hematite colored. 95.0-99.3m RHYi gets progressively more strained until fault contact at 95.3m. 95.3 - 105.3m; fault zone with cataclastic textured RHYi and gouge zones. 105.3-107.2m strained - foliated RHYi. 107.2-110.0m; lammelar banded and cataclastic foliated textured RHYi. Very schistose fabric.
		<<Min: 68.43 - 73.23 0.5% Min: Sphalerite>> and as diss
		<<Min: 68.43 - 73.23 3% Min: Pyrite>> and as diss
		<<Min: 68.43 - 73.23 0.5% Min: Galena>> and as diss
		<<Min: 73.23 - 73.42 3% Min: Sphalerite>>
		<<Min: 73.23 - 73.42 10% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
65.67	66.95	1.28	B00269874	4.6	0.038	-0.01	-0.01	0.08
66.95	67.33	0.38	B00269875	19.4	0.172	0.01	0.2	0.58
67.33	67.75	0.42	B00269876	396	1.74	0.13	2.16	3.23
67.75	68.43	0.68	B00269877	309	0.235	0.19	4.21	5.58
68.43	69.00	0.57	B00269878	12.8	0.02	-0.01	0.25	0.3
69.00	70.00	1.00	B00269879	1.3	0.006	-0.01	-0.01	0.08
70.00	71.50	1.50	B00269881	2	0.015	-0.01	0.05	0.06
71.50	73.00	1.50	B00269882	0.8	0.006	-0.01	0.02	0.04
73.00	73.45	0.45	B00269883	8.7	0.07	-0.01	0.14	0.38
73.45	75.00	1.55	B00269884	0.5	0.009	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 73.42 - 86 0.1% Min: Sphalerite>>

<<Min: 73.42 - 86 2% Min: Pyrite>> and as Diss

<<Min: 73.42 - 86 0.1% Min: Galena>>

<<Min: 78.2 - 79.3 5% Min: Calcite>> diss and as thin bands

<<Min: 79.3 - 97 1% Min: Calcite>>

<<Min: 86 - 99 0.1% Min: Galena>>

<<Min: 86 - 99.3 3% Min: Pyrite>>

<<Min: 97 - 101 5% Min: Calcite>>

<<Min: 99.3 - 110 1% Min: Pyrite>>

<<Min: 103 - 110 3% Min: Calcite>> fracture fillings, rare vein;lets and minor blebs - diss.

<<Alt: 95 - 99.3 Weak (Alt) Muscovite>> muscovite and sericite associated with fault and shearing

<<Alt: 99.3 - 102.5 Moderate (Alt) Muscovite>> mostly sericite in fault

<<Alt: 102.5 - 110 Moderate (Alt) Muscovite>> mostly sericite associated with fault zones.

<<Vein: 68.43 - 68.76 50% Quartz 10 deg. >> irregular qtz vein cutting altered silicified RHY (or MAFI) and overlying OB unit.

<<Vein: 85 - 93 5% Quartz>> irregular white - light grey qtz veins cross cutting RHYi at various angles.

<<Vein: 91.4 - 91.9 50% Calcite>> Calcite veining, more a breccia matrix with RHYi clasts.

<<Struc: 76 - 77 Moderate (Alt) dominant foliation>> parallel to wispy sulfides

<<Struc: 96.5 - 97.3 Moderate (Alt) Foliation>> foliation and cataclastic texture.

<<Struc: 99.3 - 102.9 Strong (Alt) Fault>> shear planes at variable angles but low angles appear to dominate.

<<Struc: 103.6 - 110 Moderate (Alt) Foliation>> foliation and cataclastic texture, silic bands with sericite - clay partings.

<<Struc: 103.9 - 104 Strong (Alt) Fault>> 10 cm recovered gouge

<<Struc: 104.2 - 104.9 Strong (Alt) Fault>> gouge zone with crushed schist, upper contact at 15 deg to CA.

End of Hole @ 110

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-313

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Sean Suttie	Date Logging Start:	02-Nov-15
UTM Easting	414925	Core Size:	HQ3	Azimuth:	30	Date Logging Complete:	03-Nov-15
UTM Northing:	6814965.6	Casing Pulled?:	No	Dip:	-80	Drill Company:	Geotech
UTM Elev. (m):	1389.055	Casing Depth (m):	21	Length (m):	153	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	31-Oct-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	02-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-313 was drilled to test the up-dip extent of the Krakatoa target on section NW2.
The hole collared into MAFi, and partially (50 cm intersection) intersecting the Krakatoa masssive sulphide lens at 43.13 m. The intersection is thought to represent the lower-most lens in the MAFi-hosted massive sulphide. The upper lens hosted in RHYv was not intersected and is most likely subcrops downdip (to the NE) within the Krakatoa target. Significantly thicker overburden (24m) was also encountered. Footwall lithological sequence was tested and the hole was extended to completely intersect RHYi at the lower contact of the massive sulphides. The RHYi has a thickness of ~60m. At the lower contact of RHYi is MAFi that hosts two separate, thin (<50cm) lenses of massive sulphides. Below the subeconomic massive sulphide lenses is a mudstone. The sequence is similar to ABM section 415050mE, 414800mE and 414900mE. 12m of casing was left stuck in the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-80	30.23	0	30.23	APS	Sean Suttie	01-Nov-15		☑	
36	-80.5	7.8	22.5	30.3	ReflexEZS	Geotech	01-Nov-15	5790	☑	
66	-81.3	4.9	22.5	27.4	ReflexEZS	Geotech	01-Nov-15	5813	☑	
96	-81.9	12.1	22.5	34.6	ReflexEZS	Geotech	02-Nov-15	5779	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**21.00**	**CASN** **Casing**									
21.00	**24.00**	**MAFi** **Mafic Intrusions (primarily brown MG footwall mafic intrusion)**									

21 - 24: Brown/greenish, medium grained MAFi, strongly foliated and biotite altered (coarse flakes oriented with foliation).
Also chlorite altered (pervasive). Strong CA associated with thin concordant veinlets and blebs/clots.

<<Min: 21 - 24 10% Min: Calcite>> Veinlets and clots/blebs

<<Alt: 21 - 24 Strong (Alt) Biotite>> MAFi

<<Struc: 21 - 39 Strong (Alt) Fault>> Interval strongly fractured, comprising fault gouge, poor recovery.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

24.00 39.00 RHYc Rhyolite coherant volcanics beige MG

24 - 39: Beige to greenish (light), medium grained RHY, comprising thin siliceous bands (+/- CA) concordant with foliation, planar texture (banded). Matrix strongly MU altered. Strongly fractured with poor recovery. Could be RHYcw.

<<Min: 24 - 39 4% Min: Calcite>> Associated with qtz veinlets

<<Min: 24.15 - 25.2 1% Min: Sphalerite>> Associated with qtz-ca veins/veinlets.

<<Min: 24.15 - 25.2 2% Min: Pyrrhotite>> Associated with qtz-ca veins/veinlets.

<<Min: 24.15 - 25.2 0.5% Min: Galena>> Associated with qtz-ca veins/veinlets.

<<Min: 24.15 - 25.2 0.1% Min: Chalcopyrite>> Associated with qtz-ca veins/veinlets.

<<Min: 25.2 - 39 1% Min: Sphalerite>> Thin stringers, concordant.

<<Min: 25.2 - 39 1% Min: Pyrite>> Thin stringers, concordant.

<<Min: 30 - 43.13 0.1% Min: Pyrrhotite>> Small aggregates distributed

<<Alt: 24 - 39 Strong (Alt) Muscovite>> Associated with strong foliation/fracturation

39.00 43.13 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown MCG

			39.00	40.50	1.50	B00265368	0.4	-0.005	0.01	-0.01	0.05

39 - 43.13: Brown/greenish, medium/coarse grained MAFi, strongly foliated and biotite altered (coarse flakes oriented with foliation). Also chlorite altered (pervasive). Strong CA associated with thin concordant veinlets and blebs/clots.

<<Min: 39 - 39.3 90% Min: Calcite>> Massive calcite vein

			40.50	42.00	1.50	B00265369	-0.3	-0.005	0.01	-0.01	0.03

<<Min: 39.3 - 43.13 12% Min: Calcite>> Veinlets and clots/blebs

			42.00	43.13	1.13	B00265371	-0.3	-0.005	0.02	-0.01	0.08

<<Alt: 39 - 43.13 Moderate (Alt) Chlorite>>

<<Alt: 39 - 43.13 Moderate (Alt) Biotite>>

<<Vein: 39 - 39.3 90% Calcite 40 deg. >> Massive calcite vein, regular, concordant, 40 ac.

<<Struc: 41.4 - 41.41 Moderate (Alt) dominant foliation>>

43.13 43.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MCG

			43.13	43.70	0.57	B00265372	263	1.26	0.16	2.49	9.26

43.13 - 43.7: Probably Krakatoa lens, Associated with OB domain, PY-SP-GL. Sharp contact.

<<Min: 43.13 - 43.7 4% Min: Sphalerite>> Massive sulphides, OB domain, MET 5, Krakatoa deposit.

<<Min: 43.13 - 43.7 70% Min: Pyrite>> Massive sulphides, OB domain, MET 5, Krakatoa deposit.

<<Min: 43.13 - 43.7 2% Min: Galena>> Massive sulphides, OB domain, MET 5, Krakatoa deposit.

<<Struc: 43.13 - 43.14 Contact>> Contact between MAFi and OB

From (m)	To (m)		Rocktype & Description		
43.70	**48.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FMG**

43.7 - 48: Green/brownish, fine to medium grained MAFi, moderately foliated and biotite altered (coarse flakes oriented with foliation, mainly concentred in the upper part of unit). Fine grained Matrix , chlorite altered (pervasive). Strong CA associated with thin concordant veinlets and blebs/clots.

<<Min: 43.7 - 48 5% Min: Calcite>> Veinlets and clots/blebs

<<Min: 43.7 - 50.4 0.5% Min: Pyrrhotite>> Distributed as small aggregates.

<<Alt: 43.7 - 48 Moderate (Alt) Chlorite>>

<<Alt: 43.7 - 48 Weak (Alt) Biotite>>

From (m)	To (m)		Rocktype & Description		
48.00	**49.98**	**RHY**	**undifferentiated rhyolite**	**green**	**FMG**

48 - 49.98: Beige to greenish (light), fine to medium grained RHY, comprising siliceous bands (+/- CA) concordant with foliation, planar texture (banded). Matrix moderately MU altered. Could be RHYc.

<<Alt: 49.97 - 62.45 Moderate (Alt) Chlorite>>

<<Alt: 49.97 - 62.45 Strong (Alt) Biotite>> MAFi, coarse grained (flakes)

<<Struc: 48.6 - 49.97 Moderate (Alt) Fault>> Interval comprising 2 short faults.

From (m)	To (m)		Rocktype & Description		
49.98	**50.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	**MCG**

49.98 - 50.4: Brownish, medium to coarse grained MAFi, strongly foliated and biotite altered (coarse flakes composed the matrix). Also weak chlorite altered (pervasive). Strong CA associated with thin concordant veinlets and blebs/clots.

<<Min: 50 - 62.45 12% Min: Calcite>> Associated with MAFi

From (m)	To (m)		Rocktype & Description		
50.40	**50.67**	**OI**	**Heavilly disseminated sulphides in host schist**		**CG**

50.4 - 50.67: Short narrow of massive sulphide within MAFi BI+, OI/MET6 domains, PY-PO-CP-SP mineralised at the margin of Qtz-Ca veins.

<<Min: 50.4 - 50.67 6% Min: Sphalerite>> At the margin of Qtz-Ca vein.

<<Min: 50.4 - 50.67 20% Min: Pyrite>> Coarse grained, localised at the margin of Qtz-Ca vein. OI

<<Min: 50.4 - 50.67 8% Min: Pyrrhotite>> Coarse grained, localised at the margin of Qtz-Ca vein. OI

<<Min: 50.4 - 50.67 5% Min: Chalcopyrite>> Aggregate at the margin of Qtz-Ca vein.

<<Vein: 50.4 - 50.67 50% Calcite>> Irregular and deformed Qtz-Ca vein, within semi to massive sulphide (OI).

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
43.70	45.00	1.30	B00265373	1.2	0.006	-0.01	0.02	0.07
45.00	46.50	1.50	B00265374	0.6	0.007	0.01	-0.01	0.02
46.50	48.00	1.50	B00265375	1.8	-0.005	-0.01	0.01	0.06
48.00	48.60	0.60	B00265376	1.3	0.006	-0.01	0.02	0.05
48.60	49.98	1.38	B00265377	2.2	0.015	-0.01	0.03	0.05
49.98	50.40	0.42	B00265378	0.7	-0.005	0.02	-0.01	0.08
50.40	50.80	0.40	B00265379	143	3.95	0.51	1.17	2.02

From (m)	To (m)	Rocktype & Description			
50.67	**64.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	**CG**

50.67 - 64: Brownish, medium to coarse grained MAFi, strongly foliated and biotite altered (coarse flakes composed the matrix). Also weak chlorite altered (pervasive), moderately from 55.2 to 59m. Strong CA associated with thin concordant veinlets and blebs/clots.
62.45-64m: Strong SI alteration (pervasive, MAFi bleached) associated with MU.

<<Min: 50.67 - 64 0.5% Min: Pyrrhotite>>

<<Min: 62.45 - 125.15 0.5% Min: Calcite>> Mainly associated with qtz veins/veinlets.

<<Struc: 56.3 - 57.2 Strong (Alt) Fault>> Fault Gouge (breccia). CL filled.

From (m)	To (m)	Rocktype & Description			
64.00	**125.15**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**grey**	**VFG**

64 - 125.15: Large unit of RHYi, grey to light grey, aphanitic to very fine grained, fractured unit and also locally micro cracked (consolidate), heterogeneous texture. From 64 to 66m, banded texture marked by parallel leucocratic bands. Mostly, the texture is more massive, homogeneous, with aphanitic matrix. QE, mm, disseminated within matrix. Locally, interval marked by diffused hematite. Mineralized, 1-2 % of py, occurring as thin stringers, filling fractures and also disseminated. Locally crosscut by grey qtz veins, irregular oriented, "stockwerk".

<<Min: 64 - 125.15 1% Min: Pyrite>> 1-2 % of py, occuring as thin stringers, filling fractures and also disseminated

<<Alt: 124.65 - 128.6 Moderate (Alt) Muscovite>> Marked by fracture surfaces. Associated with strong foliation.

<<Vein: 74.7 - 75 80% Quartz>> Massive grey qtz vein, discordant.

<<Vein: 120.65 - 122.6 20% Quartz>> Interval comprising multiple grey qtz veins, 1-3 cm cm, irregular oriented, weakly associated with CA. "stockwerk"

<<Struc: 68.7 - 69 Strong (Alt) Fault>> Fault Gouge (breccia), RHYi clasts.

<<Struc: 96.7 - 97.5 Moderate (Alt) Fault>> Interval strongly fractured associated with fault gouge.

<<Struc: 102.6 - 104 Weak (Alt) Fault>> Interval comprising multiple short faults.

<<Struc: 108.6 - 109.15 Strong (Alt) Fault>> Fault Gouge (breccia), RHYi clasts.

From (m)	To (m)	Rocktype & Description			
125.15	**128.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**	**FCG**

125.15 - 128.6: Grey to greenish (light), fine to coarse grained, moderately to strongly MU altered associated with strong foliation. Characterized by siliceous bands/veins, +/- CA, subconcordant, and also QE distributed within fine grained matrix. MAFi strongly MU altered or could be RHY. Gradual upper and lower contacts.

<<Min: 125.15 - 129.1 0.5% Min: Pyrite>>

<<Min: 125.15 - 129.1 2% Min: Calcite>> Associated with MAFi

<<Struc: 126.5 - 126.7 Strong (Alt) Fault>> Fault gouge.

From (m)	To (m)	Rocktype & Description			
128.60	**129.10**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**grey-green**	**FMG**

128.6 - 129.1: RHYi?

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
50.80	52.00	1.20	B00265381	0.4	0.005	-0.01	-0.01	0.03
52.00	53.50	1.50	B00265382	0.5	0.006	-0.01	-0.01	0.02
53.50	55.00	1.50	B00265383	0.4	0.007	-0.01	-0.01	0.01
125.15	126.50	1.35	B00265384	0.9	-0.005	-0.01	-0.01	-0.01
126.50	128.00	1.50	B00265385	0.8	0.008	-0.01	-0.01	-0.01
128.00	128.60	0.60	B00265386	0.9	-0.005	-0.01	-0.01	-0.01
128.60	129.10	0.50	B00265387	2.2	0.005	-0.01	0.02	0.02

From (m)	To (m)		Rocktype & Description		
129.10	**129.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MCG**

129.1 - 129.3: Short narrow of massive sulphides, OB/MET5 domain, PY-SP-GL.

<<Min: 129.1 - 129.3 40% Min: Pyrite>> Medium grained, bands.

<<Min: 129.1 - 129.3 5% Min: Pyrrhotite>> Associated with PY bands.

<<Min: 129.1 - 129.3 3% Min: Galena>> Associated with PY bands.

From (m)	To (m)		Rocktype & Description		
129.30	**130.85**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	**FCG**

129.3 - 130.85: Green/brownish, very fine to coarse grained MAFi, strongly foliated, biotite altered, flakes/clots of biotite distributed within strong CL altered matrix. Strong CA associated with thin concordant veinlets and blebs/clots, also pervasive.

<<Min: 129.3 - 129.6 4% Min: Pyrite>> Occuring as concordant bands, coarse grained.

<<Min: 129.3 - 129.6 3% Min: Pyrrhotite>> Occuring as concordant bands, coarse grained.

<<Min: 129.3 - 129.6 1% Min: Galena>> Associated with mineralized bands.

<<Min: 129.3 - 129.6 1% Min: Chalcopyrite>>

<<Min: 129.3 - 130.85 6% Min: Calcite>> Associated with MAFi

<<Min: 129.6 - 130.85 0.5% Min: Pyrrhotite>>

<<Alt: 129.3 - 130.85 Strong (Alt) Chlorite>> Within MAFi.

<<Struc: 130.25 - 130.85 Strong (Alt) Fault>> Fault gouge within MAFI. At contact with OB.

From (m)	To (m)		Rocktype & Description		
130.85	**131.06**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**FMG**

130.85 - 131.06: Short narrow of massive sulphides within MAFI, OB/MET5 domain, PY-CP(trace).

<<Min: 130.85 - 131.06 1% Min: Sphalerite>> OB

<<Min: 130.85 - 131.06 70% Min: Pyrite>> OB

<<Min: 130.85 - 131.06 0.5% Min: Chalcopyrite>>

From (m)	To (m)		Rocktype & Description		
131.06	**131.75**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FG**

131.06 - 131.75: Green, very fine to coarse grained MAFi, strongly foliated, Matrix is totally replace by CL, original alteration? Strong CA associated with thin concordant veinlets and blebs/clots, also pervasive. The lower contact with the RHY unit is gradual and brecciated, "peperitic texture".

<<Min: 131.06 - 131.75 2% Min: Pyrite>> Coarse grained.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
129.10	129.60	0.50	B00265388	143	0.291	0.05	1.8	4.68
129.60	130.85	1.25	B00265389	6.1	0.077	0.1	0.02	0.05
130.85	131.30	0.45	B00265391	69.1	0.38	0.45	0.55	1.62
131.30	131.75	0.45	B00265392	3.2	-0.005	-0.01	0.04	0.07

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 131.06 - 131.75 Strong (Alt) Chlorite>>									
131.75	**136.30**	**RHY undifferentiated rhyolite light grey FMG**	131.75	133.00	1.25	B00265393	-0.3	-0.005	-0.01	-0.01	0.01
		131.75 - 136.3: Light grey, fine to medium grained, strongly MU altered associated with strong foliation. Original alteration? Comprising siliceous bands, concordant, deformed and locally dismembered, associated with weak CA, marked a moderate banded texture which let thinking at a RHY cw sequence strongly foliated. RHYcw?									
		<<Min: 131.75 - 134.6 0.5% Min: Pyrite>>	133.00	134.50	1.50	B00265394	0.5	-0.005	-0.01	-0.01	0.01
		<<Min: 131.75 - 153 1% Min: Calcite>> Patchy and locally associated with qtz veins/bands.	134.50	135.60	1.10	B00265395	0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 134.6 - 136.3 1% Min: Pyrrhotite>>	135.60	136.30	0.70	B00265396	-0.3	-0.005	-0.01	-0.01	0.01
		<<Alt: 131.75 - 137.35 Moderate (Alt) Muscovite>> Marked by fracture surfaces. Associated with strong foliation.									
		<<Alt: 131.75 - 137.35 Weak (Alt) Chlorite>> Original?									
		<<Struc: 132 - 132.01 dominant foliation>>									
136.30	**141.00**	**MDSc Carbonaceous dominant mudstone black VFG**	136.30	136.80	0.50	B00265397	4.5	0.071	0.02	0.19	0.46
		136.3 - 141: Black to very dark grey, very fine grained, homogeneous, folded, bedding texture. Mudstone unit comprising very siliceous interval (Intense SI), grey, very homogeneous. 136.3-136.8m: Thin siliceous bands/beds, folded, associated with 5-6 % of py (stringers), syntectonic? 3-5 % of py in the rest of the unit (stringers and disseminated).									
		<<Min: 136.3 - 136.8 6% Min: Pyrite>> Occuring as Wisps/stringers parallel with foliation	136.80	138.00	1.20	B00265398	1.3	0.018	0.02	0.06	0.19
		<<Min: 136.8 - 139.25 3% Min: Pyrrhotite>> Dissiminated and as small wisps.	138.00	139.25	1.25	B00265399	1.9	0.007	0.01	0.13	0.31
		<<Min: 139.25 - 139.65 7% Min: Pyrite>>	139.25	139.65	0.40	B00265401	5.6	0.122	0.03	0.34	0.51
		<<Min: 139.25 - 139.65 4% Min: Pyrrhotite>>	139.65	141.00	1.35	B00265402	4.2	0.025	0.02	0.27	0.6
		<<Min: 139.65 - 141 3% Min: Pyrrhotite>> Dissiminated and as small wisps.									
141.00	**146.45**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey FMG**	141.00	142.50	1.50	B00265403	-0.3	-0.005	-0.01	0.01	0.04
		141 - 146.45: Light grey, fine to medium grained, moderately MU altered associated with moderate foliation (moderately crenulated). Original alteration? Comprising siliceous bands, concordant, deformed and locally dismembered, associated with weak CA, marked a moderate flow banded texture which let thinking at a RHYcw.									
		<<Min: 141 - 152.4 2% Min: Pyrrhotite>> Occuring as small wisps, oriented within foliation, locally thin stringers.	142.50	144.00	1.50	B00265404	-0.3	-0.005	-0.01	-0.01	0.01
		<<Alt: 141 - 153 Moderate (Alt) Muscovite>> Moderate to strong. Original?	144.00	145.00	1.00	B00265405	-0.3	-0.005	-0.01	-0.01	0.01
		<<Struc: 141 - 141.01 Contact>> Lower contact between MDSTc and RHY, sharp.	145.00	146.40	1.40	B00265406	-0.3	-0.005	-0.01	-0.01	-0.01
146.45	**153.00**	**RHYva Coarse grained to ash tuff light grey MCG**									
		146.45 - 153: Light grey, medium to coarse grained, +/- homogeneous, moderately foliated (regular cleavage). We observe <5 % of stretched siliceous fragments, deformed, lapilli relics? QE distributed within the matrix. 1-2 % of PO disseminated, occurring as wisps/stringers. Probably ash tuff with lapilli.									
		<<Struc: 152.4 - 153 Strong (Alt) Fault>> Fault gouge.									

Project: **KZK** **Hole Number:** **K15-313**

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

End of Hole @ 153

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-314

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	04-Nov-15
UTM Easting	414945.5	Core Size:	HQ3	Azimuth:	30	Date Logging Complete:	06-Nov-15
UTM Northing:	6815000.8	Casing Pulled?:	Yes	Dip:	-78	Drill Company:	Geotech
UTM Elev. (m):	1386.396	Casing Depth (m):	27	Length (m):	195	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	03-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	05-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

This hole hole collared into portions of the upper Krakatoa lens before encountering the lower lens. It continued through isolated MXSX lenses that have limited width between thick sequences of RHYi. Hole was extended to test the lower permissive contact of RHYi where hole K15-316 encountered MXSX. Geology encountered indicates that smaller, poorly developed lenses (<0.6m) as strongly disseminated sulphides (OI) exist between two well-formed massive sulphide lenses (>0.5m). The well formed massive sulphide lenses occur interleaved between thick intervals of RHYi. An unusual marker horizon of OI (143.71 - 149.60), which exists as interstitial or matrix replacement of py-gl-cpy-sph within a calcareous (?) or calcite rich breccia (with clasts of RHY and sulphide + calcite matrix. From 171.7 to 177.7 exists footwall-style alteration (chlorite-cordierite) associated with gl+sph (<3%). Remainder of hole was fine grained RHYv(a,l) with portions of strongly disseminated stratiform sulphides.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-78	30	0	30	APS	Florent Pons	04-Nov-15		☑	
39	-78.9	12.2	22.5	34.7	ReflexEZS	Geotech	04-Nov-15	5799	☑	
69	-79.5	9.9	22.5	32.4	ReflexEZS	Geotech	04-Nov-15	5790	☑	
96	-79.9	10.1	22.5	32.6	ReflexEZS	Geotech	05-Nov-15	5780	☑	
150	-81.5	11.6	22.5	34.1	ReflexEZS	Geotech	05-Nov-15	5705	☑	
180	-82.9	13.5	22.5	36	ReflexEZS	Geotech	06-Nov-15	5624	☑	
195	-84.8	16.3	22.5	38.8	ReflexEZS	Geotech	06-Nov-15	5772	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**26.00**	**OVBN Overburden**									
0 - 26: Casing at 27 m											
<<Struc: 25.67 - 26 Strong (Alt) Fault>>		Fault gouge (breccia)									

From (m)	To (m)	Rocktype & Description
26.00	**28.65**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**

26 - 28.65: Upper lens of Krakatoa deposit, OB/MET5 domain, Massive Py associated with bands of Sp. Seems to be hosted within RHY, strongly foliated felsic interval between 26.25-26.45m (fault?) was observed. Locally fractured.

<<Min: 26 - 27 4% Min: Sphalerite>> "patchy" within MS.

<<Min: 26 - 27 60% Min: Pyrite>> Massive sulphide, OB, medium grained.

<<Min: 26 - 27 2% Min: Galena>> "patchy" within MS.

<<Min: 26 - 28.65 5% Min: Calcite>> CA pervasive and patchy within MS.

<<Min: 27 - 27.5 3% Min: Sphalerite>> Occuring as concordant bands.

<<Min: 27 - 27.5 70% Min: Pyrite>> Massive sulphide, OB, medium grained.

<<Min: 27 - 27.5 0.5% Min: Galena>>

<<Min: 27.5 - 28 2% Min: Sphalerite>>

<<Min: 27.5 - 28 60% Min: Pyrite>>

<<Min: 27.5 - 28 4% Min: Galena>>

<<Min: 27.5 - 28 1% Min: Chalcopyrite>>

<<Min: 28 - 28.65 5% Min: Sphalerite>> Occuring as concordant bands.

<<Min: 28 - 28.65 70% Min: Pyrite>>

<<Alt: 26.25 - 26.45 Strong (Alt) Muscovite>> Associated with fault.

<<Alt: 27.5 - 27.85 Moderate (Alt) Cordierite>>

<<Struc: 26.25 - 26.45 Moderate (Alt) Fault>> Fault/intense foliation, interval of RHY.

From (m)	To (m)	Rocktype & Description
28.65	**29.20**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**

28.65 - 29.2: Interval of MAFi between massive sulphide, strongly CL altered (original) and cordierite altered. Cordierite occurring as surrounded porphyroblast, 0.5-2 cm size, moderately stretched. Comprising >25 % of bands/dismembered veins of calcite, concordant. Strongly mineralized (Py)

<<Min: 28.65 - 29.2 6% Min: Pyrite>> Coarse grained

<<Min: 28.65 - 29.5 12% Min: Calcite>> Occuring as bands/dismembered veins

<<Alt: 28.65 - 29.5 Strong (Alt) Chlorite>> Associated with strong foliated MAFi.

<<Alt: 28.65 - 29.5 Strong (Alt) Cordierite>> Cordierite occuring as subrounded porphyroblates, 0.5-2 cm size, moderately stretched.

<<Struc: 28.8 - 28.81 Strong (Alt) dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
26.00	27.00	1.00	B00265407	423	4.2	0.47	1.11	3.36
27.00	27.50	0.50	B00265408	469	2.38	0.19	4.97	10.8
27.50	27.85	0.35	B00265409	463	4.33	0.52	1.93	5.99
27.85	28.65	0.80	B00265411	271	1.42	0.3	2.15	9.23
28.65	29.20	0.55	B00265412	8.2	0.05	0.01	0.07	0.11

From (m)	To (m)		Rocktype & Description		
29.20	**29.50**	**OI**	**Heavilly disseminated sulphides in host schist**		**CG**

29.2 - 29.5: Stringers of Py within altered MAFI (CL and cordierite). At the contact with short lens of massive sulphide (OB).

<<Min: 29.2 - 29.5 1% Min: Sphalerite>>

<<Min: 29.2 - 29.5 12% Min: Pyrite>> Occuring as stringers. OI

<<Struc: 29.2 - 29.5 Moderate (Alt) Fault>> Fault interval at the contact with MS.

29.50	**29.85**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MG**

29.5 - 29.85: Lens of massive sulphide hosted within MAFi.

<<Min: 29.5 - 29.85 2% Min: Sphalerite>>

<<Min: 29.5 - 29.85 70% Min: Pyrite>> OB

<<Min: 29.5 - 29.85 1% Min: Galena>> Galena ?

29.85	**67.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green-brown**	**CG**

29.85 - 67.6: Large interval of mafic unit, massive, moderately foliated (DFOL ~ 40 ac). Marked by porphyroblast of biotite (from 57.75m to 65.6m) and chlorite (clots), mm to cm, distributed and oriented within fine grained matrix moderately chlorite altered. Strong calcite alteration, occurring as thin subconcordant veinlets and porphyroblast/blebs. Also comprising minor faults gouge.

<<Min: 29.85 - 67.6 0.1% Min: Pyrite>> Trace of Py, coarse grained.

<<Min: 29.85 - 67.6 0.1% Min: Pyrrhotite>> Rare trace.

<<Min: 29.85 - 67.6 10% Min: Calcite>> Occuring as porphyroblats distributed within matrix (also pervasive altered) and as thin veinlets/fracture filling.

<<Alt: 29.85 - 57.75 Moderate (Alt) Chlorite>> MAFI

<<Alt: 57.75 - 65.6 Weak (Alt) Chlorite>> MAFi

<<Alt: 57.75 - 65.6 Moderate (Alt) Biotite>> Porphyroblats of BI, coarse grained, distributed within matrix.

<<Struc: 38 - 38.01 Strong (Alt) dominant foliation>>

<<Struc: 45 - 45.01 Moderate (Alt) dominant foliation>>

<<Struc: 63.1 - 63.55 Strong (Alt) Fault>> Fault (clay gouge)

<<Struc: 66.2 - 67.6 Strong (Alt) Fault>> Fault interval, gouge at the contact with massive sulphide.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
29.20	29.85	0.65	B00265413	188	0.798	0.07	1.47	5.2
29.85	31.00	1.15	B00265414	0.8	-0.005	0.03	0.01	0.05
31.00	32.50	1.50	B00265415	1.7	-0.005	-0.01	-0.01	0.02
32.50	34.00	1.50	B00265416	265	1.18	0.02	0.02	0.02
62.00	63.00	1.00	B00265417	-0.3	-0.005	-0.01	-0.01	0.01
63.00	65.00	2.00	B00265418	0.4	-0.005	-0.01	0.01	0.02
65.00	66.00	1.00	B00265419	0.4	0.006	-0.01	-0.01	0.01
66.00	66.50	0.50	B00265421	0.5	0.007	0.01	-0.01	0.02
66.50	67.60	1.10	B00265422	65.4	0.241	0.12	0.83	1.25

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
67.60	**75.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	67.60	68.50	0.90	B00265423	417	1.85	0.18	5.03	9.87
67.6 - 75: Massive sulphide, Py-Sp-GL with trace of Cp, OB/MET 5 domain. Locally fractured, comprising fault gouge.											
<<Min: 67.6 - 71.4 10% Min: Sphalerite>> Homogeneous texture, massive, medium grained, locally weakly laminated marked by bands of SP.			68.50	69.50	1.00	B00265424	336	1.79	0.23	2.61	12
<<Min: 67.6 - 71.4 70% Min: Pyrite>> Homogeneous texture, massive, medium grained, locally weakly laminated marked by bands of SP.			69.50	71.00	1.50	B00265425	115	1.14	0.18	2.2	6.91
<<Min: 67.6 - 71.4 3% Min: Galena>>			71.00	71.40	0.40	B00265426	327	2.83	0.2	3.21	13.3
<<Min: 67.6 - 74 5% Min: Calcite>>			71.40	72.00	0.60	B00265427	306	3.23	0.26	2.85	9.33
<<Min: 71.4 - 73.75 5% Min: Sphalerite>> Homogeneous texture, massive, medium grained, locally weakly laminated marked by bands of SP.			72.00	73.75	1.75	B00265428	296	2.06	0.19	3.35	7.98
<<Min: 71.4 - 73.75 70% Min: Pyrite>> Homogeneous texture, massive, medium grained, locally weakly laminated marked by bands of SP.			73.75	74.20	0.45	B00265429	143	1.81	0.5	1.36	5.44
<<Min: 71.4 - 73.75 3% Min: Galena>>			74.20	75.00	0.80	B00265431	170	1.27	0.45	1.64	7.18
<<Min: 73.75 - 74.2 4% Min: Sphalerite>>											
<<Min: 73.75 - 74.2 60% Min: Pyrite>> Interval weakly fractured/brecciated filling by calcite and cordierite?											
<<Min: 73.75 - 74.2 5% Min: Galena>>											
<<Min: 73.75 - 74.2 2% Min: Chalcopyrite>>											
<<Min: 74 - 75 8% Min: Calcite>> Also pervasive.											
<<Min: 74.2 - 75 8% Min: Sphalerite>> Bands, marked a weak laminated texture.											
<<Min: 74.2 - 75 70% Min: Pyrite>>											
<<Min: 74.2 - 75 4% Min: Galena>>											
<<Alt: 73.75 - 74.2 Weak (Alt) Cordierite>> Porphyroblast of CI ?											
<<Struc: 68.7 - 70.9 Strong (Alt) Fault>> Fault within massive sulphide, gouge, filling by sericite/MU.											
<<Struc: 72.45 - 73.75 Moderate (Alt) Fault>> Interval strongly fractured, comprising gouge.											
75.00	**86.55**	**MAFi** **Mafic Intrusions (primarily green-brown footwall mafic intrusion)** **MCG**	75.00	76.50	1.50	B00265432	1.1	0.006	-0.01	0.02	0.03
75 - 86.55: Interval of mafic unit, massive, moderately foliated (DFOL ~ 45 ac). Marked by porphyroblast of biotite (from 83 to 86.55m) and chlorite (clots), mm to cm, distributed and oriented within fine grained matrix moderately chlorite altered. Strong calcite alteration, occuring as thin subconcordant veinlets and porphyroblast/blebs. Also comprising minor faults gouge.											
<<Min: 75 - 78 8% Min: Calcite>> Occuring as porphyroblats distributed within matrix (also pervasive altered) and as thin veinlets/fracture filling.			76.50	78.00	1.50	B00265433	0.9	0.006	-0.01	-0.01	0.02
<<Min: 75 - 86.55 0.1% Min: Pyrite>>			78.00	79.00	1.00	B00265434	3	0.017	-0.01	0.03	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 78 - 83 5% Min: Calcite>> Occuring as porphyroblats distributed within matrix (also pervasive altered) and as thin veinlets/fracture filling.

<<Min: 83 - 86.55 12% Min: Calcite>> Occuring as porphyroblats distributed within matrix (also pervasive altered) and as thin veinlets/fracture filling.

<<Alt: 76.5 - 86.55 Moderate (Alt) Chlorite>> MAFi

<<Alt: 83 - 86.55 Moderate (Alt) Biotite>> Porphyroblats of BI, coarse grained, distributed and oriented within matrix.

<<Struc: 75.3 - 75.31 Moderate (Alt) dominant foliation>> Marked by BI.

<<Struc: 80.1 - 80.11 Moderate (Alt) dominant foliation>> Marked by BI.

<<Struc: 86 - 86.01 Moderate (Alt) dominant foliation>> Marked by BI.

86.55 89.00 RHY undifferentiated rhyolite light grey FMG

86.55 - 89: Grey, fine to medium grained, moderately foliated and Mu altered. Comprising siliceous bands,concordant, partially dismembered, banded texture. Probably RHY interval, cw?

<<Min: 86.55 - 89 1% Min: Pyrite>> Also associated with Vn.

<<Min: 86.55 - 89 6% Min: Calcite>>

<<Vein: 86.6 - 86.7 95% Quartz 80 deg. >> Regular qtz-ca vein, grey, unmineralized.

89.00 95.35 RHYi Aphanitic Rhyolite (intrusion) light grey VFG

93.00	94.50	1.50	B00265435	2.2	0.012	-0.01	0.09	0.1

89 - 95.35: Unit of RHYi, grey to light grey,massive, aphanitic to very fine grained, fractured unit, homogeneous texture. Mineralized, 1-2 % of py, occurring as thin stringers, filling fractures and also disseminated.

<<Min: 89 - 95.35 2% Min: Pyrite>> Occuring as stringers and also disseminated

94.50	95.35	0.85	B00265436	1.3	-0.005	-0.01	0.02	0.03

<<Alt: 89 - 95.35 Weak (Alt) Albite>> Diffused, bleached.

95.35 97.35 RHYvl Lapilli tuff light grey FCG

95.35	96.50	1.15	B00265437	8.4	0.021	-0.01	0.12	0.11

95.35 - 97.35: Light grey, fine to coarse grained, weakly foliated, competent unit. Siliceous fragments are distributed within homogeneous fine grained matrix, organised as bands, weakly oriented with foliation, lapilli?

<<Min: 95.35 - 97.35 1% Min: Pyrite>>

96.50	97.35	0.85	B00265438	1.9	0.006	-0.01	0.02	0.03

<<Alt: 96.8 - 97.35 Moderate (Alt) Chlorite>>

<<Vein: 96.4 - 97.25 20% Quartz 80 deg. >> Interval comprising group of discordant qtz-+/-Ca veins, deformed, margins Cl altered (Original?)

<<Struc: 95.35 - 95.36 Contact>> Gradual contact between RHYi and RHYvl.

97.35 97.70 OI Heavilly disseminated sulphides in host schist MG

97.35	97.70	0.35	B00265439	287	0.851	0.06	3.13	5.71

97.35 - 97.7: OI, strongly Ca altered (pervasive), Py-Gl-Sp. Sharp contact, ~45 ac.

<<Min: 97.35 - 97.7 3% Min: Sphalerite>> OI interval

<<Min: 97.35 - 97.7 60% Min: Pyrite>> Medium grained, OI interval.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 97.35 - 97.7 5% Min: Galena>> OI interval

<<Min: 97.35 - 97.7 10% Min: Calcite>> Pervasive within OI interval.

<<Struc: 97.35 - 97.36 Contact>> Sharp contact (upper) between RHYvl and OI.

97.70	**98.60**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**	**MG**	97.70	98.60	0.90	B00265441	5.1	0.024	-0.01	0.06	0.07

97.7 - 98.6: Light grey, fine to medium grained, weakly foliated. Comprising siliceous bands, parallel, well preserved, within homogeneous fine grained matrix, flow banded texture? Probably RHYcw.

<<Min: 97.7 - 102 1% Min: Calcite>> Trace.

<<Min: 97.7 - 102.9 2% Min: Pyrite>> Finely disseminated within matrix.

<<Alt: 97.7 - 103.85 Weak (Alt) Chlorite>> Original?

<<Struc: 97.7 - 97.71 Contact>> Sharp contact (Lower) between OI and RHYcw

98.60	**103.85**	**RHYvl**	**Lapilli tuff**	**light grey**	**FCG**	98.60	100.00	1.40	B00265442	1.7	0.006	-0.01	0.02	0.02

98.6 - 103.85: Light grey, fine to coarse grained, moderately foliated and fractured. >20 % of siliceous fragments are distributed within homogeneous fine grained matrix (weakly MU altered), weakly oriented with foliation, lapilli?

<<Min: 102.9 - 104.3 4% Min: Pyrite>> At the selvages of Qtz-Ca veins and also as stringers.

						100.00	101.00	1.00	B00265443	0.4	0.006	-0.01	-0.01	-0.01

103.85	**106.30**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-green**	**VFG**								

103.85 - 106.3: Grey to greenish, very fine grained, homogeneous, strong pervasive Cl/Mu alterations. Comprising deformed/dismembered Ca veinlets, porphyroblats of calcite distributed within matrix. Probably MAFi. Could be a altered ash tuff very fine grained.

<<Min: 104.3 - 108.2 2% Min: Pyrite>> Disseminated and stringers

<<Alt: 103.85 - 106.3 Weak (Alt) Muscovite>> Matrix totally altered.

<<Alt: 103.85 - 106.3 Moderate (Alt) Chlorite>> Matrix totally altered.

106.30	**122.70**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**beige**	**VFG**	122.00	122.70	0.70	B00265444	1.4	0.006	-0.01	-0.01	0.01

106.3 - 122.7: Unit of RHYi, beige to light grey,massive, aphanitic to very fine grained, locally fractured but mostly competent, homogeneous texture. Very siliceous and moderate to strongly albite altered (diffused). Mineralized, 1-2 % of py, occurring as thin stringers, filling fractures and also disseminated.

<<Min: 108.2 - 122.7 3% Min: Pyrite>> Disseminated and occuring as thin stringers +/- parallel with foliation.

<<Alt: 108.5 - 117.5 Moderate (Alt) Albite>> Diffused, beige colored.

<<Alt: 117.5 - 120.1 Strong (Alt) Albite>> Diffused, beige/pinkish colored.

<<Alt: 120.1 - 122.7 Moderate (Alt) Albite>> Diffused, beige colored.

<<Struc: 120 - 120.01 Weak (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
122.70	**123.75**	**RHY** **undifferentiated rhyolite** **grey-green**		**FMG**	122.70	123.75	1.05	B00265445	1.2	0.007	-0.01	-0.01	-0.01
122.7 - 123.75: Rhy? RHYva? Fine grained, homogeneous, strongly foliated and MU altered.													
<<Min: 122.7 - 123.75 2% Min: Pyrite>>													
<<Alt: 122.7 - 123.75 Strong (Alt) Muscovite>> Associated with strong foliation													
<<Struc: 123 - 123.01 Strong (Alt) dominant foliation>>													
123.75	**128.15**	**RHYi** **Aphanitic Rhyolite (intrusion)** **beige**		**VFG**	123.75	124.70	0.95	B00265446	14.5	0.103	0.02	0.11	0.12
123.75 - 128.15: Unit of RHYi, beige to light grey,massive, aphanitic to very fine grained, mostly competent, homogeneous texture. Very siliceous and moderate to strongly albite altered (diffused). Mineralized, 5-20 % of py, occurring as thin stringers, filling fractures and concordant/parallel bands close from massive sulphide.													
<<Min: 123.75 - 126.75 6% Min: Pyrite>> Disseminated and occuring as thin stringers +/- parallel with foliation and fracture filling.					124.70	125.50	0.80	B00265447	6.4	0.054	-0.01	0.05	0.06
<<Min: 126.75 - 128.15 18% Min: Pyrite>> 15-20 %. Disseminated (medium/coarse grained) and occuring as bands/stringers, parallel with foliation and fracture filling. Semi massive at the margins of Qtz vein.					125.50	126.75	1.25	B00265448	25.7	0.085	0.02	0.16	0.16
<<Alt: 123.75 - 125.5 Strong (Alt) Albite>> Diffused, beige/pinkish colored.					126.75	128.15	1.40	B00265449	129	2.07	0.36	0.16	0.27
<<Alt: 125.5 - 126.75 Moderate (Alt) Albite>>													
<<Vein: 125.5 - 126.2 70% Quartz 40 deg. >> Massive grey qtz vein, strong Py at the margins associated with Sp/GL.													
128.15	**129.30**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MG**	128.15	128.70	0.55	B00265451	210	0.968	0.15	3.64	5.65
128.15 - 129.3: Massive sulphide interval, OB domain, massive py associated with Sp and weak galena. Pervasive calcite. Sharp contact.													
<<Min: 128.15 - 129.3 10% Min: Sphalerite>> Occuring as subparallel bands.					128.70	129.30	0.60	B00265452	346	12.17	0.37	4.86	8.21
<<Min: 128.15 - 129.3 70% Min: Pyrite>> OB, medium grained.													
<<Min: 128.15 - 129.3 3% Min: Galena>> Difficult to estimate.													
<<Min: 128.15 - 129.3 10% Min: Calcite>> Pervasive within massive sulphide.													
129.30	**134.14**	**RHYi** **Aphanitic Rhyolite (intrusion)** **grey**		**VFG**	129.30	130.40	1.10	B00265453	92.1	0.723	0.23	0.02	0.04
129.3 - 134.14: Unit of RHYi, beige to light grey,massive, aphanitic to very fine grained, locally fractured but mostly competent, homogeneous texture. Very siliceous. Mineralized, 1-3 % of py, occurring as thin stringers, filling fractures and also disseminated.													
<<Min: 129.3 - 134.15 2% Min: Pyrite>> Disseminated and occuring as thin stringers +/- parallel with foliation and fracture filling.					130.40	131.50	1.10	B00265454	6.5	0.114	0.01	0.03	0.02
<<Alt: 133 - 134.57 Moderate (Alt) Muscovite>> Sr/Mu pervasive.					131.50	133.00	1.50	B00265455	0.8	0.008	-0.01	-0.01	-0.01
<<Struc: 129.3 - 129.31 Contact>> Sharp lower contact between massive sulphide/RHYi.					133.00	134.15	1.15	B00265456	6.8	0.062	-0.01	0.07	0.1

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
134.14	**134.57**	**OI**	**Heavilly disseminated sulphides in host schist**		**MG**	134.15	134.57	0.42	B00265457	128	0.387	0.03	2.12	5.2

134.14 - 134.57: OI, medium grained. Mineralized bands, parallel with foliation. Hosted by RHYi.

<<Min: 134.15 - 134.57 8% Min: Sphalerite>> OI, medium to coarse grained, occuring as parallel bands (with foliation)

<<Min: 134.15 - 134.57 15% Min: Pyrite>> OI, medium to coarse grained, occuring as parallel bands (with foliation)

<<Min: 134.15 - 134.57 4% Min: Galena>>

134.57	**134.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MG**	134.57	135.35	0.78	B00265458	110	0.732	0.04	1.65	2.95

134.57 - 134.7: OB, moderate laminated texture. Ca pervasive

<<Min: 134.57 - 134.7 10% Min: Sphalerite>> OB

<<Min: 134.57 - 134.7 60% Min: Pyrite>> OB, medium grained

<<Min: 134.57 - 134.7 4% Min: Galena>>

134.70	**135.35**	**OI**	**Heavilly disseminated sulphides in host schist**		**MG**

134.7 - 135.35: OI, medium grained. Mineralized bands, parallel with foliation. Hosted by RHYi.

<<Min: 134.7 - 135.35 10% Min: Sphalerite>> OI, medium to coarse grained, occuring as parallel bands (with foliation)

<<Min: 134.7 - 135.35 20% Min: Pyrite>> OI, medium to coarse grained, occuring as parallel bands (with foliation)

<<Min: 134.7 - 135.35 3% Min: Galena>>

135.35	**136.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MG**	135.35	136.00	0.65	B00265459	180	0.642	0.08	2.02	4.6

135.35 - 136: OB, moderate laminated texture. Ca pervasive

<<Min: 135.35 - 136 3% Min: Sphalerite>> OB, medium grained

<<Min: 135.35 - 136 60% Min: Pyrite>> OB, medium grained

<<Min: 135.35 - 136 1% Min: Galena>>

136.00	**143.71**	**RHYi**	**Aphanitic Rhyolite (intrusion)**	**light grey**	**VFG**	136.00	137.00	1.00	B00265461	13	0.06	-0.01	0.07	0.28

136 - 143.71: Unit of RHYi, beige to light grey,massive, aphanitic to very fine grained, locally fractured but mostly competent, homogeneous texture. Very siliceous. Mineralized, 1-3 % of py, occurring as thin stringers, filling fractures and also disseminated.

<<Min: 136 - 136.6 10% Min: Pyrite>> Occuring as bands parallel with foliation.						137.00	138.00	1.00	B00265462	0.9	-0.005	-0.01	0.01	0.03

From (m)	To (m)	Rocktype & Description		
		<<Min: 136.6 - 142.15 1% Min: Pyrite>> Also thin stringers.		
		<<Min: 142.5 - 143.2 4% Min: Pyrite>> Disseminated and occuring as thin stringers/fracture filling.		
		<<Min: 143.2 - 143.71 0.5% Min: Pyrite>>		
		<<Alt: 136 - 138.5 Moderate (Alt) Muscovite>> Sr/Mu pervasive.		
		<<Struc: 138 - 138.01 Moderate (Alt) dominant foliation>>		
143.71	**149.60**	**OI**	**Heavilly disseminated sulphides in host schist**	**FCG**

143.71 - 149.6: Large OI unit, strongly Calcite altered (pervasive/fracture filling), seems hosted within brecciated/fragmented RHY (RHYi?), SI pervasive. Strong mineralization, stringers/fracture filling, weakly laminated texture, fine to coarse grained, locally aggregates. Qtz-ca-+/-Dol associated as fracture filling.

		<<Min: 143.71 - 149.6 6% Min: Sphalerite>> Aggregates distributed, fracture filling.		
		<<Min: 143.71 - 149.6 30% Min: Pyrite>> Occuring as large aggregates/fracture filling and also disseminated.		
		<<Min: 143.71 - 149.6 10% Min: Galena>>		
		<<Min: 143.71 - 149.6 3% Min: Chalcopyrite>> Irreguraly disseminated within interval, locally as small aggregates.		
		<<Min: 143.71 - 149.6 10% Min: Calcite>> Pervasive and fracture filling.		
149.60	**153.95**	**RHY**	**undifferentiated rhyolite**	**grey-green** **FG**

149.6 - 153.95: Light greenish, fine grained, foliated, strongly MU altered. Moderate banded texture marked by thin siliceous bands, concordant, locally dismembered. Felsic unit, probably RHY,ash?

		<<Min: 149.6 - 153.95 1% Min: Pyrite>>		
		<<Min: 149.6 - 153.95 3% Min: Calcite>> Ca veinlets.		
		<<Alt: 149.6 - 153.95 Strong (Alt) Muscovite>>		
		<<Struc: 149.6 - 149.61 Contact>> Sharp lower contact between massive sulphide OI /RHY.		
		<<Struc: 153 - 153.01 Strong (Alt) dominant foliation>>		
153.95	**154.40**	**OI**	**Heavilly disseminated sulphides in host schist**	**CG**

153.95 - 154.4: OI at the contact between RHY and MAFI.

		<<Min: 153.95 - 154.4 4% Min: Sphalerite>> Coarse grained.
		<<Min: 153.95 - 154.4 20% Min: Pyrite>> Occuring as bands, coarse grained.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
138.00	139.00	1.00	B00265463	0.7	-0.005	-0.01	-0.01	-0.01
139.00	140.00	1.00	B00265464	0.6	0.016	-0.01	-0.01	-0.01
140.00	141.50	1.50	B00265465	0.7	-0.005	-0.01	-0.01	-0.01
141.50	142.15	0.65	B00265466	0.5	-0.005	-0.01	-0.01	-0.01
142.15	143.20	1.05	B00265467	2.3	0.202	-0.01	0.01	-0.01
143.20	143.70	0.50	B00265468	1.5	-0.005	-0.01	0.01	0.01
143.70	144.50	0.80	B00265469	207	1.94	0.3	0.57	7.69
144.50	145.50	1.00	B00265471	292	1.6	0.32	0.94	9.47
145.50	146.50	1.00	B00265472	318	3.25	0.78	3.62	5.39
146.50	147.50	1.00	B00265473	246	2.63	0.58	3.08	5.33
147.50	148.50	1.00	B00265474	378	1.94	0.24	4.34	6.24
148.50	149.60	1.10	B00265475	141	0.833	0.13	1.74	4.21
149.60	150.70	1.10	B00265476	4.3	0.006	0.03	-0.01	0.02
150.70	152.00	1.30	B00265477	0.8	0.005	-0.01	-0.01	-0.01
152.00	153.00	1.00	B00265478	0.4	-0.005	-0.01	0.01	-0.01
153.00	153.95	0.95	B00265479	0.6	-0.005	-0.01	-0.01	-0.01
153.95	154.40	0.45	B00265481	43.9	0.379	0.08	0.72	3.84

From (m)	To (m)	Rocktype & Description			
154.40	**156.10**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FMG**

154.4 - 156.1: Interval of mafic unit, moderately/strongly foliated (DFOL ~ 55 ac). Porphyroblast of biotite (from 154.4 to 154.7m) , mm to cm, distributed and oriented within fine grained matrix moderately chlorite altered. Strong calcite alteration, occuring as thin subconcordant veinlets and porphyroblats/blebs. Also comprising minor faults gouge.

<<Min: 154.4 - 156.1 0.5% Min: Pyrite>>

<<Min: 154.4 - 156.1 10% Min: Calcite>> Blebs/veinlets

<<Alt: 154.4 - 154.7 Moderate (Alt) Biotite>>

<<Alt: 154.4 - 156.1 Strong (Alt) Chlorite>> Original?

<<Struc: 154.4 - 154.41 Contact>> Sharp lower contact between OI and MAFi.

<<Struc: 155.5 - 155.51 Strong (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description			
156.10	**156.70**	**OG**	**Chalcopyrite rich sulphides**		**FCG**

156.1 - 156.7: Interval of massive sulphide, MAFi hosted, Cp rich, essentially mineralized at the lower part of the unit as aggregates. Porphyroblats of cordierite are distributed within the mxsx and at the margins.

<<Min: 156.1 - 156.7 4% Min: Sphalerite>>

<<Min: 156.1 - 156.7 70% Min: Pyrite>> OG, medium to coarse grained (At the margins)

<<Min: 156.1 - 156.7 3% Min: Galena>>

<<Min: 156.1 - 156.7 10% Min: Chalcopyrite>> Concentrated at the margins of the mxsx as aggregates/patch.

<<Min: 156.1 - 195 1% Min: Calcite>> Locally associated with veinlets.

<<Alt: 156.1 - 156.7 Weak (Alt) Cordierite>> Small CI porphyroblasts distributed within mxsx and at the margins.

From (m)	To (m)	Rocktype & Description			
156.70	**157.70**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**	

156.7 - 157.7: Short sequence of RHY cw, flow banded texture well conserved. Strongly MU altered associated with strong foliation.

<<Min: 156.7 - 160 0.5% Min: Pyrite>>

<<Min: 156.7 - 160 3% Min: Pyrrhotite>> Small wisps of PO distributed within the matrix, oriented.

<<Alt: 156.7 - 171.7 Strong (Alt) Muscovite>> Original alteration?

<<Struc: 156.7 - 156.71 Contact>> Sharp lower contact between OG and RHY.

<<Struc: 156.7 - 157.7 Weak (Alt) Fault>> Strong foliation associated with minor fault gouge.

From (m)	To (m)	Rocktype & Description			
157.70	**180.20**	**RHYv**	**Rhyolite volcaniclastic**	**light grey**	**MCG**

157.7 - 180.2: Light grey, medium to coarse grained, +/- homogeneous texture. Unit strongly MU altered (original), associated with strong foliation. Locally, we observe dismembered bands/lapilli? Volcanoclastic sequence, coarse grained ash tuff with trace of lapilli?. 1-2 % of Po (wisps).

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
154.40	155.60	1.20	B00265482	2.3	0.022	-0.01	0.03	0.07
155.60	156.10	0.50	B00265483	36.2	0.232	0.03	0.55	0.21
156.10	156.70	0.60	B00265484	132	3.85	2.6	0.76	4.45
156.70	157.70	1.00	B00265485	5.7	0.141	0.06	0.06	0.11
157.70	159.00	1.30	B00265486	-0.3	0.009	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description

<<Min: 160 - 171.7 2% Min: Pyrrhotite>>

<<Min: 171.7 - 174.15 3% Min: Pyrrhotite>>

<<Min: 174.15 - 176.4 5% Min: Pyrrhotite>> Occuring as bands associated with CL/CI.

<<Min: 174.15 - 176.4 1% Min: Galena>> Associated with CL/CI alteration.

<<Min: 176.4 - 177.7 2% Min: Pyrrhotite>>

<<Min: 177.7 - 186.8 2% Min: Pyrite>> Bands/wisps

<<Alt: 157.7 - 159 Weak (Alt) Chlorite>> Weakly diffused.

<<Alt: 171.7 - 177.7 Strong (Alt) Chlorite>> Occuring as subconcordant bands, very fine grained, usually associated with porphyrobast of cordierite and Po, locally galena.

<<Alt: 171.7 - 177.7 Weak (Alt) Cordierite>> Porphyroblast of cordierite associated with bands of chlorite and PO.

<<Alt: 177.7 - 195 Moderate (Alt) Muscovite>> Original?

<<Struc: 175 - 175.01 Moderate (Alt) dominant foliation>>

180.20 195.00 RHYvl Lapilli tuff light grey

180.2 - 195: Light grey, medium to coarse grained. Unit moderately MU altered (original), associated with strong foliation. Locally, we observe dismembered siliceous bands/lapilli? Marked by heterogeneous QE distributed within matrix. Volcanoclastic sequence, coarse grained ash tuff with trace of lapilli?. 1-2 % of Po/py (wisps).

<<Min: 186.8 - 195 1% Min: Pyrite>> Coarse grained

<<Min: 186.8 - 195 3% Min: Pyrrhotite>>

<<Struc: 183 - 183.01 Moderate (Alt) dominant foliation>>

<<Struc: 185.7 - 186.4 Strong (Alt) Fault>> Fault gouge

<<Struc: 191.2 - 191.5 Moderate (Alt) Fault>> Fault gouge

<<Struc: 192 - 192.01 Moderate (Alt) dominant foliation>>

End of Hole @ 195

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
159.00	160.50	1.50	B00265487	0.5	0.009	-0.01	0.01	0.02
174.13	175.50	1.37	B00265488	1.1	0.006	0.01	-0.01	0.55
175.50	176.45	0.95	B00265489	-0.3	-0.005	0.03	-0.01	1.3

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-315

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	04-Nov-15
UTM Easting	415108	Core Size:	HQ3	Azimuth:	210.76	Date Logging Complete:	06-Nov-15
UTM Northing:	6815066	Casing Pulled?:	Yes	Dip:	-48	Drill Company:	Geotech
UTM Elev. (m):	1392.95	Casing Depth (m):	8	Length (m):	210	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	02-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	06-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-315 was drilled as an exploration hole to confirm the continuity and extent of the Krakatoa zone.
K15-315 encountered a felsic hanging wall package, consisting of mixed volcaniclastic and coherent rhyolite, as well as narrow BI+CA schist horizons, to a depth of 98.8 m. Strong muscovite alteration begins at ~69 m and persists to the first massive sulphide lens (98.8-104 m), which consists of OJ, OA, and OB, respectively. Below the first MSXS lens, there is strongly muscovite altered rhyolite to 107 m, followed by MAFi to 122.8 m. From 122.8-122.9 m there is an intersection of OJ mineralization, followed by strongly muscovite altered rhyolite to 128.7 m. MAFi is encountered from 128.7-133.9 m. Below this MAFi a second (mafic-hosted) MSXS lens occurs from 133.9-144.4 m, consisting of OA, OB, and OI. RHYi with MU+QZ schists on either side, occurs from 144.4-177.6 m. Another MSXS lens occurs from 177.6-183.1 m, consisting OA, OJ, and OC, and a ~.5 m section of MAFi. The hanging wall package of the lowest sulphide lens consists of strongly muscovite altered, volcaniclastic and coherent rhyolites to a final depth of 210 m (E.O.H.).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-48	210.76	0	210.76	APS	Dillon Hume	02-Nov-15		☑	
41	-47.8	191.8	22.5	214.3	ReflexEZS	Geotech	03-Nov-15	5764	☑	
83	-47.8	193.7	22.5	216.2	ReflexEZS	Geotech	04-Nov-15	5768	☑	
113	-48.1	194.4	22.5	216.9	ReflexEZS	Geotech	04-Nov-15	5768	☑	
152	-48.4	193.6	22.5	216.1	ReflexEZS	Geotech	05-Nov-15	5771	☑	
176	-48.7	197.4	22.5	219.9	ReflexEZS	Geotech	05-Nov-15	5758	☑	
200	-49.4	195	22.5	217.5	ReflexEZS	Geotech	05-Nov-15	5750	☑	
210	-49.3	192.9	22.5	215.4	ReflexEZS	Geotech	05-Nov-15	5746	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.90**	**OVBN Overburden**									
6.90	**7.40**	**RHYc Rhyolite coherant volcanics**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

7.40 11.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

7.4 - 11.9: BI+CA schist

<<Min: 7.4 - 11.9 15% Min: Calcite>>

<<Min: 7.4 - 27 0.5% Min: Pyrite>>

11.90 27.00 RHYi Aphanitic Rhyolite (intrusion)

11.9 - 27: Pink-grey aphanitic rhyolite. Upper contact shows minor porphyritic texture (RHYc?) and asymmetric crenulations.

<<Min: 11.9 - 27 2% Min: Calcite>>

27.00 28.40 RHYvl Lapilli tuff

27 - 28.4: CA lpl in fine grained, grey ash tuff

<<Min: 27 - 28.4 1% Min: Pyrite>>

<<Min: 27 - 28.4 10% Min: Calcite>>

28.40 31.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

28.4 - 31: BI+CA+/-CL schist

<<Min: 28.4 - 31 0.5% Min: Pyrite>>

<<Min: 28.4 - 31 15% Min: Calcite>>

31.00 34.60 RHYc Rhyolite coherant volcanics

31 - 34.6: Silica banded on both upper and lower lens, with pink-grey aphanitic rhyolite (RHYi) in the center.

<<Min: 31 - 34.6 2% Min: Calcite>>

34.60 35.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

34.6 - 35.5: BI+CA schist

<<Min: 34.6 - 35.5 1% Min: Pyrite>>

<<Min: 34.6 - 35.5 15% Min: Calcite>>

35.50 38.90 RHYc Rhyolite coherant volcanics

35.5 - 38.9: Silica banded rhyolite with MU cleavages

<<Min: 35.5 - 41.1 0.5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description

<<Min: 35.5 - 57.7 2% Min: Calcite>>

38.90 41.10 RHYvl Lapilli tuff

38.9 - 41.1: Rhyolitic lpl in fine grained, grey, ash matrix

41.10 49.60 RHYva Coarse grained to ash tuff

41.1 - 49.6: Medium grey, fine grained ash tuff with local rhyolitic and CA lpl

<<Min: 41.1 - 57.7 1% Min: Pyrite>>

<<Min: 41.1 - 57.7 1% Min: Pyrrhotite>>

49.60 52.30 RHYvl Lapilli tuff

49.6 - 52.3: Highly strained rhyolitic lpl tuff. Lpl are elongated into lineations.

52.30 69.00 RHYva Coarse grained to ash tuff

52.3 - 69: Fine grained ash tuff with local rhyolitic and PO lpl

<<Min: 57.7 - 69 2% Min: Pyrite>>

<<Min: 57.7 - 69 1% Min: Pyrrhotite>>

<<Min: 57.7 - 98.8 3% Min: Calcite>>

<<Alt: 57.7 - 69 Weak (Alt) Muscovite>>

<<Vein: 68.7 - 68.9 40% Quartz>> Two deformed massive QZ+CA veins with disseminated blebby PO

<<Struc: 65.6 - 65.8 Weak (Alt) Fault>> Fault gouge zone

69.00 79.60 RHYc Rhyolite coherant volcanics

69 - 79.6: Strongly crenulated siliceous rhyolite, with MU-crenulation cleavages.

<<Min: 69 - 71.5 3% Min: Pyrite>>

<<Min: 69 - 71.5 3% Min: Pyrrhotite>>

<<Min: 71.5 - 98.8 3% Min: Pyrite>>

<<Alt: 69 - 98.8 Strong (Alt) Muscovite>>

<<Struc: 72 - 73 Weak-Moderate (Alt) Fault>> Fault gouge zone

<<Struc: 77.14 - 77.15 dominant foliation>> MU-cleavage

79.60 84.30 RHYv Rhyolite volcaniclastic

79.6 - 84.3: Siliceous, PO, and CA lpl within MU matrix

84.30 98.80 RHYc Rhyolite coherant volcanics

84.3 - 98.8: Silica banded rhyolite with MU-cleavages

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
94.30	95.80	1.50	B00233144	0.9	0.008	-0.01	-0.01	0.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Vein: 94.9 - 95 90% Quartz>> Massive QZ+CA vein		95.80	97.30	1.50	B00233145	1.4	0.008	-0.01	-0.01	0.03
			<<Struc: 97.15 - 97.25 Weak (Alt) Fault>> Fault gouge zone		97.30	98.80	1.50	B00233146	3.2	0.019	-0.01	0.07	0.1
98.80	**99.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**	98.80	99.50	0.70	B00233147	178	1.49	1.11	2.79	8.91
98.8 - 99.5: Heavily disseminated to semi-massive PY+SP+CP in CL matrix													
			<<Min: 98.8 - 99.5 5% Min: Sphalerite>>										
			<<Min: 98.8 - 99.5 60% Min: Pyrite>>										
			<<Min: 98.8 - 99.5 2% Min: Chalcopyrite>>										
			<<Min: 98.8 - 99.5 1% Min: Calcite>>										
			<<Alt: 98.8 - 99.5 Moderate (Alt) Chlorite>>										
99.50	**101.20**	**OA**	**Magnetite bearing sulphides**	**MG**	99.50	100.20	0.70	B00233148	256	4.83	1.91	5.33	10.5
99.5 - 101.2: Massive PY+SP+/-GL with blebby CP, wispy/banded MG, and disseminated to blebby CA+/-CL matrix.													
			<<Min: 99.5 - 101.2 10% Min: Sphalerite>>		100.20	101.20	1.00	B00233149	243	2.17	0.58	7.14	8.75
			<<Min: 99.5 - 101.2 70% Min: Pyrite>>										
			<<Min: 99.5 - 101.2 7% Min: Magnetite>>										
			<<Min: 99.5 - 101.2 2% Min: Galena>>										
			<<Min: 99.5 - 101.2 3% Min: Chalcopyrite>>										
			<<Min: 99.5 - 101.2 3% Min: Calcite>>										
			<<Struc: 101.19 - 101.2 dominant foliation>> SP band										
101.20	**104.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	101.20	102.00	0.80	B00233152	248	1.46	0.01	6.91	9.26
101.2 - 104: Massive PY+SP+GL with disseminated to blebby CA+CL matrix gangue.													
			<<Min: 101.2 - 104 15% Min: Sphalerite>>		102.00	103.00	1.00	B00233153	288	1.79	0.01	7.32	10.3
			<<Min: 101.2 - 104 75% Min: Pyrite>>		103.00	104.00	1.00	B00233154	378	2.05	0.01	7.22	11.5
			<<Min: 101.2 - 104 2% Min: Galena>>										
			<<Min: 101.2 - 104 5% Min: Calcite>>										
104.00	**107.00**	**RHY**	**undifferentiated rhyolite**		104.00	105.50	1.50	B00233155	221	3.12	0.35	0.31	0.63
104 - 107: MU+QZ schist with minor band of semi-massive sulphide. Silica-banded with strongly MU-altered cleavages.													
			<<Min: 104 - 104.4 1% Min: Pyrite>>		105.50	107.00	1.50	B00233156	1.9	0.013	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 104 - 107 2% Min: Calcite>>									
		<<Min: 104.4 - 104.45 10% Min: Sphalerite>>									
		<<Min: 104.4 - 104.45 40% Min: Pyrite>>									
		<<Min: 104.4 - 104.45 5% Min: Galena>>									
		<<Min: 104.45 - 108.3 1% Min: Pyrite>>									
		<<Alt: 104 - 108.3 Strong (Alt) Muscovite>>									
		<<Struc: 104.8 - 104.9 Weak (Alt) Fault>> Fault gouge zone									
		<<Struc: 106.1 - 106.25 Weak (Alt) Fault>> Fault gouge zone									
107.00	**122.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	107.00	108.50	1.50	B00233157	3.9	0.017	-0.01	0.03	0.01
		107 - 122.8: Gradational/altered upper contact, with CA and BI increasing, and MU decreasing, from 107.1-108.5 m (Gradational from Mu+QZ schist to CL+BI+CA schist). CL+BI+CA from 108.5-122.8 m. Sharp lower contact.									
		<<Min: 107 - 108.3 10% Min: Calcite>>	121.20	122.70	1.50	B00233158	1	0.006	-0.01	0.01	0.04
		<<Min: 108.3 - 122.8 0.5% Min: Pyrrhotite>>	122.70	123.00	0.30	B00233159	65.7	0.197	0.19	0.81	5
		<<Min: 108.3 - 122.8 15% Min: Calcite>>									
		<<Alt: 108.3 - 122.8 Strong (Alt) Chlorite>>									
		<<Alt: 108.3 - 122.8 Strong (Alt) Biotite>>									
		<<Struc: 110.2 - 110.21 dominant foliation>> CA foliation									
		<<Struc: 113.1 - 113.11 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 113.7 - 113.71 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 115.94 - 115.95 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 116.95 - 116.96 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 121.95 - 121.96 dominant foliation>> Discontinuous BI foliation									
122.80	**122.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **CG**									
		122.8 - 122.9: Semi-massive PY+SP+CP in CL+CA matrix.									
		<<Min: 122.8 - 122.9 5% Min: Sphalerite>>									
		<<Min: 122.8 - 122.9 40% Min: Pyrite>>									
		<<Min: 122.8 - 122.9 2% Min: Chalcopyrite>>									
		<<Min: 122.8 - 122.9 15% Min: Calcite>>									
		<<Alt: 122.8 - 122.9 Moderate (Alt) Chlorite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
122.90	**128.70**	**RHY**	**undifferentiated rhyolite**		123.00	124.50	1.50	B00233161	0.4	-0.005	-0.01	-0.01	0.02
122.9 - 128.7: Silica banded rhyolite with MU cleavage													
<<Min: 122.9 - 128.7 2% Min: Pyrite>>													
<<Min: 122.9 - 128.7 3% Min: Calcite>>													
<<Alt: 122.9 - 128.7 Strong (Alt) Muscovite>>													
<<Struc: 126 - 129 Weak (Alt) Fault>> Highly fractured with local fault gouge and local foliation at low angle to core axis													
128.70	**133.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		129.40	130.90	1.50	B00233162	0.4	-0.005	-0.01	0.01	0.03
128.7 - 133.9: Green, CL+BI+CA schist.													
<<Min: 128.7 - 133.9 0.5% Min: Pyrite>>					130.90	132.40	1.50	B00233163	0.6	-0.005	-0.01	0.02	0.02
<<Min: 128.7 - 133.9 20% Min: Calcite>>					132.40	133.90	1.50	B00233164	1.1	0.008	0.02	0.01	0.04
<<Alt: 128.7 - 133.9 Strong (Alt) Chlorite>>													
<<Alt: 128.7 - 133.9 Moderate (Alt) Biotite>>													
<<Vein: 130.3 - 130.6 80% Quartz>> Massive QZ+CA vein													
<<Struc: 131.3 - 131.31 dominant foliation>> Discontinuous BI foliation/Continuous CL foliation													
133.90	**134.90**	**OA**	**Magnetite bearing sulphides**	**MG**	133.90	134.90	1.00	B00233165	165	1.34	1.21	4.67	9.99
133.9 - 134.9: Massive, laminated, PY+PO+SP+CA+/-CP+/-GL with heavily disseminated to wispy MG.													
<<Min: 133.9 - 134.9 5% Min: Sphalerite>>													
<<Min: 133.9 - 134.9 60% Min: Pyrite>>													
<<Min: 133.9 - 134.9 3% Min: Pyrrhotite>>													
<<Min: 133.9 - 134.9 25% Min: Magnetite>>													
<<Min: 133.9 - 134.9 1% Min: Galena>>													
<<Min: 133.9 - 134.9 1% Min: Chalcopyrite>>													
<<Min: 133.9 - 134.9 2% Min: Calcite>>													
134.90	**136.75**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	134.90	135.90	1.00	B00233166	137	1.7	0.3	4.63	8.34
134.9 - 136.75: Massive, laminated PY+SP+/-AS+/-GL with disseminated to blebby CA matrix													
<<Min: 134.9 - 136.75 5% Min: Sphalerite>>					135.90	136.75	0.85	B00233167	114	1.14	0.26	4.84	9.03
<<Min: 134.9 - 136.75 80% Min: Pyrite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 134.9 - 136.75 1% Min: Galena>>													
<<Min: 134.9 - 136.75 1% Min: Calcite>>													
<<Min: 134.9 - 136.75 0.5% Min: Arsenopyrite>>													
136.75	**139.20**	**OA**	**Magnetite bearing sulphides**	**MG**	136.75	137.30	0.55	B00233168	106	0.712	0.21	4.82	11.3
136.75 - 139.2: Laminated massive PY+GL+/-CP with wispy to disseminated MG													
<<Min: 136.75 - 139.2 5% Min: Sphalerite>>					137.30	138.20	0.90	B00233169	110	0.607	0.21	5.28	11.1
<<Min: 136.75 - 139.2 65% Min: Pyrite>>					138.20	139.20	1.00	B00233172	116	1.3	0.34	5.39	9.4
<<Min: 136.75 - 139.2 25% Min: Magnetite>>													
<<Min: 136.75 - 139.2 2% Min: Galena>>													
<<Min: 136.75 - 139.2 1% Min: Chalcopyrite>>													
<<Min: 136.75 - 139.2 1% Min: Calcite>>													
<<Struc: 137.25 - 137.26 dominant foliation>> Sulphide lamination													
139.20	**143.30**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	139.20	140.20	1.00	B00233173	145	2.7	0.14	3.91	5.93
139.2 - 143.3: Massive PY+/-SP+/-GL+/-CP with disseminated CA matrix													
<<Min: 139.2 - 143.3 2% Min: Sphalerite>>					140.20	141.20	1.00	B00233174	192	2.01	0.22	5.03	7.45
<<Min: 139.2 - 143.3 75% Min: Pyrite>>					141.20	142.20	1.00	B00233175	159	2.13	0.32	5.05	7.16
<<Min: 139.2 - 143.3 2% Min: Magnetite>>					142.20	143.30	1.10	B00233176	235	2.22	0.35	4.62	6.36
<<Min: 139.2 - 143.3 1% Min: Galena>>													
<<Min: 139.2 - 143.3 20% Min: Calcite>>													
<<Struc: 139.68 - 139.69 dominant foliation>> Sulphide lamination													
143.30	**144.40**	**OI**	**Heavilly disseminated sulphides in host schist**	**MG**	143.30	144.40	1.10	B00233177	31.7	0.454	0.04	0.29	0.42
143.3 - 144.4: Patchy PY in albite-altered rhyolite													
<<Min: 143.3 - 144.4 10% Min: Pyrite>>													
<<Min: 143.3 - 144.4 5% Min: Calcite>>													
<<Alt: 143.3 - 144.4 Moderate (Alt) Muscovite>>													
<<Alt: 143.3 - 144.4 Strong (Alt) Albite>>													
144.40	**146.10**	**RHY**	**undifferentiated rhyolite**		144.40	145.00	0.60	B00233178	0.9	0.006	-0.01	0.01	0.03
144.4 - 146.1: MU+QZ+CA schist with strong MU foliation													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 144.4 - 146.1 2% Min: Pyrite>>		145.00	146.10	1.10	B00233179	1.2	0.01	-0.01	-0.01	0.02
			<<Min: 144.4 - 146.1 10% Min: Calcite>>										
			<<Alt: 144.4 - 146.1 Strong (Alt) Muscovite>> Overprint from RHYi or original from MSXS?										
146.10	**174.60**	**RHYi**	**Aphanitic Rhyolite (intrusion)**		146.10	147.60	1.50	B00233181	2.3	0.02	-0.01	0.02	0.02
146.1 - 174.6: Aphanitic rhyolite with QZ phenocrysts and healed PY fractures. Locally pink (hematized).													
			<<Min: 146.1 - 174.6 3% Min: Pyrite>>		147.60	149.10	1.50	B00233182	1.3	0.015	-0.01	0.01	0.09
			<<Min: 146.1 - 174.6 3% Min: Calcite>>		173.10	174.60	1.50	B00233183	-0.3	0.006	-0.01	-0.01	-0.01
			<<Vein: 166.1 - 167.1 20% Calcite>> Zone with massive CA veins										
			<<Struc: 160 - 160.1 Weak (Alt) Fault>> Fault gouge zone										
			<<Struc: 167.1 - 167.4 Weak (Alt) Fault>> Fault gouge breccia										
174.60	**177.60**	**RHY**	**undifferentiated rhyolite**		174.60	176.10	1.50	B00233184	-0.3	-0.005	-0.01	-0.01	-0.01
174.6 - 177.6: QZ+MU+CA schist with strong MU foliation													
			<<Min: 174.6 - 177.6 2% Min: Pyrite>>		176.10	177.60	1.50	B00233185	0.7	0.005	-0.01	-0.01	0.01
			<<Min: 174.6 - 177.6 10% Min: Calcite>>										
			<<Alt: 174.6 - 177.6 Strong (Alt) Muscovite>> Overprint from RHYi or original from MSXS?										
			<<Struc: 175.68 - 175.69 dominant foliation>> Continuous MU foliation										
			<<Struc: 177.1 - 177.5 Weak (Alt) Fault>> Strongly fractured with local fault gouge										
177.60	**178.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	177.60	178.20	0.60	B00233186	65	0.144	0.08	1.3	5.3
177.6 - 178.2: Massive PY+SP+/-GL with disseminated to blebby CA matrix													
			<<Min: 177.6 - 178.2 15% Min: Sphalerite>>										
			<<Min: 177.6 - 178.2 58% Min: Pyrite>>										
			<<Min: 177.6 - 178.2 2% Min: Galena>>										
			<<Min: 177.6 - 178.2 25% Min: Calcite>>										
178.20	**178.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		178.20	178.70	0.50	B00233187	2.2	-0.005	-0.01	0.05	0.08
178.2 - 178.7: CL+CA+BI schist with ~30% CA porphyroblasts													
			<<Min: 178.2 - 178.7 30% Min: Calcite>>										
			<<Alt: 178.2 - 178.7 Strong (Alt) Chlorite>>										
			<<Alt: 178.2 - 178.7 Strong (Alt) Biotite>>										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 178.2 - 178.3 Weak (Alt) Fault>> Fault gouge at contact of MSXS and MAFi										
178.70	**180.45**	**OA**	**Magnetite bearing sulphides**	**MCG**	178.70	179.70	1.00	B00233188	48.6	0.299	0.91	0.61	10.4
178.7 - 180.45: Massive PY+/-SP+/-PO+/-CP+/-GL with heavily disseminated MG porphyroblasts/phenocrysts													
<<Min: 178.7 - 180.45 2% Min: Sphalerite>>					179.70	180.45	0.75	B00233189	65.2	0.376	0.92	1	8.84
<<Min: 178.7 - 180.45 75% Min: Pyrite>>													
<<Min: 178.7 - 180.45 1% Min: Pyrrhotite>>													
<<Min: 178.7 - 180.45 20% Min: Magnetite>>													
<<Min: 178.7 - 180.45 1% Min: Galena>>													
<<Min: 178.7 - 180.45 1% Min: Chalcopyrite>>													
<<Struc: 179.15 - 179.16 dominant foliation>> Discontinuous MG foliation													
<<Struc: 180.23 - 180.24 dominant foliation>> Discontinuous MG foliation													
180.45	**180.80**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**FCG**	180.45	180.80	0.35	B00233192	113	0.682	1.06	1.51	9.65
180.45 - 180.8: Semi-massive PY+PO+/-SP+/-CP in a CL+CI schist with coarse grained CI porphyroblasts													
<<Min: 180.45 - 180.8 2% Min: Sphalerite>>													
<<Min: 180.45 - 180.8 40% Min: Pyrite>>													
<<Min: 180.45 - 180.8 10% Min: Pyrrhotite>>													
<<Min: 180.45 - 180.8 1% Min: Chalcopyrite>>													
<<Alt: 180.45 - 180.8 Strong (Alt) Chlorite>>													
<<Alt: 180.45 - 183.1 Moderate (Alt) Cordierite>> Disseminated coarse grained CI porphyroblasts													
180.80	**181.80**	**OC**	**Chalcopyrite-pyrrhotite net textured sulphides**	**FCG**	180.80	181.80	1.00	B00233193	212	1.99	9.83	0.81	5.49
180.8 - 181.8: Net-textured massive PO+CP+PY with disseminated coarse grained CL-after-CI porphyroblasts													
<<Min: 180.8 - 181.8 20% Min: Pyrite>>													
<<Min: 180.8 - 181.8 45% Min: Pyrrhotite>>													
<<Min: 180.8 - 181.8 20% Min: Chalcopyrite>>													
<<Alt: 181.7 - 181.8 Moderate (Alt) Chlorite>>													
<<Struc: 181.44 - 181.45 dominant foliation>> CP+PO foliation													

From (m)	To (m)		Rocktype & Description	
181.80	**183.10**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**MCG**

181.8 - 183.1: Patchy to semi-massive SP+CP+PY+/-PO in CL+QZ schist with disseminated coarse grained CI porphyroblasts

<<Min: 181.8 - 183.1 15% Min: Sphalerite>>
<<Min: 181.8 - 183.1 5% Min: Pyrite>>
<<Min: 181.8 - 183.1 2% Min: Pyrrhotite>>
<<Min: 181.8 - 183.1 2% Min: Chalcopyrite>>
<<Alt: 181.8 - 183.1 Strong (Alt) Chlorite>>
<<Vein: 182.7 - 182.9 70% Quartz>> Massive QZ+AB (?) vein
<<Struc: 182.2 - 183.5 Moderate (Alt) Fault>> Highly fractured with fault gouge

From (m)	To (m)		Rocktype & Description
183.10	**188.60**	**RHYc**	**Rhyolite coherant volcanics**

183.1 - 188.6: Silica banding with MU cleavages. Strongly MU altered\

<<Min: 183.1 - 183.9 2% Min: Pyrite>>
<<Min: 183.1 - 183.9 2% Min: Pyrrhotite>>
<<Min: 183.1 - 183.9 1% Min: Chalcopyrite>>
<<Min: 183.1 - 194.4 2% Min: Calcite>>
<<Min: 183.9 - 188.6 2% Min: Pyrite>>
<<Alt: 183.1 - 183.9 Weak (Alt) Chlorite>>
<<Alt: 183.1 - 198.6 Strong (Alt) Muscovite>>
<<Vein: 183.55 - 183.65 80% Quartz>> Massive QZ vein with patchy CL+CA+/-PO+CP
<<Struc: 186.5 - 186.65 Weak (Alt) Fault>> Fault gouge zone

From (m)	To (m)		Rocktype & Description
188.60	**194.40**	**RHYvl**	**Lapilli tuff**

188.6 - 194.4: Rhyolitic, CA, and sulphide lpl in strongly MU-altered MU+QZ matrix

<<Min: 188.6 - 194.4 1% Min: Pyrite>>
<<Min: 188.6 - 194.4 2% Min: Pyrrhotite>>
<<Struc: 188.6 - 188.9 Weak (Alt) Fault>> Variable foliation and fault gouge zone
<<Struc: 191.7 - 191.8 Weak (Alt) Fault>> Fault gouge zone

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
181.80	182.40	0.60	B00233194	106	0.367	2.1	0.64	8.08
182.40	183.10	0.70	B00233195	46.1	0.295	1.26	0.22	3.17
183.10	184.60	1.50	B00233196	3.8	0.01	0.2	0.01	0.1
184.60	186.10	1.50	B00233197	-0.3	-0.005	0.01	-0.01	0.01
186.10	187.60	1.50	B00233198	0.4	-0.005	0.01	-0.01	0.03

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

194.40 195.50 MDSt Rhyolite tuff dominant mudstone

194.4 - 195.5: Strongly silicified unit with minor (~5%) carbonaceous material

<<Min: 194.4 - 195.5 3% Min: Pyrrhotite>>

<<Min: 194.4 - 195.5 0.5% Min: Arsenopyrite>>

<<Alt: 194.4 - 195.5 Strong (Alt) Silicification>>

195.50 210.00 RHYvl Lapilli tuff

195.5 - 210: Rhyolitic, CA, and sulphide lpl in strongly MU-altered MU+QZ matrix

<<Min: 195.5 - 210 1% Min: Pyrite>>

<<Min: 195.5 - 210 2% Min: Pyrrhotite>>

<<Min: 195.5 - 210 2% Min: Calcite>>

<<Alt: 197.7 - 198.6 Weak (Alt) Chlorite>>

<<Alt: 198.6 - 210 Moderate (Alt) Muscovite>>

<<Vein: 197 - 197.65 50% Quartz>> Pieces of QZ vein in rubble zone (high core loss)

<<Struc: 203 - 204 Moderate (Alt) Fault>> Fault gouge breccia

<<Struc: 205 - 206 Moderate (Alt) Fault>> Fault gouge breccia

<<Struc: 209 - 209.3 Weak (Alt) Fault>> Strongly fractured with fault gouge

End of Hole @ 210

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-316

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	04-Nov-15
UTM Easting	414988.8	Core Size:	HQ3	Azimuth:	210.15	Date Logging Complete:	07-Nov-15
UTM Northing:	6814983.2	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1386.656	Casing Depth (m):	31	Length (m):	181	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	02-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	06-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of DDH K15-316 on section NW1 is to test up-dip continuity of the Krakatoa target.
The Krakatoa sulphide horizon was intersected at 52.46 - 55.12 m (2.66 m of OB and OJ) which was within 3 m of the predicted depth. The hole collared in MAFi and the Krakatoa sulphide horizon was intersected at 52.46 - 55.12 m (2.66 m of OB and OJ) which was within 3 m of the predicted depth. An additional OB sulphide horizon was intersected at 119.3 – 120.08m in the footwall felsic package below 57 m of RHYi that appears to displace or expand the stratigraphic package. This DDH correlates well with nearby drill holes (ie. K15-312, K15-313, K15-315) where similar lithological sequences were intersected. Of note in this DDH is a correlatable MDSc at 130.8 – 131.6 m. A pyrrhotite bearing cordierite, chlorite altered zone in RHY centered over 138.6 – 139.4 m in a broader zone of chlorite alteration may represent the distal portion of a sulphide horizon.
Summary of the stratigraphic package is as follows;
0 – 31 m: Casing
31 – 44.35 m: MAFi
44.35 – 48.5 m: RHY, muscovite – sericite altered (possibly altered MAFI)
48.5 – 52.46 m: OB (approx. 15% sphalerite)
52.46 – 55.12 m: OJ (<1% CP, 3% sphalerite)
55.12 – 61.5 m: MAFi
61.5 – 118.6 m: RHYi
118.6 – 119.3 m: RHY
119.3 – 120.08 m: OB
120.08 – 130.8 m: RHYc and RHY
130.8 – 131.6 m: MDSc
131.6 – 136.9 m: RHY (muscovite – sericite – clay altered)
136 – 139.4 m RHY and possible MAFI, Chlorite altered with cordierite, pyrrhotite and silicification.
139.4 -181.0m RHY (including RHYv, RHYvl, RHYva, minor MAFi dykes
(EOH)

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	210.15	0	210.15	APS	Roger Hulstein	05-Nov-15		☑	APS survey tool
43	-56.7	188.8	22.5	211.3	ReflexEZS	Geotech	04-Nov-15	5762	☑	
73	-56.9	187.6	22.5	210.1	ReflexEZS	Geotech	04-Nov-15	5764	☑	
97	-55.5	187	22.5	209.5	ReflexEZS	Geotech	05-Nov-15	5723	☑	
127	-54.8	187.4	22.5	209.9	ReflexEZS	Geotech	04-Nov-15	5766	☑	
157	-53.7	188.6	22.5	211.1	ReflexEZS	Geotech	05-Nov-15	5736	☑	

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
181	-53.4	189.6	22.5	212.1	ReflexEZS	Geotech	05-Nov-15	5743	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**31.00**	**CASN Casing**									
31.00	**44.35**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**									
<<Min: 31 - 43.3 8% Min: Calcite>> and as foliaform veinlets											
<<Min: 31 - 43.8 0.1% Min: Pyrite>>											
<<Min: 43.3 - 44 15% Min: Calcite>> and as foliaform veinlets											
<<Min: 43.8 - 44.1 2% Min: Pyrrhotite>>											
<<Min: 44 - 48.6 5% Min: Calcite>>											
<<Min: 44.1 - 48.6 0.2% Min: Sphalerite>> and in wispy pyrite stringer veinlets											
<<Min: 44.1 - 48.6 2% Min: Pyrite>> and as wispy stringer veinlets											
<<Min: 44.1 - 48.6 0.2% Min: Galena>> and in wispy pyrite stringer veinlets											
<<Alt: 31 - 43.9 Moderate (Alt) Chlorite>>											
<<Alt: 31 - 43.9 Moderate (Alt) Biotite>>											
<<Alt: 43.9 - 48.5 Moderate (Alt) Muscovite>>											
<<Struc: 31 - 42 Moderate (Alt) dominant foliation>>											
<<Struc: 40 - 48.5 Moderate (Alt) dominant foliation>>											
<<Struc: 41.5 - 41.6 Moderate (Alt) Foliation>> banded sulfides											
44.35	**48.50**	**RHY undifferentiated rhyolite**	47.00	48.50	1.50	B00269885	0.8	0.008	-0.01	0.03	0.11
44.35 - 48.5: silic bands, musc-seritcite altered, 2% py as diss and thin wispy bands. Tr diss gn. Sharp alteration contacts with Mafi.Poor core recovery at upper contact - contactt meterage not exact.											
<<Struc: 45.55 - 45.65 Moderate (Alt) Fault>>											
48.50	**52.46**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)**	48.50	49.50	1.00	B00269886	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 48.6 - 52.46 0.1% Min: Pyrite>>			49.50	51.00	1.50	B00269887	-0.3	0.008	-0.01	-0.01	0.01
<<Min: 48.6 - 52.46 18% Min: Calcite>> and as foliaform veinlets			51.00	52.45	1.45	B00269888	0.6	0.007	-0.01	-0.01	0.03
<<Alt: 48.5 - 52.46 Moderate (Alt) Chlorite>>											
<<Alt: 48.5 - 52.46 Moderate (Alt) Biotite>>											
<<Alt: 52.36 - 52.46 Weak-Moderate (Alt) Muscovite>> sercite, weak bleaching											
<<Struc: 48.5 - 52 Moderate (Alt) dominant foliation>>											

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
52.46	**54.67**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	52.46	53.00	0.54	B00269889	229	2.28	0.2	3.95	10.4

52.46 - 54.67: Good OB, bands of concentrated diss sphalerite. Gangue of silica - calcite (5%).

<<Min: 52.46 - 54.67 15% Min: Sphalerite>>				53.00	54.00	1.00	B00269892	217	1.38	0.21	1.69	7.96
<<Min: 52.46 - 54.67 40% Min: Pyrite>>				54.00	54.67	0.67	B00269893	240	1.52	0.3	2.5	7.75
<<Min: 52.46 - 54.67 3% Min: Galena>>												
<<Min: 52.46 - 54.67 10% Min: Calcite>> and as foliaform irregular veinlets												
<<Alt: 54.52 - 61.15 Moderate (Alt) Biotite>>												
<<Struc: 52.46 - 52.46 Moderate (Alt) Contact>>												
54.67	**55.12**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**		54.67	55.12	0.45	B00269894	84.3	1.01	0.62	0.53	1.22

54.67 - 55.12: Marginal OJ. Calcite & chlorite banded and altered Mafi. 1% diss and blebby chalcopyrite.

<<Min: 54.67 - 55.12 3% Min: Sphalerite>>												
<<Min: 54.67 - 55.12 8% Min: Pyrite>>												
<<Min: 54.67 - 55.12 0.5% Min: Galena>>												
<<Min: 54.67 - 55.12 1% Min: Chalcopyrite>> minor blebs												
<<Min: 54.67 - 55.12 20% Min: Calcite>> and as foliaform veinlets												
<<Alt: 54.67 - 55.12 Moderate (Alt) Chlorite>>												
<<Struc: 54.67 - 54.67 Moderate (Alt) Contact>>												
<<Struc: 54.67 - 55.12 Moderate (Alt) Foliation>> very subjective measurement, alpha at 85 deg												
55.12	**61.50**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**		55.12	56.50	1.38	B00269895	0.5	0.006	-0.01	-0.01	0.02
<<Min: 55.12 - 61 0.1% Min: Pyrite>>				56.50	58.00	1.50	B00269896	-0.3	-0.005	-0.01	-0.01	0.02
<<Min: 55.12 - 61.2 15% Min: Calcite>>				58.00	59.43	1.43	B00269897	0.6	-0.005	-0.01	-0.01	0.02
<<Min: 61 - 61.1 2% Min: Pyrrhotite>>				59.43	60.85	1.42	B00269898	0.4	-0.005	-0.01	-0.01	0.02
<<Min: 61.1 - 96.3 0.2% Min: Sphalerite>>												
<<Min: 61.1 - 96.3 0.2% Min: Galena>>												
<<Min: 61.1 - 99.3 2% Min: Pyrite>> and as diss												
<<Min: 61.2 - 99.3 2% Min: Calcite>> locally 1-3%												
<<Alt: 55.12 - 61.15 Moderate (Alt) Chlorite>>												

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 60.9 - 61.5 Moderate (Alt) Muscovite>> Sericite and bleached MAFi									
		<<Struc: 60.8 - 61 Moderate (Alt) Foliation>>									
61.50	**104.00**	**RHYi** **Aphanitic Rhyolite (intrusion)**									
		61.5 - 104: 61.5-104m: Very irregularly fractured, wispy irregular pyrite with trace SP and GL fracture filling and diss. Brittle cataclastic deformation with irregular late qtz veinlets and filling throughout. 104 - 118.6m: Minor sulfides, Foliation intensity varies from strong to non existant as does muscovite - sericite alteration. Rarely has a schistose fabric									
		<<Min: 99.3 - 119.3 1% Min: Pyrite>>									
		<<Alt: 97 - 118.6 Weak (Alt) Muscovite>> sericite - muscovite where RHYi is foliated or sheared.									
		<<Vein: 64.64 - 64.9 100% Quartz 25 deg. >>									
		<<Struc: 66 - 67 Weak (Alt) Foliation>> weak and irregular fracture - veins and foliation									
		<<Struc: 92.94 - 94 Moderate (Alt) Fault>> missing core, broken core, minor gouge									
		<<Struc: 96.8 - 99.5 Moderate (Alt) Foliation>> weak -moderately foliated RHYi									
		<<Struc: 99.5 - 118.6 Moderate (Alt) dominant foliation>> mostly between 80 and 90 deg.									
		<<Struc: 102.95 - 103 Moderate (Alt) Foliation>> not typical but it is oriented.									
104.00	**118.60**	**RHYi** **Aphanitic Rhyolite (intrusion)**	115.00	116.00	1.00	B00269899	0.3	-0.005	-0.01	-0.01	-0.01
		104 - 118.6: 104 - 118.6m: Minor sulfides, Foliation intensity varies from strong to non existant as does muscovite - sericite alteration. Does have a schistose fabric more or less throughout.									
		<<Vein: 112.75 - 113.4 100% Quartz>> one 2x2cm py clast, also a few RHYi clasts.	116.00	117.38	1.38	B00269901	0.4	-0.005	-0.01	-0.01	-0.01
		<<Struc: 106.7 - 108.1 Moderate-Strong (Alt) Fault>> gouge zone at 30 deg, fractureed and broken core	117.38	118.60	1.22	B00269902	0.4	-0.005	-0.01	-0.01	-0.01
		<<Struc: 115 - 115.3 Weak (Alt) Fault>> minor gouge near parralel to foliation									
118.60	**119.30**	**RHY** **undifferentiated rhyolite**	118.60	119.30	0.70	B00269903	39.5	0.221	0.03	-0.01	0.01
		118.6 - 119.3: RHY unit bounded by fault gouge zones. Musc - sericite altered.									
		<<Alt: 118.6 - 119.3 Moderate (Alt) Muscovite>> sericite - muscovite altered, foliated & sheared with gouge zones.									
		<<Struc: 118.6 - 119.3 Moderate-Strong (Alt) Fault>> two gouge zones; 10 and 20 cm									
119.30	**120.08**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	119.30	120.08	0.78	B00269904	265	3.06	0.34	1.77	9.96
		119.3 - 120.08: calcite gangue									
		<<Min: 119.3 - 120.08 15% Min: Sphalerite>>									
		<<Min: 119.3 - 120.08 50% Min: Pyrite>>									
		<<Min: 119.3 - 120.08 2% Min: Galena>>									
		<<Min: 119.3 - 120.08 15% Min: Calcite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 119.3 - 120.08 Moderate (Alt) Contact>> irregular contacts									
120.08	**123.00**	**RHYc Rhyolite coherant volcanics**	120.08	120.45	0.37	B00269905	84.4	0.093	0.25	0.89	2.99
		120.08 - 123: some solid silic bands and what looks like RHYc dismemenbered by foliation. Not a classic example of RHYc!									
		<<Min: 120.08 - 124 5% Min: Pyrite>> in qtz bands, heavy diss and fine diss.	120.45	121.87	1.42	B00269906	5.9	0.104	0.03	0.06	0.4
		<<Alt: 120.08 - 131.8 Moderate-Strong (Alt) Muscovite>> Muscovite, sericite and clays	121.87	122.50	0.63	B00269907	1.4	0.04	-0.01	-0.01	0.06
		<<Alt: 120.08 - 131.8 Trace (Alt) Chlorite>>	122.50	123.00	0.50	B00269908	0.4	0.006	-0.01	-0.01	0.01
		<<Struc: 120.45 - 120.55 Strong (Alt) Fault>> 10 cm recovered fault gouge in zone of missing core									
		<<Struc: 120.55 - 121 Moderate (Alt) Foliation>>									
		<<Struc: 121.3 - 122 Moderate-Strong (Alt) Fault>> gouge on foliated qtz									
		<<Struc: 122 - 123.7 Weak-Moderate (Alt) Fault>> gouge zones on fracturte planes cutting foliation									
123.00	**130.80**	**RHY undifferentiated rhyolite**	123.00	124.50	1.50	B00269909	0.6	0.024	-0.01	-0.01	0.01
		123 - 130.8: strongly foliated. Upper section may be continution of possible RHYc.									
		<<Min: 124 - 131.8 2% Min: Pyrite>> and as blebs and wisps									
		<<Min: 125 - 126 1% Min: Pyrrhotite>>									
		<<Struc: 124 - 133 Moderate (Alt) dominant foliation>>									
		<<Struc: 126.3 - 137 Moderate (Alt) Fault>> weakly crackle brx with gougy fractures from 30 - 70 deg.									
130.80	**131.60**	**MDSc Carbonaceous dominant mudstone**									
		<<Alt: 130.8 - 131.6 Moderate-Strong (Alt) Silicification>> Original silicification?									
131.60	**136.90**	**RHYv Rhyolite volcaniclastic**									
		131.6 - 136.9: weak to intense chl alt from 135 - 150 m. Mod - intenese silicification and moderate muscovite alteration from 137.6-150.									
		<<Min: 131.8 - 132.6 3% Min: Pyrite>> in mudstone									
		<<Min: 131.8 - 132.6 3% Min: Pyrrhotite>> in bands									
		<<Min: 132.6 - 136 2% Min: Pyrite>>									
		<<Min: 132.6 - 137 0.5% Min: Pyrrhotite>>									
		<<Min: 136.3 - 147 3% Min: Calcite>>									
		<<Alt: 131.6 - 136.9 Moderate-Strong (Alt) Muscovite>> plus strong sericite and clays on foliation and fractures. Solf in competent rock									
		<<Alt: 134.2 - 136.9 Moderate (Alt) Chlorite>> patchy bands and wisps plus diss as clast - crystal replacements.									
		<<Vein: 133 - 151.3 2% Quartz-Tourmaline 25 deg. >> Qtz-tourmaline veins (<3-4cm wide) veinlets with tourmaline selvege at low angles to CA.									

From (m)	To (m)	Rocktype & Description

<<Struc: 133 - 133.1 Moderate (Alt) Vein>> qtz-tour veinlet

136.90 137.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

136.9 - 137.6: Intensely chloritized, possibly a MAFi, sharp contacts but could be an altered RHY horizon representing a distal edge of a sulfide horizon. Chlorite, muscovite alteration and silicification to about 150m. Corderite alteration at 138.6-139.4m with thin pyrrhotite bands and diss.

<<Alt: 136.9 - 137.6 Intense (Alt) Chlorite>> massive green chlorite either an altered MAFi or an altered bed of RHY? Or ??

<<Struc: 136.9 - 136.9 Moderate (Alt) Contact>> fault, crushed schist and gouge at 50 deg with Intensely chloritized MAFI dyke.

137.60 159.20 RHYv Rhyolite volcaniclastic

137.6 - 159.2: Chloritized, muscovite and silicified tto about 150m. Cordierite from 138.6-139.4m. Unit is likely a succession of ash and lapilli tuffs.

<<Min: 137.6 - 138.56 0.5% Min: Pyrite>>

<<Min: 137.6 - 138.56 0.5% Min: Pyrrhotite>>

<<Min: 138.56 - 139.7 5% Min: Pyrrhotite>> and in thin bands

<<Min: 139.7 - 143.5 1% Min: Pyrite>>

<<Min: 139.7 - 143.5 1% Min: Pyrrhotite>>

<<Min: 143.5 - 162.2 2% Min: Pyrite>>

<<Min: 147 - 150 56% Min: Calcite>>

<<Min: 150 - 165.7 1% Min: Calcite>>

<<Alt: 137.6 - 140.2 Weak-Moderate (Alt) Silicification>> associated with pyrrhotite.

<<Alt: 137.6 - 142 Weak-Moderate (Alt) Muscovite>> likely Original?

<<Alt: 137.6 - 150 Weak (Alt) Chlorite>> wisps and diss replacing crystals and clasts

<<Alt: 138.6 - 139.4 Moderate (Alt) Cordierite>> in siliceous chlorite pyrrhotite bearing bands.

<<Alt: 142 - 162.2 Weak (Alt) Muscovite>> possibly overprint

<<Struc: 137.75 - 137.75 Moderate (Alt) Contact>> sharp contact with chloritized MAFi dyke

<<Struc: 138.25 - 171.62 Moderate (Alt) dominant foliation>> mostly close to 80 deg but varies from 75 - 90 deg.

<<Struc: 142.4 - 151.7 Weak (Alt) Fault>> narrow (10-20 cm) gougy - crushed schist zones spaced approx 2 m throughout section. Angles vary between 80 - 45 deg to CA

<<Struc: 158.5 - 159.2 Moderate-Strong (Alt) Fault>> crushed core and gouge, missing core,

159.20 165.70 RHYva Coarse grained to ash tuff

159.2 - 165.7: Overall likely a RHYva, locally some lapilli, especially near lower contact.

<<Min: 162.2 - 166.6 1% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
138.50	139.70	1.20	B00269911	0.4	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 162 - 166.6 Weak (Alt) Chlorite>> in dykes and on qtz vein margins plus as rare diss.

<<Alt: 163.1 - 171 Weak-Moderate (Alt) Muscovite>> possibly overprint, strong light green sericite alteration and clays on foliation and a crystal and clasts replacements.

<<Vein: 162.2 - 163.1 70% Quartz>>

<<Struc: 162.16 - 163.1 Moderate (Alt) Vein>> irregular contacts

165.70 166.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 165.7 - 166.6 3% Min: Calcite>>

<<Alt: 165.7 - 166.6 Moderate (Alt) Biotite>> mafic dyke

<<Struc: 165.7 - 166.6 Moderate (Alt) Contact>> MAFi dyke

166.60 168.80 RHYv Rhyolite volcaniclastic

166.6 - 168.8: Blue qtz phenocrysts.

<<Min: 166.6 - 172 2% Min: Pyrite>>

<<Min: 168 - 170 3% Min: Calcite>>

168.80 169.00 RHYif feldspar and quartz porphyry intrusions

168.8 - 169: Looks like RHYi! Trace dis py, GL and SP.

169.00 172.20 RHYv Rhyolite volcaniclastic

<<Min: 171.7 - 173.2 10% Min: Calcite>>

<<Min: 172 - 176.1 2% Min: Pyrrhotite>>

<<Vein: 171.62 - 173.8 20% Quartz>>

<<Struc: 171.9 - 172 Moderate (Alt) Foliation>>

172.20 173.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 173.2 - 177.5 2% Min: Calcite>>

173.90 175.18 RHYva Coarse grained to ash tuff

173.9 - 175.18: distinctive fine grained ash with 1-3% 1-2mm feldspar (and qtz?) phenos.

<<Alt: 175 - 181 Weak (Alt) Muscovite>> Overprint? - Far from Mineralization and not great muscovite. Weak sericite and clays on fractures and foliation.

<<Struc: 174 - 181 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description
175.18	**181.00**	**RHY** **undifferentiated rhyolite**

175.18 - 181: Similar to 169-172.2 but no visible blue qtz eyes, has what looks like sheared fragments of silic bands - could have been a more coherent RHY. Contains approx 1cm patches of fine grained diss py - transposed bands?.

<<Min: 176.1 - 181 2% Min: Pyrite>> wispy approx 1cm blebs

End of Hole @ 181

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
179.50	181.00	1.50	B00269912	-0.3	-0.005	-0.01	-0.01	0.01

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-317

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	08-Nov-15
UTM Easting	415036.8	Core Size:	HQ3	Azimuth:	29.46	Date Logging Complete:	10-Nov-15
UTM Northing:	6814948.8	Casing Pulled?:	Yes	Dip:	-78	Drill Company:	Geotech
UTM Elev. (m):	1387.368	Casing Depth (m):	31.5	Length (m):	170.6	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of the drill hole was to test Krakatoa sulphide horizon and the sulphide lens above the Krakatoa (in the hanging wall RHY volcaniclastics) between drill holes K15-312 and K15-315. DDH K15-317 was successful in hitting the targets just below casing depth (set at 31.5m) with the upper sulfide lens intercepted at 32.0 - 35.97m (OB and minor OI) and the Krakatoa at 76.75 - 92.04 m (OJ, OA and OB mineralization). In addition a lower lens, on the footwall contact of the MAFi was cut at 132.82 – 133.35 m(OB) and at 135.52 – 138.95 m (OJ). A 40.3 m thick RHYi body with minor RHY separates the Krakatoa from the lower lens. The dominant foliation and banded sulfides are a consistent 35-45 degrees to core axis throughout the DDH. Below the lower OJ zone is a package of sericite - muscovite altered RHY and a MDSc unit from 140.93 - 141.85 m. Alteration is most intense (Chlorite after cordierite) for about 4 m below the MDSc and alteration decreases in intensity downhole. This lower OB and OJ mineralization, MDSc and altered zone correlates very well with a similar section in DDH K15-316 (on section NW1, 50 m to the north).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-78	6.96	22.5	29.46	APS	Roger Hulstein	06-Nov-15		☑	APS unit on rod in drill head at approx 4 m elev and SW of actual collar by approx 3 m.
38	-76.2	286.4	22.5	308.9	ReflexEZS	Geotech	07-Nov-15	5506	☐	Measured likely off due to nearby proximity to two -90 deg anchors and the casing from this hole.
71	-78.1	8.9	22.5	31.4	ReflexEZS	Geotech	08-Nov-15	5773	☑	
101	-78.3	14.1	22.5	36.6	ReflexEZS	Geotech	08-Nov-15	5781	☑	
131	-78.5	14.5	22.5	37	ReflexEZS	Geotech	08-Nov-15	5732	☑	
161	-79.7	12.8	22.5	35.3	ReflexEZS	Geotech	08-Nov-15	5730	☑	
170	-80.9	10.9	22.5	33.4	ReflexEZS	Geotech	08-Nov-15	5741	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**31.50**	**CASN Casing**									
31.50	**32.00**	**RHY undifferentiated rhyolite**	31.50	32.00	0.50	B00269913	5.3	0.028	-0.01	0.07	0.13
<<Min: 31.5 - 32 1% Min: Pyrite>>											
<<Min: 31.5 - 32 0.2% Min: Galena>>											
<<Alt: 31.5 - 32 Weak-Moderate (Alt) Muscovite>> sericite grey green alteration											

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 31.5 - 35.1 Weak (Alt) Biotite>>													
<<Struc: 31.5 - 32 Moderate (Alt) dominant foliation>>													
32.00	**35.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	32.00	33.00	1.00	B00269914	328	1.93	0.25	3.55	8.83
<<Min: 32 - 35.1 6% Min: Sphalerite>>					33.00	34.00	1.00	B00269915	258	1.85	0.24	3.47	7.09
<<Min: 32 - 35.1 65% Min: Pyrite>>					34.00	35.10	1.10	B00269916	492	2.97	0.19	5.04	8.63
<<Min: 32 - 35.1 4% Min: Galena>>													
<<Min: 32 - 35.1 5% Min: Calcite>>													
<<Struc: 32 - 33 Moderate (Alt) Foliation>> banded sulfides													
<<Struc: 33 - 35 Moderate (Alt) Foliation>> banded sulfides													
35.10	**35.97**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	35.10	35.97	0.87	B00269917	403	3.03	0.11	5.16	7.24
35.1 - 35.97: Chlorite - biotite alteration increases towards bottom of interval and mineralization decreases.													
<<Min: 35.1 - 35.97 8% Min: Sphalerite>>													
<<Min: 35.1 - 35.97 17% Min: Pyrite>>													
<<Min: 35.1 - 35.97 34% Min: Galena>>													
<<Min: 35.1 - 35.97 30% Min: Calcite>>													
<<Alt: 35.1 - 36.1 Weak (Alt) Muscovite>>													
<<Alt: 35.1 - 36.1 Moderate (Alt) Chlorite>> Alteration increases towards bottom of interval and mineralization decreases													
<<Struc: 35.1 - 35.1 Moderate (Alt) Contact>> sulfide - RHY contact													
<<Struc: 35.1 - 38.9 Moderate (Alt) Foliation>> sericite - muscoviote partings													
35.97	**39.20**	**RHYc**	**Rhyolite coherant volcanics**		35.97	37.03	1.06	B00269918	3.6	0.016	-0.01	0.04	0.03
35.97 - 39.2: White siliceous RHY cut by sericite - muscovite partingsn - foliation.Lower contact in zone of missing core and core rubble. 38.9-39.1m; 20cm of siliceous dark grey banded silica - qtz with 4% diss py and weak chloite - biotite alteration.Upper contact along strong 70 deg foliation with sericite - clay alteration. Shearing and foliation at 040 deg to CA starting 10cm below contact. Minor clay and sericite on partings.													
<<Min: 35.97 - 39.2 7% Min: Calcite>> and as fractures					37.03	38.00	0.97	B00269919	1.4	0.006	-0.01	0.01	-0.01
<<Alt: 36.1 - 39.2 Weak-Moderate (Alt) Muscovite>> sericite - muscovite alteration					38.00	39.20	1.20	B00269921	84.6	0.507	-0.01	0.07	0.05
<<Struc: 39.1 - 40 Weak-Moderate (Alt) Fault>> broken core - missing core													

From (m)	To (m)	Rocktype & Description
39.20	**65.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

39.2 - 65.7: Massive green foliated MAFi speckled white (calcite and feldspar) and black (biotite). More banded type chlorite from approximately 50m down.

<<Min: 39.2 - 42 10% Min: Calcite>> and as veinlets.

<<Min: 42 - 50 5% Min: Calcite>>

<<Min: 50 - 65.7 12% Min: Calcite>> and as veinlets and bands

<<Alt: 39.2 - 65.7 Moderate (Alt) Chlorite>>

<<Alt: 39.2 - 65.7 Weak (Alt) Biotite>>

<<Alt: 50 - 60 Weak (Alt) Chlorite>>

<<Alt: 60 - 65.7 Weak-Moderate (Alt) Chlorite>>

<<Alt: 60 - 65.7 Moderate (Alt) Biotite>>

<<Struc: 40.4 - 41.5 Moderate (Alt) dominant foliation>>

<<Struc: 42 - 44 Moderate (Alt) dominant foliation>>

<<Struc: 45 - 46 Moderate (Alt) dominant foliation>>

<<Struc: 46 - 49 Moderate (Alt) dominant foliation>>

<<Struc: 49 - 51.6 Moderate (Alt) dominant foliation>>

<<Struc: 55.9 - 56.7 Moderate (Alt) dominant foliation>>

<<Struc: 61 - 61.34 Moderate (Alt) Fault>> minor gouge

<<Struc: 64.48 - 65.5 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description
65.70	**65.81**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

65.7 - 65.81: Narrow zone of OJ mineralization on 'top' of RHY at contact with 'overlying' MAFi. Fits the theory (M. Baknes) that fluids are migrating along RHY units, flowing updip, below MAFI aquatard.

<<Min: 65.7 - 65.81 20% Min: Pyrite>>

<<Min: 65.7 - 65.81 2% Min: Pyrrhotite>>

<<Min: 65.7 - 65.81 1% Min: Galena>>

<<Min: 65.7 - 65.81 5% Min: Chalcopyrite>>

<<Min: 65.7 - 65.81 10% Min: Calcite>> diss, bands, blebs

<<Alt: 65.7 - 65.81 Weak-Moderate (Alt) Chlorite>>

<<Struc: 65.7 - 65.7 Moderate (Alt) Contact>> OJ - MAFi contact

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.20	40.70	1.50	B00269922	0.5	0.122	-0.01	0.01	0.02
64.70	65.70	1.00	B00269923	0.6	0.007	-0.01	0.01	0.12
65.70	65.81	0.11	B00269924	111	0.385	1.13	1.51	12.4

From (m)	To (m)	Rocktype & Description
65.81	**71.70**	**RHY** **undifferentiated rhyolite**

65.81 - 71.7: grey - green muscovite alteration

<<Min: 65.81 - 71.7 1% Min: Pyrite>>

<<Min: 65.81 - 71.7 2% Min: Calcite>>

<<Alt: 65.81 - 71.7 Weak-Moderate (Alt) Muscovite>> sericitre - muscovite

<<Struc: 66.6 - 68 Moderate (Alt) Fault>> Missing core, core rubble

<<Struc: 68.5 - 70.8 Moderate (Alt) dominant foliation>>

<<Struc: 70.9 - 71.2 Moderate-Strong (Alt) Fault>> missing core, broken core, 20 cm gouge.

From (m)	To (m)	Rocktype & Description
71.70	**76.75**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**

<<Min: 71.7 - 72.3 2% Min: Pyrite>>

<<Min: 71.7 - 73.3 15% Min: Calcite>>

<<Min: 72.3 - 76.75 0.5% Min: Pyrite>>

<<Min: 73.3 - 76.75 8% Min: Calcite>>

<<Alt: 71.7 - 72.7 Moderate-Strong (Alt) Biotite>> or overprint?

<<Alt: 72.3 - 76 Moderate (Alt) Chlorite>> can't separate overprint chlorite

<<Alt: 72.4 - 76 Weak (Alt) Biotite>>

<<Alt: 76 - 77.9 Strong (Alt) Chlorite>>

<<Alt: 76 - 77.9 Moderate-Strong (Alt) Biotite>> with chlorite and chalcopyrite

<<Struc: 72 - 74 Moderate (Alt) dominant foliation>>

<<Struc: 74 - 77 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description
76.75	**77.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**

76.75 - 77.9: Bands of OR chlorite alteration and OP chl-biot. Approx 10% dis cpy blebs, trace magnetite. 15% calcite gangue.

<<Min: 76.75 - 77.9 2% Min: Pyrite>>

<<Min: 76.75 - 77.9 1% Min: Magnetite>>

<<Min: 76.75 - 77.9 10% Min: Chalcopyrite>> diss blebs

<<Min: 76.75 - 77.9 15% Min: Calcite>> Bands, diss and wisps

<<Struc: 77 - 77.9 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
65.81	66.60	0.79	B00269925	0.6	-0.005	-0.01	0.01	0.02
72.50	74.00	1.50	B00269926	-0.3	-0.005	-0.01	0.02	0.02
74.00	75.50	1.50	B00269927	0.8	-0.005	-0.01	0.01	0.02
75.50	76.75	1.25	B00269928	2.3	0.059	0.15	-0.01	0.55
76.75	77.50	0.75	B00269929	32.9	0.89	2.13	0.03	0.61
77.50	77.90	0.40	B00269932	27.8	1.21	1.93	0.05	1.47

From (m)	To (m)		Rocktype & Description	
77.90	**82.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**

<<Min: 77.9 - 80.4 12% Min: Sphalerite>>
<<Min: 77.9 - 80.4 60% Min: Pyrite>>
<<Min: 77.9 - 80.4 1% Min: Magnetite>>
<<Min: 77.9 - 80.4 5% Min: Galena>>
<<Min: 77.9 - 80.4 1% Min: Chalcopyrite>> and as rare blebs
<<Min: 77.9 - 80.4 2% Min: Calcite>> patchy diss
<<Min: 77.9 - 80.4 5% Min: Barite>> difficult to determine - interstitial
<<Min: 80.4 - 82.6 10% Min: Sphalerite>>
<<Min: 80.4 - 82.6 40% Min: Pyrite>>
<<Min: 80.4 - 82.6 8% Min: Galena>> local blebs and aggregations
<<Min: 80.4 - 82.6 23% Min: Chalcopyrite>> diss and as blebs
<<Min: 80.4 - 82.6 2% Min: Calcite>> patchy
<<Min: 80.4 - 82.6 5% Min: Barite>> difficult to determine - interstitial
<<Struc: 77.9 - 77.9 Moderate (Alt) Contact>> MAFi (OJ) - OB contact
<<Struc: 77.9 - 79 Moderate (Alt) dominant foliation>> Banded sulphides
<<Struc: 79 - 80 Moderate (Alt) dominant foliation>> Banded sulphides
<<Struc: 82.2 - 83 Moderate (Alt) dominant foliation>> Banded sulphides

From (m)	To (m)		Rocktype & Description	
82.60	**84.83**	**OA**	**Magnetite bearing sulphides**	**MCG**

82.6 - 84.83: Banded and DMG magnetite.

<<Min: 82.6 - 84.83 5% Min: Sphalerite>>
<<Min: 82.6 - 84.83 40% Min: Pyrite>>
<<Min: 82.6 - 84.83 12% Min: Magnetite>> wispy bands and as diss
<<Min: 82.6 - 84.83 5% Min: Galena>> local blebs and aggregations
<<Min: 82.6 - 84.83 4% Min: Chalcopyrite>>
<<Min: 82.6 - 84.83 1% Min: Calcite>> and fracture filling
<<Min: 82.6 - 84.83 5% Min: Barite>> difficult to determine - interstitial
<<Min: 84.3 - 86 0.5% Min: Chalcopyrite>>
<<Struc: 84 - 85 Moderate (Alt) dominant foliation>> Banded sulphides

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
77.90	79.00	1.10	B00269933	151	0.878	0.56	5.97	9.97
79.00	80.00	1.00	B00269934	102	0.421	0.05	4.54	8.76
80.00	81.00	1.00	B00269935	91	1.5	0.3	5.19	7.34
81.00	82.00	1.00	B00269936	107	2.2	0.45	4.93	7.03
82.00	82.60	0.60	B00269937	113	1.4	0.12	5.69	8.9
82.60	83.00	0.40	B00269938	101	0.745	0.36	4.06	8.34
83.00	84.00	1.00	B00269939	121	2.19	0.27	5.87	7.57
84.00	84.83	0.83	B00269941	123	2.23	0.25	5.19	6.67

From (m)	To (m)	Rocktype & Description
84.83	**92.04**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MCG**
<<Min: 84.83 - 86 10% Min: Sphalerite>>		
<<Min: 84.83 - 86 5% Min: Galena>> Local blebs and aggregations		
<<Min: 84.83 - 92.04 10% Min: Barite>> difficult to determine		
<<Min: 84.83 - 92.04 40% Min: Pyrite>> and as diss		
<<Min: 86 - 91 8% Min: Sphalerite>>		
<<Min: 86 - 91 5% Min: Barite>> difficult to determine, interstitial as well		
<<Min: 86 - 91 1% Min: Chalcopyrite>>		
<<Min: 86 - 91 3% Min: Galena>>		
<<Min: 86 - 91 40% Min: Pyrite>>		
<<Min: 86 - 91 2% Min: Magnetite>> dis patches		
<<Min: 87.5 - 90.05 12% Min: Calcite>>		
<<Min: 90.5 - 91.7 5% Min: Calcite>>		
<<Min: 91 - 92.04 1% Min: Chalcopyrite>>		
<<Min: 91 - 92.04 3% Min: Galena>>		
<<Min: 91 - 92.04 50% Min: Pyrite>>		
<<Min: 91 - 92.04 15% Min: Sphalerite>> diss in prominent bands		
<<Min: 91.7 - 92.04 15% Min: Calcite>>		
<<Struc: 85 - 86 Moderate (Alt) dominant foliation>> banded sulphides		
<<Struc: 89 - 89.5 Moderate (Alt) dominant foliation>> banded sulphides		
<<Struc: 89.5 - 90 Moderate (Alt) dominant foliation>> banded sulphides		
<<Struc: 90 - 91.2 Moderate (Alt) dominant foliation>> banded sulphides		
<<Struc: 91.2 - 92 Moderate (Alt) dominant foliation>> banded sulphides		
92.04	**92.80**	**RHY** **undifferentiated rhyolite**
92.04 - 92.8: Could also be highly altered MAFi		
<<Min: 92.04 - 92.2 5% Min: Pyrite>>		
<<Min: 92.04 - 92.2 3% Min: Chalcopyrite>>		
<<Min: 92.2 - 108 3% Min: Calcite>>		
<<Min: 92.2 - 109 0.1% Min: Sphalerite>> Rare, trace on FRA and in Qtz veins		
<<Min: 92.2 - 109 2% Min: Pyrite>> and as diss		
<<Min: 92.2 - 109 0.1% Min: Galena>> Rare, trace on FRA and in Qtz veins		

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
84.83	85.83	1.00	B00269942	141	2.3	0.12	5.77	7.69
85.83	86.80	0.97	B00269943	126	1.71	0.15	3.41	5.35
86.80	87.50	0.70	B00269944	143	2.98	0.14	2.92	4.23
87.50	88.50	1.00	B00269945	257	2.6	0.05	5.56	6.25
88.50	89.50	1.00	B00269946	209	2.9	0.11	4.34	6.05
89.50	90.20	0.70	B00269947	224	2.82	0.37	3.61	4.59
90.20	91.00	0.80	B00269948	139	1.38	0.03	3.26	4.85
91.00	92.04	1.04	B00269949	421	3.05	0.31	7.24	10.5
92.04	92.80	0.76	B00269952	52.3	0.89	0.19	0.09	0.14

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 92.2 - 109 0.1% Min: Chalcopyrite>> Rare, trace on FRA and in Qtz veins									
		<<Struc: 92.04 - 92.04 Moderate (Alt) Contact>>									
		<<Struc: 92.04 - 113 Weak (Alt) Fault>> not really faulted but very fractured, broken, core rubble									
92.80	**131.00**	**RHYi Aphanitic Rhyolite (intrusion)**	92.80	94.00	1.20	B00269953	0.4	-0.005	-0.01	0.02	0.02
		92.8 - 131: Upper contact banded at 60 deg. Locally not schistose but massive with brittle fracture. Locally where foliation or shearing more intense RHYi is soft and sericite altered. Core was dropped from 113m - 131m due to core lifter spring problems….									
		<<Min: 108 - 132.82 5% Min: Calcite>> and as FRA filling, veinlets, mm foliform bands	94.00	95.50	1.50	B00269954	1.2	0.007	-0.01	0.02	0.02
		<<Min: 109 - 130.8 1% Min: Pyrite>>	95.50	97.00	1.50	B00269955	0.7	-0.005	-0.01	0.02	0.02
		<<Min: 130.8 - 132.82 0.2% Min: Pyrite>>	128.00	129.50	1.50	B00269956	0.9	-0.005	-0.01	-0.01	-0.01
		<<Min: 130.8 - 132.82 0.2% Min: Arsenopyrite>>	129.50	131.00	1.50	B00269957	-0.3	-0.005	-0.01	0.03	0.04
		<<Alt: 107 - 119 Weak (Alt) Muscovite>> Patchy sericite - clay and weak muscovite in stronger foliation - shear or fault zones serperated by fresher grey, more massive but fractured, RHYi.									
		<<Alt: 119 - 130.8 Weak-Moderate (Alt) Muscovite>> similar to 107-119.0 m but intensity increasing downhole.									
		<<Alt: 130.8 - 132.82 Weak-Moderate (Alt) Muscovite>> Similar to light green sericite alteration from 107 - 130.8m but now pervasive and along with more intense foliatian obscures the original lithology - likely a RHYi based on remnant qtz eyes and angular shards of glassy RHYi.									
		<<Vein: 109.3 - 109.5 100% Quartz>>									
		<<Vein: 118.8 - 121.3 35% Quartz>>									
		<<Vein: 127.6 - 128.3 25% Calcite 27 deg. >>									
		<<Struc: 103.5 - 104.5 Moderate (Alt) dominant foliation>>									
		<<Struc: 111 - 111.8 Weak-Moderate (Alt) Fault>> broken core, minor gouge - clay on fractures									
		<<Struc: 115.3 - 116 Moderate (Alt) dominant foliation>>									
		<<Struc: 119 - 125 Weak-Moderate (Alt) Fault>> broken core, minor gouge zones, clay on fractures. Core has been dropped (113-131m) so locations and intensity is suspect. Most gouge zones - shears seem to be at lower angles.									
		<<Struc: 125.12 - 125.12 Moderate (Alt) Vein>> 0.20m qtz vein									
		<<Struc: 126.3 - 127.4 Moderate (Alt) dominant foliation>> sericite altered									
		<<Struc: 128.35 - 128.4 Moderate (Alt) Vein>> 5cm calcite vein									
		<<Struc: 128.65 - 128.75 Moderate (Alt) Foliation>> sericite altered, strongly foliated - almost a shear band									
		<<Struc: 128.75 - 132.82 Moderate (Alt) dominant foliation>>									
131.00	**132.82**	**RHYi Aphanitic Rhyolite (intrusion)**	131.00	132.00	1.00	B00269958	0.6	0.006	-0.01	-0.01	-0.01
		131 - 132.82: Moderate to stongly foliated. Rare remnant qtz eyes and anglular RHYi shards, unit could be RHY?. Sharp contact at 132.82.									
			132.00	132.82	0.82	B00269959	2.7	0.008	-0.01	0.03	0.09

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
132.82	**133.35**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	132.82	133.35	0.53	B00269961	82.3	0.234	-0.01	1.08	3.82
132.82 - 133.35: No visible galena or chacopyrite, Low, <10% diss sphalerite.													
<<Min: 132.82 - 133.35 5% Min: Sphalerite>> and thin weak bands													
<<Min: 132.82 - 133.35 50% Min: Pyrite>>													
<<Min: 132.82 - 133.35 20% Min: Calcite>>													
<<Struc: 132.82 - 133.35 Moderate (Alt) dominant foliation>> banded sulfides													
133.35	**135.52**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		133.35	134.00	0.65	B00269962	1.2	0.006	-0.01	0.03	0.04
<<Min: 133.35 - 135.52 1% Min: Pyrite>>					134.00	135.52	1.52	B00269963	1.5	-0.005	0.02	0.03	0.05
<<Min: 133.35 - 135.52 15% Min: Calcite>>													
<<Alt: 133.35 - 135.52 Moderate (Alt) Chlorite>> MAFI banded chlorite, blebs and clots of OP type chlorite not present.													
<<Alt: 133.35 - 135.52 Weak (Alt) Biotite>>													
<<Struc: 133.35 - 135.52 Moderate (Alt) dominant foliation>>													
135.52	**138.95**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**CG**	135.52	136.25	0.73	B00269964	18.6	0.051	0.13	0.37	1.55
<<Min: 135.52 - 136.25 5% Min: Pyrite>> and as thin mm bands and diss					136.25	137.00	0.75	B00269965	52.4	0.238	1.02	0.51	4.52
<<Min: 135.52 - 136.25 1% Min: Chalcopyrite>> and as wisps					137.00	137.95	0.95	B00269966	48.5	0.265	1.15	0.29	4.93
<<Min: 136.25 - 136.55 20% Min: Pyrite>>					137.95	138.95	1.00	B00269967	56.2	0.11	0.94	0.54	6.73
<<Min: 136.25 - 136.55 8% Min: Chalcopyrite>>													
<<Min: 136.35 - 136.55 20% Min: Pyrrhotite>>													
<<Min: 136.55 - 137.9 10% Min: Pyrrhotite>>													
<<Min: 136.55 - 138.38 8% Min: Chalcopyrite>>													
<<Min: 136.95 - 138.38 3% Min: Magnetite>>													
<<Min: 137.9 - 138.95 20% Min: Pyrrhotite>> bands, blebs, AGR and diss													
<<Min: 138.38 - 138.95 3% Min: Chalcopyrite>>													
<<Alt: 135.52 - 136.2 Moderate (Alt) Cordierite>> diss in bands													
<<Alt: 135.52 - 137.3 Weak (Alt) Biotite>>													
<<Alt: 135.52 - 138.9 Strong (Alt) Chlorite>> Banded and semimassive chlorite in OJ unit													
<<Alt: 137.5 - 138.95 Moderate-Strong (Alt) Silicification>>													
<<Alt: 138.9 - 140.8 Trace (Alt) Chlorite>> rare													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 136.3 - 137 Moderate (Alt) dominant foliation>>									
138.95	**140.80**	**RHY undifferentiated rhyolite**	138.95	140.00	1.05	B00269968	1.4	-0.005	0.03	-0.01	0.19
		<<Min: 138.95 - 140.8 0.5% Min: Pyrite>>	140.00	140.80	0.80	B00269969	1.4	-0.005	0.02	0.01	0.08
		<<Min: 138.95 - 140.8 1% Min: Pyrrhotite>>									
		<<Min: 140.68 - 142 7% Min: Pyrrhotite>> and as thin mm foliaform bands									
		<<Alt: 139.9 - 141.85 Moderate (Alt) Muscovite>> Green sericite - muscovite on foiiation and shear planes									
		<<Alt: 140 - 141.7 Moderate (Alt) Silicification>> siliceous patches. Some silica in RHY could be sheared qtz vein.									
		<<Vein: 140 - 140.8 25% Quartz 50 deg. >>									
		<<Struc: 138.95 - 139.85 Moderate-Strong (Alt) Fault>> gouge and broken core									
140.80	**141.85**	**MDSc Carbonaceous dominant mudstone**	140.80	141.85	1.05	B00269971	3.2	0.019	0.03	0.05	0.25
		140.8 - 141.85: Siliceous, weakly sulfidized (pyrhotite), MDSc, contains minor RHY sections.									
		<<Min: 140.8 - 140.95 10% Min: Pyrite>>									
141.85	**170.60**	**RHY undifferentiated rhyolite**	141.85	143.00	1.15	B00269972	0.6	-0.005	0.02	0.02	0.06
		141.85 - 170.6: Muscovite - sericite altered (OR type) throughout. Foliation at approx. 30 deg with clay - sericite on surfaces. 141.85-147.3m: intense sericte - musc alteration with bands of diss 1-3 mm cordierite replaced by chlorite. This alteration correlates with a zone of cordierite - chlorite - silicification alteration in K15-316, also found below the mudstone, at a similar elevation. Alteration is still moderately intense at EOH but does decrease in intensity going downhole.									
		<<Min: 142 - 144 5% Min: Pyrite>> and as thin mm foliaform bands	143.00	144.60	1.60	B00269973	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 144 - 159.9 2% Min: Pyrite>> and as thin mm foliaform veinlets									
		<<Min: 144 - 159.9 2% Min: Pyrrhotite>>									
		<<Min: 147.17 - 150 5% Min: Calcite>>									
		<<Min: 150 - 161 10% Min: Calcite>>									
		<<Min: 159 - 164 1% Min: Pyrrhotite>>									
		<<Min: 159.9 - 170.6 2% Min: Pyrite>>									
		<<Min: 163.5 - 170.6 5% Min: Calcite>>									
		<<Alt: 141.85 - 147 Weak (Alt) Chlorite>>									
		<<Alt: 141.85 - 147.3 Strong (Alt) Muscovite>> green sericite - muscovite on foliation partings and as bands.									
		<<Alt: 143.9 - 144.6 Cordierite>> Chlorite replacing cordierite									
		<<Alt: 147 - 170.6 Trace (Alt) Chlorite>>									
		<<Alt: 147.3 - 170.6 Moderate-Strong (Alt) Muscovite>> More intense alteration (intensity 5-6) is over short (<1-2m) sections, remainder is intensity 4 with good sericte - muiscovite on partings.									
		<<Struc: 141.85 - 146.9 Weak-Moderate (Alt) Fault>> low angle foliation with strong sericite and clay plus local shearing - 'slips'									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 145.6 - 147 Moderate (Alt) dominant foliation>>

<<Struc: 146.9 - 147.2 Moderate-Strong (Alt) Fault>> gouge and broken core

<<Struc: 147.2 - 150 Weak-Moderate (Alt) Fault>> ow angle foliation with strong sericite and clay plus local shearing - 'slips'

<<Struc: 147.2 - 150 Moderate (Alt) dominant foliation>>

<<Struc: 150 - 151 Moderate-Strong (Alt) Fault>>

<<Struc: 152 - 155 Moderate (Alt) dominant foliation>>

<<Struc: 157 - 159.5 Moderate (Alt) dominant foliation>>

<<Struc: 161 - 162.3 Strong (Alt) Fault>> gouge zones, broken core and missing core.

<<Struc: 162.3 - 170.6 Moderate (Alt) dominant foliation>>

End of Hole @ 170.6

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-318

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	08-Nov-15
UTM Easting	415075	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	08-Nov-15
UTM Northing:	6815120	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1385.18	Casing Depth (m):	7.5	Length (m):	35	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Nov-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	07-Nov-15
Local Elev. (m):						Purpose:	Hydro
Comments:						Parent Hole:	

K15-318 was drilled as a monitoring well.
K15-318 encountered felsic volcaniclastics and coherent flows, locally cross-cut by BI+CA schists.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Dillon Hume	08-Nov-15		☑	
26	-88.8	185	22.5	207.5	ReflexEZS	Geotech	07-Nov-15	5774	☑	
35	-88.3	172.9	22.5	195.4	ReflexEZS	Geotech	07-Nov-15	5779	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 7.50 OVBN Overburden

7.50 19.10 RHYvl Lapilli tuff

7.5 - 19.1: Rhyolitic and calcareous lpl within grey, fine grained, ash matrix.

<<Min: 7.5 - 19.1 5% Min: Calcite>>

<<Min: 7.5 - 23 1% Min: Pyrrhotite>>

<<Struc: 13.2 - 13.6 Weak (Alt) Fault>> Tightly spaced cleavage with local fault gouge and higher oxidation than surrounding rock.

19.10 20.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

19.1 - 20.7: Gradiatonal, from top to bottom: heavily disseminated BI in grey, fine grained ash matrix to massive BI+CA schist. (metapelite with BI bein pelitic sediment material?). Relatively sharp lower contact.

<<Min: 19.1 - 20.7 20% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

20.70 23.00 RHYvl Lapilli tuff

20.7 - 23: Rhyolitic and calcareous lpl within grey, fine grained, ash matrix. Abundance of lpl decreases from the top to the bottom.

<<Min: 20.7 - 23 10% Min: Calcite>>

23.00 27.70 RHYc Rhyolite coherant volcanics

23 - 27.7: Very siliceous coherent rhyolite, with local pepperitic textures. Local blebs of PY+/-PO.

<<Min: 23 - 27.7 3% Min: Pyrite>>

<<Min: 23 - 27.7 2% Min: Pyrrhotite>>

<<Min: 23 - 27.7 3% Min: Calcite>>

27.70 32.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

27.7 - 32.3: BI+CA+CL schist with rounded CA phenocrysts?

<<Min: 27.7 - 32.3 20% Min: Calcite>>

<<Min: 27.7 - 35 0.5% Min: Pyrite>>

32.30 34.20 RHYva Coarse grained to ash tuff

32.3 - 34.2: Grey, fine grained, ash tuff with anastamosing MU cleavage

<<Min: 32.3 - 35 2% Min: Calcite>>

34.20 35.00 No Core No Core

34.2 - 35: Almost no core recovered. By correlating with K15-307, there should be a FBX here.

<<Struc: 34.2 - 35 Moderate (Alt) Fault>> Poor core recovery with minor fault gouge recovered

End of Hole @ 35

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-319

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	08-Nov-15
UTM Easting	414945.5	Core Size:	HQ3	Azimuth:	30	Date Logging Complete:	11-Nov-15
UTM Northing:	6815000.8	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1386.396	Casing Depth (m):	31	Length (m):	254	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	06-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

Hole collared into portions of RHY (Mu schist) before encountering the upper Krakatoa lens right at the contact with MAFi. The lower Krakatoa lens (OB, MAFi hosted) was encountered at 106.7 m. From 167.2 m to 196.8 m, the hole encountered the OI horizon (encountered in the K15-314, from 143.71 to 149.60m), which exists as interstitial or matrix replacement of py-gl-cpy-sph within a calcareous (?) or calcite rich breccia (with clasts of RHY and sulphide + calcite matrix), ~ 29.6 m of thickness. Followed by another OB lens 3 m below (~ 2.9 m of thickness, MAFi hosted). From 202.9 to 219.8m, Fault breccia interval, intercalated by mudstone unit (which was missing in the K15-314) and RHYcw. Remainder of hole was fine grained RHYv(a,l) with portions of moderately/strongly disseminated stratiform sulphides.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	30	0	30	APS	Florent Pons	06-Nov-15		☑	
41	-59.5	7.2	22.5	29.7	ReflexEZS	Geotech	07-Nov-15	5793	☑	
71	-61.2	7.6	22.5	30.1	ReflexEZS	Geotech	07-Nov-15	5794	☑	
101	-63.8	7.2	22.5	29.7	ReflexEZS	Geotech	08-Nov-15	5766	☑	
127	-68.1	7.9	22.5	30.4	ReflexEZS	Geotech	09-Nov-15	5778	☑	
131	-65.4	6.8	22.5	29.3	ReflexEZS	Geotech	09-Nov-15	5807	☑	
161	-66.6	8.2	22.5	30.7	ReflexEZS	Geotech	09-Nov-15	5799	☑	
191	-66.2	58.2	22.5	80.7	ReflexEZS	Geotech	09-Nov-15	7648	☐	High Mag
251	-70	8.4	22.5	30.9	ReflexEZS	Geotech	10-Nov-15	5756	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**33.13**	**OVBN Overburden**									
33.13	**59.45**	**RHY undifferentiated rhyolite light grey**	53.00	55.50	2.50	B00265491	1.5	0.037	-0.01	0.01	0.07
33.13 - 59.45: Light grey, shiny (fracture surface), muscovite schist, intensively Mu altered (original) associated with intense foliation/fracturation. Characterized by deformed/dismembered siliceous bands, concordant with foliation. The protolith could be RHYcw.											
<<Min: 33.13 - 59.45 0.5% Min: Pyrite>> Trace of disseminated py.			55.50	58.50	3.00	B00265492	2	0.015	-0.01	0.02	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 33.13 - 59.45 Intense (Alt) Muscovite>> Muscovite schist.	58.50	59.45	0.95	B00265493	0.7	0.013	-0.01	0.01	-0.01
		<<Struc: 38.8 - 38.81 Strong (Alt) dominant foliation>>									
		<<Struc: 55.5 - 59.45 Strong (Alt) Fault>> Large interval of fault gouge/breccia, fragments are from the hosted rock (RHY?). Discordant with DFOL.									
59.45	**59.90**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	59.45	59.90	0.45	B00265494	106	1.14	0.12	2.03	7.85
		59.45 - 59.9: Interval of massive sulphide within fault gouge, OB domain, brecciated (fragmented) filling by calcite.									
		<<Min: 59.45 - 59.9 6% Min: Sphalerite>> Medium grained									
		<<Min: 59.45 - 59.9 70% Min: Pyrite>> OB interval, medium grained (homogeneous)									
		<<Min: 59.45 - 59.9 6% Min: Galena>>									
		<<Min: 59.45 - 59.9 10% Min: Calcite>> Pervasive and fracture filling.									
59.90	**106.70**	**MAFi** **Mafic Intrusions (primarily green footwall mafic intrusion)** **FCG**	59.90	62.00	2.10	B00265495	5.5	0.034	-0.01	0.1	0.05
		59.9 - 106.7: Green, very fine to coarse grained MAFi, modertely foliated, Matrix is totally Cl altered. ~10 % of porphyroblast of Bi, stretched and oriented with foliation. Strong CA associated with thin concordant veinlets and blebs/clots, also pervasive.									
		<<Min: 59.9 - 70 10% Min: Calcite>> Associated with dismembered veinlets and blebs/porphyroblast	62.00	64.00	2.00	B00265496	14.6	0.015	0.02	0.01	0.04
		<<Min: 59.9 - 106.5 0.1% Min: Pyrite>>	64.00	65.15	1.15	B00265497	0.5	-0.005	-0.01	-0.01	0.02
		<<Min: 59.9 - 106.5 0.1% Min: Pyrrhotite>>	101.00	102.50	1.50	B00265498	0.6	0.014	-0.01	-0.01	0.01
		<<Min: 70 - 84.35 5% Min: Calcite>> Associated with dismembered veinlets and blebs/porphyroblast	102.50	104.00	1.50	B00265499	0.5	-0.005	-0.01	0.01	0.02
		<<Min: 84.35 - 85 12% Min: Calcite>> Associated with weak breccia.	104.00	105.30	1.30	B00232651	0.6	-0.005	-0.01	-0.01	0.02
		<<Min: 85 - 106.5 7% Min: Calcite>> Associated with dismembered veinlets and blebs/porphyroblast	105.30	106.70	1.40	B00232652	3	0.029	-0.01	0.02	0.03
		<<Min: 106.5 - 106.7 2% Min: Pyrite>>									
		<<Alt: 59.9 - 62 Moderate (Alt) Muscovite>> MU alteration within MAFi									
		<<Alt: 62 - 71 Strong (Alt) Chlorite>> MAFi									
		<<Alt: 71 - 106.5 Moderate (Alt) Chlorite>> MAFi									
		<<Alt: 106.5 - 106.7 Moderate (Alt) Muscovite>> Short interval MU altered (original), at the upper contact with massive sulphide.									
		<<Vein: 84.35 - 85 15% Calcite 70 deg. >> Interval weakly brecciated by Cacite veinlets, fracture filling, discordant (~70 ac).									
		<<Struc: 62 - 64 Strong (Alt) Fault>> Fault clay gouge.									
		<<Struc: 64 - 64.01 Strong (Alt) dominant foliation>>									
		<<Struc: 64.5 - 65.15 Strong (Alt) Fault>> Fault clay gouge.									

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 68 - 69 Strong (Alt) Fault>> Fault, intensively fractured.											
			<<Struc: 72 - 72.01 Moderate (Alt) dominant foliation>>											
			<<Struc: 88 - 88.01 Moderate (Alt) dominant foliation>>											
106.70	**112.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**		**MCG**	106.70	107.55	0.85	B00232653	170	0.966	0.3	1.73	7.71
			106.7 - 112.7: Interval of massive sulphide, OB domain, medium to coarse grained, moderate laminated texture marked by Sp bands. Ca pervasive and associated with fractures. Unit fractured. Sharp upper and lower contact. 108.4-108.8m: Short interval of RHY? Strongly Mu/Sr altered.											
			<<Min: 106.7 - 109.75 4% Min: Sphalerite>> Occuring as bands.			107.55	108.00	0.45	B00232654	241	0.928	0.04	2.89	9.89
			<<Min: 106.7 - 109.75 70% Min: Pyrite>> Medium to coarse grained. OB			108.00	109.75	1.75	B00232655	96.7	0.719	0.36	0.9	4.92
			<<Min: 106.7 - 109.75 2% Min: Galena>>			109.75	110.75	1.00	B00232656	129	1.01	0.79	0.96	7
			<<Min: 106.7 - 112.7 4% Min: Calcite>> Pervasive, disseminated blebs and also as thin veinlets.			110.75	111.75	1.00	B00232657	224	1.98	1.37	2.01	11.3
			<<Min: 109.75 - 111.75 4% Min: Galena>>			111.75	112.70	0.95	B00232658	119	0.721	0.34	0.94	6.57
			<<Min: 109.75 - 112.7 10% Min: Sphalerite>> Occuring as parallel bands, laminated texture.											
			<<Min: 109.75 - 112.7 70% Min: Pyrite>> Medium to coarse grained. OB											
			<<Min: 111.75 - 112.7 7% Min: Galena>> Aggregates at the margins. Disseminated.											
			<<Struc: 106.7 - 106.71 Contact>> Upper contact of massive sulphide.											
112.70	**120.45**	**RHYc**	**Rhyolite coherant volcanics**	**light grey**	**FG**	112.70	113.40	0.70	B00232659	2.1	0.02	-0.01	0.01	0.04
			112.7 - 120.45: Light grey, banded texture marked by grey siliceous bands, parallel with foliation,0.5-5 cm wide. Interval strongly foliated and MU altered (original). Could be RHYcw or RHYi intensively foliated. 0.5-1 % of Py disseminated. 116.4-116.95m: Bands/intrusive of RHYi, concordant with foliation.											
			<<Min: 113.4 - 120.45 0.5% Min: Pyrite>>			113.40	115.50	2.10	B00232661	1.2	0.015	-0.01	0.02	0.02
			<<Alt: 112.7 - 120.45 Strong (Alt) Muscovite>> Strong Mu alteration (original, shiny), associated with strong foliation.			115.50	117.00	1.50	B00232662	1	0.008	-0.01	0.01	0.02
			<<Vein: 112.85 - 113.4 85% Quartz 25 deg. >> massive qtz +/- ca vein, grey, subconcordant, 1% of py at margins.											
			<<Struc: 112.7 - 112.71 Contact>> lower contact of massive sulphide.											
			<<Struc: 116.1 - 116.11 Strong (Alt) dominant foliation>>											
120.45	**167.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**brown**	**FCG**	161.00	162.50	1.50	B00232663	10.1	0.161	0.14	0.08	0.05
			120.45 - 167.2: Brown/greenish, fine to coarse grained MAFi, moderately to strongly foliated and biotite altered (medium/strong,coarse flakes distributed within matrix, oriented with foliation). Fine grained Matrix , chlorite altered (pervasive). Strong CA associated with thin concordant veinlets and blebs/clots.											
			<<Min: 120.45 - 120.8 5% Min: Pyrite>> Occuring as subparallel bands.			162.50	163.75	1.25	B00232664	3.6	0.103	0.05	0.02	0.07

From (m)	To (m)	Rocktype & Description
		<<Min: 120.45 - 144.6 10% Min: Calcite>> MAFi, associated with veinlets/blebs.
		<<Min: 120.8 - 161 0.1% Min: Pyrite>> Locally associated with qtz-ca veinlets.
		<<Min: 144.6 - 145.42 60% Min: Calcite>> Calcite-qtz vein, >50 cm wide.
		<<Min: 145.41 - 162.42 12% Min: Calcite>> Pervasive, thin veinlets.
		<<Min: 161 - 163.75 3% Min: Pyrite>> Disseminated as subheudral crystal and also associated with Qtz-Ca veinlets/veins.
		<<Min: 161 - 163.75 0.5% Min: Chalcopyrite>> Associated with veinlets.
		<<Min: 162.42 - 163.75 1% Min: Calcite>>
		<<Min: 163.75 - 167.2 2% Min: Sphalerite>> Occuring as aggregates distributed within the vein and at the selvage. Locally centimetric size.
		<<Min: 163.75 - 167.2 3% Min: Pyrite>> Occuring as aggregates distributed within the vein and at the selvage. Locally centimetric size.
		<<Min: 163.75 - 167.2 4% Min: Galena>> Occuring as aggregates distributed within the vein and at the selvage. Locally centimetric size.
		<<Min: 163.75 - 167.2 2% Min: Chalcopyrite>> Occuring as aggregates distributed within the vein and at the selvage. Locally centimetric size.
		<<Min: 163.75 - 167.2 5% Min: Calcite>> Associated with massive qtz veins.
		<<Alt: 120.45 - 123.4 Strong (Alt) Chlorite>> Also associated with strong foliation.
		<<Alt: 123.4 - 131.9 Moderate (Alt) Chlorite>> MAFi
		<<Alt: 123.45 - 131.9 Moderate (Alt) Biotite>> Medium/coarse flakes distributed within matrix, oriented with foliation.
		<<Alt: 131.9 - 161 Weak (Alt) Chlorite>>
		<<Alt: 131.9 - 161 Strong (Alt) Biotite>> Fine/medium size flakes distributed within matrix, oriented with foliation.
		<<Alt: 161 - 167.2 Moderate (Alt) Muscovite>> Mu pervasive, syngenetic
		<<Alt: 161 - 167.2 Moderate (Alt) Chlorite>>
		<<Vein: 123.05 - 123.88 10% Quartz>> Group of discordant qtz-ca veins, 2-4 cm wide, deformed/dismembered.
		<<Vein: 144.6 - 146.55 60% Calcite>> 2 massive Ca veins, 25-70 cm wide, discordant, irregular.
		<<Vein: 163.75 - 167.2 90% Quartz>> Massive qtz +/- calcite vein, grey/milky, > 2 m wide, comprising Cpy/Py/GL/Sp occuring as aggregates at the margins and within the vein.
		<<Struc: 121.7 - 122.95 Moderate (Alt) Fault>> Strong/intense foliation.
		<<Struc: 123.2 - 123.21 Strong (Alt) dominant foliation>>
		<<Struc: 128 - 128.01 Moderate (Alt) dominant foliation>>
		<<Struc: 140 - 140.01 Moderate (Alt) dominant foliation>>
		<<Struc: 146.57 - 151.55 Strong (Alt) Fault>> Fault gouge/breccia interval. Clasts from hosted rocks (mafi)
		<<Struc: 152.6 - 160.7 Strong (Alt) Foliation>> Interval strongly/intensively foliated, irregular, folded. Comprising short fault gouge.
		<<Struc: 159.5 - 159.51 Strong (Alt) dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.75	165.00	1.25	B00232665	4.6	0.03	0.01	0.14	0.02
165.00	166.00	1.00	B00232666	32.4	0.021	0.08	0.41	0.03
166.00	167.20	1.20	B00232667	18.9	0.105	0.09	0.3	0.4

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
167.20	**168.55**	**OA Magnetite bearing sulphides MCG**	167.20	168.00	0.80	B00232668	265	2.17	1.53	4.77	14.1
167.2 - 168.55: Massive sulphide strongly Py/GL/SP/Cp mineralised, magnetite distributed within matrix (coarse grained).											
<<Min: 167.2 - 168.55 12% Min: Sphalerite>> Aggregates/clots distributed within the matrix.			168.00	168.55	0.55	B00232669	201	0.958	0.64	4.06	14.2
<<Min: 167.2 - 168.55 6% Min: Magnetite>> Distributed within matrix, coarse grained.											
<<Min: 167.2 - 168.55 10% Min: Galena>> Disseminated, locally aggregates.											
<<Min: 167.2 - 168.55 6% Min: Chalcopyrite>> Aggregates/clots distributed within the matrix.											
<<Min: 167.2 - 170 50% Min: Pyrite>> Medium grained, semi-massive to massive.											
<<Min: 167.2 - 190 2% Min: Calcite>> Associated with fracture filling and interval of OI.											
<<Min: 168.5 - 170 4% Min: Sphalerite>> Disseminated, locally aggregates.											
<<Min: 168.5 - 170 10% Min: Chalcopyrite>> aggregates disseminated.											
<<Min: 168.5 - 172.8 12% Min: Galena>> Disseminated, locally aggregates.											
<<Struc: 167.2 - 167.21 Contact>> Sharp upper contact of massive sulphide											
168.55	**172.80**	**OI Heavilly disseminated sulphides in host schist MCG**	168.55	169.50	0.95	B00232671	142	0.926	0.84	3.8	7.72
168.55 - 172.8: Semi massive to massive sulphide within brecciated interval filled by Qtz-Ca-Ak. Magnetite locally disseminated, coarse grained.											
<<Min: 168.55 - 172.8 1% Min: Magnetite>> Distributed within matrix, coarse grained.			169.50	170.00	0.50	B00232672	191	1.13	1.1	3.23	5.09
<<Min: 170 - 171.32 6% Min: Chalcopyrite>>			170.00	171.00	1.00	B00232673	106	0.732	0.08	4.16	7.15
<<Min: 170 - 171.7 5% Min: Sphalerite>> Occuring as bands, Weak laminated texture.			171.00	171.70	0.70	B00232674	193	1.35	0.42	5.15	7.22
<<Min: 170 - 180.2 50% Min: Pyrite>> Occuring as bands, Weak laminated texture.			171.70	172.80	1.10	B00232675	205	1.08	0.32	6.44	12.5
<<Min: 171.32 - 171.7 10% Min: Chalcopyrite>>											
<<Min: 171.7 - 172.8 12% Min: Sphalerite>> Medium grained											
<<Min: 171.7 - 172.8 3% Min: Chalcopyrite>>											
172.80	**180.20**	**OA Magnetite bearing sulphides MG**	172.80	173.70	0.90	B00232676	323	1.52	2.21	7.04	9.31
172.8 - 180.2: OA/OI moderately magnetic, laminated texture marked by bands of mineralisation and magnetite (coarse grained). Comprising short interval of OI magnetic.											
<<Min: 172.8 - 173.7 12% Min: Chalcopyrite>> Cm size.			173.70	174.30	0.60	B00232677	200	1.23	0.81	5.02	7.76
<<Min: 172.8 - 174.3 3% Min: Sphalerite>>			174.30	175.00	0.70	B00232678	288	3.03	1.61	6.57	8.47
<<Min: 172.8 - 174.3 4% Min: Galena>> Medium grained, disseminated within matrix.			175.00	176.00	1.00	B00232679	273	0.766	0.41	7.4	10
<<Min: 172.8 - 180.2 8% Min: Magnetite>> Distributed within matrix, coarse grained. Locally aggregate size.			176.00	177.00	1.00	B00232681	256	1.74	1.31	6.05	7.81
<<Min: 173.7 - 174.3 2% Min: Chalcopyrite>>			177.00	178.00	1.00	B00232682	298	3.89	1.6	6.6	8.45
<<Min: 174.3 - 180.2 4% Min: Sphalerite>>			178.00	179.00	1.00	B00232683	218	1.43	0.15	6.14	7.87

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 174.3 - 184.95 12% Min: Galena>> Medium grained, distributed within matrix. Locally aggregates.		179.00	180.20	1.20	B00232684	209	1.21	0.23	5.57	7.31
			<<Min: 174.3 - 184.95 6% Min: Chalcopyrite>> Aggregates, fine grained.										
180.20	**185.25**	**OI**	**Heavilly disseminated sulphides in host schist**	**FCG**	180.20	181.00	0.80	B00232685	191	1.36	0.13	4.75	5.87
			180.2 - 185.25: Semi massive to massive sulphide within brecciated interval filled by Qtz-Ca-Ak. Magnetite locally disseminated, coarse grained.										
			<<Min: 180.2 - 184.95 5% Min: Sphalerite>> Locally aggregates.		181.00	182.00	1.00	B00232686	251	1.9	0.2	4.93	5.94
			<<Min: 180.2 - 184.95 40% Min: Pyrite>> Large aggregates, fine/medium grained.		182.00	183.00	1.00	B00232687	210	3.29	0.31	3.87	5.68
			<<Min: 180.2 - 196.8 0.5% Min: Magnetite>> Distributed within matrix, coarse grained.		183.00	184.00	1.00	B00232688	218	2.15	0.05	4.43	7.58
			<<Min: 184.95 - 192.1 15% Min: Sphalerite>> Medium grained, occuring as bands, laminated texture.		184.00	184.50	0.50	B00232689	410	4.56	0.37	4.28	7.17
			<<Min: 184.95 - 192.1 10% Min: Galena>> Medium to coarse grained, disseminated within matrix.		184.50	185.25	0.75	B00232691	400	3.85	0.36	4	8.85
			<<Min: 184.95 - 192.1 10% Min: Chalcopyrite>> Fine grained.										
			<<Min: 184.95 - 196.8 50% Min: Pyrite>> Fine/medium grained, semi massive to massive, occuring as bands, marked with Sp a moderate laminated texture.										
185.25	**191.00**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FCG**	185.25	186.00	0.75	B00232692	270	2.27	0.7	4.31	17.7
			185.25 - 191: Laminated texture marked by bands of mineralisation, comprinsing short interval of OI										
			<<Min: 190 - 196.8 6% Min: Calcite>> And also weakly/moderately pervasive.		186.00	187.00	1.00	B00232693	251	1.84	1.63	3.98	16.9
					187.00	188.00	1.00	B00232694	409	2.49	1.84	7.79	16.1
					188.00	189.00	1.00	B00232695	421	2.62	2.71	8.31	15.4
					189.00	190.00	1.00	B00232696	398	1.64	1.66	7.79	16.2
					190.00	191.00	1.00	B00232697	301	1.8	2.02	4.82	14.3
191.00	**196.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FCG**	191.00	192.10	1.10	B00232698	389	4.12	3.36	4.75	9.68
			191 - 196: Semi massive to massive sulphide within brecciated interval filled by Qtz-Ca-Ak. Laminated texture marked by bands of mineralisation, fracture filling. Hard to determinate the protolith, strongly SI.										
			<<Min: 192.1 - 193.9 8% Min: Sphalerite>> medium grained		192.10	193.00	0.90	B00232699	277	1.51	1.24	4	11.3
			<<Min: 192.1 - 193.9 5% Min: Galena>> Medium to coarse grained.		193.00	194.00	1.00	B00232701	264	1.41	0.76	3.09	12.3
			<<Min: 192.1 - 193.9 4% Min: Chalcopyrite>>		194.00	195.00	1.00	B00232702	560	3.28	5.5	5.8	12.2
			<<Min: 193.9 - 195.42 10% Min: Sphalerite>> Medium grained.		195.00	195.42	0.42	B00232703	399	6.85	5.79	3.5	11
			<<Min: 193.9 - 195.42 15% Min: Galena>> Medium to coarse grained.		195.42	196.00	0.58	B00232704	159	0.683	0.45	2.14	6.19
			<<Min: 193.9 - 195.42 15% Min: Chalcopyrite>> Fine grained.										

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 195.42 - 196.42 5% Min: Galena>>												
<<Min: 195.42 - 196.8 6% Min: Sphalerite>>												
<<Min: 195.42 - 196.8 1% Min: Chalcopyrite>>												
<<Alt: 195.42 - 197.2 Moderate (Alt) Chlorite>> Occuring as bands, very fine grained associated with mineralisation.												
196.00	**196.80**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	196.00	196.80	0.80	B00232705	146	0.955	0.32	2.21	5.37
196 - 196.8: OB, >70 % of py medium grained. Sharp lower contact.												
196.80	**200.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**FMG**	196.80	198.00	1.20	B00232706	3.2	0.031	0.01	0.02	0.07
196.8 - 200: Green, medium grained MAFi, moderately/strongly foliated, Matrix is totally Cl altered. Strong CA associated with thin concordant veinlets and blebs/clots, also pervasive.												
<<Min: 196.8 - 200 1% Min: Pyrite>> Coarse grained, disseminated within matrix.				198.00	199.00	1.00	B00232707	3.1	0.028	-0.01	0.02	0.06
<<Min: 196.8 - 200 10% Min: Calcite>> MAFi				199.00	200.00	1.00	B00232708	11.1	0.048	0.01	0.15	0.13
<<Alt: 197.2 - 200 Moderate (Alt) Chlorite>> MAFi												
<<Struc: 196.8 - 196.81 Contact>> Sharp lower contact of mxsx.												
<<Struc: 197.5 - 197.51 Moderate (Alt) dominant foliation>>												
200.00	**202.08**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	200.00	201.00	1.00	B00232709	35.2	0.24	0.38	0.33	1.93
200 - 202.08: OB, homogeneous and massive texture. >70 % Py.												
<<Min: 200 - 202.08 70% Min: Pyrite>> Massive sulphide, OB domain.				201.00	202.08	1.08	B00232711	19.2	0.126	0.34	0.17	0.53
<<Min: 200 - 202.08 2% Min: Galena>>												
<<Min: 200 - 202.08 2% Min: Chalcopyrite>>												
202.08	**202.90**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**CG**	202.08	202.90	0.82	B00232712	19.7	0.02	0.22	0.15	5.56
202.08 - 202.9: Interval strongly mineralized, brecciated and CL altered, localized between OB and fault breccia. OJ?												
<<Min: 202.08 - 202.4 10% Min: Sphalerite>> fracture filling, OJ?												
<<Min: 202.08 - 202.4 5% Min: Pyrite>> fracture filling, OJ?												
<<Min: 202.08 - 202.4 5% Min: Chalcopyrite>> fracture filling, OJ?												
<<Alt: 202.08 - 202.9 Strong (Alt) Chlorite>> OJ associated.												

From (m)	To (m)	Rocktype & Description
202.90	**206.00**	**FBX** **Fault Breccia**

202.9 - 206: Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX) within MU/SR matrix, heteregeneous, cm size.

<<Struc: 202.9 - 206 Intense (Alt) Fault>> Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX) within MU/SR matrix, heteregeneous, cm size.

From (m)	To (m)	Rocktype & Description
206.00	**209.85**	**MDSt** **Rhyolite tuff dominant mudstone** **MG**

206 - 209.85: Grey to dark grey, carbonaceous tuff/rhy, comprising bands/intervals of mudstone associated with RHYcw (banded texture marked by siliceous bands). Strongly foliated and MU altered.

<<Min: 206 - 212 3% Min: Pyrrhotite>> Small wisps and disseminated.

<<Alt: 206 - 209.75 Strong (Alt) Muscovite>>

<<Struc: 209.5 - 209.51 Strong (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description
209.85	**212.00**	**FBX** **Fault Breccia**

209.85 - 212: Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX, RHY dominant) within MU/SR matrix, heteregeneous, cm size.

<<Struc: 209.85 - 212 Intense (Alt) Fault>> Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX, RHY dominant) within MU/SR matrix, heteregeneous, cm size.

From (m)	To (m)	Rocktype & Description
212.00	**212.88**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)**

212 - 212.88: Short interval of RHYcw, flow banded texture marked by parallel siliceous bands, deformed and locally dismembered within intense foliation. Weakly carbonaceous?

<<Min: 212 - 212.8 1% Min: Pyrite>>

<<Min: 212 - 212.8 1% Min: Pyrrhotite>>

<<Alt: 212 - 231.5 Strong (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description
212.88	**219.80**	**FBX** **Fault Breccia**

212.88 - 219.8: Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX) within MU/SR matrix, heteregeneous, cm size.

<<Struc: 212.88 - 219.8 Intense (Alt) Fault>> Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX) within MU/SR matrix, heteregeneous, cm size.

From (m)	To (m)	Rocktype & Description
219.80	**231.50**	**RHY** **undifferentiated rhyolite**

219.8 - 231.5: Interval of RHY, banded texture marked by parallel siliceous bands, deformed and locally dismembered within intense foliation. Strong MU alteration, original? 1-2 % of py/po disseminated. Could be a RHYcw unit.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
202.90	204.00	1.10	B00232713	0.7	0.005	-0.01	0.01	0.03
204.00	205.50	1.50	B00232714	0.3	-0.005	-0.01	-0.01	0.02
205.50	206.00	0.50	B00232715	0.5	-0.005	-0.01	-0.01	0.02
206.00	207.00	1.00	B00232716	-0.3	-0.005	-0.01	-0.01	0.04

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 219.8 - 227.57 1% Min: Pyrite>> Also occuring as small wisps.

<<Min: 227.57 - 228.55 3% Min: Pyrite>> Coarse grained.

<<Min: 228.55 - 231.5 1% Min: Pyrite>>

<<Struc: 222 - 222.01 Strong (Alt) Foliation>> Irregular foliation from 219.8 to 231.5m, folded.

<<Struc: 227.4 - 227.41 Strong (Alt) Foliation>>

<<Struc: 230.65 - 230.8 Strong (Alt) Fault>> Fault gouge

231.50 254.00 RHYva Coarse grained to ash tuff light grey MCG

231.5 - 254: Light grey, medium to coarse grained, +/- homogeneous, moderately foliated (regular cleavage). We observe <5 % of stretched siliceous fragments, deformed, lapilli relics? After 339.15m, Pervasive CL alteration appears associated with mineralisation (po/py). QE locally observed, distributed within the matrix. 1-2 % of Po/Py disseminated, occurring as wisps/stringers. Probably ash tuff with lapilli intervals.

236-239.15m: Lapillis tuff interval?

<<Min: 231.5 - 238.1 2% Min: Pyrrhotite>> Associated with CL alteration (original?)

<<Min: 238.1 - 247.3 4% Min: Pyrrhotite>> Associated with CL alteration (original?)

<<Min: 247.3 - 254 2% Min: Pyrrhotite>> Associated with CL alteration (original?)

<<Alt: 231.5 - 254 Moderate (Alt) Muscovite>> Original?

<<Alt: 239.15 - 254 Weak (Alt) Chlorite>> Pervasive/patchy and locally occuring as bands. Associated with mineralisation (po/py)

<<Struc: 233 - 233.01 Moderate (Alt) Foliation>>

<<Struc: 242 - 242.01 Moderate (Alt) Foliation>>

<<Struc: 253.5 - 253.51 Moderate (Alt) Foliation>>

End of Hole @ 254

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-320

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	08-Nov-15
UTM Easting	415076	Core Size:	HQ3	Azimuth:	210.5	Date Logging Complete:	11-Nov-15
UTM Northing:	6815121	Casing Pulled?:	Yes	Dip:	-46.5	Drill Company:	Geotech
UTM Elev. (m):	1385.285	Casing Depth (m):	9	Length (m):	269	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	07-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	10-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-320 was drilled to confirm and define the resource along section NW1.
K15-320 encountered overburden to 12.5 m depth, followed by a felsic hanging wall package to 128.5 m. This hanging wall package consists of mixed volcaniclastic rhyolites, BI+CA schists, coherent rhyolites, and two OB massive sulphide lenses from 120.5-121 m and 122.1-123.2 m. Strong muscovite alteration became apparent around 99.5 m. Below this hanging wall sequence, a CL+BI+CA schist (MAFi) occurs to 150 m (with minor rhyolitic material within), where another massive sulphide lens is encountered. This mafic-hosted massive sulphide lens persists to a depth of 163.7 m, consisting of OB and OA mineralization. RHYi is encountered from 163.7-202.9 m, with sharp contacts, suggesting it intruded the massive sulphide lens. Below the RHYi, OB mineralization occurs from 202.9-203.2 m, followed by another CL+BI+CA schist (MAFi). Below this MAFi there is a final massive sulphide lens, from 207.7-210.2 m, consisting of OA mineralization. The footwall package consists of argillitic mudstone and volcaniclastic rhyolites, with decreasing alteration intensity down the hole.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-46.5	210.5	0	210.5	APS	Dillon Hume	07-Nov-15		☑	
26	-45.4	193.2	22.5	215.7	ReflexEZS	Geotech	07-Nov-15	5755	☑	
50	-46.3	191.6	22.5	214.1	ReflexEZS	Geotech	07-Nov-15	5745	☑	
80	-46.7	193.5	22.5	216	ReflexEZS	Geotech	08-Nov-15	5788	☑	
107	-47.3	191.2	22.5	213.7	ReflexEZS	Geotech	08-Nov-15	5760	☑	
134	-47.5	190.3	22.5	212.8	ReflexEZS	Geotech	08-Nov-15	5760	☑	
164	-48.4	189.9	22.5	212.4	ReflexEZS	Geotech	08-Nov-15	5741	☑	
203	-48.2	190.4	22.5	212.9	ReflexEZS	Geotech	09-Nov-15	5744	☑	
227	-48.7	191.1	22.5	213.6	ReflexEZS	Geotech	09-Nov-15	5736	☑	
251	-49	193.2	22.5	215.7	ReflexEZS	Geotech	09-Nov-15	5727	☑	
269	-49.4	192.8	22.5	215.3	ReflexEZS	Geotech	10-Nov-15	5751	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**12.50**	**OVBN Overburden**									
0 - 12.5: Overburden includes 3 small pieces of MSXS (un-oxidized). Maybe core lost from K15-307.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

12.50 19.60 RHYvl Lapilli tuff

12.5 - 19.6: Calcareous and PO lpl within grey, fine grained ash tuff with local disseminated subhedral BI.

<<Min: 12.5 - 19.6 10% Min: Calcite>>

<<Min: 12.5 - 33.1 1% Min: Pyrrhotite>>

<<Struc: 15 - 15.2 Weak (Alt) Fault>> Tightly spaced foliation with local fault gouge and higher oxidation than surrounding rock.

19.60 23.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

19.6 - 23.1: Grades from top to bottom from: Heavily disseminated BI in grey, fine grained ash tuff to BI+CA schist.

<<Min: 19.6 - 23.1 20% Min: Calcite>>

<<Vein: 22.6 - 22.7 80% Calcite>> Massive QZ+CA veining

23.10 33.10 RHYvl Lapilli tuff

23.1 - 33.1: Calcareous and PO lpl within grey, fine grained ash tuff with local disseminated subhedral BI.

<<Min: 23.1 - 33.1 10% Min: Calcite>>

<<Vein: 23.15 - 23.3 80% Quartz>> Massive QZ+CA vein

<<Vein: 31.3 - 31.35 70% Quartz>> Massive QZ vein

33.10 37.00 RHYc Rhyolite coherant volcanics

33.1 - 37: Silica banded to flow banded rhyolite with wavy to anastamosing MU cleavage

<<Min: 33.1 - 37 5% Min: Calcite>>

37.00 38.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

37 - 38.2: Disseminated BI and CA porphyroblasts within ~olive green CL (?) matrix

<<Min: 37 - 38.2 20% Min: Calcite>>

38.20 40.70 RHYc Rhyolite coherant volcanics

38.2 - 40.7: Silica banded to flow banded rhyolite with wavy to anastamosing MU cleavage

<<Min: 38.2 - 44.5 5% Min: Calcite>>

40.70 44.00 RHYva Coarse grained to ash tuff

40.7 - 44: Local lpl and flow banding, but dominated by grey, fine grained ash tuff

<<Min: 40.7 - 44 1% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 42.3 - 42.4 Weak (Alt) Fault>> Local fault gouge zone									
44.00	**44.50**	**MDSc Carbonaceous dominant mudstone**									
		44 - 44.5: Black, carbonaceous mudstone with bands of silica+CA. Crenulation cleavage deforms original (?) foliation.									
		<<Min: 44 - 44.5 2% Min: Pyrite>>									
		<<Min: 44 - 44.5 2% Min: Pyrrhotite>>									
44.50	**99.50**	**RHYva Coarse grained to ash tuff**									
		44.5 - 99.5: Grey fine grained ash tuff with local blebs (~2 mm) of PO. Alteration increases intensity down the unit.									
		<<Min: 44.5 - 91.6 1% Min: Pyrite>>									
		<<Min: 44.5 - 91.6 1% Min: Pyrrhotite>>									
		<<Min: 44.5 - 99.5 2% Min: Calcite>>									
		<<Min: 91.6 - 120.5 1% Min: Pyrite>>									
		<<Min: 91.6 - 120.5 5% Min: Pyrrhotite>>									
		<<Alt: 53 - 68.6 Weak (Alt) Muscovite>>									
		<<Alt: 68.6 - 99.5 Moderate (Alt) Muscovite>>									
		<<Vein: 79.1 - 79.3 80% Quartz>> Massive QZ+Tourmaline vein									
		<<Vein: 94.85 - 94.97 95% Quartz>> Massive QZ vein									
		<<Vein: 95.3 - 95.4 80% Quartz>> Massive QZ vein									
		<<Vein: 99.35 - 99.5 90% Quartz>> Massive QZ vein									
		<<Struc: 46.6 - 46.65 Weak (Alt) Fault>> Local fault gouge zone									
		<<Struc: 65.8 - 66 Weak (Alt) Fault>> Fault gouge zone									
		<<Struc: 68.3 - 68.6 Weak-Moderate (Alt) Fault>> Fault gouge zone									
		<<Struc: 73.3 - 75.6 Weak (Alt) Fault>> Highly fractured with local fault gouge									
		<<Struc: 78.7 - 89.6 Moderate (Alt) Fault>> Highly fractured zone with local fault gouge									
		<<Struc: 90.7 - 91.1 Moderate (Alt) Fault>> Fault gouge zone									
		<<Struc: 93.2 - 93.3 Weak (Alt) Fault>> Fault gouge zone									
		<<Struc: 99.1 - 99.3 Moderate (Alt) Fault>> Fault gouge zone									
99.50	**120.50**	**RHYcw Curdy textured-flow banded (flows, subvolcanics)**	116.00	117.50	1.50	B00233199	1.1	0.025	-0.01	0.02	0.03
		99.5 - 120.5: Silica banded rhyolite with strongly MU-alterated cleavages. Strong crenulation/transposition foliation developed.									
		<<Min: 99.5 - 120.5 2% Min: Calcite>>	117.50	119.00	1.50	B00233201	2	0.049	-0.01	0.03	0.07

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 99.5 - 120.5 Strong (Alt) Muscovite>>	119.00	120.50	1.50	B00233202	6.9	0.057	0.03	0.1	0.15
		<<Struc: 99.8 - 101.8 Weak (Alt) Fault>> Highly fractured with local fault gouge along MU-cleavages (DFOL/transposition foliation)									
		<<Struc: 109.98 - 109.99 dominant foliation>> MU-cleavage, transposition foliation									
		<<Struc: 115.98 - 115.99 dominant foliation>> MU-cleavage, transposition foliation									
		<<Struc: 117 - 117.1 Weak (Alt) Fault>> Local fault gouge zone cross-cutting foliation									
		<<Struc: 118.85 - 118.86 dominant foliation>> MU cleavage, transposition foliation									
120.50	**121.00**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides** **MG**	120.50	121.00	0.50	B00233203	174	1.31	0.21	2.79	7.86
		120.5 - 121: Massive PY+CA+SP+/-GL with blebby silica and tetrahedrite/arsenopyrite (?)									
		<<Min: 120.5 - 121 8% Min: Sphalerite>>									
		<<Min: 120.5 - 121 70% Min: Pyrite>>									
		<<Min: 120.5 - 121 1% Min: Galena>>									
		<<Min: 120.5 - 121 10% Min: Calcite>>									
		<<Min: 120.5 - 121 1% Min: Arsenopyrite>> Tetrahedrite?									
121.00	**122.10**	**RHYc** **Rhyolite coherant volcanics**	121.00	121.80	0.80	B00233204	24.1	0.114	0.33	0.16	0.31
		121 - 122.1: Silica banded with MU-cleavages. Local heavily disseminated PY+SP+CP on upper and lower contacts.									
		<<Min: 121 - 121.2 2% Min: Sphalerite>>	121.80	122.10	0.30	B00233205	94	1.15	0.95	0.68	2.18
		<<Min: 121 - 121.2 5% Min: Pyrite>>									
		<<Min: 121.2 - 121.8 0.5% Min: Sphalerite>>									
		<<Min: 121.2 - 121.8 2% Min: Pyrite>>									
		<<Min: 121.8 - 122.1 3% Min: Sphalerite>>									
		<<Min: 121.8 - 122.1 3% Min: Pyrite>>									
		<<Min: 121.8 - 122.1 3% Min: Chalcopyrite>>									
		<<Min: 121.8 - 122.1 10% Min: Calcite>>									
		<<Alt: 121 - 122.1 Strong (Alt) Muscovite>>									
		<<Vein: 121.1 - 121.2 80% Quartz>> Massive QZ vein									
122.10	**123.20**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	122.10	122.70	0.60	B00233206	216	2.07	0.42	2.06	8.41
		122.1 - 123.2: Massive PY+SP+CA+/-GL with local blebs of CP									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 122.1 - 123.2 10% Min: Sphalerite>>	122.70	123.20	0.50	B00233207	150	1.17	0.3	2.79	9.1
		<<Min: 122.1 - 123.2 75% Min: Pyrite>>									
		<<Min: 122.1 - 123.2 1% Min: Galena>>									
		<<Min: 122.1 - 123.2 1% Min: Chalcopyrite>>									
		<<Min: 122.1 - 123.2 5% Min: Calcite>>									
		<<Min: 122.1 - 123.2 2% Min: Arsenopyrite>> Tetrahedrite?									
123.20	**128.50**	**RHYc** **Rhyolite coherant volcanics**	123.20	124.70	1.50	B00233208	1.7	0.022	-0.01	0.02	0.02
		123.2 - 128.5: Silica banded rhyolite with MU-cleavages									
		<<Min: 123.2 - 128.5 5% Min: Calcite>>	124.70	126.20	1.50	B00233209	1.6	0.009	-0.01	-0.01	0.03
		<<Min: 123.2 - 130.3 0.5% Min: Pyrite>>	126.20	127.70	1.50	B00233211	1.5	0.009	-0.01	0.01	-0.01
		<<Alt: 123.2 - 128.5 Strong (Alt) Muscovite>>									
		<<Struc: 124.98 - 124.99 dominant foliation>> MU cleavage, transposition foliation									
		<<Struc: 128.3 - 128.5 Moderate (Alt) Fault>> Fault gouge zone									
128.50	**139.40**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	139.30	139.60	0.30	B00233212	28.7	0.131	0.04	0.25	1.35
		128.5 - 139.4: CL+BI+CA schist with a moderately MU-altered upper contact									
		<<Min: 128.5 - 130.3 10% Min: Calcite>>									
		<<Min: 130.3 - 139.4 20% Min: Calcite>>									
		<<Alt: 128.5 - 130.3 Moderate (Alt) Muscovite>>									
		<<Alt: 128.5 - 130.3 Moderate (Alt) Chlorite>>									
		<<Alt: 128.5 - 130.3 Moderate (Alt) Biotite>>									
		<<Alt: 130.3 - 131.7 Moderate (Alt) Chlorite>>									
		<<Alt: 130.3 - 131.7 Strong (Alt) Biotite>>									
		<<Alt: 131.7 - 139.4 Strong (Alt) Chlorite>>									
		<<Alt: 131.7 - 139.4 Moderate (Alt) Biotite>>									
		<<Struc: 130.9 - 130.91 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 132 - 132.01 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 133 - 133.01 dominant foliation>> Discontinuous BI foliation									
		<<Struc: 136.74 - 136.75 dominant foliation>> Discontinuous BI foliation									
139.40	**143.70**	**RHY** **undifferentiated rhyolite**	143.55	143.90	0.35	B00233213	9.7	0.087	0.1	0.05	1.78
		139.4 - 143.7: QZ+MU schist with semi-massive sulphide mineralization for ~5cm on both upper and lower contacts									
		<<Min: 139.4 - 139.5 80% Min: Pyrite>>									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 139.4 - 143.7 1% Min: Calcite>>										
			<<Min: 139.5 - 143.65 0.5% Min: Pyrite>>										
			<<Min: 143.65 - 143.7 20% Min: Sphalerite>>										
			<<Min: 143.65 - 143.7 30% Min: Pyrite>>										
			<<Alt: 139.4 - 143.7 Strong (Alt) Muscovite>>										
			<<Vein: 139.6 - 140.3 100% Quartz 45 deg. >> Massive QZ vein										
			<<Vein: 141.6 - 141.65 100% Quartz>> Massive QZ vein										
			<<Struc: 142.4 - 143.5 Moderate (Alt) Fault>> Highly fractured with fault gouge zones										
143.70	**150.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		145.50	147.00	1.50	B00233214	-0.3	0.005	-0.01	-0.01	0.03
			143.7 - 150: CL+BI+CA schist										
			<<Min: 143.7 - 150 50% Min: Calcite>>		147.00	148.50	1.50	B00233215	0.6	0.005	-0.01	0.01	0.06
			<<Alt: 143.7 - 150 Strong (Alt) Chlorite>>		148.50	150.00	1.50	B00233216	1.1	0.007	-0.01	-0.01	0.04
			<<Alt: 143.7 - 150 Moderate (Alt) Biotite>>										
			<<Struc: 145.93 - 145.94 dominant foliation>> Discontinuous BI foliation										
			<<Struc: 149.4 - 149.7 Weak (Alt) Fault>> Highly fractured with local fault gouge and tightly space foliation										
150.00	**151.10**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	150.00	151.10	1.10	B00233217	174	1.4	0.11	4.41	7.13
			150 - 151.1: Massive PY+SP+CA+/-GL with blebby CA and silica										
			<<Min: 150 - 151.1 5% Min: Sphalerite>>										
			<<Min: 150 - 151.1 70% Min: Pyrite>>										
			<<Min: 150 - 151.1 1% Min: Galena>>										
			<<Min: 150 - 151.1 1% Min: Chalcopyrite>>										
			<<Min: 150 - 151.1 15% Min: Calcite>> Disseminated CA and veinlet CA										
151.10	**151.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		151.10	151.70	0.60	B00233218	5.5	0.03	0.02	0.09	0.16
			151.1 - 151.7: Faulted CL+BI schist										
			<<Min: 151.1 - 151.7 5% Min: Calcite>>										
			<<Alt: 151.1 - 151.7 Strong (Alt) Chlorite>>										
			<<Alt: 151.1 - 151.7 Moderate (Alt) Biotite>>										
			<<Struc: 151.1 - 151.6 Weak (Alt) Fault>> Highly fractured with fault gouge										

From (m)	To (m)		Rocktype & Description	
151.70	**160.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**

151.7 - 160.9: Semi-massive to massive PY+SP+CA+/-GL with blebs of CA and silica+/-barite (?). Small zone of CL+BI+CA schist from 158.1-158.3 m.

<<Min: 151.7 - 158.1 5% Min: Sphalerite>>
<<Min: 151.7 - 158.1 65% Min: Pyrite>>
<<Min: 151.7 - 158.1 2% Min: Galena>>
<<Min: 151.7 - 158.1 1% Min: Chalcopyrite>>
<<Min: 151.7 - 158.1 15% Min: Calcite>>
<<Min: 151.7 - 158.1 1% Min: Arsenopyrite>>
<<Min: 158.1 - 158.3 10% Min: Calcite>>
<<Min: 158.3 - 160.9 8% Min: Sphalerite>>
<<Min: 158.3 - 160.9 60% Min: Pyrite>>
<<Min: 158.3 - 160.9 1% Min: Magnetite>>
<<Min: 158.3 - 160.9 2% Min: Galena>>
<<Min: 158.3 - 160.9 15% Min: Calcite>>
<<Alt: 158.1 - 158.3 Strong (Alt) Chlorite>>
<<Alt: 158.1 - 158.3 Moderate (Alt) Biotite>>
<<Struc: 151.9 - 151.91 dominant foliation>> Sulphide lamination
<<Struc: 157.48 - 157.49 dominant foliation>> Sulphide lamination
<<Struc: 158.1 - 158.2 Weak (Alt) Fault>> Fault gouge

From (m)	To (m)		Rocktype & Description	
160.90	**163.00**	**OA**	**Magnetite bearing sulphides**	**MCG**

160.9 - 163: Massive PY+SP+CA+/- GL with disseminated coarse grain MG

<<Min: 160.9 - 163 5% Min: Sphalerite>>
<<Min: 160.9 - 163 65% Min: Pyrite>>
<<Min: 160.9 - 163 10% Min: Magnetite>>
<<Min: 160.9 - 163 1% Min: Galena>>
<<Min: 160.9 - 163 5% Min: Calcite>>
<<Struc: 160.91 - 160.92 dominant foliation>> Sulphide lamination

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
151.70	152.70	1.00	B00233219	348	2.62	0.13	4.24	7.19
152.70	153.70	1.00	B00233221	370	2.97	0.16	5.26	6.52
153.70	154.70	1.00	B00233222	238	2.14	0.27	4.18	6.02
154.70	155.70	1.00	B00233223	286	2.2	0.32	5.92	6.99
155.70	156.70	1.00	B00233224	219	2.55	0.22	4.36	5.84
156.70	157.70	1.00	B00233225	286	2.75	0.33	5.28	10.5
157.70	158.10	0.40	B00233226	255	1.37	0.15	3.79	5.32
158.10	158.30	0.20	B00233227	289	4.3	0.69	0.26	0.55
158.30	159.30	1.00	B00233228	334	2.49	0.2	3.85	6.1
159.30	160.10	0.80	B00233229	330	2.84	0.26	2.86	3.79
160.10	160.90	0.80	B00233232	229	2.84	0.16	2.69	3.85
160.90	162.00	1.10	B00233233	323	2.6	0.25	3.2	4.64
162.00	163.00	1.00	B00233234	274	1.51	0.23	4.31	5.8

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
163.00	**163.70**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	163.00	163.70	0.70	B00233235	374	1.57	0.21	6.51	7.86
163 - 163.7: Massive PY+SP+CA+/-GL												
<<Min: 163 - 163.7 10% Min: Sphalerite>>												
<<Min: 163 - 163.7 70% Min: Pyrite>>												
<<Min: 163 - 163.7 2% Min: Galena>>												
<<Min: 163 - 163.7 1% Min: Chalcopyrite>>												
<<Min: 163 - 163.7 15% Min: Calcite>>												
163.70	**198.50**	**RHYi** **Aphanitic Rhyolite (intrusion)**		163.70	165.20	1.50	B00233236	2.9	0.024	-0.01	0.03	0.06
163.7 - 198.5: Grey and patchy pink-orange, glassy, aphanitic rhyolite. QZ amygdules/phenocrysts as well as PY stringers/healed fractures.												
<<Min: 163.7 - 198.5 3% Min: Pyrite>>				165.20	166.70	1.50	B00233237	0.6	0.011	-0.01	-0.01	0.01
<<Min: 163.7 - 202.9 5% Min: Calcite>>				166.70	168.20	1.50	B00233238	0.8	0.025	-0.01	-0.01	0.03
<<Alt: 178 - 187 Moderate (Alt) Muscovite>> Pervasive green sericite alteration. More intense on fracture/gouge surfaces.												
<<Vein: 185.9 - 186 80% Calcite>> Massive CA+QZ vein												
<<Vein: 186.8 - 187 100% Quartz>> Massive QZ vein												
<<Struc: 178 - 178.1 Weak (Alt) Fault>> Minor fault gouge zone.												
<<Struc: 180.4 - 180.6 Weak (Alt) Fault>> Minor fractures with fault gouge												
<<Struc: 183.1 - 183.2 Weak (Alt) Fault>> Minor fractures with fault gouge												
<<Struc: 184.8 - 185 Weak (Alt) Fault>> Minor fractures with fault gouge												
<<Struc: 186 - 186.1 Weak (Alt) Fault>> Minor fractures with fault gouge												
<<Struc: 194.08 - 194.09 dominant foliation>> Spaced foliation in RHYi												
198.50	**202.90**	**RHY** **undifferentiated rhyolite**		198.50	199.90	1.40	B00233239	0.4	0.009	-0.01	-0.01	-0.01
198.5 - 202.9: QZ+MU+/-CA schist												
<<Min: 198.5 - 202.9 3% Min: Pyrite>>				199.90	201.40	1.50	B00233241	0.5	0.009	-0.01	-0.01	-0.01
<<Alt: 198.5 - 202.9 Strong (Alt) Muscovite>>				201.40	202.90	1.50	B00233242	2.9	0.037	-0.01	0.02	0.05
<<Struc: 201.5 - 202 Weak (Alt) Fault>> Minor fractures with fault gouge												

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
202.90	**203.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	202.90	203.20	0.30	B00233243	164	0.601	-0.01	2.75	5.08
202.9 - 203.2: Massive PY+SP+CA													
<<Min: 202.9 - 203.2 10% Min: Sphalerite>>													
<<Min: 202.9 - 203.2 69% Min: Pyrite>>													
<<Min: 202.9 - 203.2 1% Min: Galena>>													
<<Min: 202.9 - 203.2 20% Min: Calcite>>													
<<Struc: 203.06 - 203.07 dominant foliation>> Sulphide lamination													
203.20	**207.70**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		203.20	204.70	1.50	B00233244	1.9	0.014	-0.01	0.01	0.05
203.2 - 207.7: CL+BI+CA schist													
<<Min: 203.2 - 207.7 1% Min: Pyrite>>					204.70	206.10	1.40	B00233245	3.7	0.018	-0.01	0.03	0.05
<<Min: 206.1 - 206.4 2% Min: Sphalerite>>					206.10	206.40	0.30	B00233246	0.9	0.015	-0.01	0.02	0.04
<<Min: 206.1 - 206.4 1% Min: Pyrrhotite>>					206.40	207.70	1.30	B00233247	17.7	0.092	0.02	0.34	0.08
<<Alt: 203.2 - 207.7 Strong (Alt) Chlorite>>													
<<Alt: 203.2 - 207.7 Strong (Alt) Biotite>>													
<<Alt: 206.1 - 206.4 Moderate (Alt) Epidote>>													
<<Struc: 203.33 - 203.34 dominant foliation>> Discontinuous BI foliation													
207.70	**210.20**	**OA**	**Magnetite bearing sulphides**	**FMG**	207.70	208.50	0.80	B00233248	115	0.891	0.93	1.23	6.41
207.7 - 210.2: Massive PY+PO+SP with disseminated MG and blebby PO+CP. Locally coarse grained PY in PO bands.													
<<Min: 207.7 - 210.2 3% Min: Sphalerite>>					208.50	209.30	0.80	B00233249	110	1.51	2.84	0.27	9.88
<<Min: 207.7 - 210.2 50% Min: Pyrite>>					209.30	210.20	0.90	B00233252	102	2.53	3.71	0.1	7.87
<<Min: 207.7 - 210.2 30% Min: Pyrrhotite>>													
<<Min: 207.7 - 210.2 10% Min: Magnetite>>													
<<Min: 207.7 - 210.2 3% Min: Chalcopyrite>>													
<<Min: 207.7 - 210.2 2% Min: Calcite>>													
<<Struc: 209.5 - 209.6 Weak (Alt) Fault>> Fault gouge zone													
210.20	**210.90**	**RHY**	**undifferentiated rhyolite**		210.20	210.90	0.70	B00233253	1.3	0.015	0.03	0.01	0.12
210.2 - 210.9: QZ+MU+CL schist													
<<Min: 210.2 - 214.2 2% Min: Pyrrhotite>>													

From (m)	To (m)	Rocktype & Description

<<Min: 210.2 - 269 1% Min: Calcite>>

<<Alt: 210.2 - 210.9 Moderate (Alt) Muscovite>>

<<Struc: 210.5 - 210.9 Moderate (Alt) Fault>> Fault gouge zone

210.90 211.70 MDSc Carbonaceous dominant mudstone

210.9 - 211.7: Argillitic mudstone with strongly faulted upper and lower contact.

<<Struc: 211.6 - 211.7 Weak (Alt) Fault>> Fault gouge zone

211.70 226.00 RHYv Rhyolite volcaniclastic

211.7 - 226: QZ+MU schist with local 20-60 cm zones of weak CL-alteration with PO+PY stringers.

<<Min: 214.2 - 214.8 3% Min: Pyrite>>

<<Min: 214.2 - 214.8 5% Min: Pyrrhotite>>

<<Min: 214.8 - 219.2 2% Min: Pyrrhotite>>

<<Min: 219.2 - 219.4 2% Min: Pyrite>>

<<Min: 219.2 - 219.4 5% Min: Pyrrhotite>>

<<Min: 219.4 - 225.9 0.5% Min: Pyrrhotite>>

<<Min: 225.9 - 226 2% Min: Pyrite>>

<<Min: 225.9 - 226 5% Min: Pyrrhotite>>

<<Alt: 211.7 - 227 Moderate (Alt) Muscovite>>

<<Alt: 214.2 - 214.8 Weak (Alt) Chlorite>>

<<Alt: 219.2 - 219.4 Weak (Alt) Chlorite>>

<<Alt: 224.9 - 226 Weak (Alt) Chlorite>>

<<Struc: 212.7 - 213 Weak (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 218.9 - 219.1 Weak (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 221.3 - 221.8 Weak (Alt) Fault>> Highly fractured with local fault gouge

226.00 269.00 RHYvl Lapilli tuff

226 - 269: Variable amounts of rhyolitic, PO+PY, and CL+QZ+BI lpl within QZ+MU schist

<<Min: 226 - 269 2% Min: Pyrite>>

<<Min: 226 - 269 2% Min: Pyrrhotite>>

<<Alt: 227 - 234 Weak (Alt) Muscovite>>

<<Struc: 226.6 - 227 Moderate (Alt) Fault>> Fault gouge zone

<<Struc: 229.94 - 229.95 dominant foliation>> Mu cleavage

<<Struc: 233.24 - 233.25 dominant foliation>> MU cleavage

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
210.90	211.70	0.80	B00233254	1.9	0.024	0.05	0.02	0.24
211.70	213.20	1.50	B00233255	0.7	0.006	-0.01	-0.01	0.01
213.20	214.20	1.00	B00233256	-0.3	0.006	-0.01	-0.01	0.01
214.20	214.80	0.60	B00233257	0.9	0.012	0.01	-0.01	0.02
214.80	216.30	1.50	B00233258	-0.3	-0.005	-0.01	-0.01	0.08

From (m)	To (m)	Rocktype & Description
		<<Struc: 236.28 - 236.29 dominant foliation>> MU cleavage
		<<Struc: 239.25 - 239.26 dominant foliation>> MU cleavage
		<<Struc: 241.5 - 241.6 Weak (Alt) Fault>> Fault gouge zone
		<<Struc: 245.18 - 245.19 dominant foliation>> MU cleavage
		<<Struc: 247.93 - 247.94 dominant foliation>> MU cleavage
		<<Struc: 248.33 - 248.34 dominant foliation>> MU cleavage
		<<Struc: 250.3 - 250.4 Weak (Alt) Fault>> Highly fractured with local fault gouge
		<<Struc: 254.7 - 254.71 dominant foliation>>
		<<Struc: 258.13 - 258.14 dominant foliation>>
		<<Struc: 264.9 - 266 Weak (Alt) Fault>> Highly fractured with local fault gouge
		End of Hole @ 269

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-321

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Dillon Hume
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	12-Nov-15
UTM Easting	415076	Core Size:	HQ3	Azimuth:	211.1	Date Logging Complete:	15-Nov-15
UTM Northing:	6815225	Casing Pulled?:	Yes	Dip:	-45	Drill Company:	Geotech
UTM Elev. (m):	1388.445	Casing Depth (m):	24	Length (m):	308	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	10-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	14-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

K15-321 was drilled to test the resource extension of the Krakatoa zone to the north near the East Fault.
K15-321 encountered 22.7 m of overburden, followed by a felsic hanging wall package, consisting of QZ+FD porphyritic glassy rhyolite, volcaniclastic rhyolites, coherent rhyolites, and BI+CA+/-CL schists, to a depth of 139.1 m. From 139.1-195.2 m, a CL+BI+CA schist (MAFi) was encountered, with massive sulphide occurring within from 179.4-180.5 m (OB and OI mineralization) and 183.9-184.7 m (OB mineralization). The MAFi unit was followed by massive sulphide (195.2-198.8 m), consisting of OB mineralization. Below the massive sulphide is strongly altered rhyolite, followed by a faulted zone of rhyolite, RHYi, and fault breccia, to a depth of 218.3 m. Below this fault zone another CL+BI+CA schist (MAFi) occurs to a depth of 226.4 m. Below this massive sulphide is encountered (226.4-246.6 m) with horizons of MAFi (228.7-230.6 m) and faulted rhyolite (246.6-248.3 m) within . This sulphide lens consists of OB, OA, OI, and OD mineralization. Below this final sulphide lens a unit of faulted rhyolite occurs to a depth of 155.8 m, followed by unaltered felsic volcaniclastics to the end of the hole (308 m).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-45	211.1	0	211.1	APS	Dillon Hume	10-Nov-15		☑	
29	-44.4	192.7	22.5	215.2	ReflexEZS	Geotech	11-Nov-15	5761	☑	
59	-44.1	191.4	22.5	213.9	ReflexEZS	Geotech	11-Nov-15	5743	☑	
77	-45.2	190.8	22.5	213.3	ReflexEZS	Geotech	11-Nov-15	5744	☑	
101	-46.2	190	22.5	212.5	ReflexEZS	Geotech	11-Nov-15	5725	☑	
128	-46.8	189.5	22.5	212	ReflexEZS	Geotech	12-Nov-15	5730	☑	
158	-47.2	189.9	22.5	212.4	ReflexEZS	Geotech	12-Nov-15	5738	☑	
176	-47.4	190.8	22.5	213.3	ReflexEZS	Geotech	12-Nov-15	5752	☑	
203	-48.2	188.9	22.5	211.4	ReflexEZS	Geotech	12-Nov-15	5660	☑	
233	-48.7	184.2	22.5	206.7	ReflexEZS	Geotech	13-Nov-15	5653	☐	
254	-49.1	192.5	22.5	215	ReflexEZS	Geotech	13-Nov-15	5791	☑	
275	-49.5	192.1	22.5	214.6	ReflexEZS	Geotech	13-Nov-15	5800	☑	
302	-50	191.8	22.5	214.3	ReflexEZS	Geotech	13-Nov-15	5725	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**22.70**	**OVBN Overburden**									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

22.70 35.60 RHYif feldspar and quartz porphyry intrusions

22.7 - 35.6: QZ-eye and FD porphyry, rhyolite with aphanitic siliceous groundmass.

<<Min: 22.7 - 35.6 1% Min: Pyrite>>

<<Min: 22.7 - 35.6 1% Min: Calcite>>

35.60 41.30 RHYva Coarse grained to ash tuff

35.6 - 41.3: Dark green-grey, fine grained QZ+MU schist with blebby to veined CA.

<<Min: 35.6 - 41.3 2% Min: Pyrrhotite>>

<<Min: 35.6 - 41.3 10% Min: Calcite>>

<<Vein: 35.7 - 36.1 80% Quartz>> Massive QZ vein with patchy CA

<<Vein: 37.9 - 38.6 70% Quartz>> Massive QZ vein with clasts of entrained QZ+MU schist

41.30 46.90 RHYcw Curdy textured-flow banded (flows, subvolcanics)

41.3 - 46.9: QZ-eye bearing curdy rhyolite with MU cleavages.

<<Min: 41.3 - 46.9 3% Min: Pyrrhotite>>

<<Min: 41.3 - 80 5% Min: Calcite>>

46.90 54.70 RHYvl Lapilli tuff

46.9 - 54.7: QZ+MU schist with calcareous and rhyolitic lpl

<<Min: 46.9 - 54.7 1% Min: Pyrite>>

<<Min: 46.9 - 54.7 2% Min: Pyrrhotite>>

54.70 64.20 RHYc Rhyolite coherant volcanics

54.7 - 64.2: Siliceous banded to massive silica, locally lpl texture, with QZ+MU groundmass.

<<Min: 54.7 - 64.2 3% Min: Pyrrhotite>>

<<Vein: 58.3 - 59.2 90% Quartz>> Zone of massive QZ veining

<<Vein: 59.6 - 60.3 80% Quartz>> Massive QZ vein with entrained clasts of QZ+MU schist

64.20 66.90 RHYva Coarse grained to ash tuff

64.2 - 66.9: Dark brown-grey, fine grained QZ+MU schist with blebby to banded QZ+CA. Local heavily disseminated to wispy PY.

<<Min: 64.2 - 66.9 8% Min: Pyrite>> Locally heavily disseminated to wispy PY.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

66.90 74.20 RHYc Rhyolite coherant volcanics

66.9 - 74.2: Silica banded to massive siliceous rhyolite.

<<Min: 66.9 - 80 3% Min: Pyrite>>

<<Vein: 70.5 - 70.7 90% Quartz>> Massive QZ+CA vein

<<Vein: 71.1 - 72.4 70% Quartz>> Zone of massive QZ veining

74.20 76.10 RHYva Coarse grained to ash tuff

74.2 - 76.1: Medium grey, fine grained QZ+MU schist. Wispy PY from 74.2-74.6 m. Heavily disseminated BI from 75.5-76.1 m.

76.10 80.00 RHYc Rhyolite coherant volcanics

76.1 - 80: Silica banded with QZ+MU groundmass.

80.00 82.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

80 - 82.1: BI+CA+QZ schist

<<Min: 80 - 82.1 0.5% Min: Sphalerite>>

<<Min: 80 - 82.1 2% Min: Pyrite>>

<<Min: 80 - 82.1 1% Min: Pyrrhotite>>

<<Min: 80 - 82.1 10% Min: Calcite>>

82.10 82.80 RHYc Rhyolite coherant volcanics

82.1 - 82.8: Siliceous rhyolite with curdy texture

<<Min: 82.1 - 87.9 2% Min: Pyrrhotite>>

<<Min: 82.1 - 87.9 5% Min: Calcite>>

82.80 87.90 RHYva Coarse grained to ash tuff

82.8 - 87.9: Light grey, fine grained ash tuff with local calcareous and rhyolitic lpl.

87.90 91.10 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

87.9 - 91.1: Purple and green, BI+CL+CA schist with local CA phenocrysts.

<<Min: 87.9 - 91.1 3% Min: Pyrite>>

<<Min: 87.9 - 91.1 1% Min: Pyrrhotite>>

<<Min: 87.9 - 91.1 10% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

91.10 106.90 RHYva Coarse grained to ash tuff

91.1 - 106.9: Light grey, fine grained ash tuff. Local curdy, silica-banded, and lpl texture.

<<Min: 91.1 - 106.9 2% Min: Pyrrhotite>>

<<Min: 91.1 - 106.9 2% Min: Calcite>>

<<Struc: 103.6 - 103.7 Weak (Alt) Fault>> Fault gouge zone

<<Struc: 105.6 - 105.8 Weak (Alt) Fault>> Minor fault gouge

106.90 111.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

106.9 - 111: Banded BI+CA+QZ+CL with muscovite cleavages. Resembles lpl of similar composition which is found commonly in RHYvl.

<<Min: 106.9 - 111 2% Min: Pyrrhotite>>

<<Min: 106.9 - 111 10% Min: Calcite>>

111.00 127.20 RHYva Coarse grained to ash tuff

111 - 127.2: Light grey-green (alteration), fine grained ash tuff. Local lpl texture.

<<Min: 111 - 125.9 3% Min: Pyrrhotite>>

<<Min: 111 - 127.2 2% Min: Calcite>>

<<Min: 125.9 - 127.2 5% Min: Pyrite>>

<<Min: 125.9 - 127.2 5% Min: Pyrrhotite>>

<<Alt: 113 - 127.2 Weak (Alt) Muscovite>>

<<Alt: 125.9 - 126.5 Weak (Alt) Chlorite>>

<<Vein: 120.23 - 120.3 90% Quartz>> Massive QZ vein with CL selvage

<<Struc: 114.8 - 115 Weak (Alt) Fault>> Highly fractured with local fault gouge

<<Struc: 120 - 120.1 Weak (Alt) Fault>> Fault gouge zone

127.20 129.20 MDSc Carbonaceous dominant mudstone

127.2 - 129.2: Siliceous argillitic mudstone with heavily disseminated PO+PY.

<<Min: 127.2 - 129.2 3% Min: Pyrite>>

<<Min: 127.2 - 129.2 5% Min: Pyrrhotite>>

<<Min: 127.2 - 129.2 3% Min: Calcite>>

<<Alt: 127.2 - 129.2 Moderate (Alt) Silicification>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

129.20 139.10 RHY undifferentiated rhyolite

129.2 - 139.1: QZ+MU schist. Hard to determine original texture, whether coherent or volcaniclastic.

<<Min: 129.2 - 129.9 2% Min: Pyrite>>
<<Min: 129.2 - 129.9 8% Min: Pyrrhotite>>
<<Min: 129.2 - 139.1 2% Min: Calcite>>
<<Min: 129.9 - 139.1 1% Min: Pyrite>>
<<Min: 129.9 - 139.1 1% Min: Pyrrhotite>>
<<Alt: 129.2 - 139.1 Moderate (Alt) Muscovite>>
<<Vein: 132.5 - 132.85 40% Quartz>> Zone with massive QZ veining
<<Vein: 133.9 - 134.1 100% Quartz>> Massive QZ vein
<<Vein: 136.7 - 137.7 50% Quartz>> Zone of massive QZ veining
<<Vein: 138.55 - 138.7 80% Tourmaline>> QZ vein breccia clasts within fine grained tourmaline vein
<<Struc: 134.1 - 134.3 Weak-Moderate (Alt) Fault>> Fault gouge zone

139.10 140.70 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

139.1 - 140.7: TML+Fuchsite+CA+QZ mafic (?) schist. Cross-cut by TML+QZ veins/stwk.

<<Min: 139.1 - 140.7 25% Min: Calcite>>
<<Alt: 139.1 - 140.7 Moderate (Alt) Muscovite>> Fuchsite+TML alteration (?)
<<Vein: 139.1 - 140.7 60% Tourmaline>> TML+BI+CA+QZ stockwork

140.70 150.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

140.7 - 150: CL+CA+/-BI schist. Agglomoritic CA that appears to replace laths (FD?). Rock has a bleached green colour.

<<Min: 140.7 - 170 20% Min: Calcite>>
<<Alt: 140.7 - 172.5 Strong (Alt) Chlorite>>
<<Vein: 143.7 - 144.1 100% Tourmaline>> TML+CA+QZ vein (intrusion?). Equigranular.

150.00 172.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

150 - 172.5: CL+CA+/-BI schist. Well foliated with blebby CL and CA.

<<Min: 170 - 170.5 5% Min: Pyrite>>
<<Min: 170.5 - 172.5 0.5% Min: Pyrrhotite>>
<<Min: 170.5 - 172.5 20% Min: Calcite>>

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Alt: 169.8 - 172.5 Moderate (Alt) Biotite>>														
<<Vein: 155.2 - 155.3 100% Calcite>> Massive CA vein														
<<Struc: 158.4 - 158.41 dominant foliation>> Discontinuous CL foliation														
<<Struc: 160.2 - 160.4 Weak (Alt) Fault>> Fault gouge zone														
<<Struc: 164.24 - 164.25 dominant foliation>> Discontinuous CL foliation														
<<Struc: 165.5 - 165.51 dominant foliation>> Discontinuous CL foliation														
<<Struc: 169.2 - 169.4 Weak (Alt) Fault>> Fault gouge zone														
<<Struc: 170.1 - 170.25 Weak (Alt) Fault>> Fault gouge zone														
172.50	**172.90**	**RHYc**	**Rhyolite coherant volcanics**											
172.5 - 172.9: Silica-banded rhyolite														
<<Min: 172.5 - 172.9 3% Min: Calcite>>														
172.90	**179.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**			174.90	176.40	1.50	B00233259	-0.3	0.007	-0.01	-0.01	0.01
172.9 - 179.4: CL+BI+CA schist. Well foliated with local kinks/folds.														
<<Min: 172.9 - 179.4 0.5% Min: Pyrite>>						176.40	177.90	1.50	B00233261	-0.3	-0.005	-0.01	0.01	0.02
<<Min: 172.9 - 179.4 20% Min: Calcite>>						177.90	179.40	1.50	B00233262	2.4	0.015	-0.01	0.04	0.07
<<Alt: 172.9 - 179.4 Strong (Alt) Chlorite>>														
<<Alt: 172.9 - 179.4 Moderate (Alt) Biotite>>														
179.40	**179.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**medium grey**		179.40	179.70	0.30	B00233263	52.6	0.708	0.24	0.62	5.2
179.4 - 179.7: Massive PY+CA+SP+/-GL														
<<Min: 179.4 - 179.7 4% Min: Sphalerite>>														
<<Min: 179.4 - 179.7 70% Min: Pyrite>>														
<<Min: 179.4 - 179.7 1% Min: Galena>>														
<<Min: 179.4 - 179.7 10% Min: Calcite>>														
179.70	**179.90**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**		**CG**	179.70	179.90	0.20	B00233264	7.5	0.169	0.14	0.02	0.11
179.7 - 179.9: Massive CL with blebby PO+PY+CP														
<<Min: 179.7 - 179.9 2% Min: Pyrite>>														

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 179.7 - 179.9 2% Min: Pyrrhotite>>										
			<<Min: 179.7 - 179.9 1% Min: Chalcopyrite>>										
			<<Alt: 179.7 - 179.9 Strong (Alt) Chlorite>>										
179.90	**180.50**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**medium grey**	179.90	180.50	0.60	B00233265	107	0.448	0.08	1.68	7.44
			179.9 - 180.5: Massive PY+CA+SP+/-GL										
			<<Min: 179.9 - 180.5 8% Min: Sphalerite>>										
			<<Min: 179.9 - 180.5 90% Min: Pyrite>>										
			<<Min: 179.9 - 180.5 1% Min: Galena>>										
			<<Min: 179.9 - 180.5 1% Min: Calcite>>										
180.50	**182.70**	**RHYc**	**Rhyolite coherant volcanics**		180.50	181.60	1.10	B00233266	1.1	0.006	-0.01	0.02	0.03
			180.5 - 182.7: Silica-banded rhyolite										
			<<Min: 180.5 - 182.7 3% Min: Calcite>>		181.60	182.70	1.10	B00233267	2.5	0.009	-0.01	0.05	0.06
182.70	**183.90**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		182.70	183.90	1.20	B00233268	1	0.01	-0.01	0.01	0.07
			182.7 - 183.9: CL+BI+CA schist										
			<<Min: 182.7 - 183.9 0.5% Min: Pyrite>>										
			<<Min: 182.7 - 183.9 20% Min: Calcite>>										
			<<Alt: 182.7 - 183.9 Moderate (Alt) Chlorite>>										
			<<Alt: 182.7 - 183.9 Strong (Alt) Biotite>>										
			<<Struc: 183.75 - 183.76 dominant foliation>> Crenulation cleavage										
183.90	**184.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	183.90	184.70	0.80	B00233269	30.9	0.129	0.06	0.45	8.63
			183.9 - 184.7: Semi-massive to massive PY+PO+CA+SP+/-GL. Locally massive BA with disseminated PY+/-TT and bands of SP+PY										
			<<Min: 183.9 - 184.7 2% Min: Tetrahedrite>>										
			<<Min: 183.9 - 184.7 10% Min: Sphalerite>>										
			<<Min: 183.9 - 184.7 70% Min: Pyrite>>										
			<<Min: 183.9 - 184.7 3% Min: Pyrrhotite>>										
			<<Min: 183.9 - 184.7 2% Min: Galena>>										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 183.9 - 184.7 5% Min: Calcite>>													
<<Min: 183.9 - 184.7 15% Min: Barite>>													
184.70	**195.20**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		184.70	186.20	1.50	B00233272	4.3	0.029	0.01	0.07	0.47
184.7 - 195.2: CL+BI+CA+/-EP schist. Locally altered to fuchsite around faulted zone (192.7-193.8 m).													
<<Min: 184.7 - 187.9 1% Min: Pyrrhotite>>					186.20	187.70	1.50	B00233273	0.6	0.006	-0.01	0.01	0.02
<<Min: 184.7 - 195.2 8% Min: Calcite>>					187.70	189.20	1.50	B00233274	-0.3	-0.005	-0.01	-0.01	0.01
<<Alt: 184.7 - 187.9 Moderate (Alt) Epidote>>					189.20	190.70	1.50	B00233275	-0.3	0.006	-0.01	-0.01	0.02
<<Alt: 184.7 - 192.7 Strong (Alt) Chlorite>>					190.70	191.70	1.00	B00233276	-0.3	-0.005	-0.01	-0.01	-0.01
<<Alt: 184.7 - 192.7 Moderate (Alt) Biotite>>					191.70	192.70	1.00	B00233277	-0.3	-0.005	-0.01	-0.01	-0.01
<<Alt: 192.7 - 193.8 Strong (Alt) Muscovite>> Fuchsite (?) alteration of MAFi					192.70	193.80	1.10	B00233278	2.2	0.016	-0.01	0.03	0.02
<<Alt: 192.7 - 193.8 Weak (Alt) Chlorite>>					193.80	195.20	1.40	B00233279	57.4	0.26	0.04	1.15	0.04
<<Alt: 193.8 - 195.2 Strong (Alt) Chlorite>>													
<<Alt: 193.8 - 195.2 Strong (Alt) Biotite>>													
<<Struc: 184.7 - 184.71 Contact>> Contact between MSXS and MAFi													
<<Struc: 191.25 - 191.26 dominant foliation>> Discontinuous BI foliation													
<<Struc: 193.3 - 193.7 Moderate (Alt) Fault>> Fault gouge zone													
195.20	**197.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**medium grey**	195.20	196.20	1.00	B00233281	51.8	0.482	0.09	1.11	5.19
195.2 - 197.15: Massive PY+CA+SP+GL with local blebby CP													
<<Min: 195.2 - 197.15 8% Min: Sphalerite>>					196.20	197.15	0.95	B00233282	139	1.06	0.12	2.88	6.44
<<Min: 195.2 - 197.15 75% Min: Pyrite>>													
<<Min: 195.2 - 197.15 2% Min: Galena>>													
<<Min: 195.2 - 197.15 0.5% Min: Chalcopyrite>>													
<<Min: 195.2 - 197.15 10% Min: Calcite>>													
197.15	**198.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	197.15	198.00	0.85	B00233283	86.9	0.847	0.17	2	4.47
197.15 - 198.8: Patchy CA (~40%) within massive PY+SP+GL with blebby CP													
<<Min: 197.15 - 198.8 10% Min: Sphalerite>>					198.00	198.80	0.80	B00233284	85.3	1.09	0.21	1.64	3.62
<<Min: 197.15 - 198.8 45% Min: Pyrite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 197.15 - 198.8 3% Min: Galena>>									
		<<Min: 197.15 - 198.8 2% Min: Chalcopyrite>>									
		<<Min: 197.15 - 198.8 40% Min: Calcite>>									
198.80	**206.10**	**RHYv Rhyolite volcaniclastic**	198.80	199.50	0.70	B00233285	1431	2.61	0.17	0.11	0.22
		198.8 - 206.1: QZ+MU schist with local lpl and silica bands									
		<<Min: 198.8 - 199.5 0.5% Min: Sphalerite>>	199.50	201.00	1.50	B00233286	0.9	-0.005	-0.01	-0.01	0.02
		<<Min: 198.8 - 199.5 4% Min: Pyrite>>	201.00	202.50	1.50	B00233287	2.2	0.01	-0.01	-0.01	0.02
		<<Min: 198.8 - 199.5 1% Min: Pyrrhotite>>	202.50	204.00	1.50	B00233288	2.3	0.01	-0.01	0.02	-0.01
		<<Min: 198.8 - 199.5 0.5% Min: Chalcopyrite>>									
		<<Min: 198.8 - 218.3 3% Min: Calcite>>									
		<<Min: 199.5 - 217.4 2% Min: Pyrite>>									
		<<Alt: 198.8 - 199.5 Strong (Alt) Albite>>									
		<<Alt: 199.5 - 205 Moderate (Alt) Muscovite>>									
		<<Alt: 205 - 210 Strong (Alt) Muscovite>>									
		<<Vein: 200.15 - 200.3 100% Quartz>> Massive QZ vein with blebby CA									
		<<Vein: 204.1 - 204.3 100% Quartz>> Massive QZ vein									
		<<Struc: 204.3 - 204.4 Weak (Alt) Fault>> Highly fracture with minor fault gouge									
		<<Struc: 205.6 - 208.5 Moderate (Alt) Fault>> Highly fractured with variable foliation and gouge on fracture surfaces									
206.10	**210.00**	**RHY undifferentiated rhyolite**									
		206.1 - 210: Highly faulted QZ+MU schist									
		<<Struc: 208.7 - 210 Strong (Alt) Fault>> Fault gouge breccia									
210.00	**214.00**	**RHYi Aphanitic Rhyolite (intrusion)**									
		210 - 214: Strongly faulted, medium grey, aphanitic rhyolite									
		<<Struc: 210 - 217.4 Moderate (Alt) Fault>> Highly fractured with local fault gouge									
214.00	**217.40**	**RHY undifferentiated rhyolite**									
		214 - 217.4: Strongly faulted QZ+MU schist									
		<<Alt: 214 - 218.3 Strong (Alt) Muscovite>>									
217.40	**218.30**	**FBX Fault Breccia**									
		217.4 - 218.3: Strong fault zone dominated by green sericite gouge, with clasts of RHY, MAF, and MSXS.									
		<<Min: 217.4 - 218.3 5% Min: Pyrite>> Clast of MSXS									

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Struc: 217.4 - 218.3 Strong (Alt) Fault>> Fault gouge breccia										
218.30	**226.40**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		220.70	222.20	1.50	B00233289	1.5	-0.005	-0.01	0.02	0.04
			218.3 - 226.4: CL+BI+CA schist, with strongly faulted upper and lower contacts.										
			<<Min: 218.3 - 226.4 0.5% Min: Pyrite>>		222.20	223.70	1.50	B00233291	0.6	-0.005	-0.01	-0.01	0.02
			<<Min: 218.3 - 226.4 0.5% Min: Pyrrhotite>>		223.70	225.20	1.50	B00233292	0.6	-0.005	-0.01	-0.01	0.02
			<<Min: 218.3 - 226.4 20% Min: Calcite>>		225.20	226.40	1.20	B00233293	136	0.532	0.24	0.96	0.74
			<<Alt: 218.3 - 226.4 Strong (Alt) Chlorite>>										
			<<Alt: 218.3 - 226.4 Moderate (Alt) Biotite>>										
			<<Vein: 225.3 - 225.5 40% Quartz>> Clasts of massive QZ vein in fault										
			<<Struc: 225.3 - 226.4 Strong (Alt) Fault>> Fault gouge breccia										
226.40	**228.70**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	226.40	227.20	0.80	B00233294	106	1.54	0.21	3.7	6.46
			226.4 - 228.7: Massive PY+CA+SP+GL with blebby CP										
			<<Min: 226.4 - 228.7 2% Min: Tetrahedrite>>		227.20	228.00	0.80	B00233295	292	1.78	1.87	4.72	12.5
			<<Min: 226.4 - 228.7 5% Min: Sphalerite>>		228.00	228.70	0.70	B00233296	317	2.05	1.65	4.48	11.4
			<<Min: 226.4 - 228.7 70% Min: Pyrite>>										
			<<Min: 226.4 - 228.7 1% Min: Galena>>										
			<<Min: 226.4 - 228.7 2% Min: Chalcopyrite>>										
			<<Min: 226.4 - 228.7 10% Min: Calcite>>										
228.70	**230.60**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**		228.70	229.70	1.00	B00233297	9.4	0.05	0.03	0.12	0.12
			228.7 - 230.6: BI+CL+CA schist										
			<<Min: 228.7 - 230.6 1% Min: Pyrite>>		229.70	230.60	0.90	B00233298	18.3	0.068	0.01	0.26	0.05
			<<Min: 228.7 - 230.6 15% Min: Calcite>>										
			<<Alt: 228.7 - 230.6 Strong (Alt) Chlorite>>										
			<<Alt: 228.7 - 230.6 Strong (Alt) Biotite>>										
			<<Struc: 229.8 - 230.2 Moderate (Alt) Fault>> Faulted MAFi										

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
230.60	**236.20**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	230.60	231.30	0.70	B00233299	167	0.667	0.04	3.02	4.72
230.6 - 236.2: Massive PY+CA+SP+GL with blebby CP and abundant gangue													
<<Min: 230.6 - 236.2 5% Min: Sphalerite>>					231.30	232.20	0.90	B00233301	204	1.57	0.35	4.57	11.1
<<Min: 230.6 - 236.2 70% Min: Pyrite>>					232.20	233.20	1.00	B00233302	279	2.1	1.51	5.61	10.6
<<Min: 230.6 - 236.2 2% Min: Galena>>					233.20	234.20	1.00	B00233303	188	1.41	0.5	5.18	7.45
<<Min: 230.6 - 236.2 1% Min: Chalcopyrite>>					234.20	235.20	1.00	B00233304	250	1.19	0.59	5.43	7.61
<<Min: 230.6 - 236.2 10% Min: Calcite>>					235.20	236.20	1.00	B00233305	178	2.41	0.58	4.02	6.48
<<Vein: 230.65 - 230.75 60% Quartz>> Clast of massive QZ vein in fault													
<<Struc: 230.6 - 230.9 Moderate (Alt) Fault>> Fault gouge breccia													
236.20	**237.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	236.20	237.00	0.80	B00233306	268	1.63	1.3	3.26	14.7
236.2 - 237.8: Massive PY+CA+SP+GL with blebby CP+MG													
<<Min: 236.2 - 237.8 10% Min: Sphalerite>>					237.00	237.80	0.80	B00233307	327	1.77	1.08	4.1	11.5
<<Min: 236.2 - 237.8 70% Min: Pyrite>>													
<<Min: 236.2 - 237.8 3% Min: Galena>>													
<<Min: 236.2 - 237.8 3% Min: Chalcopyrite>>													
<<Min: 236.2 - 237.8 10% Min: Calcite>>													
<<Struc: 236.8 - 236.81 dominant foliation>> Sulphide lamination													
237.80	**240.20**	**OA**	**Magnetite bearing sulphides**	**MCG**	237.80	238.60	0.80	B00233308	446	2.34	2.74	5.1	9.68
237.8 - 240.2: Massive PY+SP+GL+/-CP with large cm-scale blebs of CP+MG and disseminated MG.													
<<Min: 237.8 - 240.2 5% Min: Sphalerite>>					238.60	239.40	0.80	B00233309	372	1.7	2.17	5.29	10.9
<<Min: 237.8 - 240.2 40% Min: Pyrite>>					239.40	240.20	0.80	B00233312	329	2.12	2.04	5.55	13.3
<<Min: 237.8 - 240.2 20% Min: Pyrrhotite>>													
<<Min: 237.8 - 240.2 10% Min: Magnetite>>													
<<Min: 237.8 - 240.2 5% Min: Chalcopyrite>>													
<<Min: 237.8 - 240.2 5% Min: Calcite>>													

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
240.20	**242.40**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	240.20	241.30	1.10	B00233313	362	1.44	0.57	4.97	13.8
240.2 - 242.4: Massive/laminated PY+SP+GL+CP													
<<Min: 240.2 - 242.4 10% Min: Sphalerite>>					241.30	242.40	1.10	B00233314	294	1.38	0.75	4.63	14
<<Min: 240.2 - 242.4 80% Min: Pyrite>>													
<<Min: 240.2 - 242.4 1% Min: Galena>>													
<<Min: 240.2 - 242.4 2% Min: Chalcopyrite>>													
<<Min: 240.2 - 242.4 5% Min: Calcite>>													
<<Struc: 240.89 - 240.9 dominant foliation>> Sulphide lamination													
<<Struc: 242.21 - 242.22 dominant foliation>> Sulphide lamination													
242.40	**244.10**	**OA**	**Magnetite bearing sulphides**	**MCG**	242.40	243.30	0.90	B00233315	423	2.04	2.74	4.99	13.4
242.4 - 244.1: Massive PY+SP+GL+/-CP with large cm-scale blebs of CP+MG and disseminated MG.													
<<Min: 242.4 - 244.1 10% Min: Sphalerite>>					243.30	244.10	0.80	B00233316	392	3.96	5.3	3.72	14.5
<<Min: 242.4 - 244.1 70% Min: Pyrite>>													
<<Min: 242.4 - 244.1 10% Min: Magnetite>>													
<<Min: 242.4 - 244.1 3% Min: Chalcopyrite>>													
<<Min: 242.4 - 244.1 5% Min: Calcite>>													
<<Struc: 243.35 - 243.36 dominant foliation>> Sulphide lamination													
244.10	**244.70**	**OI**	**Heavilly disseminated sulphides in host schist**	**MG**	244.10	244.70	0.60	B00233317	70.4	0.54	0.42	0.78	2.31
244.1 - 244.7: Heavily disseminated sulphide in coherent rhyolite. Upper contact appears more gradational than lower contact.													
<<Min: 244.1 - 244.7 2% Min: Pyrite>>													
<<Min: 244.1 - 244.7 2% Min: Pyrrhotite>>													
<<Min: 244.1 - 244.7 1% Min: Chalcopyrite>>													
244.70	**246.60**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	244.70	245.70	1.00	B00233318	248	1.55	1.01	3.05	9.27
244.7 - 246.6: Massive PY+SP+GL with blebs of CP+MG													
<<Min: 244.7 - 246.6 5% Min: Sphalerite>>					245.70	246.60	0.90	B00233319	223	2.46	0.18	2.23	7.66
<<Min: 244.7 - 246.6 60% Min: Pyrite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 244.7 - 246.6 15% Min: Pyrrhotite>>									
		<<Min: 244.7 - 246.6 2% Min: Galena>>									
		<<Min: 244.7 - 246.6 2% Min: Chalcopyrite>>									
		<<Min: 244.7 - 246.6 10% Min: Calcite>>									
246.60	**248.30**	**RHY undifferentiated rhyolite**	246.60	247.60	1.00	B00233321	0.7	0.006	-0.01	-0.01	0.02
		246.6 - 248.3: Moderately-strongly faulted RHYc (?)									
		<<Min: 246.6 - 248.3 1% Min: Pyrrhotite>>	247.60	248.30	0.70	B00233322	0.4	0.005	-0.01	-0.01	0.01
		<<Min: 246.6 - 248.3 1% Min: Calcite>>									
		<<Alt: 246.6 - 248.3 Strong (Alt) Muscovite>>									
		<<Struc: 246.6 - 248.3 Moderate-Strong (Alt) Fault>> Strongly faulted RHYc with local fault gouge									
248.30	**249.50**	**OD Brecciated sulphides medium grey**	248.30	248.90	0.60	B00233323	47.9	0.44	1.32	0.15	1.26
		248.3 - 249.5: Brecciated massive PY+PO+CP appears									
		<<Min: 248.3 - 249.5 60% Min: Pyrite>>	248.90	249.50	0.60	B00233324	46.9	0.25	0.99	0.23	0.94
		<<Min: 248.3 - 249.5 30% Min: Pyrrhotite>>									
		<<Min: 248.3 - 249.5 4% Min: Chalcopyrite>>									
249.50	**255.80**	**RHY undifferentiated rhyolite**	249.50	251.00	1.50	B00233325	-0.3	-0.005	-0.01	-0.01	0.01
		249.5 - 255.8: Strongly faulted rhyolite to fault gouge breccia dominated by rhyolitic material.									
		<<Min: 249.5 - 255.8 1% Min: Pyrrhotite>>	251.00	252.50	1.50	B00233326	0.4	0.007	-0.01	-0.01	0.01
		<<Alt: 249.5 - 258 Weak (Alt) Muscovite>>	252.50	254.00	1.50	B00233327	-0.3	0.007	-0.01	-0.01	-0.01
		<<Struc: 249.5 - 255.8 Strong (Alt) Fault>> Strongly faulted rhyolite to fault gouge breccia with varying foliation orientations									
255.80	**308.00**	**RHYv Rhyolite volcaniclastic**									
		255.8 - 308: Medium grey, unaltered QZ+MU schist (volcaniclastic rhyolite) varying from fine grained ash tuff to lpl tuff with rhyolitic, sulphide, and CL+QZ+BI lpl.									
		<<Min: 255.8 - 308 2% Min: Pyrite>>									
		<<Min: 255.8 - 308 2% Min: Pyrrhotite>>									
		<<Min: 255.8 - 308 2% Min: Calcite>>									
		<<Vein: 305.3 - 305.4 100% Quartz 70 deg. >> Massive QZ vein with blebby PO+PY									
		<<Struc: 256.38 - 256.39 dominant foliation>> Mu cleavage									
		<<Struc: 260.13 - 260.14 dominant foliation>> CA band									
		<<Struc: 263.17 - 263.18 dominant foliation>> Band of disseminated PO									
		<<Struc: 266.41 - 266.42 dominant foliation>> Discontinuous PO cleavage									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 271.23 - 271.24 dominant foliation>> MU cleavage
<<Struc: 272.15 - 272.16 dominant foliation>> Discontinuous foliation defined by lpl
<<Struc: 273.3 - 273.31 dominant foliation>> Sulphide band
<<Struc: 274.37 - 274.38 dominant foliation>> Mu cleavage
<<Struc: 278.16 - 278.17 dominant foliation>> Mu cleavage
<<Struc: 280.4 - 280.41 dominant foliation>> MU cleavage
<<Struc: 283.5 - 285.3 Weak (Alt) Fault>> Faulted with local fault gouge on cleavage surfaces
<<Struc: 286.9 - 287.1 Weak (Alt) Fault>> Faulted with local fault gouge on cleavage surfaces
<<Struc: 290.69 - 290.7 dominant foliation>> MU cleavage
<<Struc: 292.8 - 292.81 dominant foliation>> MU-CL cleavage
<<Struc: 295.96 - 295.97 dominant foliation>> MU cleavage
<<Struc: 299.4 - 299.41 dominant foliation>> MU cleavage
<<Struc: 300.3 - 300.4 Weak (Alt) Fault>> Faulted zone with minor fault gouge
<<Struc: 301.3 - 301.4 Weak (Alt) Fault>> Faulted zone with minor fault gouge
<<Struc: 301.9 - 302 Weak (Alt) Fault>> Faulted zone with minor fault gouge
<<Struc: 302.15 - 302.16 dominant foliation>> Mu cleavage
<<Struc: 307.8 - 307.9 Weak (Alt) Fault>> Faulted zone with minor fault gouge

End of Hole @ 308

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-322

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Roger Hulstein
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Roger Hulstein	Date Logging Start:	13-Nov-15
UTM Easting	414987.9	Core Size:	HQ	Azimuth:	29.9	Date Logging Complete:	16-Nov-15
UTM Northing:	6814977.6	Casing Pulled?:	Yes	Dip:	-82	Drill Company:	Geotech
UTM Elev. (m):	1387.022	Casing Depth (m):	23	Length (m):	197	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	15-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The purpose of DDH K15-322 is to test the Krakatoa sulphide horizon on section NW1 between DDH K15-316 and K15-320.
The drill hole collared in RHY at 25.34 m and a upper sulphide unit (OI and OB) was intersected at 39.4 – 42.25 m(2.85 m thickness), followed by MAFi and minor RHY from 42.25 – 68.25 m.
The top of the Krakatoa sulphide horizon was intersected at 68.25 m, about 14 m above where it was expected (at about 82 m). The Krakatoa consists of an upper OB horizon from 68.25 m to 74.15 m (5.9 m), followed by 10.18 m of RHY and minor MAFi to 84.33 m. A lower OB sulphide horizon was cut from 84.33 – 91.25 m (6.92 m). This section appears to contain minor barite. Both sulphide horizons are not particularly well mineralized with an estimated average of about 10% disseminated sphalerite and 1-2% disseminated galena and visible chalcopyrite restricted to narrow zones and averaging <2%. Other than intersecting the Krakatoa a little higher than expected and consisting of two lenses, the zone correlates well with adjacent drill holes on section NW1.
Below the Krakatoa lens is altered – bleached and quartz veined (30-40%) MAFi from 91.25 – 103.0 m, basically a transitional contact, followed by RHYi from 103.0 to 148.1 m and MAFi from 148.1 – 153.0 m followed by a two meter horizon of OB & OF from 153.0 – 155.0 m. The 0.7 m section of OF contains about 20% chalcopyrite and the OB contains an average of about 10% sphalerite. Below the sulphide horizon variably weakly chloritized and pyritized RHY and RHYvl were cut to EOH.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-82	29.9	0	29.9	APS	Geotech	15-Nov-15		☑	
29	-80.8	8.6	22.5	31.1	ReflexEZS	Geotech	12-Nov-15	5850	☑	
59	-81.3	8.6	22.5	31.1	ReflexEZS	Geotech	13-Nov-15	5749	☑	
89	-81.8	9.1	22.5	31.6	ReflexEZS	Geotech	13-Nov-15	5761	☑	
119	-82.4	358.9	22.5	21.4	ReflexEZS	Geotech	14-Nov-15	2097	☐	mag field low, measurement is suspect…
155	-83.5	17.6	22.5	40.1	ReflexEZS	Geotech	14-Nov-15	5429	☑	
194	-85.2	28.4	22.5	50.9	ReflexEZS	Geotech	15-Nov-15	5772	☑	
197	-85.3	29.2	22.5	51.7	ReflexEZS	Geotech	15-Nov-15	5766	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**23.00**	**OVBN Overburden**									
23.00	**25.34**	**No Core No Core**									
23 - 25.34: Overburden pebbles of drill rounded RHY, Qtz veining, MDS and MxSx											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
25.34	**30.80**	**RHY undifferentiated rhyolite**									
25.34 - 30.8: Well developed planer foliation with moderate muscovite on foliation. Minor, thin (2-4mm), silic bands.											
<<Min: 25.34 - 30.8 1% Min: Pyrite>>											
<<Min: 25.34 - 30.8 3% Min: Calcite>> and on foliation - fractures											
<<Alt: 25.34 - 30.8 Moderate-Strong (Alt) Muscovite>> looks like OR alteration											
<<Struc: 25.34 - 30.8 Moderate (Alt) dominant foliation>>											
<<Struc: 26 - 30.8 Moderate (Alt) Fault>> broken core and missing core with sericite - clay on foliation partings											
30.80	**37.00**	**RHYcw Curdy textured-flow banded (flows, subvolcanics) grey-green**	30.80	32.00	1.20	B00269974	1.7	0.018	-0.01	0.02	0.04
30.8 - 37: Curdy texture caused by 0.5-1.0 cm thick silic bands being cut and dismembered by spaced cleavage (the DFOL). Approx 3% sulphides (py,gl, sp) as blebby diss patches and wispy bands, also deformed by cleavage. Moderate muscovite-sericite on foliation partings.											
<<Min: 30.8 - 36 5% Min: Calcite>> and as diss and fracture filling			32.00	33.50	1.50	B00269975	4.8	0.074	0.01	0.04	0.06
<<Min: 30.8 - 37 0.1% Min: Sphalerite>> diss with py in wispy bands and diss patches			33.50	35.00	1.50	B00269976	2.6	0.019	-0.01	-0.01	0.02
<<Min: 30.8 - 37 2% Min: Pyrite>> diss in wispy bands and diss patches			35.00	36.00	1.00	B00269977	1.1	0.014	-0.01	0.01	0.01
<<Min: 30.8 - 37 0.1% Min: Galena>> diss with py in wispy bands and diss patches			36.00	37.00	1.00	B00269978	1.7	0.015	-0.01	-0.01	0.03
<<Min: 36 - 39.25 8% Min: Calcite>> bands, diss an fracture filling											
<<Alt: 30.8 - 37 Moderate (Alt) Muscovite>> muscovite - sericite - clay on spaced cleavage											
<<Struc: 30.8 - 37 Moderate (Alt) dominant foliation>>											
<<Struc: 36.6 - 37 Moderate (Alt) Fault>> broklen, crushed and missing core											
37.00	**39.40**	**RHY undifferentiated rhyolite grey-green**	37.00	38.30	1.30	B00269979	2.3	0.019	-0.01	0.01	0.04
37 - 39.4: Similar to 25.34-30.8m. Minor silic bands. Lower contact is 10 cm of clay gouge in RHY.											
<<Min: 37 - 39.25 2% Min: Pyrite>>			38.30	39.40	1.10	B00269981	2.8	0.023	-0.01	0.02	0.06
<<Min: 39.25 - 39.87 8% Min: Sphalerite>>											
<<Min: 39.25 - 39.87 20% Min: Pyrite>> and as diss											
<<Min: 39.25 - 39.87 1% Min: Galena>>											
<<Min: 39.25 - 40.5 5% Min: Calcite>>											
<<Alt: 37 - 39.4 Moderate (Alt) Muscovite>>											
<<Struc: 37 - 39.4 Moderate (Alt) dominant foliation>>											

From (m)	To (m)		Rocktype & Description
39.40	**39.87**	**OI**	**Heavilly disseminated sulphides in host schist**

39.4 - 39.87: approx 20% diss py and py bands, 8% diss sphalerite, 1-2% FD galena. Approx. 70% green sericite alltered fine grained rhy wallrock bands and groundmass to diss sulphides.

<<Struc: 39.4 - 39.4 Strong (Alt) Contact>> 10cm crushed RHY - clay gouge in contact with OI unit.

<<Struc: 39.8 - 41 Strong (Alt) dominant foliation>> banded sulfides

From (m)	To (m)		Rocktype & Description
39.87	**41.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

39.87 - 41.25: approx 60% buckshot py, 12% diss sphalerite & 2% diss galena. Maybe 1% CP mixed with py?

<<Min: 39.87 - 40.25 12% Min: Sphalerite>>

<<Min: 39.87 - 40.25 60% Min: Pyrite>>

<<Min: 39.87 - 40.25 2% Min: Galena>>

<<Min: 40.5 - 41.25 10% Min: Calcite>>

From (m)	To (m)		Rocktype & Description
41.25	**42.06**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**

41.25 - 42.06: Non calcareous light green bleached sericite altered MAFi (looks most like MAFi but could be altered ??)

<<Min: 41.25 - 42.06 0.1% Min: Sphalerite>> concentrated near upper and lower contacts

<<Min: 41.25 - 42.06 2% Min: Pyrite>> concentrated near upper and lower contacts

<<Min: 41.25 - 42.06 0.1% Min: Galena>> concentrated near upper and lower contacts

<<Alt: 41.25 - 42.06 Moderate (Alt) Muscovite>> sercite green, not really muscovite alteration

<<Struc: 41.25 - 41.25 Moderate (Alt) Contact>> along foliation

<<Struc: 41.8 - 42 Moderate (Alt) Foliation>>

From (m)	To (m)		Rocktype & Description
42.06	**42.40**	**OI**	**Heavilly disseminated sulphides in host schist**

42.06 - 42.4: Not a great OI; barren and mineralized qtz-calcite viening (approx 60% veininmg overall) and chlorite - sericite altered MAFi. Lower contact with pale green altered MAFi similar to 41.25-42.06 m. Upper contact is in qtz- calcite veining and irregular, lower contact is calcite vein at 40 deg.

<<Min: 42.06 - 42.4 3% Min: Sphalerite>>

<<Min: 42.06 - 42.4 10% Min: Pyrite>>

<<Min: 42.06 - 42.4 0.3% Min: Chalcopyrite>>

<<Min: 42.06 - 42.4 15% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
39.40	39.87	0.47	B00269982	181	1.26	0.18	1.68	3.88
39.87	40.40	0.53	B00269983	144	0.617	0.11	2	5.42
40.40	41.25	0.85	B00269984	173	0.633	0.41	2.75	6.45
41.25	42.06	0.81	B00269985	2.6	0.029	0.02	0.03	0.12
42.06	42.40	0.34	B00269986	13.6	0.052	0.18	0.21	1.02

From (m)	To (m)		Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Alt: 42.06 - 42.4 Weak-Moderate (Alt) Chlorite>>									
42.40	**66.75**	**MAFi**	**Mafic Intrusions (primarily green footwall mafic intrusion)**	42.40	43.50	1.10	B00269987	-0.3	-0.005	0.02	-0.01	0.03
			42.4 - 66.75: Upper contact at 40 degrees to CA and consist of pale green fine grained sericite altered MAFi that grades into fresher calcareous green chlorite - biotite massive MAFi.									
			<<Min: 42.4 - 43 1% Min: Pyrrhotite>>	43.50	45.00	1.50	B00269988	-0.3	-0.005	-0.01	-0.01	0.02
			<<Min: 42.4 - 49 20% Min: Calcite>> and as fine diss	45.00	46.50	1.50	B00269989	-0.3	-0.005	-0.01	-0.01	0.02
			<<Min: 49 - 66.75 10% Min: Calcite>>	46.50	48.00	1.50	B00269991	-0.3	-0.005	-0.01	-0.01	0.01
			<<Alt: 42.4 - 43.56 Weak-Moderate (Alt) Muscovite>> sercite green, not really muscovite alteration	63.50	65.00	1.50	B00269992	-0.3	-0.005	-0.01	-0.01	0.01
			<<Alt: 43 - 66.75 Strong (Alt) Chlorite>>	65.00	65.75	0.75	B00269993	-0.3	-0.005	-0.01	-0.01	0.01
			<<Alt: 43 - 66.75 Strong (Alt) Biotite>>	65.75	66.75	1.00	B00269994	-0.3	-0.005	-0.01	-0.01	0.05
			<<Vein: 57.5 - 66 3% Calcite>> irregular clacite veins and veinlets cross cutting foliation									
			<<Struc: 42.4 - 42.4 Moderate (Alt) Contact>> along foliation									
			<<Struc: 44.6 - 45 Moderate (Alt) Fault>> crosses foliation and drags it.									
			<<Struc: 45 - 45.5 Moderate (Alt) dominant foliation>>									
			<<Struc: 47 - 52 Moderate (Alt) dominant foliation>>									
			<<Struc: 52.5 - 53 Moderate (Alt) dominant foliation>>									
			<<Struc: 54.7 - 55.67 Moderate (Alt) Fault>> broken core, shear planes with slicks.									
			<<Struc: 55.67 - 56.4 Moderate (Alt) dominant foliation>>									
			<<Struc: 66.25 - 66.3 Moderate (Alt) Fault>> crushed MAFi, minor gouge, crosscuts foliation.									
66.75	**68.25**	**RHY**	**undifferentiated rhyolite**	66.75	67.70	0.95	B00269995	5.4	0.017	-0.01	0.07	0.1
			66.75 - 68.25: upper and lower contacts sharp along foliation.									
			<<Min: 66.75 - 68.25 1% Min: Pyrite>>	67.70	68.25	0.55	B00269996	10.2	0.031	-0.01	0.12	0.2
			<<Alt: 66.75 - 68.25 Moderate (Alt) Muscovite>> grey green alteration									
			<<Struc: 66.75 - 66.75 Moderate (Alt) Contact>> minor shearing along foliaton									
			<<Struc: 66.75 - 68.25 Moderate (Alt) dominant foliation>>									
			<<Struc: 67.35 - 67.5 Moderate (Alt) Fault>> 15cm gouge with sharp contacts									
68.25	**74.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	68.25	69.00	0.75	B00269997	286	1.61	0.11	2.42	9.33
			68.25 - 74.15: Homogonous OB. 70.1 - 70.2 m: Thin bands of wispy diss galena, approx 5% total. Diss chalcopyrite noted 72.0 - 74.0 m. Weak open space breccia throughout, locally filled with calcite.									

From (m)	To (m)	Rocktype & Description
		<<Min: 68.25 - 72 1% Min: Chalcopyrite>>
		<<Min: 68.25 - 74.15 10% Min: Sphalerite>> locally concentrated in bands
		<<Min: 68.25 - 74.15 60% Min: Pyrite>> lower contact in core rubble, likley missing core from this area.
		<<Min: 68.25 - 74.15 2% Min: Galena>> Diss and locally concentrated in wispy bands (ie. 70.1-70.2m)
		<<Min: 68.25 - 74.15 20% Min: Calcite>> and as blebs, fracute vein filling.
		<<Min: 72 - 74.15 2% Min: Chalcopyrite>>
		<<Struc: 68.25 - 68.25 Moderate (Alt) Contact>>
		<<Struc: 68.25 - 74.15 >>
		<<Struc: 69.5 - 70 Weak (Alt) Foliation>> banded sulfides
		<<Struc: 73.4 - 73.6 Moderate (Alt) Foliation>> banded sulfides
74.15	**75.10**	**RHY undifferentiated rhyolite**
		74.15 - 75.1: 74.15-74.35: OI type mineralization, sheared and weakly qtz veined, weak chlorite alteration, Originally may have been MAFi? Similar to 75.1-76.1 and 83.0-83.2m.
		<<Min: 74.15 - 75.35 20% Min: Calcite>>
		<<Min: 74.15 - 75.8 2% Min: Pyrite>>
		<<Alt: 74.15 - 74.35 Weak (Alt) Chlorite>> at contact with OB unit, also weakly sheared, qtz veined.
		<<Alt: 74.15 - 75.1 Weak-Moderate (Alt) Muscovite>> sericite muscovite clay on partings
		<<Struc: 74.2 - 74.25 Weak (Alt) Fault>> broiken core, minor gouge, qtz clasts in fault zone
		<<Struc: 74.35 - 75.1 Moderate (Alt) dominant foliation>>
75.10	**76.10**	**OI Heavilly disseminated sulphides in host schist**
		75.1 - 76.1: Originally unit may have been a MAFi, now contains approx 20+% banded calcite, weak chlorite alteration, sericite muscovite partings and bands and diss py and minor sphalerite in preferential bands as well.
		<<Min: 75.1 - 76.1 1% Min: Sphalerite>>
		<<Min: 75.1 - 76.1 10% Min: Pyrite>> in bands
		<<Min: 75.1 - 76.1 0.1% Min: Galena>>
		<<Min: 75.1 - 76.1 25% Min: Calcite>> diss and in bands
		<<Alt: 75.1 - 76.1 Moderate (Alt) Muscovite>> sericite muscovite clay on partings and as bands
		<<Alt: 75.1 - 76.1 Weak (Alt) Chlorite>>
		<<Alt: 75.1 - 76.1 Weak (Alt) Biotite>>
		<<Struc: 75.1 - 76.1 Moderate-Strong (Alt) dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
69.00	70.00	1.00	B00269998	420	1.46	0.02	3.89	8.46
70.00	70.50	0.50	B00269999	575	2.33	0.04	3.95	7.96
70.50	71.00	0.50	B00233501	140	0.899	-0.01	1.73	7.56
71.00	72.00	1.00	B00233502	172	1.01	0.02	1.75	8.3
72.00	73.00	1.00	B00233503	145	1.15	0.43	1.3	9.32
73.00	73.50	0.50	B00233504	281	3.59	1.54	2.24	8.28
73.50	74.15	0.65	B00233505	225	0.986	0.04	2.06	9.17
74.15	74.50	0.35	B00233506	21	0.183	0.02	0.08	0.15
74.50	75.10	0.60	B00233507	43.2	0.487	0.06	0.09	0.47
75.10	76.10	1.00	B00233508	92.9	0.672	0.1	0.21	2.17

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
76.10	**83.00**	**RHY** **undifferentiated rhyolite**	76.10	77.00	0.90	B00233509	34.9	0.401	0.02	0.13	0.25
76.1 - 83: silic bands											
<<Min: 76.1 - 82.8 1% Min: Pyrite>>			77.00	78.50	1.50	B00233511	3.6	0.022	-0.01	0.03	0.06
<<Min: 76.1 - 82.8 0.1% Min: Galena>>			78.50	80.00	1.50	B00233512	0.7	0.006	-0.01	-0.01	0.01
<<Alt: 76.1 - 78 Strong (Alt) Muscovite>> sericite - clay - muscovite on partings			80.00	81.50	1.50	B00233513	1.1	0.016	-0.01	0.03	0.04
<<Alt: 78 - 82.8 Moderate (Alt) Muscovite>>			81.50	82.60	1.10	B00233514	0.4	-0.005	-0.01	-0.01	0.01
<<Vein: 82.8 - 83 100% Quartz-Carbonate>>			82.60	83.00	0.40	B00233515	11.9	0.021	0.02	0.14	0.44
<<Struc: 76.1 - 79 Moderate-Strong (Alt) dominant foliation>>											
<<Struc: 78.5 - 80.7 Moderate (Alt) Fault>> irregular narrow (1-3cm) shallow gouge - clay - crushed zones											
<<Struc: 79 - 82.5 Moderate (Alt) dominant foliation>>											
83.00	**84.33**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	83.00	83.40	0.40	B00233516	83.4	0.386	0.32	0.68	5.44
83 - 84.33: Intense biotite alt - original protolith uncertain											
<<Min: 83 - 83.23 25% Min: Sphalerite>>			83.40	84.33	0.93	B00233517	46.4	0.069	0.04	0.1	0.22
<<Min: 83 - 83.23 30% Min: Pyrite>>											
<<Min: 83 - 83.23 5% Min: Calcite>>											
<<Min: 83.23 - 84.33 15% Min: Calcite>> AGR, wisps, diss and foliaform veins											
<<Min: 83.23 - 84.33 1% Lith: Biotite Chlorite>> concentrated near 84.33m											
<<Alt: 83 - 84.33 Strong (Alt) Biotite>>											
<<Alt: 83 - 84.55 Weak-Moderate (Alt) Chlorite>>											
<<Alt: 83 - 84.55 Weak (Alt) Cordierite>>											
<<Vein: 84 - 91.25 15% Carbonate-Sulphide>> mixed QTZ-calcite-barite and possibly barite as foliaform stringers, semimassive (86.2-86.6m) and fracture veinlet filling. No sulphide in veining (barium sulphate). No Barite in vein code….											
<<Struc: 83 - 83 Moderate (Alt) Contact>> OI in contact with overlying qtz-calcite vein.											
<<Struc: 83.3 - 84 Moderate (Alt) dominant foliation>>											
84.33	**91.25**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	84.33	85.00	0.67	B00233518	611	4.66	0.48	4.58	7.56
84.33 - 91.25: Low sulphide OB with average 15-20% white - light grey qtz-calcite (and possibly dolomite) - barite (exact percentage barite uncertain) as wispy foliation, as matrix to (local jigsaw) breccia and as fracture filling. 86.2-86.8m: barite etc is 70% of interval. OB is not well mineralized, average is maybe 10% sphalerite and 1-2% galena. Trace - 3% diss magnetite 89.8-90.15m.											
<<Min: 84.33 - 85 2% Min: Chalcopyrite>>			85.00	85.50	0.50	B00233519	461	5.24	0.43	3.26	5.21

From (m)	To (m)	Rocktype & Description
		<<Min: 84.33 - 85 2% Min: Galena>>
		<<Min: 84.33 - 85 50% Min: Pyrite>>
		<<Min: 84.33 - 85 15% Min: Sphalerite>>
		<<Min: 84.33 - 85 8% Min: Calcite>>
		<<Min: 85 - 86.1 10% Min: Sphalerite>>
		<<Min: 85 - 86.1 5% Min: Barite>>
		<<Min: 85 - 86.1 3% Min: Calcite>>
		<<Min: 85 - 86.1 2% Min: Chalcopyrite>>
		<<Min: 85 - 86.1 2% Min: Galena>>
		<<Min: 85 - 86.1 40% Min: Pyrite>>
		<<Min: 86.1 - 89.2 8% Min: Calcite>> and as fracture filling and diss
		<<Min: 86.1 - 89.2 1% Min: Galena>>
		<<Min: 86.1 - 89.2 25% Min: Pyrite>>
		<<Min: 86.1 - 89.2 5% Min: Sphalerite>>
		<<Min: 86.1 - 89.2 10% Min: Barite>> as diss, wisps, fracture filling blebs; mixed with calcite, qtz and possibly dolomite.
		<<Min: 89.2 - 90.5 10% Min: Calcite>> and as fracture filling
		<<Min: 89.2 - 91.25 2% Min: Galena>>
		<<Min: 89.2 - 91.25 40% Min: Pyrite>>
		<<Min: 89.2 - 91.25 15% Min: Sphalerite>> locally concentrated in bands
		<<Min: 89.8 - 90.15 3% Min: Magnetite>>
		<<Min: 90.5 - 91.25 15% Min: Calcite>> and as blebby bands
		<<Struc: 84.33 - 84.33 Moderate (Alt) Contact>> sharp contact along foliation, no shearing or faulting
		<<Struc: 84.5 - 85 Moderate (Alt) Foliation>> banded sulphides
		<<Struc: 87.8 - 88 Moderate (Alt) Foliation>> banded sulphides
		<<Struc: 90.8 - 91.1 Moderate (Alt) Foliation>> banded sulphides
91.25	**93.70**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**
		91.25 - 93.7: 91.25-92.8: Green fine grained, calcite porphroblasts, banded MAFi with calcite and pepperite texture at lower contact.
		<<Min: 91.25 - 102.45 0.5% Min: Pyrite>>
		<<Min: 91.25 - 102.45 0.1% Min: Galena>> and as diss
		<<Min: 93.2 - 96.5 5% Min: Calcite>> diss in MAFi and as fracture filling in qtz vein and RHYi
		<<Alt: 91.25 - 104 Moderate (Alt) Muscovite>> Sericite and fine muscovite on foliation.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
85.50	86.20	0.70	B00233521	609	3.93	0.27	3.74	4.31
86.20	87.20	1.00	B00233522	236	2.36	0.07	1.42	1.77
87.20	88.20	1.00	B00233523	354	3.09	0.11	2.08	3.02
88.20	89.20	1.00	B00233524	321	3.19	0.16	2.73	3.84
89.20	89.80	0.60	B00233525	706	5.06	0.36	4.9	7.58
89.80	90.30	0.50	B00233526	687	5	0.37	4.9	7.01
90.30	91.25	0.95	B00233527	430	1.75	0.1	3.73	6.2
91.25	92.00	0.75	B00233528	11.4	0.107	-0.01	0.26	0.26
92.00	93.00	1.00	B00233529	101	0.416	0.14	0.34	0.04
93.00	93.70	0.70	B00233531	-0.3	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description

<<Alt: 91.25 - 104 Moderate-Strong (Alt) Chlorite>> chlorite green altered MAFi

<<Vein: 91.25 - 102.45 40% Quartz>> irregular white qtz veining in MAFi and related to contact with RHYi - transitional contact zone marked by an excess of qtz..

<<Struc: 91.25 - 91.25 Moderate (Alt) Contact>> massive sulphide - fault gouge (5cm recovered) contact

<<Struc: 93.1 - 93.3 Moderate (Alt) Foliation>>

93.70 95.20 RHYi Aphanitic Rhyolite (intrusion)

95.20 104.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

<<Min: 102.45 - 104 5% Min: Calcite>>

<<Struc: 97.1 - 97.3 Moderate (Alt) Foliation>> foliation and qtz vein contact.

<<Struc: 97.4 - 99.3 Moderate (Alt) Fault>> crushed, brx MAFi and qtz vein, minor gouge, shear at low angle to core axis.

<<Struc: 99.3 - 99.8 Moderate (Alt) Foliation>>

104.00 118.00 RHYif feldspar and quartz porphyry intrusions

104 - 118: Brittle fractured RHYi with pyrite trace galena and sphalerite wisps, thin foliaform bands, diss and fracture fillings. Local pink patches - albite alteration?

<<Min: 104 - 118 0.1% Min: Sphalerite>> with py

<<Min: 104 - 118 2% Min: Pyrite>> Brittle fractured RHYi with pyrite trace galena and sphalerite wisps, thin foliaform bands, diss and fracture fillings.

<<Min: 104 - 118 0.1% Min: Galena>> with Py

<<Min: 104 - 118 3% Min: Calcite>>

<<Alt: 104 - 118 Trace (Alt) Muscovite>> sericite - fine muscovite on fractures and foliation.

<<Alt: 104 - 118 Weak (Alt) Albite>> patches of pink hued RHYi - possible albite alteration

<<Struc: 104 - 111.5 Weak (Alt) Fault>> brittle fractured RHYi, trace clay on foliation - fracture faces.

<<Struc: 112 - 114.7 Moderate (Alt) dominant foliation>> planer foliated RHYi

118.00 148.10 RHYi Aphanitic Rhyolite (intrusion)

118 - 148.1: very similar to above (104-118.0m) but dominated by green sericite altered planer foliated RHYi separated by shorter sections of grey glassy RHYi. This unit contains less sulfides than above RHYi.

<<Min: 118 - 120.5 5% Min: Calcite>>

<<Min: 118 - 134 1% Min: Pyrite>>

<<Min: 123.6 - 125.6 5% Min: Calcite>>

<<Min: 131.3 - 134.5 5% Min: Calcite>>

<<Min: 134 - 143 2% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
93.70	95.20	1.50	B00233532	1.4	0.007	-0.01	0.01	0.02
95.20	96.50	1.30	B00233533	5.5	0.017	-0.01	0.08	0.06
146.00	147.00	1.00	B00233534	0.3	-0.005	-0.01	-0.01	-0.01
147.00	148.10	1.10	B00233535	0.9	0.027	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 134.5 - 148.1 5% Min: Calcite>> calcite as fracture filling and irregular veinlets in glassy RHYi is transposed into foliation in planer foliated RHYi (from 143.0-148.1).

<<Min: 143 - 145 1% Min: Pyrite>>

<<Min: 145 - 148.1 1% Min: Pyrite>>

<<Min: 145 - 148.1 0.5% Min: Arsenopyrite>>

<<Alt: 118 - 122.2 Weak-Moderate (Alt) Muscovite>> green sericite - fine muscovite altered planer foliated RHYi

<<Alt: 123.5 - 125.9 Weak-Moderate (Alt) Muscovite>> green sericite - fine muscovite altered planer foliated RHYi

<<Alt: 126.5 - 130.3 Weak-Moderate (Alt) Muscovite>> green sericite - fine muscovite altered planer foliated RHYi

<<Alt: 130.9 - 134.6 Moderate (Alt) Muscovite>> green sericite - fine muscovite altered planer foliated RHYi

<<Alt: 134.6 - 141.9 Weak (Alt) Muscovite>> green sericite - fine muscovite on fractures

<<Alt: 143 - 148.1 Moderate (Alt) Muscovite>> green sericite - fine muscovite altered planer foliated RHYi

<<Alt: 147.7 - 153 Moderate (Alt) Chlorite>>

<<Vein: 122.1 - 122.9 60% Quartz>>

<<Vein: 132.8 - 143 3% Calcite>> cross cutting irregular fracture filliing calcite veins/veinlets

<<Vein: 143 - 148.1 3% Calcite 55 deg. >> calcite veins parallel to foliation (same as veins in glassy RHYi from 132.8-143.0m but in planer foliated RHYi).

<<Struc: 120 - 122 Moderate (Alt) dominant foliation>>

<<Struc: 124.7 - 125.7 Moderate (Alt) dominant foliation>>

<<Struc: 128 - 132 Moderate (Alt) dominant foliation>>

<<Struc: 132.1 - 132.9 Weak (Alt) Fault>> minor gouge zones along foliation

<<Struc: 133.1 - 134.5 Moderate (Alt) dominant foliation>>

<<Struc: 136 - 141 Weak (Alt) Fault>> brittle fractured RHYi, minor sericite - clay on foliation - fracture faces.

<<Struc: 143 - 148.1 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
148.10	**148.50**	**OI** **Heavilly disseminated sulphides in host schist**	148.10	148.50	0.40	B00233536	282	4.89	0.41	1.78	3.1

148.1 - 148.5: 0.35m of OI at upper contact of MAFi - RHYi contact. MAFi protolith, banded pyrite (25% overall), approx 5% diss sphalerite with pyrite.

<<Min: 148.1 - 148.5 5% Min: Sphalerite>> with Pyrite

<<Min: 148.1 - 148.5 25% Min: Pyrite>> concentrated in two 10cm bands

<<Min: 148.1 - 148.5 0.25% Min: Galena>>

<<Min: 148.1 - 148.5 20% Min: Calcite>>

<<Alt: 148.1 - 148.7 Weak-Moderate (Alt) Muscovite>> green sericte replaceing chlorite.

<<Vein: 148.1 - 155 3% Calcite 55 deg. >> both foliaform veinlets and irregular cross cutting calcite veinlets

<<Struc: 148.1 - 148.1 Moderate (Alt) Contact>> 5 cm of light green clay gouge at upper contact.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 148.1 - 148.2 Moderate (Alt) Foliation>> banded sulphides									
148.50	**153.00**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	148.50	150.00	1.50	B00233537	14.6	0.44	-0.01	0.31	0.14
		148.5 - 153: 0.35m of OI at upper contact of MAFi - RHYi contact.									
		<<Min: 148.5 - 153 0.5% Min: Pyrite>>	150.00	151.50	1.50	B00233538	4.2	0.025	-0.01	0.05	0.04
		<<Min: 148.5 - 153 15% Min: Calcite>> and as blebs and veinlets	151.50	153.00	1.50	B00233539	13.4	0.102	0.01	0.21	0.42
		<<Alt: 148.7 - 153 Weak (Alt) Muscovite>> green sericte replaceing chlorite.									
		<<Alt: 148.7 - 153 Moderate (Alt) Biotite>>									
		<<Alt: 152 - 153 Weak-Moderate (Alt) Chlorite>> partially altered to sericite									
		<<Struc: 148.5 - 149 Weak (Alt) Fault>> brittle fracture									
		<<Struc: 150 - 151.8 Weak (Alt) Fault>> brittle fracture, trace gouge									
		<<Struc: 150.9 - 151.2 Moderate (Alt) dominant foliation>>									
153.00	**154.35**	**OB** **Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	153.00	153.86	0.86	B00233541	110	0.81	0.08	1.71	6.55
		153 - 154.35: massive OB, approx 8-10% diss sphalerite as wisps and irregular bands. Solid core from 153.0 - 153.86m. Rubble and very poor recovery (max 20%) from 153.86 - 154.35 m.									
		<<Min: 153 - 154.35 8% Min: Sphalerite>>	153.86	154.35	0.49	B00233542	112	0.33	0.59	0.67	10.5
		<<Min: 153 - 154.35 60% Min: Pyrite>>									
		<<Min: 153 - 154.35 20% Min: Calcite>> and as AGR									
154.35	**155.00**	**OF** **Pyrrhotite rich sulphides**	154.35	155.00	0.65	B00233543	112	2.06	3.74	0.21	11.5
		154.35 - 155: Average approx 20% chalcopyrite, concentrated at lower contact. Approx 40% pyrrhotite, 20% pyrite and 1-3% diss magnetite.									
		<<Min: 154.35 - 155 20% Min: Pyrite>>									
		<<Min: 154.35 - 155 40% Min: Pyrrhotite>>									
		<<Min: 154.35 - 155 3% Min: Magnetite>>									
		<<Min: 154.35 - 155 20% Min: Chalcopyrite>> average approx 20% chalcopyrite, concentrated at lower contact									
		<<Struc: 154.35 - 154.35 Moderate (Alt) Shear>> shear - slip plane within sulphide unit									
155.00	**156.60**	**RHY** **undifferentiated rhyolite**	155.00	156.00	1.00	B00233544	0.5	0.02	-0.01	-0.01	0.03
		155 - 156.6: silic bands, locally foliaform bands of pyrite.									
		<<Min: 155 - 156 8% Min: Pyrite>>	156.00	156.60	0.60	B00233545	0.7	0.009	0.02	-0.01	0.06
		<<Min: 156 - 156.6 5% Min: Pyrite>>									

From (m)	To (m)	Rocktype & Description

<<Min: 156.4 - 159.2 2% Min: Pyrite>>

<<Alt: 155 - 156 Weak (Alt) Chlorite>> trace to very weak minor blebs and stringers.

<<Alt: 155 - 156.6 Strong (Alt) Muscovite>>

<<Struc: 155.2 - 156.9 Moderate (Alt) dominant foliation>>

<<Struc: 156 - 158 Moderate (Alt) Fault>> gougy shears at 30-60 deg to CA.

156.60 157.40 MDSc Carbonaceous dominant mudstone

156.6 - 157.4: very poor recovery, contacts determined by measuring from blocks on either side.

<<Min: 156.6 - 157.4 2% Min: Pyrite>>

<<Min: 156.6 - 157.4 4% Min: Pyrrhotite>>

<<Alt: 156.6 - 157.4 Moderate (Alt) Silicification>>

<<Alt: 156.6 - 157.4 Weak-Moderate (Alt) Muscovite>>

157.40 179.66 RHYv Rhyolite volcaniclastic

157.4 - 179.66: 157.4-161.1; silic bands and rare curdy texture. Rare blue qtz eyes starting at 173. Locally muscovite altered and sulphidized (py+po). Lapilli texture (real lapilli or pseudo lapilli due to alteration?) increases below 161.0 m.

<<Min: 157.4 - 160.6 3% Min: Calcite>>

<<Min: 159.2 - 161.1 2% Min: Pyrite>> and as foliaform stringers

<<Min: 159.3 - 161.1 1% Min: Pyrrhotite>>

<<Min: 160.6 - 166 8% Min: Calcite>>

<<Min: 161.1 - 167 1% Min: Pyrrhotite>>

<<Min: 166 - 175.2 5% Min: Calcite>>

<<Min: 167 - 170.2 2% Min: Pyrrhotite>>

<<Min: 170 - 172.5 8% Min: Pyrite>>

<<Min: 172.5 - 173 5% Min: Pyrite>>

<<Min: 173 - 187 3% Min: Pyrite>>

<<Alt: 160.5 - 161.1 Weak-Moderate (Alt) Chlorite>>

<<Alt: 161.1 - 169 Trace (Alt) Chlorite>>

<<Alt: 169 - 170.4 Weak-Moderate (Alt) Chlorite>>

<<Alt: 169.8 - 173.5 Weak-Moderate (Alt) Cordierite>>

<<Alt: 170.4 - 173.5 Weak-Moderate (Alt) Chlorite>>

<<Alt: 173.5 - 189.6 Weak (Alt) Chlorite>>

<<Vein: 160.2 - 160.3 50% Quartz-Tourmaline>> cross cutting qtz-chlorite vein, original tourmaline altered?

<<Struc: 158 - 160 Moderate (Alt) dominant foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
156.60	157.40	0.80	B00233546	2.4	0.02	0.02	0.02	0.27
157.40	158.00	0.60	B00233547	-0.3	-0.005	-0.01	-0.01	-0.01
158.00	159.50	1.50	B00233548	0.6	0.008	-0.01	-0.01	0.01
159.50	161.00	1.50	B00233549	0.4	-0.005	-0.01	-0.01	0.04
170.00	171.00	1.00	B00233551	0.4	0.009	-0.01	-0.01	0.01
171.00	172.00	1.00	B00233552	0.8	0.014	-0.01	-0.01	-0.01
172.00	173.00	1.00	B00233553	0.5	0.006	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 159.8 - 160 Weak-Moderate (Alt) Fault>> gouge zone and crushed core

<<Struc: 160.1 - 160.2 Moderate (Alt) Vein>> Qtz-tour vein cross cutting foliation

<<Struc: 160.5 - 161 Moderate (Alt) Foliation>>

<<Struc: 161 - 170 Moderate (Alt) dominant foliation>>

<<Struc: 161 - 195 Moderate (Alt) dominant foliation>>

<<Struc: 167.66 - 167.76 Weak-Moderate (Alt) Fault>> gouge zone parallel to foliation

<<Struc: 170 - 172 Moderate (Alt) dominant foliation>>

<<Struc: 172 - 178 Moderate (Alt) dominant foliation>>

<<Struc: 179 - 179.66 Moderate-Strong (Alt) Fault>> gouge zone, contacts at 35 & 45 deg top CA, approx parallel to steeper foliation.

179.66 197.00 RHYvl Lapilli tuff

179.66 - 197: Similar to lower section of previous unit but qtz eyes increase, lapilli texture more pronounced although locally alteration may result in pseudo lapilli texture. Blebby qtz folia from 181-190 m with blue qtz eyes.

<<Min: 179.66 - 190.7 5% Min: Calcite>>

<<Min: 187 - 197 2% Min: Pyrite>>

<<Min: 190.7 - 194.2 8% Min: Calcite>>

<<Min: 191.4 - 194.9 1% Min: Pyrrhotite>>

<<Min: 194.2 - 197 3% Min: Calcite>>

<<Alt: 189.6 - 195 Weak-Moderate (Alt) Chlorite>>

<<Alt: 195 - 196 Trace (Alt) Chlorite>>

<<Struc: 180 - 183 Moderate (Alt) dominant foliation>>

<<Struc: 183 - 184 Moderate (Alt) dominant foliation>>

<<Struc: 184 - 184.5 Moderate (Alt) dominant foliation>>

<<Struc: 184.5 - 185.5 Moderate (Alt) dominant foliation>>

<<Struc: 186.1 - 187 Weak-Moderate (Alt) Fault>> minor gougy zones cross cutting and near parallel to foliation

<<Struc: 187 - 189.6 Moderate (Alt) dominant foliation>>

<<Struc: 196 - 197 Moderate (Alt) dominant foliation>>

End of Hole @ 197

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-323

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	12-Nov-15
UTM Easting	414944.7	Core Size:	HQ3	Azimuth:	305	Date Logging Complete:	15-Nov-15
UTM Northing:	6814996	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1386.777	Casing Depth (m):	28.5	Length (m):	229.8	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	11-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK camp	Drill Completed:	15-Nov-15
Local Elev. (m):						Purpose:	Resource Definition
Comments:						Parent Hole:	

The hole K15-323 was drilled from the same pad as holes K15-314 and K15-319. The target was to get structural informations about potential East fault in this area and also confirmed the K15-319's ore intercepts. Hole collared into thick MAFI unit, which was expected to host the Krakatoa lens, which was missing in this hole (along with the upper lens). The first 97 m are characterized by alternation of MAFi and RHY(cw) intervals before encountered a thick RHYi unit, aphanitic, strongly SI, which hosted two massive sulphide lenses at 108.6 m (OA,OB, ~4m of thickness) and the second at 147.35m (OI, ~3.4m of thickness). The East fault was encountered at 171.43m, marked by ~ 10 m of fault breccia/gouge interval, comprising polygenetic fragments (RHY/MDS/MXSX, RHY dominant). The remainder of hole was fine grained RHYv(a,l) with portions of pervasive chlorite alteration associated with disseminated biotite.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	304.76	0	304.76	APS	Florent Pons	11-Nov-15		☑	
36	-53.5	286.7	22.5	309.2	ReflexEZS	Florent Pons	11-Nov-15	5864	☑	
66	-54.1	284	22.5	306.5	ReflexEZS	Florent Pons	11-Nov-15	5794	☑	
96	-55	282.8	22.5	305.3	ReflexEZS	Florent Pons	11-Nov-15	5780	☑	
126	-54.6	296.4	22.5	318.9	ReflexEZS	Florent Pons	12-Nov-15		☐	No mag for this test
156	-54.1	282.3	22.5	304.8	ReflexEZS	Florent Pons	13-Nov-15	5722	☑	
183	-54.2	284.4	22.5	306.9	ReflexEZS	Florent Pons	14-Nov-15	5788	☑	
213	-52.6	283.2	22.5	305.7	ReflexEZS	Florent Pons	14-Nov-15	5777	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**27.00**	**OVBN Overburden**									
27.00	**85.65**	**MAFi Mafic Intrusions (primarily green CG footwall mafic intrusion)**									

27 - 85.65: Green, heterogeneous texture. Characterized by Large chlorite clots (>20%), centimetric size, distributed within fine/medium grained matrix (Cl altered). Probably pyroxene phenocristals totally chlorite altered, gabbroic unit?. After 35 m, foliation increasing, the Cl clots become flattered/stretched associated with BI alteration (flakes).

<<Min: 27 - 49.1 1% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 27 - 85.65 0.1% Min: Pyrite>> Rare trace of py disseminated.

<<Min: 49.1 - 85.65 5% Min: Calcite>> small blebs disseminated wihtin matrix. Thin veinlets.

<<Alt: 27 - 85.65 Moderate (Alt) Chlorite>> Also occuring as large clots matrix distributed.

<<Alt: 51 - 65.3 Weak (Alt) Biotite>> Occuring as small flattered flakes/clots.

<<Alt: 66.35 - 70.9 Moderate (Alt) Biotite>> Occuring as small flattered flakes/clots.

<<Alt: 80.55 - 85.65 Moderate (Alt) Biotite>> Occuring as small flattered flakes/clots.

<<Vein: 38.25 - 40.9 Calcite>> Interval comprising multiple calcite veinlets, irregular oriented, fracture filling. Interval weak/moderately brecciated.

<<Struc: 38 - 39.7 Moderate (Alt) Fault>> Interval fractured, comprising fault gouge/breccia.

<<Struc: 63 - 63.01 Moderate (Alt) dominant foliation>>

<<Struc: 68.5 - 68.51 Moderate (Alt) dominant foliation>>

<<Struc: 81 - 81.01 Moderate (Alt) dominant foliation>>

85.65 87.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

85.65 - 87: Interval of RHYcw, flow banded texture marked siliceous bands, concordant. Associated with strong Si.

<<Min: 85.65 - 87 2% Min: Pyrite>> Occuring as thin stringers and also disseminated within the matrix.

<<Min: 85.65 - 89.7 2% Min: Calcite>>

<<Struc: 86 - 86.01 Weak (Alt) Foliation>>

87.00 89.70 RHY undifferentiated rhyolite MG

87 - 89.7: Grey/greenish, fine grained, homogeneous. Moderate to strongly silica altered. Could be RHYi.

<<Min: 87 - 93.42 1% Min: Pyrite>>

89.70 90.15 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

89.7 - 90.15: Short interval of MAFi, Bi altered.

<<Min: 89.7 - 90.15 6% Min: Calcite>>

<<Alt: 89.7 - 90.15 Moderate (Alt) Chlorite>> Associated with MAFi.

<<Alt: 89.7 - 90.15 Moderate (Alt) Biotite>> Associated with MAFi.

90.15 93.42 RHYcw Curdy textured-flow banded (flows, subvolcanics) FG

90.15 - 93.42: grey to greenish, aphanitic to fine grained. Banded texture marked by siliceous/leucocratic bands, concordant, locally deformed. Matrix moderately Mu altered. Could be RHYi strongly foliated.

<<Min: 90.15 - 93.42 2% Min: Calcite>>

From (m)	To (m)	Rocktype & Description

<<Min: 91.22 - 93.05 0.5% Min: Galena>> At the margins of Qtz veins.

<<Vein: 91.22 - 93.05 25% Quartz 35 deg. >> Group of grey qtz veins, subconcordant, 5-15 cm wide. GL/PY at the margins.

<<Struc: 90.15 - 90.25 Strong (Alt) Fault>> Fault gouge

<<Struc: 91 - 91.01 Moderate (Alt) Foliation>>

<<Struc: 92.82 - 92.9 Strong (Alt) Fault>> Fault gouge

93.42 94.33 MAFi Mafic Intrusions (primarily footwall mafic intrusion) MG

93.42 - 94.33: Short interval of MAFi, Bi/Cl altered. Calcite blebs/veinlets distributed within matrix.

<<Min: 93.42 - 94.33 2% Min: Pyrite>> Coarse grained, disseminated within Cl altered matrix.

<<Min: 93.42 - 108.7 3% Min: Calcite>> Also veinlets/fracture filling

<<Alt: 93.42 - 94.33 Weak (Alt) Chlorite>> MAFi

94.33 97.00 RHYcw Curdy textured-flow banded (flows, subvolcanics) FG

94.33 - 97: grey to greenish, aphanitic to fine grained. Banded texture marked by siliceous/leucocratic bands, concordant, locally deformed. Matrix moderately Mu altered. Could be RHYi strongly foliated.

<<Min: 94.33 - 104.15 2% Min: Pyrite>> Occuring as small aggregates, stringers/fracture filling.

<<Min: 94.33 - 104.15 0.5% Min: Galena>> Associated with py stringers.

97.00 108.60 RHYi Aphanitic Rhyolite (intrusion) beige VFG

97 - 108.6: Unit of RHYi, grey to light grey, aphanitic to very fine grained, fractured unit and also locally micro cracked (consolidate), homogeneous texture. Locally banded texture marked by parallel leucocratic bands. Mostly, the texture is more massive, homogeneous, with aphanitic matrix. QE, mm, disseminated within matrix. Locally, interval marked by diffused hematite associated with albite alteration ?. Mineralized, 1-2 % of py, occurring as thin stringers, filling fractures and also disseminated. Locally crosscut by grey qtz veins.

<<Min: 104.15 - 106.2 2% Min: Sphalerite>> Occuring as wisps/stringers and also associated with veinlets.

<<Min: 104.15 - 106.2 2% Min: Pyrite>> Occuring as wisps/stringers and also associated with veinlets.

<<Min: 106.2 - 108.6 0.5% Min: Sphalerite>>

<<Min: 106.2 - 108.6 1% Min: Pyrite>> And also stringers.

<<Struc: 108 - 108.01 Weak (Alt) Foliation>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
104.15	105.50	1.35	B00232717	1.4	0.016	-0.01	0.01	0.03
105.50	107.00	1.50	B00232718	2.1	0.015	-0.01	0.03	0.61
107.00	108.00	1.00	B00232719	5	0.023	0.01	0.06	0.13
108.00	108.60	0.60	B00232721	5.4	0.022	-0.01	0.08	0.36

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
108.60	**109.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MCG**	108.60	109.25	0.65	B00232722	92.7	0.669	0.17	2.05	2.9

108.6 - 109.25: Massive sulphide, sharp upper contact, medium to coarse grained, weak laminated texture marked by Sp bands.

<<Min: 108.6 - 109.25 4% Min: Sphalerite>> Fine/medium grained.

<<Min: 108.6 - 109.25 1% Min: Galena>>

<<Min: 108.6 - 110.1 70% Min: Pyrite>> Massive sulphide, OB/OA

<<Struc: 108.6 - 108.61 Contact>> Upper contact of massive sulphide.

109.25	**111.90**	**OA**	**Magnetite bearing sulphides**	**MCG**	109.25	110.10	0.85	B00232723	161	0.86	0.14	4.17	5.38

109.25 - 111.9: Massive sulphide, medium to coarse grained, weak laminated texture marked by Mg bands (coarse grained). Crosscut by massive qtz vein, heavily mineralised (Py,Gl,Sp).

<<Min: 109.25 - 110.1 3% Min: Sphalerite>> Occuring as thin bands.

					110.10	111.00	0.90	B00232724	64.5	0.348	0.06	1.28	1.26
					111.00	111.90	0.90	B00232725	131	0.543	0.82	2.51	4.4

<<Min: 109.25 - 110.1 10% Min: Magnetite>> Coarse grained, Occuring as bands

<<Min: 109.25 - 110.1 3% Min: Galena>>

<<Min: 110.1 - 111 5% Min: Sphalerite>> Qtz vein associated.

<<Min: 110.1 - 111 12% Min: Pyrite>> Large py aggregates within and at the Qtz vein margins.

<<Min: 110.1 - 111 6% Min: Galena>> Qtz vein associated.

<<Min: 111 - 111.3 1% Min: Sphalerite>>

<<Min: 111 - 111.3 1% Min: Pyrite>>

<<Min: 111.3 - 111.9 5% Min: Sphalerite>>

<<Min: 111.3 - 111.9 8% Min: Magnetite>> Coarse grained, Occuring as bands

<<Min: 111.3 - 111.9 6% Min: Galena>>

<<Min: 111.3 - 112.95 70% Min: Pyrite>>

<<Vein: 110.1 - 111 95% Quartz 50 deg. >> Massive grey qtz vein, heavily mineralised, large aggregate of Py associated with Gl and Sp. Subconcordant.

111.90	**112.95**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	111.90	112.95	1.05	B00232726	258	0.589	0.04	5.22	9.86

111.9 - 112.95: Massive sulphide, sharp lower contact, fine to medium grained, weak laminated texture marked by Sp bands.

<<Min: 111.9 - 112.95 2% Min: Sphalerite>>

<<Min: 111.9 - 112.95 2% Min: Galena>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.95	**147.35**	**RHYi Aphanitic Rhyolite (intrusion) VFG**	112.95	114.00	1.05	B00232727	2.1	0.017	-0.01	0.03	0.03
		112.95 - 147.35: Unit of RHYi, grey/beige and pinkish (hematite), aphanitic to very fine grained, fractured unit and also locally micro cracked (consolidate), homogeneous texture. Locally banded texture marked by parallel leucocratic bands. Mostly, the texture is more massive, homogeneous, with aphanitic matrix. QE, mm, disseminated within matrix. Diffused hematite associated with moderate/strong albite alteration. Mineralized, 2-3 % of py, occurring as thin stringers, filling fractures and also disseminated. Locally crosscut by grey qtz veins.									
		<<Min: 112.95 - 115.05 1% Min: Pyrite>>	114.00	115.05	1.05	B00232728	1.7	0.014	-0.01	0.02	0.03
		<<Min: 112.95 - 147.35 3% Min: Calcite>> Fracture filling	115.05	116.10	1.05	B00232729	3	0.019	-0.01	0.05	0.06
		<<Min: 115.05 - 116.1 0.5% Min: Sphalerite>> Associated with qtz vein (margins)	116.10	117.00	0.90	B00232731	1.4	0.009	-0.01	0.02	0.02
		<<Min: 115.05 - 116.1 1% Min: Galena>> Associated with qtz vein (margins)	143.00	144.50	1.50	B00232732	1.8	0.014	-0.01	0.01	-0.01
		<<Min: 116.1 - 144.8 3% Min: Pyrite>> 2-3 % of py, occurring as thin stringers, filling fractures and also disseminated	144.50	146.00	1.50	B00232733	3	0.012	-0.01	-0.01	0.01
		<<Min: 144.8 - 147.35 4% Min: Pyrite>> 2-3 % of py, occurring as thin stringers, filling fractures and also disseminated	146.00	147.35	1.35	B00232734	2.3	0.023	-0.01	0.01	-0.01
		<<Alt: 117 - 142.13 Moderate (Alt) Albite>> Pervasive/patchy alteration, moderate to strong, associated with diffused hematite.									
		<<Vein: 115.05 - 116.1 90% Quartz 50 deg. >> Massive irregular grey qtz vein, associated with GL and Sp at the margins.									
		<<Struc: 112.95 - 112.96 Contact>> Lower contact of massive sulphide.									
		<<Struc: 125.5 - 125.51 Moderate (Alt) Foliation>>									
147.35	**149.64**	**OI Heavilly disseminated sulphides in host schist FMG**	147.35	148.35	1.00	B00232735	28.7	0.43	-0.01	0.79	3.65
		147.35 - 149.64: Interval of OI/OB, interval heavily mineralized, occuring as fine/medium grained bands (moderate laminated texture). Strongly Ca altered, fracture filling/breccia.									
		<<Min: 147.35 - 148.72 40% Min: Pyrite>> Occuring as fine/medium grained bands.	148.35	148.72	0.37	B00232736	130	0.796	0.49	4.4	8.87
		<<Min: 147.35 - 148.72 3% Min: Galena>>	148.72	149.64	0.92	B00232737	7.9	0.023	0.05	0.1	0.24
		<<Min: 147.35 - 148.72 0.5% Min: Chalcopyrite>>									
		<<Min: 147.35 - 148.72 8% Min: Calcite>> Fracture filling and pervasive									
		<<Struc: 148.72 - 149.64 Strong (Alt) Fault>> Fault gouge.									
149.64	**150.75**	**OI Heavilly disseminated sulphides in host schist CG**	149.64	150.75	1.11	B00232738	299	1.07	0.83	4.9	11.8
		149.64 - 150.75: Interval of OI/OB, interval heavily mineralized, Coarse grained py disseminated. Strongly Ca altered, fracture filling/breccia. Sharp lower contact.									
		<<Min: 149.64 - 150.64 3% Min: Sphalerite>>									
		<<Min: 149.64 - 150.64 6% Min: Galena>>									
		<<Min: 149.64 - 150.64 1% Min: Chalcopyrite>>									

From (m)	To (m)	Rocktype & Description

<<Min: 149.64 - 150.75 40% Min: Pyrite>> Coarse grained.

<<Min: 149.64 - 150.75 5% Min: Calcite>> Fracture filling and pervasive

<<Min: 150.64 - 151.58 4% Min: Pyrite>> Large aggregates diss within matrix.

150.75 158.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FCG

150.75 - 158: Light grey to greenish, strongly foliated and altered MAFI unit, fine to coarse grained. 150.75m to 154.4m, strong pervasive MU alteration, following by the overprinted CL. Moderate to strong Ca alteration (blebs/veinlets).

<<Min: 150.75 - 158 7% Min: Calcite>> Blebs/stringers.

<<Min: 151.58 - 158 1% Min: Pyrite>>

<<Alt: 150.75 - 154.4 Strong (Alt) Muscovite>> MAFi altered

<<Alt: 154.4 - 158 Moderate (Alt) Chlorite>> MAFi

<<Vein: 153 - 154.4 60% Quartz>> Interval comprising irregular and deformed qtz-+/-Ca veins, decimetric.

<<Struc: 150.75 - 150.76 Contact>> Lower contact of massive sulphide (sharp).

<<Struc: 150.75 - 150.93 Strong (Alt) Fault>> Fault gouge

<<Struc: 154.4 - 155.35 Strong (Alt) Fault>> Fault gouge

<<Struc: 156.5 - 156.51 Strong (Alt) Foliation>>

158.00 170.25 RHY undifferentiated rhyolite light grey FMG

158 - 170.25: Light grey, fine to medium grained, strongly foliated associated with strong MU alteration. Homogeneous unit, comprising locally siliceous bands, concordant. Could be RHY volcanoclastic, Ash?
162-162.2m: Short MDS interval, bedding texture.

<<Min: 158 - 169.38 0.5% Min: Pyrite>>

<<Min: 158 - 169.38 1% Min: Pyrrhotite>>

<<Min: 158 - 171.43 1% Min: Calcite>>

<<Min: 169.38 - 170.25 3% Min: Pyrrhotite>> Also thin stringers

<<Alt: 158 - 169.38 Strong (Alt) Muscovite>> Original alteration?

<<Alt: 169.38 - 170.53 Strong (Alt) Chlorite>> Strong CL associated with MU? Py disseminated.

<<Struc: 158 - 159.2 Strong (Alt) Fault>> Fault gouge

<<Struc: 163 - 163.01 Strong (Alt) Foliation>>

<<Struc: 166 - 166.01 Strong (Alt) Foliation>>

170.25 171.43 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey FG

170.25 - 171.43: Mudstone unit, strongly fractured/foliated, MU altered. Comprising fault gouge.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
150.75	152.00	1.25	B00232739	8.6	0.083	0.09	0.12	0.69
152.00	153.00	1.00	B00232741	0.6	-0.005	0.02	0.02	0.03
153.00	154.00	1.00	B00232742	-0.3	-0.005	0.01	-0.01	0.02
154.00	155.50	1.50	B00232743	-0.3	0.006	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 170.25 - 170.52 7% Min: Pyrite>> Occuring as bands/aggregates and also disseminated. Associated with Cl alteration (original?)

<<Min: 170.25 - 170.52 2% Min: Pyrrhotite>> Associated with Cl alteration (original?)

<<Struc: 171 - 171.1 Strong (Alt) Foliation>>

171.43 181.65 FBX Fault Breccia

171.43 - 181.65: Fault breccia interval, comprising polygenetic fragments (RHY/MDS/MXSX, RHY dominant) within MU/SR matrix, heteregeneous, cm size. Probably the East fault.

<<Vein: 179.65 - 181.3 30% Quartz>> Grey qtz veins, fractured/fragmented, centimetric, unmineralized.

<<Struc: 171.43 - 181.65 Intense (Alt) Fault>> Fault gouge. East fault

181.65 187.45 RHYva Coarse grained to ash tuff grey FMG

181.65 - 187.45: Greyish, fine to medium grained, homogeneous, foliated. Marked by Cl alteration, pervasive/patchy, and also MU in fracture surface. Very small QE distributed within matrix. Could be a fine grained ash tuff.

<<Min: 181.65 - 189.17 10% Min: Calcite>> Blebs/stringers/fracture filling

<<Min: 181.65 - 229.8 0.5% Min: Pyrite>> Interval weakly mineralised.

<<Alt: 181.65 - 187.45 Weak (Alt) Chlorite>> Pervasive/patchy

<<Struc: 182.5 - 182.51 Moderate (Alt) Foliation>>

187.45 189.17 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FG

187.45 - 189.17: Brownish, fine grained, homogeneous, Bi altered. Strongly Ca altered (pervasive/blebs/ deformed veinlets). Sharp contacts. Mafic intrusive?

<<Alt: 187.45 - 189.17 Moderate (Alt) Biotite>> Matrix altered (MAFi)

<<Struc: 189 - 189.01 Moderate (Alt) Foliation>>

189.17 229.80 RHYva Coarse grained to ash tuff grey FMG

189.17 - 229.8: Greyish, fine to medium grained, heterogeneous, strongly foliated. Comprising multiple fault intervals/breccia (locally fault gouge). After 220m, Small BI porphyroblasts appears, disseminated within weak cl altered matrix. MU in fracture surface. < 5% of small QE (blue) distributed within matrix. The CL alteration is locally patchy, similar to fragment/clast Cl altered. Comprising irregular Qtz-Ca-TL vein/veinlet (trace). Probably fine grained ash tuff.

198.75-201.7m: Qtz/Felspar crystal within matrix, subheudral, crystal tuff interval?

<<Min: 189.17 - 229.8 4% Min: Calcite>> Occuring as blebs/fracture filling and thin veinlets. Locally weakly pervasive.

<<Alt: 189.17 - 215.75 Strong (Alt) Muscovite>> Associated with intense foliation.

<<Alt: 220.82 - 229.8 Weak (Alt) Chlorite>> Original? Also patchy.

<<Alt: 220.82 - 229.8 Weak (Alt) Biotite>> Small BI porphyroblasts appears (flakes mm), disseminated within weak cl altered matrix

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Vein: 227 - 227.7 15% Tourmaline>> Group of thin QTZ-TL vein/veinlet, discordant, weakly folded.									
		<<Struc: 189.35 - 195 Strong (Alt) Fault>> Interval fractured/brecciated. Comprising fault gouge.									
		<<Struc: 197.85 - 215.75 Strong (Alt) Fault>> Interval fractured/brecciated. Comprising fault gouge.									
		End of Hole @ 229.8									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-324

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Dillon Hume	Date Logging Start:	16-Nov-15
UTM Easting	415076	Core Size:	HQ3	Azimuth:	180.27	Date Logging Complete:	20-Nov-15
UTM Northing:	6815517	Casing Pulled?:	Yes	Dip:	-70	Drill Company:	Geotech
UTM Elev. (m):	1385.985	Casing Depth (m):	16.5	Length (m):	362	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK camp	Drill Completed:	20-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-324 targetted mafic hosted Krakatoa type mineralization beneath the main ABM deposit. No significant mineralization and alteration have been encountered in the footwall. After 305 m, remainder of hole was fine grained RHYv(a,l) with portions of pervasive chlorite alteration associated with biotite disseminated (porphyroblasts/flakes).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-70	180.27	0	180.27	APS	Dillon Hume	15-Nov-15		☑	
23	-70.1	159.3	22.5	181.8	ReflexEZS	Geotech	14-Nov-15	5760	☑	
56	-70.1	163.9	22.5	186.4	ReflexEZS	Geotech	15-Nov-15	5742	☑	
83	-69.4	161.9	22.5	184.4	ReflexEZS	Geotech	15-Nov-15	5879	☑	
101	-69.5	160.4	22.5	182.9	ReflexEZS	Geotech	15-Nov-15	5382	☑	Low MAG
125	-69.8	161.4	22.5	183.9	ReflexEZS	Geotech	15-Nov-15	5749	☑	
155	-69.5	167.5	22.5	190	ReflexEZS	Geotech	16-Nov-15	5760	☑	
176	-69.1	168.1	22.5	190.6	ReflexEZS	Geotech	16-Nov-15	5730	☑	
203	-68.7	167.7	22.5	190.2	ReflexEZS	Geotech	16-Nov-15	5805	☑	
230	-68.7	170.7	22.5	193.2	ReflexEZS	Geotech	17-Nov-15	5742	☑	
254	-68.7	168.5	22.5	191	ReflexEZS	Geotech	17-Nov-15	5742	☑	
278	-68.6	171.3	22.5	193.8	ReflexEZS	Geotech	18-Nov-15	5732	☑	
308	-68.2	177.6	22.5	200.1	ReflexEZS	Geotech	18-Nov-15	5813	☑	
332	-68.1	172	22.5	194.5	ReflexEZS	Geotech	18-Nov-15	5721	☑	
356	-67.9	174.9	22.5	197.4	ReflexEZS	Geotech	19-Nov-15	5732	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**17.70**	**OVBN** **Overburden**									
0 - 17.7: Casing at 16.5m.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

17.70 18.95 RHYcw Curdy textured-flow banded (flows, subvolcanics) grey

17.7 - 18.95: Grey, moderately foliated, Mu altered (moderate) associated with weak chlorite alteration (pervasive). Comprising thin siliceous bands, deformed, moderately folded/dismembered, marked a banded texture. Probably RHYcw.

<<Min: 17.7 - 18.95 2% Min: Calcite>>

<<Min: 17.7 - 30.4 1% Min: Pyrrhotite>> Disseminated, locally occuring as small wisps.

18.95 19.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) brown FG

18.95 - 19.4: Brownish, fine grained, homogeneous. Matrix moderately biotite altered, pervasive. Strong pervasive calcite, also occuring as thin bands/veinlets. Gradual/diffused contacts. MAFi?

<<Min: 18.95 - 19.4 8% Min: Calcite>> Pervasive and occuring as blebs/veinlets.

<<Alt: 18.95 - 19.4 Moderate (Alt) Biotite>> Matrix moderately Bi altered.

19.40 38.72 RHYvl Lapilli tuff light grey MCG

19.4 - 38.72: Light grey, fine to medium grained, homogeneous, moderately foliated. Comprising fragments/lapilli, cm size, siliceous, deformed, distributed within fine grained matrix (MU altered). 1-2 % of PO/Py disseminated. Volcanoclastic unit, probably RHYvl.

<<Min: 19.4 - 83 3% Min: Calcite>>

<<Min: 30.4 - 38.72 2% Min: Pyrite>> Occuring as small wisps and folded/dismembered bands, also disseminated.

<<Min: 30.4 - 38.72 0.5% Min: Pyrrhotite>>

<<Vein: 26.2 - 30.4 20% Quartz>> Interval of veining, grey qtz veins,boudinaged, strongly deformed, 2-20 m wide, margins chlorite altered.

38.72 40.43 RHYcw Curdy textured-flow banded (flows, subvolcanics) light grey

38.72 - 40.43: Light grey, characterized by siliceous bands, folded, locally dismembered, flow banded/curdy texture. Interval of RHYcw.

<<Min: 38.72 - 39.28 4% Min: Pyrite>> Occuring as deformed bands, coarse grained. Also wisps.

<<Min: 39.28 - 41.22 1% Min: Pyrite>> Also disseminated.

<<Min: 39.28 - 41.22 1% Min: Pyrrhotite>> Also disseminated.

40.43 64.85 RHYvl Lapilli tuff light grey MCG

40.43 - 64.85: Light grey, fine to medium grained, homogeneous, moderately foliated. Comprising fragments/lapilli, cm size, siliceous, deformed, distributed within fine grained matrix (MU altered). Locally banded texture marked by siliceous bands/stretched fragment, irregular and deformed. 1-2 % of PO/Py disseminated. Volcanoclastic unit, probably RHYvl.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 41.22 - 42 0.5% Min: Sphalerite>> Small blebs/aggregate disseminated.									
		<<Min: 41.22 - 42 5% Min: Pyrite>> Occuring as thin stringer/fracture filling.									
		<<Min: 42 - 45.17 3% Min: Pyrite>> Occuring as thin stringers and disseminated.									
		<<Min: 45.17 - 49 1% Min: Pyrite>>									
		<<Min: 49 - 54.35 2% Min: Pyrite>>									
		<<Min: 49 - 54.35 2% Min: Pyrrhotite>>									
		<<Min: 54.35 - 62 3% Min: Pyrrhotite>> Also occuring as small wisps.									
		<<Min: 62 - 73 2% Min: Pyrrhotite>> Occuring as thin stringers and also disseminated.									
		<<Alt: 61.75 - 72 Moderate (Alt) Muscovite>> Moderate to strong MU original alteration. "shiny" fracture surface.									
64.85	**84.10**	**RHYcw** **Curdy textured-flow banded (flows, subvolcanics)** **light grey**	73.00	73.50	0.50	B00232744	1.2	-0.005	0.04	-0.01	0.19
		64.85 - 84.1: Light grey, siliceous unit, characterized by siliceous bands, folded, locally dismembered, flow banded/curdy texture well developped. Moderate to strongly MU altered (original?). Blue QE distributed within the matrix, < 3%. 2 % of po disseminated and occuring as thin stringers/wisps. Interval of RHYcw.									
		<<Min: 73 - 73.1 10% Min: Pyrite>> Fracture filling, associated with Qtz+Ca.	73.50	75.00	1.50	B00232745	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 73 - 73.1 10% Min: Pyrrhotite>> Fracture filling, associated with Qtz+Ca.	75.00	76.50	1.50	B00232746	-0.3	-0.005	0.01	-0.01	-0.01
		<<Min: 73 - 73.1 5% Min: Chalcopyrite>> Fracture filling, associated with Qtz+Ca.	76.50	78.00	1.50	B00232747	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 73.1 - 77.45 2% Min: Pyrrhotite>> Occuring as thin stringers and also disseminated.	78.00	79.50	1.50	B00232748	-0.3	-0.005	-0.01	-0.01	0.03
		<<Min: 77.45 - 84.1 0.5% Min: Pyrrhotite>>	79.50	81.00	1.50	B00232749	-0.3	-0.005	-0.01	-0.01	0.01
		<<Alt: 83.9 - 85.4 Moderate (Alt) Cordierite>> Occuring as heterogeneous porphyroblats disseminated.	81.00	82.00	1.00	B00232751	-0.3	-0.005	-0.01	-0.01	0.02
		<<Struc: 66 - 66.01 Strong (Alt) Foliation>>	82.00	83.00	1.00	B00232752	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Struc: 76 - 76.01 Strong (Alt) Foliation>>	83.00	84.10	1.10	B00232753	3.6	-0.005	-0.01	0.03	0.06
		<<Struc: 77.45 - 77.87 Strong (Alt) Fault>> Fault gouge interval,									
		<<Struc: 80 - 80.01 Strong (Alt) Foliation>>									
84.10	**84.88**	**OJ** **Heavilly disseminated sulphides in proximal altered rock** **FG**	84.10	84.88	0.78	B00232754	46.3	0.151	0.63	0.16	0.82
		84.1 - 84.88: Interval of OJ, strong PO mineralisation, occuring as subparallel bands, laminated texture. Associated with Mu and CI alteration (original).									
		<<Min: 84.1 - 84.88 15% Min: Pyrrhotite>> Occuring as subparallel bands									
		<<Min: 84.1 - 84.88 2% Min: Chalcopyrite>>									
		<<Struc: 84.1 - 84.11 Contact>> Sharp uuper contact of OJ									
		<<Struc: 84.5 - 84.51 Strong (Alt) Foliation>>									

From (m)	To (m)		Rocktype & Description	
84.88	**87.70**	**OG**	**Chalcopyrite rich sulphides**	**FMG**

84.88 - 87.7: OG interval, 8-25 % of semi-massive Cp, associated with Po/Py/Sp/GL. < 5% of magnetite disseminated (coarse grained) Homogeneous texture, fine/medium grained, locally laminated marked by bands of mineralisation. Comprising calcite veinlets (fracture filling).

<<Min: 84.88 - 85.4 10% Min: Sphalerite>> as bands.

<<Min: 84.88 - 85.4 15% Min: Pyrite>>

<<Min: 84.88 - 85.4 20% Min: Pyrrhotite>>

<<Min: 84.88 - 85.4 10% Min: Galena>>

<<Min: 85.4 - 86.25 6% Min: Sphalerite>>

<<Min: 85.4 - 86.25 20% Min: Pyrite>>

<<Min: 85.4 - 86.25 25% Min: Pyrrhotite>>

<<Min: 85.4 - 86.25 2% Min: Galena>>

<<Min: 85.4 - 86.25 25% Min: Chalcopyrite>> 25-30 % of Cp, semi massive to massive

<<Min: 86.25 - 87.2 10% Min: Sphalerite>>

<<Min: 86.25 - 87.2 15% Min: Pyrite>>

<<Min: 86.25 - 87.2 20% Min: Pyrrhotite>>

<<Min: 86.25 - 87.2 20% Min: Chalcopyrite>>

<<Min: 87.2 - 88.8 8% Min: Pyrrhotite>> Associated with interval strongly cordierite altered.

<<Alt: 87.2 - 88.8 Weak (Alt) Muscovite>>

<<Alt: 87.2 - 88.8 Strong (Alt) Cordierite>> Large porphyroblasts.

From (m)	To (m)		Rocktype & Description	
87.70	**88.80**	**RHY**	**undifferentiated rhyolite**	**FCG**

87.7 - 88.8: Interval brecciated and altered by cordierite (large porphyroblasts), between 2 lenses of massive sulphide. 5-10 % of Po, patchy. Difficult to determinate the protolith.

From (m)	To (m)		Rocktype & Description	
88.80	**89.15**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**

88.8 - 89.15: Massive sulphide Cp rich, ~ 10% of Cp (patchy). Fine grained.

<<Min: 88.8 - 89.15 5% Min: Sphalerite>>

<<Min: 88.8 - 89.15 75% Min: Pyrite>> OB

<<Min: 88.8 - 89.15 3% Min: Galena>>

<<Min: 88.8 - 89.15 10% Min: Chalcopyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
84.88	85.40	0.52	B00232755	248	1.55	4.93	1.48	5.43
85.40	86.25	0.85	B00232756	255	2.24	7.32	1.18	3.37
86.25	86.90	0.65	B00232757	146	1.04	2.66	0.78	8.38
86.90	87.70	0.80	B00232758	157	1.39	5.4	0.25	3.83
87.70	88.20	0.50	B00232759	162	2.05	6.01	0.27	0.66
88.20	88.80	0.60	B00232761	5.8	0.291	0.31	-0.01	0.05
88.80	89.15	0.35	B00232762	134	2.45	5.11	0.13	3.65

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
89.15	**93.48**	**RHY**	**undifferentiated rhyolite**	**light grey**	89.15	90.00	0.85	B00232763	387	4.68	1.03	0.03	0.18

89.15 - 93.48: Interval strongly foliated and Mu altered, locally banded texture seems conserved, marked by deformed siliceous bands. Could be RHYcw.

<<Min: 89.15 - 91.2 4% Min: Pyrite>> fine/medium grained, occuring as large bands.					90.00	91.50	1.50	B00232764	2.2	0.035	0.03	-0.01	0.04
<<Min: 91.2 - 93.48 1% Min: Pyrite>>					91.50	93.00	1.50	B00232765	1.1	-0.005	-0.01	-0.01	0.03
<<Alt: 89.15 - 90.85 Moderate (Alt) Silicification>> Associated with stron dolomite alteration.					93.00	93.48	0.48	B00232766	2.3	0.009	-0.01	0.02	0.07
<<Alt: 89.15 - 90.85 Moderate (Alt) Muscovite>>													
<<Alt: 89.15 - 90.85 Moderate (Alt) Cordierite>> Large porphyroblasts.													
<<Alt: 90.85 - 93.48 Strong (Alt) Muscovite>> Associated with strong foliation.													
93.48	**93.90**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	93.48	93.90	0.42	B00232767	55.3	0.316	0.35	0.62	5.85

93.48 - 93.9: Interval of massive sulphide, essemtially composed by massive py with 2-3% of Sp disseminated. Sharp contacts

<<Min: 93.48 - 93.9 2% Min: Sphalerite>> OB													
<<Min: 93.48 - 93.9 70% Min: Pyrite>> OB													
<<Struc: 93.48 - 93.49 Contact>> Sharp upper contact of massive sulphide OB.													
93.90	**100.65**	**RHYcw**	**Curdy textured-flow banded (flows, subvolcanics)**	**light grey**	93.90	95.00	1.10	B00232768	3.1	0.05	0.06	0.05	0.14

93.9 - 100.65: Light grey, characterized by siliceous bands, folded, locally dismembered, flow banded/curdy texture locally developped. Strongly MU altered (original). Blue QE distributed within the matrix ? 3-4 % of py disseminated and occuring as thin stringers/wisps. RHYcw?.

<<Min: 93.9 - 100.65 4% Min: Pyrite>> 4-5%. Thin stringers/wisps, also disseminated.					95.00	96.50	1.50	B00232769	3.5	-0.005	-0.01	0.03	0.06
<<Alt: 93.9 - 100.65 Strong (Alt) Muscovite>>					96.50	98.00	1.50	B00232771	0.9	-0.005	-0.01	-0.01	0.05
<<Vein: 93.9 - 96.15 15% Quartz>> Interval of veining, grey qtz veins, +/- dolomite, boudinaged, strongly deformed, 5-10 m wide.					98.00	99.50	1.50	B00232772	0.7	-0.005	-0.01	-0.01	0.02
					99.50	100.65	1.15	B00232773	8.8	0.145	0.15	0.03	0.06
100.65	**106.10**	**OA**	**Magnetite bearing sulphides**	**FCG**	100.65	101.30	0.65	B00232774	97.4	0.749	2.38	0.29	2.87

100.65 - 106.1: Massive sulphide, OA, ~ 10 % of coarse grained magnetite, occuring as bands, marked laminated texture.

<<Min: 100.65 - 106.1 5% Min: Sphalerite>>					101.30	102.00	0.70	B00232775	67.7	0.818	1.03	0.64	2.28
<<Min: 100.65 - 106.1 5% Min: Pyrrhotite>>					102.00	103.00	1.00	B00232776	69.5	0.654	1.12	0.62	2.11
<<Min: 100.65 - 106.1 10% Min: Magnetite>> Occuring as bands					103.00	104.00	1.00	B00232777	48.5	0.786	0.66	0.33	2.47
<<Min: 100.65 - 107.55 70% Min: Pyrite>> Fine grained					104.00	105.00	1.00	B00232778	39.3	0.493	0.5	0.27	0.45

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
					105.00	106.00	1.00	B00232779	31.7	0.485	0.47	0.12	0.24
					106.00	106.80	0.80	B00232781	34.8	1.12	0.38	0.3	0.6
106.10	**106.80**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FG**									
106.1 - 106.8: Homogeneous OB massive sulphide.													
<<Min: 106.1 - 107.55 4% Min: Sphalerite>> Occuring as bands.													
<<Min: 106.1 - 107.55 1% Min: Galena>>													
<<Min: 106.1 - 107.55 1% Min: Chalcopyrite>>													
106.80	**107.28**	**OA**	**Magnetite bearing sulphides**	**FCG**	106.80	107.28	0.48	B00232782	48.6	0.697	0.38	0.34	3.48
106.8 - 107.28: Massive sulphide, OA, ~ 6 % of coarse grained magnetite, occuring as bands, marked laminated texture.													
<<Min: 106.8 - 107.55 6% Min: Magnetite>> Coarse grained, disseminated.													
107.28	**108.74**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	107.28	108.00	0.72	B00232783	131	1.63	0.28	2.37	9.65
107.28 - 108.74: OB interval, comprising fragments of Qtz-barite? Associated with Galena.													
<<Min: 107.55 - 108.74 10% Min: Sphalerite>> Fine to medium grained.					108.00	108.74	0.74	B00232784	223	2.32	0.33	1.67	6.37
<<Min: 107.55 - 108.74 60% Min: Pyrite>>													
<<Min: 107.55 - 109 8% Min: Galena>> Medium grained.													
<<Min: 107.55 - 109 1% Min: Chalcopyrite>>													
<<Struc: 107.41 - 107.55 Moderate (Alt) Fault>> Open cavity, geode.													
108.74	**109.00**	**OA**	**Magnetite bearing sulphides**	**FCG**	108.74	109.15	0.41	B00232785	141	1.83	0.59	1.54	8.08
108.74 - 109: Short OA interval.													
<<Min: 108.74 - 109 5% Min: Sphalerite>>													
<<Min: 108.74 - 109 70% Min: Pyrite>>													
<<Min: 108.74 - 109 10% Min: Magnetite>> Occuring as bands													
109.00	**114.05**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**MG**	109.15	110.00	0.85	B00232786	381	4.71	0.17	4.24	13.3
109 - 114.05: Laminated texture marked by Sp bands. Comprising fragmented veins/fracture filling of qtz + barite?.													
<<Min: 109 - 112 10% Min: Sphalerite>> Fine to medium grained, occuring as bands.					110.00	111.00	1.00	B00232787	254	3.41	0.19	2.23	8.01

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Min: 109 - 112 60% Min: Pyrite>>					111.00	112.00	1.00	B00232788	276	2.67	0.19	2.72	9.59
<<Min: 109 - 112 10% Min: Galena>> Medium grained, patchy.					112.00	113.00	1.00	B00232789	210	2.73	0.34	0.76	3.88
<<Min: 109 - 112 1% Min: Chalcopyrite>>					113.00	114.05	1.05	B00232791	349	3.65	0.54	3.14	12.3
<<Min: 112 - 113.12 5% Min: Sphalerite>> Occuring as bands													
<<Min: 112 - 113.12 70% Min: Pyrite>>													
<<Min: 112 - 113.12 5% Min: Galena>>													
<<Min: 113.12 - 114.05 15% Min: Sphalerite>> Occuring as bands, medium grained.													
<<Min: 113.12 - 114.05 8% Min: Galena>>													
<<Min: 113.12 - 114.05 1% Min: Chalcopyrite>>													
<<Min: 113.12 - 115.25 60% Min: Pyrite>> Medium grained													
114.05	**114.90**	**OA**	**Magnetite bearing sulphides**	**MCG**	114.05	114.90	0.85	B00232792	221	0.88	0.46	4.43	13.7
114.05 - 114.9: Massive sulphide, OA, ~ 10 % of coarse grained magnetite, occuring as bands, marked laminated texture. Associated with strong GL and SP.													
<<Min: 114.05 - 114.9 5% Min: Sphalerite>> Occuring as bands.													
<<Min: 114.05 - 114.9 10% Min: Magnetite>> Coarse grained, occuring as bands.													
<<Min: 114.05 - 114.9 8% Min: Galena>>													
114.90	**115.25**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	114.90	115.25	0.35	B00232793	148	3.49	2.26	1.74	6.52
114.9 - 115.25: Laminated texture marked by Py bands. Comprising cordierite porphyroblasts.													
<<Min: 114.9 - 115.25 4% Min: Sphalerite>>													
<<Min: 114.9 - 115.25 5% Min: Galena>>													
<<Alt: 115.1 - 115.75 Moderate (Alt) Cordierite>> Large porphyroblats distributed within matrix													
115.25	**116.50**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**FG**	115.25	115.75	0.50	B00232794	49.1	0.265	0.8	0.28	1.84
115.25 - 116.5: Interval of strongly minerlized associated with strong original altereation (CL/CI/MU), banded texture. The protolith could be MAFi altered/foliated.													
<<Min: 115.25 - 115.95 8% Min: Pyrrhotite>> Occuring as bands and stringers.					115.75	116.50	0.75	B00232795	26.3	0.065	0.19	0.66	3.25
<<Min: 115.25 - 115.95 1% Min: Chalcopyrite>>													
<<Min: 115.95 - 116.5 2% Min: Sphalerite>>													
<<Min: 115.95 - 116.5 8% Min: Pyrrhotite>> Occuring as bands and stringers.													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 115.95 - 116.5 5% Min: Galena>>									
		<<Min: 115.95 - 116.5 2% Min: Chalcopyrite>>									
		<<Alt: 115.25 - 115.75 Weak (Alt) Chlorite>> Thin concordant bands									
		<<Alt: 115.75 - 116.5 Strong (Alt) Chlorite>> Very thin grained, associated with mineralization.									
		<<Struc: 115.5 - 115.51 Strong (Alt) Foliation>>									
116.50	**120.20**	**RHY undifferentiated rhyolite** **FMG**	116.50	118.00	1.50	B00232796	3.4	0.009	0.04	0.06	0.69
		116.5 - 120.2: Interval of indifferentiated RHY, moderate to strongly by original/proximal alteration (CL/MU). Comprising deformed siliceous bands/fragments. Could be MAFi altered.									
		<<Min: 116.5 - 117.55 4% Min: Pyrrhotite>> Occuring as stringer/wisps.	118.00	119.50	1.50	B00232797	1.4	0.033	0.01	-0.01	0.19
		<<Min: 117.55 - 118.45 2% Min: Pyrrhotite>> Wisps/stringers	119.50	120.20	0.70	B00232798	1.6	0.006	0.02	0.01	0.1
		<<Min: 117.55 - 118.45 0.5% Min: Chalcopyrite>> Associated with PO.									
		<<Min: 118.45 - 119.5 1% Min: Pyrite>>									
		<<Min: 119.5 - 121.2 1% Min: Pyrrhotite>>									
		<<Min: 119.5 - 121.2 0.5% Min: Chalcopyrite>>									
		<<Alt: 116.5 - 117.55 Moderate (Alt) Muscovite>>									
		<<Alt: 117.55 - 118.45 Moderate (Alt) Muscovite>>									
		<<Alt: 117.55 - 118.45 Moderate (Alt) Chlorite>> Occuring as decimetric bands, mineralized.									
		<<Alt: 118.45 - 121.5 Strong (Alt) Muscovite>>									
		<<Struc: 116.6 - 116.61 Strong (Alt) Foliation>>									
120.20	**136.15**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion)** **FCG**	120.20	121.20	1.00	B00232799	1.3	-0.005	-0.01	-0.01	0.05
		120.2 - 136.15: Light grey to greenish, strongly altered and foliated MAFi. Altered by original/proximal alteration, MU and CL, occuring as bands and pervasive associated with mineralization. Calcite altered, blebs/dismembered bands distributed within matrix. 128.08-129.15m: RHYcw interval? Banded texture marked by siliceous bands. After 131m, unit locally crosscuted by short RHYi.									
		<<Min: 121.2 - 121.55 4% Min: Pyrite>> Associated with CL band	121.20	121.55	0.35	B00232801	29.2	0.059	0.4	0.48	2.28
		<<Min: 121.2 - 121.55 4% Min: Pyrrhotite>> Associated with CL band	121.55	123.00	1.45	B00232802	0.4	-0.005	-0.01	0.01	0.02
		<<Min: 121.2 - 121.55 1% Min: Chalcopyrite>>									
		<<Min: 121.55 - 127.55 0.5% Min: Pyrite>> Coarse grained.									
		<<Min: 121.55 - 131 7% Min: Calcite>> Associated with MAFi, occuring as blebls/dismembered bands.									
		<<Min: 127.55 - 127.8 5% Min: Pyrite>> Coarse grained									
		<<Min: 127.55 - 127.8 3% Min: Pyrrhotite>> Coarse grained.									
		<<Min: 127.8 - 136.15 1% Min: Pyrite>> Occuring as wisp and thin stringers									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 133.5 - 136.15 4% Min: Calcite>>

<<Alt: 121.5 - 121.55 Moderate (Alt) Muscovite>>

<<Alt: 121.5 - 121.55 Moderate (Alt) Chlorite>> CL bands, original alteration, associated with PO/PY/CP.

<<Alt: 121.55 - 128.08 Moderate (Alt) Chlorite>> MAFi

<<Alt: 128.08 - 136.15 Moderate (Alt) Muscovite>> Shiny MU, pervasive alteration within MAFi unit.

<<Struc: 123 - 123.01 Moderate (Alt) Foliation>>

<<Struc: 130 - 130.01 Moderate (Alt) Foliation>>

<<Struc: 135.3 - 135.31 Moderate (Alt) Foliation>>

136.15 156.12 RHYi Aphanitic Rhyolite (intrusion) light grey VFG

136.15 - 156.12: Unit of RHYi, grey/beige, aphanitic to very fine grained, fractured unit and also locally micro cracked (consolidate), homogeneous texture. Locally banded texture marked by parallel leucocratic bands. Mostly, the texture is more massive, homogeneous, with aphanitic matrix. Locally QE, mm, disseminated within matrix. Moderate/strong albite alteration, diffused. Mineralized, 2-3 % of py, occurring as thin stringers, filling fractures and also disseminated. Locally crosscut by grey qtz veins.

<<Min: 136.15 - 144.15 2% Min: Sphalerite>> Occuring as stringers associated with py.

<<Min: 136.15 - 144.15 2% Min: Pyrite>> Occuring as stringers associated with Sp

<<Min: 136.15 - 158 2% Min: Calcite>>

<<Min: 144.15 - 145.32 2% Min: Sphalerite>> Aggregate

<<Min: 144.15 - 145.32 2% Min: Chalcopyrite>> Aggregate

<<Min: 145.32 - 151 2% Min: Pyrite>> Occuring as wisps/stringers and also disseminated.

<<Min: 151 - 156.12 0.5% Min: Chalcopyrite>> Associated with discordant qtz veinlets.

<<Min: 151 - 167.8 1% Min: Sphalerite>> Occuring as veinlets/fracture filling associated with Py. Also associated with qtz veinlets.

<<Min: 151 - 167.8 1% Min: Pyrite>> Occuring as veinlets/fracture filling associated with Sp

<<Alt: 136.15 - 146.15 Moderate (Alt) Albite>> Patchy/pervasive.

<<Alt: 145.32 - 156.12 Moderate (Alt) Albite>> Moderate to strong pervasive/diffused, beige.

<<Vein: 144.15 - 145.32 95% Quartz>> Massive grey quartz vein, metric, irregular oriented. Aggregates of Cp/Sp distributed within matrix and at the margins.

<<Vein: 152.32 - 152.5 70% Quartz>> Regular grey qtz +/- Cal, 10-15 cm wide. Irregular oriented.

156.12 158.24 RHYva Coarse grained to ash tuff light grey FMG

156.12 - 158.24: Light grey, fine to medium grained, homogeneous, strongly silica altered (pervasive). >10% of small QE within fine grained matrix. Also comprising mm porphyroblasts/blebs of calcite, locally thin bands. Could be fine/medium grained ash tuff

<<Alt: 156.12 - 157.24 Strong (Alt) Silicification>> Strong pervasive SI alteration

<<Alt: 157.24 - 161.6 Moderate (Alt) Albite>> RHYi

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

158.24 161.60 RHYi Aphanitic Rhyolite (intrusion) beige VFG

158.24 - 161.6: Interval of RHYi, beige, aphanitic to very fine grained, homogeneous. "pepperic" texture at the upper and lower contacts, fragmented.

161.60 166.70 RHYva Coarse grained to ash tuff light grey FMG

161.6 - 166.7: Light grey, fine to medium grained, homogeneous, strongly silica altered (pervasive). >10% of small QE within fine grained matrix. Also comprising mm porphyroblasts/blebs of calcite, locally thin bands. Could be fine/medium grained ash tuff

<<Alt: 161.6 - 166.7 Moderate (Alt) Silicification>>

166.70 167.80 RHYi Aphanitic Rhyolite (intrusion) beige VFG

166.7 - 167.8: Interval of RHYi, beige, aphanitic to very fine grained, homogeneous, albite ltered.

<<Alt: 166.7 - 167.8 Moderate (Alt) Albite>>

167.80 174.78 MAFi Mafic Intrusions (primarily footwall mafic intrusion) FCG

167.8 - 174.78: Light grey to greenish, matrix fine grained, strongly altered and foliated MAFi. Altered byMu and CL alteration, occuring as bands and pervasive associated with mineralization (Py bands). Calcite altered, blebs/dismembered bands distributed within matrix.

<<Min: 167.8 - 168.53 1% Min: Pyrite>>

<<Min: 167.8 - 174.78 8% Min: Calcite>> Associated with MAFi

<<Min: 168.53 - 171.4 3% Min: Sphalerite>> Associated with PY/GL, occuring as bands/veins.

<<Min: 168.53 - 171.4 5% Min: Pyrite>> Associated with SP/GL, occuring as bands/veins.

<<Min: 168.53 - 171.4 1% Min: Galena>> Associated with SP/PY, occuring as bands/veins.

<<Min: 171.4 - 174.78 1% Min: Sphalerite>> Stringers associated with Py

<<Min: 171.4 - 174.78 1% Min: Pyrite>> Stringers associated with Sp

<<Alt: 167.8 - 174.78 Moderate (Alt) Chlorite>> MAFi

<<Struc: 173 - 173.01 Moderate (Alt) Foliation>>

174.78 181.65 RHYvl Lapilli tuff light grey CG

174.78 - 181.65: Light grey, medium/coarse grained, homogeneous, moderately foliated. Comprising fragments/lapilli, cm size, siliceous, deformed, distributed within fine grained matrix (strongly MU altered, original alteration?). Locally banded texture marked by siliceous bands/stretched fragment, irregular and deformed. 1-2 % of PO/Py disseminated. Volcanoclastic unit, probably RHYvl.

<<Min: 174.78 - 181.65 1% Min: Pyrrhotite>> Disseminated and wispy

<<Min: 174.78 - 216.71 2% Min: Calcite>> Associated with qtz veinlets, blebs matrix distributed.

<<Alt: 174.78 - 181.65 Moderate (Alt) Muscovite>> Original alteration?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

181.65 190.36 RHYcw Curdy textured-flow banded (flows, subvolcanics) beige CG

181.65 - 190.36: Light grey, characterized by siliceous bands, folded, locally dismembered, flow banded/curdy texture well developped. Moderate to strongly MU altered (original?). 1-2 % of po disseminated and occuring as thin stringers/wisps. Interval of RHYcw.

<<Min: 181.65 - 184.2 2% Min: Pyrrhotite>>

<<Min: 184.2 - 187.68 1% Min: Pyrrhotite>> Also disseminated.

<<Alt: 181.65 - 187.68 Strong (Alt) Muscovite>> Original alteration?

<<Struc: 182 - 182.01 Strong (Alt) Foliation>>

<<Struc: 187.1 - 187.8 Strong (Alt) Fault>> Fault gouge

190.36 261.20 RHYvl Lapilli tuff dark grey MCG

190.36 - 261.2: Dark grey, medium/coarse grained, +/- homogeneous, moderately foliated. Comprising fragments/lapilli, heterogeneous, cm size, siliceous, deformed, distributed within fine/medium grained matrix (Moderate CL/ MU altered). Weak banded texture marked by thin MU bands. Locally crosscuted by qtz veins, cm to dm wide.Also comprising short interval of MAFi intrusive. 1-2 % of PO disseminated. Volcanoclastic unit, probably RHYvl. Could be RHYva with lapilli.

<<Min: 191.1 - 195.4 3% Min: Pyrrhotite>> Small wisps/disseminated within matrix.

<<Min: 195.4 - 201 2% Min: Pyrrhotite>> Occuring as small wisps and stringers

<<Min: 195.4 - 201 2% Min: Pyrite>> Occuring as small wisps and stringers

<<Min: 201 - 216.2 3% Min: Pyrrhotite>> Small wisps/disseminated within matrix.

<<Min: 216.2 - 220.9 0.5% Min: Pyrite>>

<<Min: 216.71 - 264.88 1% Min: Calcite>> Trace of calcite.

<<Min: 220.9 - 225 2% Min: Pyrrhotite>> Small wisps/disseminated within matrix.

<<Min: 225 - 247.3 0.5% Min: Pyrrhotite>>

<<Min: 247.3 - 248.45 1% Min: Pyrrhotite>>

<<Min: 248.45 - 250.42 4% Min: Pyrite>> Occuring as thin bands/wisps, locally stringers.

<<Min: 250.42 - 253 1% Min: Pyrrhotite>>

<<Min: 253 - 253.55 4% Min: Pyrrhotite>> Associated with Qtz-TL.

<<Min: 253 - 253.55 2% Min: Pyrite>> Associated with Qtz-TL.

<<Min: 253.55 - 257 1% Min: Pyrrhotite>>

<<Min: 257 - 260 4% Min: Pyrrhotite>> Disseminated and thin wisps/stringers

<<Min: 260 - 261.2 0.5% Min: Pyrite>>

<<Alt: 216 - 220.9 Moderate (Alt) Chlorite>> Associated with interval of veining (quartz)

<<Alt: 221.8 - 249.55 Moderate (Alt) Silicification>> Moderate to strong silica alteration, pervasive.

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 225.9 - 241.75 Moderate (Alt) Muscovite>> Moderate MU, shiny, fracture surface. Marked a weak banded texture.

<<Alt: 260 - 261.2 Moderate (Alt) Muscovite>> Interval moderately MU altered.

<<Vein: 190.36 - 191.1 Quartz-Tourmaline>> Massive qtz-TL vein, brecciated, >50 % of TL, at the contact between RHYcw and RHYvl.

<<Vein: 198.9 - 200.83 30% Quartz 70 deg. >> Interval of grey qtz veins, 4-40 cm wide, +/- regular and concordant.

<<Vein: 204 - 204.65 95% Quartz>> Irregular massive qtz vein,light grey, decimetric, deformed.

<<Vein: 212.7 - 212.85 80% Quartz 50 deg. >> Massive qtz vein, chlorite at the margins.

<<Vein: 214.75 - 220.9 20% Quartz>> Interval comprising multiple qtz veins, deformed, locally associated with TL at the margins. 1-2% PO

<<Vein: 223.2 - 223.4 90% Quartz>> Massive grey qtz vein, deformed.

<<Vein: 223.7 - 223.9 15% Quartz-Tourmaline 25 deg. >> Qtz-TL vein, 3 cm wide, discordant.

<<Vein: 253 - 253.55 20% Quartz-Tourmaline>> Interval comprising group of Qtz-TL veins, 2-3 cm wide, irregular oriented, associated with strong silica alteration.

<<Struc: 197 - 197.01 Moderate (Alt) Foliation>>

<<Struc: 200.2 - 200.21 Moderate (Alt) Foliation>>

<<Struc: 214 - 214.01 Weak (Alt) Foliation>>

<<Struc: 223.1 - 223.2 Strong (Alt) Fault>> Fault gouge

<<Struc: 224 - 224.01 Weak (Alt) Foliation>>

<<Struc: 234 - 234.01 Moderate (Alt) Foliation>>

<<Struc: 238.5 - 238.7 Strong (Alt) Fault>> Fault gouge

<<Struc: 255.45 - 257 Weak (Alt) Fault>> Interval comprising multiple short fault gouge.

261.20 280.18 RHYva Coarse grained to ash tuff medium grey MCG

261.2 - 280.18: Medium/dark grey, medium/coarse grained, +/- homogeneous, moderately foliated. Locally comprising fragments/lapilli,< 5-10%, heterogeneous, cm size, siliceous, deformed, distributed within fine/medium grained matrix (Moderate CL/ MU altered). Locally crosscuted by qtz veins, cm to dm wide. 0.5-2 % of PO/PY disseminated. Volcanoclastic unit, probably RHYva with lapilli.

<<Min: 261.2 - 264.88 0.5% Min: Pyrite>>

<<Min: 261.2 - 264.88 4% Min: Pyrrhotite>> Disseminated and thin wisps/stringers

<<Min: 264.88 - 266 0.1% Min: Pyrite>>

<<Min: 264.88 - 266 0.1% Min: Pyrrhotite>>

<<Min: 264.88 - 266 7% Min: Calcite>> Pervasive

<<Min: 266 - 271.3 0.5% Min: Pyrite>>

<<Min: 266 - 271.3 3% Min: Pyrrhotite>> Disseminated and thin wisps/stringers

<<Min: 266 - 274.3 3% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 271.3 - 272.4 1% Min: Pyrrhotite>>

<<Min: 272.4 - 273.55 1% Min: Pyrite>> Disseminated and thin wisps/stringers

<<Min: 272.4 - 273.55 2% Min: Pyrrhotite>> Disseminated and thin wisps/stringers

<<Min: 273.55 - 278.45 0.5% Min: Pyrite>>

<<Min: 273.55 - 278.45 1% Min: Pyrrhotite>> Also thin stringers

<<Min: 274.3 - 282.8 1% Min: Calcite>>

<<Min: 278.45 - 280.18 0.5% Min: Pyrrhotite>>

<<Alt: 264.88 - 266 Weak (Alt) Muscovite>> Sericite/Mu pervasive bands. Associated with pervasive CA.

<<Alt: 271.55 - 273.55 Moderate (Alt) Silicification>> Siliceous bands/diffused qtz veins? Associated with PY/PO

<<Vein: 263.17 - 263.38 85% Quartz 80 deg. >> Qtz vein, subconcordant, dm, associated with fine PO disseminated at the margins.

<<Vein: 264.1 - 264.72 30% Quartz 80 deg. >> Group of qtz veins, subconcordant, cm to dm, associated with fine PO disseminated at the margins (CL)

<<Vein: 268.15 - 270.75 5% Quartz-Tourmaline>> Thin Qtz-TL veins, irregular oriented, 2-3 cm wide.

<<Vein: 271.55 - 273.55 15% Quartz 75 deg. >> Interval compriing siliceous bands/diffused qtz veins, subconcordant, deformed, dismembered. Associated with PO/PY

<<Struc: 266 - 266.01 Weak (Alt) Foliation>>

280.18 283.50 RHYvl Lapilli tuff light grey MCG

280.18 - 283.5: Light grey to beige, medium/coarse grained, moderately foliated. Weakly silica altered. Comprising fragments/lapilli, cm size, siliceous (albite altered?), deformed, distributed within fine grained matrix (MU altered). Weak banded texture marked by siliceous bands/stretched fragment. 1-2 % of Py disseminated/stringers. Volcanoclastic unit, probably RHYvl.

<<Min: 280.18 - 282.6 2% Min: Pyrite>> Also thin stringers.

<<Min: 282.6 - 302.7 2% Min: Pyrrhotite>> Thin wisps discordant with foliation, ~ 80 ac.

<<Min: 282.8 - 291.7 5% Min: Calcite>> Occuring as small clots/veinlets and also locally pervasive

<<Alt: 280.18 - 283.85 Weak (Alt) Silicification>> Occuring as diffused bands, thin, irregular, deformed/dismembered.

<<Alt: 280.18 - 283.85 Weak (Alt) Muscovite>> Occuring as diffused bands, thin, irregular, deformed/dismembered. Diffused albite?

283.50 291.67 RHYva Coarse grained to ash tuff medium grey MCG

283.5 - 291.67: Medium/dark grey, medium/coarse grained, +/- homogeneous, moderately foliated. Weakly silica altered. Locally comprising fragments/lapilli,< 5-10%, heterogeneous, cm size, siliceous, deformed, distributed within fine/medium grained matrix (Moderate CL/ MU altered). Locally crosscuted by qtz veins, cm to dm wide. 0.5-2 % of PO/PY disseminated. Volcanoclastic unit, probably RHYva with lapilli.

<<Vein: 290.36 - 290.5 90% Quartz 75 deg. >> Regular grey qtz vein, gouge at the margins.

<<Struc: 286 - 286.01 Moderate (Alt) Foliation>>

<<Struc: 290.25 - 290.5 Moderate (Alt) Fault>> Fault gouge at the margins of grey qtz vein.

From (m)	To (m)	Rocktype & Description

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

291.67 298.75 RHYvx Quartz and/or feldspar crystal tuff medium grey CG

291.67 - 298.75: Light/medium grey, coarse grained, moderately foliated. Comprising fragments/lapilli, cm size, siliceous (Qtz), deformed, distributed within fine grained matrix (CL/MU altered). Characterized by > 5 % of feldspar/quartz crystals, subheudral, beige, cm size, disseminated within matrix. Blue QE were observed. Volcanoclastic unit, probably RHYvx (lpl).

<<Min: 291.7 - 298.5 2% Min: Calcite>>

<<Min: 298.5 - 305.15 6% Min: Calcite>> Occuring as small clots/veinlets and also locally pervasive

<<Vein: 294.4 - 294.5 90% Quartz 85 deg. >> Regular grey qtz vein, subconcordant.

<<Struc: 295.7 - 295.85 Strong (Alt) Fault>> Fault gouge

<<Struc: 298 - 298.3 Strong (Alt) Fault>> Fault gouge

298.75 302.70 RHYva Coarse grained to ash tuff medium grey FMG

298.75 - 302.7: Medium grey, fine grained, homogeneous, moderately foliated. Matrix weakly CL/ MU altered and also Si after 300.43m. Locally crosscuted by qtz veins, cm wide. 0.5-2 % of PO/PY disseminated. Volcanoclastic unit, probably RHYva unit.

<<Alt: 299.55 - 362 Weak (Alt) Biotite>> Large interval, small homogeneous biotite clots/flakes distributed within matrix, ~ 10 %, <2 mm.

<<Alt: 300.43 - 302.05 Moderate (Alt) Silicification>> Moderate(+) si alteration.

<<Vein: 301.15 - 302.28 8% Quartz 80 deg. >> Interval comprising qtz-+/-ca vein, 1-4 cm wide, deformed, subconcordant

302.70 305.15 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FCG

302.7 - 305.15: Light to dark grey, matrix fine grained, moderately altered and foliated MAFi. Altered by BI and CL (weak, pervasive) alteration, BI occuring as small clots/porphyroblasts, mm. Calcite altered, blebs/dismembered bands distributed within matrix.

<<Min: 302.7 - 314.5 0.5% Min: Pyrrhotite>> Weak PO, locally disseminated.

305.15 326.40 RHYvl Lapilli tuff grey CG

305.15 - 326.4: Greyish, coarse grained, massive unit. Comprising clasts/lapilli, strongly SI, stretched/flattered within foliation, mm to cm size, locally pebble size. Fine grained matrix, weak to (locally) strongly silica altered also weak CL. Characterized by >10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins. Beginning of gneissic texture? Could be metamorphosed lapilli tuff or sedimentary unit?

<<Min: 305.15 - 326.4 3% Min: Calcite>> Also associated with qtz veins/veinlets.

<<Min: 314.5 - 317.3 1% Min: Pyrrhotite>>

<<Min: 317.3 - 318.9 2% Min: Pyrrhotite>> Locally small aggregate

<<Min: 318.8 - 323.3 0.1% Min: Pyrite>>

<<Min: 318.8 - 323.3 0.5% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 323.3 - 326.4 0.1% Min: Pyrite>>

<<Min: 323.3 - 326.4 2% Min: Pyrrhotite>> Locally small aggregate

<<Alt: 320.15 - 325.5 Moderate (Alt) Silicification>> Moderate to strong SI pervasive.

<<Alt: 325.5 - 326.4 Strong (Alt) Silicification>> Strong SI pervasive.

<<Vein: 307.25 - 307.85 70% Quartz-Tourmaline>> Interval of Qtz-TL veins, 3-25 cm wide, thin TL band at the selvages. Deformed and irregular oriented.

<<Vein: 312.05 - 312.1 80% Quartz-Carbonate 85 deg. >> Regular qtz-ca vein, 5 cm wide, trace PO.

<<Vein: 316.7 - 318.12 20% Quartz-Carbonate>> Interval comprising massive Qtz-Ca-+/-CL veins, deformed and folded, cm to dm size. Margins CL altered

<<Vein: 322.3 - 323.3 50% Quartz-Carbonate>> Interval comprising massive Qtz-Ca-+/-CL veins, deformed and folded, dm size. Margins CL altered

<<Struc: 311 - 311.01 Moderate (Alt) Foliation>>

326.40 332.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FCG

326.4 - 332.2: green to greyish, matrix fine grained, moderately altered and foliated MAFi. Altered by BI and CL (weak, pervasive) alteration, biotite occuring as small clots/porphyroblasts disseminated, mm. Calcite altered, blebs/dismembered bands distributed within matrix. Sharp upper and lower contacts.

<<Min: 326.4 - 336.15 8% Min: Calcite>> Associated with lapilli/clasts, blebs, veinlets/veins.

<<Min: 326.4 - 362 0.5% Min: Pyrrhotite>>

<<Alt: 326.4 - 332.2 Moderate (Alt) Chlorite>> MAFi associated.

<<Vein: 328.8 - 328.95 90% Quartz-Carbonate 75 deg. >> Interval comprising massive Qtz-Ca-CL vein, dm size. Margins CL altered

<<Struc: 327 - 327.01 Moderate (Alt) Foliation>>

332.20 342.47 RHYvl Lapilli tuff grey CG

332.2 - 342.47: Greyish, coarse grained, massive unit. Comprising clasts/lapilli, strongly SI, stretched/flattered within foliation, mm to cm size, pebble size. Fine grained matrix, weak to moderately silica altered and also Cl/MU. Characterized by >10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins. Could be lapilli tuff or sedimentary unit?

<<Min: 336.15 - 342.47 4% Min: Calcite>>

<<Alt: 332.2 - 340 Weak (Alt) Muscovite>> Weak MU alteration.

342.47 347.42 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey FCG

342.47 - 347.42: Light to dark grey, matrix fine grained, moderately altered and foliated MAFi. Altered by BI and CL (weak/moderate, pervasive bands) alteration, BI occuring as small clots/porphyroblasts, mm. Calcite altered, blebs/dismembered bands/veinlets distributed within matrix. Sharp upper and lower contacts.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 342.47 - 347.42 10% Min: Calcite>> Pervasive and occuring as blebs/veinlets.

<<Alt: 342.47 - 347.42 Moderate (Alt) Chlorite>> MAFI associated.

<<Alt: 342.47 - 347.42 Moderate (Alt) Biotite>> Occuring as small to large pervasive bands and also porphyroblasts matrix distributed.

<<Vein: 343.68 - 351.65 15% Quarzt-Chlorite-Carbonate>> Interval comprising multiple Qtz-Ca-+/-CL veins, deformed and folded, locally dismembered, cm to dm size. Margins CL altered.

347.42 356.00 RHYvl Lapilli tuff grey-brown CG

347.42 - 356: Greyish, coarse grained. Comprising clasts/lapilli, strongly SI, stretched/flattered within foliation, mm to cm size, pebble size. Fine grained matrix, weakly silica altered and also weak Cl/MU. Characterized by >10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins. Could be lapilli tuff or sedimentary unit?

<<Min: 347.42 - 356 5% Min: Calcite>> Blebs/veins/veinlets and locally pervasive (FD)

<<Min: 352 - 362 0.1% Min: Pyrite>>

356.00 358.15 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FCG

356 - 358.15: Green to brownish, matrix fine grained, moderately altered and foliated MAFi. Altered by BI and CL (moderate, pervasive) alteration, biotite occuring as small clots/porphyroblasts disseminated and pervasive bands, mm. Calcite altered, blebs/dismembered bands distributed within matrix.

<<Min: 356 - 358.65 10% Min: Calcite>> Pervasive and occuring as blebs/veinlets.

<<Alt: 356 - 356.4 Moderate (Alt) Biotite>> MAFI

<<Alt: 357.1 - 358.6 Moderate (Alt) Muscovite>> Associated with strong foliation

358.15 360.97 RHYvl Lapilli tuff grey FCG

358.15 - 360.97: RHYvl unit, grey, moderately foliated, fine to coarse grained. Weakly CL/MU altered, pervasive and bands (CL). Comprising siliceous (+ Ca) clasts/lapilli. Patchy Ca alteration. Could be RHYva with lapilli.

<<Min: 358.65 - 360.97 4% Min: Calcite>>

360.97 362.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FCG

360.97 - 362: Green to greyish, matrix fine grained, moderately altered and foliated MAFi. Altered by BI and CL (moderate, pervasive) alteration, biotite occuring as small clots/porphyroblasts disseminated and pervasive bands, mm. Calcite altered, blebs/dismembered bands distributed within matrix and also patchy.

<<Min: 360.97 - 362 10% Min: Calcite>> Pervasive and occuring as blebs/veinlets.

<<Alt: 360.97 - 362 Moderate (Alt) Chlorite>> MAFi

<<Struc: 361 - 361.01 Weak (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 362									

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-325

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	17-Nov-15
UTM Easting	415158	Core Size:	HQ3	Azimuth:	178.94	Date Logging Complete:	24-Nov-15
UTM Northing:	6815051	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1406.21	Casing Depth (m):	6	Length (m):	404.1	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	23-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-325 was drilled to test the Fault Creek fault as well as explore for any down-dropped mineralization.
K15-325 encountered a felsic rock package from 6-85.9 m, consisting of volcaniclastic and coherent rhyolites, BI+CA schists, and aphanitic rhyolite. Below this unit is strongly faulted rhyolite from 85.9-119.3 m. From 119.3-135 a moderately faulted and locally altered block of CL+BI+CA schist occurs (MAFi). Below the MAFi an intense fault zone occurs to a depth of 164.6 m, consisting of a polymictic gouge-supported fault breccia. The package of rocks on the opposite side of the fault consist of intercalated mafic intrusions and felsic volcaniclastics. Calcite, pyrite, pyrrhotite, and minor sphalerite mineralization are pervasive throughout the felsic rock units on the south side of the fault. Chlorite alteration is weak and patchy through nearly all rock units south of the fault. Two zones of heavily disseminated sulphides occur from 319m to 320m (PY,PO,SP,GL) and from 398.16m to 399.26m (PY,SP). This hole appears to show signs of being in proximity to more mineralization.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	156.44	22.5	178.94	APS	Dillon Hume	15-Nov-15		☑	
26	-59.8	155.8	22.5	178.3	APS	Geotech	15-Nov-15	5796	☑	
59	-59.8	157.2	22.5	179.7	APS	Geotech	16-Nov-15	5779	☑	
90	-59.9	154.9	22.5	177.4	APS	Geotech	19-Nov-15	5767	☑	
120	-60.2	157.5	22.5	180	APS	Geotech	19-Nov-15	5770	☑	
150	-61.8	154.9	22.5	177.4	APS	Geotech	19-Nov-15	5765	☑	
180	-62.3	153.2	22.5	175.7	APS	Geotech	19-Nov-15	5764	☑	
210	-62.4	154.4	22.5	176.9	APS	Geotech	19-Nov-15	5714	☑	
230	-61.9	155.9	22.5	178.4	APS	Geotech	19-Nov-15	5769	☑	
271	-59.4	156.8	22.5	179.3	APS	Geotech	20-Nov-15	5769	☑	
302	-56.8	156.9	22.5	179.4	APS	Geotech	21-Nov-15	5768	☑	
332	-55.3	161.9	22.5	184.4	APS	Geotech	21-Nov-15	5711	☑	
392	-51.6	156.4	22.5	178.9	APS	Geotech	22-Nov-15	5769	☑	Hole survey missing for 360m mark! Deviation of 3.8 degrees between 330m and 390m depth. Spurious data?

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.00 8.40 RHYvl Lapilli tuff

6 - 8.4: Calcareous lpl and disseminated subhedral BI in grey fine grained ash matrix

<<Min: 6 - 8.4 5% Min: Calcite>>

<<Min: 6 - 41 0.5% Min: Pyrite>>

8.40 10.60 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

8.4 - 10.6: BI+CA schist with ~0-15% gey ash tuff material. (Metapelite?)

<<Min: 8.4 - 10.6 10% Min: Calcite>>

10.60 20.30 RHYvl Lapilli tuff

10.6 - 20.3: Calcareous and rhyolitic lpl in fine grained ash matrix, with disseminated subhedral BI.

<<Min: 10.6 - 22.7 5% Min: Calcite>>

<<Vein: 20.2 - 20.3 80% Quartz>> Massive QZ vein

20.30 22.70 RHYcw Curdy textured-flow banded (flows, subvolcanics)

20.3 - 22.7: Silica-banded rhyolite

22.70 24.90 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

22.7 - 24.9: BI+CA schist with local grey ash material. (Metapelite?)

<<Min: 22.7 - 24.9 10% Min: Calcite>>

<<Struc: 24.8 - 25 Weak (Alt) Fault>> Tightly spaced cleavage with higher oxidation than surrounding rock

24.90 38.00 RHYvl Lapilli tuff

24.9 - 38: Variable from calcareous-lpl with disseminated BI in grey ash matrix to siliceous-lpl in grey ash matrix. Upper portion of the unit (24.9-31 m) is dominated by the calcareous-lpl+BI tuff, and the lower portion (31-38 m) is dominated by the siliceous-lpl tuff.

<<Min: 24.9 - 41 5% Min: Calcite>>

38.00 41.00 RHYcw Curdy textured-flow banded (flows, subvolcanics)

38 - 41: Silica-banded to curdy rhyiolite

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

41.00 50.80 RHYi Aphanitic Rhyolite (intrusion)

41 - 50.8: Grey to pink glassy, aphanitic, rhyolite with anastomozing fractures/cleavages.

<<Min: 41 - 50.8 2% Min: Pyrite>>

<<Min: 41 - 50.8 2% Min: Calcite>>

<<Vein: 41.3 - 42.3 100% Quartz>> Massive QZ vein

50.80 51.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

50.8 - 51.5: BI+CA schist with moderate amounts of fine grained grey ash material. (Metapelite?)

<<Min: 50.8 - 51.5 15% Min: Calcite>>

<<Min: 50.8 - 85.9 1% Min: Pyrite>>

<<Min: 50.8 - 85.9 0.5% Min: Pyrrhotite>>

51.50 52.30 RHYc Rhyolite coherant volcanics

51.5 - 52.3: Curdy to silica-banded rhyolite

<<Min: 51.5 - 52.3 10% Min: Calcite>>

52.30 53.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

52.3 - 53.5: BI+CA schist. (Metapelite?)

<<Min: 52.3 - 53.5 10% Min: Calcite>>

53.50 55.40 RHYc Rhyolite coherant volcanics

53.5 - 55.4: Silica-banded to apahanitic/massive rhyolite.

<<Min: 53.5 - 55.4 5% Min: Calcite>>

55.40 56.80 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

55.4 - 56.8: BI+CA schist with medium grained CA amygdules/porphyroblasts.

<<Min: 55.4 - 56.8 15% Min: Calcite>>

56.80 65.70 RHYi Aphanitic Rhyolite (intrusion)

56.8 - 65.7: Pink to grey massive aphanitic rhyolite

<<Min: 56.8 - 65.7 3% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

65.70 73.90 RHYvl Lapilli tuff

65.7 - 73.9: Siliceous lpl in medium grey ash matrix

<<Min: 65.7 - 73.9 5% Min: Calcite>>

<<Struc: 72.25 - 72.6 Weak (Alt) Fault>> Fracture zone with minor fault gouge

73.90 76.40 RHYcw Curdy textured-flow banded (flows, subvolcanics)

73.9 - 76.4: Silica banded rhyolite

<<Min: 73.9 - 85.9 2% Min: Calcite>>

<<Vein: 73.9 - 74 80% Quartz>> Massive QZ vein

76.40 85.90 RHYvl Lapilli tuff

76.4 - 85.9: Siliceous lpl in medium grey ash matrix

<<Struc: 80.3 - 80.8 Moderate (Alt) Fault>> Highly fractured with fault gouge

<<Struc: 83.8 - 83.9 Weak (Alt) Fault>> Fractured and fault gouge zone

85.90 119.30 RHY undifferentiated rhyolite

85.9 - 119.3: Highly faulted rhyolite clasts and minor sulphide clasts within sericite (?) gogue matrix. Locally the unit is coherent (not faulted).

<<Min: 85.9 - 119.3 2% Min: Pyrite>> Clasts with heavily disseminated PY in fault zone, as well as blebs of PY in non-faulted portion of unit.

<<Min: 85.9 - 119.3 1% Min: Calcite>>

<<Min: 93.42 - 207.2 2% Min: Pyrrhotite>>

<<Alt: 85.9 - 119.3 Strong (Alt) Muscovite>> Fault related (?)

<<Alt: 95.83 - 207.2 Trace (Alt) Chlorite>> locally within lapilli

<<Struc: 85.9 - 101.3 Strong (Alt) Fault>> Highly faulted rhyolite clasts and minor sulphide clasts within sericite (?) gogue matrix.

<<Struc: 107 - 110.5 Strong (Alt) Fault>> Highly faulted with local gouge-supported breccia

<<Struc: 116 - 119 Strong (Alt) Fault>> Highly faulted with local gouge-supported breccia

119.30 135.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

119.3 - 135: CL+BI+CA schist. Locally faulted and/or bleached/altered. Appears to be a block within a larger fault zone. May correlate with less faulted block from K15-310.

<<Min: 119.3 - 135 10% Min: Calcite>>

<<Alt: 119.3 - 125.2 Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 119.3 - 125.2 Moderate (Alt) Biotite>>

<<Alt: 125.2 - 125.9 Strong (Alt) Muscovite>> Fault related (?)

<<Alt: 125.9 - 129.9 Strong (Alt) Chlorite>>

<<Alt: 125.9 - 129.9 Moderate (Alt) Biotite>>

<<Alt: 129.9 - 130.8 Strong (Alt) Muscovite>> Fault related (?)

<<Alt: 130.8 - 133.5 Strong (Alt) Chlorite>>

<<Alt: 130.8 - 133.5 Moderate (Alt) Biotite>>

<<Alt: 133.5 - 134.4 Strong (Alt) Muscovite>> Fault related (?)

<<Alt: 134.4 - 135 Strong (Alt) Chlorite>>

<<Alt: 134.4 - 135 Moderate (Alt) Biotite>>

<<Vein: 122.35 - 122.5 80% Calcite>> Massive QZ+CA vein

<<Struc: 125.2 - 126.1 Weak (Alt) Fault>> Minor fault surfaces and alteration associated with them

<<Struc: 129.9 - 130.8 Strong (Alt) Fault>> Local fault gouge breccia to ductile shearing of MAFi, with associated MU-alteration.

<<Struc: 133.5 - 134.4 Strong (Alt) Fault>> Local fault gouge breccia to ductile shearing of MAFi, with associated MU-alteration.

<<Struc: 134.4 - 164.6 Intense (Alt) Fault>> Intensely faulted unit. Polymictic clasts supported in gouge matrix.

135.00 164.60 FBX Fault Breccia

135 - 164.6: Gouge-supported fault breccia, with clasts consisting of RHY,QZ-vein, MAF, MDS, and MSXS, and gouge consisting of sericite, quartz (?), chlorite, and argillitic material.

<<Min: 135 - 164.6 2% Min: Pyrite>> Clasts of massive PY within fault zone

<<Min: 135 - 164.6 5% Min: Calcite>> Clasts of CA-bearing rocks

<<Alt: 135 - 207.2 Moderate (Alt) Muscovite>>

<<Vein: 148.3 - 148.7 100% Quartz>> Clasts of massive QZ vein within fault

164.60 173.30 RHYv Rhyolite volcaniclastic

164.6 - 173.3: QZ-MS coarse-grained, fisile, felsic volcaniclastic rock (interval is pervasive with minor faults).

<<Min: 164.6 - 169.2 3% Min: Calcite>>

<<Min: 164.6 - 186.93 1% Min: Pyrite>>

<<Min: 169.2 - 193.42 5% Min: Calcite>>

<<Struc: 164.6 - 169 Weak (Alt) Fault>> Interval of several minor faults spaced less than 50cm apart

<<Struc: 170 - 173.3 Moderate (Alt) Fault>> Faulted interval with only small portions (all less than 30cm) of coherent rock.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

173.30 179.20 FBX Fault Breccia

173.3 - 179.2: Gouge-supported (pebble, sand and clay) fault breccia, with clasts of RHY, QZ and MDS. Matrix is of similar composition to clasts.

<<Struc: 173.3 - 179.2 Intense (Alt) Fault>> Polymictic fault zone with gravel, sand and clay gouge. Fault breccia

179.20 193.42 RHYv Rhyolite volcaniclastic

179.2 - 193.42: QZ-MU-MS-PY coarse-grained to lapilli felsic volcaniclastic rock. Local high concentration of PY (~5% FD) from 186.9 - 189.69m)

<<Min: 186.93 - 189.69 5% Min: Pyrite>> Local high concentration of finely disseminated pyrite.

<<Min: 189.69 - 209 1% Min: Pyrite>>

<<Struc: 179.2 - 191.33 Weak (Alt) Fault>> Interval adjacent to high intensity fault up-hole. Interval pervasively contains foliation parallel, minor faults spaced less than 50cm apart. Fault gouge is pebble-sand-clay sized. All faults are less than 10cm wide.

193.42 195.83 MDSt Rhyolite tuff dominant mudstone medium grey FG

193.42 - 195.83: Thinly laminated (micaceous laminae are thinly spaced), fissile, carbon/argillitic, carbonate and pyhrrotite bearing felsic volcaniclastic tuff.

<<Min: 193.42 - 202.03 3% Min: Calcite>>

<<Struc: 195.62 - 195.71 Weak (Alt) Fault>> Minor fault, foliation parallel with gravel-clay gouge.

195.83 207.20 RHYv Rhyolite volcaniclastic

195.83 - 207.2: QZ-MS-MU coarse grained felsic volcaniclastic rock with finely disseminated carbonate and QZ-BI-PY-CL-CB lapilli. Cl and MU are considered as overprinted alteration. Pyrrhotite is present as wisps and clots ~1-2%.

<<Min: 202.03 - 202.21 15% Min: Calcite>>

<<Min: 202.21 - 209 5% Min: Calcite>>

<<Struc: 199.9 - 199.9 Foliation>>

<<Struc: 204.9 - 205.03 Weak (Alt) Fault>> Minor fault, foliation parallel with gravel-clay gouge.

207.20 226.78 RHYvl Lapilli tuff

207.2 - 226.78: Qz-MS volaniclastic rock with BI-CL-PY-CB lapilli. Calcite is finely disseminated pervasively throughout interval. Foliation is sub-perpendicular to core-axis. Rock is dark brown-green due to concentration of BI-CL-PY.

<<Min: 207.2 - 226.78 1% Min: Pyrrhotite>>

<<Min: 209 - 226.78 8% Min: Calcite>>

<<Min: 209 - 238.01 2% Min: Pyrite>>

<<Alt: 207.2 - 226.78 Weak (Alt) Muscovite>>

<<Alt: 207.2 - 226.78 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 207.2 - 226.78 Moderate (Alt) Biotite>>

<<Alt: 221 - 222 Strong (Alt) Muscovite>> Intensity decreases from qz vein (221.44-221.55)

<<Vein: 217.24 - 218.12 Quarzt-Biotite-Sulphides>> Qz-tourmaline vein; perpendicular to foliation. Hair-line veins branch off from main vein and tourmaline mineralization occupies dominant rock foliation.

<<Vein: 221.44 - 221.55 Quartz>> White quartz vein, sub-parallel to foliation. Muscovite concentration increases towards quartz vein.

<<Struc: 208.95 - 208.95 dominant foliation>>

<<Struc: 213.46 - 213.51 Weak (Alt) Fault>> Minor fault, foliation parallel with gravel-clay gouge.

<<Struc: 216 - 216 dominant foliation>>

<<Struc: 220.5 - 220.5 dominant foliation>>

<<Struc: 223.8 - 223.8 dominant foliation>>

226.78 229.35 MAFi Mafic Intrusions (primarily melanocratic footwall mafic intrusion)

226.78 - 229.35: BI-CL-CB fine-grained mafic shist with thin, foliation parallel calcite bands.

<<Min: 226.78 - 229.35 12% Min: Calcite>>

<<Alt: 226.78 - 229.35 Moderate (Alt) Chlorite>>

<<Alt: 226.78 - 229.35 Strong (Alt) Biotite>>

<<Vein: 226.93 - 227.07 Quartz>> Translucent to white QZ-MU-PY-PO vein, sub-parallel to foliation.

<<Struc: 227.3 - 227.3 dominant foliation>>

229.35 243.30 RHYvl Lapilli tuff

229.35 - 243.3: Qz-MS volaniclastic rock with BI-CL-PY-CB lapilli. Calcite is finely disseminated pervasively throughout interval. Foliation is sub-perpendicular to core-axis. Rock is dark brown-green due to concentration of BI-CL-PY.

<<Min: 229.35 - 250 5% Min: Calcite>>

<<Min: 238.01 - 245 0.25% Min: Pyrrhotite>>

<<Min: 238.01 - 250 1% Min: Pyrite>>

<<Alt: 229.35 - 240 Weak (Alt) Chlorite>>

<<Alt: 229.35 - 240 Moderate (Alt) Biotite>>

<<Alt: 229.35 - 250 Weak (Alt) Muscovite>>

<<Vein: 235.28 - 235.34 Quartz>> White-translucent quartz, pyrite, tourmaline vein; discordant to foliation.

<<Vein: 237.35 - 237.44 Quartz>> White QZ-MU vein. Muscovite concentration/intensity increases towards vein within RHYvl host unit.

<<Vein: 242.48 - 243.3 Quartz>> Massive white quartz vein

<<Struc: 232.95 - 232.95 dominant foliation>>

<<Struc: 235.45 - 235.5 Weak (Alt) Fault>> Minor fault, foliation parallel with clay gouge.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 238.9 - 238.9 dominant foliation>>

<<Struc: 241.7 - 241.7 dominant foliation>>

243.30 250.03 RHYvl Lapilli tuff

243.3 - 250.03: Siliceous Quartz-eye bearing volcaniclastic QZ-MU schist with lapilli sized quartz-rich sub-rounded to round clasts set in fine-grained siliceous matrix.

<<Min: 250 - 283.78 5% Min: Pyrite>>

<<Min: 250 - 288.7 3% Min: Calcite>>

<<Alt: 250 - 255 Moderate (Alt) Silicification>>

<<Alt: 250 - 255 Moderate (Alt) Muscovite>>

<<Struc: 246.17 - 246.4 Weak (Alt) Fault>>

250.03 283.78 RHYi Aphanitic Rhyolite (intrusion)

250.03 - 283.78: Siliceous/Albitized, Quartz-eye bearing RHYi with white lapilli sized quartz rich sub-rounded clasts pervasive through interval. RHYi rock unit exhibits potential to be intense silicification/albitization alteration of adjacent RHYvl rather than being a coherent body intrusive body of rhyolite. Fractures are pervasive and infilled with quartz and a high concentration of pyrite. (some pyrite grains exhibit a nucleus pyrite grain from which additional pyrite grew around the nucleus).

<<Alt: 255 - 275 Strong (Alt) Silicification>>

<<Alt: 255 - 288.77 Weak (Alt) Muscovite>>

<<Alt: 275 - 283.78 Moderate (Alt) Silicification>>

<<Struc: 253.8 - 253.8 dominant foliation>>

<<Struc: 270.3 - 270.5 Weak (Alt) Fault>> Minor fault with clay to sand gouge.

283.78 288.77 RHYvl Lapilli tuff

283.78 - 288.77: Medium gray, siliceous quartz-eye bearing QZ-MU schist with trachitic, whte, lapilli sized quartz-rich rounded clasts pervasive through unit.

<<Min: 283.78 - 288.77 2% Min: Pyrite>>

<<Min: 288.7 - 291.2 12% Min: Calcite>>

<<Struc: 284.2 - 284.2 dominant foliation>>

<<Struc: 286.11 - 286.19 Weak (Alt) Fault>> minor fault with clay-sand gouge.

<<Struc: 287.1 - 287.1 dominant foliation>>

288.77 291.92 MAFi Mafic Intrusions (primarily black footwall mafic intrusion)

288.77 - 291.92: Melanocratic, coarse-grained, inequigranular BI-CA-MS schist. Abundant carbonate porphyroblasts as well as carbonate bands and trachytic biotite. Finely disseminated pyrite <1mm grains.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 288.77 - 291.92 1% Min: Pyrite>>

<<Min: 291.2 - 308.14 5% Min: Calcite>>

<<Alt: 288.77 - 291.92 Trace (Alt) Chlorite>>

<<Alt: 288.77 - 291.92 Strong (Alt) Biotite>>

291.92 295.19 RHYvl Lapilli tuff medium grey

291.92 - 295.19: Medium grey, quartz-eye bearing siliceous, QZ-MU-CB felsic volcaniclastic PY-bearing schist. White, lapilli-sized rounded QZ-CB clasts set in fine-grained MU-MS-CB matrix.

<<Min: 291.92 - 303 0.5% Min: Pyrite>>

<<Alt: 291.92 - 295.19 Weak (Alt) Muscovite>>

295.19 297.63 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

295.19 - 297.63: Dark-grey to black, fine-grained, calcite banded, BI-CB mafic schist. Ankerite or lucoxene porphyroblasts and fine-grained margins.

<<Alt: 295.19 - 297.63 Trace (Alt) Chlorite>>

<<Alt: 295.19 - 297.63 Moderate (Alt) Biotite>>

297.63 308.14 RHYvl Lapilli tuff medium grey

297.63 - 308.14: Medium grey, quartz-eye bearing siliceous, QZ-MU-CB felsic volcaniclastic PY-bearing schist. White, lapilli-sized rounded QZ-CB clasts set in fine-grained MU-MS-CB matrix.

<<Min: 303 - 308.7 3% Min: Pyrite>>

<<Alt: 297.63 - 308.14 Weak (Alt) Muscovite>>

<<Struc: 301.6 - 301.6 dominant foliation>>

<<Struc: 304.65 - 304.9 Weak (Alt) Fault>> Minor fault zone, brittle fractures, foliation parallel.

<<Struc: 305.43 - 306.82 Moderate (Alt) Fault>> approximately 1m wide faulted zone. Rocks exhibit brittle deformation, pervasive foliation parallel fractures spaced <10cm apart with clay-sand gouge.

308.14 308.63 MAFi Mafic Intrusions (primarily footwall mafic intrusion)

308.14 - 308.63: Medium grey to grey-purple with thin white carbonate bands, very fine-grained MS-CB-BI-PY-CL Mafic schist.

<<Min: 308.14 - 308.68 10% Min: Calcite>>

<<Alt: 308.14 - 308.75 Trace (Alt) Chlorite>>

<<Alt: 308.14 - 308.75 Weak (Alt) Biotite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

308.63 311.45 RHYc Rhyolite coherent volcanics light grey

308.63 - 311.45: Light to medium grey, pyrite-quartz veins, well foliated, coherent, felsic, quartz-eye bearing QZ-MS-MU schist.

<<Min: 308.68 - 311.45 2% Min: Calcite>>

<<Min: 308.7 - 311.45 5% Min: Pyrite>>

<<Alt: 308.75 - 311.45 Weak (Alt) Muscovite>>

<<Struc: 309.5 - 309.5 dominant foliation>>

311.45 315.39 MAFi Mafic Intrusions (primarily footwall mafic intrusion) black

311.45 - 315.39: Melanocratic, coarse-grained, inequigranular BI-CA-MS schist. Abundant carbonate porphyroblasts as well as carbonate bands and trachytic biotite. 4-5% disseminated pyrite 0.5-1mm grains.

<<Min: 311.45 - 313.7 1% Min: Pyrite>>

<<Min: 311.45 - 315.4 15% Min: Calcite>>

<<Min: 311.45 - 319.17 1% Min: Pyrrhotite>>

<<Min: 313.7 - 314.8 3% Min: Pyrite>>

<<Min: 314.8 - 319.17 2% Min: Pyrite>>

<<Alt: 311.45 - 315.4 Weak (Alt) Chlorite>>

<<Alt: 311.45 - 315.4 Strong (Alt) Biotite>>

315.39 317.03 RHYva Coarse grained to ash tuff medium grey

315.39 - 317.03: Medium greenish-grey, fine grained, quartz-eye/pyrite bearing, calcite banded, apheric volvaniclastic, felsic, QZ-MU-MS-CB schist.

<<Min: 315.4 - 317.03 6% Min: Calcite>>

<<Alt: 315.4 - 317.03 Weak (Alt) Muscovite>>

<<Struc: 316.45 - 316.45 dominant foliation>>

317.03 318.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion) black FG

317.03 - 318: Medium grey to grey-purple with thin white carbonate bands, very fine-grained MS-CB-BI-PY-CL Mafic schist.

<<Min: 317.03 - 320.1 15% Min: Calcite>>

<<Alt: 317.03 - 319.17 Strong (Alt) Biotite>>

<<Alt: 317.03 - 328.14 Weak (Alt) Chlorite>>

<<Vein: 317.6 - 317.95 Quartz>> Massive white quartz-carbonate vein, foliation parallel.

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
318.00	**323.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	318.87	319.87	1.00	B00233328	6.6	-0.005	0.01	0.57	0.6
<<Min: 319.17 - 320 1% Min: Pyrite>>					319.87	320.87	1.00	B00233329	0.6	-0.005	-0.01	-0.01	-0.01
<<Min: 319.17 - 320 8% Min: Pyrrhotite>>					320.87	322.00	1.13	B00233331	0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 319.17 - 328.14 1% Min: Sphalerite>>					322.00	323.50	1.50	B00233332	0.6	-0.005	-0.01	0.03	0.05
<<Min: 319.17 - 328.14 0.5% Min: Galena>>													
<<Min: 320 - 328.14 3% Min: Pyrite>>													
<<Min: 320 - 328.14 3% Min: Pyrrhotite>>													
<<Min: 320.1 - 328.14 5% Min: Calcite>>													
<<Alt: 319.17 - 328.14 Trace (Alt) Muscovite>>													
<<Struc: 321.4 - 321.46 Weak (Alt) Fault>>													
<<Struc: 322.7 - 322.7 dominant foliation>>													
323.50	**328.14**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	323.50	325.00	1.50	B00233333	0.6	-0.005	-0.01	-0.01	0.19
323.5 - 328.14: Chloritic/Biotitic, siliceous, felsic QZ-MS schist. Locally mineralized by foliation parallel carbonate bands hosting PY-PO-SP-GL sulphides. Quartz-eyes present.													
328.14	**333.21**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**salt + pepper MCG**									
328.14 - 333.21: Black to salt and pepper colored, well foliated, BI-CA-CL mafic shist. Pervasive finely disseminated, banded and phenocrystic calcite. Disseminated pyrite and pyrrhotite.													
<<Min: 328.14 - 333.21 15% Min: Calcite>>													
<<Min: 328.14 - 337.47 1% Min: Pyrite>>													
<<Min: 328.14 - 337.47 1% Min: Pyrrhotite>>													
<<Alt: 328.14 - 333.21 Moderate (Alt) Biotite>>													
333.21	**349.80**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	337.47	338.97	1.50	B00233334	0.5	-0.005	-0.01	-0.01	-0.01
333.21 - 349.8: Grey-green chloritic altered felsic volcaniclastic QZ-MU schist. PY-PO-SP-CB veins are pervasive.													
<<Min: 333.21 - 333.47 10% Min: Calcite>>					338.97	340.47	1.50	B00233335	0.8	0.006	-0.01	-0.01	-0.01
<<Min: 333.47 - 349.8 8% Min: Calcite>>					340.47	341.97	1.50	B00233336	0.8	-0.005	-0.01	0.02	0.05
<<Min: 337.47 - 349.8 1% Min: Sphalerite>>					341.97	343.47	1.50	B00233337	-0.3	-0.005	-0.01	-0.01	-0.01
<<Min: 337.47 - 349.8 5% Min: Pyrite>>					343.47	344.97	1.50	B00233338	0.6	-0.005	-0.01	0.02	0.02
<<Min: 337.47 - 349.8 3% Min: Pyrrhotite>>					344.97	346.47	1.50	B00233339	0.5	-0.005	-0.01	-0.01	0.12
<<Alt: 333.21 - 349.8 Weak (Alt) Muscovite>>					346.47	347.97	1.50	B00233341	0.4	-0.005	-0.01	-0.01	0.03
<<Alt: 337.47 - 378.5 Trace (Alt) Chlorite>>					347.97	349.47	1.50	B00233342	0.7	-0.005	-0.01	0.01	0.03
<<Struc: 340.67 - 340.67 dominant foliation>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

349.80 360.93 MAFi Mafic Intrusions (primarily footwall mafic intrusion) salt + pepper

349.8 - 360.93: Salt and pepper coloured, coarse-grained BI-rich mafic schist with finely disseminated and banded calcite.

<<Min: 349.8 - 360.93 2% Min: Pyrite>>
<<Min: 349.8 - 360.93 20% Min: Calcite>>
<<Min: 349.8 - 379.67 1% Min: Pyrrhotite>>
<<Alt: 349.8 - 360.93 Moderate (Alt) Biotite>>
<<Vein: 350.3 - 350.4 Quartz>> Massive quartz-carbonate vein, foliation parallel.
<<Vein: 355.7 - 355.87 Quartz>> Massive quartz-carbonate vein, parallel to foliation.
<<Struc: 350.1 - 350.1 dominant foliation>>
<<Struc: 360.65 - 360.93 Weak (Alt) Fault>>

360.93 378.50 RHYvl Lapilli tuff

363.00	364.50	1.50	B00233343	0.4	0.007	-0.01	0.01	0.06

360.93 - 378.5: Grey, quartz-eye bearing felsic volcaniclastic QZ-MU schist. Isolated lenses of foliation parallel replacement style mineralization is host to CB-PY-PO-SP +/-GL (found locally).

<<Min: 360.93 - 378.5 0.5% Min: Sphalerite>>

364.50	366.00	1.50	B00233344	1.3	-0.005	0.01	0.06	0.18

<<Min: 360.93 - 378.5 5% Min: Pyrite>>

366.00	367.50	1.50	B00233345	-0.3	-0.005	-0.01	-0.01	0.02

<<Min: 360.93 - 378.5 10% Min: Calcite>>

367.50	369.00	1.50	B00233346	0.5	-0.005	-0.01	0.01	0.02

<<Alt: 360.93 - 378.5 Weak (Alt) Muscovite>>

369.00	370.50	1.50	B00233347	0.4	0.006	-0.01	-0.01	0.01

<<Vein: 365.47 - 365.53 Quartz>> Massive quartz carbonate vein parallel with foliation.

370.50	372.00	1.50	B00233348	1	0.006	-0.01	0.04	0.1

<<Struc: 366.63 - 366.72 Weak (Alt) Fault>>

372.00	373.50	1.50	B00233349	0.6	0.006	-0.01	0.02	0.04

<<Struc: 367.95 - 367.95 dominant foliation>>

373.50	375.00	1.50	B00233351	0.4	-0.005	-0.01	-0.01	0.02

<<Struc: 377.1 - 377.1 dominant foliation>>

375.00	376.50	1.50	B00233352	-0.3	-0.005	-0.01	-0.01	0.01

378.50 379.67 MAFi Mafic Intrusions (primarily footwall mafic intrusion) salt + pepper

378.5 - 379.67: Salt and pepper coloured, coarse-grained BI-rich mafic schist with finely disseminated and banded calcite.

<<Min: 378.5 - 379.67 1% Min: Pyrite>>
<<Min: 378.5 - 379.67 15% Min: Calcite>>
<<Alt: 378.5 - 379.67 Weak (Alt) Chlorite>>
<<Alt: 378.5 - 379.67 Moderate (Alt) Biotite>>

379.67 382.86 RHYvl Lapilli tuff light grey

<<Min: 379.67 - 382.86 0.5% Min: Sphalerite>>
<<Min: 379.67 - 382.86 5% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 379.67 - 382.86 8% Min: Calcite>>

<<Alt: 379.67 - 380.5 Moderate (Alt) Muscovite>>

<<Alt: 380.5 - 382 Moderate-Strong (Alt) Muscovite>> Intensity high proximal to massive quartz vein

<<Alt: 382 - 382.86 Moderate (Alt) Muscovite>>

<<Vein: 381 - 381.26 Quartz>> Massive quartz-carbonate, pyrite bearing vein. Muscovite alteration intensifies proximal to vein.

382.86 385.42 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

<<Min: 382.86 - 385.42 0.5% Min: Pyrite>>

<<Min: 382.86 - 385.42 15% Min: Calcite>>

<<Alt: 382.86 - 385.42 Moderate (Alt) Chlorite>>

385.42 393.53 RHYvl Lapilli tuff grey-green

385.42 - 393.53: Grey, QZ-MU-CB-PY well foliated ductilely deformed volcaniclastic felsic schist.

<<Min: 385.42 - 393.54 7% Min: Pyrite>>

<<Min: 385.42 - 393.54 5% Min: Calcite>>

<<Alt: 385.42 - 393.54 Weak (Alt) Muscovite>>

<<Alt: 385.42 - 393.54 Trace (Alt) Chlorite>>

<<Struc: 390.2 - 390.2 dominant foliation>>

<<Struc: 392.3 - 392.5 Weak (Alt) Fault>>

393.53 394.21 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

393.53 - 394.21: Salt and pepper coloured, coarse-grained BI-rich mafic schist with finely disseminated and banded calcite.

<<Min: 393.54 - 394.21 1% Min: Pyrite>>

<<Min: 393.54 - 394.21 0.5% Min: Pyrrhotite>>

<<Min: 393.54 - 398.16 15% Min: Calcite>>

<<Alt: 393.54 - 394.21 Weak (Alt) Chlorite>>

394.21 396.27 RHYvl Lapilli tuff medium grey

394.21 - 396.27: Grey, QZ-MU-CB-PY well foliated ductilely deformed volcaniclastic felsic schist.

<<Min: 394.21 - 396.27 5% Min: Pyrite>>

<<Min: 394.21 - 396.27 1% Min: Pyrrhotite>>

<<Alt: 394.21 - 396.27 Moderate (Alt) Muscovite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 394.95 - 394.95 dominant foliation>>									
396.27	**397.74**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green**	396.64	397.74	1.10	B00233353	0.4	-0.005	-0.01	-0.01	0.01
		396.27 - 397.74: Salt and pepper coloured, coarse-grained BI-rich mafic schist with finely disseminated and banded calcite.									
		<<Min: 396.27 - 397.74 1% Min: Pyrite>>									
		<<Min: 396.27 - 397.74 1% Min: Pyrrhotite>>									
		<<Alt: 396.27 - 397.74 Weak (Alt) Chlorite>>									
		<<Alt: 396.27 - 397.74 Moderate (Alt) Biotite>>									
		<<Vein: 396.85 - 397.12 Quartz>> Massive foliation parallel quartz-carbonate-sericite vein.									
397.74	**398.16**	**RHYvl Lapilli tuff medium grey**	397.74	398.16	0.42	B00233354	-0.3	-0.005	-0.01	-0.01	-0.01
		397.74 - 398.16: Grey, QZ-MU-CB-PY well foliated ductilely deformed volcaniclastic felsic schist.									
		<<Min: 397.74 - 398.16 5% Min: Pyrite>>									
		<<Alt: 397.74 - 401.56 Moderate (Alt) Muscovite>> Marked increase in muscovite									
398.16	**399.26**	**OI Heavilly disseminated sulphides in host schist salt + pepper**	398.16	399.26	1.10	B00233355	0.7	0.017	-0.01	0.03	0.02
		398.16 - 399.26: Massive calcite vein with ~20%PY, 2-3%SP									
		<<Min: 398.16 - 399.18 2% Min: Sphalerite>>									
		<<Min: 398.16 - 399.18 80% Min: Calcite>>									
		<<Min: 398.16 - 399.26 20% Min: Pyrite>>									
		<<Min: 399.18 - 401.56 8% Min: Calcite>>									
		<<Vein: 398.16 - 399.18 Calcite>> PY20%, SP2%									
399.26	**401.56**	**RHYvl Lapilli tuff medium grey**	399.26	400.76	1.50	B00233356	-0.3	0.006	-0.01	-0.01	-0.01
		399.26 - 401.56: Grey, QZ-MU-CB-PY well foliated ductilely deformed volcaniclastic felsic schist.									
		<<Min: 399.26 - 401.56 5% Min: Pyrite>>	400.76	401.56	0.80	B00233357	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Struc: 399.26 - 399.26 dominant foliation>> Spurious? Large dip direction change									
		<<Struc: 401.4 - 401.4 dominant foliation>> Spurious? Large dip direction change									
401.56	**403.22**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green**									
		401.56 - 403.22: Salt and pepper coloured, coarse-grained BI-rich mafic schist with finely disseminated and banded calcite.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 401.56 - 403.22 1% Min: Pyrite>>
<<Min: 401.56 - 403.22 1% Min: Pyrrhotite>>
<<Min: 401.56 - 403.22 15% Min: Calcite>>
<<Alt: 401.56 - 403.22 Weak (Alt) Chlorite>>
<<Alt: 401.56 - 403.22 Weak (Alt) Biotite>>
<<Struc: 402.39 - 402.44 Weak (Alt) Fault>>

403.22 404.10 RHYvl Lapilli tuff cream

403.22 - 404.1: Grey, QZ-MU-CB-PY well foliated ductilely deformed volcaniclastic felsic schist.

<<Min: 403.22 - 404.1 1% Min: Pyrite>>
<<Min: 403.22 - 404.1 3% Min: Calcite>>
<<Alt: 403.22 - 404.1 Weak (Alt) Muscovite>>

End of Hole @ 404.1

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-326

Prospect:	Krakatoa	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	75.7	Survey By:	Roger Hulstein	Date Logging Start:	17-Nov-15
UTM Easting	415245.4	Core Size:	NQ3	Azimuth:	179.87	Date Logging Complete:	25-Nov-15
UTM Northing:	6815347.2	Casing Pulled?:	Yes	Dip:	-66	Drill Company:	Geotech
UTM Elev. (m):	1442.119	Casing Depth (m):	21	Length (m):	443	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	15-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	24-Nov-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

K15-326 was drilled to test the extension of the Krakatoa lens on the east side of the deposit. The objective was to pass through the mafic unit where K15-282, K15-277 and historical hole K97-173 were stopped.
The upper units are made up of mudstone and mafic tuff followed by volcaniclastic rhyolite intruded by aphanitic and narrow mafic dykes.
First mineralization zone (OB and OI domains) is intersected from 295.4m to 298.00m. The second lens (OB domain from 308.45m to 313.44m) sits on the top of chlorite-biotite-calcite poor mafic sill. The third sulfide lens (1.56m of OA domains over 2.53m) is observed at the bottom of this unit at 379.94m. The lower units consist of volcaniclastic rhyolite.
The hanging-wall shows strong muscovite alteration from 278.05m to 295.43m. Similar alteration is seen from 382.66m to 395.75m underneath the Krakatoa lens.
The hole ends at 443.00m on weakly muscovite altered volcaniclastic rhyolite.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-66	179.87	0	179.87	APS	Roger Hulstein	15-Nov-15		☑	
35	-64.5	278.8	22.5	301.3	ReflexEZS	Geotech	17-Nov-15	3626	☐	
65	-64.7	65.8	22.5	88.3	ReflexEZS	Geotech	17-Nov-15	3861	☐	
95	-63.5	160.5	22.5	183	ReflexEZS	Geotech	17-Nov-15	5756	☑	
125	-63.4	162.9	22.5	185.4	ReflexEZS	Geotech	18-Nov-15	5736	☑	
155	-62.4	164.4	22.5	186.9	ReflexEZS	Geotech	18-Nov-15	5752	☑	
188	-62.3	164.1	22.5	186.6	ReflexEZS	Geotech	19-Nov-15	5738	☑	
218	-61.7	167.2	22.5	189.7	ReflexEZS	Geotech	20-Nov-15	5745	☑	
245	-61	167	22.5	189.5	ReflexEZS	Geotech	20-Nov-15	5746	☑	
269	-61.2	167	22.5	189.5	ReflexEZS	Geotech	20-Nov-15	5750	☑	
296	-60	168.8	22.5	191.3	ReflexEZS	Geotech	21-Nov-15	5747	☑	
317	-59.8	165.9	22.5	188.4	ReflexEZS	Geotech	21-Nov-15	5751	☑	
347	-60.1	170.4	22.5	192.9	ReflexEZS	Geotech	22-Nov-15	5739	☑	
377	-59.9	170.9	22.5	193.4	ReflexEZS	Geotech	22-Nov-15	5780	☑	
395	-59.7	171.2	22.5	193.7	ReflexEZS	Geotech	23-Nov-15	5814	☑	
419	-59.5	174.5	22.5	197	ReflexEZS	Geotech	23-Nov-15	5755	☑	
443	-59.2	174.8	22.5	197.3	ReflexEZS	Geotech	24-Nov-15	5734	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 21.00 OVBN Overburden

21.00 28.80 MDU carbonaceous mudstone light grey
upper sequence

21 - 28.8: Dominantly mudstone with MAFt layers chloritized (or MAFi intruding an unconsolidated mudstone). CA veinlets and in matrix, locally folded.

<<Min: 21 - 62 0.5% Min: Pyrrhotite>>

<<Min: 21 - 78 15% Min: Calcite>> And in matrix when associated with MAFt.

<<Min: 21 - 191.37 0.1% Min: Pyrite>>

<<Alt: 21 - 94.3 Moderate (Alt) Chlorite>> Associated with dykes.

<<Vein: 21 - 92 Calcite>> CA veinlets.

28.80 30.37 MAFt Mafic Volcaniclastics grey-green

28.8 - 30.37: Chloritized, calcite in matrix. Could be MAFi but regarding to the texture it is probably tuffaceous. Mixed with MDS locally, calcite veinlets crenulated.

<<Vein: 28.8 - 51.04 Quartz-Carbonate>> QZ/CA veins mostly associated with MAFt.

30.37 38.00 MDU carbonaceous mudstone black
upper sequence

30.37 - 38: Calcite veinlets, strong foliation.

38.00 42.83 MAFt Mafic Volcaniclastics grey-green

38 - 42.83: Chloritized, CA veined. Sharpe contacts, could be MAFi dyke.

42.83 46.86 MDU carbonaceous mudstone black
upper sequence

42.83 - 46.86: Calcite veinlets, locally sheared.

<<Struc: 43.8 - 44.5 Moderate (Alt) Shear>> Brecciated, sheared, minor.

46.86 51.04 MAFt Mafic Volcaniclastics grey-green

46.86 - 51.04: Local massive QZ-CA veins.

<<Struc: 47 - 50 Weak (Alt) Fault>> Multiple narrow fault gouge zones, minor.

51.04 69.88 MDU carbonaceous mudstone black
upper sequence

51.04 - 69.88: Strong foliation, CA in foliation, locally folded/crenulated. Minor Dyke (MAFi). QZ/CA veins.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 62 - 92 1% Min: Pyrrhotite>> And veinlets. Elongated crosscutting a primary foliation.

<<Struc: 55 - 55.01 dominant foliation>> Average.

69.88 72.10 MAFt Mafic Volcaniclastics grey-green

69.88 - 72.1: Chloritized, CA veinlets and in matrix.

72.10 78.90 MDU carbonaceous mudstone upper sequence black

72.1 - 78.9: CA veinlets foliation oriented. Locally moderately sheared.

<<Min: 78 - 94 3% Min: Calcite>>

<<Vein: 78 - 94 Quartz-Carbonate>> QZ/CA veins, 10 to 30 cm wide, associated with lithology changes.

<<Struc: 72.24 - 73 Weak (Alt) Fault>> Fault gouge.

78.90 80.32 RHY undifferentiated rhyolite grey-green

78.9 - 80.32: Silicic banded. Progressive contact with MDS. Could be flow or interpreted as MDSw.

80.32 85.13 MDU carbonaceous mudstone upper sequence black

80.32 - 85.13: Locally silicic banded. 2 foliations.

85.13 86.56 MAFt Mafic Volcaniclastics grey-green

85.13 - 86.56: CA veinlets.

86.56 87.97 MDU carbonaceous mudstone upper sequence black

86.56 - 87.97: QZ-CA vein.

87.97 90.40 MDSw Coherent rhyolite flow with carbonaceous content grey

87.97 - 90.4: Could be RHYcw with progressive contact. Local QZ/TML rich, QZ veins. Silicic banded.

<<Alt: 87.97 - 116 Weak (Alt) Muscovite>>

90.40 92.00 MDU carbonaceous mudstone upper sequence black

90.4 - 92: CA in foliation and fracture filled.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

92.00 109.04 RHYvl Lapilli tuff grey-green

92 - 109.04: Chlorite replacing lapilli. Thin foliation. Maybe dyke from 100.70m to 101.55m (AK/CL rich with chill margin at lower and upper contact-intermediate composition). Few BI patch.

<<Min: 92 - 154 0.5% Min: Pyrrhotite>> Locally concentrated.

<<Min: 94 - 181 1% Min: Calcite>> Or replacement.

<<Alt: 94.3 - 109 Weak (Alt) Chlorite>>

<<Struc: 92 - 116 Weak (Alt) Fault>> Multiple narrow fault gouge zones (2 to 10 cm wide)and minor folding. Accentuated by MU composition. Minor

<<Struc: 100 - 100.01 dominant foliation>> Average.

109.04 112.70 RHYva Coarse grained to ash tuff grey-green

109.04 - 112.7: Locally MU altered (greenish color), banded with PO.

112.70 115.15 RHYvl Lapilli tuff grey-green

112.7 - 115.15: Moderately MU altered.

115.15 129.77 RHYva Coarse grained to ash tuff grey-green

115.15 - 129.77: Dark color due to CL/BI (?). Few lapilli aggregated.

<<Vein: 127.54 - 127.95 Quartz>> QZ vein, few CL.

<<Struc: 120 - 120.01 dominant foliation>> Average.

129.77 133.07 RHYi Aphanitic Rhyolite (intrusion) beige

129.77 - 133.07: Stockwork texture at upper contact. PY and probably TML veinlets. Could be albitization.

133.07 133.90 RHY undifferentiated rhyolite grey-green

133.07 - 133.9: Foliated. PY in foliation.

133.90 139.00 RHYi Aphanitic Rhyolite (intrusion) beige

133.9 - 139: Classified as RHYi because of aphanitic texture. Interval including large massive QZ vein, fractured, brittled, might be strongly silicified RHY.

<<Alt: 133.9 - 139 Strong (Alt) Silicification>> Log as RHYi regarding to the texture. Large QZ veins containing schist, few CL.

<<Vein: 135.23 - 137.22 Quartz-Carbonate>> QZ-CA vein surrounded by SI alteration, containing schist and few CL. Brittled.

<<Struc: 138.8 - 139.25 Moderate (Alt) Fault>> Lower contact between silicified zone and RHY. Fault gouge.

From (m)	To (m)	Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

139.00 140.17 RHYvl Lapilli tuff grey-green

139 - 140.17: Silicic banded.

140.17 143.18 RHYi Aphanitic Rhyolite (intrusion) beige

140.17 - 143.18: Albitization?

<<Alt: 142.64 - 143.18 Moderate (Alt) Silicification>> Could be albitization.

143.18 149.59 RHYvl Lapilli tuff grey-green

143.18 - 149.59: Silicic banded at upper contact. Locally planar thin lamination. Few BI porphyroblasts.

<<Alt: 143.18 - 236 Weak (Alt) Muscovite>> Locally moderate.

149.59 150.05 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

149.59 - 150.05: Unaltered AK, BI, soft matrix.

<<Struc: 150 - 150.05 Weak (Alt) Fault>> At lower contact between MAFi dyke and RHYvl.

150.05 153.75 RHYvl Lapilli tuff grey-green

<<Alt: 150.05 - 153.75 Moderate (Alt) Chlorite>>

153.75 156.28 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

153.75 - 156.28: Could be volcaniclastic. CA veinlets. 2 foliations observed.

<<Min: 154 - 161.46 1% Min: Pyrrhotite>> Eloganted in the foliation.

156.28 157.14 RHYva Coarse grained to ash tuff

157.14 159.40 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

157.14 - 159.4: Could be MAFi. Gradual contact.

159.40 160.49 RHYva Coarse grained to ash tuff grey-green

159.4 - 160.49: Few BI

160.49 161.46 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey

161.46 167.03 RHYvl Lapilli tuff grey-green

161.46 - 167.03: Few BI.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 161.46 - 244 0.5% Min: Pyrrhotite>>

<<Struc: 163.2 - 163.8 Foliation>>

<<Struc: 163.2 - 163.8 dominant foliation>> Mid strained lapilli.

167.03 173.57 RHY undifferentiated rhyolite grey-green

167.03 - 173.57: Silicic bands, probably RHYvl. Locally silicified (RHYi?).

<<Alt: 171 - 173.57 Moderate (Alt) Silicification>> Could be albitization

<<Vein: 168.5 - 168.51 Undifferentiated/Unknown/Other>> Late fracture, brown mineral filled. Bleaching halo over 1 cm on each side.

<<Vein: 173.2 - 173.47 Quartz>> QZ vein.

173.57 182.40 RHYvl Lapilli tuff grey-green

173.57 - 182.4: Silicified. BI locally aggregated, could be narrow dyke or MAFi enclave.

<<Min: 181 - 191.37 3% Min: Calcite>> and lapilli replacement.

<<Alt: 174.15 - 175.35 Weak (Alt) Chlorite>> Associated with fault/shear zone.

<<Alt: 176.83 - 181.37 Moderate (Alt) Silicification>>

<<Struc: 174.59 - 176 Moderate (Alt) Fault>> and sheared. CL/MU, QZ/CA.

<<Struc: 176.5 - 176.51 dominant foliation>>

<<Struc: 176.8 - 177.1 Weak (Alt) Fault>> Evidence of micro-faulting (truncated shallow angle veinlets).

182.40 188.17 RHY undifferentiated rhyolite grey-green

182.4 - 188.17: Silicic bands. Locally glassy. Few minor faults (gouge).

<<Alt: 182.76 - 186.07 Moderate (Alt) Silicification>>

<<Struc: 187 - 187.4 Weak (Alt) Fault>> Fault gouge containing QZ vein relic.

188.17 191.17 RHYvl Lapilli tuff grey-green

188.17 - 191.17: Progressive lower contact with silicified unit.

<<Alt: 190.43 - 206.84 Moderate (Alt) Silicification>> Locally strong. Log as RHYi but could be albitization.

<<Struc: 189 - 189.01 dominant foliation>>

191.17 206.84 RHYi Aphanitic Rhyolite (intrusion) beige

191.17 - 206.84: Classified as RHYi due to aphanitic texture. Albite and/or silicic alteration (?). Gradual upper contact, texture preserved on the edge. Fractured, MU/PY filling. PY disseminated. Interval including massive QZ vein from 200m to 201.60m. Folded at lower contact. Sericite alteration banded .

<<Min: 191.37 - 234 0.5% Min: Pyrite>> And few veinlets.

<<Vein: 200 - 201.65 Quartz>> QZ vein.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

206.84 208.23 RHYv Rhyolite volcaniclastic grey-green

<<Min: 206.84 - 257 3% Min: Calcite>>

208.23 210.18 RHYvx Quartz and/or feldspar crystal tuff grey-green

208.23 - 210.18: Feldspar shaped phenos up to 1 cm long. Lapillitic.

210.18 216.03 RHYv Rhyolite volcaniclastic grey-green

210.18 - 216.03: Interval including sorting sequence from 212.47m to 213.18m showing sharp contacts.

<<Struc: 214 - 218 Weak (Alt) Fault>> Multiple minor faults with clay gouge.

216.03 243.70 RHYva Coarse grained to ash tuff grey-green

216.03 - 243.7: Massive QZ vein intruding fine grain layer (ash?) containing QZ eyes-or chill margin-from 224.80m to 226.69m. Narrow MAFi (BI/CA) from 223.88m to 224.28m, euhedral PY at upper contact.

<<Min: 234 - 244 1% Min: Pyrite>> Small patch or deformed stringers.

<<Alt: 236 - 257 Weak (Alt) Muscovite>>

<<Vein: 224.8 - 225.8 Quartz-Carbonate>> QZ vein, CA/CL and talc patch.

<<Struc: 224.5 - 224.8 Weak (Alt) Shear>> Minor shear zone containing sandy/clay gouge.

<<Struc: 233.55 - 233.65 Weak (Alt) Fault>> Minor fault.

243.70 272.45 RHY undifferentiated rhyolite grey-green

243.7 - 272.45: PY patch, PO disseminated, blurry texture. Dark sericite or carbonaceous composition from 253.80m to 256.26m..

<<Min: 244 - 260.1 5% Min: Pyrite>> Deformed veins or patch, associated with QZ, dark color.

<<Min: 244 - 278 2% Min: Pyrrhotite>> Elongated, foliation oriented.

<<Min: 260.1 - 278 1% Min: Pyrite>>

<<Alt: 257 - 278.05 Moderate (Alt) Muscovite>>

<<Struc: 252.2 - 255.2 Weak (Alt) Fault>> Multiple minor fault showing clay gouge.

<<Struc: 261.55 - 263 Moderate (Alt) Fault>> Breccia gouge.

<<Struc: 270.2 - 272 Strong (Alt) Fault>> Core loss. Considered as strong regarding to the recovery, the size of the interval and the clay composition.

272.45 276.80 RHY undifferentiated rhyolite grey-green

272.45 - 276.8: Interpreted as high density of strained lapilli but could be flow banded.

<<Struc: 276.5 - 276.8 Weak (Alt) Fault>> Fault gouge.

From (m)	To (m)		Rocktype & Description		From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
276.80	**277.50**	**MDSc**	**Carbonaceous dominant mudstone**	**black**									
276.8 - 277.5: PY in foliation.													
277.50	**285.69**	**RHY**	**undifferentiated rhyolite**	**grey-green**									
277.5 - 285.69: Flow texture but probably due to QZ vein proximity. PY/dark QZ stringers, wavy, locally crenulated.													
<<Min: 278 - 284.56 5% Min: Pyrite>> Stringers and disseminated.													
<<Min: 278 - 284.56 0.1% Min: Pyrrhotite>>													
<<Min: 284.56 - 295.48 2% Min: Pyrite>> Elongated, foliation oriented.													
<<Alt: 278.05 - 295.48 Strong (Alt) Muscovite>>													
<<Vein: 277.5 - 278 Quartz>> QZ.													
<<Vein: 282.3 - 282.9 Quartz>> QZ.													
285.69	**295.43**	**RHYc**	**Rhyolite coherant volcanics**	**grey-green**	291.00	292.50	1.50	B00233554	3.7	0.028	0.02	0.02	0.01
285.69 - 295.43: Silicic bands. Could be flow. PY disseminated and stringers. Texture obscured at proximity of MxSx													
<<Struc: 286.9 - 286.91 dominant foliation>>					292.50	294.00	1.50	B00233555	4.4	0.033	0.02	-0.01	0.12
<<Struc: 292.5 - 292.51 dominant foliation>>					294.00	295.43	1.43	B00233556	4.7	0.023	0.01	0.06	0.09
295.43	**296.03**	**OB**	**Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**	**FMG**	295.43	296.03	0.60	B00233557	244	0.93	0.12	4.89	6.87
295.43 - 296.03: Semi-massive. 30 to 40 percent of sulfide.													
<<Min: 295.48 - 296.03 3% Min: Sphalerite>>													
<<Min: 295.48 - 296.03 60% Min: Pyrite>>													
<<Min: 295.48 - 296.03 0.1% Min: Chalcopyrite>>													
<<Min: 295.48 - 296.03 5% Min: Calcite>> In OB.													
<<Min: 295.48 - 298 0.5% Min: Galena>>													
<<Struc: 295.5 - 295.51 dominant foliation>> Lamination in MxSx.													
296.03	**298.00**	**OI**	**Heavilly disseminated sulphides in host schist**	**FMG**	296.03	297.04	1.01	B00233558	58.7	0.476	0.41	0.69	3.12
296.03 - 298: Black chlorite.													
<<Min: 296.03 - 298 5% Min: Sphalerite>>					297.04	298.00	0.96	B00233559	103	0.729	0.51	0.96	6.74
<<Min: 296.03 - 298 30% Min: Pyrite>>													

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 296.03 - 298 0.5% Min: Chalcopyrite>>									
		<<Min: 296.03 - 298 0.1% Min: Arsenopyrite>>									
		<<Alt: 296.03 - 298 Moderate (Alt) Chlorite>> Black chlorite.									
298.00	**308.56**	**RHYc Rhyolite coherant volcanics grey-green**	298.00	299.50	1.50	B00233561	2.8	0.019	0.01	0.03	0.4
		298 - 308.56: Silicic bands. Strongly MU altered.									
		<<Min: 298 - 308.56 2% Min: Pyrite>>	299.50	301.00	1.50	B00233562	0.4	-0.005	-0.01	-0.01	-0.01
		<<Alt: 298 - 308.56 Strong (Alt) Muscovite>>	301.00	302.50	1.50	B00233563	0.7	0.007	-0.01	-0.01	-0.01
		<<Struc: 298 - 305 Moderate (Alt) Fault>> Multiple fault up to 30cm gouge in strongly MU altered RHY locally sheared.	302.50	304.00	1.50	B00233564	0.6	0.008	-0.01	-0.01	-0.01
		<<Struc: 305 - 308.1 Strong (Alt) Fault>> Intensity estimated according to poor recovery and fault gouge.	304.00	305.00	1.00	B00233565	0.3	-0.005	-0.01	-0.01	-0.01
			305.00	308.00	3.00	B00233566	0.5	-0.005	-0.01	0.02	-0.01
			308.00	308.56	0.56	B00233567	19.4	0.012	-0.01	0.01	0.01
308.56	**311.40**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides FMG**	308.56	309.60	1.04	B00233568	303	3.77	0.46	3.61	8.95
		308.56 - 311.4: PO at upper contact,black CL. CA/CL patch. CA in matrix, maybe BA. QZ patch.									
		<<Min: 308.56 - 311.4 5% Min: Sphalerite>>	309.60	310.20	0.60	B00233569	212	1.69	0.15	3.57	8.84
		<<Min: 308.56 - 311.4 3% Min: Pyrrhotite>> Patch at upper contact.	310.20	311.40	1.20	B00233572	232	1.63	0.02	4.1	5.38
		<<Min: 308.56 - 311.4 1% Min: Galena>>									
		<<Min: 308.56 - 311.4 0.1% Min: Chalcopyrite>>									
		<<Min: 308.56 - 313.44 10% Min: Calcite>> In matrix and patch.									
311.40	**313.44**	**OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides MG**	311.40	312.00	0.60	B00233573	409	2.17	0.04	7.06	11.3
		311.4 - 313.44: CA, maybe Ba in matrix. CA/CL patch, locally laminated, MAFi texture (?).									
		<<Min: 311.4 - 312 20% Min: Sphalerite>>	312.00	312.63	0.63	B00233574	247	9.08	0.24	2.6	6.9
		<<Min: 311.4 - 312 2% Min: Galena>>	312.63	313.44	0.81	B00233575	248	3.49	0.24	3.94	8.54
		<<Min: 311.4 - 312 0.1% Min: Chalcopyrite>> Associated with CL bands.									
		<<Min: 312 - 312.44 3% Min: Galena>>									
		<<Min: 312 - 313.44 10% Min: Sphalerite>>									
		<<Min: 312 - 313.44 0.1% Min: Chalcopyrite>>									
		<<Struc: 313.15 - 313.16 Foliation>> Lamination in MxSx, could be relic of original foliation.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
313.44	**379.94**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)** **green**	313.44	314.00	0.56	B00233576	10	0.155	-0.01	0.15	0.16

313.44 - 379.94: Bleached, weakly foliated, low CA content from 318.00m.

<<Min: 313.44 - 318 10% Min: Calcite>>

<<Min: 313.44 - 379.94 0.1% Min: Pyrite>> Speudo-euhedral.

<<Min: 318 - 375 1% Min: Calcite>>

<<Min: 375 - 380.03 10% Min: Calcite>>

<<Alt: 313.44 - 379.94 Strong (Alt) Chlorite>>

<<Vein: 319.2 - 319.22 Calcite 35 deg. >> CA vein, part of a set of 3 veins. Alpha angle average of the 3.

<<Vein: 321.89 - 322.37 Calcite>> Massive CA vein.

<<Vein: 334.35 - 334.45 Calcite>> QZ/CA vein or patch containing BI.

<<Struc: 317.29 - 317.3 dominant foliation>>

<<Struc: 319.2 - 319.22 Vein>> CA vein, Set of 3 veins.

<<Struc: 325.91 - 325.92 dominant foliation>>

<<Struc: 331.83 - 331.84 dominant foliation>>

<<Struc: 342.47 - 342.48 dominant foliation>>

<<Struc: 352.98 - 352.99 dominant foliation>>

<<Struc: 370.06 - 370.07 Vein>> CA veinlet.

<<Struc: 372.26 - 372.26 Vein>> CA veinlet.

379.94	**380.71**	**OA** **Magnetite bearing sulphides** **FMG**	379.94	380.71	0.77	B00233584	80	0.274	0.3	2.24	11.1

379.94 - 380.71: CA in matrix over 10cm at upper contact.

<<Min: 379.94 - 380.77 10% Min: Sphalerite>>

<<Min: 379.94 - 380.77 70% Min: Pyrite>>

<<Min: 379.94 - 380.77 10% Min: Magnetite>>

<<Min: 379.94 - 380.77 3% Min: Galena>>

<<Min: 379.94 - 380.77 0.5% Min: Chalcopyrite>>

380.71	**381.68**	**RHY** **undifferentiated rhyolite** **grey-green**	380.71	381.68	0.97	B00233585	3	0.028	0.05	0.04	0.14

380.71 - 381.68: CL clots (mineral replacement). Few xlt (felspar ?) locally aggregated.

<<Min: 380.77 - 381.68 2% Min: Pyrite>> Elogated.

<<Min: 380.77 - 381.68 0.5% Min: Chalcopyrite>> Veinlets at contact.

			314.00	315.50	1.50	B00233577	9.8	0.053	0.02	0.15	0.15
			315.50	317.00	1.50	B00233578	3.8	0.02	-0.01	0.05	0.07
			317.00	318.50	1.50	B00233579	3.2	0.016	-0.01	0.05	0.07
			375.50	377.00	1.50	B00233581	2.2	-0.005	-0.01	0.04	0.06
			377.00	378.50	1.50	B00233582	1.5	-0.005	-0.01	0.03	0.05
			378.50	379.94	1.44	B00233583	4.2	0.011	-0.01	0.09	0.11

From (m)	To (m)	Rocktype & Description		
381.68	**382.47**	**OA** **Magnetite bearing sulphides**	**FG**	
381.68 - 382.47: Fine grain PY in matrix, coarser in lamination associated with SP and at upper contact.				
<<Min: 381.68 - 382.47 25% Min: Sphalerite>>				
<<Min: 381.68 - 382.47 50% Min: Pyrite>>				
<<Min: 381.68 - 382.47 10% Min: Magnetite>>				
<<Min: 381.68 - 382.47 1% Min: Galena>>				
<<Min: 381.68 - 382.47 0.5% Min: Chalcopyrite>>				
382.47	**395.00**	**RHYv** **Rhyolite volcaniclastic**	**grey-green**	
<<Min: 382.47 - 387.54 2% Min: Pyrite>> And aggregated in dark QZ patch.				
<<Min: 382.47 - 443 0.1% Min: Calcite>> Or locally associated with MAFi dyke.				
<<Min: 387.54 - 443 1% Min: Pyrite>>				
<<Min: 387.54 - 443 3% Min: Pyrrhotite>> Veinlets in foliation.				
<<Alt: 382.66 - 429.75 Moderate (Alt) Muscovite>> Could be original. Locally moderate.				
<<Struc: 384.5 - 388 Moderate (Alt) Fault>> Multiple faults, fault gouge up to 30cm, accentauted by strong MU alteration and strong foliation.				
395.00	**395.80**	**MAFi** **Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**	
395 - 395.8: CA in matrix, locally chloritized. PO veinlets at upper and lower contact. Foliated. QZ vein crosscutting the unit. Specks of tourmaline.				
395.80	**443.00**	**RHYv** **Rhyolite volcaniclastic**	**grey-green**	
395.8 - 443: Lapilli ghosts partially altered CL. PY veinlets, strong MU alteration fading out from 429.75m. Specks of tourmaline. E.O.H.				
<<Alt: 429.75 - 443 Weak (Alt) Muscovite>>				
<<Vein: 436.49 - 436.9 Quartz>> Massive QZ vein.				
<<Vein: 439.15 - 439.39 Quarzt-Tourmaline-Sulphide>> QZ vein with TML and PY.				
<<Struc: 404 - 417 Weak (Alt) Fault>> Multiples minor faults, strong MU.				

End of Hole @ 443

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
381.68	382.47	0.79	B00233586	44	0.429	1.13	0.09	8
382.47	384.00	1.53	B00233587	1	-0.005	0.02	0.01	0.03
384.00	385.50	1.50	B00233588	1	0.01	0.01	0.02	0.11
385.50	387.00	1.50	B00233589	0.5	0.009	-0.01	-0.01	0.03

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-327

Prospect:	Santorini	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	20-Nov-15
UTM Easting	414638.9	Core Size:	HQ3	Azimuth:	194.48	Date Logging Complete:	24-Nov-15
UTM Northing:	6815180	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1442.89	Casing Depth (m):	7.5	Length (m):	221	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	19-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK camp	Drill Completed:	22-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

K15-327 was drilled to target the Santorini geophysical anomaly. Total planned depth was ~ 250 m and the hole was shut down at 221m. Hole was collared in fine grained RHYvl followed by alternation of volcanoclastic unit and mafic intrusive/sill intervals, characterized by a moderate chlorite alteration, which occurring as very fine grained bands and also pervasive, usually associated with Po/Sp/Cpy mineralization. The hole intercepted two narrows intervals of OJ (Cpy/GL/Sp rich) at 63.5m (~50cm) and 83m (~1m) hosted within volcanoclastic rhyolite, these intervals were also intensely chlorite altered and contained patchy cordierite porphyroblasts. Interestingly between 183.5 to 214.35m, we intercepted unit of oligomictic, clasts supported, pebble to cobble sized volcanic metaconglomerate. It's difficult to be totally confident for this protolith due to alteration/foliation intensity.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	194.48	0	194.48	APS	Florent Pons	19-Nov-15		☑	
26	-59.2	173.5	22.5	196	ReflexEZS	Geotech	20-Nov-15	5761	☑	
53	-59.5	172.7	22.5	195.2	ReflexEZS	Geotech	20-Nov-15	5742	☑	
74	-59.6	172.4	22.5	194.9	ReflexEZS	Geotech	21-Nov-15	5775	☑	
101	-59.6	171.9	22.5	194.4	ReflexEZS	Geotech	21-Nov-15	5741	☑	
125	-59.8	174	22.5	196.5	ReflexEZS	Geotech	21-Nov-15	5724	☑	
152	-59.9	172.6	22.5	195.1	ReflexEZS	Geotech	21-Nov-15	5747	☑	
176	-59.7	173.4	22.5	195.9	ReflexEZS	Geotech	22-Nov-15	5775	☑	
200	-59.5	174.5	22.5	197	ReflexEZS	Geotech	22-Nov-15	5772	☑	
221	-59.7	175.7	22.5	198.2	ReflexEZS	Geotech	22-Nov-15	5728	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.65**	**OVBN Overburden**									
0 - 6.65: Casing at 7.5 m											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

6.65 10.05 RHYv Rhyolite volcaniclastic FMG

6.65 - 10.05: Light grey/greenish, fine to medium grained matrix, moderately foliated. Comprising siliceous bands, mm to cm wide, irregular and locally dismembered. Could be lapilli/clast strongly stretched/flattered, pebble size. Moderately MU/SI altered. Probably volcanoclastic interval.

<<Min: 6.65 - 7.65 2% Min: Pyrite>> Finely disseminated and also thin stringers.

<<Min: 6.65 - 9.3 4% Min: Calcite>> Associated with siliceous bands and qtz veinlets, blebs.

<<Min: 7.65 - 10.05 0.5% Min: Pyrite>>

<<Min: 9.3 - 11.2 12% Min: Calcite>> +/- pervasive/patchy

<<Alt: 6.65 - 10.05 Moderate (Alt) Silicification>> Occuring as concordant siliceous bands associated with diffuse fuschite (weak).

<<Alt: 6.65 - 10.05 Weak (Alt) Muscovite>> Weak to moderate MU alteration, fracture surface.

10.05 38.55 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green-brown FCG

10.05 - 38.55: Green to brownish, massive, coarse grained, weak/moderately foliated. Comprising BI/CL clots distributed within matrix, cm size, moderately flattered. "gabbroic" texture. CL clots Could be mafic phenocristal relics (pyroxene/amphibole?). BI occuring as small disseminated clots/flakes, more concentrate at the margins of the unit. Weakly Ca altered, occuring as blebs/patchy and locally pervasive. Trace of mineralization (PO).

<<Min: 10.05 - 38.55 0.1% Min: Pyrite>>

<<Min: 11.2 - 25.6 3% Min: Calcite>> Mainly fracture filling/thin veinlets, and also isolated blebs.

<<Min: 25.6 - 37.5 2% Min: Calcite>> Weakly calcite altered.

<<Min: 37.5 - 38.55 6% Min: Calcite>> MAFi. Blebs/veinlets

<<Alt: 10.05 - 13 Moderate (Alt) Biotite>> Small/medium sized Bi clots/flakes, distributed within the matrix.

<<Alt: 10.05 - 39 Moderate (Alt) Chlorite>> Pervasive and also occuring as altered clots.

<<Alt: 13 - 36.42 Weak (Alt) Biotite>> small/medium sized Bi clots/flakes, distributed within the matrix.

<<Alt: 36.42 - 38.55 Strong (Alt) Biotite>> small/medium sized Bi clots/flakes, distributed within the matrix.

<<Vein: 23 - 23.22 30% Calcite>> Vesicular calcite veins, 3-5 cm wide, irregular oriented.

<<Vein: 25.45 - 25.52 80% Calcite 75 deg. >> Regular calcite +/- qtz vein, 5 cm wide, discordant.

<<Struc: 32 - 32.01 Weak (Alt) Foliation>>

38.55 48.35 RHYva Coarse grained to ash tuff green FG

38.55 - 48.35: Light grey/greenish, fine grained, homogeneous, moderately foliated. <10 % of mm qtz grains distributed within MU altered fine grained matrix. Locally crosscut by deformed qtz veins. Probably fine grained ash tuff.

<<Min: 38.55 - 39.55 1% Min: Sphalerite>> Disseminated within veins.

<<Min: 38.55 - 39.55 1% Min: Pyrite>> Aggregate within Qtz veins.

<<Min: 38.55 - 39.55 2% Min: Pyrrhotite>> Aggregate within Qtz veins.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 38.55 - 48.35 3% Min: Calcite>> Blebs/fracture filling.

<<Min: 39.55 - 40.65 1% Min: Sphalerite>> Occuring as thin veinlets/stringers associated with py.

<<Min: 39.55 - 40.65 1% Min: Pyrite>> Occuring as thin veinlets/stringers associated with sp

<<Min: 40.65 - 48.35 1% Min: Pyrite>> Thin stringers.

<<Alt: 38.55 - 49.18 Moderate (Alt) Muscovite>>

<<Vein: 38.55 - 39.55 30% Quartz>> Interval comprising deformed and dismembered qtz veins, 1-10 cm wide. Associated with PO/PY/SP aggregates.

<<Vein: 44.3 - 44.35 95% Quartz 80 deg. >> Regular grey qtz vein, +/- Ca, seems "boudinaged".

<<Struc: 47 - 47.01 Moderate (Alt) Foliation>>

48.35	**62.56**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FCG**	62.00	62.56	0.56	B00232803	27.8	0.051	0.58	0.19	1.42

48.35 - 62.56: Green to brownish, massive, coarse grained, weak/moderately foliated. Comprising BI/CL clots distributed within matrix, cm size, moderately flattered. . CL clots could be mafic phenocristal relics (pyroxene/amphibole?). At the top of unit, strong Si alteration interval associated with diffuse fuschite and Sp stringers. BI occuring as small disseminated clots/flakes, more concentrate at the margins of the unit. Moderately Ca altered, occuring as blebs/veinlets/patchy and locally pervasive. Trace of mineralization (PO).

<<Min: 48.35 - 49 5% Min: Sphalerite>> Occuring as thin concordant bands/stringers/fracture filling? Associated with diffuse SI/fuschite.

<<Min: 48.35 - 49 3% Min: Pyrite>> Occuring as thin concordant bands/stringers/fracture filling? Associated with diffuse SI/fuschite.

<<Min: 48.35 - 62.56 6% Min: Calcite>>

<<Min: 49 - 50.07 1% Min: Pyrite>>

<<Min: 50.07 - 50.5 0.1% Min: Pyrite>>

<<Min: 50.5 - 51.32 4% Min: Sphalerite>> Occuring as thin concordant bands/stringers/fracture filling? Associated with diffuse SI/fuschite.

<<Min: 50.5 - 51.32 1% Min: Pyrite>> Occuring as thin concordant bands/stringers/fracture filling? Associated with diffuse SI/fuschite.

<<Min: 51.32 - 54 0.5% Min: Pyrrhotite>> disseminated aggregate locally associated with Cpy.

<<Min: 51.32 - 54 0.1% Min: Chalcopyrite>> Associated with PO aggregate.

<<Min: 54 - 62.56 0.1% Min: Pyrrhotite>>

<<Alt: 48.35 - 49.18 Moderate (Alt) Silicification>> Occuring as concordant bands

<<Alt: 49.35 - 50.07 Strong (Alt) Biotite>> MAFi

<<Alt: 50.07 - 51.32 Moderate (Alt) Silicification>> Occuring as concordant siliceous bands associated with diffuse fuschite (moderate).

<<Alt: 51.32 - 54 Moderate (Alt) Biotite>> small/medium sized Bi clots/flakes, distributed within the matrix.

<<Alt: 51.32 - 62.56 Moderate (Alt) Chlorite>> MAFi

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Struc: 62 - 62.01 Moderate (Alt) Foliation>>									
62.56	**65.25**	**RHY undifferentiated rhyolite green FMG**	62.56	63.00	0.44	B00232804	2.4	-0.005	0.03	0.02	0.04
		62.56 - 65.25: Green, fine to medium grained, matrix strongly Cl altered. Moderately foliated. CL alteration (proximal/original?) occuring as pervasive bands (also pervasive), very fine grained, associated with significant Po/Sp/Cpy mineralization. Trace of blue QE distributed. Comrpising deformed/dismembered calcite bands, subconcordant.									
		<<Min: 62.56 - 63 3% Min: Sphalerite>> Occuring as bands/stringers locally associated with Cp.	63.00	64.45	1.45	B00232805	1.1	-0.005	0.01	-0.01	0.04
		<<Min: 62.56 - 63 2% Min: Pyrrhotite>> Occuring as fine grained bands/stringers associated with Cp.	64.45	65.25	0.80	B00232806	6	0.009	0.21	0.07	0.41
		<<Min: 62.56 - 63 3% Min: Chalcopyrite>> Occuring as bands/stringers associated with Sp/Po.									
		<<Min: 62.56 - 95 2% Min: Calcite>> Also thin veinlets.									
		<<Min: 63 - 64.45 0.5% Min: Sphalerite>> Thin subconcordant stringers associated with Cl bands.									
		<<Min: 63 - 64.45 1% Min: Pyrrhotite>> Thin subconcordant stringers locally associated with Sp									
		<<Min: 64.45 - 65.25 1% Min: Sphalerite>> Thin stringers, locally Cp associated.									
		<<Min: 64.45 - 65.25 2% Min: Pyrrhotite>> Cp trace associated.									
		<<Min: 64.45 - 65.25 1% Min: Chalcopyrite>> Associated with Po/Sp bands.									
		<<Alt: 62.56 - 65.25 Moderate (Alt) Chlorite>> CL alteration (proximal/original?) occuring as pervasive bands (also pervasive), very fine grained, associated with significant Po/Sp/Cpy mineralization.									
65.25	**65.75**	**OJ Heavilly disseminated sulphides in proximal altered rock green CG**	65.25	65.75	0.50	B00232807	84.2	0.119	1.64	3.46	7.46
		65.25 - 65.75: Interval of OJ, strongly chlorite altered (original), Strongly mineralized (Cpy/GL/Sp rich). Mineralization occuring as bands/aggregate/patchy.									
		<<Min: 65.25 - 66.25 1% Min: Pyrrhotite>>									
		<<Alt: 65.25 - 65.75 Strong (Alt) Chlorite>> Strong/intense chlorite alteration associated with strong mineralization. OJ									
		<<Struc: 65.5 - 65.51 Vein>> Mineralization bands									
65.75	**68.30**	**RHY undifferentiated rhyolite green FCG**	65.75	66.25	0.50	B00232808	1.8	-0.005	0.02	0.07	0.14
		65.75 - 68.3: Green, fine to medium grained, matrix strongly Cl altered (original). Moderately foliated. CL alteration occuring as large pervasive bands (also pervasive), very fine grained, associated with significant Po/Sp/Cpy mineralization, could be OJ unit. Locally we observe siliceous clasts/lapilli? Relics. Comprising deformed/dismembered calcite bands, subconcordant.									
		<<Min: 66.25 - 68 4% Min: Sphalerite>> Occuring as bands, subconcordant	66.25	67.00	0.75	B00232809	34.4	0.018	0.5	2.02	3.64
		<<Min: 66.25 - 68 2% Min: Pyrrhotite>>	67.00	67.90	0.90	B00232811	13.2	-0.005	0.33	0.88	2.36
		<<Min: 66.25 - 68 4% Min: Galena>> Associated with Sp/Cp bands	67.90	68.30	0.40	B00232812	3.3	-0.005	0.07	0.18	0.28
		<<Min: 66.25 - 68 4% Min: Chalcopyrite>> Associated with Sp/Gl bands									
		<<Min: 68 - 76 1% Min: Sphalerite>> Occuring as thin bands.									

From (m)	To (m)		Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
			<<Min: 68 - 76 2% Min: Pyrrhotite>>											
			<<Min: 68 - 76 1% Min: Galena>> Associated with Sp bands											
			<<Min: 68 - 76 0.1% Min: Chalcopyrite>> Locally associated with Sp.											
			<<Alt: 65.75 - 66.25 Moderate (Alt) Chlorite>> Original?											
			<<Alt: 66.25 - 68.3 Strong (Alt) Chlorite>> Strong/intense chlorite alteration associated with moderate/strong mineralization.											
68.30	**83.00**	**RHYv**	**Rhyolite volcaniclastic**	**grey**	**CG**	68.30	69.50	1.20	B00232813	1.9	-0.005	0.02	0.03	0.34
			68.3 - 83: Greyish, medium/coarse grained, +/- homogeneous, weak to moderately MU altered (shiny on fracture surface, original?). Moderately foliated.Weak pervasive chlorite alteration, strong after 80.47m. Blue QE locally disseminated. Comprising siliceous dismembered bands or clast/lapilli, within fine/medium grained matrix. Weakly Sp/Po/Cp mineralized. 74.7-77.2m: Thin carbonaceous bands appears, MDS? 78.2-80.47m: Moderate banded texture marked by siliceous bands, weak curdy texture, RHYcw interval?											
			<<Min: 76 - 81.87 0.5% Min: Pyrrhotite>>			69.50	71.00	1.50	B00232814	2.1	-0.005	0.02	0.05	0.42
			<<Min: 81.87 - 83 0.5% Min: Sphalerite>>			71.00	72.50	1.50	B00232815	1.7	-0.005	0.03	0.11	0.31
			<<Min: 81.87 - 83 4% Min: Pyrrhotite>> Patchy/fracture filing			72.50	74.00	1.50	B00232816	1	-0.005	0.02	0.04	0.14
			<<Min: 81.87 - 83 1% Min: Chalcopyrite>> Associated with po			74.00	75.00	1.00	B00232817	0.8	-0.005	-0.01	0.02	0.05
			<<Alt: 68.3 - 80.47 Weak (Alt) Chlorite>> Original?			75.00	76.00	1.00	B00232818	4.2	0.02	0.11	0.09	0.59
			<<Alt: 68.3 - 81 Moderate (Alt) Muscovite>> shiny on fracture surface, original?			76.00	77.40	1.40	B00232819	1.2	-0.005	-0.01	0.02	0.09
			<<Alt: 80.47 - 81.87 Moderate (Alt) Chlorite>>			77.40	78.50	1.10	B00232821	1.6	-0.005	-0.01	0.04	0.24
			<<Alt: 81.47 - 83 Weak (Alt) Cordierite>> Cordierite porphyroblats appear, distributed within Cl matrix altered.			78.50	80.00	1.50	B00232822	-0.3	-0.005	-0.01	-0.01	0.02
			<<Alt: 81.87 - 84.4 Strong (Alt) Chlorite>> Strong/intense chlorite alteration associated with moderate/strong mineralization.			80.00	81.10	1.10	B00232823	6	-0.005	-0.01	0.06	0.07
			<<Vein: 77.4 - 81.1 25% Quartz 80 deg. >> Interval comprising multiple massive grey qtz veins. +/- calcite. Margins CL altered, deformed. Unmineralized.			81.10	81.87	0.77	B00232824	1.7	-0.005	-0.01	-0.01	0.15
			<<Struc: 70 - 70.01 Moderate (Alt) Foliation>>			81.87	83.00	1.13	B00232825	9.1	0.007	0.08	0.04	1.07
83.00	**84.05**	**OJ**	**Heavilly disseminated sulphides in proximal altered rock**	**green**	**FCG**	83.00	83.70	0.70	B00232826	47.5	0.03	0.09	0.22	4.7
			83 - 84.05: Interval of OJ, strongly chlorite altered (original) associated with cordierite porphyroblats, Strongly mineralized (Cpy/GL/Sp rich). Mineralization occuring as bands/aggregate/fracture filling.											
			<<Min: 83 - 83.7 2% Min: Chalcopyrite>> Associated with PO/Sp			83.70	84.05	0.35	B00232827	53.1	0.149	1.58	0.1	7.18
			<<Min: 83 - 84.05 6% Min: Sphalerite>> Fracture filling/stringers associated with Cp											
			<<Min: 83 - 84.05 6% Min: Pyrrhotite>> Fracture filling/ aggregate											
			<<Min: 83 - 84.05 4% Min: Galena>>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 83.7 - 84.05 6% Min: Chalcopyrite>> Fracture filling/aggregate.									
		<<Alt: 83 - 84.05 Moderate (Alt) Cordierite>> Cordierite porphyroblats, mm to cm, distributed within Cl matrix altered.									
84.05	**89.33**	**RHYv Rhyolite volcaniclastic green FCG**	84.05	85.00	0.95	B00232828	2.4	-0.005	0.03	-0.01	0.5
		84.05 - 89.33: Green, fine to medium grained, matrix strongly Cl altered (original) and weakly MU altered. Moderately foliated. CL alteration occuring as large pervasive bands (also pervasive), very fine grained, associated with Po/Sp/Cpy mineralization. Locally we observe siliceous fragments/clasts/lapilli relics?. Comprising deformed/dismembered calcite bands, subconcordant.									
		<<Min: 84.05 - 86 2% Min: Sphalerite>> Occuring as bands/stringers	85.00	86.00	1.00	B00232829	3.3	0.015	0.06	0.02	0.38
		<<Min: 84.05 - 86 1% Min: Pyrrhotite>> Stringers	86.00	87.05	1.05	B00232831	1	-0.005	-0.01	-0.01	0.06
		<<Min: 84.05 - 86 0.5% Min: Galena>>	87.05	88.50	1.45	B00232832	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 84.05 - 86 0.5% Min: Chalcopyrite>>	88.50	89.33	0.83	B00232833	-0.3	-0.005	-0.01	-0.01	0.05
		<<Min: 86 - 89.07 0.5% Min: Pyrrhotite>>									
		<<Min: 89.07 - 90.1 2% Min: Pyrrhotite>>									
		<<Alt: 84.05 - 87.05 Moderate (Alt) Chlorite>> Occuring as bands/pervasive, associated with Sp/Po stringers.									
		<<Alt: 87.05 - 90.1 Weak (Alt) Muscovite>> Original?									
		<<Alt: 87.05 - 90.1 Weak (Alt) Chlorite>>									
		<<Vein: 89.15 - 91.85 30% Quartz-Carbonate 75 deg. >> Interval comprising multiple qtz-dol/Ak veins/veinlets, strongly deformed/dismembered.									
		<<Struc: 85 - 85.01 Moderate (Alt) Foliation>>									
89.33	**91.85**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) green FMG**	89.33	90.10	0.77	B00232834	-0.3	-0.005	0.01	-0.01	0.04
		89.33 - 91.85: Green, fine to medium grained, strongly chlorite altered (original) associated with Po/Cp mineralization. Comprising >15 % of qtz-dol/cal veinlets/veins, strongly deformed and dismembered. Could be RHYv strongly altered, difficult to determinate.									
		<<Min: 90.1 - 91.85 0.5% Min: Sphalerite>> Stringers	90.10	91.00	0.90	B00232835	6.8	0.095	0.69	-0.01	0.09
		<<Min: 90.1 - 91.85 4% Min: Pyrrhotite>> Stringers and patchy	91.00	91.85	0.85	B00232836	5	0.043	0.38	0.02	0.11
		<<Min: 90.1 - 91.85 3% Min: Chalcopyrite>> Associated with Po/Sp									
		<<Alt: 90.1 - 91.85 Strong (Alt) Chlorite>> MAFi. Original chlorite alteration associated with Po/Sp/Cp mineralisation.									
91.85	**101.36**	**RHYvl Lapilli tuff grey-green CG**	91.85	92.58	0.73	B00232837	2.1	-0.005	-0.01	0.02	0.07
		91.85 - 101.36: Grey to greenish, coarse grained, heterogeneous. Moderately MU altered, "shiny" fracture surface. Weakly chlorite altered. Moderately to strongly foliated. Comprising fragments/clasts/lapilli, gravel to pebble size, siliceous, deformed/folded and locally stretched/flattered. Locally banded/curdy texture, RHYcw intervals? Trace of QE within matrix. Crosscut by qtz-dol/cal veins, cm to dm.									
		<<Min: 91.85 - 92.58 0.5% Min: Pyrite>>	92.58	93.05	0.47	B00232838	2.2	0.007	0.02	0.03	0.1
		<<Min: 92.05 - 93.05 2% Min: Pyrrhotite>>	93.05	94.25	1.20	B00232839	0.3	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description
		<<Min: 92.58 - 93.05 3% Min: Pyrite>> Coarse grained.
		<<Min: 93.05 - 101.05 1% Min: Pyrrhotite>>
		<<Min: 95 - 124.6 1% Min: Calcite>> Weak Ca altered.
		<<Min: 101.05 - 103.2 4% Min: Pyrite>> medium/coarse grained.
		<<Min: 101.05 - 103.2 1% Min: Pyrrhotite>>
		<<Alt: 91.85 - 103.2 Moderate (Alt) Muscovite>> 2-3 intensity. Original? Shiny fracture surface.
		<<Vein: 92.68 - 92.92 60% Quartz-Carbonate>> Qtz-dol- +/-Ak veins, >10 cm wide, deformed.
101.36	**102.55**	**RHYcw Curdy textured-flow banded grey CG (flows, subvolcanics)**
		101.36 - 102.55: Grey to greenish, coarse grained, heterogeneous. Moderately MU altered, "shiny" fracture surface. Weakly chlorite altered. Moderately foliated. Banded/curdy texture, marked by siliceous bands, deformed/folded and sometime dismembered, RHYcw intervals? Could be RHYvl with >40 % of clats/lapilli pebble size.
102.55	**112.77**	**RHY undifferentiated rhyolite grey-green FCG**
		102.55 - 112.77: Grey to greenish, fine to coarse grained, heterogeneous texture. Weak to moderately CL altered (Original alteration?), weakly MU altered. Locally comprising deformed/flattered fragments/clasts or lapilli? Distributed within matrix, mm to cm size, could be dismembered siliceous bands. After 107.75m, Moderate to strong CL alteration (original?) associated with weak cordierite (porphyroblast). It's difficult to determinate the protolith due to alteration intensity.
		<<Min: 103.2 - 104.3 5% Min: Pyrrhotite>> Occuring as bands/stringers with trace of Cp.
		<<Min: 103.2 - 104.3 0.1% Min: Chalcopyrite>> Associated with Po.
		<<Min: 104.3 - 104.8 2% Min: Pyrrhotite>>
		<<Min: 104.8 - 104.93 2% Min: Sphalerite>> Associated with Po band.
		<<Min: 104.8 - 104.93 7% Min: Pyrrhotite>> Occuring as semi-massive band, 2 cm wide
		<<Min: 104.8 - 104.93 4% Min: Galena>> Associated with Po band.
		<<Min: 104.93 - 105.47 1% Min: Pyrrhotite>>
		<<Min: 105.47 - 107.75 2% Min: Pyrrhotite>> Also thin veinlets
		<<Min: 105.47 - 108.15 0.1% Min: Chalcopyrite>> Associated with Po.
		<<Min: 108.15 - 109 6% Min: Sphalerite>> Occuring as thin veinlets.
		<<Min: 108.15 - 109 1% Min: Chalcopyrite>> Disseminated/patchy
		<<Min: 109 - 112.77 2% Min: Sphalerite>> Bands
		<<Min: 109 - 112.77 1% Min: Pyrrhotite>>
		<<Min: 109 - 112.77 0.5% Min: Chalcopyrite>>
		<<Alt: 103.2 - 107.75 Weak (Alt) Chlorite>> Occuring as interstitial bands.
		<<Alt: 107.75 - 112.77 Strong (Alt) Chlorite>> Occuring as pervasive bands, associated with Sp/Po stringers.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
94.25	95.15	0.90	B00232841	0.3	-0.005	-0.01	0.02	0.02
95.15	96.60	1.45	B00232842	-0.3	-0.005	-0.01	-0.01	0.02
96.60	98.00	1.40	B00232843	-0.3	-0.005	-0.01	-0.01	0.04
98.00	99.00	1.00	B00232844	0.5	-0.005	-0.01	-0.01	0.01
99.00	99.80	0.80	B00232845	0.6	-0.005	-0.01	0.01	0.05
99.80	101.36	1.56	B00232846	0.7	-0.005	-0.01	0.02	0.04
101.36	102.55	1.19	B00232847	0.5	0.005	-0.01	0.03	0.05
102.55	103.20	0.65	B00232848	2.5	0.006	0.03	0.2	0.55
103.20	104.30	1.10	B00232849	5.7	-0.005	0.06	0.04	0.79
104.30	105.00	0.70	B00232851	5.2	-0.005	0.02	0.1	0.2
105.00	105.47	0.47	B00232852	0.7	-0.005	-0.01	0.01	0.05
105.47	106.50	1.03	B00232853	0.9	-0.005	0.02	0.02	0.05
106.50	107.75	1.25	B00232854	-0.3	-0.005	-0.01	-0.01	0.01
107.75	108.15	0.40	B00232855	0.9	-0.005	-0.01	-0.01	0.05
108.15	109.00	0.85	B00232856	8.7	0.021	0.07	0.07	1.83
109.00	110.00	1.00	B00232857	2.7	0.008	0.02	0.02	0.16
110.00	111.50	1.50	B00232858	0.6	-0.005	-0.01	-0.01	0.12
111.50	112.77	1.27	B00232859	5.2	-0.005	0.01	0.04	0.42

From (m)	To (m)	Rocktype & Description

<<Alt: 107.75 - 112.77 Weak (Alt) Cordierite>> Small cordierite porphyroblats distributed within matrix.

<<Alt: 109.2 - 112.77 Weak (Alt) Muscovite>> Original? Shiny on fracture surface.

<<Struc: 104 - 104.01 Moderate (Alt) Foliation>>

<<Struc: 108 - 108.01 Strong (Alt) Foliation>>

112.77 126.45 RHY undifferentiated rhyolite grey-green FCG

112.77 - 126.45: Grey to greenish, fine to coarse grained, heterogeneous texture. Weak to moderately CL altered (Original alteration?), weak/moderately MU altered. Comprising deformed fragments/clasts/lapilli or siliceous bands affected by 2 foliation, moderately crenulated, RHYc ? ~ 4-5 % of blue QE. After 119.5 m, strong original CL alteration associated with PO disseminated. It's difficult to be confident for the protolith due to alteration intensity.

<<Min: 112.77 - 119.5 0.5% Min: Pyrrhotite>>

<<Min: 119.5 - 122.15 0.5% Min: Pyrite>>

<<Min: 119.5 - 122.15 2% Min: Pyrrhotite>> Associated with chlorite interval

<<Min: 122.15 - 124.6 0.5% Min: Pyrrhotite>>

<<Min: 124.6 - 126.45 0.5% Min: Pyrite>> Associated with qtz-ca-Cl veins.

<<Min: 124.6 - 126.45 3% Min: Calcite>>

<<Min: 124.6 - 137.15 1% Min: Pyrrhotite>> Matrix disseminated and at the margins of Qtz veins.

<<Alt: 112.77 - 119.5 Moderate (Alt) Muscovite>> Original? Shiny on fracture surface.

<<Alt: 112.77 - 119.5 Weak (Alt) Chlorite>> Occuring as thin pervasive bands.

<<Alt: 119.5 - 123.9 Strong (Alt) Chlorite>> Strong pervasive chlorite associated with PO disseminated.

<<Alt: 123.9 - 135.68 Moderate (Alt) Chlorite>> Original alteration? Associated with Biotite porphyroblats.

<<Vein: 120.85 - 123 8% Quartz-Carbonate>> Interval comprising qtz-+/-dol/ca, strongly deformed/boudinaged, margins strongly chlorite altered.

<<Vein: 124.6 - 125.57 40% Quartz-Carbonate 80 deg. >> Multiple qtz-cal veins, 2-15 cm wide, strongly deformed, subconcordant, margins strongly CL altered.

126.45 127.03 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey-green FG

126.45 - 127.03: Short interval of fine grained MAFi, matrix chlorite altered comprising small biotite porphyroblasts/flakes. Sharp upper and lower contact. Strong calcite, occuring as small blebs and concordant veinlets.

<<Min: 126.45 - 127.03 5% Min: Calcite>>

<<Alt: 126.45 - 144 Weak (Alt) Biotite>> Small biotite porphyroblats/flakes, mm size, distributed within the matrix.

127.03 137.75 RHYv Rhyolite volcaniclastic green FCG

127.03 - 137.75: greenish, fine to coarse grained, massive unit. Comprising clasts/lapilli, siliceous, deformed/flattered, affected by 2 foliation, mm to cm (pebble size) size. Fine grained matrix, moderate CL altered. Characterized by ~10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins/veinlets. Could be volcanoclastic unit (Vl?) or sedimentary unit. It's difficult to be confident for the protolith due to alteration intensity.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
112.77	114.00	1.23	B00232861	3.6	0.009	-0.01	0.05	0.19
114.00	115.50	1.50	B00232862	2.2	-0.005	-0.01	0.02	0.05
119.50	120.85	1.35	B00232863	0.7	-0.005	0.02	-0.01	0.03
120.85	122.15	1.30	B00232864	1.3	-0.005	0.04	0.01	0.09
122.15	123.00	0.85	B00232865	-0.3	-0.005	0.01	-0.01	0.02
123.00	123.90	0.90	B00232866	0.3	-0.005	-0.01	-0.01	0.06

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 127.03 - 135.68 3% Min: Calcite>>

<<Min: 135.68 - 141.5 2% Min: Calcite>>

<<Min: 137.35 - 137.75 3% Min: Pyrite>> Also occuring as bands.

<<Alt: 137.15 - 140 Moderate (Alt) Muscovite>> Associated with fault interval and strong foliation.

<<Struc: 131.5 - 131.51 Moderate (Alt) dominant foliation>>

137.75	**145.15**	**RHYva**	**Coarse grained to ash tuff**	**grey**	**FCG**	140.50	141.20	0.70	B00232867	7.1	0.025	0.37	0.02	0.04

137.75 - 145.15: Grey to greenish, fine grained, +/- homogeneous, moderately altered and foliated. Characterized by ~10% of mm porphyroblasts of biotite disseminated (clots/flakes), locally occuring as bands. Fine grained matrix MU altered. Trace of blue QE disseminated. Could be volcanoclastic (Ash fine grained?) unit or sedimentary unit. It's difficult to be confident for the protolith due to alteration intensity.

<<Min: 137.75 - 140.5 1% Min: Pyrrhotite>>

141.20	142.00	0.80	B00232868	1.5	-0.005	0.04	-0.01	0.05

<<Min: 140.5 - 142 3% Min: Pyrrhotite>> Fracture filling/disseminated.

142.00	142.70	0.70	B00232869	4.3	0.008	0.08	0.06	0.18

<<Min: 140.5 - 142 2% Min: Chalcopyrite>> Fracture filling and locally disseminated. Also within the qtz-carbonate veins.

142.70	143.05	0.35	B00232871	50.8	0.047	0.3	0.95	4.75

<<Min: 141.5 - 146.45 8% Min: Calcite>> Blebs/veinlets and also pervasive

<<Min: 142 - 142.45 0.5% Min: Pyrrhotite>>

<<Min: 142.45 - 142.7 2% Min: Pyrrhotite>> Associated with chlorite bands.

<<Min: 142.45 - 142.7 0.1% Min: Chalcopyrite>>

<<Min: 142.7 - 143.05 10% Min: Sphalerite>> Semi massive band, 2-3 cm wide.

<<Min: 142.7 - 143.05 5% Min: Galena>> Bands, associated with Sp/Cp. CL pervasive.

<<Min: 142.7 - 143.05 2% Min: Chalcopyrite>>

<<Min: 143.05 - 146.45 1% Min: Pyrrhotite>>

<<Alt: 140 - 143.6 Moderate (Alt) Muscovite>>

<<Alt: 140.5 - 143.05 Weak (Alt) Chlorite>> Thin bands of chlorite, concordant, associated with mineralization (GL,SP,CP)

<<Vein: 140.05 - 142 Quartz-Carbonate 85 deg. >> subconcordant qtz-carbonate veins, 2-5 cm, associated with Cp (fracture filling)

<<Struc: 138.4 - 140 Moderate (Alt) Fault>> Interval comprising multiple fault gouge, 1-12 cm wide, irregular oriented.

145.15	**146.45**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**green**	**FCG**

145.15 - 146.45: Short interval of fine grained MAFi, matrix chlorite altered comprising small biotite porphyroblasts/flakes. Diffuse upper and lower contact. Strong calcite, occuring as small blebs and concordant veinlets, also pervasive.

From (m)	To (m)	Rocktype & Description			
146.45	**147.32**	**RHYv**	**Rhyolite volcaniclastic**	**grey**	**FCG**

146.45 - 147.32: Grey, fine to coarse grained. From 147 to 147.2m, banded texture marked by siliceous (leucocrate) bands, could be pebble size lapilli interval or silica alteration.

<<Min: 146.45 - 147 0.5% Min: Pyrrhotite>>

<<Min: 146.45 - 150.6 4% Min: Calcite>>

<<Min: 147 - 147.32 1% Min: Pyrite>>

From (m)	To (m)	Rocktype & Description			
147.32	**147.62**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**	**FMG**

147.32 - 147.62: Short interval of fine grained MAFi, matrix Bi altered. Sharp upper and lower contacts. Strong calcite, occuring as small blebs and concordant veinlets, also pervasive.

<<Min: 147.32 - 147.62 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description			
147.62	**150.60**	**RHYvl**	**Lapilli tuff**	**grey**	**FCG**

147.62 - 150.6: Grey, matrix fine/medium grained, heterogeneous, weak to moderately MU altered. Volcanoclastic unit, alternation of fine/medium grained sequence and pebble size lapilli/clast (very siliceous, banded texture), sorting?

<<Min: 147.62 - 148.36 2% Min: Pyrite>> Coarse grained

<<Min: 148.36 - 153 2% Min: Pyrrhotite>>

From (m)	To (m)	Rocktype & Description			
150.60	**153.00**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**grey-brown**	**FMG**

150.6 - 153: Interval of fine grained MAFi, matrix Bi altered. Sharp upper and lower contacts. Strong calcite, occuring as small blebs and concordant veinlets, also pervasive.

<<Min: 150.6 - 153 8% Min: Calcite>> Pervasive/blebs/veinlets.

<<Struc: 152 - 152.01 Weak (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description			
153.00	**183.50**	**RHYv**	**Rhyolite volcaniclastic**	**grey-green**	**MCG**

153 - 183.5: Dark grey to greenish, medium to coarse grained (heterometric), heterogene texture, moderately chlorite altered (pervasie/patchy). Weakly Bi altered, occuring as thin bands/stringers and also weakly pervasive. Small mm QE (grey) distributed, Unit is comprising heterogeneous siliceous fragment/clast/lapilli? We also observe some chlorite patch, flattered within foliation, similar to mafic clats altered. Polymectic RHYvl? Sedimentary unti?
181.5-183.5m: Interval comprising thin carbonaceous bands?

<<Min: 153 - 153.2 2% Min: Sphalerite>> Stringers

<<Min: 153 - 153.2 2% Min: Pyrrhotite>>

<<Min: 153 - 153.2 0.5% Min: Chalcopyrite>>

<<Min: 153 - 166.2 3% Min: Calcite>> Also thin veinlets/veins

<<Min: 153.2 - 167.6 2% Min: Pyrrhotite>> Finely disseminated within the matrix.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
153.00	153.50	0.50	B00232872	1.8	-0.005	0.01	0.04	0.22

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Min: 166.2 - 167.45 12% Min: Calcite>> Pervasive									
		<<Min: 167.45 - 170.2 5% Min: Calcite>>									
		<<Min: 167.6 - 183.5 0.1% Min: Pyrite>> Locally on fracture surface.									
		<<Min: 167.6 - 191.6 0.5% Min: Pyrrhotite>>									
		<<Min: 170.2 - 183.5 1% Min: Calcite>> Trace.									
		<<Alt: 153 - 174.95 Moderate (Alt) Chlorite>> Patchy (mafic altered clast?) and also pervasive.									
		<<Alt: 166.26 - 167.23 Weak (Alt) Cordierite>> Cordierite porphyroblats? No well developped.									
		<<Alt: 174.95 - 181.4 Moderate (Alt) Chlorite>> Patchy/pervasive and also occuring as bands, fine grained. Original alt process?									
		<<Vein: 169 - 169.4 6% Tourmaline 15 deg. >> Discordant tourmaline vein, +/- calcite, 2 cm wide.									
		<<Struc: 162 - 162.01 Moderate (Alt) Foliation>>									
		<<Struc: 171.15 - 180 Strong (Alt) Fault>> Fault gouge									
		<<Struc: 176 - 176.01 Moderate (Alt) Foliation>>									
		<<Struc: 182 - 182.2 Strong (Alt) Foliation>>									
183.50	**214.35**	**RHYv Rhyolite volcaniclastic FCG**	196.85	197.50	0.65	B00232873	12.2	0.009	0.08	0.26	0.82
		183.5 - 214.35: Grey to greenish, heterogene, strongly foliated, weak to moderately altered (MU/CL). Severals blue QE distributed within matrix. This unit looks like an strongly foliated volcanic agglomerate, clasts supported, polygenetic, pebble to cobble size. The clats are strongly stretched/flattered within foliation, altered Mu and CL, marked a weak "ribbon/banded" texture. Could be alteration bands. Locally comprising CL bands (original alt process?) associated with mineralization (mainly PO) . It's difficult to be confident for the protolith due to alteration/foliation intensity.									
		<<Min: 183.5 - 214.35 3% Min: Calcite>> Associated with veins/veinlets, and disseminated blebs.	197.50	199.00	1.50	B00232874	-0.3	0.007	-0.01	-0.01	0.01
		<<Min: 191.6 - 192 2% Min: Pyrrhotite>> Disseminated within Qtz-Tl vein.	199.00	199.86	0.86	B00232875	0.6	-0.005	0.05	-0.01	0.02
		<<Min: 192 - 196.85 0.5% Min: Pyrrhotite>>	199.86	201.00	1.14	B00232876	0.5	0.013	0.02	-0.01	0.01
		<<Min: 196.85 - 197.5 6% Min: Pyrrhotite>> Wisps/thin stringers and also disseminated.	201.00	201.75	0.75	B00232877	0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 197.5 - 199.55 3% Min: Pyrrhotite>>	201.75	203.00	1.25	B00232878	1.9	0.005	0.03	0.04	0.28
		<<Min: 199.55 - 199.86 3% Min: Pyrite>> At the margins of tml vein.	203.00	204.00	1.00	B00232879	2.6	0.01	0.03	0.03	0.25
		<<Min: 199.55 - 199.86 8% Min: Pyrrhotite>> At the margins of tml vein.	204.00	204.70	0.70	B00232881	0.7	0.024	0.01	-0.01	0.02
		<<Min: 199.55 - 199.86 1% Min: Chalcopyrite>> Associated with Po.									
		<<Min: 199.86 - 201.75 1% Min: Pyrrhotite>>									
		<<Min: 201.75 - 204.7 2% Min: Pyrrhotite>> Wisps and disseminated									
		<<Min: 201.75 - 204.7 0.5% Min: Chalcopyrite>> Associated with PO.									
		<<Min: 204.7 - 214.35 1% Min: Pyrrhotite>>									
		<<Alt: 183.5 - 196.85 Weak (Alt) Chlorite>>									
		<<Alt: 196.85 - 197.5 Strong (Alt) Chlorite>> Interval strongly chlorite altered, fine grained, asscoiated with 5-6% of Po.									
		<<Alt: 197.5 - 213.11 Weak (Alt) Chlorite>>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 211.75 - 221 Weak (Alt) Muscovite>>

<<Vein: 191.6 - 192 6% Tourmaline 15 deg. >> Regular qtz-Tl vein, 2 cm wide, associated with PO.

<<Vein: 193.45 - 193.65 80% Quartz 80 deg. >> massive and deformed qtz vein, subconcordant.

<<Vein: 195.35 - 195.5 70% Quartz>> Deformed qtz vein, strong MU at the margins.

<<Vein: 199.55 - 199.86 10% Tourmaline 25 deg. >> Tourmaline vein, deformed, dismembered, discordant, " step" vein affected by second foliation. Associated with strong PO/py and trace of Cp.

<<Vein: 205.48 - 205.8 70% Quartz>> Massive qtz vein, deformed and irregular. Margins chlorite altered.

<<Struc: 210 - 210.01 Strong (Alt) Foliation>>

214.35 221.00 RHYvl Lapilli tuff light grey FCG

214.35 - 221: Light grey, fine to coarse grained, massive unit, weak/moderately foliated and MU altered. Comprising siliceous clasts/lapilli, weakly flattered with foliation, cm size. Blue QE are distributed within matrix.

<<Min: 214.35 - 221 0.1% Min: Pyrrhotite>>

<<Min: 214.35 - 221 0.5% Min: Calcite>>

<<Vein: 219.35 - 219.75 60% Quartz-Carbonate>> Irregular/deformed qtz-+/-carbonate vein, Margins MU altered.

<<Vein: 220.4 - 220.83 60% Quartz-Carbonate>> irregular/deformed qtz-+/-carbonate vein, Margins MU altered.

<<Struc: 216.8 - 219.2 Weak (Alt) Fault>> Interval comprising few short faults gouge, 2-4 cm wide.

End of Hole @ 221

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-328

Prospect:	Santorini	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	24-Nov-15
UTM Easting	414678	Core Size:	HQ3	Azimuth:	194.8	Date Logging Complete:	27-Nov-15
UTM Northing:	6815205	Casing Pulled?:	Yes	Dip:	-60	Drill Company:	Geotech
UTM Elev. (m):	1429.195	Casing Depth (m):	7	Length (m):	236	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK camp	Drill Completed:	26-Nov-15
Local Elev. (m):						Purpose:	Exploration
						Parent Hole:	

Comments:

K15-328 was drilled to target the Santorini geophysical anomaly. Total planned depth was ~ 250 m and the hole was shut down at 236m. Hole was collared in fine grained RHYvl followed by alternation of volcanoclastic unit and mafic intrusive/sill intervals, characterized by a moderate chlorite alteration, which occurring as very fine grained bands and also pervasive, usually associated with Po/Sp/Cpy mineralization. We intercepted two narrows intervals of OJ (Cpy/GL/Sp rich) at 80.75m (~15cm) and 84.67m (~85cm) hosted within volcanoclastic rhyolite, these intervals were also intensely chlorite altered and contained patchy cordierite porphyroblasts. Interestingly between 197.3 to 232.1m, we intercepted unit of oligomictic, clasts supported, pebble to cobble sized volcanic metaconglomerate. It's difficult to be totally confident for this protolith due to alteration/foliation intensity.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	194.8	0	194.8	APS	Florent Pons	23-Nov-15		☑	
50	-60.2	171.2	22.5	193.7	APS	Florent Pons	23-Nov-15	5743	☑	
77	-60.3	171.2	22.5	193.7	APS	Florent Pons	23-Nov-15	5739	☑	
101	-60.4	173.1	22.5	195.6	APS	Florent Pons	24-Nov-15	5775	☑	
125	-60.4	174.3	22.5	196.8	APS	Florent Pons	24-Nov-15	5731	☑	
152	-60	173.3	22.5	195.8	APS	Florent Pons	24-Nov-15	5734	☑	
173	-60	176	22.5	198.5	APS	Florent Pons	25-Nov-15	5724	☑	
203	-59.9	176	22.5	198.5	APS	Florent Pons	26-Nov-15	5722	☑	
224	-59.7	174.9	22.5	197.4	APS	Florent Pons	26-Nov-15	5728	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**9.78**	**OVBN Overburden**									
0 - 9.78: Casing at 7m											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

9.78 13.10 RHYvl Lapilli tuff beige FCG

9.78 - 13.1: Beige to light grey/greenish, fine to coarse grained matrix, moderately foliated (planar cleavage). Comprising siliceous fragment/lapilli, mm to cm size, stretched and flattered within foliation, and locally appears as dismembered bands. Could be volcanoclastic unit, lapilli tuff. Moderately MU/SI altered.
13.1-13.58m: RHYi intrusive or intense silica alteration band.

<<Min: 9.78 - 13.1 1% Min: Pyrite>>

<<Min: 9.78 - 15.5 2% Min: Calcite>>

13.10 13.58 RHYi Aphanitic Rhyolite (intrusion) grey VFG

13.1 - 13.58: Grey, aphanitic to very fine grained, homogeneous, +/- sharp upper and lower contacts. Intensively siliceous. Could be RHYi intrusive or Intense silica alteration band.

<<Alt: 13.1 - 13.58 Intense (Alt) Silicification>> Associated with RHYi intrusion?

13.58 19.80 RHYvl Lapilli tuff grey-green FCG

13.58 - 19.8: Beige to light grey/greenish, fine to coarse grained matrix, moderately foliated (planar cleavage). Comprising siliceous fragment/lapilli, mm to cm size, stretched and flattered within foliation, and locally appears as dismembered bands. Could be volcanoclastic unit, lapilli tuff. Moderately MU/SI altered.
13.1-13.58m: RHYi intrusive (clast?) or intense silica alteration band. Calcite alteration increases from 15.5m to MAFi contact.

<<Min: 13.58 - 13.9 0.5% Min: Pyrite>>

<<Min: 13.9 - 17.25 2% Min: Pyrite>>

<<Min: 15.5 - 19.8 6% Min: Calcite>> Occuring as thin veinlets and disseminated blebs.

<<Min: 17.25 - 19.8 3% Min: Pyrrhotite>> Occuring as thin stringers.

<<Alt: 14.2 - 19.8 Moderate (Alt) Muscovite>> "shiny" fracture surface.

<<Struc: 15 - 15.01 Moderate (Alt) Foliation>>

19.80 36.35 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green FCG

19.8 - 36.35: Green to brownish, massive, coarse grained, weak/moderately foliated. Comprising BI/CL clots distributed within matrix, cm size, moderately flattered. "gabbroic" texture marked by large CL clots, which could be mafic phenocristal relics (pyroxene/amphibole?). BI occuring as small disseminated clots/flakes, more concentrate at the margins of the unit. Weakly Ca altered, occuring as blebs/patchy and locally pervasive. Trace of mineralization (PO).

<<Min: 19.8 - 22.75 12% Min: Calcite>> Pervasive/blebs and associated with massive qtz-calcite veins.

<<Min: 19.8 - 36.35 0.5% Min: Pyrrhotite>> Trace of PO.

<<Min: 22.75 - 35.2 1% Min: Calcite>> Trace.

<<Min: 35.2 - 42 5% Min: Calcite>> Occuring as thin veinlets and disseminated blebs.

<<Alt: 19.8 - 23 Moderate (Alt) Biotite>> Small/medium sized Bi clots/flakes, distributed within the matrix.

<<Alt: 19.8 - 36.35 Moderate (Alt) Chlorite>> Pervasive and also occuring as altered clots.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 35.2 - 36.35 Moderate (Alt) Biotite>> Small/medium sized Bi clots/flakes, distributed within the matrix.									
		<<Vein: 21.05 - 21.55 45% Quartz-Carbonate>> Interval comprising irregular/deformed/boudinaged qtz-calcite veins.									
		<<Vein: 22.42 - 22.75 70% Quartz-Carbonate>> 2 massive qtz-calcite veins, deformed, discordant.									
		<<Struc: 23 - 23.01 Moderate (Alt) Foliation>>									
36.35	**57.67**	**RHYva Coarse grained to ash tuff light grey FMG** 36.35 - 57.67: Light grey/greenish, fine grained, homogeneous, moderately foliated. <10 % of mm qtz grains distributed within MU altered fine grained matrix. Locally siliceous fragment/lapilli, marked weak banded texture. Probably fine grained ash tuff (dominant) with lapilli. 56-57.67m: Weak diffuse fuschite alteration.	38.90	40.00	1.10	B00232882	0.6	-0.005	-0.01	-0.01	0.41
		<<Min: 36.35 - 38.9 3% Min: Pyrrhotite>>	40.00	41.50	1.50	B00232883	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 38.9 - 45.88 1% Min: Sphalerite>> Occuring as thin deformed stringers, associated with PY.	41.50	43.00	1.50	B00232884	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 38.9 - 45.88 1% Min: Pyrite>> Occuring as thin deformed stringers, associated with Sp.	43.00	44.00	1.00	B00232885	-0.3	-0.005	0.01	-0.01	0.06
		<<Min: 42 - 57.67 3% Min: Calcite>> Occuring as thin veinlets and disseminated blebs.	44.00	44.88	0.88	B00232886	0.5	-0.005	-0.01	-0.01	0.05
		<<Min: 45.88 - 50.05 3% Min: Sphalerite>> Occuring as thin deformed stringers/bands, associated with Py.	44.88	46.00	1.12	B00232887	0.5	-0.005	-0.01	-0.01	0.33
		<<Min: 45.88 - 50.05 2% Min: Pyrite>> Occuring as thin deformed stringers, associated with Sp. Fine grained	46.00	47.50	1.50	B00232888	1.1	-0.005	-0.01	-0.01	0.04
		<<Min: 50.05 - 56 1% Min: Sphalerite>>	47.50	49.00	1.50	B00232889	0.6	-0.005	-0.01	-0.01	0.39
		<<Min: 50.05 - 56 1% Min: Pyrite>>	49.00	50.05	1.05	B00232891	0.7	-0.005	-0.01	-0.01	0.51
		<<Min: 56 - 56.25 4% Min: Sphalerite>> Fracture filling/stringers.	50.05	51.00	0.95	B00232892	0.4	-0.005	-0.01	-0.01	0.03
		<<Min: 56.25 - 57.67 0.5% Min: Pyrite>>	51.00	52.00	1.00	B00232893	0.4	-0.005	-0.01	-0.01	0.05
		<<Min: 56.67 - 57.8 12% Min: Calcite>> Occuring as thin veinlets and very small blebs distributed.	52.00	53.50	1.50	B00232894	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Alt: 56 - 56.25 Intense (Alt) Silicification>> Associated with RHYi (clast?)	53.50	55.00	1.50	B00232895	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Vein: 53.05 - 53.32 80% Quartz>> Irregular/deformed qtz vein, Mu fracture filling.	55.00	56.00	1.00	B00232896	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Struc: 41 - 41.01 Weak (Alt) Foliation>>	56.00	56.67	0.67	B00232897	0.5	-0.005	-0.01	-0.01	0.79
		<<Struc: 44 - 44.01 Moderate (Alt) Foliation>>	56.67	57.80	1.13	B00232898	-0.3	-0.005	-0.01	-0.01	0.05
		<<Struc: 49 - 49.01 Moderate (Alt) Foliation>>									
		<<Struc: 56 - 56.01 Moderate (Alt) Foliation>>									
57.67	**57.88**	**MAFi Mafic Intrusions (primarily footwall mafic intrusion) black MCG** 57.67 - 57.88: Black, medium to coarse grained, homogeneous, strongly BI/calcite altered. Sharp upper and lower contacts. MAFi	57.80	58.74	0.94	B00232899	-0.3	-0.005	-0.01	-0.01	0.08
		<<Min: 57.67 - 57.88 0.1% Min: Pyrite>>									
		<<Min: 57.8 - 58.3 3% Min: Calcite>>									
		<<Alt: 57.67 - 57.88 Strong (Alt) Biotite>> Small/medium sized Bi clots/flakes.									
		<<Struc: 57.67 - 57.68 Contact>> Upper contact of MAFi									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
57.88	**58.74**	**RHYva Coarse grained to ash tuff** 57.88 - 58.74: Light grey/greenish, fine grained, homogeneous, moderately foliated. <10 % of mm qtz grains distributed within MU altered fine grained matrix. Locally siliceous fragment/lapilli, marked weak banded texture. Probably fine grained ash tuff (dominant) with lapilli. Py disseminated. <<Min: 57.88 - 58.7 5% Min: Pyrite>> Coarse grained, subheudral crystals. <<Min: 58.3 - 58.79 10% Min: Calcite>> <<Min: 58.7 - 59.82 4% Min: Sphalerite>> Occuring as veinlets/bands/stringers. <<Min: 58.7 - 59.82 3% Min: Pyrite>>									
58.74	**59.82**	**RHYi Aphanitic Rhyolite (intrusion) VFG** 58.74 - 59.82: Siliceous interval marked by deformed/folded bands, very fine grained.Similar to flow banding texture, clasts within ash tuff? Sharp contacts. Could be RHYi intrusive or intense silica alteration. Interval comprising Sp/Py bands. <<Min: 58.79 - 59.82 3% Min: Calcite>>	58.74	59.82	1.08	B00232901	0.6	0.023	-0.01	-0.01	0.56
59.82	**66.47**	**MAFi Mafic Intrusions (primarily green FCG footwall mafic intrusion)** 59.82 - 66.47: Green to brownish, massive, coarse grained, weak/moderately foliated. Comprising BI/CL clots distributed within matrix, cm size, moderately flattered. "gabbroic" texture marked by large CL clots, which could be mafic phenocristal relics (pyroxene/amphibole?). BI occuring as small disseminated clots/flakes, more concentrate at the margins of the unit. Moderate/strongly Ca altered, occuring as blebs/patchy and locally pervasive. Trace of mineralization (Py). <<Min: 59.82 - 60.15 3% Min: Pyrite>> At the margins of qtz-cal vein. <<Min: 59.82 - 60.15 3% Min: Pyrrhotite>> At the margins of qtz-cal vein. <<Min: 59.82 - 60.15 30% Min: Calcite>> Qtz-cal veins, dm. <<Min: 60.15 - 61.3 12% Min: Calcite>> Occuring as thin veinlets and disseminated blebs. <<Min: 60.15 - 64.45 1% Min: Pyrite>> <<Min: 60.15 - 64.45 1% Min: Pyrrhotite>> <<Min: 61.3 - 66.47 6% Min: Calcite>> Occuring as thin veinlets and disseminated blebs. <<Min: 64.45 - 66.47 2% Min: Pyrite>> <<Min: 64.45 - 66.47 2% Min: Pyrrhotite>> <<Alt: 59.82 - 66.47 Moderate (Alt) Chlorite>> MAFi <<Alt: 59.82 - 66.47 Moderate (Alt) Biotite>> Small/medium sized Bi clots/flakes, distributed within the matrix. Also thin stringers. <<Struc: 62 - 62.01 Moderate (Alt) Foliation>>	59.82	60.20	0.38	B00232902	1.1	0.008	0.01	-0.01	0.05
			60.20	61.50	1.30	B00232903	-0.3	-0.005	-0.01	-0.01	0.02
			61.50	63.00	1.50	B00232904	-0.3	-0.005	-0.01	-0.01	0.01
			63.00	64.45	1.45	B00232905	-0.3	-0.005	-0.01	-0.01	0.01
			64.45	65.50	1.05	B00232906	-0.3	-0.005	-0.01	-0.01	0.02
			65.50	66.47	0.97	B00232907	0.4	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
66.47	**80.75**	**RHYv Rhyolite volcaniclastic grey-green MCG**	66.47	67.00	0.53	B00232908	12.4	0.014	0.09	0.21	1.01
		66.47 - 80.75: Greyish/greenish, medium/coarse grained, +/- homogeneous, weak to moderately MU altered (shiny on fracture surface, original?). From 66.47m to 63.2m strong original chlorite associated with Sp/Py mineralization, become weak after. Unit moderately foliated. Comprising siliceous dismembered bands or/and flattered clast/lapilli, within medium grained matrix. Weakly Sp/Po/mineralized.									
		<<Min: 66.47 - 67 2% Min: Sphalerite>> Occuring as stringers	67.00	68.50	1.50	B00232909	2.5	-0.005	0.02	0.04	0.29
		<<Min: 66.47 - 67 1% Min: Pyrite>>	68.50	70.00	1.50	B00232911	2.6	-0.005	0.05	0.08	0.47
		<<Min: 66.47 - 69 2% Min: Calcite>>	70.00	71.00	1.00	B00232912	0.3	-0.005	-0.01	0.02	0.04
		<<Min: 67 - 69 1% Min: Sphalerite>> Occuring as stringers	71.00	72.50	1.50	B00232913	-0.3	0.006	-0.01	0.01	0.05
		<<Min: 67 - 69 1% Min: Pyrrhotite>> Also thin stringers	72.50	74.00	1.50	B00232914	1	-0.005	0.01	0.05	0.16
		<<Min: 69 - 78.45 0.5% Min: Sphalerite>> Aggregate/blebs at the margins of qtz veins.	74.00	75.50	1.50	B00232915	-0.3	-0.005	-0.01	-0.01	0.02
		<<Min: 69 - 78.45 0.5% Min: Pyrrhotite>>	75.50	77.00	1.50	B00232916	0.6	-0.005	-0.01	-0.01	0.06
		<<Min: 69 - 106 1% Min: Calcite>> Trace	77.00	78.45	1.45	B00232917	0.4	-0.005	-0.01	-0.01	0.31
		<<Min: 78.45 - 80.75 1% Min: Sphalerite>> Occuring as stringers, associated with chlorite bands	78.45	80.00	1.55	B00232918	1.7	-0.005	0.01	0.02	0.72
		<<Min: 78.45 - 80.75 1% Min: Galena>> Associated with chlorite bands.	80.00	80.75	0.75	B00232919	8.9	0.007	0.04	0.19	0.57
		<<Min: 78.45 - 80.75 0.5% Min: Chalcopyrite>> Associated with Cp.									
		<<Alt: 66.47 - 67 Strong (Alt) Chlorite>> Strong chlorite alteration associated with Sp/Py									
		<<Alt: 67 - 68.2 Moderate (Alt) Chlorite>> Occuring as irregular bands, subconcordant.									
		<<Alt: 78.45 - 80.75 Moderate (Alt) Chlorite>> Occuring as irregular bands, subconcordant.									
		<<Vein: 74.5 - 74.7 80% Quartz>> irregular qtz vein, ~ 20 cm wide, discordant, trace of Sp.									
		<<Vein: 76.65 - 77.72 10% Quartz 70 deg. >> 2 irregular qtz vein, ~ 10 cm wide, discordant to subconcordant, trace of Sp.									
		<<Struc: 75 - 75.01 Moderate (Alt) Foliation>>									
80.75	**80.90**	**OJ Heavilly disseminated sulphides in proximal altered rock CG**	80.75	81.10	0.35	B00232921	12.3	0.022	0.07	0.52	1.87
		80.75 - 80.9: Short interval of OJ, strongly chlorite altered (original), Strongly mineralized (Cpy/GL/Sp rich). Mineralization occuring as bands/aggregate/patchy.									
		<<Min: 80.75 - 80.9 6% Min: Sphalerite>>									
		<<Min: 80.75 - 80.9 10% Min: Galena>>									
		<<Min: 80.75 - 80.9 3% Min: Chalcopyrite>>									
		<<Min: 80.75 - 80.9 3% Min: Arsenopyrite>> Coarse grained									
		<<Alt: 80.75 - 81.08 Intense (Alt) Chlorite>> Occuring as irregular bands, subconcordant.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
80.90	**84.67**	**RHYv Rhyolite volcaniclastic green**	81.10	81.50	0.40	B00232922	1.1	-0.005	-0.01	0.02	0.27
80.9 - 84.67: Greyish/greenish, medium/coarse grained, +/- homogeneous, moderately to strongly MU altered, strongly foliated. Comprising siliceous dismembered bands or/and flattered clast/lapilli, within medium grained matrix. Weakly Sp/Po/mineralized.											
<<Min: 80.9 - 81.1 3% Min: Sphalerite>>			81.50	82.05	0.55	B00232923	0.5	-0.005	-0.01	0.01	0.09
<<Min: 81.1 - 84.67 2% Min: Sphalerite>> Occuring as stringers and aggregate within massive qtz vein.			82.05	83.23	1.18	B00232924	-0.3	-0.005	-0.01	-0.01	0.02
<<Alt: 81.08 - 84.67 Moderate (Alt) Muscovite>>			83.23	84.00	0.77	B00232925	-0.3	-0.005	-0.01	-0.01	0.53
<<Vein: 81.05 - 81.3 30% Tourmaline 80 deg. >> 2 tourmaline veins/bands, occuring as fine grained band.			84.00	84.67	0.67	B00232926	-0.3	-0.005	-0.01	-0.01	0.03
<<Vein: 82.25 - 84 95% Quartz>> Large massive milky qtz vein, comprising Sp/Po aggregates.											
<<Struc: 82.05 - 82.18 Strong (Alt) Fault>> Fault gouge											
84.67	**85.50**	**OJ Heavilly disseminated sulphides in proximal altered rock CG**	84.67	85.50	0.83	B00232927	8.1	0.025	0.15	0.06	2.62
84.67 - 85.5: Interval of OJ, strongly chlorite altered (original), Strongly mineralized (Cpy/GL/Sp rich). Mineralization occuring as bands/aggregate/patchy.											
<<Min: 84.67 - 85.5 5% Min: Sphalerite>> Associated with intense chlorite alteration.											
<<Min: 84.67 - 85.5 3% Min: Pyrrhotite>> Associated with intense chlorite alteration.											
<<Min: 84.67 - 85.5 5% Min: Galena>> Associated with intense chlorite alteration.											
<<Min: 84.67 - 85.5 2% Min: Chalcopyrite>> Associated with intense chlorite alteration.											
<<Alt: 84.67 - 85.5 Intense (Alt) Chlorite>>											
85.50	**115.80**	**RHYv Rhyolite volcaniclastic light grey CG**	85.50	86.20	0.70	B00232928	1.6	-0.005	0.01	0.01	0.16
85.5 - 115.8: Light grey to greenish, coarse grained, heterogeneous. Moderately MU altered, "shiny" fracture surface. Weakly chlorite altered. Moderately to strongly foliated. Comprising fragments/clasts/lapilli, gravel to pebble size, siliceous, deformed/folded and locally stretched/flattered. Trace of QE within matrix.											
<<Min: 85.5 - 91.27 2% Min: Pyrrhotite>>			86.20	87.50	1.30	B00232929	-0.3	0.006	-0.01	-0.01	0.04
<<Min: 85.5 - 91.27 5% Min: Pyrite>> Coarse grained, subheudral crystal.			87.50	89.00	1.50	B00232931	0.3	0.006	-0.01	0.01	0.02
<<Min: 85.5 - 91.27 0.5% Min: Galena>>			89.00	90.50	1.50	B00232932	0.4	0.008	-0.01	-0.01	0.05
<<Min: 91.27 - 91.4 4% Min: Galena>>			90.50	91.27	0.77	B00232933	0.6	0.008	-0.01	0.03	0.12
<<Min: 91.27 - 91.4 5% Min: Pyrrhotite>> Band			91.27	91.70	0.43	B00232934	5.2	0.012	0.02	0.18	0.86
<<Min: 91.27 - 91.4 8% Min: Pyrite>> Band			91.70	93.00	1.30	B00232935	0.6	0.01	-0.01	0.02	0.06
<<Min: 91.4 - 102.3 0.5% Min: Galena>> Associated with mineralization bands.			93.00	94.50	1.50	B00232936	2.2	0.012	-0.01	0.11	0.19
<<Min: 91.4 - 102.3 3% Min: Pyrrhotite>> Locally occuring as bands			94.50	96.00	1.50	B00232937	0.5	0.005	-0.01	0.02	0.23
<<Min: 91.4 - 102.3 5% Min: Pyrite>> Locally occuring as bands			96.00	97.50	1.50	B00232938	0.4	-0.005	-0.01	0.01	0.03

From (m)	To (m)	Rocktype & Description
		<<Min: 91.4 - 102.3 1% Min: Sphalerite>> Associated with mineralization bands.
		<<Min: 102.3 - 109.03 4% Min: Pyrrhotite>> Occuring as deformed bands associated with Py, also disseminated within matrix (coarse grained).
		<<Min: 102.3 - 109.03 6% Min: Pyrite>> Occuring as deformed bands, also disseminated within matrix (coarse grained).
		<<Min: 102.3 - 109.03 1% Min: Sphalerite>> Trace of thin Sp stringers.
		<<Min: 106 - 109 4% Min: Calcite>>
		<<Min: 109 - 115.8 3% Min: Calcite>> Blebs disseminated.
		<<Min: 110.03 - 111.52 1% Min: Pyrite>>
		<<Min: 111.52 - 111.65 1% Min: Chalcopyrite>>
		<<Min: 111.52 - 111.65 5% Min: Galena>> Associated with Po/Sp band
		<<Min: 111.52 - 111.65 40% Min: Pyrrhotite>> Occuring as band.
		<<Min: 111.52 - 111.65 5% Min: Sphalerite>> Occuring as band.
		<<Min: 112.7 - 112.83 2% Min: Chalcopyrite>>
		<<Min: 112.7 - 112.83 55% Min: Pyrrhotite>> Occuring as semi massive band
		<<Min: 112.83 - 113.58 0.5% Min: Chalcopyrite>> Associated with Po aggregate
		<<Min: 112.83 - 113.58 3% Min: Pyrrhotite>> Aggregate
		<<Min: 113.58 - 113.73 2% Min: Pyrrhotite>>
		<<Min: 113.73 - 113.81 1% Min: Chalcopyrite>>
		<<Min: 113.73 - 113.81 5% Min: Galena>> Associated with PO band.
		<<Min: 113.73 - 113.81 40% Min: Pyrrhotite>> Occuring as semi massive band
		<<Min: 113.81 - 116.66 2% Min: Pyrrhotite>>
		<<Min: 113.81 - 116.66 0.5% Min: Chalcopyrite>> ssociated with PO
		<<Alt: 86.2 - 87 Moderate (Alt) Silicification>>
		<<Alt: 105.5 - 106.9 Weak (Alt) Cordierite>> Small porphyroblasts subrounded. Original?
		<<Alt: 106.1 - 121.73 Weak (Alt) Chlorite>> Original alt process?
		<<Vein: 85.5 - 86.2 40% Quartz-Carbonate>> Deformed and dismembered qtz-carbonate veins.
		<<Vein: 109.03 - 109.5 30% Tourmaline 20 deg. >> Discordant qtz-Tl vein,
		<<Vein: 112.9 - 113.58 25% Quartz>> Interval comprising irregular and strongly deformed qtz veins, asociated with weak tourmaline. Po aggregates disseminated.
		<<Struc: 93 - 93.01 Vein>> Mineralization bands
		<<Struc: 112.5 - 112.51 Moderate (Alt) Foliation>>
		<<Struc: 112.83 - 112.84 Contact>> Band of semi massive sulphide

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
97.50	99.00	1.50	B00232939	0.4	0.005	0.02	0.01	0.03
99.00	100.50	1.50	B00232941	0.6	0.006	-0.01	0.02	0.08
100.50	101.50	1.00	B00232942	0.4	-0.005	-0.01	-0.01	0.02
101.50	102.30	0.80	B00232943	0.3	0.007	-0.01	-0.01	0.02
102.30	103.50	1.20	B00232944	0.5	0.007	-0.01	0.02	0.03
103.50	105.00	1.50	B00232945	0.4	-0.005	-0.01	0.02	0.07
105.00	106.10	1.10	B00232946	1	0.005	-0.01	0.04	0.12
106.10	107.50	1.40	B00232947	0.5	0.006	-0.01	0.01	0.1
107.50	109.00	1.50	B00232948	1	-0.005	0.01	0.03	0.11
109.00	110.50	1.50	B00232949	0.8	-0.005	0.01	0.02	0.15
110.50	111.52	1.02	B00232951	0.8	-0.005	-0.01	-0.01	0.24
111.52	111.92	0.40	B00232952	5.8	-0.005	0.09	0.1	1.28
111.92	112.55	0.63	B00232953	1.4	-0.005	-0.01	0.06	0.1
112.55	112.90	0.35	B00232954	7.1	0.007	0.15	0.17	0.63
112.90	113.58	0.68	B00232955	1.2	-0.005	0.03	0.02	0.02
113.58	114.00	0.42	B00232956	6.6	0.007	0.06	0.34	0.34
114.00	115.00	1.00	B00232957	1.3	-0.005	0.01	0.02	0.22
115.00	115.80	0.80	B00232958	1	-0.005	0.01	0.01	0.08

From (m)	To (m)	Rocktype & Description				From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
115.80	**116.66**	**MAFi**	**Mafic Intrusions (primarily footwall mafic intrusion)**	**dark grey**	**FG**	115.80	116.66	0.86	B00232959	0.5	-0.005	0.02	-0.01	0.02
115.8 - 116.66: Interval of fine grained MAFi, matrix Bi altered. Sharp lower contact. Strong pervasive calcite. Could be sediment or ash tuff.														
<<Min: 115.8 - 116.66 12% Min: Calcite>> Pervasive,blebs and thin veinlets.														
116.66	**121.73**	**RHYv**	**Rhyolite volcaniclastic**	**green**	**CG**	116.66	118.00	1.34	B00232961	-0.3	-0.005	0.01	-0.01	0.01
116.66 - 121.73: Light grey to greenish, coarse grained, heterogeneous. Moderately MU altered, "shiny" fracture surface. Weakly to moderate chlorite altered. Moderately foliated. Comprising fragments/clasts/lapilli, gravel to pebble size, siliceous, deformed/folded and locally stretched/flattered. Trace of QE within matrix.														
<<Min: 116.66 - 121.73 1% Min: Pyrrhotite>>						118.00	119.00	1.00	B00232962	-0.3	-0.005	-0.01	-0.01	0.01
<<Min: 116.66 - 138.12 2% Min: Calcite>> Disseminated blebs and veins associated.						119.00	120.50	1.50	B00232963	-0.3	-0.005	-0.01	-0.01	-0.01
<<Vein: 116.66 - 117.35 20% Quartz>> 2 qtz-chlorite veins, 10 cm wide, diffuse margins. Po/Py fracture filling.						120.50	121.73	1.23	B00232964	0.5	-0.005	-0.01	-0.01	0.01
<<Vein: 120.95 - 121.72 25% Quartz-Carbonate>> interval comprising qtz-carbonate veins, strongly deformed/boudinaged. Discordant.														
121.73	**134.50**	**RHY**	**undifferentiated rhyolite**	**green**	**FMG**	121.73	123.00	1.27	B00232965	0.8	0.006	0.02	-0.01	0.06
121.73 - 134.5: Green, fine to coarse grained, strongly chlorite altered (original alt process?) associated with Sp/Cpy/Po (bands/stringers). Strongly foliated. Pervasive chlorite and also occuring as bands. Comprising ~ 10 % of subconcordant qtz-cal veins/veinlets, deformed/dismembered. Chlorite schist.														
<<Min: 121.73 - 127.25 1% Min: Galena>> Associated with Sp stringers.						123.00	124.50	1.50	B00232966	0.5	-0.005	-0.01	-0.01	0.03
<<Min: 121.73 - 127.25 3% Min: Pyrrhotite>> Also occuring as thin stringers.						124.50	126.00	1.50	B00232967	5.9	-0.005	0.02	0.06	0.42
<<Min: 121.73 - 127.25 1% Min: Sphalerite>> Also occuring as thin stringers. Locally associated with Gl and Cpy						126.00	127.25	1.25	B00232968	0.8	-0.005	-0.01	-0.01	0.05
<<Min: 121.73 - 127.25 0.5% Min: Chalcopyrite>> Asociated with Sp						127.25	128.55	1.30	B00232969	2.3	-0.005	0.04	-0.01	0.39
<<Min: 127.25 - 128.55 1% Min: Galena>> Associated with Sp stringers.						128.55	129.80	1.25	B00232971	1.2	-0.005	-0.01	-0.01	0.1
<<Min: 127.25 - 128.55 1% Min: Pyrite>>						129.80	130.97	1.17	B00232972	2.4	-0.005	0.01	-0.01	0.13
<<Min: 127.25 - 128.55 4% Min: Sphalerite>> Thin stringers associated with Gl						130.97	131.60	0.63	B00232973	13.4	0.03	0.39	0.02	1.66
<<Min: 128.55 - 130.97 1% Min: Sphalerite>> Stringers						131.60	133.00	1.40	B00232974	1.9	-0.005	-0.01	0.01	0.07
<<Min: 128.55 - 130.97 1% Min: Pyrite>>						133.00	133.85	0.85	B00232975	0.4	-0.005	-0.01	-0.01	0.03
<<Min: 130.97 - 131.6 1% Min: Galena>>						133.85	134.50	0.65	B00232976	10.5	0.02	0.39	0.04	0.13
<<Min: 130.97 - 131.6 3% Min: Pyrite>> Associated with intense chlorite alteration														
<<Min: 130.97 - 131.6 2% Min: Sphalerite>> Thin stringers/bands														
<<Min: 130.97 - 131.6 3% Min: Chalcopyrite>> Associated with intense chlorite alteration														
<<Min: 131.6 - 133.85 1% Min: Pyrrhotite>>														
<<Min: 131.6 - 133.85 1% Min: Pyrite>>														
<<Min: 133.85 - 134.5 1% Min: Pyrite>>														

From (m)	To (m)	Rocktype & Description

<<Min: 133.85 - 134.5 3% Min: Chalcopyrite>> Fracture filling

<<Min: 133.85 - 134.5 3% Min: Pyrrhotite>>

<<Alt: 121.73 - 134.5 Strong (Alt) Chlorite>> Strong Chlorite alteration associated with mineralization.

134.50 138.12 RHYv Rhyolite volcaniclastic grey CG

134.5 - 138.12: grey, coarse grained, massive unit. Comprising clasts/lapilli, siliceous, deformed/flattered, locally affected by 2 foliation, mm to cm (pebble size) size. Moderately CL altered. Characterized by ~10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins/veinlets. Probably volcanoclastic unit (Vl?).

<<Min: 134.5 - 143.55 1% Min: Pyrite>> disseminated/wispy

<<Min: 134.5 - 143.55 0.5% Min: Pyrrhotite>> disseminated/wispy

<<Alt: 134.5 - 145 Moderate (Alt) Chlorite>> Original alt process? Weak to moderate chlorite alteration (pervasive)

<<Alt: 136 - 160 Weak (Alt) Biotite>> Small biotite porphyroblats/flakes, mm size, distributed within the matrix.

138.12 138.65 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey FMG

138.12 - 138.65: Short interval of fine grained MAFi, matrix chlorite altered comprising small biotite porphyroblasts/flakes. Diffuse upper and lower contact. Strong calcite, occuring as small blebs and concordant veinlets, also pervasive.

<<Min: 138.12 - 138.65 12% Min: Calcite>> Occuring as thin veinlets and disseminated blebs. Also pervasive

138.65 140.55 RHYv Rhyolite volcaniclastic grey CG

138.65 - 140.55: grey, coarse grained, massive unit. Comprising clasts/lapilli, siliceous, deformed/flattered, locally affected by 2 foliation, mm to cm (pebble size) size. Moderately CL altered. Characterized by ~10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins/veinlets. Probably volcanoclastic unit (Vl?).

<<Min: 138.65 - 140.55 0.5% Min: Calcite>>

140.55 141.20 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey FMG

140.55 - 141.2: Short interval of fine grained MAFi, matrix chlorite altered comprising small biotite porphyroblasts/flakes. Diffuse upper and lower contact. Strong calcite, occuring as small blebs and concordant veinlets, also pervasive.

<<Min: 140.55 - 141.2 12% Min: Calcite>> Occuring as thin veinlets and disseminated blebs. Also pervasive

141.20 150.35 RHYv Rhyolite volcaniclastic grey CG

141.2 - 150.35: grey, coarse grained, massive unit. Comprising clasts/lapilli, siliceous, deformed/flattered, locally affected by 2 foliation, mm to cm (gravel to pebble size). Moderately CL and weakly Si altered. Characterized by >10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins/veinlets.From 148.6 to 150.35m, medium grained ash? Bedding texture marked by alternation of ash tuff and lapilli sequence. Probably volcanoclastic unit (Vl?).

<<Min: 141.2 - 162.45 1% Min: Calcite>> Trace.

<<Min: 143.55 - 162.45 0.5% Min: Pyrite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
134.50	136.00	1.50	B00232977	-0.3	-0.005	-0.01	-0.01	0.01
136.00	137.00	1.00	B00232978	0.5	-0.005	-0.01	-0.01	0.01
137.00	138.12	1.12	B00232979	-0.3	-0.005	-0.01	-0.01	0.02

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 143.55 - 162.45 0.5% Min: Pyrrhotite>>

150.35 151.90 RHYcw Curdy textured-flow banded (flows, subvolcanics) cream FG

150.35 - 151.9: Interval marked by "flow banded" texture, marked by siliceous (leucocratic) bands/clasts, concordant, locally dismembered? Seems intercaled by moderate/coarse grained tuff, bedding. Could be clasts/lapilli supported sequence (over 80 %) or Silica alteration? No sharp contacts, no strong evidence for RHYcw.

<<Alt: 150.35 - 151.9 Strong (Alt) Silicification>> Occuring as bands. Banded texture

151.90 162.45 RHYv Rhyolite volcaniclastic grey CG

151.9 - 162.45: grey, coarse grained, massive unit. Comprising clasts/lapilli, siliceous, deformed/flattered, locally affected by 2 foliation, mm to cm (gravel to pebble size) size. Moderately CL and weakly Si altered. Characterized by >10% of mm porphyroblasts of biotite disseminated (clots/flakes). Comprising qtz-ca-+/-Cl veins/veinlets.From 148.6 to 150.35m, medium grained ash? Bedding texture marked by alternation of fine/medium grained ash tuff and lapilli sequence. Probably volcanoclastic unit (Vl?).

<<Vein: 158.3 - 158.6 40% Quartz>> Irregular and deformed qtz veins, "boudinaged" texture, centimetric.

<<Struc: 152 - 152.01 Moderate (Alt) Foliation>>

<<Struc: 161.05 - 161.3 Strong (Alt) Fault>> Fault gouge

162.45 164.45 MAFi Mafic Intrusions (primarily footwall mafic intrusion) dark grey FMG

162.45 - 164.45: Dark grey, fine to medium grained, strongly calcite altered (pervasive). Matrix biotite altered, pervasive. Could be mafic intrusive.

<<Min: 162.45 - 164.45 3% Min: Pyrite>> Very thin wisps/stringers.

<<Min: 162.45 - 164.45 3% Min: Pyrrhotite>> Very thin wisps/stringers.

<<Min: 162.45 - 164.45 10% Min: Calcite>> MAFi associated.

164.45 168.12 RHYva Coarse grained to ash tuff grey FCG

164.45 - 168.12: Grey, fine grained, bedding texture marked by lapillitic/clastic sequence. Blue QE are distributed within matrix. Unit moderately/strobgly factured.

<<Min: 164.45 - 168.12 1% Min: Pyrrhotite>> Disseminated

<<Min: 164.45 - 168.12 2% Min: Calcite>>

<<Alt: 167.2 - 168.12 Intense (Alt) Silicification>> Pervasive. Associated with siliceous bands/lapillis?

<<Struc: 165.7 - 167.2 Moderate (Alt) Fault>> Interval comprising multiple minor fault gouge. Moderately fractured.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

168.12 170.37 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey FCG

168.12 - 170.37: Dark grey, fine to medium grained, strongly calcite altered (pervasive). Matrix biotite altered, pervasive. Could be mafic intrusive.

<<Min: 168.12 - 170.37 5% Min: Pyrrhotite>> Disseminated

<<Min: 168.12 - 170.37 10% Min: Calcite>> MAFi associated.

<<Alt: 168.12 - 170.37 Moderate (Alt) Biotite>> Pervasive and porphyroblasts/flakes. Associated with MAFi interval.

<<Vein: 168.12 - 169.2 40% Quartz-Carbonate>> Interval comprising multiple qtz-carbonate veins, strongly deformed, decimetric size, Po at the margins.

<<Struc: 170 - 170.01 Moderate (Alt) Foliation>>

170.37 176.00 RHYva Coarse grained to ash tuff grey FCG

170.37 - 176: Grey, fine grained, weak/moderately chlorite altered (pervasive). ~ 5 % of small crystals/porphyroblasts distributed with matrix, could be felspar relics. Comprising interval of lapilli/clasts, pebble size, with sorting well conserved. This intervals occuring as bands with "flow banded" texture. Blue QE disseminated.

<<Min: 170.37 - 174.33 3% Min: Pyrrhotite>>

<<Min: 170.37 - 182.48 4% Min: Calcite>> Also thin veinlets

<<Min: 174.33 - 177.65 2% Min: Pyrrhotite>> Wisps/disseminated.

<<Min: 174.33 - 182.48 1% Min: Pyrite>>

<<Alt: 172.4 - 173.1 Strong (Alt) Silicification>> Pervasive. Associated with siliceous bands/lapillis?

<<Vein: 171.3 - 173.45 5% Quartz 80 deg. >> Multiple qtz veins, associated with carbonate (weak), subconcordant, deformed, 1-5 cm wide.

176.00 182.48 RHYv Rhyolite volcaniclastic grey-brown FCG

176 - 182.48: Grey to brownish, heterogene, strongly foliated, weak to moderately altered (MU/CL/bi). This unit looks like an strongly foliated volcanic agglomerate, clasts supported, polygenetic, pebble to cobble size. The clats are strongly stretched/flattered within foliation, altered Mu and CL, marked a weak "ribbon/banded" texture. Could be alteration bands within volcanoclastic RHY. It's difficult to be confident for the protolith (agglomerate) due to alteration/foliation intensity.

<<Alt: 176 - 182.48 Weak (Alt) Chlorite>>

<<Alt: 177.6 - 182.48 Weak (Alt) Biotite>> Also occuring as bands.

182.48 183.65 RHYva Coarse grained to ash tuff brown FG

182.48 - 183.65: Brownish, fine to medium grained, bedding texture marked by thin fine grained beds. Ash tuffaceous interval. Gradual contacts.

<<Min: 182.48 - 183.65 3% Min: Pyrite>>

<<Min: 182.48 - 183.65 12% Min: Calcite>> Disseminated within fine grained RHYva,

<<Alt: 182.48 - 183.65 Moderate (Alt) Biotite>> Associated with fine grained ash tuff.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Vein: 182.87 - 183.15 60% Quartz>> deformed qtz-carb-Cl veins, crosscuted by tourmaline veinlet.

<<Struc: 182.5 - 182.51 >>

183.65 197.30 RHYv Rhyolite volcaniclastic grey-green FCG

183.65 - 197.3: Grey to brownish, heterogene, strongly foliated, weak to moderately altered (MU/CL/bi). This unit looks like an strongly foliated volcanoclastic unit, clasts supported, polygenetic, pebble size. The clats are strongly stretched/flattered within foliation, altered Mu and CL. Could be alteration bands within volcanoclastic RHY.

<<Min: 183.65 - 184.75 1% Min: Pyrite>>

<<Min: 183.65 - 188 4% Min: Calcite>>

<<Min: 183.65 - 222.7 1% Min: Calcite>> Locally associated with veins/veinlets

<<Min: 184.75 - 185.26 2% Min: Pyrite>> At the margins of tourmaline veins.

<<Min: 185.26 - 212.82 0.5% Min: Pyrite>>

<<Alt: 183.65 - 197.3 Moderate (Alt) Chlorite>>

<<Vein: 184.75 - 185.26 15% Tourmaline>> Multiple thin tourmaline veinlets, as bands, fracture filling. Associated with py. Discordant, irregular oriented.

<<Struc: 185.7 - 185.71 Moderate (Alt) Foliation>>

<<Struc: 192 - 192.01 Moderate (Alt) Foliation>>

197.30 222.70 RHYv Rhyolite volcaniclastic grey-green FCG

197.3 - 222.7: Grey to greenish, heterogene, strongly foliated, weak to moderately altered (MU/CL). Severals blue QE distributed within matrix. This unit looks like an strongly foliated volcanic agglomerate, clasts supported, polygenetic, mostly siliceous, pebble to cobble size. The clats are strongly stretched/flattered within foliation, altered Mu and CL, marked a weak "ribbon/banded" texture. Could be alteration bands. Locally comprising CL bands (original alt process?) associated with mineralization (mainly PO) . It's difficult to be confident for the protolith due to alteration/foliation intensity.

217.8-219.3m: "banded/curdy" texture marked by siliceous clats/lapillis.

<<Min: 206 - 212.82 0.1% Min: Pyrrhotite>>

<<Min: 212.82 - 214.6 2% Min: Pyrrhotite>> Associated with chlorite bands.

<<Min: 214.6 - 221.55 1% Min: Pyrrhotite>> Disseminated, usually associated with chlorite bands.

<<Min: 221.55 - 222.7 2% Min: Pyrrhotite>> Disseminated within matrix, small wisps.

<<Alt: 197.3 - 232.1 Weak (Alt) Chlorite>> Weak/moderate. Thin subconcordant bands, clasts altered? Locally patchy. Weak "ribbon" texture.

<<Alt: 197.3 - 236 Weak (Alt) Muscovite>> Pervasive/bands. Marked a weak "ribbon" texture with CL alteration. Shiny fracture surface.

<<Vein: 201.45 - 220.9 25% Quartz 75 deg. >> Interval comprising multiple deformed qtz veins, 2-10 cmwide.

<<Vein: 211.15 - 212.45 15% Quartz>> Group of deformed/folded qtz veiins, dismembered, 2-5 cm wide.

<<Struc: 209 - 209.01 Strong (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

222.70 223.25 MAFi Mafic Intrusions (primarily footwall mafic intrusion) grey FG

222.7 - 223.25: Grey/brownish, fine grained, homogeneous. Strongly calcite altered (pervasive). >5% of Po disseminated. Could be mafic intrusive.

<<Min: 222.7 - 223.25 5% Min: Pyrrhotite>> Patchy/wisps and finely disseminated wihtin MAFi interval?

<<Min: 222.7 - 223.25 12% Min: Calcite>> Finely disseminated/pervasive.

223.25 232.10 RHYv Rhyolite volcaniclastic grey-green FCG

223.25 - 232.1: Grey to greenish, heterogene, strongly foliated, weak to moderately altered (MU/CL). Severals blue QE distributed within matrix. This unit looks like an strongly foliated volcanic agglomerate, clasts supported, polygenetic, mostly siliceous, pebble to cobble size. The clats are strongly stretched/flattered within foliation, altered Mu and CL, marked a weak "ribbon/banded" texture. Could be alteration bands. Locally comprising CL bands (original alt process?) associated with mineralization (mainly PO) . It's difficult to be confident for the protolith due to alteration/foliation intensity.

<<Min: 223.25 - 225.52 2% Min: Pyrrhotite>> Disseminated within matrix, small wisps.

<<Min: 223.25 - 229 1% Min: Calcite>>

<<Min: 225.52 - 229.15 1% Min: Pyrrhotite>>

<<Min: 229 - 232 3% Min: Calcite>>

<<Min: 229.15 - 229.42 2% Min: Pyrrhotite>> Associated with TL vein.

<<Min: 229.42 - 236 0.5% Min: Pyrrhotite>> Trace.

<<Min: 232 - 236 1% Min: Calcite>>

<<Vein: 225.52 - 225.7 70% Quartz 80 deg. >> irregular qtz vein, +/- dolomite, diffuse margins (chlorite altered)

<<Vein: 229.15 - 229.42 30% Tourmaline 35 deg. >> Discordant qtz-tourmaline vein, ~35 ac, diffuse margins (TL altered). 2 % po

<<Struc: 228 - 228.01 Strong (Alt) Foliation>>

232.10 236.00 RHYvl Lapilli tuff beige FCG

232.1 - 236: Beige to light grey, fine to coarse grained, massive unit, weak/moderately foliated and MU altered. Comprising siliceous clasts/lapilli, weakly flattered with foliation, cm size. Blue QE are distributed within matrix. Trace of disseminated Po.

<<Vein: 235 - 235.4 40% Quartz 20 deg. >> Discordant regular qtz vein, tourmaline at the selvages and fracture filing . 3-4 cm wide.

<<Struc: 233.68 - 233.78 Moderate (Alt) Fault>> Minor fault.

End of Hole @ 236

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-329

Prospect:	FCZ	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	David Nuttal
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	David Nuttal	Date Logging Start:	24-Nov-15
UTM Easting	414801	Core Size:	HQ3	Azimuth:	180.29	Date Logging Complete:	26-Nov-15
UTM Northing:	6814638	Casing Pulled?:	Yes	Dip:	-55	Drill Company:	Geotech
UTM Elev. (m):	1422.38	Casing Depth (m):	6.5	Length (m):	200	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	23-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	25-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

The objective of drill hole K15-329 (KX15-FC1) was to explore for mineralization (exploration) based on the Fault Creek VTEM anomaly south of the Fault Creek fault trace. The hole is composed of a thick package of felsic volcaniclastic rocks; dominantly RHYva/RHYvl. Narrow mafic dikes intersect the felsic volcanics between 74m to 92m depth. Moderate to intense chloritic alteration is observed from 117.73m to 162m depth and weak chloritic alteration is patchy down to 200m. Weak OJ-type mineralization (intense chlorite alteration accompanied by CP-SP-GL-PY-PO) is observed from 152.25m to 152.69m and from 158m to 161m. Muscovite mineralization is weak to moderate through to the bottom of the hole; intensity increases proximal to faults and quartz veins. Average of dominant beta angles point NNE. Average of dominant alpha angles dip 70 degrees. *NOTE WORTHY INFORMATION: intervals 117.73m - 126.58m, 152m - 153m and 158m - 161m are suspected to be failed MXSX lenses, proximal to stringer zones, distal extentions of MXSX, or indicators of proximity to strong hydrothermal activity.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-55	180.29	0	180.29	APS	David Nuttal	23-Nov-15		☑	
29	-55.2	157.1	22.5	179.6	APS	David Nuttal	24-Nov-15	5744	☑	
56	-55.6	157.4	22.5	179.9	APS	David Nuttal	24-Nov-15	5736	☑	
89	-55.8	157.6	22.5	180.1	APS	David Nuttal	24-Nov-15	5736	☑	
119	-55.4	22	22.5	44.5	APS	David Nuttal	25-Nov-15	3986	☐	
149	-56.1	157.9	22.5	180.4	APS	David Nuttal	25-Nov-15	5760	☑	
179	-56.2	158.9	22.5	181.4	APS	David Nuttal	25-Nov-15	5736	☑	
200	-55.9	159.7	22.5	182.2	APS	David Nuttal	25-Nov-15	5741	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**6.50**	**CASN Casing**									
6.50	**14.00**	**OVBN Overburden**									
14.00	**26.00**	**RHYv Rhyolite volcaniclastic light grey FMG**									
14 - 26: Light grey, fine grained, PY bearing (~3-5%), well foliated, QZ-MU-PY felsic volcaniclastic rock. Quartz-rich, lapilli-sized domains present.											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 14 - 26 3% Min: Pyrite>>
<<Min: 14 - 29.29 0.5% Min: Calcite>>
<<Min: 14 - 49.11 0.5% Min: Pyrrhotite>>
<<Alt: 14 - 42.8 Weak (Alt) Muscovite>>
<<Struc: 17 - 17.08 Weak (Alt) Fault>>
<<Struc: 19.06 - 19.24 Weak (Alt) Fault>>
<<Struc: 21.13 - 21.36 Weak (Alt) Fault>>
<<Struc: 23.89 - 23.92 Weak (Alt) Fault>>
<<Struc: 25.02 - 25.1 Weak (Alt) Fault>>

26.00 35.66 RHYvl Lapilli tuff light grey

26 - 35.66: Light grey, QZ-MU volcaniclastic, well foliated, felsic lapilli tuff. PY ~3%

<<Min: 26 - 49.74 5% Min: Pyrite>>
<<Min: 29.29 - 44.5 1% Min: Calcite>>
<<Alt: 29.15 - 31.4 Trace (Alt) Chlorite>>
<<Struc: 29.79 - 29.95 Weak (Alt) Fault>>
<<Struc: 31.42 - 31.42 dominant foliation>>
<<Struc: 31.55 - 31.55 dominant foliation>>
<<Struc: 33.22 - 33.3 Weak (Alt) Fault>>
<<Struc: 35.25 - 35.25 dominant foliation>> Spurious? Or second foliation?

35.66 36.68 RHYc Rhyolite coherant volcanics leucocratic

35.66 - 36.68: Leucocratic, siliceous, felsic QZ-MU coherent volcanic rock with wide foliation domains. PY mineralization (3%) along foliation planes.

<<Struc: 36.15 - 36.28 Weak (Alt) Fault>>

36.68 43.95 RHYvl Lapilli tuff light grey CG

36.68 - 43.95: Light grey, well foliated, siliceous, coarse-grained to lapilli bearing, felsic, volcaniclastic rock. Blebs, lenses and pods of PY mineralization ~3%.

<<Alt: 42.8 - 43.5 Strong (Alt) Muscovite>> Intensity increases towards quartz vein 43.06m-43.4m
<<Alt: 43.5 - 73.6 Moderate (Alt) Muscovite>>
<<Vein: 43.06 - 43.4 Quartz>> Massive foliation parallel quartz vein
<<Struc: 37.46 - 37.61 Weak (Alt) Fault>>
<<Struc: 37.81 - 38.78 Weak (Alt) Fault>>
<<Struc: 39.2 - 39.3 Weak (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 39.6 - 39.9 Weak (Alt) Fault>>

<<Struc: 40.14 - 40.26 Weak (Alt) Fault>>

<<Struc: 43.8 - 43.8 dominant foliation>>

43.95 49.11 RHYvl Lapilli tuff grey CG

43.95 - 49.11: Grey, well foliated, coarse-grained to lapilli bearing felsic, volcaniclastic rock. PY occurs in lenses and pods (~3-5%), PO is disseminated as foliation parallel clots (~2%). Blue, subrounded to tear-drop shaped, millimeter sized, quartz-eyes present. Narrow, foliation parallel, calcite banded, fine-grained mafic intrusion present at 44.6m to 44.8m. Chlorite alteration (intensity 2) and coarse grained PY from 44.8m to 45.3m.

<<Min: 44.5 - 54 5% Min: Calcite>>

<<Alt: 44.9 - 49.74 Weak (Alt) Chlorite>>

49.11 49.74 RHYc Rhyolite coherant volcanics cream CG

49.11 - 49.74: Cream colored, siliceous, coarse-grained, felsic coherent, volcanic. Foliation parallel PO band at 49.38m.

<<Min: 49.11 - 49.74 2% Min: Pyrrhotite>>

49.74 53.37 RHYvl Lapilli tuff grey

49.74 - 53.37: Grey, felsic, lapilli bearing QZ-MU volcaniclastic. QE-bearing.

<<Min: 49.74 - 54.1 3% Min: Pyrite>>

53.37 54.00 RHYc Rhyolite coherant volcanics cream CG

53.37 - 54: QZ-MU felsic coherent volcanic. Minor chlorite alteration along foliations.

54.00 73.61 RHYv Rhyolite volcaniclastic grey

54 - 73.61: Grey, well foliated, QZ-MU volcaniclastic. Finely disseminated pyrite occurrs through most of the the interval (~5%). Texturally appears both well bedded and also convoluted. Lapilli sized QZ-rich domains are present though do not dominate the rock type at any part of the interval. Suspected fine-grained-coarse-grained ash or tuff.

<<Min: 54 - 70 1% Min: Calcite>>

<<Min: 54.1 - 73.61 5% Min: Pyrite>> Also finely disseminated

<<Min: 70 - 73.61 5% Min: Calcite>>

<<Struc: 59.82 - 60.46 Weak (Alt) Fault>>

<<Struc: 60.62 - 61 Weak (Alt) Fault>>

<<Struc: 61.23 - 61.62 Weak (Alt) Fault>>

<<Struc: 61.9 - 62.24 Weak (Alt) Fault>>

<<Struc: 63.1 - 63.22 Weak (Alt) Fault>>

<<Struc: 66.38 - 66.55 Weak (Alt) Fault>>

<<Struc: 66.93 - 67 Weak (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 67.2 - 68.2 Moderate (Alt) Fault>>

<<Struc: 69.28 - 69.34 Weak (Alt) Fault>>

<<Struc: 69.48 - 69.52 Weak (Alt) Fault>>

<<Struc: 72.6 - 72.65 Weak (Alt) Fault>>

73.61 74.67 MAFi Mafic Intrusions (primarily footwall mafic intrusion) melanocratic

<<Min: 73.61 - 74.67 0.5% Min: Pyrite>>

<<Min: 73.61 - 74.67 0.5% Min: Pyrrhotite>>

<<Min: 73.61 - 74.67 10% Min: Calcite>>

<<Struc: 73.86 - 73.95 Weak (Alt) Fault>>

74.67 81.40 RHYv Rhyolite volcaniclastic grey

74.67 - 81.4: Grey, well foliated, siliceous, PY banded, QZ-MU volcaniclastic rock. Quartz-eyes present. Some lapilli sized clasts (does not dominate rock type)

<<Min: 74.67 - 81.4 5% Min: Calcite>>

<<Min: 74.67 - 85.17 5% Min: Pyrite>>

<<Alt: 74.67 - 85.17 Moderate (Alt) Muscovite>>

<<Alt: 81 - 82 Trace (Alt) Chlorite>>

<<Struc: 78.27 - 78.32 Weak (Alt) Fault>>

<<Struc: 81.04 - 81.14 Weak (Alt) Fault>>

81.40 85.17 RHYvl Lapilli tuff grey

81.4 - 85.17: Grey, well foliated, PY banded, carbonate bearing, quartz-eye bearing, felsic, QZ-MU lapilli volcaniclastic rock.

<<Min: 81.4 - 85.17 8% Min: Calcite>>

85.17 86.33 MAFi Mafic Intrusions (primarily footwall mafic intrusion) melanocratic

85.17 - 86.33: Melanocratic, well foliated, fine grained BI-CB mafic intrusive.

<<Min: 85.17 - 86.33 20% Min: Calcite>>

<<Min: 85.17 - 91.32 1% Min: Pyrite>>

<<Min: 85.17 - 130.3 0.5% Min: Pyrrhotite>>

<<Alt: 85.17 - 86.33 Weak (Alt) Biotite>>

<<Struc: 86.19 - 86.33 Weak (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

86.33 90.33 RHYvl Lapilli tuff grey CG

86.33 - 90.33: Grey to grey-green, coarse-grained to lapilli QZ-MU volcaniclastic rock bearing disseminated calcite/carbonate, and lens/poded PY

<<Min: 86.33 - 90.33 8% Min: Calcite>>

<<Alt: 86.33 - 90.33 Weak (Alt) Muscovite>>

<<Struc: 88.37 - 88.52 Weak (Alt) Fault>>

<<Struc: 88.67 - 88.8 Weak (Alt) Fault>>

<<Struc: 88.98 - 89.28 Weak (Alt) Fault>>

90.33 91.32 MAFi Mafic Intrusions (primarily footwall mafic intrusion) melanocratic

90.33 - 91.32: Melanocratic, well foliated, fine grained BI-CB mafic intrusive.

<<Min: 90.33 - 91.32 20% Min: Calcite>>

<<Alt: 90.33 - 91.32 Weak (Alt) Biotite>>

91.32 111.05 RHYvl Lapilli tuff grey CG

91.32 - 111.05: Grey, well foliated, lapilli + quartz-eye bearing volcaniclastic rock. QZ-mu.

<<Min: 91.32 - 111.05 8% Min: Calcite>>

<<Min: 91.32 - 114.6 5% Min: Pyrite>>

<<Alt: 91.32 - 128.72 Weak (Alt) Muscovite>>

<<Vein: 91.32 - 91.48 Quartz>> maqssive quartz-carbonate vein; foliation parallel

<<Struc: 95.05 - 95.05 dominant foliation>>

<<Struc: 98.54 - 98.54 dominant foliation>>

<<Struc: 98.83 - 98.83 dominant foliation>>

<<Struc: 101.32 - 101.38 Weak (Alt) Fault>>

<<Struc: 102.18 - 102.22 Weak (Alt) Fault>>

<<Struc: 102.28 - 102.32 Weak (Alt) Fault>>

<<Struc: 106.82 - 106.82 dominant foliation>>

111.05 112.68 RHYc Rhyolite coherant volcanics cream

111.05 - 112.68: Leucocratic, coherent volcanic rock. Abundant pyrite mineralization along foliation planes.

<<Min: 111.05 - 117.73 5% Min: Calcite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

112.68 117.73 RHYva Coarse grained to ash tuff grey FG

112.68 - 117.73: Grey, fine grained to medium grained PY-CB bearing, QZ-MU volcaniclastic rock. Quartz-eyes sporadically present.

<<Min: 114.6 - 115.21 20% Min: Pyrite>> OI ?

<<Min: 115.21 - 130.3 1% Min: Pyrite>>

117.73 126.58 RHYva Coarse grained to ash tuff grey-green FG

117.73 - 126.58: Grey-green fine grained, well foliated, calcite bearing, chloritic, fine-grained volcaniclastic rock.

<<Min: 117.73 - 128.72 3% Min: Calcite>>

<<Alt: 117.73 - 126.58 Moderate (Alt) Chlorite>>

<<Vein: 117.73 - 117.85 Quartz>> Massive foliation parallel quartz-carbonate-chlorite vein.

<<Struc: 124.8 - 124.8 dominant foliation>>

126.58 128.72 RHYva Coarse grained to ash tuff light grey MCG

126.58 - 128.72: Light grey, medium to coarse grained felsic volcaniclastic tuff. ~5% pyrite in lenses/pods.

128.72 130.30 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green

128.72 - 130.3: Green, inquigranular, (calcite) porphyroblastic mafic CL-BI-CA intrusive with fine-grained margins.

<<Min: 128.72 - 130.3 12% Min: Calcite>>

<<Alt: 128.72 - 130.3 Moderate (Alt) Chlorite>>

130.30 132.77 RHY undifferentiated rhyolite light grey

130.3 - 132.77: white to light grey, siliceous, pyrite bearing, felsic rock. Suspected to be silicified RHYva

<<Min: 130.3 - 134.17 5% Min: Pyrite>>

<<Min: 130.3 - 145 2% Min: Calcite>>

<<Alt: 130.3 - 132.77 Moderate (Alt) Silicification>> intensity increases towards fault

<<Alt: 130.3 - 152.25 Moderate (Alt) Muscovite>>

<<Struc: 130.85 - 130.85 dominant foliation>>

<<Struc: 130.9 - 130.9 Foliation>>

<<Struc: 131.08 - 131.36 Weak (Alt) Fault>>

132.77 134.17 RHYvl Lapilli tuff grey-green

132.77 - 134.17: grey-green, chloritic, well foliated, matrix supported, felsic lapilli tuff.

<<Alt: 132.77 - 134.17 Weak (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		<<Alt: 132.77 - 179 Trace (Alt) Biotite>>									
		<<Struc: 133.23 - 133.23 dominant foliation>>									
		<<Struc: 133.6 - 133.6 dominant foliation>>									
134.17	**145.00**	**RHYva Coarse grained to ash tuff grey-green FG**									
		134.17 - 145: grey-green, chloritic, fine-grained, felsic, volcaniclastic ash-tuff.									
		<<Min: 134.17 - 158 2% Min: Pyrite>>									
		<<Min: 134.17 - 158 1% Min: Pyrrhotite>>									
		<<Alt: 134.17 - 152.25 Moderate (Alt) Chlorite>>									
		<<Struc: 140.05 - 140.05 dominant foliation>>									
		<<Struc: 142.8 - 142.8 dominant foliation>>									
145.00	**152.25**	**RHYvl Lapilli tuff grey-green**	149.25	150.75	1.50	B00233358	0.3	-0.005	-0.01	-0.01	0.02
		145 - 152.25: grey-green, chloritic, quartz-eye bearing, well foliated, matrix supported, felsic, volacaniclastic lapilli tuff. Lapilli are carbonate rich. Wispy foliation parallel PY/PO.									
		<<Min: 145 - 152.69 3% Min: Calcite>>	150.75	152.25	1.50	B00233359	0.3	-0.005	-0.01	-0.01	0.03
		<<Struc: 145.75 - 145.75 dominant foliation>>									
		<<Struc: 151 - 151 dominant foliation>>									
152.25	**152.69**	**OJ Heavilly disseminated sulphides in proximal altered rock green FG**	152.25	152.69	0.44	B00233361	3.5	0.017	0.1	0.09	0.4
		152.25 - 152.69: Green, strongly chloritic, fine-grained, CP/PY/PO bearing felsic, ash-tuff. Mineralization is weak at best, though shows the characteristics of a chloritic stringer mineralization. Potential failed intercept?									
		<<Min: 152.25 - 152.69 1% Min: Chalcopyrite>>									
		<<Alt: 152.25 - 153 Strong (Alt) Chlorite>>									
152.69	**158.00**	**RHYv Rhyolite volcaniclastic grey-green**	152.69	153.50	0.81	B00233362	0.6	-0.005	-0.01	-0.01	0.06
		152.69 - 158: Grey-green, chloritic, calcite/quartz-eye bearing, matrix supported volcaniclastic tuff. Matrix appears to be ash, clasts are of various sizes and are composed of QZ-CL-CB.									
		<<Min: 152.69 - 158 5% Min: Calcite>>	153.50	155.00	1.50	B00233363	0.5	-0.005	-0.01	-0.01	0.04
		<<Alt: 153 - 158 Moderate (Alt) Muscovite>>	155.00	156.50	1.50	B00233364	0.8	-0.005	-0.01	-0.01	0.06
		<<Alt: 153 - 158 Moderate (Alt) Chlorite>>	156.50	158.00	1.50	B00233365	0.9	-0.005	-0.01	0.01	0.02
		<<Struc: 154.8 - 154.8 dominant foliation>>									
		<<Struc: 157.4 - 157.4 dominant foliation>>									

From (m)	To (m)	Rocktype & Description			From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
158.00	**161.00**	**OJ** **Heavilly disseminated sulphides in proximal altered rock**	**green**	**FG**	158.00	159.00	1.00	B00233366	8	0.015	0.2	0.05	0.88

158 - 161: Dark green, massive chlorite rock with calcite pods/lenses occurring with mineralization of CP/SP/GL/PO/PY. Potential missed stringer zone mineralization?

<<Min: 158 - 160 3% Min: Pyrite>>

<<Min: 158 - 160 0.25% Min: Galena>>

<<Min: 158 - 161 8% Min: Calcite>>

<<Min: 158 - 163 2% Min: Sphalerite>>

<<Min: 158 - 163 2% Min: Chalcopyrite>>

<<Min: 158 - 200 0.5% Min: Pyrrhotite>>

<<Min: 160 - 169.67 4% Min: Pyrite>>

<<Alt: 158 - 161 Strong (Alt) Chlorite>>

<<Vein: 159.38 - 159.42 Quartz>> Massive quartz-carbonate vein.

					159.00	160.00	1.00	B00233367	4.4	0.02	0.18	0.08	0.53
					160.00	161.00	1.00	B00233368	2.2	0.006	0.07	0.03	0.29
161.00	**169.67**	**RHYv** **Rhyolite volcaniclastic**	**grey**	**CG**	161.00	162.50	1.50	B00233369	1.3	-0.005	0.02	-0.01	0.06

161 - 169.67: Grey, matrix supported volcaniclastic tuff. Trace chlorite alteration locally. Clasts vary in size from coarse-grained to lapilli. Some crystals present as well.

<<Min: 161 - 192 5% Min: Calcite>>

<<Alt: 161 - 161.8 Weak (Alt) Chlorite>>

<<Alt: 161 - 200 Moderate (Alt) Muscovite>>

<<Alt: 161.8 - 169.67 Trace (Alt) Chlorite>>

<<Struc: 169.47 - 169.47 dominant foliation>>

					162.50	164.00	1.50	B00233371	1	-0.005	0.01	0.06	0.18
					164.00	165.50	1.50	B00233372	1.1	-0.005	0.02	0.01	0.44
169.67	**179.00**	**RHYva** **Coarse grained to ash tuff**	**grey-green**	**FG**									

169.67 - 179: Grey-green fine-grained chloritic, well foliated, carbonate bearing, felsic, ash-tuff. Sporadic crystal and lapilli clasts present; stretched along foliation.

<<Min: 169.67 - 179 3% Min: Pyrite>>

<<Alt: 169.67 - 170.8 Weak (Alt) Chlorite>>

<<Alt: 170.8 - 174.2 Moderate (Alt) Chlorite>>

<<Alt: 174.2 - 200 Weak (Alt) Chlorite>> OP?

<<Vein: 171.49 - 171.54 Quartz>> Massive foliation parallel quartz-carbonate vein.

<<Struc: 170.62 - 170.68 Weak (Alt) Fault>>

<<Struc: 177.75 - 177.81 Weak (Alt) Fault>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

179.00 200.00 RHYvl Lapilli tuff grey-green

179 - 200: Grey-green, chloritic-biotitic, (ash) matrix supported, felsic, lapilli/crystal tuff

<<Min: 179 - 200 1% Min: Pyrite>>

<<Min: 192 - 200 8% Min: Calcite>>

<<Alt: 179 - 200 Moderate (Alt) Biotite>>

<<Struc: 182.1 - 182.1 dominant foliation>>

<<Struc: 193.7 - 193.7 dominant foliation>>

<<Struc: 197.08 - 197.08 dominant foliation>>

End of Hole @ 200

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-330

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	30-Nov-15
UTM Easting	414932	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	01-Dec-15
UTM Northing:	6818702	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1349.79	Casing Depth (m):	21	Length (m):	50.95	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	25-Nov-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	30-Nov-15
Local Elev. (m):						Purpose:	Geotech
						Parent Hole:	

Comments:

K15-330 is a geotechnical hole including packer testing in bedrock (2 tests at 10ft interval followed by tests at 20ft interval thereafter) and thermistor install. It is located 300m upstream on the East, site D abutment. The tests were conducted by Piedsold Engineering. The hole consists in graphitic mudstone and CL altered mafic tuff interbedded and fractured. The upper units shows vuggy texture, moderate oxidation, locally filled with clay/sand suggesting open fractures and surface water circulation. The hole ends at 50.95m on CL altered carbonaceous mudstone where a narrow coarse grain/pebble size clast interval, medium strained, possibly polygenic, is observed. This unit could be interpreted as a detritic sequence.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	25-Nov-15		☑	
50	-88.4	176.1	22.5	198.6	ReflexEZS	Geotech	30-Nov-15	5758	☑	One survey.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 10.00 OVBN Overburden

0 - 10: Hieratic boulders.

10.00 12.95 SED undifferentiated Sediment light grey MG

10 - 12.95: Thin foliation. Moderate to strong oxidation, limonite. Foliation locally deformed, fractured.

<<Min: 10 - 40.15 1% Min: Calcite>>

<<Min: 10 - 50.95 0.1% Min: Pyrrhotite>>

<<Struc: 10 - 20 Moderate (Alt) Fault>> Open fractures, sand/or clay infilling. Water circulation from surface (weathering).

12.95 13.45 MAFt Mafic Volcaniclastics green FG

12.95 - 13.45: Chloritized, CA in veinlets and matrix, partially oxidized.

<<Alt: 12.95 - 42.27 Weak (Alt) Chlorite>> In mafic tuff, lithology controlled.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

13.45 23.80 SED undifferentiated Sediment light grey MG

13.45 - 23.8: Thin foliation. Strongly fractured sand infilling. Strong oxidation. Progressive lower contact. Could be tuffaceous.

<<Struc: 20 - 42.27 Weak (Alt) Fault>> Multiple narrow faults and rubber zone.

<<Struc: 20.7 - 20.71 dominant foliation>>

23.80 26.00 MAFt Mafic Volcaniclastics green FG

23.8 - 26: Chloritized. Partially oxidized.

26.00 37.10 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

26 - 37.1: Strongly graphitic and sericitized. Locally vuggy texture. BI/CA discontinuous veinlets.

<<Min: 26.95 - 37.1 1% Min: Pyrite>> Associated with PY/BI veinlets.

<<Struc: 30.4 - 30.41 dominant foliation>>

37.10 37.43 MAFt Mafic Volcaniclastics beige

37.1 - 37.43: Muscovite rich, PY elongated could be BI replacement. Sharp contact suggesting hieratic block (sliding).

<<Min: 37.1 - 37.43 3% Min: Pyrite>> Elongated, foliation oriented.

37.43 40.15 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

37.43 - 40.15: Fault at upper contact, clay gouge.

<<Min: 37.43 - 40.15 1% Min: Pyrite>> Associated with CA/BI.

<<Struc: 38.05 - 38.06 dominant foliation>>

40.15 42.27 MAFt Mafic Volcaniclastics green FG

40.15 - 42.27: Strongly graphitic. CA veining, fractured. Specks of BI.

<<Min: 40.15 - 42.27 10% Min: Calcite>> and in matrix.

42.27 50.95 MAFta Coarse grained to ash tuff grey-green

42.27 - 50.95: Lapillitic from 42.70m to 48.05m, rare QE possibly polygenic clasts (detritic sequence). Moderately CL altered from 46.00m to 50.95m, texture obscured but texture seems to be the same. E.O.H.

<<Min: 42.47 - 50.95 0.5% Min: Pyrite>>

<<Alt: 46 - 50.95 Moderate (Alt) Chlorite>> Could be overprinting.

<<Vein: 50.17 - 50.35 Quartz-Pyrrhotite>> Massive QZ, weak fractured, containing PY.

<<Struc: 42.27 - 42.94 Moderate (Alt) Fault>> Fault gouge/clay, at contact between mafic tuff and graphitic mudstone.

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-330

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
		End of Hole @ 50.95									

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-331

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	29-Nov-15
UTM Easting	415347	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	30-Nov-15
UTM Northing:	6816415	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1386.57	Casing Depth (m):	12	Length (m):	32	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	27-Nov-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	28-Nov-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-331/KP15-I is a geotechnical hole located at the toe of the PAC waste dump, including SPT in unfrozen soil (5 ft interval) and packer test in bedrock (30 feet interval) and thermistor installation. The lithology consists in mafic tuff interbedded with carbonaceous argillite/ash units showing CA veinlets. PO/CA discontinuous veinlets are observed from 26.00m to 32.00m, few PY and CP trace. The hole ends at 32.00m on a graphitic mudstone. Nine Standard Penetration Tests were done from 0.60m to 10.95m as well as packer tests and thermistor install.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	27-Nov-15		☑	Vertical hole.
30	-89.5	198.6	22.5	221.1	ReflexEZS	Geotech	28-Nov-15	3444	☑	Low magnetic field. Dip declination (0.5 degree) acceptable.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 13.50 OVBN Overburden

0 - 13.5: 9 SPT. Semi-intact samples.

13.50 13.95 MDU carbonaceous mudstone upper sequence

13.5 - 13.95: Calcite veining. PO,BI laminated.

<<Min: 13.5 - 26 2% Min: Pyrrhotite>> Elongated, locally patch, or associated with CA/BI veinlets.

<<Min: 13.5 - 32 0.5% Min: Pyrite>>

<<Min: 13.5 - 32 0.1% Min: Chalcopyrite>> Observed at 26.30m in PY/PO/CA patch.

<<Min: 13.5 - 32 10% Min: Calcite>> And in matrix in sediment.

<<Alt: 13.5 - 32 Weak (Alt) Chlorite>> Associated with MAFf (lithology controlled).

13.95 14.84 RHYv Rhyolite volcaniclastic FMG

13.95 - 14.84: PO elongated. Locally silicified. CA veining.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

14.84 15.60 MDU carbonaceous mudstone upper sequence

14.84 - 15.6: Mixed with tuff.BI patch, CA veinlets.

15.60 16.56 MDU carbonaceous mudstone upper sequence

15.6 - 16.56: Argillite. CA veinlets.

16.56 18.53 MAFt Mafic Volcaniclastics FMG

16.56 - 18.53: Chloritized. Interbedded with argillite at lower contact. PO disseminated..

<<Struc: 17.45 - 17.56 Vein>> CA veinlet.

18.53 19.70 MDU carbonaceous mudstone upper sequence

18.53 - 19.7: CA veinlets and in matrix.

<<Struc: 19.35 - 19.36 dominant foliation>>

19.70 22.49 MAFt Mafic Volcaniclastics FMG

19.7 - 22.49: Chloritized. Gradual upper contact.

<<Struc: 21.2 - 21.21 dominant foliation>>

<<Struc: 21.3 - 21.31 dominant foliation>>

22.49 24.18 MDU carbonaceous mudstone upper sequence

22.49 - 24.18: Interbedded with tuff. Primary foliation (could be diagenetic) folded mostly visible ash tuff, possibly sliding.

<<Struc: 22.86 - 22.88 Contact>> Contact between mudstone bed and pelitic or ash bed.

24.18 25.10 MAFt Mafic Volcaniclastics

24.18 - 25.1: Interval including massive QZ vein from 25.54m to 25.10m. Chloritized.

<<Vein: 24.54 - 25.1 Quartz-Carbonate>> QZ fractured, CA infilled.

25.10 32.00 MDU carbonaceous mudstone upper sequence

25.1 - 32: Argilite/probably ash interbedded or peiltic sequense. Mafic bed at upper contact. BI veinlets foliation oriented.
At 26.30, 5cm CA patch associated with PO/PY and CP trace. EOH.

<<Min: 26 - 32 3% Min: Pyrrhotite>> With CA and/or PY.

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-331

From (m)	To (m)	Rocktype & Description
		End of Hole @ 32

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

EQUITY | EXPLORATION CONSULTANTS LTD.

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-332

Prospect:	FCZ	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Florent Pons
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Florent Pons	Date Logging Start:	27-Nov-15
UTM Easting	414797	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	29-Nov-15
UTM Northing:	6814638	Casing Pulled?:	Yes	Dip:	-83	Drill Company:	Geotech
UTM Elev. (m):	1422.285	Casing Depth (m):	9	Length (m):	182	Drill Rig:	Zinex A5
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	26-Nov-15
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	28-Nov-15
Local Elev. (m):						Purpose:	Exploration
Comments:						Parent Hole:	

The objective of drill hole K15-332 (KX15-FC2) was to explore for mineralization based on the Fault Creek VTEM anomaly south of the Fault Creek fault trace. The hole is composed of a thick package of felsic volcaniclastic rocks; dominantly RHYva/RHYvl. Weak OJ-type mineralization (intense chlorite alteration accompanied by weak CP-SP-GL -PO) is observed from 170m to 171.2m and from 174.15m to 174.83m. Muscovite mineralization is weak to moderate through to the bottom of the hole. After 171.2 m, remainder of hole was laminated sedimentary unit, fine to coarse grained, locally BI altered, the bedding and sorting are very well conserved. We observe similar sequences at some place in the hole. It's common to see this unit described as MAFI (biotite altered, strong calcite associated and sharp contacts).

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-83	179.86	0	179.86	APS	Florent Pons	26-Nov-15		☑	
26	-81.5	159.6	22.5	182.1	ReflexEZS	Geotech	26-Nov-15	5747	☑	
50	-81.2	155.5	22.5	178	ReflexEZS	Geotech	27-Nov-15	5757	☑	
74	-80.7	157.3	22.5	179.8	ReflexEZS	Geotech	27-Nov-15	5746	☑	
101	-80.4	158.7	22.5	181.2	ReflexEZS	Geotech	27-Nov-15	5742	☑	
125	-80	159.1	22.5	181.6	ReflexEZS	Geotech	28-Nov-15	5747	☑	
152	-79.2	159.3	22.5	181.8	ReflexEZS	Geotech	28-Nov-15	5730	☑	
179	-78.5	161.5	22.5	184	ReflexEZS	Geotech	28-Nov-15	5725	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
0.00	**10.00**	**OVBN** **Overburden**									
0 - 10: Casing at 9m.											

From (m)	To (m)	Rocktype & Description			
10.00	**32.12**	**RHYv**	**Rhyolite volcaniclastic**	**light grey**	**MCG**

10 - 32.12: Light grey, medium to coarse grained, massive, +/- homogeneous. Interval moderately fractured. Moderate to strong pervasive MU alteration, original alt process? We observe some siliceous lapillis relics distributed within matrix. Trace to 2% of small subhedral porphyroblasts of tourmaline within matrix. 2-4% of py, disseminated/patchy, also occurring as deformed bands. Volcanoclastic rhyolite unit.

<<Min: 10 - 18 4% Min: Pyrite>> Disseminated Py (medium grained), occuring as bands and patchy.

<<Min: 10 - 35.55 0.5% Min: Pyrrhotite>> Matrix disseminated.

<<Min: 18 - 25.8 3% Min: Pyrite>> Disseminated Py (medium grained), occuring as bands and patchy.

<<Min: 25.8 - 35.55 2% Min: Pyrite>>

<<Alt: 10 - 61 Moderate (Alt) Muscovite>> Original alt process? "shiny" fracture surface.

<<Struc: 16.3 - 16.31 Moderate (Alt) Foliation>>

<<Struc: 24.05 - 24.1 Strong (Alt) Fault>> Fault gouge

<<Struc: 31.45 - 31.6 Strong (Alt) Fault>> Fault gouge

<<Struc: 32.1 - 32.11 Strong (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description			
32.12	**38.05**	**RHYvl**	**Lapilli tuff**	**light grey**	**FCG**

32.12 - 38.05: Light grey, fine to coarse grained, massive. Interval moderately fractured. Moderate to strong pervasive MU alteration, original alt process? We observe some siliceous lapillis distributed within matrix, > 25 %, oriented with foliation, gravel to pebble size.. Trace to 2% of small subhedral porphyroblasts of tourmaline within matrix. 1-2% of py, disseminated/patchy, also occurring as deformed bands.

<<Min: 35.55 - 50 4% Min: Pyrite>> Occuring as bands and patchy. 3-4%.

<<Min: 35.55 - 50 1% Min: Pyrrhotite>> Disseminated and small wisps.

<<Struc: 38 - 38.01 Strong (Alt) Foliation>>

From (m)	To (m)	Rocktype & Description			
38.05	**52.25**	**RHYv**	**Rhyolite volcaniclastic**	**light grey**	**MCG**

38.05 - 52.25: Light grey, medium to coarse grained, massive, +/- homogeneous. Interval moderate to locally strongly fractured. Moderate to strong pervasive MU alteration, original alt process? We observe some siliceous lapillis relics distributed within matrix. Trace to 2% of small subhedral porphyroblasts of tourmaline within matrix. 2-4% of py, disseminated/patchy, also occurring as deformed bands. Volcanoclastic rhyolite unit.

<<Min: 50 - 52.25 5% Min: Pyrite>> Occuring as bands and patchy associated with Po. 4-5%

<<Min: 50 - 58.95 2% Min: Pyrrhotite>> Occuring as bands and patchy associated with Py.

<<Vein: 44.4 - 46.35 5% Tourmaline 30 deg. >> 2 tourmaline veins, 1-2 cm wide, discordant.

<<Vein: 51.75 - 52 30% Quartz 40 deg. >> Regular qtz vein, trace of tourmaline, 3-4 cm wide, discordant.

<<Struc: 48 - 49.8 Moderate (Alt) Fault>> Interval fractured comprising fault gouge. Poor recovery.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
17.00	18.00	1.00	B00232981	-0.3	-0.005	-0.01	-0.01	0.01
18.00	19.00	1.00	B00232982	-0.3	-0.005	-0.01	-0.01	-0.01
19.00	20.00	1.00	B00232983	-0.3	-0.005	-0.01	-0.01	-0.01
50.00	51.00	1.00	B00232984	-0.3	-0.005	-0.01	-0.01	0.01
51.00	52.25	1.25	B00232985	0.6	-0.005	-0.01	-0.01	0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
52.25	**66.33**	**RHYvl Lapilli tuff light grey MCG**									
		52.25 - 66.33: Light grey, fine to coarse grained, massive. Interval moderately fractured. Moderate to strong pervasive MU alteration, original alt process? We observe some siliceous lapillis distributed within matrix, > 10 %, oriented with foliation, gravel to pebble size. Between 54.45m to 57.45m, Patchy chlorite, occurring as oriented dismembered bands, clasts/lapillis altered? Trace to 2% of small subhedral porphyroblasts of tourmaline within matrix. 1-2% of py, disseminated/patchy, also as occurring as deformed bands.									
		<<Min: 52.25 - 65.85 2% Min: Pyrite>> Bands od disseminated py within fault interval									
		<<Min: 65.85 - 72 5% Min: Pyrite>> Finely disseminated, bands/stringers.									
		<<Alt: 54.45 - 54.45 Weak (Alt) Chlorite>> Patchy chlorite, occuring as oriented dismembered bands, clasts/lapillis altered?									
		<<Alt: 61 - 66.33 Strong (Alt) Muscovite>> Associated with fault interval.									
		<<Struc: 58.95 - 60.1 Intense (Alt) Fault>> Fault gouge, fracture filling by sand/clay.									
		<<Struc: 61 - 66.33 Strong (Alt) Fault>> Fault interval, intensely foliated associated with strong/intense MU alteration. Comprising faults gouge									
66.33	**96.00**	**RHYv Rhyolite volcaniclastic light grey FCG**	66.33	67.50	1.17	B00232986	-0.3	-0.005	-0.01	-0.01	-0.01
		66.33 - 96: Light grey, medium to coarse grained, massive. Interval moderate to locally strongly foliated. Moderate to strong pervasive MU alteration, original alt process? We observe some siliceous lapillis relics distributed within matrix. 2-4% of py, disseminated/patchy, also as deformed bands/stringers. Volcanoclastic rhyolite unit. 81.43-83m: Lapillitic sequence, pebble size. 83.5-84.65m: fine/medium grained ash/sediment, weakly laminated. Could be MAFI?									
		<<Min: 70.9 - 90.24 3% Min: Calcite>>	67.50	69.00	1.50	B00232987	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 72 - 79.88 3% Min: Pyrite>> Occuring as bands and patchy. 3-4%.	69.00	70.50	1.50	B00232988	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 79.88 - 80.8 5% Min: Pyrite>> Occuring as bands and patchy. 5%.	70.50	72.00	1.50	B00232989	-0.3	-0.005	-0.01	-0.01	0.01
		<<Min: 80.8 - 83.5 4% Min: Pyrite>> Occuring as bands and patchy. 3-4%.	90.24	90.70	0.46	B00232991	10.7	-0.005	-0.01	0.23	0.37
		<<Min: 83.5 - 84.65 3% Min: Pyrrhotite>> Disseminated within fine grained ash/sediment or MAFi?	90.70	92.00	1.30	B00232992	0.8	-0.005	-0.01	-0.01	0.04
		<<Min: 84.65 - 90.24 4% Min: Pyrite>> Occuring as subconcordant bands and patchy. 3-4%.	92.00	93.00	1.00	B00232993	-0.3	-0.005	-0.01	-0.01	-0.01
		<<Min: 90.24 - 90.55 4% Min: Sphalerite>> Mineralization associated with qtz-ca veinlets/veins.									
		<<Min: 90.24 - 90.55 3% Min: Pyrite>> Mineralization associated with qtz-ca veinlets/veins.									
		<<Min: 90.24 - 90.55 2% Min: Galena>> Mineralization associated with qtz-ca veinlets/veins.									
		<<Min: 90.24 - 96 4% Min: Calcite>> Veinlets/blebs									
		<<Min: 90.55 - 103.6 2% Min: Pyrite>> Occuring as stringers/bands. Usually associated with qtz-ca veinlets.									
		<<Min: 90.55 - 103.6 2% Min: Pyrrhotite>> Occuring as stringers/bands. Usually associated with qtz-ca veinlets.									
		<<Alt: 66.33 - 91.4 Moderate (Alt) Muscovite>> Original alt process? "shiny" fracture surface.									
		<<Alt: 91.4 - 103.6 Weak (Alt) Muscovite>>									
		<<Vein: 70.17 - 70.42 80% Quartz>> irregular and deformed qtz vein, discordant, ~ 20 cm wide.									
		<<Vein: 84.65 - 85 75% Quartz 80 deg. >> Massive qtz vein, regular, 80 ac.									

From (m)	To (m)	Rocktype & Description

<<Vein: 86.55 - 86.65 80% Quartz-Carbonate 75 deg. >> massive qtz-carbonate vein. Subconcordant.

<<Vein: 89.7 - 90.2 50% Quartz 15 deg. >> massive qtz vein, regular, discordant, 15-20 ac.

<<Vein: 95 - 95.3 80% Quartz 45 deg. >> Massive discordant qtz vein, regular. 1% po disseminated within vein.

<<Vein: 95.9 - 96 70% Quartz>> Irregular and fractured qtz-tourmaline vein, 5 cm wide.

<<Struc: 95 - 95.01 Moderate (Alt) Foliation>>

96.00 99.70 RHYva Coarse grained to ash tuff light grey FCG

96 - 99.7: Light grey,fine to coarse grained, weak/moderately foliated, weakly altered. Laminated sedimentary/ash unit, bedding marked by alternation of short fine and coarse grained beds, mm to cm, comprising locally lapillitic intervals (sorted, pebble size). Moderately calcite altered (pervasive). Trace of blue QE. Py/Po as stringers/bands.

<<Min: 96 - 99.7 12% Min: Calcite>> Pervasive/blebs and also veinlets.

99.70 103.60 RHYvl Lapilli tuff light grey CG

99.7 - 103.6: Light grey, medium to coarse grained, massive. Interval weak to moderately foliated. Moderate MU alteration, pervasive. Comprising siliceous lapillis/clasts, pebble size, distributed within matrix. Sorting locally well conserved. 2-4% of py, disseminated/patchy, also as deformed bands/stringers. Lapillitic rhyolite unit.
105.4-106.45m: Medium grained, BI altered (pervasive), laminated/bedded texture, gradual contacts. Sedimentary sequence? Could be MAFi.

<<Min: 99.7 - 105.4 5% Min: Calcite>> Associated with veinlets/veins and also disseminated blebs

103.60 119.70 RHYva Coarse grained to ash tuff light grey MCG

103.6 - 119.7: Light grey, medium/coarse grained, +/- homogeneous, massive. Interval weak to moderately foliated. Weak/moderate MU alteration, pervasive. 2-3% of py, disseminated/patchy, also as deformed bands/stringers. Coarse grained ash unit.
105.4-106.45m: Medium grained, BI altered (pervasive), laminated/bedded texture, gradual contacts. Sedimentary sequence? Could be MAFi.

<<Min: 103.6 - 109.36 1% Min: Pyrrhotite>>

<<Min: 105.4 - 106.45 12% Min: Calcite>> Pervasive/blebs and also veinlets.

<<Min: 106.45 - 119.7 2% Min: Calcite>>

<<Min: 109.36 - 110.55 5% Min: Pyrite>> Finely dessinminated, occuring as large bands.

<<Min: 110.55 - 111.27 2% Min: Pyrite>>

<<Min: 111.27 - 111.72 12% Min: Pyrite>> Finely dessinminated, occuring as large band.

<<Min: 111.72 - 113.75 5% Min: Pyrite>> Finely dessinminated, occuring as bands.

<<Min: 113.75 - 119.15 2% Min: Pyrite>>

<<Min: 119.15 - 124.12 2% Min: Pyrite>> Occuring as stringers/bands

<<Min: 119.15 - 124.12 2% Min: Pyrrhotite>> Occuring as stringers/bands

<<Vein: 104.15 - 106.35 20% Quartz>> Interval of veining, irregular and deformed qtz veins, 5-10 cm wide, associated with weak carbonate.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
109.36	110.55	1.19	B00232994	-0.3	-0.005	-0.01	-0.01	0.01
110.55	111.27	0.72	B00232995	-0.3	-0.005	-0.01	-0.01	0.01
111.27	111.72	0.45	B00232996	-0.3	-0.005	-0.01	-0.01	-0.01

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Struc: 104 - 104.01 Moderate (Alt) Foliation>>

<<Struc: 116 - 116.01 Moderate (Alt) Foliation>>

119.70 121.10 SED undifferentiated Sediment brown FCG

119.7 - 121.1: Brownish, fine to coarse grained, weakly biotite altered (pervasive/flakes). Bedded/laminated texture marked by alternation of thin parallel beds, fine to coarse grained, cm to dm. Sorting well conserved. Strongly calcite altered (pervasive). Sedimentary sequence? Usually logged as MAFi unit.

<<Min: 119.7 - 121.1 12% Min: Calcite>> Pervasive

<<Alt: 119.7 - 121.1 Moderate (Alt) Biotite>> Associated with sedimentary interval.

<<Struc: 120 - 120.01 >>

121.10 137.70 RHYv Rhyolite volcaniclastic light grey CG

121.1 - 137.7: Light grey, coarse grained, heterogeneous. Interval moderate to locally strongly foliated. Moderate to strong pervasive MU alteration, original alt process? We locally observe some siliceous lapillis relics distributed within matrix. Unit is characterized by laminated/bedded texture well conserved. Disseminated blue QE. Trace of disseminated porphyroblasts of BI (subhedral). 2-4% of py, disseminated/patchy, also as deformed bands/stringers. Volcanoclastic rhyolite unit.

<<Min: 121.1 - 126.15 5% Min: Calcite>>

<<Min: 124.12 - 128 0.5% Min: Pyrite>>

<<Min: 124.12 - 128 1% Min: Pyrrhotite>>

<<Min: 126.15 - 140.77 2% Min: Calcite>>

<<Min: 128 - 138.6 3% Min: Pyrite>> Occuring as bands

<<Min: 131 - 140.77 1% Min: Pyrrhotite>> 1-2 % po.

<<Alt: 121.1 - 126.15 Moderate (Alt) Muscovite>> Original alt process?

<<Alt: 126.15 - 128 Moderate (Alt) Chlorite>> Moderate to strong chlorite alteration.

<<Alt: 128 - 132.2 Moderate (Alt) Muscovite>> Original alt process?

<<Vein: 123.45 - 124.12 50% Quartz>> Interval of veining, comprising irregular qtz veins, subconcordant to discordant, 1-5 cm wide.

<<Vein: 131.32 - 138.08 15% Quartz-Carbonate>> Interval comprising multiple qtz-carbonate veins, 1-3 cm wide, strongly deformed/folded and locally dismembered.

137.70 138.08 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green MG

137.7 - 138.08: Green, medium grained, homogeneous, matrix chlorite altered. Strongly calcite altered. Sharp contacts. Probably MAFI

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

138.08 140.77 RHYva Coarse grained to ash tuff light grey CG

138.08 - 140.77: Light grey, coarse grained, +/- homogeneous, massive. Interval weak to moderately foliated. Weak/moderate MU alteration, pervasive. 1-2% of py, disseminated/patchy, also as deformed bands/stringers. Disseminated blue QE. Coarse grained ash unit.

140.77 142.46 MAFi Mafic Intrusions (primarily footwall mafic intrusion) green FCG

140.77 - 142.46: Green, medium grained, homogeneous, matrix chlorite altered. Strongly calcite altered. Sharp contacts. Probably MAFI. Could be sedimentary unit ("bedding" at the margins)

<<Min: 140.77 - 142.46 10% Min: Calcite>> Occuring as bands within MAFI.

<<Min: 140.77 - 143.85 2% Min: Pyrrhotite>> Wisps/stringers and disseminated.

142.46 145.10 RHYva Coarse grained to ash tuff light grey CG

142.46 - 145.1: Light grey, coarse grained, +/- homogeneous, massive. Interval weak to moderately foliated. Weak/moderate MU alteration, pervasive. 1-2% of py, disseminated/patchy, also as deformed bands/stringers. Coarse grained ash unit.

<<Min: 142.46 - 145.1 8% Min: Calcite>> Associated with massive QTz-carbonate vein

<<Min: 143.85 - 145.1 3% Min: Pyrrhotite>> Associated with TL/BI with massive qtz-carbonate vein.

<<Vein: 143.85 - 145.1 95% Quartz-Carbonate>> Large irregular qtz-dolomite vein, associated with tourmaline and biotite at the margins as large aggregates/fracture filling. Vein strongly deformed. 3 % of Po, aggregate/fracture filling.

145.10 171.20 RHYv Rhyolite volcaniclastic green MG

			169.00	170.00	1.00	B00232997	0.9	-0.005	-0.01	-0.01	0.26

145.1 - 171.2: Green, massive unit, fine to medium grained, homogeneous, weak/moderately foliate. Matrix strongly chlorite altered (pervasive), comprising some bands intensely altered (Original alt process?). The protolith seems to be a massive mafic intrusive but the matrix is weakly siliceous (clasts relics, trace of QE), could be volcanoclastic sequence intensely chlorite altered (?).

			170.00	171.20	1.20	B00232998	1.6	0.006	0.05	-0.01	0.35

<<Min: 145.1 - 169 0.5% Min: Pyrite>>

<<Min: 145.1 - 169 1% Min: Pyrrhotite>>

<<Min: 145.1 - 174.83 2% Min: Calcite>>

<<Min: 169 - 170 1% Min: Sphalerite>> Thin veinlets/stringers.

<<Min: 170 - 171.2 1% Min: Sphalerite>> Stringers.

<<Min: 170 - 171.2 2% Min: Pyrrhotite>> Disseminated/wisps.

<<Min: 170 - 171.2 1% Min: Chalcopyrite>> Disseminated/wisps.

<<Alt: 145.1 - 170 Moderate (Alt) Chlorite>> Associated with MAFi.

<<Alt: 170 - 171.2 Strong (Alt) Chlorite>> Original, associated with mineralization.

<<Vein: 146.7 - 147.05 90% Quartz>> irregular oriented qtz vein, massive, decimetric, margins chlorite altered.

<<Vein: 165.55 - 165.67 70% Quartz-Carbonate>> irregular qtz-carbonate vein, discordant and deformed.

From (m)	To (m)	Rocktype & Description

<<Struc: 159 - 159.01 Weak (Alt) Foliation>>

<<Struc: 165.5 - 165.51 Moderate (Alt) Foliation>>

171.20 182.00 SED undifferentiated Sediment grey-brown FCG

171.2 - 182: Grey to brownish, fine to coarse grained, weakly biotite altered (pervasive/flakes). Bedded/laminated texture well conserved, marked by alternation of thin parallel beds, fine to coarse grained, cm to dm. Also comprising fine grained ash tuff sequence? Sorting locally well conserved. Strongly calcite altered (pervasive). Sedimentary sequence? Usually logged as MAFi unit (unit BI/calcite altered).

<<Min: 171.2 - 174.15 0.5% Min: Sphalerite>> Thin stringer

<<Min: 171.2 - 174.15 1% Min: Pyrrhotite>>

<<Min: 174.15 - 174.83 2% Min: Sphalerite>> Thin stringers

<<Min: 174.15 - 174.83 3% Min: Pyrrhotite>>

<<Min: 174.15 - 174.83 0.5% Min: Galena>>

<<Min: 174.15 - 174.83 3% Min: Chalcopyrite>> Occuring as small wisps/stringers. Also disseminated

<<Min: 174.83 - 177.45 0.5% Min: Pyrrhotite>>

<<Min: 174.83 - 182 5% Min: Calcite>> Associated with sediment.

<<Min: 177.45 - 182 1% Min: Pyrrhotite>> Coarse grained.

<<Alt: 174.15 - 174.83 Intense (Alt) Chlorite>> Associated with Cpy/Sp/Gl/Po.

<<Vein: 177.45 - 180.64 40% Quartz 55 deg. >> Interval comprising multiple massive qtz veins, associated with weak tourmaline at the margins. Subconcordant, deformed.

<<Struc: 173.3 - 173.31 Moderate (Alt) Foliation>>

<<Struc: 175.4 - 175.41 >> Bedding very well conserved.

<<Struc: 180 - 180.01 >>

End of Hole @ 182

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
174.15	174.83	0.68	B00232999	12.5	0.036	0.68	0.06	0.64

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-333

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	01-Dec-15
UTM Easting	415045	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	01-Dec-15
UTM Northing:	6816220	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1381.05	Casing Depth (m):	9	Length (m):	71	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	29-Nov-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	01-Dec-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-333/KP15-J is located on Geona Creek, downstream of the designed pit. SPT were operated (6ft interval over the unfrozen soil) as well as packer testing (in bedrock, 30ft interval). The hole is made up of mafic unit -marked by BI porphyroblasts patch-tuff or sedimentary sequence from volcanic rocks (detritic origin). The bottom shows deformations and obscured foliation witch could suggest volcanic flows. Trace of PY and PO were observed, A thermistor have been installed.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	29-Nov-15		☑	Vertical hole. No Reflex survey.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 8.00 OVBN Overburden

8.00 17.90 SED undifferentiated Sediment FG

8 - 17.9: CL/BI mafic units interbedded with sedimentary sequence locally graphitic. BI porphyroblasts, laminated..

<<Min: 8 - 51.5 0.1% Min: Pyrrhotite>>

<<Min: 8 - 71 0.1% Min: Pyrite>>

<<Min: 8 - 71 10% Min: Calcite>> Average. Irregular repartition.

<<Alt: 8 - 54.74 Moderate (Alt) Biotite>>

<<Struc: 17.26 - 17.27 dominant foliation>>

17.90 71.00 MAFta Coarse grained to ash tuff

17.9 - 71: Patch of BI porphyroblasts, locally bleached. One to five centimeter gradual sedimentary sequences observed. Could be detritic units made up of mafic composition grains. From 21.64m to 22.24, vein or dyke (maybe aplitic surrounded by QZ vein) altering the mafic unit (bleaching and BI replaced by Fe-carbonate. From 51.50m to 71.00m, foliation obscured and wavy. Could be sliding or lava flows. CA veining. E.O.H.

<<Min: 51.5 - 71 0.5% Min: Pyrrhotite>>

<<Alt: 17.9 - 71 Strong (Alt) Chlorite>>

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Alt: 51.5 - 71 Weak (Alt) Biotite>> and patch.

<<Vein: 23.26 - 23.42 Quartz 37 deg. >> QZ vein surrounded by alteration halo. Alpha angle at lower contact.

<<Vein: 67.25 - 67.37 Quartz>> QZ vein.

<<Struc: 21.5 - 22.24 Weak (Alt) Contact>> Broken zone, altered-related to aplitic dyke (?).

<<Struc: 33.63 - 33.64 dominant foliation>>

<<Struc: 48.02 - 48.03 dominant foliation>>

End of Hole @ 71

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-334

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	05-Dec-15
UTM Easting	414775	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	05-Dec-15
UTM Northing:	6818845	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1319.47	Casing Depth (m):	18	Length (m):	50.5	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	01-Dec-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	05-Dec-15
Local Elev. (m):						Purpose:	Geotech
						Parent Hole:	

Comments:

K15-334/KP15-A is a geotechnical hole (upstream of site D creek) including SPT in unfrozen soil (interval feet), packer testing in the bedrock (10 feet interval for the two first, 20 feet thereafter). The top of the hole consists in 18.10 metres of soil and overburden followed mafic unit up to 35.50m and a mudstone. This last unit is CA veined until 41.83m then shows a vuggy texture probably due to a quasi total decalcification. From top to bottom, the rock is strongly fractured, clay and sand infilling are observed. Piedsold Engineering operated 5 SPT and 7 packer testing. They encountered issues due to artesian groundwater and subterranean pressure gas, probably carbon dioxide. Therefore the piezometer could not be installed.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	01-Dec-15		☑	No Reflex Survey.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 18.10 OVBN Overburden

0 - 18.1: Casing at 18.00. Five SPT over the unfrozen soil. Organic material up to1.80m, A and B horizon. Grey and brown clay until 14.80m, weathered fracture unidentified rocks up to 18.10m but might be bleached by groundwater fluctuation mafic unit.

18.10 35.50 MAFta Coarse grained to ash tuff green

18.1 - 35.5: Could be CL altered gabbro. BI fading out at lower contact, replaced by beige mineral reacting with HCL, dolomite or AK (?). Weak foliation.

<<Alt: 18.1 - 28 Strong (Alt) Chlorite>>

<<Alt: 28 - 35.5 Moderate (Alt) Chlorite>> Bleached at lower contact.

<<Struc: 18.65 - 27.2 Moderate (Alt) Fault>> Highly fractured, locally disaggregated.

35.50 41.83 MDS Carbonaceous Mudstone & Tuffaceous Mudstone dark grey

35.5 - 41.83: CA veinlets, folded and/or crenulated. Could be MDU. Locally BI veinlets (fracture filling). From 36.10m to 37.00m, probably ash layer (felsic)..

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

<<Min: 36.1 - 37 0.1% Min: Pyrite>>

<<Struc: 37 - 38.1 Moderate (Alt) Fault>> Brittle, highly broken zone. Two clay/sandy zone suggesting open fracture infilling.

41.83 50.50 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

41.83 - 50.5: Vuggy texture, decalcification quasi complete. E.O.H.

<<Alt: 44 - 50.5 Weak (Alt) Chlorite>>

<<Struc: 46 - 46.4 Weak (Alt) Fault>> Fault gouge, black clay and sand.

End of Hole @ 50.5

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-335

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	03-Dec-15
UTM Easting	414694	Core Size:	HQ3	Azimuth:	180	Date Logging Complete:	03-Dec-15
UTM Northing:	6817330	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1418.45	Casing Depth (m):	3	Length (m):	32.33	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	02-Dec-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	03-Dec-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-335/KP15-H, located at the mill site, is a geotechnical hole including SPT in the unfrozen soil, packer testing in bedrock every 30 feet interval and thermistor install. The geology consists in sedimentary units, probably from volcanic origin, and rhyolitic ash tuff. Weak trace of oxidation, increasing at 26.60m, are observed in the fractures as well as a narrow CL altered zone (from 26.60m to 27.72m). The hole ends at 32.33m on a graphitic, CA veined, thinly laminated sedimentary unit.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	02-Dec-15		☑	
32	-88	199.6	22.5	222.1	ReflexEZS	Geotech	02-Dec-15	5388	☑	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 2.50 CASN Casing

0 - 2.5: Overburden. SPT from 1.20m to 1.59m.

2.50 19.99 SED undifferentiated Sediment light grey FMG

2.5 - 19.99: Graphitic (specks), CA in matrix fading out when CL alteration increases, weakly foliation. Probably tuffaceous.

<<Min: 2.5 - 8.86 5% Min: Calcite>>

<<Min: 2.5 - 23.85 0.5% Min: Pyrite>> and in veinlets, few patch in RHYva.

<<Min: 2.5 - 23.85 1% Min: Pyrrhotite>>

<<Min: 2.5 - 23.85 0.1% Min: Chalcopyrite>> Observed at 20.25m. Very few.

<<Min: 8.86 - 12.37 1% Min: Calcite>>

<<Min: 12.37 - 15.6 15% Min: Calcite>> and matrix.

<<Min: 15.6 - 23.85 5% Min: Calcite>>

<<Alt: 8.86 - 12.37 Weak (Alt) Chlorite>>

<<Vein: 19.5 - 19.56 Calcium carbonate/Carbonate>> Carbonate veins, brecciated.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

19.99 23.85 RHYva Coarse grained to ash tuff grey-green

<<Min: 23.84 - 32.33 2% Min: Calcite>> and few patch.

23.85 32.33 SED undifferentiated Sediment dark grey FG

23.85 - 32.33: Thin foliation, CA veinlets. E.O.H.

<<Min: 23.85 - 32.33 1% Min: Pyrite>> Thin veinlets, fracture infilling.

<<Min: 23.85 - 32.33 0.5% Min: Pyrrhotite>>

<<Alt: 26.6 - 27.72 Moderate (Alt) Chlorite>> Moderate to strong, associated with QZ veins.

<<Vein: 27.37 - 27.7 Quartz-Iron oxide>> 2 QZ veins (5cm wide) in CL altered zone. Trace of oxidation

<<Struc: 26.6 - 32.33 Weak (Alt) Fault>> Oxidized fractures and rubble zones.

<<Struc: 31.3 - 32.33 Weak (Alt) Fault>> Fractures with oxidation trace along the core axis.

End of Hole @ 32.33

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GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K15-336

Prospect:	ABM	Hole Type:	DD	Survey Type:	APS-Lidar	Logged By:	Jerome de Pasquale
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Geotech	Date Logging Start:	08-Dec-15
UTM Easting	414792	Core Size:	HQ3	Azimuth:	0	Date Logging Complete:	09-Dec-15
UTM Northing:	6819017	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Geotech
UTM Elev. (m):	1317.5	Casing Depth (m):	18	Length (m):	50.5	Drill Rig:	Hydracore
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	05-Dec-15
Local Northing:		Cemented?:	SP	Core Storage Loc.:	KZK Camp	Drill Completed:	08-Dec-15
Local Elev. (m):						Purpose:	Geotech
Comments:						Parent Hole:	

K15-336/KP15-B (centerline site D creek) is a geotechnical including SPT in unfrozen soil (5 feet interval) and packer testing (2 test at 10 feet interval on top, 20 feet interval thereafter) conducted by Knight Piesold Consulting as well as a thermistor install. The geology is made up of 18 m of salty alluvium followed by CL atered mafic ash tuff and graphitic mudstone interbedded showing CA veining in the foliation.Trace of decalcification are observed and tow narrow fault gouge zone. The hole ends at 50.50m on a dominant mudstone unit mixed with ash tuff.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	0	0	0	APS	Geotech	12-Jun-15		☑	No downhole survey.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

0.00 18.00 CASN Casing

0 - 18: Soil (A and B horizon) followed by alluvium silt. Few boulders.

18.00 39.37 MAFta Coarse grained to ash tuff green

18 - 39.37: Progressive lower contact. Interbedded with graphitic mudstone. Feldspar clasts. From 34.70mto 35.33m, ash bed.

<<Min: 18 - 50.5 0.5% Min: Pyrite>>

<<Min: 18 - 50.5 0.1% Min: Pyrrhotite>>

<<Alt: 18 - 39.47 Moderate (Alt) Chlorite>> In mafic tuff.

<<Struc: 20.6 - 20.61 dominant foliation>>

<<Struc: 29 - 29.01 dominant foliation>>

<<Struc: 31 - 33.5 Weak (Alt) Fault>> 3 fault gouge zones, 10 cm wide, clay infilling. Broken zone.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %

39.37 41.13 MDS Carbonaceous Mudstone & Tuffaceous Mudstone black

39.37 - 41.13: Thin foliation, CA veinlets, few PY along the foliation.

<<Struc: 39.4 - 39.41 dominant foliation>>

41.13 44.33 MAFta Coarse grained to ash tuff grey-brown

41.13 - 44.33: CA veinlets. Sharp upper contact, progressive lower contact. Feldspar clasts.

<<Alt: 41.13 - 44.33 Moderate (Alt) Chlorite>> In mafic tuff.

<<Vein: 43.8 - 50.4 Calcite>> CA veiningin foliation. Locally vuggy texture.

44.33 50.50 MDS Carbonaceous Mudstone & Tuffaceous Mudstone light grey

44.33 - 50.5: Dominantly graphitic mudstone mixed with mafic tuff, CA veined. Locally vuggy texture (decalcification). E.O.H.

<<Alt: 44.33 - 50.5 Weak (Alt) Chlorite>> In mafic tuff.

<<Struc: 48.1 - 48.3 Weak (Alt) Fault>> Sandy clay fault gouge.

<<Struc: 48.4 - 48.41 dominant foliation>>

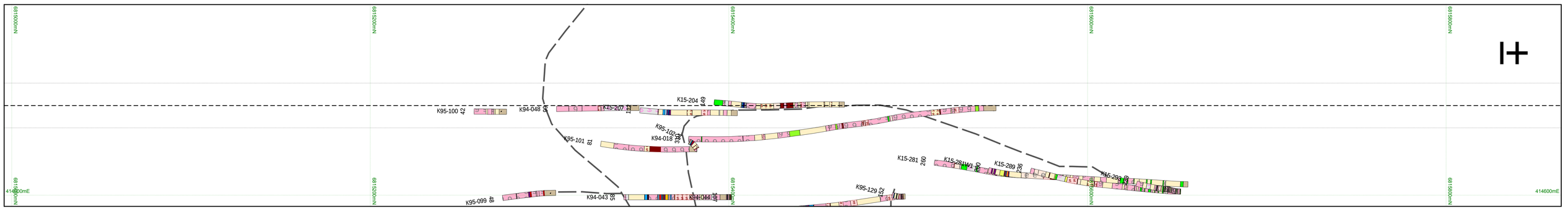
End of Hole @ 50.5

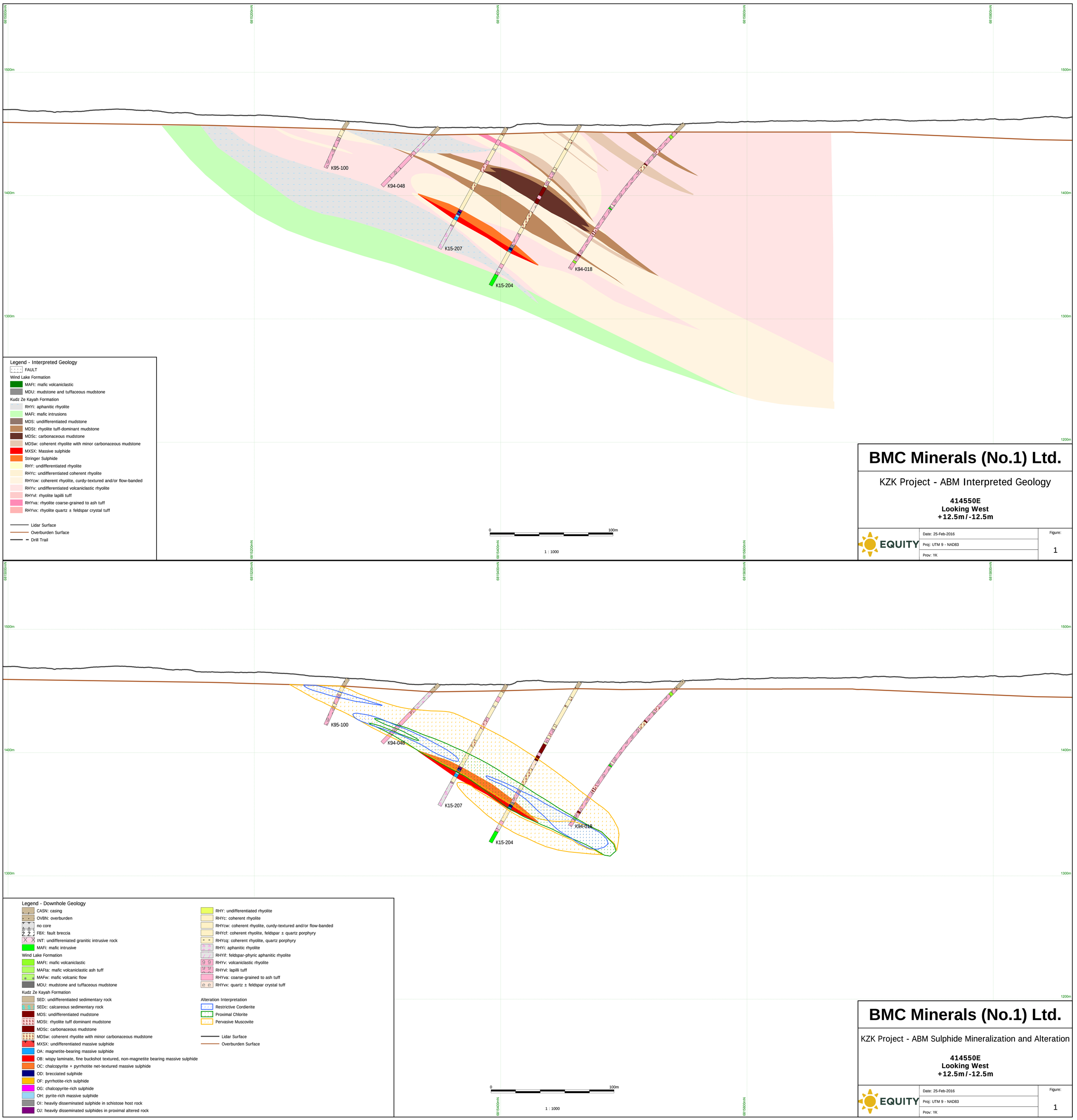
Appendix M: Geological sections

This appendix contains 35 geological sections through the areas targeted for resource and exploration drilling during the 2015 KZK Project. Out of these 35 sections, 17 are through the ABM Zone, seven are through Krakatoa Zone, two are for Santorini, another two are for the Fault Creek Target, and seven are for the GP4F Deposit (Table M-1).

Table M-1: Table of contents for sections in this appendix

Section	Deposit/Zone	Orientation	Looking	Width	Figure No
414550E	ABM	000°	270°	±12.5 m	Figure 1
414600E	ABM	000°	270°	±12.5 m	Figure 2
414625E	ABM	000°	270°	±12.5 m	Figure 3
414650E	ABM	000°	270°	±12.5 m	Figure 4
414675E	ABM	000°	270°	±12.5 m	Figure 5
414700E	ABM	000°	270°	±12.5 m	Figure 6
414750E	ABM	000°	270°	±12.5 m	Figure 7
414800E	ABM	000°	270°	±12.5 m	Figure 8
414850E	ABM	000°	270°	±12.5 m	Figure 9
414900E	ABM	000°	270°	±12.5 m	Figure 10
414950E	ABM	000°	270°	±12.5 m	Figure 11
415000E	ABM	000°	270°	±12.5 m	Figure 12
415050E	ABM	000°	270°	±12.5 m	Figure 13
415100E	ABM	000°	270°	±12.5 m	Figure 14
415150E	ABM	000°	270°	±12.5 m	Figure 15
415200E	ABM	000°	270°	±12.5 m	Figure 16
415250E	ABM	000°	270°	±12.5 m	Figure 17
K-B	Krakatoa	060°	300°	±25 m	Figure 18
K-D	Krakatoa	060°	300°	±25 m	Figure 19
K-F	Krakatoa	060°	300°	±25 m	Figure 20
K-H	Krakatoa	060°	300°	±25 m	Figure 21
K-J	Krakatoa	060°	300°	±25 m	Figure 22
K-L	Krakatoa	060°	300°	±25 m	Figure 23
K-N	Krakatoa	060°	300°	±25 m	Figure 24
414625E	Santorini	000°	270°	+14/-16.5 m	Figure 25
414675E	Santorini	000°	270°	+12.5/-30.0 m	Figure 26
414800E	FCZ	000°	270°	±15 m	Figure 27
414750E	FCZ	000°	270°	±15 m	Figure 28
418850E	GP4F	000°	270°	+110 m/-125 m	Figure 29
419350E	GP4F	000°	270°	±25 m	Figure 30
419406E	GP4F	000°	270°	±25 m	Figure 31
419460E	GP4F	000°	270°	±25 m	Figure 32
419500E	GP4F	000°	270°	±25 m	Figure 33
419560E	GP4F	000°	270°	±25 m	Figure 34
419650E	GP4F	000°	270°	±25 m	Figure 35





Legend - Interpreted Geology

- FAULT

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414550E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 1
Proj: UTM 9 - NAD83	
Prov: YK	

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
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- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
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- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - ABM Sulphide Mineralization and Alteration

414550E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 1
Proj: UTM 9 - NAD83	
Prov: YK	

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414600E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 2
Proj: UTM 9 - NAD83	
Prov: YK	

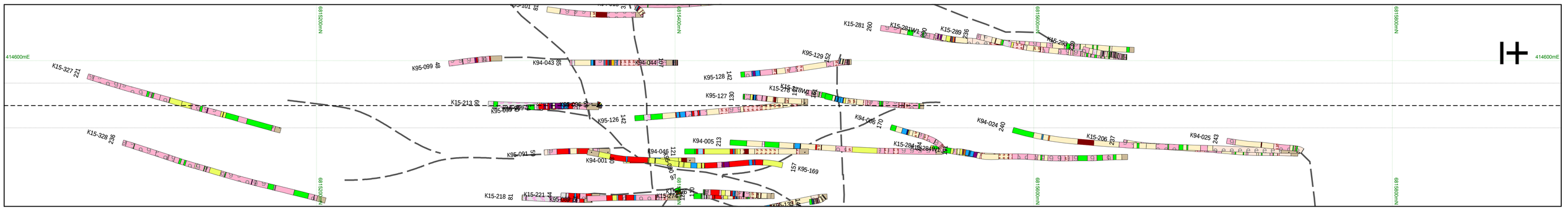
BMC Minerals (No.1) Ltd.

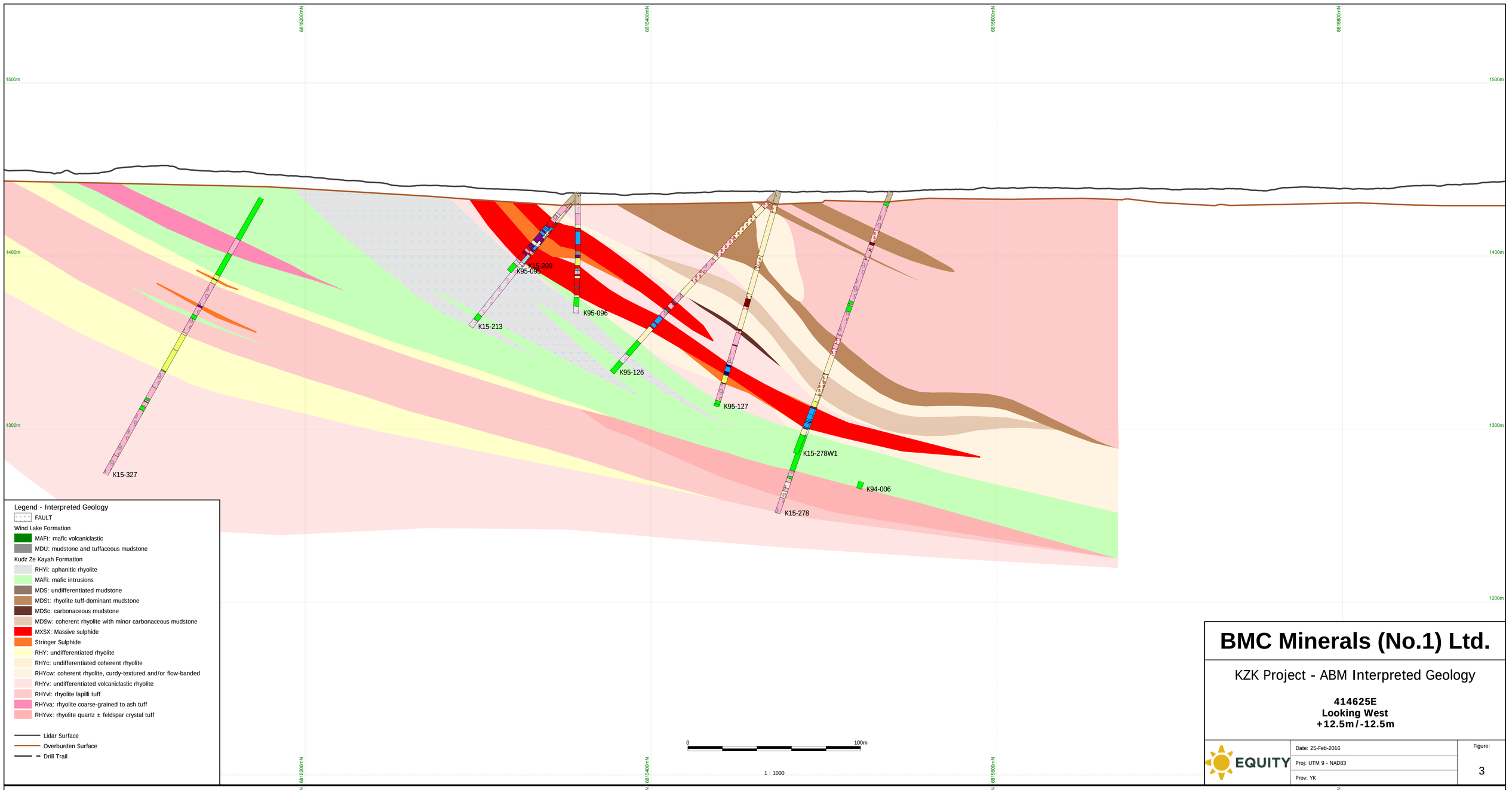
KZK Project - ABM Sulphide Mineralization and Alteration

414600E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 2
Proj: UTM 9 - NAD83	
Prov: YK	





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- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

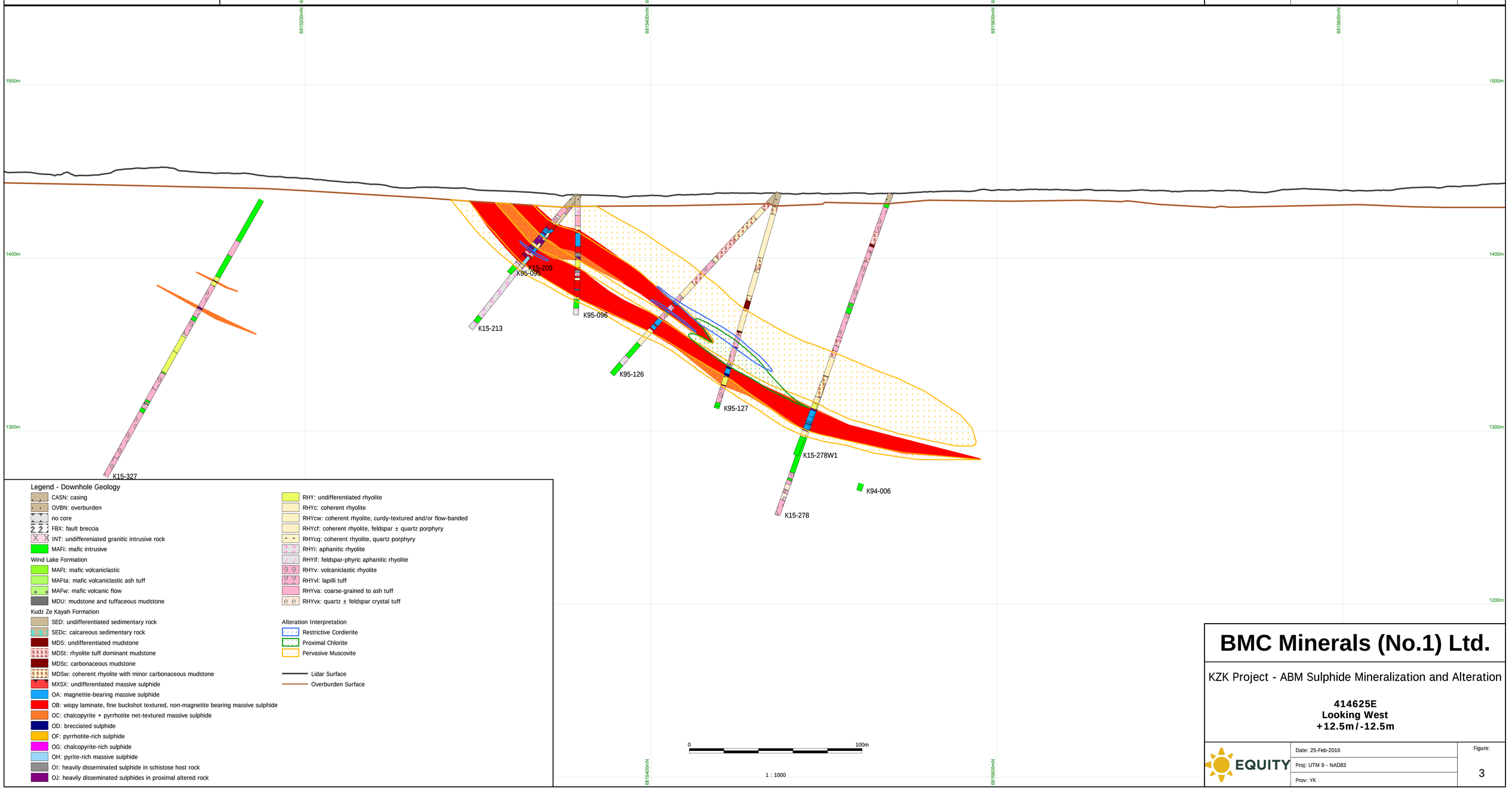
KZK Project - ABM Interpreted Geology

414625E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 3



Legend - Downhole Geology

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- FBX: fault breccia
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- MAFi: mafic intrusive

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Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

BMC Minerals (No.1) Ltd.

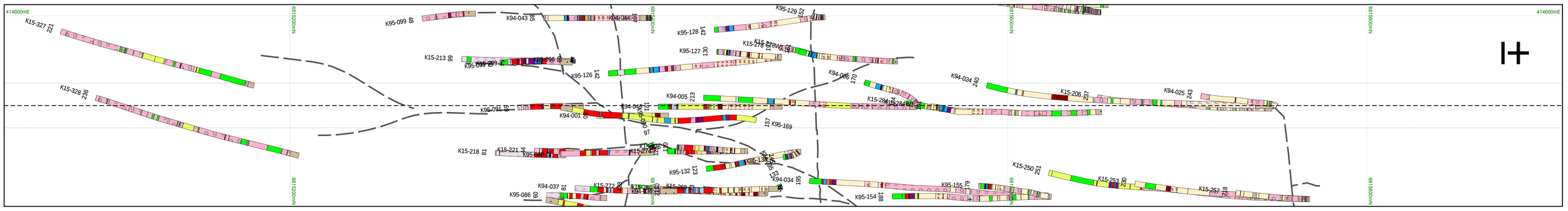
KZK Project - ABM Sulphide Mineralization and Alteration

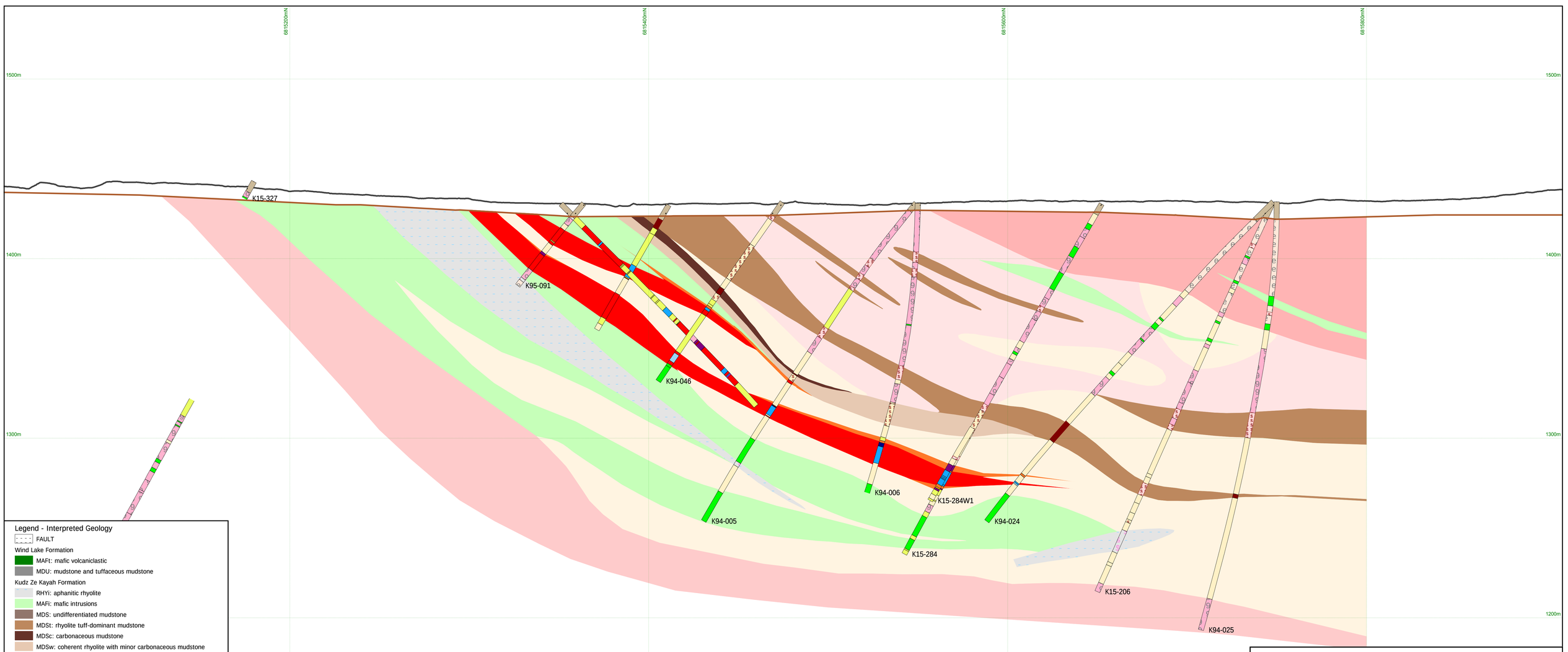
414625E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 3









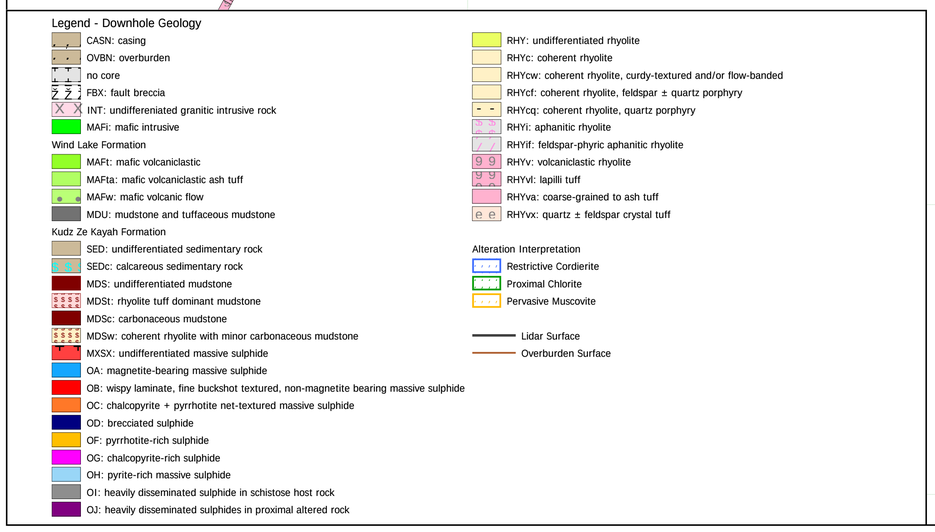
BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414650E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 4
Proj: UTM 9 - NAD83	
Prov: YK	





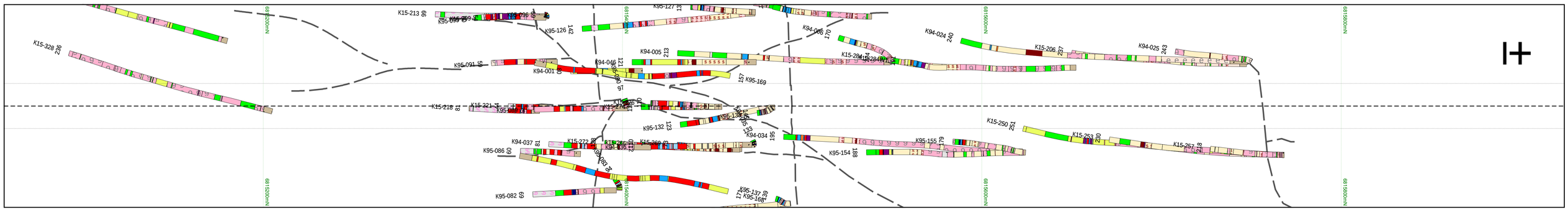
BMC Minerals (No.1) Ltd.

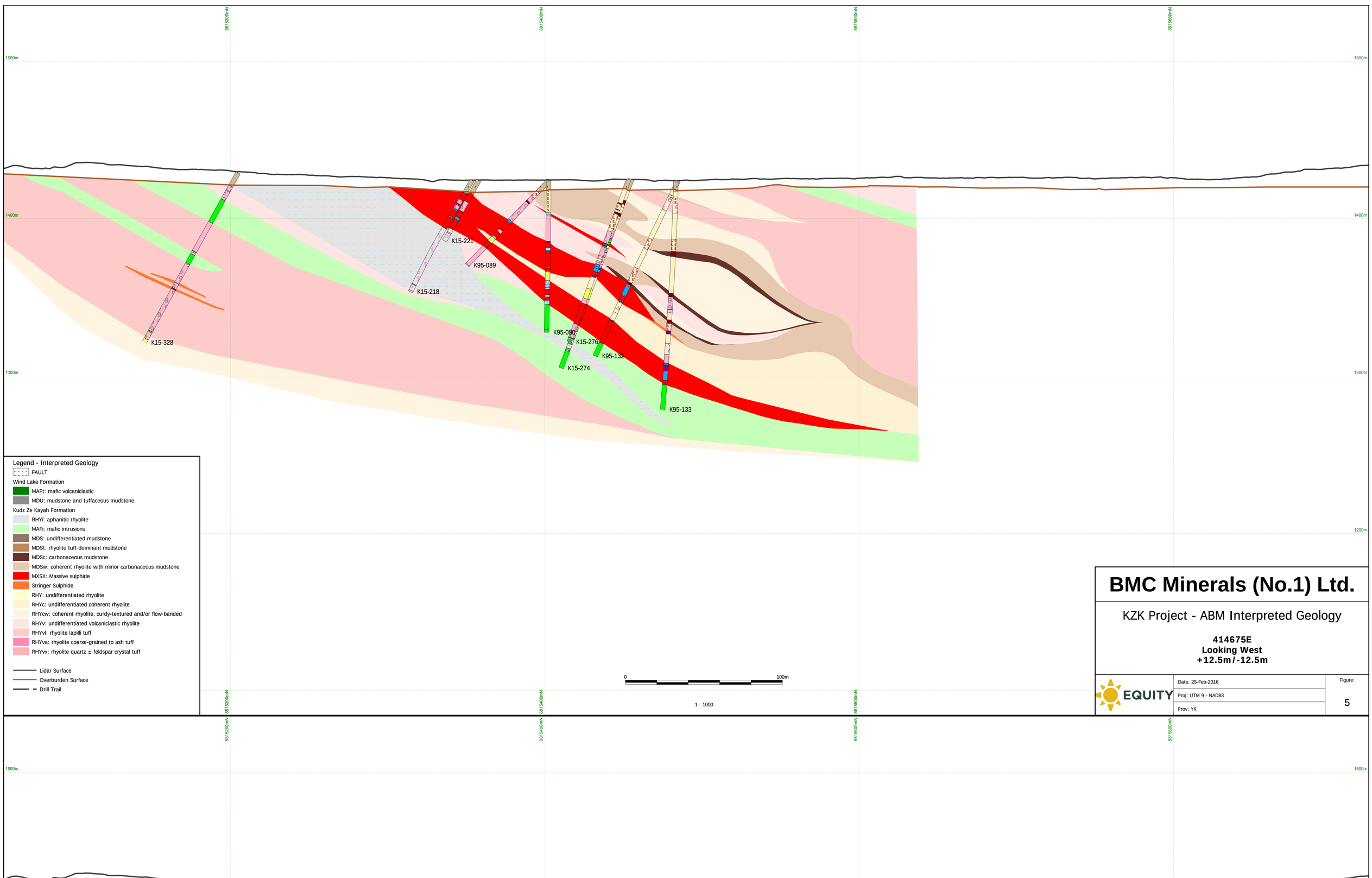
KZK Project - ABM Sulphide Mineralization and Alteration

414650E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 4
Proj: UTM 9 - NAD83	
Prov: YK	





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- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414675E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 5

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
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- INT: undifferenciated granitic intrusive rock
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- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

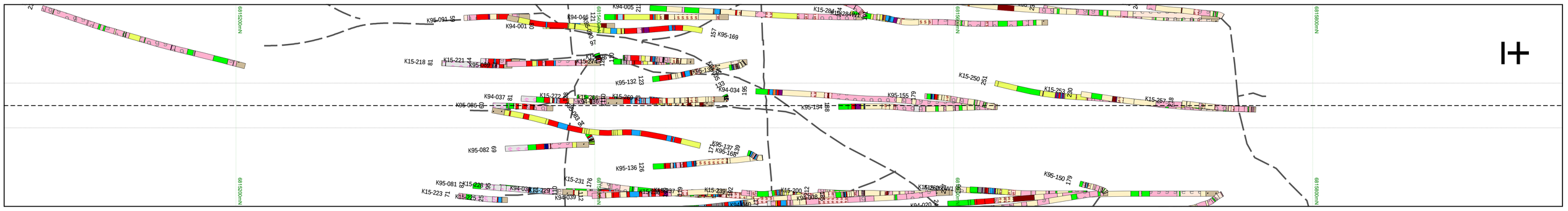
KZK Project - ABM Sulphide Mineralization and Alteration

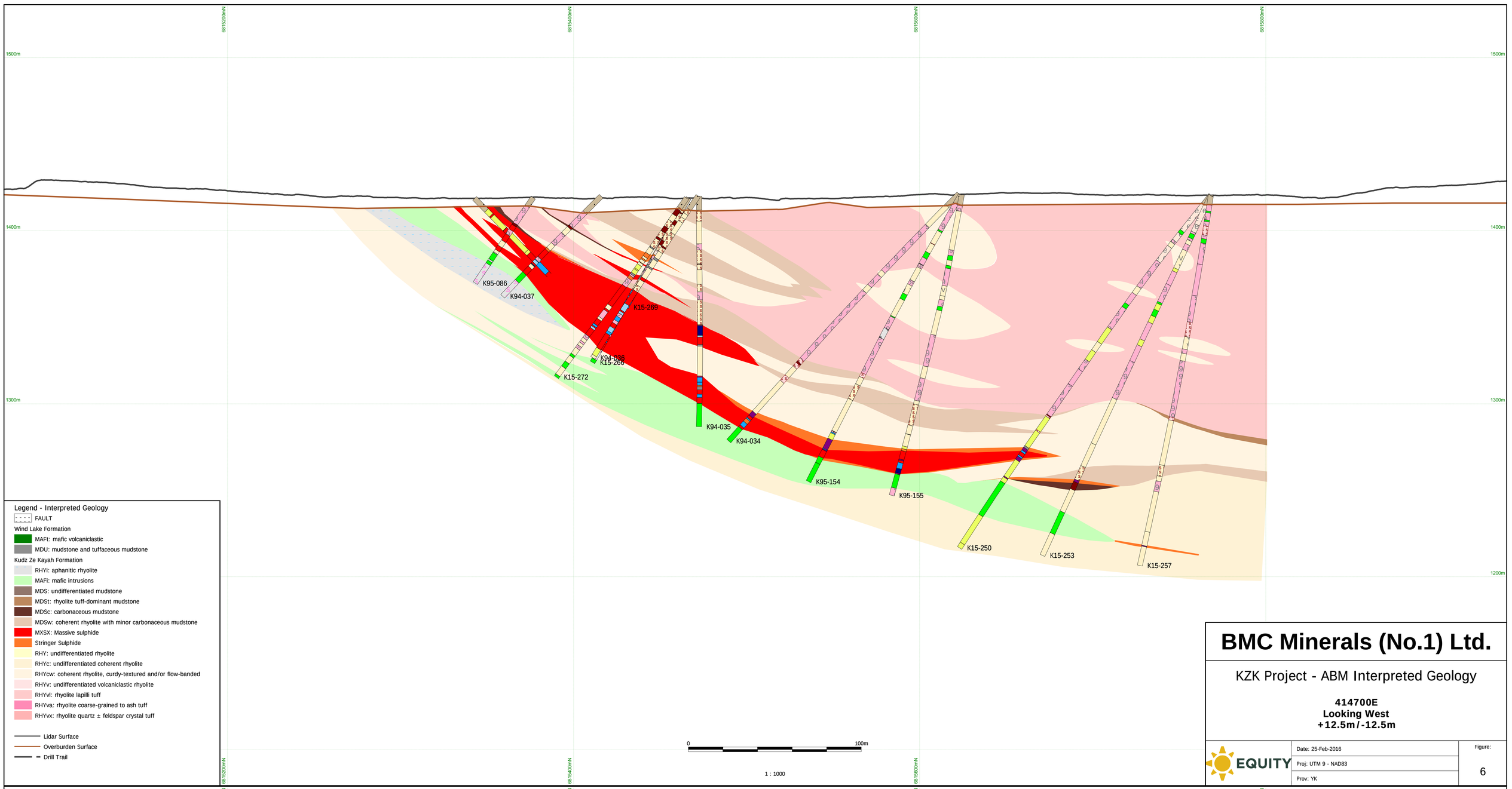
414675E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 5





Legend - Interpreted Geology

- FAULT

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

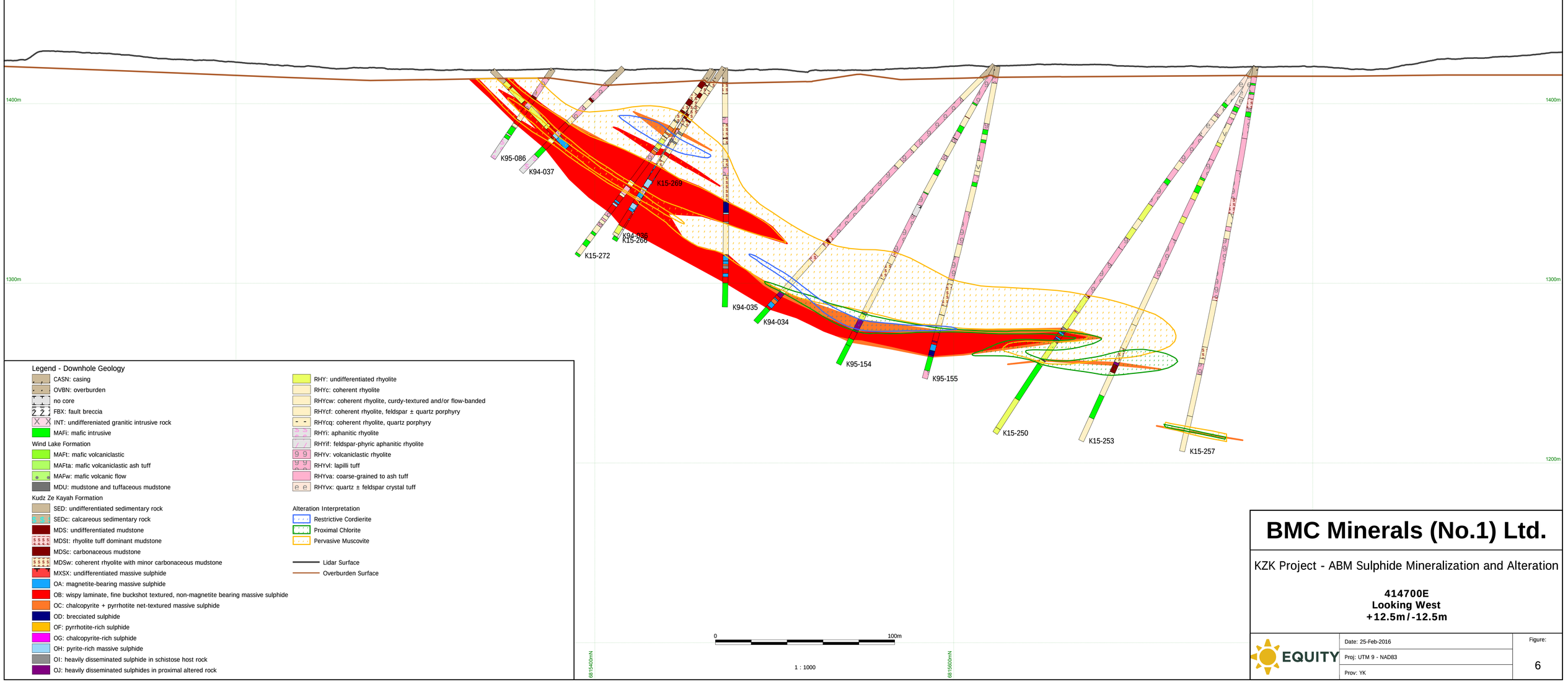
KZK Project - ABM Interpreted Geology

414700E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 6



Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

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- MAFta: mafic volcaniclastic ash tuff
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- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

BMC Minerals (No.1) Ltd.

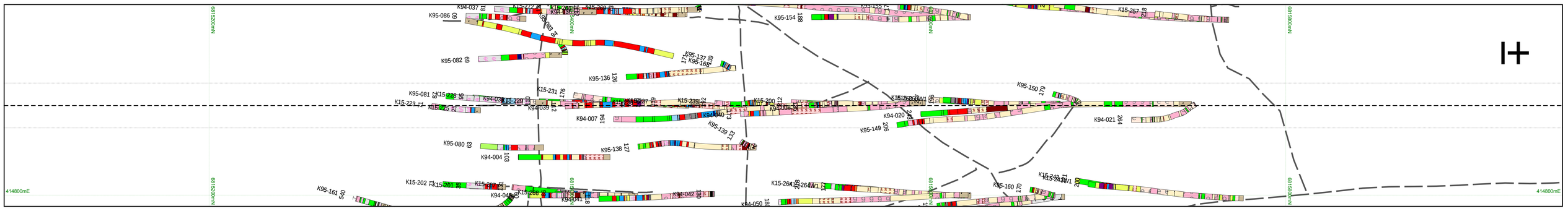
KZK Project - ABM Sulphide Mineralization and Alteration

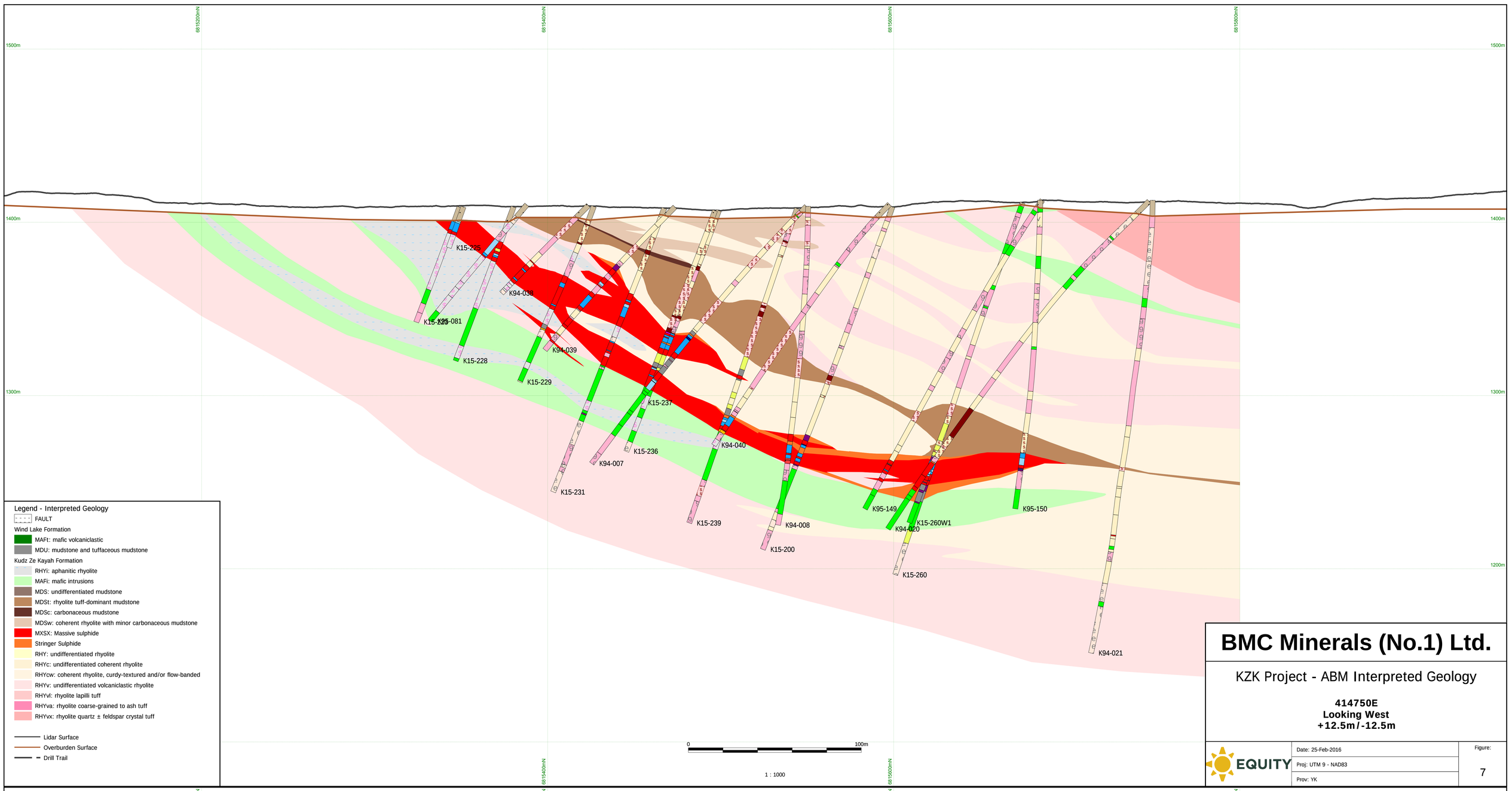
414700E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 6





Legend - Interpreted Geology

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- Lidar Surface
- Overburden Surface
- Drill Trail

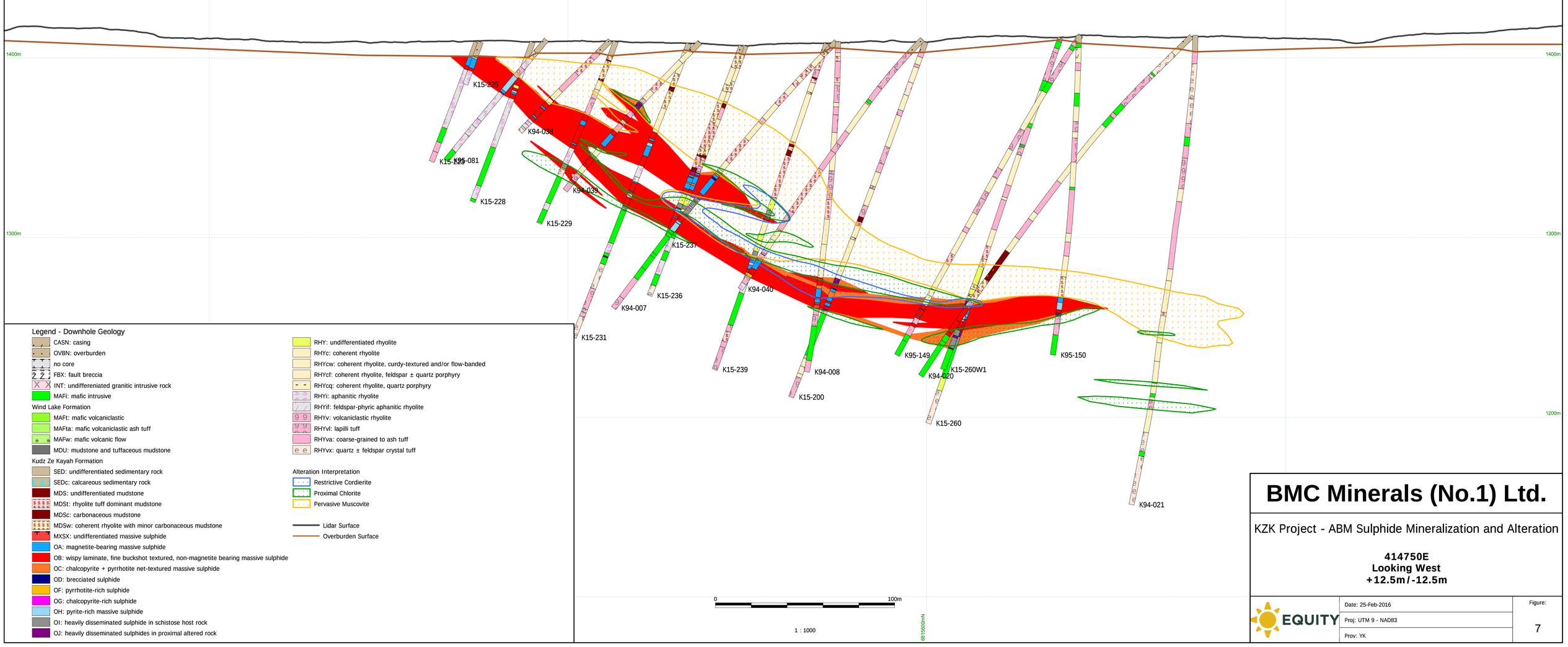
BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414750E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 7
Proj: UTM 9 - NAD83	
Prov: YK	



Legend - Downhole Geology

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Wind Lake Formation

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- MAFta: mafic volcaniclastic ash tuff
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- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

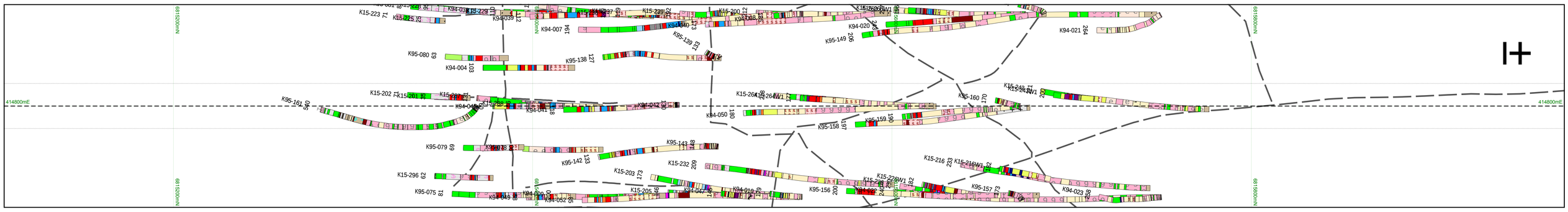
BMC Minerals (No.1) Ltd.

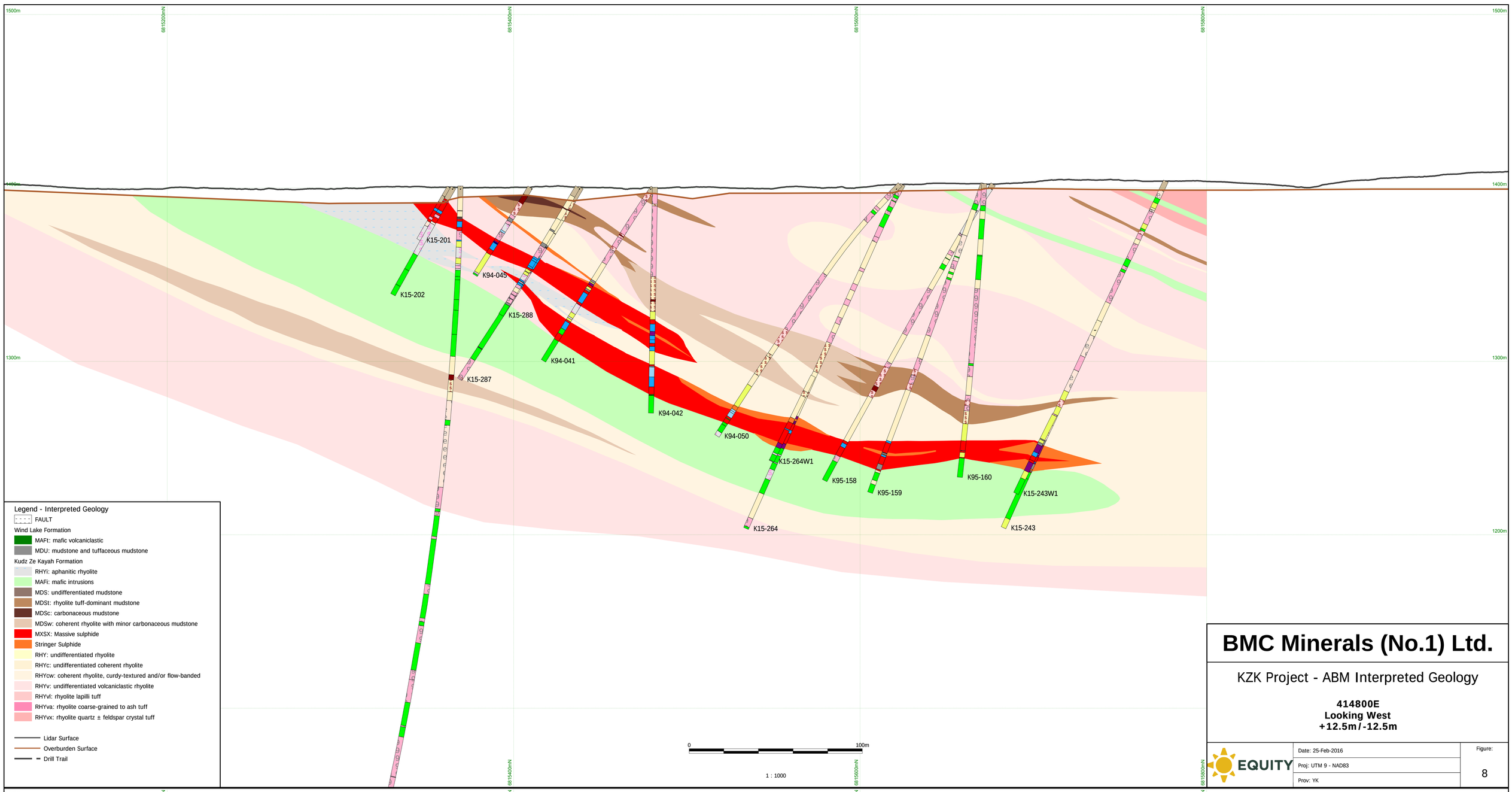
KZK Project - ABM Sulphide Mineralization and Alteration

414750E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 7
Proj: UTM 9 - NAD83	
Prov: YK	





Legend - Interpreted Geology

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Wind Lake Formation

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Kudz Ze Kayah Formation

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- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

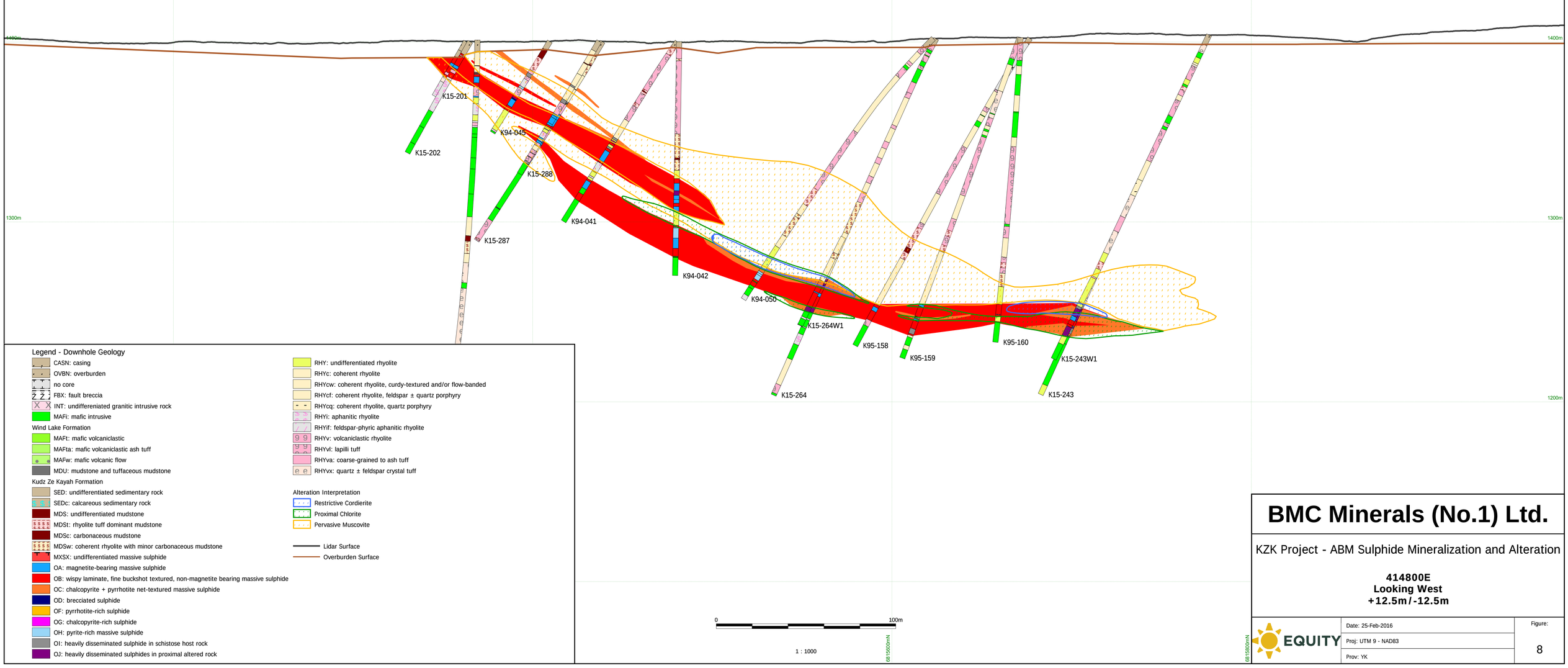
KZK Project - ABM Interpreted Geology

414800E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 8



Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undiffereniated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

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- MAFta: mafic volcaniclastic ash tuff
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Kudz Ze Kayah Formation

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- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

BMC Minerals (No.1) Ltd.

KZK Project - ABM Sulphide Mineralization and Alteration

414800E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 8

414800mE

6815200mN

6815400mN

6815600mN

6815800mN

1400m

1300m

1200m

K95-161 40
K94-045 25
K15-268 51
K94-042 108
K94-050 180
K95-159 157
K95-158 147
K95-160 107
K95-079 69
K95-078 82
K95-143 148
K95-142 133
K15-232 209
K15-216 23
K15-216W1 82
K15-296 62
K15-203 173
K15-226W1 82
K95-075 74
K94-009 90
K94-049 88
K94-052 95
K15-205 96
K94-047 94
K94-010 93
K95-156 200
K95-157 73
K94-023 98
K15-227 98
K15-230 87
K95-074 93
K95-141 123
K95-073 68
K95-146 94
K95-140 126
K94-003 137
K95-145 33
K95-144 133
K95-072 50
K95-152 173
K15-238 205
K15-238W1 34
K95-153 173
K15-233 24

K15-296
K95-075
K94-049
K94-052
K15-232
K15-205
K94-047
K94-009
K15-203
K94-010
K95-156
K15-226W1
K15-216W1
K15-216
K95-157
K94-022
K15-226
K94-023

0 100m

1 : 1000

Legend - Interpreted Geology

- FAULT

Wind Lake Formation
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Kudz Ze Kayah Formation
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- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414850E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 9
Proj: UTM 9 - NAD83	
Prov: YK	

Legend - Downhole Geology

- CASN: casing
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Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

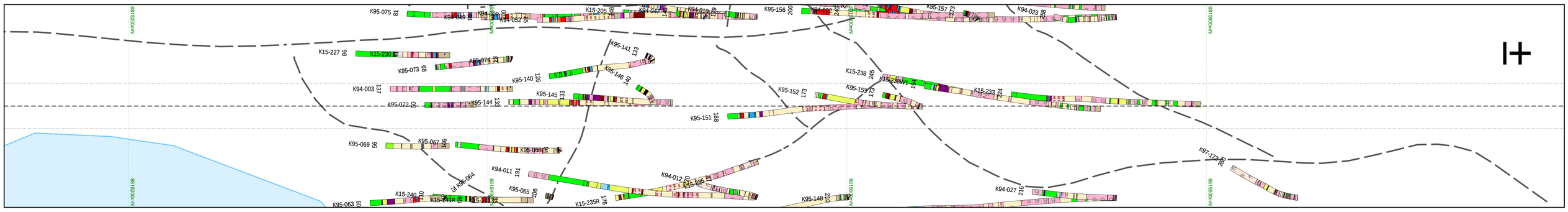
BMC Minerals (No.1) Ltd.

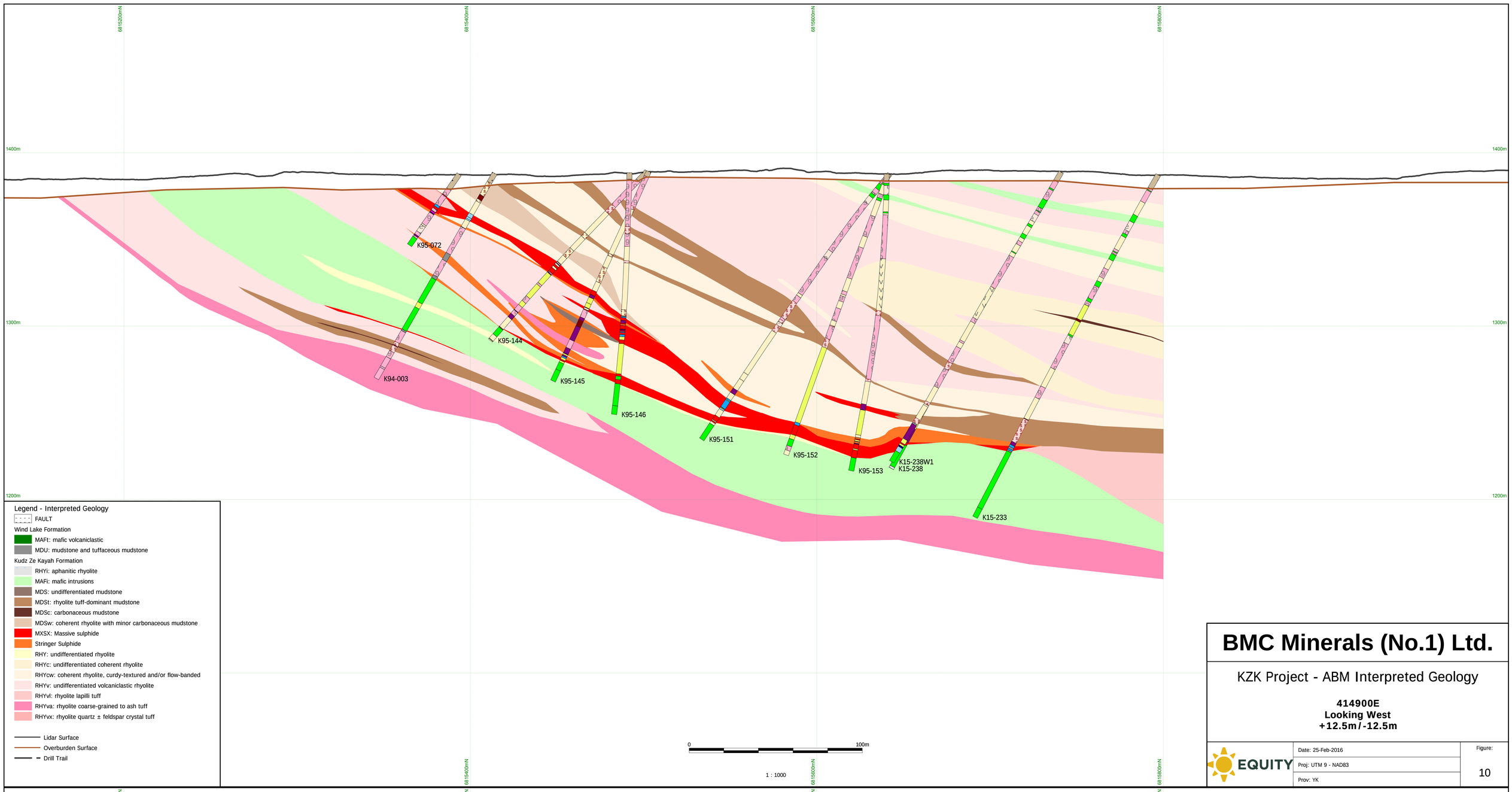
KZK Project - ABM Sulphide Mineralization and Alteration

414850E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 9
Proj: UTM 9 - NAD83	
Prov: YK	





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- Lidar Surface
- Overburden Surface
- Drill Trail

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414900E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 10

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Alteration Interpretation

- Restrictive Cordierite
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- Lidar Surface
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0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - ABM Sulphide Mineralization and Alteration

414900E
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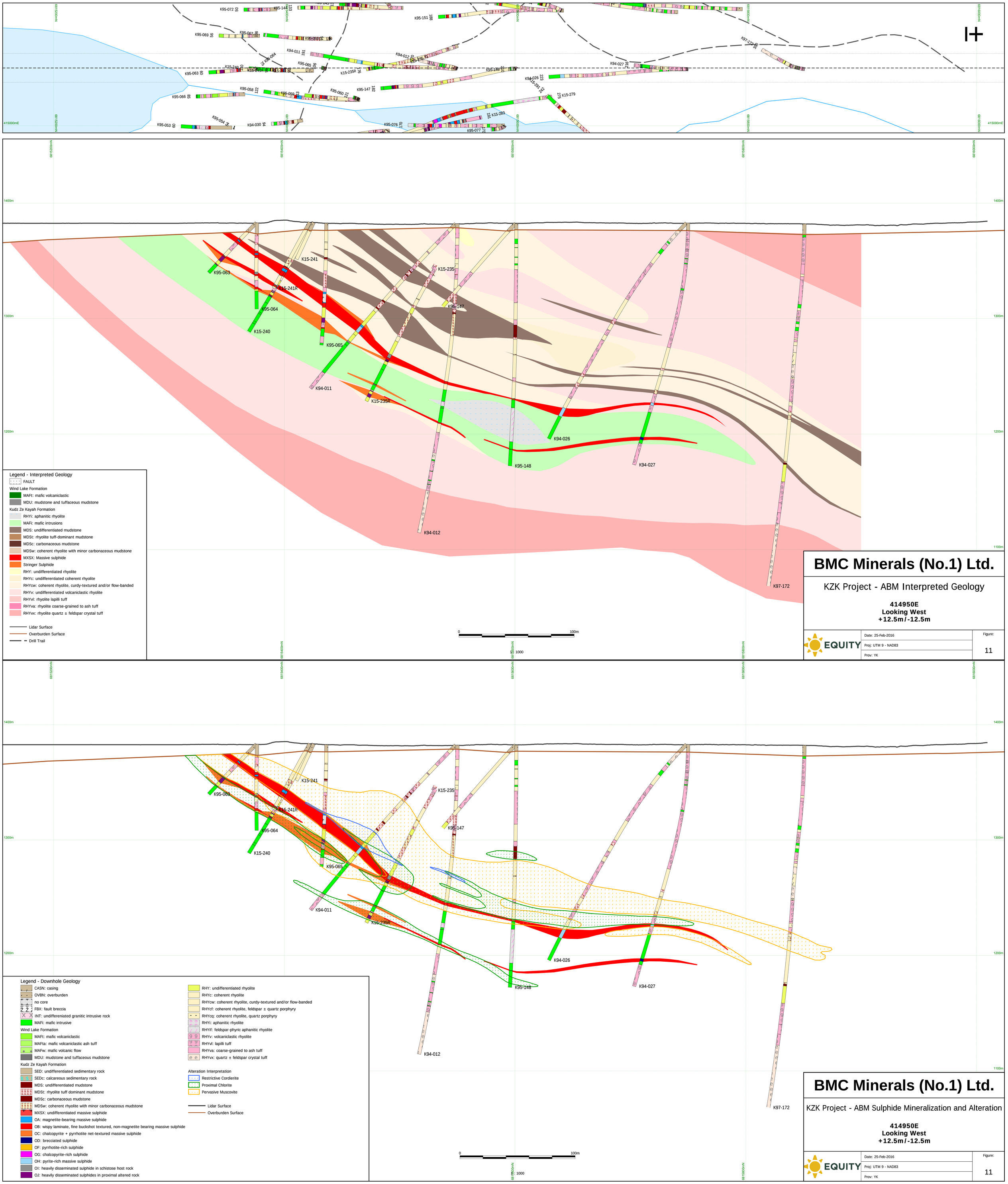
EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 10



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BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

414950E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 11
Proj: UTM 9 - NAD83	
Prov: YK	

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- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

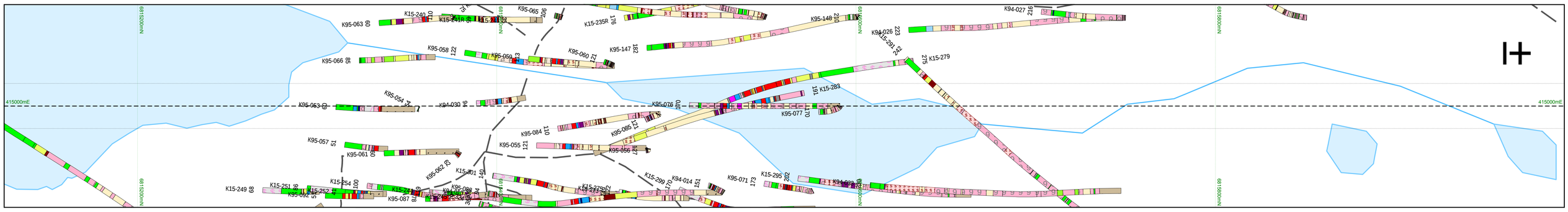
BMC Minerals (No.1) Ltd.

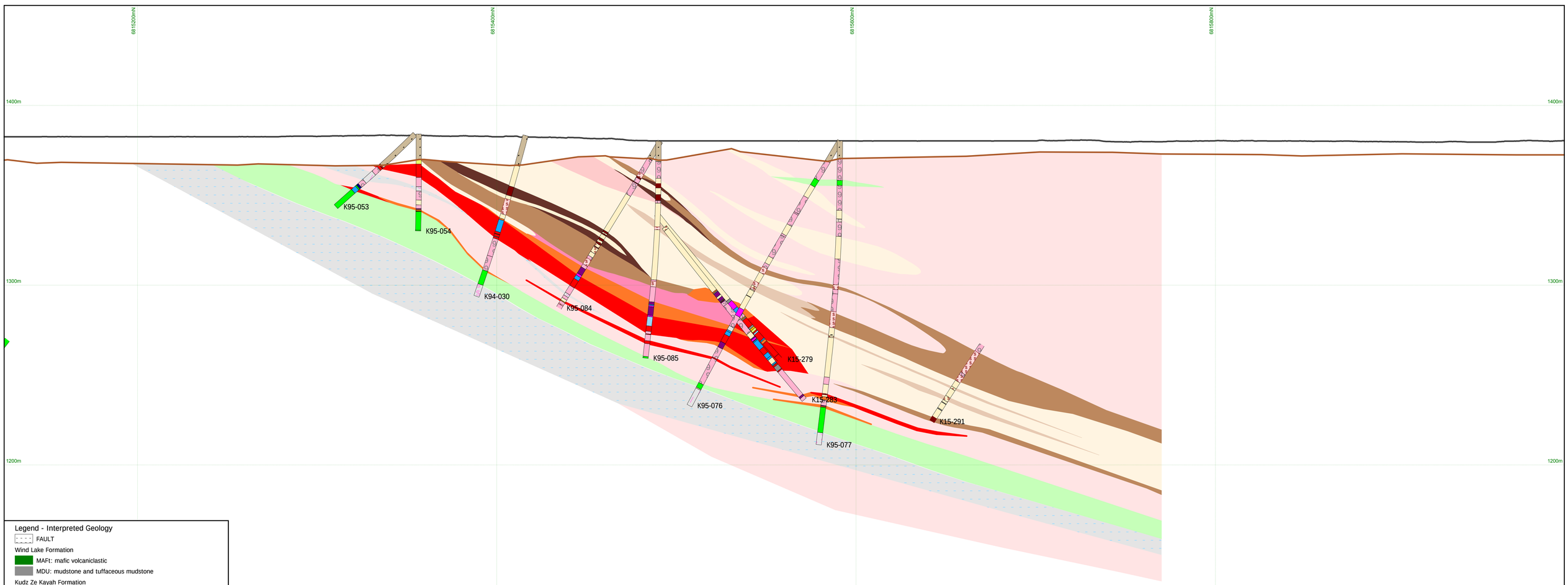
KZK Project - ABM Sulphide Mineralization and Alteration

414950E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 11
Proj: UTM 9 - NAD83	
Prov: YK	





Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

0 100m

1 : 1000

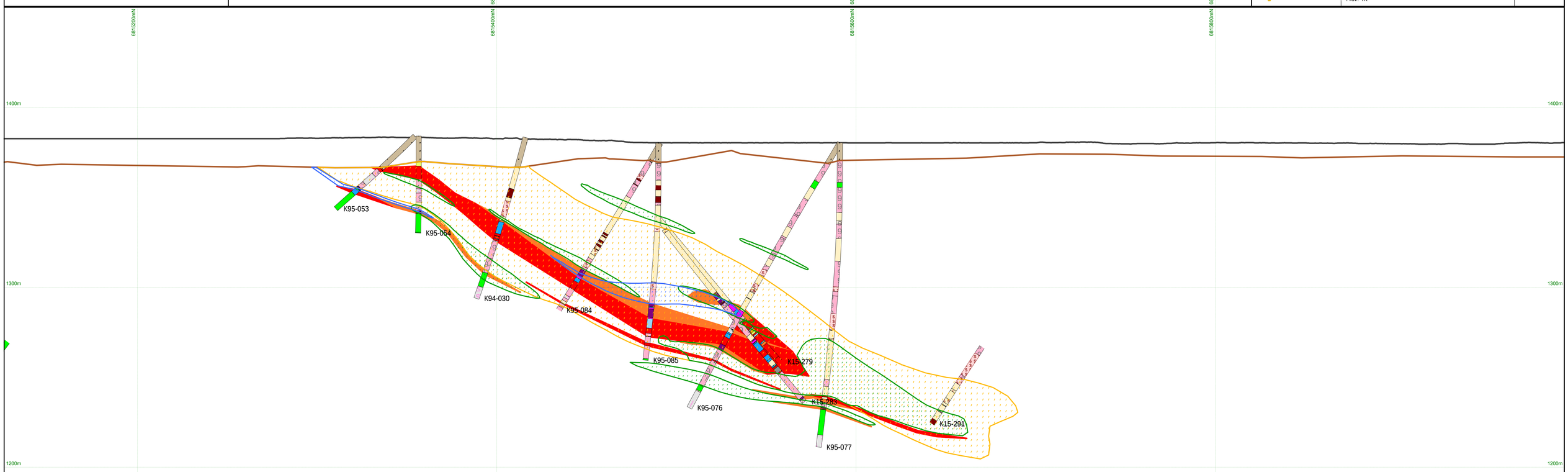
BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

415000E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 12
Proj: UTM 9 - NAD83	
Prov: YK	



Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
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- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

0 100m

1 : 1000

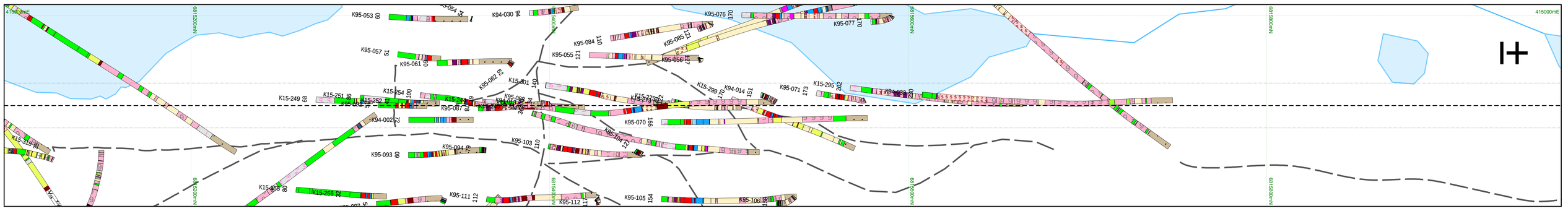
BMC Minerals (No.1) Ltd.

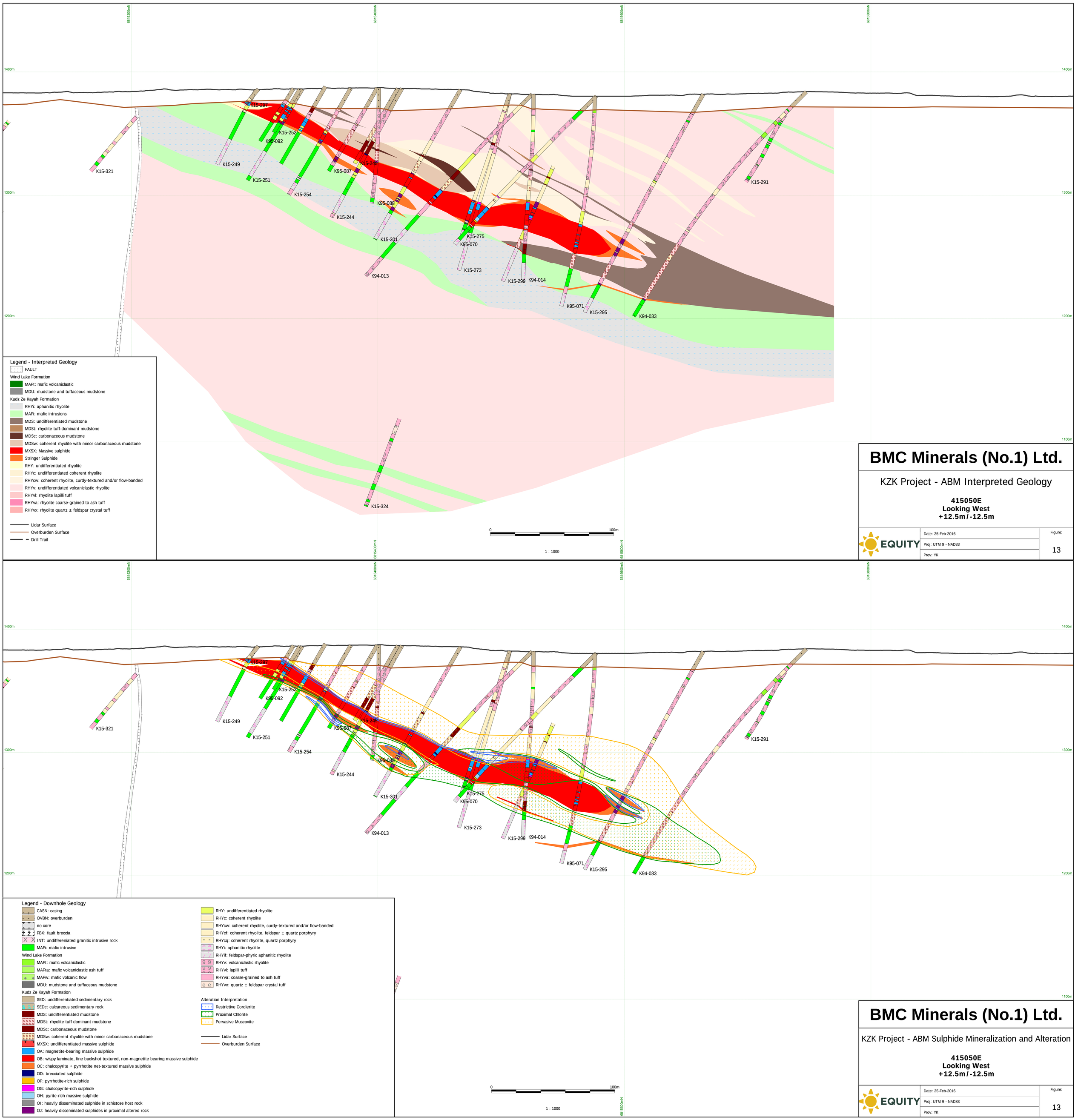
KZK Project - ABM Sulphide Mineralization and Alteration

415000E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 12
Proj: UTM 9 - NAD83	
Prov: YK	





Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
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Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
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- Stringer Sulphide
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- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

415050E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 13

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
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- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

BMC Minerals (No.1) Ltd.

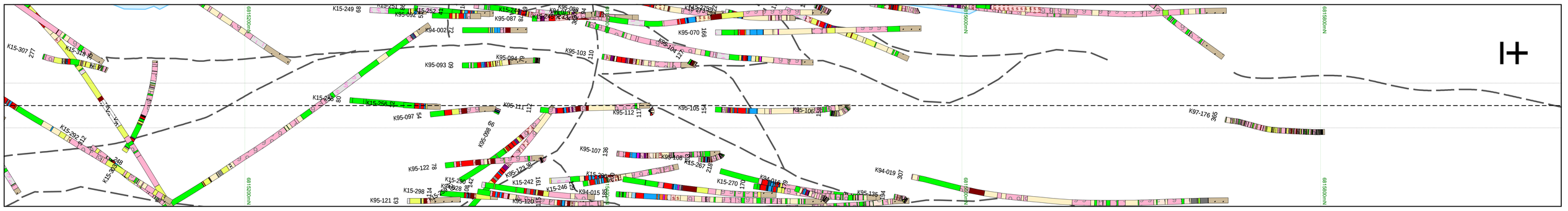
KZK Project - ABM Sulphide Mineralization and Alteration

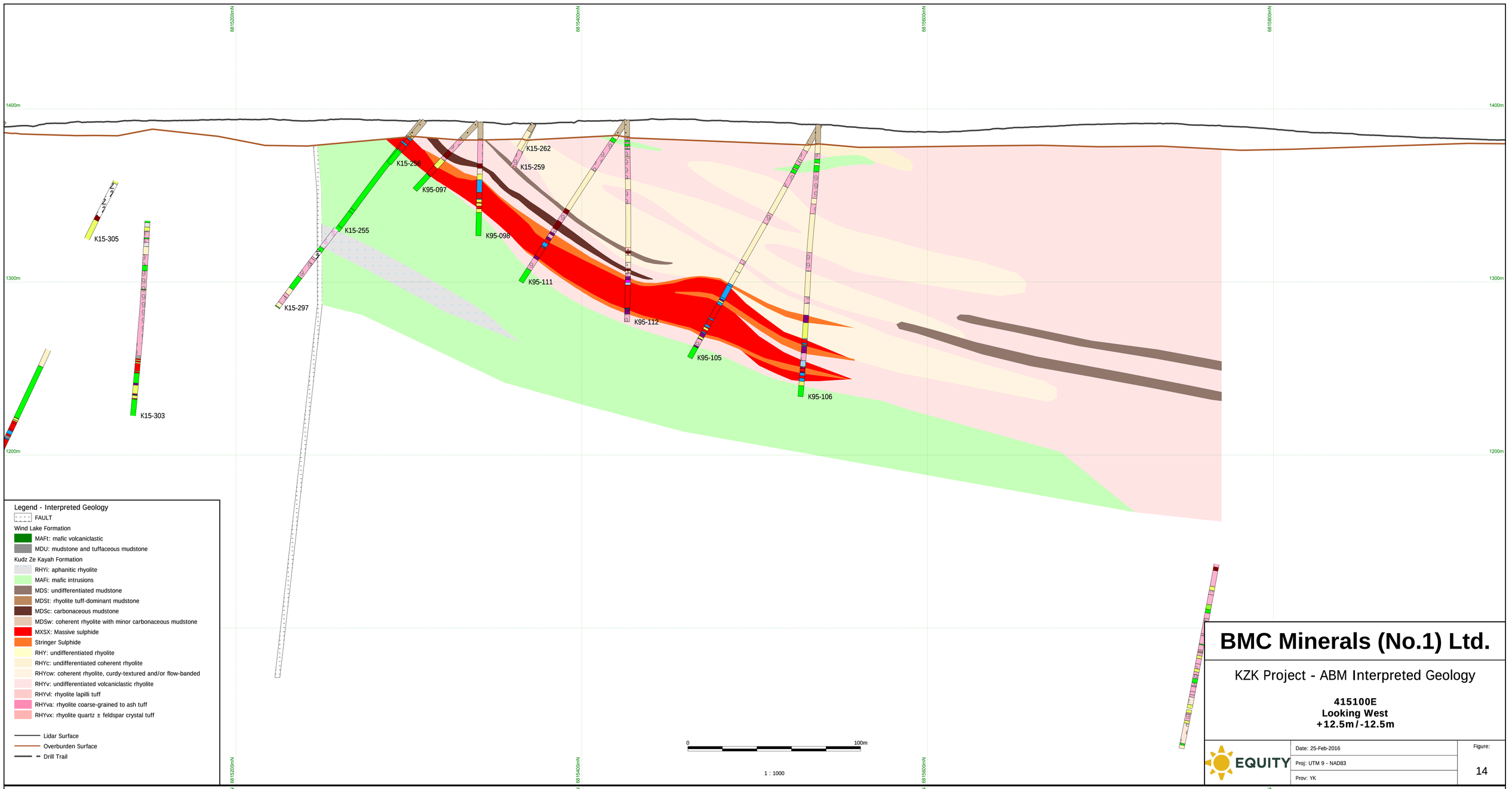
415050E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 13





Legend - Interpreted Geology

- FAULT

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- RHYi: aphanitic rhyolite
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- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

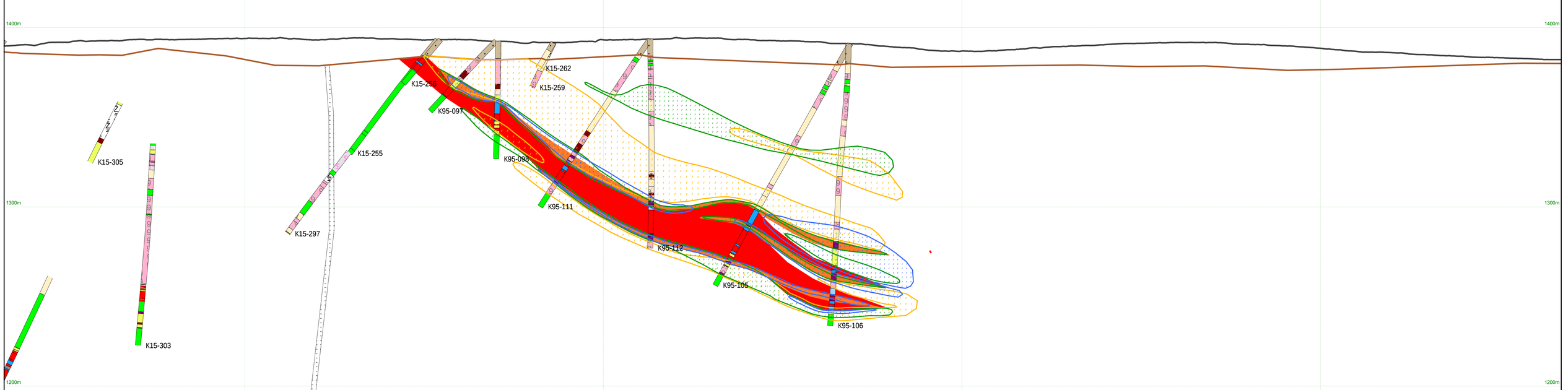
KZK Project - ABM Interpreted Geology

415100E
Looking West
+12.5m / -12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 14



Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

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- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
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- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

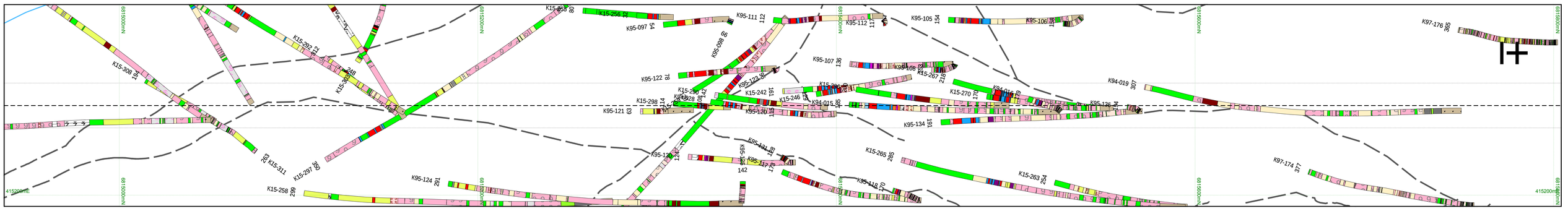
KZK Project - ABM Sulphide Mineralization and Alteration

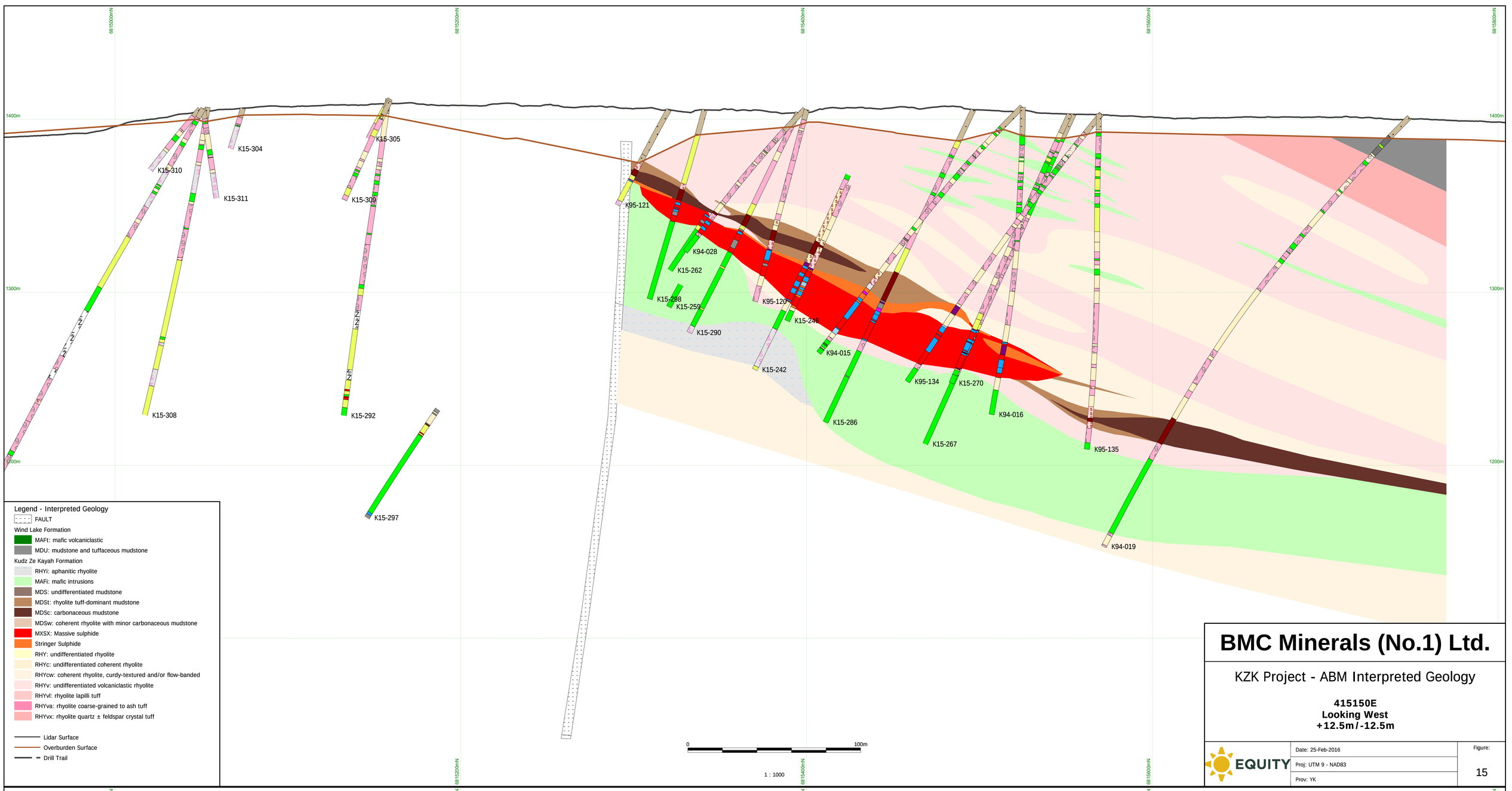
415100E
Looking West
+12.5m / -12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 14





Legend - Interpreted Geology

- FAULT

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
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- RHYc: undifferentiated coherent rhyolite
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- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

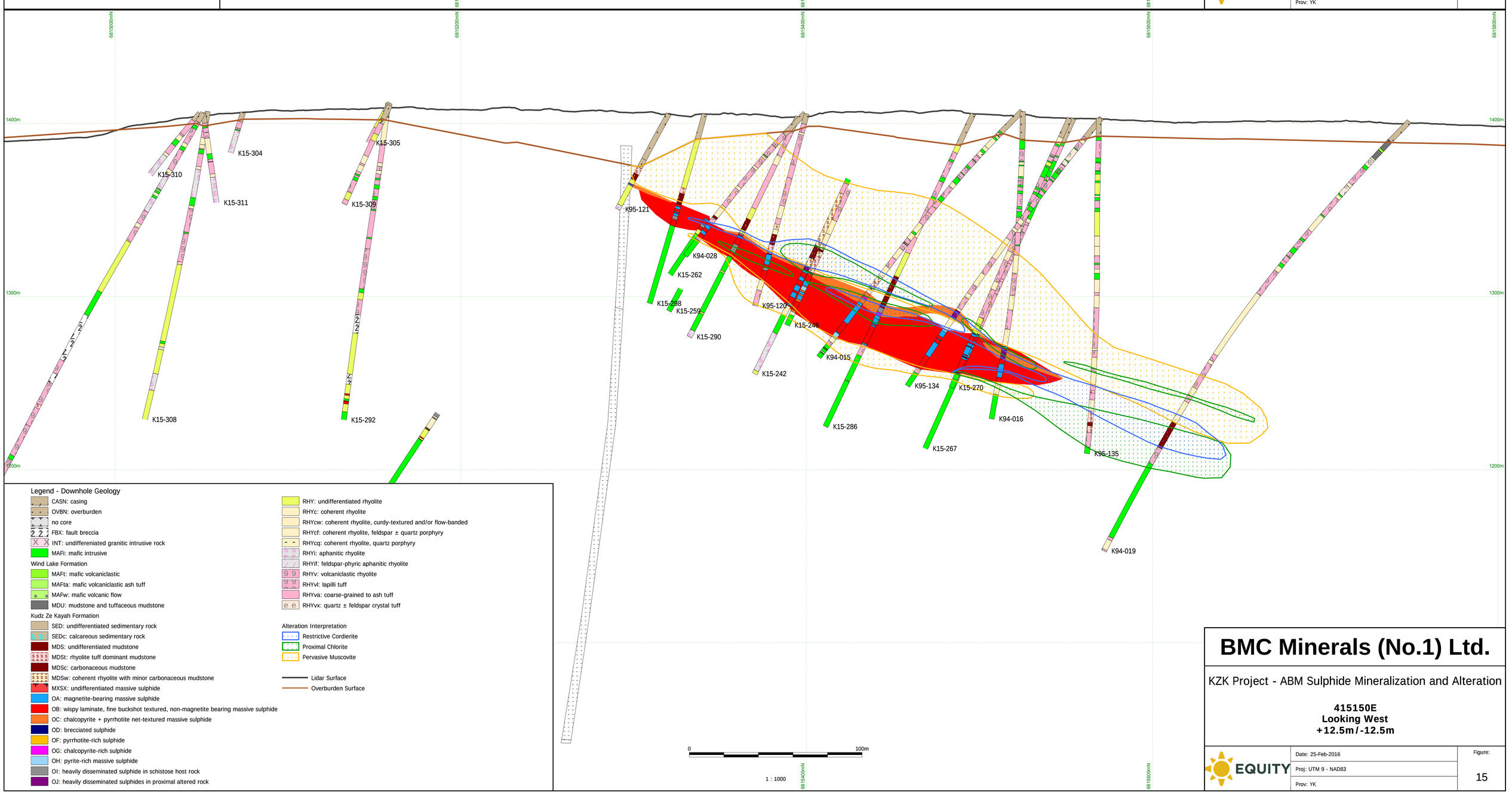
BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

415150E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 15
Proj: UTM 9 - NAD83	
Prov: YK	



Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
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Kudz Ze Kayah Formation

- SED: undifferentiated sedimentary rock
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- MDS: undifferentiated mudstone
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- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
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- OI: heavily disseminated sulphide in schistose host rock
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- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

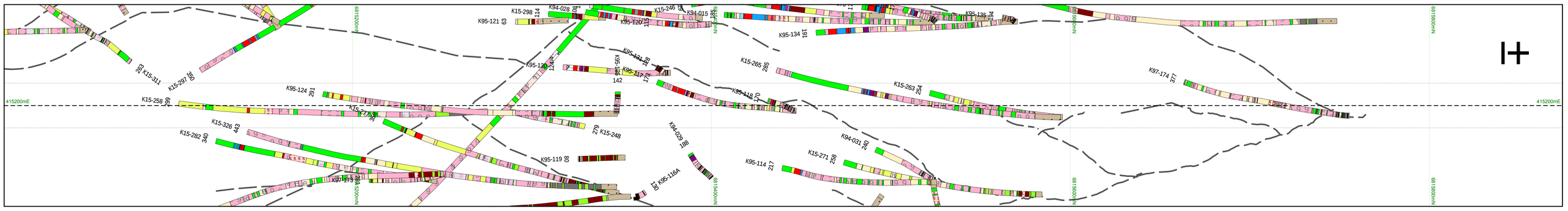
BMC Minerals (No.1) Ltd.

KZK Project - ABM Sulphide Mineralization and Alteration

415150E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016	Figure: 15
Proj: UTM 9 - NAD83	
Prov: YK	



Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
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- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

415200E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 16

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- SED: undifferentiated sedimentary rock
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- RHYcq: coherent rhyolite, quartz porphyry
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- RHYv: volcaniclastic rhyolite
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- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

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- Overburden Surface

BMC Minerals (No.1) Ltd.

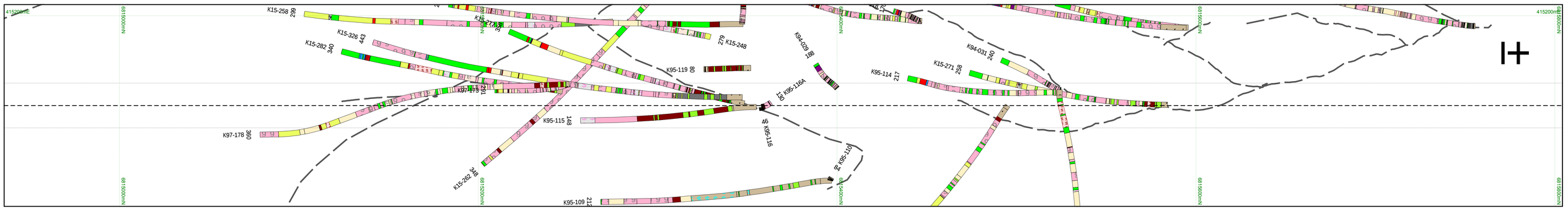
KZK Project - ABM Sulphide Mineralization and Alteration

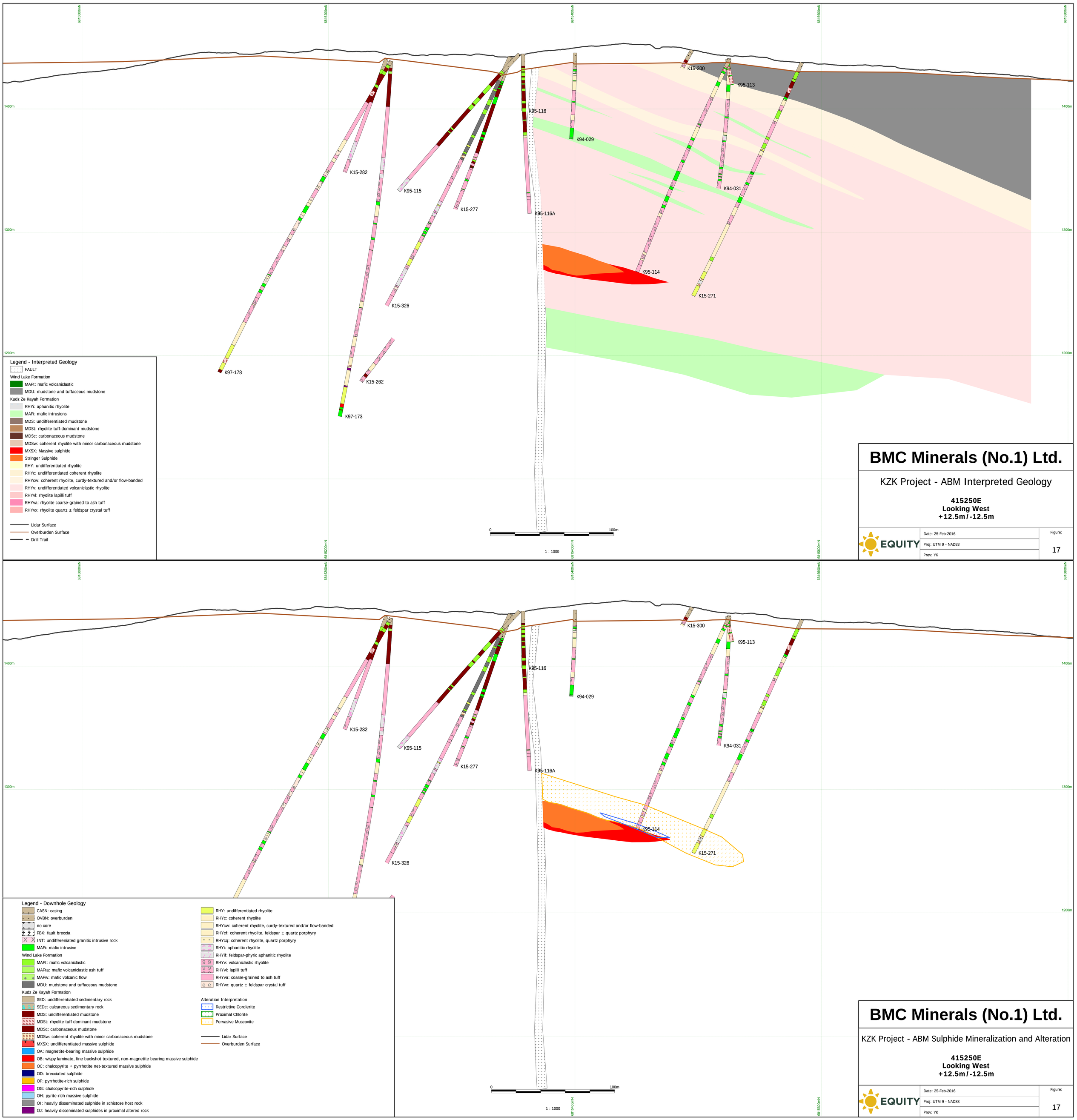
415200E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 16





Legend - Interpreted Geology

- FAULT

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- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail

BMC Minerals (No.1) Ltd.

KZK Project - ABM Interpreted Geology

415250E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 17

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
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- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
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- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface

BMC Minerals (No.1) Ltd.

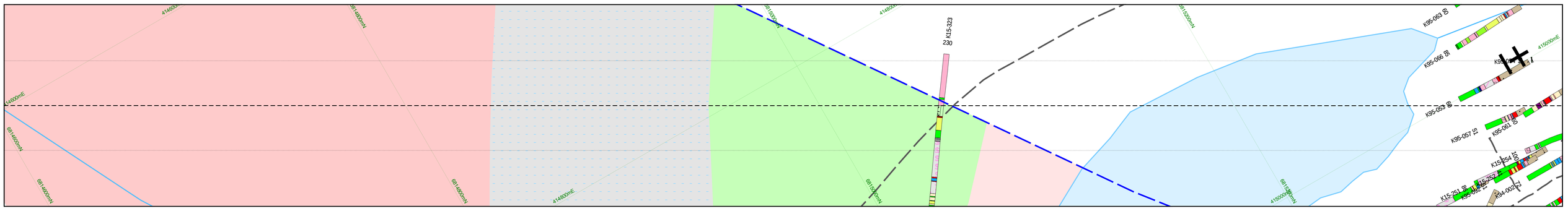
KZK Project - ABM Sulphide Mineralization and Alteration

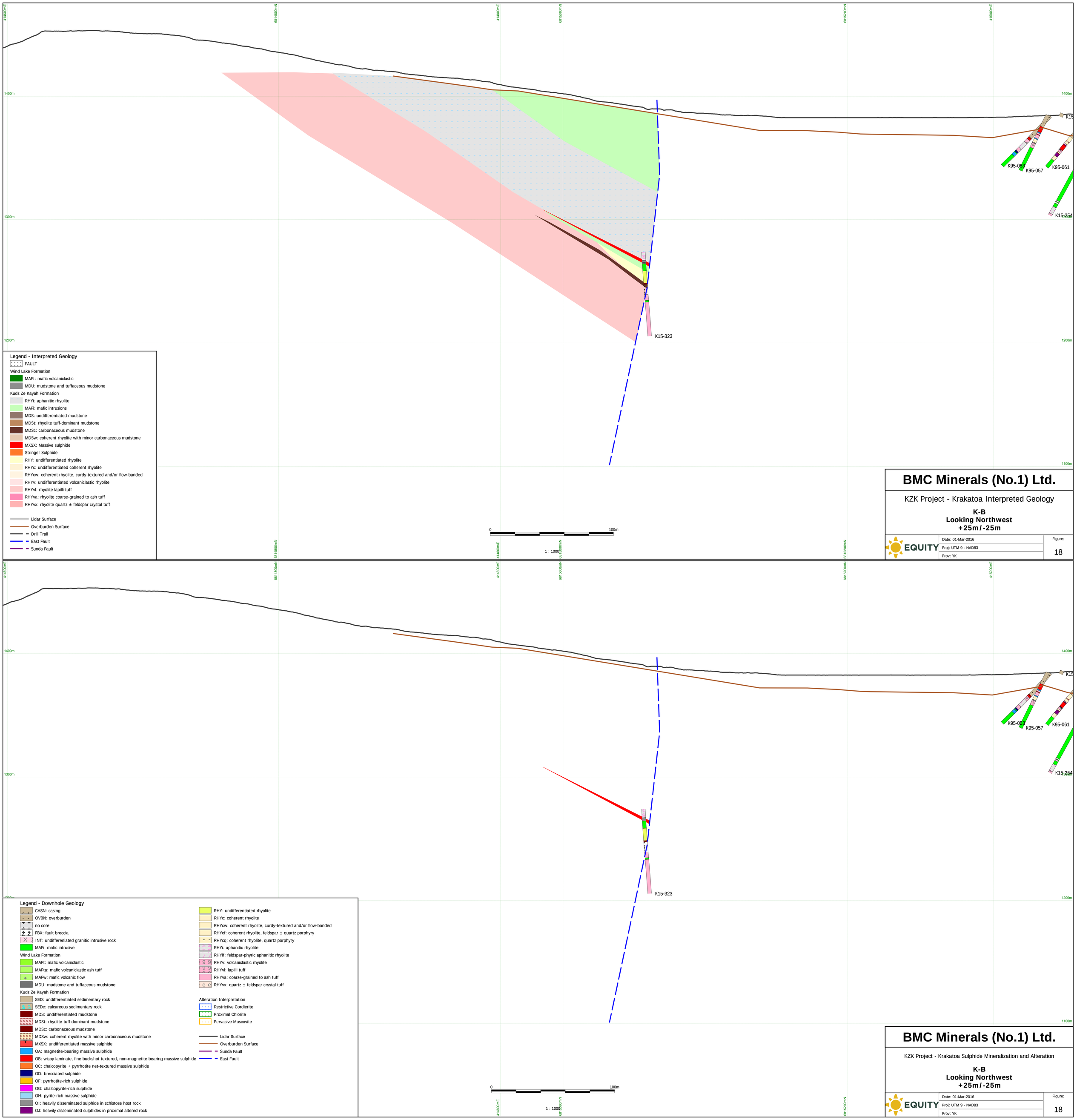
415250E
Looking West
+12.5m/-12.5m

EQUITY

Date: 25-Feb-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 17





Legend - Interpreted Geology

- FAULT

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-B
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 18

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock

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- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

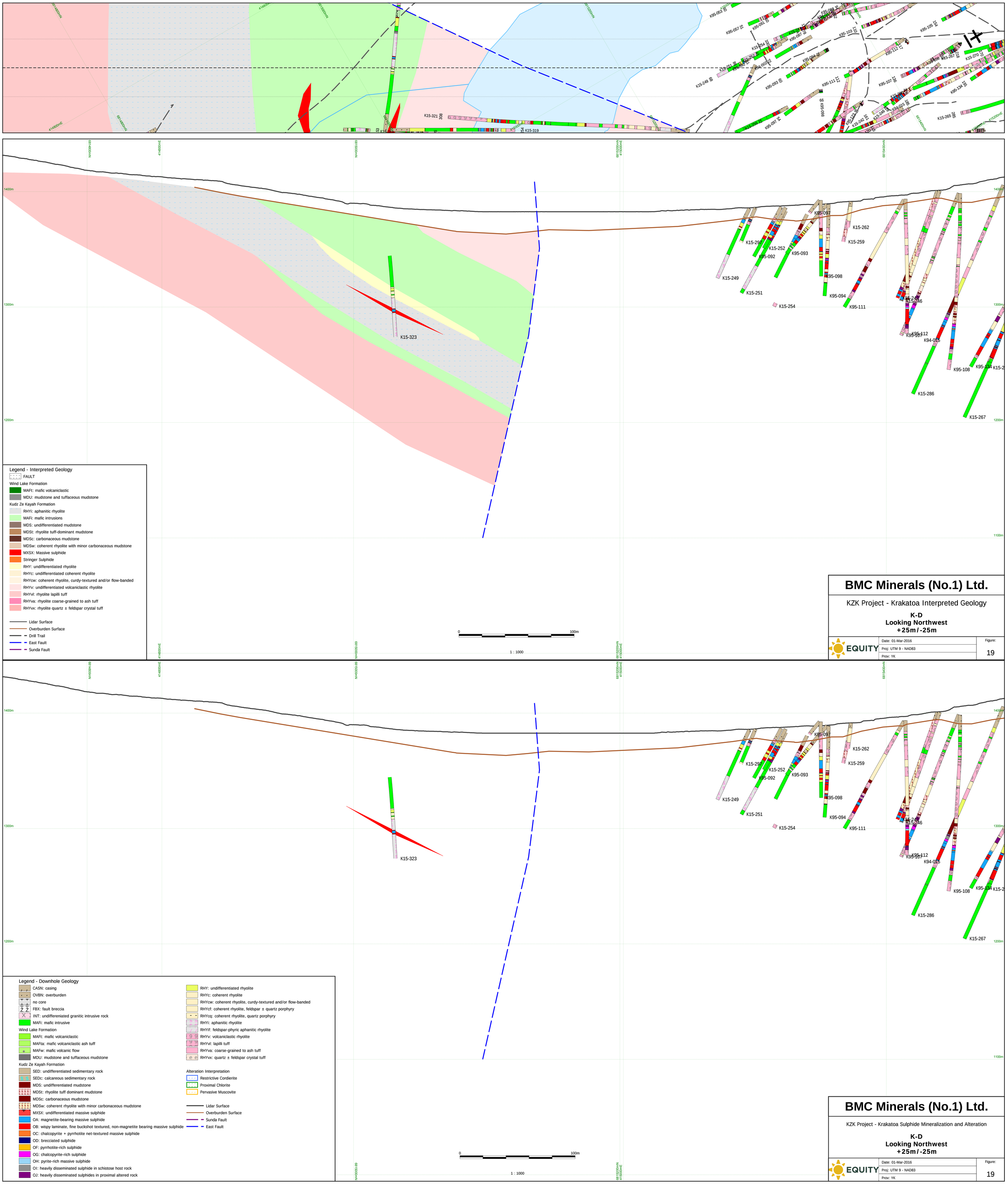
KZK Project - Krakatoa Sulphide Mineralization and Alteration

K-B
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 18



Legend - Interpreted Geology

- FAULT

Wind Lake Formation

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- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

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- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-D
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	19
Prov: YK	

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

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- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
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- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation

- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

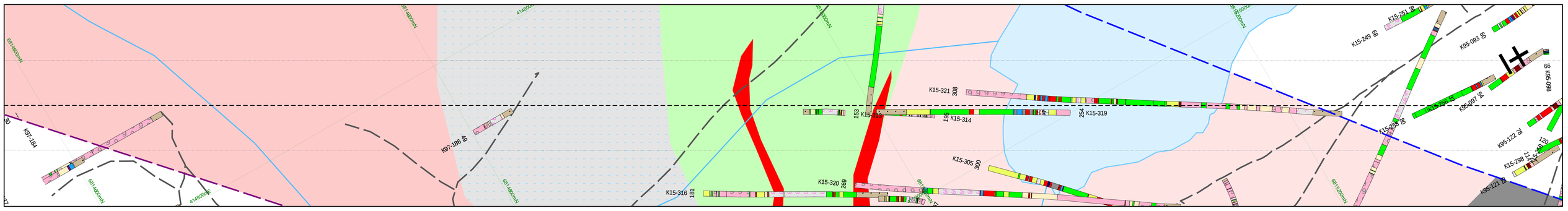
BMC Minerals (No.1) Ltd.

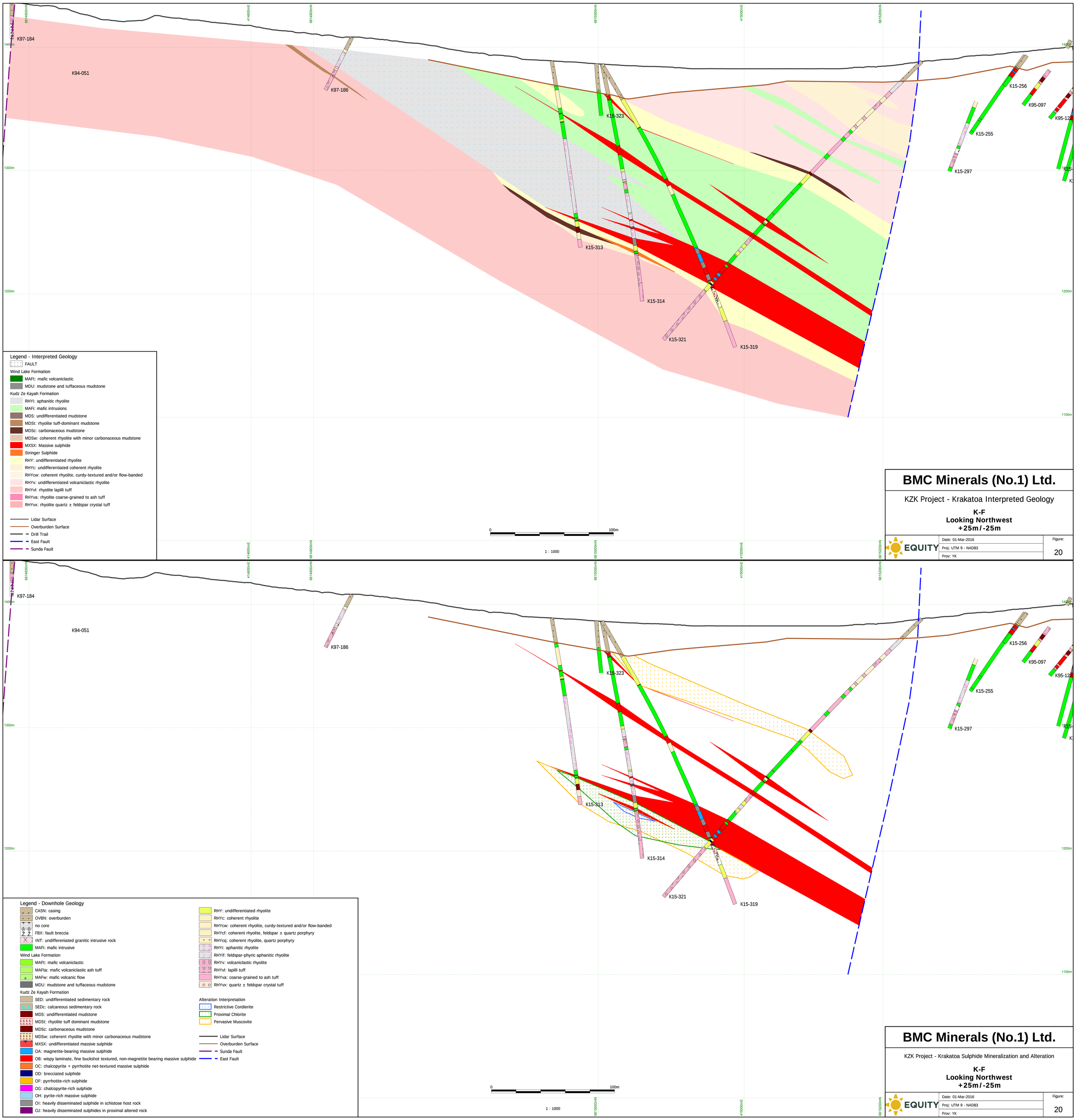
KZK Project - Krakatoa Sulphide Mineralization and Alteration

K-D
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	19
Prov: YK	





Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
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- Stringer Sulphide
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- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

0 100m

1 : 1000

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-F
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure: 20
Proj: UTM 9 - NAD83	
Prov: YK	

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
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- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
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- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
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- OI: heavily disseminated sulphide in schistose host rock
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- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

0 100m

1 : 1000

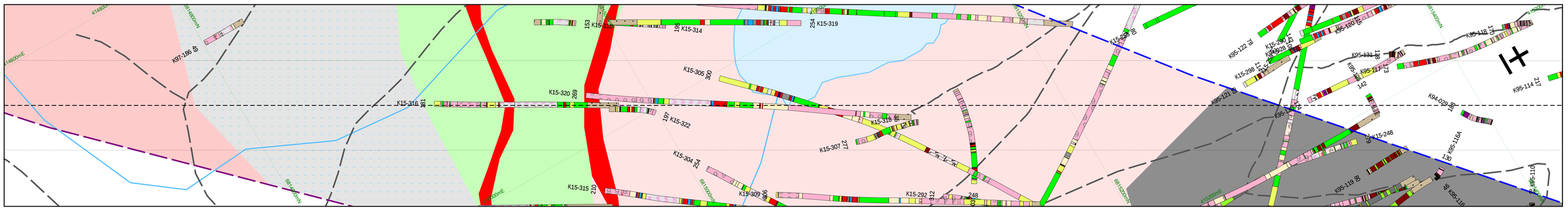
BMC Minerals (No.1) Ltd.

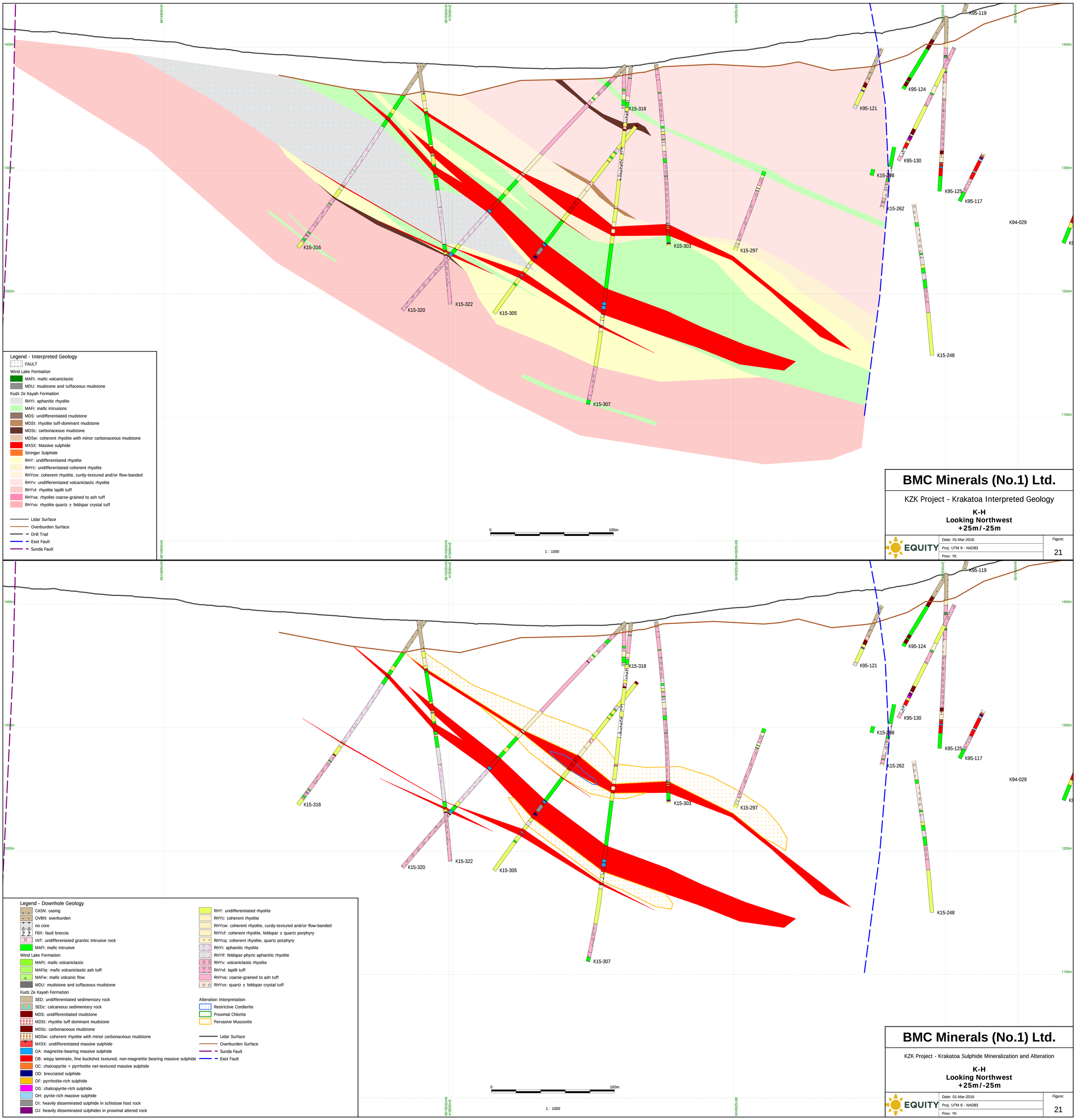
KZK Project - Krakatoa Sulphide Mineralization and Alteration

K-F
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure: 20
Proj: UTM 9 - NAD83	
Prov: YK	





Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-H
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	21
Prov: YK	

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
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- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
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- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

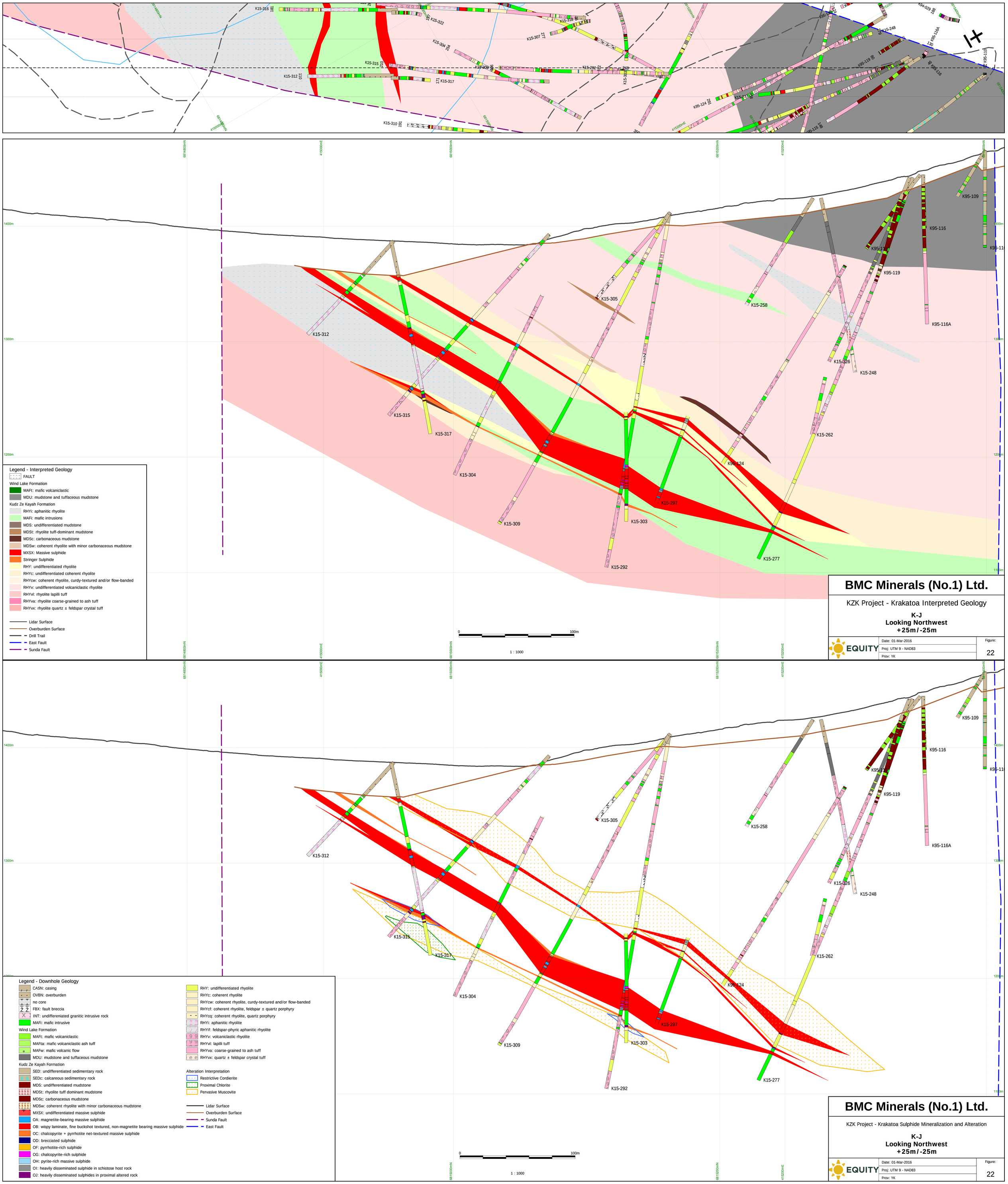
BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Sulphide Mineralization and Alteration

K-H
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	21
Prov: YK	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K95-124
K15-277
K95-119
K95-116
K95-116A
K95-110
K94-029
K15-248
K95-115
K95-109
K15-258
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K15-297
K15-292
K15-277
K95-124
K15-248
K15-326
K15-262
K95-116
K95-116A
K95-119
K95-109
6814800mN
415000mE
6815000mN
415200mE
1400m
1300m
1200m
1100m
0
100m
1 : 1000
Legend - Interpreted Geology
FAULT
Wind Lake Formation
MAFt: mafic volcaniclastic
MDU: mudstone and tuffaceous mudstone
Kudz Ze Kayah Formation
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Lidar Surface
Overburden Surface
Drill Trail
East Fault
Sunda Fault
BMC Minerals (No.1) Ltd.
KZK Project - Krakatoa Interpreted Geology
K-J
Looking Northwest
+25m/-25m
EQUITY
Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
22
Legend - Downhole Geology
CASN: casing
OVBN: overburden
no core
FBX: fault breccia
INT: undifferenciated granitic intrusive rock
MAFI: mafic intrusive
Wind Lake Formation
MAFt: mafic volcaniclastic
MAFta: mafic volcaniclastic ash tuff
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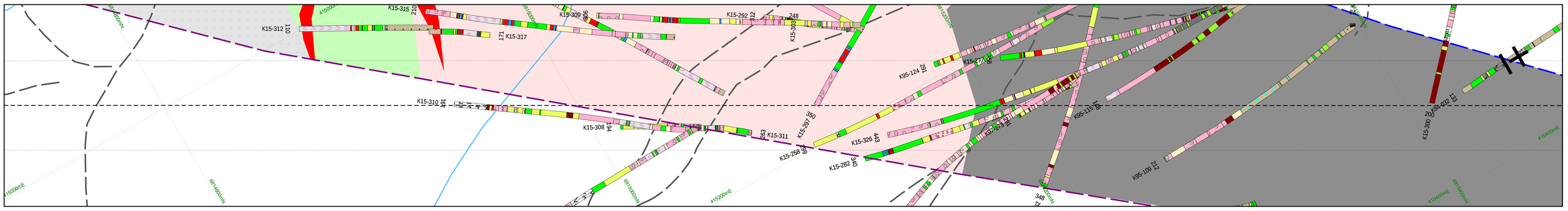
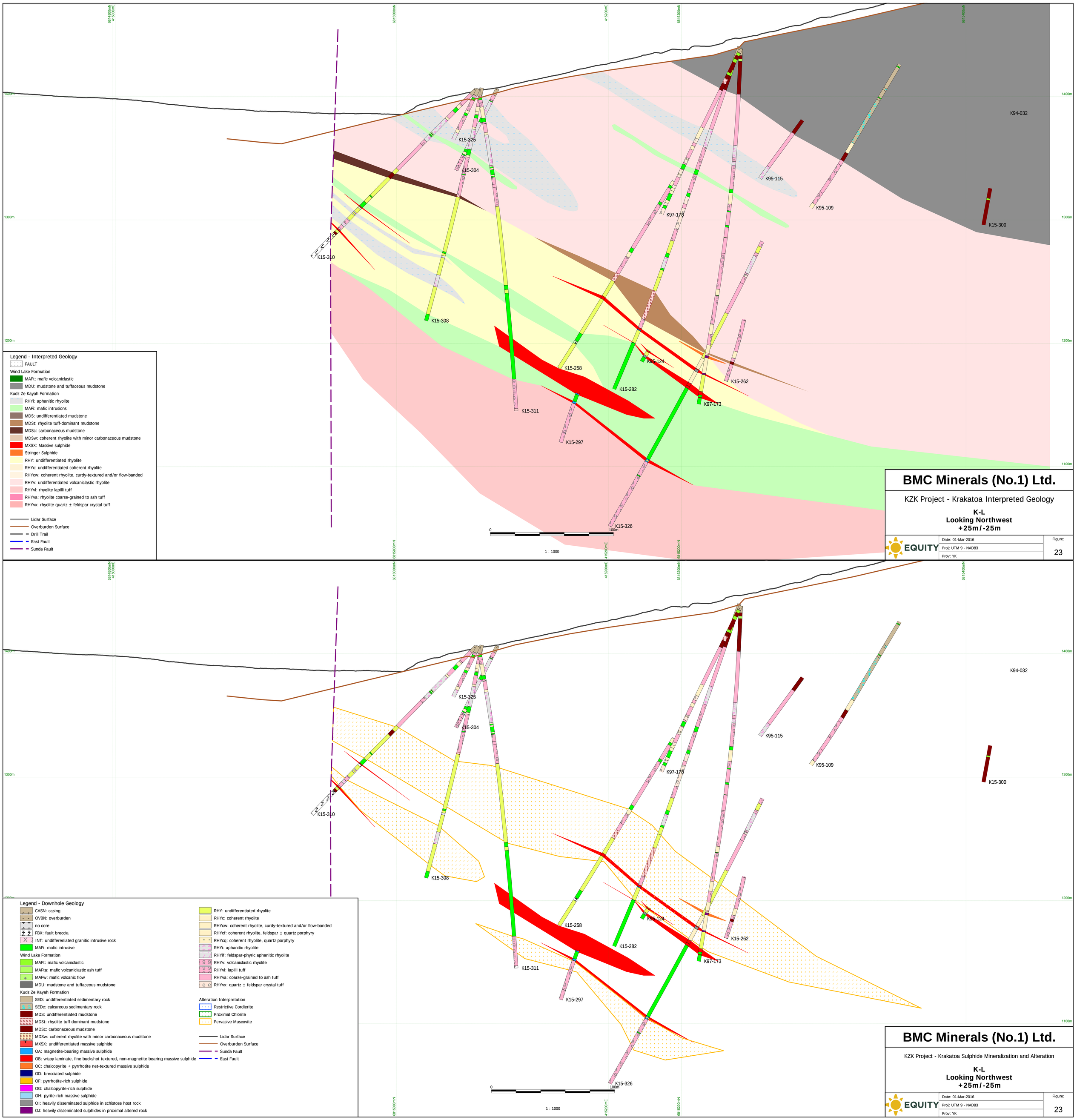
Alteration Interpretation
Restrictive Cordierite
Proximal Chlorite
Pervasive Muscovite
Lidar Surface
Overburden Surface
Sunda Fault
East Fault
BMC Minerals (No.1) Ltd.
KZK Project - Krakatoa Sulphide Mineralization and Alteration
K-J
Looking Northwest
+25m/-25m
EQUITY
Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
22





Legend - Interpreted Geology

- FAULT

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- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-L
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	23
Prov: YK	

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
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- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

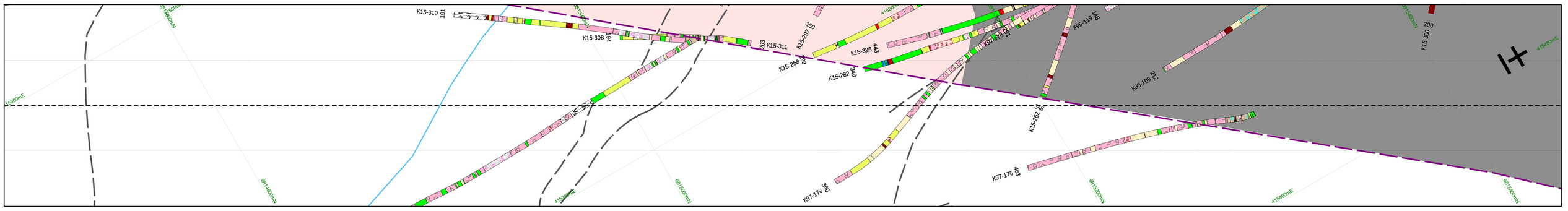
BMC Minerals (No.1) Ltd.

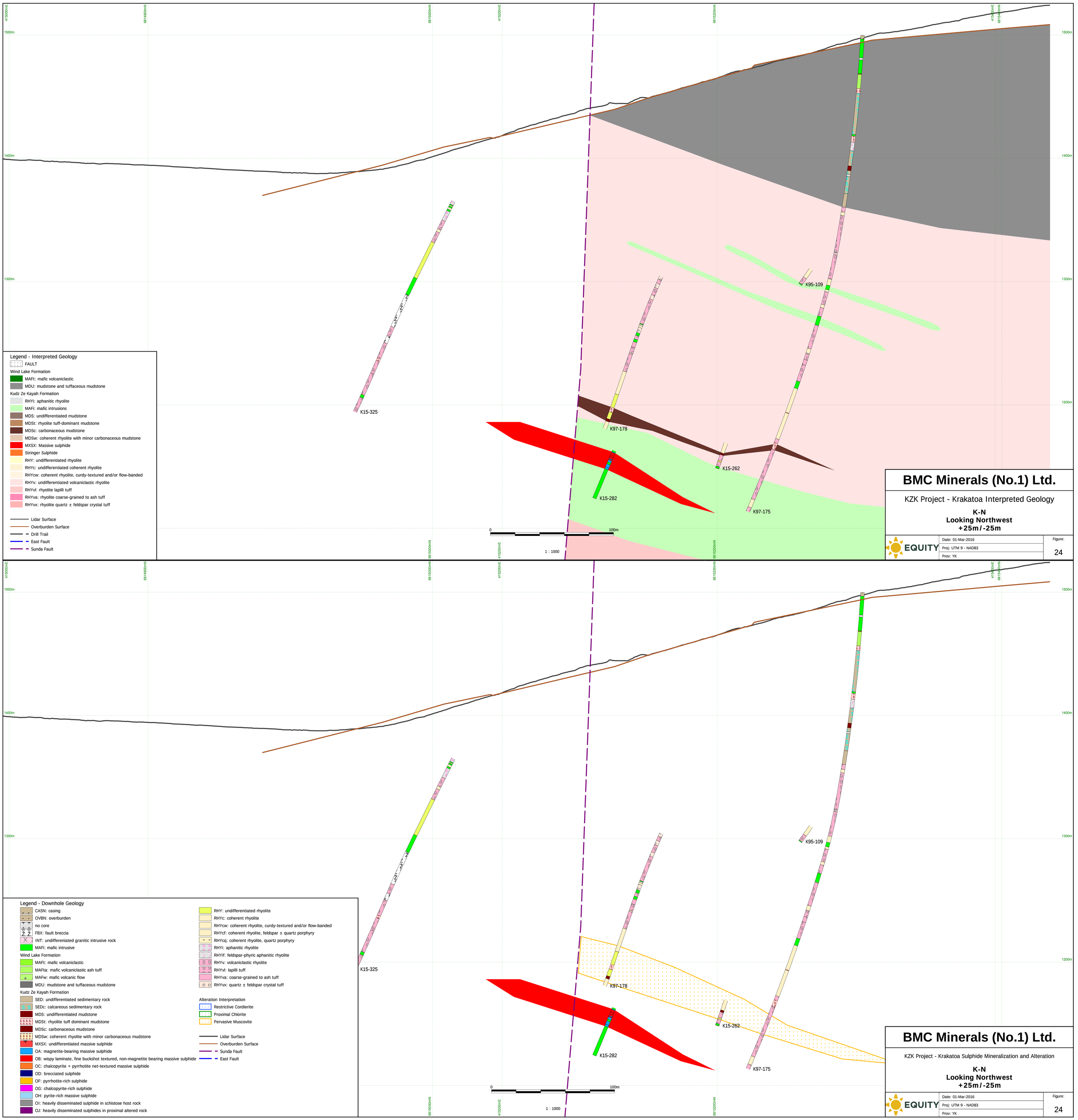
KZK Project - Krakatoa Sulphide Mineralization and Alteration

K-L
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016	Figure:
Proj: UTM 9 - NAD83	23
Prov: YK	





Legend - Interpreted Geology

- FAULT

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- RHYi: aphanitic rhyolite
- MAFi: mafic intrusions
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: Massive sulphide
- Stringer Sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Lidar Surface
- Overburden Surface
- Drill Trail
- East Fault
- Sunda Fault

BMC Minerals (No.1) Ltd.

KZK Project - Krakatoa Interpreted Geology

K-N
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 24

Legend - Downhole Geology

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive

Wind Lake Formation
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock

- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff

Alteration Interpretation
- Restrictive Cordierite
- Proximal Chlorite
- Pervasive Muscovite

- Lidar Surface
- Overburden Surface
- Sunda Fault
- East Fault

BMC Minerals (No.1) Ltd.

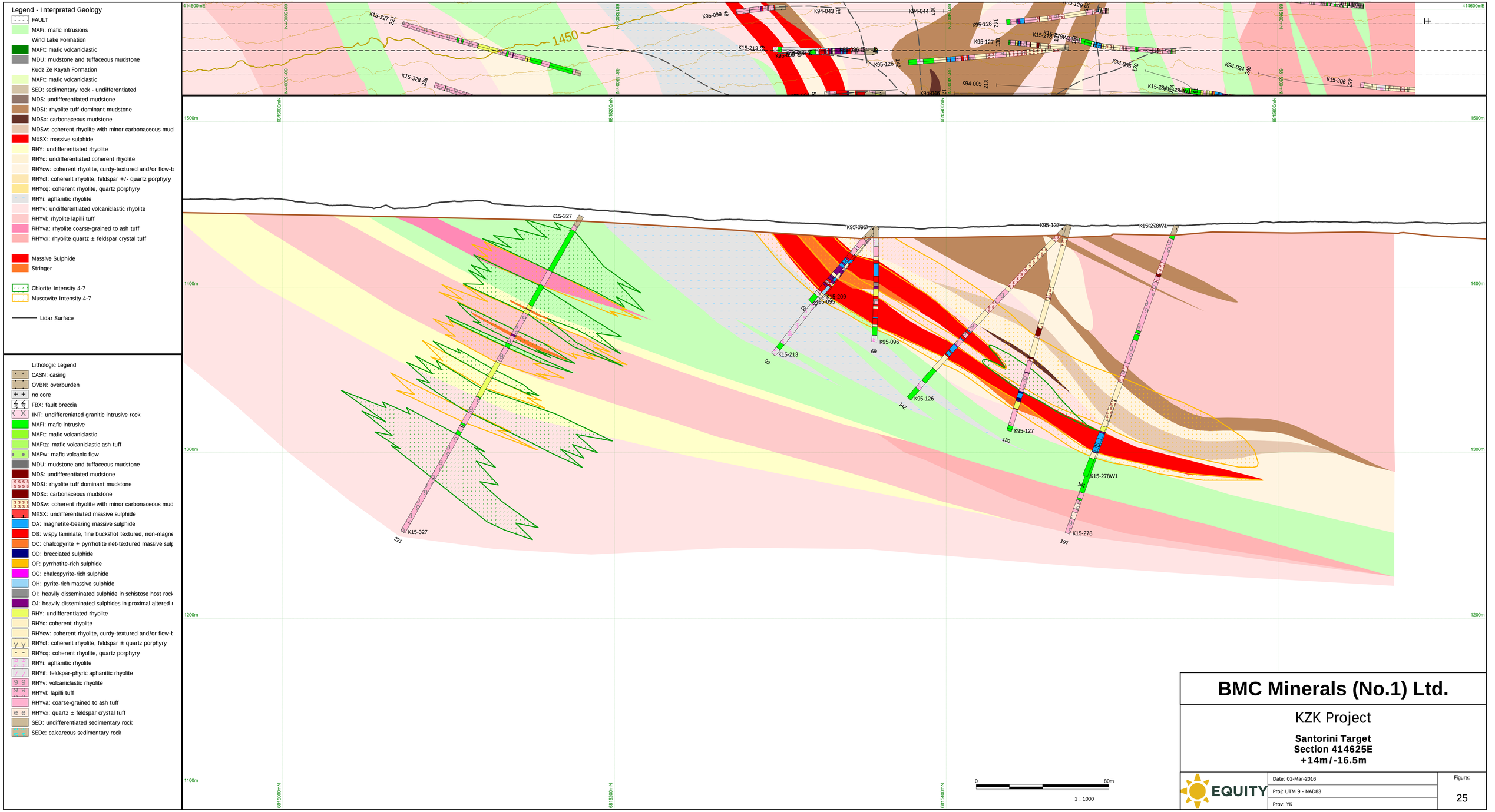
KZK Project - Krakatoa Sulphide Mineralization and Alteration

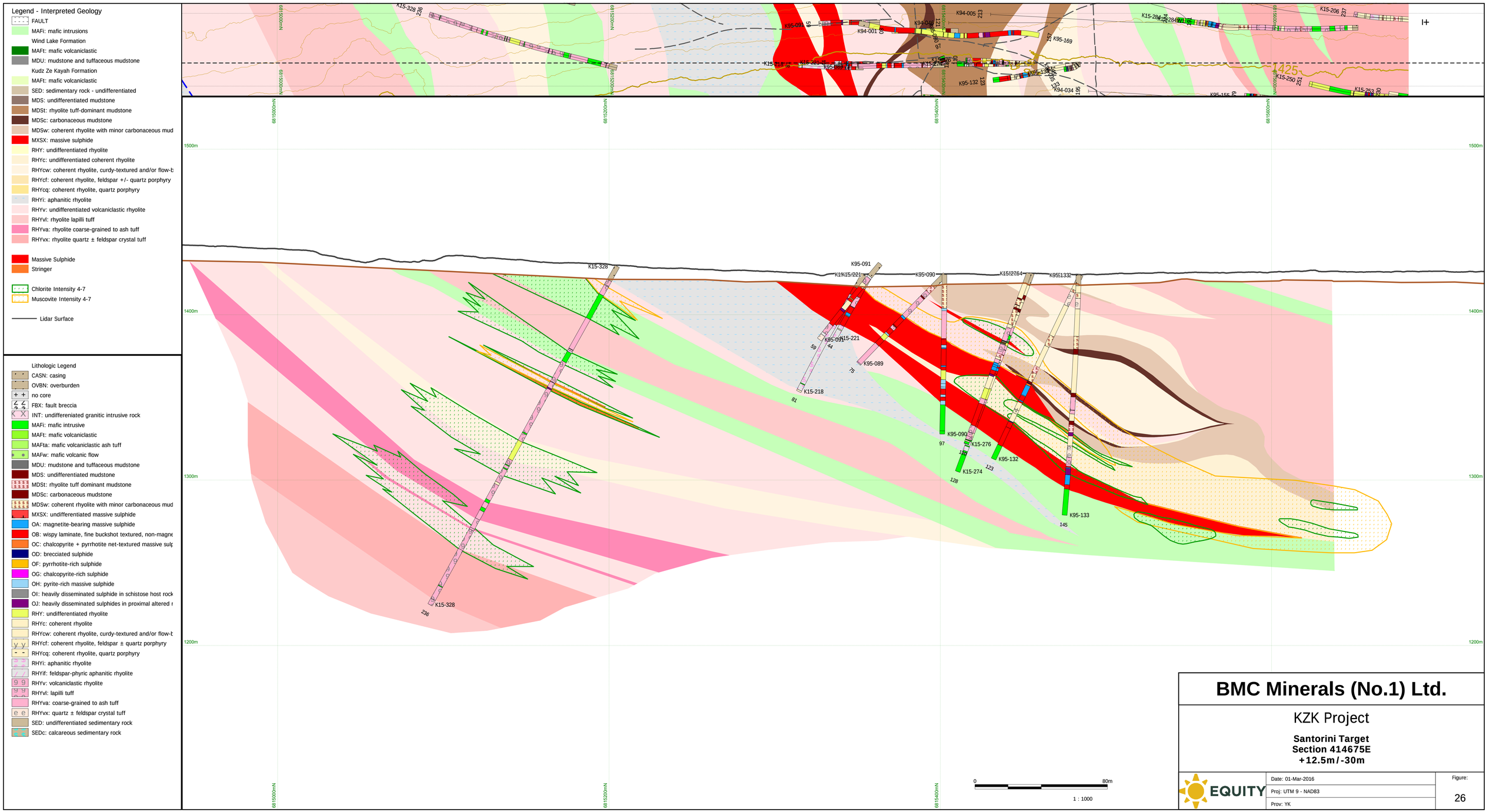
K-N
Looking Northwest
+25m/-25m

EQUITY

Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 24


Legend - Interpreted Geology
FAULT
MAFi: mafic intrusions
Wind Lake Formation
MAFt: mafic volcaniclastic
MDU: mudstone and tuffaceous mudstone
Kudz Ze Kayah Formation
MAFt: mafic volcaniclastic
SED: sedimentary rock - undifferentiated
MDS: undifferentiated mudstone
MDSt: rhyolite tuff-dominant mudstone
MDSc: carbonaceous mudstone
MDSw: coherent rhyolite with minor carbonaceous mud
MXSX: massive sulphide
RHY: undifferentiated rhyolite
RHYc: undifferentiated coherent rhyolite
RHYcw: coherent rhyolite, curdy-textured and/or flow-b
RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
RHYcq: coherent rhyolite, quartz porphyry
RHYi: aphanitic rhyolite
RHYv: undifferentiated volcaniclastic rhyolite
RHYvl: rhyolite lapilli tuff
RHYva: rhyolite coarse-grained to ash tuff
RHYvx: rhyolite quartz ± feldspar crystal tuff
Massive Sulphide
Stringer
Chlorite Intensity 4-7
Muscovite Intensity 4-7
Lidar Surface
Lithologic Legend
CASN: casing
OVBN: overburden
no core
FBX: fault breccia
INT: undifferenciated granitic intrusive rock
MAFi: mafic intrusive
MAFt: mafic volcaniclastic
MAFta: mafic volcaniclastic ash tuff
MAFw: mafic volcanic flow
MDU: mudstone and tuffaceous mudstone
MDS: undifferentiated mudstone
MDSt: rhyolite tuff dominant mudstone
MDSc: carbonaceous mudstone
MDSw: coherent rhyolite with minor carbonaceous mud
MXSX: undifferentiated massive sulphide
OA: magnetite-bearing massive sulphide
OB: wispy laminate, fine buckshot textured, non-magne
OC: chalcopyrite + pyrrhotite net-textured massive sulp
OD: brecciated sulphide
OF: pyrrhotite-rich sulphide
OG: chalcopyrite-rich sulphide
OH: pyrite-rich massive sulphide
OI: heavily disseminated sulphide in schistose host rock
OJ: heavily disseminated sulphides in proximal altered r
RHY: undifferentiated rhyolite
RHYc: coherent rhyolite
RHYcw: coherent rhyolite, curdy-textured and/or flow-b
RHYcf: coherent rhyolite, feldspar ± quartz porphyry
RHYcq: coherent rhyolite, quartz porphyry
RHYi: aphanitic rhyolite
RHYif: feldspar-phyric aphanitic rhyolite
RHYv: volcaniclastic rhyolite
RHYvl: lapilli tuff
RHYva: coarse-grained to ash tuff
RHYvx: quartz ± feldspar crystal tuff
SED: undifferentiated sedimentary rock
SEDc: calcareous sedimentary rock
414600mE
6815400mN
6815200mN
6815000mN
1500m
1400m
1300m
1200m
1100m
K15-327
K15-328
K95-099
K94-043
K94-044
K95-128
K95-127
K15-278W1
K94-006
K94-024
K15-206
K15-213
K95-096
K95-095
K95-126
K94-005
K15-209
K15-278
1450
0
80m
1 : 1000
BMC Minerals (No.1) Ltd.
KZK Project
Santorini Target
Section 414625E
+14m/-16.5m
EQUITY
Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
25


Legend - Interpreted Geology
FAULT
MAFi: mafic intrusions
Wind Lake Formation
MAFt: mafic volcaniclastic
MDU: mudstone and tuffaceous mudstone
Kudz Ze Kayah Formation
MAFt: mafic volcaniclastic
SED: sedimentary rock - undifferentiated
MDS: undifferentiated mudstone
MDSt: rhyolite tuff-dominant mudstone
MDSc: carbonaceous mudstone
MDSw: coherent rhyolite with minor carbonaceous mud
MXSX: massive sulphide
RHY: undifferentiated rhyolite
RHYc: undifferentiated coherent rhyolite
RHYcw: coherent rhyolite, curdy-textured and/or flow-b
RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
RHYcq: coherent rhyolite, quartz porphyry
RHYi: aphanitic rhyolite
RHYv: undifferentiated volcaniclastic rhyolite
RHYvl: rhyolite lapilli tuff
RHYva: rhyolite coarse-grained to ash tuff
RHYvx: rhyolite quartz ± feldspar crystal tuff
Massive Sulphide
Stringer
Chlorite Intensity 4-7
Muscovite Intensity 4-7
Lidar Surface
Lithologic Legend
CASN: casing
OVBN: overburden
no core
FBX: fault breccia
INT: undifferenciated granitic intrusive rock
MAFi: mafic intrusive
MAFt: mafic volcaniclastic
MAFta: mafic volcaniclastic ash tuff
MAFw: mafic volcanic flow
MDU: mudstone and tuffaceous mudstone
MDS: undifferentiated mudstone
MDSt: rhyolite tuff dominant mudstone
MDSc: carbonaceous mudstone
MDSw: coherent rhyolite with minor carbonaceous mud
MXSX: undifferentiated massive sulphide
OA: magnetite-bearing massive sulphide
OB: wispy laminate, fine buckshot textured, non-magne
OC: chalcopyrite + pyrrhotite net-textured massive sulp
OD: brecciated sulphide
OF: pyrrhotite-rich sulphide
OG: chalcopyrite-rich sulphide
OH: pyrite-rich massive sulphide
OI: heavily disseminated sulphide in schistose host rock
OJ: heavily disseminated sulphides in proximal altered r
RHY: undifferentiated rhyolite
RHYc: coherent rhyolite
RHYcw: coherent rhyolite, curdy-textured and/or flow-b
RHYcf: coherent rhyolite, feldspar ± quartz porphyry
RHYcq: coherent rhyolite, quartz porphyry
RHYi: aphanitic rhyolite
RHYif: feldspar-phyric aphanitic rhyolite
RHYv: volcaniclastic rhyolite
RHYvl: lapilli tuff
RHYva: coarse-grained to ash tuff
RHYvx: quartz ± feldspar crystal tuff
SED: undifferentiated sedimentary rock
SEDc: calcareous sedimentary rock
6815600mN
6815520mN
6815440mN
1500m
1400m
1300m
1200m
K15-328
K95-091
K15-221
K95-090
K15-264
K95-132
K15-218
K95-089
K15-274
K15-276
K95-133
K15-328
0
80m
1 : 1000
BMC Minerals (No.1) Ltd.
KZK Project
Santorini Target
Section 414675E
+12.5m/-30m
EQUITY
Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK
Figure:
26

Legend - Interpreted Geology

- FAULT
- MAFi: mafic intrusions

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- MAFt: mafic volcaniclastic
- SED: sedimentary rock - undifferentiated
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mud
- MXSX: massive sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-b
- RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Massive Sulphide
- Stringer

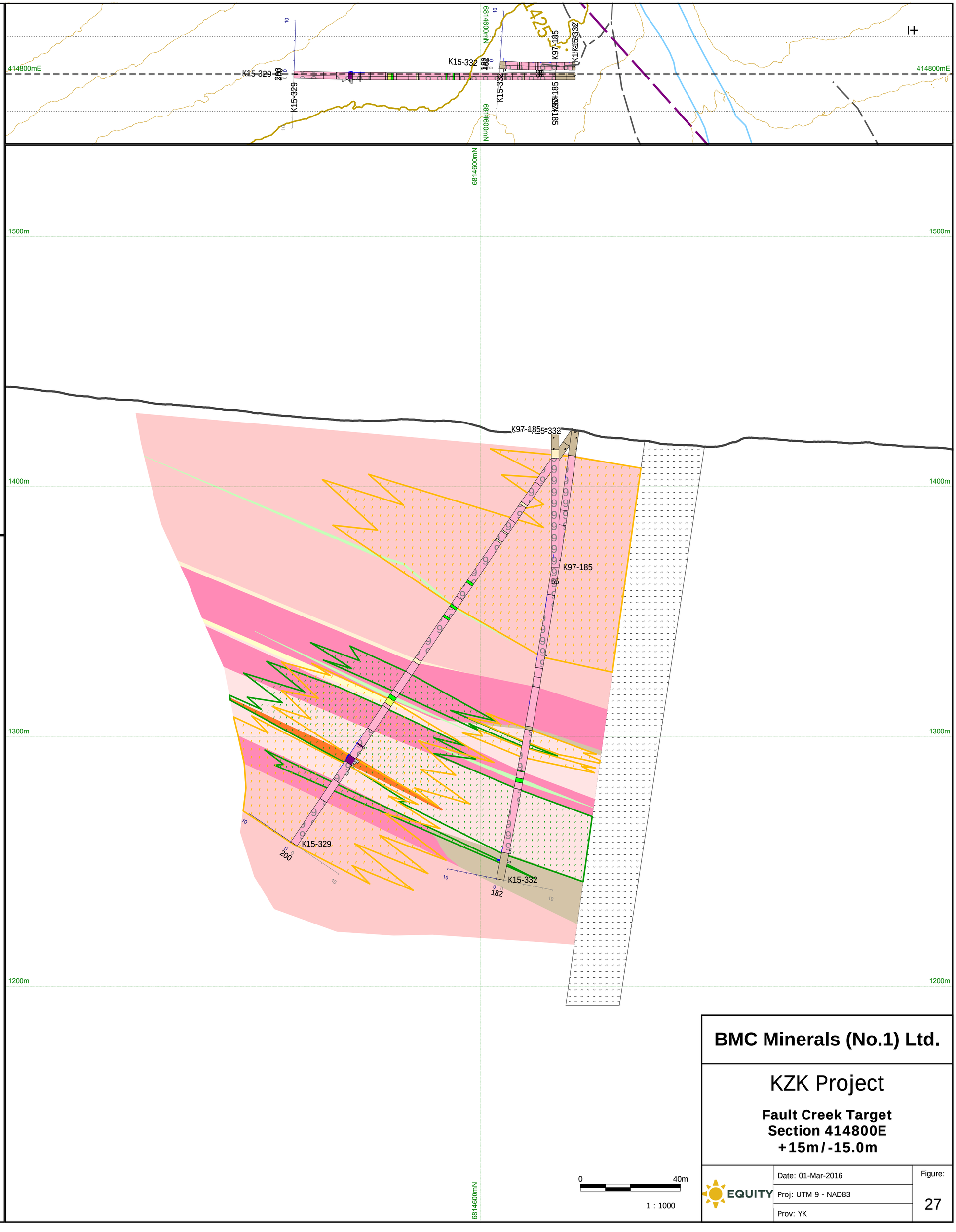
- Chlorite Intensity 4-7
- Muscovite Intensity 4-7

- Lidar Surface

Lithologic Legend

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undiffereniated granitic intrusive rock
- MAFi: mafic intrusive
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mud
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magne
- OC: chalcopyrite + pyrrhotite net-textured massive sulp
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered r
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-b
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock

- Copper 1cm=5 percent
- Zinc 1cm=5 percent



BMC Minerals (No.1) Ltd.

KZK Project

Fault Creek Target
Section 414800E
+15m/-15.0m

EQUITY

Date: 01-Mar-2016

Proj: UTM 9 - NAD83

Prov: YK

Figure: 27

Legend - Interpreted Geology

- FAULT
- MAFi: mafic intrusions

Wind Lake Formation

- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone

Kudz Ze Kayah Formation

- MAFt: mafic volcaniclastic
- SED: sedimentary rock - undifferentiated
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mud
- MXSX: massive sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-b
- RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Massive Sulphide
- Stringer

- Chlorite Intensity 4-7
- Muscovite Intensity 4-7

- Lidar Surface

Lithologic Legend

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferenciated granitic intrusive rock
- MAFi: mafic intrusive
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mud
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magne
- OC: chalcopyrite + pyrrhotite net-textured massive sulp
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered r
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-b
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- RHYi: aphanitic rhyolite
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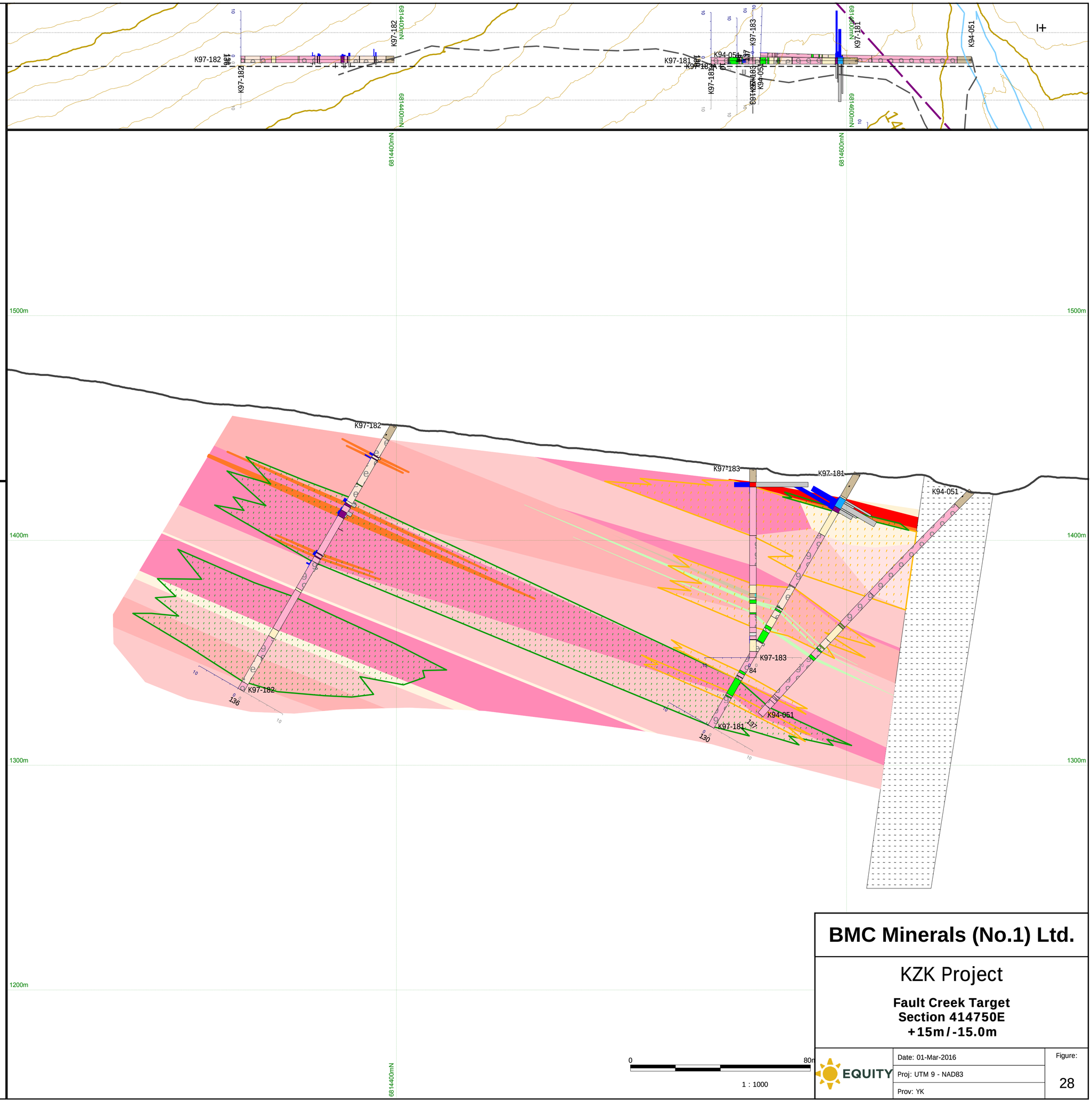
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock

- Copper 1cm=5 percent
- Zinc 1cm=5 percent



BMC Minerals (No.1) Ltd.

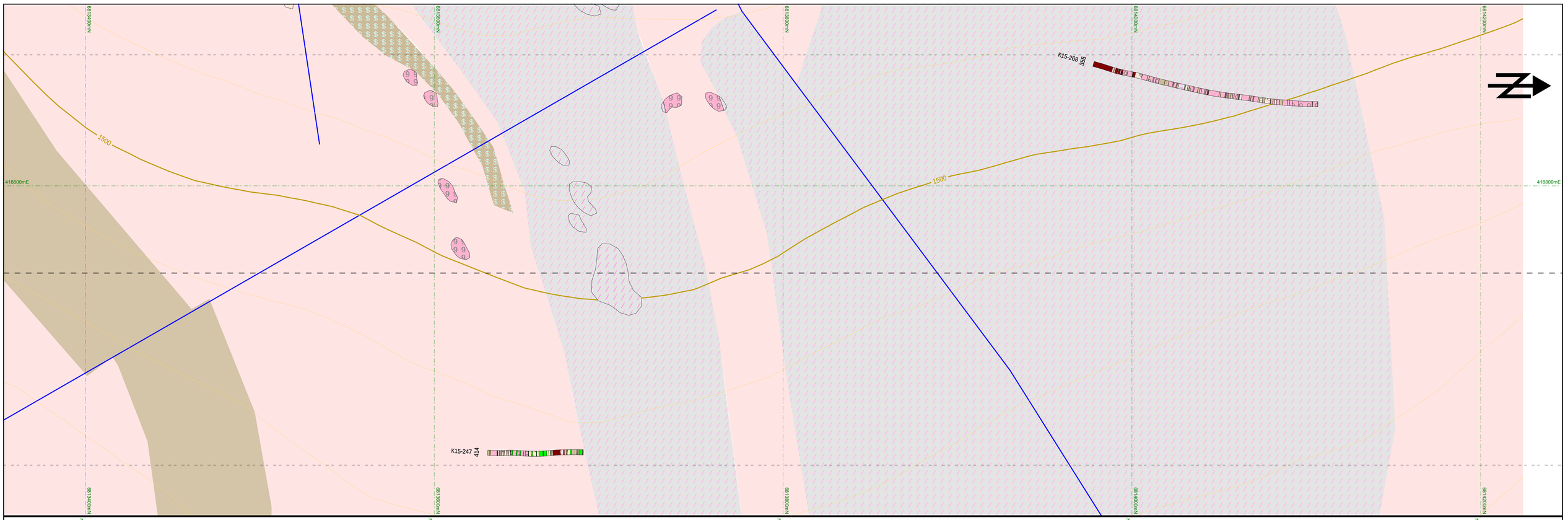
KZK Project

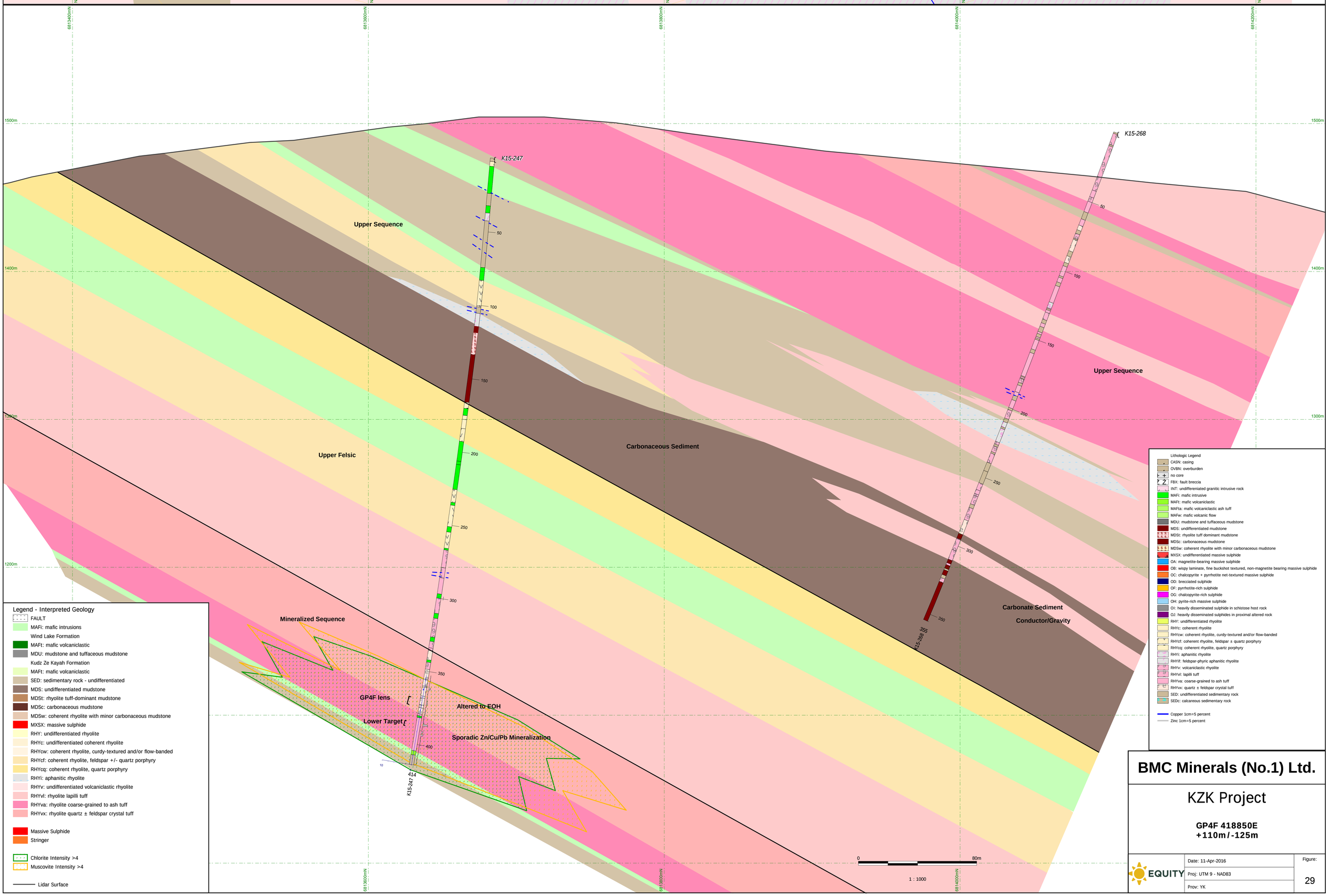
Fault Creek Target
Section 414750E
+15m / -15.0m

EQUITY

Date: 01-Mar-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 28





Legend - Interpreted Geology

- FAULT
- MAFi: mafic intrusions
- Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone
- Kudz Ze Kayah Formation
- MAFt: mafic volcaniclastic
- SED: sedimentary rock - undifferentiated
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff-dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: massive sulphide
- RHY: undifferentiated rhyolite
- RHYc: undifferentiated coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff
- Massive Sulphide
- Stringer
- Chlorite Intensity >4
- Muscovite Intensity >4
- Lidar Surface

Lithologic Legend

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferentiated granitic intrusive rock
- MAFi: mafic intrusive
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
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- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
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- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock

Copper 1cm=5 percent
Zinc 1cm=5 percent

BMC Minerals (No.1) Ltd.

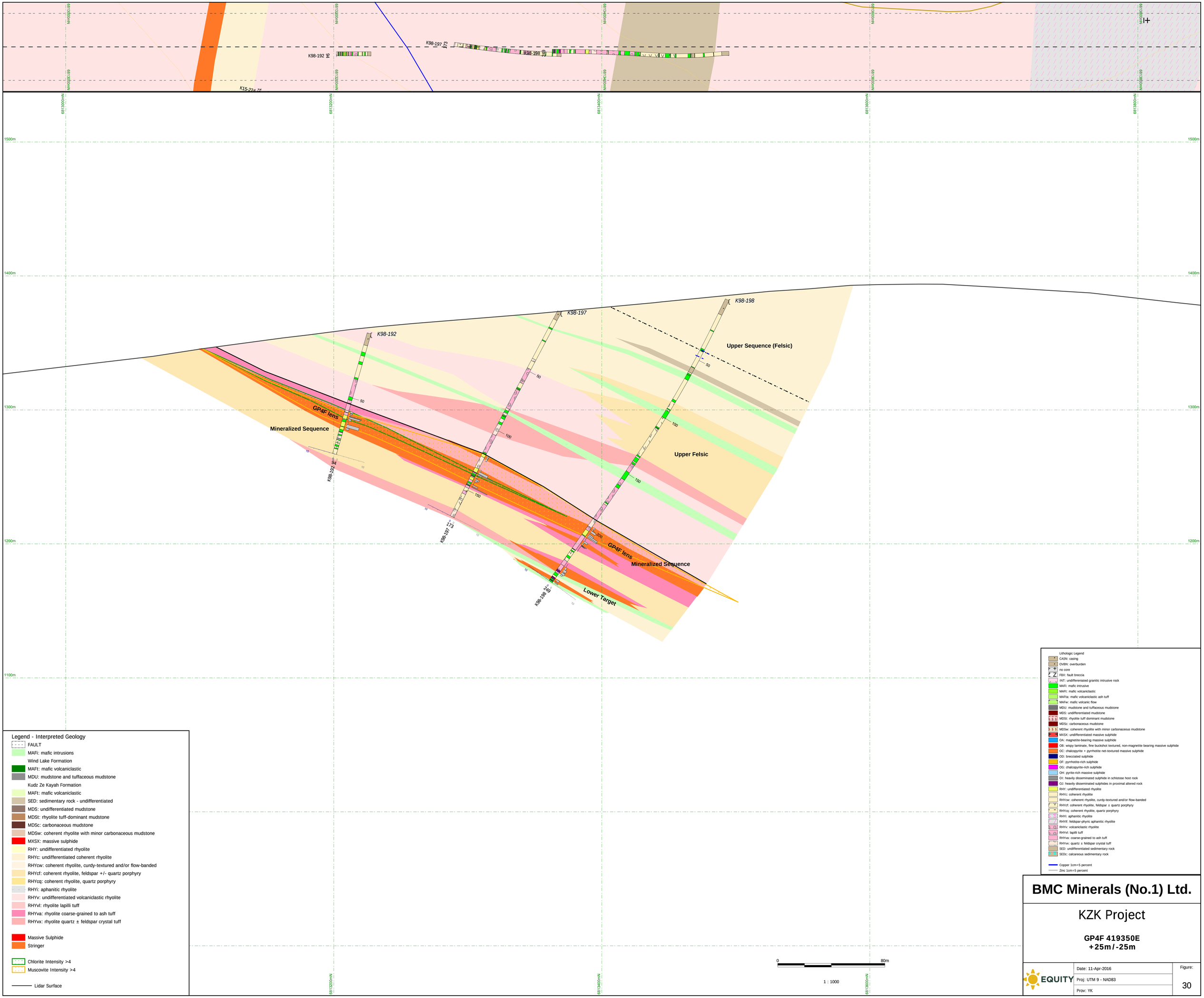
KZK Project

GP4F 418850E
+110m/-125m

EQUITY

Date: 11-Apr-2016
Proj: UTM 9 - NAD83
Prov: YK

Figure: 29



BMC Minerals (No.1) Ltd.

KZK Project

GP4F 419350E
+25m/-25m

EQUITY

Date: 11-Apr-2016	Figure:
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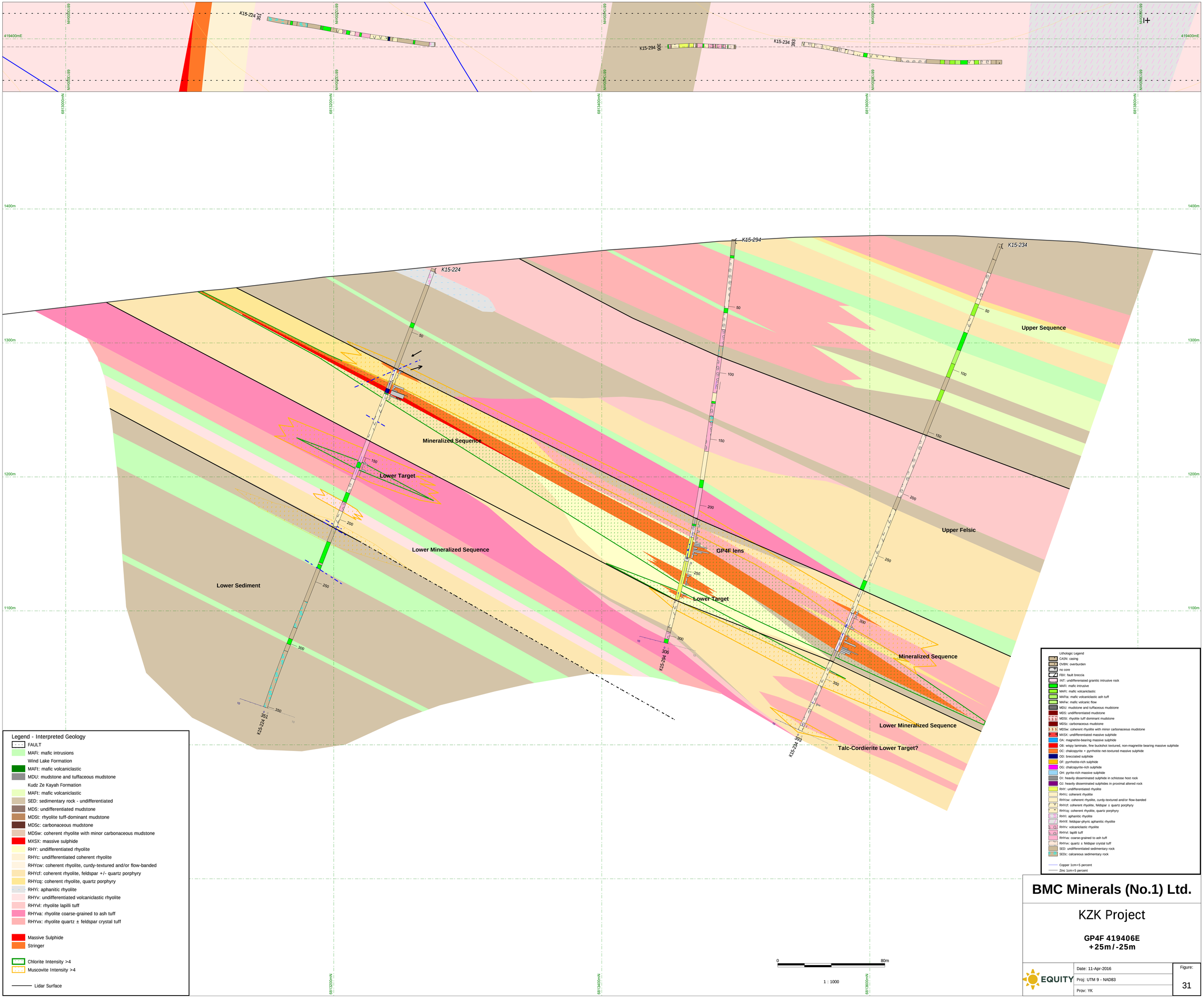
Prov: YK	



Legend - Interpreted Geology

- FAULT
- MAFi: mafic intrusions
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- MAFt: mafic volcaniclastic
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- Kudz Ze Kayah Formation
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- RHY: undifferentiated rhyolite
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- RHYcf: coherent rhyolite, feldspar +/- quartz porphyry
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- RHYi: aphanitic rhyolite
- RHYv: undifferentiated volcaniclastic rhyolite
- RHYvl: rhyolite lapilli tuff
- RHYva: rhyolite coarse-grained to ash tuff
- RHYvx: rhyolite quartz ± feldspar crystal tuff

- Massive Sulphide
- Stringer

- Chlorite Intensity >4
- Muscovite Intensity >4

- Lidar Surface

Lithologic Legend

- CASN: casing
- OVBN: overburden
- no core
- FBX: fault breccia
- INT: undifferentiated granitic intrusive rock
- MAFI: mafic intrusive
- MAFt: mafic volcaniclastic
- MAFta: mafic volcaniclastic ash tuff
- MAFw: mafic volcanic flow
- MDU: mudstone and tuffaceous mudstone
- MDS: undifferentiated mudstone
- MDSt: rhyolite tuff dominant mudstone
- MDSc: carbonaceous mudstone
- MDSw: coherent rhyolite with minor carbonaceous mudstone
- MXSX: undifferentiated massive sulphide
- OA: magnetite-bearing massive sulphide
- OB: wispy laminate, fine buckshot textured, non-magnetite bearing massive sulphide
- OC: chalcopyrite + pyrrhotite net-textured massive sulphide
- OD: brecciated sulphide
- OF: pyrrhotite-rich sulphide
- OG: chalcopyrite-rich sulphide
- OH: pyrite-rich massive sulphide
- OI: heavily disseminated sulphide in schistose host rock
- OJ: heavily disseminated sulphides in proximal altered rock
- RHY: undifferentiated rhyolite
- RHYc: coherent rhyolite
- RHYcw: coherent rhyolite, curdy-textured and/or flow-banded
- RHYcf: coherent rhyolite, feldspar ± quartz porphyry
- RHYcq: coherent rhyolite, quartz porphyry
- RHYi: aphanitic rhyolite
- RHYif: feldspar-phyric aphanitic rhyolite
- RHYv: volcaniclastic rhyolite
- RHYvl: lapilli tuff
- RHYva: coarse-grained to ash tuff
- RHYvx: quartz ± feldspar crystal tuff
- SED: undifferentiated sedimentary rock
- SEDc: calcareous sedimentary rock

Copper 1cm=5 percent
Zinc 1cm=5 percent

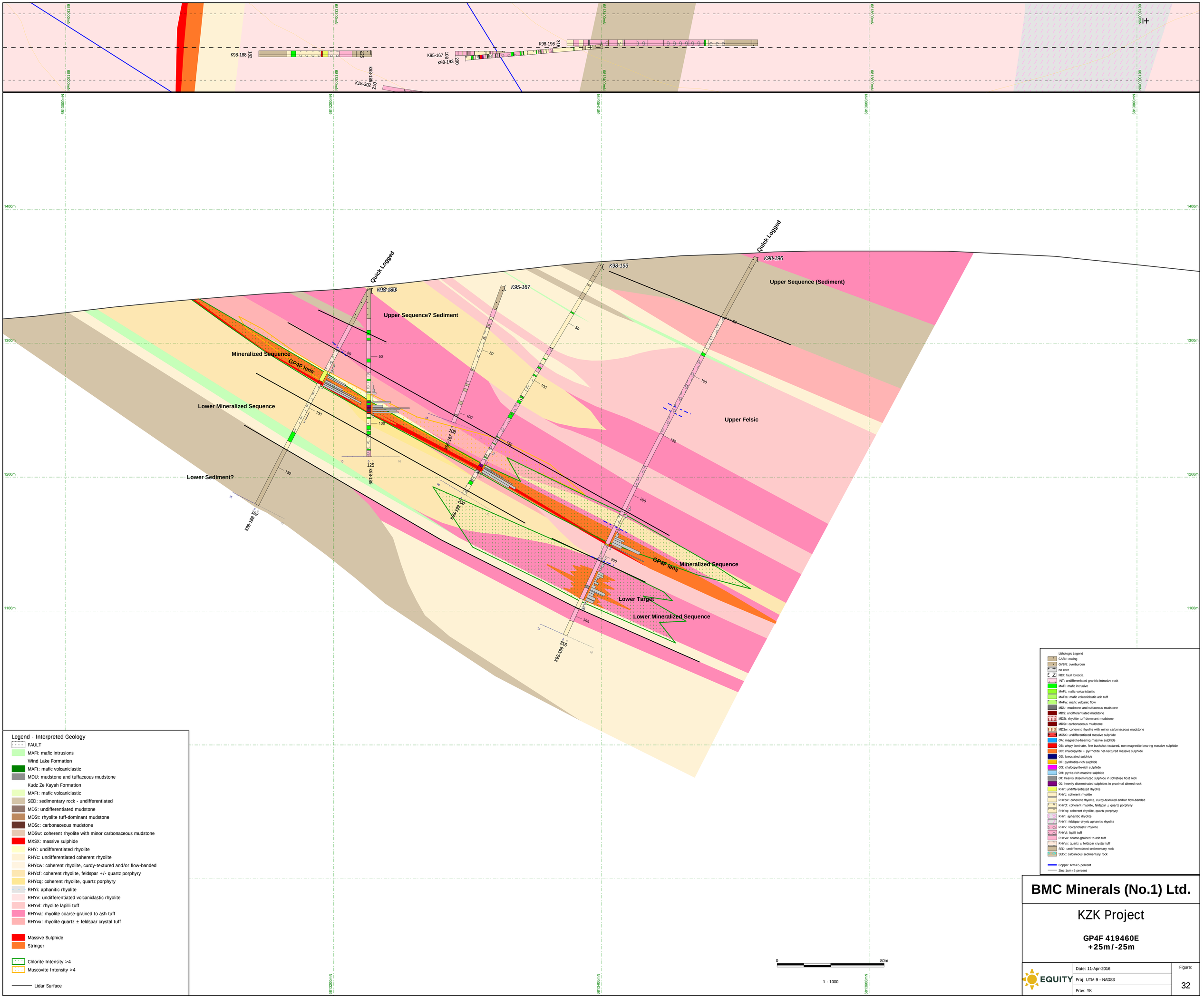
BMC Minerals (No.1) Ltd.

KZK Project

GP4F 419406E
+25m/-25m

EQUITY

Date: 11-Apr-2016	Figure: 31
Proj: UTM 9 - NAD83	
Prov: YK	



Legend - Interpreted Geology

- FAULT
- MAFi: mafic intrusions
- Wind Lake Formation
- MAFt: mafic volcaniclastic
- MDU: mudstone and tuffaceous mudstone
- Kudz Ze Kayah Formation
- MAFt: mafic volcaniclastic
- SED: sedimentary rock - undifferentiated
- MDS: undifferentiated mudstone
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Zinc 1cm=5 percent

BMC Minerals (No.1) Ltd.

KZK Project

GP4F 419460E
+25m/-25m

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Date: 11-Apr-2016
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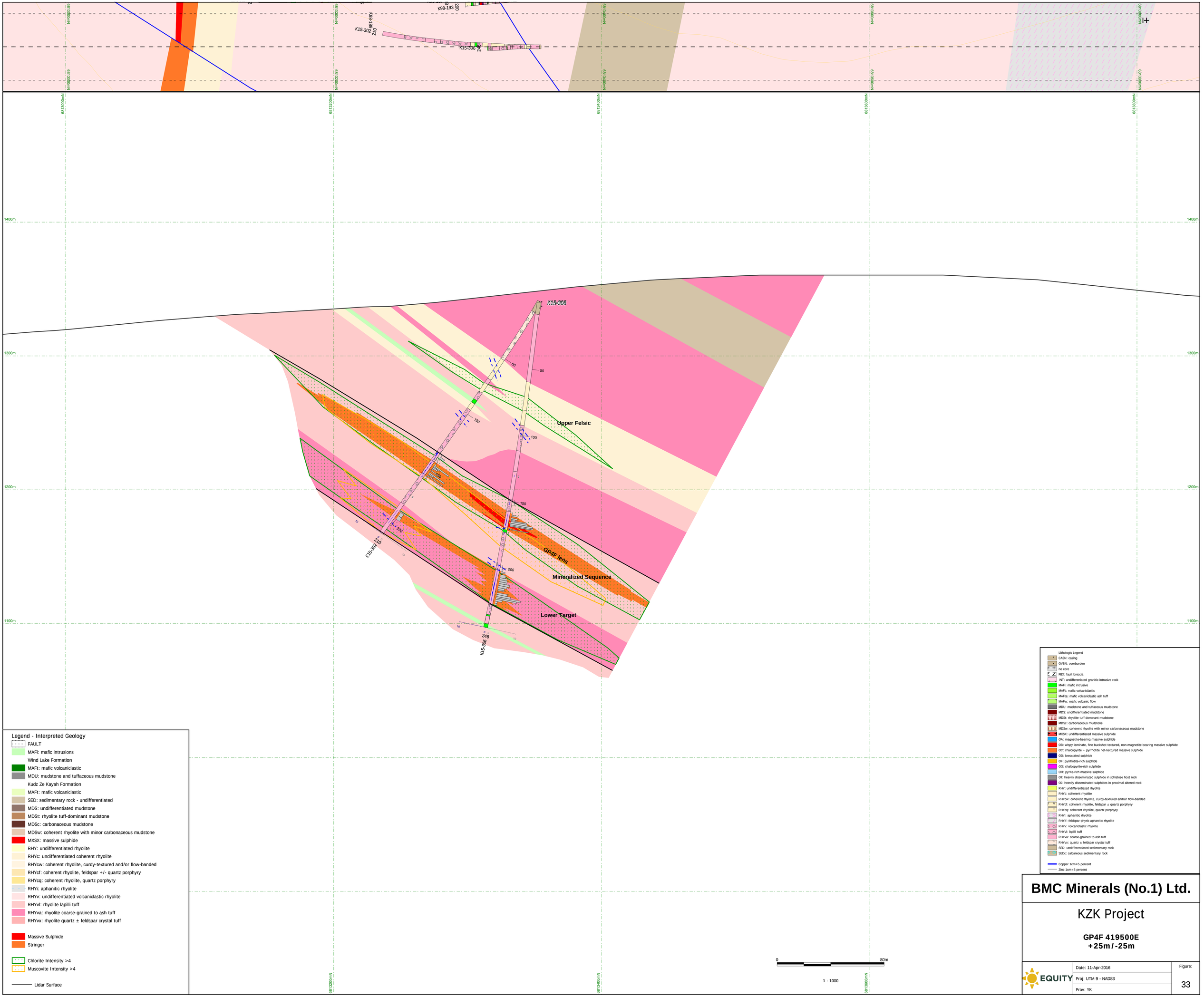
Figure: 32



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BMC Minerals (No.1) Ltd.

KZK Project

GP4F 419500E
+25m/-25m

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Date: 11-Apr-2016
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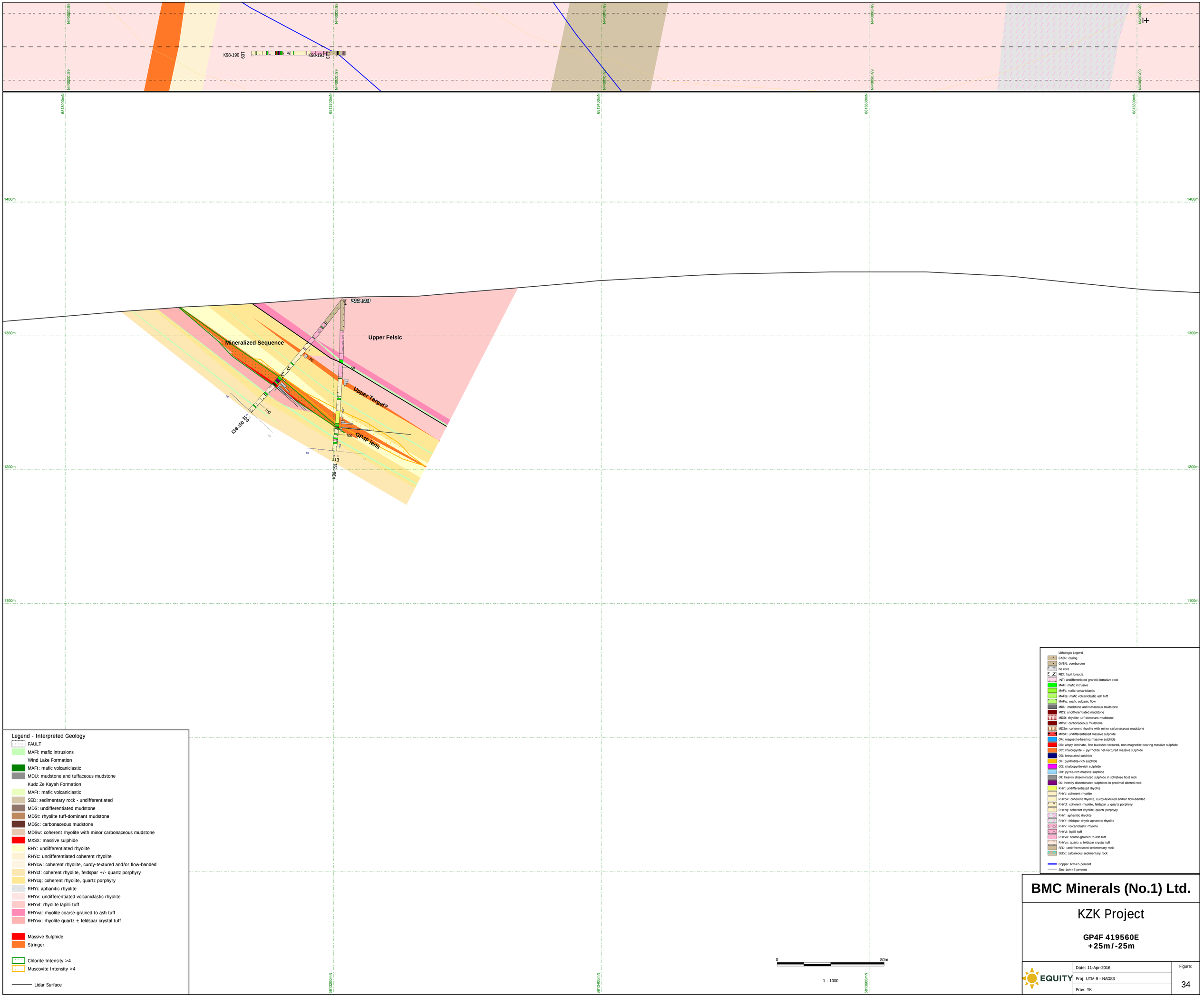
Figure: 33



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KZK Project

GP4F 419560E
+25m/-25m

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Date: 11-Apr-2016

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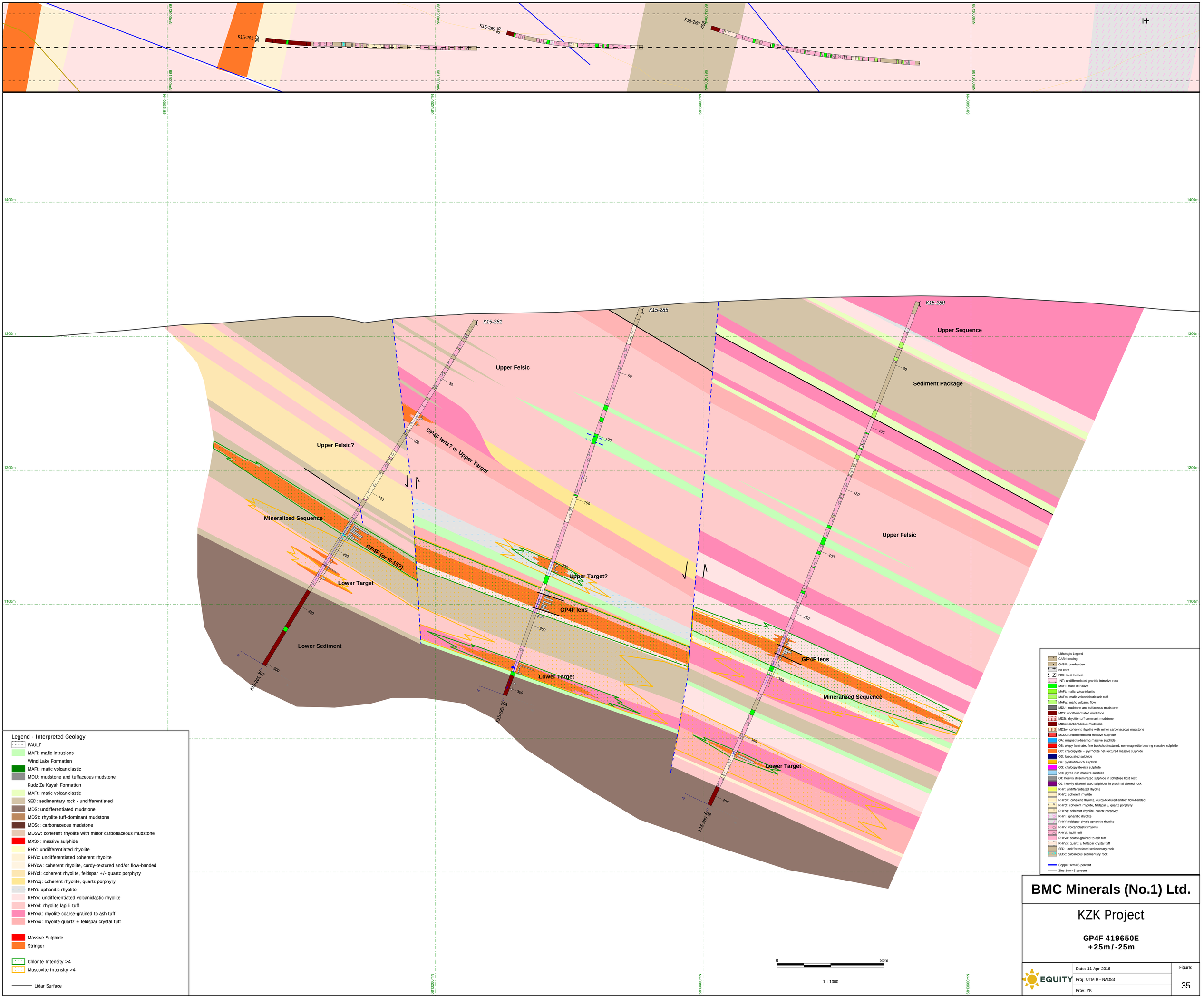
Prov: YK

Figure: 34



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KZK Project

GP4F 419650E
+25m/-25m

EQUITY

Date: 11-Apr-2016	Figure:
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Prov: YK	

Appendix N: Certificates of analysis

This appendix contains all of the certificates of analysis (COA) pertaining to resource definition and exploration drilling at the 2015 KZK Project. Elements analyzed for all of these holes include Cu, Fe, Pb, Zn, Au and Ag, and many of them were also analyzed for Ba and S. A select number of intervals were also analyzed for As, Bi, Hg, Sb and Se. COAs are listed in alphanumeric order, with the first page of each COA indicated in the Page Number column in Table N-1 below.

Table N-1: Table of contents for COAs in this appendix

Certificate	Elements Assayed	Drill holes	Target	Samples (#)	Page Number
VC151957F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-022, 047, K95-075, 088	ABM	106	1
VC151958F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-008, 039, 040	ABM	74	10
VC151960F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-014, 023, 039, 052, K95-087	ABM	104	17
VC151961F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-007, 009	ABM	74	26
VC151962F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-009, 049, K95-156, 157	ABM	59	33
VC151963F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-020, K95-149, 150	ABM	74	39
VC151964F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-010, 021, K95-081, 150	ABM	70	46
VC151965F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-038, 049, K95-070	ABM	45	53
VC151966F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-013, K95-071, 092	ABM	68	58
VC152112A	As, Bi, Hg, Sb, Se	K15-200, 202, 203, 204	ABM	122	65
VC152112F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-200, 202, 203, 204	ABM	122	70
VC152113A	As, Bi, Hg, Sb, Se	K15-206, 207, 216, 218	ABM	101	80
VC152113F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-206, 207, 216, 218	ABM	101	84
VC152205A	As, Bi, Hg, Sb, Se	K15-226, 228	ABM	40	93
VC152205F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-226, 228	ABM	68	96
VC152206A	As, Bi, Hg, Sb, Se	K15-223, 224, 227, 229	ABM, GP4F	31	103
VC152206F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-223, 224, 227, 229	ABM, GP4F	112	107
VC152276	Ag, Au, Cu, Fe, Pb, Zn	K94-006, 036, 043, 048, K95-089, 095, 096, 099, 102, 127, 132	ABM	72	116
VC152276A	As, Bi, Hg, Sb, Se	K94-006, 036, 043, 048, K95-089, 095, 096, 099, 102, 127, 132	ABM	72	120
VC152277	Ag, Au, Cu, Fe, Pb, Zn	K94-005, 024, 037, 044, K95-090, 091, 126, 128, 129, 133	ABM	92	123
VC152328A	As, Bi, Hg, Sb, Se	K15-232, 233, 235R, 238, 240	ABM	49	128
VC152328F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-232, 233, 235R, 238, 240	ABM	146	133
VC152330A	As, Bi, Hg, Sb, Se	K15-231, 236	ABM	46	145
VC152330F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-231, 236	ABM	117	150
VC152376	Cu, Pb, Zn	n/a	Oxidation work	90	160
VC152425F	Ag, Au, Cu, Fe, Pb, S, Zn	K95-069, 078, 141, 142, 143, 144, 159	ABM	74	164
VC152426F	Ag, Au, Cu, Fe, Pb, S, Zn	K94-003, K95-073, 074, 078, 079, 140, 146, 153	ABM	74	171
VC152429F	Ag, Au, Cu, Fe, Pb, Zn	K95-065, 068, 072, 079	ABM	44	178
VC152431A	As, Bi, Hg, Sb, Se	K15-239, 242, 243	ABM	29	181
VC152431F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-239, 242, 243	ABM	74	185
VC152432A	As, Bi, Hg, Sb, Se	K15-234, 242, 244	ABM, GP4F	58	192
VC152432F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-234, 242, 244	ABM, GP4F	74	196

VC152433	Ag, Au, Cu, Fe, Pb, Zn	K15-234	GP4F	42	206
VC152484	Ag, Au, Cu, Fe, Pb, Zn	K94-035, 041, 042, 045, K95-080, 082, 083, 086, 136, 137, 138, 139, 142, 154, 155, 158, 160	ABM	119	209
VC152566A	As, Bi, Hg, Sb, Se	K15-258, 259, 260	ABM	41	215
VC152566F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-258, 259, 260	ABM	87	219
VC152572	Ag, Au, Cu, Fe, Pb, Zn	K94-016, 019, 029, 031, K95-056, 062, 114, 117, 118, 124, 125, 130, 131, K97-173, 174	ABM, 1 DH unspecified	76	227
VC152573	Ag, Au, Cu, Fe, Pb, Zn	K15-261, 262, 263	ABM, GP4F	102	231
VC152574F	Ag, Au, Cu, Fe, Pb, Zn	K94-011, 012, 030, K95-055, 059, 062, 077, 151, 152	ABM	74	236
VC152575	Ag, Au, Cu, Fe, Pb, Zn	K94-011, 027, K95-054, 056, 057, 058, 061, 063, 084, 085, 147, 148	ABM	74	240
VC152576	Ag, Au, Cu, Fe, Pb, Zn	K94-026, 027, K95-053, 060, 064, 065, 066, 067, 076	ABM	66	244
VC152578	Ag, Au, Cu, Fe, Pb, Zn	K15-248, 249, 250, 251, 253, 257	ABM	74	248
VC152578A	As, Bi, Hg, Sb, Se	K15-248, 249, 250, 251, 253, 257	ABM	9	257
VC152579A	As, Bi, Hg, Sb, Se	K15-247, 251, 254, 255	ABM, GP4F	32	260
VC152579F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-247, 251, 254, 255	ABM, GP4F	74	263
VC152580	Ag, Au, Cu, Fe, Pb, Zn	K15-247	GP4F	58	273
VC152613A	As, Bi, Hg, Sb, Se	K15-264, 265	ABM	36	276
VC152613F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-264, 265	ABM	74	279
VC152615A	As, Bi, Hg, Sb, Se	K15-265, 267	ABM	40	286
VC152615F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-265, 267	ABM	58	289
VC152616	Ag, Au, Cu, Fe, Pb, Zn	K94-015, 016, 028, K95-120, 121, 123, 134, 135, K97-173	ABM	54	295
VC152617	Ag, Au, Cu, Fe, Pb, Zn	n/a	Blanks	10	298
VC152708A	As, Bi, Hg, Sb, Se	K15-287	ABM	99	300
VC152708F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-287	ABM	99	304
VC152709A	As, Bi, Hg, Sb, Se	K15-272	ABM	74	312
VC152709F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-271, 272	ABM	74	316
VC152710A	As, Bi, Hg, Sb, Se	K15-272, 274	ABM	49	323
VC152710F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-272, 274	ABM	74	327
VC152711A	As, Bi, Hg, Sb, Se	K15-273, 274	ABM	45	334
VC152711F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-273, 274	ABM	52	337
VC152791	Ag, Au, Cu, Fe, Pb, Zn	K95-093, 094, 103, 104, 105, 106, K97-172, 177	ABM	60	342
VC152818	Ag, Au, Cu, Fe, Pb, Zn	K95-097, 098, 107, 108, 111, 112, 122, 123	ABM	37	346
VC152819A	As, Bi, Hg, Sb, Se	K15-209, 277	ABM	37	349
VC152819F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-209, 277	ABM	74	353
VC152820A	As, Bi, Hg, Sb, Se	K15-277, 278, 279, 281	ABM	56	360
VC152820F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-277, 278, 279, 281	ABM	74	364
VC152821	Ag, Au, Cu, Fe, Pb, Zn	K15-279	ABM	75	371
VC152821A	As, Bi, Hg, Sb, Se	K15-279	ABM	75	378
VC152897F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-282, 286	ABM, Krakatoa	74	382
VC152898F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-280, 286, 290	ABM, GP4F	74	389

VC152899	Ag, Au, Cu, Fe, Pb, Zn	K15-280	GP4F	62	396
VC153009	Ag, Au, Cu, Fe, Pb, Zn	K15-237, 292	Krakatoa	74	402
VC153009A	As, Bi, Hg, Sb, Se	K15-237, 292	Krakatoa	74	409
VC153010F	Ag, Au, Cu, Fe, Pb, S, Zn	K15-289, 293, 296, 298	ABM	74	413
VC153011	Ag, Au, Cu, Fe, Pb, Zn	K15-294, 296, 297	ABM, GP4F, Krakatoa	74	420
VC153012	Ag, Au, Cu, Fe, Pb, Zn	K15-291, 294, 295	ABM, GP4F	63	427
VC153025	S, Specific Gravity	n/a	Pictometer	50	431
VC153089	Ag, Au, Cu, Fe, Pb, S, Zn	K15-304, 305	Krakatoa	74	434
VC153089A	As, Bi, Hg, Sb, Se	K15-304, 305	Krakatoa	74	441
VC153090	Ag, Au, Cu, Fe, Pb, S, Zn	K15-297, 305	ABM, Krakatoa	74	445
VC153090A	As, Bi, Hg, Sb, Se	K15-237, 292	Krakatoa	74	452
VC153091	Ag, Au, Cu, Fe, Pb, S, Zn	K15-297, K15-302, 304	ABM, GP4F, Krakatoa	74	456
VC153093	Ag, Au, Cu, Fe, Pb, S, Zn	K15-299, 306	ABM, GP4F	74	463
VC153094	Ag, Au, Cu, Fe, Pb, S, Zn	K15-299, 301, 303	ABM, Krakatoa	74	470
VC153095	Ag, Au, Cu, Fe, Pb, S, Zn	K15-303	Krakatoa	75	477
VC153315	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K95-145	ABM	17	484
VC153345	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-320	Krakatoa	60	487
VC153347	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-314	Krakatoa	94	493
VC153348	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-319	Krakatoa	66	501
VC153349	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-317	Krakatoa	61	508
VC153349A	As, Bi, Hg, Sb, Se	K15-317	Krakatoa	53	514
VC153377	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-313, 315	Krakatoa	74	517
VC153378	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-312, 313, 316	Krakatoa	82	524
VC153379	Ag, Au, Cu, Fe, Pb, S, Zn	K94-051, K97-181, K97-183	FCZ	11	531
VC153411	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-321, 323	Krakatoa	96	534
VC153415	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-322	Krakatoa	80	542
VC153451	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-235R, 279, 299, 307, 309, 310	ABM, Krakatoa	74	549
VC153452	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-235R, 279, 299, 307, 309, 310	ABM, Krakatoa	107	556
VC153611	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-326	Krakatoa	37	565
VC153739	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-324, 327	ABM, Santorini	74	570
VC153740	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-327, 328	Santorini	74	577
VC153741	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-328	Santorini	74	584
VC153742	Ag, Au, Ba, Cu, Fe, Pb, S, Zn	K15-325, 328, 329, 332	FCZ, Krakatoa, Santorini	80	591
VC153795	Ba	K94-008, 022, 039, 040, 047, K95-075, 088	ABM	88	598

VC153796	Ba	K94-007, 009, 014, 023, 039, 052, K95-087	ABM	84	602
VC153797	Ba	K94-009, 013, 049, K95-071, 092, 156, 157	ABM	83	606
VC153798	Ba	K15-200, 202-204, 206, 207, 216, 218	ABM	96	610
VC153799	Ba	K15-223, 224, 226-229	ABM, GP4F	80	614
VC153800	Ba	K15-232, 233, 235R, 238, 240	ABM	59	618
VC153801	Ba	K94-003, K95-073, 074, 078, 079, 140, 146, 153, K15-231, 236	ABM	87	621
VC153808	Whole rock	K15-203, 236, 249, 251	Mafic footwall	9	625
VC153810	Ba	K15-234, 239, 242, 243	ABM, GP4F	73	631
VC153811	Ba	K15-248, 249, 250, 251, 253, 257-260	ABM	78	634
VC153812	Ba	K15-247, 251, 254, 255, 264, 265	ABM, GP4F	79	638
VC153813	Ba	K15-265, 267, 287	ABM	75	642
VC153814	Ba	K15-271, 272, 274	ABM	69	646
VC153815	Ba	K15-273, 274	ABM	45	649
VC153816	Ba	K95-093, 094, 103, 104, 105, 106, K97-172, 177, K95-097, 098, 107, 108, 111, 112, 122, 123	ABM	97	652
VC153817	Ba	K15-209, 277	ABM	74	656
VC153821	Ba	K15-277, 278, 279, 281	ABM	74	660
VC153822	Ba, S	K15-279	ABM	75	664
VC153823	Ba	K15-282, 286	ABM, Krakatoa	74	668
VC153824	Ba	K15-280, 286, 290	ABM, GP4F	74	672
VC153825	Ba, S	K15-280	GP4F	62	676
VC153826	Ba, S	K15-237, 292	Krakatoa	74	679
VC153827	Ba	K15-289, 293, 296, 298	ABM	74	683
VC153828	Ba, S	K15-294, 296, 297	ABM, GP4F, Krakatoa	74	687
VC153829	Ba, S	K15-291, 294, 295	ABM, GP4F	63	691
VC153851	As, Bi, Hg, Sb, Se	K15-272	ABM	16	694
VC153854	Ba	K15-304, 305	Krakatoa	74	696
VC153855	Ba	K15-297, 305	ABM, Krakatoa	74	700
VC153856	Ba	K15-297, K15-302, 304	ABM, GP4F, Krakatoa	74	704
VC153857	Ba	K15-299, 306	ABM, GP4F	74	708
VC153858	Ba	K15-299, 301, 303	ABM, Krakatoa	74	712
VC153859	Ba	K15-303, K94-051, K97-181, K97-183	FCZ, Krakatoa	86	716

Certificate of Analysis

Work Order : VC151957F

[Report File No.: 0000014314]

To: **ROBIN BLACK** Date: Dec 09, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/R080107-212
Project No.	:	KZK
No. Of Samples	:	106
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Au, Cu, Pb, and Zn values have been updated. S data has been included and is informational only.
GO_FAG313 values have been updated.
This Report cancels and supersedes the Report No. 014180
dated Dec 06, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC151957F Order: PO# BMC15-01_1/R080107-212

Report File No.: 0000014314

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
R080107	3.875	N.A.	14	1.5	<0.01	2.26	0.05	0.16
R080108	2.440	N.A.	50	0.6	<0.01	2.39	0.03	0.06
R080109	3.060	N.A.	<5	1.0	<0.01	1.84	0.04	0.09
R080110	0.670	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
R080111	3.415	N.A.	47	7.4	0.06	9.73	0.35	6.76
R080112	3.625	N.A.	158	29.9	0.53	11.3	1.07	3.81
R080113	2.395	N.A.	2020	83.1	4.70	16.4	1.06	3.24
R080114	3.445	N.A.	2830	107	5.49	13.9	0.29	0.84
R080115	3.760	N.A.	339	29.6	2.22	8.87	0.03	0.21
R080116	3.960	N.A.	28	2.3	0.15	9.24	<0.01	0.08
R080117	3.280	N.A.	<5	3.0	0.01	4.52	0.05	0.22
R080118	3.735	N.A.	3190	222	13.3	31.9	0.27	1.18
R080119	2.335	N.A.	843	50.1	2.78	9.76	0.10	0.50
R080120	0.125	N.A.	4310	>300	0.34	11.5	11.3	17.9
R080121	0.150	N.A.	295	21.1	13.1	26.7	0.05	0.42
R080122	0.156	N.A.	5590	7.0	0.66	6.27	0.01	0.12
R080123	4.675	N.A.	2990	>300	0.50	21.2	3.30	9.14
R080124	3.085	N.A.	52	5.3	0.10	4.13	0.03	0.10
R080125	1.695	N.A.	15	1.3	0.04	5.20	<0.01	0.06
R080126	2.105	N.A.	32	10.2	0.02	3.78	0.07	0.77
R080127	2.870	N.A.	38	12.8	0.04	5.36	0.17	0.47
R080128	3.010	N.A.	6	1.3	0.02	8.15	0.01	0.03
R080129	2.540	N.A.	11	6.8	0.03	6.77	0.09	0.38
R080130	0.920	N.A.	5	<0.3	<0.01	0.07	<0.01	<0.01
R080131	2.930	N.A.	86	35.7	0.42	12.5	0.35	1.47
R080132	3.225	N.A.	141	24.5	0.13	12.2	0.13	0.61
R080133	2.365	N.A.	10	1.4	<0.01	6.60	<0.01	0.05
R080134	2.650	N.A.	13	6.3	0.03	6.84	0.04	0.36
R080135	2.905	N.A.	22	8.4	0.02	5.94	0.17	0.43
R080136	4.025	N.A.	614	44.8	0.50	35.9	0.50	2.32
R080137	2.545	N.A.	493	24.5	0.59	21.9	0.08	0.48
R080138	3.495	N.A.	470	44.6	0.33	28.4	0.60	4.81
R080139	2.035	N.A.	114	9.4	0.05	10.1	0.10	0.62
*Dup R080139	N.A.	N.A.	85	8.8	0.05	9.36	0.09	0.60
R080140	0.135	N.A.	882	42.8	0.46	20.2	0.32	1.10
R080141	2.605	N.A.	120	24.0	0.11	6.98	0.42	1.08
R080142	2.860	N.A.	38	4.4	0.02	4.25	0.06	0.28
R080143	1.680	N.A.	37	4.9	0.02	5.11	0.07	0.18
R080144	3.290	N.A.	1070	92.0	0.21	35.4	1.18	4.27
R080145	3.490	N.A.	1820	145	0.45	31.4	3.11	6.37

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Final : VC151957F Order: PO# BMC15-01_1/R080107-212

Report File No.: 0000014314

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
R080146	5.485	N.A.	1190	154	0.33	33.3	3.70	8.29
R080147	2.740	N.A.	64	13.4	0.10	10.6	0.27	0.75
R080148	2.030	N.A.	631	36.4	0.89	10.8	0.35	0.49
R080149	2.825	N.A.	8	0.4	<0.01	6.24	<0.01	0.03
R080150	1.070	N.A.	5	<0.3	<0.01	0.10	<0.01	<0.01
R080151	2.900	N.A.	<5	0.4	<0.01	1.63	<0.01	<0.01
R080152	1.415	N.A.	7	0.3	<0.01	2.04	<0.01	<0.01
R080153	2.910	N.A.	52	5.6	0.11	2.15	0.02	0.04
R080154	3.800	N.A.	268	40.7	0.64	34.9	0.53	1.04
R080155	3.935	N.A.	1130	87.8	0.84	36.6	1.29	4.45
R080156	3.265	96.8	1290	210	0.48	32.2	1.94	8.49
R080157	1.665	N.A.	649	48.8	0.69	22.1	0.60	3.54
R080158	2.040	N.A.	1520	129	1.93	28.7	0.35	0.70
R080159	2.720	N.A.	1230	149	2.40	28.8	0.32	2.45
R080160	0.145	N.A.	1250	71.6	0.36	3.84	1.36	5.35
R080161	0.145	N.A.	777	19.6	1.71	13.7	0.25	1.05
R080162	2.685	N.A.	760	62.5	0.84	23.8	1.21	4.70
R080163	3.745	N.A.	967	63.3	1.09	26.4	0.59	3.41
R080164	3.885	N.A.	987	121	0.60	22.5	2.38	5.94
R080165	4.080	N.A.	2250	155	2.52	27.1	1.60	9.46
R080166	3.580	N.A.	2820	208	4.67	29.9	1.45	9.43
R080167	3.065	N.A.	640	103	0.52	35.6	2.07	7.65
R080168	1.955	N.A.	28	7.5	0.02	5.39	0.19	0.36
R080169	2.815	N.A.	14	2.0	<0.01	2.13	0.03	0.09
R080170	9.025	N.A.	<5	0.4	<0.01	0.16	<0.01	<0.01
R080171	2.225	N.A.	5	0.6	<0.01	1.67	<0.01	0.03
R080172	2.465	N.A.	18	2.6	0.07	2.10	<0.01	0.04
R080173	1.655	N.A.	777	79.6	0.52	3.16	0.02	0.16
R080174	2.090	N.A.	24	5.7	0.05	2.28	0.05	0.10
*Dup R080174	N.A.	N.A.	22	5.4	0.06	2.38	0.05	0.10
R080175	3.280	N.A.	26	3.5	0.04	2.28	0.03	0.23
R080176	4.710	N.A.	1070	139	1.63	33.9	1.27	9.41
R080177	3.335	N.A.	979	195	0.84	35.3	3.29	9.58
R080178	2.400	N.A.	1750	198	0.40	30.8	3.27	8.66
R080179	1.220	N.A.	3160	>300	1.87	3.98	0.16	0.40
R080180	0.135	N.A.	826	44.0	0.46	18.8	0.30	1.08
R080181	3.980	N.A.	9	0.9	<0.01	2.19	<0.01	<0.01
R080182	3.135	N.A.	12	0.8	<0.01	2.12	<0.01	<0.01
R080183	3.800	N.A.	12	0.9	<0.01	1.94	<0.01	<0.01
R080184	2.925	N.A.	10	0.6	<0.01	2.37	<0.01	<0.01

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Final : VC151957F Order: PO# BMC15-01_1/R080107-212

Report File No.: 0000014314

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
R080185	3.570	N.A.	290	58.3	0.07	2.56	0.10	0.35
R080186	3.620	N.A.	1150	164	0.06	13.9	2.51	5.44
R080187	5.510	N.A.	1540	140	0.61	36.1	2.88	10.2
R080188	5.570	N.A.	658	91.3	0.26	37.1	1.26	8.21
R080189	6.355	N.A.	2030	183	0.73	34.8	1.36	7.15
R080190	0.865	N.A.	29	2.0	<0.01	0.64	0.02	0.12
R080191	5.105	N.A.	2130	254	0.89	29.6	1.88	8.53
R080192	1.480	N.A.	524	40.5	0.14	3.53	0.16	0.20
R080193	5.005	N.A.	2450	>300	0.63	27.8	4.10	11.4
R080194	2.430	N.A.	16	2.1	<0.01	2.23	<0.01	0.02
R080195	3.465	N.A.	14	1.2	<0.01	2.50	<0.01	<0.01
R080196	2.430	N.A.	20	1.7	<0.01	3.97	<0.01	0.02
R080197	3.590	N.A.	31	2.0	<0.01	2.55	0.02	0.03
R080198	3.150	N.A.	77	2.7	<0.01	2.07	0.03	0.03
R080199	3.580	N.A.	98	5.6	0.15	2.82	0.02	0.08
R080200	0.150	N.A.	1230	70.6	0.36	3.80	1.37	5.26
R080201	0.150	N.A.	812	20.3	1.77	13.8	0.26	1.09
R080202	5.570	N.A.	1180	90.0	1.51	36.7	0.56	7.79
R080203	6.130	N.A.	1120	179	0.20	33.3	2.39	12.0
R080204	5.360	N.A.	1540	237	0.69	31.5	2.98	9.69
R080205	5.285	N.A.	1430	135	0.39	31.3	1.17	9.79
R080206	5.015	90.2	2180	243	0.23	29.9	1.82	5.53
R080207	5.885	N.A.	1220	162	0.11	29.9	1.45	5.74
R080208	5.425	N.A.	1970	>300	0.59	28.5	3.93	9.38
R080209	3.200	N.A.	28	6.1	0.02	1.97	0.03	0.10
R080210	0.705	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
R080211	3.505	N.A.	13	2.3	<0.01	1.77	<0.01	0.01
R080212	2.935	N.A.	12	0.4	<0.01	1.43	<0.01	<0.01
*Rep R080114				106				
*Rep R080170				<0.3				
*Rep R080192				40.9				
*Std SU_1B				6.4				
*Std OREAS132A				58.3				
*Std SU_1B				6.3				
*Std OREAS132A				58.7				
*Std AMIS0268				194				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				

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Final : VC151957F Order: PO# BMC15-01_1/R080107-212

Report File No.: 0000014314

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Blk BLANK		<0.3				
*Rep R080143	31					
*Rep R080176	1170					
*Rep R080187	1460					
*Std OREAS152B	135					
*Std OXH97	1300					
*Std OXJ111	2260					
*Std OXN117	8050					
*Std OREAS152B	134					
*Std OXH97	1290					
*Std OXN117	7790					
*Blk BLANK	7					
*Blk BLANK	5					
*Blk BLANK	<5					
*Rep R080126			0.02	3.81	0.08	0.78
*Rep R080172			0.07	2.16	0.01	0.05
*Rep R080175			0.04	2.25	0.03	0.23
*Rep R080205			0.39	31.3	1.17	9.76
*Std OREAS134A			0.13	12.1	12.7	17.8
*Std OREAS131B			0.02	5.81	1.86	3.15
*Std OREAS926			0.81	7.49	0.01	0.04
*Std OREAS134A			0.12	12.1	12.8	17.0
*Std OREAS131B			0.02	5.75	1.87	3.07
*Std OREAS926			0.82	7.45	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC151957F Order: PO# BMC15-01_1/R080107-212

Report File No.: 0000014314

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
R080107	N.A.	N.A.	N.A.
R080108	N.A.	N.A.	N.A.
R080109	N.A.	N.A.	N.A.
R080110	N.A.	N.A.	N.A.
R080111	N.A.	N.A.	N.A.
R080112	N.A.	N.A.	N.A.
R080113	N.A.	N.A.	N.A.
R080114	N.A.	N.A.	N.A.
R080115	N.A.	N.A.	N.A.
R080116	N.A.	N.A.	N.A.
R080117	N.A.	N.A.	N.A.
R080118	N.A.	N.A.	226
R080119	N.A.	N.A.	N.A.
R080120	N.A.	N.A.	304
R080121	N.A.	N.A.	N.A.
R080122	N.A.	5.41	N.A.
R080123	N.A.	N.A.	344
R080124	N.A.	N.A.	N.A.
R080125	N.A.	N.A.	N.A.
R080126	N.A.	N.A.	N.A.
R080127	N.A.	N.A.	N.A.
R080128	N.A.	N.A.	N.A.
R080129	N.A.	N.A.	N.A.
R080130	N.A.	N.A.	N.A.
R080131	7.3	N.A.	N.A.
R080132	9.8	N.A.	N.A.
R080133	N.A.	N.A.	N.A.
R080134	N.A.	N.A.	N.A.
R080135	N.A.	N.A.	N.A.
R080136	32.4	N.A.	N.A.
R080137	16.5	N.A.	N.A.
R080138	28.8	N.A.	N.A.
R080139	5.3	N.A.	N.A.
*Dup R080139	N.A.	N.A.	N.A.
R080140	16.8	N.A.	N.A.
R080141	4.1	N.A.	N.A.
R080142	N.A.	N.A.	N.A.
R080143	N.A.	N.A.	N.A.
R080144	38.0	N.A.	N.A.
R080145	37.2	N.A.	N.A.

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Report File No.: 0000014314

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
R080146	41.2	N.A.	150
R080147	8.0	N.A.	N.A.
R080148	5.4	N.A.	N.A.
R080149	N.A.	N.A.	N.A.
R080150	N.A.	N.A.	N.A.
R080151	N.A.	N.A.	N.A.
R080152	N.A.	N.A.	N.A.
R080153	N.A.	N.A.	N.A.
R080154	28.1	N.A.	N.A.
R080155	43.4	N.A.	N.A.
R080156	40.4	N.A.	212
R080157	17.2	N.A.	N.A.
R080158	20.0	N.A.	N.A.
R080159	24.3	N.A.	N.A.
R080160	4.4	N.A.	N.A.
R080161	N.A.	N.A.	N.A.
R080162	22.9	N.A.	N.A.
R080163	24.3	N.A.	N.A.
R080164	28.2	N.A.	N.A.
R080165	30.5	N.A.	157
R080166	30.7	N.A.	178
R080167	45.2	N.A.	N.A.
R080168	N.A.	N.A.	N.A.
R080169	N.A.	N.A.	N.A.
R080170	N.A.	N.A.	N.A.
R080171	N.A.	N.A.	N.A.
R080172	N.A.	N.A.	N.A.
R080173	2.1	N.A.	N.A.
R080174	N.A.	N.A.	N.A.
*Dup R080174	N.A.	N.A.	N.A.
R080175	N.A.	N.A.	N.A.
R080176	36.9	N.A.	N.A.
R080177	43.3	N.A.	181
R080178	36.1	N.A.	166
R080179	3.3	N.A.	595
R080180	17.4	N.A.	N.A.
R080181	N.A.	N.A.	N.A.
R080182	N.A.	N.A.	N.A.
R080183	N.A.	N.A.	N.A.
R080184	N.A.	N.A.	N.A.

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Report File No.: 0000014314

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
R080185	1.8	N.A.	N.A.
R080186	14.8	N.A.	146
R080187	36.3	N.A.	N.A.
R080188	40.9	N.A.	N.A.
R080189	38.6	N.A.	178
R080190	N.A.	N.A.	N.A.
R080191	35.6	N.A.	288
R080192	N.A.	N.A.	N.A.
R080193	38.6	N.A.	439
R080194	N.A.	N.A.	N.A.
R080195	N.A.	N.A.	N.A.
R080196	N.A.	N.A.	N.A.
R080197	N.A.	N.A.	N.A.
R080198	N.A.	N.A.	N.A.
R080199	N.A.	N.A.	N.A.
R080200	N.A.	N.A.	N.A.
R080201	N.A.	N.A.	N.A.
R080202	40.8	N.A.	N.A.
R080203	43.3	N.A.	179
R080204	38.1	N.A.	218
R080205	38.6	N.A.	N.A.
R080206	37.2	N.A.	264
R080207	38.1	N.A.	141
R080208	37.4	N.A.	392
R080209	N.A.	N.A.	N.A.
R080210	N.A.	N.A.	N.A.
R080211	N.A.	N.A.	N.A.
R080212	N.A.	N.A.	N.A.

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Rep R080122		5.18	
*Std OXN117		7.43	
*Blk BLANK		<0.50	
*Rep R080203			188
*Std ME-1302			405
*Blk BLANK			<10
*Rep R080126	N.A.		
*Rep R080172	N.A.		

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Report File No.: 0000014314

	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Rep R080175	N.A.		
*Rep R080205	N.A.		
*Std OREAS134A	19.7		
*Std OREAS131B	4.9		
*Std OREAS926	N.A.		
*Std OREAS134A	N.A.		
*Std OREAS131B	N.A.		
*Std OREAS926	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC151958F

[Report File No.: 0000014181]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q311301-374
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151958 Report No. 012697
dated Sep 11, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311301	2.895	N.A.	7	2.0	<0.01	3.74	0.10	0.15
Q311302	2.395	N.A.	17	13.2	<0.01	5.43	0.80	0.55
Q311303	3.200	N.A.	9	1.8	0.01	3.09	0.11	0.23
Q311304	3.415	N.A.	32	9.0	0.05	4.67	0.13	0.33
Q311305	2.910	N.A.	108	6.9	0.20	3.75	0.02	0.07
Q311306	4.585	N.A.	820	122	0.22	32.4	4.00	9.02
Q311307	5.055	N.A.	1740	120	0.34	27.5	2.88	6.76
Q311308	5.635	N.A.	614	95.3	0.65	32.7	2.99	8.50
Q311309	3.925	N.A.	821	86.4	3.18	35.8	0.08	0.36
Q311310	0.880	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
Q311311	6.335	N.A.	557	65.4	1.31	42.8	0.26	10.9
Q311312	5.560	N.A.	513	73.7	0.46	37.6	0.94	16.2
Q311313	5.880	N.A.	248	60.7	0.10	40.7	3.42	9.57
Q311314	6.355	N.A.	721	139	0.38	32.3	3.54	9.53
Q311315	5.300	N.A.	903	130	1.19	38.3	1.53	11.4
Q311316	5.260	N.A.	2420	250	4.08	41.8	0.77	4.21
Q311317	6.065	N.A.	594	172	0.92	34.3	2.19	8.04
Q311318	2.405	N.A.	455	67.8	0.24	14.0	1.60	4.74
Q311319	3.240	N.A.	140	15.0	0.13	10.3	0.19	0.69
Q311320	0.150	N.A.	836	44.6	0.45	20.1	0.31	1.17
Q311321	3.400	N.A.	<5	0.6	<0.01	6.68	<0.01	0.02
Q311322	5.350	N.A.	<5	0.5	<0.01	3.73	<0.01	0.02
Q311323	3.220	N.A.	<5	0.5	<0.01	1.66	<0.01	0.03
Q311324	3.030	N.A.	5	0.5	<0.01	2.35	<0.01	0.01
Q311325	4.290	N.A.	34	15.3	0.30	9.82	0.14	1.45
Q311326	4.230	N.A.	25	10.4	0.16	7.83	0.03	0.48
Q311327	3.870	N.A.	<5	1.6	0.04	3.12	<0.01	0.03
Q311328	3.520	N.A.	8	0.5	<0.01	4.36	<0.01	0.25
Q311329	3.630	N.A.	13	0.7	<0.01	3.09	<0.01	0.11
Q311330	1.120	N.A.	<5	<0.3	<0.01	0.11	<0.01	<0.01
Q311331	3.570	N.A.	32	1.4	<0.01	1.56	0.01	1.08
Q311332	2.875	N.A.	12	4.7	0.03	5.33	0.02	0.07
Q311333	2.545	N.A.	20	1.1	<0.01	3.10	0.02	0.04
Q311334	3.065	N.A.	7	0.4	<0.01	4.86	<0.01	0.02
Q311335	2.695	N.A.	128	12.9	0.26	6.34	0.04	0.30
*Dup Q311335	N.A.	N.A.	117	13.2	0.26	6.19	0.04	0.28
Q311336	3.770	N.A.	1340	84.7	0.70	12.2	0.70	2.45
Q311337	3.590	N.A.	1210	97.6	0.26	13.8	1.26	4.21
Q311338	4.000	N.A.	3950	>300	1.11	28.9	4.84	15.7
Q311339	4.375	N.A.	3980	>300	0.86	26.8	4.19	12.9

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311340	0.130	N.A.	5080	6.9	0.58	6.04	0.01	0.13
Q311341	0.130	N.A.	4340	>300	0.32	11.5	11.3	18.0
Q311342	0.125	N.A.	298	20.4	12.9	27.3	0.05	0.44
Q311343	5.925	N.A.	3110	>300	1.00	30.8	4.65	11.4
Q311344	5.005	N.A.	3800	>300	0.70	21.2	3.65	9.23
Q311345	2.980	N.A.	95	13.7	0.01	4.28	0.18	0.34
Q311346	5.125	N.A.	1560	>300	0.22	17.9	3.06	6.01
Q311347	4.695	N.A.	2540	>300	0.65	16.8	1.92	3.72
Q311348	4.740	N.A.	1110	136	0.27	8.83	0.85	1.66
Q311349	4.265	N.A.	1310	159	0.33	10.6	1.18	3.41
Q311350	1.165	86.8	<5	0.4	<0.01	0.08	<0.01	<0.01
Q311351	3.225	N.A.	693	84.0	0.18	7.88	0.70	1.97
Q311352	3.500	N.A.	24	2.7	<0.01	1.97	0.01	0.02
Q311353	5.460	N.A.	3770	>300	0.85	28.4	2.88	10.9
Q311354	5.680	N.A.	1690	158	0.59	34.0	1.72	8.21
Q311355	4.660	N.A.	2930	255	1.06	40.4	1.38	5.07
Q311356	4.690	N.A.	1550	145	0.71	40.3	1.87	7.90
Q311357	6.935	N.A.	719	54.8	0.86	45.0	0.53	8.95
Q311358	4.530	N.A.	885	148	0.27	41.8	2.94	6.33
Q311359	5.605	N.A.	2400	185	0.41	27.3	2.41	9.21
Q311360	0.140	N.A.	853	43.4	0.46	20.0	0.31	1.13
Q311361	3.440	N.A.	32	4.6	0.02	3.45	0.02	0.25
Q311362	2.770	N.A.	58	7.4	<0.01	2.31	0.04	0.14
Q311363	2.845	N.A.	103	5.3	<0.01	1.89	0.03	0.19
Q311364	2.605	N.A.	528	111	0.11	9.19	1.63	3.70
Q311365	1.435	N.A.	1290	54.2	1.42	16.0	0.19	1.99
Q311366	4.740	N.A.	1430	122	0.51	35.0	1.91	8.45
Q311367	4.510	N.A.	1060	86.9	0.37	42.0	0.54	5.44
Q311368	4.750	N.A.	851	70.0	0.21	40.6	0.99	4.64
Q311369	2.985	N.A.	1510	147	0.35	33.3	2.90	6.75
Q311370	1.065	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
Q311371	3.735	N.A.	1840	174	0.42	32.5	1.88	7.58
*Dup Q311371	N.A.	N.A.	1850	177	0.45	31.7	N.A.	8.21
Q311372	2.745	N.A.	18	1.9	<0.01	2.40	0.02	0.05
Q311373	2.765	N.A.	33	4.6	<0.01	2.24	0.04	0.07
Q311374	3.135	N.A.	16	2.1	<0.01	2.50	0.02	0.06
*Rep Q311333				1.1				
*Rep Q311373				5.0				
*Std SU_1B				6.7				
*Std OREAS132A				56.6				

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Final : VC151958F Order: PO# BMC15-01_1/Q311301-374

Report File No.: 0000014181

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS132A		56.0				
*Std AMIS0268		195				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep Q311308	631					
*Rep Q311350	<5					
*Std OREAS152B	139					
*Std OXH97	1300					
*Std OXJ111	2130					
*Std OXN117	7620					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Rep Q311306			0.22	30.9	3.85	8.73
*Rep Q311315			1.19	38.4	1.54	11.4
*Rep Q311318			0.26	13.7	1.63	4.56
*Std OREAS131B			0.02	5.80	1.86	3.04
*Std OREAS134A			0.13	12.0	12.9	17.3
*Std OREAS926			0.80	7.43	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC151958F Order: PO# BMC15-01_1/Q311301-374

Report File No.: 0000014181

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q311301	N.A.	N.A.	N.A.
Q311302	N.A.	N.A.	N.A.
Q311303	N.A.	N.A.	N.A.
Q311304	N.A.	N.A.	N.A.
Q311305	N.A.	N.A.	N.A.
Q311306	37.5	N.A.	N.A.
Q311307	35.3	N.A.	N.A.
Q311308	35.7	N.A.	N.A.
Q311309	N.A.	N.A.	N.A.
Q311310	N.A.	N.A.	N.A.
Q311311	N.A.	N.A.	N.A.
Q311312	33.7	N.A.	N.A.
Q311313	41.3	N.A.	N.A.
Q311314	37.7	N.A.	N.A.
Q311315	39.2	N.A.	N.A.
Q311316	35.7	N.A.	243
Q311317	40.8	N.A.	159
Q311318	16.0	N.A.	N.A.
Q311319	N.A.	N.A.	N.A.
Q311320	N.A.	N.A.	N.A.
Q311321	N.A.	N.A.	N.A.
Q311322	N.A.	N.A.	N.A.
Q311323	N.A.	N.A.	N.A.
Q311324	N.A.	N.A.	N.A.
Q311325	N.A.	N.A.	N.A.
Q311326	N.A.	N.A.	N.A.
Q311327	N.A.	N.A.	N.A.
Q311328	N.A.	N.A.	N.A.
Q311329	N.A.	N.A.	N.A.
Q311330	N.A.	N.A.	N.A.
Q311331	N.A.	N.A.	N.A.
Q311332	N.A.	N.A.	N.A.
Q311333	N.A.	N.A.	N.A.
Q311334	N.A.	N.A.	N.A.
Q311335	N.A.	N.A.	N.A.
*Dup Q311335	N.A.	N.A.	N.A.
Q311336	12.4	N.A.	N.A.
Q311337	14.5	N.A.	N.A.
Q311338	38.0	N.A.	389
Q311339	37.5	N.A.	376

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Final : VC151958F Order: PO# BMC15-01_1/Q311301-374

Report File No.: 0000014181

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q311340	0.6	4.92	N.A.
Q311341	21.1	N.A.	303
Q311342	29.0	N.A.	N.A.
Q311343	40.0	N.A.	310
Q311344	28.9	N.A.	415
Q311345	2.8	N.A.	N.A.
Q311346	24.5	N.A.	306
Q311347	23.8	N.A.	377
Q311348	13.1	N.A.	N.A.
Q311349	12.2	N.A.	122
Q311350	<0.1	N.A.	N.A.
Q311351	8.0	N.A.	N.A.
Q311352	1.0	N.A.	N.A.
Q311353	39.6	N.A.	403
Q311354	42.3	N.A.	154
Q311355	44.8	N.A.	273
Q311356	37.6	N.A.	N.A.
Q311357	34.9	N.A.	N.A.
Q311358	39.2	N.A.	N.A.
Q311359	33.8	N.A.	218
Q311360	N.A.	N.A.	N.A.
Q311361	N.A.	N.A.	N.A.
Q311362	N.A.	N.A.	N.A.
Q311363	N.A.	N.A.	N.A.
Q311364	10.3	N.A.	N.A.
Q311365	8.1	N.A.	N.A.
Q311366	41.7	N.A.	N.A.
Q311367	47.2	N.A.	N.A.
Q311368	43.7	N.A.	N.A.
Q311369	41.1	N.A.	N.A.
Q311370	<0.1	N.A.	N.A.
Q311371	40.0	N.A.	175
*Dup Q311371	N.A.	N.A.	N.A.
Q311372	N.A.	N.A.	N.A.
Q311373	N.A.	N.A.	N.A.
Q311374	N.A.	N.A.	N.A.

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Final : VC151958F Order: PO# BMC15-01_1/Q311301-374

Report File No.: 0000014181

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.83	
*Blk BLANK		<0.50	
*Rep Q311316			237
*Std ME-1302			417
*Blk BLANK			<10
*Rep Q311306	36.7		
*Rep Q311315	N.A.		
*Rep Q311318	16.2		
*Std OREAS131B	4.7		
*Std OREAS134A	19.9		
*Std OREAS926	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC151960F

[Report File No.: 0000014182]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q311375-478
Project No.	:	KZK
No. Of Samples	:	104
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151960 Report No. 012701
dated Sep 11, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311375	1.120	N.A.	142	260	0.62	36.8	4.25	10.3
Q311376	3.185	N.A.	<5	0.4	<0.01	2.43	<0.01	0.02
Q311377	2.090	N.A.	<5	<0.3	<0.01	2.73	<0.01	<0.01
Q311378	2.120	N.A.	17	1.9	<0.01	2.63	<0.01	0.02
Q311379	2.245	N.A.	690	158	0.22	30.6	3.10	8.80
Q311380	0.135	N.A.	834	42.2	0.46	19.9	0.30	1.11
Q311381	3.145	N.A.	23	1.4	<0.01	3.86	0.04	0.03
Q311382	3.410	N.A.	11	1.9	<0.01	2.89	0.05	0.07
Q311383	3.085	N.A.	<5	0.9	<0.01	2.34	0.05	0.04
Q311384	2.400	N.A.	9	1.0	<0.01	2.22	0.04	0.06
Q311385	3.220	N.A.	8	0.7	0.03	5.47	0.01	0.03
Q311386	2.865	N.A.	8	1.6	0.05	4.72	0.02	0.07
Q311387	2.560	N.A.	34	3.7	0.10	7.16	0.02	0.26
Q311388	3.020	N.A.	130	15.1	0.38	11.2	0.09	0.84
Q311389	3.125	N.A.	642	83.4	2.79	17.3	0.11	0.42
Q311390	0.720	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
Q311391	3.610	N.A.	501	113	0.48	32.6	1.82	7.56
Q311392	2.910	N.A.	26	9.7	0.12	8.27	0.22	0.74
Q311393	2.985	N.A.	<5	1.2	0.01	3.44	0.03	0.18
Q311394	2.670	N.A.	6	0.3	<0.01	2.78	<0.01	0.10
Q311395	2.865	N.A.	14	4.7	0.07	3.82	0.08	0.54
Q311396	2.240	N.A.	5	1.8	<0.01	2.69	0.06	0.10
Q311397	2.820	N.A.	8	2.0	0.01	3.40	0.05	0.10
Q311398	2.970	N.A.	215	44.5	1.56	19.4	0.46	2.45
Q311399	1.870	N.A.	216	35.0	1.67	16.6	0.20	1.37
Q311400	0.155	N.A.	830	20.2	1.79	13.9	0.25	1.06
Q311401	3.090	N.A.	17	7.2	0.28	3.37	0.05	0.08
Q311402	3.000	N.A.	<5	<0.3	<0.01	6.56	<0.01	0.01
Q311403	3.185	N.A.	<5	<0.3	<0.01	8.89	<0.01	<0.01
Q311404	2.995	N.A.	<5	<0.3	<0.01	7.41	<0.01	<0.01
Q311405	2.080	N.A.	19	3.1	<0.01	2.89	0.06	0.11
Q311406	2.465	N.A.	7	2.7	0.06	9.89	0.04	0.21
Q311407	2.265	N.A.	10	4.6	0.03	3.56	0.05	0.09
Q311408	3.805	N.A.	812	71.8	2.09	16.8	0.03	1.40
Q311409	2.065	N.A.	38	3.7	0.04	3.37	0.04	0.18
*Dup Q311409	N.A.	N.A.	38	3.4	0.03	3.24	0.04	0.18
Q311410	0.725	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
Q311411	1.980	N.A.	8	1.3	0.02	1.98	0.01	0.04
Q311412	2.390	N.A.	1140	127	0.97	15.9	0.53	2.01
Q311413	5.940	N.A.	3190	>300	0.84	33.3	3.02	8.36

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311414	4.510	N.A.	2030	253	0.89	33.9	2.68	8.56
Q311415	4.215	N.A.	1380	237	0.76	30.0	3.27	9.90
Q311416	4.375	N.A.	1660	216	2.23	24.5	2.25	5.24
Q311417	4.005	N.A.	969	100	3.71	28.7	0.62	4.21
Q311418	4.725	N.A.	1100	137	1.71	28.9	1.19	3.23
Q311419	5.540	N.A.	1030	125	2.47	36.8	0.96	6.64
Q311420	0.150	N.A.	1240	67.0	0.37	3.85	1.42	5.79
Q311421	4.630	N.A.	2360	144	7.64	33.2	0.44	2.23
Q311422	4.900	N.A.	1290	104	4.62	34.6	0.39	4.86
Q311423	4.380	N.A.	1910	194	0.93	33.9	4.61	9.01
Q311424	5.065	97.3	564	170	0.35	32.5	4.48	14.2
Q311425	2.630	N.A.	41	12.0	0.03	2.64	0.15	0.21
Q311426	2.115	N.A.	6	1.9	<0.01	2.25	0.01	0.04
Q311427	1.770	N.A.	6	1.9	<0.01	1.91	<0.01	0.03
Q311428	1.985	N.A.	15	2.4	<0.01	2.36	<0.01	0.02
Q311429	2.535	N.A.	21	0.6	<0.01	1.85	0.02	0.02
Q311430	1.015	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
Q311431	2.345	N.A.	5	0.4	<0.01	1.91	<0.01	0.03
Q311432	2.800	N.A.	7	1.0	<0.01	2.11	0.05	0.11
Q311433	2.975	N.A.	8	2.2	<0.01	2.64	0.13	0.20
Q311434	2.530	N.A.	628	103	1.74	44.2	0.53	1.66
Q311435	4.865	N.A.	2320	132	4.39	45.7	0.22	2.11
Q311436	4.490	N.A.	245	17.4	0.19	47.6	0.09	4.81
Q311437	5.320	N.A.	275	66.0	0.19	42.3	1.15	8.17
Q311438	5.320	N.A.	957	102	0.19	38.7	1.77	8.68
Q311439	4.985	N.A.	1090	118	0.40	34.6	1.04	10.2
Q311440	0.145	N.A.	1290	66.7	0.38	3.92	1.37	5.30
Q311441	5.400	N.A.	1870	148	0.46	34.8	1.32	6.20
Q311442	2.260	N.A.	2310	197	0.50	36.3	1.58	5.63
Q311443	5.415	N.A.	1950	191	0.84	35.7	1.11	4.59
Q311444	5.650	N.A.	606	37.1	0.34	40.2	0.49	5.60
*Dup Q311444	N.A.	N.A.	633	37.7	0.34	40.2	0.50	5.48
Q311445	3.440	N.A.	865	169	3.69	38.6	0.80	4.07
Q311446	2.520	N.A.	553	48.6	1.36	12.2	0.08	0.55
Q311447	5.145	N.A.	977	70.4	1.11	39.3	0.55	3.16
Q311448	5.640	N.A.	1380	250	0.34	30.5	3.62	9.38
Q311449	6.480	N.A.	3080	>300	0.44	30.2	5.66	11.9
Q311450	0.790	N.A.	<5	0.8	<0.01	0.09	<0.01	0.02
Q311451	4.030	N.A.	1730	>300	0.32	28.3	3.38	8.65
Q311452	3.475	N.A.	2100	264	0.50	3.48	0.73	1.39

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311453	3.230	N.A.	7	1.5	<0.01	2.73	<0.01	0.04
Q311454	2.330	N.A.	598	37.8	0.67	17.6	0.29	1.44
Q311455	4.190	N.A.	304	61.0	2.13	10.5	0.13	1.06
Q311456	4.475	N.A.	22	1.9	<0.01	5.87	<0.01	0.03
Q311457	2.625	N.A.	<5	1.4	<0.01	3.92	<0.01	0.02
Q311458	2.445	N.A.	<5	0.6	<0.01	4.25	<0.01	0.02
Q311459	2.065	N.A.	37	2.4	<0.01	2.13	0.03	0.04
Q311460	0.150	N.A.	822	44.7	0.45	19.6	0.30	1.16
Q311461	2.620	N.A.	336	32.6	0.09	4.00	0.06	0.59
Q311462	2.145	N.A.	28	2.1	<0.01	2.69	0.03	0.05
Q311463	7.685	N.A.	1100	123	0.66	38.0	1.52	6.54
Q311464	7.765	N.A.	1480	188	0.24	33.4	2.27	9.98
Q311465	5.485	N.A.	1410	265	0.28	27.0	2.70	8.85
Q311466	7.065	N.A.	1360	>300	1.01	30.0	5.22	14.2
Q311467	4.110	N.A.	1520	122	0.32	5.94	0.55	1.65
Q311468	4.140	N.A.	13	3.0	<0.01	1.59	0.02	0.06
Q311469	5.780	N.A.	1020	78.9	0.42	4.05	0.07	0.24
Q311470	1.260	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
Q311471	5.290	N.A.	1810	164	2.03	23.3	1.59	5.46
Q311472	4.875	N.A.	589	57.7	0.93	22.2	0.94	3.82
Q311473	4.370	N.A.	181	32.1	0.78	19.5	0.40	3.13
Q311474	1.580	90.3	<5	1.2	0.03	2.44	<0.01	0.01
Q311475	1.570	N.A.	151	41.6	0.51	19.2	0.61	3.63
Q311476	4.175	N.A.	<5	2.2	<0.01	3.27	0.02	0.01
Q311477	2.920	N.A.	<5	0.6	<0.01	6.71	<0.01	0.01
Q311478	2.635	N.A.	<5	0.6	<0.01	7.24	<0.01	0.01
*Rep Q311390				<0.3				
*Rep Q311439				118				
*Rep Q311478				0.4				
*Std SU_1B				6.3				
*Std OREAS132A				57.5				
*Std OREAS132A				55.9				
*Std AMIS0268				199				
*Std OREAS132A				54.8				
*Std AMIS0268				190				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep Q311384			<5					

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Final : VC151960F Order: PO# BMC15-01_1/Q311375-478

Report File No.: 0000014182

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Rep Q311432	11				
*Rep Q311458	<5				
*Std OREAS152B	130				
*Std OXH97	1310				
*Std OXJ111	2200				
*Std OXN117	7830				
*Std OREAS152B	137				
*Std OXH97	1310				
*Std OXN117	7390				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Rep Q311403		<0.01	8.99	<0.01	<0.01
*Rep Q311438		0.19	39.6	1.80	8.73
*Rep Q311446		1.39	12.6	0.09	0.57
*Rep Q311474		0.03	2.42	<0.01	0.01
*Std OREAS134A		0.13	12.1	12.8	17.4
*Std OREAS131B		0.02	5.82	1.86	3.03
*Std OREAS926		0.83	7.53	<0.01	0.04
*Std OREAS926		0.83	7.69	0.01	0.04
*Std OREAS131B		0.02	5.80	1.88	2.97
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Final : VC151960F Order: PO# BMC15-01_1/Q311375-478

Report File No.: 0000014182

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q311375	33.8	242
Q311376	N.A.	N.A.
Q311377	N.A.	N.A.
Q311378	N.A.	N.A.
Q311379	40.4	161
Q311380	N.A.	N.A.
Q311381	N.A.	N.A.
Q311382	N.A.	N.A.
Q311383	N.A.	N.A.
Q311384	N.A.	N.A.
Q311385	N.A.	N.A.
Q311386	N.A.	N.A.
Q311387	N.A.	N.A.
Q311388	N.A.	N.A.
Q311389	N.A.	N.A.
Q311390	N.A.	N.A.
Q311391	41.2	N.A.
Q311392	N.A.	N.A.
Q311393	N.A.	N.A.
Q311394	N.A.	N.A.
Q311395	N.A.	N.A.
Q311396	N.A.	N.A.
Q311397	N.A.	N.A.
Q311398	N.A.	N.A.
Q311399	N.A.	N.A.
Q311400	N.A.	N.A.
Q311401	N.A.	N.A.
Q311402	N.A.	N.A.
Q311403	N.A.	N.A.
Q311404	N.A.	N.A.
Q311405	N.A.	N.A.
Q311406	N.A.	N.A.
Q311407	N.A.	N.A.
Q311408	N.A.	N.A.
Q311409	N.A.	N.A.
*Dup Q311409	N.A.	N.A.
Q311410	N.A.	N.A.
Q311411	N.A.	N.A.
Q311412	12.0	N.A.
Q311413	42.6	305

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Final : VC151960F Order: PO# BMC15-01_1/Q311375-478

Report File No.: 0000014182

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q311414	39.9	238
Q311415	38.9	235
Q311416	20.6	206
Q311417	21.0	N.A.
Q311418	29.8	N.A.
Q311419	40.8	N.A.
Q311420	4.3	N.A.
Q311421	29.5	N.A.
Q311422	34.7	N.A.
Q311423	36.2	210
Q311424	36.2	178
Q311425	N.A.	N.A.
Q311426	N.A.	N.A.
Q311427	N.A.	N.A.
Q311428	N.A.	N.A.
Q311429	N.A.	N.A.
Q311430	N.A.	N.A.
Q311431	N.A.	N.A.
Q311432	N.A.	N.A.
Q311433	N.A.	N.A.
Q311434	29.0	N.A.
Q311435	N.A.	N.A.
Q311436	N.A.	N.A.
Q311437	37.8	N.A.
Q311438	39.3	N.A.
Q311439	36.6	N.A.
Q311440	4.3	N.A.
Q311441	40.3	N.A.
Q311442	43.0	194
Q311443	42.9	194
Q311444	43.4	N.A.
*Dup Q311444	N.A.	N.A.
Q311445	41.6	156
Q311446	8.3	N.A.
Q311447	41.3	N.A.
Q311448	37.3	236
Q311449	37.1	497
Q311450	N.A.	N.A.
Q311451	34.9	316
Q311452	3.2	266

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q311453	N.A.	N.A.
Q311454	N.A.	N.A.
Q311455	N.A.	N.A.
Q311456	N.A.	N.A.
Q311457	N.A.	N.A.
Q311458	N.A.	N.A.
Q311459	N.A.	N.A.
Q311460	N.A.	N.A.
Q311461	N.A.	N.A.
Q311462	N.A.	N.A.
Q311463	N.A.	N.A.
Q311464	N.A.	214
Q311465	N.A.	264
Q311466	N.A.	337
Q311467	N.A.	N.A.
Q311468	N.A.	N.A.
Q311469	N.A.	N.A.
Q311470	N.A.	N.A.
Q311471	N.A.	165
Q311472	N.A.	N.A.
Q311473	N.A.	N.A.
Q311474	N.A.	N.A.
Q311475	N.A.	N.A.
Q311476	N.A.	N.A.
Q311477	N.A.	N.A.
Q311478	N.A.	N.A.

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep Q311449		490
*Std ME-1302		444
*Blk BLANK		<10
*Rep Q311403	N.A.	
*Rep Q311438	N.A.	
*Rep Q311446	N.A.	
*Rep Q311474	N.A.	
*Std OREAS134A	19.0	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	

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Final : VC151960F Order: PO# BMC15-01_1/Q311375-478

Report File No.: 0000014182

	S GO_ICP90Q 0.1 %	Ag GO_FAG313 10 g/t
*Std OREAS926	N.A.	
*Std OREAS131B	4.7	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	
*Blk BLANK	N.A.	
*Blk BLANK	N.A.	

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Certificate of Analysis

Work Order : VC151961F

[Report File No.: 0000014183]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q311751-824
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb and Zn results have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151961 Report No. 012706
dated Sep 11, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311751	2.295	N.A.	<5	0.4	<0.01	1.49	<0.01	0.01
Q311752	3.195	N.A.	44	7.5	0.18	4.28	0.03	0.05
Q311753	2.150	N.A.	371	29.7	1.13	13.7	0.13	0.26
Q311754	2.850	N.A.	563	49.8	3.15	25.7	0.05	0.35
Q311755	4.765	N.A.	443	86.1	0.40	40.5	2.31	12.5
Q311756	5.915	N.A.	809	46.8	2.01	>50.0	0.11	3.27
Q311757	6.220	N.A.	423	25.8	0.82	49.3	0.09	3.62
Q311758	5.980	N.A.	280	94.3	0.28	39.5	3.25	15.8
Q311759	6.030	N.A.	368	86.4	0.52	39.6	2.47	13.8
Q311760	0.150	N.A.	850	19.8	1.78	13.8	0.25	1.11
Q311761	0.150	N.A.	1290	72.8	0.37	3.84	1.35	5.48
Q311762	5.785	N.A.	702	100	1.23	42.1	1.36	6.94
Q311763	6.340	N.A.	1330	71.5	2.58	44.8	0.23	7.57
Q311764	5.250	N.A.	522	70.0	0.67	43.8	0.89	5.91
Q311765	3.765	N.A.	570	77.8	0.57	43.2	1.46	6.20
Q311766	4.730	N.A.	1470	143	0.64	36.6	1.86	9.54
Q311767	4.465	N.A.	883	133	0.51	34.0	1.67	7.68
Q311768	2.110	N.A.	215	65.6	0.44	9.85	0.61	2.37
Q311769	3.160	N.A.	240	33.9	0.06	5.10	0.23	0.65
Q311770	1.025	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
Q311771	2.790	N.A.	94	13.1	0.01	3.44	0.11	0.30
Q311772	3.315	N.A.	571	87.7	0.05	8.87	0.71	1.91
Q311773	3.075	N.A.	<5	73.9	0.02	3.84	1.56	1.23
Q311774	3.020	N.A.	583	223	0.32	18.1	3.15	6.50
Q311775	3.310	N.A.	1100	232	0.20	10.7	1.81	3.50
Q311776	1.455	N.A.	29	2.4	0.04	4.42	0.01	0.03
Q311777	4.315	N.A.	1360	105	1.50	28.3	0.63	2.49
Q311778	4.160	N.A.	1980	163	0.66	29.0	2.06	9.35
Q311779	4.690	N.A.	1490	129	0.52	33.3	2.17	9.03
Q311780	0.150	N.A.	1310	69.1	0.36	3.89	1.34	5.31
Q311781	0.150	N.A.	878	19.5	1.68	13.9	0.26	1.07
Q311782	4.945	N.A.	601	86.9	0.10	38.7	3.27	8.01
Q311783	4.455	N.A.	1660	132	0.33	27.2	2.22	7.23
Q311784	4.250	N.A.	1880	227	0.44	32.2	2.06	5.82
Q311785	4.500	N.A.	1850	200	0.43	32.8	1.85	6.93
Q311786	4.965	N.A.	2020	229	0.53	31.7	3.02	6.27
*Dup Q311786	N.A.	N.A.	1790	220	0.52	31.6	N.A.	6.35
Q311787	4.705	N.A.	371	65.7	0.08	11.6	1.39	3.82
Q311788	2.830	N.A.	13	1.6	<0.01	6.69	0.02	0.05
Q311789	2.840	N.A.	15	0.8	<0.01	4.16	<0.01	0.01

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311790	1.025	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
Q311791	2.840	N.A.	26	5.6	<0.01	2.93	0.01	0.03
Q311792	3.440	N.A.	25	10.3	<0.01	1.86	0.05	0.10
Q311793	2.540	N.A.	23	2.3	<0.01	2.20	0.02	0.05
Q311794	3.785	N.A.	1550	180	7.95	28.6	0.36	1.11
Q311795	2.505	N.A.	3080	299	14.7	40.0	0.51	2.04
Q311796	4.645	N.A.	1280	113	4.58	36.2	0.60	12.1
Q311797	3.840	N.A.	625	114	2.72	29.4	1.07	16.6
Q311798	4.215	N.A.	2040	294	8.23	29.6	1.15	6.08
Q311799	5.140	N.A.	1620	>300	1.43	29.6	4.16	10.3
Q311800	0.150	N.A.	888	42.7	0.46	19.9	0.31	1.11
Q311801	2.105	93.7	24	4.5	0.02	2.56	0.03	0.04
Q311802	3.175	N.A.	54	14.0	0.04	3.54	0.13	0.28
Q311803	3.390	N.A.	741	106	1.90	9.28	0.24	0.66
Q311804	2.265	N.A.	33	9.6	0.15	7.01	0.11	0.17
Q311805	3.445	N.A.	48	6.2	0.09	8.24	0.10	0.38
Q311806	2.490	N.A.	49	5.1	0.09	11.4	0.04	0.26
Q311807	2.045	N.A.	105	20.2	0.24	10.1	0.23	0.61
Q311808	3.770	N.A.	34	9.9	0.10	7.77	0.18	0.42
Q311809	4.920	N.A.	2530	105	1.16	37.2	1.72	12.3
Q311810	0.885	N.A.	<5	<0.3	<0.01	0.07	<0.01	0.01
Q311811	4.460	N.A.	902	67.5	0.15	40.1	1.80	7.48
Q311812	4.310	N.A.	614	112	0.42	37.8	3.02	12.3
Q311813	3.705	N.A.	497	36.9	0.46	13.0	0.36	1.76
Q311814	3.425	N.A.	364	95.6	0.22	37.8	2.78	11.4
Q311815	2.590	N.A.	404	52.6	1.05	9.62	0.26	2.85
Q311816	3.005	N.A.	10	1.1	<0.01	2.72	0.01	0.02
Q311817	2.720	N.A.	61	29.7	0.04	4.11	0.27	0.67
Q311818	2.555	N.A.	193	21.4	0.07	3.62	0.11	0.27
Q311819	3.060	N.A.	1230	173	0.19	31.9	2.38	9.00
Q311820	0.150	N.A.	861	42.1	0.47	20.1	0.31	1.13
Q311821	2.850	N.A.	429	30.0	0.52	8.42	0.26	0.87
Q311822	1.900	N.A.	266	107	0.25	37.9	2.92	9.83
Q311823	2.760	N.A.	69	45.1	0.62	8.22	0.48	1.17
*Dup Q311823	N.A.	N.A.	84	46.5	0.66	7.82	0.44	1.11
Q311824	2.675	N.A.	<5	1.7	<0.01	1.78	0.04	0.08
*Rep Q311759				87.8				
*Rep Q311803				102				
*Std OREAS132A				58.7				
*Std OREAS132A				58.7				

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Final : VC151961F Order: PO# BMC15-01_1/Q311751-824

Report File No.: 0000014183

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.4				
*Std AMIS0268		194				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep Q311755	456					
*Rep Q311816	8					
*Std OREAS152B	134					
*Std OXH97	1340					
*Std OXJ111	2300					
*Std OXN117	8080					
*Blk BLANK	<5					
*Rep Q311772			0.05	8.80	0.71	1.87
*Rep Q311806			0.09	11.3	0.04	0.26
*Std OREAS131B			0.02	5.83	1.84	3.15
*Std OREAS134A			0.13	12.2	12.8	18.0
*Std OREAS131B			0.02	5.83	1.86	3.12
*Std OREAS926			0.83	7.51	0.01	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC151961F Order: PO# BMC15-01_1/Q311751-824

Report File No.: 0000014183

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
Q311751	N.A.	N.A.	N.A.
Q311752	N.A.	N.A.	N.A.
Q311753	N.A.	N.A.	N.A.
Q311754	N.A.	N.A.	N.A.
Q311755	N.A.	N.A.	N.A.
Q311756	N.A.	N.A.	48.4
Q311757	N.A.	N.A.	N.A.
Q311758	38.5	N.A.	N.A.
Q311759	38.5	N.A.	N.A.
Q311760	N.A.	N.A.	N.A.
Q311761	N.A.	N.A.	N.A.
Q311762	35.5	N.A.	N.A.
Q311763	35.2	N.A.	N.A.
Q311764	41.8	N.A.	N.A.
Q311765	41.4	N.A.	N.A.
Q311766	45.1	N.A.	N.A.
Q311767	36.8	N.A.	N.A.
Q311768	7.6	N.A.	N.A.
Q311769	N.A.	N.A.	N.A.
Q311770	N.A.	N.A.	N.A.
Q311771	N.A.	N.A.	N.A.
Q311772	N.A.	N.A.	N.A.
Q311773	N.A.	N.A.	N.A.
Q311774	17.9	216	N.A.
Q311775	12.6	N.A.	N.A.
Q311776	1.3	N.A.	N.A.
Q311777	26.6	N.A.	N.A.
Q311778	37.7	199	N.A.
Q311779	41.3	N.A.	N.A.
Q311780	4.3	N.A.	N.A.
Q311781	N.A.	N.A.	N.A.
Q311782	44.5	N.A.	N.A.
Q311783	33.8	N.A.	N.A.
Q311784	40.0	213	N.A.
Q311785	41.6	200	N.A.
Q311786	40.4	212	N.A.
*Dup Q311786	N.A.	N.A.	N.A.
Q311787	13.3	N.A.	N.A.
Q311788	N.A.	N.A.	N.A.
Q311789	N.A.	N.A.	N.A.

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Final : VC151961F Order: PO# BMC15-01_1/Q311751-824

Report File No.: 0000014183

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
Q311790	N.A.	N.A.	N.A.
Q311791	N.A.	N.A.	N.A.
Q311792	N.A.	N.A.	N.A.
Q311793	N.A.	N.A.	N.A.
Q311794	25.3	177	N.A.
Q311795	28.8	303	N.A.
Q311796	28.4	N.A.	N.A.
Q311797	28.1	N.A.	N.A.
Q311798	26.1	306	N.A.
Q311799	35.6	475	N.A.
Q311800	15.4	N.A.	N.A.
Q311801	1.2	N.A.	N.A.
Q311802	2.4	N.A.	N.A.
Q311803	5.2	N.A.	N.A.
Q311804	1.3	N.A.	N.A.
Q311805	1.1	N.A.	N.A.
Q311806	0.7	N.A.	N.A.
Q311807	1.6	N.A.	N.A.
Q311808	1.0	N.A.	N.A.
Q311809	33.8	N.A.	N.A.
Q311810	<0.1	N.A.	N.A.
Q311811	36.0	N.A.	N.A.
Q311812	34.7	N.A.	N.A.
Q311813	8.0	N.A.	N.A.
Q311814	33.5	N.A.	N.A.
Q311815	4.4	N.A.	N.A.
Q311816	1.3	N.A.	N.A.
Q311817	3.8	N.A.	N.A.
Q311818	2.5	N.A.	N.A.
Q311819	39.6	163	N.A.
Q311820	16.3	N.A.	N.A.
Q311821	4.4	N.A.	N.A.
Q311822	39.4	N.A.	N.A.
Q311823	4.6	N.A.	N.A.
*Dup Q311823	N.A.	N.A.	N.A.
Q311824	N.A.	N.A.	N.A.

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Final : VC151961F Order: PO# BMC15-01_1/Q311751-824

Report File No.: 0000014183

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
*Rep Q311774		214	
*Std AMIS0268		192	
*Blk BLANK		<10	
*Rep Q311772	N.A.		
*Rep Q311806	N.A.		
*Std OREAS131B	4.9		
*Std OREAS134A	20.0		
*Std OREAS131B	N.A.		
*Std OREAS926	1.2		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Rep Q311756			48.3
*Std SCH1			61.6
*Blk BLANK			<0.01

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Certificate of Analysis

Work Order : VC151962F

[Report File No.: 0000014184]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q311825-883
Project No.	:	KZK
No. Of Samples	:	59
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 6 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151962 Report No. 012710
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311825	2.945	N.A.	<5	<0.3	0.01	4.01	<0.01	0.16
Q311826	2.595	N.A.	9	0.5	<0.01	1.67	0.01	0.01
Q311827	2.870	N.A.	16	1.4	0.01	2.43	0.02	0.17
Q311828	2.465	N.A.	57	4.2	0.03	5.31	0.06	0.49
Q311829	4.900	N.A.	2820	147	0.40	36.5	0.73	4.45
Q311830	0.915	N.A.	<5	<0.3	<0.01	0.17	<0.01	0.01
Q311831	4.320	N.A.	1620	115	0.36	36.2	1.27	4.77
Q311832	1.545	N.A.	676	25.1	0.50	7.54	0.06	0.76
Q311833	5.130	N.A.	1560	163	0.47	33.1	1.11	4.98
Q311834	2.595	N.A.	990	135	0.20	33.8	2.47	10.5
Q311835	5.195	N.A.	2090	232	0.54	31.5	2.57	7.11
Q311836	5.275	N.A.	478	69.8	0.01	36.3	2.80	7.94
Q311837	3.835	N.A.	2440	278	0.57	26.5	2.79	8.53
Q311838	2.390	N.A.	2170	247	0.84	15.8	1.24	3.74
Q311839	5.985	N.A.	828	110	0.37	29.3	1.97	7.66
Q311840	0.150	N.A.	1260	68.3	0.37	3.83	1.34	5.25
Q311841	0.150	N.A.	804	20.2	1.82	13.6	0.25	1.05
Q311842	0.315	N.A.	752	111	0.19	33.5	3.48	9.48
Q311843	3.300	N.A.	226	21.5	0.74	7.16	0.03	0.10
Q311844	2.705	N.A.	7	3.6	<0.01	5.33	0.08	0.11
Q311845	1.890	N.A.	15	1.7	<0.01	0.87	<0.01	0.31
Q311846	2.620	N.A.	<5	0.4	<0.01	2.31	<0.01	0.02
Q311847	2.960	N.A.	6	0.4	<0.01	2.07	<0.01	<0.01
Q311848	2.595	N.A.	62	2.4	0.05	4.62	<0.01	0.08
Q311849	5.020	N.A.	1320	119	0.36	30.6	2.02	7.65
Q311850	0.985	N.A.	9	0.4	<0.01	0.11	<0.01	0.02
Q311851	4.545	N.A.	1470	176	0.34	29.5	2.79	7.32
Q311852	4.965	N.A.	1650	182	0.37	32.1	2.48	6.28
Q311853	1.580	N.A.	2230	267	0.39	34.5	3.33	8.25
Q311854	2.800	N.A.	3040	>300	1.11	9.42	2.74	3.61
Q311855	3.190	N.A.	3070	211	0.48	27.1	3.31	8.01
Q311856	4.915	N.A.	864	50.4	0.55	40.8	0.79	3.14
Q311857	5.090	N.A.	1570	83.0	2.22	42.9	0.35	3.36
Q311858	4.430	N.A.	2450	158	3.45	37.7	0.44	4.87
Q311859	2.530	N.A.	1280	98.2	1.18	22.4	0.75	3.91
*Dup Q311859	N.A.	N.A.	1330	96.1	1.15	22.1	0.75	3.96
Q311860	0.135	N.A.	861	43.2	0.46	19.4	0.30	1.13
Q311861	4.450	N.A.	475	55.1	0.36	39.8	0.72	3.16
Q311862	4.080	N.A.	1270	107	0.40	32.9	2.20	8.73
Q311863	2.945	N.A.	1310	171	0.35	25.0	3.34	8.30

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Final : VC151962F Order: PO# BMC15-01_1/Q311825-883

Report File No.: 0000014184

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311864	3.490	N.A.	704	45.5	1.29	10.0	0.21	0.62
Q311865	1.865	N.A.	526	39.7	1.04	15.5	0.16	1.70
Q311866	1.110	N.A.	24	0.6	<0.01	4.03	<0.01	0.02
Q311867	4.170	N.A.	8	0.8	<0.01	1.52	<0.01	0.03
Q311868	1.220	N.A.	24	2.0	0.02	2.35	0.04	0.04
Q311869	0.765	N.A.	68	3.2	0.08	2.17	0.01	0.03
Q311870	0.730	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
Q311871	5.215	N.A.	1660	225	0.75	36.1	2.17	7.23
Q311872	5.160	N.A.	1100	129	0.20	36.7	2.76	9.51
Q311873	2.420	N.A.	1220	225	0.39	28.0	4.66	12.2
Q311874	2.740	85.2	484	41.9	0.09	5.53	0.28	0.69
Q311875	3.035	N.A.	15	1.8	<0.01	3.28	<0.01	<0.01
Q311876	2.970	N.A.	16	1.6	<0.01	2.74	<0.01	0.02
Q311877	3.045	N.A.	7	0.9	<0.01	1.86	<0.01	<0.01
Q311878	1.550	N.A.	1990	>300	0.40	27.4	5.03	9.93
Q311879	3.925	N.A.	17	2.7	<0.01	3.19	0.04	0.16
Q311880	0.120	N.A.	289	21.6	13.5	26.5	0.05	0.41
Q311881	0.135	N.A.	4430	>300	0.34	11.2	11.1	17.1
Q311882	0.125	N.A.	5280	7.8	0.61	6.10	0.02	0.12
Q311883	4.700	N.A.	3020	136	4.09	34.0	1.74	6.51
*Rep Q311838				247				
*Rep Q311876				1.7				
*Std OREAS132A				55.9				
*Std AMIS0268				179				
*Std SU_1B				6.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep Q311843			194					
*Rep Q311877			<5					
*Std OREAS152B			135					
*Std OXJ111			2280					
*Std OXN117			8000					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep Q311835					0.55	31.7	2.54	7.23
*Rep Q311876					<0.01	2.79	<0.01	0.02

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Final : VC151962F Order: PO# BMC15-01_1/Q311825-883

Report File No.: 0000014184

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Std OREAS134A	0.13	12.0	12.7	17.7
*Std OREAS131B	0.02	5.77	1.85	3.08
*Std OREAS926	0.84	7.42	0.01	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC151962F Order: PO# BMC15-01_1/Q311825-883

Report File No.: 0000014184

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q311825	N.A.	N.A.	N.A.
Q311826	N.A.	N.A.	N.A.
Q311827	N.A.	N.A.	N.A.
Q311828	N.A.	N.A.	N.A.
Q311829	N.A.	N.A.	N.A.
Q311830	N.A.	N.A.	N.A.
Q311831	N.A.	N.A.	N.A.
Q311832	N.A.	N.A.	N.A.
Q311833	N.A.	N.A.	153
Q311834	N.A.	N.A.	N.A.
Q311835	N.A.	N.A.	211
Q311836	N.A.	N.A.	N.A.
Q311837	N.A.	N.A.	277
Q311838	N.A.	N.A.	229
Q311839	N.A.	N.A.	N.A.
Q311840	N.A.	N.A.	N.A.
Q311841	N.A.	N.A.	N.A.
Q311842	N.A.	N.A.	N.A.
Q311843	N.A.	N.A.	N.A.
Q311844	N.A.	N.A.	N.A.
Q311845	N.A.	N.A.	N.A.
Q311846	N.A.	N.A.	N.A.
Q311847	N.A.	N.A.	N.A.
Q311848	N.A.	N.A.	N.A.
Q311849	40.1	N.A.	N.A.
Q311850	N.A.	N.A.	N.A.
Q311851	37.7	N.A.	192
Q311852	39.7	N.A.	184
Q311853	44.0	N.A.	272
Q311854	11.3	N.A.	329
Q311855	35.5	N.A.	222
Q311856	36.3	N.A.	N.A.
Q311857	34.1	N.A.	N.A.
Q311858	35.4	N.A.	160
Q311859	15.1	N.A.	N.A.
*Dup Q311859	N.A.	N.A.	N.A.
Q311860	N.A.	N.A.	N.A.
Q311861	45.0	N.A.	N.A.
Q311862	42.7	N.A.	N.A.
Q311863	35.8	N.A.	161

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Report File No.: 0000014184

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q311864	N.A.	N.A.	N.A.
Q311865	N.A.	N.A.	N.A.
Q311866	N.A.	N.A.	N.A.
Q311867	N.A.	N.A.	N.A.
Q311868	N.A.	N.A.	N.A.
Q311869	N.A.	N.A.	N.A.
Q311870	N.A.	N.A.	N.A.
Q311871	43.1	N.A.	236
Q311872	45.2	N.A.	N.A.
Q311873	39.3	N.A.	231
Q311874	N.A.	N.A.	N.A.
Q311875	N.A.	N.A.	N.A.
Q311876	N.A.	N.A.	N.A.
Q311877	N.A.	N.A.	N.A.
Q311878	34.8	N.A.	416
Q311879	N.A.	N.A.	N.A.
Q311880	N.A.	N.A.	N.A.
Q311881	N.A.	N.A.	334
Q311882	N.A.	5.19	N.A.
Q311883	32.8	N.A.	N.A.
*Std OXN117		7.20	
*Blk BLANK		<0.50	
*Std AMIS0268			191
*Blk BLANK			<10
*Rep Q311835	N.A.		
*Rep Q311876	N.A.		

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OREAS134A	18.8		
*Std OREAS131B	4.7		
*Std OREAS926	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Rep Q311882		5.00	
*Rep Q311878			410

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Certificate of Analysis

Work Order : VC151963F

[Report File No.: 0000014185]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q930801-874
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151963 Report No. 012711
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC151963F Order: PO# BMC15-01_1/Q930801-874

Report File No.: 0000014185

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q930801	3.100	N.A.	<5	0.4	<0.01	1.41	0.02	0.04
Q930802	2.280	N.A.	<5	0.3	<0.01	1.47	<0.01	0.03
Q930803	3.290	N.A.	30	36.1	0.55	7.91	0.67	1.65
Q930804	1.250	N.A.	6	3.8	0.05	3.61	0.06	0.91
Q930805	3.305	N.A.	9	1.9	0.03	3.75	0.02	0.05
Q930806	2.335	N.A.	<5	1.7	0.01	4.60	0.01	0.11
Q930807	3.165	N.A.	700	55.9	1.52	15.7	0.06	0.22
Q930808	4.365	N.A.	997	107	3.90	12.5	0.03	0.32
Q930809	3.790	N.A.	2210	155	4.45	23.8	0.28	1.02
Q930810	0.540	N.A.	<5	<0.3	<0.01	0.38	<0.01	<0.01
Q930811	0.835	N.A.	6000	281	6.32	32.1	0.88	4.83
Q930812	4.450	N.A.	1270	121	2.29	37.3	0.86	4.58
Q930813	4.045	N.A.	1610	191	0.72	28.5	2.24	6.63
Q930814	4.775	N.A.	166	25.6	0.39	17.0	0.26	2.00
Q930815	4.950	N.A.	289	28.8	0.57	24.6	0.17	1.33
Q930816	3.470	N.A.	875	60.7	0.23	32.9	0.87	5.13
Q930817	3.155	N.A.	742	74.0	0.25	36.4	0.80	6.24
Q930818	3.670	N.A.	39	4.5	0.01	3.59	0.07	0.18
Q930819	1.575	N.A.	12	0.6	<0.01	2.48	<0.01	0.05
Q930820	0.145	N.A.	803	45.4	0.47	19.6	0.29	1.13
Q930821	1.430	N.A.	29	3.8	<0.01	3.62	0.04	0.14
Q930822	2.475	N.A.	69	7.0	0.08	5.75	0.15	0.53
Q930823	1.335	N.A.	355	8.7	0.06	6.23	0.24	0.78
Q930824	3.550	N.A.	1050	69.4	3.01	13.4	0.27	1.63
Q930825	3.490	N.A.	466	37.4	2.15	14.3	0.09	0.30
Q930826	1.750	N.A.	164	15.5	0.86	13.1	0.04	0.34
Q930827	2.740	N.A.	7	0.7	0.03	5.66	<0.01	0.01
Q930828	2.800	N.A.	<5	<0.3	<0.01	6.92	<0.01	0.01
Q930829	3.310	N.A.	59	0.8	<0.01	4.74	<0.01	0.01
Q930830	0.880	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
Q930831	3.485	N.A.	7	<0.3	<0.01	1.86	<0.01	<0.01
Q930832	3.120	N.A.	11	0.4	<0.01	2.63	<0.01	<0.01
Q930833	3.195	N.A.	6	0.6	<0.01	1.67	<0.01	<0.01
Q930834	2.140	N.A.	<5	0.7	<0.01	1.79	<0.01	<0.01
Q930835	2.755	N.A.	20	7.6	0.25	8.46	0.03	0.21
*Dup Q930835	N.A.	N.A.	27	7.8	0.25	8.89	0.03	0.21
Q930836	2.605	N.A.	293	39.6	1.11	17.7	0.19	0.45
Q930837	4.165	N.A.	875	102	5.81	33.5	0.10	3.20
Q930838	6.630	N.A.	318	33.3	1.09	42.3	0.15	4.25
Q930839	6.015	N.A.	269	33.4	0.40	44.5	0.37	4.40

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Final : VC151963F Order: PO# BMC15-01_1/Q930801-874

Report File No.: 0000014185

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q930840	0.150	N.A.	819	20.8	1.77	13.7	0.25	1.06
Q930841	0.150	N.A.	1230	72.0	0.37	3.84	1.31	5.10
Q930842	7.240	N.A.	306	59.6	0.82	45.2	0.83	4.40
Q930843	6.095	N.A.	473	59.2	0.85	43.5	0.83	4.61
Q930844	5.500	N.A.	277	51.1	0.58	44.1	1.97	5.58
Q930845	5.940	N.A.	487	75.9	0.23	40.6	1.71	7.54
Q930846	6.320	N.A.	881	84.7	0.27	36.7	1.52	8.36
Q930847	6.155	N.A.	1210	123	0.33	31.1	2.34	12.4
Q930848	6.335	N.A.	2170	173	0.68	35.0	1.59	11.0
Q930849	6.210	N.A.	1420	137	0.36	31.3	2.48	11.6
Q930850	1.050	94.1	<5	<0.3	<0.01	0.11	<0.01	0.01
Q930851	7.335	N.A.	1220	198	0.27	23.1	4.46	9.45
Q930852	5.460	N.A.	333	84.2	<0.01	34.1	1.61	5.70
Q930853	1.715	N.A.	730	78.9	1.02	35.3	0.92	5.07
Q930854	3.450	N.A.	229	21.7	0.41	9.51	0.06	0.21
Q930855	2.730	N.A.	66	16.9	0.41	13.1	0.04	0.17
Q930856	3.225	N.A.	398	25.9	0.64	5.97	0.08	0.35
Q930857	1.175	N.A.	669	38.4	1.98	19.0	0.08	0.59
Q930858	1.440	N.A.	1170	56.5	2.67	29.2	0.12	0.54
Q930859	2.970	N.A.	<5	1.8	0.01	7.37	0.02	0.05
Q930860	0.135	N.A.	806	44.4	0.46	20.3	0.31	1.16
Q930861	4.670	N.A.	<5	<0.3	<0.01	6.87	<0.01	0.01
Q930862	3.330	N.A.	<5	<0.3	<0.01	6.83	<0.01	0.01
Q930863	1.980	N.A.	<5	<0.3	<0.01	1.51	<0.01	0.01
Q930864	2.910	N.A.	<5	<0.3	<0.01	1.83	<0.01	0.02
Q930865	1.305	N.A.	7	<0.3	<0.01	1.84	<0.01	<0.01
Q930866	3.100	N.A.	8	<0.3	<0.01	2.10	<0.01	<0.01
Q930867	1.480	N.A.	6	0.6	<0.01	1.95	<0.01	0.05
Q930868	5.400	N.A.	302	48.4	0.71	44.1	0.29	1.73
Q930869	6.595	N.A.	271	57.1	0.67	41.8	1.97	5.94
Q930870	0.850	N.A.	<5	<0.3	<0.01	0.13	<0.01	0.02
*Dup Q930870	N.A.	N.A.	<5	<0.3	<0.01	0.13	<0.01	0.01
Q930871	5.005	N.A.	766	59.2	0.73	42.0	0.91	1.65
Q930872	4.395	N.A.	413	29.9	0.34	42.1	0.18	1.75
Q930873	2.690	N.A.	383	35.8	0.24	40.8	0.33	2.89
Q930874	3.430	98.4	435	61.6	0.14	31.1	1.98	10.0
*Rep Q930832				0.4				
*Rep Q930873				36.1				
*Std OREAS132A				57.9				
*Std AMIS0268				199				

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Final : VC151963F Order: PO# BMC15-01_1/Q930801-874

Report File No.: 0000014185

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.1				
*Std OREAS132A		57.7				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep Q930841	1270					
*Rep Q930848	2160					
*Std OREAS153B	324					
*Std OXH97	1270					
*Std OXJ111	2150					
*Std OXN117	7700					
*Std OXH97	1280					
*Blk BLANK	<5					
*Rep Q930821			<0.01	3.67	0.03	0.14
*Rep Q930852			<0.01	34.7	1.65	5.45
*Std OREAS134A			0.13	11.9	12.6	17.3
*Std OREAS131B			0.02	5.73	1.83	2.98
*Std OREAS926			0.85	7.48	0.01	0.05
*Std OREAS134A			0.12	12.0	13.0	17.2
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Report File No.: 0000014185

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q930801	N.A.	N.A.	N.A.
Q930802	N.A.	N.A.	N.A.
Q930803	N.A.	N.A.	N.A.
Q930804	N.A.	N.A.	N.A.
Q930805	N.A.	N.A.	N.A.
Q930806	N.A.	N.A.	N.A.
Q930807	N.A.	N.A.	N.A.
Q930808	N.A.	N.A.	N.A.
Q930809	N.A.	N.A.	185
Q930810	N.A.	N.A.	N.A.
Q930811	34.8	5.43	250
Q930812	40.5	N.A.	N.A.
Q930813	38.1	N.A.	187
Q930814	N.A.	N.A.	N.A.
Q930815	N.A.	N.A.	N.A.
Q930816	36.9	N.A.	N.A.
Q930817	45.1	N.A.	N.A.
Q930818	N.A.	N.A.	N.A.
Q930819	N.A.	N.A.	N.A.
Q930820	N.A.	N.A.	N.A.
Q930821	N.A.	N.A.	N.A.
Q930822	N.A.	N.A.	N.A.
Q930823	N.A.	N.A.	N.A.
Q930824	N.A.	N.A.	N.A.
Q930825	N.A.	N.A.	N.A.
Q930826	N.A.	N.A.	N.A.
Q930827	N.A.	N.A.	N.A.
Q930828	N.A.	N.A.	N.A.
Q930829	N.A.	N.A.	N.A.
Q930830	N.A.	N.A.	N.A.
Q930831	N.A.	N.A.	N.A.
Q930832	N.A.	N.A.	N.A.
Q930833	N.A.	N.A.	N.A.
Q930834	N.A.	N.A.	N.A.
Q930835	N.A.	N.A.	N.A.
*Dup Q930835	N.A.	N.A.	N.A.
Q930836	N.A.	N.A.	N.A.
Q930837	N.A.	N.A.	N.A.
Q930838	N.A.	N.A.	N.A.
Q930839	N.A.	N.A.	N.A.

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Final : VC151963F Order: PO# BMC15-01_1/Q930801-874

Report File No.: 0000014185

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q930840	N.A.	N.A.	N.A.
Q930841	N.A.	N.A.	N.A.
Q930842	39.2	N.A.	N.A.
Q930843	40.2	N.A.	N.A.
Q930844	41.2	N.A.	N.A.
Q930845	41.6	N.A.	N.A.
Q930846	46.5	N.A.	N.A.
Q930847	41.5	N.A.	N.A.
Q930848	47.3	N.A.	186
Q930849	42.5	N.A.	N.A.
Q930850	<0.1	N.A.	N.A.
Q930851	34.4	N.A.	211
Q930852	41.3	N.A.	N.A.
Q930853	42.3	N.A.	N.A.
Q930854	N.A.	N.A.	N.A.
Q930855	N.A.	N.A.	N.A.
Q930856	N.A.	N.A.	N.A.
Q930857	N.A.	N.A.	N.A.
Q930858	N.A.	N.A.	N.A.
Q930859	N.A.	N.A.	N.A.
Q930860	N.A.	N.A.	N.A.
Q930861	N.A.	N.A.	N.A.
Q930862	N.A.	N.A.	N.A.
Q930863	N.A.	N.A.	N.A.
Q930864	N.A.	N.A.	N.A.
Q930865	N.A.	N.A.	N.A.
Q930866	N.A.	N.A.	N.A.
Q930867	N.A.	N.A.	N.A.
Q930868	N.A.	N.A.	N.A.
Q930869	37.4	N.A.	N.A.
Q930870	N.A.	N.A.	N.A.
*Dup Q930870	N.A.	N.A.	N.A.
Q930871	N.A.	N.A.	N.A.
Q930872	N.A.	N.A.	N.A.
Q930873	N.A.	N.A.	N.A.
Q930874	38.8	N.A.	N.A.

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Final : VC151963F Order: PO# BMC15-01_1/Q930801-874

Report File No.: 0000014185

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.82	
*Blk BLANK		<0.50	
*Std ME-1302			420
*Blk BLANK			<10
*Rep Q930821	N.A.		
*Rep Q930852	41.3		
*Std OREAS134A	19.3		
*Std OREAS131B	4.8		
*Std OREAS926	N.A.		
*Std OREAS134A	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	N.A.		

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Certificate of Analysis

Work Order : VC151964F

[Report File No.: 0000014186]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_1/Q930875-944
Project No.	:	KZK
No. Of Samples	:	70
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151964 Report No. 012712
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC151964F Order: PO# BMC15-01_1/Q930875-944

Report File No.: 0000014186

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q930875	5.100	N.A.	338	53.0	1.81	34.5	0.39	6.82
Q930876	3.420	N.A.	129	18.1	0.58	18.3	0.04	0.52
Q930877	2.600	N.A.	221	27.7	1.07	12.7	0.03	0.11
Q930878	2.570	N.A.	9	1.3	0.02	7.32	0.03	0.09
Q930879	2.760	N.A.	36	7.3	0.49	7.61	0.12	0.19
Q930880	0.135	N.A.	749	44.8	0.44	20.2	0.30	1.11
Q930881	3.255	N.A.	8	1.1	0.01	3.03	0.04	0.14
Q930882	3.080	N.A.	10	0.4	<0.01	2.14	<0.01	<0.01
Q930883	3.320	N.A.	11	0.5	<0.01	2.23	<0.01	0.06
Q930884	2.440	N.A.	16	1.4	0.02	4.18	0.02	0.29
Q930885	2.325	N.A.	8	0.6	<0.01	2.08	<0.01	0.02
Q930886	1.570	N.A.	85	11.7	0.15	22.9	0.13	7.03
Q930887	3.145	N.A.	11	1.5	0.05	4.25	0.02	0.15
Q930888	2.660	N.A.	<5	0.4	<0.01	1.12	<0.01	<0.01
Q930889	3.005	N.A.	8	0.5	<0.01	1.78	<0.01	0.08
Q930890	0.840	N.A.	<5	<0.3	<0.01	0.17	<0.01	<0.01
Q930891	2.735	N.A.	7	0.5	<0.01	1.77	0.01	0.63
Q930892	3.145	N.A.	6	0.3	<0.01	8.23	<0.01	0.03
Q930893	2.045	N.A.	<5	0.4	<0.01	2.58	<0.01	0.10
Q930894	2.365	N.A.	14	0.8	<0.01	2.01	0.02	0.02
Q930895	1.135	N.A.	38	18.6	0.10	10.7	1.07	4.74
Q930896	1.680	N.A.	30	7.3	0.04	6.06	0.09	0.90
Q930897	2.060	N.A.	58	17.1	0.18	8.56	0.78	1.41
Q930898	3.125	N.A.	6	0.3	<0.01	4.76	<0.01	0.05
Q930899	2.920	N.A.	13	4.1	0.01	4.96	0.05	0.29
Q930900	0.150	N.A.	875	44.9	0.45	20.5	0.31	1.12
Q930901	2.735	N.A.	9	1.8	0.01	3.66	0.03	0.20
Q930902	3.160	N.A.	5	0.9	<0.01	2.51	0.02	0.05
Q930903	2.230	N.A.	12	0.7	<0.01	2.48	<0.01	0.01
Q930904	2.535	N.A.	12	0.6	<0.01	2.50	<0.01	<0.01
Q930905	2.590	N.A.	16	1.2	<0.01	3.26	<0.01	0.02
Q930906	3.350	N.A.	2890	29.9	0.43	28.6	3.08	8.93
Q930907	4.260	N.A.	2680	206	0.35	30.4	3.19	9.35
Q930908	4.010	N.A.	2030	219	0.33	30.4	3.06	8.18
Q930909	4.820	N.A.	1850	137	0.29	38.4	1.71	6.06
Q930910	1.025	N.A.	26	1.1	<0.01	0.16	0.02	0.04
Q930911	4.905	N.A.	1970	140	0.31	32.8	2.31	5.66
Q930912	4.685	N.A.	2300	152	0.30	30.4	2.78	7.68
Q930913	3.150	N.A.	25	2.0	<0.01	2.38	0.02	0.08
Q930914	2.350	N.A.	18	4.4	0.01	3.29	0.06	0.09

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q930915	2.825	N.A.	12	1.8	<0.01	1.75	<0.01	0.01
Q930916	2.925	N.A.	21	10.0	0.19	6.23	0.11	0.56
Q930917	2.760	N.A.	29	12.0	0.07	5.08	0.24	1.55
Q930918	3.090	N.A.	7	3.4	0.01	2.31	0.06	0.09
Q930919	2.995	N.A.	50	11.4	0.10	5.24	0.19	1.90
Q930920	0.150	N.A.	815	43.4	0.45	20.7	0.32	1.14
Q930921	3.530	N.A.	14	24.0	0.04	3.21	0.41	0.22
Q930922	4.865	N.A.	471	56.5	1.53	36.0	0.15	1.70
Q930923	2.975	N.A.	20	2.8	0.02	4.26	0.02	0.11
Q930924	2.705	93.4	5	1.0	0.01	5.38	<0.01	0.04
Q930925	3.385	N.A.	86	22.2	0.26	12.4	0.14	4.15
Q930926	3.740	N.A.	6	2.1	<0.01	2.69	0.02	0.05
Q930927	3.245	N.A.	5	0.8	<0.01	3.46	<0.01	0.03
Q930928	4.100	N.A.	18	2.2	0.03	3.57	0.01	0.04
Q930929	4.095	N.A.	776	81.7	0.31	35.1	1.07	7.37
Q930930	0.810	N.A.	<5	<0.3	<0.01	0.11	<0.01	0.02
Q930931	2.215	N.A.	24	5.3	0.02	5.72	0.13	0.32
Q930932	1.395	N.A.	1810	140	2.22	41.6	2.05	2.08
Q930933	1.740	N.A.	166	26.3	0.05	7.24	0.55	1.47
Q930934	4.225	N.A.	2130	266	0.22	34.9	2.84	10.0
Q930935	4.230	N.A.	6540	>300	0.72	25.7	3.81	8.37
Q930936	4.075	N.A.	748	103	0.08	5.92	0.44	0.89
Q930937	3.065	N.A.	1520	159	0.33	21.1	3.03	7.80
Q930938	3.490	N.A.	571	59.1	0.15	34.6	1.15	5.24
Q930939	3.270	N.A.	2780	10.5	0.25	6.10	0.03	0.21
Q930940	0.150	N.A.	811	20.9	1.72	13.8	0.26	1.05
Q930941	0.160	N.A.	1280	70.0	0.36	3.83	1.36	5.29
Q930942	2.260	N.A.	156	25.4	0.25	8.39	0.20	1.00
Q930943	2.180	N.A.	7	0.9	<0.01	6.80	<0.01	0.03
Q930944	1.460	N.A.	183	5.7	0.12	3.25	0.03	0.05
*Dup Q930944	N.A.	N.A.	146	5.8	0.11	3.13	0.03	0.05
*Rep Q930888				0.3				
*Rep Q930912				153				
*Std SU_1B				6.9				
*Std OREAS132A				57.8				
*Std AMIS0268				195				
*Std OREAS132A				56.4				
*Std AMIS0268				184				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				

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Final : VC151964F Order: PO# BMC15-01_1/Q930875-944

Report File No.: 0000014186

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Rep Q930903	8				
*Std OREAS152B	139				
*Std OXH97	1320				
*Std OXJ111	2200				
*Std OXN117	7700				
*Blk BLANK	<5				
*Rep Q930877		1.07	12.7	0.03	0.11
*Rep Q930898		<0.01	4.77	<0.01	0.05
*Std OREAS134A		0.13	12.3	13.0	17.2
*Std OREAS131B		0.02	5.96	1.89	3.13
*Std OREAS134A		0.13	12.3	13.0	17.7
*Std OREAS131B		0.02	5.93	1.91	3.13
*Std OREAS926		0.82	7.60	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<5				
*Rep Q930907	2470				
*Rep Q930941	1260				

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Final : VC151964F Order: PO# BMC15-01_1/Q930875-944

Report File No.: 0000014186

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q930875	N.A.	N.A.	N.A.
Q930876	N.A.	N.A.	N.A.
Q930877	N.A.	N.A.	N.A.
Q930878	N.A.	N.A.	N.A.
Q930879	N.A.	N.A.	N.A.
Q930880	N.A.	N.A.	N.A.
Q930881	N.A.	N.A.	N.A.
Q930882	N.A.	N.A.	N.A.
Q930883	N.A.	N.A.	N.A.
Q930884	N.A.	N.A.	N.A.
Q930885	N.A.	N.A.	N.A.
Q930886	N.A.	N.A.	N.A.
Q930887	N.A.	N.A.	N.A.
Q930888	N.A.	N.A.	N.A.
Q930889	N.A.	N.A.	N.A.
Q930890	N.A.	N.A.	N.A.
Q930891	N.A.	N.A.	N.A.
Q930892	N.A.	N.A.	N.A.
Q930893	N.A.	N.A.	N.A.
Q930894	N.A.	N.A.	N.A.
Q930895	N.A.	N.A.	N.A.
Q930896	N.A.	N.A.	N.A.
Q930897	N.A.	N.A.	N.A.
Q930898	N.A.	N.A.	N.A.
Q930899	N.A.	N.A.	N.A.
Q930900	N.A.	N.A.	N.A.
Q930901	N.A.	N.A.	N.A.
Q930902	N.A.	N.A.	N.A.
Q930903	N.A.	N.A.	N.A.
Q930904	N.A.	N.A.	N.A.
Q930905	N.A.	N.A.	N.A.
Q930906	38.6	N.A.	N.A.
Q930907	37.1	N.A.	205
Q930908	38.6	N.A.	N.A.
Q930909	46.5	N.A.	N.A.
Q930910	N.A.	N.A.	N.A.
Q930911	35.6	N.A.	N.A.
Q930912	38.6	N.A.	149
Q930913	N.A.	N.A.	N.A.
Q930914	N.A.	N.A.	N.A.

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Final : VC151964F Order: PO# BMC15-01_1/Q930875-944

Report File No.: 0000014186

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
Q930915	N.A.	N.A.	N.A.
Q930916	N.A.	N.A.	N.A.
Q930917	N.A.	N.A.	N.A.
Q930918	N.A.	N.A.	N.A.
Q930919	N.A.	N.A.	N.A.
Q930920	N.A.	N.A.	N.A.
Q930921	N.A.	N.A.	N.A.
Q930922	N.A.	N.A.	N.A.
Q930923	N.A.	N.A.	N.A.
Q930924	N.A.	N.A.	N.A.
Q930925	N.A.	N.A.	N.A.
Q930926	N.A.	N.A.	N.A.
Q930927	N.A.	N.A.	N.A.
Q930928	N.A.	N.A.	N.A.
Q930929	N.A.	N.A.	N.A.
Q930930	N.A.	N.A.	N.A.
Q930931	N.A.	N.A.	N.A.
Q930932	N.A.	N.A.	N.A.
Q930933	N.A.	N.A.	N.A.
Q930934	N.A.	N.A.	275
Q930935	N.A.	5.83	855
Q930936	N.A.	N.A.	N.A.
Q930937	N.A.	N.A.	154
Q930938	N.A.	N.A.	N.A.
Q930939	N.A.	N.A.	N.A.
Q930940	N.A.	N.A.	N.A.
Q930941	N.A.	N.A.	N.A.
Q930942	N.A.	N.A.	N.A.
Q930943	N.A.	N.A.	N.A.
Q930944	N.A.	N.A.	N.A.
*Dup Q930944	N.A.	N.A.	N.A.

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Final : VC151964F Order: PO# BMC15-01_1/Q930875-944

Report File No.: 0000014186

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Rep Q930935		5.67	
*Std OXN117		7.55	
*Blk BLANK		<0.50	
*Rep Q930907			212
*Std ME-1302			412
*Blk BLANK			<10
*Rep Q930877	N.A.		
*Rep Q930898	N.A.		
*Std OREAS134A	19.3		
*Std OREAS131B	4.8		
*Std OREAS134A	N.A.		
*Std OREAS131B	N.A.		
*Std OREAS926	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	N.A.		

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Certificate of Analysis

Work Order : VC151965F

[Report File No.: 0000014187]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_1/Q311885--923, R080101-106
Project No.	:	KZK
No. Of Samples	:	45
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151965 Report No. 012713
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC151965F Order: PO# BMC15-01_1/Q311885--923, R080101-106

Report File No.: 0000014187

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311885	4.405	N.A.	1070	94.0	0.99	38.2	1.32	8.57
Q311886	2.750	N.A.	2680	231	0.97	29.4	2.86	10.8
Q311887	1.640	N.A.	153	16.9	0.05	3.41	0.19	0.33
Q311888	2.025	N.A.	2300	>300	0.96	25.4	4.28	8.23
Q311889	2.550	N.A.	533	8.3	0.02	2.86	0.06	0.11
Q311890	0.740	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
Q311891	2.980	N.A.	5	1.5	<0.01	3.39	<0.01	<0.01
Q311892	2.600	N.A.	<5	0.9	<0.01	2.03	<0.01	0.02
Q311893	3.025	N.A.	6	2.5	<0.01	2.28	0.03	0.07
Q311894	2.520	N.A.	<5	<0.3	<0.01	2.20	<0.01	0.02
Q311895	3.840	N.A.	18	4.8	0.18	6.29	<0.01	0.03
Q311896	2.875	N.A.	2560	236	7.01	35.2	0.39	1.01
Q311897	3.905	N.A.	246	18.1	0.75	10.8	0.01	0.11
Q311898	3.685	N.A.	10	3.1	<0.01	2.21	0.03	0.06
Q311899	0.470	N.A.	<5	1.9	<0.01	1.81	0.02	0.01
Q311900	0.130	N.A.	834	45.1	0.43	19.2	0.30	1.11
Q311901	2.230	N.A.	5	0.3	<0.01	1.77	<0.01	<0.01
Q311902	2.325	N.A.	7	0.5	<0.01	2.33	<0.01	<0.01
Q311903	3.370	N.A.	17	2.9	0.02	2.78	0.03	0.09
Q311904	5.210	N.A.	2910	227	7.10	36.1	0.35	2.17
Q311905	7.130	N.A.	1020	121	2.85	45.4	0.44	1.04
Q311906	6.545	N.A.	2270	114	2.19	45.4	0.81	1.97
Q311907	5.450	N.A.	1260	78.8	2.29	44.3	0.09	3.83
Q311908	6.410	N.A.	1830	128	3.72	44.6	0.15	2.07
Q311909	6.085	N.A.	1360	164	3.80	43.1	0.77	1.88
Q311910	0.965	N.A.	8	1.1	0.02	0.24	<0.01	<0.01
Q311911	6.050	N.A.	1460	98.6	2.36	46.0	0.78	1.04
Q311912	5.795	N.A.	490	62.5	0.75	43.3	0.71	1.60
Q311913	5.065	N.A.	455	68.0	0.61	43.2	0.80	1.42
Q311914	6.335	N.A.	635	58.2	0.22	40.2	0.42	5.29
Q311915	4.500	N.A.	1400	204	0.26	32.8	1.94	8.12
Q311916	2.375	N.A.	140	56.9	0.04	7.58	0.71	1.88
Q311917	2.450	N.A.	1070	160	0.32	33.2	3.08	8.45
Q311918	3.655	N.A.	158	45.7	0.59	7.79	0.33	0.91
Q311919	3.205	N.A.	82	38.9	0.49	11.9	0.77	3.62
*Dup Q311919	N.A.	N.A.	62	40.4	0.55	11.9	0.82	3.65
Q311920	0.135	N.A.	814	45.0	0.45	20.0	0.32	1.14
Q311921	2.075	N.A.	5	2.1	0.01	5.68	0.05	0.25
Q311922	2.650	N.A.	<5	0.4	<0.01	7.38	<0.01	0.05
Q311923	2.540	N.A.	<5	<0.3	<0.01	6.89	<0.01	0.03

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Final : VC151965F Order: PO# BMC15-01_1/Q311885--923, R080101-106

Report File No.: 0000014187

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
R080101	3.210	N.A.	27	3.4	<0.01	2.37	0.01	0.04
R080102	2.365	N.A.	9	0.4	<0.01	1.49	<0.01	<0.01
R080103	2.315	N.A.	18	0.4	<0.01	1.94	<0.01	<0.01
R080104	2.350	N.A.	17	0.9	<0.01	2.43	0.02	0.03
R080105	1.595	N.A.	12	0.7	<0.01	1.75	<0.01	<0.01
R080106	2.675	95.7	<5	0.6	<0.01	2.17	<0.01	<0.01
*Rep Q311898				3.0				
*Rep Q311922				0.3				
*Std OREAS132A				57.9				
*Std AMIS0268				196				
*Blk BLANK				<0.3				
*Rep R080103			15					
*Std OREAS152B			134					
*Std OXH97			1240					
*Std OXJ111			2090					
*Blk BLANK			<5					
*Rep Q311909					3.71	42.2	0.75	1.87
*Std OREAS134A					0.13	12.1	13.0	17.9
*Std OREAS131B					0.02	5.86	1.87	3.09
*Std OREAS926					0.81	7.51	<0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Final : VC151965F Order: PO# BMC15-01_1/Q311885--923, R080101-106

Report File No.: 0000014187

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q311885	40.3	N.A.
Q311886	36.0	213
Q311887	N.A.	N.A.
Q311888	34.7	283
Q311889	N.A.	N.A.
Q311890	N.A.	N.A.
Q311891	N.A.	N.A.
Q311892	N.A.	N.A.
Q311893	N.A.	N.A.
Q311894	N.A.	N.A.
Q311895	N.A.	N.A.
Q311896	N.A.	203
Q311897	N.A.	N.A.
Q311898	N.A.	N.A.
Q311899	N.A.	N.A.
Q311900	N.A.	N.A.
Q311901	N.A.	N.A.
Q311902	N.A.	N.A.
Q311903	N.A.	N.A.
Q311904	N.A.	192
Q311905	N.A.	N.A.
Q311906	N.A.	N.A.
Q311907	N.A.	N.A.
Q311908	N.A.	N.A.
Q311909	N.A.	136
Q311910	N.A.	N.A.
Q311911	N.A.	N.A.
Q311912	N.A.	N.A.
Q311913	42.3	N.A.
Q311914	42.1	N.A.
Q311915	43.0	197
Q311916	N.A.	N.A.
Q311917	39.6	171
Q311918	N.A.	N.A.
Q311919	N.A.	N.A.
*Dup Q311919	N.A.	N.A.
Q311920	N.A.	N.A.
Q311921	N.A.	N.A.
Q311922	N.A.	N.A.
Q311923	N.A.	N.A.

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Final : VC151965F Order: PO# BMC15-01_1/Q311885--923, R080101-106

Report File No.: 0000014187

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
R080101	N.A.	N.A.
R080102	N.A.	N.A.
R080103	N.A.	N.A.
R080104	N.A.	N.A.
R080105	N.A.	N.A.
R080106	N.A.	N.A.
*Std AMIS0268		193
*Blk BLANK		<10
*Rep Q311909	N.A.	
*Std OREAS134A	19.9	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	

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Certificate of Analysis

Work Order : VC151966F

[Report File No.: 0000014188]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_2/Q311924-944, Q930945-991
Project No.	:	KZK
No. Of Samples	:	68
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb and Zn values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC151966 Report No. 012714
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q311924	1.345	N.A.	21	0.4	<0.01	3.12	<0.01	0.03
Q311925	2.455	N.A.	8	<0.3	<0.01	2.32	<0.01	<0.01
Q311926	3.505	N.A.	4210	137	2.50	15.1	0.38	1.22
Q311927	6.250	N.A.	1960	143	1.84	38.6	0.95	5.78
Q311928	5.395	N.A.	1160	141	0.37	30.6	2.15	7.10
Q311929	5.250	N.A.	886	73.5	0.35	28.5	0.85	3.71
Q311930	0.150	N.A.	1240	67.0	0.36	3.83	1.37	5.33
Q311931	5.620	N.A.	1170	126	0.23	30.7	1.57	4.23
Q311932	3.965	N.A.	1920	>300	0.31	24.6	5.30	11.8
Q311933	2.690	N.A.	392	57.5	0.30	7.36	1.16	1.23
Q311934	3.130	N.A.	81	12.1	0.03	2.78	0.09	0.14
Q311935	4.720	N.A.	766	190	0.88	29.7	5.11	13.0
Q311936	3.630	N.A.	49	11.6	0.23	4.75	0.12	0.44
Q311937	3.975	N.A.	20	2.0	<0.01	1.87	0.01	0.05
Q311938	5.090	N.A.	823	145	0.20	31.3	3.20	8.02
Q311939	1.390	N.A.	13	1.7	<0.01	1.03	0.02	0.65
Q311940	0.685	N.A.	7	<0.3	<0.01	<0.05	<0.01	<0.01
Q311941	3.280	N.A.	594	152	0.18	27.7	2.64	9.01
Q311942	3.360	N.A.	7	0.4	<0.01	6.71	<0.01	0.02
Q311943	2.360	N.A.	8	0.3	<0.01	6.61	<0.01	0.01
Q311944	2.945	N.A.	7	<0.3	<0.01	7.13	<0.01	<0.01
Q930945	3.660	N.A.	64	7.9	0.02	3.46	0.03	0.03
Q930946	3.680	N.A.	8	3.3	<0.01	2.97	0.02	0.04
Q930947	3.185	N.A.	55	12.5	0.38	5.03	0.02	0.08
Q930948	5.745	N.A.	893	79.9	3.11	42.9	0.08	1.26
Q930949	6.195	N.A.	530	47.9	1.27	46.1	0.11	4.47
Q930950	0.150	N.A.	1230	70.6	0.36	3.79	1.38	5.24
Q930951	6.430	N.A.	461	47.3	0.83	43.2	0.16	6.01
Q930952	5.730	N.A.	525	63.6	0.47	41.6	1.01	3.19
Q930953	5.510	N.A.	432	43.4	0.94	45.4	0.17	0.42
Q930954	5.840	N.A.	380	49.8	0.47	41.3	0.41	5.17
Q930955	6.540	N.A.	2500	241	0.30	33.7	2.21	7.07
Q930956	6.310	N.A.	1690	275	0.24	31.6	2.66	6.69
Q930957	2.470	N.A.	1230	>300	0.30	24.4	4.58	10.2
Q930958	2.670	N.A.	69	69.5	0.39	2.80	0.78	1.19
*Dup Q930958	N.A.	N.A.	80	60.8	0.36	2.88	0.68	1.08
Q930959	4.765	N.A.	694	76.6	0.48	31.2	1.74	6.64
Q930960	0.760	N.A.	5	<0.3	<0.01	0.10	<0.01	0.01
Q930961	4.090	N.A.	326	41.3	0.68	13.5	0.43	3.78
Q930962	3.895	N.A.	16	3.7	0.02	5.87	0.22	0.65

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
Q930963	3.120	N.A.	8	1.1	<0.01	4.09	0.09	0.09
Q930964	3.380	N.A.	55	18.7	0.10	7.28	0.61	1.50
Q930965	4.310	N.A.	48	18.5	0.23	8.85	1.13	1.83
Q930966	4.885	N.A.	12	8.8	0.04	7.97	0.20	1.75
Q930967	2.875	N.A.	6	1.9	0.07	2.45	<0.01	0.51
Q930968	1.930	N.A.	10	<0.3	<0.01	2.19	<0.01	<0.01
Q930969	3.490	N.A.	9	<0.3	<0.01	2.27	0.01	0.02
Q930970	0.150	N.A.	1220	67.5	0.35	3.76	1.34	5.21
Q930971	3.160	N.A.	24	5.7	0.02	4.51	0.22	0.66
Q930972	0.930	N.A.	144	12.3	0.18	7.69	0.05	0.11
Q930973	3.675	85.3	1860	153	0.45	30.5	1.44	6.43
Q930974	5.860	N.A.	1900	131	0.36	34.4	1.23	4.27
Q930975	6.030	N.A.	2030	161	0.33	35.5	3.48	7.18
Q930976	5.360	N.A.	3580	212	0.52	33.8	1.48	4.66
Q930977	5.840	N.A.	1820	237	0.24	30.2	2.64	6.61
Q930978	4.970	N.A.	2060	178	0.50	31.0	1.96	8.12
Q930979	5.460	N.A.	3240	263	0.50	25.3	3.71	11.7
Q930980	0.785	N.A.	7	<0.3	<0.01	0.08	0.01	0.02
Q930981	5.475	N.A.	2240	162	0.55	32.0	2.29	13.8
Q930982	6.075	N.A.	1680	102	0.78	34.9	1.49	9.96
Q930983	3.595	N.A.	1430	123	1.22	33.3	1.17	6.88
Q930984	3.565	N.A.	2510	207	0.37	32.2	1.90	10.5
Q930985	4.955	N.A.	218	17.6	0.04	5.85	0.15	0.58
Q930986	4.285	N.A.	3590	300	0.57	31.9	1.86	11.5
Q930987	4.180	N.A.	1120	218	0.22	28.2	3.15	9.10
Q930988	3.680	N.A.	110	14.0	0.06	6.58	0.20	0.59
Q930989	2.900	N.A.	14	3.3	0.06	6.67	0.04	0.70
Q930990	0.130	N.A.	880	45.6	0.45	19.6	0.30	1.11
Q930991	2.875	N.A.	6	<0.3	<0.01	3.57	<0.01	0.03
*Rep Q311930				68.0				
*Rep Q930976				206				
*Std AMIS0268				193				
*Std SU_1B				5.9				
*Std OREAS132A				56.5				
*Std AMIS0268				192				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep Q311928			1160					
*Rep Q930968			11					
*Std OREAS152B			139					

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Final : VC151966F Order: PO# BMC15-01_2/Q311924-944, Q930945-991

Report File No.: 0000014188

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Std OXH97	1280				
*Std OXJ111	2210				
*Std OXN117	7700				
*Blk BLANK	<5				
*Rep Q930947		0.38	5.04	0.02	0.08
*Rep Q930979		0.49	25.3	3.69	11.4
*Rep Q930989		0.06	6.46	0.03	0.67
*Std OREAS134A		0.13	12.2	13.0	17.4
*Std OREAS131B		0.02	5.88	1.90	2.97
*Std OREAS926		0.81	7.51	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q311924	N.A.	N.A.
Q311925	N.A.	N.A.
Q311926	9.3	N.A.
Q311927	41.0	N.A.
Q311928	35.5	N.A.
Q311929	30.9	N.A.
Q311930	4.4	N.A.
Q311931	37.6	N.A.
Q311932	31.5	299
Q311933	6.8	N.A.
Q311934	1.7	N.A.
Q311935	37.9	179
Q311936	N.A.	N.A.
Q311937	N.A.	N.A.
Q311938	41.9	N.A.
Q311939	N.A.	N.A.
Q311940	N.A.	N.A.
Q311941	35.4	169
Q311942	N.A.	N.A.
Q311943	N.A.	N.A.
Q311944	N.A.	N.A.
Q930945	N.A.	N.A.
Q930946	N.A.	N.A.
Q930947	N.A.	N.A.
Q930948	N.A.	N.A.
Q930949	N.A.	N.A.
Q930950	N.A.	N.A.
Q930951	N.A.	N.A.
Q930952	N.A.	N.A.
Q930953	N.A.	N.A.
Q930954	N.A.	N.A.
Q930955	39.7	228
Q930956	40.2	303
Q930957	31.2	304
Q930958	N.A.	N.A.
*Dup Q930958	N.A.	N.A.
Q930959	33.1	N.A.
Q930960	N.A.	N.A.
Q930961	N.A.	N.A.
Q930962	N.A.	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
Q930963	N.A.	N.A.
Q930964	N.A.	N.A.
Q930965	N.A.	N.A.
Q930966	N.A.	N.A.
Q930967	N.A.	N.A.
Q930968	N.A.	N.A.
Q930969	N.A.	N.A.
Q930970	N.A.	N.A.
Q930971	N.A.	N.A.
Q930972	N.A.	N.A.
Q930973	38.6	148
Q930974	43.0	N.A.
Q930975	39.3	162
Q930976	43.3	198
Q930977	40.3	196
Q930978	35.9	157
Q930979	35.3	218
Q930980	N.A.	N.A.
Q930981	38.6	165
Q930982	35.8	N.A.
Q930983	32.8	N.A.
Q930984	40.1	201
Q930985	5.2	N.A.
Q930986	42.2	271
Q930987	37.3	224
Q930988	2.9	N.A.
Q930989	1.9	N.A.
Q930990	16.0	N.A.
Q930991	N.A.	N.A.

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Std ME-1302		449
*Blk BLANK		<10
*Rep Q930947	N.A.	
*Rep Q930979	34.9	
*Rep Q930989	1.9	
*Std OREAS134A	19.3	
*Std OREAS131B	4.8	

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Final : VC151966F Order: PO# BMC15-01_2/Q311924-944, Q930945-991

Report File No.: 0000014188

	S GO_ICP90Q 0.1 %	Ag GO_FAG313 10 g/t
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	

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Certificate of Analysis

Work Order : VC152112A

[Report File No.: 0000014129]

To: **ROBIN BLACK** Date: Dec 03, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_3/B00264016-085, 501-552
Project No.	:	KZK
No. Of Samples	:	122
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152112A Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014129

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264016	2100	3710	26.0	57.4	373	N.A.
B00264017	12	43	0.44	0.72	2	N.A.
B00264018	407	>10000	79.6	20.1	402	1.11
B00264019	391	7290	71.1	19.7	376	N.A.
B00264020	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264021	410	8840	109	29.5	270	N.A.
B00264022	465	9400	90.7	13.9	338	N.A.
B00264023	559	2720	63.0	9.13	307	N.A.
B00264024	319	3230	101	5.68	312	N.A.
B00264025	246	8440	79.1	5.55	342	N.A.
B00264026	120	5800	118	5.60	394	N.A.
B00264027	848	2960	38.1	17.7	238	N.A.
B00264028	11	61	0.80	0.44	4	N.A.
B00264029	10	28	0.72	0.20	2	N.A.
B00264030	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264031	64	407	17.4	3.86	85	N.A.
B00264032	892	1170	26.2	23.9	145	N.A.
B00264033	61	1220	34.2	5.19	96	N.A.
B00264034	<5	25	0.47	0.35	1	N.A.
B00264035	<5	12	0.38	0.18	<1	N.A.
B00264036	8	295	0.35	0.12	5	N.A.
B00264037	11	768	0.61	0.10	4	N.A.
B00264038	16	2100	12.3	0.26	14	N.A.
B00264039	152	358	252	1.51	659	N.A.
B00264040	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264041	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264042	24	408	258	6.10	713	N.A.
B00264043	17	201	364	9.78	512	N.A.
B00264044	28	114	182	5.11	282	N.A.
B00264045	25	225	117	7.18	474	N.A.
B00264046	14	110	51.8	3.10	155	N.A.
B00264047	864	1450	30.0	12.2	263	N.A.
B00264048	1600	3410	39.6	15.8	306	N.A.
B00264049	743	2640	32.7	10.5	281	N.A.
B00264050	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264051	1290	1190	35.3	0.54	340	N.A.
B00264052	100	50	2.52	0.21	13	N.A.
B00264053	19	341	10.4	3.22	113	N.A.
B00264054	7	161	155	1.90	114	N.A.
B00264055	<5	7	5.79	0.08	9	N.A.

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Final : VC152112A Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014129

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264056	<5	6	14.0	0.14	13	N.A.
B00264057	<5	14	12.7	0.10	8	N.A.
B00264058	6	87	81.7	0.69	42	N.A.
B00264059	148	864	20.2	6.72	77	N.A.
B00264060	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264061	123	1890	14.4	7.09	70	N.A.
B00264062	57	1930	52.8	9.87	146	N.A.
B00264063	34	305	112	6.30	365	N.A.
B00264064	33	354	92.9	5.03	182	N.A.
B00264065	53	212	50.8	5.93	91	N.A.
B00264066	42	269	50.6	7.40	184	N.A.
B00264067	25	497	3.65	3.70	67	N.A.
B00264068	<5	255	3.32	0.09	7	N.A.
B00264069	797	669	14.9	9.11	50	N.A.
B00264070	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264071	<5	47	4.37	0.06	4	N.A.
B00264072	8	60	6.95	0.08	5	N.A.
B00264073	<5	13	16.4	0.50	27	N.A.
B00264074	<5	11	0.43	0.01	<1	N.A.
B00264075	48	28	0.68	0.90	2	N.A.
B00264076	311	208	2.00	53.3	37	N.A.
B00264077	71	168	2.45	8.67	21	N.A.
B00264078	450	2570	19.2	30.8	58	N.A.
B00264079	274	1820	23.5	26.1	213	N.A.
B00264080	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264081	182	1050	25.4	40.7	323	N.A.
B00264082	8	38	53.5	1.04	50	N.A.
B00264083	<5	22	0.53	0.13	1	N.A.
B00264084	<5	180	0.34	0.06	<1	N.A.
B00264085	39	375	21.2	13.0	96	N.A.
B00264501	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264502	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264503	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264504	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264505	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264506	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264507	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264508	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264509	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264510	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152112A Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014129

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264511	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264512	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264513	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264514	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264515	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264516	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264517	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264518	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264519	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264520	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264521	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264522	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264523	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264524	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264525	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264526	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264527	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264528	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264529	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264530	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264531	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264532	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264533	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264534	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264535	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264536	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264537	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264538	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264539	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264540	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264541	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264542	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264543	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264544	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264545	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264546	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264547	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264548	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264549	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264550	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152112A Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014129

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264551	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264552	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00264037	9	675	0.57	0.08	4	
*Rep B00264051	1320	1250	36.5	0.62	349	
*Rep B00264071	<5	50	4.45	0.05	4	
*Std OREAS210	N.A.	3570	N.A.	N.A.	3	
*Std OREAS131B	38	86	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	519	N.A.	81	
*Std OREAS624	N.A.	112	21.1	N.A.	N.A.	
*Std DS-1	N.A.	6790	N.A.	84.8	N.A.	
*Std OREAS210	N.A.	3620	N.A.	N.A.	3	
*Std OREAS131B	38	87	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	486	N.A.	83	
*Std OREAS624	N.A.	113	21.2	N.A.	N.A.	
*Std DS-1	N.A.	6530	N.A.	82.8	N.A.	
*Blk BLANK	<5	<3	<0.02	<0.01	<1	
*Blk BLANK						<0.01
*Std MP1B						2.23

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Certificate of Analysis

Work Order : VC152112F

[Report File No.: 0000014189]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_3/B00264016-085, 501-552
Project No.	:	KZK
No. Of Samples	:	122
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 10 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Pb and Zn values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152112 Report No. 012715
dated Sep 14, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264016	3.710	N.A.	3050	292	0.58	25.1	4.36	16.9
B00264017	2.035	N.A.	15	1.7	<0.01	1.25	0.03	0.05
B00264018	4.265	N.A.	2490	141	1.24	38.5	2.19	6.79
B00264019	4.555	N.A.	1530	91.5	0.82	36.2	1.58	6.03
B00264020	0.150	N.A.	1360	67.1	0.36	3.75	1.36	5.45
B00264021	5.550	N.A.	1670	104	0.53	38.1	1.63	5.42
B00264022	4.345	N.A.	1020	129	0.50	37.4	2.28	7.14
B00264023	6.165	N.A.	839	75.4	0.21	33.9	0.89	6.61
B00264024	4.825	N.A.	836	84.7	0.21	30.9	1.32	10.9
B00264025	5.580	N.A.	2000	128	1.54	34.7	2.11	11.5
B00264026	4.325	N.A.	755	105	0.77	39.7	1.60	11.0
B00264027	5.385	N.A.	684	269	0.21	31.3	2.78	8.52
B00264028	3.750	N.A.	54	4.7	0.02	2.70	0.06	0.13
B00264029	0.880	N.A.	10	1.5	0.02	3.95	0.02	0.14
B00264030	0.900	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00264031	2.730	N.A.	86	68.7	0.14	28.4	3.07	8.58
B00264032	3.155	N.A.	844	>300	2.47	24.5	7.52	13.8
B00264033	1.750	N.A.	272	64.5	0.09	33.3	1.55	10.9
B00264034	1.660	N.A.	<5	2.0	<0.01	2.93	0.01	0.12
B00264035	3.890	N.A.	6	1.4	<0.01	2.99	<0.01	0.01
B00264036	2.870	N.A.	7	1.8	<0.01	2.22	0.04	0.06
B00264037	2.915	N.A.	<5	1.3	<0.01	1.94	0.03	0.04
B00264038	2.730	N.A.	59	11.3	0.32	6.25	0.02	0.19
B00264039	2.865	N.A.	1920	142	7.84	29.1	0.29	1.19
B00264040	0.120	N.A.	311	19.6	13.7	27.5	0.05	0.43
B00264041	0.120	N.A.	4500	>300	0.34	11.4	11.4	17.6
B00264042	1.915	N.A.	2380	181	8.59	31.4	0.36	15.0
B00264043	2.240	N.A.	1580	189	6.54	24.4	0.60	29.6
B00264044	2.500	N.A.	357	73.6	1.43	27.1	0.91	15.6
B00264045	2.490	N.A.	997	90.6	4.22	32.1	0.32	16.6
B00264046	2.955	N.A.	483	43.3	2.02	18.4	0.11	4.79
B00264047	2.090	N.A.	1730	224	0.32	28.3	4.89	7.94
B00264048	3.490	N.A.	1400	>300	0.43	29.8	6.22	9.87
B00264049	3.655	N.A.	1520	233	0.47	32.4	3.38	6.84
B00264050	0.240	N.A.	6	1.2	<0.01	0.22	0.02	0.03
*Dup B00264050	N.A.	N.A.	5	1.0	<0.01	0.15	0.02	0.03
B00264051	3.190	N.A.	1800	132	0.60	38.7	0.08	0.28
B00264052	1.590	N.A.	79	8.0	0.03	5.39	0.02	0.14
B00264053	1.685	N.A.	51	25.3	0.20	4.64	0.23	1.96
B00264054	3.335	N.A.	631	114	0.71	8.56	0.25	4.06

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264055	3.105	N.A.	80	7.2	0.08	6.57	0.06	0.16
B00264056	2.215	N.A.	27	9.1	0.06	14.1	0.19	0.36
B00264057	3.305	N.A.	16	6.6	0.03	5.56	0.05	0.12
B00264058	3.180	N.A.	162	37.8	0.15	8.49	0.19	0.72
B00264059	3.040	N.A.	939	121	0.33	31.2	2.71	10.0
B00264060	0.150	N.A.	1330	70.5	0.36	3.76	1.36	5.22
B00264061	2.985	N.A.	639	77.6	0.08	35.6	2.29	7.06
B00264062	2.560	N.A.	737	69.5	0.15	34.1	1.46	8.17
B00264063	1.780	N.A.	1300	113	1.19	39.8	1.36	9.47
B00264064	1.755	N.A.	767	63.7	0.25	37.9	0.97	9.35
B00264065	2.680	N.A.	347	70.5	0.13	37.3	2.10	12.1
B00264066	3.180	98.0	714	60.5	0.31	37.2	1.35	11.1
B00264067	2.245	N.A.	122	27.3	0.06	9.79	0.69	1.52
B00264068	1.845	N.A.	26	3.2	0.02	5.10	0.04	0.24
B00264069	1.520	N.A.	1570	140	0.22	25.1	1.52	8.38
B00264070	0.550	N.A.	<5	0.9	<0.01	0.22	<0.01	0.02
B00264071	3.135	N.A.	<5	2.5	<0.01	4.29	0.01	0.13
B00264072	3.115	N.A.	22	4.6	0.01	6.72	0.03	0.15
B00264073	2.965	N.A.	56	11.3	0.06	6.69	0.11	0.57
B00264074	2.885	N.A.	10	1.2	<0.01	2.16	<0.01	0.03
B00264075	1.790	N.A.	86	13.6	0.01	2.66	0.05	0.12
B00264076	1.430	N.A.	1050	>300	<0.01	22.6	3.85	5.88
B00264077	3.395	N.A.	269	37.7	0.03	5.28	0.36	1.06
B00264078	3.015	N.A.	1340	133	0.20	34.6	2.03	7.02
B00264079	3.300	N.A.	781	74.8	0.11	36.2	1.21	5.66
B00264080	0.135	N.A.	822	42.8	0.46	20.4	0.30	1.15
B00264081	2.115	N.A.	680	111	0.18	35.3	2.49	7.63
B00264082	3.390	N.A.	101	31.4	0.19	8.56	0.17	0.35
B00264083	1.785	N.A.	<5	1.4	<0.01	3.00	<0.01	0.02
B00264084	2.560	N.A.	15	1.1	<0.01	3.03	<0.01	<0.01
B00264085	1.140	N.A.	323	36.9	0.27	26.7	0.87	8.67
*Dup B00264085	N.A.	N.A.	384	36.4	0.29	27.0	0.90	8.25
B00264501	5.720	N.A.	10	3.2	<0.01	2.54	0.21	0.32
B00264502	5.945	N.A.	6	2.7	0.01	3.07	0.12	0.27
B00264503	5.850	N.A.	7	2.4	0.01	3.37	0.07	0.22
B00264504	2.885	N.A.	411	43.5	1.27	15.5	0.06	0.25
B00264505	3.130	N.A.	20	4.2	0.08	2.60	0.02	0.04
B00264506	5.440	N.A.	981	157	0.36	25.1	2.03	5.68
B00264507	5.340	N.A.	760	74.9	0.22	17.9	0.73	4.47
B00264508	5.655	N.A.	468	106	0.16	35.6	1.91	8.18

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Final : VC152112F Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014189

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264509	3.670	N.A.	1540	153	0.34	30.2	1.81	8.34
B00264510	0.150	N.A.	1150	67.7	0.36	3.82	1.39	5.26
B00264511	5.430	N.A.	373	113	0.30	35.9	1.79	8.17
B00264512	2.805	N.A.	1290	71.4	0.41	31.2	1.83	6.43
B00264513	4.790	N.A.	547	70.9	1.17	32.4	1.78	9.82
B00264514	4.375	N.A.	704	131	0.15	31.6	3.85	9.55
B00264515	3.340	N.A.	56	15.8	0.42	35.2	0.14	1.41
B00264516	5.945	N.A.	1210	119	3.60	39.4	0.19	3.65
B00264517	5.450	N.A.	560	70.9	1.74	37.5	0.35	2.08
B00264518	6.550	N.A.	110	31.8	0.30	35.8	0.70	2.60
B00264519	5.435	N.A.	384	67.7	0.57	39.6	0.64	4.08
B00264520	0.875	N.A.	9	1.2	0.01	0.31	<0.01	0.03
B00264521	6.665	N.A.	323	61.1	0.78	42.7	1.05	7.86
B00264522	3.105	N.A.	696	137	0.29	30.8	1.46	6.66
B00264523	3.290	N.A.	1240	218	0.35	25.8	2.65	10.5
B00264524	6.420	N.A.	649	110	1.19	36.8	1.28	12.2
B00264525	5.160	N.A.	746	117	1.08	39.7	1.79	10.7
B00264526	2.745	N.A.	5320	>300	5.49	36.5	0.96	5.60
B00264527	5.400	N.A.	1750	203	1.92	37.0	0.97	6.94
B00264528	5.055	N.A.	1250	208	0.75	29.2	2.33	7.82
B00264529	2.165	91.7	714	73.8	0.28	16.2	1.88	4.58
B00264530	0.150	N.A.	1370	69.9	0.36	3.90	1.39	5.20
B00264531	0.150	N.A.	833	21.5	1.75	13.9	0.26	1.04
B00264532	5.960	N.A.	181	24.4	0.37	6.35	0.15	0.29
B00264533	2.860	N.A.	113	22.4	0.38	13.2	0.15	0.73
B00264534	5.145	N.A.	7	0.9	<0.01	6.44	<0.01	0.02
B00264535	1.965	N.A.	76	29.7	0.78	12.8	0.09	0.97
B00264536	1.980	N.A.	8	2.4	0.08	10.6	0.01	0.51
B00264537	2.690	N.A.	<5	1.5	0.03	9.60	0.03	0.46
B00264538	2.610	N.A.	<5	1.3	0.01	2.51	<0.01	0.16
B00264539	2.635	N.A.	<5	1.3	0.08	3.73	<0.01	0.09
B00264540	0.705	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00264541	2.215	N.A.	35	3.0	0.39	6.86	<0.01	0.22
B00264542	1.260	N.A.	468	27.2	3.75	15.6	0.03	0.18
B00264543	1.885	N.A.	805	45.7	6.33	21.8	0.05	0.28
B00264544	1.815	N.A.	192	14.3	2.16	18.5	0.01	0.10
B00264545	3.000	N.A.	188	5.0	0.70	36.2	0.01	0.05
B00264546	3.325	N.A.	535	20.1	2.68	38.0	0.03	4.47
B00264547	2.195	N.A.	145	8.9	0.24	35.1	0.08	6.30
B00264548	2.615	N.A.	128	8.6	0.51	34.8	0.05	1.99

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264549	1.915	N.A.	24	6.5	0.30	7.15	0.02	0.73
B00264550	0.135	N.A.	818	43.7	0.45	20.0	0.31	1.13
B00264551	2.235	N.A.	<5	<0.3	<0.01	2.00	<0.01	0.03
B00264552	3.340	N.A.	6	0.3	<0.01	1.73	<0.01	<0.01
*Rep B00264018				137				
*Rep B00264057				6.7				
*Rep B00264517				79.7				
*Rep B00264540				<0.3				
*Std SU_1B				6.3				
*Std OREAS132A				56.7				
*Std AMIS0268				194				
*Std SU_1B				6.6				
*Std OREAS132A				58.6				
*Std AMIS0268				191				
*Std SU_1B				6.4				
*Std OREAS132A				55.6				
*Std AMIS0268				197				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				0.3				
*Rep B00264050			7					
*Rep B00264062			718					
*Rep B00264535			53					
*Rep B00264550			724					
*Std OREAS153B			331					
*Std OXH97			1370					
*Std OXJ111			2330					
*Std OXN117			7790					
*Std OREAS153B			333					
*Std OXH97			1360					
*Std OXJ111			2330					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00264026					0.76	39.7	1.59	11.0

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Final : VC152112F Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014189

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00264057	0.03	5.60	0.05	0.12
*Rep B00264080	0.44	19.5	0.31	1.24
*Rep B00264084	<0.01	3.04	<0.01	<0.01
*Rep B00264530	0.36	3.84	1.37	5.36
*Rep B00264544	2.09	18.4	0.01	0.11
*Std OREAS134A	0.13	11.9	12.8	17.5
*Std OREAS131B	0.02	5.73	1.89	3.05
*Std OREAS926	0.82	7.43	0.01	0.05
*Std OREAS134A	0.12	11.7	12.7	17.8
*Std OREAS131B	0.03	5.74	1.85	2.99
*Std OREAS926	0.82	7.43	<0.01	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC152112F Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014189

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264016	39.6	N.A.	303
B00264017	0.1	N.A.	N.A.
B00264018	45.9	N.A.	N.A.
B00264019	44.9	N.A.	N.A.
B00264020	N.A.	N.A.	N.A.
B00264021	45.8	N.A.	N.A.
B00264022	42.1	N.A.	N.A.
B00264023	40.9	N.A.	N.A.
B00264024	37.7	N.A.	N.A.
B00264025	36.7	N.A.	N.A.
B00264026	40.7	N.A.	N.A.
B00264027	37.9	N.A.	273
B00264028	1.4	N.A.	N.A.
B00264029	1.0	N.A.	N.A.
B00264030	<0.1	N.A.	N.A.
B00264031	34.0	N.A.	N.A.
B00264032	31.6	N.A.	576
B00264033	41.1	N.A.	N.A.
B00264034	N.A.	N.A.	N.A.
B00264035	N.A.	N.A.	N.A.
B00264036	N.A.	N.A.	N.A.
B00264037	N.A.	N.A.	N.A.
B00264038	N.A.	N.A.	N.A.
B00264039	25.8	N.A.	N.A.
B00264040	29.8	N.A.	N.A.
B00264041	N.A.	N.A.	323
B00264042	30.4	N.A.	158
B00264043	31.0	N.A.	185
B00264044	26.0	N.A.	N.A.
B00264045	31.9	N.A.	N.A.
B00264046	11.2	N.A.	N.A.
B00264047	33.5	N.A.	228
B00264048	41.5	N.A.	339
B00264049	39.8	N.A.	245
B00264050	N.A.	N.A.	N.A.
*Dup B00264050	N.A.	N.A.	N.A.
B00264051	44.3	N.A.	N.A.
B00264052	N.A.	N.A.	N.A.
B00264053	N.A.	N.A.	N.A.
B00264054	N.A.	N.A.	N.A.

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Final : VC152112F Order: PO# BMC15-01_3/B00264016-085, 501-552

Report File No.: 0000014189

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264055	N.A.	N.A.	N.A.
B00264056	N.A.	N.A.	N.A.
B00264057	N.A.	N.A.	N.A.
B00264058	N.A.	N.A.	N.A.
B00264059	36.3	N.A.	N.A.
B00264060	4.3	N.A.	N.A.
B00264061	39.6	N.A.	N.A.
B00264062	41.8	N.A.	N.A.
B00264063	36.2	N.A.	N.A.
B00264064	37.3	N.A.	N.A.
B00264065	35.4	N.A.	N.A.
B00264066	33.5	N.A.	N.A.
B00264067	8.4	N.A.	N.A.
B00264068	1.0	N.A.	N.A.
B00264069	31.3	N.A.	N.A.
B00264070	N.A.	N.A.	N.A.
B00264071	N.A.	N.A.	N.A.
B00264072	N.A.	N.A.	N.A.
B00264073	1.5	N.A.	N.A.
B00264074	N.A.	N.A.	N.A.
B00264075	N.A.	N.A.	N.A.
B00264076	28.5	N.A.	365
B00264077	5.6	N.A.	N.A.
B00264078	41.7	N.A.	N.A.
B00264079	44.1	N.A.	N.A.
B00264080	16.7	N.A.	N.A.
B00264081	42.8	N.A.	N.A.
B00264082	3.1	N.A.	N.A.
B00264083	N.A.	N.A.	N.A.
B00264084	N.A.	N.A.	N.A.
B00264085	31.8	N.A.	N.A.
*Dup B00264085	N.A.	N.A.	N.A.
B00264501	N.A.	N.A.	N.A.
B00264502	N.A.	N.A.	N.A.
B00264503	N.A.	N.A.	N.A.
B00264504	N.A.	N.A.	N.A.
B00264505	N.A.	N.A.	N.A.
B00264506	N.A.	N.A.	179
B00264507	N.A.	N.A.	N.A.
B00264508	N.A.	N.A.	N.A.

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264509	N.A.	N.A.	124
B00264510	N.A.	N.A.	N.A.
B00264511	N.A.	N.A.	N.A.
B00264512	N.A.	N.A.	N.A.
B00264513	N.A.	N.A.	N.A.
B00264514	N.A.	N.A.	N.A.
B00264515	N.A.	N.A.	N.A.
B00264516	N.A.	N.A.	N.A.
B00264517	N.A.	N.A.	N.A.
B00264518	N.A.	N.A.	N.A.
B00264519	N.A.	N.A.	N.A.
B00264520	N.A.	N.A.	N.A.
B00264521	N.A.	N.A.	N.A.
B00264522	N.A.	N.A.	N.A.
B00264523	N.A.	N.A.	204
B00264524	N.A.	N.A.	N.A.
B00264525	N.A.	N.A.	N.A.
B00264526	N.A.	5.73	320
B00264527	N.A.	N.A.	199
B00264528	N.A.	N.A.	224
B00264529	N.A.	N.A.	N.A.
B00264530	N.A.	N.A.	N.A.
B00264531	N.A.	N.A.	N.A.
B00264532	N.A.	N.A.	N.A.
B00264533	N.A.	N.A.	N.A.
B00264534	N.A.	N.A.	N.A.
B00264535	N.A.	N.A.	N.A.
B00264536	N.A.	N.A.	N.A.
B00264537	N.A.	N.A.	N.A.
B00264538	N.A.	N.A.	N.A.
B00264539	N.A.	N.A.	N.A.
B00264540	N.A.	N.A.	N.A.
B00264541	N.A.	N.A.	N.A.
B00264542	N.A.	N.A.	N.A.
B00264543	N.A.	N.A.	N.A.
B00264544	N.A.	N.A.	N.A.
B00264545	N.A.	N.A.	N.A.
B00264546	N.A.	N.A.	N.A.
B00264547	N.A.	N.A.	N.A.
B00264548	N.A.	N.A.	N.A.

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264549	N.A.	N.A.	N.A.
B00264550	N.A.	N.A.	N.A.
B00264551	N.A.	N.A.	N.A.
B00264552	N.A.	N.A.	N.A.
*Std OXN117		7.41	
*Blk BLANK		<0.50	
*Rep B00264048			335
*Std ME-1302			433
*Blk BLANK			<10
*Rep B00264026	N.A.		

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00264057	N.A.
*Rep B00264080	N.A.
*Rep B00264084	N.A.
*Rep B00264530	N.A.
*Rep B00264544	N.A.
*Std OREAS134A	20.0
*Std OREAS131B	4.8
*Std OREAS926	N.A.
*Std OREAS134A	19.1
*Std OREAS131B	N.A.
*Std OREAS926	N.A.
*Blk BLANK	<0.1
*Blk BLANK	<0.1

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Certificate of Analysis

Work Order : vc152113A

[Report File No.: 0000014281]

To: ROBIN BLACK
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_4/B00264553-596, 265001-057
Project No.	:	KZK
No. Of Samples	:	101
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : vc152113A Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014281

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00264553	N.A.	N.A.	N.A.	N.A.	N.A.
B00264554	N.A.	N.A.	N.A.	N.A.	N.A.
B00264555	N.A.	N.A.	N.A.	N.A.	N.A.
B00264556	<5	36	1.40	0.03	3
B00264557	<5	20	0.36	0.04	<1
B00264558	10	77	26.1	0.33	116
B00264559	19	43	74.2	1.62	431
B00264560	N.A.	N.A.	N.A.	N.A.	N.A.
B00264561	64	424	92.6	12.0	753
B00264562	83	1840	69.4	31.0	224
B00264563	99	1390	37.7	18.0	267
B00264564	15	91	36.9	1.10	80
B00264565	<5	54	0.97	0.11	3
B00264566	14	136	19.7	2.18	63
B00264567	33	499	38.7	17.2	261
B00264568	54	814	21.4	18.4	144
B00264569	32	776	47.7	8.68	278
B00264570	N.A.	N.A.	N.A.	N.A.	N.A.
B00264571	N.A.	N.A.	N.A.	N.A.	N.A.
B00264572	<5	94	4.22	0.46	13
B00264573	44	285	9.89	12.3	48
B00264574	7	53	4.77	0.56	16
B00264575	148	773	70.0	27.0	453
B00264576	297	1560	22.6	49.4	132
B00264577	913	1480	20.7	64.1	104
B00264578	469	654	21.1	80.1	485
B00264579	82	994	51.0	8.94	799
B00264580	N.A.	N.A.	N.A.	N.A.	N.A.
B00264581	39	441	63.5	5.69	689
B00264582	31	642	68.1	6.82	568
B00264583	24	843	126	4.54	632
B00264584	52	2030	137	14.5	>1000
B00264585	110	2700	66.7	24.9	163
B00264586	207	1070	25.6	28.0	67
B00264587	568	845	18.1	32.8	61
B00264588	25	1950	20.4	2.98	269
B00264589	14	342	17.0	6.98	436
B00264590	N.A.	N.A.	N.A.	N.A.	N.A.
B00264591	<5	296	1.47	0.65	13
B00264592	6	98	2.04	0.48	22

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Final : vc152113A Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014281

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00264593	6	1230	0.04	0.08	2
B00264594	<5	<3	0.04	0.04	<1
B00264595	46	278	11.1	4.39	212
B00264596	<5	<3	5.30	0.02	5
B00265001	N.A.	N.A.	N.A.	N.A.	N.A.
B00265002	N.A.	N.A.	N.A.	N.A.	N.A.
B00265003	N.A.	N.A.	N.A.	N.A.	N.A.
B00265004	N.A.	N.A.	N.A.	N.A.	N.A.
B00265005	N.A.	N.A.	N.A.	N.A.	N.A.
B00265006	N.A.	N.A.	N.A.	N.A.	N.A.
B00265007	N.A.	N.A.	N.A.	N.A.	N.A.
B00265008	N.A.	N.A.	N.A.	N.A.	N.A.
B00265009	N.A.	N.A.	N.A.	N.A.	N.A.
B00265010	N.A.	N.A.	N.A.	N.A.	N.A.
B00265011	N.A.	N.A.	N.A.	N.A.	N.A.
B00265012	N.A.	N.A.	N.A.	N.A.	N.A.
B00265013	N.A.	N.A.	N.A.	N.A.	N.A.
B00265014	N.A.	N.A.	N.A.	N.A.	N.A.
B00265015	N.A.	N.A.	N.A.	N.A.	N.A.
B00265016	N.A.	N.A.	N.A.	N.A.	N.A.
B00265017	N.A.	N.A.	N.A.	N.A.	N.A.
B00265018	N.A.	N.A.	N.A.	N.A.	N.A.
B00265019	N.A.	N.A.	N.A.	N.A.	N.A.
B00265020	N.A.	N.A.	N.A.	N.A.	N.A.
B00265021	N.A.	N.A.	N.A.	N.A.	N.A.
B00265022	1260	7450	28.1	45.2	90
B00265023	1390	8250	34.6	55.2	104
B00265024	1110	7860	61.3	43.6	305
B00265025	1190	4310	23.7	72.0	71
B00265026	1210	3600	16.6	45.3	41
B00265027	16	45	1.12	3.02	2
B00265028	5	16	0.26	0.40	<1
B00265029	159	133	4.98	13.9	23
B00265030	N.A.	N.A.	N.A.	N.A.	N.A.
B00265031	N.A.	N.A.	N.A.	N.A.	N.A.
B00265032	214	343	29.0	37.9	363
B00265033	125	326	48.3	21.2	773
B00265034	12	2090	1.12	1.70	40
B00265035	40	100	0.98	0.55	8
B00265036	17	1640	1.52	0.98	43

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Final : vc152113A Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014281

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00265037	166	6260	130	24.1	861
B00265038	465	2440	188	22.7	278
B00265039	350	2420	58.4	28.4	193
B00265040	N.A.	N.A.	N.A.	N.A.	N.A.
B00265041	355	3790	27.2	29.6	156
B00265042	126	915	32.1	9.16	98
B00265043	163	1080	47.0	5.19	179
B00265044	156	5150	14.8	21.3	82
B00265045	377	1840	41.1	38.5	416
B00265046	148	910	58.2	16.2	240
B00265047	495	1660	54.2	27.1	312
B00265048	436	2670	19.7	37.0	240
B00265049	524	3890	8.24	44.9	121
B00265050	N.A.	N.A.	N.A.	N.A.	N.A.
B00265051	N.A.	N.A.	N.A.	N.A.	N.A.
B00265052	501	3730	31.0	33.7	188
B00265053	864	2010	27.4	21.0	186
B00265054	601	870	11.8	24.8	194
B00265055	5	44	0.71	0.48	2
B00265056	6	33	0.88	0.32	2
B00265057	<5	48	0.43	0.32	1
*Rep B00264556	<5	35	1.39	<0.01	3
*Rep B00264592	7	96	1.93	0.43	23
*Rep B00265035	40	104	0.94	0.55	8
*Rep B00265053	885	2080	27.6	21.8	190
*Std OREAS131B	38	86	N.A.	N.A.	N.A.
*Std OREAS934	N.A.	N.A.	497	N.A.	83
*Std DS-1	N.A.	6660	N.A.	81.5	N.A.
*Std OREAS210	N.A.	3780	0.18	N.A.	4
*Std OREAS934	N.A.	N.A.	513	N.A.	84
*Std DS-1	N.A.	7040	N.A.	80.9	N.A.
*Blk BLANK	<5	<3	0.04	<0.01	<1
*Blk BLANK	<5	<3	<0.02	0.02	<1

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Certificate of Analysis

Work Order : VC152113F

[Report File No.: 0000014190]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_4/B00264553-596, 265001-057
Project No.	:	KZK
No. Of Samples	:	101
Date Submitted	:	Dec 04, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152113 Report No. 012788
dated Sep 18, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264553	3.105	N.A.	11	1.2	<0.01	1.88	0.02	0.94
B00264554	2.770	N.A.	18	1.9	<0.01	1.29	0.01	1.55
B00264555	2.720	N.A.	35	1.7	0.01	1.48	0.03	1.33
B00264556	4.895	N.A.	10	1.0	<0.01	2.62	0.01	0.03
B00264557	5.355	N.A.	<5	<0.3	<0.01	1.69	<0.01	<0.01
B00264558	4.595	N.A.	97	21.5	0.40	8.90	0.06	0.16
B00264559	4.260	N.A.	1760	143	4.76	22.3	0.09	0.42
B00264560	0.880	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00264561	1.885	N.A.	3070	>300	11.6	35.4	0.19	4.18
B00264562	2.970	N.A.	578	46.1	0.07	37.7	0.57	4.21
B00264563	3.020	N.A.	1210	97.5	1.31	32.1	0.97	6.10
B00264564	1.860	N.A.	227	51.0	1.18	10.4	0.12	0.21
B00264565	3.130	N.A.	17	1.2	0.01	2.89	<0.01	0.03
B00264566	3.385	N.A.	194	42.4	0.98	11.3	0.12	0.54
B00264567	1.910	N.A.	530	54.2	1.01	30.9	0.83	8.03
B00264568	2.215	N.A.	1100	61.3	1.56	32.6	0.83	8.01
B00264569	0.705	N.A.	534	67.5	1.41	21.2	0.73	2.96
B00264570	0.170	N.A.	1240	68.9	0.38	3.78	1.34	5.37
B00264571	0.170	N.A.	822	20.2	1.77	13.6	0.26	1.08
B00264572	2.380	N.A.	62	5.5	0.13	3.20	<0.01	0.05
B00264573	3.005	N.A.	242	30.8	0.12	13.6	0.29	2.40
B00264574	3.605	N.A.	55	7.9	0.13	2.71	0.01	0.07
B00264575	5.865	N.A.	1600	137	1.51	34.3	1.78	6.26
B00264576	4.760	N.A.	1730	163	0.42	31.1	2.52	8.96
B00264577	5.130	N.A.	1930	217	0.54	31.3	2.33	7.60
B00264578	5.645	N.A.	1190	172	0.38	31.9	2.28	7.21
B00264579	4.595	N.A.	1070	67.1	0.37	39.1	0.83	3.17
B00264580	1.115	N.A.	9	1.1	<0.01	0.23	0.02	0.04
B00264581	5.115	N.A.	851	78.6	1.08	41.6	0.96	4.38
B00264582	3.695	N.A.	455	60.9	0.69	41.0	0.74	5.14
B00264583	4.555	N.A.	626	89.6	1.17	38.7	0.55	4.15
B00264584	4.365	N.A.	568	119	0.52	29.8	1.22	6.26
B00264585	4.975	N.A.	856	68.8	0.27	33.4	1.43	11.1
B00264586	5.175	N.A.	935	118	0.36	23.2	2.31	10.2
B00264587	4.950	N.A.	1020	198	0.33	25.6	4.10	8.48
*Dup B00264587	N.A.	N.A.	1030	186	0.33	26.1	N.A.	8.35
B00264588	2.775	N.A.	1660	74.0	2.56	10.9	0.19	0.54
B00264589	2.350	N.A.	756	55.3	1.65	13.4	0.31	3.04
B00264590	0.155	N.A.	815	44.0	0.44	18.5	0.29	1.11
B00264591	3.095	N.A.	108	1.3	<0.01	3.35	0.02	0.03

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264592	3.880	N.A.	75	6.4	0.03	5.85	0.16	0.24
B00264593	4.525	N.A.	<5	<0.3	0.01	5.76	<0.01	0.01
B00264594	5.605	N.A.	11	<0.3	<0.01	8.28	<0.01	0.02
B00264595	2.130	N.A.	206	60.4	0.29	23.3	1.11	2.63
B00264596	4.775	N.A.	8	3.0	<0.01	6.52	0.02	0.05
B00265001	1.815	N.A.	13	3.7	0.08	4.24	0.10	1.68
B00265002	2.870	N.A.	<5	0.6	<0.01	2.83	<0.01	0.01
B00265003	2.405	N.A.	8	3.0	0.16	4.62	0.02	0.72
B00265004	1.810	N.A.	7	5.5	0.11	3.47	0.05	0.13
B00265005	2.490	N.A.	231	40.3	2.34	15.2	0.17	0.26
B00265006	1.375	85.0	125	8.9	0.92	19.8	0.02	0.11
B00265007	3.085	N.A.	662	33.0	3.12	36.1	0.15	6.32
B00265008	2.785	N.A.	215	24.3	0.67	33.9	0.73	5.56
B00265009	1.410	N.A.	75	13.1	0.72	12.9	0.13	1.58
B00265010	0.145	N.A.	1220	68.9	0.36	3.67	1.39	5.36
B00265011	0.145	N.A.	807	20.3	1.66	13.1	0.25	1.07
B00265012	1.675	N.A.	203	19.6	0.47	34.1	0.67	6.24
B00265013	4.010	N.A.	318	26.6	0.33	40.2	1.52	7.89
B00265014	2.530	N.A.	312	14.2	0.09	37.4	0.48	9.00
B00265015	3.165	N.A.	243	7.6	0.31	40.2	0.11	9.76
B00265016	2.145	N.A.	158	14.0	0.25	39.9	0.37	10.5
B00265017	3.115	N.A.	249	7.6	0.42	42.7	0.08	7.38
B00265018	3.150	N.A.	<5	0.5	<0.01	1.94	<0.01	0.04
B00265019	2.665	N.A.	7	0.4	<0.01	2.43	<0.01	0.03
B00265020	0.555	N.A.	6	<0.3	<0.01	0.08	<0.01	0.02
B00265021	2.840	N.A.	5	1.5	<0.01	2.40	0.02	0.01
B00265022	2.760	N.A.	1810	241	0.27	27.3	3.29	9.21
B00265023	1.020	N.A.	2520	233	0.61	31.0	2.01	6.95
B00265024	1.740	N.A.	2050	147	0.37	37.1	1.69	6.91
B00265025	2.515	N.A.	1950	218	0.26	30.3	2.03	6.93
B00265026	1.060	N.A.	1790	168	0.22	20.6	1.62	4.08
*Dup B00265026	N.A.	N.A.	1960	167	0.22	21.6	N.A.	4.20
B00265027	0.830	N.A.	32	7.2	<0.01	2.65	0.14	0.52
B00265028	0.510	N.A.	5	1.0	<0.01	2.28	0.01	0.26
B00265029	0.830	N.A.	264	59.0	0.04	4.19	0.87	1.96
B00265030	0.170	N.A.	1270	69.8	0.36	3.75	1.38	5.33
B00265031	0.170	N.A.	805	20.5	1.75	13.2	0.26	1.05
B00265032	1.190	N.A.	572	86.9	0.04	26.7	1.42	5.49
B00265033	1.690	N.A.	3900	>300	14.0	27.6	0.31	1.48
B00265034	2.000	N.A.	113	19.4	0.70	5.27	0.01	0.17

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265035	1.165	N.A.	38	5.9	0.02	3.43	0.01	0.06
B00265036	1.225	N.A.	761	19.3	0.75	4.45	0.01	0.12
B00265037	2.110	N.A.	8840	185	4.67	26.7	0.47	2.10
B00265038	3.670	N.A.	2360	199	0.58	38.3	1.19	4.44
B00265039	1.985	N.A.	2060	141	0.43	37.1	1.48	7.35
B00265040	0.705	N.A.	21	1.3	<0.01	0.24	0.02	0.07
B00265041	1.680	N.A.	2280	192	0.28	34.9	3.66	13.0
B00265042	0.575	N.A.	1110	71.6	0.12	36.0	2.35	12.3
B00265043	3.135	N.A.	693	121	0.16	36.7	2.99	11.1
B00265044	0.915	N.A.	653	110	0.13	12.0	2.10	5.33
B00265045	2.025	N.A.	1830	237	0.41	37.3	3.00	10.7
B00265046	1.840	N.A.	884	126	0.18	37.1	2.88	10.8
B00265047	1.310	N.A.	1560	195	0.46	35.2	1.80	10.2
B00265048	3.055	N.A.	1700	193	0.44	34.4	3.08	8.82
B00265049	1.420	N.A.	2250	265	0.72	33.8	3.32	7.39
B00265050	0.175	N.A.	1270	67.8	0.36	3.72	1.36	5.36
B00265051	0.175	N.A.	858	19.8	1.67	13.3	0.26	1.04
B00265052	2.775	N.A.	2140	211	0.62	32.1	2.11	7.47
B00265053	2.835	N.A.	1580	191	0.37	31.7	1.72	4.47
B00265054	1.725	N.A.	870	198	0.20	24.7	2.65	7.11
B00265055	1.490	N.A.	17	2.8	<0.01	2.64	0.04	0.08
B00265056	2.820	98.5	13	2.0	<0.01	2.39	0.04	0.06
B00265057	3.055	N.A.	12	1.5	<0.01	2.02	0.02	0.03
*Rep B00264572				5.5				
*Rep B00265017				7.8				
*Rep B00265054				199				
*Std SU_1B				6.0				
*Std OREAS132A				57.1				
*Std AMIS0268				194				
*Std SU_1B				6.1				
*Std OREAS132A				58.5				
*Std AMIS0268				189				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00264587			933					
*Rep B00265025			1840					
*Rep B00265049			2050					
*Std OREAS153B			309					
*Std OXH97			1250					

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Final : VC152113F Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014190

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Std OXJ111	2060				
*Std OXN117	7730				
*Std OREAS153B	322				
*Std OXH97	1270				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Rep B00264571		1.76	13.7	0.25	1.08
*Rep B00265001		0.08	4.24	0.09	1.69
*Rep B00265014		0.09	38.7	0.50	9.09
*Rep B00265053		0.39	32.9	1.68	4.77
*Std OREAS134A		0.13	11.9	12.8	17.8
*Std OREAS131B		0.02	5.76	1.91	3.08
*Std OREAS926		0.85	7.42	0.01	0.05
*Std OREAS131B		0.02	5.60	1.96	2.96
*Std OREAS131B		0.02	5.65	1.87	3.08
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264553	N.A.	N.A.	N.A.
B00264554	N.A.	N.A.	N.A.
B00264555	N.A.	N.A.	N.A.
B00264556	N.A.	N.A.	N.A.
B00264557	N.A.	N.A.	N.A.
B00264558	N.A.	N.A.	N.A.
B00264559	N.A.	N.A.	N.A.
B00264560	N.A.	N.A.	N.A.
B00264561	N.A.	N.A.	309
B00264562	45.0	N.A.	N.A.
B00264563	35.5	N.A.	N.A.
B00264564	N.A.	N.A.	N.A.
B00264565	N.A.	N.A.	N.A.
B00264566	N.A.	N.A.	N.A.
B00264567	36.1	N.A.	N.A.
B00264568	37.5	N.A.	N.A.
B00264569	22.0	N.A.	N.A.
B00264570	N.A.	N.A.	N.A.
B00264571	N.A.	N.A.	N.A.
B00264572	N.A.	N.A.	N.A.
B00264573	N.A.	N.A.	N.A.
B00264574	N.A.	N.A.	N.A.
B00264575	43.1	N.A.	N.A.
B00264576	40.5	N.A.	183
B00264577	40.5	N.A.	229
B00264578	41.3	N.A.	179
B00264579	45.6	N.A.	N.A.
B00264580	0.2	N.A.	N.A.
B00264581	38.1	N.A.	N.A.
B00264582	35.6	N.A.	N.A.
B00264583	32.8	N.A.	N.A.
B00264584	32.4	N.A.	N.A.
B00264585	42.1	N.A.	N.A.
B00264586	31.6	N.A.	N.A.
B00264587	36.3	N.A.	201
*Dup B00264587	N.A.	N.A.	196
B00264588	N.A.	N.A.	N.A.
B00264589	N.A.	N.A.	N.A.
B00264590	16.1	N.A.	N.A.
B00264591	N.A.	N.A.	N.A.

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264592	N.A.	N.A.	N.A.
B00264593	N.A.	N.A.	N.A.
B00264594	N.A.	N.A.	N.A.
B00264595	25.4	N.A.	N.A.
B00264596	N.A.	N.A.	N.A.
B00265001	N.A.	N.A.	N.A.
B00265002	N.A.	N.A.	N.A.
B00265003	N.A.	N.A.	N.A.
B00265004	N.A.	N.A.	N.A.
B00265005	N.A.	N.A.	N.A.
B00265006	N.A.	N.A.	N.A.
B00265007	N.A.	N.A.	N.A.
B00265008	28.7	N.A.	N.A.
B00265009	N.A.	N.A.	N.A.
B00265010	N.A.	N.A.	N.A.
B00265011	N.A.	N.A.	N.A.
B00265012	27.4	N.A.	N.A.
B00265013	40.6	N.A.	N.A.
B00265014	N.A.	N.A.	N.A.
B00265015	N.A.	N.A.	N.A.
B00265016	N.A.	N.A.	N.A.
B00265017	N.A.	N.A.	N.A.
B00265018	N.A.	N.A.	N.A.
B00265019	N.A.	N.A.	N.A.
B00265020	N.A.	N.A.	N.A.
B00265021	N.A.	N.A.	N.A.
B00265022	37.5	N.A.	253
B00265023	39.9	N.A.	259
B00265024	44.1	N.A.	N.A.
B00265025	38.9	N.A.	225
B00265026	27.2	N.A.	149
*Dup B00265026	N.A.	N.A.	N.A.
B00265027	1.7	N.A.	N.A.
B00265028	0.4	N.A.	N.A.
B00265029	3.4	N.A.	N.A.
B00265030	4.4	N.A.	N.A.
B00265031	N.A.	N.A.	N.A.
B00265032	31.8	N.A.	N.A.
B00265033	21.3	N.A.	364
B00265034	N.A.	N.A.	N.A.

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Final : VC152113F Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014190

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00265035	N.A.	N.A.	N.A.
B00265036	N.A.	N.A.	N.A.
B00265037	N.A.	8.44	171
B00265038	46.1	N.A.	176
B00265039	47.0	N.A.	N.A.
B00265040	N.A.	N.A.	N.A.
B00265041	43.5	N.A.	182
B00265042	45.2	N.A.	N.A.
B00265043	40.5	N.A.	N.A.
B00265044	14.5	N.A.	N.A.
B00265045	45.3	N.A.	273
B00265046	45.2	N.A.	N.A.
B00265047	45.6	N.A.	203
B00265048	46.3	N.A.	175
B00265049	43.2	N.A.	248
B00265050	N.A.	N.A.	N.A.
B00265051	N.A.	N.A.	N.A.
B00265052	42.7	N.A.	231
B00265053	39.9	N.A.	167
B00265054	30.8	N.A.	191
B00265055	N.A.	N.A.	N.A.
B00265056	N.A.	N.A.	N.A.
B00265057	N.A.	N.A.	N.A.

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.77	
*Blk BLANK		<0.50	
*Rep B00265033			380
*Std ME-1302			407
*Blk BLANK			<10
*Rep B00264571	N.A.		
*Rep B00265001	N.A.		
*Rep B00265014	N.A.		
*Rep B00265053	38.4		
*Std OREAS134A	19.1		
*Std OREAS131B	4.8		
*Std OREAS926	N.A.		
*Std OREAS131B	N.A.		

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Final : VC152113F Order: PO# BMC15-01_4/B00264553-596, 265001-057

Report File No.: 0000014190

	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Std OREAS131B	N.A.		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC152205A

[Report File No.: 0000014282]

To: ROBIN BLACK
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_5/B00264597-664
Project No.	:	KZK
No. Of Samples	:	68
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152205A Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014282

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264597	N.A.	N.A.	N.A.	N.A.	N.A.
B00264598	N.A.	N.A.	N.A.	N.A.	N.A.
B00264599	N.A.	N.A.	N.A.	N.A.	N.A.
B00264600	N.A.	N.A.	N.A.	N.A.	N.A.
B00264601	N.A.	N.A.	N.A.	N.A.	N.A.
B00264602	N.A.	N.A.	N.A.	N.A.	N.A.
B00264603	N.A.	N.A.	N.A.	N.A.	N.A.
B00264604	N.A.	N.A.	N.A.	N.A.	N.A.
B00264605	N.A.	N.A.	N.A.	N.A.	N.A.
B00264606	N.A.	N.A.	N.A.	N.A.	N.A.
B00264607	N.A.	N.A.	N.A.	N.A.	N.A.
B00264608	N.A.	N.A.	N.A.	N.A.	N.A.
B00264609	N.A.	N.A.	N.A.	N.A.	N.A.
B00264610	N.A.	N.A.	N.A.	N.A.	N.A.
B00264611	N.A.	N.A.	N.A.	N.A.	N.A.
B00264612	N.A.	N.A.	N.A.	N.A.	N.A.
B00264613	N.A.	N.A.	N.A.	N.A.	N.A.
B00264614	N.A.	N.A.	N.A.	N.A.	N.A.
B00264615	N.A.	N.A.	N.A.	N.A.	N.A.
B00264616	N.A.	N.A.	N.A.	N.A.	N.A.
B00264617	N.A.	N.A.	N.A.	N.A.	N.A.
B00264618	35	<5	<0.01	1.44	2
B00264619	123	<5	0.11	3.08	1
B00264620	N.A.	N.A.	N.A.	N.A.	N.A.
B00264621	151	14	0.08	1.47	35
B00264622	368	62	5.49	14.6	853
B00264623	313	61	2.37	11.9	1140
B00264624	327	39	1.85	3.66	153
B00264625	348	35	0.67	4.64	838
B00264626	473	72	0.81	8.70	1290
B00264627	464	73	1.89	15.3	1250
B00264628	742	25	24.1	243	1250
B00264629	1220	37	34.6	370	215
B00264630	N.A.	N.A.	N.A.	N.A.	N.A.
B00264631	N.A.	N.A.	N.A.	N.A.	N.A.
B00264632	1400	54	26.4	292	185
B00264633	218	30	4.51	28.1	779
B00264634	316	85	1.72	41.0	456
B00264635	355	67	1.67	52.4	580
B00264636	321	40	0.59	39.6	326

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Final : VC152205A Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014282

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264637	896	52	20.6	78.5	229
B00264638	1170	149	9.69	64.1	370
B00264639	456	144	3.88	35.6	417
B00264640	N.A.	N.A.	N.A.	N.A.	N.A.
B00264641	373	66	1.67	10.8	659
B00264642	495	96	2.68	14.8	458
B00264643	478	126	2.52	9.99	704
B00264644	1240	37	15.3	62.1	397
B00264645	2890	34	8.32	21.9	346
B00264646	611	10	7.19	22.3	184
B00264647	345	15	11.6	53.9	181
B00264648	539	37	12.7	44.1	580
B00264649	412	26	20.1	89.5	495
B00264650	N.A.	N.A.	N.A.	N.A.	N.A.
B00264651	N.A.	N.A.	N.A.	N.A.	N.A.
B00264652	314	24	18.9	100	334
B00264653	621	36	15.4	228	348
B00264654	561	46	7.28	75.5	447
B00264655	254	22	3.87	14.8	194
B00264656	454	122	8.03	7.26	487
B00264657	1240	30	14.6	364	89
B00264658	896	18	16.8	293	95
B00264659	2170	39	6.33	27.6	276
B00264660	N.A.	N.A.	N.A.	N.A.	N.A.
B00264661	1090	<5	7.08	1280	462
B00264662	50	<5	0.40	1.99	24
B00264663	57	<5	0.03	4.26	3
B00264664	39	<5	0.09	1.10	2
*Rep B00264637	883	51	21.9	78.6	244
*Rep B00264652	297	23	17.5	94.3	313
*Std OREAS131B	N.A.	N.A.	N.A.	38.6	N.A.
*Std OREAS934	N.A.	529	N.A.	N.A.	76
*Std DS-1	7080	N.A.	79.7	N.A.	N.A.
*Blk BLANK	<3	<5	<0.01	<0.05	<1

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Certificate of Analysis

Work Order : VC152205F

[Report File No.: 0000014191]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_5/B00264597-664
Project No.	:	KZK
No. Of Samples	:	68
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152205 Report No. 012784
dated Sep 18, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264597	1.245	N.A.	11	3.6	<0.01	2.36	<0.01	<0.01
B00264598	1.160	N.A.	41	1.5	<0.01	2.42	<0.01	<0.01
B00264599	0.975	N.A.	35	3.5	<0.01	4.49	0.04	0.06
B00264600	0.980	N.A.	<5	<0.3	<0.01	0.11	<0.01	<0.01
B00264601	1.555	N.A.	2280	256	0.30	27.0	4.08	12.0
B00264602	3.345	N.A.	1980	164	0.31	28.7	2.28	8.25
B00264603	1.040	N.A.	3390	272	0.49	24.0	3.00	8.71
B00264604	2.360	N.A.	1670	245	0.18	29.0	4.63	9.54
B00264605	0.945	N.A.	40	2.5	<0.01	2.16	0.04	0.15
B00264606	1.305	N.A.	25	55.2	0.09	2.48	<0.01	0.03
B00264607	1.460	N.A.	1300	156	0.23	34.3	2.97	9.10
B00264608	1.055	N.A.	1820	156	0.36	32.1	2.65	11.0
B00264609	2.220	N.A.	1450	164	0.37	38.6	1.73	5.40
B00264610	0.180	N.A.	4230	299	0.34	11.4	11.3	17.7
B00264611	1.550	N.A.	547	94.9	0.31	37.8	1.71	5.93
B00264612	1.705	N.A.	2770	165	0.36	33.6	3.66	7.82
B00264613	1.895	N.A.	1120	96.1	0.13	35.4	2.49	6.92
B00264614	1.490	N.A.	3590	180	0.69	32.3	1.87	7.43
B00264615	2.875	N.A.	23	6.4	0.08	2.35	0.03	0.07
B00264616	1.900	97.6	9	1.2	<0.01	2.72	<0.01	0.01
B00264617	2.610	N.A.	13	1.2	<0.01	2.14	<0.01	0.06
B00264618	5.080	N.A.	5	0.6	<0.01	2.17	<0.01	<0.01
B00264619	3.485	N.A.	12	2.7	<0.01	3.00	0.10	0.12
B00264620	1.090	N.A.	10	<0.3	<0.01	0.07	<0.01	<0.01
B00264621	5.340	N.A.	640	10.9	0.11	2.30	0.13	0.12
B00264622	6.760	N.A.	789	60.1	1.25	39.4	0.24	0.83
B00264623	5.940	N.A.	830	48.9	0.78	33.1	0.55	1.08
B00264624	4.990	N.A.	295	21.2	0.34	42.5	0.11	0.38
B00264625	5.540	N.A.	287	17.6	0.29	45.6	0.07	0.44
B00264626	5.025	N.A.	372	32.2	0.32	45.0	0.16	0.34
B00264627	5.545	N.A.	562	38.0	0.43	42.9	0.17	0.64
B00264628	3.750	N.A.	796	83.4	0.11	31.9	2.07	9.55
B00264629	4.085	N.A.	1650	17.6	0.35	32.8	2.58	11.0
B00264630	0.170	N.A.	1200	66.2	0.36	3.74	1.39	5.44
B00264631	0.170	N.A.	833	19.2	1.70	13.4	0.25	1.08
B00264632	4.080	N.A.	1210	120	0.32	32.9	1.48	4.19
*Dup B00264632	N.A.	N.A.	1150	119	0.31	32.6	1.53	4.24
B00264633	4.150	N.A.	102	25.8	0.18	30.8	0.93	6.55
B00264634	3.755	N.A.	907	81.5	1.34	31.1	0.75	2.25
B00264635	4.510	N.A.	1300	79.1	1.73	44.1	0.18	1.80

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264636	2.315	86.4	645	31.9	0.57	44.6	0.13	0.17
B00264637	2.850	N.A.	674	55.8	0.19	35.1	1.28	5.22
B00264638	2.115	N.A.	256	77.4	0.13	22.0	1.04	4.80
B00264639	4.660	N.A.	2200	166	2.66	27.2	0.44	2.43
B00264640	0.650	N.A.	6	<0.3	<0.01	0.11	<0.01	0.01
B00264641	6.080	N.A.	4090	199	4.45	45.1	0.21	1.16
B00264642	6.230	N.A.	3900	261	5.85	43.6	0.28	2.48
B00264643	6.375	N.A.	1440	163	2.89	39.9	0.46	3.19
B00264644	5.580	N.A.	1410	72.0	0.45	37.4	1.02	5.99
B00264645	5.140	N.A.	470	40.3	0.14	38.8	1.31	8.28
B00264646	7.095	N.A.	300	43.6	0.08	35.6	2.37	9.40
B00264647	4.405	N.A.	562	99.0	0.50	26.5	2.67	9.95
B00264648	6.225	N.A.	507	65.5	0.19	33.1	1.49	8.03
B00264649	6.225	N.A.	489	62.2	0.10	33.8	1.62	9.11
B00264650	0.170	N.A.	1220	70.1	0.37	3.75	1.41	5.31
B00264651	0.170	N.A.	821	20.8	1.73	13.4	0.25	1.10
B00264652	4.800	N.A.	356	67.4	0.06	29.4	2.22	5.65
B00264653	4.845	N.A.	631	85.1	0.17	37.4	1.46	6.06
B00264654	4.400	N.A.	714	67.1	0.64	38.6	1.07	4.33
B00264655	5.640	N.A.	814	63.3	1.31	22.1	0.85	3.32
B00264656	3.110	96.1	5430	202	4.83	26.9	0.78	4.05
B00264657	5.500	N.A.	1100	153	0.57	20.9	2.68	5.99
B00264658	4.465	N.A.	773	118	0.22	23.6	3.09	6.64
B00264659	4.405	N.A.	1980	112	3.08	21.8	0.49	5.88
B00264660	0.685	N.A.	7	0.8	<0.01	0.19	0.03	0.05
B00264661	3.150	N.A.	1640	185	0.38	15.9	1.77	3.17
B00264662	4.925	N.A.	10	1.1	0.02	5.81	0.01	0.07
B00264663	4.875	N.A.	10	0.6	<0.01	6.76	0.01	0.02
B00264664	6.040	N.A.	12	0.7	<0.01	4.95	0.01	0.02
*Rep B00264615				6.6				
*Rep B00264627				37.9				
*Rep B00264652				66.2				
*Std SU_1B				6.1				
*Std OREAS132A				55.9				
*Std OREAS132A				57.2				
*Std AMIS0268				198				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00264611			529					
*Rep B00264635			1280					

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Final : VC152205F Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014191

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Std OREAS153B	316				
*Std OXH97	1280				
*Std OXJ111	2160				
*Std OXN117	7720				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Rep B00264604		0.18	28.8	N.A.	9.44
*Rep B00264625		0.29	45.9	0.08	0.44
*Rep B00264642		5.85	44.1	0.28	2.55
*Std OREAS134A		0.13	11.9	13.1	17.5
*Std OREAS131B		0.02	5.73	1.92	3.10
*Std OREAS926		0.81	7.35	0.01	0.05
*Std OREAS131B		0.02	5.70	1.90	3.02
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Final : VC152205F Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014191

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264597	N.A.	N.A.	N.A.
B00264598	N.A.	N.A.	N.A.
B00264599	N.A.	N.A.	N.A.
B00264600	N.A.	N.A.	N.A.
B00264601	33.8	N.A.	254
B00264602	34.0	N.A.	198
B00264603	30.5	N.A.	258
B00264604	36.4	N.A.	237
B00264605	0.5	N.A.	N.A.
B00264606	0.7	N.A.	N.A.
B00264607	42.5	N.A.	158
B00264608	42.6	N.A.	140
B00264609	43.5	N.A.	177
B00264610	21.7	N.A.	324
B00264611	38.2	N.A.	N.A.
B00264612	35.6	N.A.	177
B00264613	36.8	N.A.	N.A.
B00264614	39.9	N.A.	213
B00264615	N.A.	N.A.	N.A.
B00264616	N.A.	N.A.	N.A.
B00264617	N.A.	N.A.	N.A.
B00264618	N.A.	N.A.	N.A.
B00264619	N.A.	N.A.	N.A.
B00264620	N.A.	N.A.	N.A.
B00264621	N.A.	N.A.	N.A.
B00264622	N.A.	N.A.	N.A.
B00264623	33.2	N.A.	N.A.
B00264624	N.A.	N.A.	N.A.
B00264625	N.A.	N.A.	N.A.
B00264626	N.A.	N.A.	N.A.
B00264627	N.A.	N.A.	N.A.
B00264628	40.7	N.A.	N.A.
B00264629	44.3	N.A.	N.A.
B00264630	4.3	N.A.	N.A.
B00264631	N.A.	N.A.	N.A.
B00264632	38.0	N.A.	N.A.
*Dup B00264632	N.A.	N.A.	N.A.
B00264633	25.9	N.A.	N.A.
B00264634	22.0	N.A.	N.A.
B00264635	N.A.	N.A.	N.A.

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Final : VC152205F Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014191

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264636	N.A.	N.A.	N.A.
B00264637	40.9	N.A.	N.A.
B00264638	21.8	N.A.	N.A.
B00264639	N.A.	N.A.	163
B00264640	N.A.	N.A.	N.A.
B00264641	N.A.	N.A.	194
B00264642	N.A.	N.A.	243
B00264643	N.A.	N.A.	146
B00264644	45.4	N.A.	N.A.
B00264645	36.5	N.A.	N.A.
B00264646	39.3	N.A.	N.A.
B00264647	31.7	N.A.	N.A.
B00264648	40.6	N.A.	N.A.
B00264649	43.3	N.A.	N.A.
B00264650	N.A.	N.A.	N.A.
B00264651	N.A.	N.A.	N.A.
B00264652	35.6	N.A.	N.A.
B00264653	45.1	N.A.	N.A.
B00264654	44.5	N.A.	N.A.
B00264655	16.0	N.A.	N.A.
B00264656	21.6	5.07	221
B00264657	26.9	N.A.	155
B00264658	31.6	N.A.	N.A.
B00264659	N.A.	N.A.	N.A.
B00264660	0.1	N.A.	N.A.
B00264661	16.0	N.A.	188
B00264662	N.A.	N.A.	N.A.
B00264663	N.A.	N.A.	N.A.
B00264664	N.A.	N.A.	N.A.

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.84	
*Blk BLANK		<0.50	
*Rep B00264614			220
*Std ME-1302			435
*Blk BLANK			<10
*Rep B00264604	N.A.		
*Rep B00264625	N.A.		

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Final : VC152205F Order: PO# BMC15-01_5/B00264597-664

Report File No.: 0000014191

	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Rep B00264642	N.A.		
*Std OREAS134A	19.3		
*Std OREAS131B	4.7		
*Std OREAS926	N.A.		
*Std OREAS131B	4.7		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC152206A

[Report File No.: 0000014283]

To: ROBIN BLACK
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_5/6501-54, 8501-25, 9001-33
Project No.	:	KZK
No. Of Samples	:	112
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152206A Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014283

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00266501	914	17	12.7	119	20
B00266502	242	38	2.72	83.4	118
B00266503	501	42	6.34	146	133
B00266504	1050	14	11.3	262	87
B00266505	394	29	10.6	94.7	111
B00266506	26	<5	0.09	8.24	<1
B00266507	40	<5	<0.01	1.41	<1
B00266508	66	<5	0.02	2.19	<1
B00266509	N.A.	N.A.	N.A.	N.A.	N.A.
B00266510	N.A.	N.A.	N.A.	N.A.	N.A.
B00266511	N.A.	N.A.	N.A.	N.A.	N.A.
B00266512	N.A.	N.A.	N.A.	N.A.	N.A.
B00266513	N.A.	N.A.	N.A.	N.A.	N.A.
B00266514	N.A.	N.A.	N.A.	N.A.	N.A.
B00266515	N.A.	N.A.	N.A.	N.A.	N.A.
B00266516	N.A.	N.A.	N.A.	N.A.	N.A.
B00266517	N.A.	N.A.	N.A.	N.A.	N.A.
B00266518	N.A.	N.A.	N.A.	N.A.	N.A.
B00266519	N.A.	N.A.	N.A.	N.A.	N.A.
B00266520	N.A.	N.A.	N.A.	N.A.	N.A.
B00266521	N.A.	N.A.	N.A.	N.A.	N.A.
B00266522	N.A.	N.A.	N.A.	N.A.	N.A.
B00266523	N.A.	N.A.	N.A.	N.A.	N.A.
B00266524	N.A.	N.A.	N.A.	N.A.	N.A.
B00266525	N.A.	N.A.	N.A.	N.A.	N.A.
B00266526	N.A.	N.A.	N.A.	N.A.	N.A.
B00266527	N.A.	N.A.	N.A.	N.A.	N.A.
B00266528	N.A.	N.A.	N.A.	N.A.	N.A.
B00266529	N.A.	N.A.	N.A.	N.A.	N.A.
B00266530	N.A.	N.A.	N.A.	N.A.	N.A.
B00266531	N.A.	N.A.	N.A.	N.A.	N.A.
B00266532	N.A.	N.A.	N.A.	N.A.	N.A.
B00266533	N.A.	N.A.	N.A.	N.A.	N.A.
B00266534	N.A.	N.A.	N.A.	N.A.	N.A.
B00266535	N.A.	N.A.	N.A.	N.A.	N.A.
B00266536	N.A.	N.A.	N.A.	N.A.	N.A.
B00266537	N.A.	N.A.	N.A.	N.A.	N.A.
B00266538	N.A.	N.A.	N.A.	N.A.	N.A.
B00266539	N.A.	N.A.	N.A.	N.A.	N.A.
B00266540	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152206A Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014283

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00266541	N.A.	N.A.	N.A.	N.A.	N.A.
B00266542	N.A.	N.A.	N.A.	N.A.	N.A.
B00266543	N.A.	N.A.	N.A.	N.A.	N.A.
B00266544	N.A.	N.A.	N.A.	N.A.	N.A.
B00266545	N.A.	N.A.	N.A.	N.A.	N.A.
B00266546	N.A.	N.A.	N.A.	N.A.	N.A.
B00266547	N.A.	N.A.	N.A.	N.A.	N.A.
B00266548	N.A.	N.A.	N.A.	N.A.	N.A.
B00266549	N.A.	N.A.	N.A.	N.A.	N.A.
B00266550	N.A.	N.A.	N.A.	N.A.	N.A.
B00266551	N.A.	N.A.	N.A.	N.A.	N.A.
B00266552	N.A.	N.A.	N.A.	N.A.	N.A.
B00266553	N.A.	N.A.	N.A.	N.A.	N.A.
B00266554	N.A.	N.A.	N.A.	N.A.	N.A.
B00268501	2870	55	21.8	2070	181
B00268502	2800	10	2.22	2300	35
B00268503	2360	104	13.6	566	334
B00268504	291	91	4.61	77.8	299
B00268505	764	104	9.81	232	180
B00268506	4160	59	29.2	1820	198
B00268507	3210	51	36.8	2220	145
B00268508	326	67	3.54	139	120
B00268509	1740	21	4.04	56.4	40
B00268510	N.A.	N.A.	N.A.	N.A.	N.A.
B00268511	51	<5	0.34	12.7	<1
B00268512	37	<5	0.24	9.89	<1
B00268513	41	<5	0.07	4.23	<1
B00268514	15	<5	0.08	2.02	<1
B00268515	24	<5	0.04	0.92	<1
B00268516	9	<5	0.21	1.85	<1
B00268517	1840	40	63.1	1790	152
B00268518	3060	24	7.68	35.8	118
B00268519	1980	<5	0.77	6.46	13
B00268520	N.A.	N.A.	N.A.	N.A.	N.A.
B00268521	44	<5	0.59	9.22	6
B00268522	11	<5	0.06	1.31	<1
B00268523	381	<5	0.11	2.22	6
B00268524	38	46	2.05	1.24	169
B00268525	35	<5	0.05	0.58	1
B00269001	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152206A Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014283

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00269002	N.A.	N.A.	N.A.	N.A.	N.A.
B00269003	N.A.	N.A.	N.A.	N.A.	N.A.
B00269004	N.A.	N.A.	N.A.	N.A.	N.A.
B00269005	N.A.	N.A.	N.A.	N.A.	N.A.
B00269006	N.A.	N.A.	N.A.	N.A.	N.A.
B00269007	N.A.	N.A.	N.A.	N.A.	N.A.
B00269008	N.A.	N.A.	N.A.	N.A.	N.A.
B00269009	N.A.	N.A.	N.A.	N.A.	N.A.
B00269010	N.A.	N.A.	N.A.	N.A.	N.A.
B00269011	N.A.	N.A.	N.A.	N.A.	N.A.
B00269012	N.A.	N.A.	N.A.	N.A.	N.A.
B00269013	N.A.	N.A.	N.A.	N.A.	N.A.
B00269014	N.A.	N.A.	N.A.	N.A.	N.A.
B00269015	N.A.	N.A.	N.A.	N.A.	N.A.
B00269016	N.A.	N.A.	N.A.	N.A.	N.A.
B00269017	N.A.	N.A.	N.A.	N.A.	N.A.
B00269018	N.A.	N.A.	N.A.	N.A.	N.A.
B00269019	N.A.	N.A.	N.A.	N.A.	N.A.
B00269020	N.A.	N.A.	N.A.	N.A.	N.A.
B00269021	N.A.	N.A.	N.A.	N.A.	N.A.
B00269022	N.A.	N.A.	N.A.	N.A.	N.A.
B00269023	N.A.	N.A.	N.A.	N.A.	N.A.
B00269024	N.A.	N.A.	N.A.	N.A.	N.A.
B00269025	N.A.	N.A.	N.A.	N.A.	N.A.
B00269026	N.A.	N.A.	N.A.	N.A.	N.A.
B00269027	N.A.	N.A.	N.A.	N.A.	N.A.
B00269028	N.A.	N.A.	N.A.	N.A.	N.A.
B00269029	N.A.	N.A.	N.A.	N.A.	N.A.
B00269030	N.A.	N.A.	N.A.	N.A.	N.A.
B00269031	N.A.	N.A.	N.A.	N.A.	N.A.
B00269032	N.A.	N.A.	N.A.	N.A.	N.A.
B00269033	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00268507	2980	49	37.2	2170	147
*Std OREAS131B	N.A.	N.A.	N.A.	37.8	N.A.
*Std OREAS934	N.A.	543	N.A.	N.A.	76
*Std DS-1	6910	N.A.	77.4	N.A.	N.A.
*Blk BLANK	<3	<5	<0.01	0.09	<1

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Certificate of Analysis

Work Order : VC152206F

[Report File No.: 0000014192]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_5/6501-54, 8501-25, 9001-33
Project No.	:	KZK
No. Of Samples	:	112
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152206 Report No. 012808
dated Sep 22, 2015 issued by SGS Canada (Production Way).

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266501	1.965	N.A.	620	83.8	0.07	34.9	2.37	9.73
B00266502	2.300	N.A.	446	71.9	0.11	39.0	1.42	6.58
B00266503	2.545	N.A.	892	160	0.37	33.3	2.64	8.56
B00266504	3.275	N.A.	1860	180	0.23	33.6	2.62	7.86
B00266505	0.920	N.A.	758	90.4	0.01	32.5	1.85	6.15
B00266506	2.915	N.A.	49	6.8	<0.01	2.02	<0.01	0.04
B00266507	2.665	N.A.	10	1.5	0.07	1.98	<0.01	0.02
B00266508	2.295	N.A.	7	1.4	<0.01	2.02	<0.01	<0.01
B00266509	3.050	N.A.	250	46.0	0.05	3.29	0.22	0.81
B00266510	0.155	N.A.	806	43.5	0.45	18.9	0.29	1.17
B00266511	2.990	N.A.	522	36.0	<0.01	4.57	0.72	1.14
B00266512	2.400	N.A.	18	1.9	<0.01	1.53	<0.01	0.01
B00266513	1.975	N.A.	3360	>300	0.44	24.9	3.55	10.6
B00266514	0.970	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00266515	1.140	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00266516	1.040	N.A.	6	<0.3	<0.01	0.07	<0.01	<0.01
B00266517	1.180	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00266518	1.165	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00266519	3.050	N.A.	2380	268	0.49	26.7	2.03	6.95
B00266520	1.235	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00266521	3.195	N.A.	2740	200	0.50	28.0	1.89	5.71
B00266522	3.190	N.A.	1170	125	0.17	30.2	1.83	4.92
B00266523	3.280	N.A.	1950	159	0.49	32.4	2.41	6.92
B00266524	3.210	N.A.	677	184	0.26	37.2	5.14	10.2
B00266525	1.680	N.A.	928	106	0.75	33.6	2.45	7.76
B00266526	2.090	N.A.	1550	142	0.95	29.9	3.14	13.2
B00266527	3.340	N.A.	1840	183	0.38	29.6	2.95	8.83
B00266528	2.675	N.A.	1460	150	0.24	29.8	2.57	7.82
B00266529	1.770	N.A.	1060	205	0.20	23.3	3.44	13.3
B00266530	0.180	N.A.	4180	>300	0.34	11.3	11.3	17.9
B00266531	1.270	N.A.	620	180	0.13	23.4	3.05	14.6
B00266532	1.740	N.A.	2780	>300	0.86	18.5	2.65	9.76
B00266533	2.380	N.A.	952	144	0.31	34.9	3.80	11.6
B00266534	1.245	N.A.	1580	>300	0.68	28.8	1.89	8.54
B00266535	3.125	N.A.	2170	179	0.67	36.3	1.29	6.80
*Dup B00266535	N.A.	N.A.	1770	165	0.67	36.5	N.A.	6.53
B00266536	2.920	N.A.	845	76.6	0.26	43.3	0.60	2.75
B00266537	1.565	N.A.	588	49.1	0.09	39.2	1.11	5.29
B00266538	2.115	N.A.	2320	134	0.53	41.1	0.58	2.15
B00266539	2.540	N.A.	815	119	0.26	37.2	2.48	7.71

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266540	0.960	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00266541	3.300	N.A.	1530	166	0.31	33.3	3.18	6.54
B00266542	1.560	N.A.	1490	114	0.36	39.2	0.48	2.81
B00266543	2.015	N.A.	934	139	0.30	33.6	1.20	6.56
B00266544	2.085	N.A.	11	4.2	0.01	3.32	0.06	0.12
B00266545	1.990	N.A.	12	3.2	<0.01	3.01	0.05	0.10
B00266546	2.695	N.A.	8	1.1	<0.01	1.95	<0.01	0.02
B00266547	2.070	N.A.	31	1.0	<0.01	2.29	0.01	0.02
B00266548	1.910	N.A.	529	225	0.74	10.1	1.38	3.03
B00266549	2.280	N.A.	89	24.3	0.15	7.91	0.41	0.91
B00266550	0.180	N.A.	4380	>300	0.33	11.3	11.4	17.6
B00266551	2.175	95.3	174	143	0.25	35.9	5.10	11.9
B00266552	2.380	N.A.	6	4.6	0.02	2.80	0.21	0.36
B00266553	2.085	N.A.	<5	<0.3	<0.01	2.74	<0.01	0.02
B00266554	2.255	N.A.	29	4.9	<0.01	3.15	0.13	0.13
B00268501	1.085	N.A.	2630	274	0.61	26.2	2.03	8.92
B00268502	1.505	N.A.	3750	178	0.78	5.59	0.17	0.76
B00268503	3.235	N.A.	952	163	0.36	34.0	2.84	15.2
B00268504	1.910	N.A.	1170	92.5	1.42	40.7	0.84	12.3
B00268505	1.310	N.A.	714	173	0.53	36.4	3.38	11.6
B00268506	3.055	N.A.	2090	231	0.63	32.1	3.58	9.83
B00268507	2.445	N.A.	2480	249	0.60	27.2	2.94	10.7
B00268508	1.850	N.A.	534	60.4	1.66	11.4	0.21	0.61
B00268509	1.210	N.A.	136	23.8	0.21	15.3	0.30	1.20
B00268510	0.205	N.A.	781	43.9	0.46	19.3	0.30	1.13
B00268511	2.985	N.A.	10	1.4	<0.01	2.66	<0.01	0.03
B00268512	1.975	N.A.	11	1.5	<0.01	2.34	<0.01	<0.01
B00268513	2.565	N.A.	6	1.0	<0.01	2.16	<0.01	0.01
B00268514	2.495	N.A.	8	0.6	<0.01	1.61	<0.01	<0.01
B00268515	2.235	N.A.	6	0.3	<0.01	1.58	<0.01	<0.01
B00268516	2.435	N.A.	7	0.4	<0.01	2.45	<0.01	<0.01
*Dup B00268516	N.A.	N.A.	7	<0.3	<0.01	2.17	<0.01	<0.01
B00268517	2.300	N.A.	2800	>300	0.75	26.8	4.65	11.0
B00268518	1.945	N.A.	415	34.3	0.62	16.5	0.26	1.42
B00268519	1.650	N.A.	35	2.6	0.03	3.47	0.02	0.05
B00268520	0.935	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00268521	2.790	N.A.	<5	<0.3	<0.01	2.07	<0.01	<0.01
B00268522	3.010	N.A.	<5	0.5	<0.01	1.95	<0.01	<0.01
B00268523	1.910	N.A.	<5	1.4	0.02	5.06	0.03	0.05
B00268524	1.895	N.A.	93	18.8	0.94	16.9	0.06	0.34

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268525	2.950	N.A.	<5	<0.3	<0.01	6.89	<0.01	0.01
B00269001	4.495	N.A.	36	13.5	0.06	5.67	0.68	1.48
B00269002	3.815	N.A.	7	3.8	0.04	2.48	0.25	0.82
B00269003	2.545	N.A.	<5	0.5	0.01	2.88	<0.01	0.14
B00269004	2.370	N.A.	8	1.9	0.11	6.91	0.02	0.31
B00269005	2.120	N.A.	6	2.0	0.03	3.86	<0.01	0.02
B00269006	3.720	N.A.	16	0.8	0.03	4.55	<0.01	0.03
B00269007	4.990	N.A.	<5	0.9	0.02	5.79	<0.01	0.14
B00269008	4.720	N.A.	<5	0.7	0.03	4.26	0.01	0.08
B00269009	5.150	N.A.	34	15.5	0.18	6.83	0.77	4.06
B00269010	0.155	N.A.	848	42.7	0.47	19.3	0.31	1.13
B00269011	4.770	N.A.	12	4.4	0.07	14.3	0.56	0.97
B00269012	4.170	N.A.	<5	1.4	0.01	7.11	0.24	0.63
B00269013	3.120	N.A.	48	13.8	0.07	16.4	1.82	2.07
B00269014	0.685	N.A.	433	30.0	0.11	10.0	2.94	6.36
B00269015	4.565	N.A.	301	104	0.13	10.5	2.24	5.08
B00269016	3.635	N.A.	118	1.4	<0.01	5.71	0.08	0.19
B00269017	1.850	N.A.	1440	35.6	0.08	5.57	1.77	3.27
B00269018	4.295	N.A.	16	1.4	0.02	3.91	0.06	0.09
B00269019	4.870	N.A.	11	4.9	<0.01	3.10	0.20	0.51
B00269020	0.655	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00269021	3.025	93.8	<5	0.9	0.02	6.00	<0.01	0.02
B00269022	5.775	N.A.	<5	2.4	0.02	5.01	0.02	0.04
B00269023	5.305	N.A.	13	2.6	<0.01	5.24	0.01	0.02
B00269024	3.875	N.A.	151	46.2	<0.01	7.11	0.26	0.59
B00269025	3.230	N.A.	15	20.7	0.10	10.8	1.01	1.54
B00269026	5.440	N.A.	<5	<0.3	<0.01	7.06	0.02	0.05
*Dup B00269026	N.A.	N.A.	<5	<0.3	<0.01	7.14	0.02	0.05
B00269027	5.155	N.A.	<5	<0.3	0.01	7.56	0.01	0.09
B00269028	4.990	N.A.	<5	1.9	0.04	9.46	0.08	0.17
B00269029	4.050	N.A.	23	19.0	0.06	7.79	1.06	1.85
B00269030	0.155	N.A.	793	42.8	0.45	19.3	0.30	1.13
B00269031	4.110	N.A.	37	7.9	0.01	3.99	0.06	0.07
B00269032	3.425	N.A.	355	102	<0.01	3.68	0.05	0.15
B00269033	5.660	N.A.	278	81.1	<0.01	4.25	0.07	0.19
*Rep B00266523				161				
*Rep B00266554				5.2				
*Rep B00268522				0.5				
*Std OREAS132A				56.8				
*Std AMIS0268				193				

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Final : VC152206F Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014192

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.6				
*Std OREAS132A		55.2				
*Std AMIS0268		192				
*Std SU_1B		6.2				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00266535	1800					
*Rep B00268514	7					
*Rep B00269022	<5					
*Rep B00269033	296					
*Std OREAS153B	313					
*Std OXH97	1320					
*Std OXJ111	2170					
*Std OXN117	7420					
*Std OREAS153B	296					
*Std OXH97	1290					
*Std OXJ111	2110					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Rep B00266533			0.33	34.5	3.81	11.3
*Rep B00266552			0.02	2.83	0.21	0.34
*Rep B00269013			0.06	16.2	1.77	2.03
*Std OREAS134A			0.13	11.8	12.9	17.9
*Std OREAS131B			0.02	5.61	1.93	3.08
*Std OREAS926			0.80	7.31	0.01	0.04
*Std OREAS134A			0.13	11.8	12.9	17.8
*Std OREAS131B			0.02	5.62	1.86	3.11
*Std OREAS926			0.86	7.24	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266501	40.6	N.A.
B00266502	38.8	N.A.
B00266503	36.1	151
B00266504	38.5	151
B00266505	37.2	N.A.
B00266506	N.A.	N.A.
B00266507	N.A.	N.A.
B00266508	N.A.	N.A.
B00266509	N.A.	N.A.
B00266510	N.A.	N.A.
B00266511	3.5	N.A.
B00266512	0.7	N.A.
B00266513	36.8	499
B00266514	N.A.	N.A.
B00266515	N.A.	N.A.
B00266516	N.A.	N.A.
B00266517	N.A.	N.A.
B00266518	N.A.	N.A.
B00266519	36.4	264
B00266520	<0.1	N.A.
B00266521	38.3	180
B00266522	38.8	N.A.
B00266523	38.9	154
B00266524	35.2	152
B00266525	36.5	N.A.
B00266526	35.7	N.A.
B00266527	35.0	166
B00266528	36.1	152
B00266529	29.2	239
B00266530	21.5	273
B00266531	28.2	181
B00266532	22.6	347
B00266533	44.3	N.A.
B00266534	39.4	350
B00266535	44.3	187
*Dup B00266535	N.A.	167
B00266536	48.6	N.A.
B00266537	43.9	N.A.
B00266538	45.1	N.A.
B00266539	39.7	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266540	N.A.	N.A.
B00266541	40.0	<10
B00266542	45.2	N.A.
B00266543	41.6	N.A.
B00266544	N.A.	N.A.
B00266545	N.A.	N.A.
B00266546	N.A.	N.A.
B00266547	N.A.	N.A.
B00266548	11.7	223
B00266549	7.3	N.A.
B00266550	N.A.	282
B00266551	32.7	N.A.
B00266552	N.A.	N.A.
B00266553	N.A.	N.A.
B00266554	N.A.	N.A.
B00268501	33.8	279
B00268502	N.A.	177
B00268503	40.0	140
B00268504	36.7	N.A.
B00268505	40.3	184
B00268506	40.9	206
B00268507	33.8	236
B00268508	N.A.	N.A.
B00268509	N.A.	N.A.
B00268510	N.A.	N.A.
B00268511	N.A.	N.A.
B00268512	N.A.	N.A.
B00268513	N.A.	N.A.
B00268514	N.A.	N.A.
B00268515	N.A.	N.A.
B00268516	N.A.	N.A.
*Dup B00268516	N.A.	N.A.
B00268517	35.9	402
B00268518	N.A.	N.A.
B00268519	N.A.	N.A.
B00268520	N.A.	N.A.
B00268521	N.A.	N.A.
B00268522	N.A.	N.A.
B00268523	N.A.	N.A.
B00268524	N.A.	N.A.

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Final : VC152206F Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014192

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268525	N.A.	N.A.
B00269001	N.A.	N.A.
B00269002	N.A.	N.A.
B00269003	N.A.	N.A.
B00269004	N.A.	N.A.
B00269005	N.A.	N.A.
B00269006	N.A.	N.A.
B00269007	N.A.	N.A.
B00269008	N.A.	N.A.
B00269009	N.A.	N.A.
B00269010	N.A.	N.A.
B00269011	N.A.	N.A.
B00269012	N.A.	N.A.
B00269013	N.A.	N.A.
B00269014	N.A.	N.A.
B00269015	N.A.	N.A.
B00269016	N.A.	N.A.
B00269017	N.A.	N.A.
B00269018	N.A.	N.A.
B00269019	N.A.	N.A.
B00269020	N.A.	N.A.
B00269021	N.A.	N.A.
B00269022	N.A.	N.A.
B00269023	N.A.	N.A.
B00269024	N.A.	N.A.
B00269025	N.A.	N.A.
B00269026	N.A.	N.A.
*Dup B00269026	N.A.	N.A.
B00269027	N.A.	N.A.
B00269028	N.A.	N.A.
B00269029	N.A.	N.A.
B00269030	N.A.	N.A.
B00269031	N.A.	N.A.
B00269032	N.A.	N.A.
B00269033	N.A.	N.A.

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Final : VC152206F Order: PO# BMC15-01_5/6501-54, 8501-25, 9001-33

Report File No.: 0000014192

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00268517		368
*Std ME-1302		436
*Blk BLANK		<10
*Rep B00266533	45.1	
*Rep B00266552	N.A.	
*Rep B00269013	N.A.	
*Std OREAS134A	19.3	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Std OREAS134A	19.7	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	
*Blk BLANK	N.A.	
*Blk BLANK	N.A.	

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Certificate of Analysis

Work Order : VC152276

[Report File No.: 0000012844]

To: **ROBIN BLACK** Date: Sep 24, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_6/B00264101-111, 7501-561
Project No.	:	KZK
No. Of Samples	:	72
Date Submitted	:	Sep 08, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152276 Order: PO# BMC15-01_6/B00264101-111, 7501-561

Report File No.: 0000012844

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264101	2.750	N.A.	<5	1.8	<0.01	3.50	<0.01	0.07
B00264102	1.005	N.A.	<5	<0.3	<0.01	3.01	<0.01	0.01
B00264103	4.235	N.A.	10	0.8	<0.01	3.55	<0.01	0.16
B00264104	2.655	N.A.	59	9.7	0.04	3.38	0.05	0.55
B00264105	2.735	N.A.	24	2.8	<0.01	2.57	0.04	0.21
B00264106	1.520	N.A.	20	<0.3	<0.01	2.14	<0.01	<0.01
B00264107	2.850	N.A.	8	0.3	<0.01	2.46	<0.01	0.01
B00264108	2.520	N.A.	20	2.3	<0.01	2.57	0.02	0.04
B00264109	2.830	N.A.	<5	<0.3	<0.01	4.30	<0.01	0.01
B00264110	0.130	N.A.	892	44.6	0.45	19.9	0.30	1.18
B00264111	2.725	N.A.	7	<0.3	<0.01	3.73	<0.01	<0.01
B00267501	2.700	N.A.	50	24.7	0.23	7.39	0.19	2.52
B00267502	3.475	N.A.	305	57.5	1.04	7.38	0.48	1.65
B00267503	3.740	N.A.	<5	0.3	<0.01	2.54	<0.01	0.05
B00267504	2.770	N.A.	8	<0.3	<0.01	2.19	<0.01	<0.01
B00267505	3.565	N.A.	11	0.5	<0.01	2.63	<0.01	0.02
B00267506	2.480	N.A.	8	<0.3	<0.01	2.20	<0.01	0.01
B00267507	2.980	N.A.	<5	<0.3	<0.01	2.78	<0.01	<0.01
B00267508	3.370	N.A.	46	7.7	0.07	3.96	0.28	0.56
B00267509	3.540	N.A.	6	0.8	<0.01	2.05	<0.01	<0.01
B00267510	0.135	N.A.	826	43.1	0.44	20.2	0.31	1.14
B00267511	2.255	N.A.	14	0.6	<0.01	3.05	<0.01	0.20
B00267512	2.775	N.A.	17	0.8	<0.01	2.52	<0.01	0.05
B00267513	2.305	N.A.	6	0.4	<0.01	1.73	<0.01	<0.01
B00267514	2.650	N.A.	6	0.4	<0.01	2.59	<0.01	<0.01
B00267515	2.380	N.A.	8	0.6	<0.01	2.39	<0.01	<0.01
B00267516	2.975	N.A.	11	0.7	<0.01	1.88	<0.01	<0.01
B00267517	2.760	N.A.	6	1.6	0.03	3.33	<0.01	0.03
B00267518	2.695	N.A.	<5	2.1	<0.01	4.70	0.03	0.10
B00267519	1.740	N.A.	<5	<0.3	<0.01	2.45	<0.01	<0.01
B00267520	0.740	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00267521	1.425	N.A.	8	0.9	<0.01	2.57	<0.01	0.05
B00267522	2.260	N.A.	<5	0.4	<0.01	2.62	<0.01	0.01
B00267523	2.835	N.A.	6	3.1	<0.01	2.70	0.08	0.12
B00267524	2.815	N.A.	14	<0.3	<0.01	4.10	<0.01	0.07
*Dup B00267524	N.A.	N.A.	9	0.4	<0.01	4.14	<0.01	0.07
B00267525	2.790	N.A.	72	10.3	0.05	2.84	0.03	0.85
B00267526	2.420	N.A.	25	1.2	<0.01	3.03	0.01	0.09
B00267527	2.800	N.A.	43	1.1	<0.01	2.89	<0.01	0.09
B00267528	2.935	N.A.	8	0.3	<0.01	2.19	<0.01	0.01

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Final : VC152276 Order: PO# BMC15-01_6/B00264101-111, 7501-561

Report File No.: 0000012844

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267529	2.930	N.A.	<5	<0.3	<0.01	1.81	<0.01	<0.01
B00267530	0.135	N.A.	830	43.6	0.44	20.0	0.30	1.18
B00267531	2.885	N.A.	13	1.3	<0.01	2.81	<0.01	0.08
B00267532	2.870	N.A.	6	1.0	<0.01	1.92	0.02	0.04
B00267533	2.320	N.A.	12	0.4	<0.01	2.56	<0.01	<0.01
B00267534	3.085	N.A.	674	27.4	0.10	4.13	0.47	1.32
B00267535	2.690	N.A.	14	0.6	<0.01	4.06	0.01	0.38
B00267536	2.550	N.A.	11	0.8	<0.01	3.47	0.02	0.21
B00267537	2.625	N.A.	13	0.5	<0.01	2.05	<0.01	<0.01
B00267538	2.425	N.A.	8	0.5	<0.01	1.81	<0.01	<0.01
B00267539	1.505	88.3	6	0.5	<0.01	2.11	<0.01	<0.01
B00267540	1.035	N.A.	6	<0.3	<0.01	0.06	<0.01	<0.01
B00267541	1.765	N.A.	<5	1.6	<0.01	1.83	0.01	<0.01
B00267542	1.845	N.A.	7	0.9	<0.01	2.27	<0.01	0.03
B00267543	2.625	N.A.	14	0.4	<0.01	2.50	<0.01	0.01
B00267544	1.135	N.A.	<5	<0.3	<0.01	1.24	<0.01	<0.01
B00267545	1.915	N.A.	18	5.7	<0.01	3.15	0.09	0.22
B00267546	2.075	N.A.	25	5.4	<0.01	3.36	0.07	0.17
B00267547	1.365	N.A.	<5	<0.3	<0.01	1.17	<0.01	0.04
B00267548	2.760	N.A.	11	1.1	<0.01	2.28	0.01	0.12
B00267549	2.780	N.A.	10	0.7	<0.01	1.97	<0.01	0.04
B00267550	0.155	N.A.	840	43.8	0.45	19.8	0.31	1.17
B00267551	1.890	N.A.	18	3.2	0.23	3.64	0.03	0.06
B00267552	1.705	N.A.	13	1.3	0.02	4.69	0.02	0.17
B00267553	3.070	N.A.	14	3.1	0.02	2.62	0.05	0.10
B00267554	1.945	N.A.	5	1.1	<0.01	2.93	0.01	0.02
B00267555	1.155	N.A.	9	0.5	<0.01	1.84	<0.01	<0.01
B00267556	2.605	N.A.	18	1.1	<0.01	2.04	<0.01	0.01
B00267557	2.350	N.A.	24	2.3	<0.01	2.13	<0.01	0.03
B00267558	1.320	N.A.	7	0.8	<0.01	1.74	<0.01	0.06
B00267559	2.575	N.A.	9	0.7	<0.01	2.70	<0.01	0.01
*Dup B00267559	N.A.	N.A.	5	0.6	<0.01	2.81	<0.01	0.01
B00267560	1.185	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00267561	2.925	85.1	10	0.5	<0.01	2.23	<0.01	<0.01
*Rep B00264106					<0.01	2.17	<0.01	<0.01
*Rep B00267523					<0.01	2.63	0.08	0.12
*Rep B00267547					<0.01	1.18	<0.01	0.03
*Std OREAS134A					0.12	12.2	13.0	18.3
*Std OREAS131B					0.02	5.84	1.86	3.12
*Std OREAS134A					0.13	12.1	13.0	17.8

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Final : VC152276 Order: PO# BMC15-01_6/B00264101-111, 7501-561

Report File No.: 0000012844

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS926			0.83	7.48	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Rep B00264106		<0.3				
*Rep B00267533		0.5				
*Std OREAS132A		56.1				
*Std SU_1B		6.7				
*Std OREAS132A		56.1				
*Std AMIS0268		193				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00267504	8					
*Rep B00267535	9					
*Std OREAS250	325					
*Std OXH97	1290					
*Std OXJ111	2150					
*Std OXN117	7590					
*Blk BLANK	<5					

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Certificate of Analysis

Work Order : VC152276A

[Report File No.: 0000014284]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_6/B00264101-111, 7501-561
Project No.	:	KZK
No. Of Samples	:	72
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152276A Order: PO# BMC15-01_6/B00264101-111, 7501-561

Report File No.: 0000014284

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00264101	N.A.	N.A.	N.A.	N.A.	N.A.
B00264102	N.A.	N.A.	N.A.	N.A.	N.A.
B00264103	N.A.	N.A.	N.A.	N.A.	N.A.
B00264104	N.A.	N.A.	N.A.	N.A.	N.A.
B00264105	N.A.	N.A.	N.A.	N.A.	N.A.
B00264106	N.A.	N.A.	N.A.	N.A.	N.A.
B00264107	N.A.	N.A.	N.A.	N.A.	N.A.
B00264108	N.A.	N.A.	N.A.	N.A.	N.A.
B00264109	N.A.	N.A.	N.A.	N.A.	N.A.
B00264110	N.A.	N.A.	N.A.	N.A.	N.A.
B00264111	N.A.	N.A.	N.A.	N.A.	N.A.
B00267501	N.A.	N.A.	N.A.	N.A.	N.A.
B00267502	N.A.	N.A.	N.A.	N.A.	N.A.
B00267503	N.A.	N.A.	N.A.	N.A.	N.A.
B00267504	N.A.	N.A.	N.A.	N.A.	N.A.
B00267505	N.A.	N.A.	N.A.	N.A.	N.A.
B00267506	N.A.	N.A.	N.A.	N.A.	N.A.
B00267507	N.A.	N.A.	N.A.	N.A.	N.A.
B00267508	N.A.	N.A.	N.A.	N.A.	N.A.
B00267509	N.A.	N.A.	N.A.	N.A.	N.A.
B00267510	N.A.	N.A.	N.A.	N.A.	N.A.
B00267511	N.A.	N.A.	N.A.	N.A.	N.A.
B00267512	N.A.	N.A.	N.A.	N.A.	N.A.
B00267513	N.A.	N.A.	N.A.	N.A.	N.A.
B00267514	N.A.	N.A.	N.A.	N.A.	N.A.
B00267515	N.A.	N.A.	N.A.	N.A.	N.A.
B00267516	N.A.	N.A.	N.A.	N.A.	N.A.
B00267517	N.A.	N.A.	N.A.	N.A.	N.A.
B00267518	N.A.	N.A.	N.A.	N.A.	N.A.
B00267519	N.A.	N.A.	N.A.	N.A.	N.A.
B00267520	N.A.	N.A.	N.A.	N.A.	N.A.
B00267521	N.A.	N.A.	N.A.	N.A.	N.A.
B00267522	N.A.	N.A.	N.A.	N.A.	N.A.
B00267523	N.A.	N.A.	N.A.	N.A.	N.A.
B00267524	5	345	0.33	0.10	<1
B00267525	218	200	2.13	4.63	22
B00267526	<5	52	0.42	0.04	<1
B00267527	<5	33	0.32	0.20	<1
B00267528	N.A.	N.A.	N.A.	N.A.	N.A.
B00267529	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152276A Order: PO# BMC15-01_6/B00264101-111, 7501-561

Report File No.: 0000014284

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00267530	N.A.	N.A.	N.A.	N.A.	N.A.
B00267531	N.A.	N.A.	N.A.	N.A.	N.A.
B00267532	N.A.	N.A.	N.A.	N.A.	N.A.
B00267533	N.A.	N.A.	N.A.	N.A.	N.A.
B00267534	N.A.	N.A.	N.A.	N.A.	N.A.
B00267535	N.A.	N.A.	N.A.	N.A.	N.A.
B00267536	N.A.	N.A.	N.A.	N.A.	N.A.
B00267537	N.A.	N.A.	N.A.	N.A.	N.A.
B00267538	N.A.	N.A.	N.A.	N.A.	N.A.
B00267539	N.A.	N.A.	N.A.	N.A.	N.A.
B00267540	N.A.	N.A.	N.A.	N.A.	N.A.
B00267541	N.A.	N.A.	N.A.	N.A.	N.A.
B00267542	N.A.	N.A.	N.A.	N.A.	N.A.
B00267543	N.A.	N.A.	N.A.	N.A.	N.A.
B00267544	N.A.	N.A.	N.A.	N.A.	N.A.
B00267545	N.A.	N.A.	N.A.	N.A.	N.A.
B00267546	N.A.	N.A.	N.A.	N.A.	N.A.
B00267547	N.A.	N.A.	N.A.	N.A.	N.A.
B00267548	N.A.	N.A.	N.A.	N.A.	N.A.
B00267549	N.A.	N.A.	N.A.	N.A.	N.A.
B00267550	N.A.	N.A.	N.A.	N.A.	N.A.
B00267551	N.A.	N.A.	N.A.	N.A.	N.A.
B00267552	N.A.	N.A.	N.A.	N.A.	N.A.
B00267553	N.A.	N.A.	N.A.	N.A.	N.A.
B00267554	N.A.	N.A.	N.A.	N.A.	N.A.
B00267555	N.A.	N.A.	N.A.	N.A.	N.A.
B00267556	N.A.	N.A.	N.A.	N.A.	N.A.
B00267557	N.A.	N.A.	N.A.	N.A.	N.A.
B00267558	N.A.	N.A.	N.A.	N.A.	N.A.
B00267559	N.A.	N.A.	N.A.	N.A.	N.A.
B00267560	N.A.	N.A.	N.A.	N.A.	N.A.
B00267561	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00267524	6	330	0.32	0.08	1
*Std OREAS131B	37	N.A.	N.A.	N.A.	N.A.
*Std OREAS934	N.A.	N.A.	498	N.A.	72
*Std DS-1	N.A.	6690	N.A.	78.2	N.A.
*Blk BLANK	<5	<3	<0.02	<0.01	<1

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Certificate of Analysis

Work Order : VC152277

[Report File No.: 0000012896]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Sep 28, 2015

P.O. No.	:	PO# BMC15-01_6/B00267001-093
Project No.	:	KZK
No. Of Samples	:	92
Date Submitted	:	Sep 08, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152277 Order: PO# BMC15-01_6/B00267001-093

Report File No.: 0000012896

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267001	3.820	N.A.	5	0.7	<0.01	2.43	<0.01	0.01
B00267002	3.770	N.A.	<5	0.6	<0.01	2.40	<0.01	0.06
B00267003	3.550	N.A.	9	2.3	0.02	2.37	0.02	0.03
B00267004	2.390	N.A.	221	11.1	0.08	30.9	0.18	2.30
B00267005	2.420	N.A.	5	0.6	<0.01	2.50	<0.01	0.06
B00267006	2.315	N.A.	<5	0.6	<0.01	2.42	<0.01	<0.01
B00267007	2.390	N.A.	11	1.4	<0.01	2.66	0.05	0.09
B00267008	2.465	N.A.	16	0.4	<0.01	2.28	<0.01	<0.01
B00267009	2.890	N.A.	6	0.4	<0.01	2.15	<0.01	<0.01
B00267010	0.160	N.A.	845	43.1	0.45	19.9	0.30	1.13
B00267011	2.925	N.A.	9	<0.3	<0.01	2.63	<0.01	<0.01
B00267012	2.450	N.A.	14	0.7	<0.01	2.67	<0.01	0.01
B00267013	2.500	N.A.	13	2.6	0.08	6.04	<0.01	0.04
B00267014	2.610	N.A.	35	2.5	0.05	3.50	0.02	0.70
B00267015	3.040	N.A.	37	3.8	0.14	6.60	<0.01	0.03
B00267016	2.510	N.A.	<5	<0.3	<0.01	4.02	<0.01	0.01
B00267017	2.630	N.A.	<5	1.4	<0.01	2.34	0.01	0.09
B00267018	2.375	N.A.	9	<0.3	<0.01	2.89	<0.01	<0.01
B00267019	2.925	N.A.	16	0.5	<0.01	3.75	<0.01	0.04
B00267020	0.910	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267021	2.675	N.A.	26	0.5	<0.01	3.97	<0.01	<0.01
B00267022	2.800	N.A.	169	17.4	0.05	5.11	0.24	0.46
B00267023	3.090	N.A.	12	1.9	<0.01	2.94	0.03	0.02
B00267024	0.375	N.A.	<5	<0.3	<0.01	2.10	<0.01	<0.01
B00267025	0.390	N.A.	6	<0.3	<0.01	2.26	<0.01	0.03
B00267026	1.375	N.A.	6	8.8	0.30	10.9	0.05	1.96
B00267027	0.985	N.A.	10	7.9	0.18	5.90	0.09	1.22
B00267028	0.865	N.A.	<5	7.0	0.03	3.67	0.16	0.74
B00267029	2.090	N.A.	12	0.6	<0.01	2.66	0.04	0.15
B00267030	0.130	N.A.	917	44.5	0.44	19.7	0.30	1.15
B00267031	0.515	N.A.	<5	4.0	<0.01	3.59	0.11	0.19
B00267032	1.180	N.A.	<5	3.1	0.02	2.38	0.04	0.43
B00267033	1.790	N.A.	<5	0.3	0.01	2.65	<0.01	0.14
B00267034	1.670	N.A.	76	1.7	<0.01	2.97	0.03	0.05
B00267035	2.070	N.A.	90	4.9	<0.01	2.42	0.07	0.14
*Dup B00267035	N.A.	N.A.	86	4.8	<0.01	2.20	0.08	0.15
B00267036	2.800	N.A.	192	17.9	0.04	3.03	0.18	0.41
B00267037	1.575	N.A.	80	22.2	<0.01	5.46	0.31	0.88
B00267038	2.690	N.A.	421	21.6	0.45	9.11	0.02	0.06
B00267039	2.620	N.A.	14	1.0	<0.01	2.51	0.03	0.38

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Final : VC152277 Order: PO# BMC15-01_6/B00267001-093

Report File No.: 0000012896

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267040	1.295	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00267041	2.980	N.A.	36	1.6	<0.01	2.88	0.02	0.05
B00267042	2.450	N.A.	26	2.0	<0.01	2.92	0.03	0.03
B00267043	2.485	N.A.	5	0.3	<0.01	2.26	<0.01	<0.01
B00267044	2.835	N.A.	44	2.9	0.06	3.14	0.05	0.27
B00267045	2.840	N.A.	19	0.6	<0.01	2.51	0.01	0.01
B00267046	2.740	N.A.	<5	1.2	<0.01	2.71	0.02	0.09
B00267047	2.440	N.A.	<5	3.7	0.02	4.76	0.05	0.64
B00267048	2.660	N.A.	637	82.8	1.62	8.11	0.15	0.19
B00267049	2.990	N.A.	155	68.6	1.35	9.29	0.08	0.67
B00267050	0.135	N.A.	884	44.7	0.46	19.8	0.30	1.14
B00267051	2.690	91.8	14	2.6	0.04	3.98	0.01	0.03
B00267052	2.665	N.A.	21	2.0	<0.01	3.51	0.01	0.01
B00267053	2.415	N.A.	6	0.7	<0.01	2.24	<0.01	<0.01
B00267054	2.865	N.A.	8	<0.3	<0.01	2.56	<0.01	<0.01
B00267055	3.170	N.A.	14	0.4	<0.01	2.23	<0.01	<0.01
B00267056	3.050	N.A.	5	0.8	<0.01	1.48	<0.01	0.06
B00267057	2.810	N.A.	6	1.1	<0.01	2.13	<0.01	0.03
B00267058	2.930	N.A.	10	1.0	<0.01	2.61	<0.01	0.01
B00267059	3.360	N.A.	8	0.5	<0.01	3.09	0.01	0.02
B00267060	0.745	N.A.	<5	0.3	<0.01	<0.05	<0.01	<0.01
B00267061	3.175	N.A.	10	1.3	<0.01	3.25	0.06	0.11
B00267062	2.930	N.A.	<5	0.5	<0.01	3.03	<0.01	0.04
B00267063	2.595	N.A.	25	3.1	0.02	3.46	0.14	0.27
B00267064	3.055	N.A.	11	3.9	0.07	4.65	0.12	0.95
B00267065	2.830	N.A.	<5	2.4	0.02	2.87	0.10	0.26
B00267066	2.795	N.A.	9	2.6	0.02	4.00	0.09	0.41
B00267067	1.995	N.A.	<5	0.6	<0.01	2.39	<0.01	0.12
B00267068	1.775	N.A.	<5	2.1	<0.01	2.74	0.03	<0.01
B00267069	1.740	N.A.	<5	1.3	<0.01	4.37	0.02	0.25
B00267070	0.135	N.A.	817	43.6	0.47	19.6	0.31	1.09
B00267071	2.715	N.A.	<5	<0.3	<0.01	4.42	<0.01	0.03
B00267072	2.865	N.A.	13	<0.3	<0.01	4.94	<0.01	0.01
B00267073	2.960	N.A.	15	0.3	<0.01	2.59	<0.01	<0.01
B00267074	1.975	N.A.	42	1.6	<0.01	1.19	0.01	0.01
B00267075	2.565	N.A.	24	1.3	<0.01	2.66	<0.01	<0.01
B00267076	2.975	N.A.	5	0.3	<0.01	2.45	<0.01	<0.01
B00267077	2.510	N.A.	6	0.4	<0.01	2.46	<0.01	<0.01
B00267078	2.585	N.A.	<5	<0.3	<0.01	2.96	<0.01	<0.01
B00267079	2.805	N.A.	<5	3.7	<0.01	3.20	0.10	0.01

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Final : VC152277 Order: PO# BMC15-01_6/B00267001-093

Report File No.: 0000012896

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267080	1.070	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00267081	2.920	N.A.	12	0.5	<0.01	3.11	<0.01	<0.01
B00267082	2.830	N.A.	32	5.9	0.06	4.85	0.08	1.09
B00267083	2.715	N.A.	5	0.5	<0.01	2.42	<0.01	<0.01
B00267084	2.835	N.A.	183	21.8	0.22	4.02	0.07	0.23
B00267085	2.840	N.A.	11	1.2	<0.01	2.72	<0.01	<0.01
B00267086	2.520	N.A.	<5	0.3	<0.01	2.00	<0.01	<0.01
B00267087	2.895	N.A.	<5	0.5	<0.01	2.72	<0.01	<0.01
B00267088	2.685	N.A.	14	2.5	<0.01	2.08	<0.01	0.02
B00267089	2.440	N.A.	<5	0.8	<0.01	2.09	<0.01	<0.01
B00267090	0.155	N.A.	809	44.2	0.48	19.9	0.30	1.10
B00267091	2.635	N.A.	15	0.5	<0.01	2.81	<0.01	0.05
B00267092	2.650	97.2	<5	<0.3	<0.01	2.34	<0.01	<0.01
*Rep B00267017					<0.01	2.37	0.01	0.10
*Rep B00267034					<0.01	2.91	0.03	0.05
*Rep B00267063					0.01	3.42	0.13	0.26
*Rep B00267080					<0.01	<0.05	<0.01	<0.01
*Std OREAS134A					0.13	12.0	12.5	17.5
*Std OREAS131B					0.02	5.72	1.82	3.10
*Std OREAS134A					0.13	12.0	12.8	17.3
*Std OREAS131B					0.02	5.73	1.91	2.98
*Std OREAS926					0.84	7.23	0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Rep B00267035			90					
*Rep B00267045			15					
*Rep B00267080			<5					
*Std OREAS250			322					
*Std OXH97			1270					
*Std OXJ111			2170					
*Std OXN117			7730					
*Std OREAS250			309					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00267004				10.9				
*Rep B00267069				1.4				
*Rep B00267079				3.7				
*Std SU_1B				6.5				
*Std OREAS132A				53.8				
*Std AMIS0268				189				

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Final : VC152277 Order: PO# BMC15-01_6/B00267001-093

Report File No.: 0000012896

Element	@Ag
Method	GE_AAS12E
Det.Lim.	0.3
Units	g/t
*Std SU_1B	6.6
*Std OREAS132A	55.5
*Std AMIS0268	191
*Blk BLANK	<0.3
*Blk BLANK	<0.3
*Blk BLANK	<0.3

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Certificate of Analysis

Work Order : VC152328A

[Report File No.: 0000014125]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO# BMC15-01_7/B00264708-741, 268526-637
Project No.	:	KZK
No. Of Samples	:	146
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152328A Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014125

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264708	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264709	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264710	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264711	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264712	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264713	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264714	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264715	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264716	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264717	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264718	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264719	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264720	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264721	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264722	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264723	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264724	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264725	5380	22	20.2	5.78	78	N.A.
B00264726	4420	19	4.48	1.59	32	N.A.
B00264727	287	<5	4.80	1.18	15	N.A.
B00264728	253	<5	4.45	0.28	9	N.A.
B00264729	790	<5	9.70	0.17	16	N.A.
B00264730	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264731	225	13	7.52	2.30	19	N.A.
B00264732	606	91	11.7	16.6	57	N.A.
B00264733	595	91	25.3	15.3	97	N.A.
B00264734	1560	76	38.8	2.87	145	N.A.
B00264735	49	26	0.26	0.44	4	N.A.
B00264736	71	16	0.05	0.08	<1	N.A.
B00264737	193	<5	0.26	0.14	<1	N.A.
B00264738	12	<5	7.33	0.04	27	N.A.
B00264739	12	<5	0.82	0.05	13	N.A.
B00264740	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264741	8	<5	<0.02	0.04	<1	N.A.
B00268526	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268527	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268528	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268529	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268530	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268531	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152328A Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014125

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268532	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268533	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268534	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268535	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268536	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268537	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268538	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268539	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268540	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268541	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268542	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268543	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268544	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268545	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268546	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268547	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268548	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268549	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268550	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268551	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268552	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268553	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268554	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268555	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268556	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268557	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268558	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268559	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268560	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268561	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268562	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268563	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268564	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268565	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268566	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268567	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268568	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268569	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268570	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268571	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152328A Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014125

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268572	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268573	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268574	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268575	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268576	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268577	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268578	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268579	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268580	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268581	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268582	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268583	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268584	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268585	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268586	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268587	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268588	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268589	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268590	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268591	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268592	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268593	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268594	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268595	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268596	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268597	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268598	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268599	14	23	0.62	0.04	<1	N.A.
B00268600	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268601	15	18	0.73	0.04	1	N.A.
B00268602	43	13	5.40	0.93	33	N.A.
B00268603	2990	571	22.4	20.5	213	N.A.
B00268604	1250	1250	15.8	24.9	157	N.A.
B00268605	238	68	71.7	10.2	217	N.A.
B00268606	165	28	110	6.00	268	N.A.
B00268607	273	92	66.6	8.10	232	N.A.
B00268608	6180	1340	26.6	10.4	160	N.A.
B00268609	>10000	3950	34.0	18.6	164	1.66
B00268610	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268611	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152328A Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014125

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268612	>10000	2700	21.4	36.4	97	3.09
B00268613	6850	1130	19.9	60.4	67	N.A.
B00268614	916	<5	0.45	0.49	<1	N.A.
B00268615	1280	<5	0.40	0.27	<1	N.A.
B00268616	161	<5	0.43	0.25	<1	N.A.
B00268617	69	11	0.24	0.30	<1	N.A.
B00268618	33	15	0.49	0.40	1	N.A.
B00268619	805	844	15.4	3.98	39	N.A.
B00268620	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268621	224	31	19.4	3.41	31	N.A.
B00268622	4120	2890	94.2	34.6	376	N.A.
B00268623	5210	872	58.6	32.4	266	N.A.
B00268624	494	24	3.25	0.82	6	N.A.
B00268625	415	<5	3.60	0.81	10	N.A.
B00268626	23	<5	4.17	0.80	9	N.A.
B00268627	20	26	64.5	7.19	158	N.A.
B00268628	357	11	17.0	0.98	25	N.A.
B00268629	133	43	185	4.83	242	N.A.
B00268630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268631	860	512	27.0	3.76	38	N.A.
B00268632	1680	90	26.6	0.61	34	N.A.
B00268633	4000	277	40.1	18.0	183	N.A.
B00268634	226	64	30.4	12.6	152	N.A.
B00268635	56	14	89.9	2.99	146	N.A.
B00268636	38	<5	1.51	0.16	2	N.A.
B00268637	32	<5	0.49	0.14	1	N.A.
*Rep B00264738	13	<5	7.58	0.04	25	
*Rep B00268628	360	10	16.3	1.03	25	
*Std OREAS210	3660	N.A.	0.17	N.A.	3	
*Std OREAS131B	87	38	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	495	N.A.	74	
*Std OREAS624	115	N.A.	20.7	N.A.	33	
*Std DS-1	7030	N.A.	N.A.	77.9	N.A.	
*Blk BLANK	<3	<5	<0.02	<0.01	<1	
*Blk BLANK						<0.01
*Rep B00268612						3.05
*Std MP1B						2.23

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Certificate of Analysis

Work Order : VC152328F

[Report File No.: 0000014193]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_7/B00264708-741, 268526-637
Project No.	:	KZK
No. Of Samples	:	146
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 12 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152328 Report No. 012997
dated Oct 06, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264708	2.230	N.A.	37	9.6	0.41	9.06	0.13	1.20
B00264709	2.510	N.A.	12	9.4	0.17	8.92	0.08	0.59
B00264710	0.155	N.A.	852	42.0	0.46	19.8	0.31	1.15
B00264711	2.715	N.A.	112	17.2	0.63	9.14	0.02	0.25
B00264712	1.700	N.A.	498	42.2	1.29	25.4	0.21	1.58
B00264713	1.365	N.A.	167	16.3	0.67	12.1	0.02	0.12
B00264714	1.755	N.A.	1080	85.5	4.11	27.1	0.05	0.87
B00264715	1.755	N.A.	277	67.7	0.98	44.4	0.49	7.00
B00264716	1.435	N.A.	350	95.1	2.14	40.8	0.76	4.12
B00264717	1.400	N.A.	206	56.1	1.27	32.8	0.89	2.74
B00264718	1.410	N.A.	77	25.4	0.33	29.6	0.58	3.85
B00264719	2.535	N.A.	267	29.8	1.07	40.9	0.23	3.61
B00264720	0.680	N.A.	<5	0.4	<0.01	0.25	<0.01	0.03
B00264721	2.010	N.A.	103	26.0	0.39	26.0	0.36	2.44
B00264722	3.005	N.A.	13	5.2	0.03	5.15	0.13	0.33
B00264723	2.595	N.A.	18	7.0	0.15	4.49	0.06	0.15
B00264724	2.590	N.A.	23	19.8	0.11	7.51	0.12	0.15
B00264725	5.785	N.A.	224	37.2	0.64	16.6	1.28	2.23
B00264726	5.625	N.A.	92	8.4	0.16	8.83	0.35	0.80
B00264727	5.975	N.A.	14	5.3	0.09	7.48	0.16	0.67
B00264728	6.080	N.A.	32	3.9	0.12	6.36	0.03	0.12
B00264729	3.785	N.A.	32	7.0	0.13	5.05	0.03	0.06
B00264730	0.155	N.A.	901	43.3	0.46	19.6	0.31	1.13
B00264731	3.400	N.A.	287	19.0	0.20	7.04	0.43	1.01
B00264732	4.360	N.A.	823	84.0	0.05	19.6	2.76	7.32
B00264733	1.935	N.A.	1050	96.0	0.54	18.9	2.71	6.43
B00264734	2.475	N.A.	395	50.8	0.46	28.8	0.41	1.64
B00264735	3.925	N.A.	14	1.5	0.01	6.47	0.09	0.15
B00264736	4.480	N.A.	13	<0.3	<0.01	7.07	<0.01	0.01
B00264737	5.310	N.A.	<5	<0.3	<0.01	6.48	<0.01	0.01
B00264738	3.630	N.A.	8	6.3	0.31	10.2	0.02	0.09
B00264739	3.140	N.A.	<5	15.9	0.77	7.35	<0.01	0.09
B00264740	0.780	N.A.	6	<0.3	<0.01	0.07	<0.01	<0.01
B00264741	3.235	N.A.	11	<0.3	<0.01	3.82	<0.01	0.01
B00268526	2.555	N.A.	129	12.6	0.13	8.83	0.11	0.72
*Dup B00268526	N.A.	N.A.	175	12.8	0.13	8.76	0.11	0.72
B00268527	1.005	N.A.	358	28.9	0.87	18.5	0.04	0.08
B00268528	0.875	N.A.	47	9.4	0.09	11.3	0.18	0.59
B00268529	0.555	N.A.	57	16.2	0.41	18.8	0.23	3.76
B00268530	0.195	N.A.	826	43.1	0.46	20.1	0.31	1.14

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268531	2.400	N.A.	10	0.6	<0.01	4.22	<0.01	0.02
B00268532	1.375	N.A.	17	<0.3	<0.01	3.64	<0.01	0.02
B00268533	1.675	N.A.	<5	0.9	0.04	4.14	<0.01	0.07
B00268534	0.790	N.A.	1270	108	4.08	19.5	0.16	0.30
B00268535	2.560	N.A.	<5	1.3	0.01	8.59	0.01	0.16
B00268536	2.950	N.A.	95	8.9	0.25	9.99	0.02	0.22
B00268537	2.195	N.A.	2940	205	9.27	28.9	0.09	0.81
B00268538	2.185	N.A.	2730	202	8.75	35.2	0.14	0.78
B00268539	1.230	N.A.	1030	158	5.22	32.3	0.26	1.19
B00268540	1.162	N.A.	<5	0.5	0.01	0.11	<0.01	<0.01
B00268541	2.300	95.2	14	2.4	0.04	8.61	0.02	0.37
B00268542	2.485	N.A.	70	6.5	0.23	7.25	0.01	0.15
B00268543	2.760	N.A.	459	28.3	0.10	37.5	0.33	2.95
B00268544	1.700	N.A.	392	55.2	0.14	39.1	0.51	5.37
B00268545	1.845	N.A.	226	24.4	0.04	36.3	0.37	5.49
B00268546	1.075	N.A.	347	20.3	0.41	42.9	0.11	2.28
B00268547	1.030	N.A.	54	4.7	0.03	5.22	0.04	0.27
B00268548	1.375	N.A.	1220	190	0.02	33.6	2.48	5.99
B00268549	1.625	N.A.	1500	158	0.02	33.7	2.47	7.36
B00268550	0.195	N.A.	837	42.0	0.46	19.5	0.31	1.12
B00268551	2.270	N.A.	2480	>300	0.65	13.4	1.40	3.58
B00268552	0.935	N.A.	1860	>300	0.65	16.2	1.59	4.25
B00268553	1.590	N.A.	1680	224	0.60	17.2	2.40	5.30
B00268554	1.075	N.A.	838	84.0	0.15	33.9	1.65	5.87
B00268555	2.355	N.A.	544	70.0	0.11	38.1	1.01	2.97
B00268556	0.860	N.A.	766	123	0.27	34.9	1.94	7.34
B00268557	1.155	N.A.	345	80.0	0.12	34.0	3.06	8.89
B00268558	1.405	N.A.	3630	>300	1.09	16.3	2.63	5.14
B00268559	1.440	N.A.	879	186	0.39	34.5	1.16	5.04
B00268560	1.045	N.A.	6	0.6	<0.01	0.16	0.02	0.04
B00268561	2.340	N.A.	1230	128	0.28	32.7	3.13	8.38
*Dup B00268561	N.A.	N.A.	1150	118	0.28	32.5	3.11	8.09
B00268562	1.225	N.A.	1600	137	0.30	30.9	3.67	6.65
B00268563	2.130	N.A.	3070	>300	0.99	19.0	5.63	9.94
B00268564	1.740	N.A.	4000	>300	0.76	18.7	3.77	6.66
B00268565	1.440	N.A.	1270	216	0.15	29.1	5.00	10.8
B00268566	2.445	N.A.	1880	170	0.33	26.6	3.66	7.23
B00268567	1.270	N.A.	21	25.2	0.51	16.1	0.23	1.85
B00268568	2.240	N.A.	10	3.1	<0.01	6.33	0.08	0.24
B00268569	2.745	N.A.	8	1.1	<0.01	5.18	0.02	0.05

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268570	0.190	N.A.	757	43.1	0.46	19.6	0.30	1.13
B00268571	2.705	N.A.	<5	<0.3	<0.01	2.84	<0.01	0.47
B00268572	2.970	N.A.	<5	3.0	0.02	2.95	0.03	0.01
B00268573	2.725	N.A.	8	1.5	0.03	4.54	<0.01	0.02
B00268574	2.445	N.A.	311	23.1	0.31	8.98	0.13	0.44
B00268575	2.360	N.A.	2130	165	0.25	12.7	1.52	2.75
B00268576	1.600	N.A.	2260	134	0.47	6.22	0.62	1.88
B00268577	3.185	N.A.	1420	153	0.25	33.6	3.00	9.57
B00268578	2.170	N.A.	466	148	0.02	30.8	4.00	9.53
B00268579	1.990	N.A.	399	22.6	0.63	13.0	0.09	0.37
B00268580	2.295	N.A.	<5	<0.3	<0.01	0.11	<0.01	0.02
B00268581	1.890	N.A.	208	46.6	0.34	13.6	1.20	3.17
B00268582	1.975	N.A.	20	5.1	0.03	11.8	0.02	0.07
B00268583	2.810	N.A.	13	2.1	0.07	8.47	<0.01	0.08
B00268584	1.045	N.A.	292	38.5	0.55	21.0	0.81	2.87
B00268585	3.020	N.A.	<5	1.1	0.02	5.79	0.02	0.11
B00268586	2.810	N.A.	<5	0.4	<0.01	1.91	<0.01	0.22
B00268587	0.695	N.A.	120	62.4	0.34	29.7	1.40	8.12
B00268588	1.465	N.A.	287	45.3	0.83	12.5	0.33	2.26
B00268589	2.695	N.A.	<5	<0.3	0.01	6.42	<0.01	0.02
B00268590	0.190	N.A.	870	41.9	0.46	19.4	0.30	1.14
B00268591	1.785	89.2	44	15.1	0.31	10.2	0.09	0.23
B00268592	0.870	N.A.	191	>300	0.56	10.3	4.12	0.85
B00268593	1.915	N.A.	73	22.2	0.37	9.98	0.10	0.41
B00268594	1.420	N.A.	29	7.1	0.11	12.4	0.06	0.61
B00268595	1.960	N.A.	216	30.9	0.68	26.1	0.18	1.73
B00268596	0.965	N.A.	11	3.5	0.02	6.82	0.03	0.68
*Dup B00268596	N.A.	N.A.	6	3.5	0.02	6.25	0.03	0.60
B00268597	1.635	N.A.	134	29.2	0.60	18.4	0.19	0.75
B00268598	2.720	N.A.	9	1.1	<0.01	2.90	0.03	0.12
B00268599	2.805	N.A.	12	0.3	<0.01	2.30	0.02	0.03
B00268600	1.770	N.A.	6	<0.3	<0.01	0.17	<0.01	<0.01
B00268601	2.210	N.A.	17	0.7	<0.01	2.08	0.05	0.06
B00268602	3.035	N.A.	39	5.4	0.12	5.58	0.05	0.66
B00268603	2.950	N.A.	1660	95.9	0.40	31.7	1.23	9.05
B00268604	2.685	N.A.	2110	112	0.57	34.3	0.98	10.5
B00268605	3.160	N.A.	496	65.1	0.39	40.3	1.20	9.37
B00268606	3.110	N.A.	597	55.6	0.71	41.4	0.56	10.2
B00268607	1.745	N.A.	620	88.6	0.75	41.2	1.42	10.3
B00268608	3.235	N.A.	2410	216	0.54	34.5	2.97	5.78

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268609	2.945	N.A.	5570	>300	0.71	32.5	0.73	4.63
B00268610	0.170	N.A.	1250	67.4	0.37	3.77	1.35	5.41
B00268611	0.170	N.A.	819	19.4	1.73	13.6	0.26	1.06
B00268612	2.985	N.A.	7920	295	0.31	30.5	1.80	6.60
B00268613	2.790	N.A.	2450	294	0.13	26.2	3.47	8.78
B00268614	2.805	N.A.	<5	1.0	<0.01	2.29	<0.01	0.02
B00268615	2.710	N.A.	<5	<0.3	<0.01	2.42	<0.01	<0.01
B00268616	2.770	N.A.	<5	0.3	<0.01	2.37	<0.01	<0.01
B00268617	1.675	N.A.	15	1.4	<0.01	3.91	0.02	0.01
B00268618	2.800	N.A.	6	1.0	<0.01	2.70	<0.01	<0.01
B00268619	2.030	N.A.	1300	42.6	0.35	9.24	0.35	0.99
B00268620	1.990	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268621	1.695	N.A.	796	51.7	1.34	6.94	0.15	0.86
B00268622	2.330	N.A.	3770	>300	0.49	31.6	4.89	11.5
B00268623	1.680	N.A.	1920	>300	1.30	29.3	6.63	13.5
B00268624	3.155	N.A.	26	8.9	0.03	6.25	0.13	0.26
B00268625	1.995	N.A.	18	3.9	0.14	7.82	0.02	0.53
B00268626	1.585	N.A.	<5	3.6	0.03	6.88	0.03	0.44
B00268627	0.995	N.A.	244	36.5	1.35	16.8	0.06	5.27
B00268628	1.390	N.A.	<5	5.2	0.04	6.70	0.02	0.60
B00268629	1.185	N.A.	227	75.8	0.67	19.3	0.36	2.72
B00268630	0.155	N.A.	776	42.3	0.46	19.7	0.31	1.13
B00268631	1.955	N.A.	437	45.3	0.19	8.15	0.01	3.02
B00268632	1.065	N.A.	190	18.9	0.62	7.63	0.03	0.19
B00268633	1.480	N.A.	612	151	0.43	28.8	2.73	10.5
B00268634	1.085	N.A.	93	71.7	0.13	16.0	1.39	6.21
B00268635	1.660	N.A.	594	76.9	2.55	15.9	0.14	0.74
B00268636	2.600	N.A.	<5	0.7	<0.01	6.90	<0.01	0.03
B00268637	2.615	94.8	<5	0.3	0.01	7.21	<0.01	0.01
*Rep B00264722				5.0				
*Rep B00268554				85.1				
*Rep B00268567				25.0				
*Rep B00268610				67.5				
*Rep B00268636				0.8				
*Std SU_1B				6.6				
*Std OREAS132A				55.2				
*Std AMIS0268				197				
*Std SU_1B				6.3				
*Std OREAS132A				55.2				
*Std AMIS0268				194				

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Final : VC152328F Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014193

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.6				
*Std OREAS132A		56.0				
*Std AMIS0268		192				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00264735	11					
*Rep B00268574	296					
*Rep B00268625	29					
*Std OREAS250	315					
*Std OXH97	1280					
*Std OXJ111	2190					
*Std OXN117	7580					
*Std OXN117	7330					
*Std OXH97	1350					
*Std AMIS0334	3070					
*Std OXN117	7560					
*Blk BLANK	<5					
*Blk BLANK	7					
*Blk BLANK	<5					
*Rep B00264709			0.17	8.85	0.07	0.58
*Rep B00264736			<0.01	7.14	<0.01	0.01
*Rep B00268545			0.05	36.2	0.32	5.70
*Rep B00268581			0.34	13.5	1.20	3.13
*Rep B00268614			<0.01	2.34	<0.01	0.02
*Rep B00268627			1.34	16.8	0.06	5.31
*Std OREAS134A			0.13	11.9	13.1	17.6
*Std OREAS131B			0.02	5.79	1.91	3.01
*Std OREAS926			0.83	7.33	0.01	0.04
*Std OREAS131B			0.02	5.71	1.89	3.04
*Std OREAS926			0.82	7.28	0.01	0.04
*Std OREAS134A			0.13	11.9	12.9	17.5
*Std OREAS131B			0.02	5.72	1.90	3.03
*Std OREAS926			0.83	7.30	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC152328F Order: PO# BMC15-01_7/B00264708-741, 268526-637

Report File No.: 0000014193

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264708	N.A.	N.A.	N.A.
B00264709	N.A.	N.A.	N.A.
B00264710	N.A.	N.A.	N.A.
B00264711	N.A.	N.A.	N.A.
B00264712	N.A.	N.A.	N.A.
B00264713	N.A.	N.A.	N.A.
B00264714	N.A.	N.A.	N.A.
B00264715	N.A.	N.A.	N.A.
B00264716	35.0	N.A.	N.A.
B00264717	26.1	N.A.	N.A.
B00264718	15.7	N.A.	N.A.
B00264719	N.A.	N.A.	N.A.
B00264720	N.A.	N.A.	N.A.
B00264721	N.A.	N.A.	N.A.
B00264722	N.A.	N.A.	N.A.
B00264723	N.A.	N.A.	N.A.
B00264724	N.A.	N.A.	N.A.
B00264725	6.4	N.A.	N.A.
B00264726	N.A.	N.A.	N.A.
B00264727	N.A.	N.A.	N.A.
B00264728	N.A.	N.A.	N.A.
B00264729	N.A.	N.A.	N.A.
B00264730	N.A.	N.A.	N.A.
B00264731	N.A.	N.A.	N.A.
B00264732	26.6	N.A.	N.A.
B00264733	24.1	N.A.	N.A.
B00264734	N.A.	N.A.	N.A.
B00264735	N.A.	N.A.	N.A.
B00264736	N.A.	N.A.	N.A.
B00264737	N.A.	N.A.	N.A.
B00264738	N.A.	N.A.	N.A.
B00264739	N.A.	N.A.	N.A.
B00264740	N.A.	N.A.	N.A.
B00264741	N.A.	N.A.	N.A.
B00268526	N.A.	N.A.	N.A.
*Dup B00268526	N.A.	N.A.	N.A.
B00268527	N.A.	N.A.	N.A.
B00268528	N.A.	N.A.	N.A.
B00268529	11.3	N.A.	N.A.
B00268530	N.A.	N.A.	N.A.

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268531	N.A.	N.A.	N.A.
B00268532	N.A.	N.A.	N.A.
B00268533	N.A.	N.A.	N.A.
B00268534	18.0	N.A.	N.A.
B00268535	0.4	N.A.	N.A.
B00268536	0.7	N.A.	N.A.
B00268537	23.4	N.A.	208
B00268538	32.8	N.A.	203
B00268539	N.A.	N.A.	128
B00268540	N.A.	N.A.	N.A.
B00268541	N.A.	N.A.	N.A.
B00268542	N.A.	N.A.	N.A.
B00268543	42.6	N.A.	N.A.
B00268544	43.4	N.A.	N.A.
B00268545	41.3	N.A.	N.A.
B00268546	39.0	N.A.	N.A.
B00268547	1.3	N.A.	N.A.
B00268548	39.0	N.A.	200
B00268549	41.7	N.A.	189
B00268550	19.0	N.A.	N.A.
B00268551	16.7	N.A.	425
B00268552	19.8	N.A.	510
B00268553	24.9	N.A.	243
B00268554	42.4	N.A.	N.A.
B00268555	43.1	N.A.	N.A.
B00268556	43.7	N.A.	N.A.
B00268557	42.8	N.A.	N.A.
B00268558	22.1	N.A.	433
B00268559	42.2	N.A.	180
B00268560	0.1	N.A.	N.A.
B00268561	41.6	N.A.	N.A.
*Dup B00268561	N.A.	N.A.	N.A.
B00268562	38.5	N.A.	N.A.
B00268563	29.9	N.A.	365
B00268564	29.4	N.A.	348
B00268565	40.2	N.A.	209
B00268566	32.0	N.A.	159
B00268567	13.5	N.A.	N.A.
B00268568	1.5	N.A.	N.A.
B00268569	N.A.	N.A.	N.A.

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268570	N.A.	N.A.	N.A.
B00268571	N.A.	N.A.	N.A.
B00268572	N.A.	N.A.	N.A.
B00268573	N.A.	N.A.	N.A.
B00268574	N.A.	N.A.	N.A.
B00268575	15.1	N.A.	137
B00268576	5.2	N.A.	N.A.
B00268577	42.3	N.A.	189
B00268578	39.7	N.A.	N.A.
B00268579	N.A.	N.A.	N.A.
B00268580	N.A.	N.A.	N.A.
B00268581	N.A.	N.A.	N.A.
B00268582	N.A.	N.A.	N.A.
B00268583	N.A.	N.A.	N.A.
B00268584	13.0	N.A.	N.A.
B00268585	N.A.	N.A.	N.A.
B00268586	N.A.	N.A.	N.A.
B00268587	35.9	N.A.	N.A.
B00268588	N.A.	N.A.	N.A.
B00268589	N.A.	N.A.	N.A.
B00268590	N.A.	N.A.	N.A.
B00268591	N.A.	N.A.	N.A.
B00268592	N.A.	N.A.	316
B00268593	N.A.	N.A.	N.A.
B00268594	N.A.	N.A.	N.A.
B00268595	N.A.	N.A.	N.A.
B00268596	N.A.	N.A.	N.A.
*Dup B00268596	N.A.	N.A.	N.A.
B00268597	N.A.	N.A.	N.A.
B00268598	N.A.	N.A.	N.A.
B00268599	N.A.	N.A.	N.A.
B00268600	N.A.	N.A.	N.A.
B00268601	N.A.	N.A.	N.A.
B00268602	N.A.	N.A.	N.A.
B00268603	37.1	N.A.	N.A.
B00268604	41.6	N.A.	N.A.
B00268605	34.3	N.A.	N.A.
B00268606	34.0	N.A.	N.A.
B00268607	34.7	N.A.	N.A.
B00268608	42.2	N.A.	227

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Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268609	36.9	5.79	375
B00268610	4.4	N.A.	N.A.
B00268611	9.4	N.A.	N.A.
B00268612	33.2	8.43	306
B00268613	33.3	N.A.	297
B00268614	N.A.	N.A.	N.A.
B00268615	N.A.	N.A.	N.A.
B00268616	N.A.	N.A.	N.A.
B00268617	N.A.	N.A.	N.A.
B00268618	N.A.	N.A.	N.A.
B00268619	N.A.	N.A.	N.A.
B00268620	N.A.	N.A.	N.A.
B00268621	N.A.	N.A.	N.A.
B00268622	42.0	N.A.	456
B00268623	35.7	N.A.	439
B00268624	N.A.	N.A.	N.A.
B00268625	N.A.	N.A.	N.A.
B00268626	N.A.	N.A.	N.A.
B00268627	N.A.	N.A.	N.A.
B00268628	N.A.	N.A.	N.A.
B00268629	N.A.	N.A.	N.A.
B00268630	N.A.	N.A.	N.A.
B00268631	N.A.	N.A.	N.A.
B00268632	N.A.	N.A.	N.A.
B00268633	36.5	N.A.	158
B00268634	18.8	N.A.	N.A.
B00268635	N.A.	N.A.	N.A.
B00268636	N.A.	N.A.	N.A.
B00268637	N.A.	N.A.	N.A.

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.70	
*Blk BLANK		<0.50	
*Rep B00268592			281
*Std AMIS0268			184
*Blk BLANK			<10
*Rep B00264709	N.A.		
*Rep B00264736	N.A.		

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	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Rep B00268545	N.A.		
*Rep B00268581	N.A.		
*Rep B00268614	N.A.		
*Rep B00268627	N.A.		
*Std OREAS134A	19.2		
*Std OREAS131B	4.8		
*Std OREAS926	N.A.		
*Std OREAS131B	N.A.		
*Std OREAS926	N.A.		
*Std OREAS134A	19.5		
*Std OREAS131B	4.8		
*Std OREAS926	N.A.		
*Blk BLANK	<0.1		

Element **Method** **Det.Lim.** **Units**	S GO_ICP90Q 0.1 %
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Certificate of Analysis

Work Order : VC152330A

[Report File No.: 0000014285]

To: ROBIN BLACK
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_7/B00266555-671
Project No.	:	KZK
No. Of Samples	:	117
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152330A Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014285

Element	As	Bi	Sb	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	5	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266555	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266556	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266557	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266558	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266559	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266560	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266561	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266562	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266563	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266564	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266565	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266566	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266567	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266568	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266569	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266570	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266571	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266572	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266573	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266574	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266575	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266576	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266577	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266578	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266579	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266580	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266581	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266582	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266583	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266584	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266585	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266586	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266587	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266588	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266589	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266590	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266591	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266592	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266593	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266594	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152330A Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014285

Element	As	Bi	Sb	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	5	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266595	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266596	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266597	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266598	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266599	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266600	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266601	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266602	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266603	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266604	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266605	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266606	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266607	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266608	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266609	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266610	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266611	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266612	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266613	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266614	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266615	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266616	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266617	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266618	32	<5	8	0.28	8	N.A.
B00266619	1220	<5	11	0.24	5	N.A.
B00266620	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266621	>10000	13	1780	6.73	119	2.71
B00266622	3640	81	163	9.99	412	N.A.
B00266623	2670	61	1450	20.3	193	N.A.
B00266624	706	70	820	22.5	212	N.A.
B00266625	1920	77	556	15.3	27	N.A.
B00266626	4660	68	649	7.66	233	N.A.
B00266627	2120	61	326	6.66	304	N.A.
B00266628	1820	81	169	3.31	369	N.A.
B00266629	1820	248	285	7.85	629	N.A.
B00266630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266631	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266632	2100	144	348	8.20	538	N.A.
B00266633	1920	86	386	18.5	403	N.A.
B00266634	3740	38	746	66.7	395	N.A.

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Final : VC152330A Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014285

Element	As	Bi	Sb	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	5	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266635	3980	18	1890	229	667	N.A.
B00266636	2240	31	1270	248	386	N.A.
B00266637	3420	14	927	124	170	N.A.
B00266638	3010	32	242	79.3	172	N.A.
B00266639	2560	29	1430	103	171	N.A.
B00266640	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266641	465	6	90	2.31	17	N.A.
B00266642	80	<5	20	2.45	2	N.A.
B00266643	36	<5	16	1.29	5	N.A.
B00266644	11	<5	<5	0.87	9	N.A.
B00266645	16	<5	<5	0.58	3	N.A.
B00266646	37	6	110	2.08	33	N.A.
B00266647	42	10	50	4.56	49	N.A.
B00266648	35	5	6	1.91	14	N.A.
B00266649	21	7	19	1.04	28	N.A.
B00266650	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266651	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266652	398	95	35	2.66	741	N.A.
B00266653	3570	81	267	11.9	381	N.A.
B00266654	2580	25	398	28.6	69	N.A.
B00266655	3160	40	522	22.2	111	N.A.
B00266656	3360	34	187	8.63	60	N.A.
B00266657	1750	26	180	5.40	132	N.A.
B00266658	1440	37	298	9.93	119	N.A.
B00266659	367	<5	89	1.40	13	N.A.
B00266660	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266661	1690	10	424	11.0	216	N.A.
B00266662	2030	19	402	50.7	181	N.A.
B00266663	2530	63	510	61.0	526	N.A.
B00266664	2060	49	341	33.1	361	N.A.
B00266665	2080	35	349	14.7	302	N.A.
B00266666	2070	21	364	18.0	189	N.A.
B00266667	1160	9	351	19.9	104	N.A.
B00266668	38	<5	6	0.49	9	N.A.
B00266669	18	<5	<5	0.34	<1	N.A.
B00266670	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266671	21	<5	<5	0.25	<1	N.A.
*Rep B00266626	4760	68	651	7.37	231	
*Rep B00266644	10	<5	5	0.75	8	
*Rep B00266664	2020	48	339	32.5	358	

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Final : VC152330A Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014285

Element	As	Bi	Sb	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	5	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
*Std OREAS131B	N.A.	N.A.	39	N.A.	N.A.	
*Std OREAS934	N.A.	543	N.A.	N.A.	78	
*Std DS-1	6780	N.A.	N.A.	77.8	N.A.	
*Blk BLANK	<3	<5	<5	<0.01	<1	
*Blk BLANK						<0.01
*Std MP1B						2.23

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Certificate of Analysis

Work Order : VC152330F

[Report File No.: 0000014194]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_7/B00266555-671
Project No.	:	KZK
No. Of Samples	:	117
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 10 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152330 Report No. 013059
dated Oct 08, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266555	2.745	N.A.	160	8.1	0.30	3.61	0.02	0.05
B00266556	1.385	N.A.	56	6.5	<0.01	2.60	0.16	0.29
B00266557	1.700	N.A.	441	19.6	0.81	7.86	0.21	5.74
B00266558	1.255	N.A.	100	5.7	0.13	3.05	0.06	0.34
B00266559	2.155	N.A.	<5	1.0	<0.01	3.96	0.02	0.03
B00266560	1.220	N.A.	7	<0.3	<0.01	<0.05	<0.01	<0.01
B00266561	2.805	N.A.	39	2.8	0.03	4.23	0.02	0.05
B00266562	2.480	N.A.	385	36.0	0.11	5.19	0.10	0.39
B00266563	2.340	N.A.	2270	270	0.40	27.0	4.28	9.78
B00266564	1.745	N.A.	3260	272	0.52	25.0	4.21	7.39
B00266565	2.365	N.A.	2730	>300	0.63	29.9	4.33	9.91
B00266566	1.185	N.A.	1100	177	0.73	30.7	3.85	7.98
B00266567	1.115	N.A.	281	91.8	0.23	21.0	2.14	4.89
B00266568	3.090	N.A.	1880	219	0.40	25.7	4.03	13.0
B00266569	1.235	N.A.	2940	>300	0.81	25.3	3.02	8.91
B00266570	0.195	N.A.	775	43.0	0.45	19.6	0.32	1.17
B00266571	1.545	N.A.	1360	48.7	0.42	36.1	0.79	10.3
B00266572	4.615	N.A.	1700	159	0.70	36.7	1.77	5.73
B00266573	2.160	N.A.	1100	140	1.17	42.6	1.79	6.82
B00266574	2.980	N.A.	1370	86.2	1.57	44.9	0.35	5.35
B00266575	2.765	N.A.	953	28.8	1.14	45.9	0.10	5.16
B00266576	2.795	N.A.	602	54.0	0.76	46.5	0.46	7.78
B00266577	2.905	N.A.	936	113	0.66	46.0	1.44	4.94
B00266578	1.715	N.A.	770	56.4	0.66	44.4	0.62	3.50
B00266579	2.135	N.A.	873	66.6	0.37	39.0	1.11	8.14
B00266580	0.925	N.A.	<5	0.4	<0.01	0.11	<0.01	0.01
B00266581	2.170	N.A.	1090	85.2	0.23	30.3	1.29	7.63
B00266582	2.770	N.A.	2260	153	0.59	32.5	0.49	2.32
B00266583	2.975	N.A.	1480	117	0.22	32.4	0.43	4.16
B00266584	3.800	N.A.	2350	247	0.35	28.2	0.95	4.82
B00266585	2.465	N.A.	1400	152	0.10	27.7	1.31	4.96
B00266586	2.580	N.A.	4030	296	0.44	30.2	1.39	5.52
B00266587	2.670	N.A.	169	11.3	0.11	4.98	0.10	1.19
B00266588	3.005	N.A.	191	21.5	<0.01	2.99	0.03	0.60
B00266589	3.105	N.A.	554	55.1	<0.01	3.33	0.04	0.59
*Dup B00266589	N.A.	N.A.	669	63.9	<0.01	3.06	0.03	0.58
B00266590	0.195	N.A.	824	43.2	0.45	19.5	0.30	1.17
B00266591	2.920	N.A.	309	12.3	<0.01	2.94	0.01	0.14
B00266592	3.070	N.A.	153	16.2	<0.01	2.84	0.06	0.15
B00266593	2.175	N.A.	41	4.6	<0.01	2.85	0.03	0.02

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266594	1.415	N.A.	149	25.9	0.53	6.23	0.09	0.36
B00266595	2.255	N.A.	1810	114	1.55	35.3	0.49	5.58
B00266596	3.145	N.A.	1540	137	0.54	36.0	2.84	8.23
B00266597	3.420	N.A.	1420	69.1	0.33	42.0	0.95	3.72
B00266598	3.530	N.A.	1430	108	0.41	35.0	1.18	7.78
B00266599	3.445	N.A.	977	98.2	0.47	39.3	1.14	4.02
B00266600	1.180	N.A.	10	<0.3	<0.01	0.06	<0.01	<0.01
B00266601	2.685	N.A.	1100	120	0.15	32.8	3.63	7.15
B00266602	1.515	N.A.	882	121	0.30	36.0	4.58	8.09
B00266603	1.940	N.A.	2440	149	0.43	32.3	2.16	8.81
B00266604	2.440	93.3	2250	134	0.50	34.2	1.63	7.91
B00266605	2.355	N.A.	388	24.3	0.08	2.60	0.04	0.11
B00266606	1.800	N.A.	169	32.0	0.06	3.20	0.10	0.31
B00266607	3.615	N.A.	5600	>300	0.64	27.6	2.73	4.76
B00266608	2.800	N.A.	4820	>300	0.55	29.2	4.71	9.22
B00266609	3.400	N.A.	1980	260	0.32	26.9	3.50	10.0
B00266610	0.210	N.A.	1200	68.1	0.36	3.79	1.39	5.27
B00266611	0.210	N.A.	764	20.2	1.68	13.5	0.26	1.04
B00266612	2.830	N.A.	2210	202	0.41	24.9	3.94	8.42
B00266613	3.210	N.A.	1740	159	0.41	30.5	3.58	9.98
B00266614	1.990	N.A.	405	71.3	0.07	38.8	1.81	6.16
B00266615	1.735	N.A.	72	11.4	0.01	9.25	0.41	0.31
B00266616	2.825	N.A.	11	3.0	0.01	4.09	0.13	0.15
B00266617	2.805	N.A.	<5	1.3	<0.01	3.00	0.03	0.06
B00266618	2.735	N.A.	6	4.0	0.02	2.48	0.10	0.18
B00266619	2.660	N.A.	32	5.3	<0.01	2.38	0.11	0.15
B00266620	1.325	N.A.	<5	<0.3	<0.01	0.08	<0.01	0.01
B00266621	0.920	N.A.	844	61.6	0.15	9.03	1.40	3.59
B00266622	3.290	N.A.	1010	110	1.10	41.3	1.60	5.21
B00266623	3.065	N.A.	1420	96.8	0.49	34.2	1.12	9.05
B00266624	2.095	N.A.	822	46.2	0.62	33.7	0.77	13.6
*Dup B00266624	N.A.	N.A.	752	46.5	0.60	34.2	0.77	14.0
B00266625	1.740	N.A.	935	93.2	0.65	36.6	1.65	12.7
B00266626	3.195	N.A.	963	160	0.70	38.3	3.26	9.70
B00266627	3.330	N.A.	524	78.0	0.53	41.3	1.61	9.17
B00266628	2.990	N.A.	800	58.1	1.46	47.5	0.44	4.54
B00266629	3.085	N.A.	3560	218	7.45	42.4	0.40	5.91
B00266630	0.145	N.A.	294	23.2	13.9	27.7	0.06	0.42
B00266631	0.140	N.A.	4770	>300	0.35	11.3	11.3	18.1
B00266632	3.055	N.A.	1240	118	1.95	45.5	0.84	4.34

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266633	3.080	N.A.	652	72.4	0.58	42.8	0.99	5.91
B00266634	2.465	N.A.	1120	121	0.50	39.5	1.76	7.52
B00266635	1.885	N.A.	1860	219	0.59	32.8	3.57	9.06
B00266636	1.475	N.A.	1480	120	0.48	31.3	1.39	8.39
B00266637	2.995	N.A.	1180	91.9	0.38	33.9	0.81	6.56
B00266638	1.645	N.A.	842	47.3	0.14	38.5	0.45	5.45
B00266639	1.815	N.A.	1780	192	0.64	33.3	1.02	6.76
B00266640	1.080	N.A.	14	1.0	<0.01	0.22	0.01	0.05
B00266641	2.405	N.A.	123	7.7	0.04	4.61	0.05	0.09
B00266642	2.730	N.A.	36	4.6	<0.01	3.36	0.02	0.19
B00266643	3.095	N.A.	40	7.3	<0.01	3.00	0.04	0.11
B00266644	1.740	N.A.	<5	6.8	0.04	3.16	0.07	0.16
B00266645	1.200	N.A.	<5	4.8	0.04	2.89	0.01	0.02
B00266646	1.985	N.A.	133	47.1	0.17	6.92	0.34	1.05
B00266647	2.220	N.A.	61	37.1	0.08	11.4	0.52	1.50
B00266648	1.570	N.A.	380	5.9	0.05	4.54	0.03	0.44
B00266649	1.775	N.A.	122	10.1	0.09	4.13	0.05	0.20
B00266650	0.170	N.A.	1270	70.7	0.37	3.77	1.35	5.26
B00266651	0.170	N.A.	824	20.0	1.78	13.5	0.26	1.07
B00266652	2.070	N.A.	1230	147	1.41	39.7	0.17	0.35
B00266653	3.535	N.A.	1100	102	0.60	40.3	0.84	3.01
B00266654	3.340	85.1	1910	146	0.54	30.7	2.44	9.51
B00266655	3.265	N.A.	1990	132	0.64	36.3	1.43	6.56
B00266656	2.860	N.A.	827	78.3	0.13	34.0	2.32	8.04
B00266657	1.560	N.A.	424	99.3	0.09	36.1	4.50	11.1
B00266658	1.960	N.A.	1450	112	0.35	33.8	1.51	7.63
B00266659	1.205	N.A.	327	41.0	0.10	3.94	0.12	0.39
B00266660	1.085	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00266661	1.335	N.A.	1010	182	0.46	16.4	1.49	4.02
B00266662	2.815	N.A.	1970	267	0.42	28.2	4.16	10.2
B00266663	2.990	N.A.	2130	214	0.50	34.8	1.11	4.37
B00266664	3.115	N.A.	1760	180	0.41	33.6	1.76	6.86
B00266665	2.870	N.A.	1670	160	0.43	34.7	1.71	5.66
B00266666	1.555	N.A.	1730	172	0.43	31.3	2.73	5.86
B00266667	2.140	N.A.	954	171	0.26	32.0	3.32	8.52
B00266668	2.385	N.A.	15	4.2	0.02	3.52	0.06	0.09
B00266669	2.860	N.A.	<5	0.4	<0.01	5.99	<0.01	0.02
B00266670	0.155	N.A.	860	44.2	0.46	19.9	0.32	1.17
B00266671	1.250	N.A.	10	<0.3	<0.01	5.83	<0.01	<0.01
*Rep B00266573				139				

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Rep B00266601		113				
*Rep B00266629		216				
*Rep B00266662		245				
*Std SU_1B		6.4				
*Std OREAS132A		56.6				
*Std AMIS0268		191				
*Std SU_1B		6.6				
*Std OREAS132A		56.8				
*Std AMIS0268		191				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00266566	935					
*Rep B00266612	1970					
*Rep B00266638	794					
*Rep B00266671	10					
*Std OREAS250	308					
*Std OXH97	1290					
*Std OXJ111	2130					
*Std OXN117	7430					
*Std OREAS250	306					
*Std OXH97	1280					
*Std OXJ111	2290					
*Blk BLANK	7					
*Blk BLANK	<5					
*Rep B00266558			0.13	3.05	0.06	0.35
*Rep B00266569			0.80	25.5	3.04	8.34
*Rep B00266629			7.20	41.0	0.39	5.56
*Rep B00266634			0.50	39.6	1.77	7.31
*Rep B00266647			0.08	11.4	0.51	1.51
*Rep B00266667			0.26	31.8	3.24	8.11
*Std OREAS134A			0.13	11.8	12.9	17.4
*Std OREAS131B			0.02	5.69	1.87	3.17
*Std OREAS926			0.82	7.34	0.01	0.04
*Std OREAS134A			0.13	11.9	12.9	17.2

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Std OREAS926	0.83	7.33	0.02	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266555	N.A.	N.A.
B00266556	N.A.	N.A.
B00266557	N.A.	N.A.
B00266558	N.A.	N.A.
B00266559	N.A.	N.A.
B00266560	N.A.	N.A.
B00266561	N.A.	N.A.
B00266562	N.A.	N.A.
B00266563	38.1	251
B00266564	35.5	256
B00266565	41.4	392
B00266566	36.2	211
B00266567	16.4	N.A.
B00266568	33.7	206
B00266569	34.7	290
B00266570	N.A.	N.A.
B00266571	45.3	N.A.
B00266572	44.6	154
B00266573	36.6	N.A.
B00266574	35.0	N.A.
B00266575	34.7	N.A.
B00266576	36.0	N.A.
B00266577	36.1	N.A.
B00266578	39.3	N.A.
B00266579	38.8	N.A.
B00266580	<0.1	N.A.
B00266581	36.5	N.A.
B00266582	39.4	177
B00266583	36.7	N.A.
B00266584	35.6	221
B00266585	34.7	162
B00266586	37.7	337
B00266587	N.A.	N.A.
B00266588	N.A.	N.A.
B00266589	N.A.	N.A.
*Dup B00266589	N.A.	N.A.
B00266590	N.A.	N.A.
B00266591	N.A.	N.A.
B00266592	N.A.	N.A.
B00266593	N.A.	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266594	N.A.	N.A.
B00266595	N.A.	N.A.
B00266596	44.6	N.A.
B00266597	47.7	N.A.
B00266598	43.7	N.A.
B00266599	43.7	N.A.
B00266600	N.A.	N.A.
B00266601	44.2	N.A.
B00266602	38.6	N.A.
B00266603	43.3	N.A.
B00266604	44.2	N.A.
B00266605	1.3	N.A.
B00266606	1.2	N.A.
B00266607	36.6	439
B00266608	39.0	576
B00266609	36.5	282
B00266610	4.5	N.A.
B00266611	8.8	N.A.
B00266612	34.3	218
B00266613	40.5	175
B00266614	46.8	N.A.
B00266615	N.A.	N.A.
B00266616	N.A.	N.A.
B00266617	N.A.	N.A.
B00266618	N.A.	N.A.
B00266619	N.A.	N.A.
B00266620	N.A.	N.A.
B00266621	7.2	N.A.
B00266622	41.2	N.A.
B00266623	42.7	N.A.
B00266624	40.6	N.A.
*Dup B00266624	N.A.	N.A.
B00266625	41.2	N.A.
B00266626	37.2	139
B00266627	36.7	N.A.
B00266628	32.8	N.A.
B00266629	33.1	200
B00266630	28.4	N.A.
B00266631	21.9	317
B00266632	40.6	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266633	43.1	N.A.
B00266634	44.2	N.A.
B00266635	39.1	209
B00266636	37.8	N.A.
B00266637	40.2	N.A.
B00266638	44.7	N.A.
B00266639	39.8	168
B00266640	N.A.	N.A.
B00266641	N.A.	N.A.
B00266642	N.A.	N.A.
B00266643	N.A.	N.A.
B00266644	N.A.	N.A.
B00266645	N.A.	N.A.
B00266646	5.7	N.A.
B00266647	9.4	N.A.
B00266648	1.0	N.A.
B00266649	0.9	N.A.
B00266650	4.4	N.A.
B00266651	N.A.	N.A.
B00266652	42.5	N.A.
B00266653	46.1	N.A.
B00266654	41.5	N.A.
B00266655	45.3	N.A.
B00266656	43.0	N.A.
B00266657	38.4	N.A.
B00266658	43.5	N.A.
B00266659	2.3	N.A.
B00266660	N.A.	N.A.
B00266661	18.3	159
B00266662	39.5	265
B00266663	43.7	219
B00266664	43.3	198
B00266665	44.3	164
B00266666	39.7	152
B00266667	41.6	159
B00266668	N.A.	N.A.
B00266669	N.A.	N.A.
B00266670	N.A.	N.A.
B00266671	N.A.	N.A.

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Final : VC152330F Order: PO# BMC15-01_7/B00266555-671

Report File No.: 0000014194

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00266585		132
*Std ME-1302		423
*Std AMIS0268		177
*Blk BLANK		<10
*Rep B00266558	N.A.	
*Rep B00266569	35.3	
*Rep B00266629	32.6	
*Rep B00266634	N.A.	
*Rep B00266647	N.A.	
*Rep B00266667	40.8	
*Std OREAS134A	19.1	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Std OREAS134A	19.5	

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Std OREAS926	N.A.
*Blk BLANK	<0.1
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Certificate of Analysis

Work Order : VC152376

[Report File No.: 0000013646]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Nov 12, 2015

P.O. No.	:	PO# BMC15-EDTA_1
Project No.	:	KZK
No. Of Samples	:	90
Date Submitted	:	Sep 17, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

EDTA Leach results are semi-quantitative only.
% extraction for samples with feed grades near or below statistical detection limit cannot be determined.

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152376 Order: PO# BMC15-EDTA_1

Report File No.: 0000013646

Element	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb	Extracted Zn
Method	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	1	0.05	0.05	0.05	0.5	0.5	0.5
Units	g	mL	mg/L	mg/L	mg/L	%	%	%
B00264017	50.0	500	<0.05	3.47	1.68	INF	12.8	3.2
B00264019	50.0	500	<0.05	338	77.3	<0.5	21.3	1.3
B00264022	50.0	500	<0.05	500	79.8	<0.5	21.9	1.1
B00264024	50.0	500	<0.05	336	88.3	<0.5	25.5	0.8
B00264026	50.0	500	<0.05	382	282	<0.5	23.8	2.6
B00264028	50.0	500	<0.05	9.91	4.86	INF	15.8	3.7
B00264031	50.0	500	<0.05	479	73.3	<0.5	15.6	0.9
B00264033	50.0	500	<0.05	341	155	<0.5	21.9	1.4
B00264035	50.0	500	<0.05	1.07	0.37	INF	INF	INF
B00265002	50.0	500	<0.05	1.13	0.24	INF	INF	INF
B00265023	50.0	500	<0.05	392	307	<0.5	29.7	4.4
B00265025	50.0	500	<0.05	363	221	<0.5	27.2	3.2
B00265027	50.0	500	<0.05	12.4	21.3	INF	9.0	4.1
B00265029	50.0	500	<0.05	15.1	9.00	<0.5	1.7	<0.5
B00265033	50.0	500	11.0	64.1	54.1	<0.5	20.5	3.6
B00265035	50.0	500	<0.05	3.80	2.96	INF	INF	5.0
B00265037	50.0	500	0.54	75.4	78.0	<0.5	16.1	3.7
B00265039	50.0	500	<0.05	255	476	<0.5	17.3	6.5
B00265042	50.0	500	<0.05	340	291	<0.5	14.5	2.4
B00265044	50.0	500	<0.05	118	57.4	<0.5	5.6	1.1
B00265046	50.0	500	<0.05	146	567	<0.5	5.1	5.3
B00265048	50.0	500	<0.05	536	76.6	<0.5	20.7	0.9
B00265052	50.0	500	<0.05	437	81.5	<0.5	26.8	1.1
B00265054	50.0	500	<0.05	251	37.2	<0.5	9.5	0.5
B00265056	50.0	500	<0.05	4.51	3.19	INF	12.6	5.3
B00266502	50.0	500	<0.05	48.6	547	<0.5	3.9	8.3
B00266504	50.0	500	<0.05	473	79.7	<0.5	18.0	1.0
B00266506	50.0	500	<0.05	1.16	1.38	INF	INF	3.4
B00266508	50.0	500	<0.05	0.53	0.28	INF	INF	INF
B00268502	50.0	500	<0.05	25.9	17.3	<0.5	15.4	2.3
B00268504	50.0	500	0.07	112	717	<0.5	13.4	5.8
B00268506	50.0	500	<0.05	461	87.7	<0.5	12.9	0.9
B00268508	50.0	500	0.26	19.5	8.75	<0.5	9.3	1.4
B00268511	50.0	500	<0.05	1.10	0.92	INF	INF	2.7
B00268513	50.0	500	<0.05	0.94	0.63	INF	INF	INF
B00268515	50.0	500	<0.05	0.41	0.16	INF	INF	INF
B00268517	50.0	500	<0.05	505	63.1	<0.5	12.7	0.6
B00268519	50.0	500	<0.05	1.53	0.55	<0.5	INF	1.0
B00268522	50.0	500	<0.05	0.46	0.23	INF	INF	INF
B00268524	50.0	500	0.23	6.62	2.19	<0.5	10.4	0.6

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Final : VC152376 Order: PO# BMC15-EDTA_1

Report File No.: 0000013646

Element	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb	Extracted Zn
Method	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	1	0.05	0.05	0.05	0.5	0.5	0.5
Units	g	mL	mg/L	mg/L	mg/L	%	%	%
B00264598	50.0	500	<0.05	0.27	0.07	INF	INF	INF
B00264601	50.0	500	<0.05	607	84.3	<0.5	14.9	0.7
B00264603	50.0	500	<0.05	465	78.6	<0.5	17.2	0.9
B00264605	50.0	500	<0.05	3.30	2.22	INF	8.4	1.4
B00264607	50.0	500	<0.05	442	86.6	<0.5	14.9	1.0
B00264609	50.0	500	0.16	272	446	<0.5	15.8	8.3
B00264612	50.0	500	<0.05	589	82.7	<0.5	16.1	1.1
B00264614	50.0	500	<0.05	224	81.9	<0.5	12.0	1.1
B00264616	50.0	500	<0.05	0.75	0.59	INF	INF	INF
B00266511	50.0	500	<0.05	52.7	5.31	INF	7.3	<0.5
B00266513	50.0	500	<0.05	439	77.6	<0.5	16.4	0.7
B00266521	50.0	500	<0.05	392	194	<0.5	32.5	3.4
B00266523	50.0	500	<0.05	437	69.8	<0.5	22.8	1.0
B00266525	50.0	500	<0.05	294	84.6	<0.5	12.0	1.1
B00266527	50.0	500	<0.05	393	64.7	<0.5	13.3	0.7
B00266529	50.0	500	<0.05	285	62.7	<0.5	8.6	<0.5
B00266532	50.0	500	<0.05	240	65.5	<0.5	9.1	0.7
B00266534	50.0	500	<0.05	439	94.1	<0.5	38.1	1.1
B00266536	50.0	500	0.17	38.6	455	<0.5	6.5	16.6
B00266538	50.0	500	0.62	102	327	<0.5	17.7	15.3
B00266541	50.0	500	<0.05	514	63.6	<0.5	16.2	1.0
B00266543	50.0	500	<0.05	345	129	<0.5	37.1	2.0
B00266545	50.0	500	<0.05	1.94	0.45	INF	4.0	<0.5
B00266556	50.0	500	<0.05	13.5	1.83	INF	8.2	0.6
B00266558	50.0	500	<0.05	5.46	2.66	<0.5	9.6	0.8
B00266561	50.0	500	<0.05	1.73	0.49	<0.5	INF	1.1
B00266563	50.0	500	<0.05	545	55.0	<0.5	17.8	0.6
B00266565	50.0	500	<0.05	588	95.8	<0.5	18.0	1.0
B00266567	50.0	500	<0.05	235	51.7	<0.5	11.0	1.1
B00266569	50.0	500	<0.05	457	87.0	<0.5	23.8	1.0
B00266572	50.0	500	0.17	215	443	<0.5	16.2	7.7
B00266574	50.0	500	0.26	50.6	315	<0.5	14.4	5.9
B00266576	50.0	500	0.08	48.5	223	<0.5	10.6	2.9
B00266578	50.0	500	0.10	131	351	<0.5	21.1	10.1
B00266581	50.0	500	<0.05	191	87.9	<0.5	16.8	1.2
B00266583	50.0	500	<0.05	84.4	71.8	<0.5	22.5	1.7
B00266621	50.0	500	<0.05	50.9	12.9	<0.5	3.6	<0.5
B00268601	50.0	500	<0.05	3.31	0.46	INF	7.0	0.8
B00268603	50.0	500	<0.05	135	76.7	<0.5	11.0	0.8
B00268605	50.0	500	<0.05	195	157	<0.5	16.3	1.7

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Final : VC152376 Order: PO# BMC15-EDTA_1

Report File No.: 0000013646

Element	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb	Extracted Zn
Method	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	1	0.05	0.05	0.05	0.5	0.5	0.5
Units	g	mL	mg/L	mg/L	mg/L	%	%	%
B00268607	50.0	500	<0.05	200	141	<0.5	14.1	1.4
B00268609	50.0	500	<0.05	76.2	67.5	<0.5	10.5	1.5
B00268613	50.0	500	<0.05	186	40.2	<0.5	5.3	<0.5
B00268615	50.0	500	<0.05	0.46	0.19	INF	INF	INF
B00268617	50.0	500	<0.05	1.19	0.19	INF	INF	INF
B00268619	50.0	500	<0.05	34.2	8.76	<0.5	9.7	0.9
B00268622	50.0	500	<0.05	457	70.7	<0.5	9.3	0.6
B00268624	50.0	500	<0.05	18.3	5.86	<0.5	13.9	2.2
B00268626	50.0	500	<0.05	7.08	2.71	<0.5	27.0	0.6
B00268628	50.0	500	<0.05	3.03	3.28	<0.5	INF	0.5

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Certificate of Analysis

Work Order : VC152425F

[Report File No.: 0000014196]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_10 B00232501-38, 267146-72
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Zn values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152425 Report No. 013115
dated Oct 14, 2015 issued by SGS Canada (Production Way).

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232501	2.710	N.A.	<5	0.7	<0.01	2.52	<0.01	<0.01
B00232502	2.915	N.A.	8	0.7	<0.01	2.47	0.01	0.02
B00232503	2.660	N.A.	10	1.2	0.02	5.97	<0.01	0.05
B00232504	2.395	N.A.	28	1.9	0.05	6.14	0.01	0.07
B00232505	2.570	N.A.	20	4.6	<0.01	3.30	0.12	0.23
B00232506	2.750	N.A.	30	1.4	<0.01	3.83	0.03	0.02
B00232507	2.015	N.A.	<5	0.8	<0.01	5.89	0.03	0.03
B00232508	1.990	N.A.	<5	<0.3	<0.01	3.12	<0.01	0.02
B00232509	2.655	N.A.	6	0.7	<0.01	1.68	<0.01	0.43
B00232510	0.135	N.A.	928	42.9	0.46	20.3	0.30	1.14
B00232511	2.450	N.A.	13	2.1	<0.01	2.27	0.03	0.66
B00232512	2.895	N.A.	<5	1.0	<0.01	2.52	0.02	0.03
B00232513	2.855	N.A.	9	3.8	0.01	2.56	0.09	0.22
B00232514	3.165	N.A.	17	2.8	<0.01	3.48	0.05	0.08
B00232515	2.815	N.A.	17	2.8	<0.01	6.49	0.13	0.21
B00232516	2.990	N.A.	25	7.9	0.16	16.0	0.46	1.05
B00232517	2.990	N.A.	186	36.8	0.29	13.4	1.09	4.98
B00232518	2.995	N.A.	5	<0.3	<0.01	5.45	<0.01	0.05
B00232519	2.620	N.A.	11	6.1	<0.01	4.44	0.26	0.04
B00232520	0.710	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00232521	2.885	N.A.	<5	<0.3	<0.01	7.68	<0.01	0.03
B00232522	2.800	N.A.	27	0.5	<0.01	3.28	0.04	0.07
B00232523	2.815	N.A.	18	0.6	<0.01	2.68	0.03	0.08
B00232524	3.325	N.A.	14	7.2	<0.01	4.53	0.15	0.19
B00232525	3.050	N.A.	<5	<0.3	<0.01	3.87	<0.01	0.01
B00232526	2.795	N.A.	228	48.7	0.28	8.82	0.60	1.60
B00232527	2.610	N.A.	39	8.1	0.03	4.56	0.09	0.31
B00232528	2.995	N.A.	7	1.1	<0.01	3.23	<0.01	0.12
B00232529	2.355	N.A.	82	2.8	0.21	10.9	<0.01	0.10
B00232530	0.130	N.A.	820	42.9	0.46	20.3	0.30	1.12
B00232531	2.650	N.A.	14	0.8	0.05	7.16	<0.01	0.03
B00232532	2.655	N.A.	10	2.5	0.05	4.02	0.04	0.09
B00232533	2.945	N.A.	<5	<0.3	<0.01	4.84	<0.01	0.03
B00232534	2.805	N.A.	13	0.5	<0.01	2.11	<0.01	0.01
B00232535	3.015	N.A.	20	1.7	<0.01	2.11	0.03	0.06
*Dup B00232535	N.A.	N.A.	16	1.8	<0.01	2.35	0.03	0.06
B00232536	3.150	N.A.	128	29.9	0.02	5.24	0.47	1.04
B00232537	2.230	N.A.	<5	4.0	<0.01	3.82	0.09	0.03
B00232538	2.475	N.A.	<5	<0.3	<0.01	4.95	<0.01	0.01
B00232544	2.910	N.A.	<5	0.7	<0.01	2.64	0.01	0.02

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232545	2.530	N.A.	14	0.8	<0.01	3.03	0.01	0.04
B00232546	2.540	N.A.	<5	<0.3	<0.01	1.78	<0.01	<0.01
B00232547	2.855	N.A.	6	<0.3	<0.01	2.58	<0.01	<0.01
B00232548	2.345	N.A.	<5	<0.3	<0.01	2.02	<0.01	<0.01
B00232549	2.590	N.A.	<5	<0.3	<0.01	2.23	<0.01	<0.01
B00232550	0.130	N.A.	808	43.6	0.47	20.4	0.30	1.19
B00232551	1.655	N.A.	<5	0.3	<0.01	2.33	<0.01	<0.01
B00232552	2.805	N.A.	20	1.8	<0.01	3.54	0.02	0.05
B00267146	2.630	N.A.	25	5.0	0.01	1.62	0.07	0.11
B00267147	1.910	N.A.	<5	1.8	0.01	3.98	0.03	0.05
B00267148	1.605	89.8	5	<0.3	<0.01	2.77	<0.01	0.02
B00267149	3.070	N.A.	<5	1.1	<0.01	2.11	0.08	0.11
B00267150	0.140	N.A.	793	45.4	0.45	20.0	0.29	1.14
B00267151	2.945	N.A.	36	1.4	<0.01	2.59	0.07	0.08
B00267152	2.700	N.A.	102	7.4	0.04	9.09	0.26	1.82
B00267153	2.410	N.A.	16	1.8	<0.01	1.38	0.01	0.02
B00267154	2.845	N.A.	20	2.1	<0.01	1.88	0.01	<0.01
B00267155	2.845	N.A.	17	3.0	<0.01	2.16	0.08	0.12
B00267156	1.580	N.A.	11	1.3	<0.01	1.21	0.03	0.06
B00267157	1.825	N.A.	9	1.2	<0.01	1.78	0.03	0.03
B00267158	1.370	N.A.	<5	0.4	<0.01	1.71	<0.01	0.01
B00267159	2.590	N.A.	8	0.7	<0.01	2.60	<0.01	<0.01
B00267160	0.750	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267161	2.765	N.A.	<5	0.7	<0.01	2.56	<0.01	<0.01
B00267162	2.760	N.A.	<5	0.7	<0.01	1.71	<0.01	<0.01
B00267163	1.790	N.A.	8	0.5	<0.01	2.88	<0.01	<0.01
B00267164	2.855	N.A.	18	1.1	<0.01	2.71	0.02	0.05
B00267165	1.520	N.A.	45	10.1	<0.01	3.56	0.18	0.26
B00267166	1.860	N.A.	9	1.3	<0.01	2.94	<0.01	0.02
B00267167	1.135	N.A.	13	1.8	<0.01	2.52	<0.01	0.03
B00267168	2.405	N.A.	44	5.6	<0.01	2.27	<0.01	0.08
B00267169	2.475	N.A.	272	26.3	0.01	5.69	0.25	0.84
B00267170	0.130	N.A.	911	44.8	0.45	20.0	0.30	1.15
B00267171	2.760	N.A.	11	1.0	<0.01	2.60	<0.01	0.01
B00267172	2.695	93.4	18	9.8	<0.01	4.04	0.15	0.32
*Rep B00232520				<0.3				
*Rep B00267167				1.8				
*Rep B00267169				26.1				
*Std SU_1B				6.6				
*Std OREAS132A				54.7				

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Final : VC152425F Order: PO# BMC15-01_10 B00232501-38, 267146-72

Report File No.: 0000014196

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		188				
*Std SU_1B		5.9				
*Std AMIS0268		195				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232537	<5					
*Rep B00267152	90					
*Std OXN117	7660					
*Std OXJ111	2200					
*Std OXH97	1370					
*Std OREAS251	520					
*Blk BLANK	<5					
*Rep B00232518			<0.01	5.53	<0.01	0.04
*Rep B00232550			0.45	20.0	0.31	1.15
*Rep B00267154			<0.01	1.88	<0.01	<0.01
*Rep B00267172			<0.01	4.06	0.16	0.33
*Std OREAS134A			0.13	12.1	12.8	17.4
*Std OREAS131B			0.02	5.83	1.88	3.11
*Std OREAS926			0.82	7.49	0.01	0.04

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
B00232501	N.A.
B00232502	N.A.
B00232503	N.A.
B00232504	N.A.
B00232505	N.A.
B00232506	N.A.
B00232507	N.A.
B00232508	N.A.
B00232509	N.A.
B00232510	N.A.
B00232511	N.A.
B00232512	N.A.
B00232513	N.A.
B00232514	N.A.
B00232515	N.A.
B00232516	N.A.
B00232517	N.A.
B00232518	N.A.
B00232519	N.A.
B00232520	N.A.
B00232521	N.A.
B00232522	N.A.
B00232523	N.A.
B00232524	N.A.
B00232525	N.A.
B00232526	6.6
B00232527	N.A.
B00232528	N.A.
B00232529	N.A.
B00232530	17.8
B00232531	N.A.
B00232532	N.A.
B00232533	N.A.
B00232534	N.A.
B00232535	N.A.
*Dup B00232535	N.A.
B00232536	4.1
B00232537	N.A.
B00232538	N.A.
B00232544	N.A.

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Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
B00232545	N.A.
B00232546	N.A.
B00232547	N.A.
B00232548	N.A.
B00232549	N.A.
B00232550	N.A.
B00232551	N.A.
B00232552	N.A.
B00267146	N.A.
B00267147	N.A.
B00267148	N.A.
B00267149	N.A.
B00267150	N.A.
B00267151	N.A.
B00267152	N.A.
B00267153	N.A.
B00267154	N.A.
B00267155	N.A.
B00267156	N.A.
B00267157	N.A.
B00267158	N.A.
B00267159	N.A.
B00267160	N.A.
B00267161	N.A.
B00267162	N.A.
B00267163	N.A.
B00267164	N.A.
B00267165	N.A.
B00267166	N.A.
B00267167	N.A.
B00267168	N.A.
B00267169	N.A.
B00267170	N.A.
B00267171	N.A.
B00267172	N.A.

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Final : VC152425F Order: PO# BMC15-01_10 B00232501-38, 267146-72

Report File No.: 0000014196

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00232518	N.A.
*Rep B00232550	N.A.
*Rep B00267154	N.A.
*Rep B00267172	N.A.
*Std OREAS134A	N.A.
*Std OREAS131B	N.A.
*Std OREAS926	1.2

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Certificate of Analysis

Work Order : VC152426F

[Report File No.: 0000014197]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_10 B00267173-223, 630-652
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Zn values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152426 Report No. 013137 dated Oct 15, 2015 issued by SGS Canada (Production Way).

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267173	2.655	N.A.	13	1.7	<0.01	2.25	0.02	0.10
B00267174	2.440	N.A.	<5	1.6	0.01	2.58	0.05	0.10
B00267175	3.035	N.A.	486	58.9	0.21	9.81	0.58	1.94
B00267176	1.190	N.A.	99	34.2	0.35	8.11	0.71	1.70
B00267177	1.270	N.A.	8	1.8	<0.01	6.43	0.05	0.31
B00267178	1.665	N.A.	185	86.3	0.12	11.6	2.92	5.55
B00267179	1.360	N.A.	31	17.0	0.03	8.02	0.55	1.43
B00267180	0.655	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00267181	2.745	N.A.	<5	<0.3	<0.01	7.14	<0.01	0.04
B00267182	2.455	N.A.	<5	<0.3	<0.01	4.54	<0.01	0.03
B00267183	0.850	N.A.	6	1.5	<0.01	2.39	0.05	0.05
B00267184	0.855	N.A.	199	4.4	<0.01	2.88	0.10	0.25
B00267185	3.090	N.A.	<5	1.5	<0.01	2.56	<0.01	<0.01
B00267186	2.490	N.A.	<5	0.6	<0.01	2.25	<0.01	<0.01
B00267187	2.705	N.A.	18	2.7	<0.01	2.66	0.03	0.24
B00267188	1.640	N.A.	<5	<0.3	<0.01	2.01	<0.01	0.01
B00267189	2.240	N.A.	5	1.5	<0.01	2.41	0.13	0.07
B00267190	0.135	N.A.	814	42.3	0.45	19.7	0.31	1.11
B00267191	2.380	N.A.	23	8.1	0.09	4.84	0.26	0.51
B00267192	0.765	N.A.	145	93.3	0.22	23.9	3.57	7.61
B00267193	1.105	N.A.	349	34.1	1.24	13.9	0.11	0.47
B00267194	2.720	N.A.	9	<0.3	<0.01	2.06	<0.01	<0.01
B00267195	2.670	N.A.	6	0.5	<0.01	1.96	0.02	0.04
B00267196	2.735	N.A.	<5	<0.3	<0.01	2.46	<0.01	<0.01
B00267197	3.060	N.A.	6	<0.3	<0.01	1.57	<0.01	<0.01
B00267198	2.720	N.A.	<5	0.4	<0.01	2.49	<0.01	<0.01
B00267199	2.855	N.A.	<5	<0.3	<0.01	2.71	0.01	0.02
B00267200	0.710	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267201	1.465	N.A.	<5	0.5	<0.01	2.37	0.03	0.04
B00267202	2.790	N.A.	<5	<0.3	<0.01	6.73	<0.01	0.01
B00267203	2.040	N.A.	<5	<0.3	<0.01	6.37	<0.01	<0.01
B00267204	3.025	N.A.	<5	<0.3	<0.01	7.31	<0.01	0.01
B00267205	1.905	N.A.	<5	<0.3	<0.01	6.94	<0.01	0.01
B00267206	2.365	N.A.	<5	<0.3	<0.01	6.58	<0.01	0.01
B00267207	2.495	N.A.	<5	<0.3	<0.01	3.03	<0.01	0.01
*Dup B00267207	N.A.	N.A.	<5	<0.3	<0.01	2.73	<0.01	0.01
B00267208	2.635	N.A.	<5	0.4	<0.01	2.49	<0.01	0.08
B00267209	2.680	N.A.	8	0.7	<0.01	3.67	0.07	0.03
B00267210	0.130	N.A.	836	42.9	0.44	19.3	0.30	1.13
B00267211	2.790	N.A.	24	<0.3	<0.01	2.49	0.02	0.03

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Final : VC152426F Order: PO# BMC15-01_10 B00267173-223, 630-652

Report File No.: 0000014197

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267212	3.160	N.A.	101	9.8	0.22	6.30	0.12	0.47
B00267213	2.790	N.A.	9	1.4	<0.01	2.82	0.04	0.08
B00267214	2.735	N.A.	12	1.7	<0.01	2.74	0.09	0.22
B00267215	2.860	N.A.	<5	0.5	<0.01	2.17	0.02	0.03
B00267216	2.750	N.A.	<5	0.3	0.02	7.66	<0.01	0.05
B00267217	2.790	N.A.	41	5.1	0.07	7.93	0.07	0.29
B00267218	2.665	N.A.	120	8.7	0.21	7.81	0.03	0.07
B00267219	2.850	N.A.	25	1.5	0.03	7.77	0.01	0.04
B00267220	5.580	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00267221	3.355	N.A.	10	0.5	<0.01	3.28	<0.01	<0.01
B00267222	2.820	93.4	<5	<0.3	<0.01	5.20	<0.01	<0.01
B00267223	2.970	N.A.	7	<0.3	<0.01	7.98	<0.01	0.02
B00267630	0.135	N.A.	830	43.2	0.45	19.8	0.31	1.17
B00267631	2.210	N.A.	9	4.2	0.13	4.52	<0.01	0.08
B00267632	2.720	N.A.	<5	2.4	<0.01	3.97	0.03	0.09
B00267633	1.555	N.A.	<5	0.6	<0.01	3.43	<0.01	0.09
B00267634	1.785	N.A.	<5	<0.3	<0.01	5.74	<0.01	0.03
B00267635	2.405	N.A.	11	0.5	<0.01	3.18	<0.01	0.03
B00267636	2.935	N.A.	9	<0.3	<0.01	3.61	<0.01	<0.01
B00267637	1.785	N.A.	13	1.3	<0.01	2.54	0.05	0.07
B00267638	2.470	N.A.	11	1.5	<0.01	2.30	0.11	0.14
B00267639	2.470	N.A.	44	8.9	0.06	3.42	0.12	0.35
B00267640	0.700	N.A.	6	<0.3	<0.01	<0.05	<0.01	<0.01
B00267641	1.975	N.A.	6	1.2	<0.01	3.02	<0.01	<0.01
B00267642	3.695	N.A.	<5	0.5	0.06	16.0	<0.01	0.03
B00267643	3.285	N.A.	32	4.3	0.16	9.60	<0.01	0.02
B00267644	2.760	N.A.	11	0.3	<0.01	2.20	<0.01	0.01
B00267645	2.535	N.A.	10	2.0	0.01	3.37	0.01	0.03
B00267646	1.875	N.A.	<5	<0.3	<0.01	1.97	<0.01	<0.01
B00267647	2.535	N.A.	40	3.8	<0.01	2.68	0.11	0.11
B00267648	2.775	N.A.	<5	<0.3	<0.01	3.18	0.01	0.01
*Dup B00267648	N.A.	N.A.	<5	<0.3	<0.01	3.25	0.02	0.01
B00267649	1.990	N.A.	<5	<0.3	<0.01	5.97	<0.01	0.16
B00267650	0.135	N.A.	742	42.1	0.45	19.5	0.30	1.14
B00267651	1.900	N.A.	<5	0.6	<0.01	3.37	<0.01	0.04
B00267652	2.085	91.4	8	9.3	<0.01	2.34	0.03	0.03
*Rep B00267192				93.2				
*Rep B00267219				1.6				
*Rep B00267649				<0.3				
*Std SU_1B				6.7				

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Final : VC152426F Order: PO# BMC15-01_10 B00267173-223, 630-652

Report File No.: 0000014197

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS132A		55.5				
*Std AMIS0268		196				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00267208	<5					
*Std OREAS251	492					
*Std OXH97	1230					
*Std OXJ111	2060					
*Std OXN117	7440					
*Blk BLANK	<5					
*Rep B00267177			0.01	6.45	0.06	0.30
*Rep B00267208			<0.01	2.50	<0.01	0.08
*Rep B00267630			0.45	20.0	0.31	1.14
*Rep B00267647			<0.01	2.70	0.11	0.11
*Std OREAS131B			0.02	5.65	1.85	3.07
*Std OREAS926			0.81	7.28	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Rep B00267631	<5					

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Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
B00267173	N.A.
B00267174	N.A.
B00267175	N.A.
B00267176	N.A.
B00267177	N.A.
B00267178	N.A.
B00267179	N.A.
B00267180	N.A.
B00267181	N.A.
B00267182	N.A.
B00267183	N.A.
B00267184	N.A.
B00267185	N.A.
B00267186	N.A.
B00267187	N.A.
B00267188	N.A.
B00267189	N.A.
B00267190	16.6
B00267191	3.0
B00267192	25.3
B00267193	4.3
B00267194	N.A.
B00267195	N.A.
B00267196	N.A.
B00267197	N.A.
B00267198	N.A.
B00267199	N.A.
B00267200	N.A.
B00267201	N.A.
B00267202	N.A.
B00267203	N.A.
B00267204	N.A.
B00267205	N.A.
B00267206	N.A.
B00267207	N.A.
*Dup B00267207	N.A.
B00267208	N.A.
B00267209	N.A.
B00267210	N.A.
B00267211	N.A.

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Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
B00267212	N.A.
B00267213	N.A.
B00267214	N.A.
B00267215	N.A.
B00267216	N.A.
B00267217	N.A.
B00267218	N.A.
B00267219	N.A.
B00267220	N.A.
B00267221	N.A.
B00267222	N.A.
B00267223	N.A.
B00267630	N.A.
B00267631	N.A.
B00267632	N.A.
B00267633	N.A.
B00267634	N.A.
B00267635	N.A.
B00267636	N.A.
B00267637	N.A.
B00267638	N.A.
B00267639	N.A.
B00267640	N.A.
B00267641	N.A.
B00267642	N.A.
B00267643	N.A.
B00267644	N.A.
B00267645	N.A.
B00267646	N.A.
B00267647	N.A.
B00267648	N.A.
*Dup B00267648	N.A.
B00267649	N.A.
B00267650	N.A.
B00267651	N.A.
B00267652	N.A.

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Final : VC152426F Order: PO# BMC15-01_10 B00267173-223, 630-652

Report File No.: 0000014197

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00267177	N.A.
*Rep B00267208	N.A.
*Rep B00267630	N.A.
*Rep B00267647	N.A.
*Std OREAS131B	N.A.
*Std OREAS926	N.A.
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Certificate of Analysis

Work Order : VC152429F

[Report File No.: 0000014294]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_10 B00267653-696
Project No.	:	KZK
No. Of Samples	:	44
Date Submitted	:	Dec 08, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Comments:

Au values have been updated.
This Report cancels and supersedes the Report No. 013194 dated Oct 20, 2015 issued by SGS Canada (Production Way).

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152429F Order: PO# BMC15-01_10 B00267653-696

Report File No.: 0000014294

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267653	2.165	N.A.	33	1.1	0.01	4.33	0.04	0.17
B00267654	2.910	N.A.	10	0.9	<0.01	2.21	<0.01	<0.01
B00267655	2.685	N.A.	8	0.5	<0.01	2.67	<0.01	<0.01
B00267656	1.870	N.A.	10	0.7	<0.01	2.94	<0.01	<0.01
B00267657	2.700	N.A.	<5	2.4	<0.01	2.45	0.05	0.21
B00267658	2.600	N.A.	11	0.8	<0.01	2.97	0.02	0.06
B00267659	2.825	N.A.	<5	0.3	<0.01	1.89	<0.01	<0.01
B00267660	0.610	N.A.	<5	<0.3	<0.01	0.26	<0.01	<0.01
B00267661	2.080	N.A.	<5	0.3	<0.01	1.94	<0.01	<0.01
B00267662	1.780	N.A.	142	18.6	0.04	3.23	0.11	0.47
B00267663	1.630	N.A.	96	17.1	0.04	2.90	0.15	0.75
B00267664	1.805	N.A.	399	117	1.41	16.4	0.52	2.14
B00267665	0.865	N.A.	<5	1.2	0.01	2.94	0.01	0.03
B00267666	2.140	N.A.	<5	0.8	0.02	2.44	0.01	0.10
B00267667	3.245	N.A.	508	15.4	0.91	4.66	0.03	0.10
B00267668	3.060	N.A.	34	12.0	0.38	8.22	0.06	0.11
B00267669	3.035	N.A.	<5	1.9	<0.01	4.01	0.05	0.13
B00267670	0.135	N.A.	769	42.3	0.45	19.8	0.30	1.16
B00267671	3.035	N.A.	<5	4.7	0.02	7.43	0.09	0.48
B00267672	3.050	N.A.	109	23.4	0.20	10.1	0.22	1.84
B00267673	2.895	N.A.	<5	0.9	0.01	3.73	<0.01	0.19
B00267674	2.910	N.A.	6	0.5	<0.01	3.94	<0.01	0.02
B00267675	2.660	N.A.	32	1.5	<0.01	3.10	0.13	0.18
B00267676	2.880	N.A.	38	1.4	<0.01	2.26	0.08	0.10
B00267677	1.870	N.A.	192	7.2	0.04	4.17	0.23	0.55
B00267678	0.965	N.A.	<5	<0.3	<0.01	3.54	<0.01	0.01
B00267679	2.620	N.A.	<5	<0.3	<0.01	2.48	<0.01	<0.01
B00267680	0.695	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00267681	2.450	N.A.	<5	3.8	0.02	3.87	0.04	0.45
B00267682	1.395	N.A.	<5	1.1	0.05	4.11	<0.01	0.02
B00267683	2.425	N.A.	266	27.3	0.76	12.8	0.07	0.36
B00267684	2.655	N.A.	11	0.5	<0.01	2.20	<0.01	0.02
B00267685	2.560	N.A.	6	<0.3	<0.01	1.87	<0.01	<0.01
B00267686	2.795	N.A.	5	<0.3	<0.01	2.25	<0.01	0.04
B00267687	2.985	N.A.	133	19.2	0.40	4.82	0.24	0.61
*Dup B00267687	N.A.	N.A.	193	20.7	0.40	5.28	0.24	0.64
B00267688	2.795	N.A.	25	3.3	<0.01	2.70	0.05	0.11
B00267689	2.365	N.A.	10	2.1	<0.01	2.67	0.05	0.03
B00267690	0.130	N.A.	830	42.3	0.45	19.3	0.30	1.12
B00267691	2.500	N.A.	9	0.7	<0.01	2.38	<0.01	0.02

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Final : VC152429F Order: PO# BMC15-01_10 B00267653-696

Report File No.: 0000014294

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267692	2.730	N.A.	10	<0.3	<0.01	2.97	<0.01	<0.01
B00267693	2.735	N.A.	<5	<0.3	<0.01	2.59	<0.01	<0.01
B00267694	3.680	N.A.	20	2.3	<0.01	3.35	0.02	0.02
B00267695	1.345	N.A.	44	3.9	<0.01	3.32	0.04	0.04
B00267696	2.155	91.7	285	24.8	1.27	9.88	0.03	0.10
*Rep B00267692				<0.3				
*Std SU_1B				6.0				
*Std OREAS132A				54.0				
*Std AMIS0268				195				
*Blk BLANK				<0.3				
*Rep B00267660			<5					
*Rep B00267695			43					
*Std OREAS251			473					
*Std OXH97			1290					
*Blk BLANK			<5					
*Rep B00267663					0.04	3.01	0.15	0.80
*Rep B00267689					<0.01	2.73	0.04	0.04
*Std OREAS131B					0.02	5.84	1.91	3.02
*Std OREAS926					0.82	7.32	0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152431A

[Report File No.: 0000014286]

To: ROBIN BLACK
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 08, 2015

P.O. No.	:	PO# BMC15-01_9 B00264761-89, 266672-716
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152431A Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014286

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00264761	120	<5	2.01	0.37	13	N.A.
B00264762	37	<5	2.73	0.22	11	N.A.
B00264763	20	<5	43.9	2.68	106	N.A.
B00264764	2240	23	29.9	0.87	226	N.A.
B00264765	>10000	56	69.4	2.47	771	1.51
B00264766	178	<5	4.21	0.93	17	N.A.
B00264767	310	6	7.63	0.36	16	N.A.
B00264768	22	6	28.4	1.09	41	N.A.
B00264769	14	9	31.6	0.56	87	N.A.
B00264770	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264771	46	12	182	3.12	441	N.A.
B00264772	64	20	210	7.85	556	N.A.
B00264773	54	18	429	3.06	428	N.A.
B00264774	2950	399	5.93	23.0	157	N.A.
B00264775	1400	285	15.3	19.5	201	N.A.
B00264776	1250	122	39.0	15.5	643	N.A.
B00264777	895	31	105	4.65	806	N.A.
B00264778	130	10	62.4	3.06	507	N.A.
B00264779	69	<5	28.9	0.71	140	N.A.
B00264780	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264781	200	10	63.0	1.47	388	N.A.
B00264782	115	5	94.2	0.73	379	N.A.
B00264783	109	10	103	1.96	523	N.A.
B00264784	53	<5	24.6	0.35	52	N.A.
B00264785	260	60	18.0	11.2	129	N.A.
B00264786	131	<5	2.41	0.13	10	N.A.
B00264787	5	<5	1.65	0.37	16	N.A.
B00264788	9	<5	9.88	0.12	19	N.A.
B00264789	19	<5	0.16	<0.01	1	N.A.
B00266672	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266673	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266674	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266675	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266676	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266677	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266678	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266679	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266680	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266681	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266682	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152431A Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014286

Element	As	Sb	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	5	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266683	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266684	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266685	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266686	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266687	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266688	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266689	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266690	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266691	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266692	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266693	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266694	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266695	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266696	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266697	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266698	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266699	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266700	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266701	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266702	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266703	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266704	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266705	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266706	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266707	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266708	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266709	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266710	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266711	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266712	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266713	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266714	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266715	329	14	0.93	0.33	2	N.A.
B00266716	3080	29	2.51	0.41	5	N.A.
*Rep B00266715	309	12	0.92	0.36	2	
*Std OREAS131B	91	38	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	517	N.A.	79	
*Std DS-1	6990	N.A.	N.A.	84.1	N.A.	
*Blk BLANK	<3	<5	<0.02	<0.01	<1	
*Blk BLANK						<0.01

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Final : VC152431A Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014286

Element	As
Method	GO_ICP13B
Det.Lim.	0.01
Units	%
*Std MP1B	2.23

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Certificate of Analysis

Work Order : VC152431F

[Report File No.: 0000014198]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_9 B00264761-89, 266672-716
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152431 Report No. 013242
dated Oct 22, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264761	5.350	N.A.	15	5.3	<0.01	3.65	0.23	0.34
B00264762	4.265	N.A.	<5	2.7	0.04	2.37	0.06	0.22
B00264763	2.275	N.A.	353	69.6	2.10	7.39	0.13	1.74
B00264764	3.565	N.A.	115	23.8	0.28	10.6	0.13	0.53
B00264765	2.320	N.A.	1610	101	1.96	29.4	0.35	1.32
B00264766	3.985	N.A.	51	3.4	0.03	14.0	0.04	0.64
B00264767	3.975	N.A.	160	8.8	0.06	16.5	0.19	0.31
B00264768	4.175	N.A.	570	30.9	0.54	17.0	0.14	1.08
B00264769	4.155	N.A.	971	42.5	1.02	20.4	0.13	0.37
B00264770	0.190	N.A.	804	42.7	0.47	19.9	0.31	1.15
B00264771	3.945	N.A.	2730	172	2.36	26.6	0.71	1.51
B00264772	2.165	N.A.	5530	>300	5.92	26.1	0.82	3.68
B00264773	5.890	N.A.	3920	213	1.26	22.2	0.74	1.89
B00264774	7.985	N.A.	2450	>300	0.34	20.4	10.9	16.4
B00264775	5.935	N.A.	2160	260	0.33	26.8	4.82	12.4
B00264776	4.720	N.A.	1350	99.0	0.24	33.0	1.85	7.33
B00264777	3.325	N.A.	3750	130	3.05	40.0	0.89	3.42
B00264778	3.265	N.A.	1140	89.1	2.89	21.7	0.17	2.44
B00264779	3.455	N.A.	150	30.9	0.93	13.2	0.09	0.38
B00264780	0.755	N.A.	<5	<0.3	<0.01	0.27	<0.01	0.01
B00264781	5.010	N.A.	921	99.7	3.26	15.1	0.17	0.71
B00264782	4.055	N.A.	822	103	3.19	18.0	0.22	0.26
B00264783	4.275	N.A.	3300	190	7.65	21.3	0.20	0.68
B00264784	1.930	N.A.	98	15.4	0.37	9.64	0.08	0.30
B00264785	2.490	N.A.	192	68.5	0.08	22.4	2.28	8.60
B00264786	5.675	N.A.	<5	2.0	0.01	5.17	0.08	0.19
B00264787	5.585	N.A.	8	2.7	0.02	5.27	0.14	0.39
B00264788	4.360	N.A.	<5	4.8	0.06	5.44	0.06	0.13
B00264789	4.595	N.A.	<5	<0.3	<0.01	6.53	<0.01	0.01
B00266672	3.010	N.A.	37	8.5	0.23	8.17	0.35	3.07
B00266673	3.300	N.A.	56	3.7	0.17	8.27	0.12	0.62
B00266674	3.110	N.A.	85	4.9	0.23	5.98	0.05	0.31
B00266675	2.420	N.A.	851	33.2	0.41	6.09	0.14	0.98
B00266676	1.850	N.A.	276	12.4	0.68	13.4	0.47	9.99
B00266677	2.105	N.A.	248	14.6	0.31	13.4	0.60	6.84
*Dup B00266677	N.A.	N.A.	255	14.4	0.35	13.4	0.59	6.72
B00266678	2.155	N.A.	256	38.8	0.09	5.11	0.59	2.30
B00266679	1.840	N.A.	270	39.7	0.48	6.44	0.10	1.62
B00266680	1.890	N.A.	<5	<0.3	<0.01	<0.05	<0.01	0.01
B00266681	1.580	N.A.	2430	>300	0.62	26.0	2.24	7.32

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266682	3.105	N.A.	818	211	0.32	23.5	4.05	9.64
B00266683	1.490	N.A.	>10000	>300	0.44	30.5	4.93	11.6
B00266684	1.570	N.A.	49	76.0	0.23	11.3	1.17	2.49
B00266685	2.440	N.A.	11	1.9	<0.01	2.97	0.02	0.02
B00266686	2.980	N.A.	36	3.4	<0.01	3.18	0.06	0.09
B00266687	3.150	N.A.	116	4.0	0.02	2.68	0.02	0.53
B00266688	2.905	N.A.	32	1.7	<0.01	2.14	0.01	0.05
B00266689	2.375	N.A.	32	6.7	0.07	6.92	0.08	1.13
B00266690	0.155	N.A.	855	44.6	0.46	20.0	0.31	1.17
B00266691	2.545	N.A.	23	0.8	0.01	4.48	<0.01	0.07
B00266692	2.130	85.2	86	26.1	0.64	13.4	0.02	4.97
B00266693	1.855	N.A.	13	2.3	<0.01	3.29	0.01	0.25
B00266694	2.275	N.A.	16	7.8	0.02	6.22	0.13	0.35
B00266695	2.120	N.A.	1510	126	3.44	17.8	0.16	0.42
B00266696	2.605	N.A.	5690	>300	11.2	30.5	0.23	1.11
B00266697	1.960	N.A.	4060	266	9.55	37.7	0.12	0.84
B00266698	1.840	N.A.	1290	118	2.82	45.9	0.40	0.68
B00266699	2.145	N.A.	408	39.4	0.60	47.2	0.53	3.04
B00266700	1.070	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00266701	2.620	N.A.	431	58.9	0.10	38.9	1.49	7.14
B00266702	1.600	N.A.	288	62.7	0.15	42.3	1.51	4.99
B00266703	1.725	N.A.	331	36.5	0.43	42.1	0.64	6.85
B00266704	3.520	N.A.	475	50.5	0.40	39.8	2.13	10.7
B00266705	2.910	N.A.	447	63.1	0.57	38.7	2.62	11.7
B00266706	1.475	N.A.	1390	136	0.45	29.4	2.05	7.73
B00266707	2.515	N.A.	1490	164	0.38	28.3	3.29	8.83
B00266708	2.890	N.A.	1220	137	0.33	28.3	3.33	8.53
B00266709	2.910	N.A.	230	62.3	0.48	40.0	3.99	10.2
B00266710	0.180	N.A.	4510	>300	0.34	11.5	11.3	18.4
B00266711	2.215	N.A.	296	121	0.41	33.6	3.95	12.1
B00266712	2.080	N.A.	6	4.2	0.02	7.23	0.12	0.24
*Dup B00266712	N.A.	N.A.	<5	3.7	0.02	7.18	0.11	0.22
B00266713	2.255	N.A.	5	<0.3	<0.01	3.45	<0.01	0.33
B00266714	1.310	N.A.	14	1.0	<0.01	3.31	<0.01	0.08
B00266715	2.475	N.A.	6	1.4	<0.01	2.32	<0.01	<0.01
B00266716	3.035	92.9	47	1.9	<0.01	2.81	<0.01	0.01
*Rep B00264777				129				
*Rep B00266709				70.8				
*Rep B00266715				1.3				
*Std OREAS132A				56.7				

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		193				
*Std AMIS0268		195				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00264763	364					
*Rep B00266699	455					
*Std OREAS251	493					
*Std OXH97	1290					
*Std OXJ111	2100					
*Std OXN117	7750					
*Blk BLANK	<5					
*Rep B00264771			2.41	26.5	0.71	1.54
*Rep B00264784			0.36	9.71	0.08	0.30
*Rep B00266688			<0.01	2.17	0.02	0.05
*Rep B00266703			0.43	42.4	0.64	6.92
*Std OREAS134A			0.13	12.0	12.9	17.6
*Std OREAS131B			0.02	5.69	1.89	3.04
*Std OREAS134A			0.13	12.0	12.8	18.1
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264761	N.A.	N.A.	N.A.
B00264762	N.A.	N.A.	N.A.
B00264763	N.A.	N.A.	N.A.
B00264764	N.A.	N.A.	N.A.
B00264765	N.A.	N.A.	N.A.
B00264766	N.A.	N.A.	N.A.
B00264767	N.A.	N.A.	N.A.
B00264768	N.A.	N.A.	N.A.
B00264769	N.A.	N.A.	N.A.
B00264770	N.A.	N.A.	N.A.
B00264771	12.5	N.A.	160
B00264772	17.5	6.61	297
B00264773	9.5	N.A.	209
B00264774	31.2	N.A.	351
B00264775	37.7	N.A.	241
B00264776	40.0	N.A.	N.A.
B00264777	38.7	N.A.	N.A.
B00264778	N.A.	N.A.	N.A.
B00264779	N.A.	N.A.	N.A.
B00264780	N.A.	N.A.	N.A.
B00264781	N.A.	N.A.	N.A.
B00264782	N.A.	N.A.	N.A.
B00264783	N.A.	N.A.	186
B00264784	N.A.	N.A.	N.A.
B00264785	25.5	N.A.	N.A.
B00264786	N.A.	N.A.	N.A.
B00264787	N.A.	N.A.	N.A.
B00264788	N.A.	N.A.	N.A.
B00264789	N.A.	N.A.	N.A.
B00266672	N.A.	N.A.	N.A.
B00266673	N.A.	N.A.	N.A.
B00266674	N.A.	N.A.	N.A.
B00266675	N.A.	N.A.	N.A.
B00266676	N.A.	N.A.	N.A.
B00266677	N.A.	N.A.	N.A.
*Dup B00266677	N.A.	N.A.	N.A.
B00266678	N.A.	N.A.	N.A.
B00266679	N.A.	N.A.	N.A.
B00266680	N.A.	N.A.	N.A.
B00266681	33.2	N.A.	271

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00266682	32.1	N.A.	231
B00266683	38.6	16.45	321
B00266684	7.8	N.A.	N.A.
B00266685	N.A.	N.A.	N.A.
B00266686	N.A.	N.A.	N.A.
B00266687	N.A.	N.A.	N.A.
B00266688	N.A.	N.A.	N.A.
B00266689	N.A.	N.A.	N.A.
B00266690	N.A.	N.A.	N.A.
B00266691	N.A.	N.A.	N.A.
B00266692	N.A.	N.A.	N.A.
B00266693	N.A.	N.A.	N.A.
B00266694	N.A.	N.A.	N.A.
B00266695	N.A.	N.A.	N.A.
B00266696	N.A.	6.14	349
B00266697	N.A.	N.A.	277
B00266698	N.A.	N.A.	N.A.
B00266699	35.9	N.A.	N.A.
B00266700	<0.1	N.A.	N.A.
B00266701	45.1	N.A.	N.A.
B00266702	48.8	N.A.	N.A.
B00266703	40.6	N.A.	N.A.
B00266704	37.4	N.A.	N.A.
B00266705	36.3	N.A.	N.A.
B00266706	39.0	N.A.	N.A.
B00266707	37.6	N.A.	130
B00266708	38.1	N.A.	N.A.
B00266709	31.8	N.A.	N.A.
B00266710	N.A.	N.A.	289
B00266711	33.4	N.A.	N.A.
B00266712	N.A.	N.A.	N.A.
*Dup B00266712	N.A.	N.A.	N.A.
B00266713	N.A.	N.A.	N.A.
B00266714	N.A.	N.A.	N.A.
B00266715	N.A.	N.A.	N.A.
B00266716	N.A.	N.A.	N.A.

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Final : VC152431F Order: PO# BMC15-01_9 B00264761-89, 266672-716

Report File No.: 0000014198

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Rep B00266683		15.81	
*Std OXN117		7.90	
*Blk BLANK		<0.50	
*Rep B00264773			206
*Std ME-1302			446
*Blk BLANK			<10
*Rep B00264771	N.A.		
*Rep B00264784	N.A.		
*Rep B00266688	N.A.		
*Rep B00266703	N.A.		
*Std OREAS134A	19.2		
*Std OREAS131B	4.7		
*Std OREAS134A	N.A.		
*Blk BLANK	<0.1		

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Certificate of Analysis
Work Order : VC152432A
[Report File No.: 0000014288]

Date: December 08, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_9 B00266717-269040
Project No.: KZK
Samples: 74
Received: Oct 21, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
58	G_LOG02	Pre-preparation processing, sorting, logging, boxing
58	GE_IC14A	Aqua Regia digestion/ICP-AES finish
58	GE_IC14M	Aqua Regia digestion/ICP-MS finish
1	GO_ICP13B	Ore Grade, Aqua Regia Diges/ICP-AES

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152432A Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014288

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266717	25	397	3.23	0.32	4	N.A.
B00266718	10	12	20.0	3.10	114	N.A.
B00266719	11	103	79.1	1.48	304	N.A.
B00266720	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266721	21	114	111	4.42	433	N.A.
B00266722	32	414	114	6.40	529	N.A.
B00266723	121	450	132	6.69	744	N.A.
B00266724	575	3240	86.2	5.80	782	N.A.
B00266725	1110	1010	67.9	7.50	627	N.A.
B00266726	218	592	47.1	5.01	383	N.A.
B00266727	112	432	35.6	3.85	268	N.A.
B00266728	160	824	44.3	5.74	366	N.A.
B00266729	289	>10000	55.1	8.23	231	1.81
B00266730	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266731	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266732	1050	2350	35.2	6.32	232	N.A.
B00266733	268	478	39.1	10.2	180	N.A.
B00266734	3760	2750	58.7	8.97	262	N.A.
B00266735	171	746	70.1	3.07	348	N.A.
B00266736	76	542	126	7.29	585	N.A.
B00266737	40	303	64.3	6.49	349	N.A.
B00266738	24	283	45.7	11.9	251	N.A.
B00266739	184	2380	68.6	9.79	327	N.A.
B00266740	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266741	529	6750	14.3	16.8	48	N.A.
B00266742	688	3400	8.73	43.6	37	N.A.
B00266743	70	369	39.8	12.3	297	N.A.
B00266744	26	265	38.5	12.8	335	N.A.
B00266745	92	440	98.3	13.0	382	N.A.
B00266746	266	903	41.5	9.41	223	N.A.
B00266747	560	3280	34.7	23.5	75	N.A.
B00266748	969	4880	17.4	45.2	33	N.A.
B00266749	730	9080	4.16	58.5	12	N.A.
B00266750	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266751	800	3830	15.7	46.4	26	N.A.
B00266752	696	2180	25.4	31.9	103	N.A.
B00266753	283	836	48.0	14.1	195	N.A.
B00266754	116	390	29.9	12.7	160	N.A.
B00266755	26	19	5.29	1.18	17	N.A.
B00266756	<5	<3	1.80	0.39	4	N.A.

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Final : VC152432A Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014288

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266757	8	11	1.65	0.63	5	N.A.
B00268638	40	1270	1.03	0.75	8	N.A.
B00268639	32	1850	0.82	0.30	9	N.A.
B00268640	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268641	30	241	10.6	0.30	11	N.A.
B00268642	178	637	50.4	9.61	241	N.A.
B00268643	238	1730	51.2	15.6	274	N.A.
B00268644	218	4350	16.6	13.0	108	N.A.
B00268645	551	3600	29.9	10.9	122	N.A.
B00268646	1020	4930	29.3	14.6	48	N.A.
B00268647	779	4520	23.8	22.9	44	N.A.
B00268648	510	5500	29.2	27.1	45	N.A.
B00268649	730	2590	82.5	30.1	346	N.A.
B00268650	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268651	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268652	392	2850	74.7	22.8	239	N.A.
B00268653	172	206	14.6	6.55	46	N.A.
B00268654	<5	227	0.64	0.18	<1	N.A.
B00268655	7	20	0.35	0.10	<1	N.A.
B00268656	15	37	4.74	1.13	7	N.A.
B00268657	14	54	7.53	1.44	38	N.A.
B00268658	40	217	53.4	4.69	169	N.A.
B00268659	28	66	33.7	1.65	118	N.A.
B00268660	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268661	14	10	32.5	1.96	31	N.A.
B00268662	<5	1860	0.42	<0.01	<1	N.A.
B00268663	103	1850	27.2	8.91	56	N.A.
B00269034	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269035	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269036	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269037	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269038	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269039	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269040	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00266717	24	426	3.15	0.30	4	
*Rep B00266748	996	5050	17.6	46.1	31	
*Rep B00268645	536	3610	29.0	10.2	124	
*Std OREAS131B	37	N.A.	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	492	N.A.	84	
*Std DS-1	N.A.	7200	N.A.	78.5	N.A.	

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Final : VC152432A Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014288

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
*Blk BLANK	<5	<3	<0.02	<0.01	<1	
*Blk BLANK	<5	<3	<0.02	<0.01	<1	
*Blk BLANK						<0.01
*Rep B00266729						1.92
*Std MP1B						2.25

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Certificate of Analysis

Work Order : VC152432F

[Report File No.: 0000014199]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_9 B00266717-269040
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 10 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
EDTA Leach results are semi-quantitative only.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152432 Report No. 13480
dated Nov 03, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266717	2.620	N.A.	7	1.7	0.02	4.05	<0.01	0.04
B00266718	1.285	N.A.	188	26.4	0.91	15.8	0.12	2.62
B00266719	2.355	N.A.	1750	111	3.81	18.2	0.11	0.51
B00266720	0.980	N.A.	<5	<0.3	0.02	0.07	<0.01	<0.01
B00266721	1.960	N.A.	1290	133	3.98	26.1	0.35	3.56
B00266722	3.060	N.A.	772	75.7	1.35	42.5	0.70	6.63
B00266723	1.825	N.A.	314	148	0.66	42.5	3.76	7.03
B00266724	2.710	N.A.	1030	64.2	0.20	39.8	1.00	4.59
B00266725	3.320	N.A.	998	43.5	0.48	39.7	0.19	4.63
B00266726	2.570	N.A.	556	91.7	0.42	40.1	1.56	5.26
B00266727	1.860	N.A.	535	83.0	0.35	41.8	1.82	7.06
B00266728	3.330	N.A.	497	116	0.23	39.3	3.49	9.44
B00266729	2.180	N.A.	4370	178	2.77	36.6	4.96	10.6
B00266730	0.165	N.A.	1300	66.9	0.35	3.71	1.37	5.25
B00266731	0.165	N.A.	807	19.9	1.72	13.5	0.26	1.05
B00266732	2.225	N.A.	1380	85.7	0.36	36.7	1.13	4.87
B00266733	3.235	N.A.	431	123	0.07	35.1	4.16	9.25
B00266734	3.100	N.A.	3470	236	1.00	31.0	2.17	7.50
B00266735	1.925	N.A.	1070	82.4	0.47	39.0	1.12	2.71
B00266736	2.140	N.A.	1010	124	0.86	44.7	1.79	7.28
B00266737	3.220	N.A.	543	40.7	0.47	44.0	0.49	6.43
B00266738	3.355	N.A.	445	33.4	0.49	41.6	0.31	12.6
B00266739	2.105	N.A.	952	150	0.65	34.6	3.25	14.2
B00266740	0.950	N.A.	<5	<0.3	<0.01	0.23	<0.01	0.04
B00266741	1.715	N.A.	2130	255	0.16	18.8	4.30	9.73
B00266742	1.955	N.A.	1760	>300	0.19	19.9	5.17	12.1
B00266743	1.380	N.A.	501	35.9	0.64	38.0	0.30	11.1
B00266744	3.235	N.A.	699	35.1	0.83	39.4	0.21	13.3
B00266745	1.520	N.A.	956	135	1.56	38.8	2.24	12.5
B00266746	1.875	N.A.	501	194	0.48	36.6	4.96	12.1
B00266747	1.600	N.A.	2040	189	0.33	27.0	3.17	12.0
B00266748	3.115	N.A.	2000	241	0.19	25.5	3.35	8.98
B00266749	3.190	N.A.	1970	200	0.15	32.6	2.94	7.35
B00266750	0.140	N.A.	4550	289	0.33	11.2	11.2	17.6
B00266751	2.960	N.A.	1800	249	0.17	27.4	3.71	11.3
*Dup B00266751	N.A.	N.A.	2120	265	0.18	26.8	3.64	11.4
B00266752	2.270	N.A.	2010	>300	0.25	25.4	4.22	10.4
B00266753	2.475	N.A.	522	263	0.28	32.3	7.74	11.4
B00266754	1.535	N.A.	396	123	0.42	27.8	2.58	7.69
B00266755	1.300	N.A.	13	13.9	0.09	4.75	0.25	0.69

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266756	2.070	N.A.	7	1.8	<0.01	2.49	0.04	0.12
B00266757	1.890	N.A.	8	4.5	0.02	1.63	0.06	0.28
B00268638	0.885	N.A.	76	2.1	<0.01	1.96	0.03	0.17
B00268639	1.070	N.A.	51	3.5	<0.01	2.19	0.05	0.05
B00268640	1.110	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268641	0.535	N.A.	240	14.9	0.27	2.96	0.06	0.06
B00268642	2.910	N.A.	940	109	1.39	35.1	0.66	5.84
B00268643	2.855	N.A.	1390	161	0.35	34.0	1.62	8.35
B00268644	3.005	N.A.	1150	97.6	0.11	29.1	1.09	6.98
B00268645	3.305	N.A.	1720	168	0.61	31.9	2.08	7.69
B00268646	2.445	93.3	1740	248	0.30	26.7	2.19	7.19
B00268647	2.925	N.A.	1160	210	0.19	28.4	1.79	5.62
B00268648	2.905	N.A.	1720	211	0.22	26.4	2.90	10.9
B00268649	1.590	N.A.	1740	236	0.37	22.4	4.06	12.2
B00268650	0.170	N.A.	1260	71.4	0.36	3.71	1.33	5.33
B00268651	0.170	N.A.	771	20.6	1.70	13.3	0.26	1.08
B00268652	2.225	N.A.	1050	>300	0.15	31.6	5.44	10.1
B00268653	1.955	N.A.	326	73.9	0.05	9.49	0.90	2.47
B00268654	2.970	N.A.	<5	1.5	<0.01	1.86	0.01	0.04
B00268655	1.715	N.A.	<5	1.3	<0.01	1.87	<0.01	0.02
B00268656	1.390	N.A.	24	14.9	0.04	3.65	0.25	0.71
B00268657	2.125	N.A.	367	31.8	1.07	8.77	0.06	0.73
B00268658	1.435	N.A.	277	45.5	0.48	26.0	1.02	4.12
B00268659	2.180	N.A.	749	57.4	1.77	17.0	0.18	1.47
B00268660	1.400	N.A.	<5	0.4	<0.01	0.28	<0.01	<0.01
B00268661	3.020	N.A.	247	18.9	0.19	9.28	0.20	1.36
B00268662	2.270	N.A.	<5	0.7	<0.01	2.50	<0.01	<0.01
B00268663	2.990	N.A.	409	104	0.27	10.6	2.24	5.86
B00269034	3.405	N.A.	<5	0.8	<0.01	3.31	<0.01	0.02
B00269035	3.320	N.A.	<5	0.8	<0.01	2.08	<0.01	<0.01
B00269036	4.115	N.A.	<5	1.7	<0.01	2.35	0.07	0.58
*Dup B00269036	N.A.	N.A.	<5	1.4	<0.01	2.28	0.06	0.52
B00269037	5.295	N.A.	<5	0.7	<0.01	1.86	0.02	0.73
B00269038	5.785	N.A.	<5	0.7	<0.01	3.12	0.02	0.41
B00269039	3.550	92.4	<5	1.6	<0.01	3.93	0.08	0.82
B00269040	0.550	N.A.	<5	<0.3	<0.01	0.16	<0.01	<0.01
*Rep B00266720				<0.3				
*Rep B00269035				0.7				
*Rep B00269040				<0.3				
*Std SU_1B				6.5				

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS132A		58.9				
*Std AMIS0268		185				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00266732	1410					
*Rep B00268658	265					
*Std OREAS251	514					
*Std OXH97	1300					
*Std OXJ111	2050					
*Std OXN117	7790					
*Blk BLANK	<5					
*Rep B00266738			0.48	41.3	0.30	12.2
*Rep B00266743			0.65	37.8	0.30	11.0
*Rep B00268647			0.19	28.3	1.73	5.66
*Rep B00268657			1.07	8.84	0.07	0.76
*Std OREAS134A			0.12	11.8	12.9	17.6
*Std OREAS131B			0.02	5.68	1.87	3.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb
Method	GO_ICP90Q	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	0.1	1	0.05	0.05	0.05	0.5	0.5
Units	%	g	mL	mg/L	mg/L	mg/L	%	%
B00266717	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266718	8.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266719	12.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266720	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266721	16.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266722	36.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266723	36.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266724	44.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266725	44.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266726	44.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266727	41.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266728	39.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266729	33.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266730	4.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266731	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266732	42.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266733	40.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266734	37.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266735	42.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266736	35.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266737	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266738	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266739	37.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266740	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266741	25.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266742	29.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266743	32.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266744	33.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266745	34.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266746	38.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266747	33.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266748	35.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266749	40.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266750	22.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266751	33.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Dup B00266751	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266752	31.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266753	33.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266754	32.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266755	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Element	S	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb
Method	GO_ICP90Q	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	0.1	1	0.05	0.05	0.05	0.5	0.5
Units	%	g	mL	mg/L	mg/L	mg/L	%	%
B00266756	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266757	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268638	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268639	N.A.	50.0	500	<0.05	6.19	0.62	<0.5	11.6
B00268640	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268641	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268642	40.4	50.0	500	<0.05	65.2	159	<0.5	9.8
B00268643	41.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268644	33.1	50.0	500	<0.05	84.2	72.2	<0.5	7.7
B00268645	37.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268646	31.3	50.0	500	<0.05	164	71.5	<0.5	7.5
B00268647	33.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268648	35.4	50.0	500	<0.05	188	42.4	<0.5	6.5
B00268649	30.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268650	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268651	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268652	38.9	50.0	500	<0.05	530	96.6	<0.5	9.7
B00268653	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268654	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268655	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268656	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268657	6.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268658	20.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268659	10.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268660	<0.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268661	3.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268662	0.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268663	10.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269034	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269035	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269036	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Dup B00269036	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269037	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269038	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269039	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269040	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00266738	N.A.
*Rep B00266743	N.A.
*Rep B00268647	N.A.
*Rep B00268657	N.A.
*Std OREAS134A	19.5
*Std OREAS131B	4.7
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Element	Extracted Zn	Ag
Method	EDTA	GO_FAG313
Det.Lim.	0.5	10
Units	%	g/t
B00266717	N.A.	N.A.
B00266718	N.A.	N.A.
B00266719	N.A.	N.A.
B00266720	N.A.	N.A.
B00266721	N.A.	N.A.
B00266722	N.A.	N.A.
B00266723	N.A.	N.A.
B00266724	N.A.	N.A.
B00266725	N.A.	N.A.
B00266726	N.A.	N.A.
B00266727	N.A.	N.A.
B00266728	N.A.	N.A.
B00266729	N.A.	150
B00266730	N.A.	N.A.
B00266731	N.A.	N.A.
B00266732	N.A.	N.A.
B00266733	N.A.	N.A.
B00266734	N.A.	260
B00266735	N.A.	N.A.
B00266736	N.A.	N.A.
B00266737	N.A.	N.A.
B00266738	N.A.	N.A.
B00266739	N.A.	N.A.
B00266740	N.A.	N.A.
B00266741	N.A.	260
B00266742	N.A.	330
B00266743	N.A.	N.A.
B00266744	N.A.	N.A.
B00266745	N.A.	N.A.
B00266746	N.A.	190
B00266747	N.A.	190
B00266748	N.A.	200
B00266749	N.A.	180
B00266750	N.A.	290
B00266751	N.A.	230
*Dup B00266751	N.A.	N.A.
B00266752	N.A.	320
B00266753	N.A.	230
B00266754	N.A.	N.A.
B00266755	N.A.	N.A.

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	Extracted Zn	Ag
Method	EDTA	GO_FAG313
Det.Lim.	0.5	10
Units	%	g/t
B00266756	N.A.	N.A.
B00266757	N.A.	N.A.
B00268638	N.A.	N.A.
B00268639	1.3	N.A.
B00268640	N.A.	N.A.
B00268641	N.A.	N.A.
B00268642	2.7	N.A.
B00268643	N.A.	160
B00268644	1.0	I.S.
B00268645	N.A.	150
B00268646	1.0	220
B00268647	N.A.	200
B00268648	<0.5	200
B00268649	N.A.	210
B00268650	N.A.	N.A.
B00268651	N.A.	N.A.
B00268652	1.0	280
B00268653	N.A.	N.A.
B00268654	N.A.	N.A.
B00268655	N.A.	N.A.
B00268656	N.A.	N.A.
B00268657	N.A.	N.A.
B00268658	N.A.	N.A.
B00268659	N.A.	N.A.
B00268660	N.A.	N.A.
B00268661	N.A.	N.A.
B00268662	N.A.	N.A.
B00268663	N.A.	N.A.
B00269034	N.A.	N.A.
B00269035	N.A.	N.A.
B00269036	N.A.	N.A.
*Dup B00269036	N.A.	N.A.
B00269037	N.A.	N.A.
B00269038	N.A.	N.A.
B00269039	N.A.	N.A.
B00269040	N.A.	N.A.

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Final : VC152432F Order: PO# BMC15-01_9 B00266717-269040

Report File No.: 0000014199

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
*Rep B00268652	260
*Std AMIS0267	940
*Blk BLANK	<10

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Certificate of Analysis

Work Order : VC152433

[Report File No.: 0000013116]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Oct 14, 2015

P.O. No.	:	PO# BMC15-01_9 B00269041-082
Project No.	:	KZK
No. Of Samples	:	42
Date Submitted	:	Sep 21, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152433 Order: PO# BMC15-01_9 B00269041-082

Report File No.: 0000013116

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269041	4.285	N.A.	<5	<0.3	<0.01	3.45	<0.01	0.02
B00269042	3.670	N.A.	<5	<0.3	<0.01	3.43	<0.01	0.07
B00269043	2.355	N.A.	<5	<0.3	<0.01	8.03	<0.01	0.14
B00269044	2.725	N.A.	<5	<0.3	<0.01	3.15	<0.01	0.10
B00269045	3.305	N.A.	<5	1.0	<0.01	3.37	0.03	0.33
B00269046	3.070	N.A.	16	<0.3	0.01	2.78	0.02	0.07
B00269047	3.555	N.A.	<5	<0.3	<0.01	4.26	<0.01	0.06
B00269048	3.615	N.A.	13	3.3	0.17	7.73	0.09	0.61
B00269049	4.525	N.A.	53	10.0	0.26	8.37	0.55	1.50
B00269050	0.155	N.A.	844	42.9	0.45	19.6	0.31	1.11
B00269051	2.250	N.A.	15	3.7	0.15	6.74	0.05	0.18
B00269052	3.815	N.A.	10	0.9	0.02	5.09	0.01	0.13
B00269053	5.215	N.A.	<5	<0.3	<0.01	4.41	<0.01	0.03
B00269054	3.665	N.A.	6	<0.3	<0.01	4.27	<0.01	<0.01
B00269055	3.080	N.A.	<5	<0.3	<0.01	3.85	<0.01	<0.01
B00269056	2.200	N.A.	31	1.7	0.04	14.5	0.02	0.93
B00269057	4.075	N.A.	7	2.0	0.25	7.65	0.01	0.18
B00269058	2.655	N.A.	<5	1.1	0.02	11.6	0.03	0.73
B00269059	3.775	N.A.	<5	1.1	0.02	10.0	0.02	0.64
B00269060	0.620	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00269061	3.835	N.A.	<5	1.3	<0.01	8.64	0.10	0.13
B00269062	4.275	N.A.	15	16.9	0.05	15.3	1.50	4.71
B00269063	2.810	N.A.	<5	<0.3	<0.01	8.30	<0.01	0.05
B00269064	5.800	N.A.	<5	<0.3	<0.01	8.32	<0.01	0.03
B00269065	3.555	N.A.	<5	0.6	0.02	10.0	0.01	0.07
B00269066	2.515	N.A.	<5	0.6	0.02	11.2	<0.01	2.31
B00269067	2.200	N.A.	20	21.2	0.07	12.6	2.19	6.53
B00269068	3.475	N.A.	22	15.7	0.10	12.2	1.54	3.84
B00269069	4.800	N.A.	38	21.4	0.10	17.5	1.65	3.83
B00269070	0.170	N.A.	1250	68.8	0.36	3.70	1.37	5.24
B00269071	0.165	N.A.	827	20.5	1.72	13.3	0.25	1.04
B00269072	3.165	N.A.	17	17.1	0.04	13.8	1.75	2.19
B00269073	5.805	N.A.	<5	1.7	0.02	7.53	0.10	0.19
B00269074	5.265	N.A.	<5	1.3	0.02	7.05	0.05	0.11
B00269075	5.740	N.A.	<5	1.0	0.01	6.98	0.02	0.67
B00269076	2.750	N.A.	<5	0.6	0.03	6.41	0.02	2.15
B00269077	2.355	N.A.	<5	0.5	<0.01	3.92	<0.01	0.03
B00269078	2.220	N.A.	8	10.9	0.08	8.55	0.08	1.41
B00269079	3.825	N.A.	<5	2.6	0.02	2.62	<0.01	0.18
B00269080	0.740	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01

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Final : VC152433 Order: PO# BMC15-01_9 B00269041-082

Report File No.: 0000013116

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269081	3.860	N.A.	18	19.4	0.02	2.74	0.07	0.13
B00269082	2.645	89.9	30	14.4	0.04	2.95	0.07	0.09
*Rep B00269067				21.4				
*Rep B00269077				0.4				
*Std SU_1B				6.2				
*Std OREAS132A				55.6				
*Blk BLANK				<0.3				
*Rep B00269069			28					
*Rep B00269080			<5					
*Std OREAS251			498					
*Std OXH97			1290					
*Std OXJ111			2070					
*Blk BLANK			<5					
*Rep B00269053					<0.01	4.46	<0.01	0.03
*Rep B00269071					1.70	13.3	0.25	1.05
*Std OREAS131B					0.02	5.72	1.88	3.14
*Std OREAS926					0.82	7.29	0.01	0.05
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152484

[Report File No.: 0000013139]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Oct 15, 2015

P.O. No.	:	PO# BMC15-01_8 B00267093-627
Project No.	:	KZK
No. Of Samples	:	119
Date Submitted	:	Sep 18, 2015
Report Comprises	:	Pages 1 to 6 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152484 Order: PO# BMC15-01_8 B00267093-627

Report File No.: 0000013139

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267093	2.390	N.A.	6	<0.3	<0.01	2.36	<0.01	<0.01
B00267094	2.280	N.A.	36	40.8	0.05	4.62	0.65	1.58
B00267095	2.655	N.A.	18	0.7	<0.01	2.37	0.02	0.04
B00267096	2.820	N.A.	17	<0.3	<0.01	2.93	<0.01	0.14
B00267097	2.810	N.A.	5	0.6	<0.01	1.79	<0.01	<0.01
B00267098	2.825	N.A.	<5	4.9	0.17	1.94	<0.01	0.02
B00267099	2.895	N.A.	17	1.9	<0.01	2.80	0.07	0.04
B00267100	0.800	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00267101	2.975	N.A.	<5	<0.3	<0.01	3.16	<0.01	0.02
B00267102	2.665	N.A.	<5	<0.3	<0.01	1.57	0.01	0.04
B00267103	2.570	N.A.	9	0.8	<0.01	1.81	0.03	0.03
B00267104	3.020	N.A.	<5	1.2	<0.01	3.40	0.02	0.10
B00267105	3.090	N.A.	48	8.6	0.15	8.38	0.11	0.25
B00267106	3.650	N.A.	44	6.9	0.11	11.5	0.15	0.27
B00267107	3.155	N.A.	140	5.2	0.26	5.73	0.02	0.06
B00267108	2.625	N.A.	<5	<0.3	<0.01	2.55	<0.01	<0.01
B00267109	2.330	N.A.	9	1.0	<0.01	2.20	0.02	0.01
B00267110	0.135	N.A.	817	43.1	0.47	19.9	0.31	1.11
B00267111	3.295	N.A.	<5	1.1	<0.01	1.99	0.04	0.15
B00267112	2.970	N.A.	<5	0.8	<0.01	2.28	0.02	0.14
B00267113	3.170	N.A.	<5	0.6	<0.01	2.34	0.02	0.21
B00267114	2.830	N.A.	6	<0.3	<0.01	3.34	<0.01	0.06
B00267115	3.310	N.A.	1160	86.8	2.43	14.5	0.05	0.18
B00267116	2.620	N.A.	12	<0.3	<0.01	4.22	<0.01	0.01
B00267117	2.830	N.A.	<5	<0.3	<0.01	2.73	<0.01	0.31
B00267118	2.990	N.A.	37	3.8	<0.01	3.15	0.02	0.07
B00267119	3.195	N.A.	8	0.7	<0.01	2.33	0.01	0.08
B00267120	0.700	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00267121	2.800	N.A.	11	0.5	<0.01	2.39	0.02	0.05
B00267122	7.145	N.A.	6	0.7	<0.01	2.23	0.02	0.02
B00267123	1.150	N.A.	22	3.8	0.11	3.41	0.02	0.04
B00267124	1.840	N.A.	353	23.2	1.14	5.71	0.07	0.48
B00267125	2.810	N.A.	<5	0.3	<0.01	3.35	<0.01	0.01
B00267126	2.050	N.A.	18	2.4	<0.01	1.98	0.05	0.55
B00267127	2.505	N.A.	40	0.6	<0.01	1.93	0.03	0.16
*Dup B00267127	N.A.	N.A.	26	0.6	<0.01	2.07	0.03	0.18
B00267128	2.135	N.A.	43	3.9	<0.01	2.28	0.03	0.18
B00267129	2.455	N.A.	8	1.6	0.02	2.28	0.07	0.14
B00267130	LNR	LNR	LNR	LNR	LNR	LNR	LNR	LNR
B00267131	2.720	N.A.	7	1.2	<0.01	1.95	<0.01	<0.01

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Final : VC152484 Order: PO# BMC15-01_8 B00267093-627

Report File No.: 0000013139

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267132	2.520	N.A.	17	1.9	<0.01	2.02	0.02	0.05
B00267133	2.705	N.A.	10	0.9	<0.01	1.69	<0.01	0.01
B00267134	2.245	N.A.	63	2.6	<0.01	2.79	<0.01	0.07
B00267135	2.690	N.A.	119	11.6	<0.01	2.96	0.11	0.27
B00267136	1.680	N.A.	200	33.7	0.15	12.2	0.32	1.11
B00267137	1.690	N.A.	40	14.3	0.11	9.10	0.03	0.35
B00267138	2.420	N.A.	<5	0.7	<0.01	3.14	<0.01	0.06
B00267139	2.755	N.A.	<5	1.1	<0.01	2.11	<0.01	0.01
B00267140	0.755	N.A.	<5	0.4	<0.01	<0.05	<0.01	<0.01
B00267141	2.630	92.7	<5	0.4	<0.01	2.13	<0.01	<0.01
B00267142	2.725	N.A.	<5	0.5	<0.01	1.58	<0.01	<0.01
B00267143	2.690	N.A.	<5	0.5	<0.01	4.75	<0.01	<0.01
B00267144	2.770	N.A.	7	0.4	<0.01	6.67	<0.01	0.02
B00267145	1.850	N.A.	10	3.4	0.02	1.95	0.04	0.05
B00267562	2.540	N.A.	58	6.0	0.14	4.76	<0.01	0.10
B00267563	2.395	N.A.	<5	2.2	0.01	5.61	0.03	0.09
B00267564	2.965	N.A.	6	0.5	<0.01	2.35	<0.01	<0.01
B00267565	2.655	N.A.	10	1.1	<0.01	1.67	<0.01	0.02
B00267566	2.775	N.A.	11	3.7	0.05	3.29	0.06	0.44
B00267567	2.395	N.A.	29	3.9	0.02	3.81	0.04	0.26
B00267568	3.265	N.A.	131	19.7	0.47	11.2	0.11	0.52
B00267569	2.165	N.A.	66	7.3	0.19	17.5	0.04	0.19
B00267570	0.130	N.A.	852	46.4	0.45	19.8	0.31	1.14
B00267571	2.300	N.A.	8	5.7	0.04	4.53	0.08	0.33
B00267572	2.175	N.A.	10	1.4	<0.01	1.99	<0.01	0.01
B00267573	2.560	N.A.	15	0.9	<0.01	2.82	<0.01	0.01
B00267574	2.645	N.A.	<5	0.8	<0.01	3.09	<0.01	0.02
B00267575	3.035	N.A.	8	0.5	<0.01	2.67	<0.01	<0.01
B00267576	2.945	N.A.	10	2.5	0.02	3.91	0.03	0.06
B00267577	2.900	N.A.	<5	0.7	<0.01	3.76	<0.01	<0.01
B00267578	2.290	N.A.	8	0.6	<0.01	3.00	<0.01	<0.01
*Dup B00267578	N.A.	N.A.	9	0.6	<0.01	2.88	<0.01	<0.01
B00267579	2.625	N.A.	<5	<0.3	<0.01	3.24	<0.01	0.02
B00267580	0.890	N.A.	<5	<0.3	<0.01	0.10	<0.01	<0.01
B00267581	2.835	N.A.	10	0.5	<0.01	2.11	<0.01	0.01
B00267582	2.335	N.A.	54	4.6	0.01	3.31	0.20	0.27
B00267583	2.255	N.A.	25	3.4	0.02	3.25	0.10	0.39
B00267584	2.625	N.A.	1130	25.7	<0.01	2.23	<0.01	0.02
B00267585	2.940	N.A.	108	0.3	<0.01	2.35	<0.01	<0.01
B00267586	2.790	N.A.	17	0.6	<0.01	3.13	<0.01	<0.01

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Final : VC152484 Order: PO# BMC15-01_8 B00267093-627

Report File No.: 0000013139

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267587	2.440	N.A.	18	0.6	<0.01	2.23	<0.01	<0.01
B00267588	2.645	N.A.	20	0.4	<0.01	1.77	<0.01	<0.01
B00267589	2.355	N.A.	13	1.0	<0.01	2.49	0.01	0.02
B00267590	0.135	N.A.	874	44.8	0.46	19.7	0.31	1.13
B00267591	1.500	N.A.	47	1.3	<0.01	3.42	<0.01	0.10
B00267592	2.290	N.A.	34	1.0	<0.01	1.84	<0.01	<0.01
B00267593	1.815	N.A.	37	1.0	<0.01	2.47	<0.01	0.03
B00267594	2.390	N.A.	24	1.3	<0.01	1.88	<0.01	0.02
B00267595	3.535	N.A.	88	20.3	<0.01	1.82	0.01	0.33
B00267596	2.150	N.A.	237	47.5	<0.01	3.90	0.04	0.19
B00267597	3.325	N.A.	232	18.1	<0.01	4.71	0.11	0.24
B00267598	1.975	N.A.	417	1.5	0.01	3.80	0.31	0.60
B00267599	2.675	N.A.	17	1.6	<0.01	2.61	0.04	0.04
B00267600	0.985	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267601	2.400	N.A.	10	1.9	<0.01	1.75	0.04	0.06
B00267602	2.120	N.A.	9	0.9	<0.01	2.38	0.02	0.02
B00267603	2.315	N.A.	22	3.5	<0.01	2.11	0.11	0.13
B00267604	0.750	N.A.	193	17.0	0.01	3.34	0.16	0.57
B00267605	2.350	N.A.	594	90.4	0.11	6.29	0.77	1.60
B00267606	2.355	N.A.	108	10.2	<0.01	1.15	0.32	0.41
B00267607	1.155	N.A.	413	5.9	<0.01	4.70	0.15	0.85
B00267608	2.735	85.6	7	1.2	0.02	4.10	<0.01	0.02
B00267609	2.210	N.A.	14	1.4	0.03	6.85	0.02	0.12
B00267610	0.135	N.A.	853	45.7	0.45	19.7	0.30	1.11
B00267611	1.910	N.A.	17	2.0	<0.01	3.17	0.07	0.08
B00267612	1.715	N.A.	196	0.8	<0.01	2.54	<0.01	0.02
B00267613	2.790	N.A.	19	1.2	<0.01	2.95	<0.01	0.02
B00267614	2.675	N.A.	12	0.5	<0.01	2.10	<0.01	<0.01
B00267615	2.120	N.A.	13	0.4	<0.01	2.07	<0.01	<0.01
B00267616	2.495	N.A.	30	3.6	<0.01	3.12	0.08	0.14
B00267617	1.000	N.A.	15	2.1	<0.01	1.95	0.03	0.05
B00267618	1.705	N.A.	55	9.7	0.06	2.44	0.35	0.93
B00267619	1.250	N.A.	576	24.6	<0.01	3.08	0.12	0.30
B00267620	0.730	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267621	2.625	N.A.	93	22.9	0.02	3.14	0.11	0.27
B00267622	2.610	N.A.	6	0.3	<0.01	3.05	0.02	0.02
B00267623	2.105	N.A.	28	4.3	0.01	4.09	0.14	1.21
B00267624	2.120	N.A.	16	2.4	0.01	6.60	0.01	0.04
B00267625	2.945	N.A.	40	4.1	0.05	6.47	0.12	0.33
B00267626	1.795	N.A.	377	37.4	0.15	8.81	0.70	1.76

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Final : VC152484 Order: PO# BMC15-01_8 B00267093-627

Report File No.: 0000013139

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267627	2.075	N.A.	32	3.7	0.01	2.32	0.07	0.13
*Rep B00267105				8.2				
*Rep B00267131				1.1				
*Rep B00267610				45.6				
*Std SU_1B				5.9				
*Std OREAS621				68.7				
*Std SU_1B				6.5				
*Std OREAS621				69.0				
*Std AMIS0268				193				
*Std SU_1B				6.8				
*Std AMIS0268				191				
*Std OREAS621				67.7				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00267127			26					
*Rep B00267569			66					
*Rep B00267591			36					
*Rep B00267622			7					
*Std OREAS251			497					
*Std OXH97			1260					
*Std OXJ111			2110					
*Std OXN117			7520					
*Std OREAS251			512					
*Std OXH97			1280					
*Std OXJ111			2160					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00267093					<0.01	2.32	<0.01	<0.01
*Rep B00267119					<0.01	2.29	0.01	0.08
*Rep B00267576					0.02	3.97	0.03	0.06
*Rep B00267623					0.01	4.12	0.14	1.27
*Std OREAS134A					0.13	11.9	13.0	17.1
*Std OREAS131B					0.02	5.72	1.91	3.02
*Std OREAS926					0.82	7.30	0.01	0.04
*Std OREAS134A					0.13	12.0	12.9	17.8
*Std OREAS131B					0.02	5.73	1.88	3.04
*Std OREAS926					0.81	7.35	0.01	0.04

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Final : VC152484 Order: PO# BMC15-01_8 B00267093-627

Report File No.: 0000013139

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Std OREAS131B	0.02	5.78	1.89	3.10
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis
Work Order : VC152566A
[Report File No.: 0000014318]

Date: December 09, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_13 B00264854-899/6764-774
Project No.: KZK
Samples: 87
Received: Oct 21, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
41	G_LOG02	Pre-preparation processing, sorting, logging, boxing
41	GE_IC14M	Aqua Regia digestion/ICP-MS finish

Storage: Pulp & Reject

PULP STORAGE : RETURN AFTER 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152566A Order: PO# BMC15-01_13 B00264854-899/6764-774

Report File No.: 0000014318

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264854	32	1.10	<0.01	1.70	<1
B00264855	33	0.52	<0.01	1.00	1
B00264856	477	0.54	<0.01	1.41	<1
B00264857	442	0.82	<0.01	1.10	4
B00264858	8	16.6	0.07	1.90	41
B00264859	7	6.68	<0.01	0.41	41
B00264860	N.A.	N.A.	N.A.	N.A.	N.A.
B00264861	40	61.0	0.18	1.48	203
B00264862	155	104	0.31	2.19	428
B00264863	133	81.2	0.79	3.87	416
B00264864	126	39.7	2.68	3.01	339
B00264865	188	55.3	2.51	7.10	102
B00264866	254	34.6	0.78	15.0	303
B00264867	325	37.6	1.49	34.3	441
B00264868	546	46.5	1.54	63.5	589
B00264869	757	27.7	5.04	122	341
B00264870	N.A.	N.A.	N.A.	N.A.	N.A.
B00264871	977	29.4	3.24	34.1	246
B00264872	756	39.7	4.98	62.3	881
B00264873	1080	34.3	24.6	319	622
B00264874	1540	38.8	68.1	354	186
B00264875	1060	39.6	56.1	409	543
B00264876	1980	10.5	44.9	486	155
B00264877	4330	36.5	49.5	38.1	459
B00264878	861	24.0	58.6	318	12
B00264879	1040	21.5	48.6	485	67
B00264880	N.A.	N.A.	N.A.	N.A.	N.A.
B00264881	231	23.3	31.0	244	185
B00264882	12	7.55	1.37	2.49	17
B00264883	58	127	2.91	2.73	208
B00264884	85	58.9	2.55	3.67	216
B00264885	583	81.8	3.68	9.79	207
B00264886	1100	153	4.63	29.8	263
B00264887	1710	151	3.69	32.2	274
B00264888	2410	64.2	2.94	15.2	181
B00264889	3620	22.2	1.33	6.26	119
B00264890	N.A.	N.A.	N.A.	N.A.	N.A.
B00264891	N.A.	N.A.	N.A.	N.A.	N.A.
B00264892	1420	29.5	1.31	6.54	117
B00264893	23	5.53	0.42	2.52	16

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Final : VC152566A Order: PO# BMC15-01_13 B00264854-899/6764-774

Report File No.: 0000014318

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264894	102	25.4	1.16	1.79	182
B00264895	9	0.60	<0.01	0.86	2
B00264896	41	0.10	<0.01	1.04	<1
B00264897	69	0.12	<0.01	1.83	<1
B00264898	65	0.15	<0.01	2.12	<1
B00264899	49	0.02	<0.01	0.47	<1
B00266764	N.A.	N.A.	N.A.	N.A.	N.A.
B00266765	N.A.	N.A.	N.A.	N.A.	N.A.
B00266766	N.A.	N.A.	N.A.	N.A.	N.A.
B00266767	N.A.	N.A.	N.A.	N.A.	N.A.
B00266768	N.A.	N.A.	N.A.	N.A.	N.A.
B00266769	N.A.	N.A.	N.A.	N.A.	N.A.
B00266770	N.A.	N.A.	N.A.	N.A.	N.A.
B00266771	N.A.	N.A.	N.A.	N.A.	N.A.
B00266772	N.A.	N.A.	N.A.	N.A.	N.A.
B00266773	N.A.	N.A.	N.A.	N.A.	N.A.
B00266774	N.A.	N.A.	N.A.	N.A.	N.A.
B00268747	N.A.	N.A.	N.A.	N.A.	N.A.
B00268748	N.A.	N.A.	N.A.	N.A.	N.A.
B00268749	N.A.	N.A.	N.A.	N.A.	N.A.
B00268750	N.A.	N.A.	N.A.	N.A.	N.A.
B00268751	N.A.	N.A.	N.A.	N.A.	N.A.
B00268752	N.A.	N.A.	N.A.	N.A.	N.A.
B00268753	N.A.	N.A.	N.A.	N.A.	N.A.
B00268754	N.A.	N.A.	N.A.	N.A.	N.A.
B00268755	N.A.	N.A.	N.A.	N.A.	N.A.
B00268756	N.A.	N.A.	N.A.	N.A.	N.A.
B00268757	N.A.	N.A.	N.A.	N.A.	N.A.
B00268758	N.A.	N.A.	N.A.	N.A.	N.A.
B00268759	N.A.	N.A.	N.A.	N.A.	N.A.
B00268760	N.A.	N.A.	N.A.	N.A.	N.A.
B00268761	N.A.	N.A.	N.A.	N.A.	N.A.
B00268762	N.A.	N.A.	N.A.	N.A.	N.A.
B00268763	N.A.	N.A.	N.A.	N.A.	N.A.
B00268764	N.A.	N.A.	N.A.	N.A.	N.A.
B00268765	N.A.	N.A.	N.A.	N.A.	N.A.
B00268766	N.A.	N.A.	N.A.	N.A.	N.A.
B00268767	N.A.	N.A.	N.A.	N.A.	N.A.
B00268768	N.A.	N.A.	N.A.	N.A.	N.A.
B00268769	N.A.	N.A.	N.A.	N.A.	N.A.

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Report File No.: 0000014318

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00268770	N.A.	N.A.	N.A.	N.A.	N.A.
B00268771	N.A.	N.A.	N.A.	N.A.	N.A.
B00268772	N.A.	N.A.	N.A.	N.A.	N.A.
B00268773	N.A.	N.A.	N.A.	N.A.	N.A.
B00268774	N.A.	N.A.	N.A.	N.A.	N.A.
B00268775	N.A.	N.A.	N.A.	N.A.	N.A.
B00268776	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00264868	546	45.6	1.64	64.4	604
*Std OREAS210	3540	N.A.	N.A.	N.A.	N.A.
*Std OREAS131B	N.A.	N.A.	N.A.	38.1	N.A.
*Std OREAS934	N.A.	526	N.A.	N.A.	79
*Std DS-1	N.A.	N.A.	83.5	N.A.	N.A.
*Blk BLANK	<3	<0.02	0.01	<0.05	<1

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Certificate of Analysis

Work Order : VC152566F

[Report File No.: 0000014200]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_13 B00264854-899/6764-774
Project No.	:	KZK
No. Of Samples	:	87
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 8 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152566 Report No. 013533
dated Nov 05, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264854	5.155	N.A.	<5	<0.3	<0.01	1.40	<0.01	<0.01
B00264855	5.210	N.A.	<5	0.6	<0.01	1.94	<0.01	<0.01
B00264856	2.465	N.A.	10	0.6	<0.01	1.74	0.01	0.02
B00264857	3.405	N.A.	6	1.8	0.05	1.88	0.03	0.04
B00264858	2.335	N.A.	34	15.0	0.51	6.37	0.07	0.26
B00264859	3.730	N.A.	79	10.7	0.65	16.9	0.02	0.21
B00264860	1.015	N.A.	<5	<0.3	<0.01	0.25	<0.01	0.01
B00264861	3.710	N.A.	191	31.5	1.29	22.6	0.05	0.19
B00264862	6.190	N.A.	418	46.4	1.58	39.7	0.11	0.64
B00264863	5.350	N.A.	202	36.7	0.54	45.7	0.15	2.36
B00264864	8.150	N.A.	289	39.5	0.72	40.0	0.11	12.4
B00264865	4.645	N.A.	492	58.4	0.68	38.5	1.28	12.7
B00264866	4.375	N.A.	938	69.8	1.06	46.0	1.78	3.44
B00264867	4.550	N.A.	779	84.4	0.94	42.0	2.52	4.75
B00264868	4.140	N.A.	594	67.7	0.44	43.3	0.70	1.10
B00264869	3.755	N.A.	430	31.5	0.06	41.8	0.13	3.71
B00264870	0.190	N.A.	822	42.6	0.45	18.9	0.31	1.15
B00264871	4.490	N.A.	529	29.6	0.27	42.8	0.16	2.00
B00264872	3.550	N.A.	675	46.4	0.43	43.2	0.34	2.21
B00264873	4.665	N.A.	647	84.0	0.22	39.1	0.86	5.96
B00264874	4.845	N.A.	1610	113	0.42	34.9	1.55	9.19
B00264875	5.655	N.A.	1280	120	0.35	35.6	1.94	9.87
B00264876	5.580	N.A.	1960	171	0.45	23.9	3.80	9.86
B00264877	2.705	N.A.	439	83.8	0.33	28.9	2.19	8.99
B00264878	3.785	N.A.	985	105	0.28	36.3	1.43	9.60
B00264879	5.420	N.A.	945	131	0.22	28.5	2.36	13.3
B00264880	1.040	N.A.	<5	0.3	<0.01	0.13	0.02	0.06
B00264881	4.970	N.A.	519	185	0.02	25.8	5.01	10.2
B00264882	2.930	N.A.	34	6.2	0.04	5.30	0.04	0.53
B00264883	3.720	N.A.	1150	105	1.75	14.2	0.18	0.61
B00264884	3.850	N.A.	785	82.7	1.83	15.5	0.17	0.41
B00264885	3.970	N.A.	860	104	2.30	13.1	0.24	0.71
B00264886	3.310	N.A.	1250	170	3.97	12.0	0.40	0.44
B00264887	3.595	N.A.	2010	163	3.54	11.0	0.45	0.43
B00264888	3.875	N.A.	660	85.4	2.19	8.97	0.19	0.43
*Dup B00264888	N.A.	N.A.	622	86.8	2.21	8.97	0.20	0.44
B00264889	3.365	N.A.	208	28.4	1.17	8.22	0.07	0.19
B00264890	0.205	N.A.	1270	69.7	0.36	3.71	1.35	5.36
B00264891	0.205	N.A.	834	19.7	1.82	13.6	0.26	1.09
B00264892	3.635	N.A.	182	27.2	0.96	11.1	0.14	0.39

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Final : VC152566F Order: PO# BMC15-01_13 B00264854-899/6764-774

Report File No.: 0000014200

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264893	2.980	N.A.	14	4.0	0.10	3.76	0.08	0.23
B00264894	2.250	N.A.	128	17.2	0.93	18.5	0.06	0.52
B00264895	2.300	N.A.	<5	<0.3	<0.01	6.56	<0.01	0.03
B00264896	3.535	N.A.	<5	<0.3	<0.01	5.06	<0.01	0.01
B00264897	1.775	N.A.	<5	0.4	<0.01	5.76	<0.01	0.01
B00264898	3.500	N.A.	<5	<0.3	<0.01	6.38	<0.01	0.01
B00264899	3.535	N.A.	<5	<0.3	<0.01	7.14	<0.01	0.01
B00266764	1.340	N.A.	<5	<0.3	<0.01	1.75	<0.01	<0.01
B00266765	1.465	N.A.	<5	0.5	<0.01	1.47	<0.01	<0.01
B00266766	1.175	96.8	<5	<0.3	<0.01	1.77	<0.01	<0.01
B00266767	1.225	N.A.	<5	0.3	<0.01	1.79	<0.01	<0.01
B00266768	0.785	N.A.	1300	191	0.49	31.6	3.90	9.61
B00266769	0.865	N.A.	792	160	0.14	33.5	3.79	10.7
B00266770	0.150	N.A.	849	43.3	0.47	19.9	0.31	1.15
B00266771	1.635	N.A.	770	122	0.37	33.2	2.47	8.68
B00266772	1.230	N.A.	10	2.4	<0.01	2.39	0.04	0.08
B00266773	1.355	N.A.	<5	1.7	<0.01	2.12	0.04	0.07
B00266774	1.185	N.A.	<5	1.3	<0.01	2.13	0.03	0.06
B00268747	1.400	N.A.	<5	0.5	<0.01	1.68	<0.01	0.02
B00268748	1.450	N.A.	57	1.3	<0.01	1.71	0.02	0.03
B00268749	2.480	N.A.	44	6.3	0.21	5.54	0.02	0.19
B00268750	0.145	N.A.	305	21.3	13.5	27.6	0.03	0.44
B00268751	0.140	N.A.	5200	6.9	0.63	6.36	0.02	0.13
B00268752	1.915	N.A.	1150	149	4.39	20.3	1.05	1.79
B00268753	2.125	N.A.	671	113	3.80	18.1	0.14	0.55
B00268754	2.140	N.A.	952	95.6	2.37	33.4	0.26	0.95
B00268755	2.310	N.A.	589	51.5	0.42	33.9	0.49	4.59
B00268756	2.185	N.A.	1400	156	0.64	34.9	2.15	10.6
B00268757	2.440	N.A.	3650	>300	0.80	31.6	2.35	10.5
B00268758	2.335	N.A.	1820	129	0.18	33.4	1.77	12.0
B00268759	1.635	N.A.	2730	203	0.15	35.7	4.07	9.34
*Dup B00268759	N.A.	N.A.	2570	194	0.15	35.8	4.02	9.28
B00268760	1.495	N.A.	<5	1.3	<0.01	0.21	0.03	0.09
B00268761	2.980	N.A.	1570	151	0.30	34.4	3.02	8.82
B00268762	3.055	N.A.	1480	244	0.28	30.2	3.98	10.7
B00268763	3.550	N.A.	3210	273	1.02	29.1	3.63	7.59
B00268764	2.590	N.A.	2680	226	0.60	30.5	2.29	10.6
B00268765	1.050	N.A.	1890	175	0.37	32.3	2.24	9.86
B00268766	2.510	N.A.	1970	293	0.39	22.0	3.01	7.39
B00268767	1.175	N.A.	68	7.4	0.02	3.25	0.10	0.27

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268768	3.360	N.A.	2710	>300	0.30	24.4	4.64	11.3
B00268769	1.925	N.A.	1450	269	0.10	29.2	4.20	7.95
B00268770	0.180	N.A.	1230	66.0	0.36	3.91	1.36	5.37
B00268771	0.170	N.A.	809	19.9	1.70	13.8	0.26	1.06
B00268772	1.975	N.A.	618	268	0.18	28.6	5.85	8.45
B00268773	2.630	N.A.	846	33.4	0.10	7.18	0.79	1.27
B00268774	1.170	N.A.	47	16.1	0.02	7.22	0.41	0.66
B00268775	1.050	N.A.	93	20.0	0.04	8.92	0.45	1.54
B00268776	2.380	90.5	<5	<0.3	0.01	5.45	<0.01	0.03
*Rep B00264855				0.8				
*Rep B00264897				0.4				
*Rep B00268775				20.2				
*Std SU_1B				6.5				
*Std OREAS621				67.2				
*Std AMIS0268				187				
*Std SU_1B				6.1				
*Std AMIS0268				195				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00264854			6					
*Rep B00266766			<5					
*Rep B00268776			<5					
*Std OREAS251			537					
*Std OXH97			1270					
*Std OXJ111			2160					
*Std OXN117			7540					
*Std OREAS251			525					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00264870					0.45	19.4	0.31	1.14
*Rep B00264878					0.27	36.5	1.33	9.60
*Rep B00268753					3.85	18.2	0.14	0.56
*Rep B00268761					0.30	34.4	3.01	8.80
*Std OREAS131B					0.02	5.67	1.91	3.14
*Std OREAS134A					0.13	12.3	13.1	17.6

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Report File No.: 0000014200

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Std OREAS131B	0.02	5.96	1.88	3.14
*Std OREAS926	0.82	7.55	0.01	0.05
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Report File No.: 0000014200

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264854	N.A.	N.A.	N.A.
B00264855	N.A.	N.A.	N.A.
B00264856	N.A.	N.A.	N.A.
B00264857	N.A.	N.A.	N.A.
B00264858	N.A.	N.A.	N.A.
B00264859	N.A.	N.A.	N.A.
B00264860	N.A.	N.A.	N.A.
B00264861	N.A.	N.A.	N.A.
B00264862	N.A.	N.A.	N.A.
B00264863	N.A.	N.A.	N.A.
B00264864	N.A.	N.A.	N.A.
B00264865	40.2	N.A.	N.A.
B00264866	43.3	N.A.	N.A.
B00264867	42.0	N.A.	N.A.
B00264868	>50.0	N.A.	N.A.
B00264869	48.9	N.A.	N.A.
B00264870	N.A.	N.A.	N.A.
B00264871	48.0	N.A.	N.A.
B00264872	45.9	N.A.	N.A.
B00264873	48.8	N.A.	N.A.
B00264874	47.1	N.A.	N.A.
B00264875	48.5	N.A.	N.A.
B00264876	38.0	N.A.	170
B00264877	33.2	N.A.	N.A.
B00264878	49.2	N.A.	N.A.
B00264879	41.5	N.A.	N.A.
B00264880	<0.1	N.A.	N.A.
B00264881	35.2	N.A.	161
B00264882	0.7	N.A.	N.A.
B00264883	5.9	N.A.	N.A.
B00264884	7.9	N.A.	N.A.
B00264885	6.6	N.A.	N.A.
B00264886	7.5	N.A.	140
B00264887	6.2	N.A.	161
B00264888	4.4	N.A.	N.A.
*Dup B00264888	N.A.	N.A.	N.A.
B00264889	2.8	N.A.	N.A.
B00264890	4.3	N.A.	N.A.
B00264891	N.A.	N.A.	N.A.
B00264892	3.8	N.A.	N.A.

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Report File No.: 0000014200

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00264893	1.3	N.A.	N.A.
B00264894	13.1	N.A.	N.A.
B00264895	N.A.	N.A.	N.A.
B00264896	N.A.	N.A.	N.A.
B00264897	N.A.	N.A.	N.A.
B00264898	N.A.	N.A.	N.A.
B00264899	N.A.	N.A.	N.A.
B00266764	0.7	N.A.	N.A.
B00266765	0.6	N.A.	N.A.
B00266766	0.8	N.A.	N.A.
B00266767	0.9	N.A.	N.A.
B00266768	36.6	N.A.	162
B00266769	37.8	N.A.	161
B00266770	N.A.	N.A.	N.A.
B00266771	35.4	N.A.	N.A.
B00266772	1.4	N.A.	N.A.
B00266773	1.6	N.A.	N.A.
B00266774	N.A.	N.A.	N.A.
B00268747	N.A.	N.A.	N.A.
B00268748	N.A.	N.A.	N.A.
B00268749	N.A.	N.A.	N.A.
B00268750	N.A.	N.A.	N.A.
B00268751	N.A.	4.87	N.A.
B00268752	13.8	N.A.	N.A.
B00268753	11.3	N.A.	N.A.
B00268754	32.9	N.A.	N.A.
B00268755	40.9	N.A.	N.A.
B00268756	45.0	N.A.	191
B00268757	37.3	N.A.	386
B00268758	42.6	N.A.	N.A.
B00268759	43.2	N.A.	223
*Dup B00268759	N.A.	N.A.	239
B00268760	N.A.	N.A.	N.A.
B00268761	43.8	N.A.	178
B00268762	39.5	N.A.	252
B00268763	33.7	N.A.	276
B00268764	41.4	N.A.	204
B00268765	38.4	N.A.	168
B00268766	29.6	N.A.	245
B00268767	1.4	N.A.	N.A.

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Final : VC152566F Order: PO# BMC15-01_13 B00264854-899/6764-774

Report File No.: 0000014200

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268768	31.4	N.A.	387
B00268769	37.2	N.A.	258
B00268770	4.3	N.A.	N.A.
B00268771	N.A.	N.A.	N.A.
B00268772	33.6	N.A.	230
B00268773	N.A.	N.A.	N.A.
B00268774	N.A.	N.A.	N.A.
B00268775	N.A.	N.A.	N.A.
B00268776	N.A.	N.A.	N.A.
*Std OXN117		7.67	
*Blk BLANK		<0.50	
*Rep B00266769			164
*Std ME-1302			439
*Blk BLANK			<10
*Rep B00264870	N.A.		
*Rep B00264878	N.A.		
*Rep B00268753	N.A.		
*Rep B00268761	N.A.		
*Std OREAS131B	N.A.		
*Std OREAS134A	19.6		

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Std OREAS131B	4.8
*Std OREAS926	N.A.
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Certificate of Analysis

Work Order : VC152572

[Report File No.: 0000013140]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Oct 15, 2015

P.O. No.	:	PO# BMC15-01_14
Project No.	:	KZK
No. Of Samples	:	76
Date Submitted	:	Sep 25, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152572 Order: PO# BMC15-01_14

Report File No.: 0000013140

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232609	2.810	N.A.	15	<0.3	<0.01	2.26	<0.01	<0.01
B00232610	0.130	N.A.	815	42.6	0.45	19.6	0.31	1.16
B00232611	2.845	N.A.	<5	<0.3	<0.01	2.95	<0.01	<0.01
B00232612	2.295	N.A.	<5	<0.3	<0.01	3.63	<0.01	<0.01
B00232613	2.310	N.A.	<5	8.1	<0.01	2.30	0.17	0.61
B00232614	2.295	N.A.	<5	<0.3	<0.01	3.50	<0.01	0.02
B00232615	2.445	N.A.	62	1.7	<0.01	2.24	0.02	<0.01
B00232616	1.805	N.A.	8	0.5	<0.01	2.03	<0.01	<0.01
B00232617	1.290	N.A.	5	<0.3	<0.01	7.68	<0.01	0.01
B00232618	3.095	N.A.	<5	0.6	<0.01	6.62	<0.01	<0.01
B00232619	2.315	N.A.	26	3.4	0.02	1.79	<0.01	0.10
B00232620	0.090	N.A.	<5	<0.3	<0.01	0.80	<0.01	<0.01
B00232621	3.090	N.A.	12	0.3	<0.01	1.90	<0.01	0.09
B00232622	3.335	N.A.	9	0.3	<0.01	2.20	<0.01	<0.01
B00232623	3.440	N.A.	<5	0.4	<0.01	1.66	<0.01	<0.01
B00232624	1.215	N.A.	11	0.9	<0.01	1.44	0.01	0.07
B00232625	1.430	N.A.	14	1.0	<0.01	1.46	<0.01	0.01
B00232626	1.310	N.A.	20	0.7	<0.01	1.86	<0.01	<0.01
B00232627	2.555	N.A.	36	0.5	<0.01	5.87	<0.01	0.04
B00232628	1.945	N.A.	8	2.6	<0.01	5.08	0.04	0.02
B00232629	2.430	N.A.	<5	<0.3	<0.01	4.43	<0.01	0.02
B00232630	0.130	N.A.	792	42.7	0.46	19.7	0.31	1.15
B00233042	2.840	N.A.	<5	1.0	<0.01	2.04	0.03	0.07
B00233043	1.930	N.A.	<5	0.9	<0.01	2.72	0.03	0.11
B00233044	2.790	N.A.	<5	<0.3	<0.01	6.53	<0.01	<0.01
B00233045	2.885	N.A.	<5	<0.3	<0.01	6.48	<0.01	<0.01
B00233046	1.625	N.A.	<5	0.5	<0.01	3.57	<0.01	<0.01
B00233047	1.675	N.A.	<5	<0.3	<0.01	3.83	<0.01	0.01
B00233048	0.390	N.A.	<5	<0.3	<0.01	4.99	<0.01	0.20
B00264147	2.855	N.A.	<5	0.7	<0.01	4.51	<0.01	0.04
B00264148	2.515	N.A.	<5	<0.3	<0.01	6.93	<0.01	0.03
B00264149	2.440	N.A.	13	0.3	<0.01	3.96	<0.01	0.10
B00264150	0.130	N.A.	840	42.4	0.45	19.2	0.30	1.16
B00264151	1.610	N.A.	<5	0.7	<0.01	3.75	0.02	0.02
*Dup B00264151	N.A.	N.A.	<5	0.5	<0.01	3.53	0.01	0.02
B00264152	3.200	N.A.	<5	0.6	<0.01	5.61	0.01	0.03
B00264153	2.820	N.A.	11	0.6	<0.01	3.61	<0.01	<0.01
B00264154	2.565	N.A.	<5	0.5	<0.01	2.25	<0.01	0.05
B00264155	2.265	N.A.	<5	0.3	<0.01	2.02	<0.01	<0.01
B00264156	1.355	N.A.	12	0.7	<0.01	1.39	<0.01	<0.01

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Final : VC152572 Order: PO# BMC15-01_14

Report File No.: 0000013140

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264157	0.540	N.A.	11	0.8	<0.01	2.41	<0.01	0.09
B00264158	3.995	N.A.	18	2.5	<0.01	6.78	0.03	0.09
B00264159	2.285	N.A.	14	2.3	<0.01	6.75	0.03	0.09
B00264160	0.580	N.A.	<5	<0.3	<0.01	0.12	<0.01	<0.01
B00264161	2.320	N.A.	30	1.9	0.02	3.62	0.02	0.33
B00264162	0.955	N.A.	63	1.7	0.01	1.53	0.01	0.59
B00264163	2.045	N.A.	<5	0.4	<0.01	2.95	<0.01	<0.01
B00264164	1.625	N.A.	235	22.4	0.89	7.28	0.04	0.58
B00264165	3.730	N.A.	8	2.4	0.03	5.95	0.02	0.11
B00264166	2.460	N.A.	<5	0.4	<0.01	3.92	<0.01	0.05
B00264167	2.575	93.7	<5	1.2	0.03	2.67	0.01	<0.01
B00264168	2.735	N.A.	<5	2.4	0.03	5.81	0.07	0.19
B00264169	2.380	N.A.	<5	0.5	<0.01	3.04	0.01	0.04
B00264170	0.135	N.A.	828	42.6	0.45	19.5	0.30	1.14
B00264171	2.930	N.A.	8	1.5	0.01	3.58	0.08	0.14
B00264172	1.890	N.A.	6	0.5	<0.01	2.56	<0.01	0.02
B00267266	2.360	N.A.	<5	1.4	0.02	10.9	0.02	0.29
B00267267	2.730	N.A.	<5	<0.3	<0.01	4.35	<0.01	<0.01
B00267268	1.075	N.A.	<5	<0.3	<0.01	4.21	<0.01	<0.01
B00267269	2.175	N.A.	<5	<0.3	<0.01	3.97	<0.01	0.05
B00267270	0.135	N.A.	801	42.1	0.45	19.6	0.31	1.14
B00267271	2.435	N.A.	<5	<0.3	<0.01	2.24	<0.01	0.07
B00267732	2.765	N.A.	<5	<0.3	0.01	7.93	<0.01	0.04
B00267733	3.185	N.A.	<5	<0.3	<0.01	5.51	<0.01	0.01
B00267734	2.265	N.A.	<5	<0.3	<0.01	9.50	<0.01	0.01
B00267735	2.445	N.A.	<5	<0.3	<0.01	3.40	<0.01	<0.01
B00267736	3.010	N.A.	<5	0.5	<0.01	4.96	<0.01	0.01
B00267737	3.620	N.A.	<5	<0.3	<0.01	1.85	<0.01	<0.01
B00267738	1.560	N.A.	14	0.9	0.01	3.49	0.03	0.16
B00267739	1.450	N.A.	<5	1.4	0.02	2.41	0.01	0.31
B00267740	0.815	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267741	1.505	N.A.	<5	1.0	<0.01	4.43	<0.01	0.03
B00267742	1.655	N.A.	<5	<0.3	<0.01	1.42	<0.01	<0.01
B00267743	2.950	N.A.	12	1.0	<0.01	2.86	<0.01	<0.01
B00267744	2.245	N.A.	25	1.3	<0.01	2.61	0.01	<0.01
B00267745	2.095	N.A.	13	1.7	<0.01	6.66	0.06	0.50
B00267746	3.180	85.9	11	0.8	<0.01	7.15	0.03	0.21
*Rep B00232610				43.5				
*Rep B00264171				1.3				
*Rep B00267743				0.9				

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Final : VC152572 Order: PO# BMC15-01_14

Report File No.: 0000013140

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.8				
*Std OREAS621		68.6				
*Std AMIS0268		184				
*Std SU_1B		6.3				
*Std OREAS621		67.9				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232628	<5					
*Rep B00264158	18					
*Rep B00267746	9					
*Std OREAS251	495					
*Std OXH97	1290					
*Std OXJ111	2120					
*Std OXN117	7420					
*Std OREAS251	502					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Rep B00232616			<0.01	2.06	<0.01	<0.01
*Rep B00264161			0.02	3.58	0.02	0.32
*Rep B00267267			<0.01	4.30	<0.01	<0.01
*Rep B00267743			<0.01	2.90	<0.01	<0.01
*Std OREAS131B			0.02	5.69	1.86	3.04
*Std OREAS926			0.83	7.32	0.01	0.04
*Std OREAS131B			0.02	5.73	1.90	3.11
*Std OREAS926			0.81	7.26	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis
Work Order : VC152573
[Report File No.: 0000013235]

Date: October 22, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_15
Project No.: KZK
Samples: 102
Received: Sep 25, 2015
Pages: Page 1 to 5
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
102	G_LOG02	Pre-preparation processing, sorting, logging, boxing
102	G_WGH79	Weighing of samples and reporting of weights
97	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
2	G_SCR34	Wet Screening 75µm, Evaluation of Prep
102	GE_FAA313	@Au, FAS, AAS, 30g-5ml(FINAL-WT)
102	GE_AAS12E	2 g, 2-Acid digest, AAS finish
102	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266775	1.560	N.A.	6	0.8	<0.01	2.66	0.01	0.11
B00266776	3.020	N.A.	61	2.1	0.21	3.51	0.02	0.05
B00266777	2.010	N.A.	5	0.7	0.01	1.67	0.01	0.04
B00266778	3.180	N.A.	<5	<0.3	<0.01	2.55	<0.01	0.01
B00266779	2.205	N.A.	<5	<0.3	<0.01	2.60	<0.01	0.01
B00266780	0.815	N.A.	9	<0.3	<0.01	0.07	<0.01	<0.01
B00266781	2.370	N.A.	<5	<0.3	<0.01	3.05	<0.01	0.02
B00266782	2.055	N.A.	<5	<0.3	<0.01	2.92	<0.01	<0.01
B00266783	2.330	N.A.	6	1.3	<0.01	3.00	0.19	0.27
B00266784	2.235	N.A.	<5	<0.3	<0.01	3.26	<0.01	0.01
B00266785	2.220	N.A.	<5	<0.3	<0.01	2.86	<0.01	<0.01
B00266786	2.220	N.A.	<5	0.4	<0.01	2.85	<0.01	0.01
B00266787	1.710	N.A.	<5	<0.3	<0.01	1.43	<0.01	<0.01
B00266788	2.190	N.A.	<5	0.7	<0.01	2.41	<0.01	<0.01
B00266789	1.920	N.A.	23	2.1	0.11	3.72	<0.01	0.07
B00266790	0.155	N.A.	818	46.8	0.48	20.3	0.31	1.13
B00266791	1.300	N.A.	<5	0.4	<0.01	1.35	<0.01	<0.01
B00268777	5.505	N.A.	10	0.5	<0.01	2.04	<0.01	<0.01
B00268778	5.155	N.A.	<5	0.4	<0.01	1.65	<0.01	<0.01
B00268779	5.145	N.A.	11	0.7	<0.01	1.49	<0.01	0.02
B00268780	0.860	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00268781	3.575	N.A.	20	1.3	0.02	2.26	0.02	0.20
B00268782	3.320	N.A.	99	14.2	0.08	6.39	0.46	1.25
B00268783	5.500	N.A.	17	0.8	0.01	2.16	0.01	0.08
B00268784	5.680	N.A.	8	0.7	<0.01	2.17	<0.01	0.02
B00268785	5.435	N.A.	8	0.7	<0.01	1.66	0.02	0.03
B00268786	4.185	N.A.	8	0.7	<0.01	2.32	<0.01	<0.01
B00268787	4.080	N.A.	9	0.7	<0.01	2.02	<0.01	<0.01
B00268788	4.085	N.A.	13	8.1	0.02	2.04	0.04	0.01
B00268789	2.450	N.A.	170	35.7	0.54	5.01	0.03	0.65
B00268790	0.155	N.A.	826	47.1	0.46	20.1	0.30	1.14
B00268791	2.290	N.A.	29	7.5	0.06	4.51	0.03	0.35
B00268792	4.400	N.A.	10	1.8	<0.01	2.80	<0.01	0.01
B00268793	4.745	N.A.	9	1.1	<0.01	2.01	<0.01	<0.01
B00268794	3.400	N.A.	8	0.9	<0.01	2.06	<0.01	<0.01
*Dup B00268794	N.A.	N.A.	8	0.9	<0.01	2.29	<0.01	<0.01
B00269155	3.095	N.A.	7	0.4	<0.01	3.89	0.05	0.29
B00269156	3.025	N.A.	<5	0.4	0.01	5.35	0.02	0.23
B00269157	1.615	N.A.	<5	2.6	<0.01	4.91	0.26	1.03
B00269158	3.305	N.A.	<5	<0.3	<0.01	3.61	<0.01	0.03

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269159	2.885	N.A.	<5	<0.3	<0.01	2.95	<0.01	0.02
B00269160	1.300	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269161	2.745	N.A.	<5	<0.3	<0.01	3.14	<0.01	0.05
B00269162	3.405	N.A.	5	2.2	0.01	6.26	0.03	0.17
B00269163	3.190	N.A.	25	40.6	0.06	7.27	0.80	0.57
B00269164	2.850	N.A.	<5	1.7	0.01	4.91	0.06	0.27
B00269165	3.765	N.A.	5	2.6	0.03	9.28	0.12	0.74
B00269166	3.880	N.A.	12	7.6	0.04	14.3	0.26	2.72
B00269167	4.065	N.A.	9	4.3	0.03	9.78	0.51	1.61
B00269168	4.550	N.A.	35	13.9	0.19	18.8	4.05	5.11
B00269169	2.830	93.8	22	6.5	0.10	13.8	1.84	5.03
B00269170	0.155	N.A.	791	46.4	0.47	20.4	0.32	1.11
B00269171	3.850	N.A.	5	0.4	<0.01	8.59	0.03	0.11
B00269172	3.620	N.A.	59	2.9	0.07	17.7	0.45	1.65
B00269173	4.255	N.A.	24	9.7	0.14	13.9	0.33	4.61
B00269174	3.355	N.A.	15	1.9	0.09	13.3	0.01	2.78
B00269175	3.855	N.A.	<5	0.5	<0.01	9.13	<0.01	0.05
B00269176	3.915	N.A.	<5	1.3	0.03	9.68	0.02	0.45
B00269177	3.795	N.A.	7	1.0	0.08	10.2	<0.01	1.12
B00269178	7.940	N.A.	<5	<0.3	<0.01	8.58	<0.01	0.06
B00269179	3.710	N.A.	<5	<0.3	<0.01	6.29	<0.01	0.04
B00269180	0.960	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00269181	2.480	N.A.	25	0.4	<0.01	4.31	0.02	0.04
B00269182	2.085	N.A.	6	0.7	<0.01	4.41	0.02	0.10
B00269183	2.870	N.A.	<5	0.4	<0.01	3.20	0.01	0.04
B00269184	2.985	N.A.	<5	<0.3	<0.01	3.08	<0.01	0.02
B00269185	2.715	N.A.	<5	<0.3	<0.01	3.25	<0.01	<0.01
B00269186	1.015	N.A.	<5	<0.3	<0.01	3.60	<0.01	0.01
B00269187	1.675	N.A.	<5	<0.3	<0.01	3.20	<0.01	0.01
B00269188	2.620	N.A.	<5	0.6	<0.01	3.36	<0.01	<0.01
B00269189	2.275	N.A.	<5	<0.3	<0.01	3.31	<0.01	<0.01
*Dup B00269189	N.A.	N.A.	<5	<0.3	<0.01	3.50	<0.01	<0.01
B00269190	0.155	N.A.	881	45.7	0.46	19.7	0.31	1.11
B00269191	2.215	N.A.	<5	0.6	<0.01	3.13	<0.01	<0.01
B00269192	3.710	N.A.	<5	0.7	<0.01	3.49	<0.01	<0.01
B00269193	3.115	N.A.	6	1.3	<0.01	4.06	<0.01	0.04
B00269194	3.340	N.A.	8	1.9	<0.01	5.30	0.03	0.04
B00269195	3.695	N.A.	<5	1.6	<0.01	3.67	0.03	0.17
B00269196	3.720	N.A.	<5	1.2	<0.01	2.31	0.02	0.34
B00269197	3.670	N.A.	<5	0.7	<0.01	4.64	<0.01	0.04

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269198	3.775	N.A.	<5	0.9	0.01	3.44	<0.01	0.12
B00269199	3.120	N.A.	<5	0.6	<0.01	3.57	<0.01	0.02
B00269200	0.975	N.A.	<5	<0.3	<0.01	0.21	<0.01	<0.01
B00269201	2.965	N.A.	31	0.6	<0.01	2.68	<0.01	0.01
B00269202	2.455	N.A.	<5	1.1	0.02	3.01	<0.01	0.01
B00269203	1.885	N.A.	36	117	0.26	11.3	2.57	3.91
B00269204	4.055	N.A.	41	11.6	<0.01	1.65	0.36	0.52
B00269205	3.505	N.A.	18	7.6	<0.01	2.94	0.37	0.31
B00269206	3.130	N.A.	<5	2.8	<0.01	2.90	0.13	0.13
B00269207	1.955	N.A.	<5	1.4	<0.01	3.93	0.17	0.14
B00269208	2.365	N.A.	<5	0.5	<0.01	3.05	0.04	0.08
B00269209	2.985	N.A.	<5	1.5	<0.01	3.64	0.10	0.17
B00269210	0.155	N.A.	912	46.2	0.47	20.0	0.31	1.11
B00269211	2.120	N.A.	<5	18.5	0.10	5.18	0.98	1.36
B00269212	2.705	N.A.	<5	1.6	<0.01	2.68	0.08	0.09
B00269213	1.515	N.A.	<5	0.8	<0.01	4.36	0.03	0.06
B00269214	2.130	N.A.	<5	0.3	<0.01	4.37	<0.01	0.06
B00269215	3.340	N.A.	<5	0.8	<0.01	4.53	<0.01	0.04
B00269216	5.110	N.A.	<5	0.5	<0.01	8.12	<0.01	0.03
B00269217	3.885	N.A.	<5	0.5	<0.01	7.98	<0.01	<0.01
B00269218	3.535	N.A.	<5	1.0	<0.01	8.45	<0.01	0.02
B00269219	2.510	89.2	<5	<0.3	<0.01	1.62	<0.01	<0.01
B00269220	0.835	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269221	3.615	N.A.	12	12.0	0.06	9.09	0.11	6.43
*Rep B00268786				0.6				
*Rep B00269188				0.5				
*Rep B00269191				0.5				
*Std SU_1B				6.6				
*Std OREAS621				69.4				
*Std AMIS0268				191				
*Std SU_1B				6.7				
*Std SU_1B				6.4				
*Std OREAS621				69.9				
*Std AMIS0268				191				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00269155			5					
*Rep B00269161			<5					
*Rep B00269218			<5					
*Std OREAS252			666					

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Final : VC152573 Order: PO# BMC15-01_15

Report File No.: 0000013235

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Std OXH97	1300				
*Std OXN117	7870				
*Std OREAS252	674				
*Std OXH97	1310				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Rep B00266784		<0.01	3.25	<0.01	0.01
*Rep B00269159		<0.01	2.95	<0.01	0.02
*Rep B00269182		<0.01	4.41	0.02	0.10
*Rep B00269193		<0.01	4.10	<0.01	0.04
*Rep B00269212		<0.01	2.68	0.09	0.09
*Std OREAS134A		0.13	12.3	13.0	17.4
*Std OREAS131B		0.02	6.00	1.86	3.12
*Std OREAS926		0.82	7.61	<0.01	0.04
*Std OREAS131B		0.02	6.00	1.87	3.13
*Std OREAS926		0.83	7.60	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152574F

[Report File No.: 0000014295]

To: **ROBIN BLACK** Date: Dec 08, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_11 B00232539-233013
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 08, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Comments:

Ag values have been updated.
This Report cancels and supersedes the VC152574 Report No. 013199 dated Oct 20, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232539	2.655	N.A.	<5	0.5	<0.01	1.98	0.02	0.02
B00232540	0.205	N.A.	6	<0.3	<0.01	<0.05	<0.01	<0.01
B00232541	2.670	N.A.	8	0.4	<0.01	1.88	0.02	0.03
B00232542	1.565	N.A.	<5	0.6	<0.01	4.40	<0.01	0.04
B00232543	2.790	N.A.	9	<0.3	<0.01	6.75	<0.01	0.01
B00232553	2.865	N.A.	<5	0.5	<0.01	1.63	0.01	0.02
B00232554	2.315	N.A.	<5	0.5	<0.01	2.47	0.02	0.05
B00232555	3.035	N.A.	12	1.4	<0.01	3.56	0.07	0.07
B00232556	3.070	N.A.	5	1.0	0.02	2.87	0.01	0.41
B00232557	3.325	N.A.	13	1.9	0.02	1.80	<0.01	0.02
B00232558	2.670	N.A.	<5	0.9	<0.01	1.67	0.01	0.02
B00232559	2.640	N.A.	15	1.5	0.02	1.81	0.02	0.14
B00232560	0.375	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232561	2.825	N.A.	10	0.8	<0.01	2.14	<0.01	<0.01
B00232562	2.305	N.A.	6	0.7	<0.01	2.11	<0.01	0.03
B00232563	3.025	N.A.	9	1.9	<0.01	2.25	<0.01	0.01
B00232564	2.915	N.A.	9	0.7	<0.01	2.06	<0.01	0.06
B00232565	3.100	N.A.	6	0.5	0.01	3.99	<0.01	0.02
B00232566	3.070	N.A.	<5	1.0	<0.01	1.70	0.01	0.03
B00232567	2.330	N.A.	<5	0.4	<0.01	1.33	<0.01	0.03
B00232568	2.015	N.A.	<5	0.4	<0.01	3.46	<0.01	0.03
B00232569	2.895	N.A.	<5	<0.3	<0.01	5.65	<0.01	0.01
B00232570	0.135	N.A.	814	46.6	0.47	20.0	0.31	1.08
B00232571	3.350	N.A.	<5	<0.3	<0.01	7.74	<0.01	0.01
B00232572	2.550	N.A.	<5	<0.3	<0.01	2.98	<0.01	0.02
B00232573	2.685	N.A.	19	1.4	0.01	2.90	0.06	0.08
B00232574	3.400	N.A.	<5	0.3	<0.01	1.99	0.01	0.01
B00232575	2.455	N.A.	<5	0.5	<0.01	1.71	<0.01	<0.01
B00232576	2.330	N.A.	5	0.4	<0.01	1.58	<0.01	<0.01
B00232577	1.900	N.A.	<5	<0.3	<0.01	1.89	<0.01	<0.01
B00232578	2.955	N.A.	5	<0.3	<0.01	5.89	<0.01	0.04
B00232579	2.825	N.A.	<5	0.4	<0.01	4.88	<0.01	0.04
B00232580	0.275	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232581	2.635	N.A.	<5	1.1	<0.01	1.69	0.03	0.05
B00232582	2.810	N.A.	18	1.3	<0.01	1.27	0.05	0.06
*Dup B00232582	N.A.	N.A.	<5	1.3	<0.01	1.25	0.04	0.06
B00232583	2.645	N.A.	<5	<0.3	<0.01	1.79	<0.01	<0.01
B00232584	1.980	N.A.	<5	<0.3	<0.01	2.12	<0.01	<0.01
B00232585	2.730	N.A.	145	10.2	0.19	5.17	0.66	1.60
B00232586	1.805	N.A.	11	12.4	0.20	7.54	0.32	0.78

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Final : VC152574F Order: PO# BMC15-01_11 B00232539-233013

Report File No.: 0000014295

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232587	2.590	N.A.	<5	1.5	<0.01	6.32	0.03	0.07
B00232588	3.010	N.A.	5	<0.3	<0.01	2.58	<0.01	0.04
B00232589	2.730	N.A.	<5	0.6	<0.01	2.33	<0.01	0.02
B00232590	0.130	N.A.	823	46.5	0.48	19.9	0.30	1.11
B00232591	3.150	N.A.	<5	0.3	<0.01	3.01	<0.01	0.01
B00232592	2.865	N.A.	<5	1.0	<0.01	2.44	<0.01	0.01
B00232593	2.810	N.A.	6	<0.3	<0.01	6.91	<0.01	0.01
B00232594	3.015	N.A.	<5	<0.3	<0.01	7.06	<0.01	0.01
B00232595	2.480	N.A.	<5	1.0	<0.01	1.88	<0.01	0.01
B00232596	2.520	N.A.	22	11.2	<0.01	2.33	0.11	0.14
B00232597	3.000	85.3	315	34.8	0.09	4.54	0.12	0.38
B00232598	2.190	N.A.	<5	0.4	<0.01	1.61	<0.01	<0.01
B00232599	1.840	N.A.	6	0.7	<0.01	1.97	<0.01	0.01
B00232600	0.335	N.A.	5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232601	2.285	N.A.	42	7.0	0.02	3.04	0.03	0.11
B00232602	3.015	N.A.	6	4.5	0.04	6.25	0.08	0.10
B00232603	2.130	N.A.	21	4.9	0.06	5.10	0.04	0.53
B00232604	2.925	N.A.	19	21.5	<0.01	5.61	0.65	0.87
B00232605	2.285	N.A.	<5	3.5	<0.01	2.61	0.08	0.03
B00232606	2.645	N.A.	<5	1.1	0.01	2.61	0.02	0.03
B00232607	2.810	N.A.	6	0.8	<0.01	1.73	0.01	0.03
B00232608	2.835	N.A.	<5	<0.3	<0.01	2.40	<0.01	<0.01
B00233001	2.620	N.A.	<5	1.8	<0.01	1.92	0.02	0.03
B00233002	2.650	N.A.	10	3.5	<0.01	2.88	0.06	0.25
B00233003	1.085	N.A.	<5	<0.3	<0.01	8.81	<0.01	0.04
B00233004	0.960	N.A.	<5	<0.3	<0.01	7.38	<0.01	0.01
B00233005	2.985	N.A.	<5	<0.3	<0.01	1.14	<0.01	<0.01
B00233006	2.525	N.A.	<5	<0.3	<0.01	1.79	<0.01	<0.01
B00233007	2.945	N.A.	7	3.0	0.12	3.95	<0.01	0.03
B00233008	1.740	N.A.	6	0.7	<0.01	1.25	<0.01	<0.01
B00233009	2.480	N.A.	<5	0.5	<0.01	1.51	<0.01	<0.01
*Dup B00233009	N.A.	N.A.	<5	0.4	<0.01	1.53	<0.01	<0.01
B00233010	0.130	N.A.	841	46.1	0.47	20.2	0.31	1.11
B00233011	2.770	N.A.	<5	0.4	<0.01	1.89	<0.01	<0.01
B00233012	2.740	N.A.	<5	<0.3	<0.01	1.67	<0.01	<0.01
B00233013	2.230	85.8	107	16.7	0.02	3.34	0.13	0.37
*Rep B00232560				<0.3				
*Rep B00232595				1.1				
*Rep B00233012				0.4				
*Std SU_1B				6.5				

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Final : VC152574F Order: PO# BMC15-01_11 B00232539-233013

Report File No.: 0000014295

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.4				
*Std OREAS621		71.5				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232561	8					
*Rep B00233012	8					
*Std OREAS252	667					
*Std OXH97	1200					
*Std OXJ111	2120					
*Std OXN117	7870					
*Blk BLANK	<5					
*Rep B00232542			<0.01	4.37	<0.01	0.04
*Rep B00232573			0.01	2.91	0.06	0.08
*Rep B00232607			<0.01	1.72	0.01	0.02
*Rep B00233010			0.46	19.3	0.30	1.08
*Std OREAS131B			0.02	5.90	1.83	3.04
*Std OREAS926			0.84	7.64	<0.01	0.04
*Std OREAS926			0.83	7.54	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152575

[Report File No.: 0000013200]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Oct 20, 2015

P.O. No.	:	PO# BMC15-01_11 B00233014-267234
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Sep 25, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152575 Order: PO# BMC15-01_11 B00233014-267234

Report File No.: 0000013200

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233014	0.895	N.A.	136	19.8	0.52	5.49	0.03	0.05
B00233015	2.300	N.A.	6	2.8	0.04	1.14	0.02	0.07
B00233016	2.690	N.A.	30	5.4	0.07	6.25	0.04	0.14
B00233017	2.305	N.A.	<5	<0.3	<0.01	7.00	<0.01	0.06
B00233018	2.865	N.A.	<5	<0.3	<0.01	1.65	<0.01	0.01
B00233019	1.125	N.A.	<5	1.5	<0.01	1.73	0.01	0.02
B00233020	0.285	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233021	2.700	N.A.	17	0.6	<0.01	2.41	<0.01	<0.01
B00233022	3.000	N.A.	<5	0.4	<0.01	1.68	<0.01	<0.01
B00233023	2.660	N.A.	6	1.1	<0.01	1.82	0.02	0.12
B00233024	2.225	N.A.	27	17.2	0.16	6.84	0.24	1.99
B00233025	2.750	N.A.	<5	0.4	<0.01	7.01	<0.01	0.01
B00233026	2.355	N.A.	<5	<0.3	<0.01	7.05	<0.01	<0.01
B00233027	3.155	N.A.	6	6.9	0.05	9.36	0.05	2.20
B00233028	3.015	N.A.	74	36.8	1.77	7.78	0.02	1.18
B00233029	2.765	N.A.	<5	0.5	<0.01	4.66	<0.01	0.03
B00233030	0.135	N.A.	755	46.4	0.45	19.9	0.30	1.14
B00233031	1.270	N.A.	<5	0.5	<0.01	2.53	<0.01	0.04
B00233032	1.850	N.A.	<5	<0.3	<0.01	2.25	<0.01	0.03
B00233033	2.400	N.A.	9	1.9	0.08	4.68	<0.01	0.12
B00233034	2.410	N.A.	11	2.2	0.06	8.33	0.01	0.22
B00233035	2.715	N.A.	<5	<0.3	<0.01	8.14	<0.01	<0.01
B00233036	3.220	N.A.	<5	<0.3	<0.01	7.05	<0.01	<0.01
B00233037	2.610	N.A.	108	17.8	0.02	3.70	0.20	0.86
B00233038	2.645	N.A.	236	8.9	0.01	2.45	0.13	0.19
B00233039	2.500	N.A.	<5	0.4	<0.01	2.34	<0.01	<0.01
B00233040	0.220	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233041	2.405	N.A.	5	6.3	0.07	6.47	0.13	0.60
B00264112	2.740	N.A.	46	6.9	0.09	5.22	0.03	0.14
B00264113	3.075	N.A.	10	3.4	0.05	5.64	0.02	0.03
B00264114	1.420	N.A.	<5	0.7	<0.01	9.71	<0.01	0.05
B00264115	3.185	N.A.	466	42.6	1.58	15.6	0.12	0.64
B00264116	2.450	N.A.	<5	0.7	<0.01	5.89	0.02	0.08
B00264117	3.005	N.A.	37	7.8	0.03	4.89	0.11	0.28
*Dup B00264117	N.A.	N.A.	44	8.1	0.04	4.89	0.11	0.27
B00264118	2.115	N.A.	8	1.2	<0.01	1.82	0.03	0.05
B00264119	2.275	N.A.	<5	0.5	<0.01	1.26	<0.01	<0.01
B00264120	0.435	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00264121	2.920	N.A.	<5	<0.3	<0.01	2.09	<0.01	<0.01
B00264122	2.575	N.A.	6	0.7	<0.01	1.54	<0.01	<0.01

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Final : VC152575 Order: PO# BMC15-01_11 B00233014-267234

Report File No.: 0000013200

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264123	2.440	N.A.	27	4.4	0.03	2.77	0.03	0.14
B00264124	2.920	N.A.	<5	<0.3	<0.01	6.88	<0.01	0.02
B00264125	2.865	N.A.	<5	<0.3	<0.01	7.38	<0.01	0.02
B00264126	2.535	N.A.	<5	0.8	<0.01	1.75	0.05	0.08
B00264127	2.300	N.A.	7	1.3	<0.01	2.24	0.04	0.17
B00264128	2.610	N.A.	<5	0.3	<0.01	1.66	<0.01	<0.01
B00264129	2.265	N.A.	7	<0.3	<0.01	1.78	<0.01	<0.01
B00264130	0.130	N.A.	724	47.0	0.46	20.3	0.31	1.15
B00264131	2.285	N.A.	18	8.2	0.18	6.62	0.04	0.47
B00264132	2.420	N.A.	8	<0.3	<0.01	5.94	<0.01	0.02
B00264133	3.335	95.4	6	1.1	0.02	5.93	<0.01	1.01
B00264134	3.160	N.A.	11	1.0	0.04	8.22	<0.01	1.08
B00264135	2.760	N.A.	22	0.8	<0.01	3.00	0.04	0.08
B00264136	2.850	N.A.	30	6.5	0.04	3.47	0.67	0.82
B00264137	2.730	N.A.	<5	0.4	<0.01	2.20	<0.01	<0.01
B00264138	2.825	N.A.	6	0.3	<0.01	1.75	<0.01	<0.01
B00264139	2.985	N.A.	16	0.4	<0.01	1.79	<0.01	<0.01
B00264140	0.265	N.A.	6	<0.3	<0.01	<0.05	<0.01	<0.01
B00264141	2.935	N.A.	<5	0.4	<0.01	1.50	<0.01	0.01
B00264142	2.735	N.A.	<5	1.6	<0.01	1.75	0.01	0.01
B00264143	2.460	N.A.	8	0.3	<0.01	1.67	<0.01	0.03
B00264144	2.690	N.A.	6	0.6	0.02	4.48	0.01	0.02
B00264145	2.555	N.A.	12	1.0	<0.01	1.75	<0.01	0.01
B00264146	2.835	N.A.	8	<0.3	<0.01	3.19	<0.01	0.01
B00267224	2.255	N.A.	<5	1.0	<0.01	9.04	<0.01	0.02
B00267225	1.390	N.A.	33	7.1	0.07	2.66	0.06	0.71
B00267226	2.185	N.A.	5	<0.3	<0.01	5.01	<0.01	<0.01
B00267227	2.995	N.A.	<5	<0.3	<0.01	7.20	<0.01	0.01
B00267228	2.535	N.A.	<5	1.1	<0.01	3.51	0.04	0.14
B00267229	2.110	N.A.	7	0.4	<0.01	6.21	<0.01	0.02
*Dup B00267229	N.A.	N.A.	12	0.6	<0.01	5.88	0.01	0.03
B00267230	0.135	N.A.	839	46.0	0.44	19.8	0.30	1.13
B00267231	1.085	N.A.	<5	1.8	0.01	2.45	0.06	0.29
B00267232	0.510	N.A.	7	1.6	<0.01	3.73	0.04	0.34
B00267233	2.635	N.A.	<5	<0.3	<0.01	6.56	<0.01	0.01
B00267234	3.200	88.3	<5	<0.3	<0.01	7.14	<0.01	0.02
*Rep B00233024				17.2				
*Rep B00264122				0.7				
*Rep B00267234				<0.3				
*Std SU_1B				6.6				

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Final : VC152575 Order: PO# BMC15-01_11 B00233014-267234

Report File No.: 0000013200

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		71.8				
*Std SU_1B		6.2				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00233041	6					
*Rep B00267233	<5					
*Std OREAS252	670					
*Std OXH97	1270					
*Std OXJ111	2110					
*Std OXN117	7620					
*Blk BLANK	<5					
*Rep B00233024			0.16	6.78	0.23	2.01
*Rep B00233038			0.01	2.46	0.13	0.20
*Rep B00264138			<0.01	1.75	<0.01	<0.01
*Rep B00267234			<0.01	7.11	<0.01	0.02
*Std OREAS134A			0.13	12.1	13.0	17.7
*Std OREAS131B			0.02	5.80	1.88	3.10
*Std OREAS926			0.82	7.49	0.01	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152576

[Report File No.: 0000013227]

To: **ROBIN BLACK** Date: Oct 21, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_11 B00267235-731
Project No.	:	KZK
No. Of Samples	:	66
Date Submitted	:	Sep 25, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Distribution of unused material:
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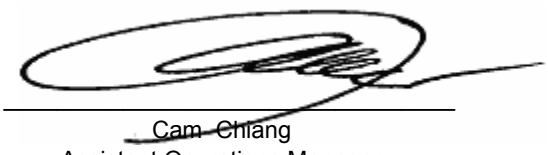
Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

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M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
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Final : VC152576 Order: PO# BMC15-01_11 B00267235-731

Report File No.: 0000013227

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267235	3.110	N.A.	<5	<0.3	<0.01	5.51	<0.01	0.01
B00267236	3.185	N.A.	<5	1.4	<0.01	4.04	0.02	0.27
B00267237	3.025	N.A.	35	14.6	0.06	7.00	0.13	5.94
B00267238	2.895	N.A.	12	11.5	0.01	3.81	0.13	0.59
B00267239	3.845	N.A.	9	9.2	0.02	6.18	0.19	1.10
B00267240	0.300	N.A.	<5	<0.3	<0.01	0.39	<0.01	<0.01
B00267241	2.620	N.A.	<5	0.4	<0.01	1.78	<0.01	0.01
B00267242	2.425	N.A.	<5	0.3	<0.01	2.26	0.01	0.01
B00267243	2.545	N.A.	<5	<0.3	<0.01	6.11	<0.01	0.02
B00267244	1.570	N.A.	<5	<0.3	<0.01	2.07	<0.01	0.01
B00267245	2.475	N.A.	8	0.7	<0.01	2.24	<0.01	<0.01
B00267246	1.575	N.A.	7	0.5	<0.01	2.34	<0.01	<0.01
B00267247	2.240	N.A.	213	12.2	0.10	3.92	0.09	0.25
B00267248	2.800	N.A.	22	6.8	0.06	4.88	0.13	0.36
B00267249	2.995	N.A.	6	0.4	<0.01	7.38	<0.01	0.02
B00267250	0.130	N.A.	839	43.6	0.44	19.3	0.30	1.11
B00267251	1.545	N.A.	<5	<0.3	<0.01	7.02	<0.01	0.01
B00267252	1.615	N.A.	5	7.1	0.11	16.4	0.04	1.88
B00267253	2.255	N.A.	9	3.1	<0.01	4.60	0.02	0.04
B00267254	1.620	N.A.	15	0.7	<0.01	2.64	<0.01	<0.01
B00267255	2.025	N.A.	7	1.8	<0.01	4.95	0.02	0.08
B00267256	1.180	N.A.	6	2.1	<0.01	3.72	<0.01	0.01
B00267257	3.010	N.A.	12	<0.3	<0.01	4.44	<0.01	0.01
B00267258	2.060	N.A.	<5	<0.3	<0.01	3.26	<0.01	<0.01
B00267259	0.655	N.A.	<5	<0.3	<0.01	3.66	<0.01	0.02
B00267260	0.245	N.A.	<5	<0.3	<0.01	0.60	<0.01	<0.01
B00267261	2.330	N.A.	18	3.2	0.05	6.49	<0.01	0.06
B00267262	2.200	N.A.	<5	<0.3	<0.01	6.14	<0.01	0.03
B00267263	2.115	N.A.	17	2.9	0.18	12.9	<0.01	0.07
B00267264	2.885	N.A.	12	1.8	0.03	7.02	<0.01	0.03
B00267265	2.675	N.A.	17	12.4	0.02	4.59	0.27	0.23
B00267697	2.075	N.A.	33	2.4	0.08	3.60	<0.01	0.04
B00267698	0.855	N.A.	7	0.3	0.01	2.04	<0.01	<0.01
B00267699	1.980	N.A.	<5	0.7	<0.01	2.57	<0.01	0.02
*Dup B00267699	N.A.	N.A.	<5	0.8	<0.01	2.79	<0.01	0.02
B00267700	0.480	N.A.	<5	<0.3	<0.01	0.10	<0.01	<0.01
B00267701	2.365	N.A.	9	2.1	<0.01	2.13	0.05	0.06
B00267702	2.420	N.A.	25	2.0	<0.01	2.51	0.06	0.07
B00267703	2.015	N.A.	95	9.5	<0.01	2.98	0.12	0.28
B00267704	2.565	N.A.	<5	<0.3	<0.01	1.72	<0.01	<0.01

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Final : VC152576 Order: PO# BMC15-01_11 B00267235-731

Report File No.: 0000013227

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267705	2.300	N.A.	<5	<0.3	<0.01	1.68	<0.01	<0.01
B00267706	3.075	N.A.	<5	0.6	<0.01	1.90	<0.01	<0.01
B00267707	2.940	N.A.	7	2.7	<0.01	3.06	0.09	0.12
B00267708	3.150	N.A.	<5	0.5	<0.01	2.13	0.01	0.03
B00267709	1.475	N.A.	<5	<0.3	<0.01	6.72	<0.01	0.02
B00267710	0.130	N.A.	840	43.7	0.46	19.8	0.31	1.14
B00267711	2.400	N.A.	<5	<0.3	<0.01	6.92	<0.01	<0.01
B00267712	2.915	N.A.	<5	<0.3	<0.01	7.69	<0.01	<0.01
B00267713	2.990	N.A.	<5	<0.3	<0.01	6.75	<0.01	<0.01
B00267714	1.635	N.A.	11	1.6	<0.01	1.91	0.06	0.10
B00267715	1.775	88.0	12	0.6	<0.01	1.87	<0.01	0.01
B00267716	2.395	N.A.	<5	<0.3	<0.01	1.77	<0.01	<0.01
B00267717	2.845	N.A.	<5	0.3	<0.01	2.19	<0.01	0.01
B00267718	1.820	N.A.	<5	2.0	<0.01	2.97	0.14	0.13
B00267719	2.855	N.A.	<5	1.1	<0.01	2.59	0.04	0.05
B00267720	0.255	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267721	1.230	N.A.	<5	0.3	<0.01	1.96	<0.01	0.01
B00267722	2.195	N.A.	<5	0.4	<0.01	2.40	<0.01	<0.01
B00267723	2.210	N.A.	6	0.5	<0.01	1.94	<0.01	<0.01
B00267724	3.485	N.A.	12	3.7	<0.01	2.66	<0.01	<0.01
B00267725	1.500	N.A.	53	6.0	0.14	7.70	0.04	0.46
B00267726	1.770	N.A.	139	13.3	0.44	9.17	0.06	0.77
B00267727	2.705	N.A.	51	13.6	0.34	8.51	0.05	0.75
B00267728	2.420	N.A.	<5	1.6	0.11	6.02	<0.01	0.03
B00267729	1.630	N.A.	24	<0.3	<0.01	6.58	<0.01	0.02
B00267730	0.130	N.A.	805	43.1	0.44	19.2	0.29	1.18
B00267731	2.665	N.A.	<5	<0.3	<0.01	7.16	<0.01	0.02
*Rep B00267265				12.5				
*Rep B00267711				<0.3				
*Std SU_1B				6.7				
*Std SU_1B				6.7				
*Std OREAS621				66.5				
*Std AMIS0268				188				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00267251			<5					
*Std OREAS251			495					
*Std OXH97			1280					
*Std OXJ111			2090					
*Std OXN117			7430					

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Final : VC152576 Order: PO# BMC15-01_11 B00267235-731

Report File No.: 0000013227

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Blk BLANK	<5				
*Rep B00267250		0.46	19.7	0.32	1.13
*Rep B00267258		<0.01	3.26	<0.01	<0.01
*Rep B00267712		<0.01	7.70	<0.01	0.01
*Std OREAS134A		0.13	12.1	13.0	17.3
*Std OREAS131B		0.02	5.74	1.92	3.06
*Std OREAS926		0.82	7.37	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152578

[Report File No.: 0000013647]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Nov 12, 2015

P.O. No.	:	PO# BMC15-01_12 B00264809-268686
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Sep 29, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

EDTA Leach results are semi-quantitative only.
% extraction for samples with feed grades near or below statistical detection limit cannot be determined.
Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264809	1.120	N.A.	<5	0.5	<0.01	3.62	<0.01	<0.01
B00264810	0.155	N.A.	878	46.6	0.47	19.5	0.31	1.15
B00264811	1.820	N.A.	409	76.5	3.28	16.3	0.23	0.46
B00264812	2.435	N.A.	71	26.1	0.92	9.55	0.08	0.12
B00264813	2.410	N.A.	330	84.3	4.33	18.8	0.14	0.36
B00264814	2.075	N.A.	494	67.0	2.87	20.4	0.12	0.27
B00264815	2.240	N.A.	62	11.2	0.38	21.5	0.03	0.52
B00264816	3.480	N.A.	128	25.1	0.46	41.1	0.31	4.61
B00264817	3.330	N.A.	391	63.3	0.04	30.4	2.50	7.93
B00264818	3.385	N.A.	345	91.4	0.08	31.1	3.63	10.1
B00264819	3.120	N.A.	391	58.7	1.02	40.4	1.34	7.76
B00264820	0.640	N.A.	<5	0.6	<0.01	0.20	0.01	0.03
B00264821	2.530	N.A.	394	37.1	1.35	18.2	0.10	0.23
B00264822	2.215	N.A.	398	53.1	3.01	16.7	0.07	0.24
B00264823	1.785	N.A.	58	18.4	0.51	13.0	0.30	1.06
B00264824	3.035	N.A.	6	1.9	0.05	9.48	0.02	0.07
B00264825	2.625	N.A.	7	0.5	0.02	9.30	<0.01	0.05
B00264826	2.715	N.A.	7	0.4	<0.01	7.26	<0.01	0.04
B00264827	1.950	N.A.	<5	2.6	0.05	4.19	0.03	1.88
B00264828	1.845	N.A.	<5	0.5	<0.01	2.41	0.01	0.06
B00264829	1.300	N.A.	11	3.9	0.02	2.82	0.05	0.11
B00264830	0.145	N.A.	318	21.1	13.4	27.1	0.05	0.42
B00264831	1.375	N.A.	510	53.8	5.55	17.0	0.13	0.26
B00264832	3.090	N.A.	36	6.1	0.41	8.73	0.04	1.79
B00264833	2.555	N.A.	<5	1.6	0.02	3.06	0.08	0.23
B00264834	2.955	N.A.	6	4.1	0.02	6.32	0.03	0.21
B00264835	3.170	N.A.	17	5.6	0.19	7.48	0.06	0.61
B00264836	1.155	N.A.	66	24.4	1.64	19.4	0.15	0.29
B00264837	1.970	N.A.	57	19.0	1.28	15.9	0.11	0.53
B00264838	2.765	N.A.	5	1.6	0.05	11.0	0.02	0.25
B00264839	2.480	N.A.	19	4.7	0.22	6.98	0.04	0.26
B00264840	1.625	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00264841	2.925	N.A.	<5	1.3	0.05	3.15	0.01	0.06
B00264842	3.145	N.A.	24	2.0	<0.01	2.30	0.03	0.22
B00264843	2.420	N.A.	14	4.2	0.02	3.65	0.02	0.13
B00264844	2.135	N.A.	93	12.4	0.25	9.12	0.05	0.52
*Dup B00264844	N.A.	N.A.	94	11.6	0.24	9.52	0.05	0.45
B00264845	2.795	N.A.	35	4.9	0.17	3.89	0.04	0.43
B00264846	2.920	N.A.	<5	<0.3	<0.01	1.86	<0.01	0.01
B00264847	3.045	N.A.	7	10.7	0.02	2.74	0.28	0.69

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Final : VC152578 Order: PO# BMC15-01_12 B00264809-268686

Report File No.: 0000013647

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264848	3.075	N.A.	<5	<0.3	<0.01	1.27	<0.01	<0.01
B00264849	2.950	N.A.	16	2.4	0.09	3.03	0.02	0.06
B00264850	0.150	N.A.	896	46.7	0.46	19.4	0.31	1.15
B00264851	2.115	N.A.	13	5.6	0.09	9.40	0.04	0.13
B00264852	3.020	N.A.	5	1.1	0.01	2.35	<0.01	0.02
B00264853	2.620	N.A.	<5	0.4	<0.01	1.62	<0.01	<0.01
B00266758	6.480	N.A.	<5	0.9	<0.01	4.37	<0.01	<0.01
B00266759	5.675	N.A.	<5	0.6	<0.01	3.98	<0.01	0.02
B00266760	1.405	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00266761	2.870	N.A.	<5	<0.3	<0.01	6.37	<0.01	<0.01
B00266762	5.745	88.3	<5	0.4	<0.01	8.24	<0.01	<0.01
B00266763	1.990	N.A.	<5	0.7	<0.01	13.5	<0.01	0.01
B00268664	0.655	N.A.	1490	187	2.51	19.7	2.46	13.0
B00268665	2.075	N.A.	865	194	0.62	30.6	6.83	18.4
B00268666	1.655	N.A.	2280	140	2.37	30.8	1.61	3.62
B00268667	2.510	N.A.	1100	173	2.58	30.5	3.36	10.7
B00268668	0.885	N.A.	17	3.4	0.02	2.02	0.06	0.12
B00268669	2.205	N.A.	67	11.2	0.02	2.48	0.02	0.11
B00268670	0.155	N.A.	865	45.1	0.45	19.3	0.31	1.14
B00268671	1.270	N.A.	8	0.9	<0.01	1.65	<0.01	0.01
B00268672	1.990	N.A.	608	140	0.37	32.2	2.91	6.85
B00268673	1.025	N.A.	64	6.7	0.18	3.70	0.04	0.11
B00268674	1.090	N.A.	114	16.9	0.14	5.53	0.22	0.75
B00268675	2.155	N.A.	133	57.0	0.04	13.3	0.90	2.42
B00268676	2.435	N.A.	5	0.3	<0.01	6.47	<0.01	0.01
B00268677	0.465	N.A.	5	0.4	<0.01	2.20	<0.01	<0.01
B00268678	2.900	N.A.	<5	0.5	<0.01	1.50	<0.01	<0.01
B00268679	1.125	N.A.	21	1.8	<0.01	2.01	<0.01	<0.01
B00268680	1.530	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268681	0.525	N.A.	494	94.0	1.17	11.4	0.59	1.44
B00268682	1.925	N.A.	2790	>300	9.84	33.3	0.29	1.11
B00268683	1.920	N.A.	2190	171	3.07	39.0	0.64	5.58
B00268684	1.865	N.A.	1490	142	2.18	40.7	0.93	6.07
*Dup B00268684	N.A.	N.A.	1470	138	2.14	40.5	0.97	6.10
B00268685	2.645	N.A.	2000	155	0.74	32.8	2.07	8.73
B00268686	2.935	85.2	2240	183	0.46	36.3	1.28	6.25
*Rep B00264817				64.6				
*Rep B00266761				<0.3				
*Rep B00268684				140				
*Std SU_1B				6.4				

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Final : VC152578 Order: PO# BMC15-01_12 B00264809-268686

Report File No.: 0000013647

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		70.2				
*Std AMIS0268		194				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00264809	6					
*Rep B00268679	20					
*Std OREAS251	515					
*Std OXH97	1270					
*Std OXJ111	2120					
*Std OXN117	7480					
*Blk BLANK	8					
*Rep B00264809			<0.01	3.58	<0.01	<0.01
*Rep B00264841			0.06	3.31	0.02	0.06
*Rep B00268670			0.44	19.1	0.30	1.15
*Rep B00268673			0.18	3.69	0.04	0.11
*Std OREAS134A			0.13	11.8	12.8	17.7
*Std OREAS926			0.84	7.25	0.01	0.04
*Std OREAS926			0.81	7.33	0.02	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb	Extracted Zn
Method	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	1	0.05	0.05	0.05	0.5	0.5	0.5
Units	g	mL	ppm	ppm	ppm	%	%	%
B00264809	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264810	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264811	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264812	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264813	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264814	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264815	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264816	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264817	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264818	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264819	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264820	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264821	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264822	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264823	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264824	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264825	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264826	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264827	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264828	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264829	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264830	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264831	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264832	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264833	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264834	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264835	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264836	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264837	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264838	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264839	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264840	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264841	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264842	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264843	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264844	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Dup B00264844	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264845	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264846	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264847	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Element	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb	Extracted Zn
Method	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	1	0.05	0.05	0.05	0.5	0.5	0.5
Units	g	mL	ppm	ppm	ppm	%	%	%
B00264848	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264849	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264850	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264851	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264852	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00264853	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266758	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266759	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266760	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266761	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266762	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266763	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268664	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268665	50.0	500	<0.05	668	84.3	<0.5	9.8	<0.5
B00268666	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268667	50.0	500	0.23	532	86.9	<0.5	15.9	0.8
B00268668	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268669	50.0	500	<0.05	2.90	0.70	INF	INF	0.7
B00268670	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268671	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268672	50.0	500	<0.05	629	45.4	<0.5	21.6	0.7
B00268673	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268674	50.0	500	0.31	68.8	7.09	<0.5	31.4	0.9
B00268675	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268676	50.0	500	<0.05	1.19	0.09	INF	INF	INF
B00268677	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268678	50.0	500	<0.05	0.77	0.39	INF	INF	INF
B00268679	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268680	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268681	50.0	500	0.19	135	19.4	<0.5	22.9	1.3
B00268682	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268683	50.0	500	15.3	155	161	<0.5	24.2	2.9
B00268684	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Dup B00268684	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268685	50.0	500	0.72	413	87.2	<0.5	20.0	1.0
B00268686	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00264809	N.A.
B00264810	N.A.
B00264811	N.A.
B00264812	N.A.
B00264813	N.A.
B00264814	N.A.
B00264815	N.A.
B00264816	N.A.
B00264817	N.A.
B00264818	N.A.
B00264819	N.A.
B00264820	N.A.
B00264821	N.A.
B00264822	N.A.
B00264823	N.A.
B00264824	N.A.
B00264825	N.A.
B00264826	N.A.
B00264827	N.A.
B00264828	N.A.
B00264829	N.A.
B00264830	N.A.
B00264831	N.A.
B00264832	N.A.
B00264833	N.A.
B00264834	N.A.
B00264835	N.A.
B00264836	N.A.
B00264837	N.A.
B00264838	N.A.
B00264839	N.A.
B00264840	N.A.
B00264841	N.A.
B00264842	N.A.
B00264843	N.A.
B00264844	N.A.
*Dup B00264844	N.A.
B00264845	N.A.
B00264846	N.A.
B00264847	N.A.

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Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00264848	N.A.
B00264849	N.A.
B00264850	N.A.
B00264851	N.A.
B00264852	N.A.
B00264853	N.A.
B00266758	N.A.
B00266759	N.A.
B00266760	N.A.
B00266761	N.A.
B00266762	N.A.
B00266763	N.A.
B00268664	196
B00268665	195
B00268666	N.A.
B00268667	164
B00268668	N.A.
B00268669	N.A.
B00268670	N.A.
B00268671	N.A.
B00268672	N.A.
B00268673	N.A.
B00268674	N.A.
B00268675	N.A.
B00268676	N.A.
B00268677	N.A.
B00268678	N.A.
B00268679	N.A.
B00268680	N.A.
B00268681	N.A.
B00268682	365
B00268683	176
B00268684	N.A.
*Dup B00268684	N.A.
B00268685	151
B00268686	185

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Final : VC152578 Order: PO# BMC15-01_12 B00264809-268686

Report File No.: 0000013647

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
*Blk BLANK	<10
*Rep B00268667	172
*Std AMIS0268	202

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Certificate of Analysis

Work Order : VC152578A

[Report File No.: 0000014322]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_12 B00264809-268686
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152578A Order: PO# BMC15-01_12 B00264809-268686

Report File No.: 0000014322

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264809	N.A.	N.A.	N.A.	N.A.	N.A.
B00264810	N.A.	N.A.	N.A.	N.A.	N.A.
B00264811	N.A.	N.A.	N.A.	N.A.	N.A.
B00264812	N.A.	N.A.	N.A.	N.A.	N.A.
B00264813	N.A.	N.A.	N.A.	N.A.	N.A.
B00264814	N.A.	N.A.	N.A.	N.A.	N.A.
B00264815	N.A.	N.A.	N.A.	N.A.	N.A.
B00264816	N.A.	N.A.	N.A.	N.A.	N.A.
B00264817	N.A.	N.A.	N.A.	N.A.	N.A.
B00264818	N.A.	N.A.	N.A.	N.A.	N.A.
B00264819	N.A.	N.A.	N.A.	N.A.	N.A.
B00264820	N.A.	N.A.	N.A.	N.A.	N.A.
B00264821	N.A.	N.A.	N.A.	N.A.	N.A.
B00264822	N.A.	N.A.	N.A.	N.A.	N.A.
B00264823	N.A.	N.A.	N.A.	N.A.	N.A.
B00264824	N.A.	N.A.	N.A.	N.A.	N.A.
B00264825	N.A.	N.A.	N.A.	N.A.	N.A.
B00264826	N.A.	N.A.	N.A.	N.A.	N.A.
B00264827	N.A.	N.A.	N.A.	N.A.	N.A.
B00264828	N.A.	N.A.	N.A.	N.A.	N.A.
B00264829	N.A.	N.A.	N.A.	N.A.	N.A.
B00264830	N.A.	N.A.	N.A.	N.A.	N.A.
B00264831	N.A.	N.A.	N.A.	N.A.	N.A.
B00264832	N.A.	N.A.	N.A.	N.A.	N.A.
B00264833	N.A.	N.A.	N.A.	N.A.	N.A.
B00264834	N.A.	N.A.	N.A.	N.A.	N.A.
B00264835	N.A.	N.A.	N.A.	N.A.	N.A.
B00264836	N.A.	N.A.	N.A.	N.A.	N.A.
B00264837	N.A.	N.A.	N.A.	N.A.	N.A.
B00264838	N.A.	N.A.	N.A.	N.A.	N.A.
B00264839	N.A.	N.A.	N.A.	N.A.	N.A.
B00264840	N.A.	N.A.	N.A.	N.A.	N.A.
B00264841	N.A.	N.A.	N.A.	N.A.	N.A.
B00264842	N.A.	N.A.	N.A.	N.A.	N.A.
B00264843	N.A.	N.A.	N.A.	N.A.	N.A.
B00264844	N.A.	N.A.	N.A.	N.A.	N.A.
B00264845	N.A.	N.A.	N.A.	N.A.	N.A.
B00264846	N.A.	N.A.	N.A.	N.A.	N.A.
B00264847	N.A.	N.A.	N.A.	N.A.	N.A.
B00264848	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152578A Order: PO# BMC15-01_12 B00264809-268686

Report File No.: 0000014322

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264849	N.A.	N.A.	N.A.	N.A.	N.A.
B00264850	N.A.	N.A.	N.A.	N.A.	N.A.
B00264851	N.A.	N.A.	N.A.	N.A.	N.A.
B00264852	N.A.	N.A.	N.A.	N.A.	N.A.
B00264853	N.A.	N.A.	N.A.	N.A.	N.A.
B00266758	N.A.	N.A.	N.A.	N.A.	N.A.
B00266759	N.A.	N.A.	N.A.	N.A.	N.A.
B00266760	N.A.	N.A.	N.A.	N.A.	N.A.
B00266761	N.A.	N.A.	N.A.	N.A.	N.A.
B00266762	N.A.	N.A.	N.A.	N.A.	N.A.
B00266763	N.A.	N.A.	N.A.	N.A.	N.A.
B00268664	N.A.	N.A.	N.A.	N.A.	N.A.
B00268665	N.A.	N.A.	N.A.	N.A.	N.A.
B00268666	N.A.	N.A.	N.A.	N.A.	N.A.
B00268667	N.A.	N.A.	N.A.	N.A.	N.A.
B00268668	N.A.	N.A.	N.A.	N.A.	N.A.
B00268669	N.A.	N.A.	N.A.	N.A.	N.A.
B00268670	N.A.	N.A.	N.A.	N.A.	N.A.
B00268671	N.A.	N.A.	N.A.	N.A.	N.A.
B00268672	N.A.	N.A.	N.A.	N.A.	N.A.
B00268673	N.A.	N.A.	N.A.	N.A.	N.A.
B00268674	N.A.	N.A.	N.A.	N.A.	N.A.
B00268675	N.A.	N.A.	N.A.	N.A.	N.A.
B00268676	N.A.	N.A.	N.A.	N.A.	N.A.
B00268677	7	0.25	0.01	1.51	1
B00268678	25	0.26	0.02	1.25	<1
B00268679	152	1.43	0.05	14.5	2
B00268680	N.A.	N.A.	N.A.	N.A.	N.A.
B00268681	3500	64.0	4.68	46.3	220
B00268682	333	89.6	4.71	177	608
B00268683	2040	148	12.4	238	419
B00268684	1620	82.0	12.2	296	433
B00268685	9930	96.3	16.4	507	282
B00268686	7900	58.1	16.3	1310	225
*Rep B00268685	9610	97.3	16.7	483	271
*Std OREAS210	3710	N.A.	N.A.	N.A.	N.A.
*Std OREAS131B	N.A.	N.A.	N.A.	41.6	N.A.
*Std OREAS934	N.A.	512	N.A.	N.A.	76
*Std DS-1	N.A.	N.A.	86.7	N.A.	N.A.
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1

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Certificate of Analysis
Work Order : VC152579A
[Report File No.: 0000014319]

Date: December 09, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_12 B00268687-269096
Project No.: KZK
Samples: 74
Received: Oct 21, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
32	G_LOG02	Pre-preparation processing, sorting, logging, boxing
32	GE_IC14A	Aqua Regia digestion/ICP-AES finish
32	GE_IC14M	Aqua Regia digestion/ICP-MS finish

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152579A Order: PO# BMC15-01_12 B00268687-269096

Report File No.: 0000014319

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00268687	4200	112	16.1	283	404
B00268688	2050	230	10.2	343	499
B00268689	3870	25	22.8	919	76
B00268690	N.A.	N.A.	N.A.	N.A.	N.A.
B00268691	N.A.	N.A.	N.A.	N.A.	N.A.
B00268692	6840	10	21.6	402	41
B00268693	575	71	8.22	269	348
B00268694	261	40	8.14	244	192
B00268695	114	8	0.86	25.9	233
B00268696	2750	<5	20.3	289	570
B00268697	1560	49	27.3	253	411
B00268698	1510	<5	12.5	118	461
B00268699	5210	<5	20.3	362	574
B00268700	N.A.	N.A.	N.A.	N.A.	N.A.
B00268701	846	<5	7.39	31.4	102
B00268702	158	<5	0.28	3.82	9
B00268703	315	11	12.4	54.8	121
B00268704	45	<5	<0.01	1.39	1
B00268705	56	<5	<0.01	1.31	<1
B00268706	59	<5	<0.01	0.85	<1
B00268707	N.A.	N.A.	N.A.	N.A.	N.A.
B00268708	N.A.	N.A.	N.A.	N.A.	N.A.
B00268709	N.A.	N.A.	N.A.	N.A.	N.A.
B00268710	N.A.	N.A.	N.A.	N.A.	N.A.
B00268711	N.A.	N.A.	N.A.	N.A.	N.A.
B00268712	N.A.	N.A.	N.A.	N.A.	N.A.
B00268713	N.A.	N.A.	N.A.	N.A.	N.A.
B00268714	N.A.	N.A.	N.A.	N.A.	N.A.
B00268715	N.A.	N.A.	N.A.	N.A.	N.A.
B00268716	N.A.	N.A.	N.A.	N.A.	N.A.
B00268717	N.A.	N.A.	N.A.	N.A.	N.A.
B00268718	N.A.	N.A.	N.A.	N.A.	N.A.
B00268719	N.A.	N.A.	N.A.	N.A.	N.A.
B00268720	N.A.	N.A.	N.A.	N.A.	N.A.
B00268721	N.A.	N.A.	N.A.	N.A.	N.A.
B00268722	N.A.	N.A.	N.A.	N.A.	N.A.
B00268723	N.A.	N.A.	N.A.	N.A.	N.A.
B00268724	N.A.	N.A.	N.A.	N.A.	N.A.
B00268725	N.A.	N.A.	N.A.	N.A.	N.A.
B00268726	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC152579A Order: PO# BMC15-01_12 B00268687-269096

Report File No.: 0000014319

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00268727	N.A.	N.A.	N.A.	N.A.	N.A.
B00268728	N.A.	N.A.	N.A.	N.A.	N.A.
B00268729	N.A.	N.A.	N.A.	N.A.	N.A.
B00268730	N.A.	N.A.	N.A.	N.A.	N.A.
B00268731	5880	26	42.9	3120	168
B00268732	6600	8	45.2	2530	81
B00268733	4310	20	62.5	2680	103
B00268734	4620	29	48.2	987	96
B00268735	5620	11	69.3	1420	42
B00268736	9960	49	84.6	1770	330
B00268737	7040	31	73.3	1340	199
B00268738	4330	42	53.8	1750	113
B00268739	3940	10	46.7	2320	76
B00268740	N.A.	N.A.	N.A.	N.A.	N.A.
B00268741	5020	23	22.7	561	142
B00268742	1890	39	22.0	231	173
B00268743	373	39	20.9	318	163
B00268744	537	<5	0.20	9.67	2
B00268745	105	<5	0.11	1.51	<1
B00268746	49	<5	0.02	1.45	<1
B00269083	N.A.	N.A.	N.A.	N.A.	N.A.
B00269084	N.A.	N.A.	N.A.	N.A.	N.A.
B00269085	N.A.	N.A.	N.A.	N.A.	N.A.
B00269086	N.A.	N.A.	N.A.	N.A.	N.A.
B00269087	N.A.	N.A.	N.A.	N.A.	N.A.
B00269088	N.A.	N.A.	N.A.	N.A.	N.A.
B00269089	N.A.	N.A.	N.A.	N.A.	N.A.
B00269090	N.A.	N.A.	N.A.	N.A.	N.A.
B00269091	N.A.	N.A.	N.A.	N.A.	N.A.
B00269092	N.A.	N.A.	N.A.	N.A.	N.A.
B00269093	N.A.	N.A.	N.A.	N.A.	N.A.
B00269094	N.A.	N.A.	N.A.	N.A.	N.A.
B00269095	N.A.	N.A.	N.A.	N.A.	N.A.
B00269096	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00268738	4240	38	52.5	1740	110
*Std OREAS131B	N.A.	N.A.	N.A.	43.6	N.A.
*Std OREAS934	N.A.	527	N.A.	N.A.	74
*Std DS-1	6730	N.A.	85.8	N.A.	N.A.
*Blk BLANK	<3	<5	<0.01	0.07	<1

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Certificate of Analysis

Work Order : VC152579F

[Report File No.: 0000014201]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_12 B00268687-269096
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 10 (Inclusive of Cover Sheet)

Comments:

EDTA Leach results are semi-quantitative only.
% extraction for samples with feed grades near or below statistical detection limit cannot be determined.
Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152579 Report No. 013648
dated Nov 12, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268687	2.435	N.A.	1670	92.9	1.50	38.4	0.56	4.98
B00268688	2.390	N.A.	1060	147	1.66	40.0	0.66	2.64
B00268689	1.950	N.A.	586	176	0.49	32.6	1.40	4.38
B00268690	0.210	N.A.	1220	69.0	0.37	3.91	1.38	5.32
B00268691	0.210	N.A.	761	20.2	1.73	13.7	0.25	1.04
B00268692	2.030	N.A.	548	110	0.24	32.7	0.96	4.33
B00268693	2.035	N.A.	640	160	0.30	27.1	4.72	9.89
B00268694	0.860	N.A.	1460	205	1.13	24.0	6.02	14.4
B00268695	0.995	N.A.	282	27.7	0.50	9.73	0.27	1.10
B00268696	2.975	N.A.	858	162	0.23	34.8	3.73	8.19
B00268697	2.515	N.A.	572	202	0.06	33.4	4.09	9.50
B00268698	1.240	N.A.	429	109	0.17	25.7	2.28	4.62
B00268699	1.525	N.A.	1440	185	0.89	32.5	3.89	7.59
B00268700	1.790	N.A.	<5	0.4	<0.01	0.19	<0.01	0.02
B00268701	1.595	N.A.	93	23.9	0.11	11.0	0.43	2.43
B00268702	0.860	N.A.	9	0.7	<0.01	2.45	<0.01	<0.01
B00268703	0.520	N.A.	338	71.1	0.29	17.6	1.08	3.87
B00268704	3.035	N.A.	<5	0.4	<0.01	6.66	<0.01	0.02
B00268705	3.090	N.A.	<5	0.9	<0.01	7.34	<0.01	0.03
B00268706	2.980	N.A.	<5	0.4	<0.01	7.25	<0.01	0.01
B00268707	2.885	N.A.	14	0.8	<0.01	1.85	0.01	0.03
B00268708	1.750	N.A.	22	1.7	0.01	3.24	0.02	0.03
B00268709	2.250	N.A.	78	10.9	0.36	6.48	0.04	0.14
B00268710	0.185	N.A.	294	21.3	13.4	27.4	0.03	0.42
B00268711	0.180	N.A.	5280	6.9	0.62	6.27	0.01	0.13
B00268712	2.215	N.A.	3980	>300	10.2	29.5	0.17	1.08
B00268713	1.685	N.A.	209	60.7	1.26	4.85	0.28	0.57
B00268714	1.870	N.A.	288	38.7	0.91	5.12	0.29	0.58
B00268715	2.315	N.A.	1360	186	0.91	34.1	1.68	10.9
B00268716	1.500	N.A.	591	120	0.22	35.9	1.69	8.55
B00268717	3.010	N.A.	1470	246	0.24	31.8	2.36	9.06
B00268718	3.370	N.A.	1180	178	0.30	32.7	1.78	10.1
B00268719	1.570	N.A.	813	103	0.19	36.6	0.54	3.62
B00268720	1.770	N.A.	<5	<0.3	<0.01	0.23	<0.01	<0.01
B00268721	3.905	N.A.	2290	>300	0.57	27.6	3.87	10.8
B00268722	2.765	N.A.	1080	273	0.31	26.5	4.47	13.4
B00268723	2.525	N.A.	622	160	0.34	33.6	3.41	13.9
B00268724	1.765	N.A.	1380	74.6	1.75	16.2	0.71	2.89
B00268725	1.725	N.A.	245	25.1	0.18	16.6	0.40	2.68
B00268726	3.390	N.A.	619	98.2	0.31	34.5	1.92	9.35

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268727	2.485	N.A.	90	17.4	0.07	7.70	0.34	1.26
B00268728	2.320	N.A.	137	26.1	0.18	6.96	0.33	1.67
B00268729	2.435	N.A.	13	1.4	<0.01	6.74	0.03	0.11
B00268730	0.195	N.A.	891	43.2	0.46	19.6	0.31	1.12
B00268731	1.755	N.A.	2780	>300	0.36	30.3	2.94	11.4
B00268732	1.910	N.A.	3950	>300	0.59	32.5	3.37	9.73
B00268733	3.730	N.A.	5430	>300	0.86	28.7	4.42	13.1
B00268734	3.105	N.A.	1390	202	0.17	27.1	2.54	8.75
B00268735	3.100	N.A.	2000	264	0.23	25.3	2.95	7.91
B00268736	1.840	85.1	3150	>300	0.47	30.5	4.06	11.8
B00268737	1.760	N.A.	2010	229	0.39	29.9	2.82	12.1
B00268738	2.615	N.A.	2500	>300	0.25	25.8	4.90	10.1
B00268739	2.920	N.A.	4370	>300	0.45	24.9	4.41	9.24
B00268740	1.550	N.A.	9	0.4	<0.01	0.25	<0.01	0.01
B00268741	2.655	N.A.	1250	135	0.11	29.4	2.33	8.51
B00268742	3.030	N.A.	636	133	0.11	33.5	2.69	8.98
B00268743	2.165	N.A.	1400	297	3.02	27.9	4.79	9.62
B00268744	3.100	N.A.	12	0.8	0.02	5.75	<0.01	0.03
B00268745	2.855	N.A.	6	<0.3	<0.01	6.90	<0.01	0.01
B00268746	2.100	N.A.	10	0.6	<0.01	7.00	<0.01	0.02
B00269083	3.900	N.A.	<5	0.6	<0.01	9.24	<0.01	0.02
B00269084	2.090	N.A.	<5	0.5	<0.01	9.18	<0.01	0.02
B00269085	3.735	N.A.	5	0.6	<0.01	8.87	<0.01	0.02
B00269086	3.255	N.A.	7	0.5	<0.01	2.09	<0.01	0.02
B00269087	3.375	N.A.	<5	2.0	<0.01	2.47	0.01	0.06
B00269088	4.240	N.A.	9	0.5	<0.01	2.06	<0.01	0.02
*Dup B00269088	N.A.	N.A.	<5	0.4	<0.01	2.08	<0.01	0.02
B00269089	3.665	N.A.	10	1.7	0.09	3.70	<0.01	0.18
B00269090	0.190	N.A.	875	44.3	0.47	19.8	0.30	1.11
B00269091	2.650	N.A.	5	0.3	<0.01	3.91	<0.01	0.05
B00269092	2.490	N.A.	<5	<0.3	<0.01	2.11	<0.01	0.01
B00269093	2.700	N.A.	<5	<0.3	<0.01	2.19	<0.01	0.01
B00269094	2.105	N.A.	<5	<0.3	<0.01	1.82	<0.01	0.01
B00269095	2.650	N.A.	<5	<0.3	<0.01	2.52	<0.01	0.05
B00269096	3.785	85.4	113	1.2	0.04	6.28	<0.01	0.64
*Rep B00268698				111				
*Rep B00268736				>300				
*Rep B00269096				1.2				
*Std SU_1B				6.4				
*Std OREAS621				66.8				

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Final : VC152579F Order: PO# BMC15-01_12 B00268687-269096

Report File No.: 0000014201

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		192				
*Std AMIS0268		195				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268705	<5					
*Rep B00269091	<5					
*Std OREAS252	670					
*Blk BLANK	<5					
*Rep B00268696			0.23	34.9	3.70	8.27
*Rep B00268717			0.24	31.7	2.38	9.03
*Rep B00269096			0.04	6.26	<0.01	0.64
*Std OREAS134A			0.13	12.2	13.0	17.3
*Std OREAS131B			0.02	5.92	1.86	3.15
*Std OREAS926			0.82	7.56	<0.01	0.04
*Std OREAS131B			0.02	5.92	1.85	3.10
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Std OXH97	1280					
*Std OXJ111	2240					
*Std OXN117	7680					

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Element	S	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb
Method	GO_ICP90Q	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	0.1	1	0.05	0.05	0.05	0.5	0.5
Units	%	g	mL	ppm	ppm	ppm	%	%
B00268687	44.4	50.0	500	1.69	197	170	<0.5	35.1
B00268688	40.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268689	38.3	50.0	500	0.15	258	76.6	<0.5	18.4
B00268690	4.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268691	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268692	39.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268693	34.2	50.0	500	<0.05	467	39.7	<0.5	9.9
B00268694	27.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268695	8.6	50.0	500	<0.05	54.4	9.99	<0.5	19.8
B00268696	43.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268697	43.7	50.0	500	<0.05	528	55.0	<0.5	12.9
B00268698	30.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268699	38.4	50.0	500	<0.05	486	47.5	<0.5	12.5
B00268700	<0.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268701	8.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268702	1.1	50.0	500	<0.05	4.12	1.11	INF	INF
B00268703	21.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268704	N.A.	50.0	500	<0.05	1.36	0.13	INF	INF
B00268705	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268706	N.A.	50.0	500	<0.05	0.98	0.08	INF	INF
B00268707	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268708	N.A.	50.0	500	<0.05	2.07	0.46	INF	INF
B00268709	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268710	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268711	0.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268712	25.7	50.0	500	19.0	41.8	22.3	<0.5	24.0
B00268713	3.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268714	4.1	50.0	500	<0.05	51.2	7.61	<0.5	17.6
B00268715	43.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268716	43.5	50.0	500	<0.05	519	87.4	<0.5	30.7
B00268717	38.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268718	41.6	50.0	500	<0.05	432	66.9	<0.5	24.2
B00268719	43.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268720	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268721	35.3	50.0	500	<0.05	438	45.3	<0.5	11.3
B00268722	34.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268723	38.0	50.0	500	<0.05	545	90.8	<0.5	16.0
B00268724	15.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268725	16.6	50.0	500	<0.05	69.2	22.6	<0.5	17.2
B00268726	41.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Element	S	Sample Wt	VOL_EDTA	Cu	Pb	Zn	Extracted Cu	Extracted Pb
Method	GO_ICP90Q	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA	EDTA
Det.Lim.	0.1	0.1	1	0.05	0.05	0.05	0.5	0.5
Units	%	g	mL	ppm	ppm	ppm	%	%
B00268727	N.A.	50.0	500	0.15	103	10.2	<0.5	30.5
B00268728	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268729	N.A.	50.0	500	<0.05	1.92	0.15	INF	6.9
B00268730	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268731	37.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268732	39.9	50.0	500	<0.05	557	85.1	<0.5	16.6
B00268733	39.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268734	36.4	50.0	500	<0.05	278	43.3	<0.5	15.3
B00268735	35.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268736	38.9	50.0	500	<0.05	437	49.3	<0.5	10.7
B00268737	39.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268738	35.9	50.0	500	<0.05	511	36.0	<0.5	13.4
B00268739	33.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268740	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268741	38.7	50.0	500	<0.05	364	42.6	<0.5	15.6
B00268742	45.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268743	36.6	50.0	500	0.19	548	47.7	<0.5	11.4
B00268744	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268745	N.A.	50.0	500	<0.05	1.43	0.13	INF	INF
B00268746	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269083	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269084	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269085	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269086	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269087	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269088	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Dup B00269088	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269089	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269090	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269091	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269092	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269093	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269094	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269095	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269096	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00268696	N.A.
*Rep B00268717	N.A.
*Rep B00269096	N.A.
*Std OREAS134A	19.5
*Std OREAS131B	4.6
*Std OREAS926	N.A.
*Std OREAS131B	N.A.
*Blk BLANK	<0.1
*Blk BLANK	N.A.

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Report File No.: 0000014201

Element	Extracted Zn	@Au	Ag
Method	EDTA	GO_FAG303	GO_FAG313
Det.Lim.	0.5	0.5	10
Units	%	g/t	g/t
B00268687	3.4	N.A.	N.A.
B00268688	N.A.	N.A.	N.A.
B00268689	1.7	N.A.	187
B00268690	N.A.	N.A.	N.A.
B00268691	N.A.	N.A.	N.A.
B00268692	N.A.	N.A.	N.A.
B00268693	<0.5	N.A.	130
B00268694	N.A.	N.A.	180
B00268695	0.9	N.A.	N.A.
B00268696	N.A.	N.A.	166
B00268697	0.6	N.A.	182
B00268698	N.A.	N.A.	N.A.
B00268699	0.6	N.A.	172
B00268700	N.A.	N.A.	N.A.
B00268701	N.A.	N.A.	N.A.
B00268702	INF	N.A.	N.A.
B00268703	N.A.	N.A.	N.A.
B00268704	INF	N.A.	N.A.
B00268705	N.A.	N.A.	N.A.
B00268706	INF	N.A.	N.A.
B00268707	N.A.	N.A.	N.A.
B00268708	1.8	N.A.	N.A.
B00268709	N.A.	N.A.	N.A.
B00268710	N.A.	N.A.	N.A.
B00268711	N.A.	5.34	N.A.
B00268712	2.1	N.A.	330
B00268713	N.A.	N.A.	N.A.
B00268714	1.3	N.A.	N.A.
B00268715	N.A.	N.A.	171
B00268716	1.0	N.A.	N.A.
B00268717	N.A.	N.A.	233
B00268718	0.7	N.A.	152
B00268719	N.A.	N.A.	N.A.
B00268720	N.A.	N.A.	N.A.
B00268721	<0.5	N.A.	295
B00268722	N.A.	N.A.	301
B00268723	0.7	N.A.	128
B00268724	N.A.	N.A.	N.A.
B00268725	0.8	N.A.	N.A.
B00268726	N.A.	N.A.	N.A.

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Report File No.: 0000014201

Element	Extracted Zn	@Au	Ag
Method	EDTA	GO_FAG303	GO_FAG313
Det.Lim.	0.5	0.5	10
Units	%	g/t	g/t
B00268727	0.8	N.A.	N.A.
B00268728	N.A.	N.A.	N.A.
B00268729	<0.5	N.A.	N.A.
B00268730	N.A.	N.A.	N.A.
B00268731	N.A.	N.A.	307
B00268732	0.9	N.A.	386
B00268733	N.A.	6.02	466
B00268734	<0.5	N.A.	234
B00268735	N.A.	N.A.	278
B00268736	<0.5	N.A.	380
B00268737	N.A.	N.A.	233
B00268738	<0.5	N.A.	324
B00268739	N.A.	N.A.	454
B00268740	N.A.	N.A.	N.A.
B00268741	0.5	N.A.	N.A.
B00268742	N.A.	N.A.	N.A.
B00268743	<0.5	N.A.	288
B00268744	N.A.	N.A.	N.A.
B00268745	INF	N.A.	N.A.
B00268746	N.A.	N.A.	N.A.
B00269083	N.A.	N.A.	N.A.
B00269084	N.A.	N.A.	N.A.
B00269085	N.A.	N.A.	N.A.
B00269086	N.A.	N.A.	N.A.
B00269087	N.A.	N.A.	N.A.
B00269088	N.A.	N.A.	N.A.
*Dup B00269088	N.A.	N.A.	N.A.
B00269089	N.A.	N.A.	N.A.
B00269090	N.A.	N.A.	N.A.
B00269091	N.A.	N.A.	N.A.
B00269092	N.A.	N.A.	N.A.
B00269093	N.A.	N.A.	N.A.
B00269094	N.A.	N.A.	N.A.
B00269095	N.A.	N.A.	N.A.
B00269096	N.A.	N.A.	N.A.

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Final : VC152579F Order: PO# BMC15-01_12 B00268687-269096

Report File No.: 0000014201

Element	@Au	Ag
Method	GO_FAG303	GO_FAG313
Det.Lim.	0.5	10
Units	g/t	g/t
*Std OXN117	7.72	
*Blk BLANK	<0.50	
*Rep B00268731		303
*Std ME-1302		432
*Blk BLANK		<10

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Certificate of Analysis

Work Order : VC152580

[Report File No.: 0000013317]

To: **ROBIN BLACK** Date: Oct 26, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_12 B00269097-269154
Project No.	:	KZK
No. Of Samples	:	58
Date Submitted	:	Sep 29, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152580 Order: PO# BMC15-01_12 B00269097-269154

Report File No.: 0000013317

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269097	3.635	N.A.	27	3.5	0.27	5.82	<0.01	0.23
B00269098	3.345	N.A.	<5	<0.3	<0.01	2.76	<0.01	0.01
B00269099	3.815	N.A.	6	<0.3	<0.01	3.76	<0.01	0.01
B00269100	1.120	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269101	3.585	N.A.	<5	<0.3	<0.01	2.40	<0.01	<0.01
B00269102	3.880	N.A.	<5	<0.3	<0.01	2.75	<0.01	<0.01
B00269103	3.485	N.A.	<5	<0.3	0.02	3.31	<0.01	<0.01
B00269104	1.800	N.A.	<5	<0.3	0.01	2.17	<0.01	<0.01
B00269105	3.500	N.A.	<5	<0.3	<0.01	4.17	<0.01	0.03
B00269106	4.065	N.A.	<5	<0.3	0.02	4.42	<0.01	0.12
B00269107	3.885	N.A.	<5	0.3	0.03	5.34	<0.01	0.21
B00269108	3.035	N.A.	7	1.2	0.06	7.41	<0.01	0.38
B00269109	3.275	N.A.	<5	<0.3	<0.01	5.92	<0.01	0.07
B00269110	0.150	N.A.	821	46.8	0.47	20.2	0.31	1.14
B00269111	3.195	N.A.	<5	1.1	0.04	4.87	<0.01	0.22
B00269112	3.655	N.A.	<5	0.4	0.02	3.74	<0.01	0.02
B00269113	3.940	N.A.	<5	<0.3	<0.01	3.39	<0.01	0.03
B00269114	3.320	N.A.	13	1.2	0.12	3.74	<0.01	0.24
B00269115	3.785	N.A.	<5	<0.3	0.02	5.12	<0.01	0.19
B00269116	3.750	N.A.	<5	1.1	0.02	5.78	<0.01	0.19
B00269117	4.250	N.A.	<5	<0.3	0.02	4.23	<0.01	0.06
B00269118	4.555	N.A.	<5	<0.3	<0.01	7.84	<0.01	0.02
B00269119	3.905	N.A.	<5	<0.3	<0.01	5.38	<0.01	0.03
B00269120	0.850	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00269121	4.195	N.A.	<5	<0.3	<0.01	5.46	<0.01	0.03
B00269122	3.815	N.A.	<5	0.4	0.01	3.55	<0.01	0.14
B00269123	3.050	N.A.	<5	0.3	0.02	4.47	0.01	0.21
B00269124	4.875	N.A.	<5	5.6	<0.01	3.44	0.08	1.67
B00269125	3.935	N.A.	<5	0.6	0.01	4.58	<0.01	0.10
B00269126	3.960	N.A.	<5	<0.3	<0.01	5.76	<0.01	0.04
B00269127	3.945	N.A.	<5	<0.3	<0.01	4.16	<0.01	0.04
B00269128	3.300	N.A.	<5	1.9	0.02	4.58	0.02	0.03
B00269129	3.595	N.A.	6	1.3	0.07	5.67	<0.01	0.49
B00269130	0.155	N.A.	793	46.3	0.45	19.7	0.30	1.12
B00269131	3.845	N.A.	<5	<0.3	0.01	7.64	<0.01	0.22
*Dup B00269131	N.A.	N.A.	<5	<0.3	0.01	7.84	<0.01	0.23
B00269132	3.715	N.A.	<5	1.3	0.03	7.46	0.01	0.67
B00269133	3.535	N.A.	<5	0.5	<0.01	6.51	<0.01	0.05
B00269134	3.355	N.A.	<5	<0.3	<0.01	4.05	<0.01	0.03
B00269135	3.570	N.A.	<5	<0.3	<0.01	4.35	<0.01	0.05

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Final : VC152580 Order: PO# BMC15-01_12 B00269097-269154

Report File No.: 0000013317

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269136	3.210	N.A.	<5	0.6	0.01	3.96	<0.01	0.14
B00269137	4.750	N.A.	<5	<0.3	0.01	3.84	<0.01	0.12
B00269138	3.665	N.A.	<5	<0.3	0.02	5.25	<0.01	0.08
B00269139	3.555	N.A.	<5	<0.3	0.01	3.35	<0.01	0.06
B00269140	1.220	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269141	2.865	N.A.	<5	0.7	<0.01	4.65	<0.01	0.05
B00269142	7.445	N.A.	<5	0.6	0.02	4.72	<0.01	0.04
B00269143	0.220	N.A.	<5	1.8	0.05	3.58	<0.01	0.06
B00269144	3.150	N.A.	<5	2.2	0.05	10.1	0.01	0.11
B00269145	4.205	N.A.	<5	1.5	0.03	10.3	0.01	0.16
B00269146	2.815	88.5	6	3.8	<0.01	10.8	0.02	0.10
B00269147	3.855	N.A.	5	1.9	0.09	7.43	<0.01	0.04
B00269148	3.785	N.A.	<5	<0.3	<0.01	7.90	<0.01	0.02
B00269149	3.915	N.A.	7	1.8	0.10	8.66	<0.01	0.03
B00269150	0.155	N.A.	849	48.6	0.45	19.5	0.30	1.11
B00269151	3.305	N.A.	<5	<0.3	<0.01	7.97	<0.01	0.02
B00269152	4.170	N.A.	<5	<0.3	<0.01	7.27	<0.01	0.02
B00269153	3.840	N.A.	<5	<0.3	<0.01	8.69	<0.01	<0.01
B00269154	3.710	N.A.	<5	<0.3	<0.01	5.10	<0.01	<0.01
*Rep B00269107				0.4				
*Rep B00269139				<0.3				
*Std SU_1B				6.6				
*Std SU_1B				6.7				
*Std OREAS621				70.1				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00269120			<5					
*Rep B00269147			<5					
*Std OREAS252			682					
*Std OXH97			1270					
*Std OXJ111			2190					
*Std OXN117			7620					
*Blk BLANK			<5					
*Rep B00269102					<0.01	2.73	<0.01	<0.01
*Rep B00269137					0.01	3.83	<0.01	0.12
*Rep B00269142					0.02	4.70	<0.01	0.04
*Std OREAS131B					0.02	5.78	1.87	3.04
*Std OREAS926					0.83	7.52	0.02	0.04
*Std OREAS131B					0.02	5.82	1.89	3.08
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis
Work Order : VC152613A
[Report File No.: 0000014289]

Date: December 08, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_16 B00264946-264825
Project No.: KZK
Samples: 74
Received: Oct 21, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
36	G_LOG02	Pre-preparation processing, sorting, logging, boxing
36	GE_IC14M	Aqua Regia digestion/ICP-MS finish

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152613A Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014289

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00264946	40	0.73	0.03	0.39	4
B00264947	14	0.80	0.05	0.42	4
B00264948	29	0.76	0.07	0.51	7
B00264949	5	5.13	0.25	1.60	22
B00264950	N.A.	N.A.	N.A.	N.A.	N.A.
B00264951	5	4.91	0.25	1.92	33
B00264952	4	2.11	0.16	0.99	19
B00264953	34	129	5.24	2.19	527
B00264954	214	215	4.81	5.49	594
B00264955	93	151	1.45	3.10	242
B00264956	272	237	2.21	6.42	514
B00264957	216	56.7	0.92	4.33	400
B00264958	3220	54.7	17.6	1250	211
B00264959	1370	37.9	12.7	379	151
B00264960	N.A.	N.A.	N.A.	N.A.	N.A.
B00264961	1300	31.7	10.3	413	103
B00264962	1960	34.7	11.6	580	82
B00264963	382	69.8	7.65	36.7	541
B00264964	215	30.1	8.80	26.9	284
B00264965	678	11.1	10.9	267	53
B00264966	544	27.7	14.4	121	237
B00264967	1470	30.9	21.4	388	234
B00264968	1720	36.7	30.9	316	242
B00264969	421	11.1	18.8	38.5	55
B00264970	N.A.	N.A.	N.A.	N.A.	N.A.
B00264971	1580	21.1	29.4	329	72
B00264972	413	48.3	23.8	152	305
B00264973	84	3.83	4.61	29.8	113
B00264974	461	48.3	10.2	32.2	687
B00264975	3740	5.72	3.55	24.5	179
B00264976	801	0.04	0.17	0.78	3
B00264977	380	0.17	0.30	1.20	11
B00264978	40	<0.02	0.06	0.52	<1
B00264979	12	1.41	0.23	0.40	2
B00264980	N.A.	N.A.	N.A.	N.A.	N.A.
B00264981	6	0.51	0.18	1.05	2
B00264982	<3	0.13	<0.01	0.32	<1
B00264983	11	0.05	0.63	0.78	<1
B00264984	<3	0.58	<0.01	0.18	<1
B00264985	<3	0.59	0.16	0.39	1

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Final : VC152613A Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014289

Element	@As	@Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	0.02	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00266792	N.A.	N.A.	N.A.	N.A.	N.A.
B00266793	N.A.	N.A.	N.A.	N.A.	N.A.
B00266794	N.A.	N.A.	N.A.	N.A.	N.A.
B00266795	N.A.	N.A.	N.A.	N.A.	N.A.
B00266796	N.A.	N.A.	N.A.	N.A.	N.A.
B00266797	N.A.	N.A.	N.A.	N.A.	N.A.
B00266798	N.A.	N.A.	N.A.	N.A.	N.A.
B00266799	N.A.	N.A.	N.A.	N.A.	N.A.
B00266800	N.A.	N.A.	N.A.	N.A.	N.A.
B00266801	N.A.	N.A.	N.A.	N.A.	N.A.
B00266802	N.A.	N.A.	N.A.	N.A.	N.A.
B00266803	N.A.	N.A.	N.A.	N.A.	N.A.
B00266804	N.A.	N.A.	N.A.	N.A.	N.A.
B00266805	N.A.	N.A.	N.A.	N.A.	N.A.
B00266806	N.A.	N.A.	N.A.	N.A.	N.A.
B00266807	N.A.	N.A.	N.A.	N.A.	N.A.
B00266808	N.A.	N.A.	N.A.	N.A.	N.A.
B00266809	N.A.	N.A.	N.A.	N.A.	N.A.
B00266810	N.A.	N.A.	N.A.	N.A.	N.A.
B00266811	N.A.	N.A.	N.A.	N.A.	N.A.
B00266812	N.A.	N.A.	N.A.	N.A.	N.A.
B00266813	N.A.	N.A.	N.A.	N.A.	N.A.
B00266814	N.A.	N.A.	N.A.	N.A.	N.A.
B00266815	N.A.	N.A.	N.A.	N.A.	N.A.
B00266816	N.A.	N.A.	N.A.	N.A.	N.A.
B00266817	N.A.	N.A.	N.A.	N.A.	N.A.
B00266818	N.A.	N.A.	N.A.	N.A.	N.A.
B00266819	N.A.	N.A.	N.A.	N.A.	N.A.
B00266820	N.A.	N.A.	N.A.	N.A.	N.A.
B00266821	N.A.	N.A.	N.A.	N.A.	N.A.
B00266822	N.A.	N.A.	N.A.	N.A.	N.A.
B00266823	N.A.	N.A.	N.A.	N.A.	N.A.
B00266824	N.A.	N.A.	N.A.	N.A.	N.A.
B00266825	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00264962	2030	34.3	11.5	592	83
*Std OREAS131B	N.A.	N.A.	N.A.	38.0	N.A.
*Std OREAS934	N.A.	507	N.A.	N.A.	77
*Std DS-1	6540	N.A.	82.8	N.A.	N.A.
*Blk BLANK	<3	<0.02	<0.01	0.05	<1

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Certificate of Analysis

Work Order : VC152613F

[Report File No.: 0000014202]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_16 B00264946-264825
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152613 Report No. 013461
dated Nov 02, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264946	5.625	N.A.	<5	0.8	<0.01	2.16	0.02	0.08
B00264947	5.660	N.A.	<5	1.3	<0.01	2.02	0.04	0.07
B00264948	5.570	N.A.	<5	1.2	<0.01	2.69	0.04	0.17
B00264949	5.120	N.A.	<5	3.6	<0.01	4.96	0.07	0.34
B00264950	0.160	N.A.	812	45.1	0.46	20.2	0.31	1.15
B00264951	3.520	N.A.	209	40.7	1.70	6.62	0.01	0.13
B00264952	2.505	N.A.	163	33.0	1.39	4.60	<0.01	0.09
B00264953	3.570	N.A.	2930	294	12.6	28.5	0.09	0.90
B00264954	3.055	N.A.	3410	208	9.30	28.8	0.05	0.60
B00264955	2.430	N.A.	900	79.5	3.01	18.7	0.06	0.29
B00264956	2.505	N.A.	1430	121	4.96	25.4	0.05	0.33
B00264957	4.200	N.A.	860	62.7	2.49	31.7	0.06	0.16
B00264958	5.050	N.A.	1390	215	0.97	25.0	2.29	7.85
B00264959	6.515	N.A.	769	86.7	0.30	30.8	1.42	5.95
B00264960	0.735	N.A.	6	1.3	<0.01	0.10	0.02	0.03
B00264961	5.705	N.A.	956	82.1	0.31	33.2	1.55	5.69
B00264962	6.015	N.A.	1440	143	0.48	29.6	2.40	7.41
B00264963	5.960	N.A.	310	80.0	0.46	34.0	2.32	11.7
B00264964	5.820	N.A.	197	49.6	0.05	32.6	2.18	8.78
B00264965	6.125	N.A.	586	95.3	0.15	26.5	2.53	6.23
B00264966	6.215	N.A.	440	71.0	0.23	33.6	1.65	7.72
B00264967	5.610	N.A.	989	182	0.51	28.7	2.15	7.02
B00264968	6.125	N.A.	1050	118	0.38	34.9	1.14	6.48
B00264969	6.275	N.A.	246	29.2	0.13	36.1	0.44	5.93
B00264970	0.140	N.A.	4730	>300	0.34	11.5	11.4	17.5
B00264971	3.955	N.A.	1120	122	0.36	27.4	2.64	9.42
B00264972	5.005	N.A.	341	115	0.09	33.9	2.17	8.95
B00264973	3.730	N.A.	982	45.3	0.83	8.66	0.61	1.43
B00264974	4.975	N.A.	1260	124	2.65	17.5	1.52	2.85
B00264975	4.170	N.A.	215	16.5	0.21	9.39	0.33	0.94
B00264976	1.875	N.A.	<5	<0.3	<0.01	6.36	<0.01	0.02
B00264977	5.655	N.A.	31	0.8	<0.01	6.77	0.03	0.06
B00264978	5.030	N.A.	<5	<0.3	<0.01	7.15	<0.01	0.01
B00264979	1.935	N.A.	<5	0.9	<0.01	1.88	0.01	0.66
B00264980	0.770	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
*Dup B00264980	N.A.	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00264981	5.590	N.A.	10	1.1	<0.01	1.40	0.01	0.32
B00264982	4.915	N.A.	<5	<0.3	<0.01	0.65	<0.01	0.06
B00264983	5.595	N.A.	6	0.5	<0.01	1.05	<0.01	1.06
B00264984	5.420	N.A.	<5	<0.3	<0.01	3.71	<0.01	0.09

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Final : VC152613F Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014202

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264985	5.150	N.A.	<5	1.1	<0.01	3.85	0.05	0.61
B00266792	1.240	N.A.	34	14.3	0.03	7.35	0.54	1.55
B00266793	0.875	N.A.	8	1.9	0.01	3.06	0.06	0.31
B00266794	2.260	N.A.	10	1.3	<0.01	2.67	0.03	0.05
B00266795	2.145	N.A.	<5	<0.3	<0.01	3.84	<0.01	0.02
B00266796	2.180	N.A.	<5	0.7	<0.01	3.78	0.01	0.02
B00266797	0.995	N.A.	<5	3.2	0.03	5.17	0.04	0.03
B00266798	1.550	N.A.	94	54.8	0.32	23.5	0.76	3.43
B00266799	2.120	N.A.	124	13.2	0.44	13.5	0.08	0.08
B00266800	1.335	N.A.	<5	<0.3	<0.01	0.26	<0.01	<0.01
B00266801	2.300	94.2	79	25.1	0.31	15.8	0.32	1.61
B00266802	1.700	N.A.	37	22.1	0.34	13.7	0.27	1.07
B00266803	2.020	N.A.	<5	1.6	0.05	3.01	0.02	0.06
B00266804	1.010	N.A.	<5	0.4	<0.01	1.39	<0.01	0.02
B00266805	2.185	N.A.	<5	1.2	<0.01	2.49	0.03	0.11
B00266806	2.650	N.A.	<5	0.8	<0.01	2.69	0.02	0.15
B00266807	3.520	N.A.	8	2.1	0.02	2.21	0.03	0.09
B00266808	3.045	N.A.	781	189	0.39	25.1	4.25	6.63
B00266809	2.425	N.A.	468	170	0.27	26.2	4.51	9.76
B00266810	0.170	N.A.	1190	66.8	0.37	3.91	1.39	5.40
B00266811	0.170	N.A.	801	21.0	1.75	14.2	0.27	1.11
B00266812	2.760	N.A.	1050	148	0.51	32.2	4.81	10.5
B00266813	2.165	N.A.	1590	231	0.09	25.8	5.56	8.20
B00266814	2.940	N.A.	139	39.0	0.65	18.6	0.47	1.17
B00266815	2.630	N.A.	59	14.0	0.31	10.6	0.05	0.20
B00266816	2.380	N.A.	279	58.2	0.87	33.1	0.51	1.91
B00266817	3.080	N.A.	507	78.8	1.76	34.9	0.27	1.46
B00266818	3.340	N.A.	434	46.8	1.05	45.3	0.10	0.44
B00266819	1.730	N.A.	363	18.1	0.34	44.3	0.05	1.66
B00266820	1.130	N.A.	<5	0.3	<0.01	0.25	<0.01	<0.01
B00266821	2.160	N.A.	1020	109	0.36	42.1	1.78	7.67
*Dup B00266821	N.A.	N.A.	985	104	0.37	42.4	1.92	7.82
B00266822	1.630	N.A.	2490	294	0.13	34.3	4.05	8.79
B00266823	2.370	N.A.	2610	271	0.18	34.5	4.46	8.06
B00266824	2.545	N.A.	2180	274	0.11	30.4	4.73	9.42
B00266825	2.385	92.3	2050	293	0.25	29.6	3.55	11.6
*Rep B00264952				33.6				
*Rep B00266813				217				
*Rep B00266823				265				
*Std SU_1B				6.6				

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Final : VC152613F Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014202

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		69.5				
*Std AMIS0268		192				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00264953	2830					
*Rep B00266792	31					
*Std OREAS252	683					
*Std OXH97	1270					
*Std OXN117	7780					
*Blk BLANK	<5					
*Rep B00264954			9.23	28.7	0.05	0.61
*Rep B00264978			<0.01	7.18	<0.01	0.01
*Rep B00266802			0.34	13.4	0.27	1.06
*Rep B00266824			0.11	30.7	4.74	9.33
*Std OREAS134A			0.13	12.2	12.9	17.6
*Std OREAS131B			0.02	5.76	1.88	3.10
*Std OREAS926			0.83	7.53	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC152613F Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014202

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00264946	N.A.	N.A.
B00264947	N.A.	N.A.
B00264948	N.A.	N.A.
B00264949	N.A.	N.A.
B00264950	N.A.	N.A.
B00264951	N.A.	N.A.
B00264952	N.A.	N.A.
B00264953	N.A.	300
B00264954	N.A.	190
B00264955	N.A.	N.A.
B00264956	N.A.	N.A.
B00264957	N.A.	N.A.
B00264958	34.1	240
B00264959	40.5	N.A.
B00264960	N.A.	N.A.
B00264961	43.3	N.A.
B00264962	40.2	N.A.
B00264963	36.1	N.A.
B00264964	33.6	N.A.
B00264965	37.4	N.A.
B00264966	43.2	N.A.
B00264967	39.2	190
B00264968	44.2	N.A.
B00264969	44.5	N.A.
B00264970	21.2	320
B00264971	37.4	N.A.
B00264972	43.0	N.A.
B00264973	7.3	N.A.
B00264974	13.3	N.A.
B00264975	4.5	N.A.
B00264976	N.A.	N.A.
B00264977	N.A.	N.A.
B00264978	N.A.	N.A.
B00264979	N.A.	N.A.
B00264980	N.A.	N.A.
*Dup B00264980	N.A.	N.A.
B00264981	N.A.	N.A.
B00264982	N.A.	N.A.
B00264983	N.A.	N.A.
B00264984	N.A.	N.A.

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Final : VC152613F Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014202

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00264985	N.A.	N.A.
B00266792	N.A.	N.A.
B00266793	N.A.	N.A.
B00266794	N.A.	N.A.
B00266795	N.A.	N.A.
B00266796	N.A.	N.A.
B00266797	N.A.	N.A.
B00266798	21.1	N.A.
B00266799	8.6	N.A.
B00266800	<0.1	N.A.
B00266801	10.0	N.A.
B00266802	8.4	N.A.
B00266803	N.A.	N.A.
B00266804	N.A.	N.A.
B00266805	N.A.	N.A.
B00266806	N.A.	N.A.
B00266807	N.A.	N.A.
B00266808	32.7	200
B00266809	32.0	150
B00266810	4.4	N.A.
B00266811	N.A.	N.A.
B00266812	35.2	N.A.
B00266813	35.9	250
B00266814	11.3	N.A.
B00266815	5.1	N.A.
B00266816	21.9	N.A.
B00266817	N.A.	N.A.
B00266818	N.A.	N.A.
B00266819	49.1	N.A.
B00266820	N.A.	N.A.
B00266821	41.5	N.A.
*Dup B00266821	N.A.	N.A.
B00266822	41.0	290
B00266823	36.4	280
B00266824	38.3	300
B00266825	38.5	290

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Final : VC152613F Order: PO# BMC15-01_16 B00264946-264825

Report File No.: 0000014202

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00264958		250
*Std ME-1302		410
*Blk BLANK		<10
*Rep B00264954	N.A.	
*Rep B00264978	N.A.	
*Rep B00266802	N.A.	
*Rep B00266824	N.A.	
*Std OREAS134A	19.4	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	

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Certificate of Analysis
Work Order : VC152615A
[Report File No.: 0000014290]

Date: December 08, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_16 B00264826-264841
Project No.: KZK
Samples: 58
Received: Oct 21, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
40	G_LOG02	Pre-preparation processing, sorting, logging, boxing
40	GE_IC14A	Aqua Regia digestion/ICP-AES finish
40	GE_IC14M	Aqua Regia digestion/ICP-MS finish
1	GO_ICP13B	Ore Grade, Aqua Regia Diges/ICP-AES

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152615A Order: PO# BMC15-01_16 B00264826-264841

Report File No.: 0000014290

Element	As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266826	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266827	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266828	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266829	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266830	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266831	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266832	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266833	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266834	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266835	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266836	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268795	5	0.22	0.04	3.48	1	N.A.
B00268796	445	2.44	0.31	36.3	6	N.A.
B00268797	1690	0.88	0.32	8.05	6	N.A.
B00268798	478	13.2	2.37	7.50	132	N.A.
B00268799	8	18.8	1.25	4.04	141	N.A.
B00268800	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268801	256	2.17	0.50	1.70	16	N.A.
B00268802	12	6.33	0.07	1.00	31	N.A.
B00268803	86	38.9	2.85	5.35	191	N.A.
B00268804	2200	35.1	3.06	47.3	248	N.A.
B00268805	7520	65.3	6.13	232	231	N.A.
B00268806	9070	19.7	32.6	1140	39	N.A.
B00268807	2830	5.79	29.3	1940	15	N.A.
B00268808	1530	22.9	39.3	1250	41	N.A.
B00268809	1620	65.6	4.90	830	174	N.A.
B00268810	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268811	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268812	705	9.92	2.69	368	48	N.A.
B00268813	1650	42.3	28.6	1110	155	N.A.
B00268814	711	62.2	7.03	50.9	283	N.A.
B00268815	515	59.8	5.86	24.1	248	N.A.
B00268816	5440	29.7	13.3	152	87	N.A.
B00268817	471	173	3.80	30.2	429	N.A.
B00268818	521	166	5.43	20.1	548	N.A.
B00268819	2110	261	6.63	283	729	N.A.
B00268820	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268821	4420	174	7.63	429	607	N.A.
B00268822	631	143	14.4	105	1050	N.A.
B00268823	>10000	115	11.5	431	382	1.55

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Final : VC152615A Order: PO# BMC15-01_16 B00264826-264841

Report File No.: 0000014290

Element	As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268824	2620	80.7	9.22	382	354	N.A.
B00268825	3120	76.3	13.3	937	142	N.A.
B00268826	3620	42.1	6.89	301	202	N.A.
B00268827	4290	32.6	17.7	999	53	N.A.
B00268828	2720	33.0	16.3	626	63	N.A.
B00268829	1640	29.8	11.2	997	65	N.A.
B00268830	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268831	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268832	2090	9.94	15.2	725	16	N.A.
B00268833	1100	7.55	18.7	700	18	N.A.
B00268834	3890	74.4	30.7	2400	247	N.A.
B00268835	2180	127	10.1	477	330	N.A.
B00268836	2560	196	8.48	213	433	N.A.
B00268837	254	115	5.94	42.3	256	N.A.
B00268838	163	2.38	0.31	4.90	5	N.A.
B00268839	109	0.74	0.21	13.4	<1	N.A.
B00268840	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268841	45	2.25	0.05	1.29	2	N.A.
*Rep B00268834	3580	70.4	29.1	2340	244	
*Std OREAS131B	N.A.	N.A.	N.A.	42.1	N.A.	
*Std OREAS934	N.A.	514	N.A.	N.A.	76	
*Std DS-1	6980	N.A.	83.3	N.A.	N.A.	
*Blk BLANK	<3	<0.02	0.01	<0.05	<1	
*Blk BLANK						<0.01
*Std MP1B						2.23
*Rep B00268823						1.60

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Certificate of Analysis

Work Order : VC152615F

[Report File No.: 0000014203]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_16 B00264826-264841
Project No.	:	KZK
No. Of Samples	:	58
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 6 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Ag and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152615 Report No. 013462
dated Nov 02, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266826	2.335	N.A.	1190	141	1.35	35.5	1.66	10.2
B00266827	2.980	N.A.	1910	202	0.30	35.0	2.99	10.4
B00266828	2.915	N.A.	61	5.3	0.02	3.04	0.17	0.28
B00266829	2.980	N.A.	36	3.0	0.01	2.24	0.12	0.17
B00266830	0.150	N.A.	899	48.8	0.45	20.2	0.31	1.11
B00266831	1.635	N.A.	97	5.8	0.02	6.79	0.02	0.02
B00266832	1.765	N.A.	25	3.4	<0.01	3.31	0.01	0.02
B00266833	1.550	N.A.	50	4.2	<0.01	4.52	0.02	0.07
B00266834	2.065	N.A.	30	3.6	<0.01	3.54	0.03	0.19
B00266835	1.355	N.A.	14	2.8	<0.01	4.75	0.03	0.06
B00266836	0.730	N.A.	34	2.8	<0.01	5.01	0.02	0.02
B00268795	2.690	N.A.	<5	<0.3	<0.01	3.49	<0.01	0.02
B00268796	2.370	N.A.	24	0.9	<0.01	3.61	0.01	0.07
B00268797	2.970	N.A.	21	1.4	<0.01	2.05	0.01	0.02
B00268798	1.520	N.A.	72	21.6	0.32	5.84	0.42	1.32
B00268799	1.635	N.A.	39	20.4	0.26	4.99	0.36	0.69
B00268800	0.805	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268801	1.800	N.A.	15	3.0	<0.01	6.62	0.03	0.31
B00268802	1.560	N.A.	<5	4.1	0.05	6.92	0.04	0.21
B00268803	1.625	N.A.	125	26.9	0.36	36.4	0.38	1.83
B00268804	1.980	N.A.	799	55.3	0.80	44.5	0.42	1.57
B00268805	2.250	N.A.	992	86.2	0.23	46.1	1.18	3.55
B00268806	3.405	N.A.	2370	288	0.26	24.1	4.74	11.2
B00268807	2.245	N.A.	3360	>300	0.69	20.9	4.22	7.86
B00268808	2.890	N.A.	1340	297	0.34	16.5	5.68	14.2
B00268809	1.475	N.A.	1480	171	0.90	16.6	0.36	1.55
B00268810	0.140	N.A.	4810	>300	0.34	11.7	11.4	18.3
B00268811	0.140	N.A.	5220	7.2	0.59	6.22	0.01	0.12
B00268812	1.240	N.A.	415	65.1	0.17	6.18	0.40	0.93
B00268813	3.145	N.A.	2370	256	0.29	26.6	4.42	11.6
B00268814	3.335	N.A.	568	59.8	0.47	44.6	0.58	3.61
B00268815	2.715	N.A.	655	48.9	0.58	44.0	0.28	2.95
B00268816	1.590	N.A.	745	76.4	0.34	29.3	1.00	5.88
B00268817	3.280	N.A.	1120	108	1.72	46.2	0.48	2.32
B00268818	3.485	N.A.	1070	110	1.94	48.2	0.28	3.86
*Dup B00268818	N.A.	N.A.	1050	103	1.77	46.0	0.27	3.81
B00268819	3.165	N.A.	1440	157	2.42	44.7	0.81	2.76
B00268820	1.055	N.A.	5	<0.3	<0.01	0.14	<0.01	0.01
B00268821	1.625	N.A.	1620	125	1.58	41.9	0.90	2.77
B00268822	2.180	N.A.	597	149	1.20	33.7	1.47	7.44

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Final : VC152615F Order: PO# BMC15-01_16 B00264826-264841

Report File No.: 0000014203

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268823	2.255	N.A.	2070	141	1.22	39.1	1.64	4.79
B00268824	2.920	N.A.	847	67.7	0.97	42.4	0.37	4.11
B00268825	1.475	N.A.	1390	179	0.25	38.1	1.13	8.90
B00268826	2.480	N.A.	652	59.8	0.40	41.7	0.72	5.30
B00268827	2.615	N.A.	1360	178	0.25	31.0	2.74	9.62
B00268828	3.450	N.A.	873	96.4	0.17	29.5	1.31	7.98
B00268829	3.405	N.A.	1100	105	0.30	32.6	0.70	5.17
B00268830	0.170	N.A.	1240	70.6	0.36	3.83	1.38	5.32
B00268831	0.105	N.A.	795	20.7	1.80	13.8	0.25	1.05
B00268832	2.480	N.A.	1020	144	0.16	23.7	2.33	6.01
B00268833	1.220	88.3	1020	147	0.19	22.3	2.89	6.64
B00268834	2.505	N.A.	3870	>300	0.63	22.6	4.10	11.3
B00268835	2.920	N.A.	650	148	0.15	28.7	3.36	10.9
B00268836	4.095	N.A.	584	173	0.51	31.8	3.16	16.1
B00268837	1.325	N.A.	563	115	2.47	18.3	1.19	11.0
B00268838	2.245	N.A.	34	4.3	<0.01	2.55	0.09	0.24
B00268839	3.030	N.A.	102	3.1	<0.01	1.94	0.02	0.04
B00268840	0.725	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268841	2.205	N.A.	<5	1.5	<0.01	2.73	0.01	0.02
*Rep B00268814				58.9				
*Rep B00268822				147				
*Std SU_1B				6.7				
*Std OREAS621				69.8				
*Std AMIS0268				192				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00266826			1060					
*Rep B00268829			1220					
*Std OREAS252			681					
*Std OXH97			1290					
*Std OXJ111			2090					
*Std OXN117			7680					
*Blk BLANK			<5					
*Rep B00266832					<0.01	3.18	0.02	0.02
*Rep B00268806					0.27	24.4	4.77	11.4

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Report File No.: 0000014203

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00268834	0.62	22.5	4.07	11.0
*Std OREAS131B	0.02	5.93	1.93	3.14
*Std OREAS926	0.82	7.50	0.01	0.05
*Std OREAS134A	0.13	12.1	13.2	17.4
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC152615F Order: PO# BMC15-01_16 B00264826-264841

Report File No.: 0000014203

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00266826	40.8	N.A.	N.A.
B00266827	37.7	N.A.	210
B00266828	N.A.	N.A.	N.A.
B00266829	N.A.	N.A.	N.A.
B00266830	N.A.	N.A.	N.A.
B00266831	N.A.	N.A.	N.A.
B00266832	N.A.	N.A.	N.A.
B00266833	N.A.	N.A.	N.A.
B00266834	N.A.	N.A.	N.A.
B00266835	N.A.	N.A.	N.A.
B00266836	N.A.	N.A.	N.A.
B00268795	N.A.	N.A.	N.A.
B00268796	N.A.	N.A.	N.A.
B00268797	N.A.	N.A.	N.A.
B00268798	N.A.	N.A.	N.A.
B00268799	N.A.	N.A.	N.A.
B00268800	N.A.	N.A.	N.A.
B00268801	N.A.	N.A.	N.A.
B00268802	N.A.	N.A.	N.A.
B00268803	22.1	N.A.	N.A.
B00268804	40.6	N.A.	N.A.
B00268805	38.9	N.A.	N.A.
B00268806	32.8	N.A.	320
B00268807	27.9	N.A.	350
B00268808	25.4	N.A.	290
B00268809	13.7	N.A.	190
B00268810	21.3	N.A.	340
B00268811	N.A.	4.63	N.A.
B00268812	4.9	N.A.	N.A.
B00268813	33.5	N.A.	280
B00268814	39.1	N.A.	N.A.
B00268815	41.1	N.A.	N.A.
B00268816	30.9	N.A.	N.A.
B00268817	N.A.	N.A.	N.A.
B00268818	N.A.	N.A.	N.A.
*Dup B00268818	N.A.	N.A.	N.A.
B00268819	N.A.	N.A.	130
B00268820	N.A.	N.A.	N.A.
B00268821	46.5	N.A.	N.A.
B00268822	28.9	N.A.	N.A.

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Final : VC152615F Order: PO# BMC15-01_16 B00264826-264841

Report File No.: 0000014203

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268823	42.3	N.A.	N.A.
B00268824	45.4	N.A.	N.A.
B00268825	46.8	N.A.	160
B00268826	42.3	N.A.	N.A.
B00268827	37.2	N.A.	160
B00268828	36.9	N.A.	N.A.
B00268829	40.2	N.A.	N.A.
B00268830	4.5	N.A.	N.A.
B00268831	N.A.	N.A.	N.A.
B00268832	30.2	N.A.	N.A.
B00268833	29.1	N.A.	N.A.
B00268834	30.4	N.A.	330
B00268835	36.6	N.A.	N.A.
B00268836	43.1	N.A.	160
B00268837	16.5	N.A.	N.A.
B00268838	N.A.	N.A.	N.A.
B00268839	N.A.	N.A.	N.A.
B00268840	N.A.	N.A.	N.A.
B00268841	N.A.	N.A.	N.A.
*Std OXN117		7.53	
*Blk BLANK		<0.50	
*Rep B00266827			200
*Std AMIS0268			200
*Blk BLANK			<10
*Rep B00266832	N.A.		
*Rep B00268806	33.4		

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
*Rep B00268834	N.A.
*Std OREAS131B	4.7
*Std OREAS926	N.A.
*Std OREAS134A	19.2
*Blk BLANK	<0.1

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Certificate of Analysis

Work Order : VC152616

[Report File No.: 0000013247]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Oct 22, 2015

P.O. No.	:	PO# BMC15-01_17 B00233049-755
Project No.	:	KZK
No. Of Samples	:	54
Date Submitted	:	Oct 02, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152616 Order: PO# BMC15-01_17 B00233049-755

Report File No.: 0000013247

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233049	1.085	N.A.	15	2.6	<0.01	2.33	0.03	0.07
B00233050	0.135	N.A.	830	45.5	0.47	20.2	0.30	1.16
B00233051	1.165	N.A.	<5	0.6	<0.01	1.46	<0.01	<0.01
B00233052	1.545	N.A.	6	0.9	<0.01	1.32	<0.01	0.01
B00233053	1.205	N.A.	<5	0.5	<0.01	1.64	<0.01	<0.01
B00233054	0.550	N.A.	10	0.6	<0.01	1.83	<0.01	0.01
B00233055	0.885	N.A.	8	0.5	<0.01	1.80	<0.01	<0.01
B00233056	1.590	N.A.	6	0.5	<0.01	1.88	<0.01	<0.01
B00233057	0.855	N.A.	<5	0.4	<0.01	1.78	<0.01	<0.01
B00233058	1.240	N.A.	40	9.5	0.27	2.13	0.02	0.22
B00233059	1.495	N.A.	24	2.9	<0.01	7.27	0.05	0.06
B00233060	0.680	N.A.	<5	<0.3	<0.01	0.13	<0.01	<0.01
B00233061	1.605	N.A.	14	2.0	<0.01	7.48	0.03	0.05
B00264173	1.000	N.A.	18	5.7	0.08	9.07	0.02	0.11
B00264174	2.195	N.A.	20	3.0	0.12	7.23	0.01	0.26
B00264175	0.855	N.A.	28	7.3	0.04	2.94	0.11	2.00
B00264176	1.865	N.A.	127	16.2	0.08	3.47	0.05	0.90
B00264177	2.245	N.A.	<5	0.4	<0.01	1.56	<0.01	0.01
B00264178	2.355	N.A.	33	2.4	0.01	1.71	0.03	0.11
B00264179	2.165	N.A.	5	0.5	<0.01	1.56	<0.01	<0.01
B00264180	0.810	N.A.	6	<0.3	<0.01	<0.05	<0.01	<0.01
B00264181	1.255	N.A.	14	0.7	<0.01	1.88	<0.01	<0.01
B00264182	2.645	N.A.	36	3.4	0.02	2.47	0.08	0.24
B00264183	1.560	N.A.	40	2.5	0.03	2.62	0.01	0.18
B00264184	1.860	N.A.	<5	1.1	0.01	3.03	<0.01	0.03
B00264185	3.065	N.A.	10	0.3	<0.01	5.16	<0.01	<0.01
B00267272	1.865	N.A.	25	1.3	<0.01	2.17	0.02	0.02
B00267273	2.755	N.A.	5	0.8	0.01	2.65	<0.01	<0.01
B00267274	1.910	N.A.	20	4.9	0.05	2.76	0.03	0.73
B00267275	2.785	N.A.	7	0.4	0.01	3.60	<0.01	0.01
B00267276	2.340	N.A.	9	1.0	<0.01	1.77	<0.01	0.01
B00267277	2.965	N.A.	8	1.1	0.01	1.73	<0.01	0.13
B00267278	2.780	N.A.	8	0.6	<0.01	5.96	<0.01	0.02
B00267279	2.820	N.A.	8	0.8	<0.01	4.56	<0.01	0.01
*Dup B00267279	N.A.	N.A.	<5	0.7	<0.01	4.55	<0.01	0.01
B00267280	0.180	N.A.	<5	<0.3	<0.01	0.15	<0.01	<0.01
B00267281	2.385	N.A.	7	0.8	<0.01	2.74	<0.01	0.02
B00267282	2.435	N.A.	12	0.9	<0.01	1.53	0.02	0.05
B00267283	2.620	N.A.	6	1.1	<0.01	1.84	0.02	0.05
B00267284	0.895	N.A.	10	2.2	0.02	1.52	0.04	0.04

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Final : VC152616 Order: PO# BMC15-01_17 B00233049-755

Report File No.: 0000013247

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267285	0.615	N.A.	<5	0.5	0.02	8.29	<0.01	0.06
B00267286	2.175	N.A.	7	<0.3	<0.01	6.89	<0.01	0.05
B00267287	0.715	N.A.	16	1.0	0.01	1.60	0.01	0.09
B00267288	3.570	N.A.	14	1.0	<0.01	1.82	<0.01	0.01
B00267289	2.435	N.A.	23	4.1	0.04	5.04	0.08	0.26
B00267290	0.135	N.A.	819	45.1	0.47	19.9	0.31	1.11
B00267747	1.935	N.A.	7	0.6	<0.01	3.27	<0.01	<0.01
B00267748	1.300	N.A.	11	0.5	<0.01	2.20	<0.01	0.04
B00267749	2.430	N.A.	50	3.8	0.03	3.39	0.05	0.51
B00267750	0.135	N.A.	826	43.1	0.46	19.4	0.30	1.07
B00267751	0.785	95.7	11	0.8	<0.01	4.14	<0.01	0.02
B00267752	1.355	N.A.	10	1.0	<0.01	2.05	<0.01	<0.01
B00267753	1.725	N.A.	8	0.9	<0.01	3.19	<0.01	<0.01
B00267754	1.935	N.A.	11	0.7	<0.01	6.84	<0.01	<0.01
B00267755	2.525	N.A.	6	0.6	<0.01	7.02	<0.01	0.01
*Rep B00267280				<0.3				
*Rep B00267283				1.2				
*Std SU_1B				6.5				
*Std OREAS621				67.4				
*Std OREAS621				68.8				
*Blk BLANK				<0.3				
*Blk BLANK				0.3				
*Rep B00233051			9					
*Rep B00267289			28					
*Std OREAS252			656					
*Std OXH97			1250					
*Std OXJ111			2060					
*Blk BLANK			<5					
*Rep B00264180					<0.01	<0.05	<0.01	<0.01
*Rep B00267285					0.02	8.43	<0.01	0.06
*Rep B00267750					0.47	20.1	0.31	1.10
*Std OREAS131B					0.02	5.90	1.85	3.09
*Std OREAS131B					0.02	5.92	1.88	3.05
*Std OREAS926					0.83	7.52	0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis
Work Order : VC152617
[Report File No.: 0000013225]

Date: October 21, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_18 B00265786-795
Project No.: KZK
Samples: 10
Received: Oct 2, 2015
Pages: Page 1 to 2
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
10	G_LOG02	Pre-preparation processing, sorting, logging, boxing
10	G_WGH79	Weighing of samples and reporting of weights
10	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_WSH78	Barren wash between each sample - pulverizing stage
1	G_WSH79	Barren wash between each sample - crushing stage
10	GE_FAA313	@Au, FAS, AAS, 30g-5ml(FINAL-WT)
10	GE_AAS12E	2 g, 2-Acid digest, AAS finish
10	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
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Final : VC152617 Order: PO# BMC15-01_18 B00265786-795

Report File No.: 0000013225

Element	WtKg	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	ppb	g/t	%	%	%	%
B00265786	1.565	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265787	1.400	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265788	1.280	<5	<0.3	<0.01	0.10	<0.01	<0.01
B00265789	1.550	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265790	1.450	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265791	1.355	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265792	1.660	6	0.3	<0.01	<0.05	<0.01	<0.01
B00265793	1.230	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265794	1.295	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00265795	1.165	<5	<0.3	<0.01	<0.05	<0.01	<0.01
*Rep B00265791			<0.3				
*Std SU_1B			6.3				
*Blk BLANK			<0.3				
*Rep B00265786		19					
*Std OREAS252		678					
*Blk BLANK		<5					
*Rep B00265790				<0.01	<0.05	<0.01	<0.01
*Std OREAS926				0.83	7.40	0.01	0.04
*Blk BLANK				<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis

Work Order : VC152708A

[Report File No.: 0000014323]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_23 B00268303-269516
Project No.	:	KZK
No. Of Samples	:	99
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

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I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152708A Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014323

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268303	14	0.86	0.03	1.08	<1	N.A.
B00268304	47	0.87	0.08	6.18	2	N.A.
B00268305	176	1.46	0.10	0.85	7	N.A.
B00268306	4	4.65	0.50	1.76	75	N.A.
B00268307	<3	1.20	0.02	0.14	9	N.A.
B00268308	16	26.3	0.79	2.20	356	N.A.
B00268309	35	234	3.38	10.5	621	N.A.
B00268310	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268311	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268312	96	47.4	1.00	1.83	801	N.A.
B00268313	115	39.2	2.13	1.72	339	N.A.
B00268314	195	48.2	1.93	6.18	368	N.A.
B00268315	132	42.4	1.23	7.37	355	N.A.
B00268316	144	24.7	0.60	4.70	397	N.A.
B00268317	126	34.0	0.80	3.12	212	N.A.
B00268318	130	28.8	0.49	2.35	219	N.A.
B00268319	81	24.3	0.85	1.12	298	N.A.
B00268320	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268321	106	40.6	1.20	0.96	276	N.A.
B00268322	232	87.3	0.37	1.01	460	N.A.
B00268323	48	68.4	0.69	0.40	457	N.A.
B00268324	14	40.9	1.78	0.38	275	N.A.
B00268325	27	4.61	0.36	1.25	86	N.A.
B00268326	77	5.68	0.81	3.04	137	N.A.
B00268327	<3	1.79	0.03	0.37	31	N.A.
B00268328	<3	0.80	0.02	0.37	23	N.A.
B00268329	22	0.97	0.69	1.13	12	N.A.
B00268330	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268331	10	0.61	0.06	1.08	2	N.A.
B00268332	3	4.48	0.20	0.39	11	N.A.
B00268333	6	73.5	0.03	0.63	87	N.A.
B00268334	<3	8.04	<0.01	0.19	26	N.A.
B00268335	5	26.4	0.11	0.38	63	N.A.
B00268336	6	3.47	0.05	0.24	34	N.A.
B00268337	26	10.2	0.19	0.84	31	N.A.
B00268338	11	3.07	0.12	0.28	13	N.A.
B00268339	28	14.8	0.32	1.08	33	N.A.
B00268340	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268341	18	0.05	<0.01	0.18	<1	N.A.
B00268342	10	1.33	0.09	0.77	3	N.A.

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Final : VC152708A Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014323

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268343	<3	19.4	0.08	0.09	28	N.A.
B00268344	5	2.13	0.10	0.16	8	N.A.
B00268960	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268961	128	8.24	1.36	53.0	23	N.A.
B00268962	683	4.14	17.3	534	53	N.A.
B00268963	184	0.35	0.24	5.95	1	N.A.
B00268964	65	0.41	0.15	4.79	<1	N.A.
B00268965	10	0.51	0.19	17.1	2	N.A.
B00268966	841	0.47	0.34	22.8	3	N.A.
B00268967	1300	0.42	0.17	24.8	2	N.A.
B00268968	6530	14.7	44.8	407	101	N.A.
B00268969	2070	60.3	43.9	1910	160	N.A.
B00268970	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268971	588	1.12	1.76	930	3	N.A.
B00268972	20	0.57	0.42	9.08	2	N.A.
B00268973	16	0.24	0.22	9.27	<1	N.A.
B00268974	156	1.29	0.57	21.9	3	N.A.
B00268975	265	0.49	0.47	21.8	3	N.A.
B00268976	1070	152	21.8	362	923	N.A.
B00268977	1430	390	5.49	818	657	N.A.
B00268978	339	157	3.56	421	511	N.A.
B00268979	372	214	3.89	512	450	N.A.
B00268980	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268981	328	182	4.18	125	299	N.A.
B00268982	3000	93.3	4.97	155	310	N.A.
B00268983	2180	114	6.34	404	263	N.A.
B00268984	997	121	8.11	244	298	N.A.
B00268985	>10000	58.6	9.31	425	329	1.00
B00268986	2820	11.8	19.0	3040	100	N.A.
B00268987	452	49.7	21.2	803	236	N.A.
B00268988	35	0.62	0.34	13.4	1	N.A.
B00268989	19	0.57	0.43	3.10	<1	N.A.
B00268990	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268991	52	0.42	0.32	5.20	<1	N.A.
B00268992	35	0.47	0.43	6.98	<1	N.A.
B00268993	132	8.19	1.28	42.1	43	N.A.
B00268994	214	6.47	5.69	94.2	28	N.A.
B00268995	571	0.35	0.60	90.9	1	N.A.
B00268996	583	19.5	7.57	122	21	N.A.
B00268997	748	6.80	8.32	138	15	N.A.

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Final : VC152708A Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014323

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268998	494	5.31	12.4	240	11	N.A.
B00268999	1650	31.0	16.4	224	110	N.A.
B00269000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269501	32	2.33	0.36	144	2	N.A.
B00269502	6	0.73	0.14	1.84	<1	N.A.
B00269503	4	0.34	0.09	1.16	<1	N.A.
B00269504	47	0.65	0.84	37.8	3	N.A.
B00269505	185	0.52	0.76	169	4	N.A.
B00269506	304	102	12.2	112	185	N.A.
B00269507	168	5.29	9.25	118	30	N.A.
B00269508	474	8.39	12.5	483	55	N.A.
B00269509	27	0.56	0.42	3.03	3	N.A.
B00269510	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269511	191	0.87	11.2	17.7	16	N.A.
B00269512	73	0.64	0.77	2.57	5	N.A.
B00269513	33	2.25	0.19	1.17	22	N.A.
B00269514	8	0.26	0.10	0.52	1	N.A.
B00269515	<3	1.18	0.40	0.51	53	N.A.
B00269516	6	0.04	0.07	0.71	<1	N.A.
*Rep B00268315	130	42.0	1.14	7.46	346	
*Rep B00268343	<3	20.3	0.08	0.11	30	
*Rep B00268969	2060	60.7	43.8	1860	155	
*Rep B00269505	189	0.53	0.74	168	4	
*Rep B00269516	5	0.04	0.07	0.69	1	
*Std OREAS131B	N.A.	N.A.	N.A.	39.5	N.A.	
*Std OREAS934	N.A.	503	N.A.	N.A.	79	
*Std DS-1	6540	N.A.	78.5	N.A.	N.A.	
*Std OREAS131B	N.A.	N.A.	N.A.	39.1	N.A.	
*Std OREAS934	N.A.	517	N.A.	N.A.	87	
*Std DS-1	6730	N.A.	77.4	N.A.	N.A.	
*Blk BLANK	<3	<0.02	0.01	<0.05	<1	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Blk BLANK	<3	0.02	<0.01	<0.05	<1	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Blk BLANK						<0.01
*Rep B00268985						1.08
*Std MP1B						2.24

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Certificate of Analysis

Work Order : VC152708F

[Report File No.: 0000014204]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_23 B00268303-269516
Project No.	:	KZK
No. Of Samples	:	99
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 8 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152708 Report No. 013457
dated Nov 02, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268303	4.020	N.A.	10	0.6	<0.01	1.45	<0.01	0.01
B00268304	3.745	N.A.	11	1.3	<0.01	1.67	<0.01	0.02
B00268305	6.150	N.A.	7	1.2	0.04	2.18	0.02	0.10
B00268306	3.845	N.A.	23	8.2	0.40	6.25	0.19	1.12
B00268307	4.055	N.A.	8	0.8	0.02	4.84	<0.01	0.04
B00268308	4.040	N.A.	48	18.2	0.16	9.23	0.88	2.50
B00268309	3.300	N.A.	222	128	1.42	17.4	4.80	9.16
B00268310	0.205	N.A.	1230	68.0	0.37	3.83	1.37	5.39
B00268311	0.205	N.A.	764	19.6	1.72	13.6	0.25	1.07
B00268312	3.965	N.A.	506	77.8	3.39	31.2	0.38	2.88
B00268313	6.100	N.A.	95	21.4	0.36	41.3	0.57	9.95
B00268314	5.975	N.A.	80	23.8	0.13	36.1	0.66	10.2
B00268315	5.905	N.A.	114	30.2	0.24	40.2	1.09	8.66
B00268316	5.805	N.A.	97	13.9	0.23	41.6	0.26	4.25
B00268317	6.100	N.A.	97	18.4	0.21	38.8	0.46	7.77
B00268318	5.690	N.A.	92	13.2	0.22	39.5	0.20	5.33
B00268319	5.795	N.A.	99	13.1	0.48	36.3	0.08	10.3
B00268320	1.110	N.A.	<5	0.3	<0.01	0.15	<0.01	0.03
B00268321	4.500	N.A.	142	18.0	0.56	36.4	0.08	7.89
B00268322	5.530	N.A.	146	17.4	0.46	43.7	0.08	0.72
B00268323	5.220	N.A.	34	13.2	0.44	35.9	0.05	0.96
B00268324	3.165	N.A.	45	19.5	0.55	33.0	0.18	4.20
B00268325	2.500	N.A.	15	3.5	0.06	6.30	0.03	0.24
B00268326	5.785	N.A.	37	5.6	0.04	4.09	0.07	0.13
B00268327	5.465	N.A.	5	2.0	0.01	3.74	0.02	0.11
B00268328	2.595	N.A.	<5	1.2	<0.01	3.64	0.03	0.03
B00268329	4.655	N.A.	6	1.7	0.03	3.42	0.02	0.02
B00268330	0.190	N.A.	886	41.9	0.45	19.9	0.31	1.13
B00268331	3.050	N.A.	<5	0.4	<0.01	1.48	<0.01	<0.01
B00268332	2.140	N.A.	<5	1.5	0.02	2.51	0.01	0.26
B00268333	1.755	N.A.	44	17.7	0.40	10.4	0.11	0.09
B00268334	5.475	N.A.	<5	1.6	0.03	2.92	0.01	0.06
B00268335	5.055	N.A.	<5	3.5	0.05	3.47	0.06	0.29
B00268336	5.450	N.A.	<5	1.8	<0.01	2.93	0.02	0.14
*Dup B00268336	N.A.	N.A.	<5	1.7	<0.01	2.90	0.03	0.15
B00268337	3.805	N.A.	21	6.4	0.12	5.35	0.06	0.07
B00268338	3.750	N.A.	10	1.9	0.03	6.90	0.02	0.07
B00268339	3.240	N.A.	81	9.9	0.19	6.44	0.10	0.13
B00268340	1.350	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00268341	5.455	N.A.	<5	<0.3	<0.01	7.10	<0.01	0.02

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Final : VC152708F Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014204

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268342	4.640	N.A.	<5	0.6	<0.01	2.41	<0.01	0.02
B00268343	2.760	N.A.	47	7.2	0.16	12.6	0.05	0.23
B00268344	5.585	N.A.	<5	1.1	<0.01	1.95	0.02	0.14
B00268960	1.635	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00268961	1.345	N.A.	16	15.9	0.10	3.45	0.22	0.68
B00268962	2.125	N.A.	686	124	0.13	8.36	1.38	2.81
B00268963	2.710	N.A.	20	1.3	<0.01	1.55	0.02	0.03
B00268964	2.570	N.A.	13	0.8	<0.01	1.38	<0.01	0.02
B00268965	2.730	N.A.	15	1.1	<0.01	1.73	0.01	0.02
B00268966	2.785	N.A.	30	1.5	<0.01	1.82	0.03	0.04
B00268967	3.010	85.3	33	1.4	<0.01	1.62	0.02	0.02
B00268968	1.940	N.A.	549	119	0.12	14.1	2.17	5.32
B00268969	2.440	N.A.	1120	261	1.28	17.0	2.87	5.16
B00268970	0.195	N.A.	806	42.8	0.46	19.9	0.32	1.17
B00268971	2.565	N.A.	667	53.7	0.24	2.59	0.05	0.08
B00268972	1.920	N.A.	15	5.0	0.07	1.91	0.03	0.07
B00268973	0.985	N.A.	7	1.1	0.02	1.80	<0.01	<0.01
B00268974	2.445	N.A.	44	4.7	0.01	2.22	0.07	0.14
B00268975	2.180	N.A.	14	2.6	0.03	1.77	0.07	0.11
B00268976	3.160	N.A.	1260	127	2.29	23.9	1.64	17.7
B00268977	2.860	N.A.	2610	171	4.48	39.2	1.44	4.75
B00268978	1.570	N.A.	3190	119	4.70	40.0	0.46	3.29
B00268979	1.855	N.A.	1750	99.8	2.81	43.2	0.73	5.65
B00268980	1.045	N.A.	7	1.3	0.03	0.22	0.01	0.03
B00268981	3.335	N.A.	1110	93.8	2.19	40.9	0.65	8.24
B00268982	3.295	N.A.	1100	123	1.71	40.8	1.54	9.39
B00268983	3.070	N.A.	944	90.9	1.01	37.2	1.06	8.63
B00268984	2.905	N.A.	787	146	0.95	33.8	2.75	13.7
B00268985	1.185	N.A.	929	188	0.18	34.0	4.46	12.0
B00268986	2.625	N.A.	2870	>300	0.64	27.6	4.66	8.14
*Dup B00268986	N.A.	N.A.	3160	>300	0.65	27.6	4.40	8.19
B00268987	1.335	N.A.	1130	>300	0.20	31.9	5.93	10.0
B00268988	2.920	N.A.	10	3.1	<0.01	1.81	0.03	0.04
B00268989	1.780	N.A.	19	1.8	<0.01	2.40	<0.01	0.04
B00268990	0.190	N.A.	787	42.3	0.45	19.7	0.31	1.16
B00268991	2.075	N.A.	50	2.6	<0.01	2.91	0.01	0.07
B00268992	1.080	N.A.	35	3.5	<0.01	1.76	0.07	0.31
B00268993	1.480	N.A.	353	42.2	0.36	9.47	0.28	1.07
B00268994	2.740	N.A.	340	69.1	0.08	35.6	3.27	7.63
B00268995	0.985	N.A.	359	17.1	0.06	3.11	0.19	0.36

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268996	1.465	N.A.	929	112	0.14	41.4	2.55	5.59
B00268997	1.035	N.A.	837	107	0.12	40.0	2.16	5.08
B00268998	1.195	N.A.	1300	180	0.42	36.4	2.77	8.30
B00268999	1.195	N.A.	791	164	0.11	35.4	3.55	10.7
B00269000	1.280	N.A.	<5	0.8	<0.01	0.32	0.03	0.06
B00269501	2.820	N.A.	400	14.4	0.07	2.91	0.03	0.09
B00269502	2.550	N.A.	<5	0.6	<0.01	1.14	0.01	0.04
B00269503	1.610	N.A.	5	<0.3	<0.01	1.55	<0.01	0.01
B00269504	1.755	N.A.	30	3.1	0.02	2.37	0.19	0.21
B00269505	1.135	N.A.	108	8.7	0.17	5.49	0.25	0.15
B00269506	0.455	N.A.	331	66.9	0.43	28.3	1.24	6.96
B00269507	1.640	N.A.	509	37.3	0.07	6.92	0.86	1.92
B00269508	2.230	N.A.	479	71.0	0.12	14.2	1.48	3.57
B00269509	1.165	N.A.	22	2.1	0.01	2.78	0.05	0.07
B00269510	0.190	N.A.	746	45.7	0.45	19.6	0.30	1.13
B00269511	1.340	N.A.	80	3.5	<0.01	8.12	0.10	0.28
B00269512	1.650	N.A.	170	1.0	<0.01	3.42	0.06	0.08
B00269513	1.515	N.A.	88	2.3	0.10	6.54	0.01	0.04
B00269514	2.575	N.A.	<5	<0.3	<0.01	1.77	<0.01	<0.01
B00269515	0.590	N.A.	72	21.7	1.60	5.26	<0.01	0.09
B00269516	1.880	85.7	<5	<0.3	0.01	6.40	<0.01	0.02
*Rep B00268309				131				
*Rep B00268967				1.5				
*Rep B00269510				43.6				
*Std SU_1B				6.3				
*Std OREAS621				66.3				
*Std AMIS0268				190				
*Std SU_1B				6.4				
*Std OREAS621				66.8				
*Std AMIS0268				192				
*Std OREAS621				68.0				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00268333			49					
*Rep B00268976			1430					
*Rep B00268996			1000					
*Std OREAS252			673					
*Std OXH97			1270					
*Std OXJ111			2110					
*Std OXN117			7600					

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Final : VC152708F Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014204

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Std OREAS252	688				
*Std OXH97	1280				
*Blk BLANK	<5				
*Blk BLANK	<5				
*Rep B00268316		0.23	42.2	0.26	4.37
*Rep B00268335		0.05	3.46	0.07	0.29
*Rep B00268976		2.27	24.0	1.64	17.5
*Rep B00268995		0.06	3.11	0.19	0.35
*Rep B00269508		0.12	14.3	1.49	3.56
*Std OREAS134A		0.13	12.0	12.9	17.5
*Std OREAS131B		0.02	5.79	1.89	3.03
*Std OREAS134A		0.13	12.0	12.9	17.6
*Std OREAS131B		0.02	5.84	1.88	3.07
*Std OREAS926		0.83	7.46	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268303	N.A.	N.A.
B00268304	N.A.	N.A.
B00268305	N.A.	N.A.
B00268306	N.A.	N.A.
B00268307	N.A.	N.A.
B00268308	2.1	N.A.
B00268309	12.9	N.A.
B00268310	N.A.	N.A.
B00268311	N.A.	N.A.
B00268312	22.0	N.A.
B00268313	31.8	N.A.
B00268314	36.3	N.A.
B00268315	32.5	N.A.
B00268316	N.A.	N.A.
B00268317	N.A.	N.A.
B00268318	N.A.	N.A.
B00268319	N.A.	N.A.
B00268320	N.A.	N.A.
B00268321	N.A.	N.A.
B00268322	N.A.	N.A.
B00268323	N.A.	N.A.
B00268324	N.A.	N.A.
B00268325	N.A.	N.A.
B00268326	N.A.	N.A.
B00268327	N.A.	N.A.
B00268328	N.A.	N.A.
B00268329	N.A.	N.A.
B00268330	N.A.	N.A.
B00268331	N.A.	N.A.
B00268332	N.A.	N.A.
B00268333	N.A.	N.A.
B00268334	N.A.	N.A.
B00268335	N.A.	N.A.
B00268336	N.A.	N.A.
*Dup B00268336	N.A.	N.A.
B00268337	N.A.	N.A.
B00268338	N.A.	N.A.
B00268339	N.A.	N.A.
B00268340	N.A.	N.A.
B00268341	N.A.	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268342	N.A.	N.A.
B00268343	N.A.	N.A.
B00268344	N.A.	N.A.
B00268960	N.A.	N.A.
B00268961	N.A.	N.A.
B00268962	N.A.	N.A.
B00268963	N.A.	N.A.
B00268964	N.A.	N.A.
B00268965	N.A.	N.A.
B00268966	N.A.	N.A.
B00268967	N.A.	N.A.
B00268968	17.3	N.A.
B00268969	20.3	269
B00268970	N.A.	N.A.
B00268971	N.A.	N.A.
B00268972	N.A.	N.A.
B00268973	N.A.	N.A.
B00268974	N.A.	N.A.
B00268975	N.A.	N.A.
B00268976	29.0	N.A.
B00268977	39.7	152
B00268978	32.9	N.A.
B00268979	38.7	N.A.
B00268980	<0.1	N.A.
B00268981	39.9	N.A.
B00268982	40.1	N.A.
B00268983	40.3	N.A.
B00268984	34.2	N.A.
B00268985	36.6	180
B00268986	34.7	398
*Dup B00268986	N.A.	422
B00268987	43.7	370
B00268988	N.A.	N.A.
B00268989	N.A.	N.A.
B00268990	N.A.	N.A.
B00268991	N.A.	N.A.
B00268992	N.A.	N.A.
B00268993	N.A.	N.A.
B00268994	37.0	N.A.
B00268995	2.4	N.A.

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Final : VC152708F Order: PO# BMC15-01_23 B00268303-269516

Report File No.: 0000014204

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268996	42.3	N.A.
B00268997	39.9	N.A.
B00268998	34.9	168
B00268999	39.8	154
B00269000	N.A.	N.A.
B00269501	N.A.	N.A.
B00269502	N.A.	N.A.
B00269503	N.A.	N.A.
B00269504	N.A.	N.A.
B00269505	4.8	N.A.
B00269506	33.5	N.A.
B00269507	7.7	N.A.
B00269508	17.0	N.A.
B00269509	1.6	N.A.
B00269510	N.A.	N.A.
B00269511	7.3	N.A.
B00269512	N.A.	N.A.
B00269513	N.A.	N.A.
B00269514	N.A.	N.A.
B00269515	1.7	N.A.
B00269516	N.A.	N.A.

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00268969		279
*Std ME-1302		443
*Blk BLANK		<10
*Rep B00268316	N.A.	
*Rep B00268335	N.A.	
*Rep B00268976	N.A.	
*Rep B00268995	N.A.	
*Rep B00269508	N.A.	
*Std OREAS134A	19.4	
*Std OREAS131B	4.6	
*Std OREAS134A	N.A.	
*Std OREAS131B	N.A.	
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	
*Blk BLANK	N.A.	

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Certificate of Analysis

Work Order : VC152709A

[Report File No.: 0000015034]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Jan 05, 2016

P.O. No.	:	PO# BMC15-ME02 B00266837-268157
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 15, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152709A Order: PO# BMC15-ME02 B00266837-268157

Report File No.: 0000015034

Element	As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00266837	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266838	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266839	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266840	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266841	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266842	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266843	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266844	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266845	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266846	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266847	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266848	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266849	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266850	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268098	36	0.74	0.04	2.90	3	N.A.
B00268099	41	0.86	0.05	2.34	4	N.A.
B00268100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268101	49	0.58	0.05	1.61	2	N.A.
B00268102	45	1.22	0.05	1.75	2	N.A.
B00268103	163	35.3	0.54	10.0	104	N.A.
B00268104	328	56.7	1.41	14.5	334	N.A.
B00268105	746	0.87	0.03	0.88	3	N.A.
B00268106	125	0.91	0.02	1.45	4	N.A.
B00268107	21	0.67	0.04	1.19	2	N.A.
B00268108	83	58.0	13.6	32.3	542	N.A.
B00268109	102	23.7	8.93	40.0	381	N.A.
B00268110	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268111	152	46.9	9.70	84.8	468	N.A.
B00268112	14	1.40	0.16	2.31	7	N.A.
B00268113	169	46.6	8.27	26.5	541	N.A.
B00268114	134	37.5	8.27	13.5	554	N.A.
B00268115	9	5.11	0.15	6.63	9	N.A.
B00268116	146	32.0	2.90	22.7	256	N.A.
B00268117	21	5.97	0.19	1.63	26	N.A.
B00268118	47	10.3	0.51	3.35	43	N.A.
B00268119	57	163	0.22	6.15	83	N.A.
B00268120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268121	49	14.8	0.82	13.5	47	N.A.
B00268122	20	2.66	1.13	13.2	18	N.A.
B00268123	5020	43.0	61.9	2120	301	N.A.

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Final : VC152709A Order: PO# BMC15-ME02 B00266837-268157

Report File No.: 0000015034

Element	As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268124	358	1.85	0.53	26.3	4	N.A.
B00268125	87	2.30	0.18	17.6	7	N.A.
B00268126	810	6.42	2.60	228	22	N.A.
B00268127	43	0.79	0.14	8.38	3	N.A.
B00268128	213	0.52	0.10	4.82	2	N.A.
B00268129	319	0.53	0.09	3.70	1	N.A.
B00268130	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268131	2240	0.64	0.56	9.58	6	N.A.
B00268132	2720	60.4	24.7	283	165	N.A.
B00268133	4090	22.6	23.1	680	63	N.A.
B00268134	4890	51.9	26.6	504	62	N.A.
B00268135	4970	118	34.8	671	120	N.A.
B00268136	6600	37.2	48.8	885	71	N.A.
B00268137	5520	43.4	55.0	1270	93	N.A.
B00268138	>10000	89.4	97.8	1580	247	2.17
B00268139	5610	47.6	40.8	1320	205	N.A.
B00268140	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268141	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268142	5010	59.6	44.2	1010	260	N.A.
B00268143	4420	66.9	44.0	1170	119	N.A.
B00268144	>10000	37.1	50.1	1020	111	1.12
B00268145	3380	27.2	49.1	1300	127	N.A.
B00268146	2250	28.3	62.1	1720	68	N.A.
B00268147	2340	4.44	58.4	2940	35	N.A.
B00268148	62	0.75	1.83	23.6	2	N.A.
B00268149	110	1.05	2.33	432	3	N.A.
B00268150	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268151	5530	17.1	82.4	2340	63	N.A.
B00268152	61	2.53	3.62	23.0	19	N.A.
B00268153	13	0.31	0.45	1.98	2	N.A.
B00268154	37	1.75	0.49	7.32	8	N.A.
B00268155	29	0.76	1.05	15.3	22	N.A.
B00268156	20	0.24	0.27	1.27	3	N.A.
B00268157	1770	14.7	44.3	152	316	N.A.
*Rep B00268103	163	33.7	0.55	10.6	108	
*Rep B00268123	5140	43.1	62.0	2100	297	
*Rep B00268145	3190	27.4	51.2	1290	133	
*Rep B00268156	13	0.23	0.28	1.28	3	
*Std OREAS934	N.A.	520	N.A.	N.A.	75	
*Std DS-1	6810	N.A.	85.3	N.A.	N.A.	

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Final : VC152709A Order: PO# BMC15-ME02 B00266837-268157

Report File No.: 0000015034

Element	As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
*Std OREAS131B	N.A.	N.A.	N.A.	43.3	N.A.	
*Std DS-1	6810	N.A.	81.0	N.A.	N.A.	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Rep B00268138						2.04
*Blk BLANK						<0.01
*Std MP1B						2.29

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Certificate of Analysis

Work Order : VC152709F

[Report File No.: 0000014205]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_19 B00266837-268157
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Au and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152709 Report No. 013474
dated Nov 03, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266837	2.340	N.A.	<5	0.3	<0.01	5.40	<0.01	0.04
B00266838	2.615	N.A.	<5	2.6	<0.01	2.89	0.12	0.13
B00266839	1.810	N.A.	6	1.2	<0.01	1.86	0.01	0.12
B00266840	1.175	N.A.	<5	<0.3	<0.01	0.12	<0.01	<0.01
B00266841	1.920	N.A.	<5	1.4	<0.01	2.01	0.01	0.18
B00266842	1.615	N.A.	11	3.3	0.05	1.02	0.11	0.30
B00266843	1.565	N.A.	5	1.3	<0.01	1.55	0.04	0.04
B00266844	2.955	N.A.	6	1.0	0.01	1.79	0.04	0.13
B00266845	1.775	N.A.	7	0.4	<0.01	1.77	<0.01	<0.01
B00266846	2.260	N.A.	<5	<0.3	<0.01	1.80	<0.01	0.04
B00266847	1.855	N.A.	<5	2.7	0.01	1.47	0.05	0.10
B00266848	1.925	N.A.	<5	5.5	0.03	1.81	0.10	0.24
B00266849	2.155	N.A.	<5	<0.3	<0.01	6.25	<0.01	0.03
B00266850	0.155	N.A.	835	43.6	0.45	19.7	0.30	1.14
B00268098	1.930	N.A.	5	0.3	<0.01	1.93	<0.01	0.01
B00268099	3.530	N.A.	7	0.7	<0.01	1.62	0.02	0.03
B00268100	0.155	N.A.	817	43.9	0.45	19.9	0.31	1.15
B00268101	1.625	N.A.	6	0.4	<0.01	1.77	<0.01	0.02
B00268102	1.290	N.A.	<5	0.8	<0.01	1.60	<0.01	0.02
B00268103	0.830	N.A.	74	22.9	1.72	9.40	0.03	0.17
B00268104	0.995	N.A.	194	58.1	4.79	18.1	0.05	0.33
B00268105	3.165	N.A.	5	0.5	<0.01	1.51	<0.01	<0.01
B00268106	1.370	N.A.	<5	0.3	<0.01	1.72	0.01	<0.01
B00268107	1.960	N.A.	<5	0.4	0.02	1.56	<0.01	0.01
B00268108	2.665	N.A.	240	53.4	1.40	26.2	1.66	14.0
B00268109	1.330	N.A.	142	23.0	0.49	31.2	1.42	13.3
B00268110	1.300	N.A.	<5	<0.3	<0.01	0.09	<0.01	0.03
B00268111	2.785	N.A.	136	38.8	0.41	29.7	2.54	13.1
B00268112	2.365	N.A.	<5	1.5	0.02	6.32	0.03	0.11
B00268113	1.310	N.A.	157	35.5	0.45	30.1	1.68	11.4
B00268114	1.465	N.A.	124	25.7	0.50	31.4	0.89	13.0
B00268115	3.225	N.A.	14	2.0	0.07	3.38	0.02	0.05
B00268116	1.425	N.A.	164	25.5	0.82	24.5	0.43	3.88
B00268117	2.675	N.A.	15	2.7	0.02	5.21	0.05	0.10
B00268118	3.140	N.A.	44	7.3	0.41	7.73	0.03	0.30
*Dup B00268118	N.A.	N.A.	40	8.3	0.43	7.83	0.04	0.30
B00268119	3.205	N.A.	30	22.2	0.89	8.91	0.11	0.21
B00268120	0.155	N.A.	830	44.6	0.45	19.9	0.30	1.15
B00268121	3.075	N.A.	5	6.5	0.01	5.96	0.08	0.54
B00268122	2.585	N.A.	11	31.0	0.64	3.18	0.15	0.62

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Final : VC152709F Order: PO# BMC15-01_19 B00266837-268157

Report File No.: 0000014205

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268123	3.375	N.A.	1370	>300	0.75	29.0	4.87	9.62
B00268124	1.405	N.A.	31	1.4	<0.01	2.18	0.02	0.04
B00268125	1.690	N.A.	35	2.4	0.02	3.15	<0.01	0.05
B00268126	1.740	N.A.	92	14.2	0.23	3.52	0.20	0.62
B00268127	3.045	N.A.	18	2.5	0.08	2.07	<0.01	0.04
B00268128	2.895	N.A.	11	0.9	<0.01	1.85	0.01	0.03
B00268129	2.075	N.A.	6	0.8	<0.01	2.04	<0.01	0.02
B00268130	1.395	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268131	1.855	N.A.	38	2.6	<0.01	2.50	0.04	0.11
B00268132	3.395	N.A.	746	78.5	0.23	37.9	0.86	8.04
B00268133	3.450	90.0	1460	172	0.12	27.3	3.73	11.6
B00268134	3.325	N.A.	1060	91.3	0.21	30.1	1.34	7.07
B00268135	2.795	N.A.	1380	126	0.39	35.0	1.29	4.45
B00268136	3.365	N.A.	1610	158	0.20	34.5	2.25	5.54
B00268137	3.110	N.A.	1610	214	0.14	37.0	2.51	5.50
B00268138	3.560	N.A.	2590	140	0.27	34.9	1.40	9.05
B00268139	3.350	N.A.	1340	115	0.27	37.2	0.94	3.14
B00268140	0.100	N.A.	1230	67.4	0.36	3.78	1.34	5.31
B00268141	0.100	N.A.	822	20.2	1.81	13.8	0.26	1.06
B00268142	3.200	N.A.	1400	99.7	0.51	38.6	0.68	2.85
B00268143	3.195	N.A.	1800	147	0.34	36.8	0.91	2.80
B00268144	3.325	N.A.	2250	170	0.20	33.1	1.06	6.66
B00268145	2.955	N.A.	2010	151	0.29	35.4	0.86	4.72
B00268146	3.635	N.A.	2860	>300	0.35	31.1	2.00	5.79
B00268147	3.040	N.A.	3590	>300	0.32	17.8	2.49	4.09
B00268148	3.010	N.A.	90	6.0	0.01	2.01	0.03	0.08
B00268149	2.400	N.A.	221	47.6	0.10	2.33	0.06	0.15
B00268150	1.080	N.A.	7	1.7	<0.01	0.07	0.01	0.01
B00268151	3.875	N.A.	3280	>300	0.38	22.1	6.12	11.9
B00268152	3.165	N.A.	89	18.8	0.01	4.31	0.27	0.63
B00268153	1.945	N.A.	20	0.4	<0.01	2.46	<0.01	<0.01
*Dup B00268153	N.A.	N.A.	13	<0.3	<0.01	2.19	<0.01	0.01
B00268154	2.980	N.A.	23	2.2	<0.01	2.57	0.02	0.05
B00268155	2.430	N.A.	13	3.2	<0.01	2.22	0.07	0.22
B00268156	1.130	N.A.	6	0.5	<0.01	1.84	<0.01	0.01
B00268157	2.840	93.5	1790	185	0.43	32.5	3.48	9.21
*Rep B00266837				0.4				
*Rep B00268157				173				
*Std OREAS621				69.5				
*Std AMIS0268				189				

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Final : VC152709F Order: PO# BMC15-01_19 B00266837-268157

Report File No.: 0000014205

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.7				
*Std OREAS621		69.0				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268107	<5					
*Rep B00268145	2030					
*Std AMIS0265	556					
*Std OXH97	1260					
*Std OXJ111	2160					
*Std OXN117	7530					
*Blk BLANK	<5					
*Rep B00268103			1.75	9.57	0.03	0.17
*Rep B00268113			0.45	30.0	1.68	11.3
*Rep B00268136			0.20	34.6	2.23	5.61
*Std OREAS134A			0.13	12.1	12.9	17.4
*Std OREAS131B			0.02	5.77	1.88	3.07
*Std OREAS926			0.81	7.37	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266837	N.A.	N.A.
B00266838	N.A.	N.A.
B00266839	N.A.	N.A.
B00266840	N.A.	N.A.
B00266841	N.A.	N.A.
B00266842	N.A.	N.A.
B00266843	N.A.	N.A.
B00266844	N.A.	N.A.
B00266845	N.A.	N.A.
B00266846	N.A.	N.A.
B00266847	N.A.	N.A.
B00266848	N.A.	N.A.
B00266849	N.A.	N.A.
B00266850	N.A.	N.A.
B00268098	N.A.	N.A.
B00268099	N.A.	N.A.
B00268100	N.A.	N.A.
B00268101	N.A.	N.A.
B00268102	N.A.	N.A.
B00268103	N.A.	N.A.
B00268104	15.1	N.A.
B00268105	N.A.	N.A.
B00268106	N.A.	N.A.
B00268107	N.A.	N.A.
B00268108	25.3	N.A.
B00268109	30.0	N.A.
B00268110	<0.1	N.A.
B00268111	30.7	N.A.
B00268112	0.5	N.A.
B00268113	32.2	N.A.
B00268114	33.7	N.A.
B00268115	N.A.	N.A.
B00268116	N.A.	N.A.
B00268117	N.A.	N.A.
B00268118	N.A.	N.A.
*Dup B00268118	N.A.	N.A.
B00268119	N.A.	N.A.
B00268120	N.A.	N.A.
B00268121	N.A.	N.A.
B00268122	N.A.	N.A.

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Final : VC152709F Order: PO# BMC15-01_19 B00266837-268157

Report File No.: 0000014205

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268123	37.7	330
B00268124	1.4	N.A.
B00268125	2.6	N.A.
B00268126	2.9	N.A.
B00268127	N.A.	N.A.
B00268128	N.A.	N.A.
B00268129	N.A.	N.A.
B00268130	N.A.	N.A.
B00268131	N.A.	N.A.
B00268132	44.4	N.A.
B00268133	39.3	204
B00268134	39.7	N.A.
B00268135	40.3	N.A.
B00268136	42.0	115
B00268137	43.7	179
B00268138	39.0	N.A.
B00268139	41.5	N.A.
B00268140	4.5	N.A.
B00268141	N.A.	N.A.
B00268142	42.7	N.A.
B00268143	47.0	N.A.
B00268144	37.8	217
B00268145	41.1	136
B00268146	41.7	341
B00268147	28.2	583
B00268148	N.A.	N.A.
B00268149	N.A.	N.A.
B00268150	N.A.	N.A.
B00268151	34.5	448
B00268152	N.A.	N.A.
B00268153	N.A.	N.A.
*Dup B00268153	N.A.	N.A.
B00268154	N.A.	N.A.
B00268155	N.A.	N.A.
B00268156	N.A.	N.A.
B00268157	43.2	183

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Report File No.: 0000014205

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00268123		373
*Std ME-1302		436
*Blk BLANK		<10
*Rep B00268103	N.A.	
*Rep B00268113	N.A.	
*Rep B00268136	N.A.	
*Std OREAS134A	19.2	
*Std OREAS131B	4.7	
*Std OREAS926	N.A.	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	

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Certificate of Analysis

Work Order : VC152710A

[Report File No.: 0000014321]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_19 B00268158-268231
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

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n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152710A Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014321

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00268158	N.A.	N.A.	N.A.	N.A.	N.A.
B00268159	N.A.	N.A.	N.A.	N.A.	N.A.
B00268160	N.A.	N.A.	N.A.	N.A.	N.A.
B00268161	N.A.	N.A.	N.A.	N.A.	N.A.
B00268162	N.A.	N.A.	N.A.	N.A.	N.A.
B00268163	N.A.	N.A.	N.A.	N.A.	N.A.
B00268164	N.A.	N.A.	N.A.	N.A.	N.A.
B00268165	N.A.	N.A.	N.A.	N.A.	N.A.
B00268166	N.A.	N.A.	N.A.	N.A.	N.A.
B00268167	N.A.	N.A.	N.A.	N.A.	N.A.
B00268168	N.A.	N.A.	N.A.	N.A.	N.A.
B00268169	N.A.	N.A.	N.A.	N.A.	N.A.
B00268170	N.A.	N.A.	N.A.	N.A.	N.A.
B00268171	N.A.	N.A.	N.A.	N.A.	N.A.
B00268172	N.A.	N.A.	N.A.	N.A.	N.A.
B00268173	N.A.	N.A.	N.A.	N.A.	N.A.
B00268174	N.A.	N.A.	N.A.	N.A.	N.A.
B00268175	N.A.	N.A.	N.A.	N.A.	N.A.
B00268176	5	74	1.27	0.14	5
B00268177	<5	14	0.79	0.23	2
B00268178	<5	161	0.85	0.10	3
B00268179	<5	15	1.25	<0.01	3
B00268180	N.A.	N.A.	N.A.	N.A.	N.A.
B00268181	<5	54	11.0	0.30	43
B00268182	<5	31	7.02	0.31	28
B00268183	<5	18	3.07	0.24	16
B00268184	7	231	31.3	1.88	122
B00268185	11	92	48.1	6.34	175
B00268186	<5	8	9.86	0.25	32
B00268187	5	22	11.8	0.15	32
B00268188	<5	18	1.29	0.10	4
B00268189	6	340	0.82	0.15	1
B00268190	N.A.	N.A.	N.A.	N.A.	N.A.
B00268191	24	104	0.61	2.48	1
B00268192	689	901	4.23	0.74	6
B00268193	8	23	0.73	<0.01	2
B00268194	33	34	1.25	0.03	2
B00268195	7	29	0.63	<0.01	2
B00268196	20	482	0.60	<0.01	2
B00268197	32	1120	3.42	0.65	51

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Final : VC152710A Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014321

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00268198	77	436	109	7.34	404
B00268199	82	415	123	7.00	500
B00268200	N.A.	N.A.	N.A.	N.A.	N.A.
B00268201	N.A.	N.A.	N.A.	N.A.	N.A.
B00268202	96	1640	47.6	3.73	579
B00268203	122	736	58.5	4.88	320
B00268204	401	2120	60.7	13.4	211
B00268205	1290	5860	20.0	63.4	64
B00268206	1170	2620	22.5	77.2	109
B00268207	238	442	3.09	4.65	31
B00268208	251	259	9.83	0.86	9
B00268209	36	680	1.57	1.46	20
B00268210	N.A.	N.A.	N.A.	N.A.	N.A.
B00268211	10	65	8.88	0.40	28
B00268212	<5	20	0.56	0.17	4
B00268213	<5	26	0.56	0.11	3
B00268214	21	12	4.27	0.15	7
B00268215	<5	13	1.89	0.11	11
B00268216	<5	15	2.49	0.11	18
B00268217	<5	236	0.47	0.05	5
B00268218	<5	500	0.64	0.10	2
B00268219	5	262	0.71	0.12	2
B00268220	N.A.	N.A.	N.A.	N.A.	N.A.
B00268221	<5	101	0.38	0.05	3
B00268222	436	5320	30.1	17.0	134
B00268223	271	5410	36.9	16.3	147
B00268224	285	6110	21.8	10.9	160
B00268225	521	5580	20.7	17.3	316
B00268226	597	8480	28.1	14.8	498
B00268227	327	6800	76.8	14.8	760
B00268228	251	1790	9.46	15.5	199
B00268229	395	2570	15.9	23.9	209
B00268230	N.A.	N.A.	N.A.	N.A.	N.A.
B00268231	270	1750	31.3	18.4	273
*Rep B00268184	7	237	31.8	1.82	124
*Rep B00268215	<5	12	1.77	0.11	12
*Std OREAS926	N.A.	N.A.	40.6	N.A.	N.A.
*Std OREAS131B	36	N.A.	N.A.	N.A.	N.A.
*Std OREAS934	N.A.	N.A.	N.A.	N.A.	80
*Std DS-1	N.A.	6840	N.A.	80.1	N.A.

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Final : VC152710A Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014321

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
*Blk BLANK	<5	<3	<0.02	<0.01	<1

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Certificate of Analysis

Work Order : VC152710F

[Report File No.: 0000014206]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_19 B00268158-268231
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152710 Report No. 013488
dated Nov 03, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152710F Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014206

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268158	3.380	N.A.	1360	107	0.40	36.9	1.65	10.1
B00268159	2.985	N.A.	1320	83.0	0.42	39.3	0.69	7.02
B00268160	0.155	N.A.	823	44.0	0.46	20.0	0.30	1.13
B00268161	1.575	N.A.	1150	72.2	0.21	37.4	0.75	10.9
B00268162	2.885	N.A.	1270	72.1	0.59	39.4	1.50	9.36
B00268163	1.495	N.A.	239	59.3	0.21	39.9	2.15	9.33
B00268164	2.740	N.A.	1250	151	0.42	31.1	2.49	9.13
B00268165	2.360	N.A.	1190	135	0.35	33.1	2.23	9.37
B00268166	2.265	N.A.	662	115	0.21	34.9	2.70	10.1
B00268167	1.295	N.A.	1130	159	0.37	31.9	3.34	8.60
B00268168	2.740	N.A.	710	106	0.19	25.6	2.76	8.20
B00268169	2.805	N.A.	634	97.6	0.16	27.0	2.60	6.23
B00268170	1.520	N.A.	9	0.8	<0.01	0.21	0.03	0.06
B00268171	0.930	N.A.	5630	>300	1.64	22.7	3.16	8.53
B00268172	1.540	N.A.	80	10.3	0.01	4.73	0.18	0.31
B00268173	2.775	N.A.	41	11.2	<0.01	2.90	0.11	0.13
B00268174	2.850	N.A.	19	4.5	<0.01	2.00	0.02	0.04
B00268175	2.865	N.A.	<5	<0.3	<0.01	2.04	<0.01	<0.01
B00268176	2.940	N.A.	11	1.6	<0.01	2.74	0.01	0.09
B00268177	3.045	N.A.	6	1.0	<0.01	2.37	<0.01	<0.01
B00268178	2.905	N.A.	7	1.3	<0.01	2.75	<0.01	<0.01
B00268179	2.245	N.A.	<5	1.1	<0.01	2.74	<0.01	0.01
B00268180	0.155	N.A.	849	45.9	0.47	20.2	0.30	1.17
B00268181	1.880	N.A.	21	29.3	0.98	5.81	0.03	0.09
B00268182	1.860	N.A.	17	13.3	0.45	4.10	0.03	0.05
B00268183	1.415	N.A.	9	8.4	0.29	3.37	0.01	0.05
B00268184	3.135	N.A.	102	37.2	1.50	11.3	0.21	0.52
B00268185	1.905	N.A.	149	36.2	0.77	12.3	0.80	1.90
B00268186	2.110	N.A.	36	7.8	0.39	6.30	0.02	0.07
B00268187	1.850	N.A.	31	6.1	0.20	5.77	0.03	0.06
B00268188	1.775	N.A.	6	1.1	<0.01	2.20	0.01	0.02
B00268189	2.430	N.A.	<5	0.8	<0.01	3.09	<0.01	<0.01
B00268190	2.445	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00268191	2.050	N.A.	25	0.7	<0.01	4.80	<0.01	0.01
B00268192	2.205	N.A.	310	48.8	0.17	3.19	0.02	0.04
B00268193	2.250	N.A.	10	0.8	<0.01	2.59	<0.01	<0.01
B00268194	2.780	N.A.	15	2.3	<0.01	1.96	0.01	0.02
B00268195	1.940	N.A.	12	1.8	<0.01	2.26	<0.01	<0.01
B00268196	3.005	N.A.	12	1.7	<0.01	2.14	0.01	0.02
B00268197	2.435	N.A.	57	8.3	0.27	7.78	0.07	0.43

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268198	3.805	N.A.	898	88.6	1.30	42.0	1.12	10.0
B00268199	2.985	N.A.	296	70.8	0.26	40.0	0.91	11.4
B00268200	0.100	N.A.	812	20.3	1.77	13.6	0.26	1.06
B00268201	0.100	N.A.	1140	67.1	0.37	3.86	1.38	5.32
B00268202	3.405	N.A.	675	62.3	0.99	45.4	0.67	5.52
B00268203	2.735	N.A.	662	97.6	0.52	43.8	1.74	5.56
B00268204	4.110	N.A.	1320	138	0.61	40.3	0.94	6.63
B00268205	3.150	N.A.	3730	>300	0.60	30.1	2.92	11.1
B00268206	2.995	N.A.	2610	>300	0.40	22.8	3.10	10.0
B00268207	2.790	91.0	466	30.5	0.06	7.69	0.19	0.69
B00268208	3.775	N.A.	200	18.0	0.08	6.47	0.02	0.08
B00268209	2.395	N.A.	136	6.5	0.16	6.98	0.02	0.21
B00268210	2.100	N.A.	<5	0.5	<0.01	0.16	<0.01	0.01
B00268211	2.925	N.A.	97	8.1	0.18	7.67	0.03	0.03
B00268212	2.930	N.A.	34	0.7	<0.01	6.19	<0.01	0.03
B00268213	1.435	N.A.	<5	0.4	<0.01	7.43	<0.01	0.02
B00268214	2.980	N.A.	119	9.2	0.19	7.37	0.01	0.03
B00268215	3.490	N.A.	12	1.2	0.01	7.38	0.01	0.03
B00268216	2.655	N.A.	12	2.8	0.02	6.83	0.02	0.05
B00268217	2.580	N.A.	<5	0.8	<0.01	5.95	0.01	0.03
B00268218	3.515	N.A.	<5	0.5	<0.01	5.24	<0.01	0.02
B00268219	3.025	N.A.	13	1.0	<0.01	2.83	<0.01	0.01
B00268220	0.145	N.A.	4190	>300	0.34	11.5	11.3	17.5
B00268221	2.960	N.A.	341	0.5	<0.01	2.26	<0.01	0.02
B00268222	3.110	N.A.	3420	155	0.52	32.6	1.67	10.6
B00268223	2.795	N.A.	1940	149	0.39	33.1	2.00	14.1
B00268224	4.110	N.A.	1850	194	0.31	30.5	5.04	13.9
B00268225	3.495	N.A.	2080	288	0.50	29.0	7.28	14.3
B00268226	3.130	N.A.	2060	184	0.26	32.2	4.22	8.68
*Dup B00268226	N.A.	N.A.	2040	181	0.26	32.4	N.A.	8.93
B00268227	3.250	N.A.	2100	181	1.44	29.6	3.87	18.7
B00268228	2.950	N.A.	1150	122	0.29	30.2	4.05	7.87
B00268229	3.445	N.A.	1560	128	0.52	31.0	3.05	8.93
B00268230	1.960	N.A.	6	<0.3	<0.01	0.18	0.02	0.04
B00268231	3.125	98.0	934	82.5	0.35	32.4	1.79	8.86
*Rep B00268183				8.4				
*Rep B00268226				172				
*Rep B00268230				0.6				
*Std SU_1B				6.5				
*Std OREAS621				69.1				

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Final : VC152710F Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014206

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		185				
*Std OREAS621		66.7				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268199	314					
*Std AMIS0265	545					
*Std OXH97	1280					
*Std OXJ111	2160					
*Std OXN117	7690					
*Blk BLANK	<5					
*Rep B00268179			<0.01	2.72	0.01	0.01
*Rep B00268194			<0.01	2.00	<0.01	0.02
*Rep B00268224			0.31	30.6	5.30	14.1
*Std OREAS134A			0.13	12.0	12.9	17.6
*Std OREAS131B			0.02	5.83	1.89	3.10
*Std OREAS926			0.83	7.36	0.01	0.04
*Std OREAS131B			0.02	5.78	1.88	3.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC152710F Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014206

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268158	47.5	N.A.	N.A.
B00268159	46.8	N.A.	N.A.
B00268160	N.A.	N.A.	N.A.
B00268161	47.5	N.A.	N.A.
B00268162	36.6	N.A.	N.A.
B00268163	31.4	N.A.	N.A.
B00268164	39.2	N.A.	159
B00268165	41.3	N.A.	N.A.
B00268166	45.3	N.A.	N.A.
B00268167	41.5	N.A.	135
B00268168	33.5	N.A.	N.A.
B00268169	34.4	N.A.	N.A.
B00268170	N.A.	N.A.	N.A.
B00268171	30.0	5.32	526
B00268172	N.A.	N.A.	N.A.
B00268173	N.A.	N.A.	N.A.
B00268174	N.A.	N.A.	N.A.
B00268175	N.A.	N.A.	N.A.
B00268176	N.A.	N.A.	N.A.
B00268177	N.A.	N.A.	N.A.
B00268178	N.A.	N.A.	N.A.
B00268179	N.A.	N.A.	N.A.
B00268180	17.0	N.A.	N.A.
B00268181	3.8	N.A.	N.A.
B00268182	2.0	N.A.	N.A.
B00268183	1.2	N.A.	N.A.
B00268184	6.3	N.A.	N.A.
B00268185	9.5	N.A.	N.A.
B00268186	1.9	N.A.	N.A.
B00268187	1.8	N.A.	N.A.
B00268188	N.A.	N.A.	N.A.
B00268189	N.A.	N.A.	N.A.
B00268190	N.A.	N.A.	N.A.
B00268191	N.A.	N.A.	N.A.
B00268192	N.A.	N.A.	N.A.
B00268193	N.A.	N.A.	N.A.
B00268194	N.A.	N.A.	N.A.
B00268195	N.A.	N.A.	N.A.
B00268196	N.A.	N.A.	N.A.
B00268197	N.A.	N.A.	N.A.

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Final : VC152710F Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014206

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268198	36.1	N.A.	N.A.
B00268199	44.7	N.A.	N.A.
B00268200	N.A.	N.A.	N.A.
B00268201	4.4	N.A.	N.A.
B00268202	38.5	N.A.	N.A.
B00268203	41.2	N.A.	N.A.
B00268204	45.6	N.A.	N.A.
B00268205	41.0	N.A.	269
B00268206	31.2	N.A.	350
B00268207	N.A.	N.A.	N.A.
B00268208	N.A.	N.A.	N.A.
B00268209	N.A.	N.A.	N.A.
B00268210	N.A.	N.A.	N.A.
B00268211	N.A.	N.A.	N.A.
B00268212	N.A.	N.A.	N.A.
B00268213	N.A.	N.A.	N.A.
B00268214	N.A.	N.A.	N.A.
B00268215	N.A.	N.A.	N.A.
B00268216	N.A.	N.A.	N.A.
B00268217	N.A.	N.A.	N.A.
B00268218	N.A.	N.A.	N.A.
B00268219	N.A.	N.A.	N.A.
B00268220	21.4	N.A.	310
B00268221	0.9	N.A.	N.A.
B00268222	43.2	N.A.	165
B00268223	44.9	N.A.	N.A.
B00268224	40.5	N.A.	209
B00268225	42.8	N.A.	293
B00268226	42.9	N.A.	181
*Dup B00268226	N.A.	N.A.	178
B00268227	41.0	N.A.	154
B00268228	39.9	N.A.	N.A.
B00268229	40.3	N.A.	N.A.
B00268230	<0.1	N.A.	N.A.
B00268231	41.0	N.A.	N.A.

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Final : VC152710F Order: PO# BMC15-01_19 B00268158-268231

Report File No.: 0000014206

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		8.11	
*Blk BLANK		<0.50	
*Rep B00268227			150
*Std ME-1302			418
*Blk BLANK			<10
*Rep B00268179	N.A.		
*Rep B00268194	N.A.		
*Rep B00268224	N.A.		
*Std OREAS134A	19.2		
*Std OREAS131B	5.0		
*Std OREAS926	N.A.		
*Std OREAS131B	4.7		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC152711A

[Report File No.: 0000014325]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_19 B00268232-268881
Project No.	:	KZK
No. Of Samples	:	52
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152711A Order: PO# BMC15-01_19 B00268232-268881

Report File No.: 0000014325

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268232	389	2130	30.5	8.70	286	N.A.
B00268233	528	4510	42.3	7.56	433	N.A.
B00268234	337	1860	22.1	17.0	195	N.A.
B00268235	334	2080	12.9	30.0	202	N.A.
B00268236	473	1780	3.12	52.2	412	N.A.
B00268237	335	693	6.74	39.7	271	N.A.
B00268238	29	80	1.02	3.81	67	N.A.
B00268239	<5	326	0.38	0.57	3	N.A.
B00268240	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268241	<5	157	0.37	0.32	2	N.A.
B00268242	<5	84	0.23	0.18	1	N.A.
B00268243	7	18	0.75	0.81	7	N.A.
B00268842	7	151	0.59	0.07	1	N.A.
B00268843	32	136	0.95	0.04	2	N.A.
B00268844	18	1720	0.75	0.15	8	N.A.
B00268845	6	54	67.7	0.66	55	N.A.
B00268846	16	121	48.4	6.90	459	N.A.
B00268847	24	278	134	5.91	623	N.A.
B00268848	27	380	204	4.62	630	N.A.
B00268849	22	516	277	3.56	628	N.A.
B00268850	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268851	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268852	21	451	192	2.36	502	N.A.
B00268853	32	311	160	2.84	443	N.A.
B00268854	36	290	59.5	1.61	440	N.A.
B00268855	29	314	53.8	1.50	419	N.A.
B00268856	41	313	70.7	1.73	405	N.A.
B00268857	69	567	67.0	1.75	5	N.A.
B00268858	83	1370	48.4	3.16	263	N.A.
B00268859	63	230	38.8	4.87	6	N.A.
B00268860	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268861	137	3600	58.3	4.73	208	N.A.
B00268862	589	4880	30.8	18.0	73	N.A.
B00268863	1250	9770	28.4	31.4	67	N.A.
B00268864	487	>10000	15.4	22.7	47	1.15
B00268865	1470	5970	43.5	61.0	130	N.A.
B00268866	1380	4620	55.8	31.9	182	N.A.
B00268867	430	253	11.4	6.39	65	N.A.
B00268868	284	2960	32.3	14.1	93	N.A.
B00268869	330	>10000	36.5	7.45	169	2.35

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Final : VC152711A Order: PO# BMC15-01_19 B00268232-268881

Report File No.: 0000014325

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00268870	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268871	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268872	18	53	11.7	0.69	33	N.A.
B00268873	21	35	35.2	1.93	231	N.A.
B00268874	9	27	5.78	0.20	12	N.A.
B00268875	8	6	0.10	0.05	<1	N.A.
B00268876	<5	10	0.09	<0.01	<1	N.A.
B00268877	6	10	0.14	0.04	<1	N.A.
B00268878	11	9	1.42	0.85	67	N.A.
B00268879	6	16	0.71	0.43	3	N.A.
B00268880	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268881	11	27	0.41	0.48	<1	N.A.
*Rep B00268238	28	82	1.01	3.83	66	
*Rep B00268867	412	249	11.1	6.22	62	
*Std OREAS131B	34	N.A.	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	496	N.A.	79	
*Std DS-1	N.A.	6620	N.A.	77.1	N.A.	
*Blk BLANK	<5	<3	0.02	<0.01	<1	
*Blk BLANK						<0.01
*Std MP1B						2.23
*Rep B00268869						2.26

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Certificate of Analysis

Work Order : VC152711F

[Report File No.: 0000014207]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_19 B00268232-268881
Project No.	:	KZK
No. Of Samples	:	52
Date Submitted	:	Dec 05, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152711 Report No. 013541
dated Nov 05, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152711F Order: PO# BMC15-01_19 B00268232-268881

Report File No.: 0000014207

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268232	3.045	N.A.	1380	108	0.56	36.2	1.66	4.97
B00268233	3.530	N.A.	2540	184	0.89	36.1	2.06	3.56
B00268234	3.025	N.A.	920	112	0.34	30.9	3.30	8.42
B00268235	3.185	N.A.	1280	124	0.39	29.8	3.69	8.81
B00268236	2.260	N.A.	1120	149	0.36	30.3	3.35	8.01
B00268237	1.575	N.A.	684	136	0.10	31.5	3.17	9.79
B00268238	2.085	N.A.	87	17.4	0.01	6.65	0.25	0.93
B00268239	2.810	N.A.	12	1.7	<0.01	2.91	0.03	0.07
B00268240	0.155	N.A.	760	43.6	0.45	19.8	0.30	1.10
B00268241	2.995	N.A.	9	1.0	<0.01	2.80	0.02	0.05
B00268242	2.645	N.A.	7	1.1	<0.01	2.96	0.01	0.02
B00268243	2.305	N.A.	52	8.4	<0.01	4.47	0.10	0.16
B00268842	2.895	N.A.	<5	<0.3	<0.01	2.30	<0.01	<0.01
B00268843	1.400	N.A.	10	<0.3	<0.01	2.69	<0.01	0.02
B00268844	2.275	N.A.	<5	2.1	<0.01	2.97	0.04	0.06
B00268845	1.905	N.A.	48	20.7	0.52	5.00	0.03	0.17
B00268846	3.370	N.A.	4510	242	12.2	42.1	0.05	2.53
B00268847	2.460	N.A.	2520	221	10.7	44.5	0.09	2.00
B00268848	3.575	N.A.	1090	115	3.27	44.1	0.18	4.46
B00268849	3.660	N.A.	1860	168	4.18	46.5	0.37	3.04
B00268850	0.105	N.A.	294	20.6	13.5	28.0	0.05	0.42
B00268851	0.105	N.A.	5030	6.9	0.60	6.11	0.01	0.12
B00268852	3.400	N.A.	2070	166	5.14	48.0	0.30	1.56
B00268853	3.270	N.A.	2040	140	4.51	49.4	0.21	2.35
B00268854	2.740	N.A.	1650	112	3.93	49.7	0.09	1.45
B00268855	3.510	N.A.	556	38.3	1.21	47.7	0.13	2.10
B00268856	2.970	N.A.	881	79.6	1.67	48.7	0.45	1.67
B00268857	3.090	N.A.	528	69.3	0.63	44.4	0.63	1.26
B00268858	3.630	N.A.	553	50.3	0.65	43.2	0.30	1.21
B00268859	2.640	N.A.	626	47.8	0.74	41.9	0.22	2.25
B00268860	0.900	N.A.	<5	0.3	<0.01	0.27	<0.01	0.01
B00268861	3.065	N.A.	723	78.9	0.41	43.3	0.95	2.20
B00268862	3.050	N.A.	1440	93.4	0.29	37.0	0.69	5.59
B00268863	2.990	N.A.	2770	158	0.36	33.2	1.20	6.20
B00268864	2.825	N.A.	1390	46.9	0.14	34.5	0.74	5.59
*Dup B00268864	N.A.	N.A.	1400	49.6	0.14	34.3	0.75	5.32
B00268865	2.390	N.A.	2300	>300	0.45	28.3	5.75	15.5
B00268866	2.715	N.A.	2640	298	0.75	33.5	2.14	6.98
B00268867	1.870	N.A.	1130	101	0.29	13.9	0.37	1.94
B00268868	1.690	N.A.	427	219	0.17	32.6	4.46	15.2

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268869	1.945	N.A.	2580	137	1.04	43.5	2.60	8.52
B00268870	0.165	N.A.	1250	66.8	0.36	3.80	1.35	5.21
B00268871	0.165	N.A.	784	18.8	1.71	13.3	0.26	1.05
B00268872	1.985	N.A.	<5	12.4	0.08	8.62	0.23	1.38
B00268873	1.165	N.A.	13	29.7	0.14	11.5	0.81	4.33
B00268874	3.205	N.A.	8	1.9	0.02	6.53	0.09	0.20
B00268875	2.845	N.A.	<5	0.5	<0.01	6.74	<0.01	0.02
B00268876	2.995	N.A.	<5	0.3	<0.01	6.15	<0.01	0.02
B00268877	1.600	N.A.	<5	<0.3	<0.01	6.94	0.02	0.05
B00268878	1.070	N.A.	71	13.6	0.89	16.6	0.01	0.31
B00268879	2.790	91.2	15	4.2	<0.01	1.94	0.08	0.11
B00268880	0.935	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268881	2.925	N.A.	42	6.7	<0.01	2.57	0.04	0.09
*Rep B00268847				224				
*Rep B00268865				>300				
*Std SU_1B				6.3				
*Std OREAS621				67.4				
*Std AMIS0268				189				
*Blk BLANK				<0.3				
*Rep B00268866			2980					
*Rep B00268881			46					
*Std AMIS0265			516					
*Std OXH97			1280					
*Std OXJ111			2090					
*Blk BLANK			<5					
*Rep B00268856					1.72	50.0	0.44	1.67
*Rep B00268877					<0.01	6.92	<0.01	0.05
*Std OREAS131B					0.02	5.82	1.86	3.01
*Std OREAS926					0.83	7.51	0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Final : VC152711F Order: PO# BMC15-01_19 B00268232-268881

Report File No.: 0000014207

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268232	43.8	N.A.	N.A.
B00268233	44.5	N.A.	211
B00268234	41.4	N.A.	N.A.
B00268235	36.4	N.A.	N.A.
B00268236	35.8	N.A.	N.A.
B00268237	38.6	N.A.	N.A.
B00268238	5.5	N.A.	N.A.
B00268239	0.4	N.A.	N.A.
B00268240	16.9	N.A.	N.A.
B00268241	0.2	N.A.	N.A.
B00268242	0.3	N.A.	N.A.
B00268243	2.6	N.A.	N.A.
B00268842	0.9	N.A.	N.A.
B00268843	1.6	N.A.	N.A.
B00268844	0.4	N.A.	N.A.
B00268845	2.3	N.A.	N.A.
B00268846	35.2	N.A.	240
B00268847	37.5	N.A.	265
B00268848	41.3	N.A.	N.A.
B00268849	37.5	N.A.	220
B00268850	28.0	N.A.	N.A.
B00268851	0.6	5.35	N.A.
B00268852	37.7	N.A.	<10
B00268853	35.4	N.A.	N.A.
B00268854	36.9	N.A.	N.A.
B00268855	42.4	N.A.	N.A.
B00268856	38.6	N.A.	N.A.
B00268857	47.0	N.A.	N.A.
B00268858	48.0	N.A.	N.A.
B00268859	48.5	N.A.	N.A.
B00268860	0.5	N.A.	N.A.
B00268861	45.6	N.A.	N.A.
B00268862	42.1	N.A.	N.A.
B00268863	36.5	N.A.	148
B00268864	38.5	N.A.	N.A.
*Dup B00268864	36.6	N.A.	N.A.
B00268865	37.8	N.A.	340
B00268866	41.8	N.A.	300
B00268867	10.2	N.A.	N.A.
B00268868	36.1	N.A.	184

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Final : VC152711F Order: PO# BMC15-01_19 B00268232-268881

Report File No.: 0000014207

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268869	27.9	N.A.	N.A.
B00268870	4.5	N.A.	N.A.
B00268871	8.7	N.A.	N.A.
B00268872	3.8	N.A.	N.A.
B00268873	6.2	N.A.	N.A.
B00268874	0.5	N.A.	N.A.
B00268875	N.A.	N.A.	N.A.
B00268876	N.A.	N.A.	N.A.
B00268877	N.A.	N.A.	N.A.
B00268878	N.A.	N.A.	N.A.
B00268879	N.A.	N.A.	N.A.
B00268880	N.A.	N.A.	N.A.
B00268881	N.A.	N.A.	N.A.
*Rep B00268851		5.21	
*Std OXN117		7.83	
*Blk BLANK		<0.50	
*Rep B00268865			338
*Std ME-1302			401
*Blk BLANK			<10
*Rep B00268856	39.6		
*Rep B00268877	N.A.		
*Std OREAS131B	5.1		
*Std OREAS926	1.2		
*Blk BLANK	<0.1		

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Certificate of Analysis

Work Order : VC152791

[Report File No.: 0000013478]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Nov 03, 2015

P.O. No.	:	PO#: BMC15-01_22
Project No.	:	KZK
No. Of Samples	:	60
Date Submitted	:	Oct 15, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152791 Order: PO#: BMC15-01_22

Report File No.: 0000013478

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233077	2.865	N.A.	14	3.9	<0.01	2.54	0.13	0.24
B00233078	3.320	N.A.	18	5.2	0.17	14.5	0.09	0.48
B00233079	3.350	N.A.	94	22.5	0.49	13.5	0.29	0.43
B00233080	0.155	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00233081	2.915	N.A.	28	4.1	0.12	9.49	0.06	0.81
B00233082	2.480	N.A.	13	4.6	0.02	3.81	0.13	0.28
B00233083	2.110	N.A.	35	8.5	<0.01	3.10	0.28	0.42
B00233084	2.620	N.A.	<5	0.5	<0.01	6.65	0.02	0.02
B00233085	2.220	N.A.	<5	<0.3	<0.01	2.52	<0.01	0.08
B00233086	2.720	N.A.	<5	<0.3	<0.01	1.93	<0.01	0.03
B00233087	2.090	N.A.	<5	0.4	<0.01	1.40	<0.01	0.06
B00233088	2.035	N.A.	<5	<0.3	<0.01	2.16	<0.01	<0.01
B00233089	1.390	N.A.	<5	<0.3	<0.01	3.06	<0.01	0.02
B00233090	0.155	N.A.	812	47.5	0.45	19.5	0.31	1.12
B00233091	2.855	N.A.	16	11.0	0.16	11.7	0.11	1.34
B00233092	2.225	N.A.	8	0.4	<0.01	1.48	<0.01	<0.01
B00233093	2.590	N.A.	11	0.3	<0.01	1.39	<0.01	<0.01
B00233094	2.425	N.A.	15	1.0	<0.01	2.67	0.01	0.05
B00233095	1.975	N.A.	51	7.5	0.13	7.69	0.06	0.48
B00233096	3.205	N.A.	<5	<0.3	<0.01	7.00	<0.01	0.02
B00233097	2.955	N.A.	<5	<0.3	<0.01	5.88	<0.01	0.03
B00267313	1.960	N.A.	14	0.6	<0.01	2.09	<0.01	<0.01
B00267314	2.480	N.A.	13	1.0	<0.01	1.78	<0.01	0.06
B00267315	3.230	N.A.	<5	0.4	<0.01	6.47	<0.01	<0.01
B00267316	3.090	N.A.	8	<0.3	<0.01	6.43	<0.01	<0.01
B00267317	2.725	N.A.	17	1.3	<0.01	1.58	0.02	0.07
B00267318	2.750	N.A.	6	1.0	<0.01	1.31	<0.01	0.05
B00267319	2.520	N.A.	<5	0.3	<0.01	6.61	<0.01	0.01
B00267320	0.370	N.A.	<5	<0.3	<0.01	0.20	<0.01	<0.01
B00267321	2.095	N.A.	198	42.2	0.15	11.0	0.81	2.76
B00267322	1.850	N.A.	6	<0.3	<0.01	6.86	<0.01	0.02
B00267323	2.815	N.A.	<5	<0.3	<0.01	6.51	<0.01	<0.01
B00267324	3.035	N.A.	<5	<0.3	<0.01	6.59	<0.01	<0.01
B00267325	2.315	N.A.	23	0.9	<0.01	1.11	0.02	0.06
B00267326	3.055	N.A.	<5	<0.3	<0.01	1.84	<0.01	<0.01
*Dup B00267326	N.A.	N.A.	<5	0.5	<0.01	1.80	<0.01	<0.01
B00267327	2.510	N.A.	<5	0.4	<0.01	1.97	<0.01	<0.01
B00267328	2.430	N.A.	<5	1.4	<0.01	2.86	0.01	0.17
B00267329	1.305	N.A.	2180	63.2	2.44	15.7	0.04	2.31
B00267330	0.155	N.A.	848	44.4	0.46	19.8	0.31	1.14

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Final : VC152791 Order: PO#: BMC15-01_22

Report File No.: 0000013478

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00267331	1.965	N.A.	19	0.9	<0.01	3.12	<0.01	0.16
B00267332	2.010	N.A.	216	8.3	0.05	4.86	0.02	0.16
B00267333	1.100	N.A.	1670	104	2.11	21.9	0.11	0.58
B00267334	2.530	N.A.	41	7.0	0.02	2.81	0.24	0.25
B00267335	2.460	N.A.	17	3.4	<0.01	2.13	0.09	0.06
B00267336	2.185	N.A.	<5	1.2	<0.01	8.15	<0.01	0.04
B00267337	2.160	N.A.	<5	0.6	0.04	7.89	<0.01	0.05
B00267338	2.645	N.A.	<5	0.8	<0.01	2.29	<0.01	0.01
B00267339	0.965	N.A.	139	2.7	0.08	3.74	<0.01	0.02
B00267340	0.185	N.A.	<5	<0.3	<0.01	0.28	<0.01	<0.01
B00267341	1.605	85.5	<5	0.5	<0.01	1.55	<0.01	0.02
B00267342	1.350	N.A.	<5	<0.3	<0.01	1.47	<0.01	0.01
B00267343	2.375	N.A.	<5	0.5	<0.01	2.74	<0.01	<0.01
B00267344	2.635	N.A.	<5	0.3	<0.01	2.08	0.01	0.03
B00267345	1.770	N.A.	9	0.7	<0.01	4.02	<0.01	0.02
B00267346	2.815	N.A.	<5	0.4	<0.01	2.03	<0.01	0.01
B00267347	1.800	N.A.	10	<0.3	<0.01	1.74	<0.01	<0.01
B00267348	1.125	N.A.	16	0.3	<0.01	3.75	<0.01	<0.01
B00267349	1.225	N.A.	20	2.8	0.02	1.51	0.12	0.26
B00267350	0.155	N.A.	<5	<0.3	<0.01	0.26	<0.01	<0.01
B00267351	1.470	N.A.	12	1.4	<0.01	1.91	0.07	0.14
*Rep B00233097					<0.01	5.91	<0.01	0.03
*Rep B00267318					<0.01	1.33	<0.01	0.05
*Rep B00267342					<0.01	1.48	<0.01	0.01
*Std OREAS926					0.82	7.32	<0.01	0.04
*Std OREAS131B					0.02	5.75	1.87	3.06
*Std OREAS926					0.83	7.40	0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Rep B00233081			19					
*Rep B00267332			178					
*Std OXC129			205					
*Std OXH97			1370					
*Std OXJ111			2240					
*Std OXN117			7820					
*Blk BLANK			<5					
*Rep B00267320				<0.3				
*Rep B00267349				3.0				
*Std AMIS0268				189				
*Std SU_1B				6.6				
*Std OREAS621				69.7				

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Final : VC152791 Order: PO#: BMC15-01_22

Report File No.: 0000013478

Element	@Ag
Method	GE_AAS12E
Det.Lim.	0.3
Units	g/t
*Blk BLANK	<0.3
*Blk BLANK	<0.3

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Certificate of Analysis

Work Order : VC152818

[Report File No.: 0000013477]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Nov 03, 2015

P.O. No.	:	PO#: BMC15-01_20
Project No.	:	KZK
No. Of Samples	:	37
Date Submitted	:	Oct 09, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152818 Order: PO#: BMC15-01_20

Report File No.: 0000013477

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233062	2.700	N.A.	23	0.8	<0.01	2.49	0.01	0.02
B00233063	2.395	N.A.	22	0.6	<0.01	1.99	<0.01	<0.01
B00233064	1.555	N.A.	<5	0.4	<0.01	6.62	<0.01	<0.01
B00233065	2.045	N.A.	5	<0.3	<0.01	6.85	<0.01	0.01
B00233066	1.580	N.A.	200	7.1	0.13	14.3	0.24	3.82
B00233067	2.590	N.A.	11	1.6	<0.01	2.36	0.03	0.16
B00233068	2.580	N.A.	9	0.4	<0.01	6.82	<0.01	0.01
B00233069	3.120	N.A.	7	0.4	<0.01	7.79	<0.01	0.01
B00233070	0.155	N.A.	770	43.4	0.46	20.0	0.30	1.17
B00233071	2.185	N.A.	<5	1.5	<0.01	1.54	0.02	0.06
B00233072	2.515	N.A.	14	1.4	<0.01	2.60	0.01	0.01
B00233073	2.835	N.A.	10	0.6	<0.01	2.65	<0.01	<0.01
B00233074	3.275	N.A.	11	1.1	<0.01	2.32	0.02	0.01
B00233075	2.885	N.A.	12	1.3	<0.01	2.95	0.02	0.03
B00233076	2.410	N.A.	42	10.6	0.06	5.19	0.19	0.95
B00267291	2.160	N.A.	30	3.7	0.02	2.46	0.09	0.34
B00267292	1.205	N.A.	12	1.0	0.01	1.93	0.02	0.26
B00267293	1.365	N.A.	45	4.5	0.02	1.81	0.03	0.39
B00267294	2.435	N.A.	<5	0.9	0.01	6.71	<0.01	0.02
B00267295	2.860	N.A.	<5	<0.3	<0.01	7.02	<0.01	<0.01
B00267296	2.600	N.A.	<5	0.3	<0.01	2.61	<0.01	0.03
B00267297	2.545	N.A.	75	4.3	<0.01	2.20	0.03	0.08
B00267298	2.350	N.A.	<5	0.6	<0.01	2.78	<0.01	0.03
B00267299	2.125	N.A.	8	0.6	<0.01	2.94	<0.01	0.01
B00267300	0.200	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00267301	2.010	N.A.	<5	0.3	<0.01	2.83	<0.01	0.05
B00267302	1.410	N.A.	8	0.8	<0.01	1.93	<0.01	0.55
B00267303	0.865	N.A.	<5	0.5	<0.01	2.71	<0.01	<0.01
B00267304	1.160	N.A.	<5	1.1	<0.01	2.09	0.02	0.04
B00267305	1.110	N.A.	<5	7.8	<0.01	1.36	0.36	<0.01
B00267306	2.295	N.A.	<5	0.5	<0.01	1.96	<0.01	0.02
B00267307	1.840	N.A.	19	2.0	<0.01	1.89	<0.01	0.13
B00267308	0.690	N.A.	31	1.5	<0.01	2.13	0.01	0.09
B00267309	0.570	N.A.	74	4.0	<0.01	3.00	0.01	0.01
*Dup B00267309	N.A.	N.A.	74	4.2	<0.01	2.98	0.02	0.01
B00267310	0.155	N.A.	873	45.1	0.47	20.2	0.31	1.17
B00267311	3.160	N.A.	<5	0.9	<0.01	2.47	<0.01	0.09
B00267312	3.145	91.8	<5	1.3	<0.01	2.91	0.02	0.10
*Rep B00233072			20					
*Std AMIS0265			614					

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Final : VC152818 Order: PO#: BMC15-01_20

Report File No.: 0000013477

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OXH97	1330					
*Blk BLANK	<5					
*Rep B00267294			0.01	6.71	<0.01	0.02
*Std OREAS134A			0.13	12.1	13.0	17.6
*Std OREAS926			0.84	7.44	0.02	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Rep B00267311		0.8				
*Std SU_1B		6.8				
*Std OREAS621		68.1				
*Blk BLANK		<0.3				

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Certificate of Analysis

Work Order : VC152819A

[Report File No.: 0000014876]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 29, 2015

P.O. No.	:	PO# BMC15-ME02 B00265058-266881
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 15, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152819A Order: PO# BMC15-ME02 B00265058-266881

Report File No.: 0000014876

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00265058	1080	1.46	2.51	200	17	N.A.
B00265059	69	0.45	0.04	6.02	1	N.A.
B00265060	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265061	730	5.39	0.82	9.04	26	N.A.
B00265062	1090	58.1	11.0	59.4	5	N.A.
B00265063	2840	28.0	29.9	557	44	N.A.
B00265064	7390	8.11	33.3	1190	27	N.A.
B00265065	>10000	14.4	21.6	1040	39	1.23
B00265066	2430	54.0	8.91	542	241	N.A.
B00265067	3530	93.5	12.1	395	258	N.A.
B00265068	4790	37.2	18.2	605	67	N.A.
B00265069	3650	34.9	50.6	970	241	N.A.
B00265070	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265071	73	0.95	1.36	9.22	2	N.A.
B00265072	579	113	11.5	2220	213	N.A.
B00265073	1030	36.4	17.3	745	134	N.A.
B00265074	2280	17.6	5.21	917	34	N.A.
B00265075	821	19.3	19.8	311	99	N.A.
B00265076	475	74.4	16.8	79.9	178	N.A.
B00265077	195	93.8	9.77	45.5	350	N.A.
B00265078	261	88.3	5.76	30.9	237	N.A.
B00265079	31	2.60	1.58	7.40	15	N.A.
B00265080	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265081	389	4.56	1.26	35.0	35	N.A.
B00265082	9080	13.6	54.3	1170	168	N.A.
B00265083	5170	32.2	44.1	1330	352	N.A.
B00265084	2390	52.7	43.3	1190	209	N.A.
B00265085	2790	9.73	30.4	1550	120	N.A.
B00265086	530	13.3	37.0	427	94	N.A.
B00265087	51	0.49	0.72	6.86	2	N.A.
B00265088	201	3.90	5.32	53.2	54	N.A.
B00265089	1980	21.8	22.8	704	312	N.A.
B00265090	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265091	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265092	3980	15.4	16.1	457	236	N.A.
B00265093	5340	34.0	20.5	496	337	N.A.
B00265094	2020	26.2	18.0	397	177	N.A.
B00265095	2020	33.7	16.3	357	324	N.A.
B00265096	6600	39.5	15.7	1500	320	N.A.
B00265097	5640	0.79	3.63	1610	7	N.A.

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Final : VC152819A Order: PO# BMC15-ME02 B00265058-266881

Report File No.: 0000014876

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00265098	129	0.30	0.32	4.23	2	N.A.
B00265099	256	3.41	3.02	29.5	38	N.A.
B00265100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266851	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266852	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266853	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266854	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266855	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266856	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266857	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266858	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266859	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266860	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266861	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266862	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266863	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266864	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266865	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266866	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266867	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266868	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266869	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266870	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266871	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266872	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266873	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266874	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266875	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266876	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266877	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266878	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266879	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266880	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00266881	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00265072	594	119	12.1	2240	226	
*Rep B00265099	259	3.49	3.16	29.5	39	
*Std OREAS131B	N.A.	N.A.	N.A.	40.7	N.A.	
*Std OREAS934	N.A.	478	N.A.	N.A.	78	
*Std DS-1	6630	N.A.	82.3	N.A.	N.A.	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	

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Final : VC152819A Order: PO# BMC15-ME02 B00265058-266881

Report File No.: 0000014876

Element	As
Method	GO_ICP13B
Det.Lim.	0.01
Units	%
*Rep B00265065	1.21
*Blk BLANK	<0.01
*Std MP1B	2.22

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Certificate of Analysis

Work Order : VC152819F

[Report File No.: 0000014208]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_21 B00265058-266881
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 and GO_FAG303 may be elevated due to reduced assay fraction size.
Ag and Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152819 Report No. 013649
dated Nov 12, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265058	3.360	N.A.	126	15.3	0.06	3.10	0.05	0.50
B00265059	1.865	N.A.	8	0.3	<0.01	2.28	<0.01	0.01
B00265060	1.160	N.A.	<5	<0.3	<0.01	0.11	<0.01	<0.01
B00265061	1.470	N.A.	498	15.6	0.67	4.62	0.06	0.48
B00265062	2.460	N.A.	831	54.1	0.91	38.9	0.68	6.91
B00265063	4.575	N.A.	2200	212	0.53	25.4	5.67	16.8
B00265064	4.010	N.A.	2470	197	0.67	26.9	3.40	9.07
B00265065	5.090	N.A.	2490	153	0.47	28.3	2.54	6.62
B00265066	3.530	N.A.	793	34.6	0.49	35.3	0.43	7.68
B00265067	3.320	N.A.	1350	111	0.75	34.9	0.85	11.2
B00265068	2.065	N.A.	1240	154	0.36	37.6	2.61	8.38
B00265069	0.980	N.A.	1490	>300	0.50	32.0	5.10	10.8
B00265070	0.155	N.A.	883	46.4	0.46	19.8	0.30	1.13
B00265071	4.630	N.A.	15	1.6	<0.01	2.12	0.02	0.19
B00265072	4.640	N.A.	2910	106	1.22	15.8	0.13	1.28
B00265073	3.190	N.A.	704	31.2	0.51	11.2	0.43	2.33
B00265074	1.095	N.A.	601	13.9	0.27	3.41	0.08	0.54
B00265075	4.320	N.A.	564	82.6	0.11	11.7	0.90	3.26
B00265076	2.930	N.A.	745	96.5	0.78	15.4	0.74	2.86
B00265077	1.425	N.A.	2740	142	4.31	16.7	0.08	1.88
B00265078	1.315	N.A.	1340	92.8	2.13	15.1	0.09	1.27
B00265079	5.235	N.A.	52	4.8	0.11	3.49	0.01	0.34
B00265080	1.120	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00265081	2.250	N.A.	54	8.1	<0.01	4.84	0.14	0.32
B00265082	2.970	N.A.	2230	>300	0.24	22.2	5.52	14.9
B00265083	2.485	N.A.	3420	>300	0.68	29.0	3.05	9.47
B00265084	6.780	N.A.	2740	>300	0.24	25.0	6.74	20.0
B00265085	3.295	N.A.	5530	>300	0.79	16.8	2.46	5.41
B00265086	2.525	N.A.	2980	>300	0.11	19.3	3.33	7.24
B00265087	4.430	N.A.	37	3.9	<0.01	2.70	0.04	0.14
B00265088	1.800	N.A.	157	48.1	0.03	8.12	0.74	1.43
B00265089	4.445	N.A.	2650	>300	0.57	26.9	3.40	9.03
B00265090	0.165	N.A.	1280	67.7	0.38	3.85	1.35	5.34
B00265091	0.170	N.A.	880	20.3	1.72	13.3	0.25	1.05
B00265092	4.095	N.A.	4490	>300	1.04	23.8	3.58	7.08
*Dup B00265092	N.A.	N.A.	3940	>300	1.03	22.7	N.A.	6.79
B00265093	3.945	N.A.	3190	294	0.80	34.7	4.26	11.1
B00265094	3.990	N.A.	1560	163	0.51	37.2	1.80	7.29
B00265095	5.135	N.A.	1060	128	0.59	36.3	2.58	7.87
B00265096	3.835	N.A.	3460	266	1.67	32.7	2.39	6.94

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Final : VC152819F Order: PO# BMC15-01_21 B00265058-266881

Report File No.: 0000014208

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265097	1.755	N.A.	2000	271	1.70	5.32	0.12	0.75
B00265098	3.395	N.A.	66	2.1	<0.01	3.33	0.02	0.10
B00265099	4.020	N.A.	201	21.7	0.05	8.87	0.67	1.40
B00265100	1.165	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00266851	2.630	N.A.	13	0.4	<0.01	3.47	<0.01	0.01
B00266852	1.565	N.A.	<5	0.3	<0.01	6.57	<0.01	0.01
B00266853	2.095	N.A.	12	0.5	<0.01	10.9	<0.01	<0.01
B00266854	2.380	N.A.	12	0.4	<0.01	11.0	<0.01	0.02
B00266855	1.125	N.A.	7	<0.3	<0.01	5.56	<0.01	<0.01
B00266856	1.670	N.A.	24	1.8	<0.01	2.10	0.04	0.06
B00266857	3.540	93.0	17	1.9	<0.01	2.56	0.02	0.06
B00266858	3.000	N.A.	1170	142	0.65	16.7	1.38	2.29
B00266859	1.850	N.A.	636	152	0.25	18.5	1.58	5.38
B00266860	1.175	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00266861	1.545	N.A.	727	114	0.11	16.9	1.62	3.69
B00266862	3.335	N.A.	1380	220	0.41	22.5	2.28	6.24
B00266863	2.160	N.A.	2280	>300	0.83	36.1	2.80	8.88
B00266864	2.440	N.A.	1700	234	0.21	36.0	2.17	5.84
B00266865	1.490	N.A.	1640	258	0.58	29.7	2.94	6.84
B00266866	2.705	N.A.	2390	298	0.10	33.5	2.72	7.68
B00266867	2.965	N.A.	2720	253	0.22	35.6	3.26	9.25
B00266868	2.355	N.A.	1690	242	1.47	34.0	3.47	5.62
B00266869	1.820	N.A.	13	2.6	<0.01	2.57	0.03	0.04
B00266870	0.195	N.A.	790	44.2	0.45	19.7	0.30	1.13
B00266871	1.530	N.A.	15	3.6	<0.01	2.26	0.03	0.07
B00266872	1.230	N.A.	7	0.9	<0.01	2.20	<0.01	<0.01
B00266873	2.085	N.A.	9	0.8	<0.01	2.07	<0.01	<0.01
B00266874	1.890	N.A.	14	2.6	0.01	2.54	0.03	0.04
B00266875	1.435	N.A.	10	0.5	<0.01	2.07	<0.01	<0.01
B00266876	1.620	N.A.	54	7.7	0.02	3.14	0.03	0.09
B00266877	2.605	N.A.	1530	65.5	0.10	2.80	0.04	0.12
B00266878	1.440	N.A.	745	142	0.01	31.2	2.07	8.18
B00266879	1.310	N.A.	701	133	0.03	19.8	2.27	4.45
B00266880	1.030	N.A.	<5	0.4	<0.01	0.05	<0.01	<0.01
B00266881	2.580	N.A.	2150	241	0.41	24.3	3.93	7.68
*Rep B00265089				>300				
*Rep B00266868				237				
*Rep B00266879				132				
*Std SU_1B				6.6				
*Std OREAS621				66.2				

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Final : VC152819F Order: PO# BMC15-01_21 B00265058-266881

Report File No.: 0000014208

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		194				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00265058	120					
*Rep B00266877	1550					
*Std AMIS0265	546					
*Std OXH97	1280					
*Std OXJ111	2120					
*Std OXN117	7700					
*Blk BLANK	<5					
*Rep B00266852			<0.01	6.57	<0.01	0.02
*Rep B00266859			0.25	18.3	1.53	5.32
*Rep B00266873			<0.01	2.06	<0.01	<0.01
*Std OREAS134A			0.13	12.1	12.8	17.4
*Std OREAS131B			0.03	5.82	1.84	3.06
*Std OREAS926			0.85	7.42	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Report File No.: 0000014208

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00265058	2.2	N.A.	N.A.
B00265059	1.2	N.A.	N.A.
B00265060	0.1	N.A.	N.A.
B00265061	2.9	N.A.	N.A.
B00265062	41.0	N.A.	N.A.
B00265063	37.6	N.A.	188
B00265064	37.2	N.A.	178
B00265065	36.7	N.A.	N.A.
B00265066	29.8	N.A.	N.A.
B00265067	34.7	N.A.	N.A.
B00265068	41.3	N.A.	N.A.
B00265069	38.2	N.A.	320
B00265070	17.0	N.A.	N.A.
B00265071	0.8	N.A.	N.A.
B00265072	9.5	N.A.	N.A.
B00265073	4.0	N.A.	N.A.
B00265074	2.0	N.A.	N.A.
B00265075	11.5	N.A.	N.A.
B00265076	14.7	N.A.	N.A.
B00265077	9.4	N.A.	N.A.
B00265078	8.6	N.A.	N.A.
B00265079	1.3	N.A.	N.A.
B00265080	<0.1	N.A.	N.A.
B00265081	2.3	N.A.	N.A.
B00265082	31.5	N.A.	318
B00265083	38.8	N.A.	440
B00265084	36.3	N.A.	549
B00265085	22.8	5.85	626
B00265086	26.6	N.A.	324
B00265087	1.5	N.A.	N.A.
B00265088	7.4	N.A.	N.A.
B00265089	34.4	N.A.	330
B00265090	4.6	N.A.	N.A.
B00265091	9.1	N.A.	N.A.
B00265092	29.7	N.A.	443
*Dup B00265092	N.A.	N.A.	416
B00265093	43.3	N.A.	269
B00265094	43.7	N.A.	141
B00265095	43.6	N.A.	N.A.
B00265096	39.3	N.A.	291

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Final : VC152819F Order: PO# BMC15-01_21 B00265058-266881

Report File No.: 0000014208

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00265097	6.4	N.A.	270
B00265098	2.2	N.A.	N.A.
B00265099	8.1	N.A.	N.A.
B00265100	<0.1	N.A.	N.A.
B00266851	1.2	N.A.	N.A.
B00266852	3.2	N.A.	N.A.
B00266853	9.2	N.A.	N.A.
B00266854	8.9	N.A.	N.A.
B00266855	3.5	N.A.	N.A.
B00266856	1.0	N.A.	N.A.
B00266857	0.8	N.A.	N.A.
B00266858	14.9	N.A.	N.A.
B00266859	21.8	N.A.	183
B00266860	<0.1	N.A.	N.A.
B00266861	19.4	N.A.	N.A.
B00266862	26.5	N.A.	223
B00266863	44.0	N.A.	299
B00266864	43.4	N.A.	184
B00266865	35.1	N.A.	262
B00266866	39.4	N.A.	282
B00266867	43.8	N.A.	258
B00266868	31.1	N.A.	268
B00266869	1.4	N.A.	N.A.
B00266870	16.5	N.A.	N.A.
B00266871	1.6	N.A.	N.A.
B00266872	1.3	N.A.	N.A.
B00266873	1.4	N.A.	N.A.
B00266874	1.5	N.A.	N.A.
B00266875	1.3	N.A.	N.A.
B00266876	2.2	N.A.	N.A.
B00266877	1.5	N.A.	N.A.
B00266878	39.5	N.A.	N.A.
B00266879	22.7	N.A.	N.A.
B00266880	<0.1	N.A.	N.A.
B00266881	30.6	N.A.	244

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Final : VC152819F Order: PO# BMC15-01_21 B00265058-266881

Report File No.: 0000014208

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.84	
*Blk BLANK		<0.50	
*Rep B00265086			329
*Std ME-1302			439
*Blk BLANK			<10
*Rep B00266852	3.2		
*Rep B00266859	21.3		
*Rep B00266873	1.4		
*Std OREAS134A	19.9		
*Std OREAS131B	4.9		
*Std OREAS926	1.2		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		

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Certificate of Analysis
Work Order : VC152820A
[Report File No.: 0000014291]

Date: December 08, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_21 B00266881-268884
Project No.: KZK
Samples: 74
Received: Oct 21, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
56	G_LOG02	Pre-preparation processing, sorting, logging, boxing
56	GE_IC14A	Aqua Regia digestion/ICP-AES finish
56	GE_IC14M	Aqua Regia digestion/ICP-MS finish

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152820A Order: PO# BMC15-01_21 B00266881-268884

Report File No.: 0000014291

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00266882	N.A.	N.A.	N.A.	N.A.	N.A.
B00266883	N.A.	N.A.	N.A.	N.A.	N.A.
B00266884	N.A.	N.A.	N.A.	N.A.	N.A.
B00266885	N.A.	N.A.	N.A.	N.A.	N.A.
B00266886	N.A.	N.A.	N.A.	N.A.	N.A.
B00266887	N.A.	N.A.	N.A.	N.A.	N.A.
B00266888	N.A.	N.A.	N.A.	N.A.	N.A.
B00266889	N.A.	N.A.	N.A.	N.A.	N.A.
B00266890	N.A.	N.A.	N.A.	N.A.	N.A.
B00266891	N.A.	N.A.	N.A.	N.A.	N.A.
B00266892	N.A.	N.A.	N.A.	N.A.	N.A.
B00266893	N.A.	N.A.	N.A.	N.A.	N.A.
B00268244	61	<5	0.28	3.99	22
B00268245	10	<5	2.59	5.03	90
B00268246	620	<5	0.31	3.60	22
B00268247	217	9	<0.01	1.65	8
B00268248	27	106	0.05	4.18	131
B00268249	20	54	0.24	17.4	116
B00268250	N.A.	N.A.	N.A.	N.A.	N.A.
B00268251	73	56	0.17	5.29	366
B00268252	99	119	0.09	18.9	696
B00268253	69	45	0.73	5.33	642
B00268254	71	115	1.11	5.69	468
B00268255	120	47	2.97	7.11	364
B00268256	98	83	4.97	4.70	315
B00268257	172	34	2.18	4.04	179
B00268258	167	26	2.28	4.64	171
B00268259	162	247	1.15	6.53	285
B00268260	N.A.	N.A.	N.A.	N.A.	N.A.
B00268261	14	<5	<0.01	4.83	54
B00268262	300	166	0.29	9.21	246
B00268263	143	144	0.08	3.98	430
B00268264	89	49	1.25	2.55	277
B00268265	81	31	1.60	3.84	297
B00268266	128	81	3.39	7.50	642
B00268267	138	132	3.67	4.96	779
B00268268	59	40	0.79	3.21	239
B00268269	10	<5	0.01	1.23	14
B00268270	N.A.	N.A.	N.A.	N.A.	N.A.
B00268271	22	<5	0.04	1.67	4

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Final : VC152820A Order: PO# BMC15-01_21 B00266881-268884

Report File No.: 0000014291

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
B00268272	20	<5	<0.01	0.91	3
B00268273	10	6	0.03	0.28	10
B00268274	7	176	0.15	2.71	55
B00268275	373	<5	<0.01	0.36	5
B00268276	14	<5	<0.01	1.08	1
B00268277	87	<5	<0.01	1.44	12
B00268278	6	8	<0.01	0.50	42
B00268279	9	158	0.60	2.00	651
B00268280	N.A.	N.A.	N.A.	N.A.	N.A.
B00268281	14	11	0.59	0.85	322
B00268282	154	63	1.52	2.46	462
B00268283	99	50	2.71	1.87	485
B00268284	79	25	2.19	2.24	686
B00268285	11	85	0.15	0.27	178
B00268286	7	<5	<0.01	0.10	2
B00268287	12	<5	<0.01	0.11	2
B00268288	125	<5	0.01	6.85	6
B00268289	7	<5	0.09	6.25	24
B00268290	N.A.	N.A.	N.A.	N.A.	N.A.
B00268291	6	<5	0.02	0.51	12
B00268292	379	<5	<0.01	0.79	12
B00268293	15	<5	0.08	0.24	52
B00268294	11	<5	0.08	0.25	45
B00268295	5	<5	0.07	0.40	10
B00268296	4	7	0.07	0.29	18
B00268297	13	<5	0.08	0.77	7
B00268298	9	<5	<0.01	0.86	3
B00268299	12	6	0.26	1.00	8
B00268300	N.A.	N.A.	N.A.	N.A.	N.A.
B00268301	3	22	0.49	0.92	27
B00268302	77	<5	<0.01	0.83	2
B00268882	24	<5	0.76	7.38	99
B00268883	19	<5	0.85	3.89	19
B00268884	27	87	0.53	6.57	151
*Rep B00268254	70	123	1.13	5.67	485
*Rep B00268277	87	<5	<0.01	1.48	12
*Rep B00268296	3	7	0.07	0.30	20
*Rep B00268884	28	91	0.56	6.66	155
*Std OREAS210	3560	N.A.	N.A.	N.A.	N.A.
*Std OREAS934	N.A.	526	N.A.	N.A.	79

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Final : VC152820A Order: PO# BMC15-01_21 B00266881-268884

Report File No.: 0000014291

Element	As	Bi	@Hg	@Sb	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	3	5	0.01	0.05	1
Units	ppm	ppm	ppm	ppm	ppm
*Std DS-1	N.A.	N.A.	85.3	N.A.	N.A.
*Std OREAS131B	N.A.	N.A.	N.A.	41.3	N.A.
*Std OREAS934	N.A.	531	N.A.	N.A.	78
*Std DS-1	6630	N.A.	77.8	N.A.	N.A.
*Blk BLANK	<3	<5	<0.01	<0.05	<1
*Blk BLANK	<3	<5	<0.01	<0.05	<1

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Certificate of Analysis

Work Order : VC152820F

[Report File No.: 0000014209]

To: **ROBIN BLACK** Date: Dec 06, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_21 B00266881-268884
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152820 Report No. 013489
dated Nov 03, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266882	1.895	N.A.	978	158	0.15	6.93	2.09	0.36
B00266883	2.445	N.A.	883	182	0.19	23.1	2.02	5.61
B00266884	3.990	N.A.	651	122	0.03	39.9	1.00	4.26
B00266885	4.015	N.A.	1250	131	0.19	41.3	0.95	3.71
B00266886	2.080	N.A.	130	32.9	0.03	7.63	0.32	0.14
B00266887	3.055	N.A.	62	11.3	0.02	6.99	0.13	0.08
B00266888	3.020	N.A.	82	10.8	0.02	7.22	0.12	0.10
B00266889	1.245	N.A.	92	22.9	0.01	7.12	0.25	0.06
B00266890	0.155	N.A.	798	44.0	0.47	20.4	0.31	1.17
B00266891	1.465	N.A.	665	43.2	0.04	8.94	0.45	1.05
B00266892	1.925	N.A.	3100	196	0.71	10.2	1.37	4.27
B00266893	1.205	N.A.	180	19.9	<0.01	7.52	0.23	0.07
B00268244	5.600	N.A.	<5	3.8	0.02	2.54	0.18	0.43
B00268245	4.650	N.A.	38	9.1	0.39	5.57	0.10	3.52
B00268246	4.370	N.A.	<5	2.1	0.04	3.01	0.06	0.56
B00268247	3.050	N.A.	8	3.6	<0.01	2.93	0.04	0.05
B00268248	2.170	N.A.	247	18.7	1.55	11.4	0.03	0.09
B00268249	2.125	N.A.	520	23.4	1.94	18.2	0.02	0.18
B00268250	0.155	N.A.	881	45.2	0.47	19.9	0.30	1.15
B00268251	4.585	N.A.	442	19.1	1.58	28.2	0.01	0.14
B00268252	6.065	N.A.	279	13.3	0.98	43.1	0.02	0.28
B00268253	6.045	N.A.	242	8.8	0.75	40.5	0.02	4.97
B00268254	4.945	N.A.	398	15.8	1.10	47.0	0.03	4.17
B00268255	5.995	N.A.	278	12.6	0.59	43.9	0.08	6.44
B00268256	6.165	N.A.	204	33.6	0.40	37.9	0.68	14.2
B00268257	3.230	N.A.	185	13.0	0.19	38.8	0.15	10.4
B00268258	4.740	N.A.	179	12.7	0.47	41.8	0.08	8.07
B00268259	3.125	N.A.	257	61.7	0.22	45.2	0.47	3.64
B00268260	1.155	N.A.	<5	<0.3	<0.01	0.16	<0.01	0.02
B00268261	0.675	N.A.	166	11.2	0.93	26.1	<0.01	0.12
B00268262	3.145	N.A.	202	14.5	0.16	41.2	0.07	0.66
B00268263	6.045	N.A.	222	11.6	0.42	44.2	0.03	0.60
B00268264	3.180	N.A.	133	11.1	0.36	36.6	0.04	9.64
B00268265	2.670	N.A.	563	23.4	0.37	34.1	0.51	12.6
B00268266	3.415	N.A.	191	40.6	0.20	37.4	1.04	11.7
*Dup B00268266	N.A.	N.A.	216	39.7	0.18	37.4	0.98	11.5
B00268267	3.920	N.A.	200	50.2	0.22	40.5	0.42	6.55
B00268268	1.905	N.A.	125	25.4	0.35	23.7	0.09	0.72
B00268269	3.325	N.A.	<5	2.2	<0.01	2.75	0.02	0.04
B00268270	0.155	N.A.	819	44.1	0.47	20.1	0.31	1.14

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268271	3.805	N.A.	<5	1.0	<0.01	2.11	0.02	0.07
B00268272	3.315	N.A.	10	0.7	<0.01	3.10	<0.01	0.03
B00268273	4.455	N.A.	13	1.7	<0.01	2.49	0.03	0.10
B00268274	2.860	N.A.	235	19.2	0.61	10.2	0.14	0.23
B00268275	1.850	N.A.	<5	0.5	0.04	7.06	<0.01	0.05
B00268276	5.420	N.A.	<5	0.6	<0.01	1.86	<0.01	<0.01
B00268277	5.705	N.A.	8	2.0	0.03	2.21	0.12	0.26
B00268278	5.360	N.A.	44	4.0	0.07	3.93	0.11	0.15
B00268279	5.085	N.A.	119	15.3	1.27	>50.0	0.07	1.32
B00268280	1.520	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00268281	3.110	96.1	953	47.8	5.58	29.3	0.02	0.52
B00268282	2.995	N.A.	391	27.9	1.53	40.8	0.21	5.05
B00268283	3.160	N.A.	88	8.6	0.41	40.1	0.06	7.11
B00268284	3.815	N.A.	974	51.9	4.86	42.6	0.02	0.77
B00268285	2.575	N.A.	166	12.6	1.05	20.4	0.04	0.16
B00268286	5.895	N.A.	<5	<0.3	<0.01	9.39	<0.01	0.04
B00268287	5.650	N.A.	<5	<0.3	<0.01	5.63	<0.01	0.02
B00268288	5.230	N.A.	<5	<0.3	<0.01	3.65	<0.01	0.08
B00268289	4.840	N.A.	<5	1.0	0.01	2.76	0.02	0.10
B00268290	0.155	N.A.	821	44.2	0.44	19.6	0.30	1.13
B00268291	5.430	N.A.	<5	<0.3	<0.01	2.37	<0.01	<0.01
B00268292	5.690	N.A.	<5	0.7	0.03	4.39	<0.01	0.02
B00268293	2.945	N.A.	52	5.4	0.52	14.4	0.02	0.10
B00268294	3.245	N.A.	54	4.9	0.43	11.9	0.02	0.13
B00268295	5.630	N.A.	<5	2.1	0.05	3.54	0.03	0.16
B00268296	5.805	N.A.	27	4.6	0.22	5.70	0.04	0.14
B00268297	5.770	N.A.	<5	0.7	0.01	4.00	0.02	0.07
B00268298	3.575	N.A.	<5	0.3	<0.01	2.47	0.01	0.04
B00268299	4.495	N.A.	9	1.5	0.02	3.50	0.03	0.15
B00268300	1.595	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00268301	3.850	N.A.	20	6.2	0.21	4.79	0.06	0.24
*Dup B00268301	N.A.	N.A.	18	6.8	0.20	4.92	0.06	0.22
B00268302	3.785	N.A.	<5	0.9	<0.01	1.95	0.01	0.02
B00268882	3.195	N.A.	8	7.1	0.02	4.46	0.34	1.39
B00268883	2.770	N.A.	6	2.6	0.07	3.34	0.04	0.75
B00268884	3.110	96.0	313	65.9	1.92	9.24	0.17	0.75
*Rep B00268252				13.2				
*Rep B00268278				3.9				
*Rep B00268884				67.8				
*Std SU_1B				6.4				

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Final : VC152820F Order: PO# BMC15-01_21 B00266881-268884

Report File No.: 0000014209

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		66.4				
*Std AMIS0268		188				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00266882	988					
*Rep B00268269	<5					
*Std AMIS0265	587					
*Std OXH97	1290					
*Std OXJ111	2180					
*Std OXN117	7920					
*Blk BLANK	<5					
*Rep B00266890			0.47	20.3	0.31	1.16
*Rep B00268273			<0.01	2.53	0.03	0.10
*Rep B00268283			0.41	40.1	0.06	7.00
*Rep B00268295			0.05	3.52	0.03	0.16
*Std OREAS134A			0.13	12.0	12.9	17.6
*Std OREAS131B			0.02	5.77	1.84	3.10
*Std OREAS134A			0.13	12.1	12.8	17.7
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Report File No.: 0000014209

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
B00266882	4.8	140	N.A.
B00266883	25.8	170	N.A.
B00266884	45.3	N.A.	N.A.
B00266885	43.5	N.A.	N.A.
B00266886	0.4	N.A.	N.A.
B00266887	0.3	N.A.	N.A.
B00266888	0.4	N.A.	N.A.
B00266889	0.2	N.A.	N.A.
B00266890	16.9	N.A.	N.A.
B00266891	2.2	N.A.	N.A.
B00266892	9.1	194	N.A.
B00266893	0.3	N.A.	N.A.
B00268244	0.9	N.A.	N.A.
B00268245	4.7	N.A.	N.A.
B00268246	1.1	N.A.	N.A.
B00268247	1.3	N.A.	N.A.
B00268248	3.8	N.A.	N.A.
B00268249	4.1	N.A.	N.A.
B00268250	17.4	N.A.	N.A.
B00268251	19.7	N.A.	N.A.
B00268252	32.0	N.A.	N.A.
B00268253	35.9	N.A.	N.A.
B00268254	33.2	N.A.	N.A.
B00268255	41.1	N.A.	N.A.
B00268256	32.6	N.A.	N.A.
B00268257	34.8	N.A.	N.A.
B00268258	33.0	N.A.	N.A.
B00268259	31.2	N.A.	N.A.
B00268260	0.2	N.A.	N.A.
B00268261	5.6	N.A.	N.A.
B00268262	34.9	N.A.	N.A.
B00268263	32.0	N.A.	N.A.
B00268264	28.1	N.A.	N.A.
B00268265	25.0	N.A.	N.A.
B00268266	33.4	N.A.	N.A.
*Dup B00268266	32.2	N.A.	N.A.
B00268267	36.8	N.A.	N.A.
B00268268	11.7	N.A.	N.A.
B00268269	0.6	N.A.	N.A.
B00268270	17.7	N.A.	N.A.

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Report File No.: 0000014209

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
B00268271	1.0	N.A.	N.A.
B00268272	1.0	N.A.	N.A.
B00268273	0.5	N.A.	N.A.
B00268274	2.0	N.A.	N.A.
B00268275	0.5	N.A.	N.A.
B00268276	1.2	N.A.	N.A.
B00268277	0.7	N.A.	N.A.
B00268278	0.6	N.A.	N.A.
B00268279	28.9	N.A.	48.8
B00268280	<0.1	N.A.	N.A.
B00268281	17.3	N.A.	N.A.
B00268282	35.7	N.A.	N.A.
B00268283	34.9	N.A.	N.A.
B00268284	34.5	N.A.	N.A.
B00268285	4.8	N.A.	N.A.
B00268286	<0.1	N.A.	N.A.
B00268287	<0.1	N.A.	N.A.
B00268288	<0.1	N.A.	N.A.
B00268289	0.9	N.A.	N.A.
B00268290	17.1	N.A.	N.A.
B00268291	0.9	N.A.	N.A.
B00268292	0.4	N.A.	N.A.
B00268293	2.1	N.A.	N.A.
B00268294	1.8	N.A.	N.A.
B00268295	1.0	N.A.	N.A.
B00268296	1.3	N.A.	N.A.
B00268297	2.0	N.A.	N.A.
B00268298	1.4	N.A.	N.A.
B00268299	1.6	N.A.	N.A.
B00268300	<0.1	N.A.	N.A.
B00268301	1.4	N.A.	N.A.
*Dup B00268301	1.3	N.A.	N.A.
B00268302	0.1	N.A.	N.A.
B00268882	2.0	N.A.	N.A.
B00268883	1.8	N.A.	N.A.
B00268884	5.8	N.A.	N.A.

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Final : VC152820F Order: PO# BMC15-01_21 B00266881-268884

Report File No.: 0000014209

Element	S	Ag	Fe
Method	GO_ICP90Q	GO_FAG313	GO_XRF77B
Det.Lim.	0.1	10	0.01
Units	%	g/t	%
*Std AMIS0268		195	
*Blk BLANK		<10	
*Rep B00266890	16.5		
*Rep B00268273	0.5		
*Rep B00268283	34.3		
*Rep B00268295	0.9		
*Std OREAS134A	19.9		
*Std OREAS131B	4.9		
*Std OREAS134A	19.0		
*Blk BLANK	<0.1		
*Rep B00268279			48.5
*Std SCH1			61.2
*Blk BLANK			<0.01

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Certificate of Analysis

Work Order : VC152821

[Report File No.: 0000013837]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

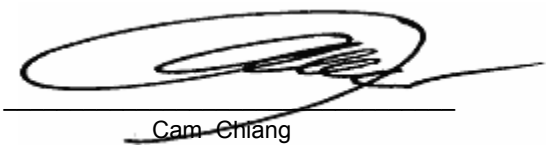
Date: Nov 20, 2015

P.O. No.	:	PO# BMC15-01_21 B00268885-268959
Project No.	:	KZK
No. Of Samples	:	75
Date Submitted	:	Oct 15, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268885	2.935	N.A.	2930	>300	18.0	42.1	0.15	1.49
B00268886	3.155	N.A.	4940	>300	15.8	41.7	0.21	1.36
B00268887	3.390	N.A.	3700	295	17.4	41.7	0.09	1.58
B00268888	2.705	N.A.	4440	>300	17.3	42.3	0.10	1.57
B00268889	2.240	N.A.	4710	>300	16.7	42.6	0.16	1.60
B00268890	0.105	N.A.	1280	68.4	0.36	3.87	1.33	5.31
B00268891	0.105	N.A.	793	19.9	1.71	13.8	0.25	1.08
B00268892	3.200	N.A.	765	89.3	1.97	42.8	0.36	13.4
B00268893	3.280	N.A.	286	111	0.36	37.8	1.50	16.6
B00268894	3.280	N.A.	293	118	0.47	35.9	3.12	15.6
B00268895	2.725	N.A.	332	94.7	0.61	31.6	2.39	19.5
B00268896	3.550	N.A.	516	55.0	0.90	38.3	0.60	2.41
B00268897	1.960	N.A.	15	1.6	0.03	2.83	0.02	0.08
B00268898	1.815	N.A.	22	6.1	0.13	4.56	0.06	0.44
B00268899	1.365	N.A.	66	35.0	0.47	45.8	0.64	4.05
B00268900	1.955	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00268901	1.235	N.A.	10	17.3	0.15	6.17	0.17	3.21
B00268902	3.060	N.A.	1050	164	0.93	36.9	0.56	4.64
B00268903	3.240	N.A.	1700	206	1.12	36.6	0.63	2.56
B00268904	2.970	N.A.	2050	241	1.20	37.2	1.66	3.25
B00268905	3.190	N.A.	2510	>300	1.33	35.3	2.66	6.28
B00268906	3.460	N.A.	1520	>300	0.88	34.0	3.73	8.80
B00268907	1.145	N.A.	1150	>300	1.06	31.6	2.12	8.15
B00268908	3.060	N.A.	648	126	0.35	16.2	1.09	3.47
B00268909	3.200	N.A.	378	121	0.45	41.4	2.73	8.35
B00268910	0.155	N.A.	859	43.9	0.46	20.3	0.30	1.16
B00268911	2.645	N.A.	23	1.8	0.03	2.21	0.03	0.06
B00268912	1.500	N.A.	1020	57.5	2.03	38.7	0.13	1.96
B00268913	0.970	N.A.	1250	114	4.72	36.6	0.15	1.26
B00268914	2.840	N.A.	548	41.5	1.08	44.9	0.14	0.61
B00268915	3.210	N.A.	510	58.8	1.10	38.9	0.28	2.66
B00268916	3.175	N.A.	594	72.6	1.09	37.7	0.54	2.30
B00268917	3.120	N.A.	318	30.2	0.24	41.1	0.19	3.41
B00268918	3.115	N.A.	280	36.2	0.25	39.7	0.34	3.80
B00268919	2.705	N.A.	493	91.1	0.20	40.6	0.74	5.62
*Dup B00268919	N.A.	N.A.	527	92.1	0.19	40.9	0.76	5.57
B00268920	1.000	N.A.	<5	0.5	<0.01	0.14	<0.01	0.02
B00268921	2.510	N.A.	3250	232	4.32	40.8	1.06	2.49
B00268922	3.290	N.A.	1160	163	6.47	41.2	0.27	0.99
B00268923	1.600	N.A.	2840	134	5.60	39.4	0.20	1.07

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Final : VC152821 Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000013837

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268924	3.110	N.A.	809	99.5	1.98	39.1	0.38	3.04
B00268925	3.275	N.A.	1010	85.2	1.54	40.6	0.29	3.35
B00268926	3.295	N.A.	1370	230	3.73	41.9	0.80	1.48
B00268927	3.225	N.A.	2660	221	5.15	39.6	0.61	0.84
B00268928	3.105	N.A.	1410	122	3.33	39.2	0.33	1.89
B00268929	3.310	N.A.	627	61.7	0.75	39.6	0.26	1.36
B00268930	0.170	N.A.	1280	68.7	0.36	3.85	1.38	5.30
B00268931	0.170	N.A.	879	20.1	1.76	13.8	0.25	1.04
B00268932	2.975	N.A.	703	77.6	1.96	37.5	0.22	1.01
B00268933	3.095	N.A.	491	46.8	0.79	40.4	0.17	1.87
B00268934	3.235	87.5	492	24.3	0.78	40.9	0.11	1.25
B00268935	3.505	N.A.	1230	55.6	2.41	39.4	0.07	0.72
B00268936	2.935	N.A.	923	159	1.57	39.1	0.54	6.18
B00268937	3.320	N.A.	124	34.1	0.09	8.07	0.26	1.84
B00268938	3.130	N.A.	536	96.9	0.25	35.8	0.74	4.49
B00268939	3.130	N.A.	1660	151	1.06	37.3	0.48	5.13
B00268940	1.395	N.A.	<5	<0.3	<0.01	0.10	<0.01	0.02
B00268941	1.440	N.A.	1880	128	1.78	37.2	0.67	2.54
B00268942	2.395	N.A.	117	10.5	0.12	3.52	0.07	0.12
B00268943	2.095	N.A.	2060	54.3	1.80	12.4	0.32	1.07
B00268944	1.175	N.A.	1470	53.6	1.06	21.0	0.43	1.47
B00268945	3.100	N.A.	859	65.1	0.99	35.6	0.71	3.68
B00268946	3.205	N.A.	1180	88.0	0.19	35.2	0.73	5.92
B00268947	3.060	N.A.	1520	129	0.46	35.0	0.95	4.07
B00268948	3.310	N.A.	1630	174	0.39	31.5	1.62	6.84
B00268949	1.390	N.A.	1640	195	0.20	28.8	2.37	6.61
B00268950	0.155	N.A.	818	47.6	0.45	20.3	0.31	1.15
B00268951	3.000	N.A.	448	38.0	0.78	5.59	0.09	0.17
B00268952	3.020	N.A.	346	25.9	0.59	4.04	0.05	0.08
B00268953	2.960	N.A.	<5	0.3	<0.01	1.80	<0.01	0.01
B00268954	3.140	N.A.	277	16.8	0.16	3.64	0.14	0.40
*Dup B00268954	N.A.	N.A.	236	17.3	0.18	3.69	0.15	0.45
B00268955	2.600	N.A.	10	<0.3	<0.01	3.36	<0.01	0.03
B00268956	2.190	N.A.	361	41.9	0.91	14.6	0.33	1.95
B00268957	2.420	N.A.	207	17.4	0.51	6.69	0.06	0.13
B00268958	2.555	N.A.	<5	0.3	0.02	3.82	<0.01	0.03
B00268959	2.655	94.2	<5	<0.3	<0.01	1.09	<0.01	0.01
*Rep B00268910				44.5				
*Rep B00268949				195				
*Rep B00268958				<0.3				

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Final : VC152821 Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000013837

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.5				
*Std OREAS621		67.7				
*Std AMIS0268		194				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268899	45					
*Rep B00268933	486					
*Rep B00268959	<5					
*Std OXC129	206					
*Std OXH97	1310					
*Std OXJ111	2300					
*Std OXN117	8020					
*Std OXB130	120					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Rep B00268903			1.10	36.1	0.60	2.51
*Rep B00268914			1.08	45.5	0.14	0.60
*Rep B00268940			<0.01	0.10	<0.01	0.01
*Rep B00268949			0.20	29.0	2.26	6.69
*Std OREAS134A			0.13	12.2	12.9	17.4
*Std OREAS131B			0.02	5.91	1.87	3.13
*Std OREAS926			0.81	7.55	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00268885	316
B00268886	359
B00268887	287
B00268888	342
B00268889	370
B00268890	N.A.
B00268891	N.A.
B00268892	N.A.
B00268893	N.A.
B00268894	N.A.
B00268895	N.A.
B00268896	N.A.
B00268897	N.A.
B00268898	N.A.
B00268899	N.A.
B00268900	N.A.
B00268901	N.A.
B00268902	169
B00268903	197
B00268904	215
B00268905	316
B00268906	347
B00268907	297
B00268908	N.A.
B00268909	N.A.
B00268910	N.A.
B00268911	N.A.
B00268912	N.A.
B00268913	N.A.
B00268914	N.A.
B00268915	N.A.
B00268916	N.A.
B00268917	N.A.
B00268918	N.A.
B00268919	N.A.
*Dup B00268919	N.A.
B00268920	N.A.
B00268921	228
B00268922	140
B00268923	N.A.

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Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00268924	N.A.
B00268925	N.A.
B00268926	201
B00268927	198
B00268928	N.A.
B00268929	N.A.
B00268930	N.A.
B00268931	N.A.
B00268932	N.A.
B00268933	N.A.
B00268934	N.A.
B00268935	N.A.
B00268936	124
B00268937	N.A.
B00268938	N.A.
B00268939	149
B00268940	N.A.
B00268941	N.A.
B00268942	N.A.
B00268943	N.A.
B00268944	N.A.
B00268945	N.A.
B00268946	N.A.
B00268947	N.A.
B00268948	153
B00268949	181
B00268950	N.A.
B00268951	N.A.
B00268952	N.A.
B00268953	N.A.
B00268954	N.A.
*Dup B00268954	N.A.
B00268955	N.A.
B00268956	N.A.
B00268957	N.A.
B00268958	N.A.
B00268959	N.A.

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Final : VC152821 Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000013837

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
*Std ME-1302	424
*Rep B00268905	298
*Blk BLANK	<10

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Certificate of Analysis

Work Order : VC152821A

[Report File No.: 0000014331]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_21 B00268885-268959
Project No.	:	KZK
No. Of Samples	:	75
Date Submitted	:	Oct 21, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC152821A Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000014331

Element	Bi	Sb	@As	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	5	3	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00268885	107	29	585	7.85	659
B00268886	514	129	752	8.36	705
B00268887	30	45	428	8.52	557
B00268888	162	89	343	8.55	503
B00268889	471	171	222	6.65	549
B00268890	N.A.	N.A.	N.A.	N.A.	N.A.
B00268891	N.A.	N.A.	N.A.	N.A.	N.A.
B00268892	182	43	326	11.0	412
B00268893	255	54	428	11.7	478
B00268894	135	92	339	11.0	379
B00268895	126	77	382	13.8	596
B00268896	59	96	6590	5.74	245
B00268897	<5	<5	723	0.29	6
B00268898	<5	<5	30	0.41	18
B00268899	46	167	425	9.29	127
B00268900	N.A.	N.A.	N.A.	N.A.	N.A.
B00268901	33	19	26	0.92	64
B00268902	29	1720	2500	18.3	49
B00268903	43	2310	3630	16.2	46
B00268904	70	2490	3950	16.6	95
B00268905	33	3060	3930	25.3	61
B00268906	19	2820	3390	33.0	62
B00268907	5	2770	3010	30.7	58
B00268908	<5	911	1570	12.7	23
B00268909	14	987	1580	11.0	110
B00268910	N.A.	N.A.	N.A.	N.A.	N.A.
B00268911	<5	11	1470	0.30	3
B00268912	69	52	2150	5.84	418
B00268913	99	88	1410	6.02	659
B00268914	140	146	1490	2.26	524
B00268915	164	197	2430	7.79	362
B00268916	212	383	1300	6.72	342
B00268917	57	148	782	8.87	190
B00268918	87	53	1160	9.90	161
B00268919	208	60	1330	14.1	185
B00268920	N.A.	N.A.	N.A.	N.A.	N.A.
B00268921	355	144	1470	13.3	502
B00268922	90	100	1140	7.45	442
B00268923	71	70	1310	6.37	340
B00268924	181	59	1910	12.1	389

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Final : VC152821A Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000014331

Element	Bi	Sb	@As	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	5	3	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00268925	158	46	3030	12.7	450
B00268926	492	105	1710	10.6	883
B00268927	375	103	1050	10.2	720
B00268928	171	82	967	10.9	397
B00268929	143	79	1330	9.37	334
B00268930	N.A.	N.A.	N.A.	N.A.	N.A.
B00268931	N.A.	N.A.	N.A.	N.A.	N.A.
B00268932	129	83	1050	7.51	324
B00268933	141	158	740	9.94	438
B00268934	112	281	3600	8.31	320
B00268935	52	58	634	5.17	449
B00268936	419	187	582	23.6	863
B00268937	147	117	66	5.96	131
B00268938	262	223	575	14.1	550
B00268939	97	1540	1780	17.1	398
B00268940	N.A.	N.A.	N.A.	N.A.	N.A.
B00268941	80	1430	1900	10.7	222
B00268942	6	69	576	0.68	14
B00268943	22	41	662	6.81	91
B00268944	50	46	2180	11.1	152
B00268945	61	80	4000	31.3	159
B00268946	68	717	7150	32.4	108
B00268947	70	1300	4630	26.1	240
B00268948	33	1580	3180	38.1	107
B00268949	24	2100	2910	30.4	86
B00268950	N.A.	N.A.	N.A.	N.A.	N.A.
B00268951	12	25	79	1.57	47
B00268952	<5	14	22	1.33	28
B00268953	<5	<5	<3	0.22	<1
B00268954	11	208	877	0.60	19
B00268955	<5	<5	385	0.14	1
B00268956	16	28	51	2.43	53
B00268957	13	22	7	0.38	37
B00268958	<5	<5	262	0.05	3
B00268959	<5	<5	3	0.04	<1
*Rep B00268902	28	1680	2540	17.8	51
*Rep B00268928	173	82	976	11.1	409
*Rep B00268945	61	83	3970	30.9	158
*Rep B00268958	<5	<5	248	0.07	3
*Std OREAS131B	N.A.	41	N.A.	N.A.	N.A.

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Final : VC152821A Order: PO# BMC15-01_21 B00268885-268959

Report File No.: 0000014331

Element	Bi	Sb	@As	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	5	3	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
*Std OREAS934	516	N.A.	N.A.	N.A.	80
*Std DS-1	N.A.	N.A.	6570	78.9	N.A.
*Std OREAS210	N.A.	N.A.	3780	N.A.	N.A.
*Std OREAS131B	N.A.	38	N.A.	N.A.	N.A.
*Std OREAS934	513	N.A.	N.A.	N.A.	80
*Std DS-1	N.A.	N.A.	N.A.	77.1	N.A.
*Blk BLANK	<5	<5	<3	<0.01	<1
*Blk BLANK	<5	<5	<3	<0.01	<1

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Certificate of Analysis

Work Order : VC152897F

[Report File No.: 0000014210]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_24 B00266894-266967
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152897 Report No. 013838
dated Nov 20, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266894	2.680	N.A.	<5	<0.3	<0.01	1.88	<0.01	<0.01
B00266895	2.690	N.A.	<5	<0.3	<0.01	1.71	<0.01	<0.01
B00266896	2.365	N.A.	20	2.0	0.02	1.87	<0.01	0.10
B00266897	2.760	N.A.	2930	232	0.36	32.5	3.81	9.07
B00266898	2.475	N.A.	733	100	0.13	33.2	2.86	10.7
B00266899	1.255	N.A.	1310	105	2.22	35.7	1.22	9.53
B00266900	0.540	N.A.	9	0.6	<0.01	0.12	0.02	0.04
B00266901	2.845	N.A.	33	6.4	0.03	3.70	0.07	0.51
B00266902	1.745	N.A.	6	<0.3	<0.01	1.96	<0.01	<0.01
B00266903	1.225	N.A.	<5	<0.3	<0.01	1.94	<0.01	<0.01
B00266904	1.595	N.A.	8	<0.3	<0.01	2.10	0.01	0.02
B00266905	2.170	N.A.	6	<0.3	<0.01	1.97	<0.01	<0.01
B00266906	1.030	N.A.	13	0.9	<0.01	1.90	<0.01	<0.01
B00266907	1.500	N.A.	34	1.6	<0.01	2.29	0.02	0.07
B00266908	1.205	N.A.	752	150	0.48	18.5	2.33	6.43
B00266909	1.650	N.A.	21	4.5	0.02	1.47	0.06	0.13
B00266910	0.155	N.A.	815	43.6	0.47	19.6	0.31	1.13
B00266911	2.995	N.A.	27	8.1	0.12	7.33	0.03	0.25
B00266912	3.135	N.A.	9	1.6	0.01	7.75	0.03	0.06
B00266913	3.075	N.A.	9	0.9	<0.01	7.27	<0.01	0.01
B00266914	2.990	N.A.	16	2.6	<0.01	7.07	0.02	0.01
B00266915	3.180	N.A.	23	5.7	<0.01	6.73	0.06	0.03
B00266916	1.315	N.A.	1340	249	0.03	19.2	3.35	9.58
B00266917	3.760	N.A.	2800	288	0.40	30.9	2.43	8.62
B00266918	3.275	N.A.	3160	260	0.40	27.2	2.78	8.50
B00266919	2.130	N.A.	1410	202	0.31	23.7	2.28	15.8
B00266920	0.785	N.A.	<5	<0.3	<0.01	0.10	0.01	0.04
B00266921	2.620	N.A.	1130	135	1.67	20.4	0.96	23.1
B00266922	4.090	N.A.	817	99.3	0.28	33.7	1.96	6.33
B00266923	2.005	N.A.	711	105	0.54	36.1	2.69	6.94
B00266924	1.920	N.A.	649	134	0.15	31.2	3.77	8.05
B00266925	2.770	N.A.	357	102	0.43	36.3	2.68	7.97
B00266926	2.700	N.A.	316	62.4	0.49	40.7	0.85	5.63
B00266927	1.760	N.A.	7	2.3	0.02	7.75	0.05	0.10
B00266928	1.970	N.A.	<5	<0.3	<0.01	7.26	0.01	0.07
*Dup B00266928	N.A.	N.A.	<5	<0.3	<0.01	6.88	<0.01	0.05
B00266929	2.875	N.A.	625	118	0.43	29.9	2.62	4.90
B00266930	0.170	N.A.	1310	68.6	0.38	3.78	1.39	5.36
B00266931	0.170	N.A.	815	20.6	1.74	13.2	0.25	1.05
B00266932	2.725	N.A.	921	139	0.27	31.9	3.04	5.46

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266933	2.740	N.A.	901	135	0.45	35.8	2.65	7.84
B00266934	2.690	N.A.	1120	80.1	0.25	37.8	1.28	3.51
B00266935	1.960	N.A.	1160	115	0.28	35.9	1.21	3.56
B00266936	2.600	N.A.	13	1.4	0.01	7.28	0.02	0.05
B00266937	1.860	N.A.	19	1.9	<0.01	5.54	0.03	0.04
B00266938	3.180	N.A.	9	1.6	<0.01	7.04	0.02	0.03
B00266939	2.945	N.A.	13	1.1	<0.01	7.49	0.01	0.02
B00266940	0.570	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00266941	1.375	N.A.	822	72.8	3.27	16.3	0.05	0.17
B00266942	1.945	N.A.	839	85.9	3.21	18.1	0.11	0.17
B00266943	1.835	94.9	145	12.9	0.54	16.3	0.01	0.05
B00266944	2.185	N.A.	1230	121	4.19	18.9	0.17	0.29
B00266945	1.945	N.A.	1000	128	4.94	24.3	0.13	0.50
B00266946	2.515	N.A.	2290	239	8.62	27.8	0.29	0.83
B00266947	2.540	N.A.	4100	196	8.21	26.3	0.18	0.97
B00266948	2.485	N.A.	825	92.9	2.10	45.0	0.53	2.52
B00266949	2.535	N.A.	496	96.6	1.49	41.2	1.10	4.65
B00266950	0.170	N.A.	1280	65.9	0.36	3.80	1.36	5.26
B00266951	0.170	N.A.	806	20.3	1.70	13.7	0.26	1.09
B00266952	2.970	N.A.	909	79.8	2.51	47.7	0.16	1.00
B00266953	2.615	N.A.	1690	95.3	3.29	48.4	0.09	1.22
B00266954	1.965	N.A.	921	73.8	2.48	47.9	0.10	4.94
B00266955	1.720	N.A.	2640	133	5.35	43.7	0.14	2.93
B00266956	1.795	N.A.	798	139	1.06	41.8	2.05	11.7
B00266957	1.470	N.A.	845	83.6	0.16	35.0	1.22	8.54
B00266958	2.745	N.A.	399	69.1	0.35	42.5	0.97	6.55
B00266959	3.110	N.A.	2070	115	0.44	33.4	1.14	7.56
B00266960	0.535	N.A.	<5	<0.3	<0.01	0.18	0.01	0.04
B00266961	3.220	N.A.	1390	136	0.29	38.1	0.54	6.17
B00266962	3.050	N.A.	1550	169	0.47	37.0	0.30	2.77
B00266963	2.630	N.A.	1170	124	0.19	35.2	0.73	3.41
*Dup B00266963	N.A.	N.A.	1160	118	0.18	35.5	0.78	3.39
B00266964	3.095	N.A.	2750	177	0.21	37.9	0.80	3.51
B00266965	3.215	N.A.	3860	>300	0.15	26.4	3.83	8.83
B00266966	2.635	N.A.	1300	177	0.10	31.0	2.22	7.22
B00266967	2.065	99.6	609	96.7	0.01	25.9	1.76	3.81
*Rep B00266907				1.8				
*Rep B00266960				0.4				
*Rep B00266967				92.8				
*Std AMIS0268				189				

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Final : VC152897F Order: PO# BMC15-01_24 B00266894-266967

Report File No.: 0000014210

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std SU_1B		6.3				
*Std OREAS621		66.4				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00266926	287					
*Rep B00266948	860					
*Std AMIS0265	576					
*Std OXH97	1310					
*Std OXJ111	2110					
*Std OXN117	7770					
*Blk BLANK	<5					
*Rep B00266913			<0.01	7.21	<0.01	0.01
*Rep B00266924			0.15	31.5	3.78	8.25
*Rep B00266952			2.64	48.1	0.16	0.99
*Rep B00266960			<0.01	0.18	<0.01	0.04
*Std OREAS134A			0.13	12.0	13.0	17.4
*Std OREAS131B			0.02	5.86	1.92	3.08
*Std OREAS926			0.82	7.46	0.01	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266894	0.8	N.A.
B00266895	0.7	N.A.
B00266896	0.7	N.A.
B00266897	39.8	218
B00266898	39.8	N.A.
B00266899	32.2	N.A.
B00266900	0.2	N.A.
B00266901	2.4	N.A.
B00266902	1.4	N.A.
B00266903	1.3	N.A.
B00266904	1.3	N.A.
B00266905	0.9	N.A.
B00266906	0.4	N.A.
B00266907	1.4	N.A.
B00266908	22.2	N.A.
B00266909	0.2	N.A.
B00266910	18.0	N.A.
B00266911	0.9	N.A.
B00266912	0.2	N.A.
B00266913	<0.1	N.A.
B00266914	<0.1	N.A.
B00266915	0.1	N.A.
B00266916	27.1	241
B00266917	41.5	313
B00266918	35.9	242
B00266919	31.9	184
B00266920	0.1	N.A.
B00266921	28.8	N.A.
B00266922	38.1	N.A.
B00266923	35.2	N.A.
B00266924	36.8	N.A.
B00266925	31.1	N.A.
B00266926	31.3	N.A.
B00266927	0.4	N.A.
B00266928	<0.1	N.A.
*Dup B00266928	<0.1	N.A.
B00266929	28.7	N.A.
B00266930	4.7	N.A.
B00266931	8.9	N.A.
B00266932	33.9	N.A.

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Final : VC152897F Order: PO# BMC15-01_24 B00266894-266967

Report File No.: 0000014210

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266933	40.5	N.A.
B00266934	39.6	N.A.
B00266935	41.7	N.A.
B00266936	0.4	N.A.
B00266937	0.2	N.A.
B00266938	0.1	N.A.
B00266939	<0.1	N.A.
B00266940	<0.1	N.A.
B00266941	6.9	N.A.
B00266942	5.6	N.A.
B00266943	2.0	N.A.
B00266944	9.2	N.A.
B00266945	14.3	N.A.
B00266946	19.7	237
B00266947	16.8	178
B00266948	41.8	N.A.
B00266949	40.3	N.A.
B00266950	4.4	N.A.
B00266951	9.0	N.A.
B00266952	34.6	N.A.
B00266953	30.9	N.A.
B00266954	34.0	N.A.
B00266955	34.2	N.A.
B00266956	33.2	N.A.
B00266957	40.5	N.A.
B00266958	41.5	N.A.
B00266959	40.7	N.A.
B00266960	0.2	N.A.
B00266961	44.1	N.A.
B00266962	41.7	139
B00266963	41.2	N.A.
*Dup B00266963	40.3	N.A.
B00266964	43.4	144
B00266965	31.9	314
B00266966	37.0	144
B00266967	29.4	N.A.

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Final : VC152897F Order: PO# BMC15-01_24 B00266894-266967

Report File No.: 0000014210

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00266946		225
*Std AMIS0268		185
*Blk BLANK		<10
*Rep B00266913	<0.1	
*Rep B00266924	38.2	
*Rep B00266952	36.8	
*Rep B00266960	0.2	
*Std OREAS134A	19.8	
*Std OREAS131B	5.0	
*Std OREAS926	1.2	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	

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Certificate of Analysis

Work Order : VC152898F

[Report File No.: 0000014211]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_24 B00266968-269262
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC152898 Report No. 013650
dated Nov 12, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00266968	2.130	N.A.	697	115	0.03	29.6	2.04	4.86
B00266969	2.530	N.A.	1280	91.2	0.12	33.7	1.38	5.20
B00266970	0.165	N.A.	1250	67.6	0.37	3.79	1.41	5.14
B00266971	0.170	N.A.	804	21.8	1.77	13.6	0.25	1.05
B00266972	1.755	N.A.	1770	>300	0.41	29.8	3.92	7.43
B00266973	2.490	N.A.	434	230	0.30	31.8	7.41	14.2
B00266974	2.805	N.A.	114	29.8	0.10	7.65	0.45	1.75
B00266975	1.340	N.A.	45	8.3	0.03	2.72	0.13	0.29
B00266976	2.630	N.A.	9	2.5	<0.01	2.31	0.06	0.13
B00266977	1.680	N.A.	34	4.2	0.03	1.77	0.02	0.47
B00266978	2.315	N.A.	18	1.2	0.01	3.43	0.03	0.12
B00266979	2.235	N.A.	6	0.8	<0.01	2.34	<0.01	0.02
B00266980	0.800	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00266981	1.835	N.A.	350	60.7	1.53	14.8	0.26	2.41
B00266982	2.635	N.A.	1260	81.3	1.84	33.8	0.49	8.71
B00266983	2.270	N.A.	1010	102	0.10	35.2	1.85	17.4
B00266984	2.365	N.A.	404	63.3	0.49	38.9	0.75	14.5
B00266985	3.320	N.A.	3540	>300	0.40	32.2	3.87	8.81
B00266986	3.370	N.A.	4760	>300	0.80	31.6	4.20	9.81
B00266987	3.020	N.A.	3230	>300	0.75	28.7	3.53	7.94
B00266988	2.545	N.A.	3020	>300	0.80	17.9	2.81	6.75
B00266989	2.720	N.A.	2500	>300	0.28	16.0	5.22	8.34
B00266990	0.170	N.A.	1280	67.9	0.37	3.92	1.36	5.10
B00266991	0.170	N.A.	844	21.1	1.75	13.5	0.26	1.04
B00266992	2.435	N.A.	1530	236	0.13	15.3	3.36	6.19
B00266993	3.480	N.A.	609	87.8	0.10	17.4	2.23	5.08
B00266994	3.755	N.A.	2200	268	0.25	22.7	2.33	5.94
B00266995	4.510	N.A.	3400	>300	0.41	28.6	3.25	8.77
B00266996	2.860	N.A.	757	151	0.27	28.0	1.73	5.23
B00266997	3.000	N.A.	72	26.6	<0.01	7.47	0.37	0.89
B00266998	2.960	N.A.	11	1.5	<0.01	6.98	0.01	0.03
B00266999	2.840	N.A.	13	0.5	<0.01	8.19	<0.01	0.02
B00267000	0.755	N.A.	<5	<0.3	<0.01	0.12	<0.01	<0.01
B00269222	3.685	N.A.	<5	<0.3	<0.01	9.37	<0.01	0.04
B00269223	4.545	N.A.	7	0.4	0.02	5.23	0.01	0.36
*Dup B00269223	N.A.	N.A.	<5	0.4	0.02	5.31	0.02	0.32
B00269224	3.350	N.A.	<5	1.1	0.01	4.90	0.04	0.09
B00269225	5.040	N.A.	<5	1.0	0.02	5.26	<0.01	0.03
B00269226	5.420	N.A.	5	0.5	<0.01	3.42	0.01	0.02
B00269227	4.260	N.A.	16	3.8	<0.01	5.52	0.20	0.39

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269228	1.960	N.A.	12	2.6	<0.01	7.25	0.14	0.26
B00269229	3.845	N.A.	12	6.1	<0.01	5.38	0.42	0.57
B00269230	0.155	N.A.	861	44.3	0.46	19.7	0.30	1.11
B00269231	4.160	N.A.	<5	0.7	<0.01	4.68	0.03	0.04
B00269232	4.060	N.A.	10	3.0	<0.01	4.74	0.17	0.54
B00269233	5.780	N.A.	7	1.7	<0.01	3.79	0.12	0.37
B00269234	4.430	N.A.	<5	<0.3	<0.01	1.39	<0.01	<0.01
B00269235	3.875	N.A.	22	2.4	<0.01	4.18	0.15	1.23
B00269236	6.040	N.A.	13	5.5	<0.01	3.10	0.48	3.09
B00269237	5.765	N.A.	7	3.9	<0.01	4.25	0.35	1.77
B00269238	3.825	86.7	9	2.2	<0.01	5.07	0.13	0.65
B00269239	3.700	N.A.	5	4.6	0.02	6.74	0.51	0.59
B00269240	0.845	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269241	2.710	N.A.	16	24.0	0.02	5.77	2.35	2.54
B00269242	5.160	N.A.	<5	1.4	0.01	5.52	0.09	0.27
B00269243	3.030	N.A.	7	7.5	0.01	3.55	0.42	0.40
B00269244	2.070	N.A.	8	6.7	0.02	4.70	0.23	0.36
B00269245	4.380	N.A.	<5	1.8	0.02	6.40	0.03	0.07
B00269246	3.005	N.A.	<5	1.2	<0.01	6.12	0.02	0.06
B00269247	2.500	N.A.	<5	1.9	0.02	4.81	0.09	0.49
B00269248	4.240	N.A.	<5	2.6	<0.01	4.04	0.21	0.98
B00269249	5.255	N.A.	<5	<0.3	<0.01	6.08	<0.01	0.02
B00269250	0.165	N.A.	1250	67.2	0.36	3.90	1.33	5.29
B00269251	0.170	N.A.	817	20.4	1.74	13.7	0.25	1.07
B00269252	4.535	N.A.	<5	0.3	<0.01	7.27	<0.01	0.01
B00269253	3.630	N.A.	<5	<0.3	<0.01	5.36	<0.01	0.01
B00269254	3.720	N.A.	<5	<0.3	<0.01	8.07	<0.01	0.01
B00269255	4.930	N.A.	<5	<0.3	<0.01	1.94	<0.01	<0.01
B00269256	4.155	N.A.	<5	0.5	<0.01	6.21	<0.01	0.03
B00269257	4.330	N.A.	<5	1.9	<0.01	4.22	0.03	0.07
B00269258	3.075	N.A.	<5	1.6	<0.01	4.33	0.01	0.02
*Dup B00269258	N.A.	N.A.	8	1.6	<0.01	4.56	0.01	0.02
B00269259	2.780	N.A.	<5	1.8	<0.01	4.53	<0.01	0.03
B00269260	0.770	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00269261	3.905	N.A.	<5	<0.3	<0.01	4.91	<0.01	<0.01
B00269262	3.115	N.A.	<5	<0.3	<0.01	5.84	<0.01	0.01
*Rep B00266991				20.8				
*Rep B00269258				1.6				
*Rep B00269259				1.5				
*Std SU_1B				6.6				

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Final : VC152898F Order: PO# BMC15-01_24 B00266968-269262

Report File No.: 0000014211

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.8				
*Std AMIS0268		191				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00269224	<5					
*Rep B00269231	<5					
*Std OXC129	203					
*Std OXH97	1300					
*Std OXJ111	2200					
*Std OXN117	7820					
*Blk BLANK	<5					
*Rep B00266973			0.28	30.4	7.15	13.3
*Rep B00266996			0.28	28.1	1.73	5.25
*Rep B00269241			0.02	5.83	2.39	2.53
*Rep B00269258			<0.01	4.36	0.01	0.03
*Std OREAS134A			0.13	11.9	13.0	17.0
*Std OREAS131B			0.02	5.79	1.87	3.09
*Std OREAS926			0.81	7.39	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00266968	32.6	N.A.
B00266969	38.6	N.A.
B00266970	4.5	N.A.
B00266971	9.2	N.A.
B00266972	36.5	341
B00266973	35.6	231
B00266974	8.3	N.A.
B00266975	1.4	N.A.
B00266976	0.9	N.A.
B00266977	1.1	N.A.
B00266978	1.9	N.A.
B00266979	1.1	N.A.
B00266980	<0.1	N.A.
B00266981	11.9	N.A.
B00266982	40.0	N.A.
B00266983	39.6	N.A.
B00266984	36.8	N.A.
B00266985	40.1	282
B00266986	38.6	320
B00266987	34.6	426
B00266988	20.7	390
B00266989	25.8	364
B00266990	4.5	N.A.
B00266991	8.9	N.A.
B00266992	20.4	244
B00266993	18.6	N.A.
B00266994	26.8	265
B00266995	35.4	418
B00266996	33.3	148
B00266997	2.8	N.A.
B00266998	<0.1	N.A.
B00266999	0.1	N.A.
B00267000	<0.1	N.A.
B00269222	0.4	N.A.
B00269223	0.7	N.A.
*Dup B00269223	0.7	N.A.
B00269224	2.0	N.A.
B00269225	2.0	N.A.
B00269226	1.0	N.A.
B00269227	4.5	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00269228	6.6	N.A.
B00269229	3.6	N.A.
B00269230	17.8	N.A.
B00269231	0.8	N.A.
B00269232	2.7	N.A.
B00269233	1.7	N.A.
B00269234	0.2	N.A.
B00269235	2.6	N.A.
B00269236	2.3	N.A.
B00269237	1.9	N.A.
B00269238	2.7	N.A.
B00269239	3.6	N.A.
B00269240	<0.1	N.A.
B00269241	4.1	N.A.
B00269242	1.2	N.A.
B00269243	1.3	N.A.
B00269244	1.7	N.A.
B00269245	3.2	N.A.
B00269246	2.4	N.A.
B00269247	1.2	N.A.
B00269248	1.4	N.A.
B00269249	0.1	N.A.
B00269250	4.5	N.A.
B00269251	9.0	N.A.
B00269252	0.4	N.A.
B00269253	0.2	N.A.
B00269254	0.2	N.A.
B00269255	<0.1	N.A.
B00269256	0.8	N.A.
B00269257	2.0	N.A.
B00269258	2.4	N.A.
*Dup B00269258	2.5	N.A.
B00269259	2.0	N.A.
B00269260	<0.1	N.A.
B00269261	1.1	N.A.
B00269262	0.9	N.A.

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Report File No.: 0000014211

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00266987		424
*Std AMIS0268		194
*Blk BLANK		<10
*Rep B00266973	33.3	
*Rep B00266996	33.7	
*Rep B00269241	4.2	
*Rep B00269258	2.4	
*Std OREAS134A	19.8	
*Std OREAS131B	4.9	
*Std OREAS926	1.2	
*Blk BLANK	<0.1	

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Certificate of Analysis
Work Order : VC152899
[Report File No.: 0000013651]

Date: November 12, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_24 B00269263-269324
Project No.: KZK
Samples: 62
Received: Oct 19, 2015
Pages: Page 1 to 6
(Inclusive of Cover Sheet)

Methods Summary

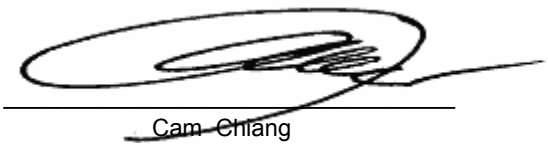
No. Of Samples	Method Code	Description
62	G_LOG02	Pre-preparation processing, sorting, logging, boxing
62	G_WGH79	Weighing of samples and reporting of weights
58	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_SCR34	Wet Screening 75µm, Evaluation of Prep
62	GE_FAA313	@Au, FAS, AAS, 30g-5ml(FINAL-WT)
62	GE_AAS12E	2 g, 2-Acid digest, AAS finish
62	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element
1	GO_FAG313	30 g, Fire assay, gravimetric finish(Ag)

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269263	3.060	N.A.	<5	2.2	<0.01	3.67	0.02	0.05
B00269264	3.170	N.A.	<5	3.5	0.01	4.98	0.02	0.24
B00269265	5.275	N.A.	<5	1.6	<0.01	3.70	<0.01	0.03
B00269266	1.930	N.A.	119	19.9	0.02	4.00	0.02	<0.01
B00269267	4.035	N.A.	798	>300	0.27	4.32	3.45	6.80
B00269268	4.235	N.A.	71	21.8	0.02	2.38	0.06	0.02
B00269269	3.835	N.A.	<5	4.2	0.01	2.91	<0.01	0.01
B00269270	0.150	N.A.	797	47.6	0.47	19.8	0.31	1.13
B00269271	5.020	N.A.	<5	1.2	<0.01	3.43	0.02	0.04
B00269272	2.825	N.A.	9	3.7	<0.01	3.79	0.12	0.25
B00269273	3.775	N.A.	20	6.6	<0.01	5.20	0.15	0.17
B00269274	2.945	N.A.	14	4.5	<0.01	3.51	0.17	0.37
B00269275	4.530	N.A.	14	4.6	<0.01	2.17	0.04	0.10
B00269276	2.450	N.A.	80	29.5	<0.01	3.06	0.53	0.20
B00269277	3.895	N.A.	60	17.8	0.01	3.69	0.42	0.94
B00269278	5.615	N.A.	21	8.6	<0.01	2.66	0.20	0.43
B00269279	3.515	N.A.	15	9.9	<0.01	4.63	0.13	0.39
B00269280	0.750	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269281	3.770	N.A.	11	4.9	<0.01	2.11	0.06	0.24
B00269282	1.725	N.A.	16	50.7	0.02	5.11	0.92	1.73
B00269283	3.340	N.A.	19	2.5	<0.01	2.06	0.02	0.05
B00269284	3.905	N.A.	19	2.0	<0.01	2.26	0.04	0.15
B00269285	5.340	N.A.	10	3.2	0.01	1.92	0.18	0.48
B00269286	3.325	N.A.	<5	<0.3	<0.01	1.81	0.01	0.04
B00269287	2.005	N.A.	305	39.0	0.02	4.43	0.71	1.22
B00269288	1.550	N.A.	70	6.7	<0.01	4.38	0.09	0.30
B00269289	2.410	N.A.	1320	51.2	0.05	6.66	0.68	2.03
B00269290	0.170	N.A.	1270	71.2	0.38	3.78	1.36	5.31
B00269291	0.170	N.A.	724	19.9	1.90	13.7	0.25	1.05
B00269292	2.245	N.A.	26	2.8	<0.01	3.69	0.09	0.11
B00269293	3.755	N.A.	197	29.4	0.01	3.93	1.99	3.50
B00269294	4.430	N.A.	25	2.9	0.03	7.34	0.08	0.15
B00269295	3.965	N.A.	382	100	0.12	12.8	1.79	3.34
B00269296	2.875	N.A.	217	23.4	<0.01	2.80	0.45	0.64
B00269297	3.080	N.A.	13	1.6	<0.01	2.49	0.04	0.20
*Dup B00269297	N.A.	N.A.	11	1.3	<0.01	2.65	0.03	0.18
B00269298	3.095	N.A.	128	11.2	0.10	7.37	0.17	2.10
B00269299	2.020	N.A.	128	14.1	0.14	6.40	0.44	1.80
B00269300	0.775	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269301	2.050	N.A.	28	5.3	0.15	7.16	0.16	1.21

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269302	2.335	N.A.	41	12.1	0.15	11.4	0.64	3.33
B00269303	1.875	N.A.	10	0.6	0.13	11.2	<0.01	0.14
B00269304	4.760	N.A.	<5	0.5	0.02	4.68	0.01	0.07
B00269305	3.635	N.A.	<5	0.9	0.03	7.58	<0.01	0.33
B00269306	2.555	N.A.	8	6.8	0.05	8.25	0.33	2.12
B00269307	2.455	N.A.	<5	1.6	0.04	5.77	0.11	0.11
B00269308	4.600	N.A.	<5	<0.3	<0.01	2.50	<0.01	<0.01
B00269309	2.440	N.A.	<5	2.7	0.05	5.62	<0.01	0.06
B00269310	0.155	N.A.	799	48.2	0.45	19.5	0.30	1.09
B00269311	3.310	N.A.	16	12.0	0.08	6.96	0.37	0.21
B00269312	2.280	96.4	22	79.7	0.19	10.9	3.12	5.35
B00269313	2.940	N.A.	6	4.4	<0.01	5.33	0.21	0.50
B00269314	4.710	N.A.	7	2.0	0.10	3.63	0.06	0.24
B00269315	2.885	N.A.	102	16.7	1.32	7.81	0.03	0.35
B00269316	2.740	N.A.	<5	1.2	0.12	3.97	<0.01	0.44
B00269317	1.310	N.A.	15	3.1	0.15	4.98	0.02	1.72
B00269318	4.340	N.A.	<5	2.2	0.02	7.49	0.09	0.14
B00269319	3.060	N.A.	<5	3.5	0.07	6.10	0.30	0.81
B00269320	0.940	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269321	4.710	N.A.	<5	0.8	0.01	3.54	0.04	0.10
B00269322	3.995	N.A.	<5	<0.3	<0.01	4.20	<0.01	0.04
B00269323	2.860	N.A.	<5	<0.3	<0.01	4.36	<0.01	0.04
B00269324	4.530	N.A.	27	3.4	0.29	7.91	<0.01	0.25
*Rep B00269286				<0.3				
*Rep B00269298				10.9				
*Std SU_1B				6.2				
*Std OREAS621				70.8				
*Std AMIS0268				191				
*Std SU_1B				6.5				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00269286			<5					
*Std OXB130			129					
*Std OXH97			1310					
*Std OXJ111			2230					
*Std OXN117			8000					
*Blk BLANK			<5					
*Rep B00269275					<0.01	2.16	0.04	0.10
*Rep B00269307					0.04	5.80	0.10	0.11
*Rep B00269313					<0.01	5.31	0.21	0.50

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Final : VC152899 Order: PO# BMC15-01_24 B00269263-269324

Report File No.: 0000013651

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Std OREAS131B	0.02	5.80	1.91	3.10
*Std OREAS926	0.85	7.40	0.01	0.04
*Std OREAS131B	0.02	5.78	1.91	3.03
*Std OREAS926	0.84	7.51	0.01	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC152899 Order: PO# BMC15-01_24 B00269263-269324

Report File No.: 0000013651

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00269263	N.A.
B00269264	N.A.
B00269265	N.A.
B00269266	N.A.
B00269267	492
B00269268	N.A.
B00269269	N.A.
B00269270	N.A.
B00269271	N.A.
B00269272	N.A.
B00269273	N.A.
B00269274	N.A.
B00269275	N.A.
B00269276	N.A.
B00269277	N.A.
B00269278	N.A.
B00269279	N.A.
B00269280	N.A.
B00269281	N.A.
B00269282	N.A.
B00269283	N.A.
B00269284	N.A.
B00269285	N.A.
B00269286	N.A.
B00269287	N.A.
B00269288	N.A.
B00269289	N.A.
B00269290	N.A.
B00269291	N.A.
B00269292	N.A.
B00269293	N.A.
B00269294	N.A.
B00269295	N.A.
B00269296	N.A.
B00269297	N.A.
*Dup B00269297	N.A.
B00269298	N.A.
B00269299	N.A.
B00269300	N.A.
B00269301	N.A.

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Final : VC152899 Order: PO# BMC15-01_24 B00269263-269324

Report File No.: 0000013651

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00269302	N.A.
B00269303	N.A.
B00269304	N.A.
B00269305	N.A.
B00269306	N.A.
B00269307	N.A.
B00269308	N.A.
B00269309	N.A.
B00269310	N.A.
B00269311	N.A.
B00269312	N.A.
B00269313	N.A.
B00269314	N.A.
B00269315	N.A.
B00269316	N.A.
B00269317	N.A.
B00269318	N.A.
B00269319	N.A.
B00269320	N.A.
B00269321	N.A.
B00269322	N.A.
B00269323	N.A.
B00269324	N.A.

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
*Blk BLANK	<10
*Rep B00269267	511
*Std ME-1302	424

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Certificate of Analysis

Work Order : VC153009

[Report File No.: 0000013841]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

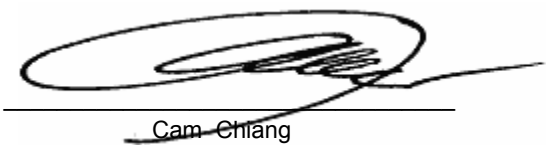
Date: Nov 20, 2015

P.O. No.	:	PO# BMC15-01_25 B00265101-174
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Oct 29, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.

Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153009 Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000013841

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265101	2.705	N.A.	<5	0.9	<0.01	3.05	<0.01	<0.01
B00265102	2.960	N.A.	<5	0.3	<0.01	2.75	<0.01	0.04
B00265103	2.750	N.A.	<5	1.2	<0.01	5.75	<0.01	<0.01
B00265104	2.860	N.A.	<5	0.4	<0.01	1.65	<0.01	<0.01
B00265105	2.835	N.A.	8	0.4	<0.01	2.04	<0.01	<0.01
B00265106	2.075	N.A.	11	1.2	<0.01	2.07	<0.01	<0.01
B00265107	3.935	N.A.	106	36.3	0.01	4.49	0.52	0.87
B00265108	3.925	N.A.	11	1.0	<0.01	1.68	<0.01	<0.01
B00265109	4.515	N.A.	1340	>300	0.22	33.0	4.87	8.72
B00265110	0.170	N.A.	1250	67.3	0.37	3.76	1.38	5.15
B00265111	0.170	N.A.	760	20.1	1.73	13.2	0.25	1.02
B00265112	4.225	N.A.	163	21.0	0.06	3.72	0.27	0.65
B00265113	3.465	N.A.	19	4.0	<0.01	2.18	0.03	0.01
B00265114	3.940	N.A.	7	1.4	<0.01	7.05	0.02	0.05
B00265115	2.075	N.A.	1010	274	0.15	21.5	3.81	5.86
B00265116	3.090	N.A.	3090	>300	1.52	30.2	4.83	8.59
B00265117	4.080	N.A.	986	257	0.73	31.3	3.31	8.05
B00265118	3.870	N.A.	25	4.5	<0.01	2.30	0.03	0.05
B00265119	4.645	N.A.	11	2.4	<0.01	1.47	0.02	0.04
B00265120	0.815	N.A.	<5	<0.3	<0.01	0.10	<0.01	<0.01
B00265121	4.450	N.A.	39	11.2	<0.01	2.27	0.10	0.02
B00265122	5.585	N.A.	<5	<0.3	<0.01	6.90	<0.01	0.01
B00265123	5.170	N.A.	7	<0.3	<0.01	6.61	<0.01	0.01
B00265124	5.245	N.A.	11	2.5	<0.01	6.86	0.04	0.02
B00265125	4.580	N.A.	1170	>300	0.81	30.7	6.17	9.08
B00265126	5.960	N.A.	2180	291	0.48	36.7	6.97	8.02
B00265127	6.165	N.A.	666	267	0.13	35.5	6.43	8.56
B00265128	5.130	N.A.	848	283	0.09	35.0	6.61	8.14
B00265129	5.815	N.A.	1200	>300	0.09	32.6	5.70	6.93
B00265130	0.170	N.A.	1250	67.2	0.37	3.75	1.36	5.18
B00265131	0.170	N.A.	784	20.0	1.71	13.2	0.25	1.03
B00265132	5.785	N.A.	1100	271	0.06	32.0	6.01	6.98
B00265133	5.860	N.A.	1130	255	0.42	35.6	6.28	7.92
B00265134	3.330	N.A.	1040	274	0.35	32.8	6.53	8.26
*Dup B00265134	N.A.	N.A.	981	273	0.36	33.0	6.61	8.42
B00265135	3.675	N.A.	1540	271	0.68	32.2	5.67	7.41
B00265136	2.895	N.A.	1150	234	0.01	33.3	4.61	5.36
B00265137	4.765	N.A.	1900	275	0.37	29.8	5.07	5.84
B00265138	3.775	N.A.	1960	>300	0.31	26.4	4.89	6.13
B00265139	3.485	N.A.	2530	>300	1.31	25.7	4.73	14.5

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Final : VC153009 Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000013841

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265140	0.775	N.A.	6	1.6	<0.01	0.16	0.03	0.05
B00265141	4.175	N.A.	1610	>300	0.64	26.7	5.40	13.7
B00265142	4.410	N.A.	1660	>300	0.38	28.0	5.01	8.53
B00265143	5.530	N.A.	1480	>300	0.07	28.4	5.36	9.20
B00265144	2.910	N.A.	1910	243	0.47	31.9	3.05	6.21
B00265145	2.925	N.A.	2180	>300	0.59	31.5	4.53	8.80
B00265146	2.690	N.A.	2320	>300	1.14	32.3	4.68	11.3
B00265147	3.155	N.A.	1940	>300	1.13	30.4	4.19	14.1
B00265148	5.465	N.A.	2080	>300	2.15	31.9	5.03	12.7
B00265149	5.605	96.1	1780	>300	1.09	30.5	4.08	10.7
B00265150	0.170	N.A.	1200	69.7	0.37	3.84	1.35	5.32
B00265151	0.170	N.A.	807	20.0	1.74	13.7	0.26	1.07
B00265152	3.305	N.A.	5310	277	5.10	32.7	2.10	8.29
B00265153	4.275	N.A.	1460	211	0.72	33.9	3.15	9.79
B00265154	4.575	N.A.	2720	247	1.13	32.7	3.12	10.3
B00265155	3.095	N.A.	2300	>300	1.25	25.0	5.01	17.7
B00265156	5.250	N.A.	3490	>300	3.10	25.9	4.64	15.2
B00265157	2.940	N.A.	1480	>300	1.03	23.0	6.45	18.0
B00265158	2.910	N.A.	2600	>300	1.06	25.6	5.57	12.1
B00265159	3.785	N.A.	3980	>300	6.54	24.1	3.36	9.56
B00265160	0.835	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00265161	3.380	N.A.	1710	210	1.33	32.3	2.84	8.37
B00265162	4.140	N.A.	1950	211	0.23	31.6	2.89	6.89
B00265163	3.015	N.A.	1670	49.4	0.23	28.7	0.43	3.86
B00265164	3.565	N.A.	1240	201	0.07	27.1	3.29	8.15
B00265165	4.050	N.A.	66	3.8	<0.01	7.04	0.05	0.09
B00265166	3.335	N.A.	34	4.1	<0.01	7.26	0.04	0.07
B00265167	4.230	N.A.	26	2.8	<0.01	7.36	0.04	0.07
B00265168	2.905	N.A.	25	3.5	<0.01	6.85	0.06	0.05
B00265169	3.560	N.A.	160	45.2	0.28	36.6	0.59	2.86
*Dup B00265169	N.A.	N.A.	168	44.9	0.29	37.1	0.57	2.79
B00265170	0.155	N.A.	851	45.8	0.46	20.0	0.30	1.12
B00265171	2.715	N.A.	174	68.4	1.01	46.3	0.39	8.30
B00265172	3.490	N.A.	8	2.2	0.03	3.80	0.02	0.29
B00265173	5.105	N.A.	6	0.7	0.01	5.14	<0.01	0.02
B00265174	5.220	94.9	<5	0.6	<0.01	2.91	<0.01	0.03
*Rep B00265118				4.7				
*Rep B00265152				284				
*Rep B00265174				0.5				
*Std SU_1B				6.4				

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Final : VC153009 Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000013841

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.0				
*Std AMIS0268		186				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00265121	38					
*Rep B00265149	1780					
*Std OXB130	105					
*Std OXH97	1290					
*Std OXN117	7230					
*Blk BLANK	<5					
*Rep B00265106			<0.01	2.01	<0.01	<0.01
*Rep B00265132			0.06	32.2	5.96	7.02
*Rep B00265151			1.77	13.8	0.26	1.06
*Rep B00265166			<0.01	7.32	0.04	0.07
*Std OREAS134A			0.13	12.1	12.7	17.4
*Std OREAS131B			0.02	5.79	1.89	3.02
*Std OREAS926			0.82	7.42	0.01	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Std OXH97	1280					

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Final : VC153009 Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000013841

Element	@Au	Ag
Method	GO_FAG303	GO_FAG313
Det.Lim.	0.5	10
Units	g/t	g/t
B00265101	N.A.	N.A.
B00265102	N.A.	N.A.
B00265103	N.A.	N.A.
B00265104	N.A.	N.A.
B00265105	N.A.	N.A.
B00265106	N.A.	N.A.
B00265107	N.A.	N.A.
B00265108	N.A.	N.A.
B00265109	N.A.	317
B00265110	N.A.	N.A.
B00265111	N.A.	N.A.
B00265112	N.A.	N.A.
B00265113	N.A.	N.A.
B00265114	N.A.	N.A.
B00265115	N.A.	264
B00265116	N.A.	330
B00265117	N.A.	262
B00265118	N.A.	N.A.
B00265119	N.A.	N.A.
B00265120	N.A.	N.A.
B00265121	N.A.	N.A.
B00265122	N.A.	N.A.
B00265123	N.A.	N.A.
B00265124	N.A.	N.A.
B00265125	N.A.	271
B00265126	N.A.	266
B00265127	N.A.	242
B00265128	N.A.	294
B00265129	N.A.	341
B00265130	N.A.	N.A.
B00265131	N.A.	N.A.
B00265132	N.A.	257
B00265133	N.A.	218
B00265134	N.A.	258
*Dup B00265134	N.A.	251
B00265135	N.A.	254
B00265136	N.A.	217
B00265137	N.A.	282
B00265138	N.A.	325
B00265139	N.A.	375

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Element	@Au	Ag
Method	GO_FAG303	GO_FAG313
Det.Lim.	0.5	10
Units	g/t	g/t
B00265140	N.A.	N.A.
B00265141	N.A.	433
B00265142	N.A.	400
B00265143	N.A.	348
B00265144	N.A.	222
B00265145	N.A.	329
B00265146	N.A.	355
B00265147	N.A.	309
B00265148	N.A.	421
B00265149	N.A.	322
B00265150	N.A.	N.A.
B00265151	N.A.	N.A.
B00265152	4.76	286
B00265153	N.A.	225
B00265154	N.A.	222
B00265155	N.A.	328
B00265156	N.A.	319
B00265157	N.A.	284
B00265158	N.A.	311
B00265159	N.A.	343
B00265160	N.A.	N.A.
B00265161	N.A.	207
B00265162	N.A.	241
B00265163	N.A.	N.A.
B00265164	N.A.	197
B00265165	N.A.	N.A.
B00265166	N.A.	N.A.
B00265167	N.A.	N.A.
B00265168	N.A.	N.A.
B00265169	N.A.	N.A.
*Dup B00265169	N.A.	N.A.
B00265170	N.A.	N.A.
B00265171	N.A.	N.A.
B00265172	N.A.	N.A.
B00265173	N.A.	N.A.
B00265174	N.A.	N.A.

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Final : VC153009 Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000013841

Element	@Au	Ag
Method	GO_FAG303	GO_FAG313
Det.Lim.	0.5	10
Units	g/t	g/t
*Std OXN117	7.90	
*Blk BLANK	<0.50	
*Rep B00265152		285
*Blk BLANK		<10
*Std AMIS0268		194

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Certificate of Analysis

Work Order : VC153009A

[Report File No.: 0000014324]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_25 B00265101-174
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153009A Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000014324

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00265101	<3	1.64	0.02	0.78	<1	N.A.
B00265102	<3	0.32	0.04	1.90	<1	N.A.
B00265103	<3	2.84	0.02	1.04	<1	N.A.
B00265104	5	0.70	0.02	1.17	<1	N.A.
B00265105	141	0.57	0.04	0.87	1	N.A.
B00265106	107	1.38	0.06	1.53	1	N.A.
B00265107	62	3.47	4.44	23.8	31	N.A.
B00265108	28	0.08	0.09	2.55	1	N.A.
B00265109	5430	1.92	51.1	348	84	N.A.
B00265110	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265111	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265112	90	0.44	3.45	18.7	7	N.A.
B00265113	365	0.11	0.27	10.1	2	N.A.
B00265114	472	<0.02	0.28	8.98	1	N.A.
B00265115	2870	15.4	21.6	204	228	N.A.
B00265116	>10000	30.3	28.9	490	507	1.30
B00265117	5260	20.0	38.5	266	785	N.A.
B00265118	340	0.87	0.36	5.11	15	N.A.
B00265119	327	0.47	0.25	7.23	3	N.A.
B00265120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265121	25	1.06	0.14	9.06	5	N.A.
B00265122	2120	<0.02	0.06	3.09	<1	N.A.
B00265123	695	<0.02	0.08	2.17	<1	N.A.
B00265124	67	0.20	0.17	8.19	1	N.A.
B00265125	677	18.3	13.7	356	281	N.A.
B00265126	3070	4.66	9.29	443	266	N.A.
B00265127	933	15.4	8.48	376	296	N.A.
B00265128	1790	9.31	8.40	420	262	N.A.
B00265129	1560	6.52	9.21	630	140	N.A.
B00265130	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265131	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265132	3630	6.43	9.52	459	180	N.A.
B00265133	897	10.1	6.98	341	285	N.A.
B00265134	624	8.21	7.83	372	240	N.A.
B00265135	560	8.96	8.45	386	215	N.A.
B00265136	3350	4.04	10.2	331	99	N.A.
B00265137	4690	1.43	11.7	497	69	N.A.
B00265138	5590	7.41	16.8	538	42	N.A.
B00265139	2120	131	33.2	748	292	N.A.
B00265140	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC153009A Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000014324

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00265141	1110	128	29.4	564	390	N.A.
B00265142	3150	55.1	26.4	866	290	N.A.
B00265143	4450	52.6	50.0	1070	273	N.A.
B00265144	3410	61.4	44.3	1140	310	N.A.
B00265145	5260	53.4	50.9	947	260	N.A.
B00265146	3380	78.1	46.9	902	258	N.A.
B00265147	3250	94.5	43.1	875	255	N.A.
B00265148	3630	85.3	30.5	948	247	N.A.
B00265149	3510	109	18.2	845	237	N.A.
B00265150	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265151	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265152	2990	109	14.7	382	395	N.A.
B00265153	3230	141	16.1	299	217	N.A.
B00265154	3250	60.4	23.1	879	7	N.A.
B00265155	1750	75.5	41.5	745	223	N.A.
B00265156	1780	88.3	29.1	1160	457	N.A.
B00265157	1110	76.7	32.4	654	263	N.A.
B00265158	5710	75.6	29.0	1190	363	N.A.
B00265159	3710	71.1	38.2	1340	328	N.A.
B00265160	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265161	6350	101	56.7	593	165	N.A.
B00265162	9040	13.1	68.2	654	6	N.A.
B00265163	9450	4.73	53.4	289	10	N.A.
B00265164	5640	11.7	80.2	382	16	N.A.
B00265165	146	0.32	1.26	13.6	<1	N.A.
B00265166	58	0.74	0.70	9.22	<1	N.A.
B00265167	97	0.29	0.60	8.86	<1	N.A.
B00265168	550	0.46	0.12	24.4	1	N.A.
B00265169	1120	64.0	4.51	15.8	194	N.A.
B00265170	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265171	31	153	6.48	18.0	355	N.A.
B00265172	6	4.25	0.22	11.4	8	N.A.
B00265173	28	1.01	0.09	5.19	2	N.A.
B00265174	3	0.82	0.08	7.21	2	N.A.
*Rep B00265132	3290	5.90	8.95	417	163	
*Rep B00265173	29	1.03	0.09	5.35	2	
*Std OREAS131B	N.A.	N.A.	N.A.	40.9	N.A.	
*Std OREAS934	N.A.	520	N.A.	N.A.	75	
*Std DS-1	6920	N.A.	84.0	N.A.	N.A.	
*Std OREAS131B	N.A.	N.A.	N.A.	43.2	N.A.	

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Final : VC153009A Order: PO# BMC15-01_25 B00265101-174

Report File No.: 0000014324

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
*Std OREAS934	N.A.	522	N.A.	N.A.	74	
*Std DS-1	6950	N.A.	80.7	N.A.	N.A.	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Blk BLANK						<0.01
*Rep B00265116						1.33
*Std MP1B						2.28

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Certificate of Analysis

Work Order : VC153010F

[Report File No.: 0000014212]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 06, 2015

P.O. No.	:	PO# BMC15-01_25 B00265175-268391
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Pb values have been updated. S data has been included and is informational only.
This Report cancels and supersedes the VC153010 Report No. 013839
dated Nov 20, 2015 issued by SGS Canada (Production Way).

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153010F Order: PO# BMC15-01_25 B00265175-268391

Report File No.: 0000014212

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265175	2.590	N.A.	89	2.7	0.02	2.14	0.02	0.22
B00265176	1.835	N.A.	<5	0.6	<0.01	1.53	<0.01	0.10
B00265177	1.425	N.A.	<5	0.9	<0.01	1.45	<0.01	0.04
B00265178	1.095	N.A.	1480	>300	4.11	30.4	3.95	11.6
B00265179	2.325	N.A.	1280	141	0.13	35.1	1.97	13.2
B00265180	0.865	N.A.	<5	<0.3	<0.01	0.18	<0.01	0.02
B00265181	2.555	N.A.	892	119	0.19	38.6	1.53	9.54
B00265182	2.330	N.A.	1530	144	1.06	40.0	1.71	9.56
B00265183	2.480	N.A.	1790	211	0.40	30.7	3.08	7.40
B00265184	2.840	N.A.	1960	165	0.44	36.0	1.80	6.93
B00265185	1.480	N.A.	711	134	0.08	36.4	1.91	13.6
B00265186	1.985	N.A.	891	241	0.01	34.1	4.63	10.1
B00265187	2.215	N.A.	828	166	0.32	35.9	3.59	10.3
B00265188	2.025	N.A.	2210	149	1.50	33.6	2.68	9.33
B00265189	1.830	N.A.	1030	152	0.72	19.3	3.61	6.92
B00265190	0.170	N.A.	1210	68.1	0.38	3.83	1.32	5.26
B00265191	0.165	N.A.	780	20.6	1.82	13.5	0.25	1.05
B00265192	1.935	N.A.	647	158	0.25	15.3	3.70	6.50
B00265193	1.865	N.A.	1440	287	0.42	28.2	5.13	8.56
B00265194	1.545	N.A.	3840	>300	0.17	28.0	6.74	9.90
B00265195	1.940	N.A.	1690	271	0.14	25.0	2.72	6.96
B00265196	2.365	N.A.	1740	243	0.19	32.0	1.91	6.34
B00265197	3.040	N.A.	1980	>300	0.26	27.8	2.62	7.05
B00265198	2.245	N.A.	13	3.7	<0.01	6.36	0.04	0.10
B00265199	2.725	N.A.	25	7.6	<0.01	6.63	0.06	0.16
B00265200	0.830	N.A.	11	4.9	<0.01	0.19	0.04	0.08
B00265201	3.015	N.A.	13	3.0	<0.01	6.00	0.04	0.02
B00268345	2.400	N.A.	<5	3.6	0.04	4.31	0.02	0.17
B00268346	1.340	N.A.	8	9.5	0.02	4.48	0.24	0.07
B00268347	1.235	N.A.	10	5.5	0.16	2.71	0.03	0.27
B00268348	0.925	N.A.	<5	2.9	0.05	2.73	0.10	0.65
B00268349	0.970	N.A.	<5	1.1	<0.01	2.00	0.02	0.39
B00268350	0.150	N.A.	856	43.3	0.47	19.7	0.30	1.15
B00268351	2.755	N.A.	171	2.8	<0.01	2.62	0.02	0.44
B00268352	2.915	N.A.	<5	0.5	<0.01	3.66	0.02	0.02
*Dup B00268352	N.A.	N.A.	<5	0.5	<0.01	3.62	0.02	0.02
B00268353	1.055	N.A.	15	6.9	<0.01	7.06	0.33	1.31
B00268354	2.990	N.A.	<5	<0.3	<0.01	4.09	<0.01	0.02
B00268355	2.930	N.A.	5	0.9	0.01	4.47	<0.01	0.01
B00268356	1.110	N.A.	18	1.2	0.03	12.8	0.01	0.70

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268357	2.885	N.A.	<5	<0.3	<0.01	2.67	<0.01	<0.01
B00268358	3.050	N.A.	<5	0.7	0.01	3.68	0.02	0.02
B00268359	1.605	N.A.	<5	9.0	0.04	7.07	0.40	1.02
B00268360	1.045	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268361	3.080	N.A.	<5	4.4	0.03	3.80	0.08	0.10
B00268362	2.430	N.A.	<5	1.9	0.01	3.52	0.06	0.39
B00268363	2.885	N.A.	5	15.9	<0.01	3.29	0.31	0.26
B00268364	2.965	N.A.	<5	1.1	0.01	3.38	<0.01	0.23
B00268365	2.055	N.A.	39	11.3	0.25	9.54	0.04	3.63
B00268366	2.230	N.A.	<5	1.1	0.02	5.17	<0.01	0.17
B00268367	1.635	96.5	60	18.0	0.40	6.94	0.05	4.37
B00268368	1.960	N.A.	<5	3.3	0.05	5.94	0.01	1.55
B00268369	2.000	N.A.	<5	1.7	0.06	3.32	0.01	1.94
B00268370	0.155	N.A.	815	44.2	0.45	19.5	0.30	1.15
B00268371	1.775	N.A.	<5	2.1	0.07	3.64	0.02	2.80
B00268372	1.730	N.A.	<5	3.0	0.05	3.17	0.08	1.11
B00268373	1.245	N.A.	<5	3.2	0.05	3.95	0.08	0.39
B00268374	1.120	N.A.	5	14.2	0.02	3.03	0.44	0.97
B00268375	1.995	N.A.	<5	1.6	<0.01	3.46	0.04	0.30
B00268376	2.795	N.A.	5	4.0	0.04	3.42	0.29	0.56
B00268377	2.755	N.A.	<5	1.0	<0.01	2.18	0.03	0.09
B00268378	1.985	N.A.	<5	2.2	0.03	3.37	0.06	0.48
B00268379	1.105	N.A.	<5	0.6	<0.01	2.79	<0.01	0.02
B00268380	1.020	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268381	1.220	N.A.	<5	2.3	0.05	3.05	0.06	0.50
B00268382	1.410	N.A.	<5	7.0	0.01	4.03	0.17	0.82
B00268383	1.325	N.A.	1590	192	0.94	33.9	3.15	9.39
B00268384	2.835	N.A.	1290	178	0.35	28.9	3.45	9.57
B00268385	2.625	N.A.	102	21.7	0.12	8.71	0.26	2.12
B00268386	2.615	N.A.	11	1.9	<0.01	1.62	0.02	0.04
B00268387	2.755	N.A.	10	1.2	<0.01	1.30	0.02	0.03
*Dup B00268387	N.A.	N.A.	<5	0.7	<0.01	1.19	<0.01	<0.01
B00268388	2.730	N.A.	62	7.3	0.02	2.23	0.07	0.17
B00268389	2.490	N.A.	249	24.3	0.08	3.48	0.22	0.57
B00268390	0.140	N.A.	859	44.4	0.45	19.5	0.30	1.15
B00268391	2.090	N.A.	10	0.9	<0.01	2.43	<0.01	0.01
*Rep B00265177				1.1				
*Rep B00268368				3.3				
*Rep B00268391				0.9				
*Std SU_1B				6.7				

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Final : VC153010F Order: PO# BMC15-01_25 B00265175-268391

Report File No.: 0000014212

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		67.1				
*Std AMIS0268		198				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268353	15					
*Rep B00268359	<5					
*Std OXC129	197					
*Std OXH97	1320					
*Std OXJ111	2040					
*Std OXN117	7990					
*Blk BLANK	<5					
*Rep B00265191			1.78	13.3	0.25	1.06
*Rep B00265195			0.13	25.1	2.68	6.92
*Rep B00268368			0.05	5.95	0.01	1.55
*Rep B00268379			<0.01	2.75	<0.01	0.02
*Std OREAS926			0.84	7.27	0.01	0.04
*Std OREAS134A			0.13	11.9	12.9	17.8
*Std OREAS131B			0.02	5.70	1.87	3.13
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153010F Order: PO# BMC15-01_25 B00265175-268391

Report File No.: 0000014212

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00265175	2.0	N.A.
B00265176	0.7	N.A.
B00265177	0.4	N.A.
B00265178	38.4	507
B00265179	46.2	N.A.
B00265180	0.2	N.A.
B00265181	43.8	N.A.
B00265182	39.2	N.A.
B00265183	38.5	238
B00265184	45.2	180
B00265185	42.1	N.A.
B00265186	45.5	236
B00265187	39.1	182
B00265188	32.0	N.A.
B00265189	17.8	148
B00265190	4.8	N.A.
B00265191	9.6	N.A.
B00265192	14.3	147
B00265193	29.0	312
B00265194	35.1	534
B00265195	31.9	275
B00265196	40.5	232
B00265197	37.3	342
B00265198	0.5	N.A.
B00265199	0.5	N.A.
B00265200	0.3	N.A.
B00265201	<0.1	N.A.
B00268345	1.7	N.A.
B00268346	0.8	N.A.
B00268347	0.4	N.A.
B00268348	1.3	N.A.
B00268349	0.7	N.A.
B00268350	18.9	N.A.
B00268351	2.5	N.A.
B00268352	1.2	N.A.
*Dup B00268352	1.3	N.A.
B00268353	4.9	N.A.
B00268354	0.9	N.A.
B00268355	1.9	N.A.
B00268356	8.5	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268357	0.2	N.A.
B00268358	1.1	N.A.
B00268359	4.6	N.A.
B00268360	<0.1	N.A.
B00268361	1.3	N.A.
B00268362	0.7	N.A.
B00268363	0.4	N.A.
B00268364	0.4	N.A.
B00268365	3.9	N.A.
B00268366	0.3	N.A.
B00268367	3.7	N.A.
B00268368	1.7	N.A.
B00268369	1.8	N.A.
B00268370	17.3	N.A.
B00268371	2.4	N.A.
B00268372	1.4	N.A.
B00268373	1.4	N.A.
B00268374	0.8	N.A.
B00268375	0.2	N.A.
B00268376	0.6	N.A.
B00268377	0.2	N.A.
B00268378	0.5	N.A.
B00268379	0.2	N.A.
B00268380	<0.1	N.A.
B00268381	0.9	N.A.
B00268382	0.7	N.A.
B00268383	40.0	174
B00268384	39.7	154
B00268385	8.1	N.A.
B00268386	1.2	N.A.
B00268387	0.8	N.A.
*Dup B00268387	0.7	N.A.
B00268388	1.8	N.A.
B00268389	3.2	N.A.
B00268390	17.9	N.A.
B00268391	1.6	N.A.

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Final : VC153010F Order: PO# BMC15-01_25 B00265175-268391

Report File No.: 0000014212

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Rep B00265186		224
*Std ME-1302		406
*Blk BLANK		<10
*Rep B00265191	9.4	
*Rep B00265195	30.9	
*Rep B00268368	1.7	
*Rep B00268379	0.2	
*Std OREAS926	1.2	
*Std OREAS134A	19.5	
*Std OREAS131B	4.8	
*Blk BLANK	<0.1	

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Certificate of Analysis

Work Order : VC153011

[Report File No.: 0000013840]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

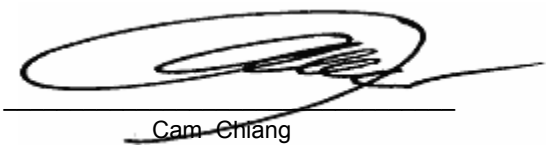
Date: Nov 20, 2015

P.O. No.	:	PO# BMC15-01_25 B00268392-269371
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Oct 29, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153011 Order: PO# BMC15-01_25 B00268392-269371

Report File No.: 0000013840

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268392	1.275	N.A.	772	271	0.11	18.5	6.05	10.9
B00268393	1.710	N.A.	21	2.8	<0.01	2.74	0.04	0.06
B00268394	1.260	N.A.	1060	66.4	2.08	12.9	0.22	0.98
B00268395	3.165	N.A.	1150	64.0	0.86	39.8	0.78	4.05
B00268396	2.340	N.A.	1920	106	0.55	37.1	0.92	5.97
B00268397	2.740	N.A.	2130	124	0.49	38.0	1.16	5.66
B00268398	2.925	N.A.	3080	198	0.79	34.1	1.53	7.71
B00268399	2.000	N.A.	1530	52.0	0.26	38.0	0.84	9.59
B00268400	1.105	N.A.	6	<0.3	<0.01	0.12	<0.01	0.02
B00268401	1.665	N.A.	2970	231	0.81	31.8	0.90	10.2
B00268402	3.035	N.A.	4760	>300	0.63	28.8	4.53	9.26
B00268403	2.170	N.A.	10	1.9	<0.01	2.66	0.01	0.08
B00268404	2.130	N.A.	8	1.4	<0.01	2.99	0.01	0.07
B00268405	1.860	N.A.	8	1.2	<0.01	2.10	<0.01	0.01
B00268406	4.600	N.A.	38	8.0	<0.01	2.62	0.11	0.15
B00268407	4.000	N.A.	53	16.1	<0.01	4.33	0.43	0.75
B00268408	3.295	N.A.	1890	81.7	2.31	27.0	0.30	2.15
B00268409	3.460	N.A.	1540	128	2.73	29.5	0.53	4.14
B00268410	0.170	N.A.	1210	64.9	0.37	3.79	1.36	5.21
B00268411	0.170	N.A.	829	19.8	1.77	13.4	0.25	1.07
B00268412	2.960	N.A.	1630	114	3.82	25.5	0.19	1.48
B00268413	4.180	N.A.	706	179	1.40	29.6	3.67	11.3
B00268414	2.440	N.A.	321	67.1	0.30	20.3	1.40	5.84
B00268415	3.620	N.A.	8	1.1	<0.01	2.28	<0.01	0.01
B00268416	3.240	N.A.	7	0.6	<0.01	1.83	<0.01	0.01
B00268417	2.695	N.A.	10	0.6	<0.01	1.78	<0.01	<0.01
B00268418	4.470	N.A.	68	25.2	0.02	8.07	0.40	0.28
B00269325	2.605	N.A.	<5	<0.3	<0.01	2.76	<0.01	<0.01
B00269326	2.255	N.A.	<5	0.4	<0.01	3.41	<0.01	<0.01
B00269327	2.275	N.A.	<5	<0.3	<0.01	2.06	<0.01	<0.01
B00269328	1.910	N.A.	<5	<0.3	0.02	4.35	<0.01	0.01
B00269329	1.870	N.A.	<5	0.4	0.02	4.22	<0.01	<0.01
B00269330	0.155	N.A.	837	43.7	0.46	19.5	0.31	1.13
B00269331	2.835	N.A.	8	2.1	0.02	2.29	0.04	0.38
B00269332	2.925	N.A.	<5	<0.3	<0.01	3.65	<0.01	0.01
*Dup B00269332	N.A.	N.A.	<5	<0.3	<0.01	3.52	<0.01	0.01
B00269333	1.970	N.A.	<5	0.4	<0.01	4.39	0.02	0.09
B00269334	2.975	N.A.	17	2.3	0.05	11.9	0.16	0.65
B00269335	2.855	N.A.	<5	<0.3	<0.01	3.03	<0.01	0.01
B00269336	2.985	N.A.	<5	1.1	<0.01	3.03	0.02	0.11

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Final : VC153011 Order: PO# BMC15-01_25 B00268392-269371

Report File No.: 0000013840

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269337	2.115	N.A.	<5	<0.3	0.01	5.47	<0.01	0.98
B00269338	1.780	N.A.	<5	<0.3	<0.01	3.56	<0.01	0.17
B00269339	3.035	N.A.	45	<0.3	<0.01	5.51	<0.01	0.15
B00269340	1.050	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269341	2.635	N.A.	6	<0.3	<0.01	3.09	<0.01	<0.01
B00269342	1.400	N.A.	10	0.5	0.12	10.2	<0.01	0.84
B00269343	2.060	N.A.	20	0.4	0.06	9.82	<0.01	0.20
B00269344	1.895	N.A.	<5	1.6	0.03	5.89	0.01	0.03
B00269345	2.030	N.A.	6	4.0	0.04	11.5	0.35	0.90
B00269346	2.310	N.A.	13	10.3	0.05	9.95	1.85	2.22
B00269347	2.105	94.4	15	3.7	0.09	10.2	0.21	2.23
B00269348	1.620	N.A.	55	17.5	0.33	18.9	1.05	4.99
B00269349	1.425	N.A.	5	2.6	<0.01	12.7	0.17	0.20
B00269350	0.170	N.A.	1200	65.4	0.36	3.78	1.36	5.33
B00269351	2.350	N.A.	21	5.8	0.12	10.1	0.42	1.47
B00269352	1.160	N.A.	9	4.0	0.04	10.7	0.23	1.09
B00269353	1.755	N.A.	42	10.5	0.18	12.8	0.56	6.06
B00269354	2.080	N.A.	262	20.4	0.57	8.06	0.29	3.50
B00269355	1.235	N.A.	8	3.0	0.04	8.64	0.13	0.66
B00269356	1.055	N.A.	7	2.7	0.03	8.08	0.13	1.91
B00269357	1.690	N.A.	16	5.5	0.20	10.5	0.07	0.53
B00269358	2.445	N.A.	5	6.1	0.01	6.83	0.07	0.63
B00269359	1.865	N.A.	19	19.3	0.05	26.8	0.03	0.03
B00269360	0.895	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00269361	1.295	N.A.	8	3.6	<0.01	5.57	0.03	0.07
B00269362	2.110	N.A.	15	9.0	0.02	11.9	0.03	0.02
B00269363	1.280	N.A.	8	5.6	<0.01	7.64	0.02	0.10
B00269364	1.195	N.A.	13	9.2	<0.01	10.5	0.06	0.03
B00269365	1.935	N.A.	8	1.3	<0.01	5.17	<0.01	0.01
B00269366	1.360	N.A.	42	11.0	0.04	14.1	0.10	0.09
B00269367	1.080	N.A.	25	6.9	0.02	5.72	0.15	0.09
*Dup B00269367	N.A.	N.A.	15	7.2	0.02	5.81	0.16	0.09
B00269368	1.975	N.A.	58	33.4	0.01	7.64	1.54	1.45
B00269369	2.490	N.A.	<5	13.8	<0.01	6.42	0.91	0.78
B00269370	0.155	N.A.	835	43.6	0.46	19.9	0.30	1.14
B00269371	2.120	85.2	11	2.2	0.01	5.63	0.05	0.38
*Rep B00268407				16.5				
*Rep B00269359				19.9				
*Rep B00269370				45.7				
*Std SU_1B				6.2				

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Final : VC153011 Order: PO# BMC15-01_25 B00268392-269371

Report File No.: 0000013840

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		67.2				
*Std AMIS0268		186				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268397	2220					
*Rep B00269351	22					
*Std OXB130	125					
*Std OXH97	1250					
*Std OXJ111	2120					
*Std OXN117	7670					
*Blk BLANK	<5					
*Rep B00268408			2.29	26.9	0.30	2.12
*Rep B00269341			<0.01	3.12	<0.01	<0.01
*Rep B00269342			0.12	10.1	<0.01	0.85
*Rep B00269361			<0.01	5.57	0.02	0.07
*Std OREAS134A			0.14	11.9	12.8	17.7
*Std OREAS131B			0.02	5.76	1.88	3.07
*Std OREAS926			0.82	7.40	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153011 Order: PO# BMC15-01_25 B00268392-269371

Report File No.: 0000013840

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00268392	283
B00268393	N.A.
B00268394	N.A.
B00268395	N.A.
B00268396	N.A.
B00268397	N.A.
B00268398	192
B00268399	N.A.
B00268400	N.A.
B00268401	219
B00268402	410
B00268403	N.A.
B00268404	N.A.
B00268405	N.A.
B00268406	N.A.
B00268407	N.A.
B00268408	N.A.
B00268409	N.A.
B00268410	N.A.
B00268411	N.A.
B00268412	N.A.
B00268413	181
B00268414	N.A.
B00268415	N.A.
B00268416	N.A.
B00268417	N.A.
B00268418	N.A.
B00269325	N.A.
B00269326	N.A.
B00269327	N.A.
B00269328	N.A.
B00269329	N.A.
B00269330	N.A.
B00269331	N.A.
B00269332	N.A.
*Dup B00269332	N.A.
B00269333	N.A.
B00269334	N.A.
B00269335	N.A.
B00269336	N.A.

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Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
B00269337	N.A.
B00269338	N.A.
B00269339	N.A.
B00269340	N.A.
B00269341	N.A.
B00269342	N.A.
B00269343	N.A.
B00269344	N.A.
B00269345	N.A.
B00269346	N.A.
B00269347	N.A.
B00269348	N.A.
B00269349	N.A.
B00269350	N.A.
B00269351	N.A.
B00269352	N.A.
B00269353	N.A.
B00269354	N.A.
B00269355	N.A.
B00269356	N.A.
B00269357	N.A.
B00269358	N.A.
B00269359	N.A.
B00269360	N.A.
B00269361	N.A.
B00269362	N.A.
B00269363	N.A.
B00269364	N.A.
B00269365	N.A.
B00269366	N.A.
B00269367	N.A.
*Dup B00269367	N.A.
B00269368	N.A.
B00269369	N.A.
B00269370	N.A.
B00269371	N.A.

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Final : VC153011 Order: PO# BMC15-01_25 B00268392-269371

Report File No.: 0000013840

Element	Ag
Method	GO_FAG313
Det.Lim.	10
Units	g/t
*Std ME-1302	415
*Blk BLANK	<10
*Rep B00268392	315

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Certificate of Analysis
Work Order : VC153012
[Report File No.: 0000013786]

Date: November 18, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_25 B00269372-269573
Project No.: KZK
Samples: 63
Received: Nov 2, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
63	G_LOG02	Pre-preparation processing, sorting, logging, boxing
63	G_WGH79	Weighing of samples and reporting of weights
59	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_SCR34	Wet Screening 75µm, Evaluation of Prep
7	G_WSH78	Barren wash between each sample - pulverizing stage
7	G_WSH79	Barren wash between each sample - crushing stage
63	GE_FAA313	@Au, FAS, AAS, 30g-5ml(Final Mode)
63	GE_AAS12E	2 g, 2-Acid digest, AAS finish
63	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269372	1.920	N.A.	<5	1.8	0.02	7.67	0.02	0.52
B00269373	1.570	N.A.	<5	3.4	0.03	7.60	0.07	1.36
B00269374	1.705	N.A.	<5	2.1	<0.01	6.36	0.02	0.42
B00269375	2.085	N.A.	<5	9.6	0.20	17.3	0.29	1.41
B00269376	2.215	N.A.	<5	2.0	0.02	7.59	0.03	0.20
B00269377	1.690	N.A.	<5	1.0	0.02	8.45	<0.01	0.12
B00269517	0.970	N.A.	7	1.6	<0.01	2.87	0.07	0.12
B00269518	1.895	N.A.	14	3.0	0.01	3.57	0.13	0.40
B00269519	0.660	N.A.	22	3.0	0.02	3.80	0.12	0.27
B00269520	0.920	N.A.	<5	0.3	<0.01	<0.05	<0.01	<0.01
B00269521	1.840	N.A.	<5	1.7	<0.01	2.64	0.05	0.23
B00269522	2.840	N.A.	<5	1.8	0.03	2.90	0.06	0.48
B00269523	3.370	N.A.	<5	1.2	0.03	2.65	0.03	0.48
B00269524	1.310	N.A.	35	10.1	0.03	4.61	0.44	5.84
B00269525	2.820	N.A.	<5	3.0	0.02	2.40	0.16	0.51
B00269526	2.160	N.A.	<5	0.8	<0.01	2.71	<0.01	0.01
B00269527	2.820	N.A.	31	5.9	0.10	6.71	0.03	0.31
B00269528	2.685	N.A.	26	6.2	0.11	6.92	0.05	0.38
B00269529	2.720	N.A.	707	143	0.23	26.2	5.49	13.5
B00269530	0.210	N.A.	1290	68.1	0.36	3.73	1.35	5.22
B00269531	0.205	N.A.	789	20.8	1.71	13.3	0.25	1.05
B00269532	1.920	N.A.	795	128	0.26	33.2	4.21	7.28
B00269533	0.700	N.A.	557	76.8	2.16	12.5	0.81	1.31
B00269534	2.955	N.A.	664	124	0.39	33.8	3.45	7.65
B00269535	0.505	N.A.	<5	0.9	<0.01	2.75	<0.01	0.01
B00269536	3.025	N.A.	<5	0.7	<0.01	2.01	<0.01	0.01
B00269537	1.475	N.A.	<5	1.0	<0.01	2.28	0.01	0.04
B00269538	2.720	N.A.	<5	0.7	<0.01	1.76	<0.01	<0.01
B00269539	2.945	N.A.	<5	0.8	<0.01	2.66	<0.01	0.04
B00269540	0.940	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269541	2.810	N.A.	<5	0.7	<0.01	2.49	0.01	0.02
B00269542	2.220	N.A.	<5	1.0	<0.01	2.50	0.04	0.06
B00269543	1.995	N.A.	18	5.0	0.02	5.39	0.50	0.62
B00269544	2.045	N.A.	<5	1.0	<0.01	3.70	0.05	0.05
B00269545	2.080	N.A.	<5	2.6	0.01	4.34	0.14	0.23
*Dup B00269545	N.A.	N.A.	5	2.6	0.01	4.60	0.14	0.22
B00269546	1.985	N.A.	14	8.2	0.05	7.13	0.39	1.47
B00269547	0.725	N.A.	1200	32.4	0.65	8.26	0.96	0.78
B00269548	2.805	N.A.	<5	0.9	0.03	2.51	<0.01	0.07
B00269549	2.580	N.A.	<5	0.7	<0.01	2.69	<0.01	0.01

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Final : VC153012 Order: PO# BMC15-01_25 B00269372-269573

Report File No.: 0000013786

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269550	0.155	N.A.	866	43.9	0.45	19.4	0.30	1.09
B00269551	2.060	N.A.	<5	1.1	0.01	3.03	<0.01	0.03
B00269552	2.035	N.A.	107	25.3	0.06	11.3	0.66	7.60
B00269553	2.205	N.A.	13	2.8	0.02	12.5	0.05	1.09
B00269554	1.975	N.A.	<5	3.4	<0.01	4.29	0.13	0.33
B00269555	1.500	N.A.	18	12.2	0.02	4.90	0.27	1.78
B00269556	1.255	N.A.	<5	4.9	0.01	2.57	0.17	0.24
B00269557	1.875	N.A.	<5	5.4	0.03	2.36	0.10	0.47
B00269558	1.005	N.A.	31	3.2	0.02	3.42	0.12	1.58
B00269559	1.375	85.3	12	1.9	0.01	4.62	0.03	1.70
B00269560	1.180	N.A.	<5	<0.3	<0.01	0.11	<0.01	0.01
B00269561	1.915	N.A.	<5	0.5	<0.01	2.31	<0.01	0.01
B00269562	3.125	N.A.	<5	0.5	<0.01	1.91	<0.01	0.01
B00269563	3.010	N.A.	<5	0.4	<0.01	2.62	<0.01	0.02
B00269564	3.185	N.A.	<5	0.4	<0.01	2.13	<0.01	0.01
B00269565	1.090	N.A.	48	10.0	0.43	8.96	0.06	0.19
B00269566	1.500	N.A.	149	4.6	0.17	11.4	0.04	0.07
B00269567	2.120	N.A.	<5	<0.3	<0.01	5.76	<0.01	0.02
B00269568	2.045	N.A.	<5	0.3	0.01	6.49	<0.01	0.02
B00269569	3.235	N.A.	<5	0.8	0.02	6.89	<0.01	0.02
B00269570	0.155	N.A.	856	43.8	0.46	19.7	0.30	1.11
B00269571	2.345	N.A.	163	37.8	0.44	17.0	0.40	2.07
B00269572	2.190	N.A.	76	22.4	0.48	11.3	0.34	2.35
B00269573	2.940	N.A.	6	0.6	<0.01	1.34	<0.01	0.01
*Rep B00269539				0.8				
*Rep B00269563				0.4				
*Std SU_1B				6.6				
*Std OREAS621				69.4				
*Std AMIS0268				189				
*Std SU_1B				6.4				
*Blk BLANK				0.3				
*Blk BLANK				<0.3				
*Rep B00269526			<5					
*Rep B00269556			<5					
*Std OXC129			205					
*Std OXH97			1320					
*Std OXJ111			2240					
*Std OXN117			7830					
*Blk BLANK			<5					
*Rep B00269520					<0.01	0.05	<0.01	<0.01

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Final : VC153012 Order: PO# BMC15-01_25 B00269372-269573

Report File No.: 0000013786

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00269563	<0.01	2.58	<0.01	0.01
*Std OREAS134A	0.13	12.0	12.8	17.6
*Std OREAS131B	0.02	5.75	1.87	3.03
*Std OREAS926	0.82	7.31	<0.01	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Certificate of Analysis
Work Order : VC153025
[Report File No.: 0000013810]

Date: November 19, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO#2015-13273
Project No.: KZK
Samples: 50
Received: Nov 3, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
50	G_LOG02	Pre-preparation processing, sorting, logging, boxing
50	G_PHY03V	Specific Gravity - Pycnometer
50	GC_CSA06V	Total Sulfur, Leco Method

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Comments:

G_PHY03V analysis was performed by SGS Sudbury.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153025 Order: PO#2015-13273

Report File No.: 0000013810

Element	Sg	S
Method	G_PHY03V	GC_CSA06V
Det.Lim.	0.01	0.005
Units	NOUNIT	%
B00264023	4.40	37.9
B00264026	4.84	37.6
B00264027	4.32	36.5
B00264031	4.12	32.9
B00264032	4.23	28.8
B00264042	4.18	30.5
B00264043	4.08	31.2
B00264047	4.30	33.8
B00264061	4.51	40.0
B00264063	4.42	35.2
B00264065	4.53	34.5
B00264067	3.10	8.62
B00264561	4.22	32.0
B00264575	4.40	40.7
B00264579	4.30	43.3
B00264582	4.34	36.2
B00264584	4.02	32.9
B00264586	4.11	31.7
B00264589	3.26	9.78
B00265024	4.52	44.4
B00265026	3.80	26.6
B00265039	4.46	46.1
B00265043	4.59	39.7
B00265047	4.46	44.3
B00265052	4.60	42.0
B00266501	4.60	39.6
B00268503	4.42	39.0
B00268517	4.43	36.5
B00264731	2.99	3.47
B00264733	3.85	24.0
B00264734	3.85	30.9
B00268608	4.51	40.1
B00268612	4.23	33.4
B00268634	3.46	19.0
B00266626	4.60	37.4
B00266635	4.48	39.2
B00266638	4.39	43.3
B00266652	4.44	43.5
B00266653	4.55	46.2
B00266659	2.91	2.90

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Final : VC153025 Order: PO#2015-13273

Report File No.: 0000013810

Element	Sg	S
Method	G_PHY03V	GC_CSA06V
Det.Lim.	0.01	0.005
Units	NOUNIT	%
B00266661	3.57	18.5
B00266664	4.54	42.0
B00266666	4.37	39.3
B00266667	4.46	40.2
B00264767	2.99	1.48
B00264776	4.45	40.1
B00264778	3.35	14.5
B00264781	3.14	7.56
B00264783	3.30	12.4
B00264785	3.72	25.9
*Rep B00264067	3.13	
*Rep B00265039	4.47	
*Rep B00268608	4.50	
*Rep B00264778	3.39	
*Rep B00264026		38.6
*Rep B00264584		32.9
*Rep B00266635		39.5
*Rep B00264783		12.5
*Std HCC-1		33.9
*Std GTS-2A		0.337
*Std HCC-1		34.2
*Std GTS-2A		0.359
*Blk BLANK		<0.005
*Blk BLANK		0.007
*Std AMIS0281	3.29	
*Std AMIS0282	2.80	

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Certificate of Analysis

Work Order : VC153089

[Report File No.: 0000014115]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO#:BMC15-01_26 B00233101-125,265202-250
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153089 Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014115

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233101	4.635	N.A.	9	<0.3	<0.01	6.40	<0.01	0.02
B00233102	5.575	N.A.	753	128	0.07	35.0	5.75	8.45
B00233103	3.690	N.A.	1250	146	0.73	39.2	6.94	9.31
B00233104	4.230	N.A.	1930	134	0.21	31.3	4.99	6.78
B00233105	5.670	N.A.	2950	123	0.28	29.4	4.16	5.90
B00233106	5.685	N.A.	4030	133	0.31	30.2	4.71	6.24
B00233107	5.975	N.A.	2680	166	0.89	32.1	4.88	7.04
B00233108	6.255	N.A.	2150	151	0.46	32.8	4.68	7.96
B00233109	4.890	N.A.	1890	120	0.11	30.0	3.67	5.84
B00233110	0.170	N.A.	1210	67.0	0.36	3.77	1.34	5.24
B00233111	0.170	N.A.	745	19.7	1.74	13.6	0.25	1.06
B00233112	4.950	N.A.	2220	138	0.39	28.3	3.67	6.17
B00233113	4.915	N.A.	1530	142	0.11	30.8	4.31	6.30
B00233114	3.840	N.A.	3540	270	0.68	26.7	4.46	6.04
B00233115	1.745	N.A.	2780	136	0.60	1.58	0.15	0.23
B00233116	6.140	N.A.	14	0.5	<0.01	2.62	<0.01	<0.01
B00233117	4.430	N.A.	8	0.8	<0.01	1.91	<0.01	<0.01
B00233118	2.680	N.A.	7	0.5	<0.01	2.06	<0.01	<0.01
B00233119	3.825	N.A.	11	0.8	<0.01	2.64	<0.01	<0.01
B00233120	1.485	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233121	5.485	N.A.	8	0.9	<0.01	6.48	0.01	0.03
B00233122	5.305	N.A.	14	6.8	0.01	6.88	0.16	0.04
B00233123	2.360	N.A.	75	20.0	0.21	10.5	0.50	2.38
B00233124	4.990	N.A.	8	1.8	0.03	3.03	0.02	0.02
B00233125	5.290	N.A.	6	0.7	<0.01	2.55	0.01	<0.01
B00265202	5.085	N.A.	77	5.3	0.02	1.45	<0.01	<0.01
B00265203	4.820	N.A.	84	3.9	0.02	1.72	<0.01	<0.01
B00265204	2.580	N.A.	18	1.2	<0.01	1.58	<0.01	0.03
B00265205	2.700	N.A.	693	149	0.95	17.8	1.77	3.56
B00265206	2.905	N.A.	1700	135	0.34	24.6	1.27	3.51
B00265207	6.755	N.A.	2170	264	0.52	32.1	2.22	6.74
B00265208	3.995	N.A.	1760	233	0.27	32.9	2.43	8.10
B00265209	3.930	N.A.	1290	155	0.38	31.1	2.09	5.83
B00265210	0.155	N.A.	817	45.3	0.46	19.8	0.31	1.14
B00265211	3.355	N.A.	1770	204	2.49	23.0	2.64	4.38
*Dup B00265211	N.A.	N.A.	2040	183	2.31	23.1	2.57	4.22
B00265212	3.340	N.A.	2560	178	0.91	24.0	2.54	5.97
B00265213	5.090	N.A.	2710	280	0.97	32.5	2.44	8.85
B00265214	2.515	N.A.	1750	195	0.34	32.4	2.72	11.3
B00265215	7.375	N.A.	3020	>300	0.84	33.0	2.21	8.89

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Final : VC153089 Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014115

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265216	4.030	N.A.	2360	271	0.57	32.3	2.94	9.11
B00265217	4.375	N.A.	2760	>300	0.79	31.5	2.35	7.24
B00265218	2.885	N.A.	4770	>300	1.35	28.1	2.13	6.14
B00265219	3.860	N.A.	2850	210	0.49	33.5	2.14	7.17
B00265220	0.650	N.A.	8	1.0	<0.01	0.08	<0.01	0.02
B00265221	4.330	N.A.	3100	281	0.61	30.0	3.78	9.78
B00265222	4.200	N.A.	1700	>300	0.28	28.7	7.01	16.9
B00265223	6.190	N.A.	1400	228	0.31	29.2	3.46	14.1
B00265224	5.670	N.A.	1510	300	0.08	29.8	6.52	14.1
B00265225	4.455	N.A.	849	73.5	0.10	35.0	1.05	5.28
B00265226	4.400	96.5	1330	119	0.24	33.6	1.24	6.41
B00265227	4.330	N.A.	19	2.5	<0.01	2.39	0.01	0.02
B00265228	5.820	N.A.	19	2.0	<0.01	2.31	0.02	0.04
B00265229	4.845	N.A.	21	1.7	<0.01	2.03	0.01	0.04
B00265230	0.155	N.A.	830	44.2	0.46	19.6	0.31	1.13
B00265231	5.045	N.A.	11	0.9	<0.01	2.30	<0.01	<0.01
B00265232	3.715	N.A.	20	1.9	<0.01	2.46	0.02	0.02
B00265233	4.045	N.A.	54	20.1	0.04	2.46	0.13	0.13
B00265234	4.215	N.A.	347	45.2	0.16	30.1	0.42	8.64
B00265235	5.095	N.A.	15	2.8	<0.01	7.70	0.03	0.04
B00265236	5.585	N.A.	10	0.5	<0.01	7.80	<0.01	0.03
B00265237	5.915	N.A.	8	0.5	<0.01	7.17	<0.01	0.05
B00265238	5.310	N.A.	7	0.4	<0.01	7.22	<0.01	0.01
B00265239	5.805	N.A.	7	0.6	<0.01	7.02	<0.01	0.01
B00265240	0.915	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00265241	5.595	N.A.	20	2.1	0.03	6.64	0.03	0.03
B00265242	3.145	N.A.	641	154	0.04	31.3	4.89	9.29
B00265243	5.280	N.A.	1080	154	0.44	33.4	6.21	9.79
B00265244	4.590	N.A.	900	173	0.42	36.1	6.42	10.0
B00265245	4.425	N.A.	698	162	0.16	33.3	5.09	7.87
B00265246	4.290	N.A.	1060	263	0.21	32.3	5.34	9.42
*Dup B00265246	N.A.	N.A.	992	222	0.22	32.1	5.52	9.41
B00265247	4.640	N.A.	1370	269	0.12	29.5	5.11	10.8
B00265248	3.310	N.A.	2190	>300	0.34	16.3	3.44	4.72
B00265249	6.620	N.A.	2320	>300	0.15	16.3	3.10	3.93
B00265250	0.155	N.A.	825	44.7	0.47	19.8	0.31	1.15
*Rep B00233115				137				
*Rep B00265234				48.2				
*Rep B00265250				43.1				
*Std SU_1B				6.5				

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Final : VC153089 Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014115

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		69.2				
*Std AMIS0268		187				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00265205	629					
*Rep B00265248	2100					
*Std OXB130	122					
*Std OXH97	1250					
*Std OXJ111	2120					
*Std OXN117	7430					
*Blk BLANK	<5					
*Rep B00233112			0.39	28.1	3.68	6.28
*Rep B00265210			0.46	19.9	0.31	1.15
*Rep B00265226			0.23	33.4	1.20	6.47
*Rep B00265237			<0.01	7.25	<0.01	0.05
*Std OREAS134A			0.13	12.0	12.6	17.2
*Std OREAS131B			0.02	5.80	1.88	3.01
*Std OREAS131B			0.02	5.83	1.93	3.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153089 Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014115

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00233101	0.2	N.A.
B00233102	40.6	N.A.
B00233103	34.0	N.A.
B00233104	37.4	N.A.
B00233105	32.7	N.A.
B00233106	32.2	N.A.
B00233107	39.3	147
B00233108	38.8	143
B00233109	34.1	N.A.
B00233110	4.5	N.A.
B00233111	8.9	N.A.
B00233112	31.1	N.A.
B00233113	32.7	N.A.
B00233114	29.3	273
B00233115	1.2	N.A.
B00233116	0.6	N.A.
B00233117	0.3	N.A.
B00233118	0.5	N.A.
B00233119	1.4	N.A.
B00233120	0.1	N.A.
B00233121	<0.1	N.A.
B00233122	<0.1	N.A.
B00233123	5.1	N.A.
B00233124	1.3	N.A.
B00233125	0.9	N.A.
B00265202	0.3	N.A.
B00265203	0.4	N.A.
B00265204	0.5	N.A.
B00265205	21.0	N.A.
B00265206	25.8	N.A.
B00265207	38.4	249
B00265208	41.8	222
B00265209	35.0	141
B00265210	17.8	N.A.
B00265211	23.0	222
*Dup B00265211	23.4	183
B00265212	27.8	169
B00265213	41.0	281
B00265214	40.4	201
B00265215	40.1	343

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Report File No.: 0000014115

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00265216	40.3	318
B00265217	39.9	418
B00265218	33.5	558
B00265219	41.6	240
B00265220	0.1	N.A.
B00265221	38.5	307
B00265222	39.5	296
B00265223	39.5	229
B00265224	41.9	303
B00265225	42.7	N.A.
B00265226	42.5	N.A.
B00265227	1.0	N.A.
B00265228	1.0	N.A.
B00265229	1.2	N.A.
B00265230	17.6	N.A.
B00265231	1.0	N.A.
B00265232	1.2	N.A.
B00265233	1.2	N.A.
B00265234	30.0	N.A.
B00265235	0.2	N.A.
B00265236	<0.1	N.A.
B00265237	<0.1	N.A.
B00265238	<0.1	N.A.
B00265239	<0.1	N.A.
B00265240	<0.1	N.A.
B00265241	0.3	N.A.
B00265242	38.3	137
B00265243	34.6	135
B00265244	31.9	179
B00265245	37.8	158
B00265246	40.6	228
*Dup B00265246	39.0	227
B00265247	35.7	254
B00265248	26.9	303
B00265249	24.3	396
B00265250	16.0	N.A.

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Report File No.: 0000014115

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Blk BLANK		<10
*Rep B00233112	30.3	
*Rep B00265210	18.9	
*Rep B00265226	39.9	
*Rep B00265237	<0.1	
*Std OREAS134A	18.9	
*Std OREAS131B	5.0	
*Std OREAS131B	5.0	
*Blk BLANK	<0.1	
*Rep B00265218		541
*Std AMIS0268		196
*Std ME-1302		408

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Certificate of Analysis

Work Order : VC153089A

[Report File No.: 0000014326]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO#:BMC15-01_26 B00233101-125,265202-250
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153089A Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014326

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00233101	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233102	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233103	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233104	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233105	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233106	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233107	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233108	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233109	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233110	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233111	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233112	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233113	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233114	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233115	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233116	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233117	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233118	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233119	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233121	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233122	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233123	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233124	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00233125	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265202	70	0.83	0.23	51.6	1	N.A.
B00265203	98	0.99	0.28	36.9	1	N.A.
B00265204	419	0.42	0.30	2.80	2	N.A.
B00265205	3190	40.2	17.9	68.2	149	N.A.
B00265206	>10000	96.5	23.0	124	478	0.99
B00265207	>10000	47.1	83.0	713	>1000	1.38
B00265208	3630	34.4	99.6	733	>1000	N.A.
B00265209	>10000	80.6	78.4	170	>1000	1.32
B00265210	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265211	5080	71.6	51.4	73.7	174	N.A.
B00265212	>10000	90.4	66.6	297	>1000	2.69
B00265213	6530	78.4	92.9	795	>1000	N.A.
B00265214	3980	57.9	116	389	>1000	N.A.
B00265215	5480	116	92.4	1020	>1000	N.A.
B00265216	5130	50.9	91.1	781	>1000	N.A.

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Final : VC153089A Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014326

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00265217	5380	22.2	76.6	1210	>1000	N.A.
B00265218	7680	21.0	76.5	2310	>1000	N.A.
B00265219	5140	84.1	68.5	659	591	N.A.
B00265220	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265221	6850	21.6	72.9	923	176	N.A.
B00265222	2570	29.2	77.7	408	136	N.A.
B00265223	3510	39.3	50.2	468	248	N.A.
B00265224	3580	17.3	46.5	484	92	N.A.
B00265225	1350	20.9	24.1	108	120	N.A.
B00265226	4430	36.2	19.2	169	247	N.A.
B00265227	129	0.57	0.05	6.04	2	N.A.
B00265228	307	0.68	0.15	4.22	2	N.A.
B00265229	217	0.56	0.20	4.33	2	N.A.
B00265230	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265231	189	0.39	0.02	2.20	<1	N.A.
B00265232	12	0.56	0.06	2.46	2	N.A.
B00265233	12	1.93	0.40	14.1	7	N.A.
B00265234	181	15.6	20.9	24.0	76	N.A.
B00265235	41	0.22	0.06	3.58	1	N.A.
B00265236	59	0.02	<0.01	1.99	<1	N.A.
B00265237	48	0.05	0.05	2.05	<1	N.A.
B00265238	390	0.03	<0.01	1.67	<1	N.A.
B00265239	83	0.03	0.02	1.52	<1	N.A.
B00265240	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265241	97	0.07	0.19	4.85	1	N.A.
B00265242	443	22.1	12.3	153	131	N.A.
B00265243	6580	19.8	8.83	288	106	N.A.
B00265244	>10000	15.2	8.59	205	152	1.12
B00265245	1930	12.1	7.92	238	123	N.A.
B00265246	3940	39.0	11.4	258	211	N.A.
B00265247	7570	66.5	20.5	439	223	N.A.
B00265248	3890	2.02	24.3	1180	20	N.A.
B00265249	4370	2.23	31.5	1250	20	N.A.
B00265250	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00265215	5530	120	93.7	1040	>1000	
*Rep B00265244	>10000	14.8	8.46	197	152	
*Rep B00265249	4280	2.19	31.1	1240	19	
*Std OREAS131B	N.A.	N.A.	N.A.	39.1	N.A.	
*Std OREAS934	N.A.	494	N.A.	N.A.	75	
*Std DS-1	6910	N.A.	84.7	N.A.	N.A.	

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Final : VC153089A Order: PO#:BMC15-01_26 B00233101-125,265202-250

Report File No.: 0000014326

Element	@As	@Bi	@Hg	@Sb	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	3	0.02	0.01	0.05	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
*Std OREAS131B	N.A.	N.A.	N.A.	41.1	N.A.	
*Std OREAS934	N.A.	497	N.A.	N.A.	76	
*Std DS-1	6930	N.A.	82.0	N.A.	N.A.	
*Blk BLANK	<3	<0.02	<0.01	<0.05	<1	
*Blk BLANK	<3	<0.02	<0.01	0.07	<1	
*Blk BLANK						<0.01
*Rep B00265212						2.70
*Std MP1B						2.28

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Certificate of Analysis

Work Order : VC153090

[Report File No.: 0000014116]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO#:BMC15-01_26 B00265251-283,268419-459
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265251	5.225	N.A.	1820	>300	0.13	17.7	2.74	3.69
B00265252	5.735	N.A.	2400	>300	0.25	18.9	2.88	4.19
B00265253	6.025	N.A.	2220	>300	0.22	15.9	2.42	3.26
B00265254	6.070	N.A.	2820	>300	0.28	20.8	3.38	4.69
B00265255	6.345	N.A.	2320	>300	0.27	24.5	3.85	5.50
B00265256	4.670	N.A.	5860	>300	0.47	24.7	4.81	5.93
B00265257	5.220	N.A.	2590	>300	0.20	28.5	5.47	10.9
B00265258	4.990	N.A.	3750	246	0.25	30.9	2.35	6.79
B00265259	5.665	N.A.	4480	>300	0.46	27.9	3.16	7.36
B00265260	0.865	N.A.	8	0.7	<0.01	0.11	0.02	0.02
B00265261	3.980	N.A.	1600	228	0.04	32.4	2.91	5.05
B00265262	5.440	N.A.	4420	248	0.31	30.8	2.20	5.17
B00265263	6.115	N.A.	1640	272	0.10	27.4	3.06	5.27
B00265264	3.680	N.A.	914	119	0.17	2.63	0.07	0.11
B00265265	2.225	N.A.	<5	0.4	<0.01	2.19	<0.01	0.02
B00265266	2.820	N.A.	14	3.0	<0.01	1.81	0.03	0.04
B00265267	4.050	N.A.	7	1.1	<0.01	1.80	<0.01	<0.01
B00265268	3.645	N.A.	<5	0.4	<0.01	1.41	<0.01	<0.01
B00265269	3.850	N.A.	20	2.8	<0.01	2.05	0.02	0.02
B00265270	0.155	N.A.	885	44.5	0.47	20.3	0.31	1.12
B00265271	1.180	N.A.	>10000	>300	5.57	3.30	0.48	0.66
B00265272	5.025	N.A.	253	33.5	0.02	2.73	0.24	0.44
B00265273	5.155	N.A.	3010	>300	0.25	24.2	7.27	10.9
B00265274	4.010	N.A.	2080	>300	0.11	24.3	6.78	10.1
B00265275	2.945	N.A.	2990	>300	0.06	19.9	6.64	11.8
B00265276	5.430	N.A.	1960	>300	0.43	30.8	5.97	6.50
B00265277	4.295	N.A.	1300	>300	0.02	27.9	4.68	9.13
B00265278	3.585	N.A.	757	193	0.10	25.3	2.32	6.78
B00265279	3.610	N.A.	2720	133	5.43	42.0	0.12	8.60
B00265280	0.820	N.A.	8	2.8	<0.01	0.24	0.04	0.07
B00265281	5.130	N.A.	27	1.3	0.03	3.11	<0.01	0.02
B00265282	4.295	N.A.	<5	0.6	<0.01	3.26	<0.01	0.02
B00265283	5.255	N.A.	<5	0.6	<0.01	2.96	<0.01	0.03
B00268419	3.925	N.A.	6	0.4	<0.01	2.94	<0.01	0.01
*Dup B00268419	N.A.	N.A.	8	0.5	<0.01	2.70	<0.01	0.01
B00268420	1.930	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00268421	4.815	N.A.	10	<0.3	<0.01	3.60	<0.01	0.01
B00268422	4.585	N.A.	5	<0.3	<0.01	3.15	<0.01	0.01
B00268423	3.655	N.A.	35	1.4	<0.01	14.3	<0.01	0.02
B00268424	2.325	N.A.	24	0.8	<0.01	8.98	0.01	0.01

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268425	2.060	N.A.	32	0.7	<0.01	8.45	0.01	<0.01
B00268426	1.945	N.A.	39	1.5	<0.01	11.2	0.02	<0.01
B00268427	3.350	N.A.	10	2.0	<0.01	4.56	0.03	0.16
B00268428	3.070	N.A.	40	2.1	<0.01	11.4	0.02	0.03
B00268429	5.725	N.A.	25	3.9	0.01	5.47	0.03	0.13
B00268430	0.155	N.A.	832	47.1	0.45	19.3	0.29	1.11
B00268431	4.175	N.A.	10	1.3	<0.01	1.74	<0.01	<0.01
B00268432	5.555	N.A.	8	1.3	<0.01	1.60	<0.01	<0.01
B00268433	3.425	N.A.	47	6.7	<0.01	1.91	0.03	0.02
B00268434	5.225	N.A.	33	8.4	0.02	2.63	0.03	0.18
B00268435	5.335	95.7	1080	152	0.09	20.8	1.08	3.46
B00268436	5.430	N.A.	135	20.0	0.03	2.24	0.03	0.10
B00268437	4.320	N.A.	32	3.7	<0.01	2.77	0.02	0.07
B00268438	3.880	N.A.	11	0.9	<0.01	2.59	<0.01	<0.01
B00268439	5.430	N.A.	20	3.4	<0.01	2.23	0.03	0.05
B00268440	1.615	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00268441	3.230	N.A.	473	128	0.03	27.8	1.69	8.47
B00268442	2.455	N.A.	79	5.6	<0.01	2.50	0.06	0.11
B00268443	1.745	N.A.	5240	>300	0.48	22.1	3.91	6.34
B00268444	5.640	N.A.	7	<0.3	<0.01	7.18	<0.01	0.02
B00268445	5.550	N.A.	<5	<0.3	<0.01	6.44	<0.01	<0.01
B00268446	6.120	N.A.	17	0.7	<0.01	7.19	<0.01	0.02
B00268447	6.440	N.A.	11	1.0	<0.01	6.82	<0.01	0.01
B00268448	5.790	N.A.	16	2.0	<0.01	6.73	0.01	0.02
B00268449	6.295	N.A.	51	2.8	0.01	6.21	0.02	0.02
B00268450	0.170	N.A.	1240	67.7	0.38	3.77	1.38	5.23
B00268451	0.170	N.A.	757	20.7	1.75	13.1	0.25	1.05
B00268452	4.460	N.A.	1720	>300	0.34	30.1	6.66	8.35
B00268453	2.305	N.A.	2480	>300	0.27	25.7	5.39	7.63
*Dup B00268453	N.A.	N.A.	2190	>300	0.27	25.3	5.20	7.54
B00268454	4.555	N.A.	1210	194	0.12	11.9	1.70	3.20
B00268455	5.085	N.A.	1870	171	0.16	8.69	1.16	2.40
B00268456	5.400	N.A.	5370	>300	0.48	24.3	4.60	10.3
B00268457	4.875	N.A.	1670	296	0.95	25.3	3.72	8.59
B00268458	4.785	N.A.	2720	>300	1.38	25.0	3.94	9.39
B00268459	4.240	N.A.	1710	>300	0.19	26.4	4.56	9.09
*Rep B00265254				>300				
*Rep B00268434				9.5				
*Rep B00268458				>300				
*Std SU_1B				6.4				

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		66.7				
*Std AMIS0268		194				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00265283	<5					
*Rep B00268447	8					
*Std OXB130	124					
*Std OXH97	1290					
*Std OXJ111	2170					
*Std OXN117	7820					
*Blk BLANK	<5					
*Rep B00265273			0.25	24.3	7.35	10.7
*Rep B00268420			<0.01	0.08	<0.01	<0.01
*Rep B00268435			0.10	20.6	1.09	3.44
*Std OREAS926			0.83	7.46	<0.01	0.04
*Std OREAS131B			0.02	5.70	1.85	3.00
*Std OREAS926			0.82	7.32	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00265251	22.1	N.A.	387
B00265252	25.1	N.A.	414
B00265253	22.9	N.A.	372
B00265254	27.9	N.A.	425
B00265255	28.9	N.A.	335
B00265256	27.2	5.86	472
B00265257	36.0	N.A.	380
B00265258	35.3	N.A.	265
B00265259	29.4	N.A.	418
B00265260	0.2	N.A.	N.A.
B00265261	36.0	N.A.	221
B00265262	33.1	N.A.	243
B00265263	30.1	N.A.	262
B00265264	0.5	N.A.	N.A.
B00265265	0.3	N.A.	N.A.
B00265266	0.3	N.A.	N.A.
B00265267	0.6	N.A.	N.A.
B00265268	0.3	N.A.	N.A.
B00265269	0.8	N.A.	N.A.
B00265270	17.9	N.A.	N.A.
B00265271	4.9	26.86	3347
B00265272	1.1	N.A.	N.A.
B00265273	30.3	N.A.	611
B00265274	28.0	N.A.	448
B00265275	21.7	N.A.	461
B00265276	26.1	N.A.	380
B00265277	33.3	N.A.	306
B00265278	33.4	N.A.	203
B00265279	33.7	N.A.	N.A.
B00265280	0.2	N.A.	N.A.
B00265281	1.2	N.A.	N.A.
B00265282	1.3	N.A.	N.A.
B00265283	1.3	N.A.	N.A.
B00268419	1.2	N.A.	N.A.
*Dup B00268419	1.1	N.A.	N.A.
B00268420	<0.1	N.A.	N.A.
B00268421	1.8	N.A.	N.A.
B00268422	1.1	N.A.	N.A.
B00268423	11.8	N.A.	N.A.
B00268424	7.4	N.A.	N.A.

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00268425	7.1	N.A.	N.A.
B00268426	10.2	N.A.	N.A.
B00268427	3.1	N.A.	N.A.
B00268428	9.5	N.A.	N.A.
B00268429	3.5	N.A.	N.A.
B00268430	16.1	N.A.	N.A.
B00268431	0.6	N.A.	N.A.
B00268432	0.5	N.A.	N.A.
B00268433	0.5	N.A.	N.A.
B00268434	1.4	N.A.	N.A.
B00268435	23.9	N.A.	146
B00268436	1.5	N.A.	N.A.
B00268437	1.9	N.A.	N.A.
B00268438	1.6	N.A.	N.A.
B00268439	1.4	N.A.	N.A.
B00268440	<0.1	N.A.	N.A.
B00268441	33.8	N.A.	N.A.
B00268442	1.4	N.A.	N.A.
B00268443	27.9	6.56	572
B00268444	0.5	N.A.	N.A.
B00268445	<0.1	N.A.	N.A.
B00268446	<0.1	N.A.	N.A.
B00268447	<0.1	N.A.	N.A.
B00268448	<0.1	N.A.	N.A.
B00268449	<0.1	N.A.	N.A.
B00268450	4.6	N.A.	N.A.
B00268451	8.8	N.A.	N.A.
B00268452	29.0	N.A.	560
B00268453	26.0	N.A.	448
*Dup B00268453	26.1	N.A.	452
B00268454	12.2	N.A.	187
B00268455	7.5	N.A.	169
B00268456	29.9	4.31	384
B00268457	29.0	N.A.	307
B00268458	30.5	N.A.	315
B00268459	32.8	N.A.	323

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Final : VC153090 Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014116

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.78	
*Std AMIS0267			909
*Blk BLANK			<10
*Rep B00265273	31.6		
*Rep B00268420	<0.1		
*Rep B00268435	23.4		
*Std OREAS926	1.2		
*Std OREAS131B	5.0		
*Std OREAS926	1.2		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Blk BLANK		<0.50	
*Rep B00265271			3420
*Rep B00268452			554

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Certificate of Analysis

Work Order : VC153090A

[Report File No.: 0000014327]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO#:BMC15-01_26 B00265251-283,268419-459
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 4 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153090A Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014327

Element	Sb	@As	@Bi	@Hg	@Se	As	Sb
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01	0.01
Units	ppm	ppm	ppm	ppm	ppm	%	%
B00265251	1010	3990	0.22	23.1	17	N.A.	N.A.
B00265252	2190	4070	0.50	23.5	24	N.A.	N.A.
B00265253	1410	4160	0.42	18.1	20	N.A.	N.A.
B00265254	1700	6730	2.29	22.2	58	N.A.	N.A.
B00265255	765	6890	2.00	16.7	67	N.A.	N.A.
B00265256	1900	4220	3.06	27.3	78	N.A.	N.A.
B00265257	1020	>10000	35.6	72.1	56	0.99	N.A.
B00265258	1380	>10000	35.9	42.9	65	1.99	N.A.
B00265259	1930	>10000	19.8	42.2	55	1.22	N.A.
B00265260	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265261	506	>10000	11.2	37.2	86	1.16	N.A.
B00265262	1090	>10000	29.2	35.8	85	1.29	N.A.
B00265263	911	>10000	14.3	41.6	87	2.08	N.A.
B00265264	1070	468	0.90	1.46	1	N.A.	N.A.
B00265265	<5	23	0.05	0.17	<1	N.A.	N.A.
B00265266	8	181	0.45	0.44	<1	N.A.	N.A.
B00265267	5	36	0.48	0.11	<1	N.A.	N.A.
B00265268	<5	13	0.05	0.10	<1	N.A.	N.A.
B00265269	6	106	1.95	0.26	1	N.A.	N.A.
B00265270	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265271	>10000	5310	3.03	22.6	9	N.A.	3.32
B00265272	131	180	0.41	4.03	2	N.A.	N.A.
B00265273	1380	3220	7.92	110	57	N.A.	N.A.
B00265274	713	6340	8.43	108	73	N.A.	N.A.
B00265275	2390	6870	1.01	116	20	N.A.	N.A.
B00265276	734	5650	2.44	48.8	68	N.A.	N.A.
B00265277	589	3030	23.3	56.5	86	N.A.	N.A.
B00265278	550	435	119	20.9	38	N.A.	N.A.
B00265279	47	290	159	8.19	365	N.A.	N.A.
B00265280	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00265281	<5	19	1.17	0.31	1	N.A.	N.A.
B00265282	6	116	0.70	0.28	2	N.A.	N.A.
B00265283	<5	3	0.48	0.19	1	N.A.	N.A.
B00268419	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268420	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268421	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268422	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268423	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268424	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268425	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Final : VC153090A Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014327

Element	Sb	@As	@Bi	@Hg	@Se	As	Sb
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01	0.01
Units	ppm	ppm	ppm	ppm	ppm	%	%
B00268426	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268427	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268428	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268429	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268430	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268431	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268432	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268433	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268434	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268435	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268436	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268437	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268438	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268439	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268440	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268441	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268442	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268443	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268444	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268445	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268446	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268447	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268448	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268449	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268450	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268451	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268452	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268453	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268454	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268455	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268456	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268457	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268458	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00268459	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00265258	1350	>10000	35.2	42.0	62		
*Std OREAS131B	40	N.A.	N.A.	N.A.	N.A.		
*Std OREAS934	N.A.	N.A.	488	N.A.	N.A.		
*Std OREAS624	N.A.	N.A.	N.A.	N.A.	32		
*Std DS-1	N.A.	6880	N.A.	82.6	N.A.		
*Blk BLANK	<5	<3	<0.02	<0.01	<1		

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Final : VC153090A Order: PO#:BMC15-01_26 B00265251-283,268419-459

Report File No.: 0000014327

Element	As	Sb
Method	GO_ICP13B	GO_ICP13B
Det.Lim.	0.01	0.01
Units	%	%
*Std MP1B	2.31	N.A.
*Std CD_1	N.A.	3.46
*Rep B00265271	N.A.	3.34

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Certificate of Analysis

Work Order : VC153091

[Report File No.: 0000014119]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO#:BMC15-01_26 B00284460-500,269378-410
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153091 Order: PO#:BMC15-01_26 B00284460-500,269378-410

Report File No.: 0000014119

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268460	1.870	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00268461	5.290	N.A.	1080	4.9	0.07	21.1	5.50	10.5
B00268462	4.610	N.A.	3060	>300	4.18	32.7	2.63	8.36
B00268463	3.125	N.A.	4110	290	5.61	31.7	2.47	10.2
B00268464	3.735	N.A.	1470	163	0.60	31.8	2.38	8.99
B00268465	3.985	N.A.	1010	272	0.61	28.0	4.07	13.9
B00268466	5.050	N.A.	2360	>300	2.51	23.5	3.94	6.78
B00268467	5.510	N.A.	2120	>300	1.09	24.9	4.11	9.60
B00268468	5.130	N.A.	1690	195	0.28	26.9	2.14	8.37
B00268469	4.880	N.A.	2690	177	0.29	30.3	1.57	6.30
B00268470	0.165	N.A.	1230	65.2	0.37	3.78	1.37	5.31
B00268471	0.170	N.A.	761	20.5	1.79	13.4	0.26	1.05
B00268472	4.050	N.A.	2780	213	0.21	29.9	2.22	7.07
B00268473	3.395	N.A.	2780	270	0.13	31.0	3.51	8.02
B00268474	5.240	N.A.	1590	213	0.18	26.6	2.92	6.01
B00268475	6.530	N.A.	40	5.9	0.02	6.79	0.05	0.08
B00268476	5.450	N.A.	25	2.2	<0.01	7.07	0.02	0.05
B00268477	3.855	N.A.	18	2.4	<0.01	7.00	0.04	0.06
B00268478	5.575	N.A.	18	1.3	<0.01	7.01	0.02	0.03
B00268479	4.985	N.A.	10	1.1	<0.01	6.74	0.02	0.04
B00268480	1.585	N.A.	<5	<0.3	<0.01	0.10	<0.01	<0.01
B00268481	5.280	N.A.	404	78.7	0.69	39.5	1.29	4.85
B00268482	5.925	N.A.	208	102	0.37	41.4	1.64	6.75
B00268483	1.395	N.A.	102	26.1	1.25	47.0	0.10	5.38
B00268484	5.405	N.A.	10	5.9	0.06	5.13	0.04	1.70
B00268485	4.865	N.A.	6	0.9	<0.01	2.39	0.02	0.05
B00268486	3.990	N.A.	7	<0.3	<0.01	3.50	<0.01	0.02
B00268487	4.970	N.A.	6	<0.3	<0.01	1.17	<0.01	0.01
B00268488	5.365	N.A.	6	<0.3	<0.01	1.01	<0.01	<0.01
B00268489	4.560	N.A.	48	0.5	<0.01	1.84	<0.01	0.05
B00268490	0.170	N.A.	1280	67.5	0.37	3.78	1.38	5.34
B00268491	0.170	N.A.	759	20.0	1.77	13.6	0.26	1.09
B00268492	6.465	N.A.	376	83.0	0.22	27.5	1.83	8.52
B00268493	4.705	N.A.	512	115	0.40	32.3	2.57	9.67
*Dup B00268493	N.A.	N.A.	507	110	0.37	33.0	2.53	10.2
B00268494	4.740	N.A.	437	74.0	0.56	32.3	1.23	10.9
B00268495	4.770	N.A.	5	0.3	<0.01	7.36	0.01	0.07
B00268496	2.650	N.A.	18	4.4	<0.01	6.51	0.08	0.04
B00268497	5.020	N.A.	16	0.3	0.01	4.32	<0.01	0.02
B00268498	6.050	N.A.	7	0.5	<0.01	6.86	0.01	0.02

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Final : VC153091 Order: PO#:BMC15-01_26 B00284460-500,269378-410

Report File No.: 0000014119

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00268499	5.755	N.A.	9	<0.3	<0.01	6.54	<0.01	0.02
B00268500	1.440	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00269378	2.795	N.A.	82	9.2	0.47	3.48	0.03	0.22
B00269379	0.570	N.A.	43	11.0	0.21	3.08	0.36	2.04
B00269380	0.980	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269381	2.460	N.A.	<5	0.6	<0.01	2.09	0.07	0.08
B00269382	1.320	N.A.	<5	<0.3	<0.01	4.25	<0.01	0.02
B00269383	1.395	N.A.	<5	<0.3	<0.01	3.57	<0.01	0.03
B00269384	2.060	N.A.	10	0.8	0.02	8.32	<0.01	0.35
B00269385	1.650	N.A.	<5	0.5	<0.01	4.16	0.02	0.04
B00269386	2.130	85.3	<5	2.6	0.04	7.26	0.14	0.64
B00269387	2.320	N.A.	95	32.4	0.21	19.1	3.61	6.76
B00269388	1.335	N.A.	110	26.4	0.16	18.1	2.81	2.81
B00269389	2.470	N.A.	64	11.2	0.06	17.6	1.42	2.17
B00269390	0.170	N.A.	1240	70.0	0.36	3.76	1.36	5.14
B00269391	0.170	N.A.	717	21.2	1.79	13.5	0.26	1.05
B00269392	1.680	N.A.	31	6.6	<0.01	12.7	0.72	0.68
B00269393	1.470	N.A.	<5	<0.3	0.01	8.00	<0.01	0.06
B00269394	1.735	N.A.	275	47.8	0.18	20.3	3.36	4.37
B00269395	1.645	N.A.	<5	<0.3	<0.01	6.88	<0.01	0.04
B00269396	1.025	N.A.	12	2.5	0.03	6.70	0.07	0.16
B00269397	2.345	N.A.	1050	165	0.19	22.5	3.81	6.97
B00269398	2.060	N.A.	959	87.6	0.16	20.2	2.46	2.31
B00269399	1.715	N.A.	16	0.9	0.02	5.32	0.01	0.03
B00269400	1.135	N.A.	<5	<0.3	<0.01	0.10	0.02	0.02
B00269401	1.520	N.A.	1350	17.0	0.12	22.6	5.08	7.02
B00269402	1.740	N.A.	24	26.8	<0.01	4.09	0.10	0.33
B00269403	2.610	N.A.	32	5.4	0.01	3.65	0.24	0.37
B00269404	2.465	N.A.	<5	0.4	<0.01	3.50	0.01	0.02
*Dup B00269404	N.A.	N.A.	<5	0.7	<0.01	3.40	0.01	0.02
B00269405	2.075	N.A.	<5	4.7	<0.01	2.09	0.11	0.39
B00269406	2.950	N.A.	87	22.4	0.02	5.94	0.65	1.32
B00269407	3.855	N.A.	67	26.3	0.02	5.93	0.74	1.49
B00269408	2.835	N.A.	16	0.8	<0.01	3.23	<0.01	0.02
B00269409	3.670	N.A.	12	1.3	<0.01	4.04	<0.01	0.03
B00269410	0.155	N.A.	816	45.0	0.46	19.8	0.31	1.14
*Rep B00268491				20.1				
*Rep B00269381				0.6				
*Rep B00269410				44.9				
*Std SU_1B				6.4				

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Final : VC153091 Order: PO#:BMC15-01_26 B00284460-500,269378-410

Report File No.: 0000014119

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.4				
*Std AMIS0268		188				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00268488	<5					
*Rep B00269404	<5					
*Std OXB130	123					
*Std OXH97	1300					
*Std OXJ111	2310					
*Std OXN117	7950					
*Blk BLANK	<5					
*Rep B00268474			0.18	25.6	2.94	5.98
*Rep B00268496			<0.01	6.52	0.09	0.04
*Rep B00269387			0.21	19.2	3.61	6.86
*Rep B00269410			0.46	19.7	0.31	1.15
*Std OREAS131B			0.02	5.75	1.91	3.04
*Std OREAS926			0.84	7.34	0.01	0.04
*Std OREAS131B			0.02	5.72	1.89	3.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268460	<0.1	N.A.
B00268461	28.8	N.A.
B00268462	32.2	250
B00268463	33.9	325
B00268464	39.6	167
B00268465	37.4	301
B00268466	26.9	360
B00268467	31.0	333
B00268468	29.9	199
B00268469	34.9	180
B00268470	4.6	N.A.
B00268471	8.6	N.A.
B00268472	34.7	215
B00268473	35.2	285
B00268474	25.1	229
B00268475	0.2	N.A.
B00268476	<0.1	N.A.
B00268477	<0.1	N.A.
B00268478	<0.1	N.A.
B00268479	<0.1	N.A.
B00268480	0.1	N.A.
B00268481	38.7	N.A.
B00268482	41.7	N.A.
B00268483	35.7	N.A.
B00268484	3.9	N.A.
B00268485	1.3	N.A.
B00268486	2.1	N.A.
B00268487	0.4	N.A.
B00268488	0.2	N.A.
B00268489	0.6	N.A.
B00268490	4.7	N.A.
B00268491	9.6	N.A.
B00268492	28.6	N.A.
B00268493	28.4	N.A.
*Dup B00268493	29.5	N.A.
B00268494	26.8	N.A.
B00268495	<0.1	N.A.
B00268496	0.2	N.A.
B00268497	1.8	N.A.
B00268498	<0.1	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00268499	<0.1	N.A.
B00268500	<0.1	N.A.
B00269378	0.9	N.A.
B00269379	1.8	N.A.
B00269380	<0.1	N.A.
B00269381	<0.1	N.A.
B00269382	<0.1	N.A.
B00269383	<0.1	N.A.
B00269384	0.6	N.A.
B00269385	0.7	N.A.
B00269386	1.7	N.A.
B00269387	12.3	N.A.
B00269388	8.4	N.A.
B00269389	8.0	N.A.
B00269390	4.5	N.A.
B00269391	9.2	N.A.
B00269392	2.9	N.A.
B00269393	0.9	N.A.
B00269394	10.8	N.A.
B00269395	0.4	N.A.
B00269396	1.1	N.A.
B00269397	13.6	142
B00269398	8.5	N.A.
B00269399	1.2	N.A.
B00269400	<0.1	N.A.
B00269401	18.7	N.A.
B00269402	0.6	N.A.
B00269403	0.9	N.A.
B00269404	0.4	N.A.
*Dup B00269404	0.4	N.A.
B00269405	0.7	N.A.
B00269406	5.4	N.A.
B00269407	4.9	N.A.
B00269408	1.2	N.A.
B00269409	1.8	N.A.
B00269410	17.8	N.A.

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Final : VC153091 Order: PO#:BMC15-01_26 B00284460-500,269378-410

Report File No.: 0000014119

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Std AMIS0268		200
*Rep B00268474	25.2	
*Rep B00268496	0.2	
*Rep B00269387	12.6	
*Rep B00269410	18.2	
*Std OREAS131B	5.0	
*Std OREAS926	1.2	
*Std OREAS131B	4.9	
*Blk BLANK	<0.1	
*Blk BLANK		<10
*Rep B00268468		172

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Certificate of Analysis

Work Order : VC153093

[Report File No.: 0000014123]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO# BMC15-01_26 B00269411-452,574-605
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.
S data has been included.
This Report cancels and supersedes the Report No. 014120 dated Dec 03, 2015 issued by SGS Canada (Production Way).

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269411	2.535	N.A.	<5	1.5	<0.01	3.63	0.03	0.20
B00269412	1.800	N.A.	17	1.0	0.04	4.27	<0.01	0.05
B00269413	2.560	N.A.	17	5.2	0.07	4.86	0.28	0.52
B00269414	2.940	N.A.	8	3.3	0.05	3.11	0.23	0.34
B00269415	2.860	N.A.	6	4.2	0.01	5.67	0.02	0.31
B00269416	2.025	N.A.	15	15.4	0.05	10.8	0.25	2.11
B00269417	2.555	N.A.	7	0.6	0.01	9.35	<0.01	0.06
B00269418	2.265	N.A.	26	13.9	0.07	16.4	0.91	2.39
B00269419	1.240	N.A.	101	10.5	0.07	15.6	0.78	1.77
B00269420	0.830	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00269421	1.525	N.A.	662	51.1	0.16	18.5	3.22	6.00
B00269422	2.235	N.A.	224	34.9	0.13	11.4	0.85	6.31
B00269423	2.375	N.A.	899	94.1	0.17	11.5	2.48	8.52
B00269424	1.875	N.A.	1680	216	0.21	19.4	4.96	8.77
B00269425	1.290	N.A.	2850	292	0.09	16.6	4.72	7.80
B00269426	1.335	N.A.	121	13.9	0.03	7.10	0.19	0.18
B00269427	1.025	N.A.	377	>300	0.42	21.2	4.71	7.32
B00269428	3.495	N.A.	1970	3.0	0.02	7.65	0.02	0.04
B00269429	2.180	N.A.	6	2.5	0.02	4.46	0.02	0.08
B00269430	0.155	N.A.	861	44.0	0.46	20.3	0.31	1.15
B00269431	2.610	N.A.	<5	1.5	<0.01	2.91	0.04	0.12
B00269432	1.885	N.A.	15	6.8	<0.01	2.89	0.27	0.51
B00269433	2.145	N.A.	22	18.4	0.07	8.94	1.12	1.48
B00269434	1.780	N.A.	19	4.6	0.01	3.46	0.16	0.24
B00269435	4.640	N.A.	31	18.7	0.06	12.7	0.69	2.02
B00269436	2.605	N.A.	<5	19.0	0.09	16.1	0.88	2.69
B00269437	2.905	N.A.	14	7.6	0.12	11.1	0.45	2.96
B00269438	2.630	N.A.	<5	6.6	0.10	8.37	0.34	2.95
B00269439	1.915	N.A.	20	7.5	0.20	11.1	0.30	4.08
B00269440	1.085	N.A.	7	<0.3	<0.01	0.08	<0.01	0.01
B00269441	2.025	N.A.	31	6.3	0.24	11.3	0.15	3.25
B00269442	2.665	N.A.	47	5.5	0.27	8.54	0.06	2.48
B00269443	1.540	N.A.	6	2.7	0.13	14.3	0.04	2.50
B00269444	1.470	N.A.	<5	1.1	0.03	4.43	0.03	0.05
B00269445	2.780	N.A.	43	16.7	0.29	10.3	1.02	4.03
*Dup B00269445	N.A.	N.A.	51	16.3	0.29	10.1	0.99	4.03
B00269446	2.590	N.A.	<5	13.2	0.10	11.0	1.00	5.28
B00269447	2.035	N.A.	14	10.6	0.10	8.98	0.27	9.25
B00269448	1.555	N.A.	31	36.2	0.12	8.83	1.77	7.89
B00269449	3.090	N.A.	<5	5.7	0.07	7.29	0.28	2.45

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269450	0.155	N.A.	867	45.5	0.45	19.7	0.30	1.10
B00269451	3.005	N.A.	<5	2.8	0.03	6.97	0.06	0.83
B00269452	2.820	N.A.	<5	1.7	<0.01	5.37	0.08	0.85
B00269574	2.970	N.A.	11	2.6	0.02	4.81	0.13	0.57
B00269575	2.305	N.A.	<5	0.7	<0.01	2.57	0.03	0.03
B00269576	2.585	N.A.	19	12.1	0.02	2.69	0.34	0.41
B00269577	2.110	N.A.	28	18.2	0.05	4.61	0.56	1.43
B00269578	1.910	N.A.	43	15.9	0.39	6.10	0.12	1.65
B00269579	2.165	N.A.	418	107	1.86	8.66	2.27	6.82
B00269580	1.650	N.A.	<5	<0.3	<0.01	0.06	<0.01	0.01
B00269581	1.375	92.5	3420	117	3.42	10.7	1.09	7.45
B00269582	1.970	N.A.	60	7.6	0.34	8.17	<0.01	0.96
B00269583	3.540	N.A.	1320	136	2.50	39.4	1.40	9.18
B00269584	2.925	N.A.	1220	150	0.69	33.8	1.35	7.22
B00269585	2.935	N.A.	1080	138	0.50	30.1	1.87	5.25
B00269586	1.790	N.A.	1730	167	0.31	31.6	2.59	6.67
B00269587	2.505	N.A.	1700	168	0.24	31.2	1.67	6.84
B00269588	1.105	N.A.	1260	70.9	0.51	36.1	1.01	9.62
B00269589	3.270	N.A.	1870	253	0.33	31.0	3.70	9.06
B00269590	0.170	N.A.	1260	68.0	0.37	3.85	1.38	5.18
B00269591	0.170	N.A.	833	20.6	1.72	13.4	0.26	1.04
B00269592	3.790	N.A.	1720	182	0.35	33.2	2.28	6.89
B00269593	1.310	N.A.	200	87.3	<0.01	19.3	1.80	4.42
B00269594	3.130	N.A.	863	132	0.39	38.8	1.53	7.74
B00269595	2.570	N.A.	560	104	0.44	41.3	1.40	5.74
B00269596	2.630	N.A.	6030	293	9.28	43.8	0.36	1.64
B00269597	1.405	N.A.	3190	237	7.95	46.0	0.34	1.22
B00269598	1.410	N.A.	986	123	1.74	44.8	0.49	3.43
B00269599	2.225	N.A.	831	131	0.24	34.2	1.59	8.25
B00269600	1.335	N.A.	<5	<0.3	<0.01	0.08	<0.01	0.01
B00269601	3.505	N.A.	2310	261	0.41	22.0	3.80	10.1
B00269602	3.370	N.A.	2660	297	0.46	20.7	3.92	13.0
B00269603	3.010	N.A.	1700	279	0.24	23.8	4.18	10.6
B00269604	3.065	N.A.	692	104	0.12	26.1	1.60	6.33
B00269605	1.950	N.A.	889	98.6	0.11	21.1	1.09	8.98
*Rep B00269412				1.0				
*Rep B00269599				129				
*Rep B00269602				>300				
*Std SU_1B				6.5				
*Std OREAS621				70.1				

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		188				
*Std OREAS621		69.8				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00269442	35					
*Rep B00269605	1020					
*Std OXB130	120					
*Std OXH97	1150					
*Std OXJ111	2090					
*Std OXN117	7730					
*Blk BLANK	<5					
*Rep B00269421			0.16	18.4	3.26	5.93
*Rep B00269447			0.11	9.00	0.27	9.24
*Rep B00269604			0.12	25.9	1.57	6.24
*Std OREAS131B			0.02	5.82	1.89	3.03
*Std OREAS926			0.82	7.47	0.01	0.04
*Std OREAS131B			0.02	5.78	1.89	2.98
*Std OREAS926			0.83	7.41	0.02	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00269411	1.9	N.A.	N.A.
B00269412	0.3	N.A.	N.A.
B00269413	1.4	N.A.	N.A.
B00269414	0.8	N.A.	N.A.
B00269415	0.6	N.A.	N.A.
B00269416	5.0	N.A.	N.A.
B00269417	0.8	N.A.	N.A.
B00269418	5.6	N.A.	N.A.
B00269419	3.3	N.A.	N.A.
B00269420	<0.1	N.A.	N.A.
B00269421	8.7	N.A.	N.A.
B00269422	8.0	N.A.	N.A.
B00269423	9.6	N.A.	N.A.
B00269424	17.8	N.A.	230
B00269425	17.7	N.A.	336
B00269426	1.4	N.A.	N.A.
B00269427	16.9	N.A.	417
B00269428	1.1	N.A.	N.A.
B00269429	1.0	N.A.	N.A.
B00269430	18.2	N.A.	N.A.
B00269431	0.1	N.A.	N.A.
B00269432	1.1	N.A.	N.A.
B00269433	5.2	N.A.	N.A.
B00269434	1.2	N.A.	N.A.
B00269435	4.3	N.A.	N.A.
B00269436	5.0	N.A.	N.A.
B00269437	4.1	N.A.	N.A.
B00269438	3.1	N.A.	N.A.
B00269439	5.0	N.A.	N.A.
B00269440	<0.1	N.A.	N.A.
B00269441	3.8	N.A.	N.A.
B00269442	2.5	N.A.	N.A.
B00269443	4.1	N.A.	N.A.
B00269444	1.4	N.A.	N.A.
B00269445	5.1	N.A.	N.A.
*Dup B00269445	4.9	N.A.	N.A.
B00269446	5.6	N.A.	N.A.
B00269447	7.7	N.A.	N.A.
B00269448	8.0	N.A.	N.A.
B00269449	4.2	N.A.	N.A.

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00269450	17.6	N.A.	N.A.
B00269451	2.9	N.A.	N.A.
B00269452	1.0	N.A.	N.A.
B00269574	2.4	N.A.	N.A.
B00269575	<0.1	N.A.	N.A.
B00269576	0.3	N.A.	N.A.
B00269577	2.7	N.A.	N.A.
B00269578	3.1	N.A.	N.A.
B00269579	7.7	N.A.	N.A.
B00269580	0.1	N.A.	N.A.
B00269581	9.6	N.A.	N.A.
B00269582	1.7	N.A.	N.A.
B00269583	37.0	N.A.	N.A.
B00269584	42.2	N.A.	148
B00269585	38.5	N.A.	N.A.
B00269586	38.7	N.A.	169
B00269587	39.9	N.A.	173
B00269588	37.7	N.A.	N.A.
B00269589	37.7	N.A.	288
B00269590	4.6	N.A.	N.A.
B00269591	9.0	N.A.	N.A.
B00269592	41.8	N.A.	201
B00269593	17.9	N.A.	N.A.
B00269594	42.3	N.A.	N.A.
B00269595	40.1	N.A.	N.A.
B00269596	37.2	5.91	316
B00269597	40.0	N.A.	249
B00269598	42.8	N.A.	N.A.
B00269599	42.5	N.A.	N.A.
B00269600	<0.1	N.A.	N.A.
B00269601	33.2	N.A.	291
B00269602	31.9	N.A.	314
B00269603	30.2	N.A.	281
B00269604	28.2	N.A.	N.A.
B00269605	24.7	N.A.	N.A.

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Final : VC153093 Order: PO# BMC15-01_26 B00269411-452,574-605

Report File No.: 0000014123

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OREAS216		6.64	
*Blk BLANK		<0.50	
*Std ME-1302			416
*Blk BLANK			<10
*Rep B00269421	8.9		
*Rep B00269447	7.6		
*Rep B00269604	28.0		
*Std OREAS131B	5.0		
*Std OREAS926	1.2		
*Std OREAS131B	5.0		
*Std OREAS926	1.2		
*Blk BLANK	<0.1		
*Blk BLANK	<0.1		
*Rep B00269596		5.91	
*Rep B00269427			399

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Certificate of Analysis

Work Order : VC153094

[Report File No.: 0000014121]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 03, 2015

P.O. No.	:	PO# BMC15-01_26 B00269606-679
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153094 Order: PO# BMC15-01_26 B00269606-679

Report File No.: 0000014121

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269606	1.585	N.A.	26	6.8	<0.01	3.35	0.09	0.18
B00269607	2.920	N.A.	16	7.0	<0.01	4.30	0.10	0.77
B00269608	1.585	N.A.	1120	109	2.66	33.4	0.63	2.22
B00269609	2.045	N.A.	539	71.7	1.32	27.6	0.38	1.83
B00269610	0.155	N.A.	847	45.8	0.45	19.5	0.31	1.12
B00269611	3.765	N.A.	224	27.1	0.54	6.12	0.08	0.34
B00269612	3.100	N.A.	<5	2.3	<0.01	5.15	0.01	0.06
B00269613	3.050	N.A.	<5	0.6	<0.01	3.44	<0.01	0.02
B00269614	2.975	N.A.	15	2.6	0.03	6.26	0.02	0.28
B00269615	0.730	N.A.	254	95.8	0.59	30.0	1.38	5.17
B00269616	3.045	N.A.	<5	0.9	<0.01	7.01	0.02	0.05
B00269617	2.675	N.A.	10	0.8	<0.01	2.92	<0.01	0.06
B00269618	2.990	N.A.	9	1.1	<0.01	1.33	0.02	0.02
B00269619	2.500	N.A.	81	3.8	<0.01	2.55	0.03	0.03
B00269620	1.400	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00269621	1.820	N.A.	72	22.8	0.69	19.4	0.09	0.90
B00269622	3.330	N.A.	894	82.5	2.20	40.4	0.44	2.97
B00269623	3.035	N.A.	977	234	0.18	35.0	3.61	10.1
B00269624	3.560	N.A.	960	147	0.21	36.2	1.82	8.33
B00269625	2.655	N.A.	650	169	0.60	29.8	3.75	13.4
B00269626	3.335	N.A.	1090	134	0.17	30.9	2.05	10.1
B00269627	2.430	N.A.	718	58.8	0.18	33.1	0.67	7.70
B00269628	3.650	N.A.	1750	104	0.70	37.2	0.49	6.33
B00269629	2.705	N.A.	1850	162	0.28	34.4	0.99	3.85
B00269630	0.165	N.A.	1250	70.1	0.36	3.83	1.37	5.21
B00269631	0.170	N.A.	797	21.0	1.72	13.5	0.25	1.05
B00269632	2.925	N.A.	2230	183	0.11	33.5	1.99	5.03
B00269633	3.610	N.A.	2010	174	0.20	34.3	1.08	5.57
B00269634	3.260	N.A.	2120	246	0.27	38.4	1.70	4.67
B00269635	2.030	N.A.	2270	>300	0.33	32.6	3.27	7.86
B00269636	1.715	N.A.	328	155	0.03	21.1	2.63	7.05
B00269637	3.250	N.A.	16	2.8	<0.01	2.45	0.02	0.04
B00269638	2.750	N.A.	<5	0.4	<0.01	2.33	<0.01	<0.01
B00269639	3.040	N.A.	14	1.1	<0.01	2.52	<0.01	0.05
*Dup B00269639	N.A.	N.A.	12	1.0	<0.01	2.80	<0.01	0.03
B00269640	1.395	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269641	3.220	N.A.	51	4.8	0.04	5.97	0.05	0.23
B00269642	1.275	N.A.	26	2.1	0.07	5.63	0.02	0.03
B00269643	2.345	N.A.	162	20.5	0.64	11.5	0.18	1.37
B00269644	2.125	N.A.	37	10.5	0.08	5.35	0.30	0.46

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Final : VC153094 Order: PO# BMC15-01_26 B00269606-679

Report File No.: 0000014121

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269645	2.210	N.A.	219	59.4	0.19	15.3	4.78	5.69
B00269646	2.705	N.A.	601	5.3	0.03	5.06	0.48	0.73
B00269647	1.540	N.A.	110	6.6	0.06	7.33	0.56	0.87
B00269648	1.735	N.A.	<5	0.3	<0.01	2.81	0.02	0.04
B00269649	2.625	N.A.	181	20.3	0.23	11.1	2.61	6.41
B00269650	0.155	N.A.	844	46.7	0.45	18.9	0.29	1.12
B00269651	2.925	N.A.	6	2.5	0.03	4.13	0.02	0.20
B00269652	2.380	N.A.	6	1.4	<0.01	3.30	0.03	0.12
B00269653	3.075	N.A.	<5	0.8	<0.01	2.93	<0.01	0.02
B00269654	1.095	N.A.	10	4.1	<0.01	3.48	0.07	0.25
B00269655	2.080	91.5	140	24.1	0.14	8.32	0.37	1.15
B00269656	1.910	N.A.	41	12.8	0.04	3.89	0.19	0.45
B00269657	2.120	N.A.	52	29.9	0.10	9.81	0.48	1.29
B00269658	2.785	N.A.	6	0.4	0.01	2.68	<0.01	0.11
B00269659	2.735	N.A.	<5	<0.3	<0.01	2.58	<0.01	0.02
B00269660	1.255	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00269661	2.775	N.A.	<5	0.5	<0.01	2.34	<0.01	0.02
B00269662	3.090	N.A.	5	0.5	<0.01	2.13	<0.01	<0.01
B00269663	3.040	N.A.	33	1.3	0.02	2.36	<0.01	0.03
B00269664	0.885	N.A.	9	0.4	<0.01	2.21	<0.01	<0.01
B00269665	0.945	N.A.	<5	0.4	<0.01	2.21	<0.01	<0.01
B00269666	4.295	N.A.	2160	209	0.64	35.5	2.05	7.83
B00269667	1.870	N.A.	86	11.2	0.10	3.56	0.02	0.03
B00269668	5.645	N.A.	1300	136	0.15	34.2	1.54	5.74
B00269669	1.865	N.A.	86	9.8	<0.01	3.89	0.15	0.06
B00269670	0.170	N.A.	858	21.1	1.75	13.5	0.26	1.06
B00269671	0.170	N.A.	1280	69.5	0.37	3.83	1.38	5.17
B00269672	5.605	N.A.	886	90.1	0.15	35.0	1.76	6.97
B00269673	5.360	N.A.	1140	167	0.36	37.2	1.90	7.44
*Dup B00269673	N.A.	N.A.	1180	172	0.36	37.5	1.87	7.45
B00269674	6.045	N.A.	703	154	0.03	34.3	2.08	5.98
B00269675	6.070	N.A.	893	166	0.06	32.7	2.31	6.20
B00269676	2.450	N.A.	1080	129	0.04	35.6	1.83	10.3
B00269677	1.645	N.A.	98	23.0	<0.01	7.58	0.28	0.54
B00269678	4.620	N.A.	931	189	0.02	33.2	2.66	9.98
B00269679	4.980	N.A.	12	1.6	<0.01	6.78	0.02	0.06
*Rep B00269614				2.5				
*Rep B00269657				30.6				
*Rep B00269679				1.7				
*Std SU_1B				6.6				

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Final : VC153094 Order: PO# BMC15-01_26 B00269606-679

Report File No.: 0000014121

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		69.9				
*Std AMIS0268		193				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00269622	788					
*Rep B00269658	8					
*Std OXB130	125					
*Std OXH97	1300					
*Std OXJ111	2160					
*Std OXN117	7780					
*Blk BLANK	<5					
*Rep B00269621			0.69	19.5	0.08	0.89
*Rep B00269630			0.36	3.80	1.36	5.37
*Rep B00269666			0.64	36.2	2.04	7.90
*Std OREAS131B			0.02	5.77	1.89	3.08
*Std OREAS131B			0.02	5.75	1.91	3.03
*Std OREAS926			0.84	7.34	0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153094 Order: PO# BMC15-01_26 B00269606-679

Report File No.: 0000014121

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00269606	2.4	N.A.
B00269607	2.2	N.A.
B00269608	25.9	N.A.
B00269609	20.0	N.A.
B00269610	18.5	N.A.
B00269611	1.1	N.A.
B00269612	0.3	N.A.
B00269613	<0.1	N.A.
B00269614	0.8	N.A.
B00269615	33.0	N.A.
B00269616	<0.1	N.A.
B00269617	1.2	N.A.
B00269618	0.5	N.A.
B00269619	0.7	N.A.
B00269620	0.1	N.A.
B00269621	12.4	N.A.
B00269622	42.1	N.A.
B00269623	44.9	254
B00269624	44.1	N.A.
B00269625	35.2	164
B00269626	38.3	N.A.
B00269627	38.6	N.A.
B00269628	40.0	N.A.
B00269629	38.4	168
B00269630	4.6	N.A.
B00269631	9.2	N.A.
B00269632	38.1	194
B00269633	39.1	188
B00269634	44.6	262
B00269635	41.3	412
B00269636	25.6	159
B00269637	0.6	N.A.
B00269638	0.3	N.A.
B00269639	1.4	N.A.
*Dup B00269639	1.3	N.A.
B00269640	<0.1	N.A.
B00269641	4.8	N.A.
B00269642	0.7	N.A.
B00269643	4.4	N.A.
B00269644	1.7	N.A.

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Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
B00269645	11.0	N.A.
B00269646	1.1	N.A.
B00269647	0.7	N.A.
B00269648	<0.1	N.A.
B00269649	6.3	N.A.
B00269650	17.5	N.A.
B00269651	0.5	N.A.
B00269652	0.3	N.A.
B00269653	0.4	N.A.
B00269654	1.5	N.A.
B00269655	5.4	N.A.
B00269656	2.6	N.A.
B00269657	6.5	N.A.
B00269658	0.1	N.A.
B00269659	0.1	N.A.
B00269660	<0.1	N.A.
B00269661	0.5	N.A.
B00269662	0.5	N.A.
B00269663	0.8	N.A.
B00269664	0.9	N.A.
B00269665	0.6	N.A.
B00269666	42.6	197
B00269667	0.6	N.A.
B00269668	41.2	N.A.
B00269669	0.6	N.A.
B00269670	9.1	N.A.
B00269671	4.8	N.A.
B00269672	42.4	N.A.
B00269673	45.5	164
*Dup B00269673	44.9	169
B00269674	40.6	163
B00269675	41.2	147
B00269676	46.3	N.A.
B00269677	5.8	N.A.
B00269678	44.7	167
B00269679	0.2	N.A.

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Final : VC153094 Order: PO# BMC15-01_26 B00269606-679

Report File No.: 0000014121

Element	S	Ag
Method	GO_ICP90Q	GO_FAG313
Det.Lim.	0.1	10
Units	%	g/t
*Std AMIS0268		183
*Blk BLANK		<10
*Rep B00269621	11.8	
*Rep B00269630	4.6	
*Rep B00269666	42.4	
*Std OREAS131B	5.0	
*Std OREAS131B	5.0	
*Std OREAS926	1.2	
*Blk BLANK	<0.1	
*Blk BLANK	<0.1	
*Rep B00269635		385

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Certificate of Analysis

Work Order : VC153095

[Report File No.: 0000014124]

To: **ROBIN BLACK** Date: Dec 03, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_26 B00269680-754
Project No.	:	KZK
No. Of Samples	:	75
Date Submitted	:	Nov 06, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269680	1.140	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269681	4.740	N.A.	11	0.9	0.01	7.22	<0.01	0.01
B00269682	5.300	N.A.	<5	0.7	<0.01	6.90	<0.01	0.01
B00269683	3.960	N.A.	5	1.4	<0.01	7.27	<0.01	0.01
B00269684	2.450	N.A.	<5	<0.3	<0.01	8.14	<0.01	0.03
B00269685	4.615	N.A.	447	113	1.02	19.7	0.73	3.18
B00269686	4.430	N.A.	8	1.0	<0.01	2.18	<0.01	0.01
B00269687	5.620	N.A.	18	1.4	<0.01	1.82	0.02	0.04
B00269688	5.360	N.A.	18	1.1	<0.01	1.78	0.02	0.03
B00269689	3.320	N.A.	16	1.2	<0.01	1.89	0.01	0.01
B00269690	0.145	N.A.	840	19.7	1.75	13.5	0.26	1.07
B00269691	0.170	N.A.	1270	71.6	0.38	3.80	1.39	5.22
B00269692	2.260	N.A.	1870	125	0.51	26.8	1.50	10.6
B00269693	1.600	N.A.	1310	217	0.21	36.6	3.10	8.55
B00269694	1.655	N.A.	6130	>300	0.43	29.3	2.43	6.73
B00269695	4.090	N.A.	286	26.7	0.02	4.26	0.14	0.58
B00269696	1.925	N.A.	24	3.8	<0.01	1.29	0.02	0.02
B00269697	1.965	N.A.	2170	278	0.10	24.9	3.66	6.73
B00269698	3.130	N.A.	23	7.9	0.02	9.17	0.15	0.21
B00269699	5.535	N.A.	7	0.9	<0.01	8.02	0.01	0.02
B00269700	1.580	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00269701	6.375	N.A.	<5	<0.3	<0.01	7.75	<0.01	0.01
B00269702	5.945	N.A.	<5	<0.3	<0.01	7.13	<0.01	0.01
B00269703	5.390	N.A.	5	<0.3	<0.01	7.03	<0.01	<0.01
B00269704	5.325	N.A.	<5	<0.3	0.01	6.75	<0.01	0.02
B00269705	5.940	N.A.	45	2.6	0.06	6.05	<0.01	0.03
B00269706	5.705	N.A.	4290	283	2.41	27.0	4.30	8.03
B00269707	1.215	N.A.	2690	235	1.69	29.1	3.60	6.85
B00269708	2.550	N.A.	1250	268	0.60	26.1	5.29	11.6
B00269709	7.050	N.A.	2800	275	1.46	26.7	4.95	8.34
B00269710	0.145	N.A.	319	20.5	13.7	27.7	0.06	0.42
B00269711	0.140	N.A.	6120	7.0	0.66	6.09	0.02	0.12
B00269712	1.930	N.A.	2190	251	2.50	28.7	3.60	11.2
B00269713	3.290	N.A.	1560	>300	0.62	25.8	5.30	14.8
B00269714	5.490	N.A.	1930	>300	0.33	29.3	6.47	10.7
B00269715	5.450	N.A.	3370	190	0.33	29.8	1.86	7.03
B00269716	5.300	N.A.	1760	135	0.26	30.3	1.01	6.79
B00269717	5.720	N.A.	3890	229	0.49	25.9	2.06	10.8
B00269718	5.225	N.A.	1450	239	0.14	25.9	3.52	11.8
B00269719	3.550	N.A.	886	162	0.14	31.5	2.30	5.80

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269720	0.810	N.A.	<5	<0.3	<0.01	0.21	<0.01	<0.01
B00269721	2.475	N.A.	1890	124	1.97	40.9	1.06	3.96
B00269722	4.925	N.A.	1360	204	0.08	33.0	3.79	8.32
B00269723	3.855	N.A.	1930	196	0.39	35.5	3.19	8.13
B00269724	1.980	N.A.	1220	268	1.81	33.4	4.07	9.49
B00269725	4.455	N.A.	920	190	0.42	30.2	3.51	12.5
B00269726	4.345	N.A.	1690	>300	0.09	22.3	6.21	16.9
B00269727	4.455	N.A.	3610	>300	4.49	24.1	5.68	19.8
B00269728	2.485	N.A.	2040	>300	1.04	21.0	7.95	23.4
B00269729	6.460	96.1	1450	269	0.60	27.8	6.29	15.9
B00269730	0.140	N.A.	4370	296	0.34	11.3	11.4	17.5
B00269731	0.140	N.A.	5480	6.8	0.62	6.09	0.02	0.13
B00269732	2.055	N.A.	2400	198	3.39	23.7	1.87	11.5
B00269733	2.610	N.A.	2000	168	0.75	31.6	2.52	10.0
B00269734	2.860	N.A.	2160	132	0.42	30.4	2.09	10.7
B00269735	1.000	N.A.	4010	201	3.32	28.8	2.05	14.3
B00269736	4.230	N.A.	957	220	0.35	24.8	3.77	13.1
B00269737	3.220	N.A.	1180	221	1.16	28.1	2.91	11.0
B00269738	2.540	N.A.	2620	220	1.82	15.1	1.11	3.98
B00269739	2.390	N.A.	1380	108	0.48	30.5	1.21	9.60
B00269740	0.615	N.A.	5	0.3	<0.01	0.10	<0.01	0.04
B00269741	3.325	N.A.	991	191	0.33	25.8	2.54	8.01
B00269742	5.505	N.A.	39	6.0	0.03	7.20	0.08	0.31
B00269743	5.770	N.A.	9	0.7	<0.01	6.39	<0.01	0.03
B00269744	4.825	N.A.	15	1.9	<0.01	7.42	0.04	0.06
B00269745	5.355	N.A.	<5	0.8	<0.01	7.09	0.02	0.03
B00269746	5.675	N.A.	12	0.9	<0.01	7.11	0.03	0.03
B00269747	4.465	N.A.	14	3.3	<0.01	6.74	0.05	0.06
*Dup B00269747	N.A.	N.A.	14	3.3	<0.01	6.81	0.05	0.06
B00269748	3.585	N.A.	2230	190	4.67	27.6	1.24	4.53
B00269749	4.615	N.A.	2820	118	5.01	21.5	0.12	3.87
B00269750	0.205	N.A.	718	20.9	1.78	13.5	0.25	1.06
B00269751	0.205	N.A.	1290	70.2	0.37	3.76	1.36	5.30
B00269752	4.345	N.A.	12	2.6	0.02	2.89	0.03	0.08
B00269753	5.165	N.A.	47	1.2	<0.01	3.62	0.02	0.05
B00269754	5.670	N.A.	6	<0.3	<0.01	3.02	<0.01	<0.01
*Rep B00269705				2.7				
*Rep B00269719				155				
*Rep B00269754				0.4				
*Std SU_1B				6.3				

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		69.6				
*Std AMIS0268		188				
*Std AMIS0268		190				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00269687	16					
*Rep B00269732	2240					
*Std OXB130	125					
*Std OXH97	1320					
*Std OXN117	7800					
*Blk BLANK	<5					
*Rep B00269680			<0.01	<0.05	<0.01	<0.01
*Rep B00269720			<0.01	0.20	<0.01	<0.01
*Rep B00269734			0.42	30.3	2.05	10.6
*Rep B00269748			4.71	27.8	1.24	4.54
*Std OREAS134A			0.13	11.9	13.0	17.3
*Std OREAS131B			0.02	5.82	1.91	3.09
*Std OREAS926			0.85	7.40	0.01	0.04
*Std OREAS131B			0.02	5.78	1.91	3.09
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<5					
*Std OREAS216	7150					

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00269680	<0.1	N.A.	N.A.
B00269681	0.1	N.A.	N.A.
B00269682	<0.1	N.A.	N.A.
B00269683	<0.1	N.A.	N.A.
B00269684	0.2	N.A.	N.A.
B00269685	16.7	N.A.	N.A.
B00269686	1.1	N.A.	N.A.
B00269687	1.1	N.A.	N.A.
B00269688	1.1	N.A.	N.A.
B00269689	1.0	N.A.	N.A.
B00269690	9.3	N.A.	N.A.
B00269691	4.7	N.A.	N.A.
B00269692	30.2	N.A.	N.A.
B00269693	33.8	N.A.	233
B00269694	34.9	4.48	346
B00269695	3.7	N.A.	N.A.
B00269696	0.7	N.A.	N.A.
B00269697	31.1	N.A.	281
B00269698	1.3	N.A.	N.A.
B00269699	<0.1	N.A.	N.A.
B00269700	<0.1	N.A.	N.A.
B00269701	<0.1	N.A.	N.A.
B00269702	<0.1	N.A.	N.A.
B00269703	<0.1	N.A.	N.A.
B00269704	0.5	N.A.	N.A.
B00269705	1.7	N.A.	N.A.
B00269706	31.3	N.A.	294
B00269707	33.2	N.A.	242
B00269708	33.5	N.A.	285
B00269709	30.6	N.A.	272
B00269710	28.3	N.A.	N.A.
B00269711	0.7	5.74	N.A.
B00269712	36.2	N.A.	266
B00269713	34.0	N.A.	368
B00269714	36.0	N.A.	431
B00269715	35.6	N.A.	178
B00269716	34.4	N.A.	N.A.
B00269717	32.4	N.A.	228
B00269718	34.1	N.A.	222
B00269719	36.9	N.A.	142

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
B00269720	<0.1	N.A.	N.A.
B00269721	42.4	N.A.	N.A.
B00269722	38.9	N.A.	203
B00269723	42.3	N.A.	203
B00269724	39.5	N.A.	263
B00269725	37.8	N.A.	182
B00269726	31.1	N.A.	301
B00269727	32.5	N.A.	366
B00269728	32.2	N.A.	350
B00269729	37.5	N.A.	275
B00269730	21.2	N.A.	295
B00269731	0.7	5.44	N.A.
B00269732	22.9	N.A.	187
B00269733	36.7	N.A.	161
B00269734	35.3	N.A.	N.A.
B00269735	33.0	N.A.	191
B00269736	31.4	N.A.	225
B00269737	35.0	N.A.	210
B00269738	15.9	N.A.	199
B00269739	37.9	N.A.	N.A.
B00269740	<0.1	N.A.	N.A.
B00269741	31.3	N.A.	180
B00269742	1.5	N.A.	N.A.
B00269743	0.1	N.A.	N.A.
B00269744	<0.1	N.A.	N.A.
B00269745	<0.1	N.A.	N.A.
B00269746	0.2	N.A.	N.A.
B00269747	<0.1	N.A.	N.A.
*Dup B00269747	<0.1	N.A.	N.A.
B00269748	23.6	N.A.	174
B00269749	12.2	N.A.	N.A.
B00269750	9.1	N.A.	N.A.
B00269751	4.5	N.A.	N.A.
B00269752	2.0	N.A.	N.A.
B00269753	2.0	N.A.	N.A.
B00269754	1.7	N.A.	N.A.

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Final : VC153095 Order: PO# BMC15-01_26 B00269680-754

Report File No.: 0000014124

Element	S	@Au	Ag
Method	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.1	0.5	10
Units	%	g/t	g/t
*Std OXN117		7.62	
*Blk BLANK		<0.50	
*Std ME-1302			403
*Blk BLANK			<10
*Rep B00269680	<0.1		
*Rep B00269720	<0.1		
*Rep B00269734	34.6		
*Rep B00269748	23.6		
*Std OREAS134A	19.9		
*Std OREAS131B	5.0		
*Std OREAS926	1.2		
*Std OREAS131B	5.0		
*Blk BLANK	<0.1		
*Rep B00269694			347

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Certificate of Analysis

Work Order : VC153315

[Report File No.: 0000014643]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 18, 2015

P.O. No.	:	PO# BMC15-01_28
Project No.	:	KZK
No. Of Samples	:	17
Date Submitted	:	Nov 18, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153315 Order: PO# BMC15-01_28

Report File No.: 0000014643

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269761	1.930	N.A.	52	15.6	0.05	11.1	0.35	1.89
B00269762	2.705	N.A.	24	8.4	0.06	9.40	0.13	2.07
B00269763	3.080	N.A.	<5	<0.3	<0.01	3.92	<0.01	0.05
B00269764	2.880	N.A.	6	2.5	0.02	4.86	<0.01	0.77
B00269765	3.075	N.A.	8	2.1	0.06	9.47	0.03	2.50
B00269766	2.030	N.A.	<5	0.3	0.01	6.85	<0.01	0.12
B00269767	3.480	N.A.	12	16.5	0.02	11.6	0.29	0.56
B00269768	2.465	N.A.	37	3.5	0.15	15.4	0.04	0.49
B00269769	3.170	N.A.	68	32.6	0.57	18.4	1.15	1.85
B00269770	0.155	N.A.	815	44.2	0.47	20.6	0.31	1.11
B00269771	0.905	N.A.	6	2.2	0.11	5.84	0.06	1.22
B00269772	2.235	N.A.	21	3.2	0.03	6.57	0.17	0.74
B00269773	3.210	N.A.	<5	<0.3	<0.01	5.10	<0.01	0.03
B00269774	3.320	N.A.	5	<0.3	<0.01	4.25	<0.01	0.02
B00269775	2.385	N.A.	13	22.0	0.01	4.90	0.31	0.60
B00269776	1.990	N.A.	<5	<0.3	<0.01	3.26	<0.01	0.03
B00269777	3.575	93.3	<5	1.3	<0.01	4.41	0.03	0.06
*Rep B00269766				<0.3				
*Std SU_1B				6.2				
*Blk BLANK				<0.3				
*Rep B00269766			8					
*Std OXB130			122					
*Blk BLANK			<5					
*Rep B00269768					0.15	15.3	0.03	0.50
*Std OREAS134A					0.13	12.2	13.1	16.8
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Final : VC153315 Order: PO# BMC15-01_28

Report File No.: 0000014643

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269761	0.18	2.4
B00269762	0.08	1.6
B00269763	0.08	<0.1
B00269764	0.08	0.5
B00269765	0.06	2.0
B00269766	0.13	0.4
B00269767	0.18	1.0
B00269768	0.19	1.2
B00269769	0.12	3.7
B00269770	0.04	18.3
B00269771	0.08	1.0
B00269772	0.12	0.6
B00269773	0.22	0.1
B00269774	0.29	0.3
B00269775	0.28	0.5
B00269776	0.21	<0.1
B00269777	0.25	<0.1
*Rep B00269768	0.18	1.2
*Std OREAS134A	0.14	19.4
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis

Work Order : VC153345

[Report File No.: 0000014651]

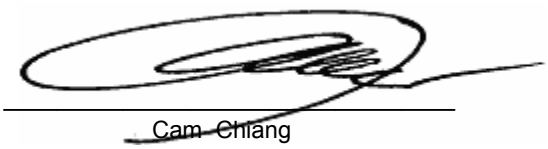
To: **ROBIN BLACK** Date: Dec 19, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_31 B00233199-258
Project No.	:	KZK
No. Of Samples	:	60
Date Submitted	:	Nov 23, 2015
Report Comprises	:	Pages 1 to 6 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

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n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153345 Order: PO# BMC15-01_31 B00233199-258

Report File No.: 0000014651

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233199	4.460	N.A.	25	1.1	<0.01	2.16	0.02	0.03
B00233200	1.740	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233201	5.055	N.A.	49	2.0	<0.01	2.47	0.03	0.07
B00233202	5.560	N.A.	57	6.9	0.03	2.64	0.10	0.15
B00233203	2.750	N.A.	1310	212	0.21	32.5	2.79	7.86
B00233204	2.715	N.A.	114	24.1	0.33	3.65	0.16	0.31
B00233205	1.040	N.A.	1150	94.0	0.95	10.7	0.68	2.18
B00233206	3.575	N.A.	2070	226	0.42	32.9	2.06	8.41
B00233207	2.985	N.A.	1170	184	0.30	33.3	2.79	9.10
B00233208	5.965	N.A.	22	1.7	<0.01	2.45	0.02	0.02
B00233209	5.315	N.A.	9	1.6	<0.01	1.31	<0.01	0.03
B00233210	0.155	N.A.	853	44.0	0.47	20.3	0.31	1.12
B00233211	5.100	N.A.	9	1.5	<0.01	1.28	0.01	<0.01
B00233212	1.210	N.A.	131	28.7	0.04	11.0	0.25	1.35
B00233213	1.335	N.A.	87	9.7	0.10	7.46	0.05	1.78
B00233214	6.130	N.A.	5	<0.3	<0.01	7.61	<0.01	0.03
B00233215	5.250	N.A.	5	0.6	<0.01	8.14	0.01	0.06
B00233216	6.360	N.A.	7	1.1	<0.01	6.65	<0.01	0.04
B00233217	7.015	N.A.	1400	216	0.11	28.5	4.41	7.13
B00233218	1.370	N.A.	30	5.5	0.02	7.69	0.09	0.16
B00233219	5.510	N.A.	2620	>300	0.13	25.4	4.24	7.19
B00233220	1.500	N.A.	<5	0.6	<0.01	0.12	<0.01	0.02
B00233221	5.870	N.A.	2970	>300	0.16	23.3	5.26	6.52
B00233222	5.240	N.A.	2140	243	0.27	26.5	4.18	6.02
B00233223	5.460	N.A.	2200	279	0.32	29.0	5.92	6.99
B00233224	6.470	N.A.	2550	230	0.22	22.9	4.36	5.84
B00233225	6.365	N.A.	2750	>300	0.33	28.1	5.28	10.5
B00233226	2.320	N.A.	1370	232	0.15	18.4	3.79	5.32
B00233227	0.685	N.A.	4300	276	0.69	7.18	0.26	0.55
B00233228	5.880	N.A.	2490	>300	0.20	23.0	3.85	6.10
B00233229	4.480	N.A.	2840	>300	0.26	17.8	2.86	3.79
B00233230	0.170	N.A.	1200	68.7	0.37	3.78	1.34	5.36
B00233231	0.170	N.A.	784	20.2	1.73	13.8	0.26	1.02
B00233232	5.945	N.A.	2840	245	0.16	16.3	2.69	3.85
B00233233	5.030	N.A.	2600	296	0.25	21.9	3.20	4.64
B00233234	6.275	N.A.	1510	259	0.23	24.3	4.31	5.80
B00233235	4.835	N.A.	1570	>300	0.21	30.8	6.51	7.86
B00233236	5.080	N.A.	24	2.9	<0.01	2.44	0.03	0.06
B00233237	5.570	N.A.	11	0.6	<0.01	2.40	<0.01	0.01
B00233238	5.165	N.A.	25	0.8	<0.01	1.85	<0.01	0.03

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Final : VC153345 Order: PO# BMC15-01_31 B00233199-258

Report File No.: 0000014651

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233239	5.150	N.A.	9	0.4	<0.01	1.51	<0.01	<0.01
B00233240	1.325	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233241	5.675	N.A.	9	0.5	<0.01	1.39	<0.01	<0.01
B00233242	5.325	N.A.	37	2.9	<0.01	2.13	0.02	0.05
B00233243	1.550	N.A.	601	177	<0.01	27.4	2.75	5.08
B00233244	5.920	N.A.	14	1.9	<0.01	7.05	0.01	0.05
B00233245	5.135	N.A.	18	3.7	<0.01	7.46	0.03	0.05
B00233246	1.240	N.A.	15	0.9	<0.01	7.27	0.02	0.04
B00233247	5.215	N.A.	92	17.7	0.02	7.58	0.34	0.08
B00233248	4.650	86.3	891	115	0.93	37.4	1.23	6.41
B00233249	4.400	N.A.	1510	110	2.84	36.4	0.27	9.88
B00233250	0.145	N.A.	312	20.6	13.3	27.5	0.05	0.40
B00233251	0.140	N.A.	5120	6.4	0.58	6.04	0.01	0.11
B00233252	3.890	N.A.	2530	102	3.71	32.8	0.10	7.87
B00233253	1.480	N.A.	15	1.3	0.03	4.50	0.01	0.12
B00233254	1.015	N.A.	24	1.9	0.05	3.53	0.02	0.24
B00233255	5.725	N.A.	6	0.7	<0.01	1.79	<0.01	0.01
B00233256	4.095	N.A.	6	<0.3	<0.01	2.15	<0.01	0.01
B00233257	2.345	N.A.	12	0.9	0.01	7.45	<0.01	0.02
B00233258	5.350	N.A.	<5	<0.3	<0.01	3.05	<0.01	0.08
*Rep B00233215				0.5				
*Rep B00233255				0.7				
*Std SU_1B				6.5				
*Std OREAS621				70.3				
*Std AMIS0268				192				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00233206			1820					
*Rep B00233248			820					
*Std OXB130			120					
*Std OXH97			1210					
*Std OXJ111			2180					
*Std AMIS0267			8560					
*Blk BLANK			<5					
*Rep B00233210					0.47	20.2	0.31	1.12
*Rep B00233242					<0.01	2.14	0.02	0.05

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Final : VC153345 Order: PO# BMC15-01_31 B00233199-258

Report File No.: 0000014651

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00233247	0.02	7.55	0.35	0.07
*Std OREAS134A	0.13	12.2	13.2	17.2
*Std OREAS131B	0.02	5.82	1.84	3.08
*Std OREAS134A	0.13	12.2	13.1	17.0
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC153345 Order: PO# BMC15-01_31 B00233199-258

Report File No.: 0000014651

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233199	0.18	0.9	N.A.	N.A.
B00233200	<0.01	0.1	N.A.	N.A.
B00233201	0.21	0.9	N.A.	N.A.
B00233202	0.20	1.3	N.A.	N.A.
B00233203	0.01	38.9	N.A.	174
B00233204	0.21	1.9	N.A.	N.A.
B00233205	0.19	8.8	N.A.	N.A.
B00233206	<0.01	40.3	N.A.	216
B00233207	<0.01	41.7	N.A.	150
B00233208	0.35	0.8	N.A.	N.A.
B00233209	0.32	0.2	N.A.	N.A.
B00233210	0.05	18.9	N.A.	N.A.
B00233211	0.23	<0.1	N.A.	N.A.
B00233212	0.49	9.7	N.A.	N.A.
B00233213	0.23	3.5	N.A.	N.A.
B00233214	0.18	0.1	N.A.	N.A.
B00233215	0.19	0.1	N.A.	N.A.
B00233216	0.75	0.3	N.A.	N.A.
B00233217	>4.00	36.5	N.A.	174
B00233218	0.60	1.0	N.A.	N.A.
B00233219	>4.00	33.6	N.A.	348
B00233220	0.02	0.2	N.A.	N.A.
B00233221	>4.00	32.7	N.A.	370
B00233222	>4.00	33.6	N.A.	238
B00233223	>4.00	36.2	N.A.	286
B00233224	>4.00	32.7	N.A.	219
B00233225	>4.00	37.6	N.A.	286
B00233226	>4.00	27.6	N.A.	255
B00233227	2.84	3.3	N.A.	289
B00233228	>4.00	30.2	N.A.	334
B00233229	>4.00	24.7	N.A.	330
B00233230	0.26	4.6	N.A.	N.A.
B00233231	0.14	9.4	N.A.	N.A.
B00233232	>4.00	25.4	N.A.	229
B00233233	>4.00	30.0	N.A.	323
B00233234	>4.00	31.2	N.A.	274
B00233235	0.08	38.8	N.A.	374
B00233236	0.58	0.5	N.A.	N.A.
B00233237	0.48	0.6	N.A.	N.A.
B00233238	0.17	1.2	N.A.	N.A.

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Final : VC153345 Order: PO# BMC15-01_31 B00233199-258

Report File No.: 0000014651

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233239	0.12	0.6	N.A.	N.A.
B00233240	<0.01	<0.1	N.A.	N.A.
B00233241	0.13	0.6	N.A.	N.A.
B00233242	0.41	1.1	N.A.	N.A.
B00233243	0.06	33.4	N.A.	164
B00233244	0.95	0.1	N.A.	N.A.
B00233245	0.64	<0.1	N.A.	N.A.
B00233246	0.35	0.2	N.A.	N.A.
B00233247	0.89	0.3	N.A.	N.A.
B00233248	0.16	41.0	N.A.	N.A.
B00233249	0.02	33.1	N.A.	N.A.
B00233250	<0.01	28.1	N.A.	N.A.
B00233251	0.04	0.6	5.57	N.A.
B00233252	0.06	26.2	N.A.	N.A.
B00233253	0.13	1.5	N.A.	N.A.
B00233254	0.05	1.8	N.A.	N.A.
B00233255	0.08	0.3	N.A.	N.A.
B00233256	0.07	0.5	N.A.	N.A.
B00233257	0.07	4.4	N.A.	N.A.
B00233258	0.07	0.3	N.A.	N.A.
*Std OXN117			8.07	
*Blk BLANK			<0.50	
*Std AMIS0268				196
*Blk BLANK				<10
*Rep B00233210	0.05	18.9		
*Rep B00233242	0.41	1.1		

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Rep B00233247	0.88	0.2		
*Std OREAS134A	0.14	19.5		
*Std OREAS131B	0.08	4.9		
*Std OREAS134A	0.15	19.9		
*Blk BLANK	<0.01	<0.1		
*Rep B00233235				348
*Rep B00233251			5.70	

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Certificate of Analysis

Work Order : VC153347

[Report File No.: 0000014644]

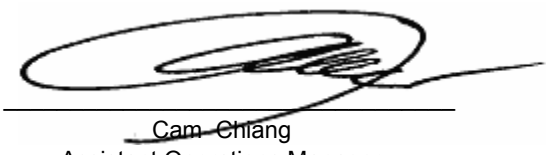
To: **ROBIN BLACK** Date: Dec 18, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_31 B00265407-500
Project No.	:	KZK
No. Of Samples	:	94
Date Submitted	:	Nov 23, 2015
Report Comprises	:	Pages 1 to 8 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265407	5.640	N.A.	4200	>300	0.47	23.2	1.11	3.36
B00265408	3.110	N.A.	2380	>300	0.19	34.0	4.97	10.8
B00265409	2.050	N.A.	4330	>300	0.52	26.7	1.93	5.99
B00265410	0.205	N.A.	784	21.3	1.71	13.5	0.26	1.03
B00265411	3.130	N.A.	1420	277	0.30	36.1	2.15	9.23
B00265412	2.255	N.A.	50	8.2	0.01	9.33	0.07	0.11
B00265413	3.255	N.A.	798	187	0.07	27.5	1.47	5.20
B00265414	2.740	N.A.	<5	0.8	0.03	7.49	0.01	0.05
B00265415	5.655	N.A.	<5	1.7	<0.01	6.84	<0.01	0.02
B00265416	4.995	N.A.	1180	255	0.02	6.85	0.02	0.02
B00265417	3.975	N.A.	<5	<0.3	<0.01	6.84	<0.01	0.01
B00265418	2.995	N.A.	<5	0.4	<0.01	4.76	0.01	0.02
B00265419	3.270	N.A.	6	0.4	<0.01	7.24	<0.01	0.01
B00265420	0.595	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00265421	2.350	N.A.	7	0.5	0.01	7.23	<0.01	0.02
B00265422	2.060	N.A.	241	65.4	0.12	11.4	0.83	1.25
B00265423	3.890	N.A.	1850	>300	0.18	33.0	5.03	9.87
B00265424	5.265	N.A.	1790	>300	0.23	33.5	2.61	12.0
B00265425	2.650	N.A.	1140	115	0.18	25.9	2.20	6.91
B00265426	2.050	N.A.	2830	286	0.20	33.8	3.21	13.3
B00265427	2.990	N.A.	3230	>300	0.26	33.1	2.85	9.33
B00265428	5.135	N.A.	2060	297	0.19	32.6	3.35	7.98
B00265429	2.545	N.A.	1810	143	0.50	28.7	1.36	5.44
B00265430	0.170	N.A.	830	20.7	1.68	13.9	0.26	1.03
B00265431	3.720	N.A.	1270	165	0.45	31.6	1.64	7.18
B00265432	4.820	N.A.	6	1.1	<0.01	6.68	0.02	0.03
B00265433	5.410	N.A.	6	0.9	<0.01	6.57	<0.01	0.02
B00265434	2.690	N.A.	17	3.0	<0.01	5.91	0.03	0.02
B00265435	5.100	N.A.	12	2.2	<0.01	1.79	0.09	0.10
B00265436	2.270	N.A.	<5	1.3	<0.01	1.53	0.02	0.03
B00265437	3.590	N.A.	21	8.4	<0.01	3.08	0.12	0.11
B00265438	3.345	N.A.	6	1.9	<0.01	2.34	0.02	0.03
B00265439	1.730	N.A.	851	283	0.06	23.8	3.13	5.71
B00265440	1.405	N.A.	<5	0.3	<0.01	0.06	<0.01	<0.01
B00265441	2.315	N.A.	24	5.1	<0.01	1.85	0.06	0.07
*Dup B00265441	N.A.	N.A.	30	4.8	<0.01	1.86	0.06	0.08
B00265442	4.785	N.A.	6	1.7	<0.01	2.55	0.02	0.02
B00265443	2.910	N.A.	6	0.4	<0.01	2.43	<0.01	<0.01
B00265444	2.695	N.A.	6	1.4	<0.01	1.32	<0.01	0.01
B00265445	4.005	N.A.	7	1.2	<0.01	1.55	<0.01	<0.01

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265446	3.455	N.A.	103	14.5	0.02	6.20	0.11	0.12
B00265447	3.000	N.A.	54	6.4	<0.01	3.35	0.05	0.06
B00265448	4.210	N.A.	85	25.7	0.02	3.23	0.16	0.16
B00265449	4.485	N.A.	2070	129	0.36	4.76	0.16	0.27
B00265450	0.150	N.A.	853	45.5	0.45	19.9	0.31	1.12
B00265451	2.870	N.A.	968	207	0.15	22.9	3.64	5.65
B00265452	3.820	N.A.	>10000	>300	0.37	26.7	4.86	8.21
B00265453	2.215	N.A.	723	92.1	0.23	1.91	0.02	0.04
B00265454	3.425	N.A.	114	6.5	0.01	1.57	0.03	0.02
B00265455	3.440	N.A.	8	0.8	<0.01	1.92	<0.01	<0.01
B00265456	5.300	85.2	62	6.8	<0.01	2.55	0.07	0.10
B00265457	1.740	N.A.	387	151	0.03	9.40	2.12	5.20
B00265458	3.650	N.A.	732	110	0.04	12.6	1.65	2.95
B00265459	3.200	N.A.	642	176	0.08	17.4	2.02	4.60
B00265460	0.620	N.A.	<5	0.3	<0.01	0.05	<0.01	<0.01
B00265461	3.620	N.A.	60	13.0	<0.01	2.61	0.07	0.28
B00265462	1.975	N.A.	<5	0.9	<0.01	1.57	0.01	0.03
B00265463	3.870	N.A.	<5	0.7	<0.01	1.43	<0.01	<0.01
B00265464	3.390	N.A.	16	0.6	<0.01	1.20	<0.01	<0.01
B00265465	5.670	N.A.	<5	0.7	<0.01	1.43	<0.01	<0.01
B00265466	2.875	N.A.	<5	0.5	<0.01	1.15	<0.01	<0.01
B00265467	3.070	N.A.	202	2.3	<0.01	4.10	0.01	<0.01
B00265468	2.480	N.A.	<5	1.5	<0.01	1.35	0.01	0.01
B00265469	3.650	N.A.	1940	224	0.30	18.1	0.57	7.69
B00265470	0.145	N.A.	301	21.3	13.4	27.5	0.03	0.42
B00265471	4.780	N.A.	1600	275	0.32	20.1	0.94	9.47
B00265472	4.875	N.A.	3250	>300	0.78	22.6	3.62	5.39
B00265473	4.835	N.A.	2630	229	0.58	23.6	3.08	5.33
B00265474	4.760	N.A.	1940	>300	0.24	23.3	4.34	6.24
B00265475	4.760	N.A.	833	152	0.13	16.8	1.74	4.21
B00265476	4.060	N.A.	6	4.3	0.03	2.57	<0.01	0.02
*Dup B00265476	N.A.	N.A.	<5	4.4	0.03	2.34	0.01	0.02
B00265477	2.015	N.A.	5	0.8	<0.01	2.36	<0.01	<0.01
B00265478	4.095	N.A.	<5	0.4	<0.01	1.84	0.01	<0.01
B00265479	3.770	N.A.	<5	0.6	<0.01	1.81	<0.01	<0.01
B00265480	0.780	N.A.	<5	<0.3	<0.01	0.21	<0.01	<0.01
B00265481	2.625	N.A.	379	43.9	0.08	17.2	0.72	3.84
B00265482	4.490	N.A.	22	2.3	<0.01	7.08	0.03	0.07
B00265483	3.300	N.A.	232	36.2	0.03	8.21	0.55	0.21
B00265484	2.000	N.A.	3850	164	2.60	34.1	0.76	4.45

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265485	3.825	N.A.	141	5.7	0.06	3.12	0.06	0.11
B00265486	4.175	N.A.	9	<0.3	<0.01	4.67	<0.01	0.02
B00265487	5.450	N.A.	9	0.5	<0.01	2.57	0.01	0.02
B00265488	3.770	N.A.	6	1.1	0.01	11.6	<0.01	0.55
B00265489	4.015	N.A.	<5	<0.3	0.03	10.3	<0.01	1.30
B00265490	0.150	N.A.	844	45.9	0.46	20.3	0.31	1.13
B00265491	5.480	N.A.	37	1.5	<0.01	2.17	0.01	0.07
B00265492	3.845	N.A.	15	2.0	<0.01	2.03	0.02	<0.01
B00265493	3.340	N.A.	13	0.7	<0.01	2.16	0.01	<0.01
B00265494	2.250	N.A.	1140	106	0.12	26.2	2.03	7.85
B00265495	3.730	N.A.	34	5.5	<0.01	2.20	0.10	0.05
B00265496	1.825	N.A.	15	14.6	0.02	4.81	0.01	0.04
B00265497	4.895	N.A.	<5	0.5	<0.01	7.75	<0.01	0.02
B00265498	6.415	N.A.	14	0.6	<0.01	8.54	<0.01	0.01
B00265499	4.235	N.A.	<5	0.5	<0.01	9.61	0.01	0.02
B00265500	0.905	N.A.	9	<0.3	<0.01	0.12	<0.01	<0.01
*Rep B00265419				0.5				
*Rep B00265473				234				
*Rep B00265491				1.7				
*Std OREAS621				69.0				
*Std AMIS0268				185				
*Std SU_1B				6.2				
*Std AMIS0268				195				
*Std SU_1B				6.1				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00265428			1800					
*Rep B00265463			<5					
*Rep B00265488			8					
*Std OXB130			125					
*Std OXH97			1330					
*Std OXJ111			2150					
*Std AMIS0267			9500					
*Std OXB130			123					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Blk BLANK			<5					

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00265424	0.23	32.9	2.64	11.6
*Rep B00265448	0.03	3.26	0.15	0.16
*Rep B00265465	<0.01	1.47	<0.01	<0.01
*Rep B00265492	<0.01	2.07	0.01	0.01
*Rep B00265498	<0.01	8.55	<0.01	0.01
*Std OREAS134A	0.13	12.0	12.9	17.2
*Std OREAS131B	0.02	5.72	1.81	3.06
*Std OREAS926	0.81	7.42	0.02	0.04
*Std OREAS134A	0.13	12.1	13.0	17.6
*Std OREAS131B	0.02	5.69	1.86	3.11
*Blk BLANK	<0.01	<0.05	<0.01	<0.01
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00265407	0.53	27.7	N.A.	423
B00265408	0.02	43.1	N.A.	469
B00265409	0.37	32.3	N.A.	463
B00265410	0.14	9.3	N.A.	N.A.
B00265411	0.03	47.6	N.A.	271
B00265412	<0.01	4.6	N.A.	N.A.
B00265413	0.17	31.7	N.A.	188
B00265414	0.26	0.7	N.A.	N.A.
B00265415	0.25	0.3	N.A.	N.A.
B00265416	0.21	0.4	N.A.	265
B00265417	0.15	0.5	N.A.	N.A.
B00265418	0.17	0.6	N.A.	N.A.
B00265419	0.33	0.2	N.A.	N.A.
B00265420	<0.01	<0.1	N.A.	N.A.
B00265421	0.25	0.2	N.A.	N.A.
B00265422	0.51	5.3	N.A.	N.A.
B00265423	0.59	44.6	N.A.	417
B00265424	0.01	43.6	N.A.	336
B00265425	0.43	31.9	N.A.	N.A.
B00265426	<0.01	45.2	N.A.	327
B00265427	0.02	42.3	N.A.	306
B00265428	0.01	40.5	N.A.	296
B00265429	<0.01	32.7	N.A.	N.A.
B00265430	0.14	9.2	N.A.	N.A.
B00265431	0.03	38.8	N.A.	170
B00265432	0.22	0.1	N.A.	N.A.
B00265433	0.13	0.1	N.A.	N.A.
B00265434	0.23	0.1	N.A.	N.A.
B00265435	0.48	1.1	N.A.	N.A.
B00265436	1.23	0.5	N.A.	N.A.
B00265437	1.56	1.0	N.A.	N.A.
B00265438	1.05	0.5	N.A.	N.A.
B00265439	0.13	29.7	N.A.	287
B00265440	<0.01	0.1	N.A.	N.A.
B00265441	1.38	0.5	N.A.	N.A.
*Dup B00265441	1.36	0.6	N.A.	N.A.
B00265442	1.05	0.6	N.A.	N.A.
B00265443	0.89	0.5	N.A.	N.A.
B00265444	0.13	0.4	N.A.	N.A.
B00265445	0.15	0.5	N.A.	N.A.

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00265446	0.19	6.6	N.A.	N.A.
B00265447	0.21	3.2	N.A.	N.A.
B00265448	0.22	3.0	N.A.	N.A.
B00265449	0.13	4.9	N.A.	N.A.
B00265450	0.05	18.1	N.A.	N.A.
B00265451	0.03	28.8	N.A.	210
B00265452	0.01	34.0	12.17	346
B00265453	0.32	1.2	N.A.	N.A.
B00265454	0.32	1.2	N.A.	N.A.
B00265455	0.32	1.0	N.A.	N.A.
B00265456	0.21	1.9	N.A.	N.A.
B00265457	0.11	12.0	N.A.	128
B00265458	0.17	14.2	N.A.	N.A.
B00265459	0.12	20.5	N.A.	180
B00265460	<0.01	0.1	N.A.	N.A.
B00265461	0.22	1.8	N.A.	N.A.
B00265462	0.34	1.2	N.A.	N.A.
B00265463	0.16	0.6	N.A.	N.A.
B00265464	0.13	1.0	N.A.	N.A.
B00265465	0.15	1.1	N.A.	N.A.
B00265466	0.15	0.4	N.A.	N.A.
B00265467	0.13	4.2	N.A.	N.A.
B00265468	0.19	0.4	N.A.	N.A.
B00265469	0.02	19.3	N.A.	207
B00265470	<0.01	28.3	N.A.	N.A.
B00265471	<0.01	19.1	N.A.	292
B00265472	<0.01	18.3	N.A.	318
B00265473	<0.01	17.4	N.A.	246
B00265474	<0.01	21.7	N.A.	378
B00265475	<0.01	14.4	N.A.	141
B00265476	0.17	0.7	N.A.	N.A.
*Dup B00265476	0.16	0.7	N.A.	N.A.
B00265477	0.19	1.1	N.A.	N.A.
B00265478	0.13	0.8	N.A.	N.A.
B00265479	0.31	0.5	N.A.	N.A.
B00265480	<0.01	<0.1	N.A.	N.A.
B00265481	0.41	17.9	N.A.	N.A.
B00265482	0.38	<0.1	N.A.	N.A.
B00265483	0.45	1.1	N.A.	N.A.
B00265484	0.21	35.5	N.A.	132

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Final : VC153347 Order: PO# BMC15-01_31 B00265407-500

Report File No.: 0000014644

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00265485	0.50	1.6	N.A.	N.A.
B00265486	0.16	1.4	N.A.	N.A.
B00265487	0.11	1.0	N.A.	N.A.
B00265488	0.03	2.8	N.A.	N.A.
B00265489	0.06	1.9	N.A.	N.A.
B00265490	0.04	18.1	N.A.	N.A.
B00265491	0.26	1.4	N.A.	N.A.
B00265492	0.25	0.4	N.A.	N.A.
B00265493	0.21	0.6	N.A.	N.A.
B00265494	0.07	32.2	N.A.	N.A.
B00265495	0.26	0.3	N.A.	N.A.
B00265496	0.17	0.9	N.A.	N.A.
B00265497	0.16	0.2	N.A.	N.A.
B00265498	0.06	<0.1	N.A.	N.A.
B00265499	0.07	0.2	N.A.	N.A.
B00265500	<0.01	<0.1	N.A.	N.A.
*Std OXN117			7.90	
*Std AMIS0268				200

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Blk BLANK				<10
*Rep B00265424	0.01	43.8		
*Rep B00265448	0.22	3.1		
*Rep B00265465	0.15	1.0		
*Rep B00265492	0.26	0.4		
*Rep B00265498	0.06	<0.1		
*Std OREAS134A	0.14	19.5		
*Std OREAS131B	0.08	4.8		
*Std OREAS926	0.04	1.2		
*Std OREAS134A	0.14	19.4		
*Std OREAS131B	0.07	5.0		
*Blk BLANK	<0.01	<0.1		
*Blk BLANK	<0.01	<0.1		
*Rep B00265408				460
*Blk BLANK			<0.50	

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Certificate of Analysis

Work Order : VC153348

[Report File No.: 0000014645]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 18, 2015

P.O. No.	:	PO# BMC15-01_31 B00232651-716
Project No.	:	KZK
No. Of Samples	:	66
Date Submitted	:	Nov 23, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232651	4.135	N.A.	<5	0.6	<0.01	8.29	<0.01	0.02
B00232652	3.545	N.A.	29	3.0	<0.01	7.52	0.02	0.03
B00232653	4.655	N.A.	966	175	0.30	29.0	1.73	7.71
B00232654	2.875	N.A.	928	228	0.04	31.0	2.89	9.89
B00232655	3.420	N.A.	719	96.7	0.36	23.1	0.90	4.92
B00232656	6.690	N.A.	1010	129	0.79	34.8	0.96	7.00
B00232657	5.835	N.A.	1980	230	1.37	36.1	2.01	11.3
B00232658	5.115	N.A.	721	119	0.34	23.5	0.94	6.57
B00232659	4.175	N.A.	20	2.1	<0.01	2.21	0.01	0.04
B00232660	1.375	N.A.	<5	0.5	<0.01	0.10	<0.01	0.03
B00232661	3.790	N.A.	15	1.2	<0.01	2.43	0.02	0.02
B00232662	4.480	N.A.	8	1.0	<0.01	2.46	0.01	0.02
B00232663	3.545	N.A.	161	10.1	0.14	7.21	0.08	0.05
B00232664	4.880	N.A.	103	3.6	0.05	5.55	0.02	0.07
B00232665	2.900	N.A.	30	4.6	0.01	2.33	0.14	0.02
B00232666	6.700	N.A.	21	32.4	0.08	1.47	0.41	0.03
B00232667	2.845	N.A.	105	18.9	0.09	4.51	0.30	0.40
B00232668	4.490	N.A.	2170	247	1.53	28.8	4.77	14.1
B00232669	3.145	N.A.	958	191	0.64	27.9	4.06	14.2
B00232670	0.145	N.A.	309	20.1	13.6	28.2	0.03	0.43
B00232671	4.945	N.A.	926	142	0.84	30.0	3.80	7.72
B00232672	2.315	N.A.	1130	158	1.10	22.6	3.23	5.09
B00232673	4.515	N.A.	732	106	0.08	27.0	4.16	7.15
B00232674	4.330	N.A.	1350	171	0.42	32.7	5.15	7.22
B00232675	4.540	N.A.	1080	214	0.32	28.6	6.44	12.5
B00232676	5.485	N.A.	1520	>300	2.21	34.8	7.04	9.31
B00232677	3.855	N.A.	1230	214	0.81	35.8	5.02	7.76
B00232678	4.315	N.A.	3030	264	1.61	34.5	6.57	8.47
B00232679	5.690	N.A.	766	285	0.41	30.4	7.40	10.00
B00232680	0.670	N.A.	<5	0.9	<0.01	0.22	0.04	0.05
B00232681	6.060	N.A.	1740	269	1.31	34.8	6.05	7.81
B00232682	6.410	N.A.	3890	>300	1.60	35.4	6.60	8.45
B00232683	5.325	N.A.	1430	250	0.15	33.2	6.14	7.87
B00232684	6.470	N.A.	1210	241	0.23	32.3	5.57	7.31
B00232685	4.175	N.A.	1360	230	0.13	25.9	4.75	5.87
*Dup B00232685	N.A.	N.A.	1550	217	0.13	25.5	4.56	5.74
B00232686	5.370	N.A.	1900	240	0.20	27.1	4.93	5.94
B00232687	5.560	N.A.	3290	217	0.31	24.6	3.87	5.68
B00232688	5.205	N.A.	2150	233	0.05	29.3	4.43	7.58
B00232689	2.680	N.A.	4560	>300	0.37	30.3	4.28	7.17

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232690	0.145	N.A.	304	21.3	13.4	28.1	0.03	0.44
B00232691	3.825	N.A.	3850	>300	0.36	28.8	4.00	8.85
B00232692	4.480	N.A.	2270	>300	0.70	27.5	4.31	17.7
B00232693	5.550	N.A.	1840	298	1.63	27.3	3.98	16.9
B00232694	5.665	N.A.	2490	>300	1.84	26.9	7.79	16.1
B00232695	5.420	N.A.	2620	>300	2.71	27.6	8.31	15.4
B00232696	5.700	N.A.	1640	>300	1.66	26.1	7.79	16.2
B00232697	5.925	N.A.	1800	>300	2.02	27.3	4.82	14.3
B00232698	5.360	N.A.	4120	>300	3.36	24.0	4.75	9.68
B00232699	4.675	N.A.	1510	292	1.24	25.6	4.00	11.3
B00232700	0.875	85.3	7	1.3	<0.01	0.25	0.02	0.04
B00232701	5.210	N.A.	1410	>300	0.76	30.4	3.09	12.3
B00232702	4.265	N.A.	3280	>300	5.50	23.0	5.80	12.2
B00232703	0.795	N.A.	5820	>300	5.79	29.1	3.50	11.0
B00232704	2.725	N.A.	683	156	0.45	26.1	2.14	6.19
B00232705	2.885	N.A.	955	158	0.32	30.7	2.21	5.37
B00232706	4.530	N.A.	31	3.2	0.01	7.84	0.02	0.07
B00232707	3.610	N.A.	28	3.1	<0.01	7.18	0.02	0.06
B00232708	4.745	N.A.	48	11.1	0.01	7.71	0.15	0.13
B00232709	3.315	N.A.	240	35.2	0.38	42.7	0.33	1.93
B00232710	0.145	N.A.	309	20.6	13.3	28.0	0.02	0.43
B00232711	5.745	N.A.	126	19.2	0.34	42.9	0.17	0.53
B00232712	2.290	N.A.	20	19.7	0.22	9.76	0.15	5.56
B00232713	3.460	N.A.	5	0.7	<0.01	3.66	0.01	0.03
B00232714	4.650	N.A.	<5	0.3	<0.01	4.02	<0.01	0.02
B00232715	1.820	N.A.	<5	0.5	<0.01	3.49	<0.01	0.02
B00232716	3.280	N.A.	<5	<0.3	<0.01	5.11	<0.01	0.04
*Rep B00232677				204				
*Rep B00232703				>300				
*Std SU_1B				6.3				
*Std OREAS621				65.3				
*Std AMIS0268				192				
*Std AMIS0268				198				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00232710			295					
*Std OXB130			114					
*Std OXH97			1240					
*Std OXJ111			2240					
*Std AMIS0267			9960					

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Blk BLANK	<5				
*Rep B00232661		<0.01	2.43	0.01	0.02
*Rep B00232688		0.05	29.3	4.32	7.54
*Rep B00232704		0.45	26.5	2.17	6.19
*Std OREAS134A		0.13	12.4	13.3	17.4
*Std OREAS134A		0.13	12.3	13.0	17.0
*Std OREAS926		0.81	7.58	0.01	0.05
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00232651	0.30	<0.1	N.A.	N.A.
B00232652	0.52	0.9	N.A.	N.A.
B00232653	0.18	32.5	N.A.	170
B00232654	<0.01	38.3	N.A.	241
B00232655	0.44	24.7	N.A.	N.A.
B00232656	0.19	39.3	N.A.	N.A.
B00232657	0.03	39.7	N.A.	224
B00232658	0.15	26.4	N.A.	N.A.
B00232659	0.40	1.2	N.A.	N.A.
B00232660	<0.01	0.1	N.A.	N.A.
B00232661	0.35	1.2	N.A.	N.A.
B00232662	0.37	1.4	N.A.	N.A.
B00232663	1.58	3.5	N.A.	N.A.
B00232664	1.73	1.3	N.A.	N.A.
B00232665	0.49	0.5	N.A.	N.A.
B00232666	0.03	0.2	N.A.	N.A.
B00232667	0.83	2.5	N.A.	N.A.
B00232668	0.02	31.8	N.A.	265
B00232669	<0.01	30.9	N.A.	201
B00232670	<0.01	29.1	N.A.	N.A.
B00232671	0.02	32.3	N.A.	N.A.
B00232672	0.02	19.6	N.A.	191
B00232673	0.02	28.2	N.A.	N.A.
B00232674	0.03	35.1	N.A.	193
B00232675	0.04	33.0	N.A.	205
B00232676	<0.01	32.4	N.A.	323
B00232677	<0.01	32.1	N.A.	200
B00232678	<0.01	31.9	N.A.	288
B00232679	<0.01	34.7	N.A.	273
B00232680	<0.01	0.2	N.A.	N.A.
B00232681	<0.01	35.6	N.A.	256
B00232682	<0.01	28.8	N.A.	298
B00232683	<0.01	28.6	N.A.	218
B00232684	<0.01	27.0	N.A.	209
B00232685	<0.01	22.5	N.A.	191
*Dup B00232685	<0.01	22.2	N.A.	203
B00232686	<0.01	23.8	N.A.	251
B00232687	<0.01	19.7	N.A.	210
B00232688	0.02	29.8	N.A.	218
B00232689	0.02	33.6	N.A.	410

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00232690	<0.01	28.4	N.A.	N.A.
B00232691	0.04	31.6	N.A.	400
B00232692	0.03	36.7	N.A.	270
B00232693	<0.01	34.9	N.A.	251
B00232694	0.03	31.4	N.A.	409
B00232695	0.02	29.2	N.A.	421
B00232696	0.01	32.5	N.A.	398
B00232697	<0.01	32.5	N.A.	301
B00232698	<0.01	25.5	N.A.	389
B00232699	0.02	28.4	N.A.	277
B00232700	<0.01	0.1	N.A.	N.A.
B00232701	<0.01	37.1	N.A.	264
B00232702	0.04	28.4	N.A.	560
B00232703	0.07	34.2	6.85	399
B00232704	0.43	29.4	N.A.	159
B00232705	0.04	33.2	N.A.	146
B00232706	0.13	0.2	N.A.	N.A.
B00232707	0.03	<0.1	N.A.	N.A.
B00232708	0.05	0.4	N.A.	N.A.
B00232709	0.07	48.6	N.A.	N.A.
B00232710	<0.01	29.4	N.A.	N.A.
B00232711	0.06	38.3	N.A.	N.A.
B00232712	0.15	7.4	N.A.	N.A.
B00232713	0.20	1.2	N.A.	N.A.
B00232714	0.13	0.7	N.A.	N.A.
B00232715	0.10	0.2	N.A.	N.A.
B00232716	0.08	1.0	N.A.	N.A.

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Std AMIS0267			9.30	
*Blk BLANK			<0.50	
*Std ME-1302				444
*Std AMIS0267				928
*Blk BLANK				<10
*Rep B00232661	0.36	1.3		
*Rep B00232688	0.02	29.0		
*Rep B00232704	0.44	29.4		
*Std OREAS134A	0.14	19.3		

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Final : VC153348 Order: PO# BMC15-01_31 B00232651-716

Report File No.: 0000014645

	Ba GO_ICP90Q 0.01 %	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Std OREAS134A	0.14	19.0		
*Std OREAS926	0.04	1.1		
*Blk BLANK	<0.01	<0.1		
*Blk BLANK	<0.01	<0.1		
*Rep B00232703			6.46	
*Rep B00232678				268

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Certificate of Analysis

Work Order : VC153349

[Report File No.: 0000014762]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 21, 2015

P.O. No.	:	PO# BMC15-01_31 B00269913-973
Project No.	:	KZK
No. Of Samples	:	61
Date Submitted	:	Nov 23, 2015
Report Comprises	:	Pages 1 to 6 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153349 Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014762

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269913	2.345	N.A.	28	5.3	<0.01	3.25	0.07	0.13
B00269914	5.760	N.A.	1930	>300	0.25	34.3	3.55	8.83
B00269915	5.055	N.A.	1850	269	0.24	35.2	3.47	7.09
B00269916	4.910	N.A.	2970	>300	0.19	26.5	5.04	8.63
B00269917	3.955	N.A.	3030	>300	0.11	19.0	5.16	7.24
B00269918	3.590	N.A.	16	3.6	<0.01	1.62	0.04	0.03
B00269919	2.475	N.A.	6	1.4	<0.01	1.31	0.01	<0.01
B00269920	1.095	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269921	4.045	N.A.	507	84.6	<0.01	2.55	0.07	0.05
B00269922	2.700	N.A.	122	0.5	<0.01	8.85	0.01	0.02
B00269923	3.605	N.A.	7	0.6	<0.01	8.06	0.01	0.12
B00269924	0.630	N.A.	385	111	1.13	24.6	1.51	12.4
B00269925	2.140	N.A.	<5	0.6	<0.01	2.57	0.01	0.02
B00269926	6.400	N.A.	<5	<0.3	<0.01	7.88	0.02	0.02
B00269927	5.315	N.A.	<5	0.8	<0.01	7.69	0.01	0.02
B00269928	3.775	N.A.	59	2.3	0.15	6.55	<0.01	0.55
B00269929	2.795	N.A.	890	32.9	2.13	11.9	0.03	0.61
B00269930	0.165	N.A.	841	20.2	1.71	13.6	0.26	1.01
B00269931	0.170	N.A.	1310	69.8	0.36	3.71	1.33	5.21
B00269932	1.760	N.A.	1210	27.8	1.93	11.9	0.05	1.47
B00269933	6.385	N.A.	878	171	0.56	32.0	5.97	9.97
B00269934	5.575	N.A.	421	102	0.05	32.9	4.54	8.76
B00269935	5.755	N.A.	1500	91.0	0.30	34.3	5.19	7.34
B00269936	5.950	N.A.	2200	107	0.45	30.9	4.93	7.03
B00269937	3.670	N.A.	1400	113	0.12	31.9	5.69	8.90
B00269938	2.500	N.A.	745	101	0.36	34.1	4.06	8.34
B00269939	5.685	N.A.	2190	121	0.27	33.1	5.87	7.57
B00269940	1.005	N.A.	<5	<0.3	<0.01	0.08	0.01	0.01
B00269941	4.705	N.A.	2230	123	0.25	31.9	5.19	6.67
B00269942	6.300	N.A.	2300	141	0.12	27.9	5.77	7.69
B00269943	5.520	N.A.	1710	126	0.15	22.9	3.41	5.35
B00269944	4.260	N.A.	2980	143	0.14	20.8	2.92	4.23
B00269945	5.755	N.A.	2600	250	0.05	26.0	5.56	6.25
B00269946	5.605	N.A.	2900	192	0.11	29.3	4.34	6.05
B00269947	4.385	N.A.	2820	215	0.37	29.2	3.61	4.59
*Dup B00269947	N.A.	N.A.	2480	203	0.38	28.8	3.62	4.64
B00269948	4.635	N.A.	1380	139	0.03	21.5	3.26	4.85
B00269949	6.145	N.A.	3050	>300	0.31	26.8	7.24	10.5
B00269950	0.175	N.A.	809	20.3	1.73	13.6	0.26	1.04
B00269951	0.170	N.A.	1290	67.3	0.36	3.82	1.37	5.29

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Final : VC153349 Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014762

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269952	1.270	N.A.	890	52.3	0.19	7.06	0.09	0.14
B00269953	3.480	N.A.	<5	0.4	<0.01	1.76	0.02	0.02
B00269954	4.315	N.A.	7	1.2	<0.01	3.06	0.02	0.02
B00269955	4.655	N.A.	<5	0.7	<0.01	2.24	0.02	0.02
B00269956	5.520	N.A.	<5	0.9	<0.01	1.75	<0.01	<0.01
B00269957	5.315	N.A.	<5	<0.3	<0.01	2.19	0.03	0.04
B00269958	3.045	N.A.	6	0.6	<0.01	2.23	<0.01	<0.01
B00269959	3.525	N.A.	8	2.7	<0.01	2.25	0.03	0.09
B00269960	1.170	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269961	2.925	N.A.	234	82.3	<0.01	31.0	1.08	3.82
B00269962	1.525	98.1	6	1.2	<0.01	6.92	0.03	0.04
B00269963	3.790	N.A.	<5	1.5	0.02	7.40	0.03	0.05
B00269964	3.070	N.A.	51	18.6	0.13	15.8	0.37	1.55
B00269965	3.700	N.A.	238	52.4	1.02	28.4	0.51	4.52
B00269966	4.165	N.A.	265	48.5	1.15	15.8	0.29	4.93
B00269967	4.170	N.A.	110	56.2	0.94	15.7	0.54	6.73
B00269968	2.025	N.A.	<5	1.4	0.03	3.07	<0.01	0.19
B00269969	3.455	N.A.	<5	1.4	0.02	3.24	0.01	0.08
B00269970	0.155	N.A.	841	44.1	0.46	20.3	0.31	1.13
B00269971	3.230	N.A.	19	3.2	0.03	8.02	0.05	0.25
B00269972	3.355	N.A.	<5	0.6	0.02	8.44	0.02	0.06
B00269973	4.975	N.A.	<5	<0.3	<0.01	7.01	<0.01	0.02
*Rep B00269936				105				
*Rep B00269971				3.1				
*Std SU_1B				6.4				
*Std OREAS621				69.4				
*Std OREAS621				68.4				
*Std AMIS0268				194				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00269927			10					
*Rep B00269962			<5					
*Std OXB130			128					
*Std OXH97			1330					
*Std OXJ111			2190					
*Blk BLANK			<5					
*Rep B00269934					0.05	33.3	4.47	8.76
*Rep B00269948					0.02	21.1	3.15	4.76

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Final : VC153349 Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014762

Element	@Cu	Fe	@Pb	@Zn
Method	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.05	0.01	0.01
Units	%	%	%	%
*Rep B00269960	<0.01	<0.05	<0.01	<0.01
*Std OREAS134A	0.13	12.0	12.7	17.2
*Std OREAS131B	0.02	5.84	1.83	3.15
*Std OREAS926	0.81	7.53	<0.01	0.04
*Blk BLANK	<0.01	<0.05	<0.01	<0.01

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Final : VC153349 Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014762

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00269913	0.52	1.2	N.A.
B00269914	2.74	44.8	328
B00269915	1.74	45.0	258
B00269916	0.93	33.2	492
B00269917	1.41	24.7	403
B00269918	0.89	0.2	N.A.
B00269919	0.49	0.3	N.A.
B00269920	<0.01	<0.1	N.A.
B00269921	0.45	0.5	N.A.
B00269922	0.26	0.2	N.A.
B00269923	0.14	0.2	N.A.
B00269924	0.01	30.4	N.A.
B00269925	0.16	0.9	N.A.
B00269926	0.12	0.2	N.A.
B00269927	0.32	<0.1	N.A.
B00269928	0.24	0.5	N.A.
B00269929	0.40	4.7	N.A.
B00269930	0.13	9.0	N.A.
B00269931	0.24	4.5	N.A.
B00269932	0.73	4.7	N.A.
B00269933	1.87	40.1	151
B00269934	0.28	38.1	N.A.
B00269935	0.86	39.8	N.A.
B00269936	>4.00	38.9	N.A.
B00269937	>4.00	39.6	N.A.
B00269938	0.25	34.5	N.A.
B00269939	0.19	28.3	N.A.
B00269940	<0.01	0.1	N.A.
B00269941	0.47	32.2	N.A.
B00269942	>4.00	36.0	N.A.
B00269943	>4.00	29.8	N.A.
B00269944	>4.00	28.6	N.A.
B00269945	>4.00	32.9	257
B00269946	3.57	34.9	209
B00269947	>4.00	36.3	224
*Dup B00269947	>4.00	37.5	192
B00269948	>4.00	29.5	N.A.
B00269949	0.06	35.4	421
B00269950	0.15	9.2	N.A.
B00269951	0.26	4.6	N.A.

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Final : VC153349 Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014762

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00269952	0.35	5.7	N.A.
B00269953	0.53	0.6	N.A.
B00269954	0.43	1.6	N.A.
B00269955	0.36	0.7	N.A.
B00269956	0.13	1.0	N.A.
B00269957	0.15	0.9	N.A.
B00269958	0.17	1.0	N.A.
B00269959	0.31	1.2	N.A.
B00269960	<0.01	0.1	N.A.
B00269961	0.01	36.1	N.A.
B00269962	0.14	0.2	N.A.
B00269963	0.15	<0.1	N.A.
B00269964	0.45	6.0	N.A.
B00269965	0.04	19.7	N.A.
B00269966	0.01	9.2	N.A.
B00269967	0.03	10.3	N.A.
B00269968	0.17	1.2	N.A.
B00269969	0.12	1.5	N.A.
B00269970	0.05	18.4	N.A.
B00269971	0.05	6.1	N.A.
B00269972	0.06	5.5	N.A.
B00269973	0.06	3.5	N.A.
*Std AMIS0268			201
*Blk BLANK			<10
*Rep B00269934	0.28	37.8	
*Rep B00269948	>4.00	28.2	

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
*Rep B00269960	<0.01	<0.1	
*Std OREAS134A	0.14	19.2	
*Std OREAS131B	0.07	4.9	
*Std OREAS926	0.04	1.1	
*Blk BLANK	<0.01	<0.1	
*Rep B00269917			402

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Certificate of Analysis

Work Order : VC153349A

[Report File No.: 0000014329]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_31 B00269913-973
Project No.	:	KZK
No. Of Samples	:	61
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153349A Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014329

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00269913	8	135	0.52	0.89	6	N.A.
B00269914	642	3460	1.64	37.2	497	N.A.
B00269915	484	3070	1.69	27.0	665	N.A.
B00269916	1150	614	2.73	35.1	637	N.A.
B00269917	633	270	1.35	26.6	60	N.A.
B00269918	<5	8	0.11	0.22	2	N.A.
B00269919	<5	12	0.05	0.07	<1	N.A.
B00269920	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269921	35	54	0.20	0.21	2	N.A.
B00269922	<5	230	<0.02	0.05	<1	N.A.
B00269923	6	41	0.45	0.25	3	N.A.
B00269924	53	221	93.1	31.7	530	N.A.
B00269925	<5	17	0.57	0.08	2	N.A.
B00269926	<5	66	0.11	0.02	<1	N.A.
B00269927	<5	63	1.43	0.02	1	N.A.
B00269928	<5	181	0.73	0.54	10	N.A.
B00269929	28	206	54.9	0.81	91	N.A.
B00269930	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269931	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269932	29	91	28.0	1.40	74	N.A.
B00269933	190	241	105	5.98	412	N.A.
B00269934	163	2160	91.4	3.09	415	N.A.
B00269935	401	>10000	15.9	3.33	167	1.38
B00269936	553	>10000	9.92	4.54	108	1.13
B00269937	624	>10000	15.5	3.37	152	1.31
B00269938	322	2580	23.3	2.98	208	N.A.
B00269939	1190	>10000	3.12	3.05	93	1.36
B00269940	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269941	440	>10000	0.27	3.76	31	1.38
B00269942	636	>10000	3.33	9.70	36	1.21
B00269943	561	3460	5.16	9.98	51	N.A.
B00269944	791	>10000	0.08	6.37	20	1.40
B00269945	817	>10000	0.10	7.12	69	1.68
B00269946	872	>10000	0.08	10.1	23	2.03
B00269947	762	1350	3.98	17.9	135	N.A.
B00269948	178	548	1.99	32.3	65	N.A.
B00269949	1110	6700	0.21	99.4	20	N.A.
B00269950	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269951	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269952	144	686	0.53	1.35	7	N.A.

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Final : VC153349A Order: PO# BMC15-01_31 B00269913-973

Report File No.: 0000014329

Element	Sb	@As	@Bi	@Hg	@Se	As
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GO_ICP13B
Det.Lim.	5	3	0.02	0.01	1	0.01
Units	ppm	ppm	ppm	ppm	ppm	%
B00269953	<5	11	0.36	0.16	<1	N.A.
B00269954	6	27	0.33	0.22	<1	N.A.
B00269955	7	13	0.22	0.14	<1	N.A.
B00269956	<5	18	0.54	0.22	<1	N.A.
B00269957	<5	38	0.46	0.13	<1	N.A.
B00269958	<5	147	0.45	0.17	<1	N.A.
B00269959	6	14	0.57	1.10	<1	N.A.
B00269960	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269961	98	249	5.72	28.8	11	N.A.
B00269962	<5	14	0.39	0.09	1	N.A.
B00269963	<5	26	0.84	0.10	2	N.A.
B00269964	9	73	27.2	2.32	64	N.A.
B00269965	18	100	71.0	6.06	204	N.A.
B00269966	28	42	55.3	6.81	88	N.A.
B00269967	18	126	84.6	5.93	118	N.A.
B00269968	9	5	1.56	0.16	4	N.A.
B00269969	<5	387	1.56	0.09	6	N.A.
B00269970	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00269971	30	867	4.88	0.29	19	N.A.
B00269972	18	22	1.15	0.08	6	N.A.
B00269973	10	<3	0.25	0.02	2	N.A.
*Rep B00269932	26	85	28.7	1.53	76	
*Rep B00269944	804	>10000	0.08	6.25	20	
*Rep B00269966	31	42	56.6	6.86	88	
*Std OREAS131B	38	N.A.	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	483	N.A.	77	
*Std DS-1	N.A.	7150	N.A.	82.9	N.A.	
*Std OREAS131B	38	N.A.	N.A.	N.A.	N.A.	
*Std OREAS934	N.A.	N.A.	522	N.A.	81	
*Std DS-1	N.A.	7050	N.A.	83.4	N.A.	
*Blk BLANK	<5	<3	<0.02	<0.01	<1	
*Blk BLANK	<5	<3	<0.02	<0.01	<1	
*Blk BLANK						<0.01
*Std MP1B						2.31
*Rep B00269946						1.98

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Certificate of Analysis

Work Order : VC153377

[Report File No.: 0000014652]

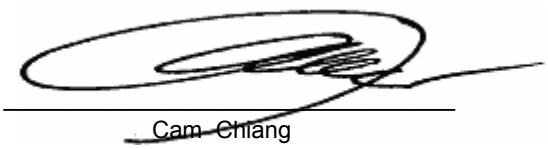
To: **ROBIN BLACK** Date: Dec 19, 2015
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.	:	PO# BMC15-01_29 B00233144-198,368-386
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 25, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153377 Order: PO# BMC15-01_29 B00233144-198,368-386

Report File No.: 0000014652

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233144	5.285	N.A.	8	0.9	<0.01	1.68	<0.01	0.01
B00233145	4.125	N.A.	8	1.4	<0.01	1.77	<0.01	0.03
B00233146	3.860	N.A.	19	3.2	<0.01	2.66	0.07	0.10
B00233147	1.970	N.A.	1490	177	1.11	31.2	2.79	8.91
B00233148	2.425	N.A.	4830	290	1.91	32.2	5.33	10.5
B00233149	5.830	N.A.	2170	269	0.58	33.8	7.14	8.75
B00233150	0.140	N.A.	4700	>300	0.35	11.4	11.5	17.4
B00233151	0.140	N.A.	5160	6.9	0.64	6.06	0.02	0.13
B00233152	4.690	N.A.	1460	276	0.01	32.8	6.91	9.26
B00233153	6.155	N.A.	1790	283	0.01	32.8	7.32	10.3
B00233154	2.795	N.A.	2050	>300	0.01	26.7	7.22	11.5
B00233155	3.785	N.A.	3120	220	0.35	2.91	0.31	0.63
B00233156	2.360	N.A.	13	1.9	<0.01	1.23	<0.01	0.01
B00233157	5.670	N.A.	17	3.9	<0.01	1.80	0.03	0.01
B00233158	6.320	N.A.	6	1.0	<0.01	7.40	0.01	0.04
B00233159	1.085	N.A.	197	65.7	0.19	15.6	0.81	5.00
B00233160	1.535	N.A.	<5	<0.3	<0.01	0.09	<0.01	0.01
B00233161	5.205	N.A.	<5	0.4	<0.01	1.50	<0.01	0.02
B00233162	5.035	N.A.	<5	0.4	<0.01	6.70	0.01	0.03
B00233163	5.680	N.A.	<5	0.6	<0.01	7.47	0.02	0.02
B00233164	5.815	N.A.	8	1.1	0.02	8.08	0.01	0.04
B00233165	5.570	N.A.	1340	168	1.21	37.1	4.67	9.99
B00233166	7.525	N.A.	1700	137	0.30	31.4	4.63	8.34
B00233167	4.675	N.A.	1140	114	0.26	29.5	4.84	9.03
B00233168	3.165	N.A.	712	106	0.21	37.5	4.82	11.3
B00233169	4.795	N.A.	607	110	0.21	37.5	5.28	11.1
B00233170	0.170	N.A.	1240	69.8	0.36	3.68	1.33	5.39
B00233171	0.165	N.A.	763	20.5	1.75	13.6	0.26	1.06
B00233172	6.065	N.A.	1300	116	0.34	35.7	5.39	9.40
B00233173	6.265	N.A.	2700	145	0.14	24.8	3.91	5.93
B00233174	5.590	N.A.	2010	188	0.22	27.1	5.03	7.45
B00233175	5.965	N.A.	2130	178	0.32	29.0	5.05	7.16
B00233176	6.010	N.A.	2220	222	0.35	31.3	4.62	6.36
B00233177	4.120	N.A.	454	31.7	0.04	5.95	0.29	0.42
B00233178	2.345	N.A.	6	0.9	<0.01	1.93	0.01	0.03
*Dup B00233178	N.A.	N.A.	7	1.2	<0.01	2.05	<0.01	0.03
B00233179	2.510	N.A.	10	1.2	<0.01	1.63	<0.01	0.02
B00233180	1.165	N.A.	<5	<0.3	<0.01	0.08	<0.01	<0.01
B00233181	4.970	N.A.	20	2.3	<0.01	2.19	0.02	0.02
B00233182	4.020	N.A.	15	1.3	<0.01	1.99	0.01	0.09

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Final : VC153377 Order: PO# BMC15-01_29 B00233144-198,368-386

Report File No.: 0000014652

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233183	4.080	N.A.	6	<0.3	<0.01	1.25	<0.01	<0.01
B00233184	5.235	N.A.	<5	<0.3	<0.01	1.66	<0.01	<0.01
B00233185	5.430	N.A.	5	0.7	<0.01	2.09	<0.01	0.01
B00233186	2.985	N.A.	144	65.0	0.08	28.6	1.30	5.30
B00233187	1.695	N.A.	<5	2.2	<0.01	7.34	0.05	0.08
B00233188	5.770	N.A.	299	48.6	0.91	42.3	0.61	10.4
B00233189	4.590	N.A.	376	65.2	0.92	43.1	1.00	8.84
B00233190	0.145	N.A.	324	21.5	13.8	27.5	0.03	0.42
B00233191	0.140	N.A.	5280	6.6	0.63	6.04	0.01	0.13
B00233192	1.800	N.A.	682	113	1.06	31.5	1.51	9.65
B00233193	5.395	85.3	1990	213	9.83	42.4	0.81	5.49
B00233194	1.840	N.A.	367	106	2.10	18.6	0.64	8.08
B00233195	1.580	N.A.	295	46.1	1.26	14.1	0.22	3.17
B00233196	5.170	N.A.	10	3.8	0.20	5.65	0.01	0.10
B00233197	5.025	N.A.	<5	<0.3	0.01	3.32	<0.01	0.01
B00233198	4.675	N.A.	<5	0.4	0.01	2.78	<0.01	0.03
B00265368	5.465	N.A.	<5	0.4	0.01	7.36	<0.01	0.05
B00265369	5.995	N.A.	<5	<0.3	0.01	9.22	<0.01	0.03
B00265370	0.150	N.A.	825	45.8	0.47	20.2	0.31	1.12
B00265371	4.040	N.A.	<5	<0.3	0.02	9.36	<0.01	0.08
B00265372	2.905	N.A.	1260	>300	0.16	28.4	2.49	9.26
B00265373	5.170	N.A.	6	1.2	<0.01	10.8	0.02	0.07
B00265374	5.745	N.A.	7	0.6	0.01	9.78	<0.01	0.02
B00265375	5.785	N.A.	<5	1.8	<0.01	7.80	0.01	0.06
B00265376	2.105	N.A.	6	1.3	<0.01	1.38	0.02	0.05
B00265377	2.750	N.A.	15	2.2	<0.01	1.87	0.03	0.05
B00265378	1.755	N.A.	<5	0.7	0.02	9.08	<0.01	0.08
B00265379	1.735	N.A.	3950	143	0.51	9.68	1.17	2.02
B00265380	0.755	N.A.	<5	0.4	<0.01	0.07	<0.01	<0.01
B00265381	5.775	N.A.	5	0.4	<0.01	8.39	<0.01	0.03
B00265382	2.715	N.A.	6	0.5	<0.01	7.05	<0.01	0.02
*Dup B00265382	N.A.	N.A.	9	0.5	<0.01	7.18	<0.01	0.01
B00265383	5.740	N.A.	7	0.4	<0.01	6.48	<0.01	0.01
B00265384	2.440	N.A.	<5	0.9	<0.01	1.95	<0.01	<0.01
B00265385	2.560	N.A.	8	0.8	<0.01	2.00	<0.01	<0.01
B00265386	1.680	N.A.	<5	0.9	<0.01	2.02	<0.01	<0.01
*Rep B00233149				268				
*Rep B00265382				0.4				
*Rep B00265385				1.0				
*Std SU_1B				6.1				

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Final : VC153377 Order: PO# BMC15-01_29 B00233144-198,368-386

Report File No.: 0000014652

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		69.5				
*Std AMIS0268		196				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00233164	11					
*Rep B00265382	6					
*Std OXB130	124					
*Std OXH97	1260					
*Std OXJ111	2060					
*Std AMIS0267	8690					
*Blk BLANK	<5					
*Rep B00233156			<0.01	1.24	0.01	0.02
*Rep B00233177			0.04	5.97	0.29	0.41
*Rep B00265372			0.16	28.0	2.40	9.21
*Rep B00265378			0.02	9.07	0.01	0.08
*Std OREAS134A			0.13	12.1	13.1	17.3
*Std OREAS131B			0.02	5.70	1.83	3.16
*Std OREAS926			0.83	7.39	0.01	0.05
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233144	0.30	0.5	N.A.	N.A.
B00233145	0.37	0.6	N.A.	N.A.
B00233146	0.58	1.0	N.A.	N.A.
B00233147	0.18	30.3	N.A.	178
B00233148	<0.01	36.5	N.A.	256
B00233149	<0.01	39.1	N.A.	243
B00233150	0.04	21.7	N.A.	314
B00233151	0.04	0.7	5.16	N.A.
B00233152	0.04	41.1	N.A.	248
B00233153	0.47	42.4	N.A.	288
B00233154	>4.00	38.2	N.A.	378
B00233155	0.95	2.5	N.A.	221
B00233156	0.54	0.4	N.A.	N.A.
B00233157	0.52	0.1	N.A.	N.A.
B00233158	0.18	<0.1	N.A.	N.A.
B00233159	0.15	14.5	N.A.	N.A.
B00233160	<0.01	<0.1	N.A.	N.A.
B00233161	0.16	0.8	N.A.	N.A.
B00233162	0.29	<0.1	N.A.	N.A.
B00233163	0.03	<0.1	N.A.	N.A.
B00233164	0.28	0.2	N.A.	N.A.
B00233165	0.07	35.0	N.A.	165
B00233166	3.44	39.6	N.A.	N.A.
B00233167	>4.00	36.2	N.A.	N.A.
B00233168	0.05	37.1	N.A.	N.A.
B00233169	0.03	32.1	N.A.	N.A.
B00233170	0.24	4.5	N.A.	N.A.
B00233171	0.13	8.7	N.A.	N.A.
B00233172	0.03	32.0	N.A.	N.A.
B00233173	>4.00	33.8	N.A.	N.A.
B00233174	>4.00	34.1	N.A.	192
B00233175	2.60	37.9	N.A.	159
B00233176	2.10	38.7	N.A.	235
B00233177	0.45	5.8	N.A.	N.A.
B00233178	0.77	0.3	N.A.	N.A.
*Dup B00233178	0.76	0.2	N.A.	N.A.
B00233179	0.38	0.5	N.A.	N.A.
B00233180	<0.01	<0.1	N.A.	N.A.
B00233181	0.25	1.8	N.A.	N.A.
B00233182	0.18	1.4	N.A.	N.A.

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Report File No.: 0000014652

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233183	0.11	0.7	N.A.	N.A.
B00233184	0.12	0.6	N.A.	N.A.
B00233185	0.26	1.0	N.A.	N.A.
B00233186	0.03	33.2	N.A.	N.A.
B00233187	0.59	<0.1	N.A.	N.A.
B00233188	<0.01	34.1	N.A.	N.A.
B00233189	<0.01	41.1	N.A.	N.A.
B00233190	<0.01	29.2	N.A.	N.A.
B00233191	0.04	0.7	4.65	N.A.
B00233192	0.02	27.4	N.A.	N.A.
B00233193	<0.01	32.5	N.A.	212
B00233194	0.05	10.9	N.A.	N.A.
B00233195	0.09	6.8	N.A.	N.A.
B00233196	0.19	2.9	N.A.	N.A.
B00233197	0.11	1.6	N.A.	N.A.
B00233198	0.09	1.3	N.A.	N.A.
B00265368	0.17	0.1	N.A.	N.A.
B00265369	0.18	0.3	N.A.	N.A.
B00265370	0.04	18.4	N.A.	N.A.
B00265371	0.25	0.2	N.A.	N.A.
B00265372	0.04	36.7	N.A.	263
B00265373	0.16	0.6	N.A.	N.A.
B00265374	0.14	0.4	N.A.	N.A.
B00265375	0.27	0.2	N.A.	N.A.
B00265376	0.19	0.3	N.A.	N.A.
B00265377	0.26	0.5	N.A.	N.A.
B00265378	0.40	0.9	N.A.	N.A.
B00265379	0.28	7.9	N.A.	N.A.
B00265380	<0.01	0.2	N.A.	N.A.
B00265381	0.26	<0.1	N.A.	N.A.
B00265382	0.31	<0.1	N.A.	N.A.
*Dup B00265382	0.32	<0.1	N.A.	N.A.
B00265383	0.26	<0.1	N.A.	N.A.
B00265384	0.11	0.7	N.A.	N.A.
B00265385	0.14	0.8	N.A.	N.A.
B00265386	0.22	0.8	N.A.	N.A.

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Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Std OXN117			7.72	
*Blk BLANK			<0.50	
*Std ME-1302				432
*Blk BLANK				<10
*Rep B00233156	0.55	0.5		
*Rep B00233177	0.45	5.7		
*Rep B00265372	0.04	36.0		
*Rep B00265378	0.39	0.9		
*Std OREAS134A	0.14	19.5		
*Std OREAS131B	0.07	4.8		
*Std OREAS926	0.04	1.1		
*Blk BLANK	<0.01	<0.1		
*Rep B00233154				388
*Rep B00233151			5.26	

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Certificate of Analysis

Work Order : VC153378

[Report File No.: 0000014653]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 19, 2015

P.O. No.	:	PO# BMC15-01_29 B00265387-406,269851-912
Project No.	:	KZK
No. Of Samples	:	82
Date Submitted	:	Nov 25, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Report File No.: 0000014653

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265387	2.555	N.A.	5	2.2	<0.01	2.08	0.02	0.02
B00265388	2.080	N.A.	291	152	0.05	13.5	1.80	4.68
B00265389	3.460	N.A.	77	6.1	0.10	5.99	0.02	0.05
B00265390	0.165	N.A.	827	20.9	1.77	13.9	0.26	1.02
B00265391	1.810	N.A.	380	69.1	0.45	25.7	0.55	1.62
B00265392	1.520	N.A.	<5	3.2	<0.01	6.68	0.04	0.07
B00265393	4.710	N.A.	<5	<0.3	<0.01	1.94	<0.01	0.01
B00265394	5.635	N.A.	<5	0.5	<0.01	1.42	<0.01	0.01
B00265395	3.660	N.A.	<5	0.3	<0.01	1.38	<0.01	0.01
B00265396	2.460	N.A.	<5	<0.3	<0.01	1.29	<0.01	0.01
B00265397	1.935	N.A.	71	4.5	0.02	7.13	0.19	0.46
B00265398	4.600	N.A.	18	1.3	0.02	4.97	0.06	0.19
B00265399	4.135	N.A.	7	1.9	0.01	1.70	0.13	0.31
B00265400	0.775	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265401	1.340	N.A.	122	5.6	0.03	11.5	0.34	0.51
B00265402	4.515	N.A.	25	4.2	0.02	2.62	0.27	0.60
B00265403	5.695	N.A.	<5	<0.3	<0.01	2.90	0.01	0.04
B00265404	4.920	N.A.	<5	<0.3	<0.01	1.64	<0.01	0.01
B00265405	2.960	N.A.	<5	<0.3	<0.01	2.81	<0.01	0.01
B00265406	5.505	N.A.	<5	<0.3	<0.01	1.94	<0.01	<0.01
B00269851	5.740	N.A.	<5	0.4	0.01	8.73	<0.01	0.01
B00269852	4.695	N.A.	<5	<0.3	<0.01	7.57	<0.01	0.01
B00269853	5.475	N.A.	26	1.3	0.01	6.52	0.01	0.02
B00269854	1.865	N.A.	650	141	0.25	23.0	2.35	6.27
B00269855	1.385	N.A.	39	11.2	0.02	5.57	0.10	0.38
B00269856	1.500	N.A.	205	98.5	0.95	24.2	0.61	5.78
B00269857	1.695	N.A.	43	69.5	0.85	4.94	0.04	0.16
B00269858	1.890	N.A.	<5	1.3	<0.01	2.47	<0.01	0.03
B00269859	4.645	N.A.	<5	0.5	<0.01	6.95	<0.01	0.03
B00269860	0.580	N.A.	<5	<0.3	<0.01	0.44	<0.01	<0.01
B00269861	6.210	N.A.	<5	<0.3	<0.01	7.30	<0.01	0.01
B00269862	5.940	N.A.	15	4.8	0.03	7.43	0.07	0.06
B00269863	2.695	N.A.	613	189	0.37	28.1	3.94	5.92
B00269864	4.830	N.A.	9	1.2	<0.01	2.07	<0.01	0.04
B00269865	4.735	N.A.	36	7.6	0.02	2.26	0.06	0.23
*Dup B00269865	N.A.	N.A.	42	7.9	0.02	2.22	0.08	0.23
B00269866	1.920	N.A.	2140	>300	0.88	22.4	3.85	5.15
B00269867	2.130	N.A.	4600	>300	0.51	20.9	3.59	4.88
B00269868	4.520	N.A.	2160	>300	0.06	26.2	8.74	11.7
B00269869	5.920	N.A.	4440	>300	0.22	14.8	3.10	4.10

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269870	0.170	N.A.	797	20.8	1.70	13.7	0.26	1.01
B00269871	0.170	N.A.	1300	71.8	0.37	3.77	1.35	5.20
B00269872	3.950	N.A.	239	31.4	<0.01	2.06	0.12	0.29
B00269873	1.645	N.A.	484	122	0.05	2.68	0.47	0.38
B00269874	4.580	N.A.	38	4.6	<0.01	0.81	<0.01	0.08
B00269875	1.360	N.A.	172	19.4	0.01	3.46	0.20	0.58
B00269876	3.040	N.A.	1740	>300	0.13	12.5	2.16	3.23
B00269877	3.710	N.A.	235	297	0.19	23.9	4.21	5.58
B00269878	2.065	N.A.	20	12.8	<0.01	1.50	0.25	0.30
B00269879	4.100	N.A.	6	1.3	<0.01	1.93	<0.01	0.08
B00269880	0.350	92.6	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00269881	4.380	N.A.	15	2.0	<0.01	2.29	0.05	0.06
B00269882	4.700	N.A.	6	0.8	<0.01	2.03	0.02	0.04
B00269883	1.845	N.A.	70	8.7	<0.01	4.03	0.14	0.38
B00269884	5.475	N.A.	9	0.5	<0.01	1.83	<0.01	<0.01
B00269885	2.985	N.A.	8	0.8	<0.01	1.58	0.03	0.11
B00269886	3.685	N.A.	<5	<0.3	<0.01	7.66	<0.01	0.02
B00269887	5.860	N.A.	8	<0.3	<0.01	7.89	<0.01	0.01
B00269888	5.865	N.A.	7	0.6	<0.01	6.97	<0.01	0.03
B00269889	2.765	N.A.	2280	262	0.20	29.4	3.95	10.4
B00269890	0.170	N.A.	751	20.2	1.69	13.9	0.27	1.03
B00269891	0.170	N.A.	1250	67.9	0.37	3.78	1.37	5.35
B00269892	5.485	N.A.	1380	210	0.21	32.5	1.69	7.96
B00269893	2.840	N.A.	1520	234	0.30	32.8	2.50	7.75
B00269894	1.850	N.A.	1010	84.3	0.62	8.91	0.53	1.22
B00269895	2.930	N.A.	6	0.5	<0.01	7.17	<0.01	0.02
B00269896	2.675	N.A.	<5	<0.3	<0.01	7.80	<0.01	0.02
B00269897	5.585	N.A.	<5	0.6	<0.01	7.99	<0.01	0.02
B00269898	4.575	N.A.	<5	0.4	<0.01	8.19	<0.01	0.02
B00269899	3.000	N.A.	<5	0.3	<0.01	1.91	<0.01	<0.01
B00269900	1.020	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
*Dup B00269900	N.A.	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00269901	4.290	N.A.	<5	0.4	<0.01	1.16	<0.01	<0.01
B00269902	3.710	N.A.	<5	0.4	<0.01	1.44	<0.01	<0.01
B00269903	2.220	N.A.	221	39.5	0.03	1.87	<0.01	0.01
B00269904	4.885	N.A.	3060	272	0.34	31.7	1.77	9.96
B00269905	0.820	N.A.	93	84.4	0.25	6.20	0.89	2.99
B00269906	2.915	N.A.	104	5.9	0.03	4.60	0.06	0.40
B00269907	2.400	N.A.	40	1.4	<0.01	4.72	<0.01	0.06
B00269908	1.850	N.A.	6	0.4	<0.01	2.58	<0.01	0.01

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269909	4.705	N.A.	24	0.6	<0.01	4.97	<0.01	0.01
B00269910	0.155	N.A.	819	44.2	0.46	20.1	0.31	1.11
B00269911	4.590	N.A.	<5	0.4	<0.01	5.76	<0.01	0.02
B00269912	5.515	N.A.	<5	<0.3	<0.01	2.51	<0.01	0.01
*Rep B00265400				<0.3				
*Rep B00269894				82.0				
*Rep B00269905				86.7				
*Std SU_1B				6.5				
*Std SU_1B				6.7				
*Std OREAS621				68.8				
*Std AMIS0268				189				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00265403			<5					
*Rep B00269868			1890					
*Rep B00269911			<5					
*Std OXB130			126					
*Std OXH97			1330					
*Std OXJ111			2240					
*Std AMIS0267			8760					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00265395					<0.01	1.38	<0.01	0.02
*Rep B00269861					<0.01	7.22	<0.01	0.01
*Rep B00269884					<0.01	1.85	<0.01	<0.01
*Rep B00269910					0.46	20.2	0.32	1.09
*Std OREAS131B					0.03	5.74	1.85	3.03
*Std OREAS926					0.83	7.42	0.01	0.04
*Std OREAS131B					0.02	5.76	1.88	3.14
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00265387	0.40	0.5	N.A.
B00265388	0.40	14.7	143
B00265389	0.40	0.3	N.A.
B00265390	0.13	9.4	N.A.
B00265391	0.17	23.0	N.A.
B00265392	0.37	<0.1	N.A.
B00265393	0.41	0.2	N.A.
B00265394	0.26	0.2	N.A.
B00265395	0.18	0.2	N.A.
B00265396	0.15	0.3	N.A.
B00265397	0.03	6.7	N.A.
B00265398	0.04	3.1	N.A.
B00265399	0.01	0.9	N.A.
B00265400	<0.01	<0.1	N.A.
B00265401	0.02	11.5	N.A.
B00265402	0.01	1.8	N.A.
B00265403	0.07	1.3	N.A.
B00265404	0.08	0.5	N.A.
B00265405	0.07	1.0	N.A.
B00265406	0.08	1.2	N.A.
B00269851	0.11	0.3	N.A.
B00269852	0.18	<0.1	N.A.
B00269853	0.31	0.5	N.A.
B00269854	0.09	20.6	N.A.
B00269855	0.44	3.1	N.A.
B00269856	0.06	20.4	N.A.
B00269857	0.26	3.4	N.A.
B00269858	0.21	0.8	N.A.
B00269859	0.19	<0.1	N.A.
B00269860	<0.01	<0.1	N.A.
B00269861	0.16	<0.1	N.A.
B00269862	0.29	0.3	N.A.
B00269863	3.29	35.5	182
B00269864	0.98	0.6	N.A.
B00269865	1.75	1.2	N.A.
*Dup B00269865	1.71	1.2	N.A.
B00269866	2.58	28.7	540
B00269867	>4.00	30.7	430
B00269868	>4.00	36.8	698
B00269869	>4.00	26.2	565

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Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00269870	0.15	9.0	N.A.
B00269871	0.25	4.5	N.A.
B00269872	3.92	2.1	N.A.
B00269873	>4.00	2.8	N.A.
B00269874	1.99	0.3	N.A.
B00269875	>4.00	3.7	N.A.
B00269876	>4.00	22.8	396
B00269877	>4.00	25.8	309
B00269878	2.00	0.9	N.A.
B00269879	1.10	0.6	N.A.
B00269880	0.01	<0.1	N.A.
B00269881	0.33	1.1	N.A.
B00269882	0.62	1.0	N.A.
B00269883	1.34	3.3	N.A.
B00269884	0.18	0.5	N.A.
B00269885	0.20	0.5	N.A.
B00269886	0.25	<0.1	N.A.
B00269887	0.29	<0.1	N.A.
B00269888	0.43	<0.1	N.A.
B00269889	0.02	38.7	229
B00269890	0.13	9.2	N.A.
B00269891	0.24	4.5	N.A.
B00269892	0.02	38.7	217
B00269893	<0.01	39.3	240
B00269894	0.01	6.2	N.A.
B00269895	0.06	<0.1	N.A.
B00269896	0.06	<0.1	N.A.
B00269897	0.12	0.1	N.A.
B00269898	0.36	<0.1	N.A.
B00269899	0.15	1.1	N.A.
B00269900	<0.01	<0.1	N.A.
*Dup B00269900	<0.01	<0.1	N.A.
B00269901	0.13	0.5	N.A.
B00269902	0.15	1.0	N.A.
B00269903	0.39	0.7	N.A.
B00269904	3.36	41.9	265
B00269905	0.70	6.9	N.A.
B00269906	0.20	4.2	N.A.
B00269907	0.18	3.7	N.A.
B00269908	0.13	1.5	N.A.

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Final : VC153378 Order: PO# BMC15-01_29 B00265387-406,269851-912

Report File No.: 0000014653

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00269909	0.12	4.3	N.A.
B00269910	0.05	18.7	N.A.
B00269911	0.05	2.5	N.A.
B00269912	0.10	1.1	N.A.
*Std AMIS0268			194
*Blk BLANK			<10
*Rep B00265395	0.18	0.2	
*Rep B00269861	0.15	<0.1	
*Rep B00269884	0.18	0.4	
*Rep B00269910	0.05	18.5	
*Std OREAS131B	0.08	4.8	
*Std OREAS926	0.04	1.2	
*Std OREAS131B	0.08	4.8	
*Blk BLANK	<0.01	0.1	
*Blk BLANK	<0.01	<0.1	
*Rep B00269868			696

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Certificate of Analysis

Work Order : VC153379

[Report File No.: 0000014330]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 09, 2015

P.O. No.	:	PO# BMC15-01_30 B00264187-196
Project No.	:	KZK
No. Of Samples	:	11
Date Submitted	:	Nov 25, 2015
Report Comprises	:	Pages 1 to 3 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153379 Order: PO# BMC15-01_30 B00264187-196

Report File No.: 0000014330

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00264186	1.050	N.A.	15	3.0	0.01	3.58	0.03	0.02
B00264187	1.820	N.A.	9	1.8	<0.01	2.30	<0.01	0.02
B00264188	1.035	N.A.	<5	0.4	<0.01	2.03	<0.01	0.02
B00264189	3.865	N.A.	<5	<0.3	<0.01	7.95	<0.01	0.01
B00264190	0.155	N.A.	854	46.1	0.46	20.5	0.31	1.12
B00264191	0.520	N.A.	35	0.9	0.02	23.2	<0.01	0.11
B00264192	3.260	N.A.	<5	<0.3	<0.01	3.71	<0.01	<0.01
B00264193	1.155	N.A.	10	1.2	0.01	10.7	0.03	0.44
B00264194	3.750	N.A.	8	2.6	0.02	7.35	0.02	0.04
B00264195	3.365	N.A.	<5	0.3	<0.01	8.03	<0.01	0.07
B00264196	3.390	85.2	<5	1.6	<0.01	7.69	<0.01	0.05
*Rep B00264191				0.9				
*Std SU_1B				6.9				
*Blk BLANK				<0.3				
*Rep B00264192			<5					
*Std OXB130			124					
*Blk BLANK			<5					
*Rep B00264187					<0.01	2.31	<0.01	0.02
*Std OREAS926					0.82	7.44	<0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Final : VC153379 Order: PO# BMC15-01_30 B00264187-196

Report File No.: 0000014330

Element	S
Method	GO_ICP90Q
Det.Lim.	0.1
Units	%
B00264186	1.2
B00264187	1.2
B00264188	1.0
B00264189	0.8
B00264190	18.3
B00264191	22.3
B00264192	2.4
B00264193	2.6
B00264194	0.6
B00264195	0.8
B00264196	0.3
*Rep B00264187	1.2
*Std OREAS926	1.1
*Blk BLANK	0.1

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Certificate of Analysis

Work Order : VC153411

[Report File No.: 0000014792]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

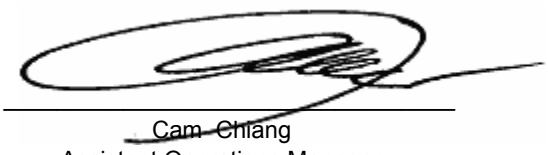
Date: Dec 22, 2015

P.O. No.	:	PO# BMC15-01_32 B00232717-743,233259-327
Project No.	:	KZK
No. Of Samples	:	96
Date Submitted	:	Nov 26, 2015
Report Comprises	:	Pages 1 to 8 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232717	4.595	N.A.	16	1.4	<0.01	2.27	0.01	0.03
B00232718	5.015	N.A.	15	2.1	<0.01	2.02	0.03	0.61
B00232719	4.105	N.A.	23	5.0	0.01	2.07	0.06	0.13
B00232720	1.465	N.A.	6	<0.3	<0.01	<0.05	<0.01	<0.01
B00232721	2.185	N.A.	22	5.4	<0.01	2.29	0.08	0.36
B00232722	4.375	N.A.	669	92.7	0.17	40.2	2.05	2.90
B00232723	5.260	N.A.	860	167	0.14	38.5	4.17	5.38
B00232724	2.670	N.A.	348	64.5	0.06	6.57	1.28	1.26
B00232725	4.705	N.A.	543	131	0.82	29.3	2.51	4.40
B00232726	6.875	N.A.	589	251	0.04	34.3	5.22	9.86
B00232727	3.430	N.A.	17	2.1	<0.01	2.25	0.03	0.03
B00232728	2.565	N.A.	14	1.7	<0.01	2.05	0.02	0.03
B00232729	3.665	N.A.	19	3.0	<0.01	1.12	0.05	0.06
B00232730	0.155	N.A.	818	45.9	0.46	20.2	0.31	1.11
B00232731	3.040	N.A.	9	1.4	<0.01	2.30	0.02	0.02
B00232732	4.505	N.A.	14	1.8	<0.01	2.08	0.01	<0.01
B00232733	5.200	N.A.	12	3.0	<0.01	2.21	<0.01	0.01
B00232734	3.520	N.A.	23	2.3	<0.01	2.40	0.01	<0.01
B00232735	4.590	N.A.	430	28.7	<0.01	20.5	0.79	3.65
B00232736	1.960	N.A.	796	130	0.49	22.6	4.40	8.87
B00232737	1.265	N.A.	23	7.9	0.05	4.42	0.10	0.24
B00232738	2.885	N.A.	1070	263	0.83	24.4	4.90	11.8
B00232739	4.470	N.A.	83	8.6	0.09	5.49	0.12	0.69
B00232740	1.415	N.A.	<5	<0.3	<0.01	0.09	<0.01	<0.01
B00232741	3.695	N.A.	<5	0.6	0.02	4.41	0.02	0.03
B00232742	3.600	N.A.	<5	<0.3	0.01	4.32	<0.01	0.02
B00232743	3.175	N.A.	6	<0.3	<0.01	5.03	<0.01	0.02
B00233259	4.905	N.A.	7	<0.3	<0.01	6.99	<0.01	0.01
B00233260	1.155	N.A.	<5	<0.3	<0.01	0.07	<0.01	<0.01
B00233261	5.890	N.A.	<5	<0.3	<0.01	8.58	0.01	0.02
B00233262	4.935	N.A.	15	2.4	<0.01	5.62	0.04	0.07
B00233263	1.540	N.A.	708	52.6	0.24	33.4	0.62	5.20
B00233264	0.730	N.A.	169	7.5	0.14	9.28	0.02	0.11
B00233265	3.730	N.A.	448	107	0.08	39.0	1.68	7.44
B00233266	3.410	N.A.	6	1.1	<0.01	1.98	0.02	0.03
*Dup B00233266	N.A.	N.A.	7	0.9	<0.01	2.00	0.02	0.04
B00233267	3.075	N.A.	9	2.5	<0.01	1.55	0.05	0.06
B00233268	3.845	N.A.	10	1.0	<0.01	6.28	0.01	0.07
B00233269	4.890	N.A.	129	30.9	0.06	25.9	0.45	8.63
B00233270	0.170	N.A.	1180	71.6	0.36	3.82	1.36	5.18

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233271	0.170	N.A.	779	20.4	1.70	13.6	0.26	1.03
B00233272	5.800	N.A.	29	4.3	0.01	8.51	0.07	0.47
B00233273	6.255	N.A.	6	0.6	<0.01	7.62	0.01	0.02
B00233274	5.920	N.A.	<5	<0.3	<0.01	7.76	<0.01	0.01
B00233275	5.410	N.A.	6	<0.3	<0.01	6.98	<0.01	0.02
B00233276	3.595	N.A.	<5	<0.3	<0.01	6.87	<0.01	<0.01
B00233277	3.245	N.A.	<5	<0.3	<0.01	7.25	<0.01	<0.01
B00233278	4.195	N.A.	16	2.2	<0.01	6.28	0.03	0.02
B00233279	4.185	N.A.	260	57.4	0.04	5.98	1.15	0.04
B00233280	1.110	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233281	5.210	86.0	482	51.8	0.09	27.8	1.11	5.19
B00233282	4.970	N.A.	1060	139	0.12	32.3	2.88	6.44
B00233283	4.150	N.A.	847	86.9	0.17	25.0	2.00	4.47
B00233284	3.755	N.A.	1090	85.3	0.21	25.3	1.64	3.62
B00233285	2.375	N.A.	2610	>300	0.17	4.94	0.11	0.22
B00233286	4.915	N.A.	<5	0.9	<0.01	2.20	<0.01	0.02
B00233287	5.015	N.A.	10	2.2	<0.01	2.23	<0.01	0.02
B00233288	5.000	N.A.	10	2.3	<0.01	1.48	0.02	<0.01
B00233289	5.160	N.A.	<5	1.5	<0.01	6.79	0.02	0.04
B00233290	0.155	N.A.	844	46.1	0.46	20.3	0.31	1.14
B00233291	5.245	N.A.	<5	0.6	<0.01	7.13	<0.01	0.02
B00233292	5.220	N.A.	<5	0.6	<0.01	7.36	<0.01	0.02
B00233293	3.335	N.A.	532	136	0.24	5.40	0.96	0.74
B00233294	4.020	N.A.	1540	106	0.21	24.4	3.70	6.46
B00233295	4.545	N.A.	1780	287	1.87	26.9	4.72	12.5
B00233296	3.575	N.A.	2050	>300	1.65	24.6	4.48	11.4
B00233297	2.820	N.A.	50	9.4	0.03	6.96	0.12	0.12
B00233298	3.365	N.A.	68	18.3	0.01	7.13	0.26	0.05
B00233299	2.475	N.A.	667	178	0.04	19.7	3.02	4.72
B00233300	1.330	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00233301	5.565	N.A.	1570	236	0.35	26.6	4.57	11.1
*Dup B00233301	N.A.	N.A.	1600	234	0.31	26.3	4.46	10.8
B00233302	5.560	N.A.	2100	276	1.51	28.7	5.61	10.6
B00233303	5.160	N.A.	1410	209	0.50	27.1	5.18	7.45
B00233304	5.815	N.A.	1190	248	0.59	30.7	5.43	7.61
B00233305	4.890	N.A.	2410	192	0.58	27.7	4.02	6.48
B00233306	4.385	N.A.	1630	>300	1.30	25.5	3.26	14.7
B00233307	4.455	N.A.	1770	>300	1.08	24.8	4.10	11.5
B00233308	4.530	N.A.	2340	>300	2.74	28.1	5.10	9.68
B00233309	4.255	N.A.	1700	>300	2.17	29.0	5.29	10.9

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233310	0.170	N.A.	1220	69.8	0.36	3.72	1.31	5.09
B00233311	0.170	N.A.	813	20.2	1.75	13.7	0.25	1.04
B00233312	4.455	N.A.	2120	>300	2.04	27.2	5.55	13.3
B00233313	6.170	N.A.	1440	>300	0.57	27.2	4.97	13.8
B00233314	5.810	N.A.	1380	284	0.75	29.5	4.63	14.0
B00233315	5.200	N.A.	2040	>300	2.74	26.6	4.99	13.4
B00233316	4.275	N.A.	3960	>300	5.30	24.9	3.72	14.5
B00233317	2.465	N.A.	540	70.4	0.42	6.27	0.78	2.31
B00233318	4.815	N.A.	1550	249	1.01	24.9	3.05	9.27
B00233319	4.305	N.A.	2460	219	0.18	31.0	2.23	7.66
B00233320	1.260	N.A.	5	<0.3	<0.01	0.05	<0.01	<0.01
B00233321	3.325	N.A.	6	0.7	<0.01	1.60	<0.01	0.02
B00233322	2.465	N.A.	5	0.4	<0.01	1.60	<0.01	0.01
B00233323	2.945	N.A.	440	47.9	1.32	28.2	0.15	1.26
B00233324	2.055	N.A.	250	46.9	0.99	30.4	0.23	0.94
B00233325	4.645	N.A.	<5	<0.3	<0.01	2.04	<0.01	0.01
B00233326	4.875	N.A.	7	0.4	<0.01	2.94	<0.01	0.01
B00233327	4.740	N.A.	7	<0.3	<0.01	2.41	<0.01	<0.01
*Rep B00232732				1.6				
*Rep B00233272				4.2				
*Rep B00233311				20.5				
*Std SU_1B				6.6				
*Std SU_1B				6.4				
*Std OREAS621				70.6				
*Std AMIS0268				199				
*Std AMIS0268				194				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00232724			378					
*Rep B00233279			244					
*Rep B00233316			3690					
*Std OXB130			120					
*Std OXH97			1220					
*Std OXJ111			2210					
*Std AMIS0267			9470					
*Std OXB130			126					
*Std OXH97			1250					
*Blk BLANK			<5					
*Blk BLANK			<5					

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	@Au	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.01	0.05	0.01	0.01
Units	ppb	%	%	%	%
*Blk BLANK	<5				
*Rep B00232727		<0.01	2.26	0.03	0.03
*Rep B00233274		<0.01	7.72	<0.01	0.01
*Rep B00233295		1.83	27.1	4.96	12.4
*Rep B00233315		2.71	26.4	5.00	13.1
*Rep B00233323		1.31	28.4	0.16	1.31
*Std OREAS134A		0.13	12.1	13.1	17.0
*Std OREAS131B		0.02	5.80	1.81	3.05
*Std OREAS134A		0.13	12.3	12.6	17.7
*Std OREAS926		0.82	7.31	<0.01	0.04
*Std OREAS131B		0.02	5.72	1.85	2.98
*Std OREAS926		0.82	7.30	0.01	0.04
*Blk BLANK		<0.01	<0.05	<0.01	<0.01
*Blk BLANK		<0.01	<0.05	<0.01	<0.01

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00232717	0.29	1.6	N.A.
B00232718	0.32	1.7	N.A.
B00232719	0.28	1.2	N.A.
B00232720	<0.01	0.1	N.A.
B00232721	0.24	1.5	N.A.
B00232722	0.01	47.8	N.A.
B00232723	<0.01	43.3	161
B00232724	0.13	6.4	N.A.
B00232725	0.16	26.5	N.A.
B00232726	<0.01	43.2	258
B00232727	0.49	0.8	N.A.
B00232728	0.94	0.9	N.A.
B00232729	0.48	0.1	N.A.
B00232730	0.05	18.8	N.A.
B00232731	0.92	0.8	N.A.
B00232732	0.10	1.5	N.A.
B00232733	0.09	1.9	N.A.
B00232734	0.10	2.1	N.A.
B00232735	0.03	23.4	N.A.
B00232736	0.03	29.0	N.A.
B00232737	0.17	1.4	N.A.
B00232738	<0.01	32.5	299
B00232739	0.16	2.7	N.A.
B00232740	<0.01	0.1	N.A.
B00232741	0.16	0.7	N.A.
B00232742	0.11	0.7	N.A.
B00232743	0.12	0.5	N.A.
B00233259	0.16	0.1	N.A.
B00233260	<0.01	0.1	N.A.
B00233261	0.09	0.2	N.A.
B00233262	0.41	0.1	N.A.
B00233263	0.10	38.6	N.A.
B00233264	0.49	2.9	N.A.
B00233265	0.02	49.4	N.A.
B00233266	0.51	0.4	N.A.
*Dup B00233266	0.51	0.4	N.A.
B00233267	0.51	0.3	N.A.
B00233268	1.13	0.4	N.A.
B00233269	>4.00	35.0	N.A.
B00233270	0.25	4.6	N.A.

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Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00233271	0.13	9.4	N.A.
B00233272	1.97	2.2	N.A.
B00233273	0.48	0.2	N.A.
B00233274	0.23	0.2	N.A.
B00233275	0.32	0.2	N.A.
B00233276	0.25	0.2	N.A.
B00233277	0.23	0.2	N.A.
B00233278	0.27	0.2	N.A.
B00233279	0.51	0.4	N.A.
B00233280	<0.01	<0.1	N.A.
B00233281	0.02	33.0	N.A.
B00233282	0.03	38.4	N.A.
B00233283	<0.01	24.3	N.A.
B00233284	0.03	22.9	N.A.
B00233285	0.34	3.2	1431
B00233286	0.70	0.4	N.A.
B00233287	0.33	1.1	N.A.
B00233288	0.16	0.5	N.A.
B00233289	0.13	<0.1	N.A.
B00233290	0.05	18.3	N.A.
B00233291	0.13	0.1	N.A.
B00233292	0.21	<0.1	N.A.
B00233293	1.23	2.1	N.A.
B00233294	0.02	26.5	N.A.
B00233295	<0.01	29.5	292
B00233296	0.03	27.2	317
B00233297	1.16	0.9	N.A.
B00233298	0.71	0.4	N.A.
B00233299	0.36	22.2	167
B00233300	<0.01	<0.1	N.A.
B00233301	<0.01	30.5	204
*Dup B00233301	<0.01	29.6	246
B00233302	<0.01	28.5	279
B00233303	0.01	26.4	188
B00233304	0.03	27.9	250
B00233305	0.03	23.6	178
B00233306	0.01	31.6	268
B00233307	<0.01	28.6	327
B00233308	<0.01	28.2	446
B00233309	<0.01	30.3	372

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Final : VC153411 Order: PO# BMC15-01_32 B00232717-743,233259-327

Report File No.: 0000014792

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00233310	0.23	4.5	N.A.
B00233311	0.13	9.3	N.A.
B00233312	<0.01	30.8	329
B00233313	<0.01	36.5	362
B00233314	<0.01	39.5	294
B00233315	0.01	33.7	423
B00233316	0.02	30.8	392
B00233317	0.18	6.0	N.A.
B00233318	0.16	28.1	248
B00233319	0.13	37.2	223
B00233320	<0.01	<0.1	N.A.
B00233321	0.09	0.3	N.A.
B00233322	0.08	0.5	N.A.
B00233323	0.45	25.4	N.A.
B00233324	0.47	29.3	N.A.
B00233325	0.13	0.5	N.A.
B00233326	0.15	0.8	N.A.
B00233327	0.09	0.8	N.A.

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
*Std AMIS0268			207
*Blk BLANK			<10
*Rep B00232727	0.48	0.7	
*Rep B00233274	0.23	0.2	
*Rep B00233295	<0.01	30.5	
*Rep B00233315	0.01	34.5	
*Rep B00233323	0.46	26.3	
*Std OREAS134A	0.14	19.4	
*Std OREAS131B	0.07	4.7	
*Std OREAS134A	0.14	19.3	
*Std OREAS926	0.04	1.2	
*Std OREAS131B	0.07	4.8	
*Std OREAS926	0.04	1.2	
*Blk BLANK	<0.01	<0.1	
*Blk BLANK	<0.01	<0.1	
*Rep B00233285			1404

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Certificate of Analysis

Work Order : VC153415

[Report File No.: 0000014858]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

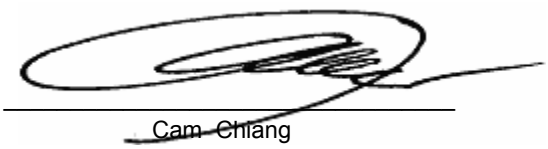
Date: Dec 24, 2015

P.O. No.	:	PO# BMC15-01_32 B00269974-000,233501-533
Project No.	:	KZK
No. Of Samples	:	80
Date Submitted	:	Nov 26, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269974	3.050	N.A.	18	1.7	<0.01	1.42	0.02	0.04
B00269975	4.130	N.A.	74	4.8	0.01	1.39	0.04	0.06
B00269976	5.005	N.A.	19	2.6	<0.01	1.36	<0.01	0.02
B00269977	3.510	N.A.	14	1.1	<0.01	1.17	0.01	0.01
B00269978	3.305	N.A.	15	1.7	<0.01	1.36	<0.01	0.03
B00269979	2.865	N.A.	19	2.3	<0.01	1.48	0.01	0.04
B00269980	0.845	N.A.	<5	<0.3	<0.01	0.24	<0.01	<0.01
B00269981	3.015	N.A.	23	2.8	<0.01	2.09	0.02	0.06
B00269982	2.100	N.A.	1260	193	0.18	23.4	1.68	3.88
B00269983	3.140	N.A.	617	144	0.11	30.4	2.00	5.42
B00269984	4.465	N.A.	633	173	0.41	28.1	2.75	6.45
B00269985	3.250	N.A.	29	2.6	0.02	2.80	0.03	0.12
B00269986	1.210	N.A.	52	13.6	0.18	11.7	0.21	1.02
B00269987	3.805	N.A.	<5	<0.3	0.02	5.45	<0.01	0.03
B00269988	4.030	N.A.	<5	<0.3	<0.01	6.71	<0.01	0.02
B00269989	3.920	N.A.	<5	<0.3	<0.01	6.67	<0.01	0.02
B00269990	0.155	N.A.	832	46.1	0.46	19.9	0.31	1.10
B00269991	4.115	N.A.	<5	<0.3	<0.01	6.47	<0.01	0.01
B00269992	5.820	N.A.	<5	<0.3	<0.01	7.80	<0.01	0.01
B00269993	2.960	N.A.	<5	<0.3	<0.01	7.05	<0.01	0.01
B00269994	2.710	N.A.	<5	<0.3	<0.01	7.42	<0.01	0.05
B00269995	2.655	N.A.	17	5.4	<0.01	2.30	0.07	0.10
B00269996	1.590	N.A.	31	10.2	<0.01	2.16	0.12	0.20
B00269997	3.690	N.A.	1610	260	0.11	33.1	2.42	9.33
B00269998	3.375	N.A.	1460	>300	0.02	30.0	3.89	8.46
B00269999	2.580	N.A.	2330	>300	0.04	31.4	3.95	7.96
B00270000	0.750	N.A.	12	2.6	<0.01	0.19	0.06	0.10
B00233501	1.500	N.A.	899	140	<0.01	30.6	1.73	7.56
B00233502	3.220	N.A.	1010	168	0.02	32.3	1.75	8.30
B00233503	5.065	N.A.	1150	145	0.43	32.4	1.30	9.32
B00233504	2.690	N.A.	3590	286	1.54	30.6	2.24	8.28
B00233505	2.815	N.A.	986	231	0.04	30.1	2.06	9.17
B00233506	1.265	N.A.	183	21.0	0.02	3.51	0.08	0.15
B00233507	2.100	N.A.	487	43.2	0.06	3.91	0.09	0.47
B00233508	3.005	N.A.	672	92.9	0.10	7.07	0.21	2.17
*Dup B00233508	N.A.	N.A.	740	101	0.10	7.59	0.23	2.12
B00233509	1.775	N.A.	401	34.9	0.02	3.07	0.13	0.25
B00233510	0.155	N.A.	788	46.9	0.46	20.1	0.31	1.15
B00233511	4.685	N.A.	22	3.6	<0.01	2.17	0.03	0.06
B00233512	4.810	N.A.	6	0.7	<0.01	1.98	<0.01	0.01

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Final : VC153415 Order: PO# BMC15-01_32 B00269974-000,233501-533

Report File No.: 0000014858

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233513	3.810	N.A.	16	1.1	<0.01	2.16	0.03	0.04
B00233514	3.435	N.A.	<5	0.4	<0.01	2.06	<0.01	0.01
B00233515	1.585	N.A.	21	11.9	0.02	4.26	0.14	0.44
B00233516	1.500	N.A.	386	83.4	0.32	14.3	0.68	5.44
B00233517	3.340	N.A.	69	46.4	0.04	7.24	0.10	0.22
B00233518	3.855	N.A.	4660	>300	0.48	24.5	4.58	7.56
B00233519	2.455	N.A.	5200	>300	0.43	23.2	3.26	5.21
B00233520	0.850	N.A.	<5	1.0	<0.01	0.07	0.01	0.02
B00233521	4.335	N.A.	3930	>300	0.27	19.9	3.74	4.31
B00233522	5.360	N.A.	2360	259	0.07	8.67	1.42	1.77
B00233523	5.510	92.2	3090	>300	0.11	14.1	2.08	3.02
B00233524	5.105	N.A.	3190	>300	0.16	18.2	2.73	3.84
B00233525	3.505	N.A.	5220	>300	0.36	25.8	4.90	7.58
B00233526	2.860	N.A.	5000	>300	0.37	26.0	4.90	7.01
B00233527	5.980	N.A.	1750	>300	0.10	30.5	3.73	6.20
B00233528	2.405	N.A.	107	11.4	<0.01	3.22	0.26	0.26
B00233529	3.480	N.A.	416	101	0.14	1.93	0.34	0.04
B00233530	0.155	N.A.	823	43.9	0.47	20.3	0.30	1.14
B00233531	2.370	N.A.	<5	<0.3	<0.01	1.83	<0.01	0.01
B00233532	5.215	N.A.	7	1.4	<0.01	1.52	0.01	0.02
B00233533	4.280	N.A.	17	5.5	<0.01	1.14	0.08	0.06
B00233534	3.505	N.A.	<5	0.3	<0.01	1.49	<0.01	<0.01
B00233535	3.255	N.A.	27	0.9	<0.01	1.56	<0.01	<0.01
B00233536	1.675	N.A.	4890	252	0.41	17.5	1.78	3.10
B00233537	5.450	N.A.	440	14.6	<0.01	7.39	0.31	0.14
B00233538	3.180	N.A.	25	4.2	<0.01	7.00	0.05	0.04
B00233539	6.860	N.A.	102	13.4	0.01	7.78	0.21	0.42
B00233540	0.720	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00233541	4.115	N.A.	810	110	0.08	31.6	1.71	6.55
B00233542	0.405	N.A.	330	112	0.59	39.7	0.67	10.5
B00233543	3.595	N.A.	2060	112	3.74	37.2	0.21	11.5
*Dup B00233543	N.A.	N.A.	1780	107	3.80	37.2	0.19	11.8
B00233544	2.545	N.A.	20	0.5	<0.01	6.15	<0.01	0.03
B00233545	1.885	N.A.	9	0.7	0.02	2.90	<0.01	0.06
B00233546	0.750	N.A.	20	2.4	0.02	4.28	0.02	0.27
B00233547	2.565	N.A.	<5	<0.3	<0.01	1.35	<0.01	<0.01
B00233548	4.660	N.A.	8	0.6	<0.01	2.80	<0.01	0.01
B00233549	4.350	N.A.	<5	0.4	<0.01	3.21	<0.01	0.04
B00233550	0.155	N.A.	869	47.1	0.47	20.1	0.30	1.14
B00233551	3.595	N.A.	9	0.4	<0.01	7.31	<0.01	0.01

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Final : VC153415 Order: PO# BMC15-01_32 B00269974-000,233501-533

Report File No.: 0000014858

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233552	3.905	N.A.	14	0.8	<0.01	8.89	<0.01	<0.01
B00233553	3.700	N.A.	6	0.5	<0.01	7.43	<0.01	0.01
*Rep B00233508				96.4				
*Rep B00233521				>300				
*Rep B00233553				0.3				
*Std SU_1B				6.4				
*Std OREAS621				67.2				
*Std AMIS0268				189				
*Std AMIS0268				194				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00269997			1600					
*Rep B00233525			4960					
*Rep B00233548			7					
*Std OXB130			117					
*Std OXH97			1310					
*Std OXJ111			2270					
*Std AMIS0267			9480					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00269985					0.02	2.80	0.04	0.12
*Rep B00233514					<0.01	2.18	0.01	0.04
*Rep B00233539					0.01	7.70	0.19	0.41
*Std OREAS131B					0.02	5.80	1.80	3.08
*Std OREAS926					0.81	7.29	0.01	0.04
*Std OREAS134A					0.13	12.0	13.1	16.9
*Std OREAS926					0.83	7.38	<0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Final : VC153415 Order: PO# BMC15-01_32 B00269974-000,233501-533

Report File No.: 0000014858

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00269974	0.27	0.9	N.A.	N.A.
B00269975	0.29	0.9	N.A.	N.A.
B00269976	0.29	0.6	N.A.	N.A.
B00269977	0.29	0.5	N.A.	N.A.
B00269978	0.29	0.5	N.A.	N.A.
B00269979	0.24	0.7	N.A.	N.A.
B00269980	<0.01	0.3	N.A.	N.A.
B00269981	0.26	1.2	N.A.	N.A.
B00269982	0.22	27.4	N.A.	181
B00269983	0.13	35.6	N.A.	N.A.
B00269984	0.07	31.2	N.A.	173
B00269985	0.28	1.0	N.A.	N.A.
B00269986	0.15	10.2	N.A.	N.A.
B00269987	0.22	0.5	N.A.	N.A.
B00269988	0.11	<0.1	N.A.	N.A.
B00269989	0.12	<0.1	N.A.	N.A.
B00269990	0.04	18.1	N.A.	N.A.
B00269991	0.13	<0.1	N.A.	N.A.
B00269992	0.10	0.1	N.A.	N.A.
B00269993	0.24	<0.1	N.A.	N.A.
B00269994	0.18	0.3	N.A.	N.A.
B00269995	0.33	0.7	N.A.	N.A.
B00269996	0.32	1.0	N.A.	N.A.
B00269997	0.02	39.9	N.A.	286
B00269998	<0.01	39.2	N.A.	420
B00269999	0.03	40.0	N.A.	575
B00270000	<0.01	0.3	N.A.	N.A.
B00233501	<0.01	38.2	N.A.	N.A.
B00233502	<0.01	39.6	N.A.	172
B00233503	<0.01	40.9	N.A.	N.A.
B00233504	<0.01	39.2	N.A.	281
B00233505	<0.01	37.5	N.A.	225
B00233506	0.17	0.9	N.A.	N.A.
B00233507	0.37	3.0	N.A.	N.A.
B00233508	0.13	6.5	N.A.	N.A.
*Dup B00233508	0.13	6.8	N.A.	N.A.
B00233509	0.30	1.8	N.A.	N.A.
B00233510	0.05	19.2	N.A.	N.A.
B00233511	0.34	1.1	N.A.	N.A.
B00233512	0.23	1.0	N.A.	N.A.

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Final : VC153415 Order: PO# BMC15-01_32 B00269974-000,233501-533

Report File No.: 0000014858

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233513	0.21	1.4	N.A.	N.A.
B00233514	0.29	1.0	N.A.	N.A.
B00233515	0.50	2.7	N.A.	N.A.
B00233516	0.56	15.1	N.A.	N.A.
B00233517	1.00	1.1	N.A.	N.A.
B00233518	>4.00	32.1	N.A.	611
B00233519	>4.00	31.8	5.24	461
B00233520	0.05	0.2	N.A.	N.A.
B00233521	>4.00	29.6	N.A.	609
B00233522	>4.00	18.2	N.A.	236
B00233523	>4.00	23.8	N.A.	354
B00233524	>4.00	26.0	N.A.	321
B00233525	>4.00	34.0	5.06	706
B00233526	>4.00	34.1	N.A.	687
B00233527	>4.00	39.2	N.A.	430
B00233528	0.64	1.9	N.A.	N.A.
B00233529	0.58	0.2	N.A.	N.A.
B00233530	0.05	18.0	N.A.	N.A.
B00233531	1.50	0.3	N.A.	N.A.
B00233532	0.54	0.5	N.A.	N.A.
B00233533	0.53	0.4	N.A.	N.A.
B00233534	0.15	0.7	N.A.	N.A.
B00233535	0.35	0.6	N.A.	N.A.
B00233536	0.43	22.2	N.A.	282
B00233537	1.24	1.6	N.A.	N.A.
B00233538	0.97	0.4	N.A.	N.A.
B00233539	0.79	1.1	N.A.	N.A.
B00233540	<0.01	0.1	N.A.	N.A.
B00233541	>4.00	40.8	N.A.	N.A.
B00233542	0.03	35.9	N.A.	N.A.
B00233543	0.09	35.0	N.A.	N.A.
*Dup B00233543	0.08	36.1	N.A.	N.A.
B00233544	0.17	5.2	N.A.	N.A.
B00233545	0.13	1.9	N.A.	N.A.
B00233546	0.03	3.3	N.A.	N.A.
B00233547	0.09	0.5	N.A.	N.A.
B00233548	0.06	1.6	N.A.	N.A.
B00233549	0.06	1.5	N.A.	N.A.
B00233550	0.04	17.4	N.A.	N.A.
B00233551	0.07	5.8	N.A.	N.A.

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Final : VC153415 Order: PO# BMC15-01_32 B00269974-000,233501-533

Report File No.: 0000014858

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233552	0.06	8.3	N.A.	N.A.
B00233553	0.06	5.3	N.A.	N.A.
*Std OXN117			7.68	
*Blk BLANK			<0.50	
*Std AMIS0268				193
*Blk BLANK				<10
*Rep B00269985	0.29	1.0		
*Rep B00233514	0.29	1.1		
*Rep B00233539	0.78	1.1		
*Std OREAS131B	0.07	4.9		
*Std OREAS926	0.04	1.2		
*Std OREAS134A	0.14	19.4		
*Std OREAS926	0.06	1.2		
*Blk BLANK	<0.01	<0.1		
*Blk BLANK	<0.01	<0.1		
*Rep B00269999				573

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Certificate of Analysis

Work Order : VC153451

[Report File No.: 0000014642]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 18, 2015

P.O. No.	:	PO# BMC15-01_27 B00233126-143,284-357
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265284	2.840	N.A.	<5	<0.3	<0.01	6.52	<0.01	0.02
B00265285	2.310	N.A.	<5	0.7	<0.01	6.59	<0.01	0.05
B00265286	1.290	N.A.	23	7.2	0.09	9.39	0.08	0.13
B00265287	2.635	N.A.	<5	<0.3	<0.01	2.00	<0.01	<0.01
B00265288	2.275	N.A.	<5	<0.3	<0.01	2.18	<0.01	<0.01
B00265289	2.000	N.A.	<5	<0.3	<0.01	3.54	<0.01	0.02
B00265290	0.190	N.A.	849	46.2	0.48	20.2	0.30	1.13
B00265291	2.850	N.A.	6	0.6	0.02	4.12	<0.01	0.19
B00265292	2.440	N.A.	<5	0.5	<0.01	6.06	<0.01	0.03
B00265293	2.805	N.A.	<5	<0.3	<0.01	7.30	<0.01	0.01
B00265294	3.035	N.A.	<5	<0.3	<0.01	7.04	<0.01	<0.01
B00265295	2.915	N.A.	<5	0.7	<0.01	1.94	<0.01	0.01
B00265296	2.945	N.A.	<5	<0.3	<0.01	1.73	<0.01	0.04
B00265297	3.160	N.A.	<5	0.9	<0.01	2.35	<0.01	0.09
B00265298	2.725	N.A.	<5	0.5	<0.01	3.57	<0.01	0.09
B00265299	3.010	N.A.	<5	<0.3	<0.01	3.08	<0.01	0.02
B00265300	0.755	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265301	2.030	N.A.	<5	0.3	<0.01	2.78	<0.01	0.02
B00265302	1.605	N.A.	<5	0.5	0.01	3.66	<0.01	0.03
B00265303	2.525	N.A.	<5	<0.3	<0.01	2.31	<0.01	0.01
B00265304	2.285	N.A.	27	1.8	0.09	7.55	<0.01	0.06
B00265305	1.205	N.A.	<5	0.6	0.05	7.58	<0.01	0.06
B00265306	2.825	N.A.	11	2.7	0.03	2.51	0.01	0.04
B00265307	2.255	N.A.	<5	0.3	<0.01	1.33	<0.01	0.02
B00265308	3.695	N.A.	<5	4.5	<0.01	10.9	0.02	<0.01
B00265309	3.500	N.A.	<5	<0.3	<0.01	4.35	<0.01	<0.01
B00265310	0.155	N.A.	883	44.8	0.46	20.1	0.31	1.12
B00265311	3.080	N.A.	<5	<0.3	<0.01	3.57	<0.01	0.01
B00265312	4.855	N.A.	26	0.4	<0.01	6.79	0.02	0.01
B00265313	5.625	N.A.	17	1.6	<0.01	3.78	0.02	0.10
B00265314	4.290	N.A.	15	1.0	0.01	1.32	<0.01	0.06
B00265315	5.355	N.A.	<5	1.1	0.01	1.48	<0.01	0.05
B00265316	4.755	N.A.	16	1.7	0.01	1.24	<0.01	0.03
B00265317	5.450	N.A.	9	1.7	0.02	1.39	<0.01	0.02
B00265318	3.840	N.A.	353	104	0.51	32.5	1.50	11.5
*Dup B00265318	N.A.	N.A.	313	106	0.49	32.2	1.54	11.3
B00265319	2.735	N.A.	367	130	0.71	34.0	2.12	9.82
B00265320	0.765	N.A.	<5	0.4	<0.01	0.21	0.01	0.04
B00265321	2.445	N.A.	55	27.2	0.04	5.72	0.46	1.50
B00265322	2.490	N.A.	<5	0.6	<0.01	1.80	<0.01	0.02

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Final : VC153451 Order: PO# BMC15-01_27 B00233126-143,284-357

Report File No.: 0000014642

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265323	5.350	N.A.	<5	0.8	<0.01	2.05	0.02	0.08
B00265324	4.955	N.A.	<5	<0.3	<0.01	2.12	<0.01	<0.01
B00265325	4.570	N.A.	6	1.5	<0.01	6.69	0.01	0.02
B00265326	5.450	N.A.	7	1.0	<0.01	6.85	<0.01	0.02
B00265327	4.575	N.A.	<5	0.4	0.02	7.71	<0.01	0.02
B00265328	3.550	N.A.	<5	0.3	<0.01	7.42	<0.01	0.03
B00265329	2.125	N.A.	41	21.7	0.13	9.93	0.07	0.88
B00265330	0.155	N.A.	889	45.8	0.46	20.1	0.31	1.12
B00265331	3.055	N.A.	17	2.9	0.03	4.10	<0.01	0.07
B00265332	2.905	N.A.	29	12.9	0.02	3.75	0.29	1.23
B00265333	2.910	85.3	831	113	0.42	31.0	3.50	8.39
B00265334	3.175	N.A.	820	136	0.35	33.3	4.15	9.48
B00265335	4.350	N.A.	1140	120	0.38	25.0	3.89	6.48
B00265336	5.270	N.A.	744	94.3	0.11	27.8	3.80	6.87
B00265337	5.500	N.A.	372	68.9	0.12	27.4	2.74	5.69
B00265338	5.940	N.A.	696	78.2	0.37	27.3	2.48	5.62
B00265339	5.680	N.A.	1210	113	0.10	34.4	3.35	7.49
B00265340	0.825	N.A.	8	<0.3	<0.01	0.17	<0.01	0.04
B00265341	4.970	N.A.	737	88.1	0.40	36.3	1.78	9.80
B00265342	3.380	N.A.	1720	141	1.02	34.8	5.08	7.21
B00265343	4.155	N.A.	1850	90.5	0.89	33.7	3.25	6.97
B00265344	3.710	N.A.	674	102	0.11	34.3	3.47	9.18
B00265345	3.190	N.A.	447	120	0.22	32.0	2.92	9.17
B00265346	4.270	N.A.	156	64.8	0.18	24.3	1.86	5.44
B00265347	3.595	N.A.	155	48.3	0.12	21.5	1.75	3.54
B00265348	3.480	N.A.	349	87.3	0.39	32.5	2.50	6.93
B00265349	3.625	N.A.	1050	103	0.19	29.8	3.91	5.78
B00265350	0.140	N.A.	4660	>300	0.35	11.5	11.6	17.1
B00265351	6.130	N.A.	837	153	0.22	30.3	5.20	7.23
B00265352	5.425	N.A.	1780	297	0.76	27.3	4.20	7.85
B00265353	4.250	N.A.	283	83.0	0.18	31.8	2.36	5.05
*Dup B00265353	N.A.	N.A.	282	91.6	0.19	31.5	2.36	4.90
B00265354	5.220	N.A.	1320	229	0.20	29.9	3.92	8.25
B00265355	4.700	N.A.	691	155	0.14	35.9	2.88	8.05
B00265356	1.925	N.A.	50	3.0	0.01	3.53	0.08	0.18
B00265357	1.585	N.A.	740	126	0.20	14.6	2.54	3.74
*Rep B00265294				<0.3				
*Rep B00265351				151				
*Rep B00265354				225				
*Std SU_1B				6.5				

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Final : VC153451 Order: PO# BMC15-01_27 B00233126-143,284-357

Report File No.: 0000014642

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.0				
*Std AMIS0268		188				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00265308	<5					
*Rep B00265324	<5					
*Std OXB130	121					
*Std OXH97	1390					
*Std OXJ111	2170					
*Std AMIS0267	8930					
*Blk BLANK	<5					
*Rep B00265293			<0.01	7.20	<0.01	0.01
*Rep B00265320			<0.01	0.18	<0.01	0.04
*Rep B00265334			0.35	33.5	4.13	9.64
*Rep B00265353			0.18	31.8	2.32	4.96
*Std OREAS134A			0.13	12.6	12.9	17.3
*Std OREAS926			0.83	7.39	<0.01	0.04
*Std OREAS134A			0.13	12.2	12.9	17.3
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00265284	0.02	<0.1	N.A.
B00265285	0.05	<0.1	N.A.
B00265286	0.16	0.4	N.A.
B00265287	0.09	0.7	N.A.
B00265288	0.08	0.4	N.A.
B00265289	0.14	<0.1	N.A.
B00265290	0.04	18.9	N.A.
B00265291	0.13	0.3	N.A.
B00265292	0.08	0.2	N.A.
B00265293	0.05	<0.1	N.A.
B00265294	0.07	<0.1	N.A.
B00265295	0.54	0.3	N.A.
B00265296	0.26	0.2	N.A.
B00265297	0.44	0.2	N.A.
B00265298	0.37	0.3	N.A.
B00265299	0.51	<0.1	N.A.
B00265300	<0.01	<0.1	N.A.
B00265301	0.39	<0.1	N.A.
B00265302	0.45	0.6	N.A.
B00265303	0.41	<0.1	N.A.
B00265304	0.05	0.6	N.A.
B00265305	0.11	1.0	N.A.
B00265306	0.31	1.0	N.A.
B00265307	0.32	0.5	N.A.
B00265308	0.10	5.8	N.A.
B00265309	0.11	1.3	N.A.
B00265310	0.04	18.6	N.A.
B00265311	0.11	0.9	N.A.
B00265312	0.06	6.0	N.A.
B00265313	0.07	3.3	N.A.
B00265314	0.18	0.7	N.A.
B00265315	0.15	0.7	N.A.
B00265316	0.15	0.5	N.A.
B00265317	0.20	0.4	N.A.
B00265318	0.02	31.8	N.A.
*Dup B00265318	0.03	31.8	N.A.
B00265319	0.03	30.7	N.A.
B00265320	<0.01	0.2	N.A.
B00265321	0.07	4.6	N.A.
B00265322	0.08	1.1	N.A.

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Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00265323	0.08	1.5	N.A.
B00265324	0.08	1.7	N.A.
B00265325	0.03	<0.1	N.A.
B00265326	0.21	<0.1	N.A.
B00265327	0.48	0.7	N.A.
B00265328	0.41	<0.1	N.A.
B00265329	0.91	5.0	N.A.
B00265330	0.04	18.7	N.A.
B00265331	0.71	2.5	N.A.
B00265332	0.66	2.4	N.A.
B00265333	0.08	31.8	N.A.
B00265334	0.02	33.1	N.A.
B00265335	0.02	24.7	N.A.
B00265336	0.03	31.1	N.A.
B00265337	0.14	30.7	N.A.
B00265338	0.04	30.5	N.A.
B00265339	<0.01	37.2	N.A.
B00265340	<0.01	0.2	N.A.
B00265341	0.01	36.5	N.A.
B00265342	0.01	33.2	N.A.
B00265343	<0.01	30.7	N.A.
B00265344	0.03	40.4	N.A.
B00265345	0.02	36.1	N.A.
B00265346	0.01	21.2	N.A.
B00265347	0.01	17.2	N.A.
B00265348	0.06	30.1	N.A.
B00265349	0.02	32.9	N.A.
B00265350	0.04	21.7	272
B00265351	0.03	34.0	126
B00265352	0.04	31.7	277
B00265353	0.20	36.1	N.A.
*Dup B00265353	0.18	36.2	N.A.
B00265354	0.08	38.5	209
B00265355	0.02	44.8	144
B00265356	0.45	1.1	N.A.
B00265357	0.19	18.3	N.A.

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Final : VC153451 Order: PO# BMC15-01_27 B00233126-143,284-357

Report File No.: 0000014642

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
*Std AMIS0268			189
*Blk BLANK			<10
*Rep B00265293	0.05	<0.1	
*Rep B00265320	<0.01	0.1	
*Rep B00265334	0.02	33.2	
*Rep B00265353	0.20	35.5	
*Std OREAS134A	0.14	19.7	
*Std OREAS926	0.04	1.1	
*Std OREAS134A	0.14	19.5	
*Blk BLANK	<0.01	<0.1	

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Certificate of Analysis

Work Order : VC153452

[Report File No.: 0000014721]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Dec 21, 2015

P.O. No.	:	PO# BMC15-01_27 358-367,775-760,778-850
Project No.	:	KZK
No. Of Samples	:	107
Date Submitted	:	Nov 27, 2015
Report Comprises	:	Pages 1 to 9 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00265358	3.735	N.A.	94	21.4	0.05	3.81	0.30	0.66
B00265359	3.870	N.A.	27	3.4	<0.01	2.29	0.05	0.19
B00265360	0.820	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00265361	2.325	N.A.	215	218	0.66	32.7	7.24	9.64
B00265362	4.300	N.A.	7	0.8	0.01	5.29	0.02	0.04
B00265363	5.440	N.A.	9	2.4	0.01	6.78	0.07	0.10
B00265364	5.544	N.A.	<5	1.2	<0.01	6.64	0.03	0.05
B00265365	5.440	N.A.	<5	<0.3	<0.01	3.64	<0.01	<0.01
B00265366	3.770	N.A.	<5	<0.3	<0.01	6.60	<0.01	<0.01
B00265367	3.365	N.A.	<5	<0.3	<0.01	4.61	<0.01	<0.01
B00269755	4.140	N.A.	<5	<0.3	<0.01	4.79	<0.01	<0.01
B00269756	3.000	N.A.	<5	0.5	<0.01	3.14	<0.01	<0.01
B00269757	1.885	N.A.	<5	1.3	0.02	4.79	<0.01	<0.01
B00269758	3.810	N.A.	<5	<0.3	<0.01	2.35	<0.01	<0.01
B00269759	2.025	N.A.	33	1.3	<0.01	10.5	0.01	0.03
B00269760	0.965	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00269778	3.355	N.A.	22	1.0	0.01	1.60	<0.01	<0.01
B00269779	3.195	N.A.	11	1.0	<0.01	1.16	<0.01	<0.01
B00269780	0.935	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00269781	4.475	N.A.	10	1.3	<0.01	1.95	0.01	0.03
B00269782	4.175	N.A.	467	125	0.41	26.1	3.05	9.12
B00269783	4.670	N.A.	1170	130	0.85	32.2	3.02	8.66
B00269784	4.005	N.A.	32	6.2	0.02	3.38	0.10	0.44
B00269785	4.960	N.A.	5	0.6	<0.01	1.84	<0.01	0.01
B00269786	1.690	N.A.	15	2.0	<0.01	2.19	0.05	0.06
B00269787	4.955	N.A.	1260	211	0.17	33.6	3.68	10.2
B00269788	5.600	N.A.	1170	205	0.12	31.4	4.12	12.7
B00269789	4.045	N.A.	37	1.0	<0.01	2.00	<0.01	0.03
B00269790	0.155	N.A.	905	43.6	0.46	20.4	0.31	1.14
B00269791	3.405	N.A.	14	2.0	<0.01	2.15	0.03	0.08
B00269792	1.935	N.A.	5	0.5	<0.01	1.75	<0.01	0.01
B00269793	4.560	N.A.	7	2.4	<0.01	1.99	0.02	0.06
B00269794	5.040	N.A.	<5	0.7	<0.01	1.97	<0.01	0.02
B00269795	4.655	N.A.	114	16.0	0.10	8.02	0.15	1.05
B00269796	4.960	N.A.	10	3.1	<0.01	6.88	0.04	0.03
*Dup B00269796	N.A.	N.A.	7	2.1	<0.01	7.06	0.03	0.03
B00269797	4.905	N.A.	<5	0.4	<0.01	1.63	<0.01	<0.01
B00269798	4.905	N.A.	<5	1.0	<0.01	7.24	<0.01	0.03
B00269799	6.655	N.A.	7	1.1	<0.01	6.93	0.02	0.02
B00269800	0.725	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269801	4.185	N.A.	34	9.5	<0.01	6.95	0.18	0.02
B00269802	2.905	N.A.	47	12.9	0.01	6.75	0.19	0.04
B00269803	2.720	N.A.	2150	173	0.20	31.7	2.36	8.99
B00269804	4.640	N.A.	1960	178	0.24	28.1	2.51	8.16
B00269805	6.090	N.A.	2150	159	0.27	29.5	2.44	8.21
B00269806	6.020	N.A.	1940	140	0.14	22.5	2.96	6.82
B00269807	5.400	N.A.	2080	227	0.12	24.2	4.16	8.19
B00269808	5.580	N.A.	5440	179	0.15	32.1	2.23	6.20
B00269809	3.445	N.A.	3930	250	0.36	29.0	2.10	5.04
B00269810	0.170	N.A.	877	20.2	1.72	13.8	0.26	1.01
B00269811	0.170	N.A.	1290	66.5	0.36	3.76	1.36	5.28
B00269812	5.380	85.4	5480	>300	0.37	19.8	5.45	7.74
B00269813	5.170	N.A.	3910	>300	0.29	21.0	4.98	6.29
B00269814	3.245	N.A.	4820	>300	0.29	22.9	4.03	5.95
B00269815	4.675	N.A.	2200	>300	0.25	24.2	9.44	12.4
B00269816	5.525	N.A.	916	219	0.09	27.7	5.68	10.8
B00269817	5.375	N.A.	1280	238	0.33	26.3	4.53	7.33
B00269818	4.450	N.A.	739	81.9	0.33	38.6	1.41	8.43
B00269819	5.965	N.A.	1170	112	0.82	36.4	1.85	8.39
B00269820	0.695	N.A.	<5	0.5	<0.01	0.14	<0.01	0.03
B00269821	2.870	N.A.	866	129	0.84	34.1	2.55	8.71
B00269822	2.790	N.A.	795	160	0.24	36.4	3.21	8.59
B00269823	5.500	N.A.	370	69.8	0.29	33.9	1.22	9.30
B00269824	5.235	N.A.	534	86.0	0.57	32.5	1.34	6.25
B00269825	5.720	N.A.	514	88.2	0.52	38.5	1.34	6.21
B00269826	3.655	N.A.	549	72.7	0.60	38.6	1.37	5.26
B00269827	3.940	N.A.	925	118	1.51	36.2	1.96	4.83
B00269828	5.430	N.A.	863	88.2	0.07	33.8	1.55	4.93
B00269829	4.120	N.A.	1170	95.2	0.34	35.8	0.68	3.02
B00269830	0.210	N.A.	859	19.8	1.76	13.9	0.27	1.04
B00269831	0.210	N.A.	1280	65.3	0.36	3.77	1.36	5.31
*Dup B00269832	N.A.	N.A.	1100	87.1	0.15	32.5	0.76	3.85
B00269832	5.320	N.A.	993	99.6	0.16	32.2	0.81	3.86
B00269833	3.350	N.A.	105	20.0	0.04	8.91	0.17	1.24
B00269834	4.335	N.A.	<5	0.7	<0.01	3.90	<0.01	0.01
B00269835	5.660	N.A.	<5	<0.3	<0.01	3.18	<0.01	0.01
B00269836	2.685	N.A.	<5	<0.3	<0.01	4.21	<0.01	0.01
B00269837	3.370	N.A.	7	0.9	<0.01	2.69	<0.01	0.03
B00269838	4.625	N.A.	17	1.7	<0.01	5.72	0.01	0.05
B00269839	2.895	N.A.	<5	<0.3	<0.01	5.77	<0.01	0.02

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00269840	0.775	N.A.	<5	<0.3	<0.01	0.09	<0.01	0.01
B00269841	1.535	N.A.	19	2.9	0.01	7.74	0.04	0.11
B00269842	2.485	N.A.	430	122	0.39	31.1	2.76	9.27
B00269843	3.180	N.A.	353	65.9	0.50	37.9	1.63	10.6
B00269844	3.040	N.A.	134	70.6	0.46	36.5	1.64	10.3
B00269845	1.640	N.A.	14	21.7	0.18	15.9	0.33	5.50
B00269846	4.160	N.A.	6	6.9	0.04	4.69	0.10	1.12
B00269847	3.385	N.A.	<5	0.4	<0.01	1.64	<0.01	0.02
B00269848	2.320	N.A.	<5	0.4	<0.01	1.78	<0.01	0.02
B00269849	4.450	N.A.	<5	<0.3	<0.01	1.91	<0.01	0.02
B00269850	0.195	N.A.	852	46.0	0.47	20.3	0.32	1.12
B00233126	6.085	N.A.	<5	0.6	<0.01	7.20	<0.01	0.02
B00233127	5.575	N.A.	<5	<0.3	0.01	7.77	<0.01	0.01
B00233128	5.425	N.A.	58	4.5	0.06	8.91	0.13	0.20
B00233129	2.760	N.A.	2180	136	0.16	18.6	2.94	3.83
B00233130	0.170	N.A.	1260	70.6	0.36	3.73	1.35	5.29
B00233131	0.170	N.A.	732	18.1	1.75	13.7	0.25	1.00
B00233132	4.675	N.A.	121	17.2	0.03	2.45	0.11	0.19
B00233133	3.130	N.A.	15	1.0	<0.01	1.86	<0.01	<0.01
B00233134	5.445	N.A.	17	1.7	<0.01	2.41	<0.01	<0.01
B00233135	3.145	N.A.	<5	0.5	<0.01	1.20	<0.01	<0.01
B00233136	4.865	91.7	<5	<0.3	<0.01	2.44	<0.01	<0.01
B00233137	5.155	N.A.	8	0.5	<0.01	2.06	<0.01	<0.01
B00233138	5.335	N.A.	1530	218	0.28	30.8	3.54	11.6
B00233139	1.075	N.A.	2510	157	5.83	43.3	0.48	5.65
B00233140	2.070	N.A.	<5	<0.3	<0.01	0.09	<0.01	0.01
B00233141	1.670	N.A.	254	17.5	0.19	5.91	0.16	0.25
*Dup B00233141	N.A.	N.A.	304	16.2	0.19	5.98	0.14	0.21
B00233142	5.275	N.A.	7	0.7	<0.01	2.20	<0.01	0.02
B00233143	4.500	N.A.	35	2.9	0.07	2.71	0.04	1.53
*Rep B00265361				214				
*Rep B00269803				174				
*Rep B00269844				70.6				
*Rep B00233143				3.0				
*Std SU_1B				6.8				
*Std OREAS621				66.9				
*Std AMIS0268				185				
*Std SU_1B				6.2				
*Std OREAS621				70.5				
*Std AMIS0268				195				

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00269793	9					
*Rep B00269806	1880					
*Rep B00233129	2260					
*Std OXB130	125					
*Std OXH97	1340					
*Std OXJ111	2220					
*Std AMIS0267	9650					
*Std OXB130	125					
*Std OXH97	1310					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Blk BLANK	<5					
*Rep B00265360			<0.01	<0.05	<0.01	<0.01
*Rep B00269799			<0.01	6.89	0.02	0.02
*Rep B00269813			0.29	20.6	4.78	6.38
*Rep B00269843			0.50	37.9	1.60	10.3
*Rep B00233130			0.38	3.81	1.37	5.32
*Std OREAS134A			0.13	12.3	13.1	17.1
*Std OREAS131B			0.02	5.85	1.84	3.13
*Std OREAS926			0.82	7.45	0.01	0.04
*Std OREAS926			0.82	7.47	0.01	0.05
*Std OREAS134A			0.13	12.2	13.3	17.1
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00265358	0.28	2.9	N.A.	N.A.
B00265359	0.18	1.4	N.A.	N.A.
B00265360	<0.01	<0.1	N.A.	N.A.
B00265361	0.03	27.6	N.A.	222
B00265362	0.27	0.2	N.A.	N.A.
B00265363	0.13	0.2	N.A.	N.A.
B00265364	0.11	<0.1	N.A.	N.A.
B00265365	0.08	2.1	N.A.	N.A.
B00265366	0.11	4.5	N.A.	N.A.
B00265367	0.16	1.1	N.A.	N.A.
B00269755	0.30	3.4	N.A.	N.A.
B00269756	0.26	1.3	N.A.	N.A.
B00269757	0.19	3.9	N.A.	N.A.
B00269758	0.13	1.3	N.A.	N.A.
B00269759	0.08	10.4	N.A.	N.A.
B00269760	<0.01	<0.1	N.A.	N.A.
B00269778	0.26	0.9	N.A.	N.A.
B00269779	0.22	0.5	N.A.	N.A.
B00269780	<0.01	<0.1	N.A.	N.A.
B00269781	0.24	0.6	N.A.	N.A.
B00269782	0.09	31.3	N.A.	N.A.
B00269783	0.05	37.2	N.A.	N.A.
B00269784	0.26	2.1	N.A.	N.A.
B00269785	0.25	0.6	N.A.	N.A.
B00269786	0.25	0.2	N.A.	N.A.
B00269787	0.02	41.0	N.A.	220
B00269788	0.03	37.6	N.A.	171
B00269789	0.10	1.2	N.A.	N.A.
B00269790	0.04	19.1	N.A.	N.A.
B00269791	0.11	1.6	N.A.	N.A.
B00269792	0.14	1.3	N.A.	N.A.
B00269793	0.29	0.9	N.A.	N.A.
B00269794	0.45	0.5	N.A.	N.A.
B00269795	0.30	3.7	N.A.	N.A.
B00269796	0.29	<0.1	N.A.	N.A.
*Dup B00269796	0.28	<0.1	N.A.	N.A.
B00269797	0.24	1.0	N.A.	N.A.
B00269798	0.43	<0.1	N.A.	N.A.
B00269799	0.35	<0.1	N.A.	N.A.
B00269800	<0.01	<0.1	N.A.	N.A.

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00269801	0.38	<0.1	N.A.	N.A.
B00269802	0.43	<0.1	N.A.	N.A.
B00269803	>4.00	41.8	N.A.	148
B00269804	>4.00	37.2	N.A.	180
B00269805	>4.00	39.2	N.A.	142
B00269806	>4.00	30.9	N.A.	N.A.
B00269807	>4.00	32.3	N.A.	208
B00269808	2.12	35.7	6.10	185
B00269809	>4.00	35.8	N.A.	244
B00269810	0.13	9.0	N.A.	N.A.
B00269811	0.25	4.3	N.A.	N.A.
B00269812	>4.00	26.6	4.97	530
B00269813	>4.00	27.2	N.A.	373
B00269814	>4.00	30.2	N.A.	305
B00269815	1.94	33.0	N.A.	457
B00269816	0.17	34.0	N.A.	197
B00269817	0.04	28.9	N.A.	221
B00269818	0.04	31.3	N.A.	N.A.
B00269819	0.04	29.8	N.A.	N.A.
B00269820	<0.01	0.1	N.A.	N.A.
B00269821	0.07	29.5	N.A.	N.A.
B00269822	0.04	39.0	N.A.	154
B00269823	0.03	26.9	N.A.	N.A.
B00269824	0.03	24.8	N.A.	N.A.
B00269825	0.04	28.3	N.A.	N.A.
B00269826	0.01	30.3	N.A.	N.A.
B00269827	0.02	30.3	N.A.	N.A.
B00269828	0.55	38.3	N.A.	N.A.
B00269829	3.20	41.6	N.A.	N.A.
B00269830	0.13	9.2	N.A.	N.A.
B00269831	0.24	4.4	N.A.	N.A.
*Dup B00269832	0.87	34.4	N.A.	N.A.
B00269832	0.76	35.7	N.A.	N.A.
B00269833	0.27	5.8	N.A.	N.A.
B00269834	0.14	0.9	N.A.	N.A.
B00269835	0.09	0.9	N.A.	N.A.
B00269836	0.08	2.3	N.A.	N.A.
B00269837	0.10	0.7	N.A.	N.A.
B00269838	0.23	1.3	N.A.	N.A.
B00269839	0.11	1.0	N.A.	N.A.

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00269840	<0.01	<0.1	N.A.	N.A.
B00269841	0.51	0.4	N.A.	N.A.
B00269842	0.05	37.2	N.A.	N.A.
B00269843	0.01	34.6	N.A.	N.A.
B00269844	0.01	31.8	N.A.	N.A.
B00269845	0.17	14.3	N.A.	N.A.
B00269846	0.17	3.4	N.A.	N.A.
B00269847	0.18	1.1	N.A.	N.A.
B00269848	0.14	1.1	N.A.	N.A.
B00269849	0.11	0.9	N.A.	N.A.
B00269850	0.04	18.7	N.A.	N.A.
B00233126	0.12	<0.1	N.A.	N.A.
B00233127	0.08	<0.1	N.A.	N.A.
B00233128	0.36	0.9	N.A.	N.A.
B00233129	>4.00	21.9	N.A.	N.A.
B00233130	0.23	4.5	N.A.	N.A.
B00233131	0.12	9.3	N.A.	N.A.
B00233132	1.14	1.7	N.A.	N.A.
B00233133	0.19	0.4	N.A.	N.A.
B00233134	0.22	1.4	N.A.	N.A.
B00233135	0.28	0.5	N.A.	N.A.
B00233136	0.22	0.5	N.A.	N.A.
B00233137	0.37	0.7	N.A.	N.A.
B00233138	3.18	43.9	N.A.	205
B00233139	0.07	38.3	N.A.	137
B00233140	<0.01	<0.1	N.A.	N.A.
B00233141	0.19	3.8	N.A.	N.A.
*Dup B00233141	0.18	3.6	N.A.	N.A.
B00233142	0.21	1.0	N.A.	N.A.
B00233143	0.05	2.6	N.A.	N.A.

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Std AMIS0267			9.16	
*Std AMIS0268				194
*Blk BLANK				<10
*Rep B00265360	<0.01	<0.1		
*Rep B00269799	0.34	<0.1		
*Rep B00269813	>4.00	26.3		

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Final : VC153452 Order: PO# BMC15-01_27 358-367,775-760,778-850

Report File No.: 0000014721

	Ba GO_ICP90Q 0.01 %	S GO_ICP90Q 0.1 %	@Au GO_FAG303 0.5 g/t	Ag GO_FAG313 10 g/t
*Rep B00269843	0.02	33.6		
*Rep B00233130	0.24	4.6		
*Std OREAS134A	0.14	19.2		
*Std OREAS131B	0.08	4.7		
*Std OREAS926	0.04	1.2		
*Std OREAS926	0.04	1.2		
*Std OREAS134A	0.13	19.8		
*Blk BLANK	<0.01	<0.1		
*Blk BLANK	<0.01	<0.1		
*Rep B00269812				524
*Blk BLANK			<0.50	
*Rep B00269808			6.51	

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Certificate of Analysis

Work Order : VC153611

[Report File No.: 0000014965]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

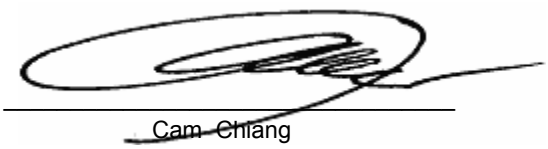
Date: Dec 30, 2015

P.O. No.	:	PO# BGM15-01_34 B00233554-590
Project No.	:	KZK
No. Of Samples	:	37
Date Submitted	:	Dec 01, 2015
Report Comprises	:	Pages 1 to 5 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG303 and GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153611 Order: PO# BGM15-01_34 B00233554-590

Report File No.: 0000014965

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233554	2.600	N.A.	28	3.7	0.02	1.66	0.02	0.01
B00233555	2.350	N.A.	33	4.4	0.02	1.92	<0.01	0.12
B00233556	2.515	N.A.	23	4.7	0.01	2.21	0.06	0.09
B00233557	1.685	N.A.	930	267	0.12	26.8	4.89	6.87
B00233558	1.430	N.A.	476	58.7	0.41	15.4	0.69	3.12
B00233559	1.330	N.A.	729	103	0.51	17.0	0.96	6.74
B00233560	1.135	N.A.	<5	0.3	<0.01	0.10	<0.01	0.02
B00233561	2.010	N.A.	19	2.8	0.01	2.34	0.03	0.40
B00233562	2.250	N.A.	<5	0.4	<0.01	1.75	<0.01	<0.01
B00233563	1.195	N.A.	7	0.7	<0.01	1.72	<0.01	<0.01
B00233564	2.170	N.A.	8	0.6	<0.01	1.90	<0.01	<0.01
B00233565	1.545	N.A.	<5	0.3	<0.01	1.76	<0.01	<0.01
B00233566	1.735	N.A.	<5	0.5	<0.01	1.82	0.02	<0.01
B00233567	1.055	N.A.	12	19.4	<0.01	2.13	0.01	0.01
B00233568	2.740	N.A.	3770	>300	0.46	28.3	3.61	8.95
B00233569	1.590	N.A.	1690	236	0.15	30.0	3.57	8.84
B00233570	0.170	N.A.	1220	71.8	0.37	3.81	1.30	5.30
B00233571	0.170	N.A.	772	21.0	1.77	13.6	0.26	1.02
B00233572	2.610	N.A.	1630	225	0.02	31.2	4.10	5.38
B00233573	1.685	N.A.	2170	>300	0.04	22.6	7.06	11.3
B00233574	1.220	N.A.	5750	252	0.24	24.2	2.60	6.90
B00233575	2.105	N.A.	3490	248	0.24	29.6	3.94	8.54
B00233576	1.115	N.A.	155	10.0	<0.01	6.64	0.15	0.16
B00233577	2.935	N.A.	53	9.8	0.02	7.02	0.15	0.15
B00233578	3.120	N.A.	20	3.8	<0.01	7.23	0.05	0.07
B00233579	2.960	N.A.	16	3.2	<0.01	7.57	0.05	0.07
B00233580	1.200	N.A.	<5	<0.3	<0.01	0.09	0.01	0.01
B00233581	2.520	N.A.	<5	2.2	<0.01	7.04	0.04	0.06
B00233582	3.020	N.A.	<5	1.5	<0.01	6.70	0.03	0.05
B00233583	2.475	N.A.	11	4.2	<0.01	7.31	0.09	0.11
B00233584	2.410	N.A.	274	80.0	0.30	37.6	2.24	11.1
B00233585	1.955	N.A.	28	3.0	0.05	4.65	0.04	0.14
B00233586	2.310	N.A.	429	44.0	1.13	40.7	0.09	8.00
B00233587	2.835	N.A.	<5	1.0	0.02	1.92	0.01	0.03
B00233588	2.300	N.A.	10	1.0	0.01	2.20	0.02	0.11
*Dup B00233588	N.A.	N.A.	7	0.8	<0.01	2.11	0.02	0.07
B00233589	2.095	91.9	9	0.5	<0.01	3.09	<0.01	0.03
B00233590	0.155	N.A.	901	45.9	0.46	20.4	0.31	1.09
*Rep B00233564				0.5				
*Rep B00233590				47.1				

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Final : VC153611 Order: PO# BGM15-01_34 B00233554-590

Report File No.: 0000014965

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std AMIS0268		196				
*Std OREAS621		69.6				
*Blk BLANK		<0.3				
*Rep B00233569	1840					
*Std OXN117	7620					
*Std OXH97	1260					
*Blk BLANK	<5					
*Rep B00233555			0.02	1.91	<0.01	0.12
*Rep B00233573			0.03	22.8	6.62	11.1
*Std OREAS134A			0.12	12.3	12.8	17.4
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Std OREAS131B			0.02	5.94	1.86	3.10
*Rep B00233574	2860					

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Final : VC153611 Order: PO# BGM15-01_34 B00233554-590

Report File No.: 0000014965

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
B00233554	0.16	1.0	N.A.	N.A.
B00233555	0.18	1.1	N.A.	N.A.
B00233556	0.18	0.8	N.A.	N.A.
B00233557	0.07	32.6	N.A.	244
B00233558	0.05	13.2	N.A.	N.A.
B00233559	0.04	12.7	N.A.	N.A.
B00233560	<0.01	<0.1	N.A.	N.A.
B00233561	0.11	1.7	N.A.	N.A.
B00233562	0.09	1.4	N.A.	N.A.
B00233563	0.10	1.3	N.A.	N.A.
B00233564	0.13	1.6	N.A.	N.A.
B00233565	0.12	1.4	N.A.	N.A.
B00233566	0.12	1.4	N.A.	N.A.
B00233567	0.40	1.3	N.A.	N.A.
B00233568	0.16	33.2	N.A.	303
B00233569	2.98	37.7	N.A.	212
B00233570	0.24	4.5	N.A.	N.A.
B00233571	0.13	8.6	N.A.	N.A.
B00233572	2.41	38.1	N.A.	232
B00233573	0.94	32.4	N.A.	409
B00233574	2.94	28.4	9.08	247
B00233575	1.50	39.5	N.A.	248
B00233576	0.21	0.4	N.A.	N.A.
B00233577	0.31	0.5	N.A.	N.A.
B00233578	0.55	0.1	N.A.	N.A.
B00233579	0.22	<0.1	N.A.	N.A.
B00233580	<0.01	<0.1	N.A.	N.A.
B00233581	0.06	<0.1	N.A.	N.A.
B00233582	0.11	<0.1	N.A.	N.A.
B00233583	0.34	0.1	N.A.	N.A.
B00233584	0.02	39.0	N.A.	N.A.
B00233585	0.58	1.5	N.A.	N.A.
B00233586	0.03	31.6	N.A.	N.A.
B00233587	0.29	1.2	N.A.	N.A.
B00233588	0.16	1.4	N.A.	N.A.
*Dup B00233588	0.16	1.4	N.A.	N.A.
B00233589	0.08	2.1	N.A.	N.A.
B00233590	0.04	17.6	N.A.	N.A.

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Final : VC153611 Order: PO# BGM15-01_34 B00233554-590

Report File No.: 0000014965

Element	Ba	S	@Au	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG303	GO_FAG313
Det.Lim.	0.01	0.1	0.5	10
Units	%	%	g/t	g/t
*Std ME-1302				411
*Blk BLANK				<10
*Rep B00233555	0.18	1.2		
*Rep B00233573	0.92	29.5		
*Std OREAS134A	0.13	18.6		
*Blk BLANK			<0.50	
*Rep B00233574			3.08	
*Rep B00233573				419
*Std OXN117			7.79	
*Blk BLANK	<0.01	<0.1		
*Std OREAS131B	0.07	4.9		

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Certificate of Analysis

Work Order : VC153739

[Report File No.: 0000015022]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

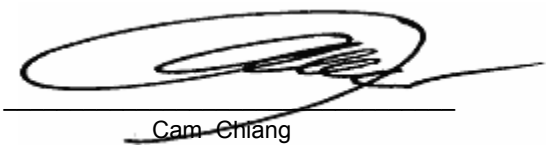
Date: Jan 05, 2016

P.O. No.	:	PO# BMC15-01_35 B00232744-817
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 08, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232744	1.500	N.A.	<5	1.2	0.04	4.17	<0.01	0.19
B00232745	5.550	N.A.	<5	<0.3	<0.01	1.56	<0.01	<0.01
B00232746	5.730	N.A.	<5	<0.3	0.01	1.50	<0.01	<0.01
B00232747	4.950	N.A.	<5	<0.3	<0.01	1.53	<0.01	<0.01
B00232748	5.485	N.A.	<5	<0.3	<0.01	1.79	<0.01	0.03
B00232749	5.320	N.A.	<5	<0.3	<0.01	1.66	<0.01	0.01
B00232750	0.155	N.A.	866	46.1	0.46	20.2	0.31	1.15
B00232751	3.660	N.A.	<5	<0.3	<0.01	1.72	<0.01	0.02
B00232752	2.790	N.A.	<5	<0.3	<0.01	1.57	<0.01	<0.01
B00232753	3.980	N.A.	<5	3.6	<0.01	2.83	0.03	0.06
B00232754	3.615	N.A.	151	46.3	0.63	26.6	0.16	0.82
B00232755	3.245	N.A.	1550	249	4.93	34.0	1.48	5.43
B00232756	4.880	N.A.	2240	286	7.32	43.5	1.18	3.37
B00232757	4.050	N.A.	1040	146	2.66	39.1	0.78	8.38
B00232758	2.285	N.A.	1390	166	5.40	33.6	0.25	3.83
B00232759	2.965	N.A.	2050	192	6.01	35.3	0.27	0.66
B00232760	0.795	N.A.	<5	0.6	0.02	0.15	<0.01	0.01
B00232761	2.305	N.A.	291	5.8	0.31	8.67	<0.01	0.05
B00232762	2.045	N.A.	2450	155	5.11	41.0	0.13	3.65
B00232763	3.575	N.A.	4680	>300	1.03	5.14	0.03	0.18
B00232764	5.660	N.A.	35	2.2	0.03	3.34	<0.01	0.04
B00232765	5.635	N.A.	<5	1.1	<0.01	1.58	<0.01	0.03
B00232766	1.730	N.A.	9	2.3	<0.01	3.67	0.02	0.07
B00232767	2.230	N.A.	316	55.3	0.35	34.7	0.62	5.85
B00232768	3.705	N.A.	50	3.1	0.06	2.30	0.05	0.14
B00232769	5.565	N.A.	<5	3.5	<0.01	1.93	0.03	0.06
B00232770	0.140	N.A.	777	45.7	0.45	19.8	0.31	1.13
B00232771	4.765	N.A.	<5	0.9	<0.01	2.39	<0.01	0.05
B00232772	4.665	N.A.	<5	0.7	<0.01	1.92	<0.01	0.02
B00232773	4.160	N.A.	145	8.8	0.15	3.81	0.03	0.06
B00232774	3.960	N.A.	749	97.4	2.38	46.1	0.29	2.87
B00232775	4.765	N.A.	818	67.7	1.03	45.9	0.64	2.28
B00232776	6.385	N.A.	654	69.5	1.12	45.5	0.62	2.11
B00232777	6.360	N.A.	786	48.5	0.66	46.1	0.33	2.47
B00232778	6.610	N.A.	493	39.3	0.50	47.9	0.27	0.45
*Dup B00232778	N.A.	N.A.	487	38.5	0.51	48.1	0.26	0.45
B00232779	6.575	N.A.	485	31.7	0.47	47.2	0.12	0.24
B00232780	2.000	N.A.	<5	<0.3	<0.01	0.16	<0.01	<0.01
B00232781	4.740	N.A.	1120	34.8	0.38	42.9	0.30	0.60
B00232782	3.075	N.A.	697	48.6	0.38	43.3	0.34	3.48

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232783	4.395	N.A.	1630	162	0.28	33.1	2.37	9.65
B00232784	4.085	N.A.	2320	219	0.33	32.9	1.67	6.37
B00232785	2.655	N.A.	1830	141	0.59	37.7	1.54	8.08
B00232786	3.215	N.A.	4710	>300	0.17	26.4	4.24	13.3
B00232787	5.470	N.A.	3410	227	0.19	31.6	2.23	8.01
B00232788	4.825	N.A.	2670	266	0.19	30.6	2.72	9.59
B00232789	6.505	N.A.	2730	197	0.34	37.2	0.76	3.88
B00232790	0.140	N.A.	3970	>300	0.35	11.6	11.3	17.9
B00232791	6.320	N.A.	3650	>300	0.54	28.2	3.14	12.3
B00232792	5.155	N.A.	880	207	0.46	34.1	4.43	13.7
B00232793	1.810	88.3	3490	148	2.26	30.4	1.74	6.52
B00232794	1.990	N.A.	265	49.1	0.80	13.1	0.28	1.84
B00232795	3.070	N.A.	65	26.3	0.19	14.2	0.66	3.25
B00232796	5.890	N.A.	9	3.4	0.04	4.98	0.06	0.69
B00232797	5.590	N.A.	33	1.4	0.01	3.82	<0.01	0.19
B00232798	2.670	N.A.	6	1.6	0.02	4.27	0.01	0.10
B00232799	3.525	N.A.	<5	1.3	<0.01	2.57	<0.01	0.05
B00232800	1.405	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00232801	1.500	N.A.	59	29.2	0.40	16.0	0.48	2.28
B00232802	5.740	N.A.	<5	0.4	<0.01	6.46	0.01	0.02
B00232803	2.285	N.A.	51	27.8	0.58	8.05	0.19	1.42
B00232804	1.610	N.A.	<5	2.4	0.03	7.18	0.02	0.04
B00232805	5.540	N.A.	<5	1.1	0.01	3.57	<0.01	0.04
B00232806	3.085	N.A.	9	6.0	0.21	11.3	0.07	0.41
B00232807	2.105	N.A.	119	84.2	1.64	14.3	3.46	7.46
B00232808	1.995	N.A.	<5	1.8	0.02	3.03	0.07	0.14
B00232809	3.040	N.A.	18	34.4	0.50	8.70	2.02	3.64
B00232810	0.145	N.A.	294	21.0	13.7	27.7	0.03	0.41
B00232811	3.335	N.A.	<5	13.2	0.33	13.5	0.88	2.36
B00232812	1.300	N.A.	<5	3.3	0.07	8.81	0.18	0.28
B00232813	4.680	N.A.	<5	1.9	0.02	3.09	0.03	0.34
*Dup B00232813	N.A.	N.A.	<5	1.7	0.02	3.04	0.03	0.35
B00232814	5.755	N.A.	<5	2.1	0.02	2.58	0.05	0.42
B00232815	5.575	N.A.	<5	1.7	0.03	1.91	0.11	0.31
B00232816	3.500	N.A.	<5	1.0	0.02	1.65	0.04	0.14
B00232817	3.570	N.A.	<5	0.8	<0.01	2.29	0.02	0.05
*Rep B00232750				43.9				
*Rep B00232809				34.7				
*Rep B00232816				1.0				
*Std SU_1B				6.5				

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.7				
*Std AMIS0268		193				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232762	2480					
*Rep B00232801	77					
*Std OXB130	121					
*Std OXH97	1190					
*Std OXJ111	2000					
*Std OXN117	7500					
*Blk BLANK	<5					
*Rep B00232752			<0.01	1.57	<0.01	<0.01
*Rep B00232781			0.37	42.8	0.30	0.60
*Rep B00232792			0.46	33.3	4.52	13.2
*Rep B00232813			0.02	3.11	0.03	0.35
*Std OREAS134A			0.13	12.2	13.2	17.5
*Std OREAS926			0.82	7.42	<0.01	0.04
*Std OREAS134A			0.13	12.2	13.3	17.3
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00232744	0.10	1.9	N.A.
B00232745	0.15	0.4	N.A.
B00232746	0.17	0.6	N.A.
B00232747	0.11	0.3	N.A.
B00232748	0.09	0.2	N.A.
B00232749	0.08	0.1	N.A.
B00232750	0.04	17.8	N.A.
B00232751	0.10	0.2	N.A.
B00232752	0.20	<0.1	N.A.
B00232753	0.40	0.2	N.A.
B00232754	0.61	9.8	N.A.
B00232755	0.21	27.9	248
B00232756	0.03	32.6	255
B00232757	<0.01	42.0	N.A.
B00232758	0.14	27.0	157
B00232759	0.23	28.5	162
B00232760	<0.01	0.2	N.A.
B00232761	0.26	2.6	N.A.
B00232762	0.03	47.2	134
B00232763	0.33	2.2	387
B00232764	0.27	0.9	N.A.
B00232765	0.28	0.4	N.A.
B00232766	0.18	<0.1	N.A.
B00232767	0.05	40.1	N.A.
B00232768	0.27	0.9	N.A.
B00232769	0.25	0.5	N.A.
B00232770	0.04	17.7	N.A.
B00232771	0.29	1.0	N.A.
B00232772	0.20	0.8	N.A.
B00232773	0.26	0.6	N.A.
B00232774	<0.01	44.9	N.A.
B00232775	<0.01	48.0	N.A.
B00232776	<0.01	44.4	N.A.
B00232777	<0.01	42.5	N.A.
B00232778	0.01	42.8	N.A.
*Dup B00232778	0.01	40.2	N.A.
B00232779	0.01	41.4	N.A.
B00232780	<0.01	0.2	N.A.
B00232781	0.01	45.9	N.A.
B00232782	<0.01	42.3	N.A.

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00232783	0.02	37.2	131
B00232784	0.01	36.7	223
B00232785	0.02	38.2	N.A.
B00232786	0.05	31.7	381
B00232787	0.04	35.7	254
B00232788	<0.01	35.8	276
B00232789	<0.01	43.8	210
B00232790	0.03	21.9	336
B00232791	>4.00	35.9	349
B00232792	0.11	35.0	221
B00232793	0.07	31.5	N.A.
B00232794	0.16	6.7	N.A.
B00232795	0.12	5.9	N.A.
B00232796	0.16	1.2	N.A.
B00232797	0.14	1.1	N.A.
B00232798	0.15	0.4	N.A.
B00232799	0.15	0.2	N.A.
B00232800	<0.01	0.1	N.A.
B00232801	0.07	7.2	N.A.
B00232802	0.07	0.1	N.A.
B00232803	0.10	3.0	N.A.
B00232804	0.11	0.5	N.A.
B00232805	0.10	0.2	N.A.
B00232806	0.03	0.9	N.A.
B00232807	<0.01	7.4	N.A.
B00232808	0.11	0.3	N.A.
B00232809	<0.01	3.3	N.A.
B00232810	<0.01	27.0	N.A.
B00232811	<0.01	2.2	N.A.
B00232812	0.02	0.3	N.A.
B00232813	0.12	0.3	N.A.
*Dup B00232813	0.12	0.4	N.A.
B00232814	0.10	0.3	N.A.
B00232815	0.09	0.3	N.A.
B00232816	0.10	<0.1	N.A.
B00232817	0.10	<0.1	N.A.

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Final : VC153739 Order: PO# BMC15-01_35 B00232744-817

Report File No.: 0000015022

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
*Std ME-1302			444
*Blk BLANK			<10
*Rep B00232752	0.20	<0.1	
*Rep B00232781	<0.01	44.5	
*Rep B00232792	0.11	36.7	
*Rep B00232813	0.12	0.3	
*Std OREAS134A	0.14	19.0	
*Std OREAS926	0.04	1.1	
*Std OREAS134A	0.14	19.1	
*Blk BLANK	<0.01	<0.1	
*Rep B00232786			372

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Certificate of Analysis

Work Order : VC153740

[Report File No.: 0000014994]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

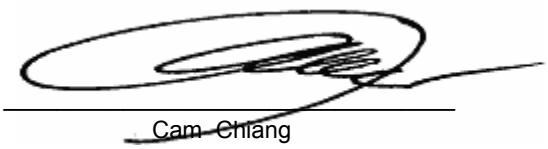
Date: Dec 31, 2015

P.O. No.	:	PO# BMC15-01_35 B00232818-891
Project No.	:	KZK
No. Of Samples	:	74
Date Submitted	:	Dec 08, 2015
Report Comprises	:	Pages 1 to 7 (Inclusive of Cover Sheet)

Distribution of unused material:
Active files:

Comments:

Lower limit for GO_FAG313 may be elevated due to reduced assay fraction size.
Ba and S data is informational only.

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R.	= Listed not received	I.S.	= Insufficient Sample
n.a.	= Not applicable	--	= No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232818	3.435	N.A.	20	4.2	0.11	3.11	0.09	0.59
B00232819	4.900	N.A.	<5	1.2	<0.01	2.59	0.02	0.09
B00232820	1.020	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232821	3.000	N.A.	<5	1.6	<0.01	4.42	0.04	0.24
B00232822	5.745	N.A.	<5	<0.3	<0.01	1.73	<0.01	0.02
B00232823	3.875	N.A.	<5	6.0	<0.01	2.70	0.06	0.07
B00232824	2.985	N.A.	<5	1.7	<0.01	8.25	<0.01	0.15
B00232825	3.685	N.A.	7	9.1	0.08	12.5	0.04	1.07
B00232826	2.940	N.A.	30	47.5	0.09	13.0	0.22	4.70
B00232827	1.465	N.A.	149	53.1	1.58	14.4	0.10	7.18
B00232828	3.835	N.A.	<5	2.4	0.03	7.39	<0.01	0.50
B00232829	3.580	N.A.	15	3.3	0.06	6.24	0.02	0.38
B00232830	0.155	N.A.	851	42.7	0.47	19.5	0.30	1.10
B00232831	3.910	N.A.	<5	1.0	<0.01	4.58	<0.01	0.06
B00232832	4.840	N.A.	<5	<0.3	<0.01	5.14	<0.01	0.02
B00232833	3.120	N.A.	<5	<0.3	<0.01	5.53	<0.01	0.05
B00232834	3.140	N.A.	<5	<0.3	0.01	7.69	<0.01	0.04
B00232835	3.575	N.A.	95	6.8	0.69	9.32	<0.01	0.09
B00232836	3.685	N.A.	43	5.0	0.38	8.41	0.02	0.11
B00232837	2.790	N.A.	<5	2.1	<0.01	3.18	0.02	0.07
B00232838	1.795	N.A.	7	2.2	0.02	3.33	0.03	0.10
B00232839	4.680	N.A.	<5	0.3	<0.01	2.32	<0.01	0.02
B00232840	0.960	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232841	3.345	N.A.	<5	0.3	<0.01	2.19	0.02	0.02
B00232842	5.145	N.A.	<5	<0.3	<0.01	2.20	<0.01	0.02
B00232843	5.540	N.A.	<5	<0.3	<0.01	1.80	<0.01	0.04
B00232844	3.890	N.A.	<5	0.5	<0.01	1.58	<0.01	0.01
B00232845	3.785	N.A.	<5	0.6	<0.01	2.61	0.01	0.05
B00232846	2.355	N.A.	<5	0.7	<0.01	3.10	0.02	0.04
B00232847	4.870	N.A.	5	0.5	<0.01	3.46	0.03	0.05
B00232848	2.015	N.A.	6	2.5	0.03	5.54	0.20	0.55
B00232849	4.250	N.A.	<5	5.7	0.06	9.12	0.04	0.79
B00232850	0.155	N.A.	796	43.5	0.47	20.4	0.31	1.14
B00232851	2.620	N.A.	<5	5.2	0.02	4.94	0.10	0.20
B00232852	1.680	N.A.	<5	0.7	<0.01	6.34	0.01	0.05
*Dup B00232852	N.A.	N.A.	<5	0.6	<0.01	6.57	<0.01	0.04
B00232853	4.200	N.A.	<5	0.9	0.02	6.62	0.02	0.05
B00232854	4.440	N.A.	<5	<0.3	<0.01	4.72	<0.01	0.01
B00232855	1.665	N.A.	<5	0.9	<0.01	7.35	<0.01	0.05
B00232856	3.925	N.A.	21	8.7	0.07	7.80	0.07	1.83

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Final : VC153740 Order: PO# BMC15-01_35 B00232818-891

Report File No.: 0000014994

Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232857	3.210	N.A.	8	2.7	0.02	5.55	0.02	0.16
B00232858	5.120	N.A.	<5	0.6	<0.01	5.44	<0.01	0.12
B00232859	4.595	N.A.	<5	5.2	0.01	6.09	0.04	0.42
B00232860	0.740	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00232861	4.235	N.A.	9	3.6	<0.01	4.48	0.05	0.19
B00232862	5.455	N.A.	<5	2.2	<0.01	3.28	0.02	0.05
B00232863	4.700	N.A.	<5	0.7	0.02	6.03	<0.01	0.03
B00232864	4.620	N.A.	<5	1.3	0.04	9.09	0.01	0.09
B00232865	3.530	N.A.	<5	<0.3	0.01	4.52	<0.01	0.02
B00232866	3.195	N.A.	<5	0.3	<0.01	11.0	<0.01	0.06
B00232867	2.800	92.6	25	7.1	0.37	6.52	0.02	0.04
B00232868	2.495	N.A.	<5	1.5	0.04	4.33	<0.01	0.05
B00232869	2.705	N.A.	8	4.3	0.08	5.61	0.06	0.18
B00232870	0.140	N.A.	4280	>300	0.34	11.3	11.3	17.4
B00232871	1.620	N.A.	47	50.8	0.30	10.8	0.95	4.75
B00232872	2.060	N.A.	<5	1.8	0.01	6.02	0.04	0.22
B00232873	2.590	N.A.	9	12.2	0.08	21.9	0.26	0.82
B00232874	5.840	N.A.	7	<0.3	<0.01	4.29	<0.01	0.01
B00232875	2.090	N.A.	<5	0.6	0.05	9.33	<0.01	0.02
B00232876	5.385	N.A.	13	0.5	0.02	4.50	<0.01	0.01
B00232877	2.160	N.A.	<5	0.3	<0.01	5.00	<0.01	0.01
B00232878	4.880	N.A.	5	1.9	0.03	4.09	0.04	0.28
B00232879	3.780	N.A.	10	2.6	0.03	3.58	0.03	0.25
B00232880	0.925	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232881	2.650	N.A.	24	0.7	0.01	5.07	<0.01	0.02
B00232882	4.445	N.A.	<5	0.6	<0.01	2.55	<0.01	0.41
B00232883	5.180	N.A.	<5	<0.3	<0.01	2.05	<0.01	<0.01
B00232884	4.755	N.A.	<5	<0.3	<0.01	1.87	<0.01	0.02
B00232885	3.770	N.A.	<5	<0.3	0.01	1.59	<0.01	0.06
B00232886	3.135	N.A.	<5	0.5	<0.01	1.85	<0.01	0.05
B00232887	4.090	N.A.	<5	0.5	<0.01	1.76	<0.01	0.33
*Dup B00232887	N.A.	N.A.	<5	0.6	<0.01	1.72	<0.01	0.33
B00232888	5.800	N.A.	<5	1.1	<0.01	2.30	<0.01	0.04
B00232889	5.550	N.A.	<5	0.6	<0.01	1.77	<0.01	0.39
B00232890	0.155	N.A.	841	45.3	0.48	20.4	0.31	1.13
B00232891	3.475	N.A.	<5	0.7	<0.01	1.79	<0.01	0.51
*Rep B00232831				0.9				
*Rep B00232871				52.1				
*Rep B00232891				0.8				
*Std SU_1B				6.4				

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Final : VC153740 Order: PO# BMC15-01_35 B00232818-891

Report File No.: 0000014994

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.8				
*Std AMIS0268		196				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232844	<5					
*Rep B00232860	<5					
*Std OXB130	122					
*Std OXH97	1280					
*Std OXJ111	2060					
*Std OXN117	7380					
*Blk BLANK	<5					
*Rep B00232839			<0.01	2.30	<0.01	0.02
*Rep B00232853			0.02	6.65	<0.01	0.05
*Rep B00232866			<0.01	11.1	<0.01	0.06
*Rep B00232887			<0.01	1.71	<0.01	0.33
*Std OREAS131B			0.02	5.83	1.84	3.05
*Std OREAS134A			0.13	11.9	13.0	17.2
*Std OREAS926			0.83	7.65	<0.01	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Final : VC153740 Order: PO# BMC15-01_35 B00232818-891

Report File No.: 0000014994

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00232818	0.08	0.5	N.A.
B00232819	0.07	<0.1	N.A.
B00232820	<0.01	<0.1	N.A.
B00232821	0.07	0.2	N.A.
B00232822	0.12	<0.1	N.A.
B00232823	0.13	<0.1	N.A.
B00232824	0.04	<0.1	N.A.
B00232825	<0.01	2.3	N.A.
B00232826	<0.01	5.7	N.A.
B00232827	<0.01	7.8	N.A.
B00232828	<0.01	0.6	N.A.
B00232829	0.04	0.6	N.A.
B00232830	0.04	17.5	N.A.
B00232831	0.11	<0.1	N.A.
B00232832	0.20	0.1	N.A.
B00232833	0.14	0.2	N.A.
B00232834	0.15	0.7	N.A.
B00232835	0.14	1.4	N.A.
B00232836	0.15	1.5	N.A.
B00232837	0.18	0.8	N.A.
B00232838	0.17	1.9	N.A.
B00232839	0.17	0.3	N.A.
B00232840	<0.01	<0.1	N.A.
B00232841	0.16	0.4	N.A.
B00232842	0.17	0.2	N.A.
B00232843	0.12	0.2	N.A.
B00232844	0.10	0.4	N.A.
B00232845	0.10	0.2	N.A.
B00232846	0.15	1.2	N.A.
B00232847	0.13	1.9	N.A.
B00232848	0.15	3.1	N.A.
B00232849	0.15	3.0	N.A.
B00232850	0.04	18.6	N.A.
B00232851	0.25	1.6	N.A.
B00232852	0.32	0.7	N.A.
*Dup B00232852	0.32	0.7	N.A.
B00232853	0.41	0.3	N.A.
B00232854	0.46	0.3	N.A.
B00232855	0.21	0.2	N.A.
B00232856	0.02	1.1	N.A.

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Final : VC153740 Order: PO# BMC15-01_35 B00232818-891

Report File No.: 0000014994

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
B00232857	0.12	<0.1	N.A.
B00232858	0.15	0.2	N.A.
B00232859	0.10	0.7	N.A.
B00232860	<0.01	<0.1	N.A.
B00232861	0.10	0.3	N.A.
B00232862	0.11	0.2	N.A.
B00232863	0.09	0.3	N.A.
B00232864	0.11	0.3	N.A.
B00232865	0.27	<0.1	N.A.
B00232866	0.22	0.1	N.A.
B00232867	0.46	0.9	N.A.
B00232868	0.46	0.1	N.A.
B00232869	0.43	0.4	N.A.
B00232870	0.03	20.8	298
B00232871	0.27	4.5	N.A.
B00232872	0.29	0.8	N.A.
B00232873	0.51	3.6	N.A.
B00232874	0.44	0.5	N.A.
B00232875	0.33	3.0	N.A.
B00232876	0.36	0.2	N.A.
B00232877	0.32	<0.1	N.A.
B00232878	0.44	0.9	N.A.
B00232879	0.45	0.9	N.A.
B00232880	<0.01	<0.1	N.A.
B00232881	0.34	0.3	N.A.
B00232882	0.13	0.7	N.A.
B00232883	0.13	0.4	N.A.
B00232884	0.13	0.5	N.A.
B00232885	0.16	0.4	N.A.
B00232886	0.17	0.6	N.A.
B00232887	0.16	0.7	N.A.
*Dup B00232887	0.16	0.7	N.A.
B00232888	0.14	1.1	N.A.
B00232889	0.14	0.7	N.A.
B00232890	0.05	18.4	N.A.
B00232891	0.12	0.7	N.A.

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Final : VC153740 Order: PO# BMC15-01_35 B00232818-891

Report File No.: 0000014994

Element	Ba	S	Ag
Method	GO_ICP90Q	GO_ICP90Q	GO_FAG313
Det.Lim.	0.01	0.1	10
Units	%	%	g/t
*Std AMIS0267			988
*Blk BLANK			<10
*Rep B00232839	0.18	0.3	
*Rep B00232853	0.41	0.3	
*Rep B00232866	0.23	0.1	
*Rep B00232887	0.15	0.6	
*Std OREAS131B	0.08	4.9	
*Std OREAS134A	0.14	18.9	
*Std OREAS926	0.04	1.2	
*Blk BLANK	<0.01	<0.1	
*Rep B00232870			313

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Certificate of Analysis
Work Order : VC153741
[Report File No.: 0000014999]

Date: January 04, 2016

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_35 B00232892-965
Project No.: KZK
Samples: 74
Received: Dec 8, 2015
Pages: Page 1 to 7
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	G_WGH79	Weighing of samples and reporting of weights
71	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_SCR34	Wet Screening 75µm, Evaluation of Prep
74	GE_FAA313	@Au, FAS, AAS, 30g-5ml(Final Mode)
74	GE_AAS12E	2 g, 2-Acid digest, AAS finish
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Comments:

Ba and S data is informational only.

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232892	3.580	N.A.	<5	0.4	<0.01	1.71	<0.01	0.03
B00232893	3.490	N.A.	<5	0.4	<0.01	1.56	<0.01	0.05
B00232894	4.835	N.A.	<5	<0.3	<0.01	1.67	<0.01	<0.01
B00232895	3.760	N.A.	<5	<0.3	<0.01	1.70	<0.01	<0.01
B00232896	3.550	N.A.	<5	<0.3	<0.01	1.82	<0.01	<0.01
B00232897	2.355	N.A.	<5	0.5	<0.01	1.37	<0.01	0.79
B00232898	4.385	N.A.	<5	<0.3	<0.01	7.22	<0.01	0.05
B00232899	3.140	N.A.	<5	<0.3	<0.01	4.00	<0.01	0.08
B00232900	0.630	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232901	2.780	N.A.	23	0.6	<0.01	1.43	<0.01	0.56
B00232902	1.600	N.A.	8	1.1	0.01	8.59	<0.01	0.05
B00232903	4.885	N.A.	<5	<0.3	<0.01	7.49	<0.01	0.02
B00232904	5.675	N.A.	<5	<0.3	<0.01	7.14	<0.01	0.01
B00232905	5.430	N.A.	<5	<0.3	<0.01	6.92	<0.01	0.01
B00232906	3.175	N.A.	<5	<0.3	<0.01	7.24	<0.01	0.02
B00232907	2.245	N.A.	<5	0.4	<0.01	6.62	<0.01	0.02
B00232908	1.910	N.A.	14	12.4	0.09	7.16	0.21	1.01
B00232909	5.470	N.A.	<5	2.5	0.02	5.34	0.04	0.29
B00232910	0.155	N.A.	841	44.1	0.47	19.3	0.29	1.09
B00232911	4.915	N.A.	<5	2.6	0.05	3.01	0.08	0.47
B00232912	3.160	N.A.	<5	0.3	<0.01	2.10	0.02	0.04
B00232913	5.415	N.A.	6	<0.3	<0.01	1.83	0.01	0.05
B00232914	5.060	N.A.	<5	1.0	0.01	1.56	0.05	0.16
B00232915	5.510	N.A.	<5	<0.3	<0.01	1.89	<0.01	0.02
B00232916	5.525	N.A.	<5	0.6	<0.01	2.73	<0.01	0.06
B00232917	5.385	N.A.	<5	0.4	<0.01	2.59	<0.01	0.31
B00232918	2.735	N.A.	<5	1.7	0.01	3.12	0.02	0.72
B00232919	2.590	N.A.	7	8.9	0.04	4.29	0.19	0.57
B00232920	0.875	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00232921	1.265	N.A.	22	12.3	0.07	8.81	0.52	1.87
B00232922	1.530	N.A.	<5	1.1	<0.01	4.42	0.02	0.27
B00232923	2.150	N.A.	<5	0.5	<0.01	4.52	0.01	0.09
B00232924	1.905	N.A.	<5	<0.3	<0.01	1.70	<0.01	0.02
B00232925	2.835	N.A.	<5	<0.3	<0.01	0.76	<0.01	0.53
B00232926	2.385	N.A.	<5	<0.3	<0.01	2.20	<0.01	0.03
*Dup B00232926	N.A.	N.A.	<5	0.3	<0.01	2.46	<0.01	0.03
B00232927	2.480	N.A.	25	8.1	0.15	16.6	0.06	2.62
B00232928	2.170	N.A.	<5	1.6	0.01	4.16	0.01	0.16
B00232929	4.955	N.A.	6	<0.3	<0.01	3.75	<0.01	0.04
B00232930	0.155	N.A.	802	43.2	0.47	19.4	0.31	1.08

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232931	5.660	N.A.	6	0.3	<0.01	3.37	0.01	0.02
B00232932	5.965	N.A.	8	0.4	<0.01	3.90	<0.01	0.05
B00232933	3.000	N.A.	8	0.6	<0.01	4.22	0.03	0.12
B00232934	1.615	N.A.	12	5.2	0.02	7.79	0.18	0.86
B00232935	4.320	N.A.	10	0.6	<0.01	4.09	0.02	0.06
B00232936	5.330	N.A.	12	2.2	<0.01	4.24	0.11	0.19
B00232937	5.410	N.A.	5	0.5	<0.01	3.55	0.02	0.23
B00232938	5.695	N.A.	<5	0.4	<0.01	2.44	0.01	0.03
B00232939	6.065	N.A.	5	0.4	0.02	2.55	0.01	0.03
B00232940	1.285	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00232941	5.760	94.2	6	0.6	<0.01	3.24	0.02	0.08
B00232942	3.830	N.A.	<5	0.4	<0.01	3.76	<0.01	0.02
B00232943	3.205	N.A.	7	0.3	<0.01	4.04	<0.01	0.02
B00232944	4.590	N.A.	7	0.5	<0.01	4.18	0.02	0.03
B00232945	5.665	N.A.	<5	0.4	<0.01	3.97	0.02	0.07
B00232946	4.140	N.A.	5	1.0	<0.01	3.94	0.04	0.12
B00232947	5.125	N.A.	6	0.5	<0.01	3.98	0.01	0.10
B00232948	5.575	N.A.	<5	1.0	0.01	4.58	0.03	0.11
B00232949	5.970	N.A.	<5	0.8	0.01	4.14	0.02	0.15
B00232950	0.155	N.A.	850	43.8	0.46	19.9	0.31	1.11
B00232951	4.015	N.A.	<5	0.8	<0.01	4.63	<0.01	0.24
B00232952	1.575	N.A.	<5	5.8	0.09	12.6	0.10	1.28
B00232953	2.590	N.A.	<5	1.4	<0.01	5.56	0.06	0.10
B00232954	1.720	N.A.	7	7.1	0.15	20.9	0.17	0.63
B00232955	2.435	N.A.	<5	1.2	0.03	4.31	0.02	0.02
B00232956	1.945	N.A.	7	6.6	0.06	14.3	0.34	0.34
B00232957	3.930	N.A.	<5	1.3	0.01	6.06	0.02	0.22
B00232958	3.095	N.A.	<5	1.0	0.01	5.90	0.01	0.08
B00232959	3.330	N.A.	<5	0.5	0.02	8.44	<0.01	0.02
B00232960	1.245	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00232961	5.290	N.A.	<5	<0.3	0.01	4.83	<0.01	0.01
*Dup B00232961	N.A.	N.A.	<5	<0.3	0.01	4.57	<0.01	0.01
B00232962	4.045	N.A.	<5	<0.3	<0.01	4.64	<0.01	0.01
B00232963	4.605	N.A.	<5	<0.3	<0.01	5.65	<0.01	<0.01
B00232964	4.050	N.A.	<5	0.5	<0.01	5.25	<0.01	0.01
B00232965	4.780	N.A.	6	0.8	0.02	8.00	<0.01	0.06
*Rep B00232905				<0.3				
*Rep B00232945				0.4				
*Rep B00232963				<0.3				
*Std SU_1B				6.6				

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Final : VC153741 Order: PO# BMC15-01_35 B00232892-965

Report File No.: 0000014999

Element	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	5	0.3	0.01	0.05	0.01	0.01
Units	ppb	g/t	%	%	%	%
*Std OREAS621		68.3				
*Std AMIS0268		189				
*Blk BLANK		<0.3				
*Blk BLANK		<0.3				
*Rep B00232898	<5					
*Rep B00232965	6					
*Std OXB130	120					
*Std OXH97	1260					
*Std OXJ111	2100					
*Std OXN117	7340					
*Blk BLANK	<5					
*Rep B00232905			<0.01	6.92	<0.01	0.01
*Rep B00232914			0.01	1.57	0.05	0.16
*Rep B00232947			<0.01	3.96	0.01	0.10
*Rep B00232964			<0.01	5.33	<0.01	0.01
*Std OREAS134A			0.13	12.1	13.3	17.0
*Std OREAS926			0.83	7.34	0.02	0.04
*Blk BLANK			<0.01	<0.05	<0.01	<0.01
*Blk BLANK			<0.01	<0.05	<0.01	<0.01

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Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00232892	0.13	0.4
B00232893	0.12	0.5
B00232894	0.13	0.4
B00232895	0.13	0.4
B00232896	0.17	0.5
B00232897	0.15	0.6
B00232898	0.12	<0.1
B00232899	0.26	1.7
B00232900	<0.01	<0.1
B00232901	0.14	1.2
B00232902	0.19	0.9
B00232903	0.18	<0.1
B00232904	0.11	<0.1
B00232905	0.08	<0.1
B00232906	0.06	0.2
B00232907	0.05	0.1
B00232908	0.15	1.3
B00232909	0.12	0.4
B00232910	0.04	17.4
B00232911	0.15	0.7
B00232912	0.11	<0.1
B00232913	0.11	<0.1
B00232914	0.10	0.2
B00232915	0.10	<0.1
B00232916	0.12	<0.1
B00232917	0.12	0.3
B00232918	0.13	0.5
B00232919	0.09	0.4
B00232920	<0.01	<0.1
B00232921	0.01	1.2
B00232922	0.03	0.2
B00232923	0.12	<0.1
B00232924	0.08	<0.1
B00232925	0.01	0.3
B00232926	0.18	<0.1
*Dup B00232926	0.19	<0.1
B00232927	0.04	3.0
B00232928	0.21	0.8
B00232929	0.18	1.4
B00232930	0.04	18.3

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Final : VC153741 Order: PO# BMC15-01_35 B00232892-965

Report File No.: 0000014999

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00232931	0.14	1.1
B00232932	0.17	1.8
B00232933	0.15	2.1
B00232934	0.12	5.7
B00232935	0.17	1.6
B00232936	0.15	2.1
B00232937	0.16	1.5
B00232938	0.15	0.7
B00232939	0.15	0.8
B00232940	<0.01	0.1
B00232941	0.17	1.3
B00232942	0.17	1.7
B00232943	0.18	1.6
B00232944	0.20	1.9
B00232945	0.22	1.5
B00232946	0.21	1.5
B00232947	0.23	1.1
B00232948	0.23	1.7
B00232949	0.20	1.2
B00232950	0.04	17.6
B00232951	0.25	0.5
B00232952	0.25	5.7
B00232953	0.21	0.3
B00232954	0.19	10.7
B00232955	0.30	1.4
B00232956	0.25	5.3
B00232957	0.31	0.4
B00232958	0.33	0.4
B00232959	0.42	0.5
B00232960	<0.01	<0.1
B00232961	0.53	0.5
*Dup B00232961	0.49	0.4
B00232962	0.41	0.1
B00232963	0.39	<0.1
B00232964	0.28	<0.1
B00232965	0.16	0.3

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Final : VC153741 Order: PO# BMC15-01_35 B00232892-965

Report File No.: 0000014999

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
*Rep B00232905	0.08	<0.1
*Rep B00232914	0.11	0.2
*Rep B00232947	0.23	1.1
*Rep B00232964	0.28	<0.1
*Std OREAS134A	0.14	19.4
*Std OREAS926	0.04	1.2
*Blk BLANK	<0.01	<0.1
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153742
[Report File No.: 0000015000]

Date: January 04, 2016

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_35 B00232966-000,328-372
Project No.: KZK
Samples: 80
Received: Dec 8, 2015
Pages: Page 1 to 7
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
80	G_LOG02	Pre-preparation processing, sorting, logging, boxing
80	G_WGH79	Weighing of samples and reporting of weights
75	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_SCR34	Wet Screening 75µm, Evaluation of Prep
80	GE_FAA313	@Au, FAS, AAS, 30g-5ml(Final Mode)
80	GE_AAS12E	2 g, 2-Acid digest, AAS finish
80	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Comments:

Ba and S data is informational only.

Certified By :

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

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n.a. = Not applicable
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Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00232966	5.625	N.A.	<5	0.5	<0.01	5.34	<0.01	0.03
B00232967	5.045	N.A.	<5	5.9	0.02	8.99	0.06	0.42
B00232968	4.170	N.A.	<5	0.8	<0.01	5.91	<0.01	0.05
B00232969	5.010	N.A.	<5	2.3	0.04	8.19	<0.01	0.39
B00232970	0.155	N.A.	846	45.0	0.46	20.2	0.30	1.15
B00232971	4.760	N.A.	<5	1.2	<0.01	3.90	<0.01	0.10
B00232972	4.265	N.A.	<5	2.4	0.01	4.44	<0.01	0.13
B00232973	2.455	N.A.	30	13.4	0.39	9.15	0.02	1.66
B00232974	4.805	N.A.	<5	1.9	<0.01	4.74	0.01	0.07
B00232975	3.310	N.A.	<5	0.4	<0.01	7.30	<0.01	0.03
B00232976	2.570	N.A.	20	10.5	0.39	11.9	0.04	0.13
B00232977	5.805	N.A.	<5	<0.3	<0.01	4.65	<0.01	0.01
B00232978	3.855	N.A.	<5	0.5	<0.01	4.11	<0.01	0.01
B00232979	4.260	N.A.	<5	<0.3	<0.01	8.43	<0.01	0.02
B00232980	1.095	N.A.	<5	<0.3	<0.01	0.06	<0.01	<0.01
B00232981	3.115	N.A.	<5	<0.3	<0.01	1.66	<0.01	0.01
B00232982	3.720	N.A.	<5	<0.3	<0.01	1.73	<0.01	<0.01
B00232983	3.815	N.A.	<5	<0.3	<0.01	1.75	<0.01	<0.01
B00232984	3.815	N.A.	<5	<0.3	<0.01	3.50	<0.01	0.01
B00232985	3.985	N.A.	<5	0.6	<0.01	2.68	<0.01	0.01
B00232986	4.185	N.A.	<5	<0.3	<0.01	1.86	<0.01	<0.01
B00232987	5.445	N.A.	<5	<0.3	<0.01	2.84	<0.01	<0.01
B00232988	5.610	N.A.	<5	<0.3	<0.01	3.69	<0.01	<0.01
B00232989	5.355	N.A.	<5	<0.3	<0.01	3.14	<0.01	0.01
B00232990	0.155	N.A.	810	45.2	0.47	20.3	0.31	1.14
B00232991	1.805	N.A.	<5	10.7	<0.01	4.98	0.23	0.37
B00232992	4.565	N.A.	<5	0.8	<0.01	2.69	<0.01	0.04
B00232993	3.970	N.A.	<5	<0.3	<0.01	2.73	<0.01	<0.01
B00232994	4.515	N.A.	<5	<0.3	<0.01	3.79	<0.01	0.01
B00232995	2.970	N.A.	<5	<0.3	<0.01	2.28	<0.01	0.01
B00232996	1.555	N.A.	<5	<0.3	<0.01	7.30	<0.01	<0.01
B00232997	3.560	N.A.	<5	0.9	<0.01	6.03	<0.01	0.26
B00232998	4.690	N.A.	6	1.6	0.05	11.6	<0.01	0.35
B00232999	2.575	N.A.	36	12.5	0.68	19.6	0.06	0.64
B00233000	1.220	N.A.	<5	<0.3	<0.01	0.14	<0.01	<0.01
*Dup B00233000	N.A.	N.A.	<5	<0.3	<0.01	0.19	<0.01	<0.01
B00233328	3.840	N.A.	<5	6.6	0.01	9.08	0.57	0.60
B00233329	2.700	N.A.	<5	0.6	<0.01	4.80	<0.01	<0.01
B00233330	0.155	N.A.	799	44.9	0.47	20.0	0.29	1.08
B00233331	4.025	N.A.	<5	0.3	<0.01	2.50	<0.01	<0.01

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233332	5.650	N.A.	<5	0.6	<0.01	3.18	0.03	0.05
B00233333	5.495	N.A.	<5	0.6	<0.01	2.62	<0.01	0.19
B00233334	5.630	N.A.	<5	0.5	<0.01	4.43	<0.01	<0.01
B00233335	5.390	N.A.	6	0.8	<0.01	5.85	<0.01	<0.01
B00233336	5.560	N.A.	<5	0.8	<0.01	5.25	0.02	0.05
B00233337	5.500	N.A.	<5	<0.3	<0.01	1.88	<0.01	<0.01
B00233338	5.810	N.A.	<5	0.6	<0.01	5.25	0.02	0.02
B00233339	5.725	N.A.	<5	0.5	<0.01	4.83	<0.01	0.12
B00233340	1.105	N.A.	<5	<0.3	<0.01	<0.05	<0.01	<0.01
B00233341	5.445	N.A.	<5	0.4	<0.01	2.05	<0.01	0.03
B00233342	5.650	85.3	<5	0.7	<0.01	1.74	0.01	0.03
B00233343	5.305	N.A.	7	0.4	<0.01	2.44	0.01	0.06
B00233344	5.385	N.A.	<5	1.3	0.01	1.77	0.06	0.18
B00233345	4.620	N.A.	<5	<0.3	<0.01	1.20	<0.01	0.02
B00233346	5.345	N.A.	<5	0.5	<0.01	1.86	0.01	0.02
B00233347	5.410	N.A.	6	0.4	<0.01	2.58	<0.01	0.01
B00233348	5.835	N.A.	6	1.0	<0.01	4.18	0.04	0.10
B00233349	5.335	N.A.	6	0.6	<0.01	4.01	0.02	0.04
B00233350	0.155	N.A.	795	47.1	0.46	19.9	0.31	1.12
B00233351	5.480	N.A.	<5	0.4	<0.01	4.47	<0.01	0.02
B00233352	5.765	N.A.	<5	<0.3	<0.01	3.83	<0.01	0.01
B00233353	4.035	N.A.	<5	0.4	<0.01	5.21	<0.01	0.01
B00233354	1.960	N.A.	<5	<0.3	<0.01	2.14	<0.01	<0.01
B00233355	4.555	N.A.	17	0.7	<0.01	8.82	0.03	0.02
B00233356	5.610	N.A.	6	<0.3	<0.01	3.97	<0.01	<0.01
B00233357	2.700	N.A.	<5	<0.3	<0.01	3.01	<0.01	<0.01
B00233358	4.570	N.A.	<5	0.3	<0.01	4.68	<0.01	0.02
B00233359	5.195	N.A.	<5	0.3	<0.01	6.60	<0.01	0.03
B00233360	1.005	N.A.	<5	<0.3	<0.01	0.05	<0.01	<0.01
B00233361	1.625	N.A.	17	3.5	0.10	11.7	0.09	0.40
B00233362	3.065	N.A.	<5	0.6	<0.01	6.80	<0.01	0.06
*Dup B00233362	N.A.	N.A.	<5	0.5	<0.01	6.78	<0.01	0.06
B00233363	5.140	N.A.	<5	0.5	<0.01	6.15	<0.01	0.04
B00233364	5.485	N.A.	<5	0.8	<0.01	4.67	<0.01	0.06
B00233365	5.815	N.A.	<5	0.9	<0.01	8.35	0.01	0.02
B00233366	3.810	N.A.	15	8.0	0.20	13.5	0.05	0.88
B00233367	3.880	N.A.	20	4.4	0.18	13.0	0.08	0.53
B00233368	3.665	N.A.	6	2.2	0.07	11.6	0.03	0.29
B00233369	5.530	N.A.	<5	1.3	0.02	7.11	<0.01	0.06
B00233370	0.155	N.A.	857	44.1	0.46	19.9	0.29	1.11

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Element	WtKg	M75um	@Au	@Ag	@Cu	Fe	@Pb	@Zn
Method	G_WGH79	G_SCR34	GE_FAA313	GE_AAS12E	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.01	5	0.3	0.01	0.05	0.01	0.01
Units	kg	%	ppb	g/t	%	%	%	%
B00233371	5.820	N.A.	<5	1.0	0.01	4.41	0.06	0.18
B00233372	5.690	N.A.	<5	1.1	0.02	4.77	0.01	0.44
*Rep B00232977				<0.3				
*Rep B00233338				0.6				
*Rep B00233371				1.1				
*Std SU_1B				6.2				
*Std OREAS621				70.6				
*Std AMIS0268				189				
*Std SU_1B				6.6				
*Blk BLANK				<0.3				
*Blk BLANK				<0.3				
*Rep B00232988			<5					
*Rep B00233365			<5					
*Rep B00233372			<5					
*Std OXB130			117					
*Std OXH97			1220					
*Std OXJ111			2110					
*Std OXN117			7450					
*Blk BLANK			<5					
*Blk BLANK			<5					
*Rep B00232984					<0.01	3.43	<0.01	0.01
*Rep B00232989					<0.01	3.16	<0.01	<0.01
*Rep B00233352					<0.01	3.80	<0.01	0.01
*Rep B00233359					<0.01	6.43	<0.01	0.03
*Std OREAS134A					0.13	12.0	13.0	17.4
*Std OREAS131B					0.02	5.81	1.80	3.07
*Std OREAS926					0.83	7.62	<0.01	0.04
*Blk BLANK					<0.01	<0.05	<0.01	<0.01
*Blk BLANK					<0.01	<0.05	<0.01	<0.01

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Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00232966	0.13	<0.1
B00232967	0.02	0.8
B00232968	0.07	0.1
B00232969	0.02	0.5
B00232970	0.05	18.8
B00232971	0.16	0.2
B00232972	0.15	0.4
B00232973	0.07	2.2
B00232974	0.15	0.3
B00232975	0.12	0.2
B00232976	0.05	1.1
B00232977	0.33	0.3
B00232978	0.33	0.2
B00232979	0.30	0.2
B00232980	<0.01	<0.1
B00232981	0.09	0.6
B00232982	0.09	0.6
B00232983	0.09	0.7
B00232984	0.07	1.4
B00232985	0.06	0.9
B00232986	0.08	0.7
B00232987	0.09	1.0
B00232988	0.08	1.8
B00232989	0.09	1.5
B00232990	0.05	18.8
B00232991	0.11	3.0
B00232992	0.12	1.5
B00232993	0.11	1.9
B00232994	0.10	2.8
B00232995	0.09	1.2
B00232996	0.08	6.6
B00232997	0.15	0.2
B00232998	0.02	0.4
B00232999	0.03	1.9
B00233000	<0.01	<0.1
*Dup B00233000	<0.01	0.1
B00233328	0.10	3.7
B00233329	0.09	2.8
B00233330	0.05	18.5
B00233331	0.11	1.0

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Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00233332	0.11	1.5
B00233333	0.16	1.1
B00233334	0.08	2.6
B00233335	0.07	5.0
B00233336	0.06	3.3
B00233337	0.07	0.8
B00233338	0.07	2.8
B00233339	0.08	2.8
B00233340	<0.01	<0.1
B00233341	0.08	0.8
B00233342	0.09	0.6
B00233343	0.25	1.4
B00233344	0.17	1.0
B00233345	0.12	0.2
B00233346	0.12	1.1
B00233347	0.13	1.5
B00233348	0.14	2.9
B00233349	0.14	3.0
B00233350	0.05	18.6
B00233351	0.14	1.6
B00233352	0.12	3.1
B00233353	0.09	1.0
B00233354	0.09	0.3
B00233355	<0.01	9.2
B00233356	0.08	3.3
B00233357	0.10	1.3
B00233358	0.18	0.7
B00233359	0.14	0.6
B00233360	<0.01	<0.1
B00233361	0.08	0.9
B00233362	0.12	<0.1
*Dup B00233362	0.13	<0.1
B00233363	0.15	<0.1
B00233364	0.15	0.4
B00233365	0.15	0.9
B00233366	0.07	1.5
B00233367	0.06	0.6
B00233368	0.08	0.4
B00233369	0.28	0.2
B00233370	0.04	18.3

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Final : VC153742 Order: PO# BMC15-01_35 B00232966-000,328-372

Report File No.: 0000015000

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00233371	0.48	0.9
B00233372	0.46	1.4
*Rep B00232984	0.07	1.4
*Rep B00232989	0.09	1.5
*Rep B00233352	0.12	3.1
*Rep B00233359	0.14	0.6
*Std OREAS134A	0.14	19.1
*Std OREAS131B	0.08	4.9
*Std OREAS926	0.04	1.2
*Blk BLANK	<0.01	<0.1
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153795
[Report File No.: 0000014571]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC151957 and VC151958
Project No.: KZK
Samples: 88
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
88	G_LOG02	Pre-preparation processing, sorting, logging, boxing
88	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153795 Order: Ba results from VC151957 and VC151958

Report File No.: 0000014571

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
R080131	0.25
R080132	0.71
R080136	0.21
R080137	0.49
R080138	0.60
R080139	0.46
R080140	0.04
R080141	0.46
R080144	0.30
R080145	0.05
R080146	0.05
R080147	0.77
R080148	0.51
R080154	0.17
R080155	0.17
R080156	0.07
R080157	2.40
R080158	0.52
R080159	2.65
R080160	0.23
R080162	1.00
R080163	1.09
R080164	>4.00
R080165	1.55
R080166	0.22
R080167	0.09
R080173	0.16
R080176	0.04
R080177	0.02
R080178	0.01
R080179	0.21
R080180	0.04
R080185	0.29
R080186	0.47
R080187	0.04
R080188	0.02
R080189	<0.01
R080191	0.45
R080193	3.76
R080202	0.04

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Final : VC153795 Order: Ba results from VC151957 and VC151958

Report File No.: 0000014571

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
R080203	0.02
R080204	0.02
R080205	0.03
R080206	>4.00
R080207	>4.00
R080208	2.81
Q311306	0.49
Q311307	>4.00
Q311308	1.06
Q311312	0.08
Q311313	0.08
Q311314	>4.00
Q311315	1.16
Q311316	0.03
Q311317	2.34
Q311318	0.51
Q311336	0.29
Q311337	0.35
Q311338	1.58
Q311339	>4.00
Q311340	0.04
Q311341	0.04
Q311342	<0.01
Q311343	3.86
Q311344	>4.00
Q311345	1.05
Q311346	>4.00
Q311347	>4.00
Q311348	>4.00
Q311349	1.09
Q311350	0.02
Q311351	1.39
Q311352	0.67
Q311353	>4.00
Q311354	>4.00
Q311355	0.03
Q311356	0.05
Q311357	0.06
Q311358	0.02
Q311359	3.74

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Final : VC153795 Order: Ba results from VC151957 and VC151958

Report File No.: 0000014571

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q311364	1.46
Q311365	0.61
Q311366	3.47
Q311367	0.02
Q311368	0.41
Q311369	>4.00
Q311370	<0.01
Q311371	>4.00
*Rep R080141	0.48
*Rep R080176	0.04
*Std OREAS131B	0.08
*Blk BLANK	<0.01
*Rep Q311318	0.52
*Rep R080157	2.41
*Std OREAS134A	0.14
*Std OREAS146	1.24
*Std OREAS134A	0.14
*Std OREAS146	1.30
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153796
[Report File No.: 0000014572]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC151960 and VC151961
Project No.: KZK
Samples: 84
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
84	G_LOG02	Pre-preparation processing, sorting, logging, boxing
84	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153796 Order: Ba results from VC151960 and VC151961

Report File No.: 0000014572

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q311375	0.04
Q311379	1.16
Q311391	0.30
Q311412	1.00
Q311413	0.06
Q311414	0.86
Q311415	>4.00
Q311416	1.84
Q311417	0.30
Q311418	0.37
Q311419	0.02
Q311420	0.24
Q311421	0.16
Q311422	0.22
Q311423	0.02
Q311424	1.00
Q311434	0.05
Q311437	<0.01
Q311438	<0.01
Q311439	0.46
Q311440	0.24
Q311441	2.62
Q311442	2.14
Q311443	>4.00
Q311444	0.06
Q311445	0.36
Q311446	0.83
Q311447	1.25
Q311448	>4.00
Q311449	>4.00
Q311451	>4.00
Q311452	0.41
Q311758	<0.01
Q311759	<0.01
Q311762	<0.01
Q311763	<0.01
Q311764	<0.01
Q311765	0.01
Q311766	0.02
Q311767	0.28

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Final : VC153796 Order: Ba results from VC151960 and VC151961

Report File No.: 0000014572

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q311768	2.01
Q311774	2.23
Q311775	>4.00
Q311776	1.91
Q311777	0.89
Q311778	>4.00
Q311779	3.25
Q311780	0.25
Q311782	0.02
Q311783	3.21
Q311784	>4.00
Q311785	>4.00
Q311786	>4.00
Q311787	2.56
Q311794	0.17
Q311795	0.06
Q311796	0.01
Q311797	0.02
Q311798	0.70
Q311799	0.42
Q311800	0.04
Q311801	1.04
Q311802	0.57
Q311803	0.38
Q311804	0.29
Q311805	0.26
Q311806	0.32
Q311807	0.22
Q311808	0.36
Q311809	0.03
Q311810	<0.01
Q311811	0.01
Q311812	0.18
Q311813	0.52
Q311814	0.04
Q311815	0.50
Q311816	0.59
Q311817	0.77
Q311818	1.38
Q311819	0.51

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Final : VC153796 Order: Ba results from VC151960 and VC151961

Report File No.: 0000014572

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q311820	0.05
Q311821	1.06
Q311822	0.01
Q311823	0.44
*Rep Q311423	0.02
*Rep Q311443	>4.00
*Rep Q311795	0.06
*Rep Q311810	<0.01
*Std OREAS131B	0.08
*Std OREAS134A	0.15
*Std OREAS146	1.32
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153797
[Report File No.: 0000014573]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC151962 to VC151966
Project No.: KZK
Samples: 83
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
83	G_LOG02	Pre-preparation processing, sorting, logging, boxing
83	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153797 Order: Ba results from VC151962 to VC151966

Report File No.: 0000014573

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q311849	>4.00
Q311851	2.82
Q311852	2.67
Q311853	0.05
Q311854	3.59
Q311855	2.15
Q311856	0.55
Q311857	0.43
Q311858	0.44
Q311859	0.79
Q311861	0.03
Q311862	2.26
Q311863	>4.00
Q311871	0.30
Q311872	0.06
Q311873	3.84
Q311878	0.08
Q311883	0.14
Q930811	0.54
Q930812	0.32
Q930813	>4.00
Q930816	0.26
Q930817	0.02
Q930842	0.28
Q930843	0.05
Q930844	<0.01
Q930845	0.07
Q930846	3.02
Q930847	>4.00
Q930848	2.28
Q930849	>4.00
Q930850	0.01
Q930851	>4.00
Q930852	0.67
Q930853	0.11
Q930869	<0.01
Q930874	0.44
Q930906	>4.00
Q930907	0.25
Q930908	3.54

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Final : VC153797 Order: Ba results from VC151962 to VC151966

Report File No.: 0000014573

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q930909	0.06
Q930911	1.69
Q930912	>4.00
Q311885	0.11
Q311886	0.02
Q311888	3.34
Q311913	<0.01
Q311914	0.01
Q311915	3.46
Q311917	0.13
Q311926	0.36
Q311927	0.02
Q311928	0.01
Q311929	0.02
Q311930	0.24
Q311931	>4.00
Q311932	0.03
Q311933	0.52
Q311934	0.50
Q311935	0.11
Q311938	0.02
Q311941	0.06
Q930955	0.03
Q930956	3.32
Q930957	0.31
Q930959	0.09
Q930973	>4.00
Q930974	2.89
Q930975	0.92
Q930976	>4.00
Q930977	>4.00
Q930978	1.11
Q930979	2.86
Q930981	0.08
Q930982	0.01
Q930983	0.42
Q930984	0.68
Q930985	2.01
Q930986	1.20
Q930987	>4.00

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Final : VC153797 Order: Ba results from VC151962 to VC151966

Report File No.: 0000014573

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
Q930988	0.55
Q930989	0.21
Q930990	0.04
*Rep Q930813	>4.00
*Rep Q930852	0.65
*Rep Q930979	2.83
*Rep Q930984	0.64
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS134A	0.14
*Std OREAS134A	0.14
*Std OREAS146	1.33
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153798
[Report File No.: 0000014574]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152112 and VC152113
Project No.: KZK
Samples: 96
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
96	G_LOG02	Pre-preparation processing, sorting, logging, boxing
96	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153798 Order: Ba results from VC152112 and VC152113

Report File No.: 0000014574

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264016	>4.00
B00264017	0.63
B00264018	0.01
B00264019	0.02
B00264021	0.01
B00264022	0.03
B00264023	0.04
B00264024	0.05
B00264025	0.01
B00264026	0.01
B00264027	0.02
B00264028	0.50
B00264029	0.64
B00264030	<0.01
B00264031	0.17
B00264032	0.11
B00264033	0.01
B00264039	0.10
B00264040	<0.01
B00264042	0.03
B00264043	0.01
B00264044	<0.01
B00264045	0.04
B00264046	0.83
B00264047	2.66
B00264048	>4.00
B00264049	2.87
B00264051	0.14
B00264059	0.04
B00264060	0.23
B00264061	0.01
B00264062	0.10
B00264063	0.02
B00264064	0.04
B00264065	0.18
B00264066	0.16
B00264067	0.85
B00264068	1.11
B00264069	0.52
B00264073	0.40

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Final : VC153798 Order: Ba results from VC152112 and VC152113

Report File No.: 0000014574

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264076	0.52
B00264077	1.38
B00264078	0.05
B00264079	0.04
B00264080	0.05
B00264081	0.02
B00264082	0.48
B00264085	0.03
B00264562	0.04
B00264563	0.10
B00264567	0.62
B00264568	0.09
B00264569	0.15
B00264575	0.34
B00264576	0.52
B00264577	0.75
B00264578	0.13
B00264579	0.10
B00264580	<0.01
B00264581	0.03
B00264582	0.07
B00264583	0.23
B00264584	0.18
B00264585	0.35
B00264586	>4.00
B00264587	>4.00
B00264590	0.05
B00264595	0.11
B00265008	0.03
B00265012	0.07
B00265013	<0.01
B00265022	>4.00
B00265023	>4.00
B00265024	0.80
B00265025	>4.00
B00265026	>4.00
B00265027	0.89
B00265028	0.96
B00265029	0.90
B00265030	0.23

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Final : VC153798 Order: Ba results from VC152112 and VC152113

Report File No.: 0000014574

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265032	0.19
B00265033	0.70
B00265038	0.07
B00265039	0.05
B00265041	0.05
B00265042	<0.01
B00265043	<0.01
B00265044	1.48
B00265045	0.71
B00265046	0.01
B00265047	0.02
B00265048	2.56
B00265049	1.45
B00265052	3.59
B00265053	0.20
B00265054	0.29
*Rep B00264027	0.02
*Rep B00264046	0.82
*Rep B00264081	0.02
*Rep B00265053	0.20
*Std OREAS134A	0.13
*Std OREAS146	1.25
*Std OREAS134A	0.14
*Std OREAS146	1.26
*Std OREAS146	1.30
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153799
[Report File No.: 0000014575]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152205 and VC152206
Project No.: KZK
Samples: 80
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
80	G_LOG02	Pre-preparation processing, sorting, logging, boxing
80	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153799 Order: Ba results from VC152205 and VC152206

Report File No.: 0000014575

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264601	1.88
B00264602	1.36
B00264603	3.75
B00264604	>4.00
B00264605	1.20
B00264606	0.95
B00264607	0.11
B00264608	0.03
B00264609	0.02
B00264610	0.04
B00264611	0.01
B00264612	0.07
B00264613	0.75
B00264614	0.02
B00264623	0.31
B00264628	0.05
B00264629	0.12
B00264630	0.23
B00264632	0.25
B00264633	0.84
B00264634	1.60
B00264637	0.03
B00264638	2.47
B00264644	0.41
B00264645	0.17
B00264646	1.02
B00264647	1.15
B00264648	0.47
B00264649	0.83
B00264652	1.22
B00264653	0.12
B00264654	0.06
B00264655	1.55
B00264656	0.99
B00264657	>4.00
B00264658	>4.00
B00264660	0.07
B00264661	0.43
B00266501	2.87
B00266502	2.87

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Final : VC153799 Order: Ba results from VC152205 and VC152206

Report File No.: 0000014575

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266503	0.26
B00266504	0.06
B00266505	0.04
B00266511	0.79
B00266512	0.86
B00266513	>4.00
B00266519	>4.00
B00266520	<0.01
B00266521	>4.00
B00266522	>4.00
B00266523	>4.00
B00266524	0.02
B00266525	0.07
B00266526	0.04
B00266527	0.13
B00266528	0.51
B00266529	1.48
B00266530	0.04
B00266531	1.47
B00266532	0.56
B00266533	0.01
B00266534	>4.00
B00266535	2.95
B00266536	0.03
B00266537	0.04
B00266538	0.13
B00266539	2.49
B00266541	0.73
B00266542	1.14
B00266543	2.97
B00266548	1.04
B00266549	1.28
B00266551	0.04
B00268501	0.55
B00268503	0.02
B00268504	<0.01
B00268505	0.02
B00268506	0.03
B00268507	0.32
B00268517	3.73

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Final : VC153799 Order: Ba results from VC152205 and VC152206

Report File No.: 0000014575

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Rep B00266511	0.77
*Rep B00266533	0.02
*Std OREAS131B	0.09
*Std OREAS134A	0.13
*Std OREAS146	1.28
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS146	1.31
*Std OREAS134A	0.14
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153800
[Report File No.: 0000014576]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152328
Project No.: KZK
Samples: 59
Received: Dec 14, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
59	G_LOG02	Pre-preparation processing, sorting, logging, boxing
59	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153800 Order: Ba results from VC152328

Report File No.: 0000014576

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264716	<0.01
B00264717	0.01
B00264718	0.03
B00264725	0.14
B00264732	>4.00
B00264733	>4.00
B00268529	0.57
B00268534	0.27
B00268535	0.49
B00268536	0.78
B00268537	0.25
B00268538	0.17
B00268543	1.96
B00268544	0.04
B00268545	1.75
B00268546	0.05
B00268547	0.72
B00268548	0.08
B00268549	0.21
B00268550	0.04
B00268551	3.49
B00268552	3.56
B00268553	>4.00
B00268554	1.34
B00268555	0.17
B00268556	0.06
B00268557	0.03
B00268558	>4.00
B00268559	0.09
B00268560	<0.01
B00268561	0.04
B00268562	0.10
B00268563	>4.00
B00268564	>4.00
B00268565	0.27
B00268566	0.62
B00268567	0.33
B00268568	0.38
B00268575	>4.00
B00268576	1.75

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Final : VC153800 Order: Ba results from VC152328

Report File No.: 0000014576

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268577	0.58
B00268578	0.10
B00268584	0.12
B00268587	0.04
B00268603	0.03
B00268604	<0.01
B00268605	<0.01
B00268606	0.02
B00268607	<0.01
B00268608	0.01
B00268609	0.01
B00268610	0.24
B00268611	0.13
B00268612	0.01
B00268613	0.10
B00268622	0.02
B00268623	0.02
B00268633	0.02
B00268634	0.23
*Rep B00264716	<0.01
*Rep B00268551	3.44
*Rep B00268634	0.24
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Std OREAS134A	0.13
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153801
[Report File No.: 0000014577]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152330 to VC152426
Project No.: KZK
Samples: 87
Received: Dec 14, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
87	G_LOG02	Pre-preparation processing, sorting, logging, boxing
87	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153801 Order: Ba results from VC152330 to VC152426

Report File No.: 0000014577

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266563	>4.00
B00266564	>4.00
B00266565	>4.00
B00266566	1.81
B00266567	0.49
B00266568	1.47
B00266569	>4.00
B00266571	1.93
B00266572	3.85
B00266573	0.21
B00266574	0.05
B00266575	<0.01
B00266576	0.02
B00266577	0.05
B00266578	0.17
B00266579	<0.01
B00266580	<0.01
B00266581	2.07
B00266582	>4.00
B00266583	1.68
B00266584	>4.00
B00266585	>4.00
B00266586	3.83
B00266596	0.25
B00266597	0.13
B00266598	>4.00
B00266599	3.07
B00266601	>4.00
B00266602	0.02
B00266603	3.91
B00266604	2.69
B00266605	1.17
B00266606	1.51
B00266607	>4.00
B00266608	>4.00
B00266609	>4.00
B00266610	0.24
B00266611	0.13
B00266612	>4.00
B00266613	2.31

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Final : VC153801 Order: Ba results from VC152330 to VC152426

Report File No.: 0000014577

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266614	0.04
B00266621	0.90
B00266622	0.06
B00266623	1.21
B00266624	0.07
B00266625	<0.01
B00266626	0.01
B00266627	<0.01
B00266628	<0.01
B00266629	0.03
B00266630	<0.01
B00266631	0.04
B00266632	0.05
B00266633	0.03
B00266634	<0.01
B00266635	0.02
B00266636	0.10
B00266637	1.37
B00266638	0.45
B00266639	0.10
B00266646	1.49
B00266647	1.08
B00266648	1.85
B00266649	2.42
B00266650	0.24
B00266652	0.30
B00266653	0.30
B00266654	>4.00
B00266655	1.08
B00266656	1.90
B00266657	0.10
B00266658	2.89
B00266659	1.96
B00266661	>4.00
B00266662	>4.00
B00266663	2.26
B00266664	2.65
B00266665	1.64
B00266666	1.79
B00266667	1.79

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Final : VC153801 Order: Ba results from VC152330 to VC152426

Report File No.: 0000014577

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00232526	0.82
B00232530	0.04
B00232536	0.91
B00267190	0.04
B00267191	0.54
B00267192	0.12
B00267193	0.13
*Rep B00266569	>4.00
*Rep B00266629	0.03
*Rep B00232536	0.91
*Rep B00267192	0.12
*Std OREAS131B	0.07
*Std OREAS134A	0.14
*Std OREAS146	1.29
*Std OREAS926	0.04
*Std OREAS131B	0.08
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153808
[Report File No.: 0000015131]

Date: January 07, 2016

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: PO# BMC15-01_36 B00293457-461,468-471
Project No.: KZK
Samples: 9
Received: Dec 15, 2015
Pages: Page 1 to 6
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
9	G_LOG02	Pre-preparation processing, sorting, logging, boxing
9	G_WGH79	Weighing of samples and reporting of weights
9	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
1	G_SCR34	Wet Screening 75µm, Evaluation of Prep
3	GO_XRF76V	Ore grade Borate fusion, XRF
6	GO_ICP95A	Lithium Metaborate fusion/ICP-AES (Lithologic) package
6	G_PHY01K	Gravimetric determination at 1000C

Storage: Pulp & Reject

PULP STORAGE : STORE FOR 90 DAYS
REJECT STORAGE : STORE FOR 30 DAYS

Comments:

Samples B00293460, B00293461, B00293468, B00293469, B00293470, and B00293471 could not be analyzed using GO_XRF76V due to sample nature.

Certified By :



Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:
L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element	WtKg	M75um	@LOI	@SiO2	@Al2O3	@Fe2O3	@MgO	@CaO
Method	G_WGH79	G_SCR34	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V
Det.Lim.	0.01	0.01	-10.000	0.01	0.01	0.01	0.01	0.01
Units	kg	%	%	%	%	%	%	%
B00293457	0.310	N.A.	15.7	39.6	17.0	2.38	0.51	17.5
B00293458	0.530	N.A.	2.63	49.1	14.5	10.5	9.12	6.50
B00293459	0.390	N.A.	11.1	44.8	14.3	8.79	7.90	8.64
B00293460	0.415	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293461	0.425	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293468	0.510	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293469	0.600	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293470	0.420	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293471	0.445	85.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00293459			11.1	45.2	14.3	8.81	7.82	8.63
*Std SY4			4.70	50.5	20.9	6.27	0.56	8.01
*Blk BLANK			N.A.	<0.01	<0.01	<0.01	<0.01	<0.01

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Final : VC153808 Order: PO# BMC15-01_36 B00293457-461,468-471

Report File No.: 0000015131

Element	@K2O	@Na2O	@TiO2	@MnO	@P2O5	@Cr2O3	@V2O5	Nb2O5
Method	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V
Det.Lim.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Units	%	%	%	%	%	%	%	%
B00293457	5.69	0.10	1.68	0.16	0.15	0.06	0.05	<0.01
B00293458	6.22	0.13	1.47	0.13	0.14	0.05	0.04	<0.01
B00293459	1.44	1.68	1.20	0.12	0.13	0.05	0.04	<0.01
B00293460	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293461	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293468	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293469	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293470	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293471	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep B00293459	1.42	1.70	1.18	0.12	0.13	0.04	0.03	<0.01
*Std SY4	1.67	7.20	0.30	0.11	0.13	<0.01	<0.01	<0.01
*Blk BLANK	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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Element	ZrO2	Y2O3	Sum	Al2O3	Ba	CaO	Cr2O3	Fe2O3
Method	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A
Det.Lim.	0.01	0.01	0	0.01	0.001	0.01	0.01	0.01
Units	%	%	%	%	%	%	%	%
B00293457	0.01	<0.01	100.6	N.A.	N.A.	N.A.	N.A.	N.A.
B00293458	0.02	<0.01	100.6	N.A.	N.A.	N.A.	N.A.	N.A.
B00293459	0.02	<0.01	100.3	N.A.	N.A.	N.A.	N.A.	N.A.
B00293460	N.A.	N.A.	N.A.	2.64	0.070	0.06	<0.01	39.4
B00293461	N.A.	N.A.	N.A.	0.04	0.019	7.71	<0.01	43.2
B00293468	N.A.	N.A.	N.A.	0.07	7.17	7.24	<0.01	44.7
B00293469	N.A.	N.A.	N.A.	0.02	0.004	0.44	<0.01	41.6
B00293470	N.A.	N.A.	N.A.	0.10	7.74	1.69	<0.01	34.4
B00293471	N.A.	N.A.	N.A.	0.05	7.03	3.97	<0.01	37.1
*Rep B00293459	0.01	<0.01	100.5					
*Std SY4	0.07	<0.01	100.3					
*Blk BLANK	<0.01	<0.01	N.A.					
*Rep B00293471				0.05	7.35	4.20	<0.01	38.0
*Std SY4				21.0	0.034	8.17	<0.01	6.20
*Blk BLANK				<0.01	<0.001	<0.01	<0.01	<0.01

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Element	K2O	MgO	MnO	Na2O	Nb	P2O5	SiO2	Sr
Method	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A
Det.Lim.	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.001
Units	%	%	%	%	%	%	%	%
B00293457	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293458	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293459	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
B00293460	1.03	0.23	0.02	0.02	0.002	<0.01	14.2	<0.001
B00293461	0.01	1.87	0.13	<0.01	0.001	0.01	5.40	0.016
B00293468	<0.01	2.66	0.31	<0.01	0.001	0.04	0.18	0.029
B00293469	<0.01	0.84	0.12	<0.01	<0.001	<0.01	1.22	<0.001
B00293470	0.01	0.61	0.09	<0.01	0.001	<0.01	1.04	0.014
B00293471	<0.01	2.09	0.13	<0.01	0.001	<0.01	0.49	0.024
*Rep B00293471	0.01	2.22	0.13	<0.01	0.001	<0.01	0.50	0.026
*Std SY4	1.72	0.55	0.11	7.28	0.002	0.13	49.5	0.123
*Blk BLANK	<0.01	<0.01	<0.01	<0.01	<0.001	0.01	<0.01	<0.001

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Final : VC153808 Order: PO# BMC15-01_36 B00293457-461,468-471

Report File No.: 0000015131

Element	TiO2	Y	Zn	Zr	LOI
Method	GO_ICP95A	GO_ICP95A	GO_ICP95A	GO_ICP95A	G_PHY01K
Det.Lim.	0.01	0.001	5	0.001	0.01
Units	%	%	ppm	%	%
B00293457	N.A.	N.A.	N.A.	N.A.	N.A.
B00293458	N.A.	N.A.	N.A.	N.A.	N.A.
B00293459	N.A.	N.A.	N.A.	N.A.	N.A.
B00293460	0.05	<0.001	>10000	0.005	25.8
B00293461	<0.01	<0.001	>10000	<0.001	26.3
B00293468	<0.01	<0.001	>10000	<0.001	25.2
B00293469	<0.01	<0.001	>10000	<0.001	18.0
B00293470	<0.01	<0.001	>10000	<0.001	23.0
B00293471	<0.01	<0.001	>10000	<0.001	24.4
*Rep B00293471	<0.01	<0.001	>10000	<0.001	
*Std SY4	0.29	0.012	100	0.056	
*Blk BLANK	<0.01	<0.001	<5	<0.001	
*Rep B00293471					23.9
*Std OREAS70B					6.84
*Blk BLANK					<0.01

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Certificate of Analysis
Work Order : VC153810
[Report File No.: 0000014578]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152431 to VC152433
Project No.: KZK
Samples: 73
Received: Dec 15, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
73	G_LOG02	Pre-preparation processing, sorting, logging, boxing
73	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153810 Order: Ba results from VC152431 to VC152433

Report File No.: 0000014578

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264771	0.62
B00264772	0.76
B00264773	0.93
B00264774	>4.00
B00264775	>4.00
B00264776	2.22
B00264777	0.03
B00264785	0.20
B00266681	>4.00
B00266682	>4.00
B00266683	0.52
B00266684	1.25
B00266699	0.02
B00266700	<0.01
B00266701	<0.01
B00266702	<0.01
B00266703	<0.01
B00266704	<0.01
B00266705	<0.01
B00266706	>4.00
B00266707	>4.00
B00266708	>4.00
B00266709	0.43
B00266711	0.24
B00266718	0.22
B00266719	0.39
B00266721	0.60
B00266722	0.05
B00266723	0.05
B00266724	<0.01
B00266725	<0.01
B00266726	0.02
B00266727	0.01
B00266728	<0.01
B00266729	0.01
B00266730	0.23
B00266732	0.07
B00266733	0.10
B00266734	0.02
B00266735	0.03

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Final : VC153810 Order: Ba results from VC152431 to VC152433

Report File No.: 0000014578

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266736	0.03
B00266739	<0.01
B00266741	>4.00
B00266742	>4.00
B00266743	0.12
B00266744	0.04
B00266745	<0.01
B00266746	<0.01
B00266747	2.99
B00266748	>4.00
B00266749	0.06
B00266750	0.04
B00266751	0.04
B00266752	2.25
B00266753	0.02
B00266754	0.05
B00268642	0.03
B00268643	0.01
B00268644	0.22
B00268645	0.02
B00268646	0.02
B00268647	0.02
B00268648	1.03
B00268649	0.03
B00268652	0.03
B00268657	0.24
B00268658	0.09
B00268659	0.12
B00268660	<0.01
B00268661	0.15
B00268662	0.13
B00268663	0.09
B00269069	0.02
*Rep B00268648	1.04
*Std OREAS134A	0.14
*Std OREAS146	1.29
*Std OREAS134A	0.13
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153811
[Report File No.: 0000014579]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152566 to VC152578
Project No.: KZK
Samples: 78
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
78	G_LOG02	Pre-preparation processing, sorting, logging, boxing
78	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

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*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

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Final : VC153811 Order: Ba results from VC152566 to VC152578

Report File No.: 0000014579

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264865	0.08
B00264866	0.05
B00264867	0.21
B00264868	0.02
B00264869	<0.01
B00264871	<0.01
B00264872	<0.01
B00264873	1.11
B00264874	3.60
B00264875	1.81
B00264876	>4.00
B00264877	>4.00
B00264878	1.11
B00264879	>4.00
B00264880	0.02
B00264881	2.57
B00264882	2.44
B00264883	0.61
B00264884	0.44
B00264885	0.33
B00264886	0.37
B00264887	0.34
B00264888	0.44
B00264889	0.33
B00264890	0.24
B00264892	0.18
B00264893	0.20
B00264894	0.17
B00266764	0.16
B00266765	0.20
B00266766	0.17
B00266767	0.19
B00266768	0.01
B00266769	0.01
B00266771	0.01
B00266772	0.09
B00266773	0.08
B00268752	0.15
B00268753	0.40
B00268754	0.37

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Final : VC153811 Order: Ba results from VC152566 to VC152578

Report File No.: 0000014579

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268755	0.39
B00268756	0.09
B00268757	0.14
B00268758	0.07
B00268759	<0.01
B00268761	0.03
B00268762	1.31
B00268763	0.20
B00268764	3.40
B00268765	1.43
B00268766	>4.00
B00268767	3.15
B00268768	0.18
B00268769	0.18
B00268770	0.24
B00268772	0.02
B00233046	0.09
B00233047	0.10
B00233048	0.07
B00264156	0.21
B00264157	0.24
B00264158	0.61
B00264159	0.65
B00269168	0.03
B00264817	0.12
B00264818	0.49
B00264819	0.01
B00268664	0.06
B00268665	<0.01
B00268666	0.13
B00268667	0.08
B00268672	0.02
B00268681	0.39
B00268682	0.09
B00268683	<0.01
B00268684	0.01
B00268685	<0.01
B00268686	0.01
*Rep B00264892	0.19
*Rep B00266768	0.01

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Final : VC153811 Order: Ba results from VC152566 to VC152578

Report File No.: 0000014579

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Rep B00268753	0.41
*Rep B00268665	<0.01
*Std OREAS131B	0.07
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Std OREAS926	0.04
*Std OREAS146	1.28
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153812
[Report File No.: 0000014580]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152579 and VC152613
Project No.: KZK
Samples: 79
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
79	G_LOG02	Pre-preparation processing, sorting, logging, boxing
79	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153812 Order: Ba results from VC152579 and VC152613

Report File No.: 0000014580

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268687	<0.01
B00268688	0.02
B00268689	0.02
B00268690	0.24
B00268692	0.02
B00268693	0.04
B00268694	0.02
B00268695	0.13
B00268696	<0.01
B00268697	0.02
B00268698	0.10
B00268699	<0.01
B00268700	<0.01
B00268701	0.15
B00268702	0.18
B00268703	0.08
B00268711	0.04
B00268712	0.15
B00268713	0.31
B00268714	0.23
B00268715	0.04
B00268716	<0.01
B00268717	0.01
B00268718	0.01
B00268719	0.01
B00268721	0.03
B00268722	0.42
B00268723	<0.01
B00268724	0.24
B00268725	0.16
B00268726	<0.01
B00268731	0.09
B00268732	0.33
B00268733	0.84
B00268734	>4.00
B00268735	>4.00
B00268736	0.38
B00268737	2.88
B00268738	>4.00
B00268739	0.07

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Final : VC153812 Order: Ba results from VC152579 and VC152613

Report File No.: 0000014580

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268741	0.12
B00268742	0.06
B00268743	0.09
B00264958	1.39
B00264959	>4.00
B00264961	>4.00
B00264962	>4.00
B00264963	0.52
B00264964	1.15
B00264965	>4.00
B00264966	2.41
B00264967	>4.00
B00264968	1.31
B00264969	0.10
B00264970	0.04
B00264971	>4.00
B00264972	0.07
B00264973	0.78
B00264974	0.39
B00264975	0.58
B00266798	0.20
B00266799	0.37
B00266800	<0.01
B00266801	0.58
B00266802	0.52
B00266808	>4.00
B00266809	2.76
B00266810	0.24
B00266812	0.75
B00266813	>4.00
B00266814	0.90
B00266815	0.09
B00266816	0.34
B00266819	<0.01
B00266821	0.02
B00266822	0.10
B00266823	0.01
B00266824	0.02
B00266825	0.08
*Rep B00268722	0.44

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Final : VC153812 Order: Ba results from VC152579 and VC152613

Report File No.: 0000014580

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Rep B00264962	>4.00
*Rep B00266822	0.10
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS146	1.34
*Std OREAS134A	0.15
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153813
[Report File No.: 0000014581]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152615 to VC152708
Project No.: KZK
Samples: 75
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
75	G_LOG02	Pre-preparation processing, sorting, logging, boxing
75	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153813 Order: Ba results from VC152615 to VC152708

Report File No.: 0000014581

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266826	0.14
B00266827	0.26
B00268803	0.37
B00268804	0.03
B00268805	<0.01
B00268806	>4.00
B00268807	>4.00
B00268808	>4.00
B00268809	2.70
B00268810	0.04
B00268812	2.72
B00268813	3.54
B00268814	0.06
B00268815	0.04
B00268816	0.40
B00268821	0.03
B00268822	0.65
B00268823	0.04
B00268824	<0.01
B00268825	0.01
B00268826	0.09
B00268827	0.64
B00268828	>4.00
B00268829	>4.00
B00268830	0.23
B00268832	>4.00
B00268833	3.97
B00268834	0.38
B00268835	0.76
B00268836	0.21
B00268837	0.13
B00233049	0.10
B00233051	0.13
B00233052	0.23
B00233053	0.20
B00233054	0.11
B00233055	0.10
B00233056	0.10
B00233057	0.10
B00233058	0.13

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Final : VC153813 Order: Ba results from VC152615 to VC152708

Report File No.: 0000014581

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00233059	0.44
B00233061	0.57
B00268308	0.11
B00268309	0.02
B00268312	0.03
B00268313	<0.01
B00268314	<0.01
B00268315	<0.01
B00268968	1.04
B00268969	0.77
B00268976	0.27
B00268977	0.02
B00268978	<0.01
B00268979	<0.01
B00268980	<0.01
B00268981	<0.01
B00268982	0.02
B00268983	0.05
B00268984	0.01
B00268985	0.02
B00268986	2.15
B00268987	2.80
B00268994	<0.01
B00268995	0.68
B00268996	<0.01
B00268997	0.02
B00268998	0.05
B00268999	0.02
B00269505	0.61
B00269506	0.22
B00269507	0.69
B00269508	0.66
B00269509	0.96
B00269511	1.13
B00269515	0.28
*Rep B00268806	>4.00
*Rep B00268969	0.79
*Std OREAS131B	0.07
*Std OREAS134A	0.15
*Std OREAS146	1.33

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Final : VC153813 Order: Ba results from VC152615 to VC152708

Report File No.: 0000014581

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS621	0.26
*Std OREAS146	1.32
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153814
[Report File No.: 0000014582]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152709 and VC152710
Project No.: KZK
Samples: 69
Received: Dec 15, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
69	G_LOG02	Pre-preparation processing, sorting, logging, boxing
69	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153814 Order: Ba results from VC152709 and VC152710

Report File No.: 0000014582

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268104	0.09
B00268108	0.03
B00268109	0.02
B00268110	<0.01
B00268111	0.01
B00268112	0.30
B00268113	0.04
B00268114	0.02
B00268123	0.15
B00268124	0.39
B00268125	0.26
B00268126	0.43
B00268132	0.93
B00268133	>4.00
B00268134	>4.00
B00268135	0.86
B00268136	0.16
B00268137	0.15
B00268138	0.75
B00268139	>4.00
B00268140	0.25
B00268142	3.62
B00268143	>4.00
B00268144	>4.00
B00268145	2.49
B00268146	>4.00
B00268147	>4.00
B00268151	>4.00
B00268157	0.16
B00268158	0.02
B00268159	0.01
B00268161	<0.01
B00268162	<0.01
B00268163	0.01
B00268164	0.06
B00268165	0.02
B00268166	0.01
B00268167	0.02
B00268168	0.03
B00268169	0.04

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Final : VC153814 Order: Ba results from VC152709 and VC152710

Report File No.: 0000014582

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268171	0.25
B00268180	0.04
B00268181	0.10
B00268182	0.09
B00268183	0.15
B00268184	0.06
B00268185	0.09
B00268186	0.20
B00268187	0.22
B00268198	0.03
B00268199	<0.01
B00268201	0.24
B00268202	<0.01
B00268203	<0.01
B00268204	0.99
B00268205	3.95
B00268206	>4.00
B00268220	0.04
B00268221	0.70
B00268222	2.62
B00268223	0.29
B00268224	0.29
B00268225	>4.00
B00268226	>4.00
B00268227	0.31
B00268228	>4.00
B00268229	1.60
B00268230	0.03
B00268231	2.75
*Rep B00268151	>4.00
*Rep B00268162	<0.01
*Rep B00268184	0.06
*Rep B00268205	3.92
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Std OREAS131B	0.08
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153815
[Report File No.: 0000014583]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152711
Project No.: KZK
Samples: 45
Received: Dec 15, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
45	G_LOG02	Pre-preparation processing, sorting, logging, boxing
45	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153815 Order: Ba results from VC152711

Report File No.: 0000014583

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268232	1.30
B00268233	1.46
B00268234	2.06
B00268235	0.34
B00268236	0.02
B00268237	0.02
B00268238	0.89
B00268239	0.41
B00268240	0.05
B00268241	0.29
B00268242	0.26
B00268243	0.57
B00268842	0.12
B00268843	0.12
B00268844	0.21
B00268845	0.83
B00268846	0.01
B00268847	0.02
B00268848	0.01
B00268849	0.06
B00268850	<0.01
B00268851	0.04
B00268852	0.02
B00268853	<0.01
B00268854	0.02
B00268855	<0.01
B00268856	0.01
B00268857	0.03
B00268858	<0.01
B00268859	<0.01
B00268860	<0.01
B00268861	<0.01
B00268862	0.07
B00268863	0.01
B00268864	<0.01
B00268865	0.13
B00268866	1.90
B00268867	1.21
B00268868	0.01
B00268869	0.04

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Final : VC153815 Order: Ba results from VC152711

Report File No.: 0000014583

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268870	0.27
B00268871	0.14
B00268872	0.02
B00268873	0.04
B00268874	0.34
*Rep B00268856	<0.01
*Dup B00268864	0.01
*Std OREAS131B	0.08
*Std OREAS134A	0.15
*Std OREAS926	0.04
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153816
[Report File No.: 0000014584]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152791 and VC152818
Project No.: KZK
Samples: 97
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
97	G_LOG02	Pre-preparation processing, sorting, logging, boxing
97	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153816 Order: Ba results from VC152791 and VC152818

Report File No.: 0000014584

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00233077	0.55
B00233078	0.20
B00233079	0.44
B00233080	<0.01
B00233081	0.28
B00233082	0.49
B00233083	0.61
B00233084	0.09
B00233085	0.08
B00233086	0.15
B00233087	0.16
B00233088	0.19
B00233089	0.16
B00233090	0.04
B00233091	0.16
B00233092	0.11
B00233093	0.13
B00233094	0.19
B00233095	0.25
B00233096	0.17
B00233097	0.18
B00267313	0.31
B00267314	0.30
B00267315	0.10
B00267316	0.03
B00267317	0.22
B00267318	0.33
B00267319	0.13
B00267320	<0.01
B00267321	0.25
B00267322	0.13
B00267323	0.05
B00267324	0.02
B00267325	0.07
B00267326	0.14
B00267327	0.11
B00267328	0.10
B00267329	1.05
B00267330	0.05
B00267331	1.19

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Final : VC153816 Order: Ba results from VC152791 and VC152818

Report File No.: 0000014584

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00267332	0.91
B00267333	0.75
B00267334	0.06
B00267335	0.08
B00267336	0.09
B00267337	0.08
B00267338	0.07
B00267339	0.09
B00267340	<0.01
B00267341	0.10
B00267342	0.09
B00267343	0.05
B00267344	0.07
B00267345	0.07
B00267346	0.08
B00267347	0.04
B00267348	0.03
B00267349	0.02
B00267350	<0.01
B00267351	0.03
B00233062	0.41
B00233063	0.48
B00233064	0.10
B00233065	0.16
B00233066	0.18
B00233067	0.27
B00233068	0.06
B00233069	0.02
B00233070	0.04
B00233071	0.19
B00233072	0.47
B00233073	0.22
B00233074	0.22
B00233075	0.22
B00233076	0.25
B00267291	0.20
B00267292	0.02
B00267293	0.08
B00267294	0.20
B00267295	0.02

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Final : VC153816 Order: Ba results from VC152791 and VC152818

Report File No.: 0000014584

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00267296	0.19
B00267297	0.18
B00267298	0.23
B00267299	0.25
B00267300	<0.01
B00267301	0.20
B00267302	0.11
B00267303	0.18
B00267304	0.29
B00267305	0.01
B00267306	0.30
B00267307	0.12
B00267308	0.17
B00267309	0.28
B00267310	0.04
B00267311	0.13
B00267312	0.22
*Rep B00233097	0.18
*Rep B00267318	0.33
*Dup B00267326	0.14
*Rep B00267342	0.09
*Rep B00267294	0.20
*Dup B00267309	0.27
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS131B	0.08
*Std OREAS134A	0.15
*Std OREAS134A	0.15
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153817
[Report File No.: 0000014585]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152819
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153817 Order: Ba results from VC152819

Report File No.: 0000014585

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265058	0.18
B00265059	0.47
B00265060	<0.01
B00265061	0.54
B00265062	0.08
B00265063	>4.00
B00265064	>4.00
B00265065	>4.00
B00265066	0.30
B00265067	0.46
B00265068	0.16
B00265069	1.23
B00265070	0.05
B00265071	2.52
B00265072	1.28
B00265073	1.81
B00265074	1.24
B00265075	1.17
B00265076	1.59
B00265077	1.11
B00265078	1.19
B00265079	1.37
B00265080	<0.01
B00265081	1.71
B00265082	0.67
B00265083	>4.00
B00265084	3.47
B00265085	>4.00
B00265086	>4.00
B00265087	0.87
B00265088	1.22
B00265089	1.62
B00265090	0.26
B00265091	0.14
B00265092	1.65
B00265093	0.02
B00265094	0.02
B00265095	0.01
B00265096	0.03
B00265097	0.22

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Final : VC153817 Order: Ba results from VC152819

Report File No.: 0000014585

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265098	1.69
B00265099	0.84
B00265100	<0.01
B00266851	0.09
B00266852	0.07
B00266853	0.08
B00266854	0.07
B00266855	0.09
B00266856	0.24
B00266857	0.31
B00266858	0.19
B00266859	0.41
B00266860	<0.01
B00266861	0.54
B00266862	0.27
B00266863	0.02
B00266864	0.04
B00266865	0.13
B00266866	<0.01
B00266867	<0.01
B00266868	0.04
B00266869	0.16
B00266870	0.05
B00266871	0.16
B00266872	0.15
B00266873	0.15
B00266874	0.16
B00266875	0.24
B00266876	0.53
B00266877	0.98
B00266878	0.23
B00266879	>4.00
B00266880	<0.01
B00266881	>4.00
*Rep B00265088	1.24
*Rep B00266864	0.04
*Rep B00266873	0.15
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS146	1.31

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Final : VC153817 Order: Ba results from VC152819

Report File No.: 0000014585

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.15
*Blk BLANK	<0.01
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153821
[Report File No.: 0000014586]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152820
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153821 Order: Ba results from VC152820

Report File No.: 0000014586

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266882	>4.00
B00266883	1.44
B00266884	0.04
B00266885	0.02
B00266886	3.53
B00266887	0.33
B00266888	0.43
B00266889	1.38
B00266890	0.05
B00266891	1.42
B00266892	0.94
B00266893	1.64
B00268244	0.11
B00268245	0.09
B00268246	0.19
B00268247	0.16
B00268248	0.02
B00268249	0.04
B00268250	0.05
B00268251	0.01
B00268252	<0.01
B00268253	<0.01
B00268254	<0.01
B00268255	<0.01
B00268256	<0.01
B00268257	<0.01
B00268258	<0.01
B00268259	<0.01
B00268260	<0.01
B00268261	0.03
B00268262	<0.01
B00268263	<0.01
B00268264	<0.01
B00268265	<0.01
B00268266	<0.01
B00268267	<0.01
B00268268	0.20
B00268269	0.33
B00268270	0.05
B00268271	0.26

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Final : VC153821 Order: Ba results from VC152820

Report File No.: 0000014586

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268272	0.38
B00268273	0.08
B00268274	0.05
B00268275	0.02
B00268276	0.06
B00268277	0.08
B00268278	0.10
B00268279	<0.01
B00268280	<0.01
B00268281	<0.01
B00268282	<0.01
B00268283	<0.01
B00268284	<0.01
B00268285	0.09
B00268286	0.13
B00268287	0.14
B00268288	0.15
B00268289	0.18
B00268290	0.05
B00268291	0.18
B00268292	0.22
B00268293	0.12
B00268294	0.15
B00268295	0.11
B00268296	0.15
B00268297	0.17
B00268298	0.19
B00268299	0.15
B00268300	<0.01
B00268301	0.21
B00268302	0.24
B00268882	0.33
B00268883	0.29
B00268884	0.33
*Rep B00266890	0.05
*Dup B00268266	<0.01
*Rep B00268273	0.08
*Rep B00268283	<0.01
*Rep B00268295	0.11
*Dup B00268301	0.21

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Final : VC153821 Order: Ba results from VC152820

Report File No.: 0000014586

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.15
*Std OREAS131B	0.08
*Std OREAS134A	0.15
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153822
[Report File No.: 0000014587]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba and S results from VC152821
Project No.: KZK
Samples: 75
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
75	G_LOG02	Pre-preparation processing, sorting, logging, boxing
75	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba and S results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153822 Order: Ba and S results from VC152821

Report File No.: 0000014587

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00268885	0.01	33.1
B00268886	0.01	35.9
B00268887	<0.01	33.0
B00268888	<0.01	32.2
B00268889	<0.01	30.5
B00268890	0.26	4.4
B00268891	0.13	8.9
B00268892	<0.01	34.0
B00268893	<0.01	35.6
B00268894	<0.01	34.1
B00268895	<0.01	33.0
B00268896	0.14	41.4
B00268897	2.66	1.0
B00268898	2.23	2.0
B00268899	0.03	30.8
B00268900	<0.01	<0.1
B00268901	0.41	2.9
B00268902	0.13	38.4
B00268903	1.18	43.3
B00268904	0.09	41.7
B00268905	0.16	41.6
B00268906	0.10	41.7
B00268907	0.10	38.4
B00268908	1.79	18.3
B00268909	0.05	30.1
B00268910	0.05	16.3
B00268911	2.11	0.6
B00268912	0.24	39.9
B00268913	0.02	35.4
B00268914	<0.01	47.2
B00268915	<0.01	39.9
B00268916	0.08	40.0
B00268917	0.04	47.1
B00268918	0.01	43.1
B00268919	<0.01	44.7
B00268920	<0.01	0.2
B00268921	<0.01	37.5
B00268922	<0.01	37.5
B00268923	<0.01	38.4
B00268924	<0.01	40.1

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Final : VC153822 Order: Ba and S results from VC152821

Report File No.: 0000014587

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00268925	<0.01	41.2
B00268926	<0.01	40.2
B00268927	0.02	36.2
B00268928	<0.01	39.1
B00268929	<0.01	40.7
B00268930	0.26	4.4
B00268931	0.14	8.9
B00268932	<0.01	38.5
B00268933	<0.01	42.9
B00268934	<0.01	43.8
B00268935	<0.01	39.2
B00268936	<0.01	43.7
B00268937	0.07	5.3
B00268938	0.03	38.6
B00268939	0.01	41.1
B00268940	<0.01	0.2
B00268941	0.06	40.6
B00268942	1.47	2.1
B00268943	1.18	10.5
B00268944	1.62	23.0
B00268945	0.07	39.6
B00268946	0.04	39.0
B00268947	0.01	38.9
B00268948	>4.00	41.1
B00268949	>4.00	39.7
B00268950	0.05	17.5
B00268951	1.13	3.6
B00268952	0.79	1.4
B00268953	0.77	<0.1
B00268954	0.67	1.7
B00268955	0.50	0.6
B00268956	0.20	9.6
B00268957	0.37	3.0
B00268958	0.42	0.5
B00268959	0.14	<0.1
*Rep B00268914	<0.01	47.2
*Dup B00268919	<0.01	45.5
*Rep B00268940	<0.01	0.1
*Rep B00268949	>4.00	38.3
*Dup B00268954	0.66	1.8

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Final : VC153822 Order: Ba and S results from VC152821

Report File No.: 0000014587

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
*Std OREAS131B	0.08	4.8
*Std OREAS134A	0.15	19.9
*Std OREAS146	1.27	<0.1
*Std OREAS926	0.04	1.2
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153823
[Report File No.: 0000014588]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152897
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153823 Order: Ba results from VC152897

Report File No.: 0000014588

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266894	0.15
B00266895	0.18
B00266896	0.20
B00266897	<0.01
B00266898	<0.01
B00266899	0.02
B00266900	<0.01
B00266901	0.10
B00266902	0.08
B00266903	0.09
B00266904	0.12
B00266905	0.39
B00266906	0.41
B00266907	0.29
B00266908	0.21
B00266909	0.02
B00266910	0.05
B00266911	0.44
B00266912	0.15
B00266913	0.31
B00266914	0.59
B00266915	0.97
B00266916	>4.00
B00266917	3.59
B00266918	>4.00
B00266919	0.27
B00266920	<0.01
B00266921	0.02
B00266922	<0.01
B00266923	<0.01
B00266924	<0.01
B00266925	0.02
B00266926	0.01
B00266927	0.91
B00266928	0.73
B00266929	0.01
B00266930	0.26
B00266931	0.13
B00266932	<0.01
B00266933	<0.01

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Final : VC153823 Order: Ba results from VC152897

Report File No.: 0000014588

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266934	<0.01
B00266935	1.18
B00266936	0.65
B00266937	0.71
B00266938	0.44
B00266939	0.39
B00266940	<0.01
B00266941	0.31
B00266942	0.37
B00266943	0.35
B00266944	0.41
B00266945	0.69
B00266946	0.57
B00266947	0.49
B00266948	<0.01
B00266949	0.13
B00266950	0.26
B00266951	0.14
B00266952	0.02
B00266953	0.02
B00266954	0.02
B00266955	0.04
B00266956	<0.01
B00266957	<0.01
B00266958	0.17
B00266959	>4.00
B00266960	0.02
B00266961	1.40
B00266962	>4.00
B00266963	>4.00
B00266964	1.17
B00266965	>4.00
B00266966	3.62
B00266967	0.57
*Rep B00266913	0.31
*Rep B00266924	<0.01
*Dup B00266928	0.73
*Rep B00266952	0.02
*Rep B00266960	0.02
*Dup B00266963	>4.00

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Final : VC153823 Order: Ba results from VC152897

Report File No.: 0000014588

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.15
*Std OREAS131B	0.08
*Std OREAS926	0.04
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153824
[Report File No.: 0000014589]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC152898
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153824 Order: Ba results from VC152898

Report File No.: 0000014589

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00266968	0.20
B00266969	0.07
B00266970	0.25
B00266971	0.13
B00266972	0.46
B00266973	0.01
B00266974	0.08
B00266975	0.16
B00266976	0.20
B00266977	0.05
B00266978	0.21
B00266979	0.32
B00266980	<0.01
B00266981	0.49
B00266982	0.13
B00266983	<0.01
B00266984	0.01
B00266985	>4.00
B00266986	1.66
B00266987	0.87
B00266988	2.53
B00266989	>4.00
B00266990	0.26
B00266991	0.14
B00266992	>4.00
B00266993	0.50
B00266994	0.21
B00266995	2.22
B00266996	0.29
B00266997	0.42
B00266998	0.06
B00266999	0.02
B00267000	<0.01
B00269222	0.03
B00269223	0.10
B00269224	0.09
B00269225	0.16
B00269226	0.09
B00269227	0.14
B00269228	0.13

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Final : VC153824 Order: Ba results from VC152898

Report File No.: 0000014589

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269229	0.14
B00269230	0.04
B00269231	0.11
B00269232	0.14
B00269233	0.11
B00269234	0.06
B00269235	0.17
B00269236	0.17
B00269237	0.15
B00269238	0.19
B00269239	0.19
B00269240	<0.01
B00269241	0.16
B00269242	0.17
B00269243	0.15
B00269244	0.17
B00269245	0.12
B00269246	0.11
B00269247	0.10
B00269248	0.09
B00269249	0.10
B00269250	0.26
B00269251	0.14
B00269252	0.13
B00269253	0.11
B00269254	0.11
B00269255	0.10
B00269256	0.14
B00269257	0.15
B00269258	0.19
B00269259	0.23
B00269260	<0.01
B00269261	0.20
B00269262	0.21
*Rep B00266973	0.01
*Rep B00266996	0.29
*Dup B00269223	0.11
*Rep B00269241	0.16
*Rep B00269258	0.19
*Dup B00269258	0.19

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Final : VC153824 Order: Ba results from VC152898

Report File No.: 0000014589

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.14
*Std OREAS131B	0.08
*Std OREAS926	0.04
*Blk BLANK	0.01

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Certificate of Analysis
Work Order : VC153825
[Report File No.: 0000014590]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba and S results from VC152899
Project No.: KZK
Samples: 62
Received: Dec 15, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
62	G_LOG02	Pre-preparation processing, sorting, logging, boxing
62	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba and S results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153825 Order: Ba and S results from VC152899

Report File No.: 0000014590

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269263	0.20	0.9
B00269264	0.18	2.6
B00269265	0.31	0.9
B00269266	0.42	1.8
B00269267	0.24	6.2
B00269268	0.49	1.6
B00269269	0.23	1.7
B00269270	0.05	18.2
B00269271	0.10	1.6
B00269272	0.11	2.4
B00269273	0.09	3.7
B00269274	0.09	2.2
B00269275	0.15	1.1
B00269276	0.13	2.0
B00269277	0.12	2.2
B00269278	0.12	1.1
B00269279	0.10	2.9
B00269280	<0.01	<0.1
B00269281	0.09	1.2
B00269282	0.09	4.0
B00269283	0.07	1.1
B00269284	0.07	1.4
B00269285	0.07	1.2
B00269286	0.20	0.2
B00269287	0.10	2.8
B00269288	0.34	1.6
B00269289	0.22	4.4
B00269290	0.26	4.5
B00269291	0.13	9.2
B00269292	0.32	1.5
B00269293	0.16	4.0
B00269294	0.36	3.9
B00269295	0.16	8.5
B00269296	0.15	0.6
B00269297	0.16	0.2
B00269298	0.13	4.3
B00269299	0.18	3.2
B00269300	<0.01	<0.1
B00269301	0.20	3.9
B00269302	0.16	5.0

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Final : VC153825 Order: Ba and S results from VC152899

Report File No.: 0000014590

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269303	0.18	2.8
B00269304	0.28	0.7
B00269305	0.21	0.9
B00269306	0.22	3.2
B00269307	0.18	1.3
B00269308	0.18	0.2
B00269309	0.26	1.1
B00269310	0.05	16.4
B00269311	0.33	2.6
B00269312	0.06	8.9
B00269313	0.07	0.3
B00269314	0.02	0.7
B00269315	0.05	3.4
B00269316	0.06	1.2
B00269317	0.02	2.2
B00269318	0.08	0.4
B00269319	0.05	1.2
B00269320	<0.01	<0.1
B00269321	0.21	1.3
B00269322	0.33	0.2
B00269323	0.52	<0.1
B00269324	0.22	1.4
*Rep B00269275	0.15	1.1
*Dup B00269297	0.15	0.2
*Rep B00269307	0.17	1.3
*Rep B00269313	0.07	0.3
*Std OREAS131B	0.08	5.0
*Std OREAS131B	0.08	5.0
*Std OREAS134A	0.15	20.3
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153826
[Report File No.: 0000014591]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba and S results from VC153009
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba and S results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153826 Order: Ba and S results from VC153009

Report File No.: 0000014591

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00265101	0.19	1.6
B00265102	0.20	1.4
B00265103	0.27	3.1
B00265104	0.29	0.4
B00265105	0.14	0.8
B00265106	0.18	0.8
B00265107	0.33	4.1
B00265108	0.41	0.1
B00265109	0.04	40.6
B00265110	0.26	4.5
B00265111	0.13	8.5
B00265112	0.29	3.1
B00265113	0.39	0.4
B00265114	0.34	0.3
B00265115	0.16	24.8
B00265116	<0.01	35.7
B00265117	0.02	37.6
B00265118	0.26	1.2
B00265119	0.41	0.9
B00265120	<0.01	0.1
B00265121	0.60	0.9
B00265122	0.61	0.1
B00265123	0.61	<0.1
B00265124	0.59	0.1
B00265125	0.06	29.7
B00265126	<0.01	31.7
B00265127	<0.01	31.0
B00265128	0.01	30.0
B00265129	1.94	30.7
B00265130	0.26	4.3
B00265131	0.13	8.5
B00265132	0.02	28.9
B00265133	0.01	30.9
B00265134	0.02	30.3
B00265135	<0.01	32.3
B00265136	<0.01	37.4
B00265137	<0.01	26.5
B00265138	0.01	28.4
B00265139	0.05	33.4
B00265140	<0.01	0.2

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Final : VC153826 Order: Ba and S results from VC153009

Report File No.: 0000014591

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00265141	0.02	32.8
B00265142	<0.01	31.3
B00265143	<0.01	34.1
B00265144	<0.01	35.2
B00265145	<0.01	37.5
B00265146	<0.01	38.6
B00265147	<0.01	37.8
B00265148	<0.01	40.0
B00265149	0.03	37.5
B00265150	0.26	4.4
B00265151	0.14	8.8
B00265152	0.01	37.2
B00265153	<0.01	41.3
B00265154	0.01	39.4
B00265155	0.02	35.0
B00265156	0.01	32.6
B00265157	0.01	32.4
B00265158	0.04	31.5
B00265159	0.13	27.5
B00265160	<0.01	0.1
B00265161	0.07	36.1
B00265162	<0.01	33.9
B00265163	<0.01	29.6
B00265164	0.02	28.4
B00265165	0.75	0.3
B00265166	0.18	0.1
B00265167	0.10	0.4
B00265168	0.17	<0.1
B00265169	0.28	32.1
B00265170	0.05	15.9
B00265171	0.01	31.1
B00265172	0.27	1.4
B00265173	0.15	3.1
B00265174	0.12	0.9
*Rep B00265106	0.18	0.7
*Rep B00265132	0.02	28.8
*Dup B00265134	0.01	31.2
*Rep B00265151	0.14	8.8
*Rep B00265166	0.18	0.1
*Dup B00265169	0.28	32.1

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Final : VC153826 Order: Ba and S results from VC153009

Report File No.: 0000014591

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
*Std OREAS131B	0.08	4.8
*Std OREAS134A	0.15	19.5
*Std OREAS146	1.29	<0.1
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153827
[Report File No.: 0000014592]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153010
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153827 Order: Ba results from VC153010

Report File No.: 0000014592

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265175	0.06
B00265176	0.16
B00265177	0.23
B00265178	0.05
B00265179	<0.01
B00265180	<0.01
B00265181	<0.01
B00265182	0.06
B00265183	>4.00
B00265184	3.75
B00265185	0.06
B00265186	0.29
B00265187	0.16
B00265188	0.21
B00265189	0.12
B00265190	0.25
B00265191	0.13
B00265192	0.14
B00265193	0.24
B00265194	0.02
B00265195	1.22
B00265196	3.71
B00265197	>4.00
B00265198	0.42
B00265199	0.25
B00265200	0.09
B00265201	0.07
B00268345	0.11
B00268346	0.07
B00268347	0.10
B00268348	0.10
B00268349	0.14
B00268350	0.05
B00268351	0.25
B00268352	0.13
B00268353	0.11
B00268354	0.18
B00268355	0.28
B00268356	0.28
B00268357	0.29

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Final : VC153827 Order: Ba results from VC153010

Report File No.: 0000014592

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268358	0.35
B00268359	0.37
B00268360	<0.01
B00268361	0.34
B00268362	0.10
B00268363	0.09
B00268364	0.09
B00268365	0.03
B00268366	0.07
B00268367	0.06
B00268368	0.08
B00268369	0.10
B00268370	0.04
B00268371	0.07
B00268372	0.09
B00268373	0.07
B00268374	0.07
B00268375	0.06
B00268376	0.08
B00268377	0.11
B00268378	0.09
B00268379	0.08
B00268380	<0.01
B00268381	0.09
B00268382	0.05
B00268383	0.23
B00268384	>4.00
B00268385	0.28
B00268386	0.19
B00268387	0.19
B00268388	0.10
B00268389	0.10
B00268390	0.04
B00268391	0.27
*Rep B00265191	0.13
*Rep B00265195	1.23
*Dup B00268352	0.13
*Rep B00268368	0.08
*Rep B00268379	0.08
*Std OREAS926	0.04

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Final : VC153827 Order: Ba results from VC153010

Report File No.: 0000014592

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.14
*Std OREAS131B	0.07
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153828
[Report File No.: 0000014593]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba and S results from VC153011
Project No.: KZK
Samples: 74
Received: Dec 15, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba and S results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153828 Order: Ba and S results from VC153011

Report File No.: 0000014593

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00268392	0.42	24.7
B00268393	0.85	0.6
B00268394	0.54	5.8
B00268395	0.06	39.8
B00268396	0.22	42.9
B00268397	<0.01	42.0
B00268398	0.01	39.6
B00268399	0.03	33.8
B00268400	<0.01	0.1
B00268401	0.01	37.9
B00268402	1.25	37.8
B00268403	0.31	1.1
B00268404	0.21	1.1
B00268405	0.15	0.6
B00268406	0.95	1.6
B00268407	0.54	2.4
B00268408	0.27	23.6
B00268409	0.18	23.7
B00268410	0.25	4.5
B00268411	0.13	8.9
B00268412	0.20	15.8
B00268413	0.09	30.4
B00268414	0.13	22.9
B00268415	0.13	1.1
B00268416	0.10	1.1
B00268417	0.11	0.8
B00268418	0.17	5.6
B00269325	0.05	0.6
B00269326	0.05	1.0
B00269327	0.05	0.4
B00269328	0.06	1.5
B00269329	0.05	1.4
B00269330	0.04	17.1
B00269331	0.12	0.5
B00269332	0.16	0.1
B00269333	0.17	0.2
B00269334	0.12	1.2
B00269335	0.18	<0.1
B00269336	0.18	<0.1
B00269337	0.19	0.8

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Final : VC153828 Order: Ba and S results from VC153011

Report File No.: 0000014593

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269338	0.16	0.2
B00269339	0.18	0.4
B00269340	<0.01	<0.1
B00269341	0.20	<0.1
B00269342	0.17	2.6
B00269343	0.15	1.3
B00269344	0.13	1.6
B00269345	0.06	2.7
B00269346	0.05	3.1
B00269347	0.06	3.5
B00269348	0.09	10.5
B00269349	0.26	3.8
B00269350	0.26	4.6
B00269351	0.21	4.8
B00269352	0.09	1.5
B00269353	0.07	6.8
B00269354	0.10	4.6
B00269355	0.27	3.5
B00269356	0.15	2.0
B00269357	0.13	5.1
B00269358	0.19	2.3
B00269359	0.10	18.4
B00269360	<0.01	<0.1
B00269361	0.18	2.7
B00269362	0.18	6.6
B00269363	0.17	3.3
B00269364	0.18	6.7
B00269365	0.17	2.1
B00269366	0.21	7.7
B00269367	0.25	2.1
B00269368	0.08	2.6
B00269369	0.05	1.8
B00269370	0.05	18.0
B00269371	0.09	2.3
*Rep B00268408	0.27	23.5
*Dup B00269332	0.16	0.1
*Rep B00269341	0.21	<0.1
*Rep B00269342	0.17	2.6
*Rep B00269361	0.18	2.8
*Dup B00269367	0.25	2.3

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Final : VC153828 Order: Ba and S results from VC153011

Report File No.: 0000014593

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
*Std OREAS134A	0.14	19.3
*Std OREAS134A	0.14	19.4
*Std OREAS146	1.32	<0.1
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis
Work Order : VC153829
[Report File No.: 0000014594]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba and S results from VC153012
Project No.: KZK
Samples: 63
Received: Dec 15, 2015
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
63	G_LOG02	Pre-preparation processing, sorting, logging, boxing
63	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba and S results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153829 Order: Ba and S results from VC153012

Report File No.: 0000014594

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269372	0.09	2.0
B00269373	0.05	2.8
B00269374	0.06	0.8
B00269375	0.06	10.8
B00269376	0.11	2.4
B00269377	0.06	1.3
B00269517	0.14	1.4
B00269518	0.12	2.6
B00269519	0.12	2.7
B00269520	<0.01	<0.1
B00269521	0.18	0.6
B00269522	0.17	1.0
B00269523	0.20	0.9
B00269524	0.17	3.8
B00269525	0.19	0.4
B00269526	0.42	0.2
B00269527	0.42	2.0
B00269528	0.56	1.7
B00269529	<0.01	33.6
B00269530	0.25	4.6
B00269531	0.13	8.9
B00269532	<0.01	40.4
B00269533	0.32	12.7
B00269534	0.02	41.2
B00269535	0.17	<0.1
B00269536	0.40	<0.1
B00269537	0.34	0.5
B00269538	0.34	0.5
B00269539	0.33	0.6
B00269540	<0.01	0.1
B00269541	0.36	0.9
B00269542	0.41	0.3
B00269543	0.39	1.9
B00269544	0.42	0.8
B00269545	0.45	1.3
B00269546	0.43	2.7
B00269547	0.61	3.6
B00269548	0.56	0.4
B00269549	0.49	0.3
B00269550	0.04	17.5

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Final : VC153829 Order: Ba and S results from VC153012

Report File No.: 0000014594

Element	Ba	S
Method	GO_ICP90Q	GO_ICP90Q
Det.Lim.	0.01	0.1
Units	%	%
B00269551	0.48	0.3
B00269552	0.24	5.6
B00269553	0.23	2.3
B00269554	0.30	1.2
B00269555	0.25	2.1
B00269556	0.23	0.9
B00269557	0.32	1.1
B00269558	0.25	1.6
B00269559	0.25	1.4
B00269560	<0.01	<0.1
B00269561	0.25	<0.1
B00269562	0.32	<0.1
B00269563	0.38	<0.1
B00269564	0.31	<0.1
B00269565	0.21	2.0
B00269566	0.20	4.7
B00269567	0.15	0.2
B00269568	0.16	0.3
B00269569	0.25	0.3
B00269570	0.05	17.7
B00269571	0.23	9.4
B00269572	0.34	6.2
B00269573	0.55	0.6
*Rep B00269520	<0.01	<0.1
*Dup B00269545	0.44	1.3
*Rep B00269563	0.38	<0.1
*Std OREAS131B	0.08	4.8
*Std OREAS134A	0.14	19.8
*Std OREAS146	1.27	<0.1
*Blk BLANK	<0.01	<0.1

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Certificate of Analysis

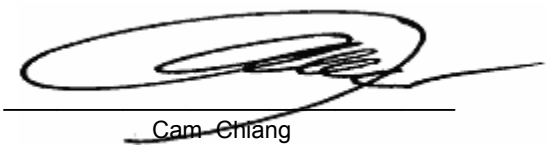
Work Order : VC153851

[Report File No.: 0000015130]

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

Date: Jan 07, 2016

P.O. No.	:	PO# BMC15-ME02 B00268158-268231
Project No.	:	KZK
No. Of Samples	:	16
Date Submitted	:	Dec 15, 2015
Report Comprises	:	Pages 1 to 2 (Inclusive of Cover Sheet)

Certified By : 

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the **@** symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153851 Order: PO# BMC15-ME02 B00268158-268231

Report File No.: 0000015130

Element	Sb	@As	@Bi	@Hg	@Se
Method	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B	GE_ICM14B
Det.Lim.	5	3	0.02	0.01	1
Units	ppm	ppm	ppm	ppm	ppm
B00268158	94	2490	34.4	27.3	242
B00268159	92	2620	43.1	8.22	292
B00268161	137	2230	35.4	8.18	192
B00268162	71	4940	43.0	5.28	235
B00268163	45	227	46.0	5.24	164
B00268164	197	696	28.6	22.0	164
B00268165	130	1250	65.5	21.9	511
B00268166	108	1110	48.1	33.3	322
B00268167	226	1030	30.3	31.1	247
B00268168	155	674	25.5	34.5	236
B00268169	161	648	5.35	51.5	150
B00268171	2960	4800	5.68	57.0	149
B00268172	14	109	1.53	1.71	18
B00268173	9	24	0.33	0.68	<1
B00268174	<5	39	0.37	0.28	<1
B00268175	<5	<3	0.25	0.09	<1
*Rep B00268171	2900	4720	5.68	57.1	142
*Std OREAS131B	36	N.A.	N.A.	N.A.	N.A.
*Std OREAS934	N.A.	N.A.	531	N.A.	76
*Std DS-1	N.A.	6720	N.A.	83.0	N.A.
*Blk BLANK	<5	<3	<0.02	<0.01	<1

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Certificate of Analysis
Work Order : VC153854
[Report File No.: 0000014595]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153089
Project No.: KZK
Samples: 74
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

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I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

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Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153854 Order: Ba results from VC153089

Report File No.: 0000014595

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00233101	0.38
B00233102	<0.01
B00233103	0.02
B00233104	0.12
B00233105	0.03
B00233106	0.05
B00233107	1.81
B00233108	0.56
B00233109	0.04
B00233110	0.26
B00233111	0.14
B00233112	0.02
B00233113	<0.01
B00233114	0.03
B00233115	0.08
B00233116	0.72
B00233117	0.33
B00233118	0.20
B00233119	0.15
B00233120	<0.01
B00233121	0.11
B00233122	0.11
B00233123	0.25
B00233124	0.27
B00233125	0.21
B00265202	0.27
B00265203	0.26
B00265204	0.27
B00265205	0.16
B00265206	0.09
B00265207	0.02
B00265208	<0.01
B00265209	0.04
B00265210	0.04
B00265211	0.04
B00265212	0.07
B00265213	0.04
B00265214	<0.01
B00265215	<0.01
B00265216	<0.01

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Final : VC153854 Order: Ba results from VC153089

Report File No.: 0000014595

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265217	<0.01
B00265218	<0.01
B00265219	<0.01
B00265220	<0.01
B00265221	<0.01
B00265222	0.05
B00265223	<0.01
B00265224	<0.01
B00265225	<0.01
B00265226	0.02
B00265227	0.21
B00265228	0.20
B00265229	0.21
B00265230	0.04
B00265231	0.23
B00265232	0.46
B00265233	0.68
B00265234	0.12
B00265235	0.29
B00265236	0.15
B00265237	0.43
B00265238	0.16
B00265239	0.22
B00265240	<0.01
B00265241	1.15
B00265242	0.07
B00265243	<0.01
B00265244	0.01
B00265245	0.15
B00265246	0.33
B00265247	2.12
B00265248	>4.00
B00265249	>4.00
B00265250	0.05
*Rep B00233112	0.02
*Rep B00265210	0.05
*Dup B00265211	0.05
*Rep B00265226	0.02
*Rep B00265237	0.43
*Dup B00265246	0.32

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Final : VC153854 Order: Ba results from VC153089

Report File No.: 0000014595

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS134A	0.14
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153855
[Report File No.: 0000014596]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153090
Project No.: KZK
Samples: 74
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153855 Order: Ba results from VC153090

Report File No.: 0000014596

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00265251	>4.00
B00265252	>4.00
B00265253	>4.00
B00265254	>4.00
B00265255	>4.00
B00265256	>4.00
B00265257	0.12
B00265258	0.05
B00265259	0.01
B00265260	<0.01
B00265261	0.01
B00265262	<0.01
B00265263	0.01
B00265264	0.16
B00265265	0.15
B00265266	0.15
B00265267	0.17
B00265268	0.10
B00265269	0.19
B00265270	0.04
B00265271	0.22
B00265272	0.31
B00265273	0.03
B00265274	<0.01
B00265275	<0.01
B00265276	<0.01
B00265277	0.26
B00265278	>4.00
B00265279	0.05
B00265280	<0.01
B00265281	0.15
B00265282	0.11
B00265283	0.07
B00268419	0.09
B00268420	<0.01
B00268421	0.09
B00268422	0.08
B00268423	0.06
B00268424	0.08
B00268425	0.07

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Final : VC153855 Order: Ba results from VC153090

Report File No.: 0000014596

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268426	0.11
B00268427	0.10
B00268428	0.08
B00268429	0.14
B00268430	0.04
B00268431	0.23
B00268432	0.28
B00268433	0.22
B00268434	0.36
B00268435	0.50
B00268436	0.60
B00268437	0.57
B00268438	0.61
B00268439	0.73
B00268440	<0.01
B00268441	0.38
B00268442	2.02
B00268443	0.42
B00268444	0.80
B00268445	0.13
B00268446	0.21
B00268447	0.30
B00268448	0.54
B00268449	1.46
B00268450	0.26
B00268451	0.13
B00268452	0.02
B00268453	0.57
B00268454	2.15
B00268455	3.00
B00268456	0.23
B00268457	0.57
B00268458	0.48
B00268459	0.06
*Rep B00265273	0.03
*Dup B00268419	0.08
*Rep B00268420	<0.01
*Rep B00268435	0.49
*Dup B00268453	0.60
*Std OREAS131B	0.08

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Final : VC153855 Order: Ba results from VC153090

Report File No.: 0000014596

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.14
*Std OREAS134A	0.14
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153856
[Report File No.: 0000014597]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153091
Project No.: KZK
Samples: 74
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153856 Order: Ba results from VC153091

Report File No.: 0000014597

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268460	<0.01
B00268461	0.09
B00268462	0.02
B00268463	0.01
B00268464	0.02
B00268465	0.01
B00268466	<0.01
B00268467	0.01
B00268468	<0.01
B00268469	<0.01
B00268470	0.26
B00268471	0.12
B00268472	<0.01
B00268473	<0.01
B00268474	0.23
B00268475	0.58
B00268476	0.28
B00268477	0.30
B00268478	0.06
B00268479	0.18
B00268480	<0.01
B00268481	0.06
B00268482	0.14
B00268483	<0.01
B00268484	0.31
B00268485	0.15
B00268486	0.11
B00268487	0.29
B00268488	0.33
B00268489	0.44
B00268490	0.25
B00268491	0.13
B00268492	0.08
B00268493	0.02
B00268494	0.04
B00268495	0.26
B00268496	0.30
B00268497	0.53
B00268498	0.05
B00268499	0.04

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Final : VC153856 Order: Ba results from VC153091

Report File No.: 0000014597

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00268500	<0.01
B00269378	0.14
B00269379	0.14
B00269380	<0.01
B00269381	0.15
B00269382	0.21
B00269383	0.23
B00269384	0.15
B00269385	0.28
B00269386	0.29
B00269387	0.06
B00269388	0.05
B00269389	0.02
B00269390	0.25
B00269391	0.13
B00269392	0.02
B00269393	0.15
B00269394	0.06
B00269395	0.09
B00269396	0.17
B00269397	0.06
B00269398	0.15
B00269399	0.11
B00269400	<0.01
B00269401	0.06
B00269402	0.15
B00269403	0.15
B00269404	0.14
B00269405	0.08
B00269406	0.19
B00269407	0.15
B00269408	0.21
B00269409	0.24
B00269410	0.04
*Rep B00268474	0.22
*Dup B00268493	0.02
*Rep B00268496	0.30
*Rep B00269387	0.06
*Dup B00269404	0.14
*Rep B00269410	0.04

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Final : VC153856 Order: Ba results from VC153091

Report File No.: 0000014597

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS134A	0.14
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153857
[Report File No.: 0000014598]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153093
Project No.: KZK
Samples: 74
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153857 Order: Ba results from VC153093

Report File No.: 0000014598

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269411	0.09
B00269412	0.15
B00269413	0.16
B00269414	0.16
B00269415	0.19
B00269416	0.19
B00269417	0.16
B00269418	0.08
B00269419	0.09
B00269420	<0.01
B00269421	0.05
B00269422	0.14
B00269423	0.13
B00269424	0.06
B00269425	0.05
B00269426	0.11
B00269427	0.05
B00269428	0.13
B00269429	0.14
B00269430	0.05
B00269431	0.12
B00269432	0.15
B00269433	0.24
B00269434	0.17
B00269435	0.13
B00269436	0.02
B00269437	0.02
B00269438	0.01
B00269439	0.06
B00269440	<0.01
B00269441	0.11
B00269442	0.04
B00269443	0.09
B00269444	0.11
B00269445	0.05
B00269446	0.03
B00269447	0.06
B00269448	0.08
B00269449	0.10
B00269450	0.05

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Final : VC153857 Order: Ba results from VC153093

Report File No.: 0000014598

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269451	0.11
B00269452	0.15
B00269574	0.38
B00269575	0.54
B00269576	0.44
B00269577	0.41
B00269578	0.38
B00269579	0.35
B00269580	<0.01
B00269581	0.66
B00269582	1.11
B00269583	0.05
B00269584	1.00
B00269585	>4.00
B00269586	>4.00
B00269587	>4.00
B00269588	0.06
B00269589	1.49
B00269590	0.26
B00269591	0.13
B00269592	>4.00
B00269593	2.95
B00269594	0.10
B00269595	0.68
B00269596	0.03
B00269597	0.01
B00269598	0.01
B00269599	3.62
B00269600	<0.01
B00269601	>4.00
B00269602	>4.00
B00269603	2.49
B00269604	0.55
B00269605	0.58
*Rep B00269421	0.05
*Dup B00269445	0.05
*Rep B00269447	0.06
*Rep B00269579	0.36
*Std OREAS131B	0.08
*Std OREAS134A	0.14

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Final : VC153857 Order: Ba results from VC153093

Report File No.: 0000014598

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153858
[Report File No.: 0000014599]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153094
Project No.: KZK
Samples: 74
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
74	G_LOG02	Pre-preparation processing, sorting, logging, boxing
74	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____

Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153858 Order: Ba results from VC153094

Report File No.: 0000014599

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269606	1.04
B00269607	0.58
B00269608	0.34
B00269609	0.30
B00269610	0.04
B00269611	0.58
B00269612	0.47
B00269613	0.31
B00269614	0.12
B00269615	0.01
B00269616	0.10
B00269617	0.11
B00269618	0.11
B00269619	0.35
B00269620	<0.01
B00269621	0.24
B00269622	0.08
B00269623	0.02
B00269624	<0.01
B00269625	<0.01
B00269626	0.06
B00269627	<0.01
B00269628	0.01
B00269629	<0.01
B00269630	0.26
B00269631	0.14
B00269632	0.01
B00269633	<0.01
B00269634	0.02
B00269635	1.25
B00269636	3.88
B00269637	0.63
B00269638	0.28
B00269639	0.32
B00269640	<0.01
B00269641	0.22
B00269642	0.19
B00269643	0.14
B00269644	0.21
B00269645	0.09

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Final : VC153858 Order: Ba results from VC153094

Report File No.: 0000014599

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269646	0.08
B00269647	0.10
B00269648	0.14
B00269649	0.07
B00269650	0.05
B00269651	0.14
B00269652	0.21
B00269653	0.27
B00269654	0.30
B00269655	0.15
B00269656	0.14
B00269657	0.31
B00269658	0.07
B00269659	0.21
B00269660	<0.01
B00269661	0.21
B00269662	0.11
B00269663	0.19
B00269664	0.22
B00269665	0.15
B00269666	<0.01
B00269667	0.09
B00269668	2.62
B00269669	0.97
B00269670	0.14
B00269671	0.26
B00269672	0.09
B00269673	0.03
B00269674	>4.00
B00269675	>4.00
B00269676	2.84
B00269677	1.61
B00269678	2.50
B00269679	0.18
*Rep B00269621	0.23
*Rep B00269630	0.25
*Dup B00269639	0.34
*Rep B00269666	0.01
*Dup B00269673	0.03
*Std OREAS131B	0.08

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Final : VC153858 Order: Ba results from VC153094

Report File No.: 0000014599

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Certificate of Analysis
Work Order : VC153859
[Report File No.: 0000014600]

Date: December 17, 2015

To: **ROBIN BLACK**
BMC MINERALS (NO 1) LTD
ROBIN BLACK
530-1130 WEST PENDER ST
VANCOUVER BC V6E 4A4

P.O. No.: Ba results from VC153095 and VC153379
Project No.: KZK
Samples: 86
Received: Dec 16, 2015
Pages: Page 1 to 4
(Inclusive of Cover Sheet)

Methods Summary

No. Of Samples	Method Code	Description
86	G_LOG02	Pre-preparation processing, sorting, logging, boxing
86	GO_ICP90Q	Sodium Peroxide fusion/ICP-AES, single element

Storage: Pulp & Reject

PULP STORAGE	:	STORE FOR 90 DAYS
REJECT STORAGE	:	STORE FOR 30 DAYS

Comments:

Ba results are informational only.

Certified By : _____
Cam Chiang
Assistant Operations Manager

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at http://www.scc.ca/en/search/palcan/sgs

Report Footer:

L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
-- = No result

*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. *NAA08V) were subcontracted

Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Final : VC153859 Order: Ba results from VC153095 and VC153379

Report File No.: 0000014600

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269680	<0.01
B00269681	0.07
B00269682	0.02
B00269683	0.03
B00269684	0.23
B00269685	0.24
B00269686	0.49
B00269687	0.41
B00269688	0.42
B00269689	0.44
B00269690	0.13
B00269691	0.25
B00269692	0.16
B00269693	<0.01
B00269694	0.19
B00269695	0.99
B00269696	0.72
B00269697	0.15
B00269698	0.64
B00269699	0.15
B00269700	<0.01
B00269701	0.11
B00269702	0.26
B00269703	0.55
B00269704	0.64
B00269705	1.01
B00269706	0.05
B00269707	<0.01
B00269708	<0.01
B00269709	<0.01
B00269710	<0.01
B00269711	0.04
B00269712	<0.01
B00269713	<0.01
B00269714	<0.01
B00269715	<0.01
B00269716	<0.01
B00269717	<0.01
B00269718	0.01
B00269719	<0.01

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Final : VC153859 Order: Ba results from VC153095 and VC153379

Report File No.: 0000014600

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00269720	<0.01
B00269721	0.02
B00269722	<0.01
B00269723	<0.01
B00269724	<0.01
B00269725	0.01
B00269726	0.03
B00269727	0.02
B00269728	<0.01
B00269729	<0.01
B00269730	0.04
B00269731	0.04
B00269732	0.02
B00269733	<0.01
B00269734	0.02
B00269735	<0.01
B00269736	<0.01
B00269737	0.09
B00269738	0.75
B00269739	0.17
B00269740	<0.01
B00269741	0.24
B00269742	0.65
B00269743	0.62
B00269744	0.28
B00269745	0.04
B00269746	0.04
B00269747	0.12
B00269748	0.05
B00269749	0.05
B00269750	0.13
B00269751	0.26
B00269752	0.46
B00269753	0.23
B00269754	0.13
B00264186	0.59
B00264187	0.12
B00264188	0.13
B00264189	0.52
B00264190	0.05

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Final : VC153859 Order: Ba results from VC153095 and VC153379

Report File No.: 0000014600

Element	Ba
Method	GO_ICP90Q
Det.Lim.	0.01
Units	%
B00264191	0.17
B00264192	0.21
B00264193	0.11
B00264194	0.12
B00264195	0.12
B00264196	0.11
*Rep B00269680	<0.01
*Rep B00269720	<0.01
*Rep B00269734	0.02
*Dup B00269747	0.13
*Rep B00269748	0.05
*Rep B00264187	0.12
*Std OREAS134A	0.14
*Std OREAS131B	0.08
*Std OREAS134A	0.14
*Std OREAS146	1.32
*Blk BLANK	<0.01
*Blk BLANK	<0.01

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Appendix O: QA/QC report

Review of QA/QC results for 2015 KZK Project

Release 1.0, January 22nd, 2016

Ron Voordouw

Equity Exploration Consultants Ltd.

SUMMARY

This technical document describes the quality assurance (QA) protocols used in collecting, sampling and analyzing drill core for the 2015 KZK Project, and summarizes the final, post re-assay, quality control (QC) results for certified reference materials (CRMs) and blanks. The aim of the 2015 QA/QC program was to ensure that geochemical sampling and assays met industry standards, and that the analytical results were sufficiently accurate and free of contamination to be included in a new resource estimate. Real-time monitoring of QA/QC by BMC, Equity and SGS led to mid-program modifications in QA (e.g. in the analysis of Pb and Ba) and several requests for re-assay, all of which were processed and passed QC prior to the writing of this report. Calculation of Z-scores for 363 CRM samples indicates negative analytical bias of -1 to -3% for Ag, Au and Cu, and positive bias of 1-2% for Pb and Zn. For blank materials, only two out of 1445 analyses (= 289 blank analyses each for Ag, Au, Cu, Pb, Zn) exceeded the threshold established to indicate contamination. A check assay program shows high correlation (≥0.980) between the original SGS and duplicate ALS analyses. Therefore, based on CRM, blank and check assay analyses, the 2015 KZK Project geochemical assay data appears to be sufficiently accurate and free of contamination to be included in the updated resource calculation.

KEYWORDS: KZK Project, QA/QC

INTRODUCTION

In January 2015, BMC Minerals (No. 1) Ltd. ("BMC") purchased the KZK Project from Teck Resources Ltd and subsequently embarked on a multi-faceted exploration and development program that included diamond drilling, geophysical surveys and historical drill core reclogging. Work focussed mostly on the ABM volcanogenic massive sulphide (VMS) deposit in addition to several ABM-proximal prospects and the GP4F VMS deposit, which lies 5 km southeast of ABM. The ABM deposit consists of polymetallic (Cu-Pb-Zn-Au-Ag) massive sulphide mineralization dominated by pyrite, sphalerite, pyrrhotite, galena and chalcopyrite.

The following sections describe the procedures used to sample and analyze drill core on the 2015 KZK Project, as well as the quality assurance and control (QA/QC) program that was used to monitor the accuracy and contamination of geochemical assays.

Sampling

The 2015 KZK resource drilling, exploration drilling and core re-logging programs collected 5603 samples for geochemical assay, comprising 4951 half-core samples, 289 blanks and 363 certified reference material (CRM) samples. All core samples were identified with a unique sample ID number and marked with sample tags in the core box. Core samples were taken from every mineralized intersection as well as for ~10 m into the immediate hanging wall and footwall host rock in order to characterize potential waste rock dilution. Primary core samples conformed to lithological boundaries where possible, with core loggers attempting to constrain alteration and mineralization features within the lithological boundaries as well. Sample lengths range from 0.10-3.6 m, with a median of 1.10 m and an average length of 1.16 m. Sample weights range from 0.22-8.15 kg with a median weight of 2.91 kg and average of 3.15 kg. Sample weights show a surprisingly poor correlation (ρ = 0.27) with sample length (Figure 1), most likely due to the range in rock density (2.5-4.7 g/cm^3) and the artificially long length of samples taken from intervals with significant core loss.

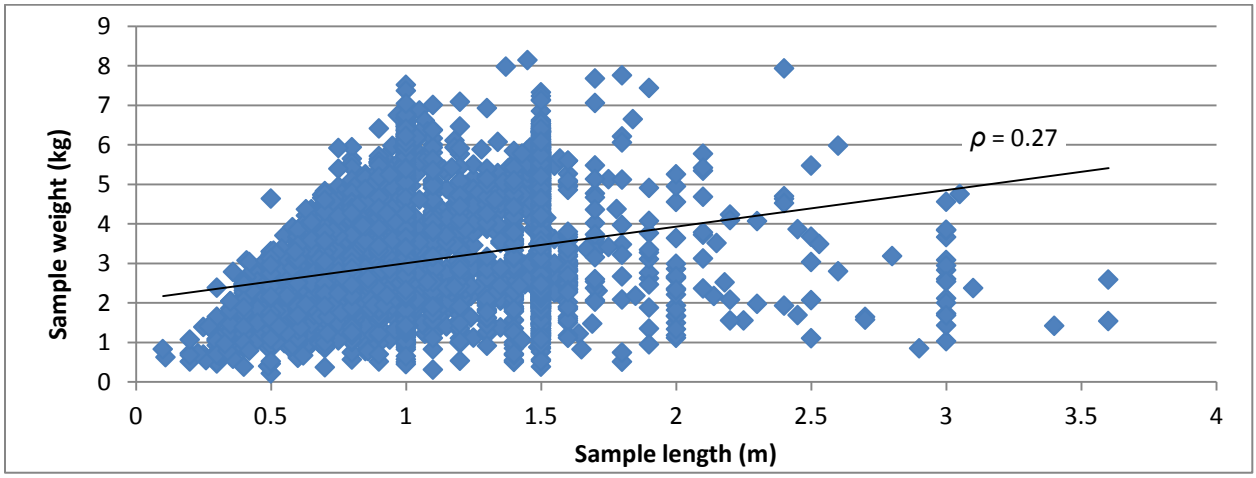

Figure 1: Length (m) against weight (kg) for all core samples collected as part of the 2015 sampling program.

Drill core samples were cut using an open circulation rock saw. Split core was consistently sampled from the same side and placed into labelled plastic sample bags that were sealed with a plastic zip tie and shipped in labelled rice bags sealed with individually numbered security tags. A list of required quartz washes was submitted to the analysis lab that would follow suspected high-grade samples in order to avoid contaminating adjacent lower grade samples. These quartz washes were completed at the crush and pulveriser stage of sample preparation.

Analytical methods

Drill core samples were sent to SGS Mineral Services Geochemistry Vancouver ("SGS Vancouver" or "SGS") for geochemical analysis of base (Cu, Pb, Zn) and precious (Ag, Au) metals for use in the resource calculation, as well as Fe and several other major and trace elements (As, Ba, Bi, Hg, S, Sb, Se). SGS Vancouver is an ISO 9001:2008 certified laboratory (accredited laboratory No. 744 – see Appendix N-A) that also conforms with the requirements of CAN-P-1579, CAN-P-1578 and CAN-P-4E (ISO/IEC 17025-2005) for the analytical methods used on the 2015 KZK Project (Table 1).

All core, CRM and blank samples submitted to SGS were analyzed for Ag, Au, Cu, Fe, Pb and Zn. Prior to analysis, samples were weighed, dried and crushed to 75% passing 2 mm, with a 250 g split pulverized to 85% passing 75 microns. Gold was analysed by 30 g fire assay with an AAS finish and silver analysed by ICP with an AAS finish on a two-gram 2-acid digest aliquot. Gold and silver over limits were triggered at Au >5 g/t and Ag >150 g/t respectively, resulting in re-analysis using a 30 g fire assay with gravimetric finish. Copper, lead, zinc and iron assays were done with sodium peroxide fusion and ICP-AES analysis. This fusion results in complete digestion of the sample and so provides a near total chemical analysis. However, the high Ba and S content of some samples promoted the precipitation $BaSO_4$ and, along with it, some of the Pb. As a result, a number of samples had to be re-analyzed for Pb at lower weight in order to prevent Ba precipitation.

Table 1: Analytical methods and range for precious and base metals analysed as part of 2015 KZK Project

Element	Analytical Method	SGS code	Analytical Range
Au	30 g fire assay/AAS finish	GE_FAA313	0.005-10 ppm
	Au over limit (>5 g/t): 30 g fire assay/gravimetric finish	GO_FAG303	0.5-3000 ppm
Ag	2 g 2-acid digest/ICP-AAS	GE_AAS12E	0.3-300 ppm
	Ag over limit (>150 ppm): 30 g fire assay/gravimetric finish	GO_FAG313	10-5000 ppm
Cu	Na peroxide fusion/ICP-AES	GO_ICP90Q	0.01-30%
Fe	Na peroxide fusion/ICP-AES	GO_ICP90Q	0.05-30%
Pb	Na peroxide fusion/ICP-AES	GO_ICP90Q	0.01-30%
Zn	Na peroxide fusion/ICP-AES	GO_ICP90Q	0.01-30%

Out of the 4951 core samples submitted for Ag-Au-Cu-Fe-Pb-Zn analysis, 3337 were also analyzed for Ba, 3286 for sulphur and 1129 for As-Bi-Hg-Sb-Se. However, no CRM were analyzed for elements besides base and precious metals. For As, Bi, Hg, S, Sb and Se the preparation methods were the same as those used for the base and precious metal assays, with analysis done by ICP-MS on a two-acid aqua regia digest of 3:1 HCl:HNO_3. For samples with relatively high Ba and S, a lower weight was used in order to prevent the precipitation of Pb along with $BaSO_4$. Samples with >5% Ba and low base metals were fused with pyrosulphate and analyzed by XRF.

QA/QC program

Quality assurance and control for Au, Ag, Cu, Fe, Pb and Zn assays was monitored through the insertion of Certified Reference Material (CRM) and blanks at alternating 20th sample intervals within the drill core sample sequence. The selection and insertion of low-, medium- or high-grade CRMs was matched to the visually estimated grade of surrounding mineralization. The selected CRM were manufactured from sulphide ore with a similar mineralogy to ABM and are generally certified for Cu, Pb, Zn and Fe at the percent level, as well as Au and Ag at the ppm level. On occasion, extra blanks were inserted after particularly high-grade samples.

Six different CRMs were utilised in the 2015 KZK Project (Table 2, Appendix N-B), with CND-ME-1311 used to match low-grade intervals, OREAS 621 and OREAS 623 used for medium grade and, lastly, OREAS 113, GBM310-16 and G312-4 used to match the highest grades. Back-to-back insertion of standards was done where intervals of moderate- to high-grade intervals were estimated as poly-metallic, Cu-rich (OREAS 113, G312-4) or Pb-rich (GBM310-16, G312-4) , respectively. A minimum weight of 100 g was used for CRM samples so that reanalyses could be completed if required. Each CRM sample is identified by its own unique sample number.

Table 2: Certified means and standard deviations (SD) for CRMs used in 2015 KZK Project

CRM Name	Threshold	Ag (ppm)		Au (ppm)		Cu (%)		Fe (%)		Pb (%)		Zn (%)	
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
CDN-ME-1311	Low-grade	44.9	1.1	0.839	0.033	0.468	0.011			0.303	0.006	1.12	0.02
OREAS 621	Medium-grade	69.0	6.7	1.250	0.042	0.368	0.017	3.71	0.11	1.33	0.06	5.22	0.22
OREAS 623	Medium-grade	22.7	3.5	0.827	0.039	1.73	0.09	13.45	0.38	0.247	0.010	1.03	0.04
OREAS 113	High-grade					13.3	0.5	28.0	2.1	0.025*	0.001*	0.4158	0.0196
GBM310-16	High-grade	314.3	14.9							11.26	0.50	17.02	0.68
G312-4	High-grade			5.30	0.22								

Notes: blank cells = not certified; *not used to monitor QA/QC on 2015 KZK Project

Blank material consisted of landscaping stone acquired from Premier Horticulture Ltd. in 18 kg bags. Ten of these blank samples were submitted to SGS on their own, to verify that the blank material does not contain any base or precious metals of interest (Table 3). Analytical results show that the 10 blank samples are below detection for Cu, Pb and Zn with one sample (B00265792) at the detection level for Ag and 0.001 ppm above the detection level for Au. Fe was slightly above the detection limit in two samples (B00265778, B00265794). The analytical results are considered acceptable for use of the landscaping stone as a blank material.

Table 3: Certified means and standard deviations (SD) for CRMs used in 2015 KZK Project

Sample ID	Ag (ppm)	Au (ppm)	Cu (%)	Fe (%)	Pb (%)	Zn (%)
B00265786	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265787	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265788	<0.3	<0.005	<0.01	0.1	<0.01	<0.01
B00265789	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265790	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265791	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265792	0.3	0.006	<0.01	<0.05	<0.01	<0.01
B00265793	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01
B00265794	<0.3	<0.005	<0.01	0.09	<0.01	<0.01
B00265795	<0.3	<0.005	<0.01	<0.05	<0.01	<0.01

Criteria for failure and re-assay

The three criteria used to flag CRM and blank samples as "QAQC failures" include:

(i) Any CRM sample with a Z-score >3 standard deviations (SD) from the mean ("3-SD failures");
(ii) Two consecutive, or two out of three consecutive, CRM samples with Z-scores between 2 and 3 SDs from the mean ("2-SD failures"); Z-scores must be of the same sign (i.e. positive or negative) and for the same element;
(iii) Any blank sample returning >10 times the analytical detection limit

When a CRM or blank exceeds one of the three failure thresholds defined above, a request for re-analysis also depends on whether it is associated with "mineralized" core samples or not. Minimum values used to define the boundary between "mineralized" and unmineralized" are in Table 1.

For failed CRMs and blanks, the "associated core samples" are the 10 sample numbers preceding the CRM/blank and the 10 sample numbers that follow it, meaning each CRM/blank is typically associated with 20 samples. A CRM/blank occurring near the beginning or end of a certificate may have a lower number of associated core samples whereas those occurring near a sequence-numbering switch may have a lower or higher number.

Table 4: Detection and mineralized limits for selected precious and base metals

Element	Detection limit (dl)	10x dl	"Mineralized"
Ag	0.3 g/t	3 g/t	20 g/t
Au	0.005 g/t	0.05 g/t	0.1 g/t
Cu	0.01%	0.10%	0.10%
Fe	0.05%	0.50%	n/a
Pb	0.01%	0.10%	0.50%
Zn	0.01%	0.10%	0.50%

Notes on finalized certificates

Several of the assay certificates finalized by SGS Vancouver were published as two or more versions differentiated from each other by a single letter suffix (Table 5). In general, those certificates that lack a suffix are either original base and precious (±Ba, S) assays, some of which were replaced by suffixed certificates and others that were not. Another set of certificates with no suffix contains only Ba ± S assays.

Certificates with the suffix "R" contain re-assays of base and precious metals that were requested by Equity, mostly to rectify the 3-SD failures. Those certificates with the suffix "U" contain re-assays of Pb that were triggered by SGS after they discovered that the presence of high Ba precipitates out some of the Pb. The suffix "A" refers to certificates with analytical results for As, Bi, Hg, Sb and Se. The "F" suffix marks a finalized integration of Ag-Au-Cu-Fe-Pb-Zn data that combined data from the original, "R" and/or "U" certificates.

Table 5: Summary of suffixes used on SGS Vancouver certificates

Suffix	Example	Description
None	VC151957	Original Ag, Au, Cu, Fe, Pb, Zn, ±Ba, ±S assays; or original Ba ± S assays
A	VC151957A	As, Bi, Hg, Sb, Se analyses
F	VC151957F	"Final" certificates comprising integrations of original, "R" and "U" certificates
R	VC151957R	Re-assays of Ag, Au, Cu, Pb and/or Zn requested by Equity
U	VC151957U	Re-assays of Pb initiated by SGS

REVIEW OF CERTIFICED REFERENCE MATERIALS (OR STANDARDS)

This section reviews the performance for each of the six certified reference materials (CRM or "standards") used on the 2015 KZK Project. A summary of standards analyzed and mean abundances for key elements is shown in Table 6 and their certificates are provided in Appendix N-B. Shewart charts for Au, Ag, Cu, Fe, Pb and Zn, along with blank charts, are shown in Appendix N-C. The total number of failures for each CRM are summarized in Table 7 and Appendix N-D.

Table 6: Mean values and % difference (relative to certified mean) for CRMs used in 2015 KZK Project

Standard	Description	N.o. Analyses	Ag (ppm)	Au (ppm)	Cu (%)	Fe (%)	Pb (%)	Zn (%)
CDN-ME-1311	Certified mean	171	44.9	0.839	0.468		0.303	1.12
	Measured mean		44.5	0.834	0.458		0.305	1.13
	% difference		-0.9%	-0.6%	-2.1%		0.8%	1.1%
OREAS 621	Certified mean	75	69	1.25	0.368	3.71	1.33	5.22
	Measured mean		69	1.25	0.365	3.79	1.36	5.28
	% difference		-0.5%	0.1%	-0.8%	2.3%	2.3%	1.2%
OREAS 623	Certified mean	70	22.7	0.827	1.73	13.45	0.247	1.03
	Measured mean		20.3	0.803	1.74	13.58	0.256	1.05
	% difference		-10.6%	-2.8%	0.7%	1.0%	3.7%	2.2%
OREAS 113	Certified mean	17			13.3	28.0		0.4158
	Measured mean				13.5	27.5		0.4229
	% difference				1.3%	-1.7%		1.7%
GBM310-16	Certified mean	18	314.3				11.26	17.02
	Measured mean		306.9				11.34	17.69
	% difference		-2.4%				0.7%	4.0%
G312-4 (FA)	Certified mean	12		5.30				
	Measured mean			5.32				
	% difference			0.4%				
G312-4 (GRA)	Certified mean	12		?				
	Measured mean			5.19				
	% difference			?				
Weighted average	% difference	363	-2.9%	-0.9%	-1.1%	1.3%	1.7%	1.5%

Table 7: Summary of 3-SD and 2-SD failures for all CRM used in 2015 KZK Project

CRM	N	Ag		Au		Cu		Pb		Zn		Total (N.o.)		Total (%)	
		3-SD	*2-SD*	*3-SD*	*2-SD*	*3-SD*	*2-SD*	*3-SD*	*2-SD*	*3-SD*	*2-SD*	*3-SD*	*2-SD*	*3-SD*	*2-SD*
CDN-ME-1311	171	4	3	2.5	1	1	2	4	1.5	6	4.5	17.5	12	2.0%	1.4%
OREAS 621	75	0	0	2	0	0	0	0	0	0	0	2	0	0.5%	0.0%
OREAS 623	70	0	0	4	0.5	0	0	0	0.5	0	0	4	1	1.1%	0.3%
OREAS 113	17	-	-	-	-	0	0	-	-	0	0	0	0	0.0%	0.0%
GBM310-16	18	0	1	-	-	-	-	0	0	0	0.5	0	1.5	0.0%	2.8%
G312-4 (FA)	12	-	-	0	0	-	-	-	-	-	-	0	0	0.0%	0.0%
G312-4 (GRA)	12	-	-	?	?	-	-	-	-	-	-	?	?	?	?
Total	**375**	**4**	**4**	**8.5**	**1.5**	**1**	**2**	**4**	**2**	**6**	**5**	**23.5**	**14.5**	**1.4%**	**0.9%**

Notes: "0" = no failure, "-" = CRM not certified; * = "half failures" are 2-SD failures where the two failed CRM are different types (e.g.. CDN-ME-1311 and OREAS 623).

CDN-ME-1311

This CRM is manufactured by CDN Resource Laboratories in Langley, BC, Canada, and consists of material from the Campo Morado VMS deposit in Mexico. It is certified for Ag, Au, Cu, Pb and Zn – but not for Fe – with mineralogy comprising pyrite, quartz, ankerite, sphalerite, chalcopyrite and galena, as well as trace tennanite-freibergite, arsenopyrite and pyrrhotite. Certified values are displayed in Tables 2. Pulp material is packaged in either 60 or 100 g paper envelopes that are individually vacuum-sealed and labelled with a sticker.

A total of 172 of these CRM are noted in the drill hole database and 171 analyses were returned from SGS Vancouver. The one missing standard (Q32320) appears to be a typo in the log for drill hole K94-008, and probably does not exist.

Mean concentrations of Ag, Au, Cu, Pb and Zn for all CDN-ME-1311 analyses done as part of the 2015 KZK Project lie within ±2.1% of the certified mean. The average bias for silver, gold and copper is negative and ranges from -0.6 to -2.1% whereas Pb and Zn show positive bias between +0.8 to +1.1%.

Twenty-nine and one-half quality control failures were recorded for CDN-ME-1311 comprising 17.5 3-SD failures and twelve 2-SD. The "half-failures" consist of 2-SD failures where only one of the two CRM is CDN-ME-1311 (i.e. and the second is one of the four other CRM) or where one of the CRMs is both a 2-SD and 3-SD failure. The combined 3-SD and 2-SD failure rate for CDN-ME-1311 is 3.4%, which is notably higher than the 0.5-1.4% recorded for other CRMs with >50 analyses. The most likely reason for the high failure rate of this CRM is that the ratio of certified standard deviation to mean – especially for Ag, Pb and Zn – is significantly lower for CDN-ME-1311 (1.8-2.5%) than it is for OREAS 621 (4.2-9.8%) and OREAS 623 (3.8-17.2%). The relatively narrow range of certified values for CDN-ME-1311 was therefore likely complicit in the higher number of failures.

Fifteen of the 3-SD failures and 0.5 of the 2-SD failures were re-assayed (Appendix N-D). The two-and-a-half 3-SD failures that were not re-assayed include failed Ag and Zn assays with no associated mineralized core samples, and a composite 3-SD/2-SD failure that also lacks associated mineralization. The re-assayed half 2-SD failure was requested prior to a procedural change that these failures would only be flagged for now, rather than re-assayed.

OREAS 621

OREAS 621 is manufactured by Ore Research & Exploration Pty Ltd of Bayswater North, Australia, ("Ore Research") and consist of zinc VMS ore from Gossan Hill, Western Australia, blended with barren rhyodacite that hosts and underlies the deposit. Certified elements include Ag, Au, Cu, Fe, Pb and Zn (Table 2). Ore mineralogy consists mostly of sphalerite and chalcopyrite with lesser amounts of galena, in addition to pyrite, pyrrhotite and magnetite. Pulp material is packaged in 60 g laminated foil packets with nitrogen flush to prevent oxidation, and so two packets were submitted for each OREAS 621 sample number in order to exceed the minimum 100 g threshold. The packets come pre-printed with the CRM label that can be removed with a solvent.

A total of seventy-five OREAS 621 standards occur in the drill hole database, all of which were assayed by SGS Vancouver. Mean concentrations of Ag, Au, Cu, Fe, Pb and Zn all lie within ±2.3% of the certified mean (Table 6). Silver and copper show a weak negative bias (-0.5 to -0.8%), gold is weakly positive to neutral (+0.1%) and Fe, Pb and Zn show positive bias of +1.2 to +2.3% (Table 6).

Only two QC failures were recorded for OREAS 621, with both comprising Au failures at the 3-SD level (Table 7). The total failure rate of 0.5% is the lowest for the three CRMs with >50 analyses, possibly because the standard deviation values for this CRM are high in relation to its certified mean.

Both of the 3-SD failures for gold were associated with mineralized core samples and rectified through re-assay. As such, all QAQC issues related to OREAS 621 have been resolved (Appendix N-D).

OREAS 623

OREAS 623 is also manufactured by Ore Research and, likewise, consists of zinc VMS ore from Gossan Hill that is blended with barren rhyodacite. Certified elements include Ag, Au, Cu, Fe, Pb and Zn (Table 2). Ore mineralogy consists mostly of sphalerite and chalcopyrite with lesser amounts of galena, in addition to pyrite, pyrrhotite and magnetite. Pulp material is provided in 60 g laminated foil packets with a nitrogen flush to prevent oxidation, and so,

once again, two packets were needed to exceed the minimum 100 g threshold. The packets come pre-printed with the CRM label that is removed with a solvent.

A total of 70 OREAS 623 standards were noted in the drill hole database and 70 analyses were returned from SGS Vancouver.

Mean and median abundances of Ag, Au, Cu, Fe, Pb and Zn for all OREAS 623 analyses done as part of the 2015 KZK Project lie within ±10.6% of the certified mean, reducing to ±3.7% when silver is excluded (Table 6). Silver and gold show negative bias of -10.6% and -2.8% respectively whereas assays of Cu, Fe, Pb and Zn returned an average positive bias ranging from 0.7-3.7%. For silver, the high ratio of certified standard deviation to mean (6.7:68.7 ppm) prevented QAQC failures even though the average CRM assay was 10.6% below the certified mean.

Five quality control failures were recorded for OREAS 623, four of which comprise 3-SD failures for gold and two half 2-SD failures where OREAS 623 failed together with CDN-ME-1311 for gold and Pb. The total failure rate of 1.4% is actually somewhat high given that most of these are for gold, which has a higher ratio of certified standard deviation to mean (4.9) than CDN-ME-1311 (4.0) and OREAS 621 (3.4). All four of the 3-SD failures for OREAS 623 were associated with mineralized core samples and therefore rectified with re-assay. The half 2-SD failure for gold was also rectified with re-assay whereas the half 2-SD failure for Pb was left as is (Appendix N-D).

OREAS 113

This CRM is also manufactured by Ore Research and, in North America, is distributed by Analytical Solutions Ltd of Toronto, Ontario, Canada. It is prepared from material derived from the Triton Copper Project in New South Wales, Australia. This deposit consists of massive pyrite and chalcopyrite breccias underlying oxide ores, with OREAS 113 prepared from the chalcopyrite breccia ore. Certified elements include Cu, Fe and Zn (Table 2). Pulp material is provided in 10 g heat-sealed foil packets that are nitrogen-flushed to remove oxygen. For the 2015 KZK Project, Analytical Solutions Ltd provided custom-sized 100 g packets.

Seventeen OREAS 113 standards were noted in the drill hole database and 17 were analysed by SGS Vancouver. Mean abundances of Cu, Fe and Zn all lie within ±1.7% of the certified mean (Table 6). Copper and zinc show a positive bias averaging between +1.3 to +1.7% whereas Fe shows negative bias averaging -1.7%. There were no failures for this CRM on the 2015 KZK Project.

GMB310-16

GBM310-16 was sourced from GeoStats Pty Ltd ("GeoStats") of O'Connor, Western Australia, and is prepared from zinc sulphide ore. Certified elements include Ag, Pb and Zn (Table 6). This CRM is generally available in 20 g heat-sealed plastic packets but were likewise provided in custom 100 g packets for the 2015 KZK Project.

A total of eighteen GBM310-16 standards were noted in the drill hole database and 18 analyses were returned from SGS Vancouver. Mean abundances of Ag, Pb and Zn all lie within ±4.0% of the certified mean (Table 6). Silver shows a negative average bias of -2.4% whereas Pb and Zn show positive bias that averages 0.7% (Pb) to 4.0% (Zn).

One-and-a-half quality control failures were recorded for GBM310-16, comprising a 2-SD failure for Ag (two consecutive GBM310-16) and another 2-SD failure for zinc (consecutive GBM310-16 and CDN-ME-1311). Neither of these failures were submitted for re-assay.

G312-4

This CRM is also manufactured by GeoStats and is prepared from Cu-Au sulphide ore. Certified elements consist only of gold for 50 g fire assay. GeoStats provided custom-sized 100 g to the 2015 KZK Project.

Twelve G312-4 standard are noted in the drill hole database and 24 assays were returned from SGS Vancouver, with twelve for the fire assay method and the same 12 samples also analyzed by the gravimetric technique. The mean gold abundance for the fire assay method is 5.32 g/t Au, which is just 0.4% higher than the certified mean. The gravimetric average is 5.19 g/t but this standard is not certified for this method. There were no 3-SD or 2-SD failures.

REVIEW OF BLANKS

Blank material used on the 2015 KZK Project comprised landscaping stone acquired from Premier Horticulture Ltd. ("Premier") in 18 kg bags. Two-hundred and eighty blank samples are recorded in the drill hole database whereas 289 analyses were assayed by SGS Vancouver. This discrepancy is due to batch of 10 blank samples that was sent to SGS Vancouver near the start of the 2015 KZK Project to assess the abundance of key elements within these blanks samples (Table 3), but which is not recorded in the drill hole database. An additional blank sample, Q311310_2, is recorded in the drill hole database but was never submitted to SGS, so it is most likely a data entry mistake. In consideration of this, all of the blanks sent to SGS Vancouver are accounted for.

The ten blank samples analyzed to assess the suitability of Premier landscaping stone as blank material all returned below detection for Cu, Pb and Zn with one sample (B00265792) at the detection limit (*dl*) for Ag and 0.001 ppm >*dl* for Au (Table 3). Fe was 0.04-0.05% above the detection limit in two samples (B00265778, B00265794). The analytical results were deemed acceptable for use of the Premier stone as a blank material.

On average, >80-90% of blank assays returned values for Ag, Au and Pb that were less than the detection limit (Table 8, Appendix N-C). Copper showed even less contamination, with only 2.1% of all blanks returning more than the *dl* of 0.01% Cu. Zinc and iron, on the other hand, recorded more contamination, with 27.7% and a remarkably high 71.3% of assays exceeding *dl* respectively. Maximum contamination levels of Zn were relatively low, however, with only one sample exceeding the failure threshold of 10 x *dl* (see below). The consistent Fe contamination is possibly related to the Fe-rich nature of most analyzed rocks. Whatever the case, the maximum levels of Fe contamination were insignificant compared to its abundance and irrelevant to the resource calculation.

Only five blank analyses were found to exceed the failure threshold of 10 x *dl*. Three of these analyses were for Fe and therefore required no follow-up work. The remaining two failures were for Ag (16.3 x *dl*) and Zn (12 x *dl*), both of which were associated with strongly mineralized core samples and so required no follow-up work.

Table 8: Summary statistics for blanks analyzed as part of 2015 KZK program

Statistic	Ag	Au	Cu	Fe	Pb	Zn
Detection limit	0.3 ppm	0.005 ppm	0.01%	0.05%	0.01%	0.01%
Mean (N = 289)	<dl	<dl	<dl	0.10%	<dl	0.012%
N.o. samples <*dl*	230	235	283	83	256	209
% of samples <*dl*	79.6%	81.3%	97.9%	28.7%	88.6%	72.3%
N.o. samples >10 x *dl*	1	0	0	3	0	1
% of samples >10 x *dl*	0.3%	0.0%	0.0%	1.0%	0.0%	0.3%
Maximum assay	4.9 ppm	0.029 ppm	0.03%	0.8%	0.06%	0.12%
Maximum assay/*dl*	16.3	5.8	3.0	16.0	6.0	12.0

CHECK ASSAYS

A check assay program was done by sending 150 half-core samples to ALS Minerals ("ALS") in North Vancouver, BC, Canada, for geochemical analysis of base (Cu, Pb, Zn) and precious (Ag, Au) metals, as well as Fe. The ALS lab in North Vancouver is an ISO 9001:2008 certified laboratory (accredited laboratory No. 579) that also conforms with the requirements of CAN-P-1579 and CAN-P-4E (ISO/IEC 17025-2005) for the analytical methods used (Table 9), which are analogous to those used by SGS Vancouver (Table 1).

All check assay pulp samples submitted to ALS were analyzed for Ag, Au, Cu, Fe, Pb and Zn. Gold was analysed by 30 g fire assay with an AAS finish and silver analysed by ICP with an AAS finish. The silver over limit analysis was triggered at Ag >100 g/t, resulting in re-analysis using a 30 g fire assay with gravimetric finish. Over limit analysis for Au was not requested. Copper, lead, zinc and iron assays were done with sodium peroxide fusion and ICP-AES analysis. This fusion results in complete digestion of the sample and so provides a near total chemical analysis.

Table 9: Analytical methods and range for precious and base metals analysed as part of 2015 KZK Project

Element	Analytical Method	ALS code	Analytical Range
Au	Au 30 g fire assay/AAS finish	Au-AA25	0.01-100 ppm
	Au over limit (>5 g/t): 30 g fire assay/gravimetric finish	Au-GRA21	0.05-1000 ppm
Ag	Ag by aqua regia digestion and AAS	Ag-AA45	0.2-100 ppm
	Ag over limit (>100 ppm): 30 g fire assay/gravimetric finish	Ag-GRA21	5-10000 ppm
Cu	Na peroxide fusion/ICP-AES	ME-ICP81	0.002-30%
Fe	Na peroxide fusion/ICP-AES	ME-ICP81	0.05-70%
Pb	Na peroxide fusion/ICP-AES	ME-ICP81	0.01-30%
Zn	Na peroxide fusion/ICP-AES	ME-ICP81	0.002-30%

Gold assays are, on average, 2.3% lower for the ALS check assays in comparison to the original SGS values (Table 10), which themselves were an average of -1.0% below the certified CRM values (Table 6). The Pearson correlation coefficient (ρ) for the two datasets is 0.980, which can be increased to ρ = 0.989 with removal of three outliers. Deleting these outliers also reduces the difference between ALS and SGS means to just 0.1%. Over limit assays for gold were not requested and would have been statistically irrelevant, since only one check assay returned >5 g/t Au.

Silver values determined by ALS are, on average, 2.5% lower than the SGS values, with a Pearson correlation coefficient (ρ) of 0.997 between the two data sets. Only 17 of the silver assays exceeded the over limit for both the SGS and ALS methods, with ALS assays an average of 2.0% lower than SGS and with ρ = 0.992. Like gold, the negative average bias for ALS check assays would be on top of the negative bias for SGS Ag assays indicated by the CRMs.

Copper assays are very similar for ALS and SGS assays, with the ALS check assays an average of 0.5% lower than SGS and with a perfect Pearson correlation coefficient between the two datasets of ρ = 1.000.

Iron values are an average of 2.1% lower for the ALS check assays relative to the original SGS values. This negative bias is in contrast to the 1.3% positive bias calculated for the SGS analyses relative to certified reference materials, suggesting that ALS and SGS assays show broadly similar accuracy for Fe. This is consistent with the very high Pearson correlation coefficient (ρ = 0.999) for the two datasets.

The Pb check assays are an average of 3.9% higher than the original SGS assays. This is somewhat contrary to expectation, given that SGS modified their analytical method to adjust for the Pb loss in Ba-rich samples due to the precipitation of $BaSO_4$. Unfortunately there is no Ba data for any of the 150 samples submitted for check assay. The positive check assay bias is on top of the positive bias recorded for SGS assays relative to CRM, suggesting that the SGS assays are more accurate than the ALS check assays. The Pearson correlation coefficient (ρ = 0.989) is somewhat lower than the other elements, possibly because of the Ba interference effects described earlier.

Table 10: Selected statistics for SGS original assays and ALS check assays

Analysis	ALS - Au	SGS - Au	ALS - Ag	SGS - Ag	ALS - Ag ol	SGS - Ag ol	ALS - Cu	SGS - Cu	ALS - Fe	SGS - Fe	ALS - Pb	SGS - Pb	ALS - Zn	SGS - Zn
Unit	ppb	ppb	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%
N.o. samples	150	150	117	117	17	17	150	150	150	150	150	150	150	150
Mean	481	492	18.4	18.9	253	258	0.326	0.327	13.17	13.45	0.710	0.683	2.47	2.50
Mean bias (%)	-2.3%		-2.5%		-2.0%		-0.5%		-2.1%		3.9%		-1.3%	
Median	60	67	4.0	4.2	207	214	0.065	0.070	6.085	6.395	0.13	0.14	0.55	0.58
Median bias (%)	-9.8%		-4.8%		-3.3%		-7.1%		-4.8%		-7.1%		-3.9%	
Min	5	3	0.2	0.2	144	124	0.001	0.005	0.88	0.87	0.01	0.01	0.00	0.01
Max	6180	6540	97.1	110.0	790	859	5.57	5.49	44.30	42.70	5.12	5.22	13.35	14.20
Range	6175	6538	96.9	109.9	646	735	5.569	5.485	43.42	41.83	5.12	5.22	13.35	14.20
Standard dev	830	898	26.0	26.6	149	166	0.665	0.666	12.67	13.00	1.09	1.01	3.33	3.40
R2 value	0.960		0.994		0.984		0.999		0.998		0.977		0.998	
Pearson correl	0.980		0.997		0.992		1.000		0.999		0.989		0.999	

ol = over limit for Ag (>100 ppm for ALS, >150 ppm for SGS)

Check assays for Zn are an average of 1.3% lower than the original SGS assays, which in turn were an average of 1.5% higher than the CRM. So it follows that the ALS check assays are likely somewhat more accurate than the original SGS assays. The Pearson correlation coefficient for the two datasets is very high ($\rho = 0.999$).

DISCUSSION AND CONCLUSIONS

The quality assurance (QA) protocols used as part of the 2015 KZK geochemical assay program followed industry standard by inserting a minimum of 10% QA/QC samples within the core sample stream. This 10% includes all CRMs, blanks and check assays. It does not include the CRMs and blanks inserted by SGS Vancouver nor the duplicate analyses they completed on selected core pulps. Both the SGS and ALS lab facilities are ISO 9001:2008 certified for the analytical methods used on the 2015 KZK Project.

Quality control of CRM and blank analyses was monitored in as close to real-time as possible. CRMs that assayed more than three standard deviations (or Z-scores) away from the certified mean (i.e. "3-SD" failure) were submitted for re-assay if they were associated with mineralized core samples. These re-assays were completed prior to the writing of this report. The 2-SD failures were generally not submitted for re-assay. Only five blank analyses exceeded the failure threshold of ten times the detection limit, with each case associated with strongly mineralized core samples that rendered the magnitude of contamination negligible. As a result, QC monitoring of the 2015 KZK assay results has resolved all relevant 3-SD failures and determined that contamination levels are negligible. The bulk of 2-SD failures remain in the dataset as their related core assays were deemed suitable for inclusion in the resource estimate.

Gold assays of CRM returned an average of value -0.9% lower than the certified mean, which corresponds to an error of 10-15 ppb Au (or 0.01-0.015 g/t) at typical ABM resource grades of 1.0-1.5 g/t Au (Green, 2015) . A total of eight-and-a-half 3-SD failures and one-and-a-half 2-SD failures were recorded, for 10 failures in total. Nine of these were resolved through re-assay whereas the one remaining 2-SD failure was determined to require no follow-up work. There were no blank failures. The ALS check results show a reasonable correlation with SGS data ($\rho = 0.989$) and additional negative bias relative to SGS samples that averages -2.3%. When compared with the already negative bias of SGS relative to CRM, the check assay results suggest that the SGS analyses are more accurate than those done by ALS.

Silver assays of CRM showed an average analytical bias -2.9%, equating to an error of ~4 g/t at typically ABM resource grades of 140 g/t Ag (Green, 2015). An exceptionally high bias of -10.6% was recorded for OREAS 623 and is likely a function of its low certified grade (22.7 ppm) and the relatively high detection limit for the analytical method employed (0.3 ppm). A total of four 3-SD and four 2-SD failures were recorded for all CRM analyses of silver, with three of the 3-SD failures resolved through re-assay. The fourth 3-SD failure was not re-assayed due to lack of associated mineralization whereas the 2-SD failures were left as is. A single blank failure was also not re-assayed since it was associated with mineralized core that rendered contamination levels negligible. Check assay results shows a strong correlation between ALS and SGS datasets ($\rho = 0.997$) and additional negative bias for check assays averaging -2.5% for AAS analysis and -2.0% for gravimetric. Given that the SGS assays already showed an average -2.9% negative bias relative to the CRM, these check assay results again suggest that the SGS data is more accurate than the ALS check assays.

Copper assays of CRM returned an average analytical bias of -1.1%, as well as one 3-SD failure and two 2-SD failures. Analytical bias equates to an error of 90 ppm (or 0.009%) on typical ABM resource grades of 0.9% Cu (Green, 2015). The 3-SD failure was subsequently resolved through re-assay whereas both 2-SD failures were left as is. There were no blank failures. Check assay results showed an additional negative bias of ALS relative to SGS assays that averages -0.5%, as well as a perfect Pearson correlation coefficient of 1.000. These results indicate that the ALS and SGS data-sets are essentially identical and therefore of comparable accuracy.

Iron analyses of CRM returned an average bias of +1.3%, which is similar to the base and precious metals tracked as part of this program. CRM failures were not tracked for Fe, since this element was not included in the resource, and there were three blank failures that were also not followed up for the same reason. Check assay results showed an average negative bias of -2.1%, suggesting that the ALS check assays for Fe are of broadly similar accuracy to, or possibly slightly more accurate than, the SGS assays.

Pb assays of standards were an average of +1.7% higher than the certified mean, which equates to an error of 0.027% (or 270 ppm) for typical ABM resource grades of ~1.5% Pb (Green, 2015). A total of four 3-SD and two 2-SD failures were recorded. All four of the 3-SD failures were rectified through re-assay whereas the two 2-SD failures were left as is. There were no blank failures. Check assay results showed an average positive bias of 3.9% for ALS analyses relative to SGS that, when considered on top of the +1.8% for SGS assays relative to CRM, suggests the SGS analyses are more accurate than the ALS check assays. The better accuracy for SGS analyses is possibly related to their modification of the analytical method for Pb, which they found was being complicated through the high barium and sulphur contents of the samples.

Zn in CRM assayed an average of +1.5% higher than the certified mean, corresponding to an error of 0.08-0.09% (800-900 ppm) at typical ABM resource grades of 5.5-6.0% Zn (Green, 2015). A total of six 3-SD and five 2-SD failures were recorded. Five of the 3-SD failures were rectified through re-assay with the sixth left as is because it was not associated with mineralized core samples. Only one of the 2-SD failures was rectified through re-assay and the remaining four were left as is. A single blank failure was associated with strongly mineralized core samples and was therefore not re-assayed. Check assay results showed a negative bias averaging -1.3% of ALS relative to SGS assays, which appears to counterbalance the +1.5% positive bias recorded for SGS assays relative to certified means of CRM. These results suggest that the ALS check assay data for Zn are more accurate than the SGS assays.

In summary, the analytical biases quantified through the analyses of certified reference materials and check assays indicates that the Au, Ag, Cu, Pb and Zn assays are sufficiently accurate. Analytical results for blank samples indicate that analyses are free of contamination. For these reasons, assay data for Au, Ag, Cu, Pb and Zn is of sufficiently high quality for use in resource estimation.

REFERENCES

Green, A., 2015, Mineral Resource Estimate, ABM Polymetallic Deposit, Yukon Territory, Canada, p. 344.

Appendix N-A:
Lab Certification Forms

Standards Council of Canada

600-55 Metcalfe Street
Ottawa, ON K1P 6L5
Canada

Conseil canadien des normes

55, rue Metcalfe, bureau 600
Ottawa, ON K1P 6L5
Canada

SCOPE OF ACCREDITATION

SGS Canada Inc.
SGS CANADA MINERALS SERVICES BURNABY
3260 Production Way Suite E
Burnaby, BC
V5A4W4

Accredited Laboratory No. 744
(Conforms with requirements of CAN-P-1579 , CAN-P-1587 , CAN-P-4E (ISO/IEC 17025:2005))

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CLIENTS SERVED: Mining, Exploration, Research and Industrial Clients - Worldwide

FIELDS OF TESTING: Chemical/Physical

PROGRAM SPECIALTY AREA: Agriculture Inputs, Food, Animal Health and Plant Protection (PSA-AFAP) , Mineral Analysis

SCOPE ISSUED ON: 2015-08-26

ACCREDITATION VALID TO: 2016-04-05

CHEMICALS AND CHEMICAL PRODUCTS

Chemicals for Agricultural Industry:

SPPA Potassium in Fertilizers	SPPA: Saskatchewan Potash Producers Association, Inc. (SPPA) Sample Preparation Procedures Standard Analytical Procedures & Standard Physical Testing Procedures For The Analysis of Potassium (K2O) and

	Sodium Chloride (NaCl) in Potassium Chloride & other Fertilizers [K2O; NaCl; KCL]

METALLIC ORES AND PRODUCTS

Metallic Ores:

Rocks and Ores

(Sediments, sands, soils, stones
Precious Metals)

Mineral Analysis Testing
(see Note 1 concerning off site physical sample preparation)

Assay, Umpire Assay Work

Mineral Assaying

GE_AAS12E	Determination of Silver in Geological Samples by Nitric and Hydrochloric Acid (aqua regia) Digestion and Atomic-Absorption Spectroscopy (AAS) [Ag;HCl; HNO_3]
GE_AAS42E	Determination of Silver in Geological Samples by Multi-acid Digestion and Atomic-Absorption Spectroscopy (AAS) [Ag; HNO_3; $HClO_4$; HF and HCl]
GE_CSA06V	Determination of Total Sulphur and Carbon in Geological Samples Using Infrared (IR) Combustion [S; C; LECO]
GE_FAA313-FAA515	The Determination of Exploration Grade Gold by Lead Fusion Fire Assay and Atomic Absorption Finish [30g.; 50g.; Au; HNO_3, HCl, AAS]
GE_FAI313-FAI515	Determination of Gold, Platinum and Palladium by Lead Fusion Fire Assay and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) [Au; Pt; Pd; HNO_3; HCl]
GE_ICM14B	Determination of Fifty two (52) Elements in Geological Samples using an Aqua Regia Digestion and a Combination of Inductively Coupled Plasma Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [HNO_3; HCl; Al; Sb; As; Ba; Be; Bi; B; Ca; Cd; Ce; Cs; Cr; Co; Cu; Ga; Ge; Hf; In; Fe; La; Pb; Li; Lu; Mg; Mn; Hg; Mo; Ni; Nb; P; K; Rb; Sc; Se; Ag; Na; Sr; S; Ta; Te; Tb; Tl; Th; Sn; Ti; U; V; W; Y; Yb, Zn; Zr]

GE_ICM40B	Determination of Forty Nine (49) Elements in Geological Samples using Multi-acid digestion and a Combination of Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [HCl; HNO_3; HF; $HClO_4$; Ag; Al; As; Ba; Be; Bi; Cd; Ca; Ce; Cs; Cr; Co; Cu; Ga; Hf; In; Fe; K; La; Li; Lu; Mg; Mn; Mo; Ni; Nb; P; Pb; Rb; Sb; Sc; Se; Na; Sr; S; Ta; Te; Tb; Tl; Th; Sn; Ti; W; U; V; Yb; Y; Zn; Zr]
GE_ICM90A	Determination of Fifty-five (55) Elements in Geological Samples using Sodium Peroxide Fusion and a Combination of Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) [Na_2O_2; HNO_3; $C_4H_6O_3$; Ag, Al; As; Ba; Be; Bi; Ca; Cd; Ce; Co; Cr; Cs; Cu; Dy; Er; Eu; Fe; Ga; Gd; Ge; Hf; Ho; In; K; La; Li; Lu; Mg; Mn; Mo; Nb; Nd; Ni; P; Pb; Pr; Rb; Sb; Sc; Sm; Sn; Sr; Ta; Tb; Th; Tl; Ti; Tm; U; V; W; Y; Yb, Zn; Zr]
GE_ICP14B	Determination of Thirty-Four (34) Elements in Geological Samples using Aqua Regia Digestion and Inductively Coupled Plasma Emission Spectrometry [Ag; Al; As; Ba; Be; Bi; Ca; Cd; Cr; Co; Cu; Fe; Hg; K; La; Li; Mg; Mn; Mo; Na; Ni; P; Pb; S; Sb; Sc; Sn; Sr; Ti; V; W; Y; Zn; Zr; HCl; HNO_3]
GE_ICP40B	Determination of Thirty Two (33) Elements in Geological Samples using Multi-Acid Digestion and Inductively Coupled Plasma Emission Spectrometry (ICP-OES) [HCl; HNO_3; HF; $HClO_4$; Ag; Al; As; Ba; Be; Bi; Cd; Ca; Cr; Co; Cu; Fe; K; La; Li; Mg; Mn; Mo; Na; Ni; P; Pb; S; Sb; Sc; Sn; Sr; Ti; W; V; Y; Zn; Zr]
GO_FAG303-FAG505	Determination of Ore Grade Gold by Lead Fusion Fire Assay and Gravimetric Finish [30g.; 50g.; Au; HNO_3; NH_4OH]
GO_ICP90Q	Determination of Six (6) Elements in Mineralized Geological Samples (Ore Grade) using Sodium Peroxide Fusion and Inductively Coupled Plasma Emission Spectrometry (ICP-OES) [Na_2O_2; HNO_3; $C_4H_6O_6$; Co; Cu; Pb; Mo; Ni; Zn]
GT GC_GO_XRF76V	Preparation and Determination of Major Element Oxides, LOI by Borate Fusion and Xray Fluorescence Spectrometry [SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, P_2O_5, MnO, TiO_2, Cr_2O_3; V_2O_5; LOI; XRF]

Notes:

The physical sample preparation involving accredited test methods for Minerals Analysis as listed on the scope of accreditation may be performed at SGS Canada Minerals Services - Burnaby, or at off-site

sample preparation locations (Garson, Ontario) that are monitored regularly for quality control and quality assurance practices.

CAN-P-4E (ISO/IEC 17025): General Requirements for the Competence of Testing and Calibration Laboratories (ISO/IEC 17025-2005)
CAN-P-1579:2014: Requirements for the Accreditation of Mineral Analysis Testing Laboratories
CAN-P-1587: Requirements - Accreditation of Agriculture Inputs, Food, Animal Health and Plant Protection Testing Laboratories

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Chantal Guay, ing., P. Eng.
Vice President, Accreditation Services

Date: 2015-08-26

Number of Scope Listings: 14
SCC 1003-15/919
Partner File #0
Partner:

Standards Council of Canada
Conseil canadien des normes
200-270, rue Albert St.
Ottawa, ON (Canada)
K1P 6N7
Canada
Tel.: +1 613 238 3222
Fax.: +1 613 569 7808
E-mail/Courriel : info@scc.ca
Internet: http://www.scc.ca

SCOPE OF ACCREDITATION

ALS Limited
ALS MINERALS
2103 Dollarton Hwy
North Vancouver, BC
V7H 0A7

Accredited Laboratory No. 579
(Conforms with requirements of CAN-P-1579 , CAN-P-4E (ISO/IEC 17025:2005))

CONTACT:	Ms. Erin Miller
TEL:	+1 604 984 0221
FAX:	+1 604 984 0218
EMAIL:	erin.miller@alsglobal.com
URL:	www.alsglobal.com
CLIENTS SERVED:	Mining, Exploration and other interested parties
FIELDS OF TESTING:	Chemical/Physical
PROGRAM SPECIALTY AREA:	Mineral Analysis
ISSUED ON:	2014-12-17
VALID TO:	2017-05-18

The physical sample preparation involving accredited test method for Minerals Analysis as listed on the Scope of Accreditation may be performed at the ALS Minerals North Vancouver location or at off-site sample preparation laboratories that are monitored regularly for quality control and quality assurance practices:

ALS Minerals - Unit 150 - 2155 Dollarton Hwy, North Vancouver, BC V7H 2B2 Canada
ALS Minerals - 2912 Molitor Street, Terrace, British Columbia V8G 3A4 Canada
ALS Minerals - 3 Coronation Drive, PO Box 1919, Yellowknife, NWT X1A 2P4 Canada
ALS Minerals - 78 Mt. Sima Rd Whitehorse, YK Y1A 0A8 Canada
ALS Minerals - 2953 Shuswap Drive, Kamloops, BC V2H 1S9 Canada
ALS Minerals - Jazmin 1140, e/R, Michel y Amapola, Sector Reforma Colonia San Carlos, Guadalajara, Jalisco 44460 Mexico
ALS Minerals Magnolia #16, Esq. Laurles Col. Libertad, Hermosillo, Sonora 83130 Mexico
ALS Minerals - Avenida de las Industrias No 6500, Col. Zona Industrial Nombre de Dios, Chihuahua, Chihuahua 31156 Mexico

ALS Minerals - Transito Pesado S/n, Bodega 100, 200, 300 y 400, Frente a Central Camionera, Col. Lomas de la Isabelica, Zacatecas, Zacatecas 98099 Mexico

METALLIC ORES AND PRODUCTS

Mineral Analysis Testing

Mineral Assaying

AA45	Ag, Cu, Pb and Zn - Determination of Base Metals Using AAS Following an Aqua Regia Digestion
AA46	Ag, Cu, Pb, Zn and Mo - Determination of Ores and High Grade Materials Using AAS Following an Aqua Regia Digestion
AA61	Ag, Co, Cu, Ni, Pb and Zn - Determination of Base Metals Using AAS Following a Four Acid Digestion
AA62	Ag, Co, Cu, Mo, Ni, Pb and Zn - Determination of Ores and High Grade Materials Using AAS Following a Four Acid Digestion
Au/Ag-GRA	Determination of Au and Ag by Lead Collection Fire Assay and Gravimetric Finish
Au-AA	Determination of Au by Lead Collection Fire Assay and Atomic Absorption Spectrometry
C-IR07	C - Determination of Total C by Leco Furnace and Infrared Spectroscopy.
ICP81	Al, Co, Cu, Fe, Mg, Mn, Ni, Pb, S, and Zn by Sodium Peroxide Fusion and ICP-AES
ME-ICP06	SiO_2, Al_2O_3, Fe_2O_3, CaO, MgO, Na_2O, K_2O, Cr_2O_3, TiO_2, MnO, P_2O_5, SrO, BaO, Total - Determination of Major Oxides by Lithium Metaborate/Lithium Tetraborate Fusion and ICP-AES.
ME-ICP41	Multi-Element (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Ti, Tl, U, V, W, Zn) Determination by Aqua Regia Digestion and ICP-AES.
ME-ICP41a	Multi-Element (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Hf, Hg, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, S, Sb, Sc, Se, Si, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn) Determination of Low Grade Ores by Aqua Regia Digestion and ICP-AES.
ME-ICP61	Multi-Element (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, S, Sb, Sc, Se, Si, Sn, Sr, Ta, Te, Ti, Tl, U, V, W, Y, Zn, Zr) Determination by 4-Acid Digestion and ICP-AES
ME-ICP61a	Multi-Element (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Hf, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr Determination of Low Grade Ores by

	Four-Acid Digestion and ICP-AES.
ME-MS41	Multi-Element (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr) Determination by Aqua Regia Digestion and ICP-AES and ICP-MS.
ME-MS61	Multi-Element (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Si, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, Zr) Determination by 4 Acid Digestion and ICP-AES and ICP-MS.
ME-MS81	Ba, Ce, Cr, Cs, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Rb, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, V, W, Y, Yb, Zr Determination of Rare Earth Elements by Lithium Borate Fusion and ICP-MS.
ME-XRF06	SiO_2, Al_2O_3, Fe_2O_3, CaO, MgO, Na_2O, K_2O, Cr_2O_3, TiO_2, MnO, P_2O_5, SrO, BaO, Total Determination of Major Oxides by Lithium Metaborate/Lithium Tetraborate Fusion and XRF.
ME-XRF26	SiO_2, Al_2O_3, Fe_2O_3, CaO, MgO, Na_2O, K_2O, Cr_2O_3, TiO_2, MnO, P_2O_5, SrO, BaO, Total Determination of Major Oxides by Lithium Metaborate/Lithium Tetraborate Fusion and XRF.
OA-GRA05	LOI Loss on Ignition
OA-GRA05x	LOI Loss on Ignition.
OA-GRA06	LOI Loss on Ignition.
OA-VOL08	Fizz Rating, NP, MPA, NNP, Ratio (NP:MPA) Acid Base Accounting.
OG46	Ag, Cu, Mo, Pb and Zn - Determination of Ores and High Grade Material Using ICP-AES Following an Aqua Regia Digestion
OG62	Ag, Cu, Co, Mo, Ni, Pb and Zn-Determination of Ores and High Grade Material Using ICP-AES Following a Four-Acid Digestion
PGM-ICP	Determination of Au, Pt and Pd by Lead Collection Fire Assay and ICP-AES
S-IR08	S Determination of Total S by Leco Furnace and Infrared Spectroscopy.

Notes:

CAN-P-1579: Requirements for the Accreditation of Mineral Analysis Testing Laboratories
CAN-P-4E (ISO/IEC 17025): General Requirements for the Competence of Testing and Calibration Laboratories (ISO/IEC 17025-2005)

Chantal Guay, ing., P. Eng.
Vice President, Accreditation

Services

Date: 2014-12-17

Number of Scope Listings: 26
SCC 1003-15/722
Partner File #0
Partner: SCC

Appendix N-B:

CRM certificates

CDN Resource Laboratories Ltd.

#2, 20148 – 102nd Ave, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

REFERENCE MATERIAL: CDN-ME-1311

Recommended values and the "Between Lab" Two Standard Deviations

Gold	***0.839 g/t ± 0.066 g/t***	***Certified value***
Silver	***44.9 g/t ± 2.2 g/t***	***Certified value***
Copper	***0.468 % ± 0.022 %***	***Certified value***
Lead	***0.303 % ± 0.012 %***	***Certified value***
Zinc	***1.12 % ± 0.04 %***	***Certified value***

Note: Standards with an RSD of near or less than 5% are certified; RSD's of between 5% and 15% are Provisional; RSD's over 15% are Indicated. Provisional and Indicated values cannot be used to monitor accuracy with a high degree of certainty.

PREPARED BY: CDN Resource Laboratories Ltd.
CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia
INDEPENDENT GEOCHEMIST: Dr. Barry Smee., Ph.D., P. Geo.
DATE OF CERTIFICATION: March 20, 2014

METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone mixer. Splits were taken and sent to 15 laboratories for round robin assaying.

ORIGIN OF REFERENCE MATERIAL:

The ore was supplied by Farallon Resources from their Campo Morado property in Mexico. The Campo Morado precious-metal-bearing, volcanogenic massive sulphide deposits occur in a lower Cretaceous bimodal, calc-alkaline volcanic sequence. Most deposits occur in the upper part of a sequence of felsic flows and heterolithic volcanoclastic rocks or at its contact with overlying chert and argillite. Gold, silver, zinc, and lead are associated with pyrite, quartz, ankerite, sphalerite, chalcopyrite and galena, with minor tennanite-freibergite, arsenopyrite, and pyrrhotite.

Approximate chemical composition (from whole rock analysis) is as follows:

	Percent			Percent
SiO2	36.2		MgO	2.0
Al2O3	4.8		K2O	0.7
Fe2O3	28.4		TiO2	0.2
CaO	2.6		LOI	22.4
Na2O	0.1		S	17.5
C	1.3			

Statistical Procedures:

The final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was removed from further calculations when the mean of all analyses from that laboratory failed a t test of the global means of the other laboratories. The means and standard deviations were calculated using all remaining data. Any analysis that fell outside of the mean ±2 standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data. This method is different from that used by Government agencies in that the actual "between-laboratory" standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

Assay Procedures:

Au: Fire assay pre-concentration, AA or ICP finish.
Ag, Cu, Pb, Zn: 4-acid digestion, AA or ICP finish.

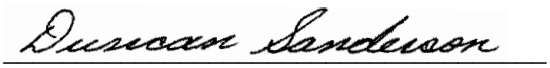
REFERENCE MATERIAL CDN-ME-1311

Participating Laboratories:
(not in same order as listed in table of results)

Acme Analytical Laboratories Ltd., Vancouver, BC, Canada
Actlabs, Ancaster, Ontario, Canada
Actlabs, Thunder Bay, Ontario, Canada
ALS Brisbane, Australia
ALS Canada Inc., North Vancouver, BC, Canada
ALS, Loughrea, Ireland (Omac)
American Assay Laboratories Inc., Sparks, Nevada, USA
Alex Stewart Assayers, Argentina
Certimin, Lima, Peru
Genalysis, Perth, Australia
SGS, Lima, Peru
SGS Canada Inc., Burnaby, BC, Canada
Skyline Assayers and Laboratories, Nevada, USA
TSL Laboratories Ltd., Saskatoon, Saskatchewan, Canada
Ultra Trace, Perth, Australia

Legal Notice:

This certificate and the reference material described in it have been prepared with due care and attention. However CDN Resource Laboratories Ltd. or Barry Smee accept no liability for any decisions or actions taken following the use of the reference material. Our liability is limited solely to the cost of the reference material.

Certified by 

Duncan Sanderson, Certified Assayer of B.C.

Geochemist 

Dr. Barry Smee, Ph.D., P. Geo.

ORE RESEARCH & EXPLORATION P/L ABN 28 006 859 856
37A Hosie Street · Bayswater North · VIC 3153 · AUSTRALIA
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info@ore.com.au www.ore.com.au

CERTIFICATE OF ANALYSIS FOR

VOLCANIC HOSTED MASSIVE SULPHIDE Zn-Pb-Cu-Ag-Au ORE

CERTIFIED REFERENCE MATERIAL

OREAS 621

Summary Statistics for Key Analytes (additional certified values below).

Constituent	Certified Value	1SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Fire Assay						
Au, Gold (ppm)	1.25	0.042	1.23	1.27	1.23*	1.27*
Infrared Combustion						
S, Sulphur (wt.%)	4.54	0.086	4.50	4.57	4.47	4.60
4-Acid Digestion						
Ag, Silver (ppm)	69	2.7	68	70	67	71
Cu, Copper (wt.%)	0.363	0.008	0.360	0.366	0.357	0.369
Pb, Lead (wt.%)	1.36	0.039	1.34	1.37	1.33	1.38
Zn, Zinc (wt.%)	5.22	0.139	5.17	5.27	5.13	5.31

INTRODUCTION

OREAS reference materials are intended to provide a low cost method of evaluating and improving the quality of analysis of geological samples. To the geologist they provide a means of implementing quality control in analytical data sets generated in exploration from the grass roots level through to prospect evaluation, and in grade control at mining operations. To the analyst they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

SOURCE MATERIALS

OREAS 621 was prepared from Zn and Cu VHMS ores sourced from the Gossan Hill deposit at Golden Grove located 338km NNE of Perth in the Murchison Province of the Archaen Yilgarn Craton, Western Australia. The VHMS deposits are hosted within and underlain by a layered rhyodacitic volcanoclastic succession. The Gossan Hill ores have been blended with fresh, barren rhyodacite material sourced from a quarry approximately 30km east of Melbourne, Australia to achieve the desired grades. The main mineralisation assemblage consists of sphalerite, chalcopyrite and lesser galena with a gangue of pyrite, pyrrhotite and magnetite. Smith *et al*. (as cited in Smith, 2003) noted the ore shoots contain many chalcophile, or partly chalchophile elements namely Fe, S, Cu, Pb, Zn, Co, As, Sb, Bi, Cd, In, Mo, Ag, Sn, Ge, Se, Te, Hg and Au. OREAS 621 is one of a suite of five CRMs ranging in grades from 0.18-3.10% Cu, 1.0-10.2% Zn, 0.25-2.21% Pb, 22-103ppm Ag and 0.68-1.85ppm Au.

COMMINUTION AND HOMOGENISATION PROCEDURES

The material constituting OREAS 621 was prepared in the following manner:

- drying of sulphide bearing ore materials to constant mass at 90°C;
- drying of rhyodacite material to constant mass at 105°C;
- crushing and milling of the ore material to 100% minus 35 microns;
- crushing and milling of the barren material to 98% minus 75 microns;
- blending in appropriate proportions to achieve the desired grades;
- packaging in 10g and 60g units sealed under nitrogen in laminated foil pouches.

ANALYTICAL PROGRAM

Twenty eight commercial analytical laboratories participated in the program to certify the 146 elements reported in Table 1. The following methods were employed:

- Gold via 20-40g* fire assay with AAS (20 labs), ICP-OES (3 labs) finish;
- Instrumental neutron activation analysis for Au on 1g subsamples to confirm homogeneity (1 laboratory);
- Sulphur by Infrared Combustion Analysis (21 labs).
- Peroxide fusion for full elemental suite ICP-OES and ICP-MS (up to 14 laboratories depending on the element).

- 4-Acid digestion (HF-HNO_3-$HClO_4$-HCl) for full elemental suite ICP-OES and ICP-MS or AAS finish (up to 22 laboratories depending on the element).
- 3-Acid digestion (HNO_3-$HClO_4$-HCl) for a limited suite by ICP-OES and AAS (up to 10 laboratories depending on the element).
- Aqua regia digestion (see note below) for full elemental suite ICP-OES and ICP-MS (up to 22 laboratories depending on the element).
- Gold via 15-50g* aqua regia digestion with ICP-MS (11 labs), AAS (5 labs) or graphite furnace AAS (1 lab) finish;

*The certified values (and 95% Confidence Interval and SD) for Au are also applicable to 50g charge weights.

It is important to note that in the analytical industry there is no standardisation of the aqua regia digestion process. Aqua regia is a partial empirical digest and differences in recoveries for various analytes are commonplace. These are caused by variations in the digest conditions which can include the ratio of nitric to hydrochloric acids, acid strength, temperatures, leach times and secondary digestions. Recoveries for sulphide-hosted base metal sulphides approach total values, however, other analytes, in particular the lithophile elements, show greater sensitivity to method parameters. This can result in lack of consensus in an inter-laboratory certification program for these elements. The approach applied here is to report certified values in those instances where reasonable agreement exists amongst a majority of participating laboratories. The results of specific laboratories may differ significantly from the certified values, but will, nonetheless, be valid and reproducible in the context of the specifics of the aqua regia method in use. Users of this reference material should, therefore, be mindful of this limitation when applying the certified values in a quality control program.

For the round robin program twenty 1kg lot samples were taken at predetermined intervals during the bagging stage, immediately following final blending and are considered representative of the entire batch. The six samples received by each laboratory were obtained by taking two 110g scoop splits from each of three separate 1kg lots. This format enabled nested ANOVA treatment of the results to evaluate homogeneity, i.e. to ascertain whether between-unit variance is greater than within-unit variance. Table 1 presents the 146 certified values together with their associated 1SD's, 95% confidence and tolerance limits and Table 2 shows 57 indicative values. Table 3 provides performance gate intervals for the certified values of each method group based on their pooled 1SD's. Tabulated results of all elements (including Au INAA analyses) together with uncorrected means, medians, standard deviations, relative standard deviations and per cent deviation of lab means from the corrected mean of means (PDM^3) are presented in the detailed certification data for this CRM (**OREAS 621 Datapack.xlsx**).

STABILITY AND STORAGE INSTRUCTIONS

OREAS 621 has been prepared from Zn and Cu VHMS ores sourced from the Gossan Hill deposit at Golden Grove and blended with argillic altered rhyodacite waste rock. It contains reactive sulphide (4.54% S) and has been packaged under a nitrogen environment (single use laminated foil pouches only). In its unopened state and under normal conditions of storage the CRM has a shelf life beyond ten years. Its stability will be monitored at regular intervals and purchasers notified if any changes are observed.

INSTRUCTIONS FOR CORRECT USE

The certified values for OREAS 621 refer to the concentration level in its packaged state. It should not be dried prior to weighing and analysis. The certified values for gold by fire assay and aqua regia digestion are applicable to charge/sample weights ranging 15-50g.

HANDLING INSTRUCTIONS

Fine powders pose a risk to eyes and lungs and therefore standard precautions such as the use of safety glasses and dust masks are advised.

LEGAL NOTICE

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

QMS ACCREDITED

ORE Pty Ltd is accredited to ISO 9001:2008 by Lloyd's Register Quality Assurance Ltd for its quality management system including development, manufacturing, certification and supply of CRMs.

CERTIFYING OFFICER



Craig Hamlyn (B.Sc. Hons - Geology), Technical Manager - ORE P/L

REFERENCES

Ingamells, C. O. and Switzer, P. (1973), Talanta 20, 547-568.

ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.

ISO Guide 35 (2006), Certification of reference materials - General and statistical principals.

Smith, R.E. (2003), Gossan Hill Cu-Zn-Au Deposit, Golden Grove, Western Australia

ORE RESEARCH & EXPLORATION P/L ABN 28 006 859 856
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CERTIFICATE OF ANALYSIS FOR

VOLCANIC HOSTED MASSIVE SULPHIDE Zn-Pb-Cu-Ag-Au ORE

CERTIFIED REFERENCE MATERIAL

OREAS 623

Summary Statistics for Key Analytes (additional certified values below).

Constituent	Certified Value	1SD	95% Confidence Limits		95% Tolerance Limits	
			Low	High	Low	High
Fire Assay						
Au, Gold (ppm)	0.827	0.039	0.811	0.842	0.814*	0.839*
Infrared Combustion						
S, Sulphur (wt.%)	9.07	0.180	9.00	9.14	8.93	9.20
4-Acid Digestion						
Ag, Silver (ppm)	20.4	1.06	19.9	20.9	19.6	21.2
Cu, Copper (wt.%)	1.73	0.064	1.72	1.75	1.67	1.80
Pb, Lead (wt.%)	0.250	0.007	0.247	0.252	0.243	0.256
Zn, Zinc (wt.%)	1.03	0.030	1.02	1.04	1.00	1.05

INTRODUCTION

OREAS reference materials are intended to provide a low cost method of evaluating and improving the quality of analysis of geological samples. To the geologist they provide a means of implementing quality control in analytical data sets generated in exploration from the grass roots level through to prospect evaluation, and in grade control at mining operations. To the analyst they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

SOURCE MATERIALS

OREAS 623 was prepared from Zn and Cu VHMS ores sourced from the Gossan Hill deposit at Golden Grove located 338km NNE of Perth in the Murchison Province of the Archaen Yilgarn Craton, Western Australia. The VHMS deposits are hosted within and underlain by a layered rhyodacitic volcanoclastic succession. The Gossan Hill ores have been blended with fresh, barren rhyodacite material sourced from a quarry approximately 30km east of Melbourne, Australia to achieve the desired grades. The main mineralisation assemblage consists of sphalerite, chalcopyrite and lesser galena with a gangue of pyrite, pyrrhotite and magnetite. Smith *et al*. (as cited in Smith, 2003) noted the ore shoots contain many chalcophile, or partly chalchophile elements namely Fe, S, Cu, Pb, Zn, Co, As, Sb, Bi, Cd, In, Mo, Ag, Sn, Ge, Se, Te, Hg and Au. OREAS 623 is one of a suite of five CRMs ranging in grades from 0.18-3.10% Cu, 1.0-10.2% Zn, 0.25-2.21% Pb, 22-103ppm Ag and 0.68-1.85ppm Au.

COMMINUTION AND HOMOGENISATION PROCEDURES

The material constituting OREAS 623 was prepared in the following manner:

- drying of sulphide bearing ore materials to constant mass at 90°C;
- drying of rhyodacite material to constant mass at 105°C;
- crushing and milling of the ore material to 100% minus 35 microns;
- crushing and milling of the barren material to 98% minus 75 microns;
- blending in appropriate proportions to achieve the desired grades;
- packaging in 10g and 60g units sealed under nitrogen in laminated foil pouches.

ANALYTICAL PROGRAM

Twenty eight commercial analytical laboratories participated in the program to certify the 147 elements reported in Table 1. The following methods were employed:

- Gold via 20-40g* fire assay with AAS (20 labs), ICP-OES (3 labs) finish;
- Instrumental neutron activation analysis for Au on 1g subsamples to confirm homogeneity (1 laboratory);
- Sulphur by Infrared Combustion Analysis (21 labs).
- Peroxide fusion for full elemental suite ICP-OES and ICP-MS (up to 14 laboratories depending on the element).

- 4-Acid digestion (HF-HNO_3-$HClO_4$-HCl) for full elemental suite ICP-OES and ICP-MS or AAS finish (up to 22 laboratories depending on the element).
- 3-Acid digestion (HNO_3-$HClO_4$-HCl) for a limited suite by ICP-OES and AAS (up to 10 laboratories depending on the element).
- Aqua regia digestion (see note below) for full elemental suite ICP-OES and ICP-MS (up to 22 laboratories depending on the element).
- Gold via 15-50g* aqua regia digestion with ICP-MS (11 labs), AAS (5 labs) or graphite furnace AAS (1 lab) finish;

*The certified values (and 95% Confidence Interval and SD) for Au are also applicable to 50g charge weights.

It is important to note that in the analytical industry there is no standardisation of the aqua regia digestion process. Aqua regia is a partial empirical digest and differences in recoveries for various analytes are commonplace. These are caused by variations in the digest conditions which can include the ratio of nitric to hydrochloric acids, acid strength, temperatures, leach times and secondary digestions. Recoveries for sulphide-hosted base metal sulphides approach total values, however, other analytes, in particular the lithophile elements, show greater sensitivity to method parameters. This can result in lack of consensus in an inter-laboratory certification program for these elements. The approach applied here is to report certified values in those instances where reasonable agreement exists amongst a majority of participating laboratories. The results of specific laboratories may differ significantly from the certified values, but will, nonetheless, be valid and reproducible in the context of the specifics of the aqua regia method in use. Users of this reference material should, therefore, be mindful of this limitation when applying the certified values in a quality control program.

For the round robin program twenty 1kg lot samples were taken at predetermined intervals during the bagging stage, immediately following final blending and are considered representative of the entire batch. The six samples received by each laboratory were obtained by taking two 110g scoop splits from each of three separate 1kg lots. This format enabled nested ANOVA treatment of the results to evaluate homogeneity, i.e. to ascertain whether between-unit variance is greater than within-unit variance. Table 1 presents the 147 certified values together with their associated 1SD's, 95% confidence and tolerance limits and Table 2 shows 56 indicative values. Table 3 provides performance gate intervals for the certified values of each method group based on their pooled 1SD's. Tabulated results of all elements (including Au INAA analyses) together with uncorrected means, medians, standard deviations, relative standard deviations and per cent deviation of lab means from the corrected mean of means (PDM^3) are presented in the detailed certification data for this CRM (**OREAS 623 Datapack.xlsx**).

INTENDED USE

OREAS 623 is intended for the following uses:

- for the monitoring of laboratory performance in the analysis of analytes reported in Table 1 in geological samples;
- for the verification of analytical methods for analytes reported in Table 1;
- for the calibration of instruments used in the determination of the concentration of analytes reported in Table 1.

STABILITY AND STORAGE INSTRUCTIONS

OREAS 623 has been prepared from Zn and Cu VHMS ores sourced from the Gossan Hill deposit at Golden Grove and blended with argillic altered rhyodacite waste rock. It contains reactive sulphide (9.07% S) and has been packaged under a nitrogen environment (single use laminated foil pouches only). In its unopened state and under normal conditions of storage the CRM has a shelf life beyond ten years. Its stability will be monitored at regular intervals and purchasers notified if any changes are observed.

INSTRUCTIONS FOR CORRECT USE

The certified values for OREAS 623 refer to the concentration level in its packaged state. It should not be dried prior to weighing and analysis. The certified values for gold by fire assay and aqua regia digestion are applicable to charge/sample weights ranging 15-50g.

HANDLING INSTRUCTIONS

Fine powders pose a risk to eyes and lungs and therefore standard precautions such as the use of safety glasses and dust masks are advised.

LEGAL NOTICE

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

QMS ACCREDITED

ORE Pty Ltd is accredited to ISO 9001:2008 by Lloyd's Register Quality Assurance Ltd for its quality management system including development, manufacturing, certification and supply of CRMs.

CERTIFYING OFFICER



Craig Hamlyn (B.Sc. Hons - Geology), Technical Manager - ORE P/L

REFERENCES

Ingamells, C. O. and Switzer, P. (1973), Talanta 20, 547-568.

ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.

ISO Guide 35 (2006), Certification of reference materials - General and statistical principals.

Smith, R.E. (2003), Gossan Hill Cu-Zn-Au Deposit, Golden Grove, Western Australia

ORE RESEARCH & EXPLORATION PTY LTD

6-8 Gatwick Road, Bayswater North, Vic 3153 AUSTRALIA
Telephone: 61-3-9729 0333 Facsimile: 61-3-9729 4777

CERTIFICATE OF ANALYSIS FOR

COPPER SULPHIDE ORE REFERENCE MATERIAL

OREAS 113

Summary Statistics for OREAS 113

Constituent	Certified Value	Absolute Standard Deviations					Relative Standard Deviations			5% window	
		1SD	2SD Low	2SD High	3SD Low	3SD High	1RSD	2RSD	3RSD	Low	High
SP Fusion ICP											
Ag (ppm)	~25	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
As (ppm)	238	33	171	304	138	337	14.0%	27.9%	41.9%	226	250
Cd (ppm)	~16	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
Co (ppm	754	28	698	811	669	840	3.77%	7.54%	11.3%	717	792
Cu (wt.%)	13.3	0.5	12.3	14.3	11.8	14.8	3.74%	7.48%	11.2%	12.6	13.9
Fe (wt.%)	28.0	2.1	23.8	32.2	21.7	34.3	7.55%	15.1%	22.6%	26.6	29.4
Pb (ppm)	248	14	221	276	207	290	5.54%	11.1%	16.6%	236	261
Sb (ppm)	7.6	1.0	5.6	9.5	4.7	10.5	12.8%	25.6%	38.4%	7.2	8.0
Zn (ppm)	4158	196	3766	4551	3569	4748	4.72%	9.45%	14.2%	3951	4366
4-Acid ICP											
Ag (ppm)	22.6	1.7	19.2	25.9	17.6	27.6	7.37%	14.7%	22.1%	21.4	23.7
As (ppm)	234	13	208	260	195	272	5.48%	11.0%	16.5%	222	246
Cd (ppm)	15.5	2.0	11.5	19.5	9.5	21.5	12.8%	25.7%	38.5%	14.7	16.3
Co (ppm	766	27	713	820	686	847	3.49%	6.99%	10.5%	728	805
Cu (wt.%)	13.5	0.4	12.8	14.3	12.4	14.6	2.74%	5.48%	8.23%	12.9	14.2
Fe (wt.%)	28.2	1.0	26.1	30.3	25.1	31.3	3.70%	7.41%	11.1%	26.8	29.6
Pb (ppm)	230	28	175	285	147	313	12.0%	24.0%	36.0%	219	242
Sb (ppm)	8	2	4	12	2	14	26.8%	53.7%	80.5%	7	8
Zn (ppm)	4178	248	3683	4673	3435	4921	5.92%	11.8%	17.8%	3969	4387

Note - intervals may appear asymmetric due to rounding; IND - indeterminate

Prepared by:
Ore Research & Exploration Pty Ltd
June 2009

REPORT 08-724_113

INTRODUCTION

OREAS reference materials (RM) are intended to provide a low cost method of evaluating and improving the quality of precious and base metal analysis of geological samples. To the explorationist, they provide an important control in analytical data sets related to exploration from the grass roots level through to resource definition. To the analyst, they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

OREAS 113 is a very high grade Cu ore certified reference material (CRM) prepared from material sourced from the Tritton Copper Project near Nyngan, New South Wales. The deposit consists of sulphide ore bodies (massive pyrite and chalcopyrite breccias) underlying oxide ores. OREAS 113 is one of a suite of five CRMs and was prepared from chalcopyrite breccia ore. All five CRMs have been characterised for Ag, As, Cd, Co, Cu, Fe, Pb, Sb and Zn by 4-acid ICP and sodium peroxide fusion ICP methods.

COMMINUTION AND HOMOGENISATION PROCEDURES

The material was prepared in the following manner:

a) drying at 65^0 C to constant mass;
b) crushing and screening;
c) multi-stage milling to 100% minus 35 microns;
d) final homogenisation;
e) packaging into 10g units sealed under nitrogen in laminated foil pouches.

ANALYSIS OF OREAS 113

Ten commercial laboratories participated in the analytical program to characterise Ag, As, Cd, Co, Cu, Fe, Pb, Sb and Zn. Their results together with uncorrected means, medians, one sigma standard deviations, relative standard deviations and percent deviation of lab means from the corrected mean of means (PDM^3) are presented in Tables A2 and A19 (Appendix). The parameter PDM^3 is a measure of laboratory accuracy while the relative standard deviation is an effective measure of analytical precision where homogeneity of the test material has been confirmed.

The analytical methods employed by each laboratory are explained, together with other abbreviations used, in Table A1 (Appendix).

Each participating laboratory received 5 samples of 30g each. Each set of subsamples submitted to each laboratory was taken at regular intervals during packaging of the standard in order to maximise their representation. All ten laboratories reported 4-acid data for the requested elements while eight included sodium peroxide fusion results. Laboratories were instructed to assay samples as received.

INSTRUCTIONS FOR THE CORRECT USE OF THE REFERENCE MATERIAL

The certified values for OREAS 113 refer to the concentration level of Ag, As, Cd, Co, Cu, Fe, Pb, Sb and Zn in its packaged state. The CRM should not be dried prior to weighing and analysis.

LEGAL NOTICE

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

CERTIFYING OFFICER:

Craig Hamlyn (B.Sc. Hons - Geology)

REFERENCES

ISO Guide 35 (2006), Certification of reference materials - General and statistical principals.

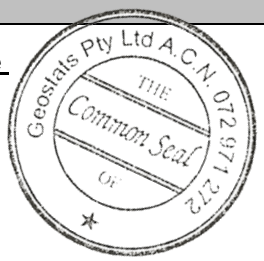
ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Ore Grade Base Metal Reference Material Product Code

GBM310-16



Certified Control Values

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	35	nr	nr	nr
Copper (ppm)	3459	nr	nr	nr
Zinc (ppm)	170201	6825	148	+/- 1113
Lead (ppm)	112603	5008	144	+/- 828
Cobalt (ppm)	nr	nr	nr	nr
Silver (ppm)	314.3	14.9	94	+/- 3.07
Sulphur (%)	21.44	0.64	72	+/- 0.15

CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2010 & April-2012 round robins. The number of results used to certify each analyte is shown in the table above.

Material Description

This material is described as a Zinc Sulphide Ore .

Colour Designation (ISCC-NBS, SP440)

This material is light gray in colour.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into either heat sealed, air tight, plastic pulp packets or screw top sealed plastic containers ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

Neutron Activation Analysis Results (ppm, unless otherwise noted)	
Antimony	725.5
Arsenic	1935
Barium	475
Bromine	<2
Cadmium	513.5
Caesium	1
Calcium (%)	nr
Cerium	33.45
Chromium	50
Cobalt	9.71
Europium	0.555
Gold (ppb)	4070
Hafnium	0.8
Iridium (ppb)	<10
Iron (%)	11.1
Lanthanum	19.15
Lutetium	0.325
Mercury	nr
Molybdenum	11
Neodymium	nr
Nickel	30
Potassium (%)	nr
Rubidium	41
Samarium	2.42
Scandium	6.44
Selenium	<5
Silver	297
Sodium (%)	0.108
Strontium	nr
Tantalum	0.275
Tellurium	<10
Terbium	<0.5
Thorium	4.87
Tin	<500
Tungsten	<10
Uranium	2.5
Ytterbium	0.59
Zinc	165500
Zirconium	<400

Major Elements by Fusion / XRF (%)	
Fe	11.4
SiO_2	25.27
Al_2O_3	5.11
TiO_2	0.215
MnO	0.07
CaO	0.22
P	0.022
S	20.6
MgO	0.44
K_2O	1.38
Na_2O	0.441
LOI1000	17.36

Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.

'nr': Not Reported

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Website http://www.geostats.com.au

GBM310-16

Geostats Pty Ltd, Certified Ore Grade Base Metal Reference Material, Product Code:

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Gold Reference Material Product Code

G312-4

Certified Control Values

50 gram Fire Assay

Gold Grade	5.30 ppm
Standard Deviation	0.22 ppm
Confidence Interval	+/- 0.034 ppm

Aqua Regia Digest

Gold Grade	4.98 ppm
Standard Deviation	0.34 ppm
Confidence Interval	+/- 0.081 ppm



CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2012 round robin. A total of 155 fire assay results and 69 results from an aqua regia technique were used to certify this material.

Material Description

This material is described as a Cu / Gold Sulphide ore.

Colour Designation (ISCC-NBS, SP440)

This material is light gray in colour.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging

All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into either heat sealed, air tight, plastic pulp packets or screw top sealed plastic containers ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork

All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

Neutron Activation Analysis Results (ppm, unless otherwise noted)	
Antimony	1.5
Arsenic	15.4
Barium	420
Bromine	0.8
Cadmium	<10
Caesium	1.9
Calcium (%)	nr
Cerium	41
Chromium	90
Cobalt	41.4
Europium	1.4
Gold (ppb)	5300
Hafnium	5.8
Iridium (ppb)	<10
Iron (%)	6.2
Lanthanum	24
Lutetium	0.4
Mercury	nr
Molybdenum	35
Neodymium	nr
Nickel	350
Potassium (%)	nr
Rubidium	110
Samarium	4.7
Scandium	20.2
Selenium	<5
Silver	7
Sodium (%)	2.45
Strontium	nr
Tantalum	1
Tellurium	<10
Terbium	0.7
Thorium	13.1
Tin	<100
Tungsten	4
Uranium	7.6
Ytterbium	2.71
Zinc	1190
Zirconium	200

Major Elements by Fusion / XRF (%)	
Fe	6.04
SiO_2	59.33
Al_2O_3	14.27
TiO_2	1.182
MnO	0.12
CaO	5.65
P	0.059
S	0.671
MgO	3.06
K_2O	2.03
Na_2O	3.383
LOI1000	0.79

Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.

'nr': Not Reported

20 Hines Road, O'Connor, Western Australia 6163
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Website http://www.geostats.com.au

G312-4

Geostats Pty Ltd, Certified Gold Reference Material, Product Code:

Appendix N-C:

Shewart and blank charts

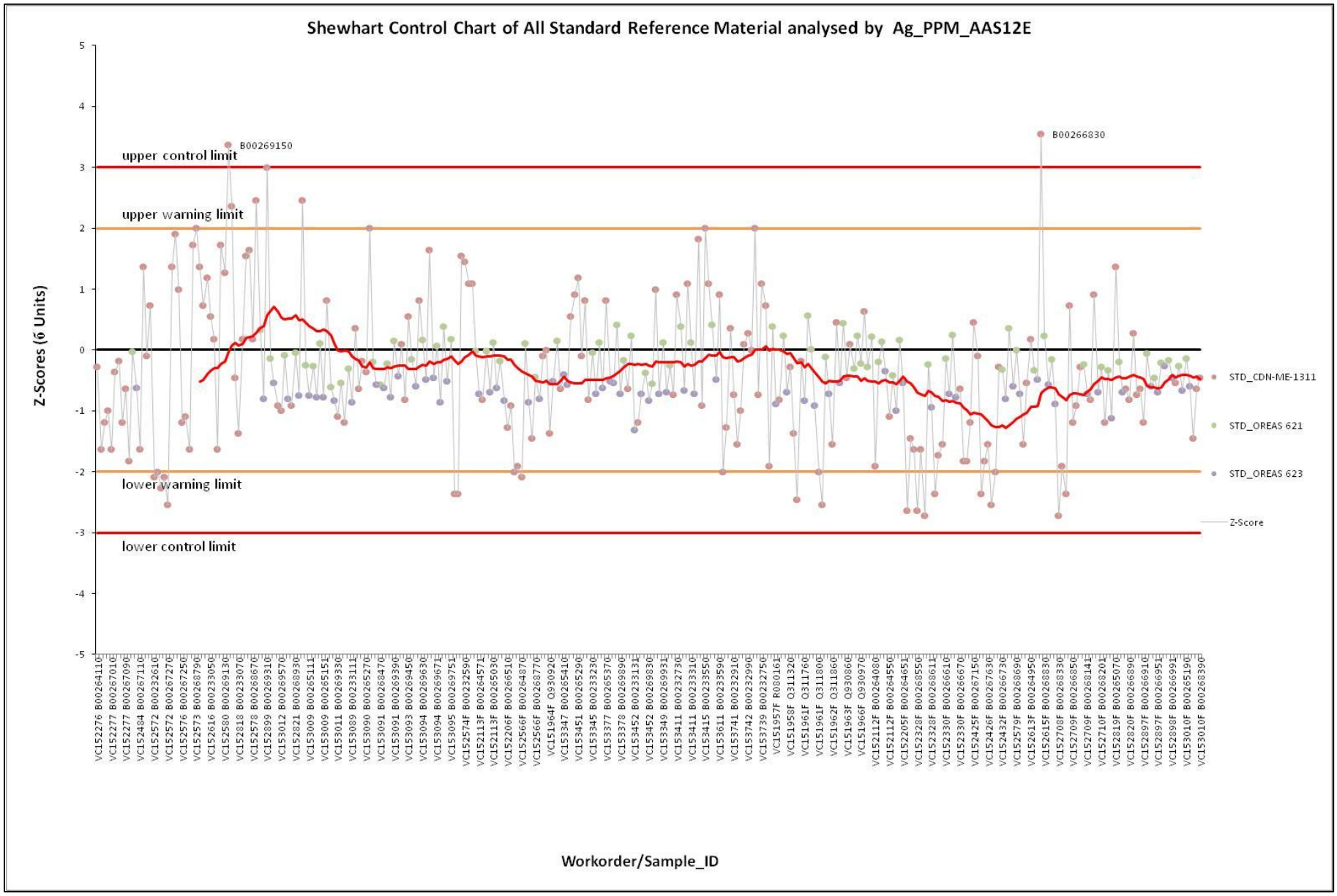

Figure 1: Shewart control chart for silver in CRMs. Red curved line is a moving average of 30 samples. The chart shows two 3-SD failures, neither of which requires follow-up work, and several 2-SD failures pegged for possible re-assay. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

EQUITY | EXPLORATION CONSULTANTS LTD.

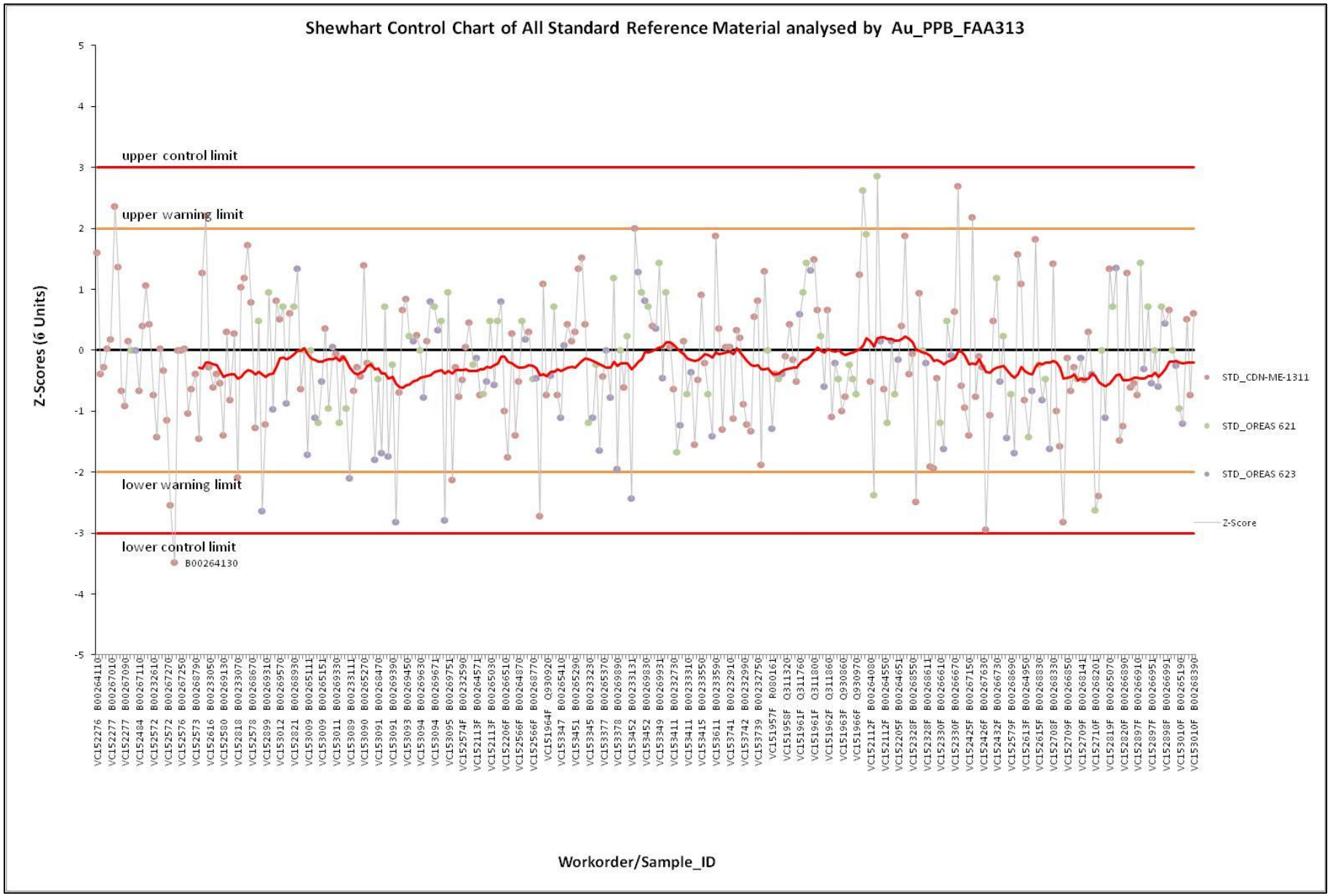

Figure 2: Shewart control chart for gold in CRMs. Red line is a moving average of 30 samples. The chart shows one 3-SD failure, which does not require follow-up work, and several 2-SD failures pegged for possible re-assay. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

EQUITY | EXPLORATION CONSULTANTS LTD.

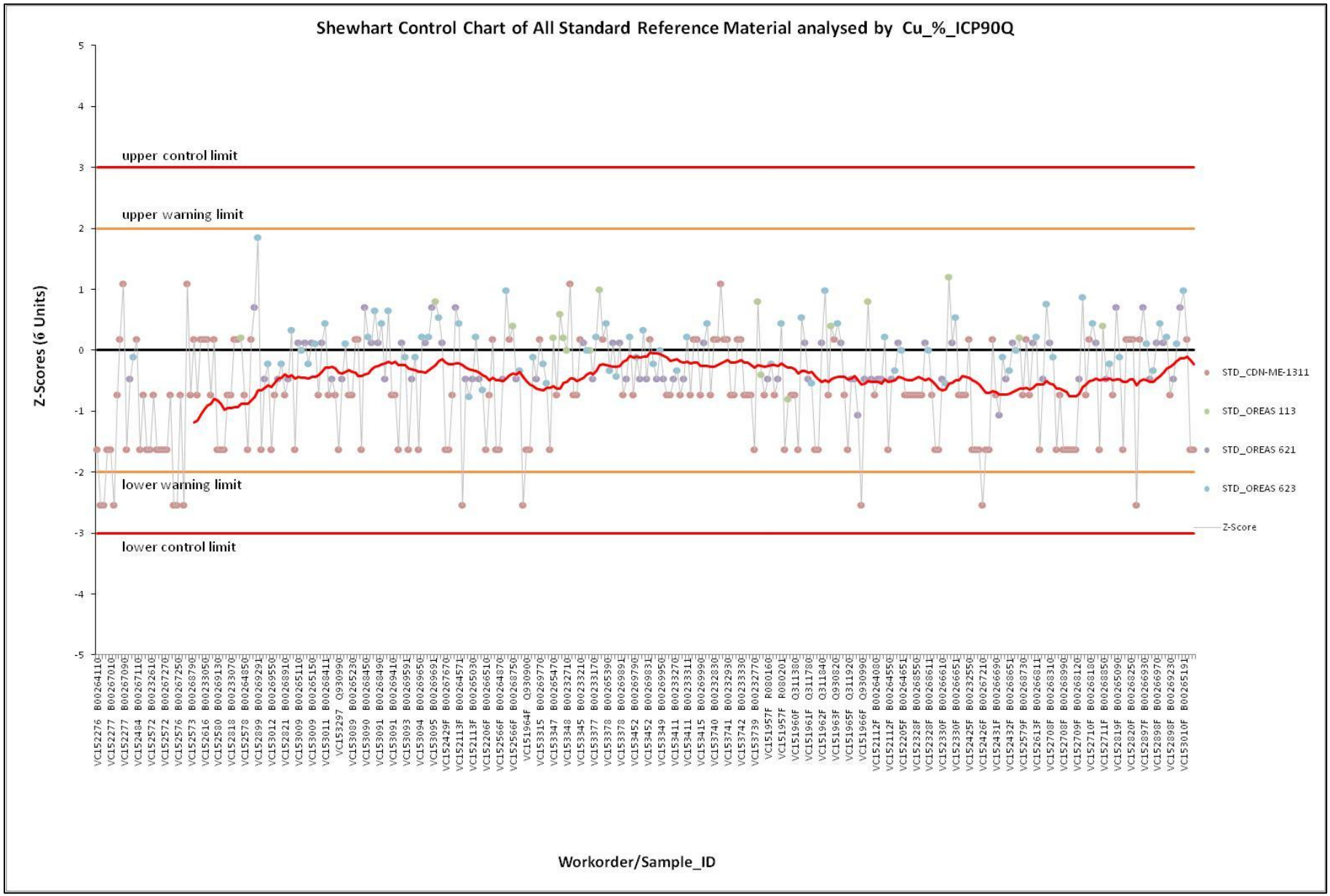

Figure 3: Shewart control chart for copper in CRMs. Red line is a moving average of 30 samples. There are no 3-SD failures and only a few 2-SD failures – mostly incurred at the start of the analytical program – pegged for possible re-assay. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

EQUITY | EXPLORATION CONSULTANTS LTD.

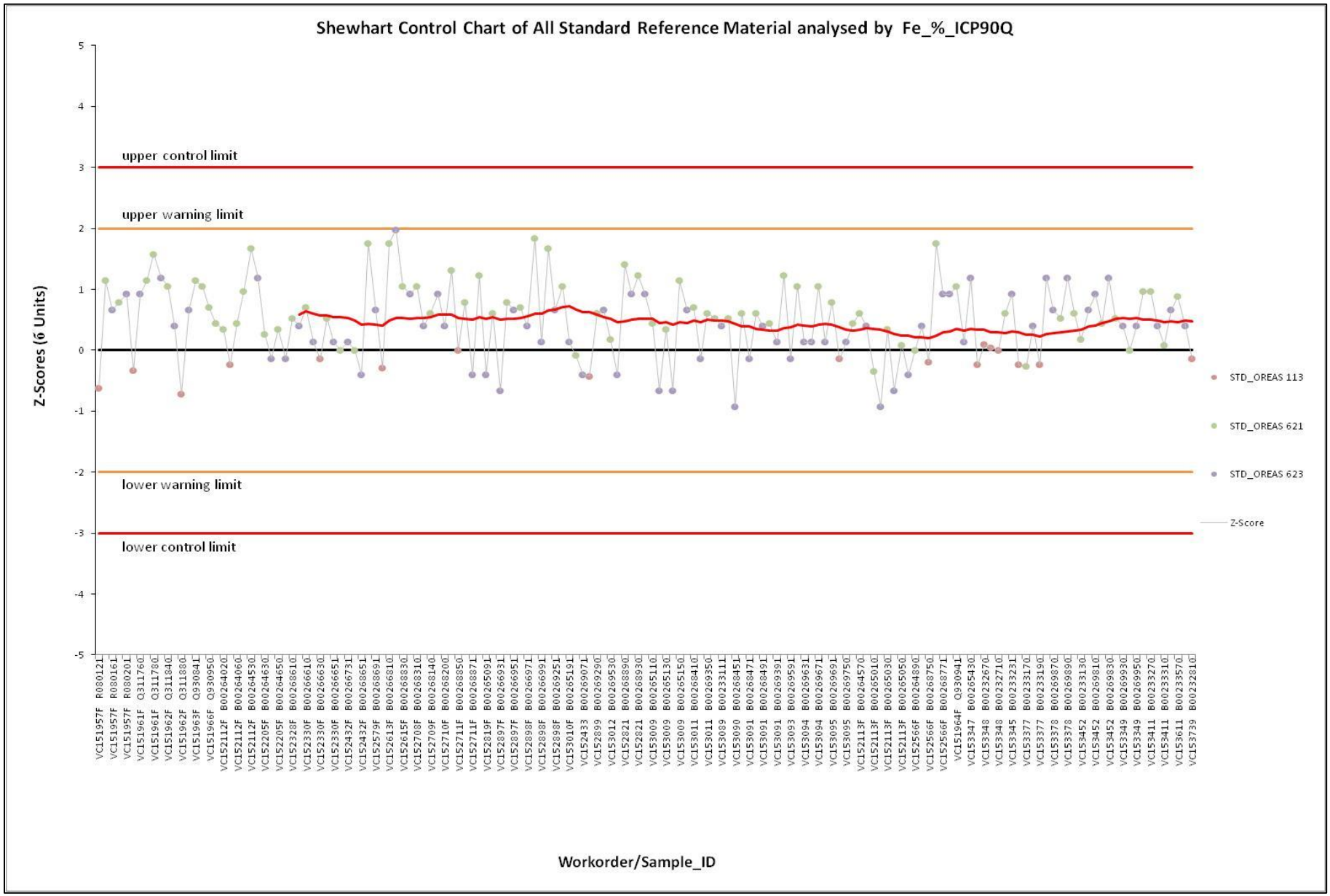

Figure 4: Shewart control chart for iron in CRMs. Red curved line is a moving average of 30 samples. There are no 3-SD or 2-SD failures. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

EQUITY | EXPLORATION CONSULTANTS LTD.

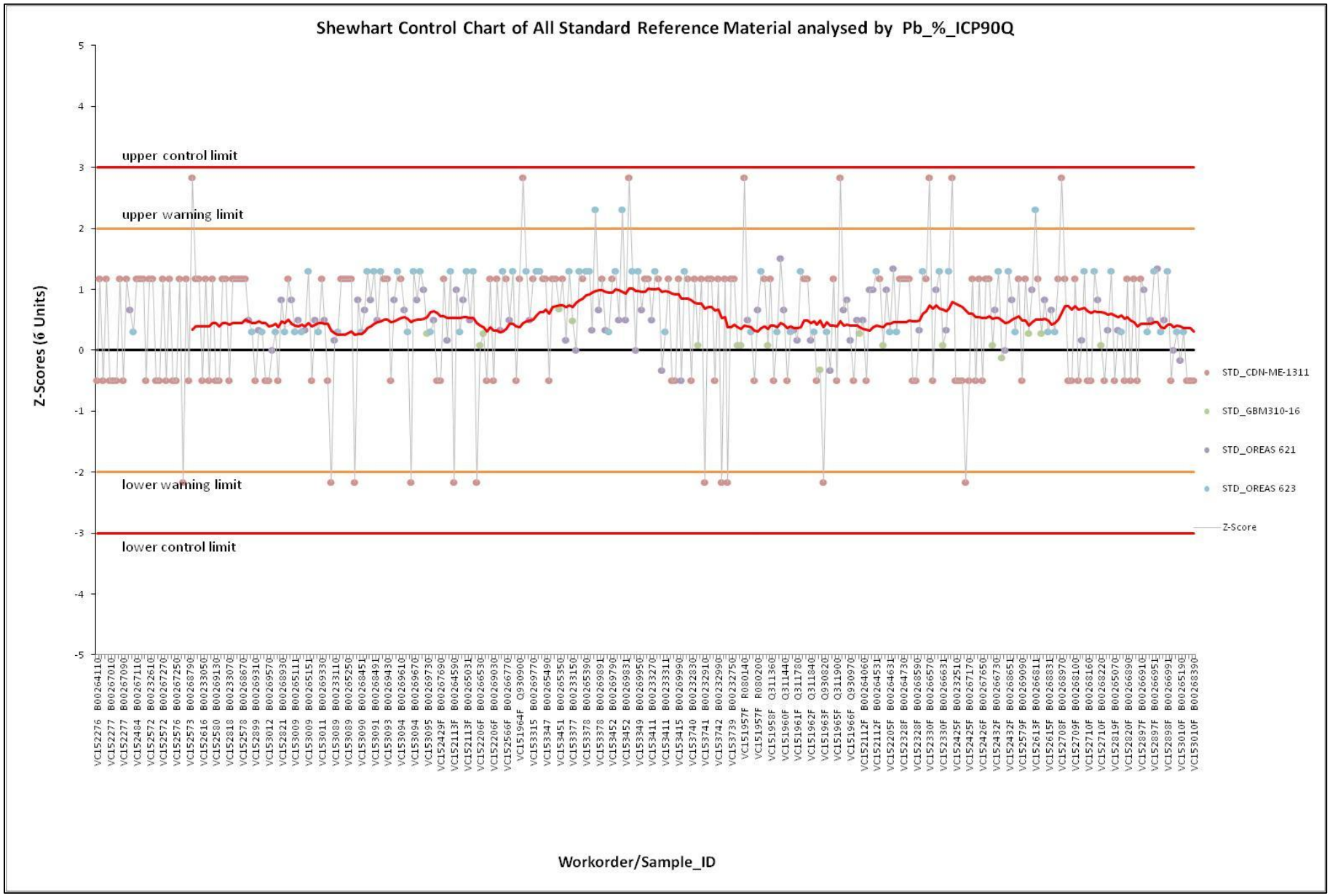

Figure 5: Shewart control chart for Pb in CRMs. Red curved line is a moving average of 30 samples. There are no 3-SD failures but there are several 2-SD failures pegged for possible follow-up work. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

EQUITY | EXPLORATION CONSULTANTS LTD.

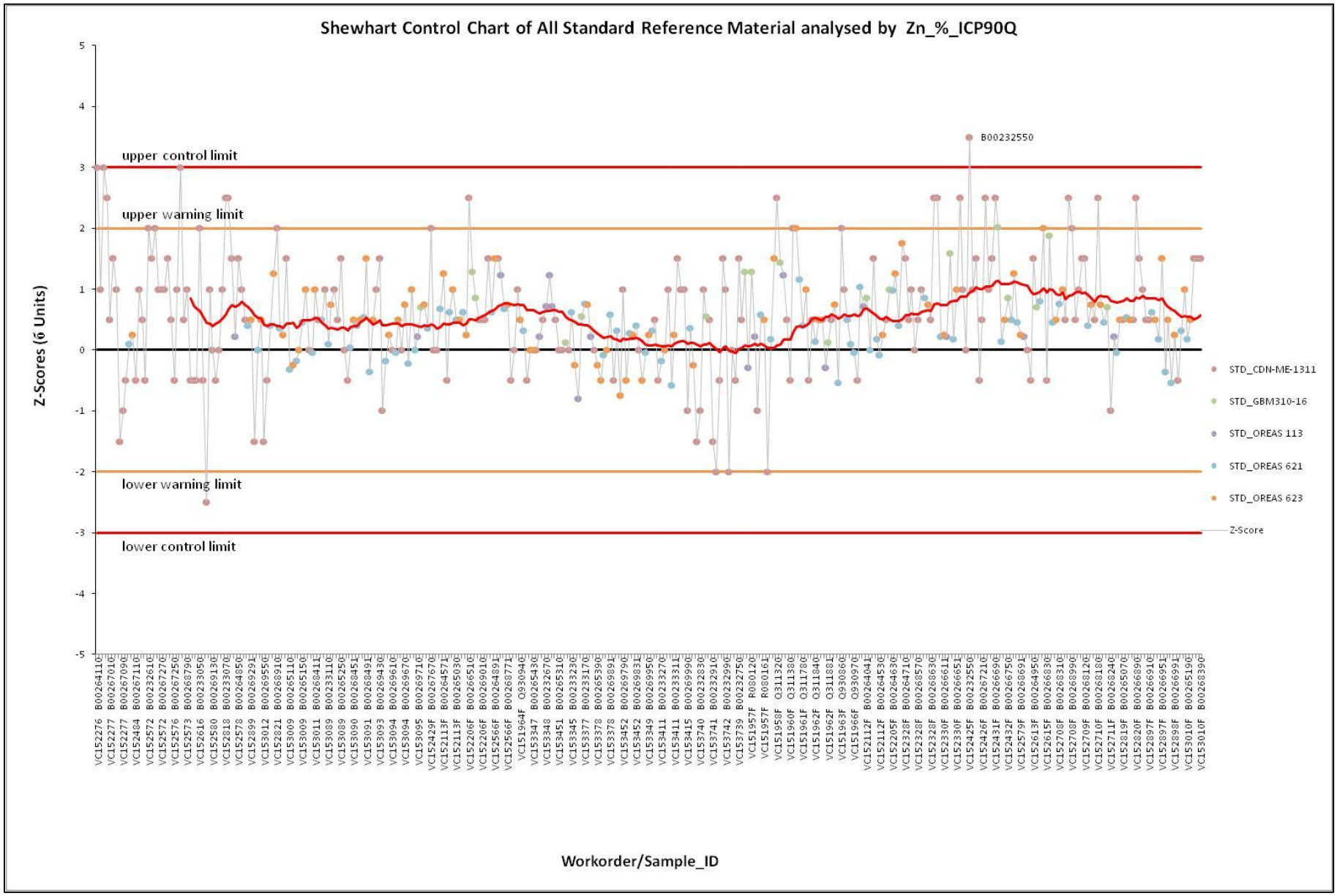

Figure 6: Shewart control chart for zinc in CRMs. Red line is a moving average of 30 samples. There is one 3-SD failure, which does not require follow-up work, and several 2-SD failures pegged for possible re-assay. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

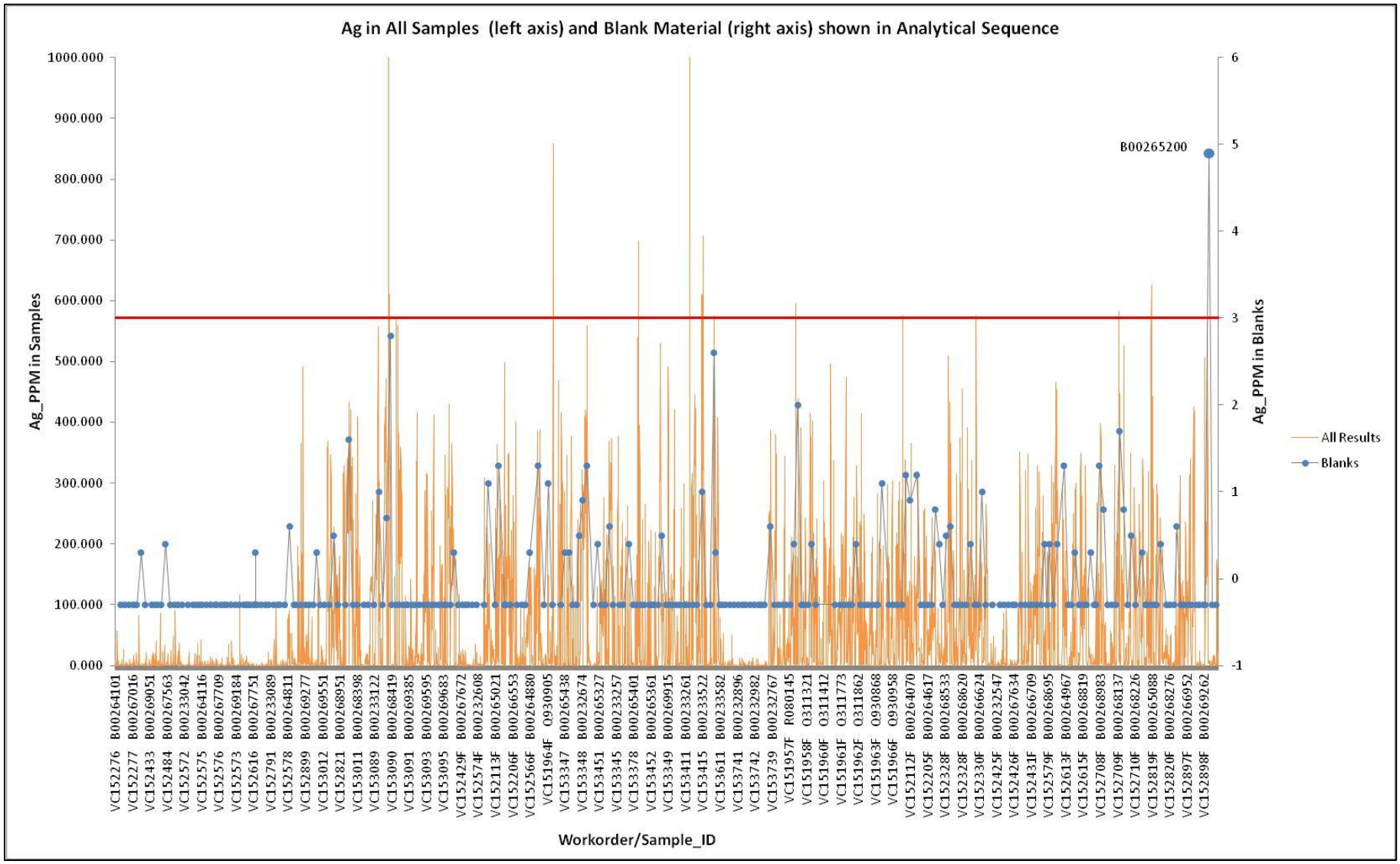

Figure 7: Silver in blanks (blue lines and dots) as well as samples (yellow line). Only one sample (B00265200) exceeds the >10 dl threshold (red horizontal line) but is associated with mineralized core samples, so re-analysis is not recommended. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

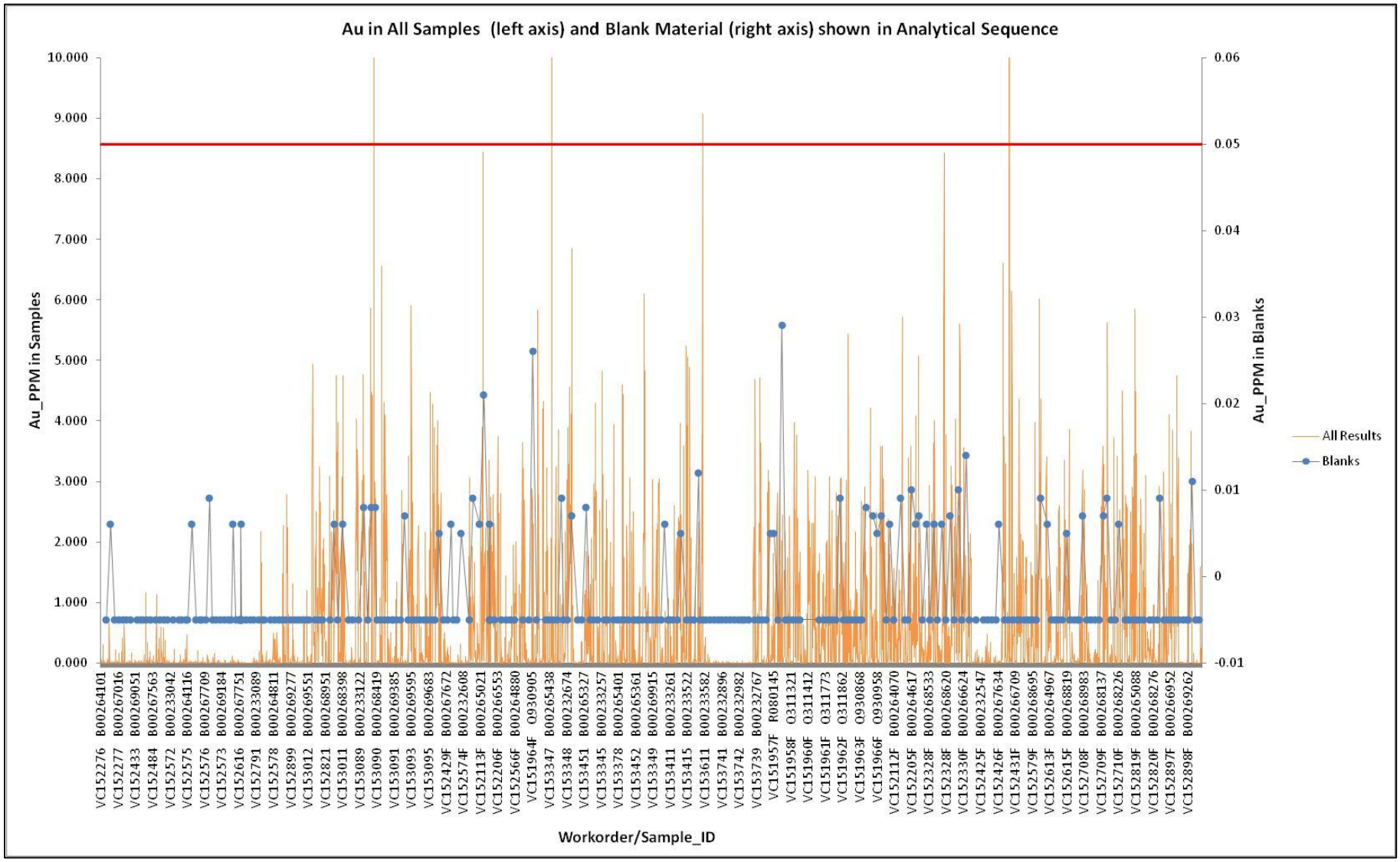

Figure 8: Gold in blanks (blue lines and dots) as well as samples (yellow line). There are no blank assays that exceed the >10 dl threshold (red horizontal line). Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

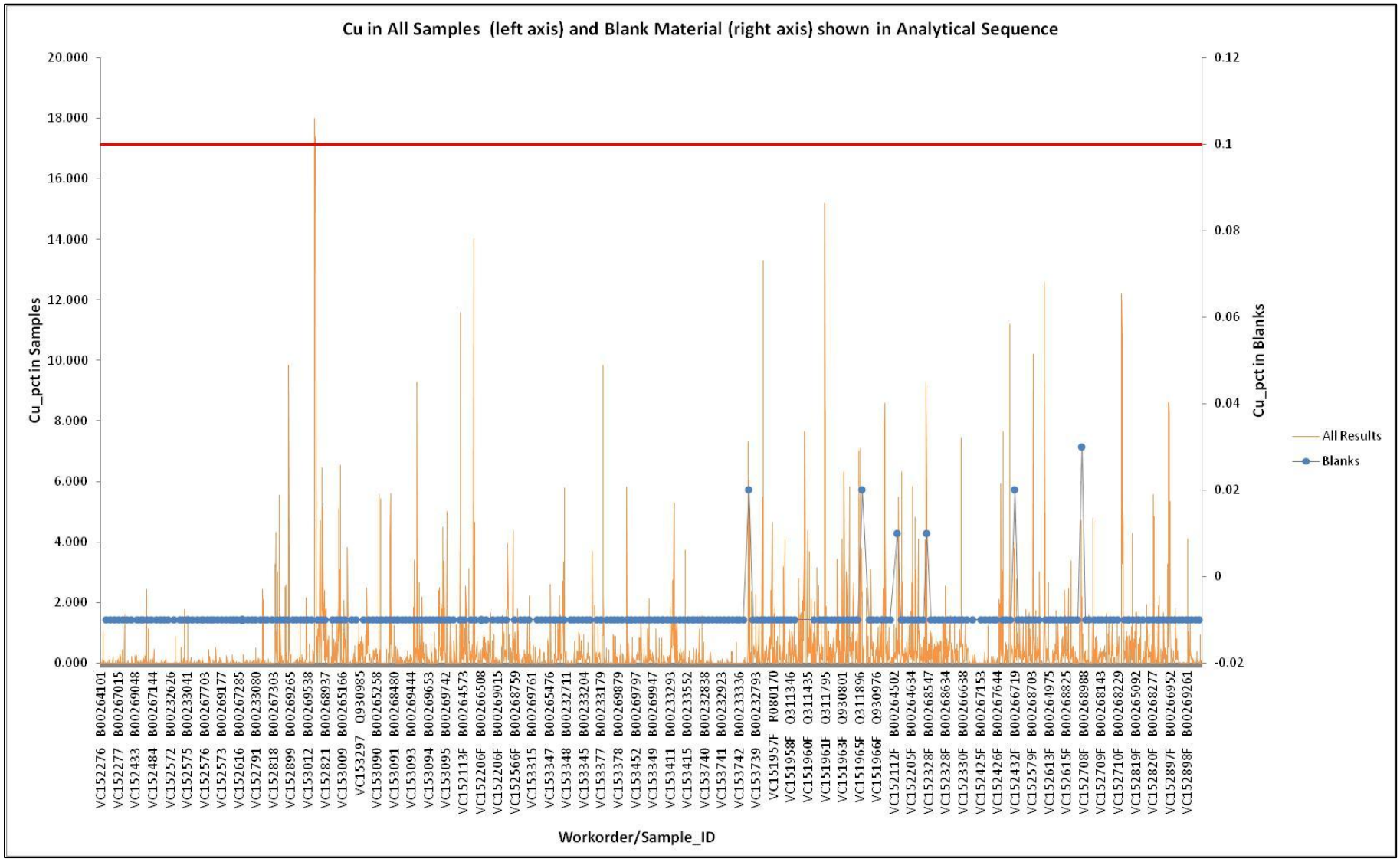

Figure 9: Copper in blanks (blue lines and dots) as well as samples (yellow line). There are no blank assays that exceed the >10 dl threshold (red horizontal line). Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

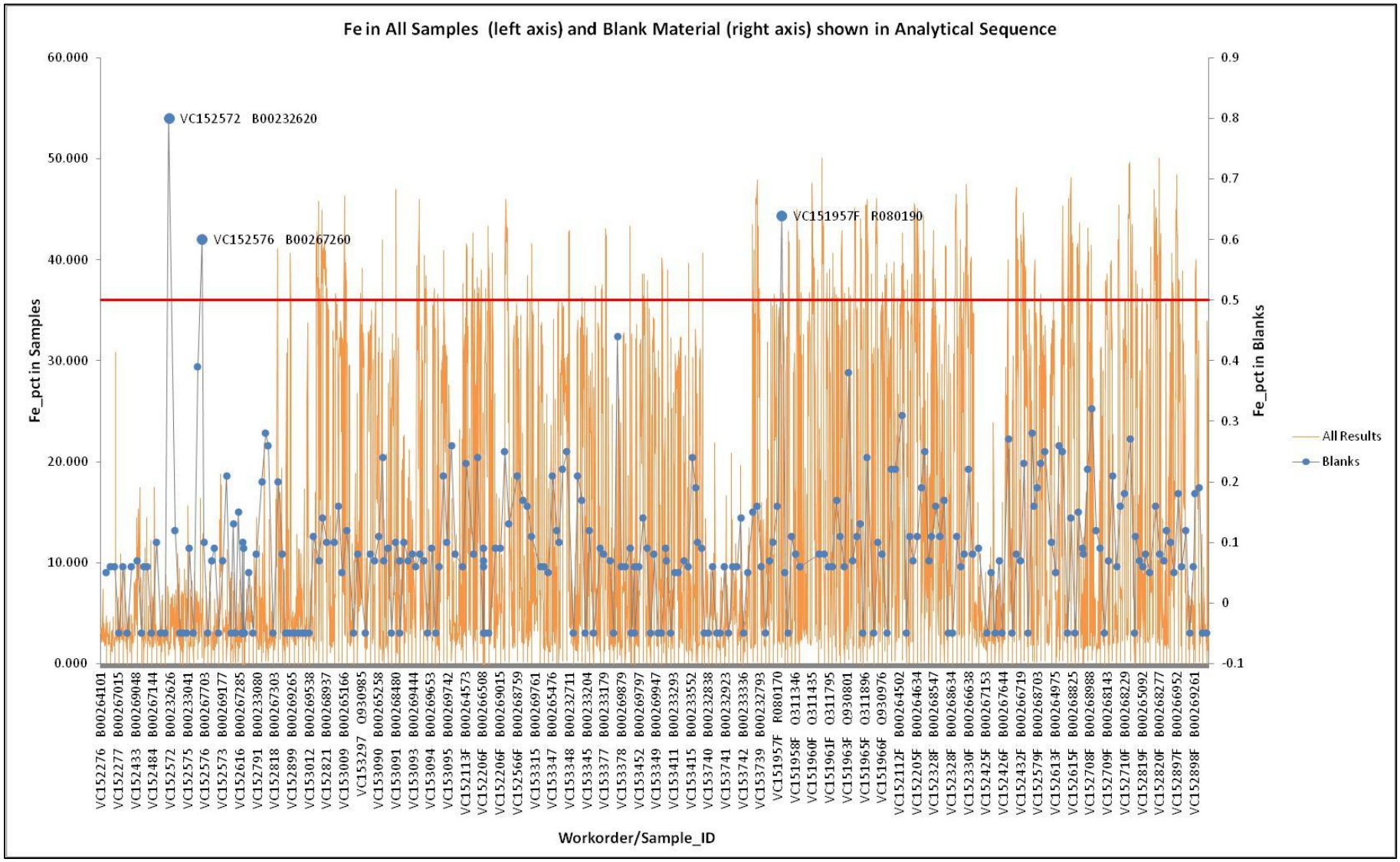

Figure 10: Iron (Fe) in blanks (blue lines and dots) as well as samples (yellow line). There are three samples that exceed the >10 dl threshold (red horizontal line) but no follow-up work is recommended because Fe is not integral to the resource. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

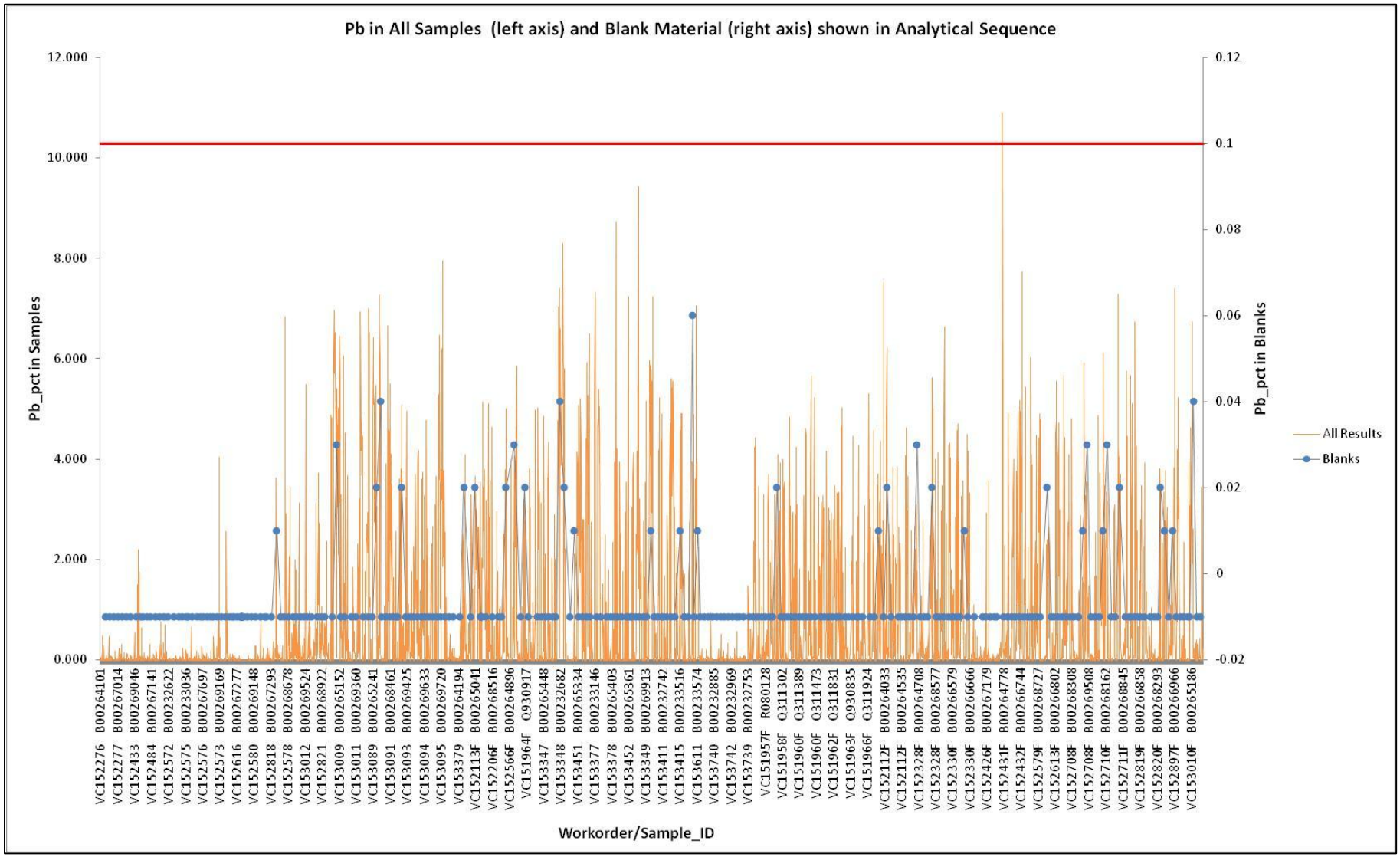

Figure 11: Lead in blanks (blue lines and dots) as well as samples (yellow line). There are no blank assays that exceed the >10 dl threshold (red horizontal line). Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

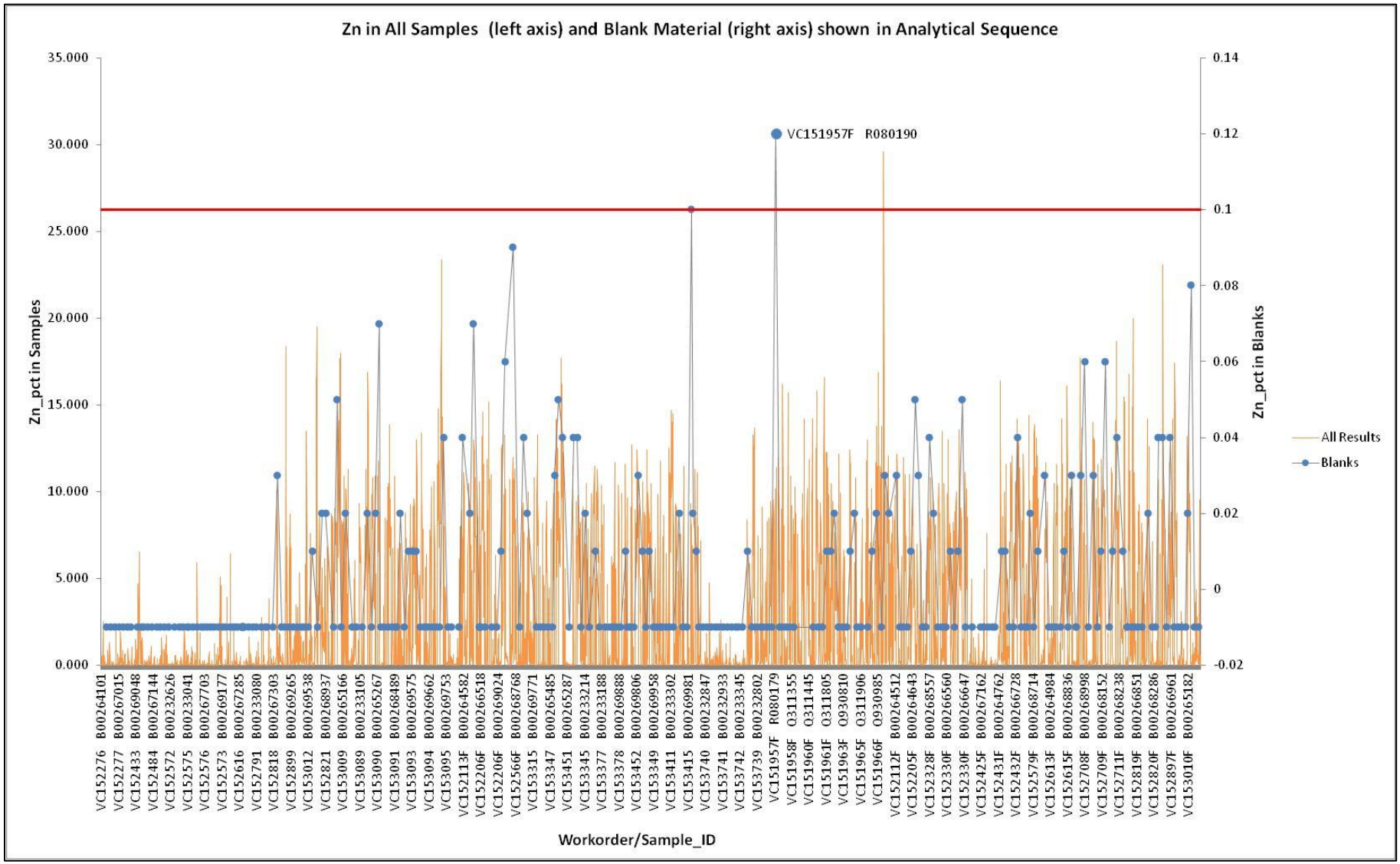

Figure 12: Zinc in blanks (blue lines and dots) as well as samples (yellow line). There is one sample (R080190) that exceeds the >10 dl threshold (red horizontal line) but is associated with mineralized core samples, so re-analysis is not recommended. Certificates finalized from Dec 23-Jan 8 plot just before the "F" certificates.

Appendix N-D:

Failure tracker

Table 5: Failure tracker for work orders related to the KZK project (white rows = QAQC issues that do not req uire follow-up; orange rows = QAQC issues that may require follow-up, red rows = QAQC issue requiring follow-up, blue rows = resolved QAQC issue).

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC151957	08-Sep-15	R080201	Au	3 SD	OREAS 623 assayed 0.659 g/t Au (Z-score -4.3)	Re-assay R080191-193, R080198-208	GE_FAA313	14	Nov 15: requested SGS to re-run GE_FAA313 (R080191-193, R080198-208)	Nov 19: Re-assay passed QAQC
VC151957	08-Sep-15	R080180	Cu, Pb	3 SD	CDN-ME-1311 assayed 0.42% Cu and 0.28% Pb (Z-scores of -4.4, -3.8 respectively)	Re-assay R080173, R080176-180, R080185-189	GO_ICP90Q	11	Nov. 14: requested SGS to R-run GO_ICP90Q (R080173, R080176-180, R080185-189)	Nov 19: Re-assay passed QAQC
VC151957	08-Sep-15	R080140	Zn	3 SD	CDN-ME-1311 assayed 1.21% Zn (Z-score 4.5)	Re-assay R080131-132, R080136-141, R080144-148	GO_ICP90Q	13	Nov. 14: requested SGS to R-run GO_ICP90Q (R080131-132, R080136-141, R080144-148)	Nov 19: Re-assay passed QAQC
VC151957	08-Sep-15	R080190	Ag, Au, Zn	Blank	Blank with 2.0 g/t Ag (6.7 x dl), 0.029 g/t Au (5.8 x dl), 0.12% Zn (12x dl)	No re-assays required				
VC151961	03-Sep-15	Q311820, Q311800	Zn	3 SD & 2 SD	Two consecutive CDN-ME-1311 with Z-scores > 2, including one that is 3.5 (Q311820)	Re-assay Q311794-823	GO_ICP90Q	30	Nov. 14: requested SGS to R-run GO_ICP90Q (Q311794-823)	Nov 18: Re-assay passed QAQC
VC151963	09-Sep-15	Q930840, Q930860	Au	2 SD	Consecutive OREAS 623 and CDN-ME-1311 with Z-scores between -2 to 3 SD	Re-assay Q930835-860, Q930868-869	GE_FAA313	28	Nov. 15: requested SGS to R-run GE_FAA313 (Q930835-860, Q930868-869)	Nov 19: Re-assay passed QAQC
VC151964	08-Sep-15	Q930910	Au	Blank	0.026 g/t Au in blank (5.2x dl)	No re-assays required				

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC151966	42255	Q930990	Zn	3 SD	CDN-ME-1311 assayed 1.19% Zn (Z-score 3.5)	Re-assay Q930981-990	GO_ICP90Q	10	Nov. 14: requested SGS to R-run GO_ICP90Q (Q930981-990); re-run failured, requested a second re-run on Nov. 21 (email to Andrew Pickering)	Nov. 20: Zn returned 1.05% Zn (SD = -3.5) so still a failure; Nov. 24, re-re-run returned 1.11% Zn (SD = -0.5) so passed.
VC152112	14-Sep-15	B00264080	Pb, Zn	3 SD	CDN-ME-1311 assayed 0.33% Pb and 1.23% Zn (Z-scores of 4.5, 5.5 respectively)	Re-assay B00264073, B00264076-082, B00264085	GO_ICP90Q	9	Nov. 14: requested SGS to R-run GO_ICP90Q (B00264073, B00264076-082, B00264085)	Nov 18: Re-assay passed QAQC
VC152113	18-Sep-15	B00265050	Au	3 SD	OREAS 621 assayed 1.05 g/t Au (Z-score -4.8)	Re-assay B00265041-054	GE_FAA313	14	Nov 15: requested SGS to re-run GE_FAA313 (B00265041-054)	Nov. 20: Re-assay passed QAQC
VC152113	18-Sep-15	B00264590	Pb	3 SD	CDN-ME-1311 assayed 0.28% Pb (Z-score -3.8)	Re-assay B00264581-587, B00264595	GO_ICP90Q	9	Nov. 14: requested SGS to R-run GO_ICP90Q (B00264581-587, B00264590, B00264595)	Nov. 20: Re-assay passed QAQC
VC152113	18-Sep-15	B00265040	Zn	Blank	0.07% Zn in blank (7x dl)	No re-assays required				
VC152205	18-Sep-15	B00264651	Au	3SD	OREAS 623 assayed 0.689 g/t Au (Z-score -3.5)	Re-assay B00264641-659	GE_FAA313	19	Nov 15: requested SGS to re-run GE_FAA313 (B00264641-659)	Nov 19: Re-assay passed QAQC
VC152206	22-Sep-15	B00268510	Au	3 SD	CDN-ME-1311 assayed 0.728 g/t Au (Z-score -3.4)	Re-assay B00268501-510; B00268517-519	GE_FAA313	13	Nov. 15: requested SGS to R-run for Au (GE_FAA313) (B00268501-510; N00268517-519)	Nov 19: Re-assay passed QAQC
VC152206	22-Sep-15	B00266530, B00266550	Ag	2 SD	Two consecutive GBM310-16 (gravimetric) with Z-scores between -2 to -3	Re-assay gravimetric Ag for B00266521, 523-524, 527-532, 534-535, 541, 548, 550	GE_AAS12E	14	To be submitted for re-assay in Jan 2016?	

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC152276		B00264110, B00267510, B00267530, B00267550	Cu, Zn	2 SD	2 consecutive Cu warning limits (Z-scores of -2.5 and -2.5) and 3 of 4 consecutive Zn warning limits (Z-scores of 3.0, 1.0, 3.0 and 2.5); all CDN-ME-1311	R-run: B00264104, B00264110, B00267501 & 502, B00267508, B00267510, B00267525, B00267530, B00267534	GO_ICP90Q	9	To be submitted for re-assay in Jan 2016?	
VC152328	06-Oct-15	B002685550, B00266550	Ag	2 SD	Two consecutive CDN-ME-1311 with Z-scores between -2 to -3	Re-assay B00268541-567, 570, 574-584, 587-595	GE_AAS12E	48	To be submitted for re-assay in Jan 2016?	
VC152330	08-Oct-15	B00266611	Au	3 SD	OREAS 623 assayed 0.698 g/t Au (Z-score -3.3)	Re-assay B00266601-615	GE_FAA313	15	Nov 15: requested SGS to re-run GE_FAA313 (B00266601-615)	Nov 19: Re-assay passed QAQC
VC152330	08-Oct-15	B00266570, B00266590	Zn	2 SD	Two consecutive CDN-ME-1311 with Z-scores between +2-3 SD	R-run: B00266563-579, B00266581-590, B00266595-599	GO_ICP90Q	33	To be submitted for re-assay in Jan 2016?	
VC152425	14-Oct-15	B00232530	Zn	3 SD	CDN-ME-1311 assayed 1.19% Zn (Z-score 3.5)	Re-assay B00232526, B00232530, B00232536	GO_ICP90Q	3	Nov. 14: requested SGS to R-run GO_ICP90Q (B00232526, B00232530, B00232536)	Nov 18: Re-assay passed QAQC
VC152425	14-Oct-15	B00232550	Zn	3 SD	CDN-ME-1311 assayed 1.19% Zn (Z-score 3.5)	No re-assays required				
VC152426	15-Oct-15	B00267190, B00267630	Zn	3 SD & 2 SD	Two of three CDN-ME-1311 with Z-scores >2, including one Z-score = 3.5 (B00267190)	Re-assay B00267190-193	GO_ICP90Q	4	Nov 15: Re-assay GO_ICP90Q (B00267190-193)	Nov 18: Re-assay passed QAQC
VC152429	20-Oct-15	B00267690	Au	3 SD	CDN-ME-1311 assayed 0.689 g/t Au (Z-score -4.6)	Re-assay B00267683, B00267687, B00267690, B00267696	GE_FAA313	4	Nov. 15: requested SGS to R-run for Au (GE_FAA313) (B00267683, B00267687, B00267690, B00267696)	Nov 19: Re-assay passed QAQC
VC152431	22-Oct-15	B00266690, B00266710	Zn	2 SD	Consecutive Z-scores between +2-3 SD for CDN-ME-1311 and GBM310-16	R-run: B00266681-684, B00266687, B00266689-690, B00266692, B00266696-699, B00266701-711	GO_ICP90Q	23	To be submitted for re-assay in Jan 2016?	
VC152566	05-Nov-15	B00268771	Au	3 SD	OREAS 623 assayed 0.644 g/t Au (Z-score -4.7)	Re-assay B00268761-775	GE_FAA313	15	Nov 15: requested SGS to re-run GE_FAA313 (B00268761-775)	Nov 19: Re-assay passed QAQC

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC152566	05-Nov-15	B00264880	Zn	Blank	0.06% Zn in blank (6x dl)	No re-assays required				
VC152566	05-Nov-15	B00268760	Zn	Blank	0.09% Zn in blank (9x dl)	No re-assays required				
VC152572	15-Oct-15	All standards on COA	Ag	2 SD	4 of 5 standards on COA have Z-scores between -2 and -3; 5th one has Z-score of -2.00	Re-assay entire work order	GE_AAS12E	76	To be submitted for re-assay in Jan 2016?	
VC152574	20-Oct-15	B00233010	Ag	3 SD	CDN-ME-1311 assayed 38.5 g/t Ag (Z-score -5.8)	Re-assay B00233013	GE_AAS12E	2	Nov. 14: requested SGS to re-run for Ag (GE_AAS12E) (B00233010, B00233013)	Nov 17: Re-assay passed QAQC
VC152575	20-Oct-15	B00233030, 00264130	Au	2 SD & 3 SD	CDN-ME-1311 assayed 0.724 g/t Au (Z-score -3.5); other standard returned Z-score of -2.5	No re-assays required for 3 SD; for 2 SD re-assays required B00233030, 037, 038, B00264115, 130	GE_FAA313	5	To be submitted for re-assay in Jan 2016?	
VC152576		B00267250, B00267730	Cu	2 SD	2 of 3 consecutive CDN-ME-1311 with Z-scores both equal -2.54 for Cu	R-run: B00267250, B00267252, B00267726, 727, 730	GO_ICP90Q	5	To be submitted for re-assay in Jan 2016?	
VC152580	26-Oct-15	B00269150	Ag	3 SD	CDN-ME-1311 assayed 48.6 g/t Ag (Z-score -3.4)	No re-assays required				
VC152615	02-Nov-15	B00266830	Ag	3 SD	CDN-ME-1311 assayed 48.8 g/t Ag (Z-score -3.6)	Re-assay B00266826-827, B00268798-799	GE_AAS12E	5	Nov. 14: requested SGS to re-run for Ag (GE_AAS12E) (B00266826-827, B00266830, B00268798-799)	Nov 17: Re-assay passed QAQC
VC152615	02-Nov-15	B00268811	Au	3 SD	G312-4 assayed 4.63 g/t Au (Z-score -3.03)	No re-assays required				
VC152708		B00268330, B00268990	Ag	2 SD	Two consecutive CDN-ME-1311 with Z-scores between -2 to -3	Re-assay B00268321-324, 330, 333, B00268961, 962, 969-971, 967-999	GE_AAS12E	44	To be submitted for re-assay in Jan 2016?	

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC152708	02-Nov-15	B00269000	Zn	Blank	0.06% Zn in blank (6x dl)	No re-assays required				
VC152710	03-Nov-15	B00268180	Pb	3 SD	CDN-ME-1311 assayed 0.33% Pb (Z-score 4.5)	Re-assay B00268171, B00268180-187	GO_ICP90Q	9	Nov. 14: requested SGS to R-run GO_ICP90Q (B00268171, B00268180-187)	Nov 18: Re-assay passed QAQC
VC152710	03-Nov-15	B00268170	Zn	Blank	0.06% Zn in blank (6x dl)	No re-assays required				
VC152818	03-Nov-15	B00267310, B00233070	Zn	2 SD	Two consecutive CDN-ME-1311 with Z-scores between +2-3 SD	R-run: B00233066, 070, 076; B00267302, 310	GO_ICP90Q	5	To be submitted for re-assay in Jan 2016?	
VC152819	12-Nov-15	B00265070	Ag	3 SD	CDN-ME-1311 assayed 48.3 g/t Ag (Z-score 3.1)	Re-assay B00265061-078	GE_AAS12E	18	Nov. 15: requested SGS to re-run GE_AAS12E (B00265061-078)	Nov 17: Re-assay passed QAQC
VC152709	03-Nov-15	B00268140	Au	3SD	OREAS 621 assayed 1.07 g/t Au (Z-score -4.3)	Re-assay B00268131-149	GE_FAA313	19	Nov 17: requested SGS to re-run GE_FAA313 (B00268131-149)	Nov 20: Re-assay passed QAQC
VC153010	20-Nov-15	B00265200	Ag	Blank	Blank with 4.8 ppm Ag (16 x dl)	No re-assays required				
VC151966F	04-Dec-15	n/a	Zn	Cert integr-ation	Not all re-assayed Zn values have been transcribed to the F certificate	Transcribe all R values and re-issue certificate	n/a	n/a	Transcription request sent to SGS	Zn values were correct and sourced from re-assay of re-assay certificate
VC152113F	05-Dec-15	n/a	Au	Cert integr-ation	One Au re-assay was not transcribed onto the F certificate	Transcribe the missing R value and re-issue certificate	n/a	n/a	Transcription request sent to SGS	New certificate issued with R value
VC152206F	05-Dec-15	n/a	Au	Cert integr-ation	One Au re-assay was not transcribed onto the F certificate	Transcribe the missing R value and re-issue certificate	n/a	n/a	Transcription request sent to SGS	New certificate issued with R value

Work Order	Finalized	Sample	Elem(s)	Failure Type	Reason for Failure	Recommended Action	Lab code	# re-assay	Action Taken	Action Result
VC152566F	05-Dec-15	n/a	Au	Cert integr-ation	One Au re-assay was not transcribed onto the F certificate	Transcribe the missing R value and re-issue certificate	n/a	n/a	Transcription request sent to SGS	New certificate issued with R value
VC153452	23-Dec-15	B00269830, 9850	Pb	2-SD	Two out of three consecutive CRMs (OREAS 623, CDN-ME-1311) with Z-scores between +2-3 SD	Re-assay B00269821-9833, B00269842-9845, B0029850	GO_ICP90Q	18	To be submitted for re-assay in Jan 2016?	
VC153742	04-Jan-16	B00233330, 3370	Pb	2-SD	Two out of three consecutive CDN-ME-1311 with Z-scores between -2 to -3 SD	Re-assay B00233328, 3330	GO_ICP90Q	2	To be submitted for re-assay in Jan 2016?	

Appendix P: Metallurgical samples

Table P-1: List of samples collected in 2015 that were used to build metallurgical composites

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-201	B00264002	Whole core metallurgical	HQ3	10.20	10.90	0.70
K15-201	B00264003	Whole core metallurgical	HQ3	10.90	11.90	1.00
K15-201	B00264004	Whole core metallurgical	HQ3	11.90	12.90	1.00
K15-201	B00264005	Whole core metallurgical	HQ3	12.90	13.40	0.50
K15-201	B00264006	Whole core metallurgical	HQ3	13.40	14.20	0.80
K15-201	B00264007	Whole core metallurgical	HQ3	14.20	15.00	0.80
K15-201	B00264008	Whole core metallurgical	HQ3	15.00	15.80	0.80
K15-201	B00264009	Whole core metallurgical	HQ3	15.80	16.80	1.00
K15-201	B00264011	Whole core metallurgical	HQ3	16.80	17.80	1.00
K15-201	B00264012	Whole core metallurgical	HQ3	17.80	20.00	2.20
K15-201	B00264013	Whole core metallurgical	HQ3	20.00	21.50	1.50
K15-201	B00264014	Whole core metallurgical	HQ3	21.50	23.00	1.50
K15-201	B00265853	Whole core metallurgical	HQ3	23.00	24.00	1.00
K15-201	B00265854	Whole core metallurgical	HQ3	24.00	25.00	1.00
K15-201	B00265855	Whole core metallurgical	HQ3	25.00	26.00	1.00
K15-201	B00265856	Whole core metallurgical	HQ3	26.00	27.00	1.00
K15-201	B00265857	Whole core metallurgical	HQ3	27.00	28.00	1.00
K15-205	B00265858	Whole core metallurgical	HQ3	95.60	96.60	1.00
K15-205	B00265859	Whole core metallurgical	HQ3	96.60	97.60	1.00
K15-205	B00265860	Whole core metallurgical	HQ3	97.60	98.30	0.70
K15-205	B00265861	Whole core metallurgical	HQ3	98.30	99.60	1.30
K15-205	B00265862	Whole core metallurgical	HQ3	99.60	100.60	1.00
K15-205	B00265501	Whole core metallurgical	HQ3	100.60	101.40	0.80
K15-205	B00265502	Whole core metallurgical	HQ3	101.40	102.20	0.80
K15-205	B00265503	Whole core metallurgical	HQ3	102.20	102.90	0.70
K15-205	B00265504	Whole core metallurgical	HQ3	102.90	103.90	1.00
K15-205	B00265505	Whole core metallurgical	HQ3	103.90	104.90	1.00
K15-205	B00265506	Whole core metallurgical	HQ3	104.90	105.20	0.30
K15-205	B00265507	Whole core metallurgical	HQ3	105.20	106.20	1.00
K15-205	B00265508	Whole core metallurgical	HQ3	106.20	107.20	1.00
K15-205	B00265509	Whole core metallurgical	HQ3	107.20	108.20	1.00
K15-205	B00265510	Whole core metallurgical	HQ3	108.20	109.30	1.10
K15-205	B00265863	Whole core metallurgical	HQ3	109.30	110.20	0.90
K15-205	B00265864	Whole core metallurgical	HQ3	110.20	111.20	1.00
K15-205	B00265865	Whole core metallurgical	HQ3	111.20	112.20	1.00
K15-205	B00265866	Whole core metallurgical	HQ3	112.20	113.20	1.00
K15-205	B00265867	Whole core metallurgical	HQ3	113.20	114.20	1.00
K15-205	B00265868	Whole core metallurgical	HQ3	114.20	115.20	1.00
K15-205	B00265869	Whole core metallurgical	HQ3	115.20	116.10	0.90
K15-205	B00265870	Whole core metallurgical	HQ3	116.10	117.10	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-205	B00265871	Whole core metallurgical	HQ3	117.10	118.10	1.00
K15-205	B00265872	Whole core metallurgical	HQ3	118.10	119.00	0.90
K15-205	B00265511	Whole core metallurgical	HQ3	119.00	119.80	0.80
K15-205	B00265512	Whole core metallurgical	HQ3	119.80	120.80	1.00
K15-205	B00265513	Whole core metallurgical	HQ3	120.80	121.80	1.00
K15-205	B00265514	Whole core metallurgical	HQ3	121.80	122.80	1.00
K15-205	B00265515	Whole core metallurgical	HQ3	122.80	123.80	1.00
K15-205	B00265516	Whole core metallurgical	HQ3	123.80	124.50	0.70
K15-205	B00265517	Whole core metallurgical	HQ3	124.50	125.10	0.60
K15-205	B00265518	Whole core metallurgical	HQ3	125.10	125.70	0.60
K15-205	B00265873	Whole core metallurgical	HQ3	125.70	126.80	1.10
K15-205	B00265519	Whole core metallurgical	HQ3	126.80	127.20	0.40
K15-205	B00265874	Whole core metallurgical	HQ3	127.20	128.20	1.00
K15-205	B00265875	Whole core metallurgical	HQ3	128.20	129.20	1.00
K15-205	B00265876	Whole core metallurgical	HQ3	129.20	130.20	1.00
K15-205	B00265877	Whole core metallurgical	HQ3	130.20	131.30	1.10
K15-205	B00265878	Whole core metallurgical	HQ3	131.30	132.20	0.90
K15-205	B00265879	Whole core metallurgical	HQ3	132.20	133.20	1.00
K15-205	B00265880	Whole core metallurgical	HQ3	133.20	134.20	1.00
K15-205	B00265881	Whole core metallurgical	HQ3	134.20	134.90	0.70
K15-205	B00265882	Whole core metallurgical	HQ3	134.90	135.20	0.30
K15-205	B00265883	Whole core metallurgical	HQ3	135.20	136.30	1.10
K15-205	B00265520	Whole core metallurgical	HQ3	136.30	137.30	1.00
K15-205	B00265521	Whole core metallurgical	HQ3	137.30	138.30	1.00
K15-205	B00265522	Whole core metallurgical	HQ3	138.30	139.30	1.00
K15-205	B00265884	Whole core metallurgical	HQ3	139.30	140.30	1.00
K15-205	B00265885	Whole core metallurgical	HQ3	140.30	141.30	1.00
K15-205	B00265886	Whole core metallurgical	HQ3	141.30	142.30	1.00
K15-205	B00265887	Whole core metallurgical	HQ3	142.30	143.30	1.00
K15-205	B00265888	Whole core metallurgical	HQ3	143.30	144.30	1.00
K15-213	B00293332	Whole core metallurgical	HQ3	16.00	17.00	1.00
K15-213	B00293333	Whole core metallurgical	HQ3	17.00	18.00	1.00
K15-213	B00293334	Whole core metallurgical	HQ3	18.00	19.00	1.00
K15-213	B00293335	Whole core metallurgical	HQ3	19.00	20.00	1.00
K15-213	B00293336	Whole core metallurgical	HQ3	20.00	21.20	1.20
K15-213	B00265523	Whole core metallurgical	HQ3	21.20	21.50	0.30
K15-213	B00265524	Whole core metallurgical	HQ3	21.50	22.00	0.50
K15-213	B00265525	Whole core metallurgical	HQ3	22.00	23.00	1.00
K15-213	B00265526	Whole core metallurgical	HQ3	23.00	24.00	1.00
K15-213	B00265527	Whole core metallurgical	HQ3	24.00	25.00	1.00
K15-213	B00265528	Whole core metallurgical	HQ3	25.00	26.00	1.00
K15-213	B00265529	Whole core metallurgical	HQ3	26.00	27.00	1.00
K15-213	B00265530	Whole core metallurgical	HQ3	27.00	27.80	0.80

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-213	B00293337	Whole core metallurgical	HQ3	27.80	28.50	0.70
K15-213	B00293338	Whole core metallurgical	HQ3	28.50	29.20	0.70
K15-213	B00293339	Whole core metallurgical	HQ3	29.20	30.00	0.80
K15-213	B00293340	Whole core metallurgical	HQ3	30.00	31.30	1.30
K15-213	B00293341	Whole core metallurgical	HQ3	31.30	32.02	0.72
K15-213	B00293342	Whole core metallurgical	HQ3	32.02	33.10	1.08
K15-213	B00265531	Whole core metallurgical	HQ3	33.10	33.90	0.80
K15-213	B00265532	Whole core metallurgical	HQ3	33.90	34.70	0.80
K15-213	B00265533	Whole core metallurgical	HQ3	34.70	35.50	0.80
K15-213	B00293343	Whole core metallurgical	HQ3	35.50	36.20	0.70
K15-213	B00293344	Whole core metallurgical	HQ3	36.20	37.00	0.80
K15-213	B00293345	Whole core metallurgical	HQ3	37.00	38.00	1.00
K15-213	B00293346	Whole core metallurgical	HQ3	38.00	39.20	1.20
K15-213	B00265534	Whole core metallurgical	HQ3	39.20	39.90	0.70
K15-213	B00265535	Whole core metallurgical	HQ3	39.90	40.60	0.70
K15-213	B00265536	Whole core metallurgical	HQ3	40.60	41.10	0.50
K15-213	B00265537	Whole core metallurgical	HQ3	41.10	41.70	0.60
K15-213	B00265538	Whole core metallurgical	HQ3	41.70	42.40	0.70
K15-213	B00265539	Whole core metallurgical	HQ3	42.40	43.10	0.70
K15-213	B00265540	Whole core metallurgical	HQ3	44.70	45.70	1.00
K15-213	B00265541	Whole core metallurgical	HQ3	45.70	46.70	1.00
K15-213	B00265542	Whole core metallurgical	HQ3	46.70	47.70	1.00
K15-213	B00265543	Whole core metallurgical	HQ3	47.70	48.70	1.00
K15-213	B00265544	Whole core metallurgical	HQ3	48.70	49.70	1.00
K15-213	B00265545	Whole core metallurgical	HQ3	49.70	50.70	1.00
K15-213	B00265546	Whole core metallurgical	HQ3	50.70	51.60	0.90
K15-213	B00293347	Whole core metallurgical	HQ3	51.60	52.50	0.90
K15-213	B00293348	Whole core metallurgical	HQ3	52.50	53.10	0.60
K15-213	B00293349	Whole core metallurgical	HQ3	53.10	54.00	0.90
K15-213	B00293350	Whole core metallurgical	HQ3	54.00	55.00	1.00
K15-216W1	B00265889	Whole core metallurgical	HQ3	150.20	151.20	1.00
K15-216W1	B00265890	Whole core metallurgical	HQ3	151.20	152.20	1.00
K15-216W1	B00265891	Whole core metallurgical	HQ3	152.20	153.20	1.00
K15-216W1	B00265892	Whole core metallurgical	HQ3	153.20	154.20	1.00
K15-216W1	B00265893	Whole core metallurgical	HQ3	154.20	155.20	1.00
K15-216W1	B00265569	Whole core metallurgical	HQ3	155.20	156.00	0.80
K15-216W1	B00265570	Whole core metallurgical	HQ3	156.00	157.00	1.00
K15-216W1	B00265571	Whole core metallurgical	HQ3	157.00	158.00	1.00
K15-216W1	B00265894	Whole core metallurgical	HQ3	158.00	159.00	1.00
K15-216W1	B00265895	Whole core metallurgical	HQ3	159.00	160.00	1.00
K15-216W1	B00265896	Whole core metallurgical	HQ3	160.00	161.00	1.00
K15-216W1	B00265897	Whole core metallurgical	HQ3	161.00	162.00	1.00
K15-216W1	B00265898	Whole core metallurgical	HQ3	162.00	163.00	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-216W1	B00265899	Whole core metallurgical	HQ3	163.00	164.00	1.00
K15-216W1	B00265900	Whole core metallurgical	HQ3	164.00	165.00	1.00
K15-216W1	B00265901	Whole core metallurgical	HQ3	165.00	166.00	1.00
K15-216W1	B00265902	Whole core metallurgical	HQ3	166.00	166.70	0.70
K15-216W1	B00265572	Whole core metallurgical	HQ3	166.70	167.50	0.80
K15-216W1	B00265573	Whole core metallurgical	HQ3	167.50	168.30	0.80
K15-216W1	B00265574	Whole core metallurgical	HQ3	168.30	169.10	0.80
K15-216W1	B00265575	Whole core metallurgical	HQ3	169.10	169.80	0.70
K15-216W1	B00265576	Whole core metallurgical	HQ3	169.80	170.80	1.00
K15-216W1	B00265577	Whole core metallurgical	HQ3	170.80	171.50	0.70
K15-216W1	B00265578	Whole core metallurgical	HQ3	171.50	172.50	1.00
K15-216W1	B00265579	Whole core metallurgical	HQ3	172.50	173.50	1.00
K15-216W1	B00265580	Whole core metallurgical	HQ3	173.50	174.50	1.00
K15-216W1	B00265581	Whole core metallurgical	HQ3	174.50	175.30	0.80
K15-216W1	B00265582	Whole core metallurgical	HQ3	175.30	176.30	1.00
K15-216W1	B00265583	Whole core metallurgical	HQ3	176.30	177.10	0.80
K15-216W1	B00265903	Whole core metallurgical	HQ3	177.10	178.10	1.00
K15-216W1	B00265904	Whole core metallurgical	HQ3	178.10	178.90	0.80
K15-216W1	B00265905	Whole core metallurgical	HQ3	178.90	179.90	1.00
K15-216W1	B00265906	Whole core metallurgical	HQ3	179.90	180.90	1.00
K15-216W1	B00265907	Whole core metallurgical	HQ3	180.90	181.90	1.00
K15-221	B00265912	Whole core metallurgical	HQ3	8.80	9.40	0.60
K15-221	B00265547	Whole core metallurgical	HQ3	9.40	10.40	1.00
K15-221	B00265548	Whole core metallurgical	HQ3	10.40	11.40	1.00
K15-221	B00265549	Whole core metallurgical	HQ3	11.40	12.40	1.00
K15-221	B00265550	Whole core metallurgical	HQ3	12.40	13.40	1.00
K15-221	B00265551	Whole core metallurgical	HQ3	13.40	14.40	1.00
K15-221	B00265552	Whole core metallurgical	HQ3	14.40	15.50	1.10
K15-221	B00265913	Whole core metallurgical	HQ3	15.50	16.50	1.00
K15-221	B00265914	Whole core metallurgical	HQ3	16.50	17.50	1.00
K15-221	B00265915	Whole core metallurgical	HQ3	17.50	18.50	1.00
K15-221	B00265916	Whole core metallurgical	HQ3	18.50	19.50	1.00
K15-221	B00265917	Whole core metallurgical	HQ3	19.50	20.50	1.00
K15-221	B00265918	Whole core metallurgical	HQ3	20.50	21.50	1.00
K15-221	B00265919	Whole core metallurgical	HQ3	21.50	22.30	0.80
K15-221	B00265553	Whole core metallurgical	HQ3	22.30	22.60	0.30
K15-221	B00265554	Whole core metallurgical	HQ3	22.60	23.60	1.00
K15-221	B00265555	Whole core metallurgical	HQ3	23.60	24.60	1.00
K15-221	B00265556	Whole core metallurgical	HQ3	24.60	25.60	1.00
K15-221	B00265557	Whole core metallurgical	HQ3	25.60	26.30	0.70
K15-221	B00265558	Whole core metallurgical	HQ3	26.30	26.80	0.50
K15-221	B00265559	Whole core metallurgical	HQ3	26.80	27.80	1.00
K15-221	B00265560	Whole core metallurgical	HQ3	27.80	28.50	0.70

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-221	B00265561	Whole core metallurgical	HQ3	28.50	29.00	0.50
K15-221	B00265562	Whole core metallurgical	HQ3	29.00	30.00	1.00
K15-221	B00265563	Whole core metallurgical	HQ3	30.00	31.00	1.00
K15-221	B00265564	Whole core metallurgical	HQ3	31.00	32.00	1.00
K15-221	B00265565	Whole core metallurgical	HQ3	32.00	33.00	1.00
K15-221	B00265566	Whole core metallurgical	HQ3	33.00	34.00	1.00
K15-221	B00265567	Whole core metallurgical	HQ3	34.00	35.00	1.00
K15-221	B00265568	Whole core metallurgical	HQ3	35.00	35.30	0.30
K15-221	B00265920	Whole core metallurgical	HQ3	35.30	36.30	1.00
K15-221	B00265921	Whole core metallurgical	HQ3	36.30	37.30	1.00
K15-221	B00265922	Whole core metallurgical	HQ3	37.30	37.90	0.60
K15-221	B00265923	Whole core metallurgical	HQ3	37.90	38.50	0.60
K15-221	B00265924	Whole core metallurgical	HQ3	38.50	39.50	1.00
K15-221	B00265925	Whole core metallurgical	HQ3	39.50	40.50	1.00
K15-225	B00265584	Whole core metallurgical	HQ3	9.00	9.90	0.90
K15-225	B00265585	Whole core metallurgical	HQ3	9.90	10.90	1.00
K15-225	B00265586	Whole core metallurgical	HQ3	10.90	11.90	1.00
K15-225	B00265587	Whole core metallurgical	HQ3	11.90	14.00	2.10
K15-225	B00265588	Whole core metallurgical	HQ3	14.00	15.36	1.36
K15-225	B00265589	Whole core metallurgical	HQ3	15.36	16.00	0.64
K15-225	B00265590	Whole core metallurgical	HQ3	16.00	17.00	1.00
K15-225	B00265926	Whole core metallurgical	HQ3	17.00	18.00	1.00
K15-225	B00265927	Whole core metallurgical	HQ3	18.00	19.00	1.00
K15-225	B00265928	Whole core metallurgical	HQ3	19.00	20.00	1.00
K15-225	B00265929	Whole core metallurgical	HQ3	20.00	21.00	1.00
K15-225	B00265930	Whole core metallurgical	HQ3	21.00	22.00	1.00
K15-226W1	B00265931	Whole core metallurgical	HQ3	139.10	140.10	1.00
K15-226W1	B00265932	Whole core metallurgical	HQ3	140.10	141.10	1.00
K15-226W1	B00265933	Whole core metallurgical	HQ3	141.10	142.10	1.00
K15-226W1	B00265934	Whole core metallurgical	HQ3	142.10	143.10	1.00
K15-226W1	B00265935	Whole core metallurgical	HQ3	143.10	144.10	1.00
K15-226W1	B00264665	Whole core metallurgical	HQ3	144.10	144.90	0.80
K15-226W1	B00264666	Whole core metallurgical	HQ3	144.90	145.55	0.65
K15-226W1	B00264667	Whole core metallurgical	HQ3	145.55	146.05	0.50
K15-226W1	B00264668	Whole core metallurgical	HQ3	146.05	146.60	0.55
K15-226W1	B00264669	Whole core metallurgical	HQ3	146.60	147.30	0.70
K15-226W1	B00264670	Whole core metallurgical	HQ3	147.30	148.00	0.70
K15-226W1	B00264671	Whole core metallurgical	HQ3	148.00	148.95	0.95
K15-226W1	B00264672	Whole core metallurgical	HQ3	148.95	149.80	0.85
K15-226W1	B00264673	Whole core metallurgical	HQ3	149.80	150.40	0.60
K15-226W1	B00264674	Whole core metallurgical	HQ3	150.40	151.00	0.60
K15-226W1	B00264675	Whole core metallurgical	HQ3	151.00	152.00	1.00
K15-226W1	B00264676	Whole core metallurgical	HQ3	152.00	153.00	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-226W1	B00264677	Whole core metallurgical	HQ3	153.00	154.00	1.00
K15-226W1	B00264678	Whole core metallurgical	HQ3	154.00	155.00	1.00
K15-226W1	B00264679	Whole core metallurgical	HQ3	155.00	156.00	1.00
K15-226W1	B00264680	Whole core metallurgical	HQ3	156.00	157.00	1.00
K15-226W1	B00264681	Whole core metallurgical	HQ3	157.00	158.00	1.00
K15-226W1	B00264682	Whole core metallurgical	HQ3	158.00	158.95	0.95
K15-226W1	B00264683	Whole core metallurgical	HQ3	158.95	159.60	0.65
K15-226W1	B00264684	Whole core metallurgical	HQ3	159.60	160.40	0.80
K15-226W1	B00264685	Whole core metallurgical	HQ3	160.40	161.30	0.90
K15-226W1	B00264686	Whole core metallurgical	HQ3	161.30	162.30	1.00
K15-226W1	B00264687	Whole core metallurgical	HQ3	162.30	163.20	0.90
K15-226W1	B00264688	Whole core metallurgical	HQ3	163.20	164.00	0.80
K15-226W1	B00264689	Whole core metallurgical	HQ3	164.00	164.65	0.65
K15-226W1	B00264690	Whole core metallurgical	HQ3	164.65	165.30	0.65
K15-226W1	B00264691	Whole core metallurgical	HQ3	165.30	166.00	0.70
K15-226W1	B00264692	Whole core metallurgical	HQ3	166.00	166.60	0.60
K15-226W1	B00264693	Whole core metallurgical	HQ3	166.60	167.40	0.80
K15-226W1	B00264694	Whole core metallurgical	HQ3	167.40	168.00	0.60
K15-226W1	B00264695	Whole core metallurgical	HQ3	168.00	169.00	1.00
K15-226W1	B00264696	Whole core metallurgical	HQ3	169.00	170.00	1.00
K15-226W1	B00264697	Whole core metallurgical	HQ3	170.00	170.70	0.70
K15-226W1	B00264698	Whole core metallurgical	HQ3	170.70	171.63	0.93
K15-226W1	B00264699	Whole core metallurgical	HQ3	171.63	172.40	0.77
K15-226W1	B00264700	Whole core metallurgical	HQ3	172.40	173.30	0.90
K15-226W1	B00264701	Whole core metallurgical	HQ3	173.30	174.20	0.90
K15-226W1	B00264702	Whole core metallurgical	HQ3	174.20	174.70	0.50
K15-226W1	B00264703	Whole core metallurgical	HQ3	174.70	175.25	0.55
K15-226W1	B00264704	Whole core metallurgical	HQ3	175.25	176.00	0.75
K15-226W1	B00264705	Whole core metallurgical	HQ3	176.00	176.65	0.65
K15-226W1	B00264706	Whole core metallurgical	HQ3	176.65	177.30	0.65
K15-226W1	B00264707	Whole core metallurgical	HQ3	177.30	178.00	0.70
K15-226W1	B00265936	Whole core metallurgical	HQ3	178.00	179.00	1.00
K15-226W1	B00265937	Whole core metallurgical	HQ3	179.00	180.00	1.00
K15-226W1	B00265938	Whole core metallurgical	HQ3	180.00	181.00	1.00
K15-226W1	B00265939	Whole core metallurgical	HQ3	181.00	182.00	1.00
K15-230	B00265591	Whole core metallurgical	HQ3	11.30	12.00	0.70
K15-230	B00265592	Whole core metallurgical	HQ3	12.00	12.50	0.50
K15-230	B00265593	Whole core metallurgical	HQ3	12.50	12.80	0.30
K15-230	B00265594	Whole core metallurgical	HQ3	12.80	13.20	0.40
K15-230	B00265595	Whole core metallurgical	HQ3	13.20	14.20	1.00
K15-230	B00265596	Whole core metallurgical	HQ3	14.20	14.80	0.60
K15-230	B00265597	Whole core metallurgical	HQ3	14.80	15.60	0.80
K15-230	B00265598	Whole core metallurgical	HQ3	15.60	16.55	0.95

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-230	B00265599	Whole core metallurgical	HQ3	16.55	17.00	0.45
K15-230	B00265600	Whole core metallurgical	HQ3	17.00	18.00	1.00
K15-230	B00265601	Whole core metallurgical	HQ3	18.00	18.45	0.45
K15-230	B00265941	Whole core metallurgical	HQ3	18.45	19.45	1.00
K15-230	B00265942	Whole core metallurgical	HQ3	19.45	20.45	1.00
K15-230	B00265943	Whole core metallurgical	HQ3	20.45	21.45	1.00
K15-230	B00265944	Whole core metallurgical	HQ3	21.45	22.45	1.00
K15-230	B00265945	Whole core metallurgical	HQ3	22.45	23.50	1.05
K15-230	B00265946	Whole core metallurgical	HQ3	23.50	24.50	1.00
K15-230	B00265947	Whole core metallurgical	HQ3	24.50	25.50	1.00
K15-230	B00265948	Whole core metallurgical	HQ3	25.50	26.50	1.00
K15-230	B00265949	Whole core metallurgical	HQ3	26.50	27.50	1.00
K15-230	B00265950	Whole core metallurgical	HQ3	27.50	28.50	1.00
K15-230	B00265951	Whole core metallurgical	HQ3	28.50	29.50	1.00
K15-230	B00265952	Whole core metallurgical	HQ3	29.50	30.10	0.60
K15-230	B00265953	Whole core metallurgical	HQ3	30.10	31.10	1.00
K15-230	B00265954	Whole core metallurgical	HQ3	31.10	32.10	1.00
K15-230	B00265955	Whole core metallurgical	HQ3	32.10	33.10	1.00
K15-230	B00265956	Whole core metallurgical	HQ3	33.10	34.10	1.00
K15-230	B00265957	Whole core metallurgical	HQ3	34.10	35.10	1.00
K15-230	B00265958	Whole core metallurgical	HQ3	35.10	35.60	0.50
K15-230	B00265959	Whole core metallurgical	HQ3	35.60	36.70	1.10
K15-230	B00265960	Whole core metallurgical	HQ3	36.70	37.50	0.80
K15-230	B00265961	Whole core metallurgical	HQ3	37.50	38.50	1.00
K15-230	B00265962	Whole core metallurgical	HQ3	38.50	39.50	1.00
K15-230	B00265963	Whole core metallurgical	HQ3	39.50	40.50	1.00
K15-230	B00265964	Whole core metallurgical	HQ3	40.50	41.00	0.50
K15-237	B00265965	Whole core metallurgical	HQ3	70.75	71.75	1.00
K15-237	B00265966	Whole core metallurgical	HQ3	71.75	72.75	1.00
K15-237	B00265967	Whole core metallurgical	HQ3	72.75	73.75	1.00
K15-237	B00265968	Whole core metallurgical	HQ3	73.75	74.75	1.00
K15-237	B00265969	Whole core metallurgical	HQ3	74.75	75.26	0.51
K15-237	B00265602	Whole core metallurgical	HQ3	75.26	76.02	0.76
K15-237	B00265603	Whole core metallurgical	HQ3	76.02	76.52	0.50
K15-237	B00265604	Whole core metallurgical	HQ3	76.52	77.18	0.66
K15-237	B00265605	Whole core metallurgical	HQ3	77.18	77.68	0.50
K15-237	B00265606	Whole core metallurgical	HQ3	77.68	78.22	0.54
K15-237	B00265607	Whole core metallurgical	HQ3	78.22	78.75	0.53
K15-237	B00265608	Whole core metallurgical	HQ3	78.75	79.50	0.75
K15-237	B00265609	Whole core metallurgical	HQ3	79.50	80.50	1.00
K15-237	B00265610	Whole core metallurgical	HQ3	80.50	81.40	0.90
K15-237	B00265611	Whole core metallurgical	HQ3	81.40	82.15	0.75
K15-237	B00265612	Whole core metallurgical	HQ3	82.15	83.15	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-237	B00265613	Whole core metallurgical	HQ3	83.15	84.15	1.00
K15-237	B00265614	Whole core metallurgical	HQ3	84.15	84.72	0.57
K15-237	B00265615	Whole core metallurgical	HQ3	84.72	85.22	0.50
K15-237	B00265616	Whole core metallurgical	HQ3	85.22	86.00	0.78
K15-237	B00265617	Whole core metallurgical	HQ3	86.00	87.00	1.00
K15-237	B00265618	Whole core metallurgical	HQ3	87.00	88.00	1.00
K15-237	B00265619	Whole core metallurgical	HQ3	88.00	88.60	0.60
K15-237	B00265970	Whole core metallurgical	HQ3	88.60	89.60	1.00
K15-237	B00265971	Whole core metallurgical	HQ3	89.60	90.60	1.00
K15-237	B00265972	Whole core metallurgical	HQ3	90.60	91.60	1.00
K15-237	B00265973	Whole core metallurgical	HQ3	91.60	92.60	1.00
K15-237	B00265974	Whole core metallurgical	HQ3	92.60	93.60	1.00
K15-237	B00265975	Whole core metallurgical	HQ3	93.60	94.15	0.55
K15-237	B00265620	Whole core metallurgical	HQ3	94.15	95.00	0.85
K15-237	B00265621	Whole core metallurgical	HQ3	95.00	96.00	1.00
K15-237	B00265622	Whole core metallurgical	HQ3	96.00	96.80	0.80
K15-237	B00265623	Whole core metallurgical	HQ3	96.80	97.54	0.74
K15-237	B00265624	Whole core metallurgical	HQ3	97.54	98.45	0.91
K15-237	B00265625	Whole core metallurgical	HQ3	98.45	99.00	0.55
K15-237	B00265626	Whole core metallurgical	HQ3	99.00	100.00	1.00
K15-237	B00265627	Whole core metallurgical	HQ3	100.00	101.00	1.00
K15-237	B00265628	Whole core metallurgical	HQ3	101.00	101.92	0.92
K15-237	B00265629	Whole core metallurgical	HQ3	101.92	102.61	0.69
K15-237	B00265630	Whole core metallurgical	HQ3	102.61	103.50	0.89
K15-237	B00265631	Whole core metallurgical	HQ3	103.50	104.50	1.00
K15-237	B00265632	Whole core metallurgical	HQ3	104.50	105.50	1.00
K15-237	B00265633	Whole core metallurgical	HQ3	105.50	106.50	1.00
K15-237	B00265634	Whole core metallurgical	HQ3	106.50	107.50	1.00
K15-237	B00265635	Whole core metallurgical	HQ3	107.50	108.50	1.00
K15-237	B00265636	Whole core metallurgical	HQ3	108.50	109.43	0.93
K15-237	B00265976	Whole core metallurgical	HQ3	109.43	110.43	1.00
K15-237	B00265977	Whole core metallurgical	HQ3	110.43	111.43	1.00
K15-237	B00265978	Whole core metallurgical	HQ3	111.43	112.43	1.00
K15-237	B00265979	Whole core metallurgical	HQ3	112.43	113.25	0.82
K15-237	B00265980	Whole core metallurgical	HQ3	113.25	114.50	1.25
K15-238W1	B00265981	Whole core metallurgical	HQ3	162.90	163.90	1.00
K15-238W1	B00265982	Whole core metallurgical	HQ3	163.90	164.90	1.00
K15-238W1	B00265983	Whole core metallurgical	HQ3	164.90	165.90	1.00
K15-238W1	B00265984	Whole core metallurgical	HQ3	165.90	166.90	1.00
K15-238W1	B00265985	Whole core metallurgical	HQ3	166.90	168.04	1.14
K15-238W1	B00264742	Whole core metallurgical	HQ3	168.04	168.89	0.85
K15-238W1	B00264743	Whole core metallurgical	HQ3	168.89	169.50	0.61
K15-238W1	B00264744	Whole core metallurgical	HQ3	169.50	170.00	0.50

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-238W1	B00264745	Whole core metallurgical	HQ3	170.00	171.00	1.00
K15-238W1	B00264746	Whole core metallurgical	HQ3	171.00	171.77	0.77
K15-238W1	B00264747	Whole core metallurgical	HQ3	171.77	172.43	0.66
K15-238W1	B00264748	Whole core metallurgical	HQ3	172.43	173.63	1.20
K15-238W1	B00264749	Whole core metallurgical	HQ3	173.63	174.14	0.51
K15-238W1	B00264750	Whole core metallurgical	HQ3	174.14	175.00	0.86
K15-238W1	B00264751	Whole core metallurgical	HQ3	175.00	176.00	1.00
K15-238W1	B00264752	Whole core metallurgical	HQ3	176.00	177.00	1.00
K15-238W1	B00264753	Whole core metallurgical	HQ3	177.00	178.00	1.00
K15-238W1	B00264754	Whole core metallurgical	HQ3	178.00	178.87	0.87
K15-238W1	B00265986	Whole core metallurgical	HQ3	178.87	179.87	1.00
K15-238W1	B00265987	Whole core metallurgical	HQ3	179.87	180.87	1.00
K15-238W1	B00265988	Whole core metallurgical	HQ3	180.87	181.59	0.72
K15-238W1	B00264755	Whole core metallurgical	HQ3	181.59	182.28	0.69
K15-238W1	B00265989	Whole core metallurgical	HQ3	182.28	183.32	1.04
K15-238W1	B00264756	Whole core metallurgical	HQ3	183.32	184.32	1.00
K15-238W1	B00264757	Whole core metallurgical	HQ3	184.32	185.00	0.68
K15-238W1	B00264758	Whole core metallurgical	HQ3	185.00	185.80	0.80
K15-238W1	B00264759	Whole core metallurgical	HQ3	185.80	186.60	0.80
K15-238W1	B00264760	Whole core metallurgical	HQ3	186.60	187.30	0.70
K15-238W1	B00265990	Whole core metallurgical	HQ3	187.30	188.30	1.00
K15-238W1	B00265991	Whole core metallurgical	HQ3	188.30	189.30	1.00
K15-238W1	B00265992	Whole core metallurgical	HQ3	189.30	190.30	1.00
K15-238W1	B00265993	Whole core metallurgical	HQ3	190.30	191.30	1.00
K15-238W1	B00265994	Whole core metallurgical	HQ3	191.30	192.30	1.00
K15-241R	B00265995	Whole core metallurgical	HQ3	38.56	39.56	1.00
K15-241R	B00265996	Whole core metallurgical	HQ3	39.56	40.56	1.00
K15-241R	B00265997	Whole core metallurgical	HQ3	40.56	41.56	1.00
K15-241R	B00265998	Whole core metallurgical	HQ3	41.56	42.56	1.00
K15-241R	B00265999	Whole core metallurgical	HQ3	42.56	43.42	0.86
K15-241R	B00265637	Whole core metallurgical	HQ3	43.42	43.73	0.31
K15-241R	B00265638	Whole core metallurgical	HQ3	43.73	43.93	0.20
K15-241R	B00265639	Whole core metallurgical	HQ3	43.93	44.95	1.02
K15-241R	B00265640	Whole core metallurgical	HQ3	44.95	45.62	0.67
K15-241R	B00265641	Whole core metallurgical	HQ3	45.62	46.62	1.00
K15-241R	B00265642	Whole core metallurgical	HQ3	46.62	47.30	0.68
K15-241R	B00265643	Whole core metallurgical	HQ3	47.30	48.09	0.79
K15-241R	B00265644	Whole core metallurgical	HQ3	48.09	49.09	1.00
K15-241R	B00265645	Whole core metallurgical	HQ3	49.09	50.09	1.00
K15-241R	B00265646	Whole core metallurgical	HQ3	50.09	51.09	1.00
K15-241R	B00265647	Whole core metallurgical	HQ3	51.09	51.84	0.75
K15-241R	B00265648	Whole core metallurgical	HQ3	51.84	52.50	0.66
K15-241R	B00266000	Whole core metallurgical	HQ3	52.50	53.50	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-241R	B00266001	Whole core metallurgical	HQ3	53.50	54.50	1.00
K15-241R	B00266002	Whole core metallurgical	HQ3	54.50	55.50	1.00
K15-241R	B00266003	Whole core metallurgical	HQ3	55.50	56.50	1.00
K15-241R	B00266004	Whole core metallurgical	HQ3	56.50	57.50	1.00
K15-241R	B00266005	Whole core metallurgical	HQ3	57.50	58.50	1.00
K15-241R	B00266006	Whole core metallurgical	HQ3	58.50	59.50	1.00
K15-241R	B00266007	Whole core metallurgical	HQ3	59.50	60.50	1.00
K15-241R	B00266008	Whole core metallurgical	HQ3	60.50	61.60	1.10
K15-241R	B00265649	Whole core metallurgical	HQ3	61.60	62.10	0.50
K15-241R	B00265650	Whole core metallurgical	HQ3	62.10	63.00	0.90
K15-241R	B00265651	Whole core metallurgical	HQ3	63.00	63.60	0.60
K15-241R	B00266009	Whole core metallurgical	HQ3	63.60	64.60	1.00
K15-241R	B00266010	Whole core metallurgical	HQ3	64.60	65.00	0.40
K15-243W1	B00266011	Whole core metallurgical	HQ3	160.15	161.15	1.00
K15-243W1	B00266012	Whole core metallurgical	HQ3	161.15	162.15	1.00
K15-243W1	B00266013	Whole core metallurgical	HQ3	162.15	163.15	1.00
K15-243W1	B00266014	Whole core metallurgical	HQ3	163.15	164.15	1.00
K15-243W1	B00266015	Whole core metallurgical	HQ3	164.15	165.15	1.00
K15-243W1	B00264790	Whole core metallurgical	HQ3	165.15	165.76	0.61
K15-243W1	B00266016	Whole core metallurgical	HQ3	165.76	166.76	1.00
K15-243W1	B00266017	Whole core metallurgical	HQ3	166.76	167.48	0.72
K15-243W1	B00264791	Whole core metallurgical	HQ3	167.48	168.96	1.48
K15-243W1	B00264792	Whole core metallurgical	HQ3	168.96	170.00	1.04
K15-243W1	B00264793	Whole core metallurgical	HQ3	170.00	171.00	1.00
K15-243W1	B00264794	Whole core metallurgical	HQ3	171.00	172.00	1.00
K15-243W1	B00264795	Whole core metallurgical	HQ3	172.00	173.00	1.00
K15-243W1	B00264796	Whole core metallurgical	HQ3	173.00	173.64	0.64
K15-243W1	B00264797	Whole core metallurgical	HQ3	173.64	175.00	1.36
K15-243W1	B00264798	Whole core metallurgical	HQ3	175.00	176.14	1.14
K15-243W1	B00264799	Whole core metallurgical	HQ3	176.14	177.00	0.86
K15-243W1	B00264800	Whole core metallurgical	HQ3	177.00	178.00	1.00
K15-243W1	B00264801	Whole core metallurgical	HQ3	178.00	178.80	0.80
K15-243W1	B00264802	Whole core metallurgical	HQ3	178.80	180.10	1.30
K15-243W1	B00264803	Whole core metallurgical	HQ3	180.10	181.00	0.90
K15-243W1	B00264804	Whole core metallurgical	HQ3	181.00	182.00	1.00
K15-243W1	B00264805	Whole core metallurgical	HQ3	182.00	183.00	1.00
K15-243W1	B00264806	Whole core metallurgical	HQ3	183.00	184.00	1.00
K15-243W1	B00264807	Whole core metallurgical	HQ3	184.00	185.00	1.00
K15-243W1	B00264808	Whole core metallurgical	HQ3	185.00	185.86	0.86
K15-243W1	B00266018	Whole core metallurgical	HQ3	185.86	186.86	1.00
K15-243W1	B00266019	Whole core metallurgical	HQ3	186.86	187.86	1.00
K15-243W1	B00266020	Whole core metallurgical	HQ3	187.86	188.86	1.00
K15-243W1	B00266021	Whole core metallurgical	HQ3	188.86	189.86	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-243W1	B00266022	Whole core metallurgical	HQ3	189.86	190.55	0.69
K15-245	B00266023	Whole core metallurgical	HQ3	54.20	55.20	1.00
K15-245	B00266024	Whole core metallurgical	HQ3	55.20	56.20	1.00
K15-245	B00266025	Whole core metallurgical	HQ3	56.20	57.20	1.00
K15-245	B00266026	Whole core metallurgical	HQ3	57.20	58.20	1.00
K15-245	B00266027	Whole core metallurgical	HQ3	58.20	59.21	1.01
K15-245	B00265682	Whole core metallurgical	HQ3	59.21	60.29	1.08
K15-245	B00265683	Whole core metallurgical	HQ3	60.29	61.29	1.00
K15-245	B00265684	Whole core metallurgical	HQ3	61.29	62.29	1.00
K15-245	B00265685	Whole core metallurgical	HQ3	62.29	63.25	0.96
K15-245	B00265686	Whole core metallurgical	HQ3	63.25	64.25	1.00
K15-245	B00265687	Whole core metallurgical	HQ3	64.25	65.25	1.00
K15-245	B00265688	Whole core metallurgical	HQ3	65.25	66.25	1.00
K15-245	B00265689	Whole core metallurgical	HQ3	66.25	67.15	0.90
K15-245	B00266028	Whole core metallurgical	HQ3	67.15	68.15	1.00
K15-245	B00266029	Whole core metallurgical	HQ3	68.15	69.15	1.00
K15-245	B00266030	Whole core metallurgical	HQ3	69.15	70.00	0.85
K15-246	B00266031	Whole core metallurgical	HQ3	90.36	91.36	1.00
K15-246	B00266032	Whole core metallurgical	HQ3	91.36	92.36	1.00
K15-246	B00266033	Whole core metallurgical	HQ3	92.36	93.36	1.00
K15-246	B00266034	Whole core metallurgical	HQ3	93.36	94.36	1.00
K15-246	B00266035	Whole core metallurgical	HQ3	94.36	95.36	1.00
K15-246	B00265652	Whole core metallurgical	HQ3	95.36	96.00	0.64
K15-246	B00265653	Whole core metallurgical	HQ3	96.00	96.52	0.52
K15-246	B00265654	Whole core metallurgical	HQ3	96.52	97.22	0.70
K15-246	B00265655	Whole core metallurgical	HQ3	97.22	98.22	1.00
K15-246	B00265656	Whole core metallurgical	HQ3	98.22	99.22	1.00
K15-246	B00265657	Whole core metallurgical	HQ3	99.22	100.22	1.00
K15-246	B00265658	Whole core metallurgical	HQ3	100.22	101.08	0.86
K15-246	B00265659	Whole core metallurgical	HQ3	101.08	102.08	1.00
K15-246	B00265660	Whole core metallurgical	HQ3	102.08	103.08	1.00
K15-246	B00265661	Whole core metallurgical	HQ3	103.08	104.00	0.92
K15-246	B00265662	Whole core metallurgical	HQ3	104.00	104.52	0.52
K15-246	B00265663	Whole core metallurgical	HQ3	104.52	105.25	0.73
K15-246	B00265664	Whole core metallurgical	HQ3	105.25	106.25	1.00
K15-246	B00265665	Whole core metallurgical	HQ3	106.25	106.86	0.61
K15-246	B00265666	Whole core metallurgical	HQ3	106.86	107.83	0.97
K15-246	B00265667	Whole core metallurgical	HQ3	107.83	108.50	0.67
K15-246	B00265668	Whole core metallurgical	HQ3	108.50	109.28	0.78
K15-246	B00265669	Whole core metallurgical	HQ3	109.28	110.24	0.96
K15-246	B00265670	Whole core metallurgical	HQ3	110.24	111.24	1.00
K15-246	B00265671	Whole core metallurgical	HQ3	111.24	112.75	1.51
K15-246	B00265672	Whole core metallurgical	HQ3	112.75	113.25	0.50

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-246	B00265673	Whole core metallurgical	HQ3	113.25	113.92	0.67
K15-246	B00265674	Whole core metallurgical	HQ3	113.92	114.92	1.00
K15-246	B00265675	Whole core metallurgical	HQ3	114.92	115.92	1.00
K15-246	B00265676	Whole core metallurgical	HQ3	115.92	116.92	1.00
K15-246	B00265677	Whole core metallurgical	HQ3	116.92	117.92	1.00
K15-246	B00265678	Whole core metallurgical	HQ3	117.92	118.92	1.00
K15-246	B00265679	Whole core metallurgical	HQ3	118.92	119.43	0.51
K15-246	B00265680	Whole core metallurgical	HQ3	119.43	120.00	0.57
K15-246	B00265681	Whole core metallurgical	HQ3	120.00	120.63	0.63
K15-246	B00266036	Whole core metallurgical	HQ3	120.63	121.63	1.00
K15-246	B00266037	Whole core metallurgical	HQ3	121.63	122.60	0.97
K15-246	B00266038	Whole core metallurgical	HQ3	122.60	123.60	1.00
K15-246	B00266039	Whole core metallurgical	HQ3	123.60	124.60	1.00
K15-246	B00266040	Whole core metallurgical	HQ3	124.60	125.60	1.00
K15-252	B00266041	Whole core metallurgical	HQ3	13.90	14.90	1.00
K15-252	B00266042	Whole core metallurgical	HQ3	14.90	15.90	1.00
K15-252	B00266043	Whole core metallurgical	HQ3	15.90	16.80	0.90
K15-252	B00265690	Whole core metallurgical	HQ3	16.80	17.70	0.90
K15-252	B00265691	Whole core metallurgical	HQ3	17.70	18.10	0.40
K15-252	B00265692	Whole core metallurgical	HQ3	18.10	18.70	0.60
K15-252	B00265693	Whole core metallurgical	HQ3	18.70	19.30	0.60
K15-252	B00265694	Whole core metallurgical	HQ3	19.30	19.90	0.60
K15-252	B00265695	Whole core metallurgical	HQ3	19.90	20.50	0.60
K15-252	B00265696	Whole core metallurgical	HQ3	20.50	21.50	1.00
K15-252	B00265697	Whole core metallurgical	HQ3	21.50	22.30	0.80
K15-252	B00265698	Whole core metallurgical	HQ3	22.30	23.10	0.80
K15-252	B00265699	Whole core metallurgical	HQ3	23.10	24.00	0.90
K15-252	B00265700	Whole core metallurgical	HQ3	24.00	25.00	1.00
K15-252	B00265701	Whole core metallurgical	HQ3	25.00	26.00	1.00
K15-252	B00265702	Whole core metallurgical	HQ3	26.00	27.00	1.00
K15-252	B00265703	Whole core metallurgical	HQ3	27.00	27.70	0.70
K15-252	B00266044	Whole core metallurgical	HQ3	27.70	28.70	1.00
K15-252	B00266045	Whole core metallurgical	HQ3	28.70	29.50	0.80
K15-252	B00266046	Whole core metallurgical	HQ3	29.50	30.00	0.50
K15-252	B00265704	Whole core metallurgical	HQ3	30.00	31.00	1.00
K15-252	B00265705	Whole core metallurgical	HQ3	31.00	32.10	1.10
K15-252	B00266047	Whole core metallurgical	HQ3	32.10	33.10	1.00
K15-252	B00266048	Whole core metallurgical	HQ3	33.10	34.10	1.00
K15-252	B00266049	Whole core metallurgical	HQ3	34.10	35.10	1.00
K15-252	B00266050	Whole core metallurgical	HQ3	35.10	36.60	1.50
K15-256	B00293368	Whole core metallurgical	HQ3	11.50	12.60	1.10
K15-256	B00265706	Whole core metallurgical	HQ3	12.60	13.20	0.60
K15-256	B00265707	Whole core metallurgical	HQ3	13.20	14.20	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-256	B00265708	Whole core metallurgical	HQ3	14.20	15.20	1.00
K15-256	B00265709	Whole core metallurgical	HQ3	15.20	16.20	1.00
K15-256	B00265710	Whole core metallurgical	HQ3	16.20	17.10	0.90
K15-256	B00265711	Whole core metallurgical	HQ3	17.10	18.10	1.00
K15-256	B00265712	Whole core metallurgical	HQ3	18.10	19.10	1.00
K15-256	B00265713	Whole core metallurgical	HQ3	19.10	20.10	1.00
K15-256	B00265714	Whole core metallurgical	HQ3	20.10	21.10	1.00
K15-256	B00265715	Whole core metallurgical	HQ3	21.10	22.10	1.00
K15-256	B00265716	Whole core metallurgical	HQ3	22.10	22.60	0.50
K15-260W1	B00264900	Whole core metallurgical	HQ3	150.00	150.75	0.75
K15-260W1	B00264901	Whole core metallurgical	HQ3	150.75	151.44	0.69
K15-260W1	B00264902	Whole core metallurgical	HQ3	151.44	152.55	1.11
K15-260W1	B00264903	Whole core metallurgical	HQ3	152.55	153.15	0.60
K15-260W1	B00264904	Whole core metallurgical	HQ3	153.15	154.00	0.85
K15-260W1	B00264905	Whole core metallurgical	HQ3	154.00	154.98	0.98
K15-260W1	B00264906	Whole core metallurgical	HQ3	154.98	155.75	0.77
K15-260W1	B00264907	Whole core metallurgical	HQ3	155.75	156.87	1.12
K15-260W1	B00264908	Whole core metallurgical	HQ3	156.87	157.92	1.05
K15-260W1	B00264909	Whole core metallurgical	HQ3	157.92	158.47	0.55
K15-260W1	B00264910	Whole core metallurgical	HQ3	158.47	159.00	0.53
K15-260W1	B00264911	Whole core metallurgical	HQ3	159.00	159.54	0.54
K15-260W1	B00264912	Whole core metallurgical	HQ3	159.54	160.16	0.62
K15-260W1	B00264913	Whole core metallurgical	HQ3	160.16	161.00	0.84
K15-260W1	B00264914	Whole core metallurgical	HQ3	161.00	162.00	1.00
K15-260W1	B00264915	Whole core metallurgical	HQ3	162.00	163.00	1.00
K15-260W1	B00264916	Whole core metallurgical	HQ3	163.00	164.05	1.05
K15-260W1	B00264917	Whole core metallurgical	HQ3	164.05	165.00	0.95
K15-260W1	B00264918	Whole core metallurgical	HQ3	165.00	165.70	0.70
K15-260W1	B00264919	Whole core metallurgical	HQ3	165.70	166.20	0.50
K15-260W1	B00264920	Whole core metallurgical	HQ3	166.20	167.00	0.80
K15-260W1	B00264921	Whole core metallurgical	HQ3	167.00	168.00	1.00
K15-260W1	B00264922	Whole core metallurgical	HQ3	168.00	169.00	1.00
K15-260W1	B00264923	Whole core metallurgical	HQ3	169.00	169.59	0.59
K15-260W1	B00264924	Whole core metallurgical	HQ3	169.59	170.18	0.59
K15-260W1	B00264925	Whole core metallurgical	HQ3	170.18	170.76	0.58
K15-260W1	B00264926	Whole core metallurgical	HQ3	170.76	171.26	0.50
K15-260W1	B00264927	Whole core metallurgical	HQ3	171.26	171.85	0.59
K15-260W1	B00264928	Whole core metallurgical	HQ3	171.85	172.48	0.63
K15-260W1	B00264929	Whole core metallurgical	HQ3	172.48	173.30	0.82
K15-260W1	B00264930	Whole core metallurgical	HQ3	173.30	174.20	0.90
K15-260W1	B00264931	Whole core metallurgical	HQ3	174.20	174.92	0.72
K15-260W1	B00264932	Whole core metallurgical	HQ3	174.92	175.85	0.93
K15-260W1	B00264933	Whole core metallurgical	HQ3	175.85	176.50	0.65

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-260W1	B00264934	Whole core metallurgical	HQ3	176.50	177.12	0.62
K15-260W1	B00264935	Whole core metallurgical	HQ3	177.12	178.00	0.88
K15-260W1	B00264936	Whole core metallurgical	HQ3	178.00	179.00	1.00
K15-260W1	B00264937	Whole core metallurgical	HQ3	179.00	180.00	1.00
K15-260W1	B00264938	Whole core metallurgical	HQ3	180.00	181.00	1.00
K15-260W1	B00264939	Whole core metallurgical	HQ3	181.00	181.67	0.67
K15-260W1	B00264940	Whole core metallurgical	HQ3	181.67	182.28	0.61
K15-260W1	B00264941	Whole core metallurgical	HQ3	182.28	183.10	0.82
K15-260W1	B00264942	Whole core metallurgical	HQ3	183.10	183.80	0.70
K15-260W1	B00264943	Whole core metallurgical	HQ3	183.80	185.30	1.50
K15-260W1	B00264944	Whole core metallurgical	HQ3	185.30	186.80	1.50
K15-260W1	B00264945	Whole core metallurgical	HQ3	186.80	188.00	1.20
K15-264W1	B00264986	Whole core metallurgical	HQ3	141.15	142.65	1.50
K15-264W1	B00264987	Whole core metallurgical	HQ3	142.65	144.15	1.50
K15-264W1	B00264988	Whole core metallurgical	HQ3	144.15	145.65	1.50
K15-264W1	B00264989	Whole core metallurgical	HQ3	145.65	146.65	1.00
K15-264W1	B00264991	Whole core metallurgical	HQ3	146.65	147.65	1.00
K15-264W1	B00264992	Whole core metallurgical	HQ3	147.65	148.30	0.65
K15-264W1	B00264993	Whole core metallurgical	HQ3	148.30	148.90	0.60
K15-264W1	B00264994	Whole core metallurgical	HQ3	148.90	149.90	1.00
K15-264W1	B00264995	Whole core metallurgical	HQ3	149.90	150.75	0.85
K15-264W1	B00264996	Whole core metallurgical	HQ3	150.75	151.75	1.00
K15-264W1	B00264997	Whole core metallurgical	HQ3	151.75	152.75	1.00
K15-264W1	B00264998	Whole core metallurgical	HQ3	152.75	153.75	1.00
K15-264W1	B00264999	Whole core metallurgical	HQ3	153.75	154.75	1.00
K15-264W1	B00268001	Whole core metallurgical	HQ3	154.75	155.40	0.65
K15-264W1	B00268002	Whole core metallurgical	HQ3	155.40	155.90	0.50
K15-264W1	B00268003	Whole core metallurgical	HQ3	155.90	156.50	0.60
K15-264W1	B00268004	Whole core metallurgical	HQ3	156.50	157.50	1.00
K15-264W1	B00268005	Whole core metallurgical	HQ3	157.50	158.50	1.00
K15-264W1	B00268006	Whole core metallurgical	HQ3	158.50	159.50	1.00
K15-264W1	B00268007	Whole core metallurgical	HQ3	159.50	160.50	1.00
K15-264W1	B00268008	Whole core metallurgical	HQ3	160.50	161.50	1.00
K15-264W1	B00268009	Whole core metallurgical	HQ3	161.50	162.50	1.00
K15-264W1	B00268011	Whole core metallurgical	HQ3	162.50	163.50	1.00
K15-264W1	B00268012	Whole core metallurgical	HQ3	163.50	164.50	1.00
K15-264W1	B00268013	Whole core metallurgical	HQ3	164.50	165.20	0.70
K15-264W1	B00268014	Whole core metallurgical	HQ3	165.20	166.20	1.00
K15-264W1	B00268015	Whole core metallurgical	HQ3	166.20	167.00	0.80
K15-264W1	B00268016	Whole core metallurgical	HQ3	167.00	168.00	1.00
K15-264W1	B00268017	Whole core metallurgical	HQ3	168.00	169.50	1.50
K15-264W1	B00268018	Whole core metallurgical	HQ3	169.50	171.00	1.50
K15-264W1	B00268019	Whole core metallurgical	HQ3	171.00	171.51	0.51

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-264W1	B00268021	Whole core metallurgical	HQ3	171.51	172.50	0.99
K15-266	B00268022	Whole core metallurgical	HQ3	33.85	34.85	1.00
K15-266	B00268023	Whole core metallurgical	HQ3	34.85	35.85	1.00
K15-266	B00268024	Whole core metallurgical	HQ3	35.85	36.85	1.00
K15-266	B00268025	Whole core metallurgical	HQ3	36.85	37.85	1.00
K15-266	B00268026	Whole core metallurgical	HQ3	37.85	38.85	1.00
K15-266	B00268027	Whole core metallurgical	HQ3	38.85	39.85	1.00
K15-266	B00268028	Whole core metallurgical	HQ3	39.85	40.85	1.00
K15-266	B00268029	Whole core metallurgical	HQ3	40.85	41.40	0.55
K15-266	B00268030	Whole core metallurgical	HQ3	41.40	42.40	1.00
K15-266	B00268031	Whole core metallurgical	HQ3	42.40	43.40	1.00
K15-266	B00268032	Whole core metallurgical	HQ3	43.40	44.40	1.00
K15-266	B00268033	Whole core metallurgical	HQ3	44.40	45.25	0.85
K15-266	B00268034	Whole core metallurgical	HQ3	45.25	46.25	1.00
K15-266	B00268035	Whole core metallurgical	HQ3	46.25	46.75	0.50
K15-266	B00268036	Whole core metallurgical	HQ3	46.75	47.75	1.00
K15-266	B00268037	Whole core metallurgical	HQ3	47.75	48.75	1.00
K15-266	B00268038	Whole core metallurgical	HQ3	48.75	49.75	1.00
K15-266	B00268039	Whole core metallurgical	HQ3	49.75	50.20	0.45
K15-266	B00268040	Whole core metallurgical	HQ3	50.20	51.20	1.00
K15-266	B00268041	Whole core metallurgical	HQ3	51.20	52.40	1.20
K15-266	B00268042	Whole core metallurgical	HQ3	52.40	53.40	1.00
K15-266	B00268043	Whole core metallurgical	HQ3	53.40	54.40	1.00
K15-266	B00268044	Whole core metallurgical	HQ3	54.40	55.00	0.60
K15-266	B00268045	Whole core metallurgical	HQ3	55.00	56.00	1.00
K15-266	B00268046	Whole core metallurgical	HQ3	56.00	57.00	1.00
K15-266	B00268047	Whole core metallurgical	HQ3	57.00	58.00	1.00
K15-266	B00268048	Whole core metallurgical	HQ3	58.00	59.20	1.20
K15-266	B00268049	Whole core metallurgical	HQ3	59.20	60.20	1.00
K15-266	B00268050	Whole core metallurgical	HQ3	60.20	62.20	2.00
K15-266	B00268051	Whole core metallurgical	HQ3	62.20	63.20	1.00
K15-266	B00268052	Whole core metallurgical	HQ3	63.20	64.20	1.00
K15-266	B00268053	Whole core metallurgical	HQ3	64.20	64.90	0.70
K15-266	B00268054	Whole core metallurgical	HQ3	64.90	65.90	1.00
K15-266	B00268055	Whole core metallurgical	HQ3	65.90	66.90	1.00
K15-266	B00268056	Whole core metallurgical	HQ3	66.90	67.40	0.50
K15-266	B00268057	Whole core metallurgical	HQ3	67.40	67.90	0.50
K15-266	B00268058	Whole core metallurgical	HQ3	67.90	68.85	0.95
K15-266	B00268059	Whole core metallurgical	HQ3	68.85	69.90	1.05
K15-266	B00268060	Whole core metallurgical	HQ3	69.90	70.90	1.00
K15-266	B00268061	Whole core metallurgical	HQ3	70.90	71.40	0.50
K15-266	B00268062	Whole core metallurgical	HQ3	71.40	72.22	0.82
K15-266	B00268063	Whole core metallurgical	HQ3	72.22	73.20	0.98

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-266	B00268064	Whole core metallurgical	HQ3	73.20	74.20	1.00
K15-266	B00268065	Whole core metallurgical	HQ3	74.20	75.00	0.80
K15-266	B00268066	Whole core metallurgical	HQ3	75.00	76.00	1.00
K15-266	B00268067	Whole core metallurgical	HQ3	76.00	77.00	1.00
K15-266	B00268068	Whole core metallurgical	HQ3	77.00	78.00	1.00
K15-266	B00268069	Whole core metallurgical	HQ3	78.00	79.20	1.20
K15-266	B00268070	Whole core metallurgical	HQ3	79.20	80.20	1.00
K15-266	B00268071	Whole core metallurgical	HQ3	80.20	81.20	1.00
K15-266	B00268072	Whole core metallurgical	HQ3	81.20	82.30	1.10
K15-266	B00268073	Whole core metallurgical	HQ3	82.30	83.30	1.00
K15-266	B00268074	Whole core metallurgical	HQ3	83.30	84.50	1.20
K15-266	B00268075	Whole core metallurgical	HQ3	84.50	85.50	1.00
K15-266	B00268076	Whole core metallurgical	HQ3	85.50	86.30	0.80
K15-266	B00268077	Whole core metallurgical	HQ3	86.30	87.25	0.95
K15-266	B00268078	Whole core metallurgical	HQ3	87.25	88.30	1.05
K15-266	B00268079	Whole core metallurgical	HQ3	88.30	89.30	1.00
K15-266	B00268080	Whole core metallurgical	HQ3	89.30	90.30	1.00
K15-266	B00268081	Whole core metallurgical	HQ3	90.30	90.95	0.65
K15-266	B00268082	Whole core metallurgical	HQ3	90.95	92.34	1.39
K15-266	B00268083	Whole core metallurgical	HQ3	92.34	93.34	1.00
K15-266	B00268084	Whole core metallurgical	HQ3	93.34	94.34	1.00
K15-266	B00268085	Whole core metallurgical	HQ3	94.34	95.34	1.00
K15-266	B00268086	Whole core metallurgical	HQ3	95.34	96.25	0.91
K15-266	B00268087	Whole core metallurgical	HQ3	96.25	97.25	1.00
K15-266	B00268088	Whole core metallurgical	HQ3	97.25	98.25	1.00
K15-266	B00268089	Whole core metallurgical	HQ3	98.25	99.25	1.00
K15-266	B00268090	Whole core metallurgical	HQ3	99.25	100.25	1.00
K15-266	B00268091	Whole core metallurgical	HQ3	100.25	101.17	0.92
K15-266	B00268092	Whole core metallurgical	HQ3	101.17	101.75	0.58
K15-266	B00268093	Whole core metallurgical	HQ3	101.75	102.65	0.90
K15-266	B00268094	Whole core metallurgical	HQ3	102.65	103.85	1.20
K15-266	B00268095	Whole core metallurgical	HQ3	103.85	104.40	0.55
K15-266	B00268096	Whole core metallurgical	HQ3	104.40	105.40	1.00
K15-266	B00268097	Whole core metallurgical	HQ3	105.40	106.80	1.40
K15-270	B00265746	Whole core metallurgical	HQ3	131.10	132.10	1.00
K15-270	B00265747	Whole core metallurgical	HQ3	132.10	133.10	1.00
K15-270	B00265748	Whole core metallurgical	HQ3	133.10	134.10	1.00
K15-270	B00265749	Whole core metallurgical	HQ3	134.10	135.10	1.00
K15-270	B00265750	Whole core metallurgical	HQ3	135.10	136.10	1.00
K15-270	B00265751	Whole core metallurgical	HQ3	136.10	136.60	0.50
K15-270	B00265752	Whole core metallurgical	HQ3	136.60	137.30	0.70
K15-270	B00265753	Whole core metallurgical	HQ3	137.30	137.90	0.60
K15-270	B00265754	Whole core metallurgical	HQ3	137.90	138.80	0.90

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-270	B00265755	Whole core metallurgical	HQ3	138.80	139.70	0.90
K15-270	B00265756	Whole core metallurgical	HQ3	139.70	140.60	0.90
K15-270	B00265757	Whole core metallurgical	HQ3	140.60	141.50	0.90
K15-270	B00265758	Whole core metallurgical	HQ3	141.50	142.40	0.90
K15-270	B00265759	Whole core metallurgical	HQ3	142.40	143.10	0.70
K15-270	B00265760	Whole core metallurgical	HQ3	143.10	143.90	0.80
K15-270	B00265761	Whole core metallurgical	HQ3	143.90	144.50	0.60
K15-270	B00265762	Whole core metallurgical	HQ3	144.50	145.40	0.90
K15-270	B00265763	Whole core metallurgical	HQ3	145.40	146.40	1.00
K15-270	B00265764	Whole core metallurgical	HQ3	146.40	147.40	1.00
K15-270	B00265765	Whole core metallurgical	HQ3	147.40	148.40	1.00
K15-270	B00265766	Whole core metallurgical	HQ3	148.40	149.30	0.90
K15-270	B00265767	Whole core metallurgical	HQ3	149.30	149.80	0.50
K15-270	B00265768	Whole core metallurgical	HQ3	149.80	150.50	0.70
K15-270	B00265769	Whole core metallurgical	HQ3	150.50	151.30	0.80
K15-270	B00265770	Whole core metallurgical	HQ3	151.30	152.30	1.00
K15-270	B00265771	Whole core metallurgical	HQ3	152.30	153.30	1.00
K15-270	B00265772	Whole core metallurgical	HQ3	153.30	154.30	1.00
K15-270	B00265773	Whole core metallurgical	HQ3	154.30	155.30	1.00
K15-270	B00265774	Whole core metallurgical	HQ3	155.30	156.30	1.00
K15-270	B00265775	Whole core metallurgical	HQ3	156.30	157.20	0.90
K15-270	B00265776	Whole core metallurgical	HQ3	157.20	158.10	0.90
K15-270	B00265777	Whole core metallurgical	HQ3	158.10	159.00	0.90
K15-270	B00265778	Whole core metallurgical	HQ3	159.00	159.80	0.80
K15-270	B00265779	Whole core metallurgical	HQ3	159.80	160.60	0.80
K15-270	B00265780	Whole core metallurgical	HQ3	160.60	161.20	0.60
K15-270	B00265781	Whole core metallurgical	HQ3	161.20	161.90	0.70
K15-270	B00265782	Whole core metallurgical	HQ3	161.90	162.90	1.00
K15-270	B00265783	Whole core metallurgical	HQ3	162.90	163.90	1.00
K15-270	B00265784	Whole core metallurgical	HQ3	163.90	164.90	1.00
K15-270	B00265785	Whole core metallurgical	HQ3	164.90	165.90	1.00
K15-275	B00266055	Whole core metallurgical	HQ3	86.10	87.10	1.00
K15-275	B00266056	Whole core metallurgical	HQ3	87.10	88.10	1.00
K15-275	B00266057	Whole core metallurgical	HQ3	88.10	89.10	1.00
K15-275	B00266058	Whole core metallurgical	HQ3	89.10	90.10	1.00
K15-275	B00266059	Whole core metallurgical	HQ3	90.10	91.10	1.00
K15-275	B00266060	Whole core metallurgical	HQ3	91.10	92.00	0.90
K15-275	B00266061	Whole core metallurgical	HQ3	92.00	92.90	0.90
K15-275	B00266062	Whole core metallurgical	HQ3	92.90	94.00	1.10
K15-275	B00266063	Whole core metallurgical	HQ3	94.00	95.00	1.00
K15-275	B00266064	Whole core metallurgical	HQ3	95.00	96.00	1.00
K15-275	B00266065	Whole core metallurgical	HQ3	96.00	97.00	1.00
K15-275	B00266066	Whole core metallurgical	HQ3	97.00	98.00	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-275	B00266067	Whole core metallurgical	HQ3	98.00	98.80	0.80
K15-275	B00266068	Whole core metallurgical	HQ3	98.80	99.20	0.40
K15-275	B00266069	Whole core metallurgical	HQ3	99.20	100.00	0.80
K15-275	B00266070	Whole core metallurgical	HQ3	100.00	100.60	0.60
K15-275	B00266071	Whole core metallurgical	HQ3	100.60	101.50	0.90
K15-275	B00266072	Whole core metallurgical	HQ3	101.50	102.40	0.90
K15-275	B00266073	Whole core metallurgical	HQ3	102.40	102.90	0.50
K15-275	B00266074	Whole core metallurgical	HQ3	102.90	103.80	0.90
K15-275	B00266075	Whole core metallurgical	HQ3	103.80	104.70	0.90
K15-275	B00266076	Whole core metallurgical	HQ3	104.70	105.60	0.90
K15-275	B00266077	Whole core metallurgical	HQ3	105.60	106.50	0.90
K15-275	B00266078	Whole core metallurgical	HQ3	106.50	107.40	0.90
K15-275	B00266079	Whole core metallurgical	HQ3	107.40	108.30	0.90
K15-275	B00266080	Whole core metallurgical	HQ3	108.30	109.00	0.70
K15-275	B00266081	Whole core metallurgical	HQ3	109.00	109.80	0.80
K15-275	B00266082	Whole core metallurgical	HQ3	109.80	110.40	0.60
K15-275	B00266083	Whole core metallurgical	HQ3	110.40	110.90	0.50
K15-275	B00266084	Whole core metallurgical	HQ3	110.90	111.40	0.50
K15-275	B00266085	Whole core metallurgical	HQ3	111.40	112.40	1.00
K15-275	B00266086	Whole core metallurgical	HQ3	112.40	113.40	1.00
K15-275	B00266087	Whole core metallurgical	HQ3	113.40	114.40	1.00
K15-275	B00266088	Whole core metallurgical	HQ3	114.40	115.10	0.70
K15-275	B00266089	Whole core metallurgical	HQ3	115.10	115.80	0.70
K15-275	B00266090	Whole core metallurgical	HQ3	115.80	116.20	0.40
K15-275	B00266091	Whole core metallurgical	HQ3	116.20	116.80	0.60
K15-275	B00266092	Whole core metallurgical	HQ3	116.80	117.80	1.00
K15-275	B00266093	Whole core metallurgical	HQ3	117.80	118.80	1.00
K15-276	B00265796	Whole core metallurgical	HQ3	38.50	39.50	1.00
K15-276	B00265797	Whole core metallurgical	HQ3	39.50	40.50	1.00
K15-276	B00265798	Whole core metallurgical	HQ3	40.50	41.50	1.00
K15-276	B00265799	Whole core metallurgical	HQ3	41.50	42.50	1.00
K15-276	B00265800	Whole core metallurgical	HQ3	42.50	43.34	0.84
K15-276	B00265801	Whole core metallurgical	HQ3	43.34	44.33	0.99
K15-276	B00265802	Whole core metallurgical	HQ3	44.33	45.22	0.89
K15-276	B00265803	Whole core metallurgical	HQ3	45.22	45.82	0.60
K15-276	B00265804	Whole core metallurgical	HQ3	45.82	46.50	0.68
K15-276	B00265805	Whole core metallurgical	HQ3	46.50	47.50	1.00
K15-276	B00265806	Whole core metallurgical	HQ3	47.50	48.50	1.00
K15-276	B00265807	Whole core metallurgical	HQ3	48.50	49.50	1.00
K15-276	B00265808	Whole core metallurgical	HQ3	49.50	50.50	1.00
K15-276	B00265809	Whole core metallurgical	HQ3	53.82	54.50	0.68
K15-276	B00265810	Whole core metallurgical	HQ3	54.50	55.30	0.80
K15-276	B00265811	Whole core metallurgical	HQ3	55.30	56.00	0.70

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-276	B00265812	Whole core metallurgical	HQ3	56.00	57.00	1.00
K15-276	B00265813	Whole core metallurgical	HQ3	57.00	57.52	0.52
K15-276	B00265814	Whole core metallurgical	HQ3	57.52	58.50	0.98
K15-276	B00265815	Whole core metallurgical	HQ3	58.50	59.02	0.52
K15-276	B00265816	Whole core metallurgical	HQ3	59.02	59.50	0.48
K15-276	B00265817	Whole core metallurgical	HQ3	59.50	60.17	0.67
K15-276	B00265818	Whole core metallurgical	HQ3	60.17	60.75	0.58
K15-276	B00265819	Whole core metallurgical	HQ3	60.75	61.50	0.75
K15-276	B00265820	Whole core metallurgical	HQ3	61.50	62.40	0.90
K15-276	B00265821	Whole core metallurgical	HQ3	62.40	63.00	0.60
K15-276	B00265822	Whole core metallurgical	HQ3	63.00	64.00	1.00
K15-276	B00265823	Whole core metallurgical	HQ3	64.00	64.98	0.98
K15-276	B00265824	Whole core metallurgical	HQ3	64.98	65.50	0.52
K15-276	B00265825	Whole core metallurgical	HQ3	65.50	66.09	0.59
K15-276	B00265826	Whole core metallurgical	HQ3	66.09	67.00	0.91
K15-276	B00265827	Whole core metallurgical	HQ3	67.00	68.00	1.00
K15-276	B00265828	Whole core metallurgical	HQ3	68.00	69.00	1.00
K15-276	B00265829	Whole core metallurgical	HQ3	69.00	70.00	1.00
K15-276	B00265830	Whole core metallurgical	HQ3	70.00	71.00	1.00
K15-276	B00265831	Whole core metallurgical	HQ3	79.67	80.67	1.00
K15-276	B00265832	Whole core metallurgical	HQ3	80.67	81.50	0.83
K15-276	B00265833	Whole core metallurgical	HQ3	81.50	82.00	0.50
K15-276	B00265834	Whole core metallurgical	HQ3	82.00	83.00	1.00
K15-276	B00265835	Whole core metallurgical	HQ3	83.00	83.99	0.99
K15-276	B00265836	Whole core metallurgical	HQ3	83.99	84.99	1.00
K15-276	B00265837	Whole core metallurgical	HQ3	84.99	85.99	1.00
K15-276	B00265838	Whole core metallurgical	HQ3	85.99	86.99	1.00
K15-276	B00265839	Whole core metallurgical	HQ3	86.99	87.99	1.00
K15-276	B00265840	Whole core metallurgical	HQ3	87.99	88.99	1.00
K15-276	B00265841	Whole core metallurgical	HQ3	88.99	89.99	1.00
K15-276	B00265842	Whole core metallurgical	HQ3	89.99	90.99	1.00
K15-276	B00265843	Whole core metallurgical	HQ3	90.99	91.99	1.00
K15-276	B00265844	Whole core metallurgical	HQ3	91.99	92.99	1.00
K15-276	B00265845	Whole core metallurgical	HQ3	92.99	93.99	1.00
K15-276	B00265846	Whole core metallurgical	HQ3	93.99	94.99	1.00
K15-276	B00265847	Whole core metallurgical	HQ3	94.99	95.99	1.00
K15-276	B00265848	Whole core metallurgical	HQ3	95.99	96.99	1.00
K15-276	B00265849	Whole core metallurgical	HQ3	96.99	97.94	0.95
K15-276	B00265850	Whole core metallurgical	HQ3	97.94	98.50	0.56
K15-276	B00266051	Whole core metallurgical	HQ3	98.50	99.50	1.00
K15-276	B00266052	Whole core metallurgical	HQ3	99.50	100.50	1.00
K15-276	B00266053	Whole core metallurgical	HQ3	100.50	101.50	1.00
K15-276	B00266054	Whole core metallurgical	HQ3	101.50	102.48	0.98

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-278W1	B00266094	Whole core metallurgical	HQ3	127.90	128.90	1.00
K15-278W1	B00266095	Whole core metallurgical	HQ3	128.90	129.50	0.60
K15-278W1	B00266096	Whole core metallurgical	HQ3	129.50	130.17	0.67
K15-278W1	B00266097	Whole core metallurgical	HQ3	130.17	131.17	1.00
K15-278W1	B00266098	Whole core metallurgical	HQ3	131.17	132.17	1.00
K15-278W1	B00266099	Whole core metallurgical	HQ3	132.17	133.17	1.00
K15-278W1	B00266100	Whole core metallurgical	HQ3	133.17	134.17	1.00
K15-278W1	B00266101	Whole core metallurgical	HQ3	134.17	135.17	1.00
K15-278W1	B00266102	Whole core metallurgical	HQ3	135.17	136.17	1.00
K15-278W1	B00266103	Whole core metallurgical	HQ3	136.17	136.87	0.70
K15-278W1	B00266104	Whole core metallurgical	HQ3	136.87	137.87	1.00
K15-278W1	B00266105	Whole core metallurgical	HQ3	137.87	138.87	1.00
K15-278W1	B00266106	Whole core metallurgical	HQ3	138.87	139.83	0.96
K15-278W1	B00266107	Whole core metallurgical	HQ3	139.83	140.60	0.77
K15-278W1	B00266108	Whole core metallurgical	HQ3	140.60	141.37	0.77
K15-278W1	B00266109	Whole core metallurgical	HQ3	141.37	141.54	0.17
K15-278W1	B00266110	Whole core metallurgical	HQ3	141.54	142.32	0.78
K15-278W1	B00266111	Whole core metallurgical	HQ3	142.32	143.32	1.00
K15-278W1	B00266112	Whole core metallurgical	HQ3	143.32	144.00	0.68
K15-278W1	B00266113	Whole core metallurgical	HQ3	144.00	144.66	0.66
K15-278W1	B00266114	Whole core metallurgical	HQ3	144.66	145.30	0.64
K15-278W1	B00266115	Whole core metallurgical	HQ3	145.30	145.81	0.51
K15-278W1	B00266116	Whole core metallurgical	HQ3	145.81	146.81	1.00
K15-278W1	B00266117	Whole core metallurgical	HQ3	146.81	147.81	1.00
K15-278W1	B00266118	Whole core metallurgical	HQ3	147.81	148.81	1.00
K15-278W1	B00266119	Whole core metallurgical	HQ3	148.81	149.63	0.82
K15-278W1	B00266120	Whole core metallurgical	HQ3	149.63	150.63	1.00
K15-281W1	B00266121	Whole core metallurgical	HQ3	173.63	174.63	1.00
K15-281W1	B00266122	Whole core metallurgical	HQ3	174.63	175.63	1.00
K15-281W1	B00266123	Whole core metallurgical	HQ3	175.63	176.63	1.00
K15-281W1	B00266124	Whole core metallurgical	HQ3	176.63	177.63	1.00
K15-281W1	B00266125	Whole core metallurgical	HQ3	177.63	178.63	1.00
K15-281W1	B00266126	Whole core metallurgical	HQ3	178.63	179.32	0.69
K15-281W1	B00266127	Whole core metallurgical	HQ3	179.32	180.32	1.00
K15-281W1	B00266128	Whole core metallurgical	HQ3	180.32	181.31	0.99
K15-281W1	B00266129	Whole core metallurgical	HQ3	181.31	182.06	0.75
K15-281W1	B00266130	Whole core metallurgical	HQ3	182.06	182.70	0.64
K15-281W1	B00266131	Whole core metallurgical	HQ3	182.70	183.56	0.86
K15-281W1	B00266132	Whole core metallurgical	HQ3	183.56	184.56	1.00
K15-281W1	B00266133	Whole core metallurgical	HQ3	184.56	185.56	1.00
K15-281W1	B00266134	Whole core metallurgical	HQ3	185.56	186.56	1.00
K15-281W1	B00266135	Whole core metallurgical	HQ3	186.56	187.24	0.68
K15-281W1	B00266136	Whole core metallurgical	HQ3	187.24	187.93	0.69

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-281W1	B00266137	Whole core metallurgical	HQ3	187.93	188.93	1.00
K15-281W1	B00266138	Whole core metallurgical	HQ3	188.93	189.93	1.00
K15-281W1	B00266139	Whole core metallurgical	HQ3	189.93	190.93	1.00
K15-281W1	B00266140	Whole core metallurgical	HQ3	190.93	191.58	0.65
K15-281W1	B00266141	Whole core metallurgical	HQ3	191.58	192.23	0.65
K15-281W1	B00266142	Whole core metallurgical	HQ3	192.23	193.17	0.94
K15-281W1	B00266143	Whole core metallurgical	HQ3	193.17	194.10	0.93
K15-281W1	B00266144	Whole core metallurgical	HQ3	194.10	194.82	0.72
K15-281W1	B00266145	Whole core metallurgical	HQ3	194.82	195.32	0.50
K15-281W1	B00266146	Whole core metallurgical	HQ3	195.32	195.97	0.65
K15-281W1	B00266147	Whole core metallurgical	HQ3	195.97	196.64	0.67
K15-281W1	B00266148	Whole core metallurgical	HQ3	196.64	197.64	1.00
K15-281W1	B00266149	Whole core metallurgical	HQ3	197.64	198.64	1.00
K15-281W1	B00266150	Whole core metallurgical	HQ3	198.64	199.60	0.96
K15-283	B00293351	Whole core metallurgical	HQ3	107.00	108.00	1.00
K15-283	B00293352	Whole core metallurgical	HQ3	108.00	109.00	1.00
K15-283	B00293353	Whole core metallurgical	HQ3	109.00	110.00	1.00
K15-283	B00293354	Whole core metallurgical	HQ3	110.00	111.00	1.00
K15-283	B00293355	Whole core metallurgical	HQ3	111.00	111.45	0.45
K15-283	B00266151	Whole core metallurgical	HQ3	111.45	112.05	0.60
K15-283	B00266152	Whole core metallurgical	HQ3	112.05	112.68	0.63
K15-283	B00266153	Whole core metallurgical	HQ3	112.68	113.66	0.98
K15-283	B00266154	Whole core metallurgical	HQ3	113.66	114.66	1.00
K15-283	B00266155	Whole core metallurgical	HQ3	114.66	115.10	0.44
K15-283	B00266271	Whole core metallurgical	HQ3	115.10	116.34	1.24
K15-283	B00266156	Whole core metallurgical	HQ3	116.34	117.34	1.00
K15-283	B00266157	Whole core metallurgical	HQ3	117.34	118.08	0.74
K15-283	B00266158	Whole core metallurgical	HQ3	118.08	118.43	0.35
K15-283	B00266159	Whole core metallurgical	HQ3	118.43	118.74	0.31
K15-283	B00266160	Whole core metallurgical	HQ3	118.74	118.92	0.18
K15-283	B00266161	Whole core metallurgical	HQ3	118.92	119.25	0.33
K15-283	B00293356	Whole core metallurgical	HQ3	119.25	119.90	0.65
K15-283	B00293357	Whole core metallurgical	HQ3	119.90	120.44	0.54
K15-283	B00293358	Whole core metallurgical	HQ3	120.44	121.44	1.00
K15-283	B00293359	Whole core metallurgical	HQ3	121.81	123.00	1.19
K15-283	B00293360	Whole core metallurgical	HQ3	123.00	124.00	1.00
K15-283	B00293361	Whole core metallurgical	HQ3	124.00	125.00	1.00
K15-283	B00293362	Whole core metallurgical	HQ3	140.00	141.00	1.00
K15-283	B00293363	Whole core metallurgical	HQ3	141.00	142.00	1.00
K15-283	B00266162	Whole core metallurgical	HQ3	145.41	145.93	0.52
K15-283	B00266163	Whole core metallurgical	HQ3	145.93	147.15	1.22
K15-283	B00266164	Whole core metallurgical	HQ3	147.15	147.45	0.30
K15-283	B00266165	Whole core metallurgical	HQ3	147.45	148.00	0.55

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-283	B00266166	Whole core metallurgical	HQ3	148.00	149.00	1.00
K15-283	B00266167	Whole core metallurgical	HQ3	149.00	150.00	1.00
K15-283	B00266168	Whole core metallurgical	HQ3	150.00	151.00	1.00
K15-283	B00266169	Whole core metallurgical	HQ3	151.00	152.00	1.00
K15-283	B00266170	Whole core metallurgical	HQ3	152.00	152.80	0.80
K15-283	B00266171	Whole core metallurgical	HQ3	152.80	153.27	0.47
K15-283	B00266172	Whole core metallurgical	HQ3	153.27	154.27	1.00
K15-283	B00266173	Whole core metallurgical	HQ3	154.27	155.27	1.00
K15-283	B00266174	Whole core metallurgical	HQ3	155.27	156.27	1.00
K15-283	B00266175	Whole core metallurgical	HQ3	156.27	157.00	0.73
K15-283	B00266176	Whole core metallurgical	HQ3	157.00	158.00	1.00
K15-283	B00266177	Whole core metallurgical	HQ3	158.00	159.00	1.00
K15-283	B00266178	Whole core metallurgical	HQ3	159.00	159.69	0.69
K15-283	B00266179	Whole core metallurgical	HQ3	159.69	160.83	1.14
K15-283	B00266272	Whole core metallurgical	HQ3	160.83	161.70	0.87
K15-283	B00266273	Whole core metallurgical	HQ3	161.70	163.00	1.30
K15-283	B00266274	Whole core metallurgical	HQ3	163.00	163.87	0.87
K15-283	B00266180	Whole core metallurgical	HQ3	163.87	164.62	0.75
K15-283	B00266181	Whole core metallurgical	HQ3	164.62	165.00	0.38
K15-283	B00266182	Whole core metallurgical	HQ3	165.00	165.86	0.86
K15-283	B00266183	Whole core metallurgical	HQ3	165.86	166.86	1.00
K15-283	B00266184	Whole core metallurgical	HQ3	166.86	167.86	1.00
K15-283	B00266185	Whole core metallurgical	HQ3	167.86	168.90	1.04
K15-283	B00266186	Whole core metallurgical	HQ3	168.90	169.52	0.62
K15-283	B00293364	Whole core metallurgical	HQ3	169.52	172.00	2.48
K15-283	B00293365	Whole core metallurgical	HQ3	172.00	173.00	1.00
K15-283	B00293366	Whole core metallurgical	HQ3	173.00	174.00	1.00
K15-283	B00293367	Whole core metallurgical	HQ3	174.00	175.00	1.00
K15-283	B00266187	Whole core metallurgical	HQ3	187.75	188.81	1.06
K15-284W1	B00266240	Whole core metallurgical	HQ3	163.11	164.11	1.00
K15-284W1	B00266241	Whole core metallurgical	HQ3	164.11	164.72	0.61
K15-284W1	B00266242	Whole core metallurgical	HQ3	164.72	165.72	1.00
K15-284W1	B00266243	Whole core metallurgical	HQ3	165.72	166.72	1.00
K15-284W1	B00266244	Whole core metallurgical	HQ3	166.72	167.72	1.00
K15-284W1	B00266245	Whole core metallurgical	HQ3	167.72	168.72	1.00
K15-284W1	B00266246	Whole core metallurgical	HQ3	168.72	169.72	1.00
K15-284W1	B00266247	Whole core metallurgical	HQ3	169.72	170.72	1.00
K15-284W1	B00266248	Whole core metallurgical	HQ3	170.72	171.22	0.50
K15-284W1	B00266249	Whole core metallurgical	HQ3	171.22	171.79	0.57
K15-284W1	B00266250	Whole core metallurgical	HQ3	171.79	172.29	0.50
K15-284W1	B00266251	Whole core metallurgical	HQ3	172.29	173.29	1.00
K15-284W1	B00266252	Whole core metallurgical	HQ3	173.29	174.29	1.00
K15-284W1	B00266253	Whole core metallurgical	HQ3	174.29	175.26	0.97

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-284W1	B00266254	Whole core metallurgical	HQ3	175.26	176.00	0.74
K15-284W1	B00266255	Whole core metallurgical	HQ3	176.00	176.61	0.61
K15-284W1	B00266256	Whole core metallurgical	HQ3	176.61	177.11	0.50
K15-284W1	B00266257	Whole core metallurgical	HQ3	177.11	178.11	1.00
K15-284W1	B00266258	Whole core metallurgical	HQ3	178.11	179.11	1.00
K15-284W1	B00266259	Whole core metallurgical	HQ3	179.11	180.11	1.00
K15-284W1	B00266260	Whole core metallurgical	HQ3	180.11	180.79	0.68
K15-284W1	B00266261	Whole core metallurgical	HQ3	180.79	181.79	1.00
K15-284W1	B00266262	Whole core metallurgical	HQ3	181.79	182.42	0.63
K15-284W1	B00266263	Whole core metallurgical	HQ3	182.42	183.16	0.74
K15-284W1	B00266264	Whole core metallurgical	HQ3	183.16	183.72	0.56
K15-284W1	B00266265	Whole core metallurgical	HQ3	183.72	184.29	0.57
K15-284W1	B00266266	Whole core metallurgical	HQ3	184.29	185.29	1.00
K15-284W1	B00266267	Whole core metallurgical	HQ3	185.29	186.29	1.00
K15-284W1	B00266268	Whole core metallurgical	HQ3	186.29	187.12	0.83
K15-284W1	B00266269	Whole core metallurgical	HQ3	187.12	188.12	1.00
K15-284W1	B00266270	Whole core metallurgical	HQ3	188.12	189.12	1.00
K15-288	B00266188	Whole core metallurgical	HQ3	27.63	28.63	1.00
K15-288	B00266189	Whole core metallurgical	HQ3	28.63	29.52	0.89
K15-288	B00266190	Whole core metallurgical	HQ3	29.52	30.52	1.00
K15-288	B00266191	Whole core metallurgical	HQ3	30.52	37.84	7.32
K15-288	B00266192	Whole core metallurgical	HQ3	37.84	38.90	1.06
K15-288	B00266193	Whole core metallurgical	HQ3	38.90	39.93	1.03
K15-288	B00266194	Whole core metallurgical	HQ3	39.93	40.93	1.00
K15-288	B00266195	Whole core metallurgical	HQ3	40.93	41.70	0.77
K15-288	B00266196	Whole core metallurgical	HQ3	41.70	42.30	0.60
K15-288	B00266197	Whole core metallurgical	HQ3	42.30	43.30	1.00
K15-288	B00266198	Whole core metallurgical	HQ3	43.30	44.30	1.00
K15-288	B00266199	Whole core metallurgical	HQ3	44.30	45.30	1.00
K15-288	B00266200	Whole core metallurgical	HQ3	45.30	46.30	1.00
K15-288	B00266201	Whole core metallurgical	HQ3	46.30	47.30	1.00
K15-288	B00266202	Whole core metallurgical	HQ3	47.30	48.37	1.07
K15-288	B00266203	Whole core metallurgical	HQ3	48.37	49.70	1.33
K15-288	B00266204	Whole core metallurgical	HQ3	49.70	50.70	1.00
K15-288	B00266205	Whole core metallurgical	HQ3	50.70	51.70	1.00
K15-288	B00266206	Whole core metallurgical	HQ3	51.70	52.70	1.00
K15-288	B00266207	Whole core metallurgical	HQ3	52.70	53.25	0.55
K15-288	B00266208	Whole core metallurgical	HQ3	53.25	54.00	0.75
K15-288	B00266209	Whole core metallurgical	HQ3	54.00	54.41	0.41
K15-288	B00266210	Whole core metallurgical	HQ3	54.41	55.00	0.59
K15-288	B00266211	Whole core metallurgical	HQ3	55.00	55.50	0.50
K15-288	B00266212	Whole core metallurgical	HQ3	55.50	56.50	1.00
K15-288	B00266213	Whole core metallurgical	HQ3	56.50	57.50	1.00

Hole	Sample ID	Sample type	Core Size	From (m)	To (m)	Length (m)
K15-288	B00266214	Whole core metallurgical	HQ3	57.50	58.50	1.00
K15-288	B00266215	Whole core metallurgical	HQ3	58.50	59.50	1.00
K15-288	B00266216	Whole core metallurgical	HQ3	59.50	60.50	1.00
K15-288	B00266217	Whole core metallurgical	HQ3	60.50	62.50	2.00
K15-288	B00266218	Whole core metallurgical	HQ3	62.50	63.35	0.85
K15-288	B00266219	Whole core metallurgical	HQ3	63.35	64.36	1.01
K15-288	B00266220	Whole core metallurgical	HQ3	64.36	64.71	0.35
K15-288	B00266221	Whole core metallurgical	HQ3	64.71	65.50	0.79
K15-288	B00266222	Whole core metallurgical	HQ3	65.50	65.95	0.45
K15-288	B00266223	Whole core metallurgical	HQ3	65.95	67.36	1.41
K15-288	B00266224	Whole core metallurgical	HQ3	67.36	68.36	1.00
K15-288	B00266225	Whole core metallurgical	HQ3	68.36	69.36	1.00
K15-288	B00266226	Whole core metallurgical	HQ3	69.36	70.36	1.00
K15-288	B00266227	Whole core metallurgical	HQ3	70.36	71.36	1.00
K15-288	B00266228	Whole core metallurgical	HQ3	71.36	72.36	1.00
K15-288	B00266229	Whole core metallurgical	HQ3	72.36	73.36	1.00
K15-288	B00266230	Whole core metallurgical	HQ3	73.36	74.36	1.00
K15-288	B00266231	Whole core metallurgical	HQ3	74.36	75.36	1.00
K15-288	B00266232	Whole core metallurgical	HQ3	75.36	76.76	1.40
K15-288	B00266233	Whole core metallurgical	HQ3	76.76	78.13	1.37
K15-288	B00266234	Whole core metallurgical	HQ3	78.13	79.13	1.00
K15-288	B00266235	Whole core metallurgical	HQ3	79.13	80.13	1.00
K15-288	B00266236	Whole core metallurgical	HQ3	80.13	81.13	1.00
K15-288	B00266237	Whole core metallurgical	HQ3	81.13	82.13	1.00
K15-288	B00266238	Whole core metallurgical	HQ3	82.13	83.13	1.00
K15-288	B00266239	Whole core metallurgical	HQ3	83.13	84.13	1.00

Appendix Q: Petrographic reports

This appendix contains four petrographic reports completed for the KZK Project between November 26th, 2015, and January 16th, 2016. A list of these reports is shown below in Table Q-1. The full reference for each report is found in Appendix A.

Table Q-1: List of petrographic reports attached as Appendix Q

Report	Methods	Samples	Published	No Pages
Townend and Townend 2015	Petrography*, SEM analysis	37	26-Nov-15	392
Leitch 2015	Petrography*	17	22-Dec-15	42
Leitch 2016a	Petrography*	11	04-Jan-16	25
Leitch 2016b	Petrography*	31	16-Jan-16	75
Totals		*96*		*534*

Notes:* includes transmitted light and reflected light microscopy on polished thin sections

TOWNEND
mineralogy laboratory

NEIL MARTIN 26-11-2015

BMC (UK) LTD,

OUR REFERENCE: 23919

PREPARATION OF 36 POLISHED THIN SECTIONS OF THIRTY SIX DRILL CORES AND MINERAGRAPHIC/PETROGRAPHIC DESCRIPTIONS, INCLUDING SEM ANALYSES

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SUMMARY OF RESULTS

Thirty six drill core samples taken from twenty one drill holes represent a quite variable assemblage of sulphides and usually subordinate non-sulphide gangue. Thirty of the drill cores can be classified as massive sulphide and of these twenty seven contained significant mineralisation.

The ore mineralisation was dominated by sphalerite, with lesser quantities of chalcopyrite, tetrahedrite and usually accessory galena. Silver bearing gold, exceptionally reaching 40% silver (electrum) was detected in eleven cores. Silver was also present in tetrahedrite with typical values between 1 and 2% plus several examples of high silver tetrahedrite (freibergite)

Pyrite was the dominant gangue sulphide with lesser quantities of pyrrhotite, while oxides are represented by significant magnetite in one group of core. With the exception of pyrrhotite in some samples, the sulphides were fresh primary minerals. Pyrrhotite sometimes showed marked alteration to marcasite.

The very subordinate non-sulphide gangue within the massive ores was mainly carbonates, (ankerite, siderite >dolomite) and quartz with subordinate muscovite. There were three exceptional samples in which a lesser sulphide content was associated with either major barite or once the barium feldspar, celsian. There was a little silicate alteration with secondary phyllosilicates such as chlorite and kaolinite.

Textures of the massive sulphide cores usually featured a coarse banding due to variations in the percentage of the main sulphides. The textures of the main sulphides were relatively consistent with pyrite as euhedral crystals, contrasting the anhedral shape of the associated sphalerite, chalcopyrite, galena or pyrrhotite.

Probably the most dominant texture consists of major euhedral pyrite concentrations in an enclosing coarse matrix of sphalerite, plus or minus chalcopyrite. Pyrite grainsizes can vary between 50 and 500 µm but tend to be in the 100-200 µm range. Liberation sizes for sphalerite or chalcopyrite vary widely depending on the density of the pyrite concentration. In samples where pyrite becomes dominant, and semi-coalescent, the sphalerite and chalcopyrite forms very subordinate interstitial and relatively fine grains wrapped around the idiomorphic pyrite. In some cores where this occurs there is then a population of sphalerite, chalcopyrite and galena fines within the pyrite host.

Some of the sulphide bands may be deficient in pyrite and then either sphalerite or chalcopyrite is dominant with coarse liberation sizes. There are some massive samples where pyrrhotite is a major sulphide forming more complex textures with the sphalerite, chalcopyrite etc.

One group of massive sulphides, also contains major magnetite that tends to occur as subhedral grains of similar dimensions to pyrite, but within sphalerite. Uncommonly the magnetite may host fines of galena, chalcopyrite etc.

Another small group of massive sulphide contains chalcopyrite as the coarse dominant matrix with finer included pyrite, pyrrhotite and accessory sphalerite.

Three massive sulphide cores are dominated by pyrite, pyrrhotite and magnetite with low levels of sphalerite, chalcopyrite etc.

There are seven drill cores which contain minor to accessory quantities of sulphides. These are predominantly quartz muscovite chlorite schists that have vein mineralisation of base metal sulphides in siderite or dolomite. The sulphides are mainly pyrrhotite, pyrite with chalcopyrite and lesser sphalerite.

The drill cores reveal little evidence of a volcanic origin. They are essentially low grade metamorphic schists with sometimes oriented muscovite visible in massive sulphide.

One possible primary phenomena, is the presence of coarse albite in the schists and several of the massive sulphide cores. In the latter, there is a 1 cm mass of coarse polycrystalline albite i.e. albitite, in one sample (259 49.87). In another (203 101.3), numerous albites to 1.2cm, either fresh or part to completely altered, to a fine grained yellow brown phyllosilicate. Similar crystals, usually part altered at rims occur in most of the low sulphide schists. Albitites are common as wallrocks in both VMS and SEDEX deposits.

Based on mineralogy, the drill cores are classified into seven groups:

GROUP 1

160 153.3-153.6
202 11.66-11.84
226 149.45-149.55
236 99.4-99.52
267 154.74-154.86
274 85.15-85.28

Massive sulphides, dominated by euhedral pyrite, interstitial accessory sphalerite > galena, chalcopyrite, arsenopyrite, tetrahedrite. Gangue ankerite.

GROUP 2

227 34.19 -34.29
264 155.3-155.6
267 140-140.11

Massive to minor sulphides. Major euhedral pyrite, angular sphalerite, accessory tetrahedrite/ tennantite, chalcopyrite, galena and arsenopyrite. Gangue celsian or barite.

GROUP 3

240 51.35-51.48
243 176.57-176 74

Massive to major sulphides. Major euhedral pyrite, minor anhedral sphalerite tetrahedrite chalcopyrite, accessory galena arsenopyrite. Gangue ankerite, siderite, quartz and mica.

GROUP 4

144	78-78.11
202	16.33-16.46
203	102-76-102.87
203	122.23-122.38
207	83.2-83.34
240	47.57-47.67
264	156.56-156.7
274	59.22-59.36
278	136-136.13
284	171.92-172.05
287	50.98-51.23

Massive sulphides. Major euhedral pyrite, major to minor anhedral sphalerite, minor magnetite, minor to accessory pyrrhotite, accessory chalcopyrite galena. Gangue siderite quartz chlorite talc.

GROUP 5

203	101.3-101.4
259	49.87-49.5
264	149.32-149.45
273	95.62-95.76
273	91.55 -91.69

Massive sulphides dominant to major chalcopyrite, major to minor pyrite, minor to accessory pyrrhotite, accessory sphalerite. Gangue albite muscovite chlorite quartz siderite.

GROUP 6

236	81.5-81.6
267	143.52-143.62
273	98-98.12

Massive low grade sulphides. Dominant pyrite, minor pyrrhotite magnetite, accessory sphalerite chalcopyrite galena. Gangue siderite dolomite quartz,

GROUP 7

238	175.32-175.43
242	92.24-92.36
260	155.67-155.78
264	164.7-164.81
284	180.76-180.91
284	182.35-182.48

Sulphide poor chlorite muscovite schists with sulphide bearing quartz carbonate veins.

METAL DISTRIBUTION

ZINC
Zinc is mainly present as sphalerite, with measured iron content ranging from 5 to 10%. It is also present in all the tetrahedrite tennantite grains analysed, between 3 and 5% Fe.

COPPER
Copper is present as chalcopyrite and tetrahedrite/tennantite. There was a trace as bournonite as above, and once as the copper tin sulphide, stannite (243 176.57)

LEAD/SELENIUM
Lead is present as galena plus a trace as bournonite and an unnamed lead antimony sulphide in sample 144 78. Several galenas were analysed for selenium by SEM, which found up to 9%.

SILVER
The silver detected was mainly present in the tetrahedrite/tennantite group. Most examples had between 1 and 2% silver, but there were several silver rich grains, containing between 15 and 25% silver, equivalent to freibergite.

Silver was also present in gold, and in one sample was electrum with silver content around 40%.

GOLD
Gold was found optically in eleven cores, the majority in the first priority group. It was also silver bearing and one particularly high grade sample from the third priority group was electrum.

ARSENIC ANTIMONY
Arsenic was present as accessory arsenopyrite in a number of massive sulphide samples. It also occurred as an accessory element in tetrahedrite and once was dominant over antimony (tennantite). Antimony was present mainly in tetrahedrite, with values between 15 and 26%, and once in bournonite.

BISMUTH TIN
There are two examples of fine bismuth occurrences, with galena. Tin was detected once as fine stannite.

SAMPLE K15-144 78-78.11

DRILL CORE

POLISHED THIN SECTION

GANGUE	**15%**
MUSCOVITE	50%
QUARTZ	40%
CARBONATE	10%
ORES	**85%**
SPHALERITE	30-40%
PYRITE	20-30%
MAGNETITE	10-20%
CHALCOPYRITE	5-15%
GALENA	3-5%
ARSENOPYRITE	3-5%
PYRRHOTITE	3-5%
FREIBERGITE	TRACE
BOURNONITE	TRACE
Pb Sb SULPHIDE	TRACE

CLASSIFIED AS A SEMI MASSIVE GALENA CHALCOPYRITE MAGNETITE PYRITE SPHALERITE ORE.

The dominant ore texture consists of a matrix of sphalerite and magnetite hosting subordinate quantities of the other sulphides. The gangue is composed of disseminated mostly oriented 100 µm muscovite, is often within massive sulphide and associated equigranular finer quartz. There is a little disseminated manganese siderite (SEM).

The sphalerite areas can exceed half a millimetre but with common fine inclusions of chalcopyrite or galena. The magnetite is less commonly hosting the sulphides but examples with chalcopyrite inclusions are present.

Pyrite varies from a major constituent as equant shaped individual grains ranging from euhedral to rather indented margins against the other sulphides, or magnetite. Pyrite dimensions are from 100 to 500 µm and the sulphide contain inclusions of galena or sphalerite rarely chalcopyrite.

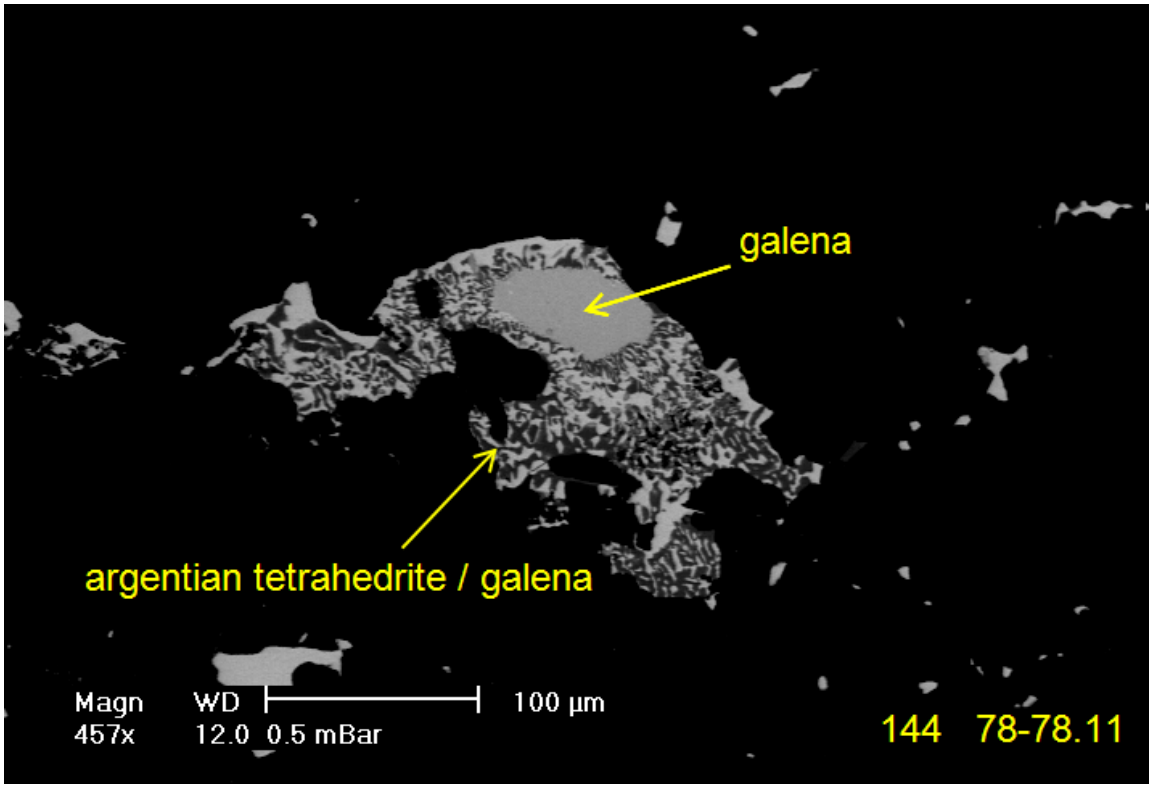
Locally the chalcopyrite becomes a major component of the sphalerite, with very angular shapes to 200 µm, down to less than 10 µm. Not uncommonly it is a partial rim to pyrite. Galena also has its distribution within the dominant sphalerite, less commonly chalcopyrite but also with a regular grain shapes usually less than 100 µm.

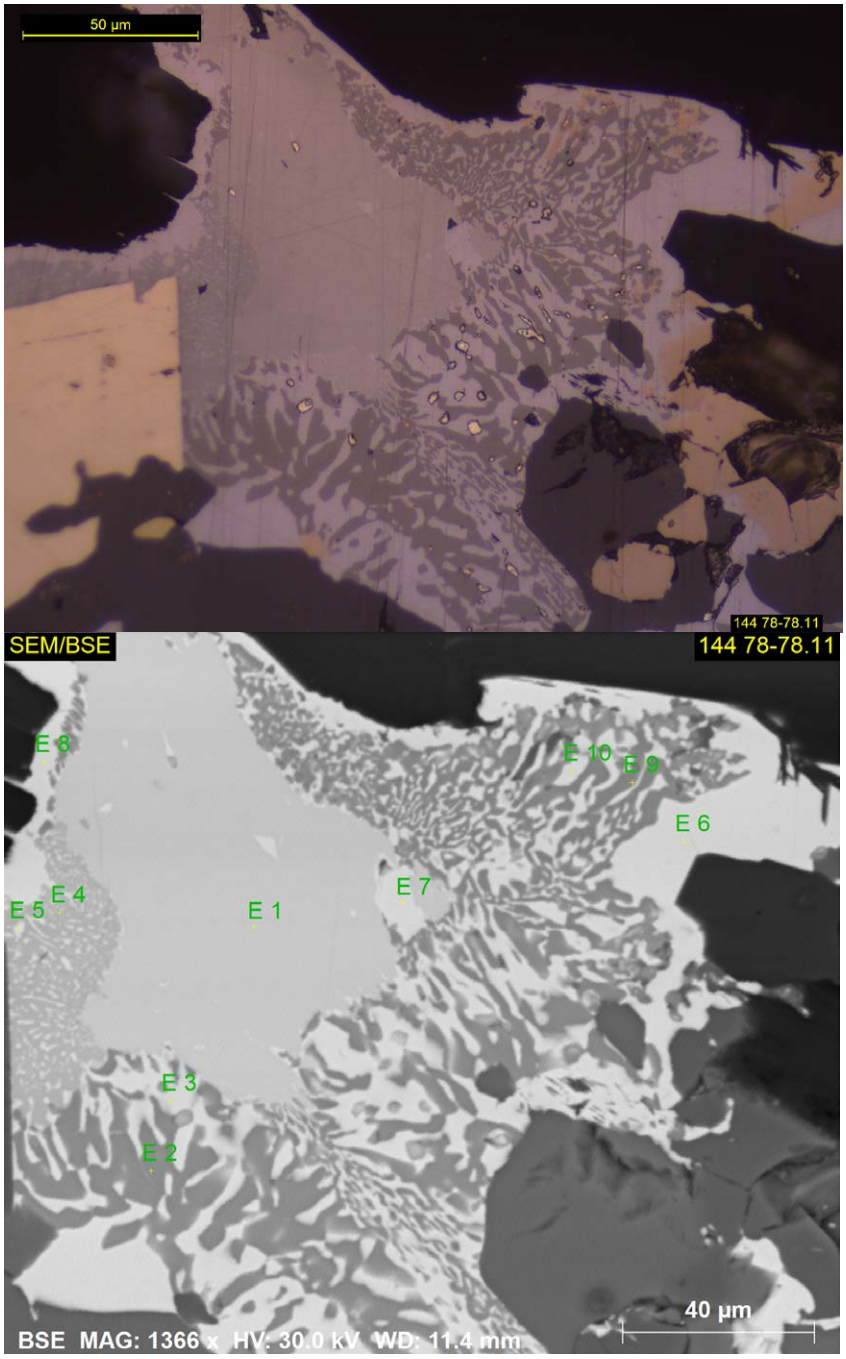
Arsenopyrite and pyrrhotite are sporadically present in local concentrations. The arsenopyrite exceptionally exceeds 300 µm clusters, in contact with galena and chalcopyrite.

Anhedral pyrrhotite is similarly important locally within sphalerite in contact with chalcopyrite or galena.

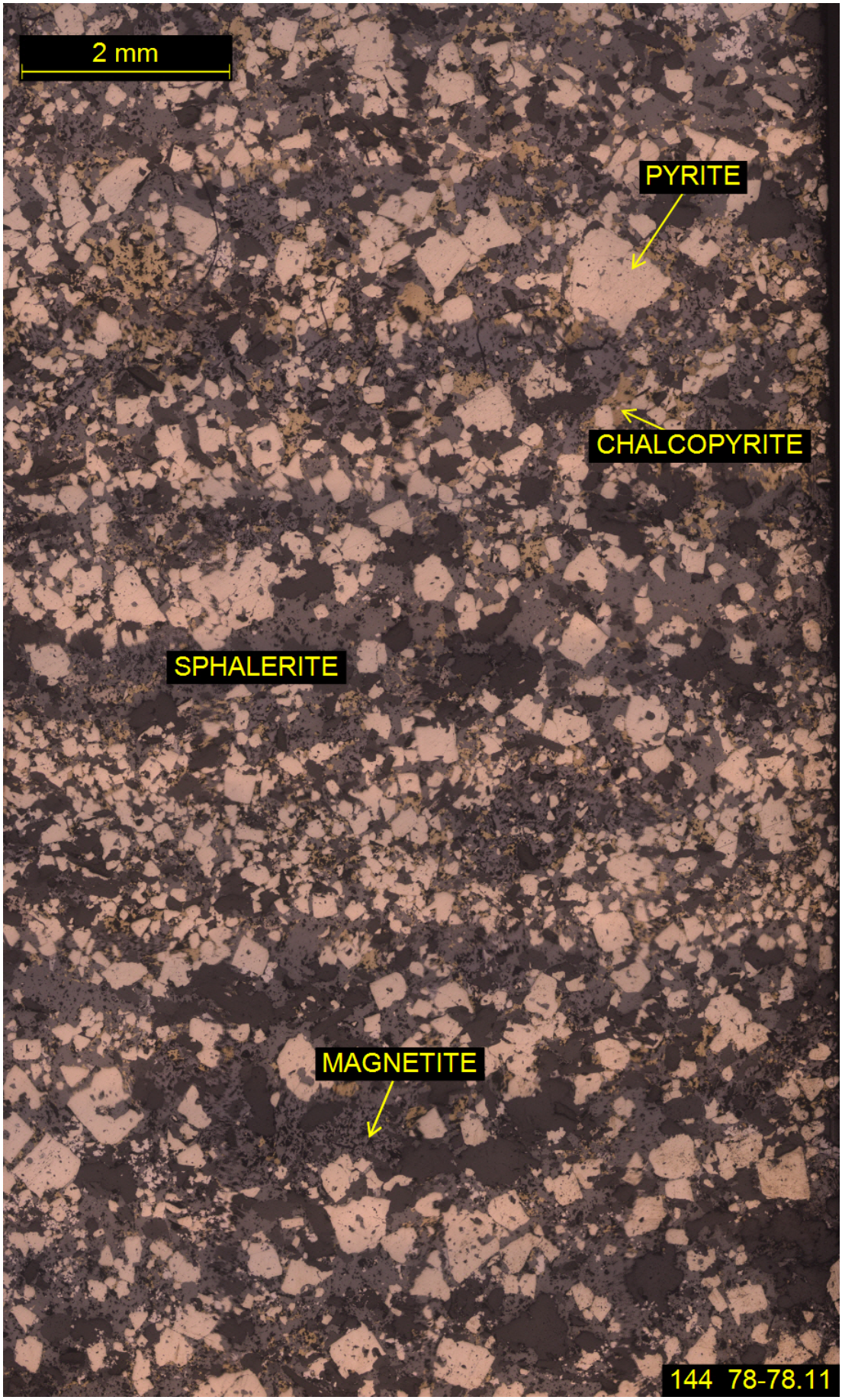
The 6.5 cm core contains several occurrences of complex intergrowths of silver lead, copper and antimony sulphides. These included a eutectic like intergrowth of silver rich tetrahedrite (15-21% silver) and galena, and fine-grained intergrowth of bournonite and galena. There were also several examples of an unnamed lead rich antimony sulphide (no silver). White specks within the freibergite galena intergrowth could not be located by SEM.

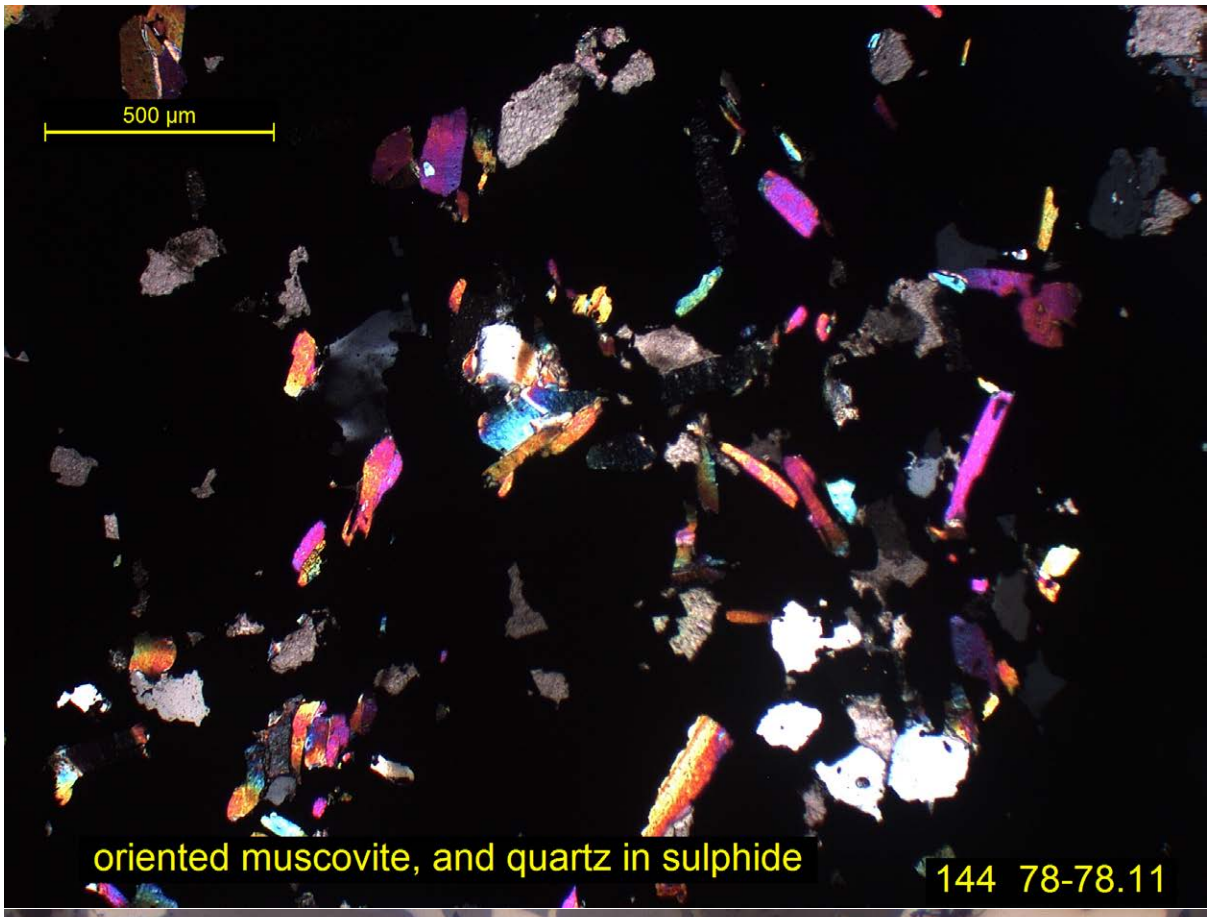
SEM/EDS ANALYSES

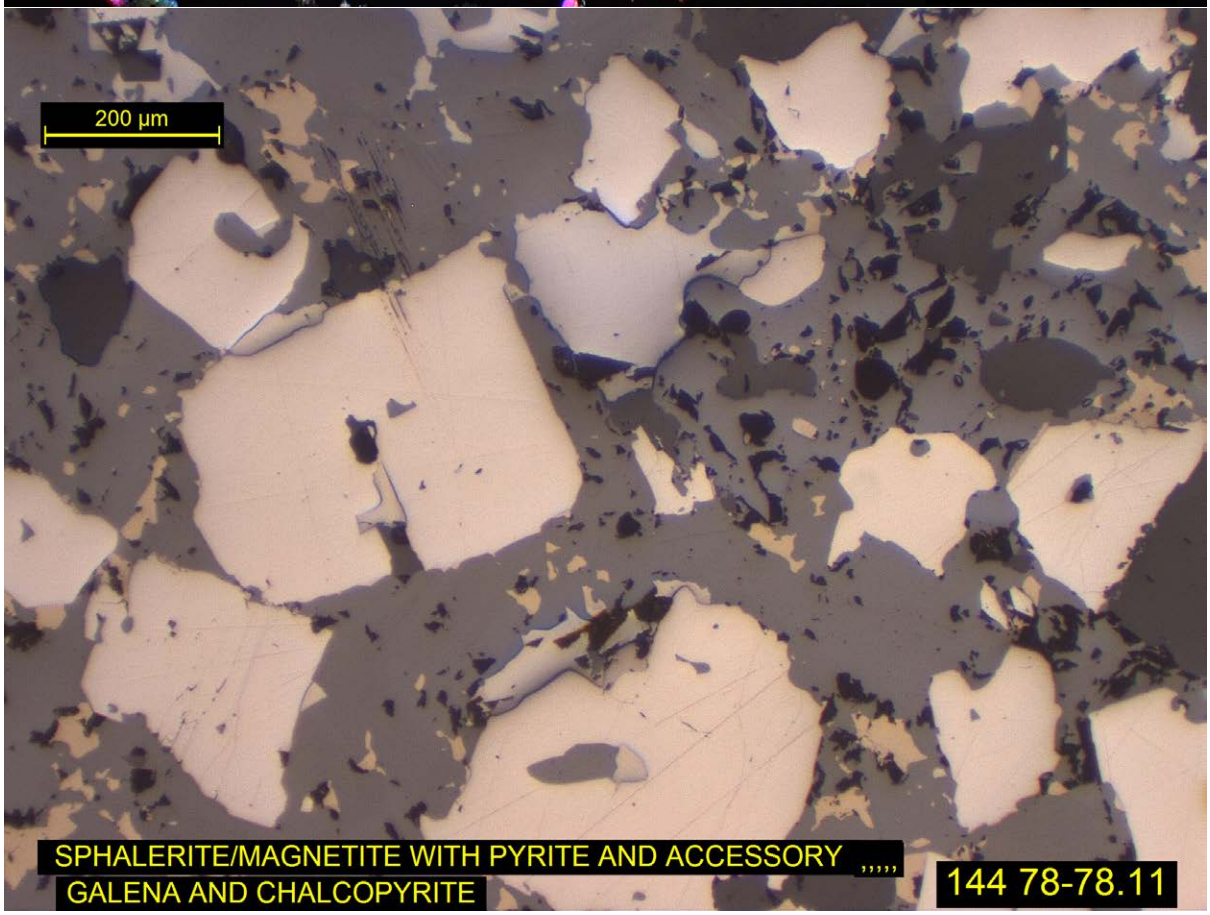


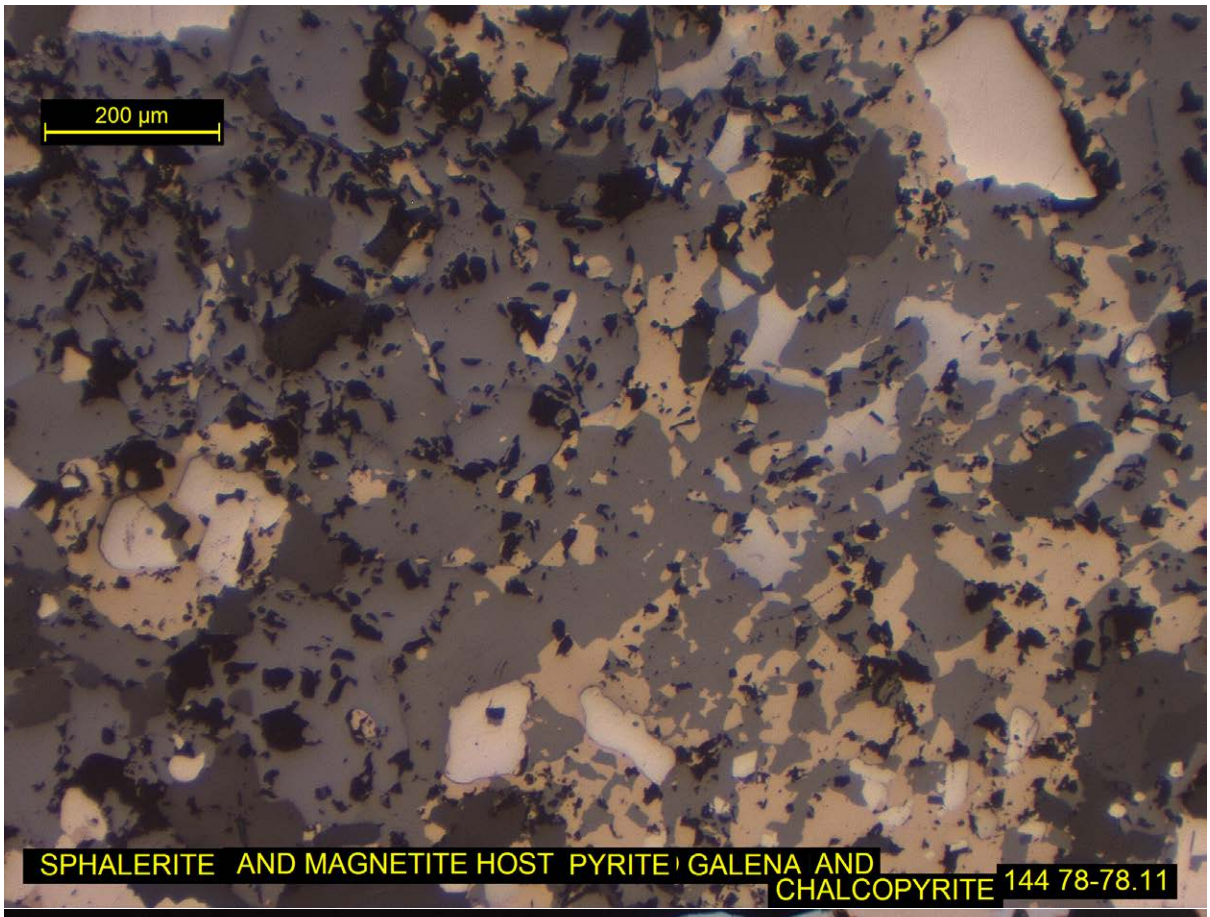


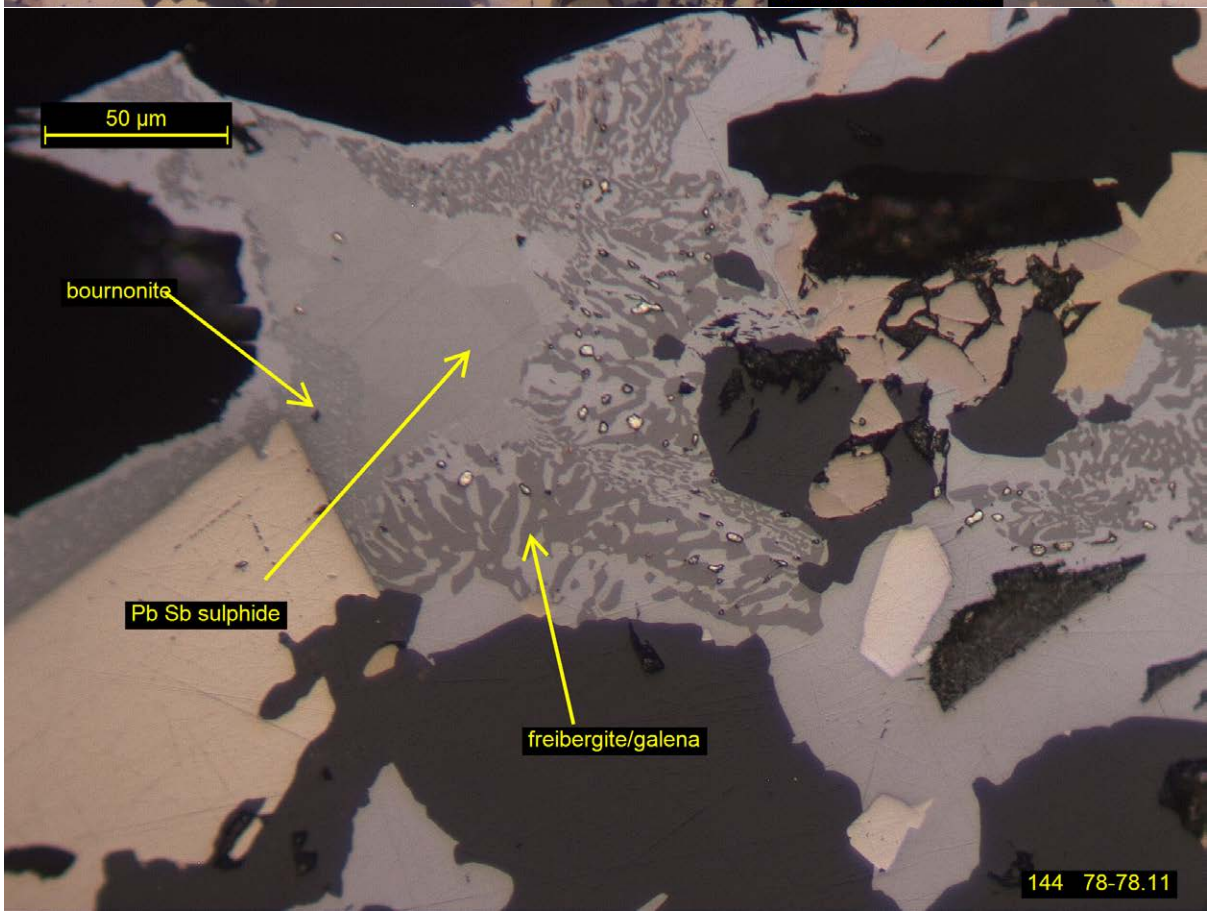
	S	Fe	Cu	Sb	Pb	Se	Zn	Ag	
E 1	17.7	0.5	1.7	21.9	58.2				Sb GALENA
E 2	22.3	5.8	18.8	26.9	6.5		1.1	18.6	FREIBERGITE
E 3	13	1.7	3.8	2.9	78.6				GALENA
E 4	16.7	0.6	11.1	20.2	51.4				?
E 5	18.6	0.7	8.9	20.7	51.1				?
E 6	12.3	1.3			85.3	0.5	0.5		GALENA
E 7	13.7	0.6	0.6	5.6	79.5				GALENA
E 8	13	0.9	0.7		85.4				GALENA
E 9	21.4	9.5	11.4	17.9	22.3		2.8	14.7	FREIBERGITE
E 10	12.9	1.5	2.3	4.2	76.9			2.2	GALENA

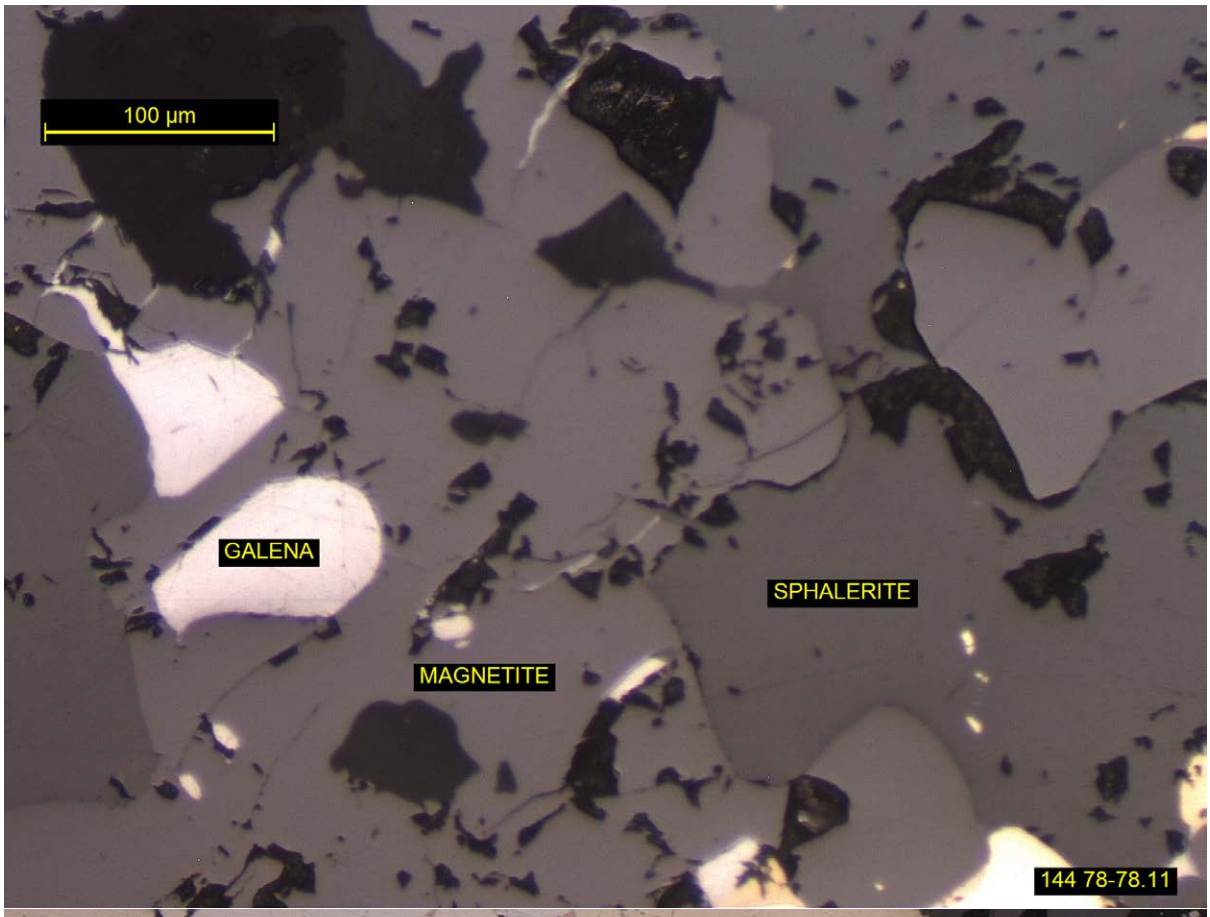

2 mm
PYRITE
CHALCOPYRITE
SPHALERITE
MAGNETITE
144 78-78.11

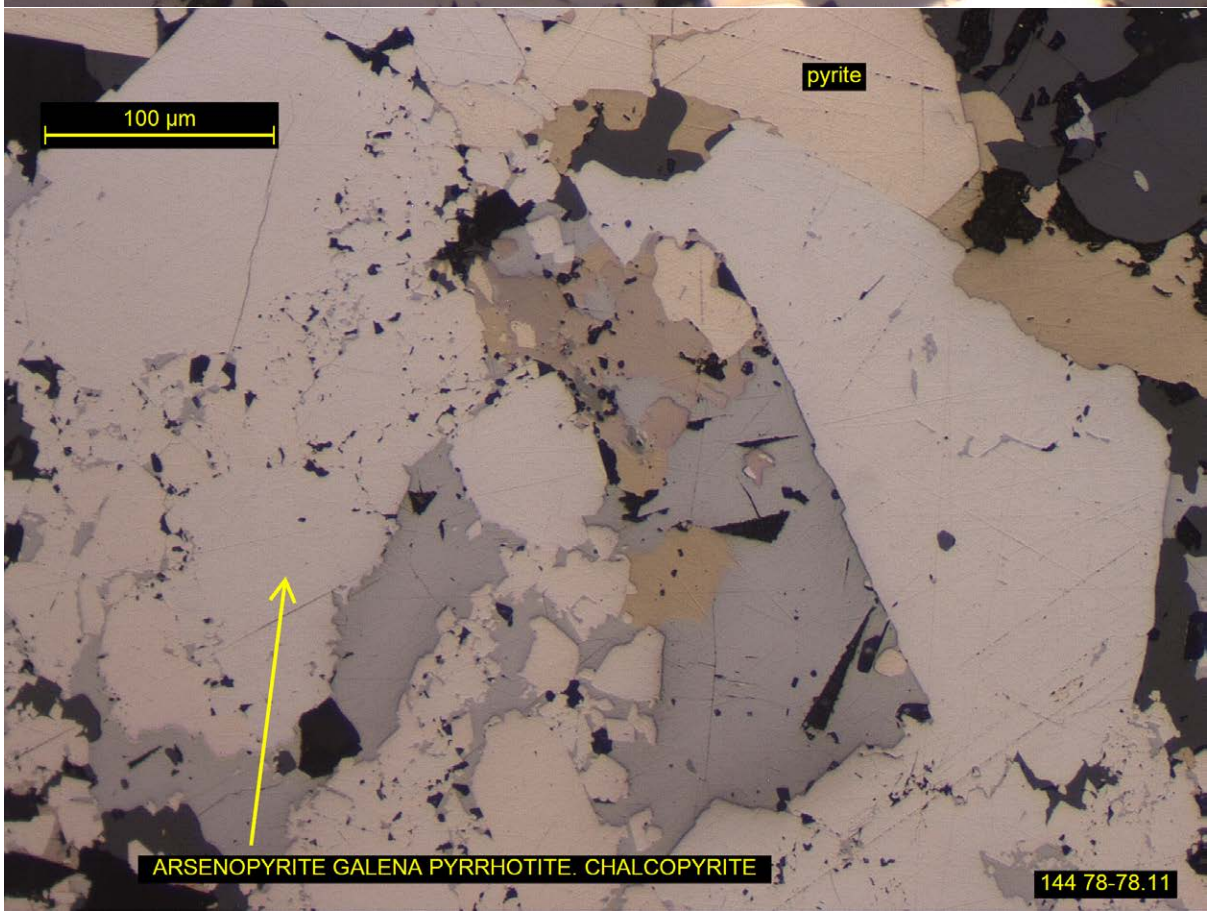

500 µm
oriented muscovite, and quartz in sulphide
144 78-78.11

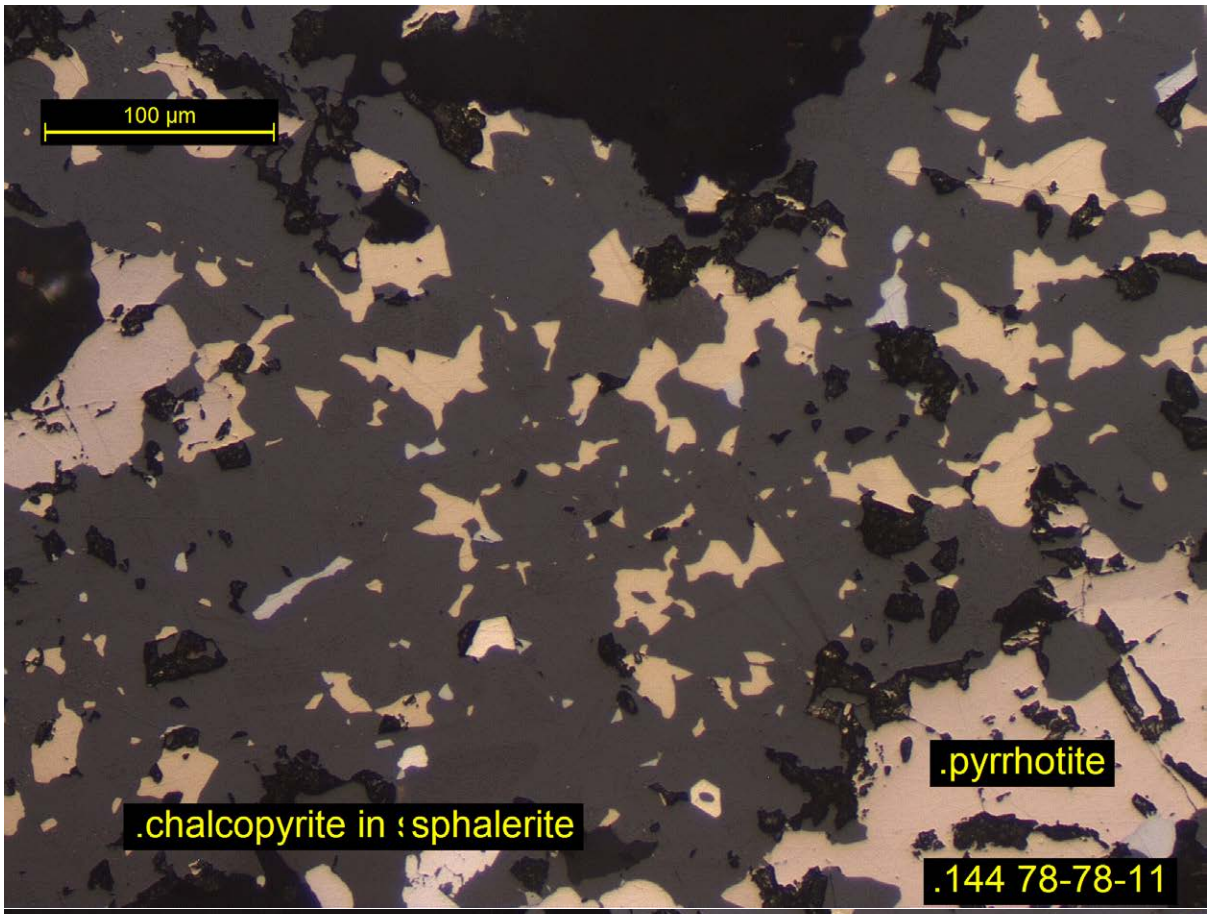

200 µm
SPHALERITE/MAGNETITE WITH PYRITE AND ACCESSORY
GALENA AND CHALCOPYRITE
144 78-78.11

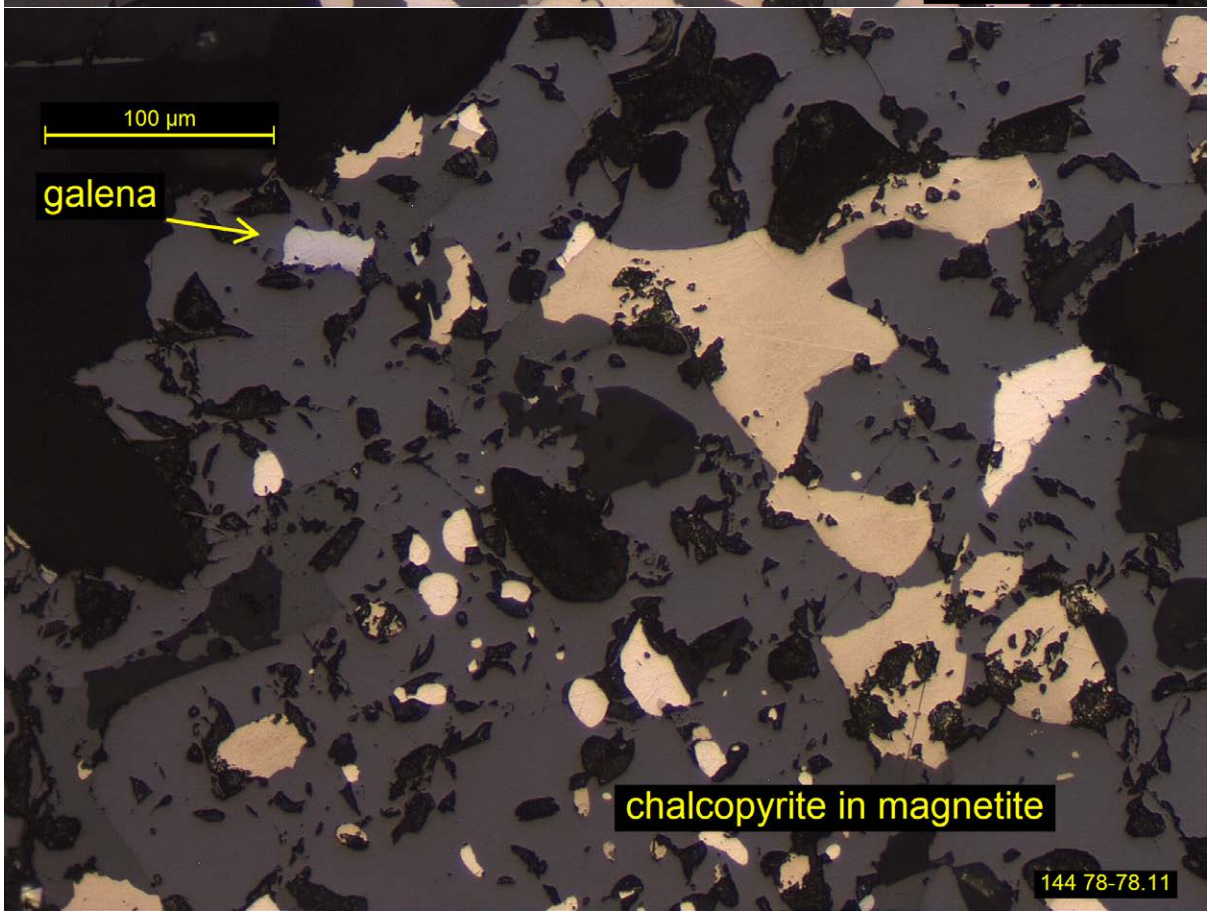

200 µm
SPHALERITE AND MAGNETITE HOST PYRITE GALENA AND CHALCOPYRITE
144 78-78.11


50 µm
bournonite
Pb Sb sulphide
freibergite/galena
144 78-78.11


100 µm
GALENA
SPHALERITE
MAGNETITE
144 78-78.11


pyrite
100 µm
ARSENOPYRITE GALENA PYRRHOTITE. CHALCOPYRITE
144 78-78.11


100 µm
.pyrrhotite
.chalcopyrite in ؛sphalerite
.144 78-78-11


100 µm
galena
chalcopyrite in magnetite
144 78-78.11

SAMPLE K15-160 153.3-153.6

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
CARBONATE	80%
QUARTZ	20%
ORES	**90%**
PYRITE	85% +
SPHALERITE	3-10%
GALENA	1-2%
CHALCOPYRITE	<1%
ARSENOPYRITE	TRACE
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A SEMI MASSIVE CARBONATE CEMENTED PYRITE ROCK WITH ACCESSORY SPHALERITE GALENA.

The drill core is dominantly composed of pyrite that ranges from the semi massive coalesced grains to more disseminated individuals within carbonate or sphalerite. Pyrite crystal shapes are subhedral when coalesced to more euhedral when disseminated.

The main gangue matrix is composed of two carbonates, ankerite and calcite (SEM). The former appears to be a more dusty finer grained component. Much occurs as an interstitial 100-300 µm matrix to the semi massive pyrite etc. There is a little sporadic quartz.

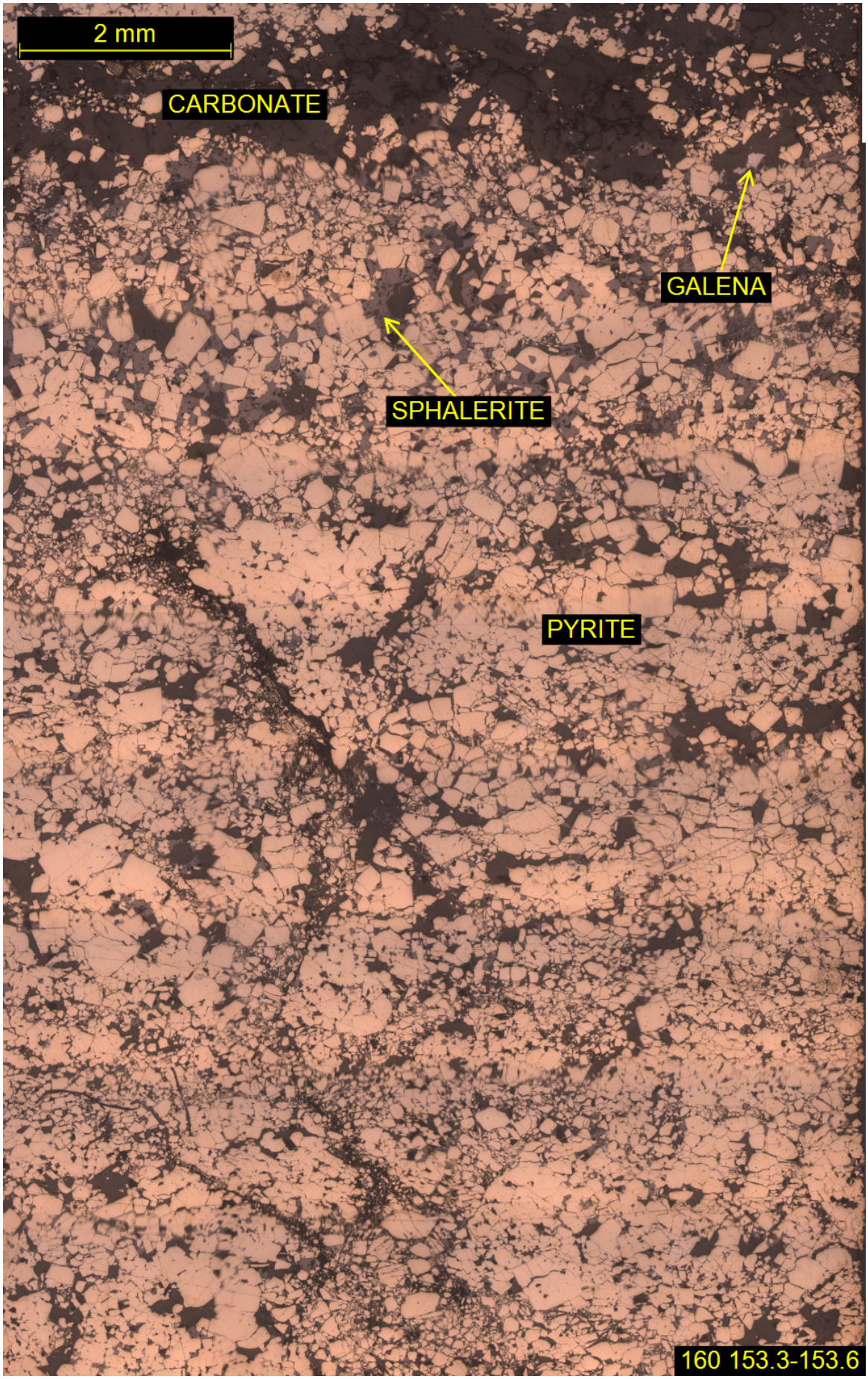
There is coarse banding emphasised by the variation in sphalerite content from locally equal to pyrite over a narrow widths to a dominant 2-3% disseminated attachment. Liberation sizes for sphalerite range from 200 µm occasionally to more common 50 µm. Where pyrites are almost coalescing, the pyrites are not normally host to sphalerite or galena inclusions.

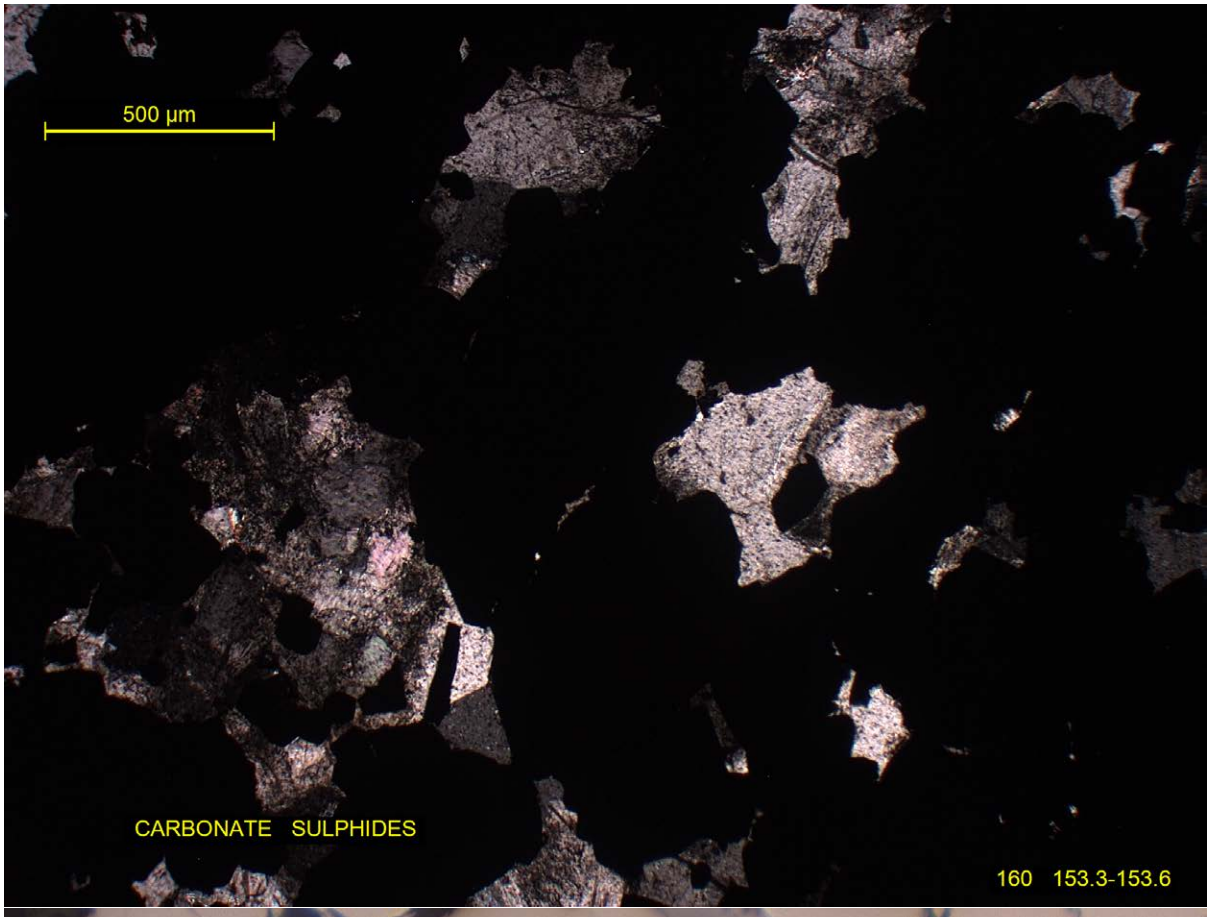
The galena content is as marginal attachments to adjacent pyrite, with liberation sizes usually under 50 µm. Chalcopyrite is an uncommon component of the matrix around pyrites sometimes in contact with sphalerite or galena. There was a rare example of arsenopyrite composite with pyrite and once chalcopyrite.

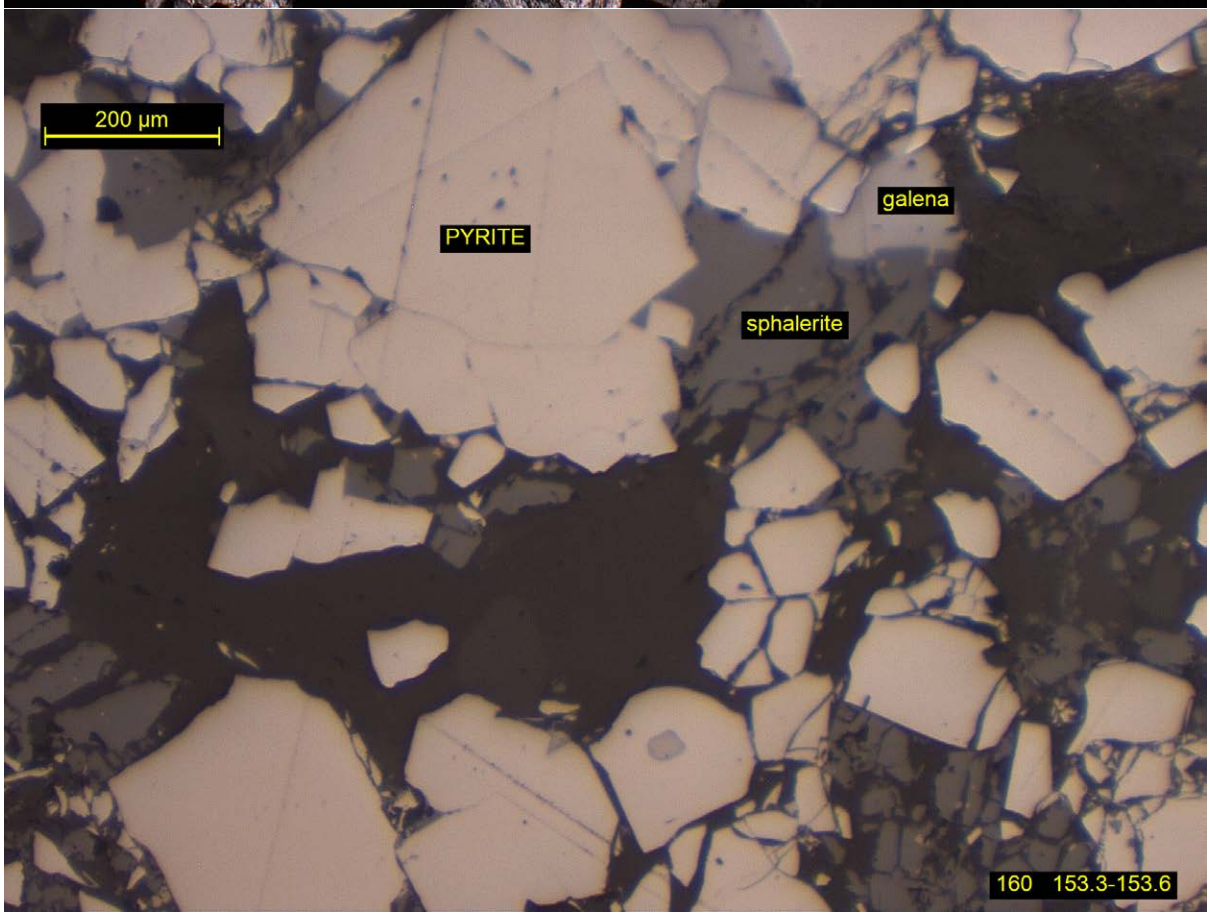
Fine galena may occur within rare carbonate dominant bands.

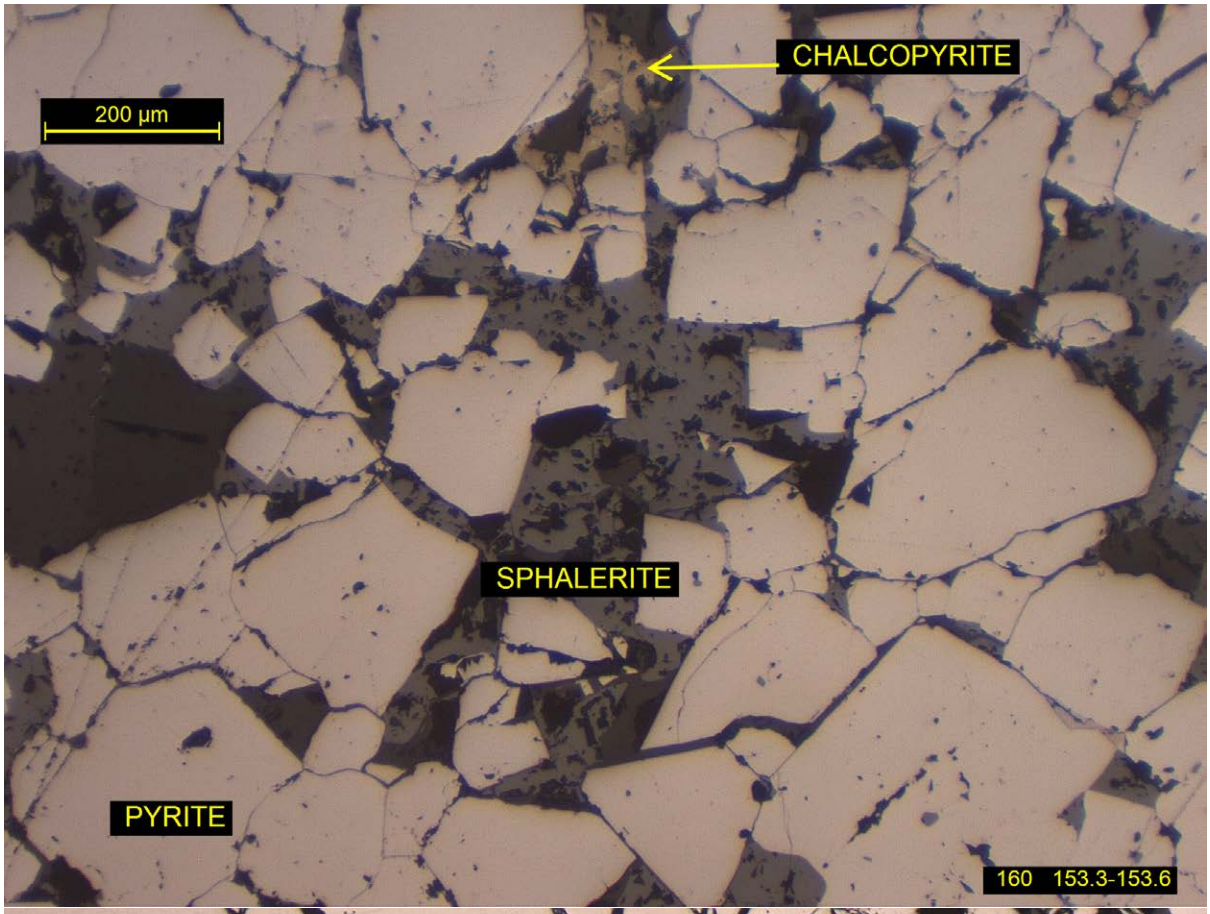
GOLD

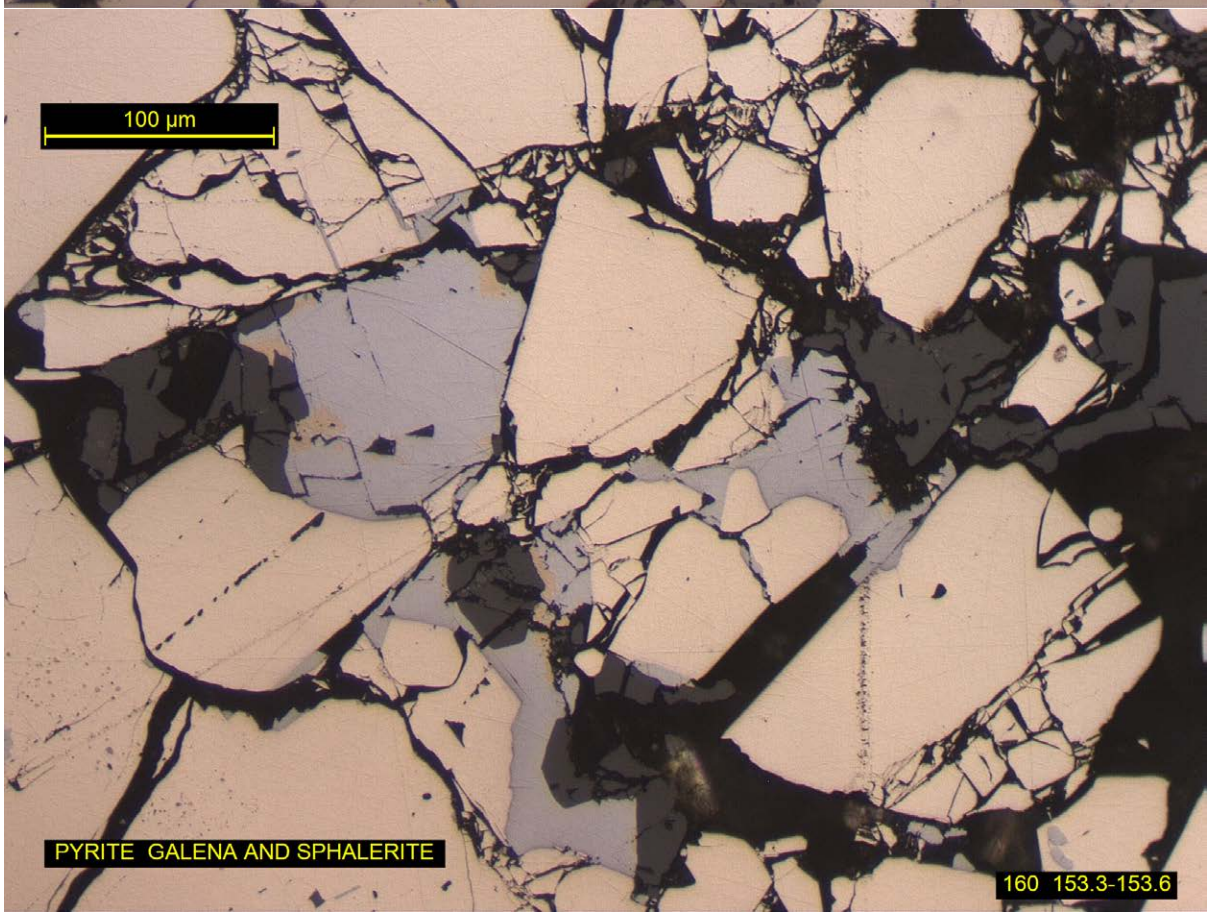
One occurrence of gold was detected optically. This was an argentian particle of 3 microns within a chalcopyrite galena? vein in coarse pyrite.

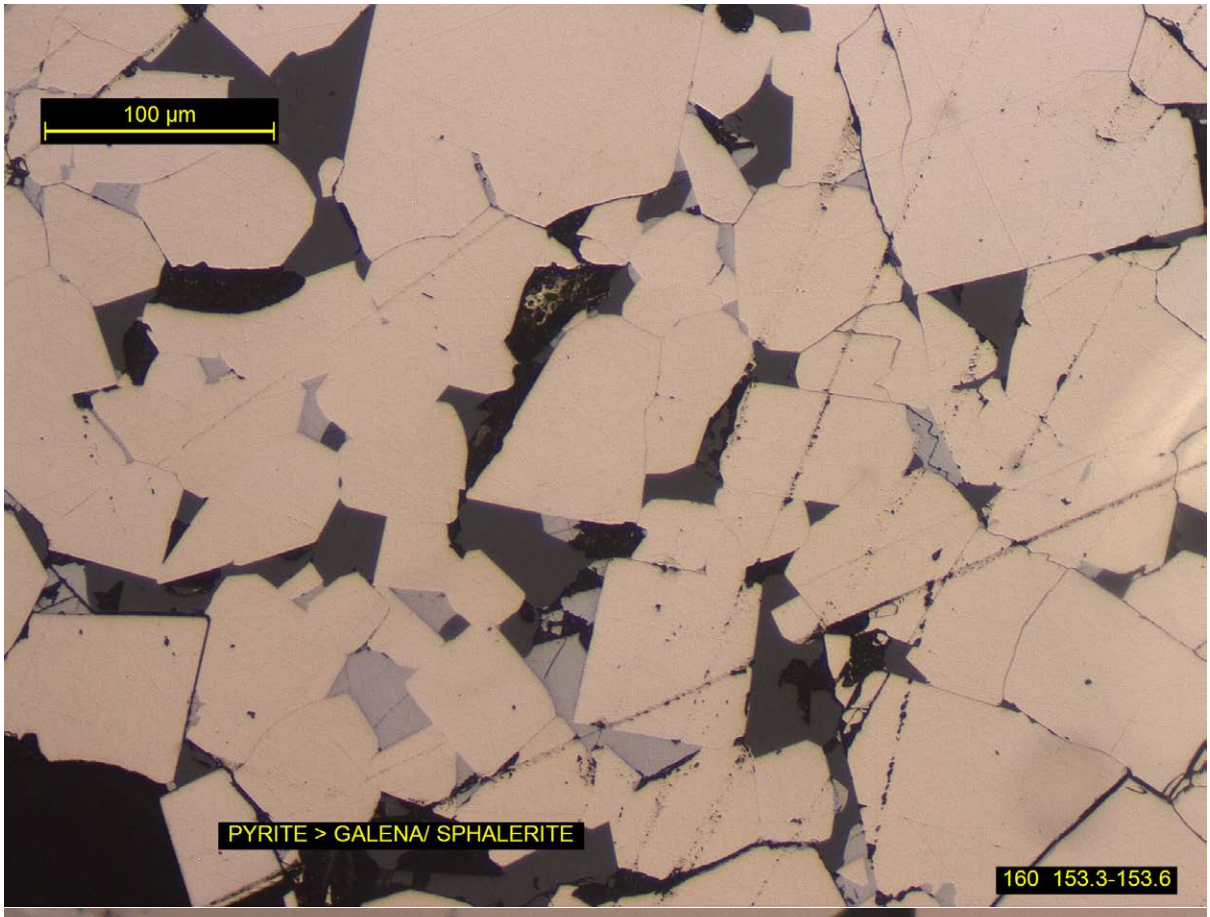

2 mm
CARBONATE
GALENA
SPHALERITE
PYRITE
160 153.3-153.6

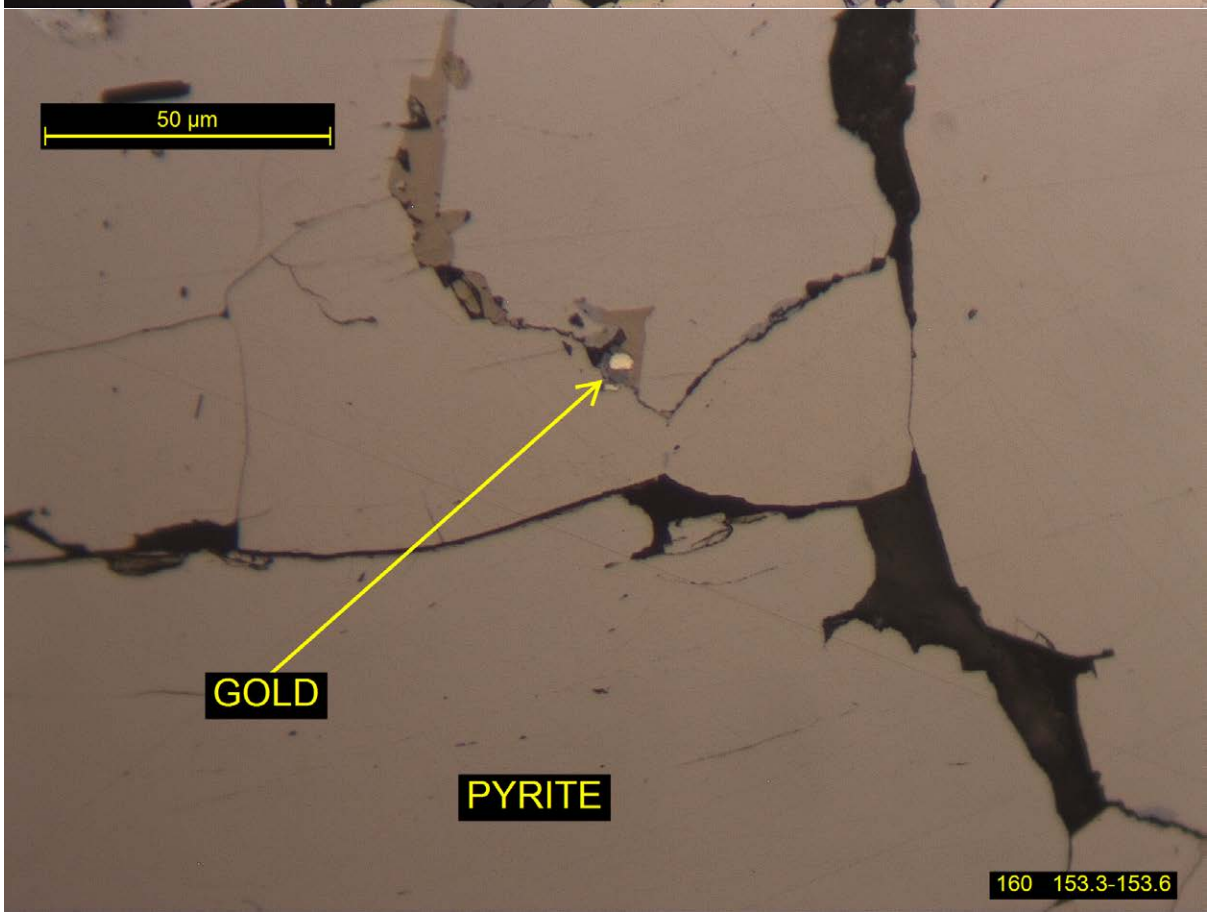

500 µm
CARBONATE SULPHIDES
160 153.3-153.6


200 µm
PYRITE
galena
sphalerite
160 153.3-153.6


CHALCOPYRITE
200 µm
SPHALERITE
PYRITE
160 153.3-153.6


100 µm
PYRITE GALENA AND SPHALERITE
160 153.3-153.6


100 µm
PYRITE > GALENA/ SPHALERITE
160 153.3-153.6


50 µm
GOLD
PYRITE
160 153.3-153.6

SAMPLE K15-202 11.66-11.84

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
CARBONATE	90%
QUARTZ	10%
MUSCOVITE	TRACE
ORES	**90%**
PYRITE	85% +
SPHALERITE	5-10%
GALENA	1-2%
ARSENOPYRITE	1-2%
MAGNETITE	TRACE
CHALCOPYRITE	TRACE

CLASSIFIED AS SEMI MASSIVE PYRITE CONTAINING ACCESSORY SPHALERITE AND GALENA.

The drill core is dominantly composed of pyrite that is most commonly massive, with coalesced grains exceeding 95%. The separate pyrite crystals were euhedral with diameters between 50 and 200 µm. Apart from the gangue content, sphalerite is the other significant mineral.

The gangue is dominantly ankerite (SEM) with local patches of quartz. The carbonate is regularly present as interstitial sub 100 µm grains.

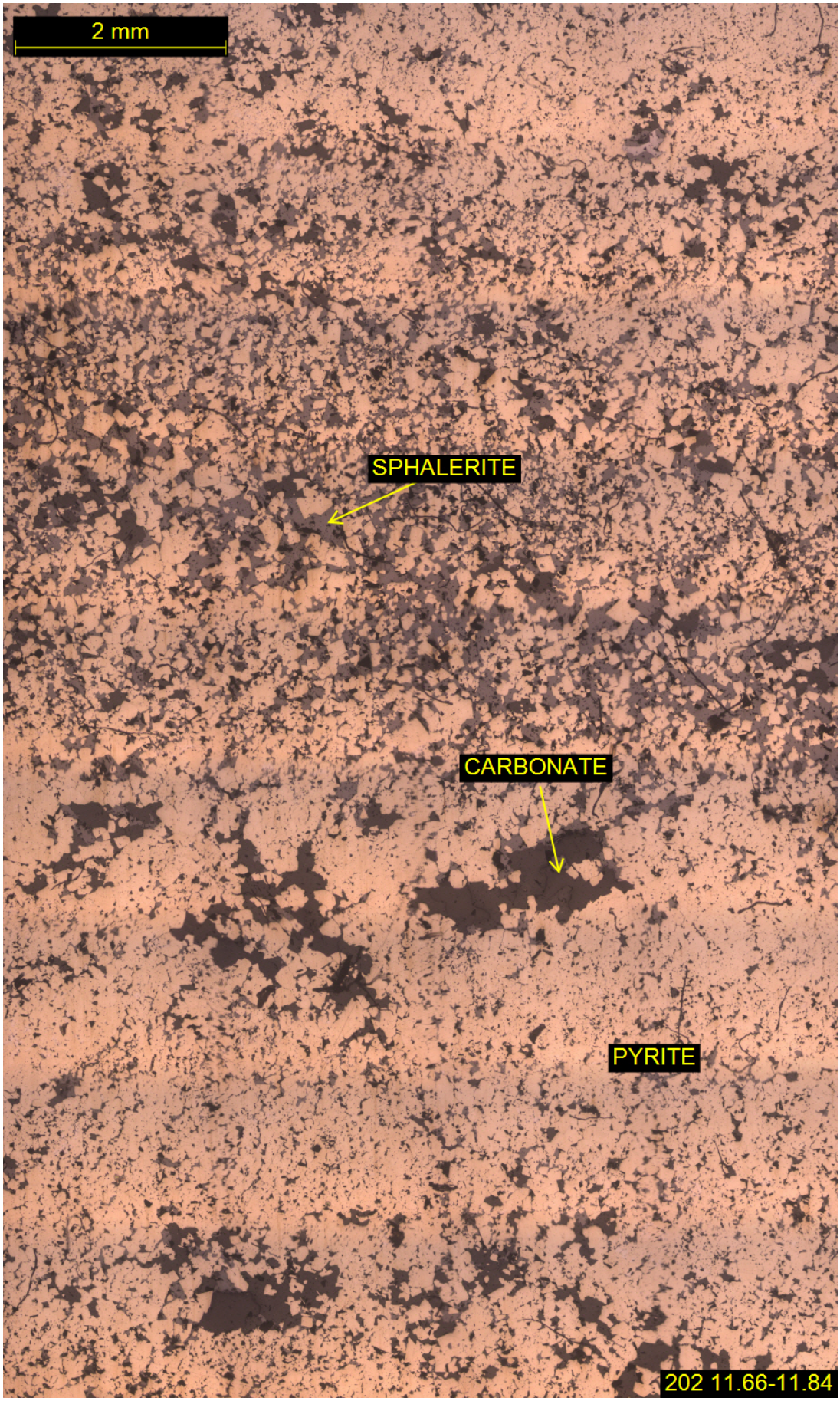
The sphalerite content is low except for several roughly sub millimetre bands where its content equals that of the pyrite. It then forms a matrix to the euhedral iron sulphide. Normally the sphalerite occurs as 50 µm very allotriomorphic shapes to adjacent idiomorphic pyrites. Exceptionally there are millimetre dimension sphalerite masses.

The galena content is very sporadic that locally may have a similar allotriomorphic 50 µm relationship to the dominant pyrite.

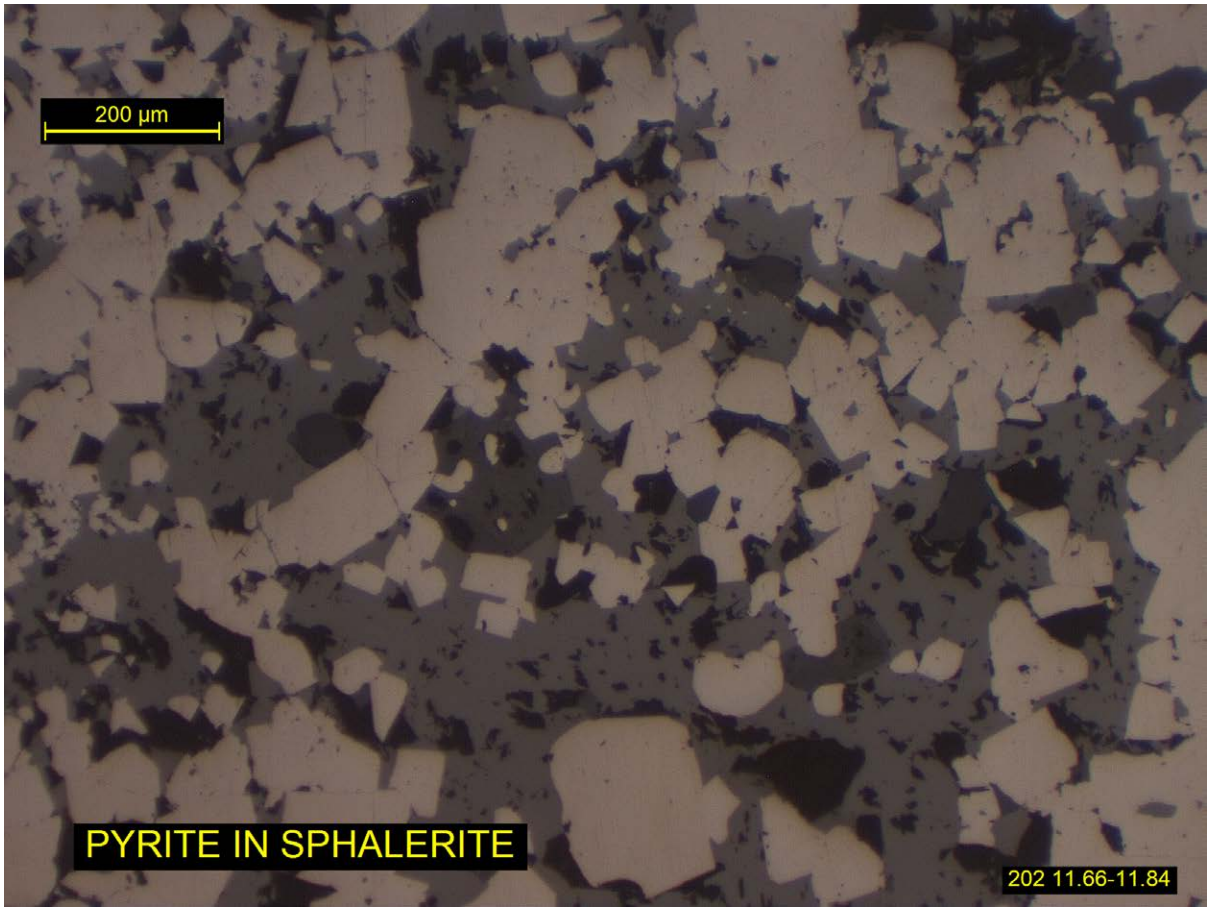
Fine arsenopyrite is occasionally quite common in clusters within the pyrite and may be in contact with the sphalerite.

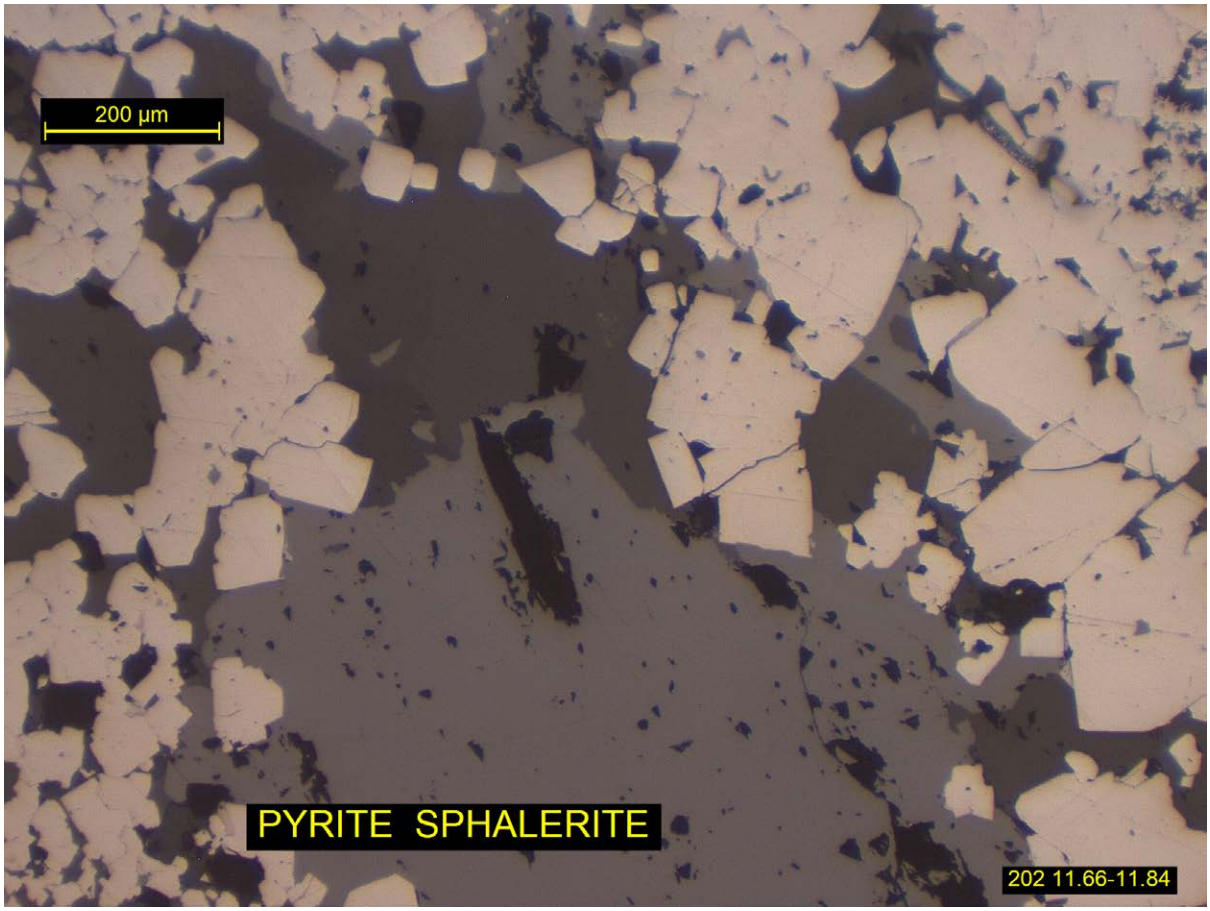
Pyrites may contain fines of galena and sphalerite down to a few microns. See SEM image.

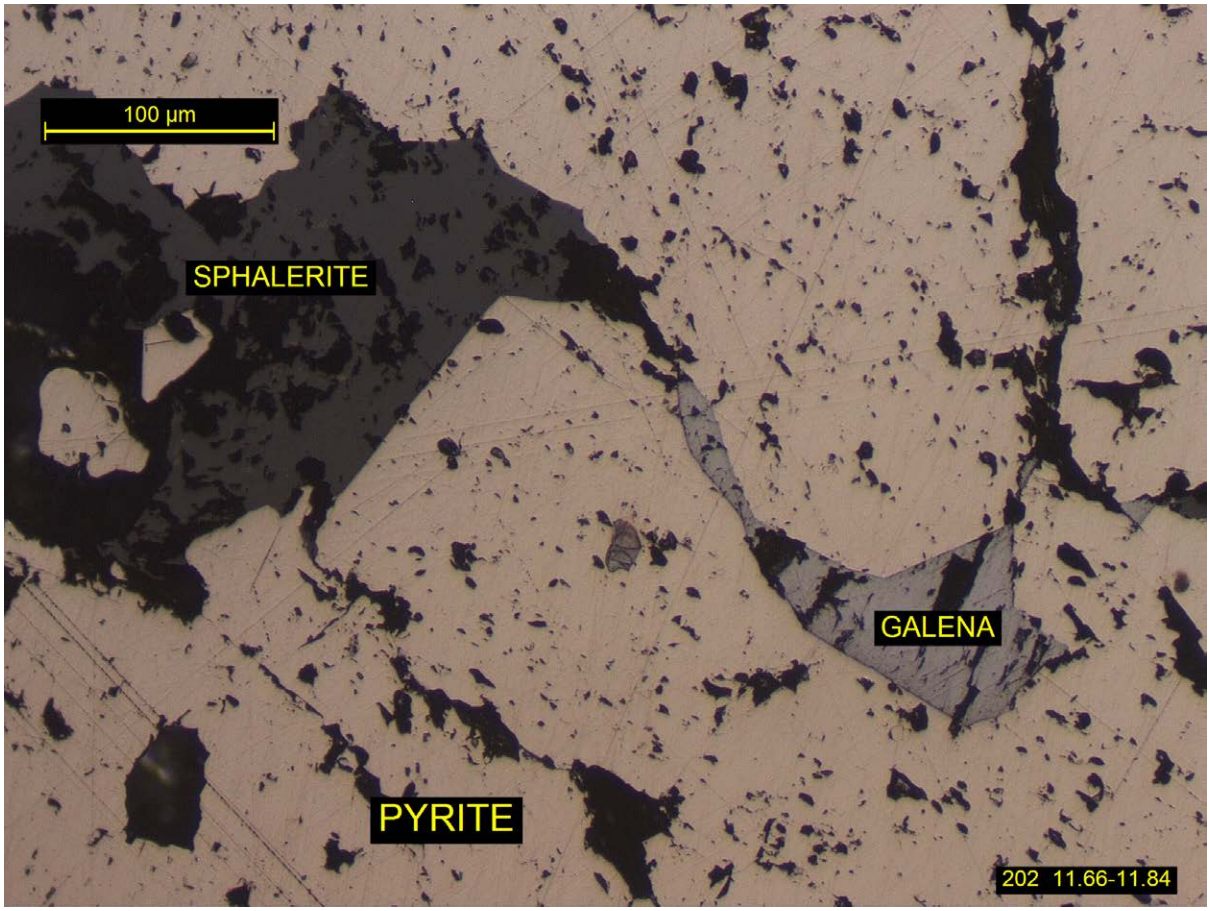
There are several occurrences of magnetite clusters within the gangue.

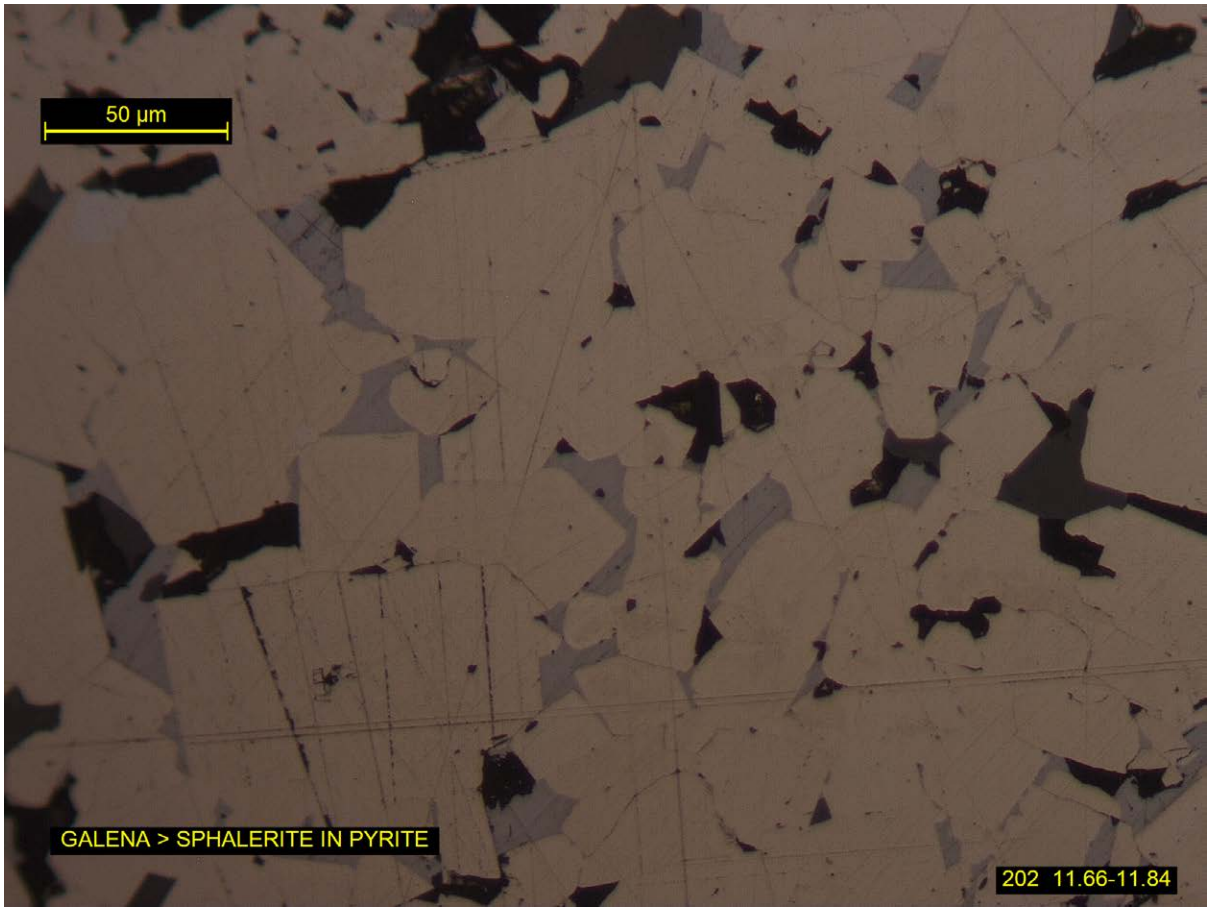

2 mm
SPHALERITE
CARBONATE
PYRITE
202 11.66-11.84

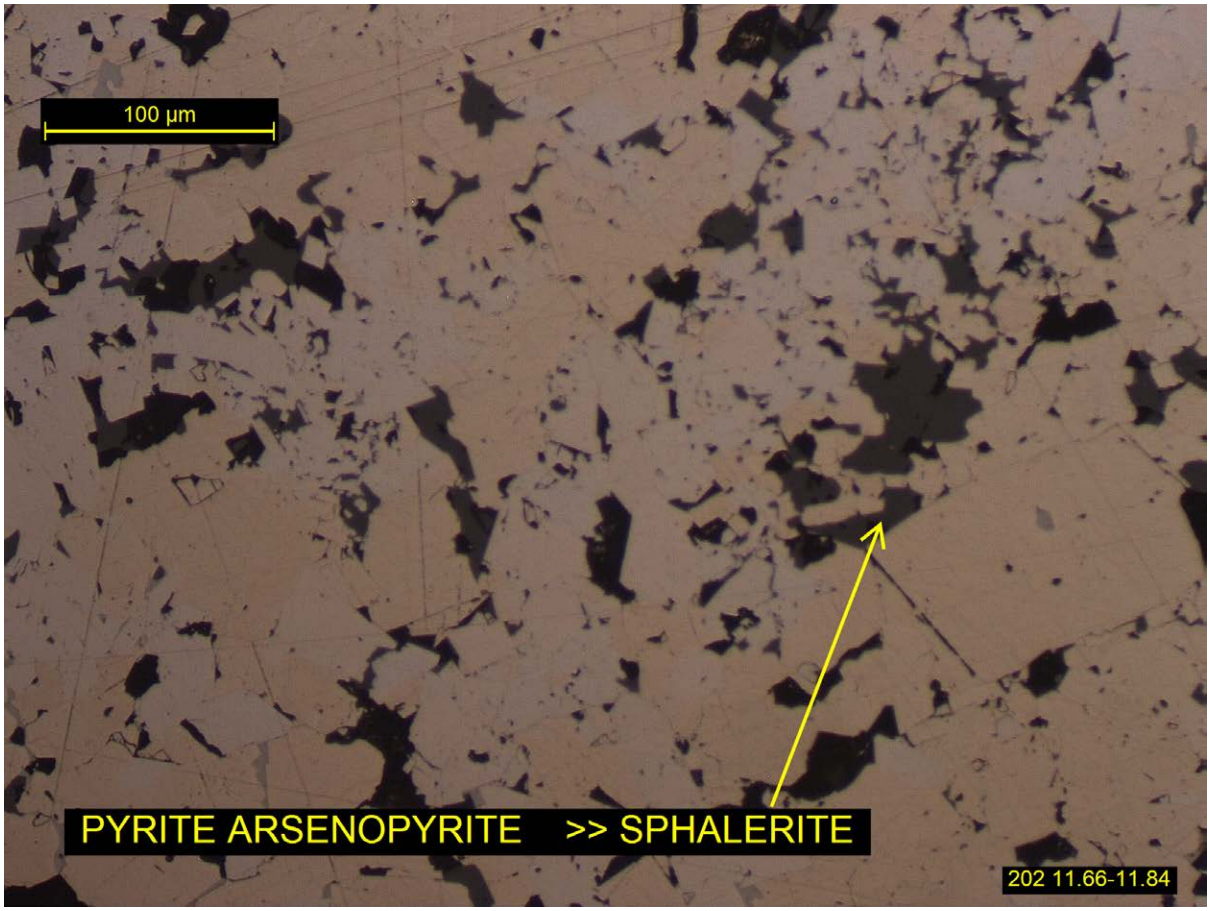

500 µm
ankerite in sulphides
202 11.66-11.84


200 µm
PYRITE IN SPHALERITE
202 11.66-11.84


200 µm
PYRITE SPHALERITE
202 11.66-11.84


100 µm
SPHALERITE
GALENA
PYRITE
202 11.66-11.84


50 µm
GALENA > SPHALERITE IN PYRITE
202 11.66-11.84


100 µm
PYRITE ARSENOPYRITE >> SPHALERITE
202 11.66-11.84

SAMPLE K15-226 149.45-149.55

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
CARBONATE	70-95%
MUSCOVITE	<5-30%
ORES	**90%**
PYRITE	85%
SPHALERITE	10%
GALENA	5%

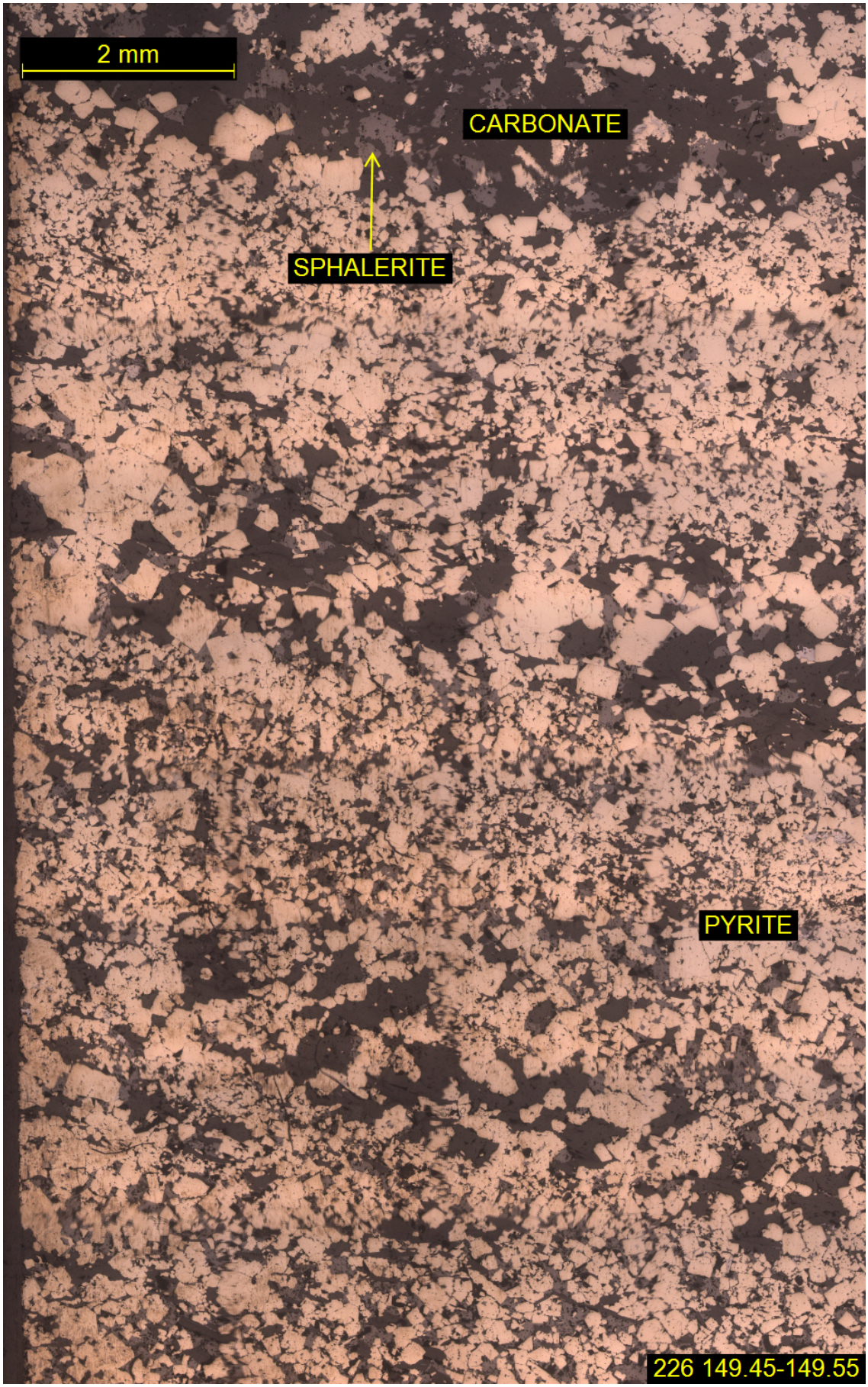
CLASSIFIED AS A BANDED MUSCOVITE CARBONATE CEMENTED SEMI MASSIVE GALENA SPHALERITE PYRITE ORE.

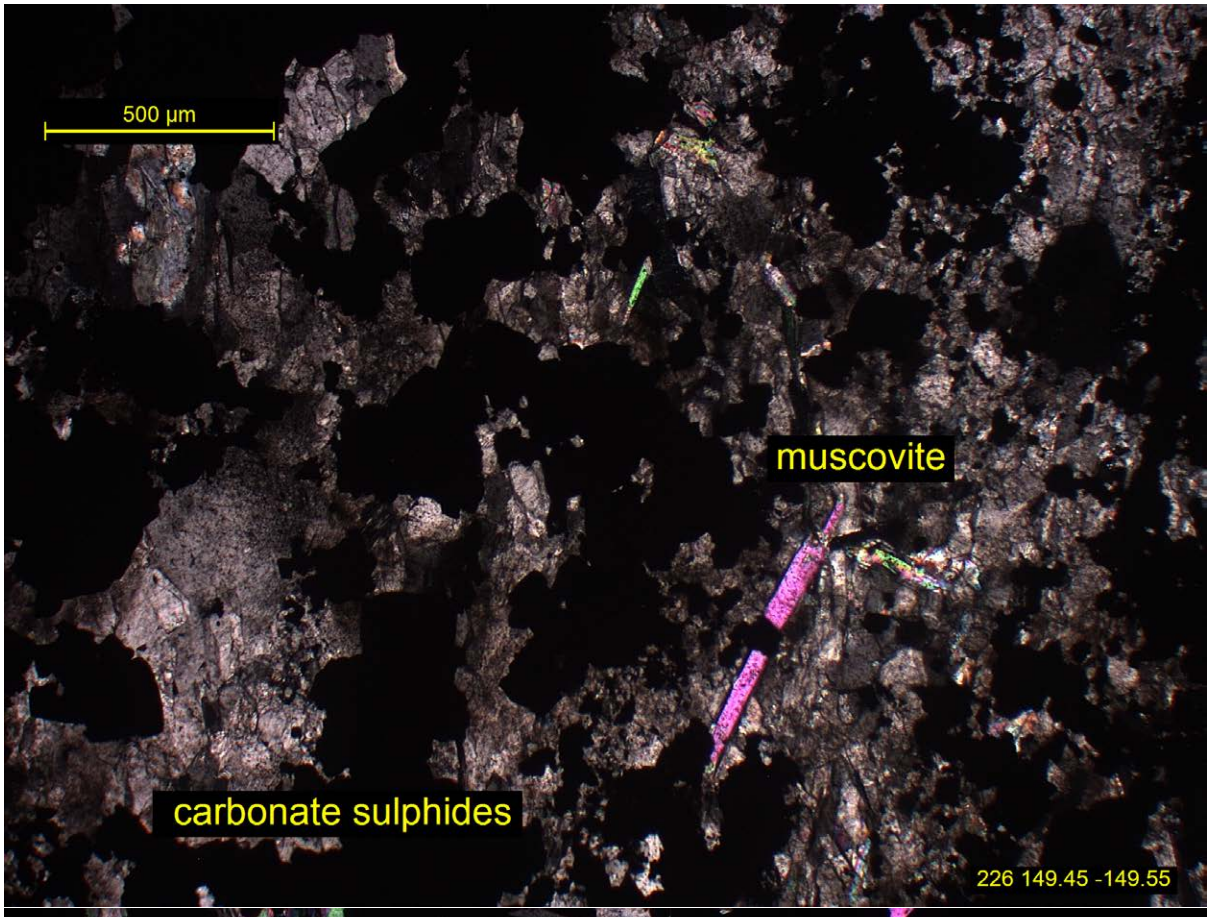
The texture is dominated by pyrite that forms rough bands of concentrations of commonly subhedral to euhedral crystals from 50 to 200 µm. These may be cemented by accessory carbonate (ankerite SEM). Parts of the drill core become quite rich in oriented muscovite in several coarse bands.

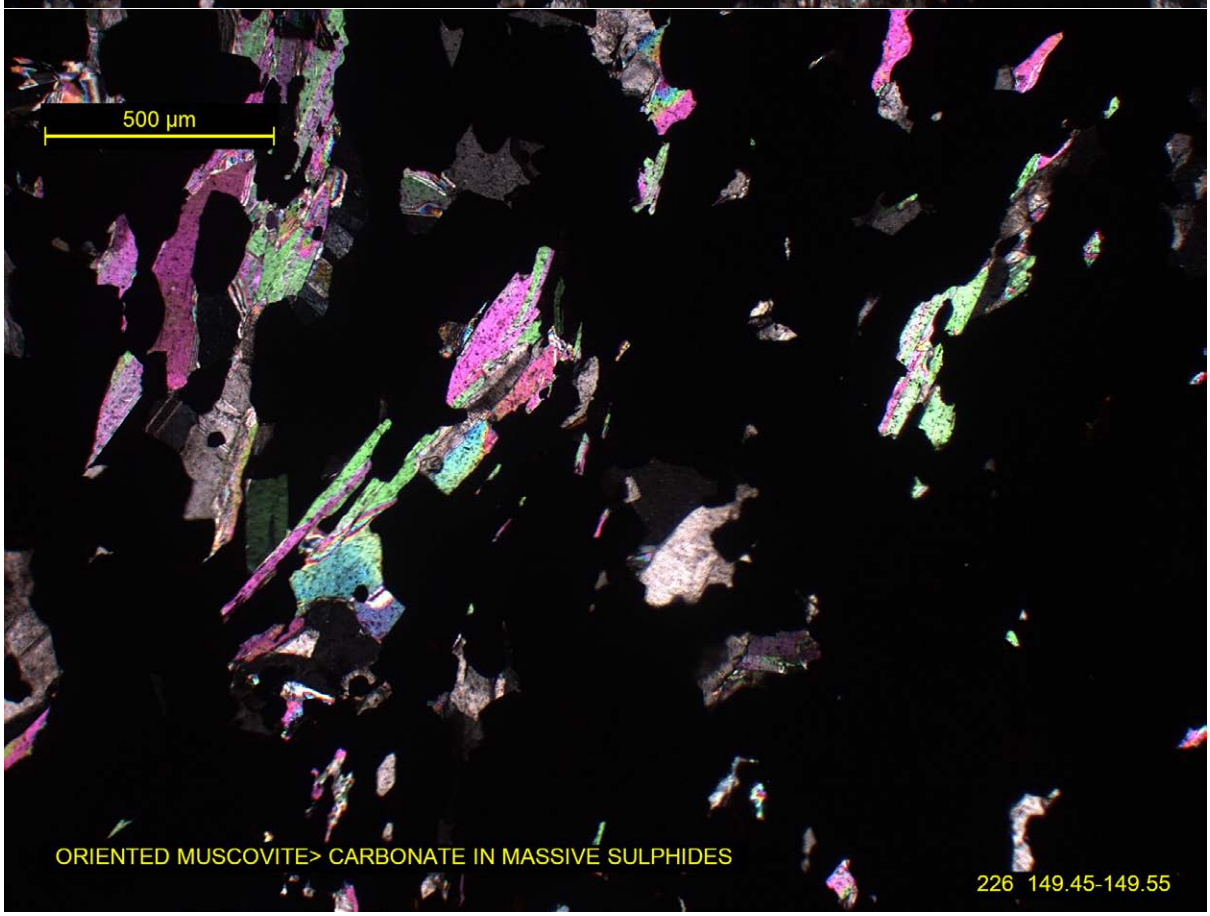
The dominant texture consists of semi coalesced pyrite clusters infilled by allotriomorphic sphalerite where liberation sizes are under 50 µm. Occasionally coalescence of the pyrite results in a finer lower grade sphalerite content. Inclusions of sphalerite in pyrite are uncommon.

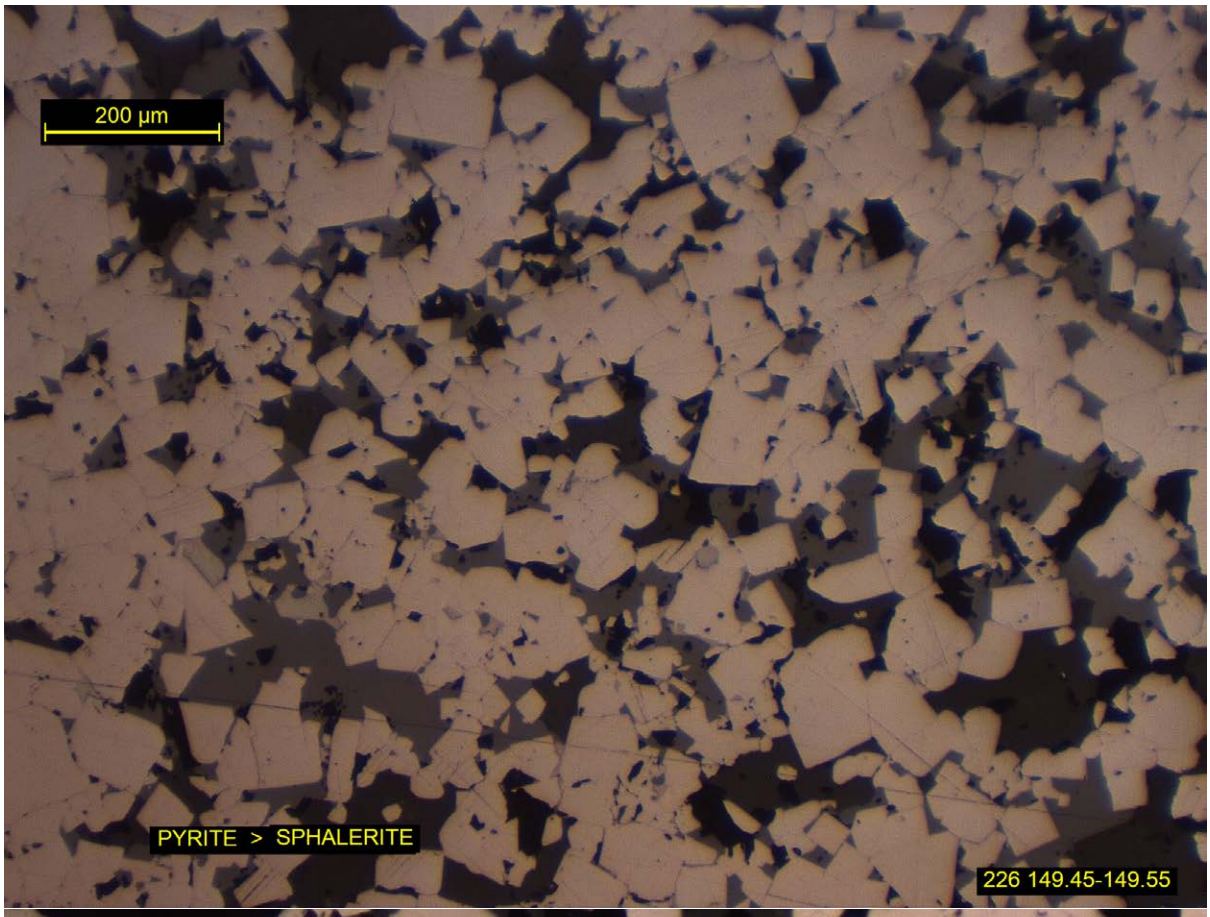
Galena occurs partly as allotriomorphic shaped grains separating adjacent pyrite but is much more common as irregular fine inclusions within pyrite. There is evidence of banding of this type of galena. Some pyrites contain up to 30% galena, as very irregular shapes down to 5 µm.

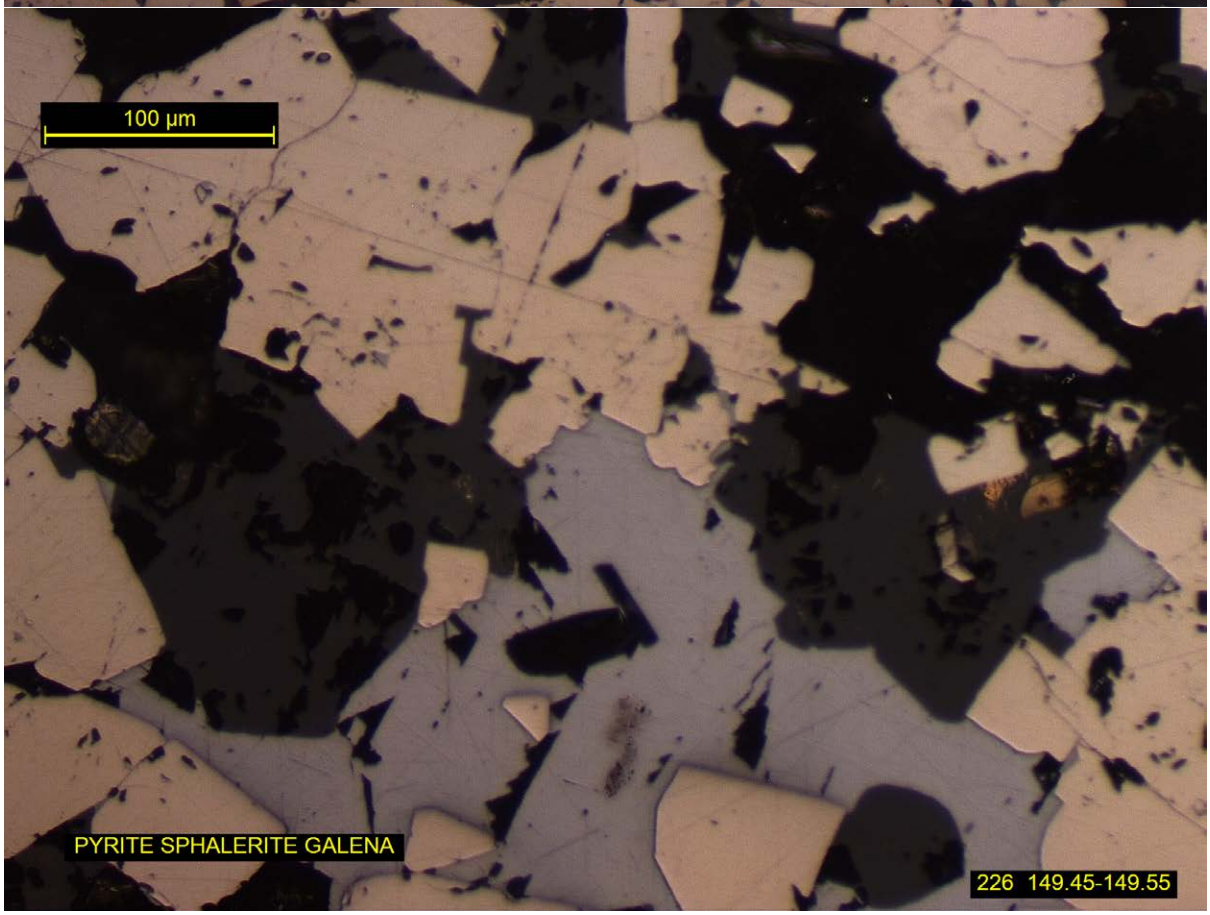
Within the occasional carbonate rich bands, there can be coarse sphalerite or galena, with negligible pyrite.

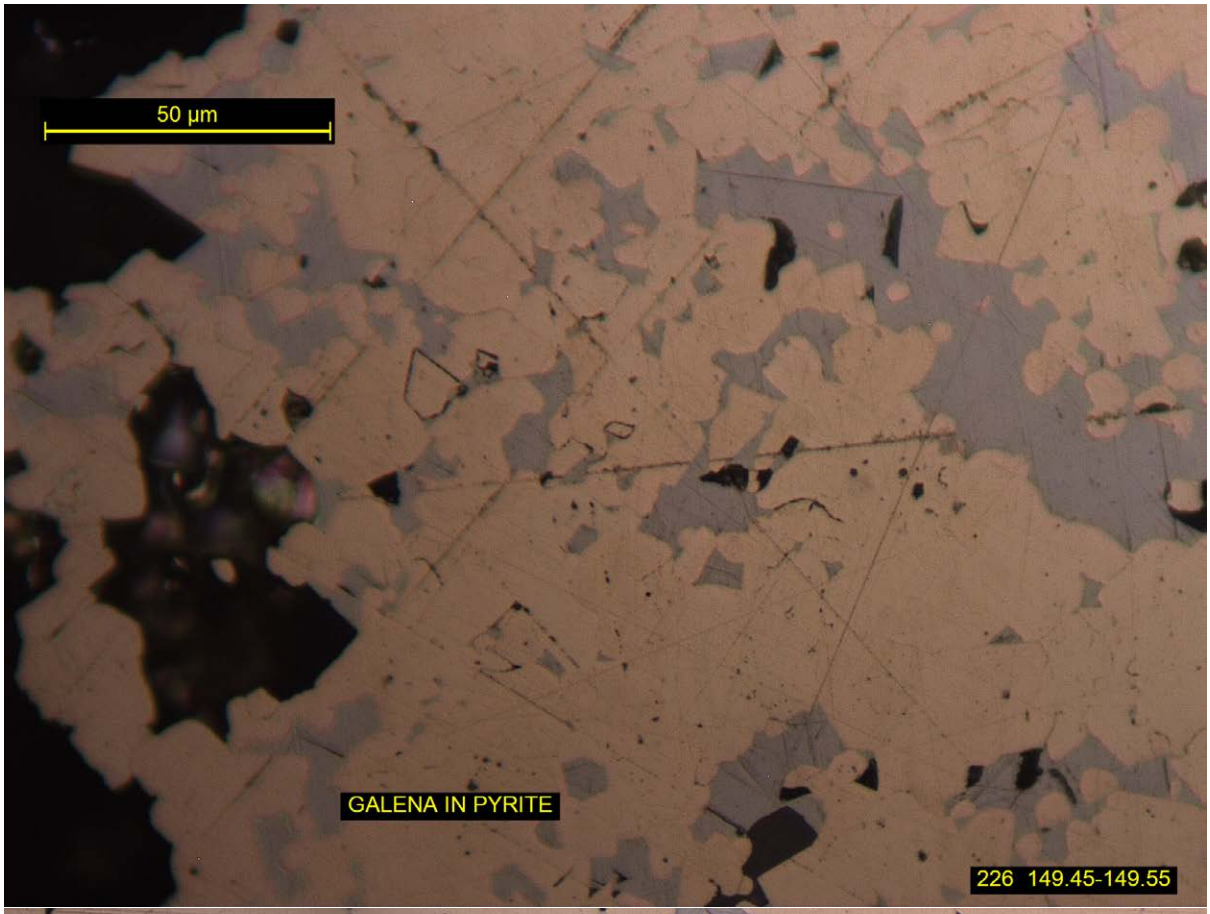

2 mm
CARBONATE
SPHALERITE
PYRITE
226 149.45-149.55

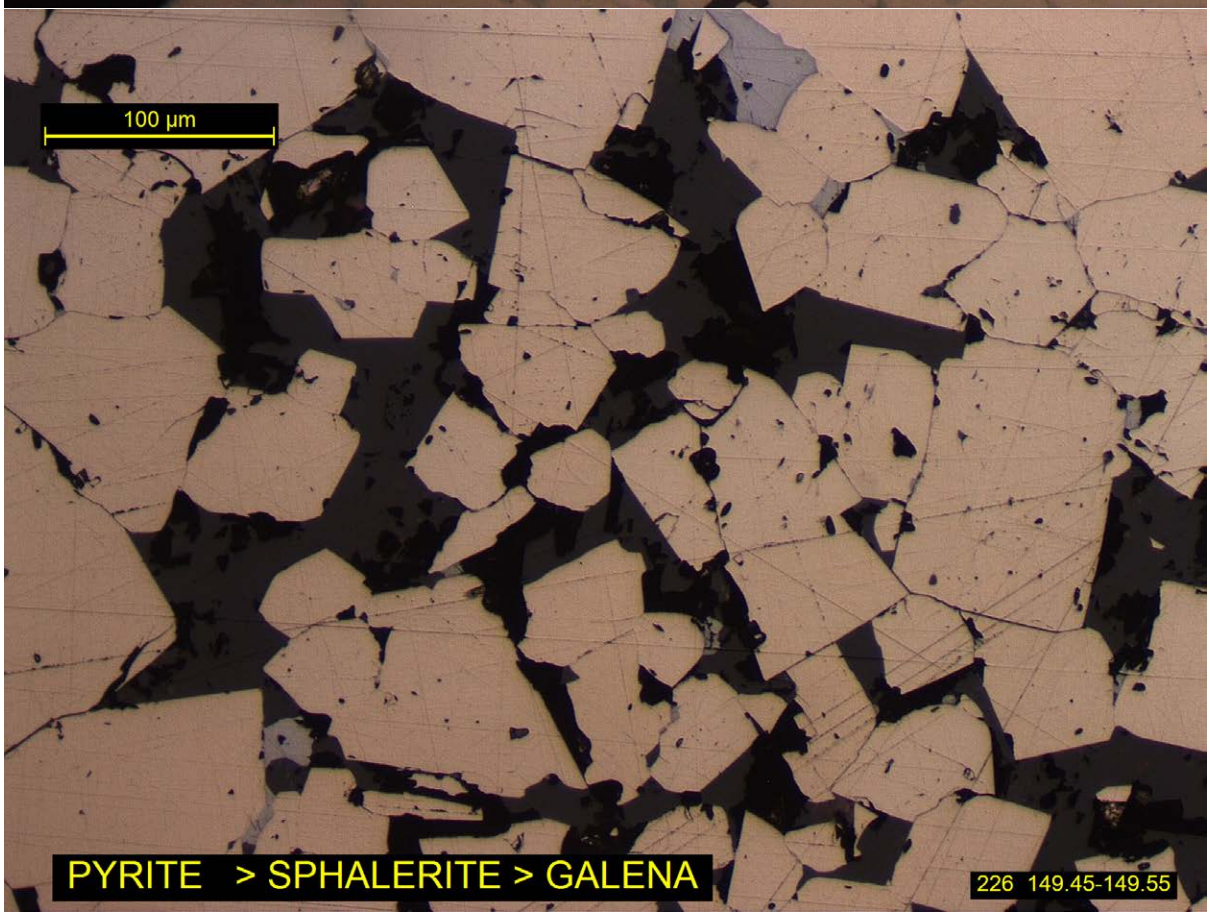

500 µm
muscovite
carbonate sulphides
226 149.45 -149.55


500 µm
ORIENTED MUSCOVITE> CARBONATE IN MASSIVE SULPHIDES
226 149.45-149.55


200 µm
PYRITE > SPHALERITE
226 149.45-149.55


100 µm
PYRITE SPHALERITE GALENA
226 149.45-149.55


50 µm
GALENA IN PYRITE
226 149.45-149.55


100 µm
PYRITE > SPHALERITE > GALENA
226 149.45-149.55

SAMPLE K15-227 34.19-34.29

DRILL CORE

POLISHED THIN SECTION

GANGUE	**50%**
CELSIAN	55%
CARBONATE	35%
QUARTZ	10%
ORES	**50%**
PYRITE.	DOMINANT
SPHALERITE	MAJOR
TETRAHEDRITE	MAJOR.
CHALCOPYRITE	ACCESSORY
GALENA	ACCESSORY
ARSENOPYRITE	ACCESSORY
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A BANDED TETRAHEDRITE SPHALERITE PYRITE IN A CALCITE BEARING COARSE-GRAINED CELSIAN ROCK

The irregular sulphide bands are hosted by either dominant very coarse-grained (to 5mm) celsian (low potash SEM) or much finer granoblastic carbonate (calcite) with accessory quartz. The slide contains a sulphide free carbonate band.

The sulphide textures and composition are quite variable across the banding. Pyrite is usually dominant but the lower termination of the slide features a semi massive band of a centimetre width of euhedral pyrite, with negligible quantities of sphalerite or tetrahedrite. This changes to a lower density sulphide of a coarser more network like texture. Pyrite distribution is erratic although present as clusters of euhedral crystals, usually in contact with tetrahedrite and lesser quantities of sphalerite, galena of chalcopyrite. Where pyrite is of low content, tetrahedrite becomes the dominant sulphide with areas in excess of a millimetre.

Further banding consists of more abundant pyrite with tetrahedrite sphalerite etc as allotriomorphic matrix to the former mineral. Sphalerite is usually finer when in contact with dominant pyrite.

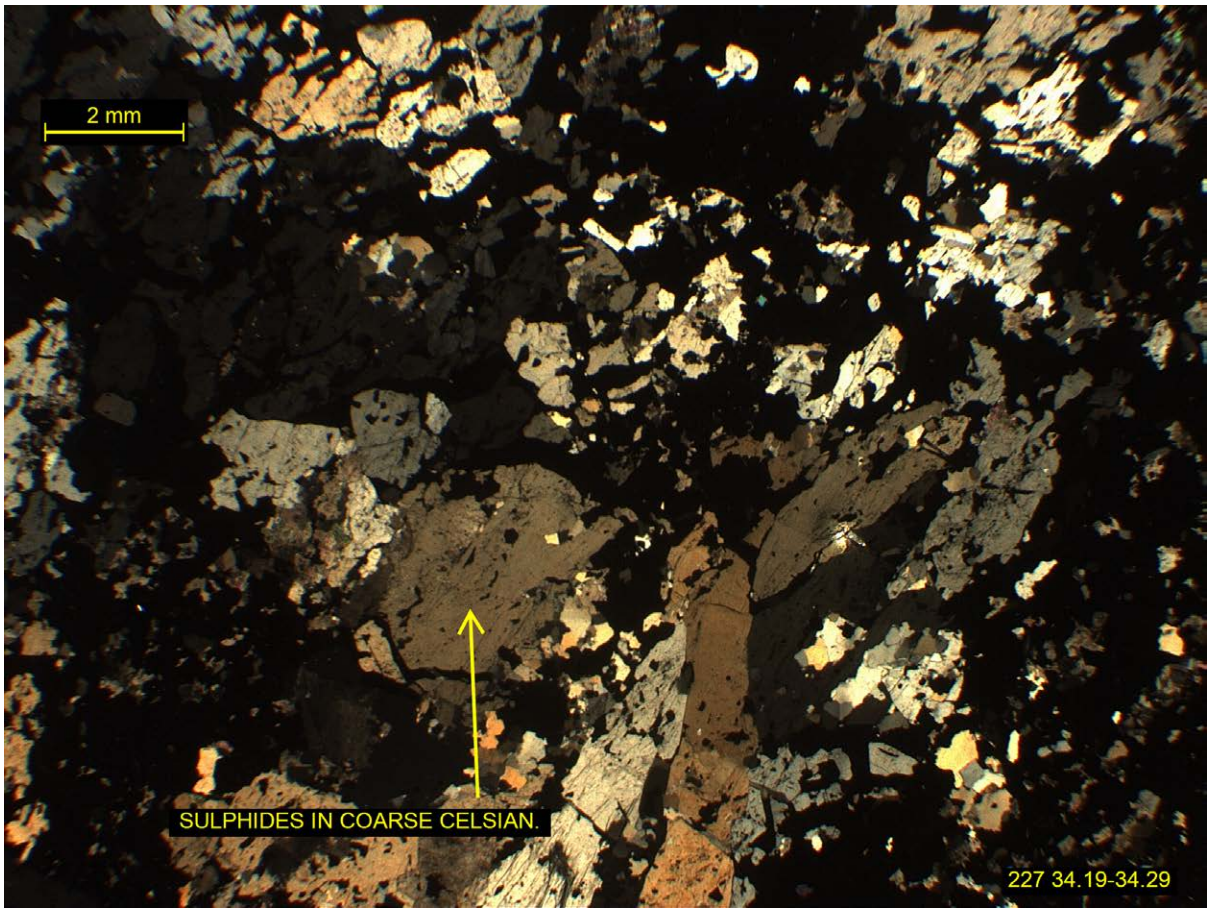
Non-banded lower pyrite areas contain coarse tetrahedrite that may be rimmed by chalcopyrite. Exceptional chalcopyrite forms half millimetre masses composite with similar galena and tetrahedrite. Arsenopyrite is locally well-developed and has a vein like character partly enclosing chalcopyrite/tetrahedrite. The tetrahedrite is zincian and contains about 1% silver (SEM).

GOLD

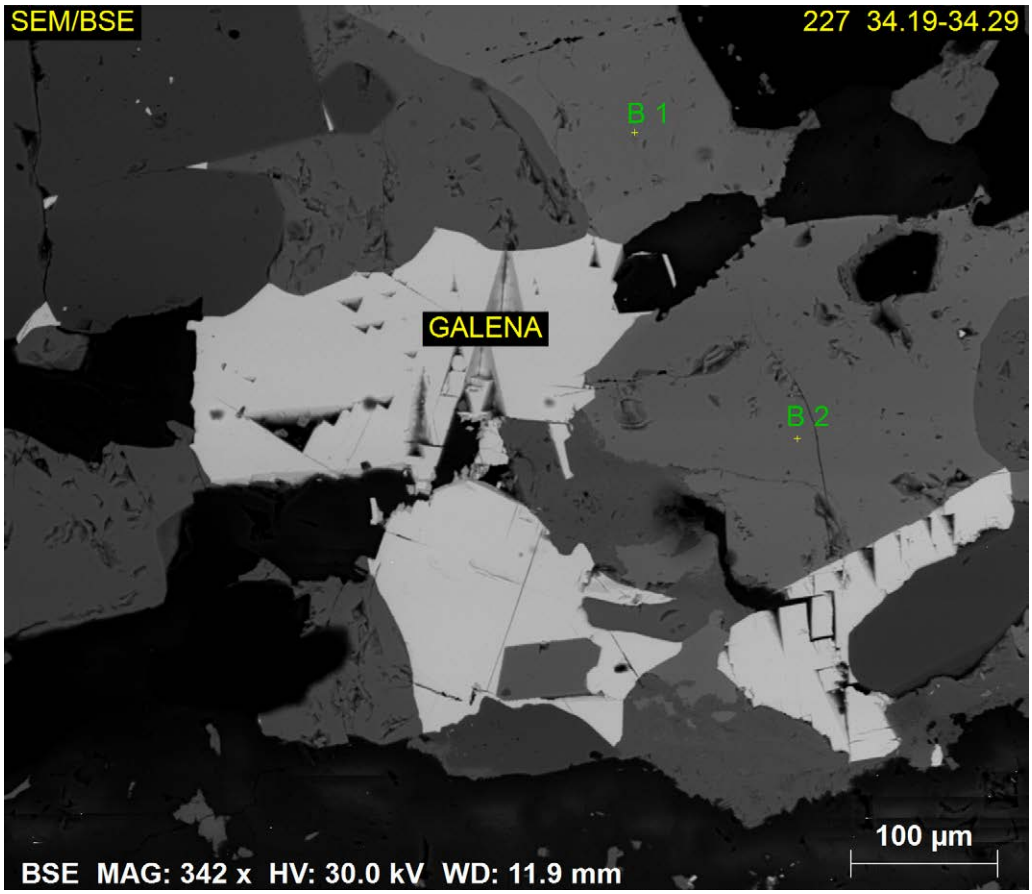
Two occurrences of gold were detected optically. Both were argentian, with one example, containing about 15% silver (SEM).

One example was a wispy shaped 40 µm gold in celsian.

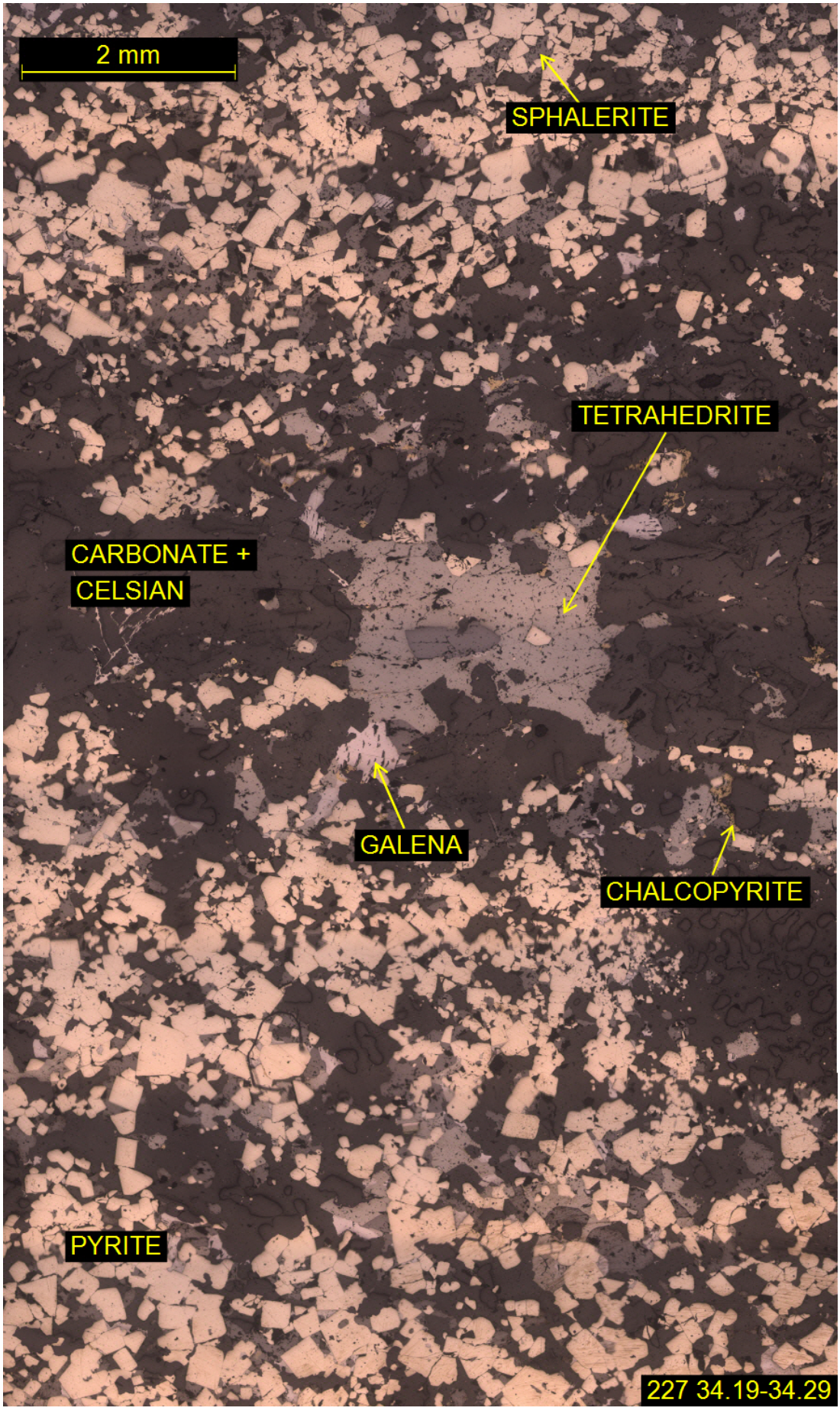
The second example was of 80 µm composite with galena on the margin of coarse arsenopyrite.

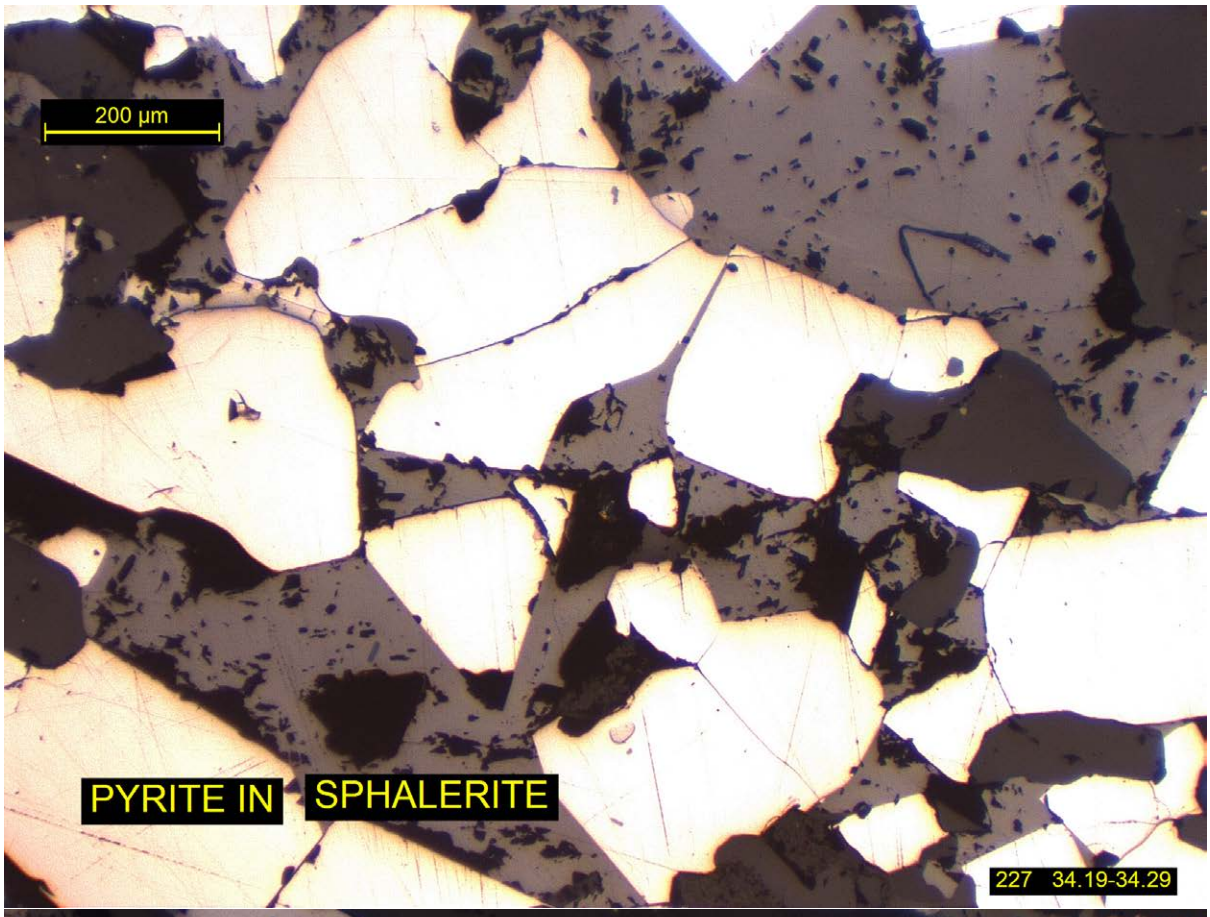


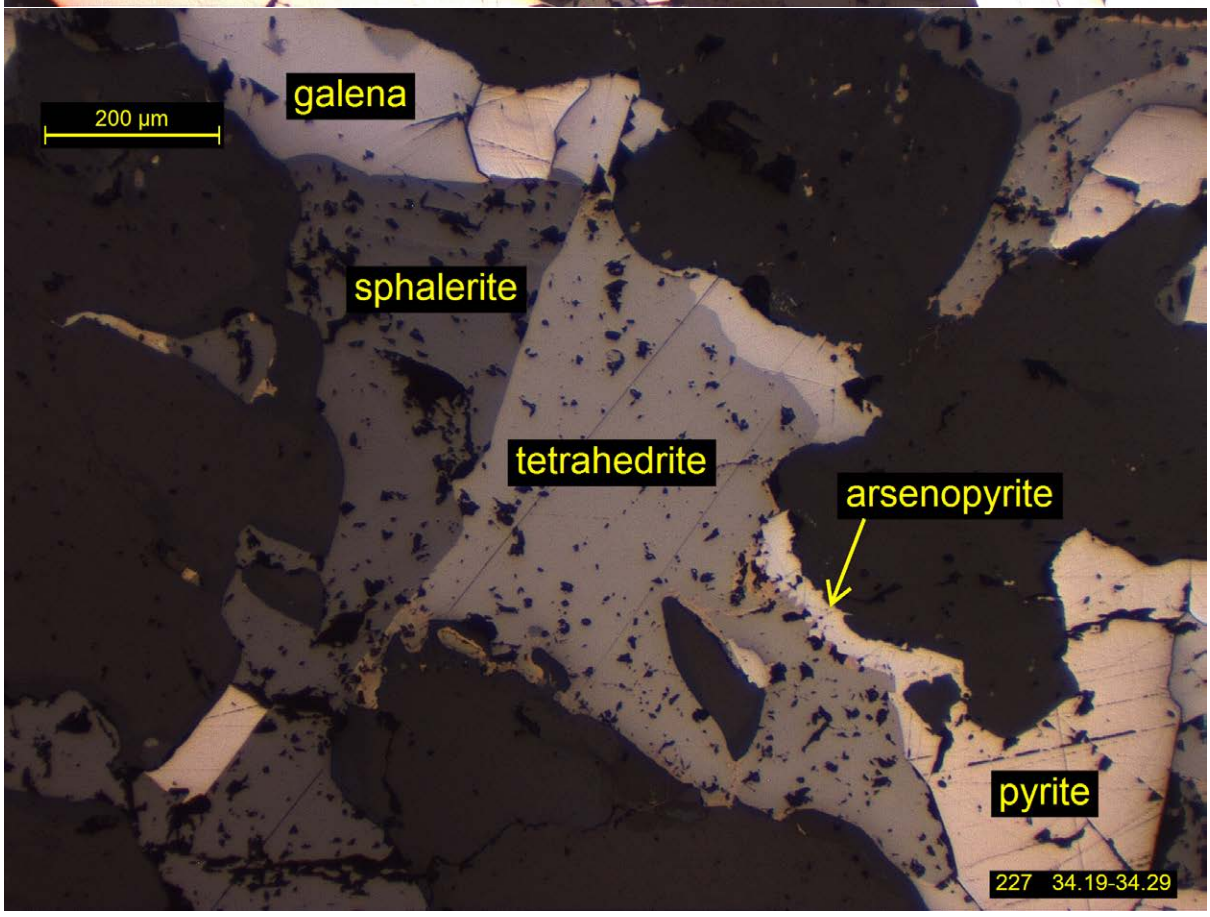
SEM/EDS ANALYSES

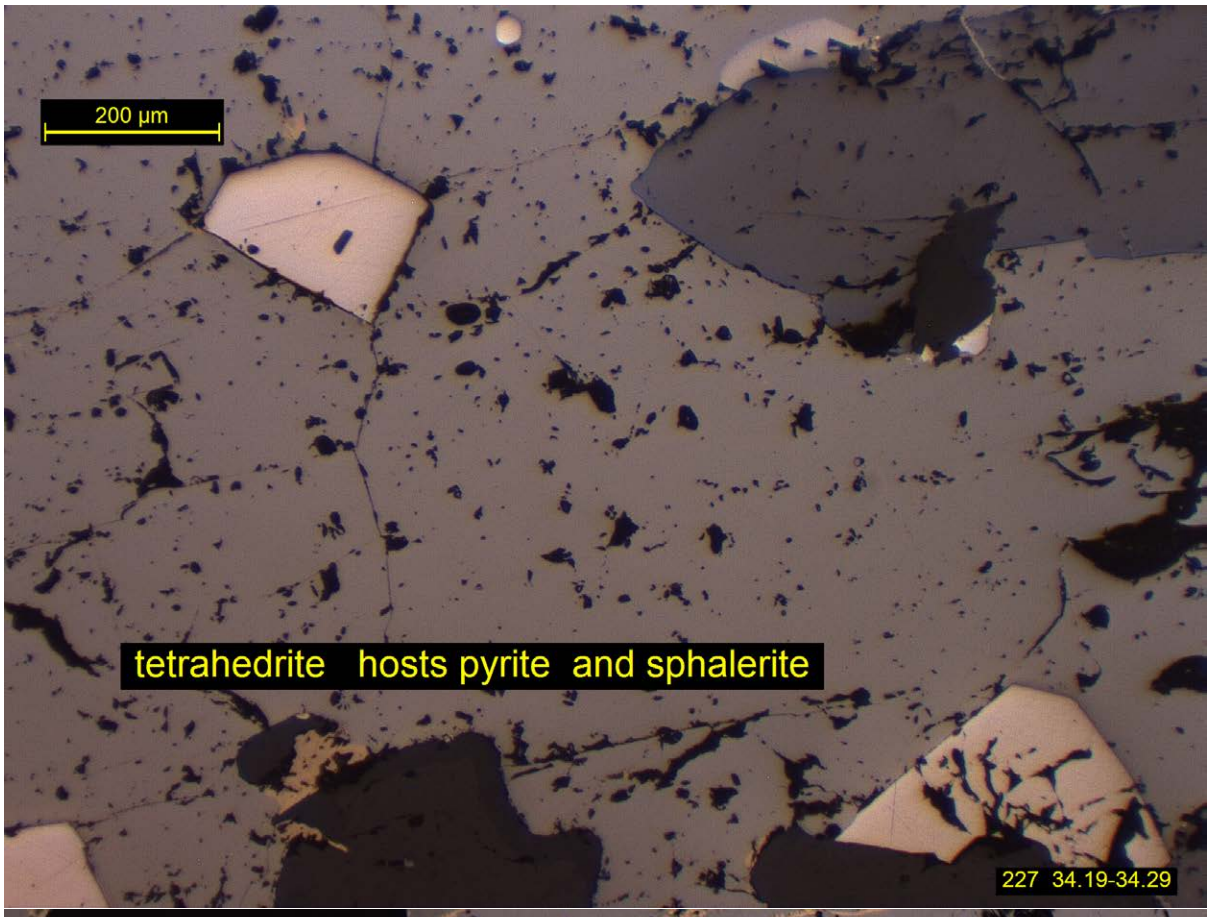


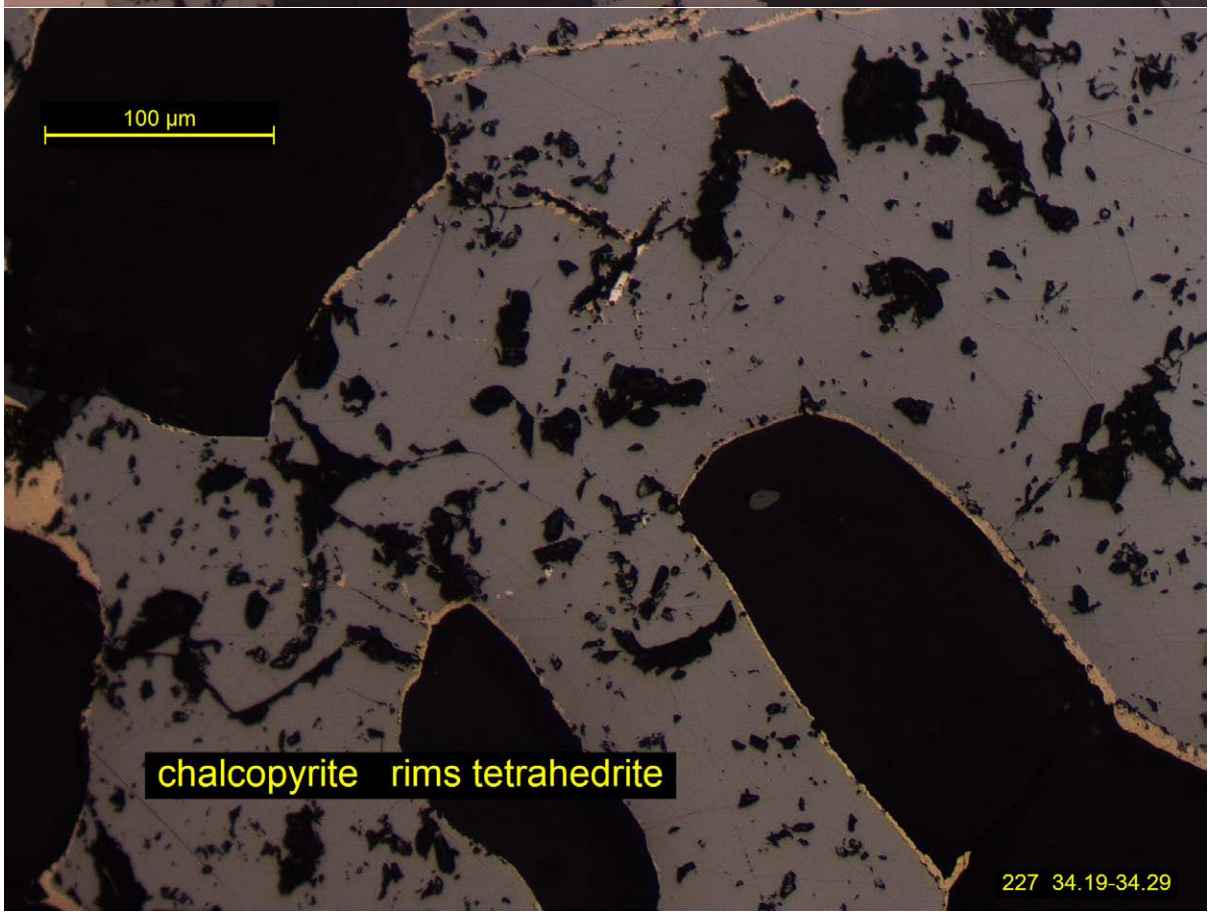
	S	Fe	Cu	Zn	As	Ag	Sb	
B 1	23.1	5.4	40.3	3.7	8.3	1.3	17.9	TETRAHEDRITE
B 2	23.1	5.2	40.2	3.4	8.5	1.4	18.2	TETRAHEDRITE

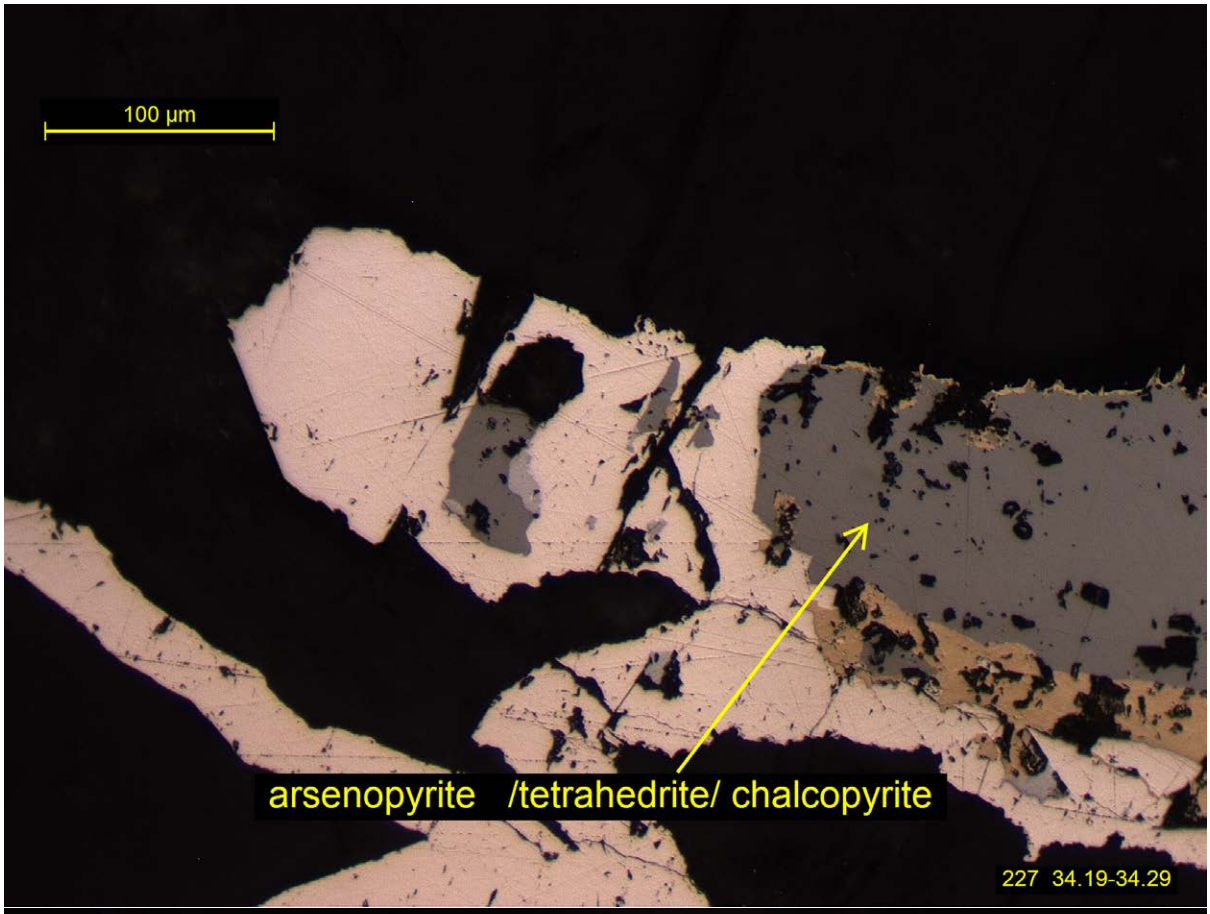

2 mm
SPHALERITE
TETRAHEDRITE
CARBONATE +
CELSIAN
GALENA
CHALCOPYRITE
PYRITE
227 34.19-34.29

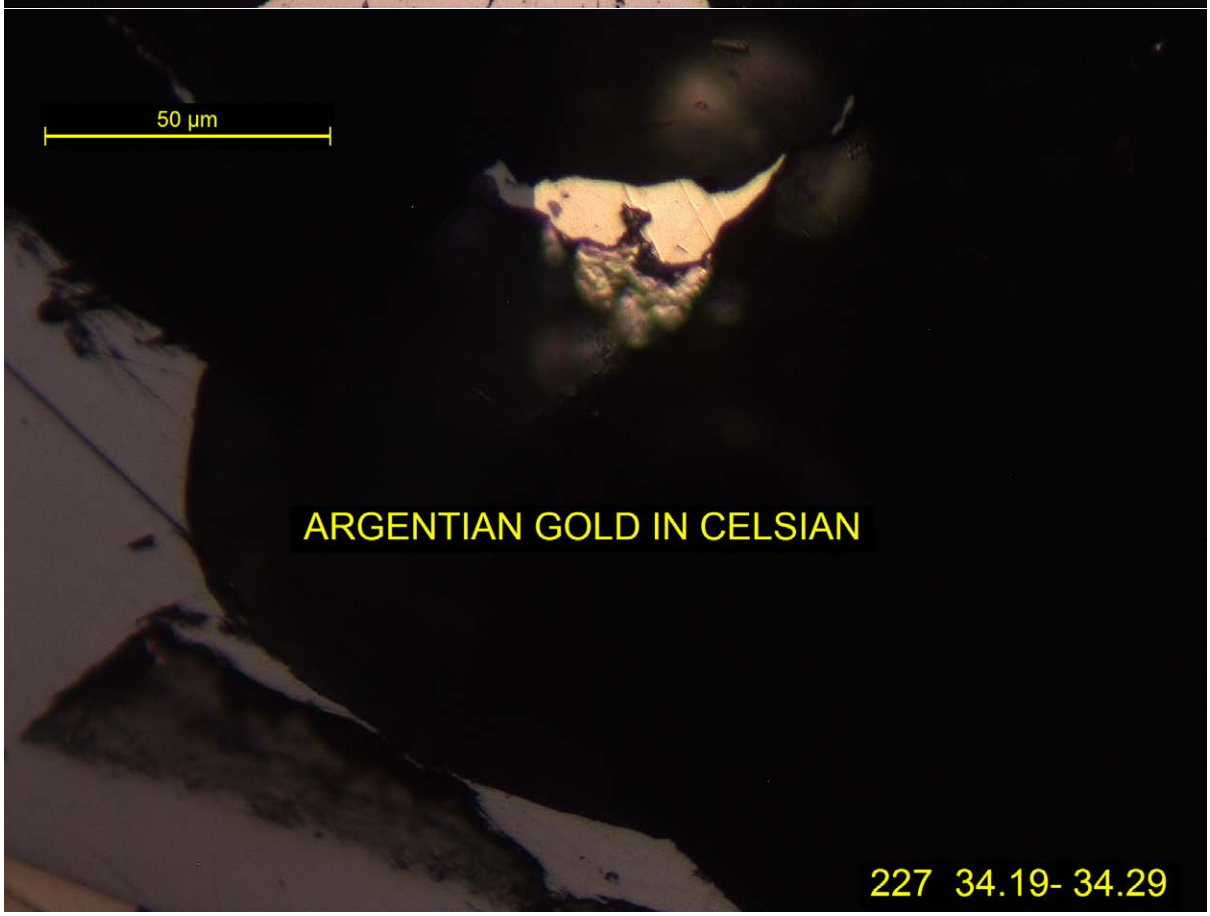

200 µm
PYRITE IN SPHALERITE
227 34.19-34.29

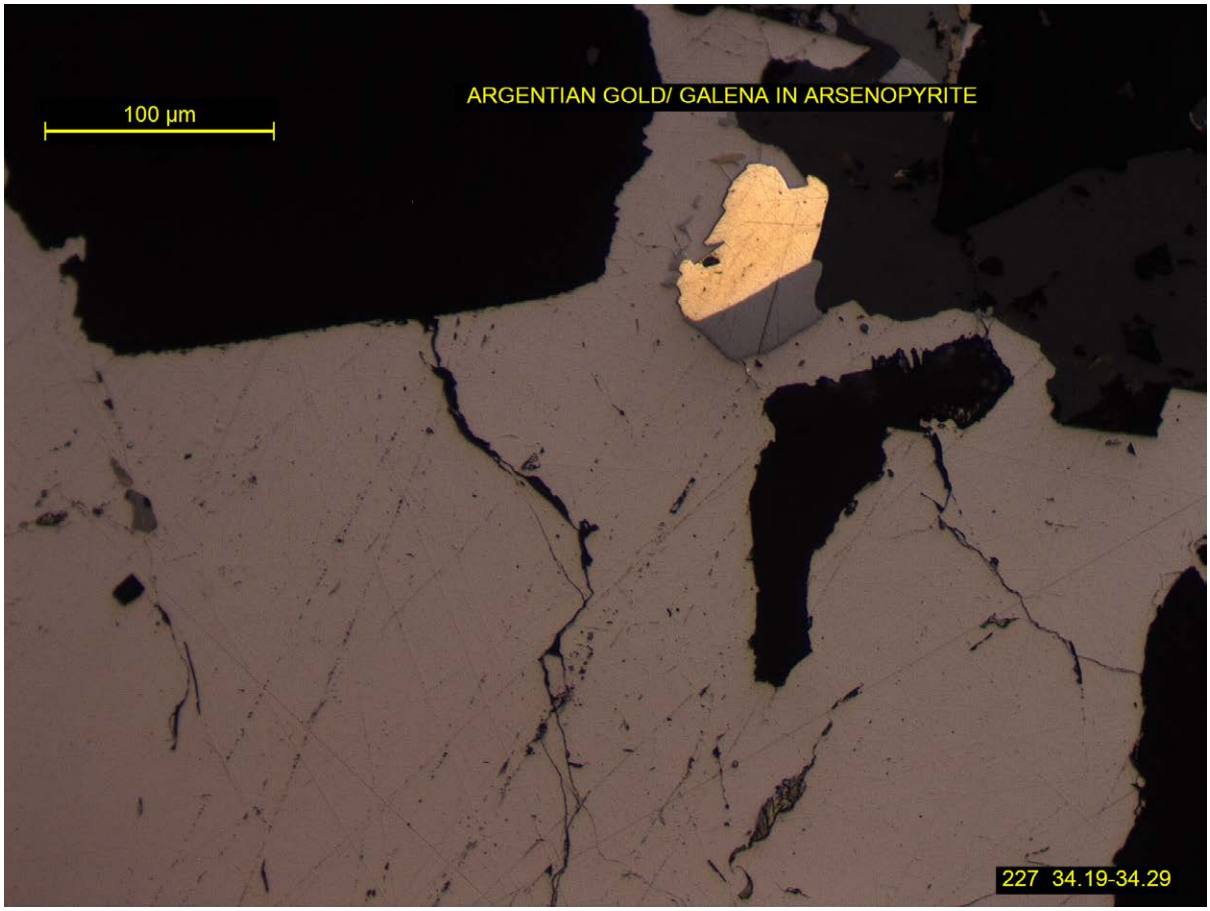

200 µm
galena
sphalerite
tetrahedrite
arsenopyrite
pyrite
227 34.19-34.29


200 µm
tetrahedrite hosts pyrite and sphalerite
227 34.19-34.29


100 µm
chalcopyrite rims tetrahedrite
227 34.19-34.29


100 µm
arsenopyrite /tetrahedrite/ chalcopyrite
227 34.19-34.29


50 µm
ARGENTIAN GOLD IN CELSIAN
227 34.19- 34.29


100 µm
ARGENTIAN GOLD/ GALENA IN ARSENOPYRITE
227 34.19-34.29

SAMPLE K15-236 99.4-99.52

DRILL CORE

POLISHED THIN SECTION

GANGUE	**20%**
CARBONATE	DOMINANT
QUARTZ	MINOR
ALTERED FELDSPAR	MINOR
MUSCOVITE	TRACE
ORES	**80%**
PYRITE	95%
CHALCOPYRITE	1-3%
SPHALERITE	<1%
PYRRHOTITE	<1%
MARCASITE	<1%
GALENA	TRACE
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A QUARTZ CARBONATE PYRITE ROCK

The dominant texture consists of a coarse pyrite framework made of coalesced pyrites, that are often marginally euhedral. The pyrite is rarely present as individual crystals even within the dominant gangue areas. These were typically 100 to 200 µm.

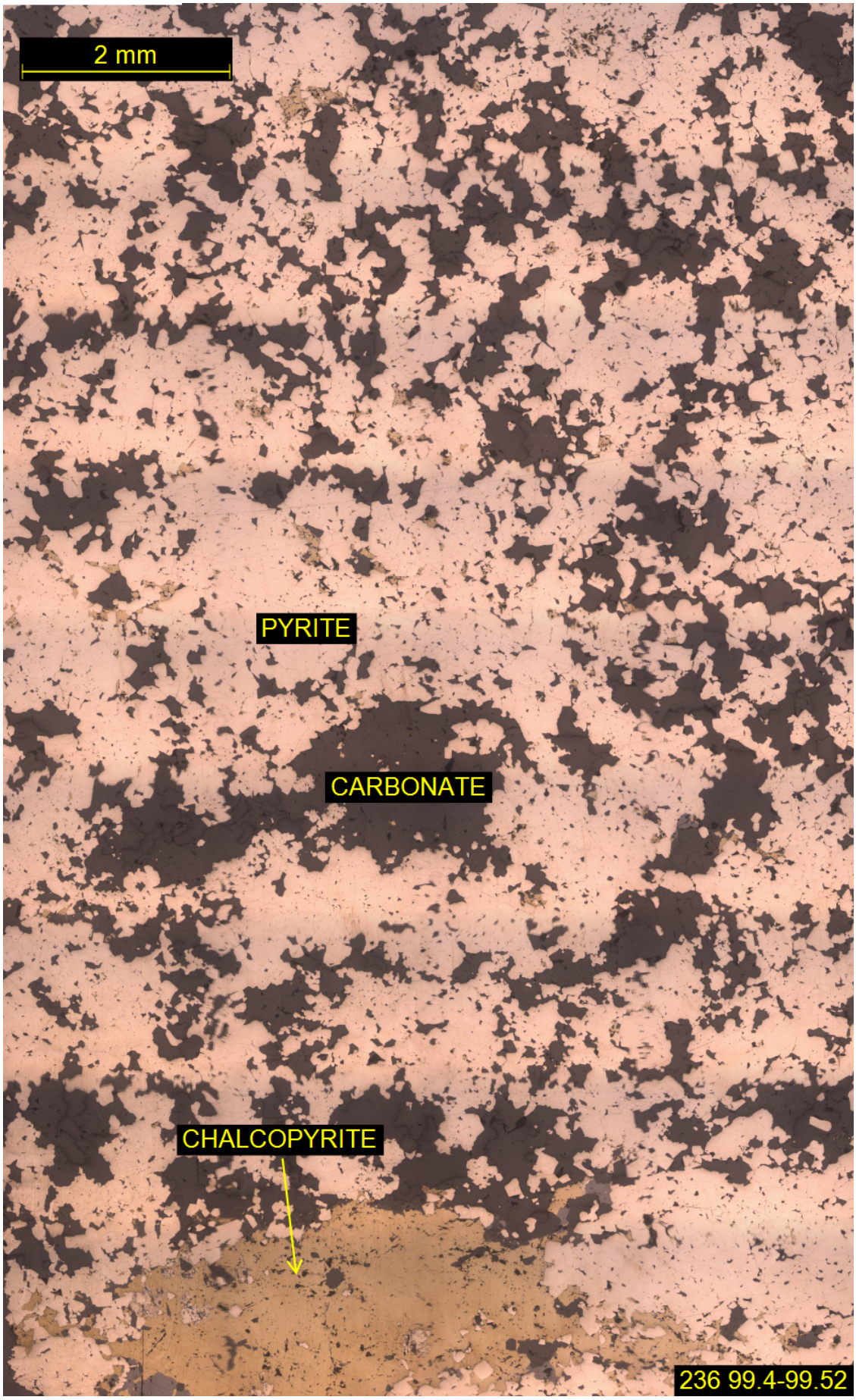
Ankerite and lesser quartz with traces of muscovite form the dominant matrix as allotriomorphic shapes between pyrites, occasionally dominant, with rhombic habit for the carbonate. This gangue texture is interrupted by half centimetre masses of a relic nature composed of zoned siderite ankerite in a coarsely textured aluminosilicate matrix with elevated potash plus some barium, possibly ex feldspar.

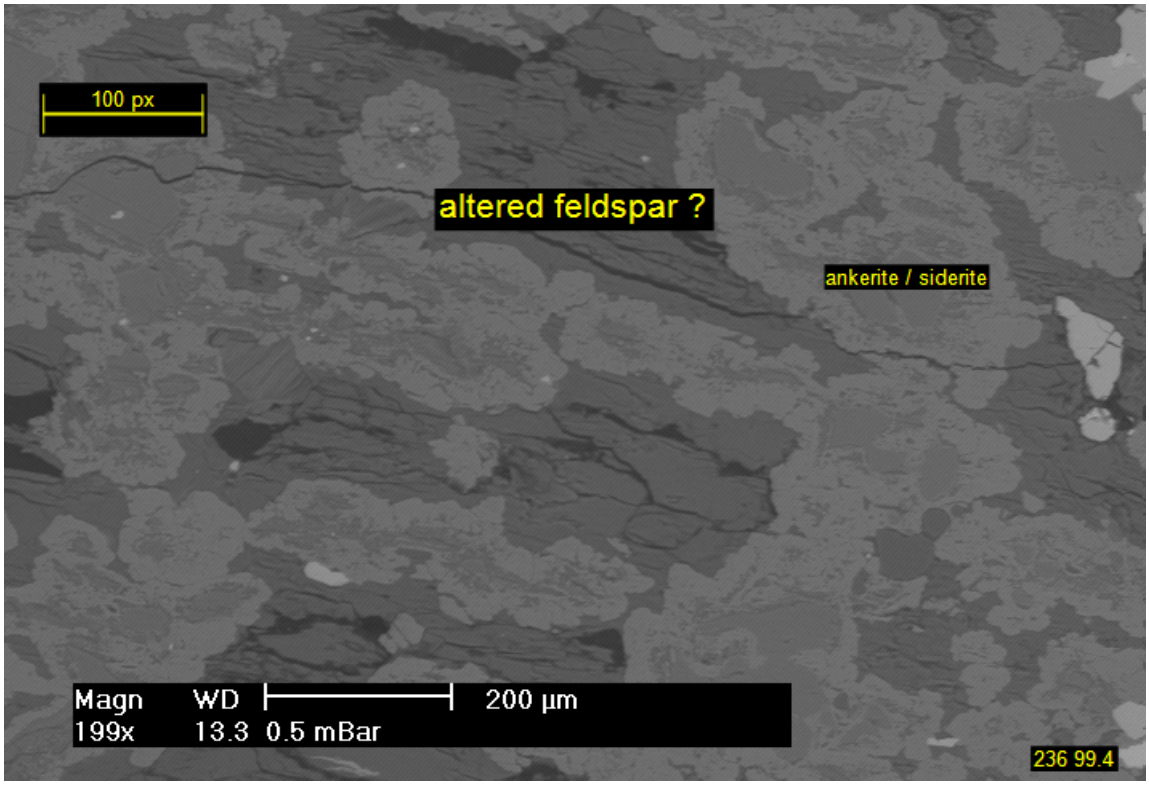
Chalcopyrite is the other significant sulphide present. It occurs as very occasional coarse millimetre plus masses, that then may contain inclusions of pyrrhotite sometimes completely altered to marcasite. Otherwise the chalcopyrite occurs as very sporadic allotriomorphic masses against euhedral pyrite frequently less than 50 µm. Large areas of pyrite contain only traces of this chalcopyrite.

Sphalerite occurs as rare associates of chalcopyrite against euhedral pyrite, exceptionally reaching 150 µm. Galena occurs as very fine rare inclusions in pyrite.

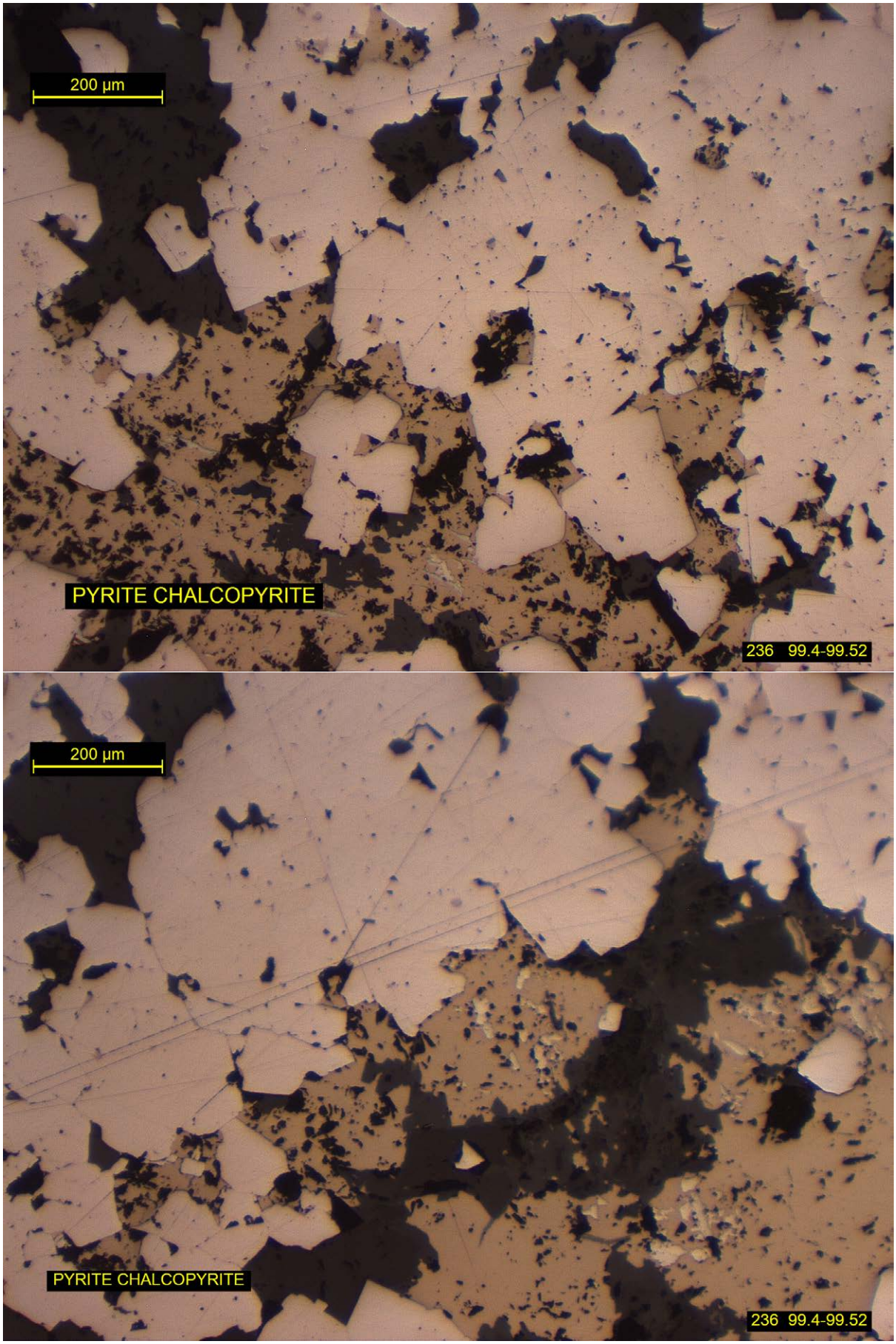
GOLD

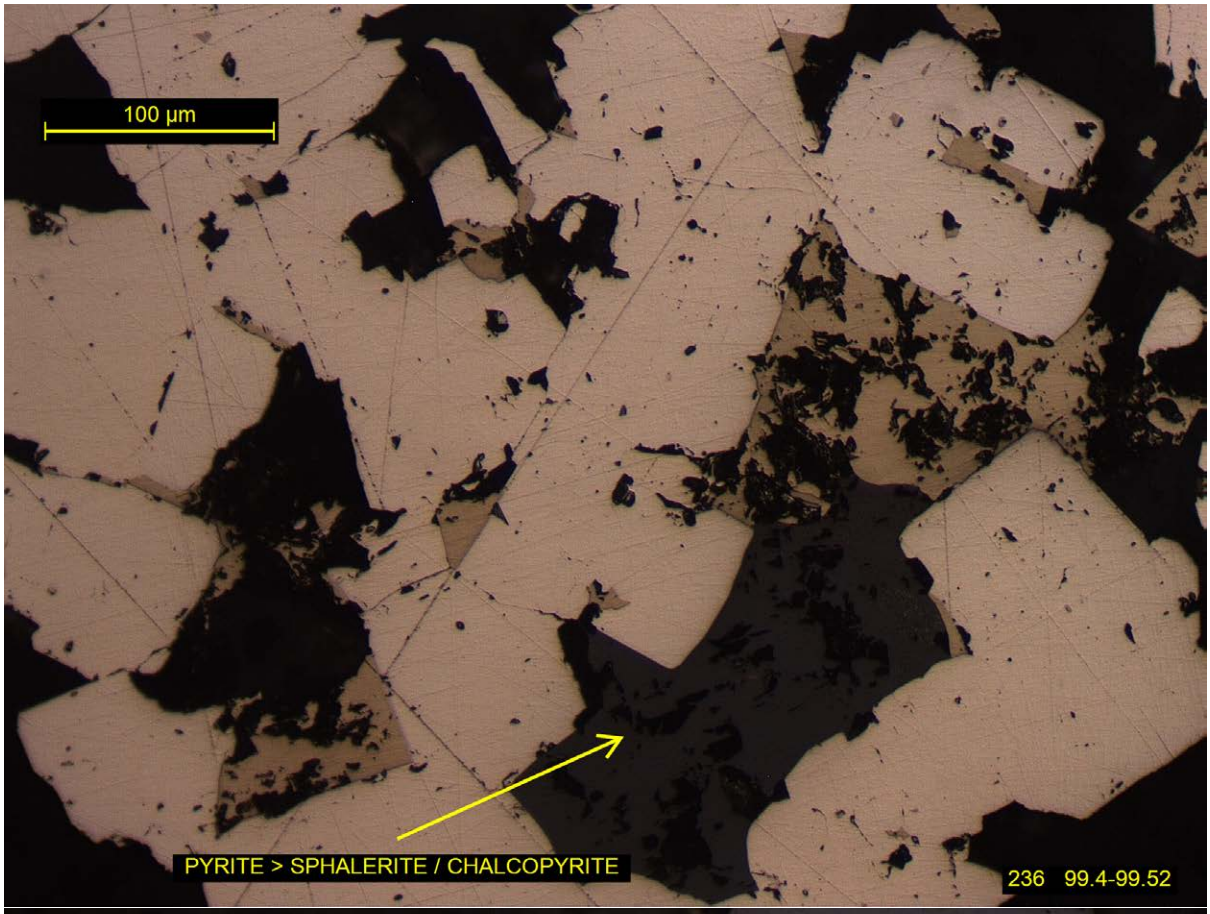
Two particles of argentian gold, measuring 3 and 5 µm occurred within a 40 µm inclusion of chalcopyrite in coarse pyrite.

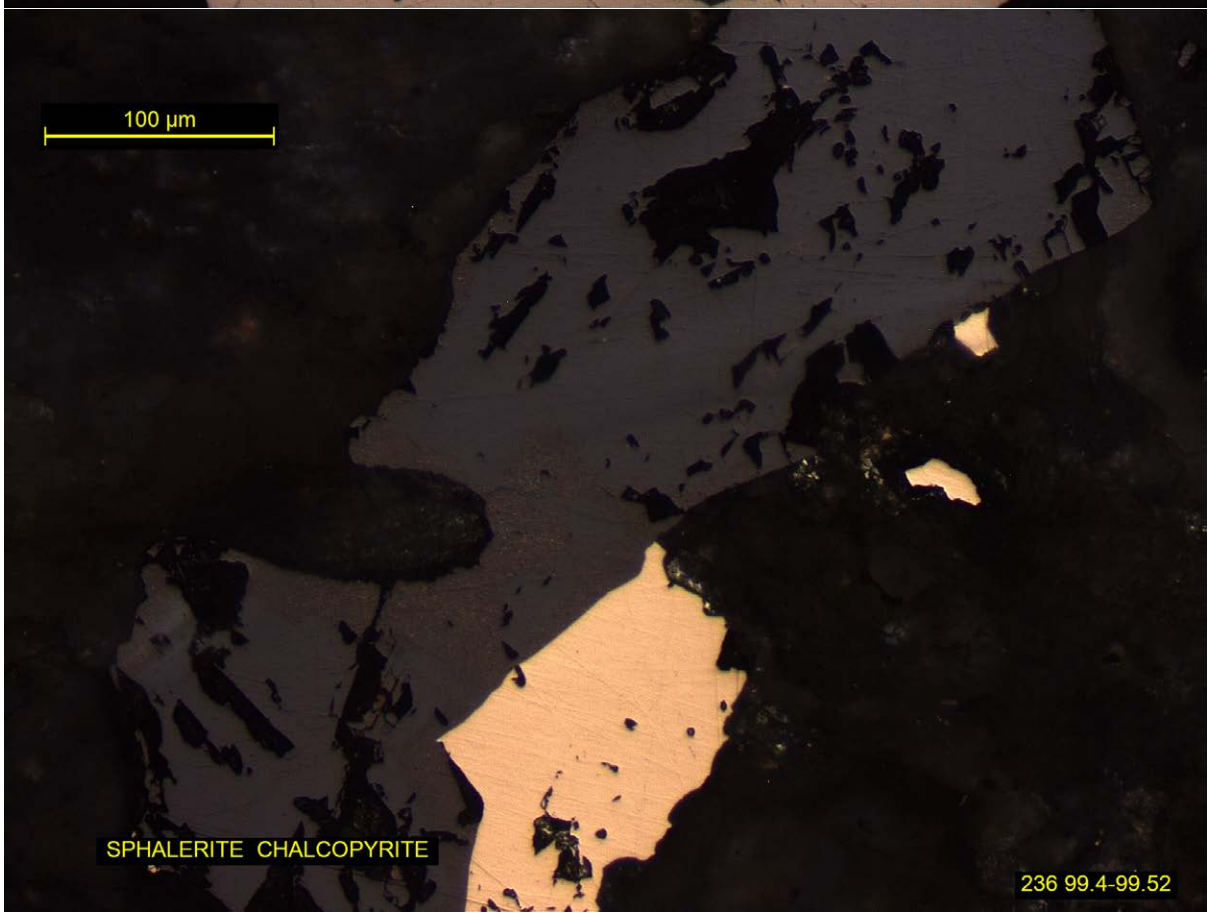

2 mm
PYRITE
CARBONATE
CHALCOPYRITE
236 99.4-99.52

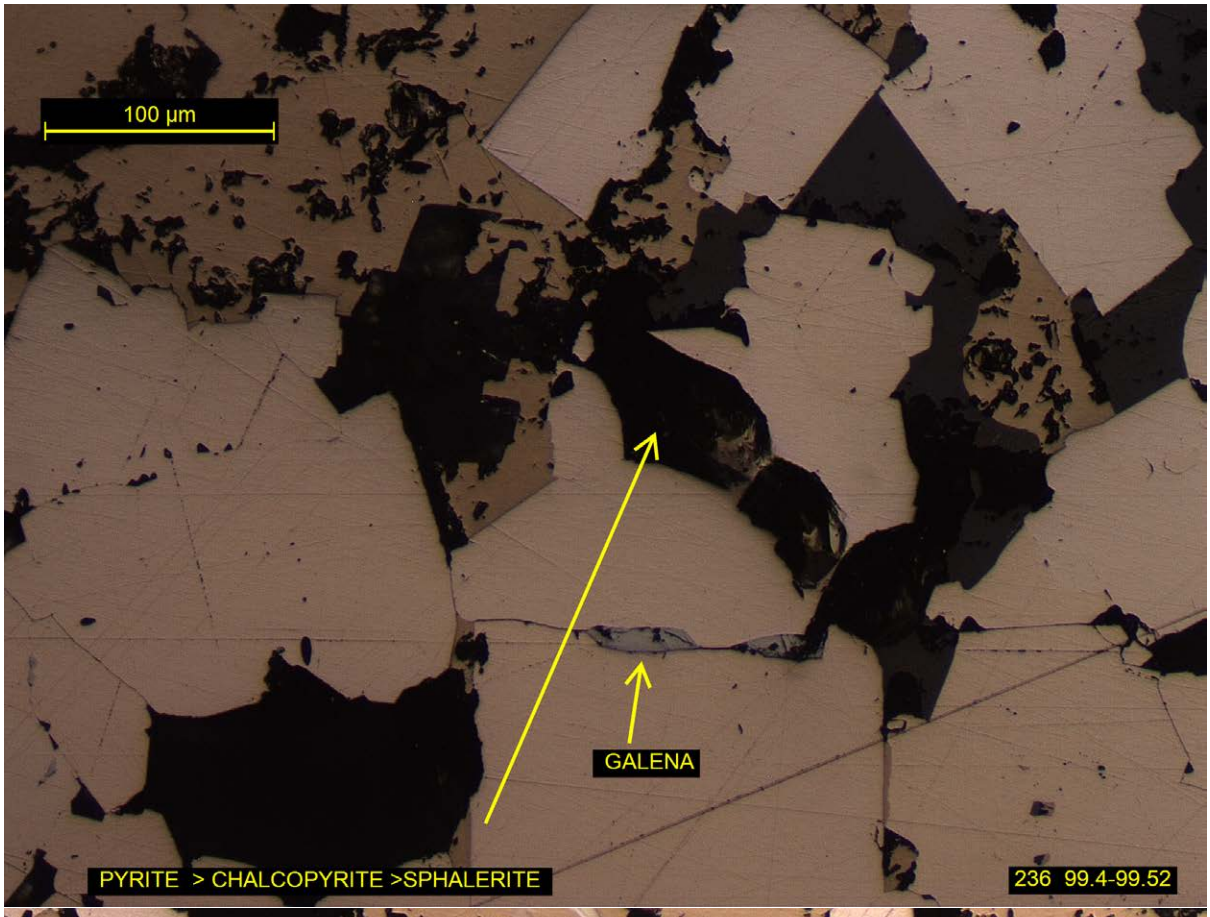

100 px
altered feldspar ?
ankerite / siderite
Magn WD 200 µm
199x 13.3 0.5 mBar
236 99.4

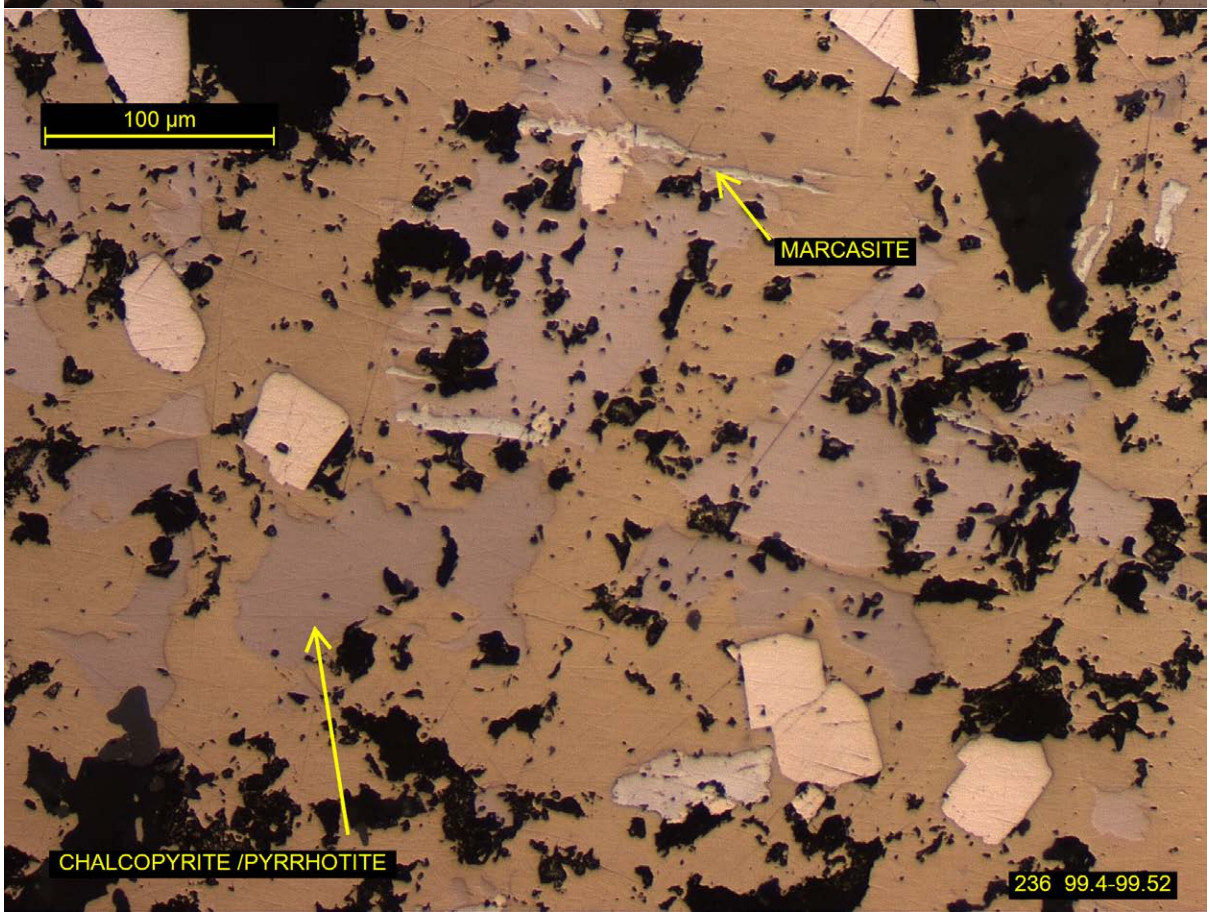

500 µm
SULPHIDES IN ANKERITE > QUARTZ.
236 99.4

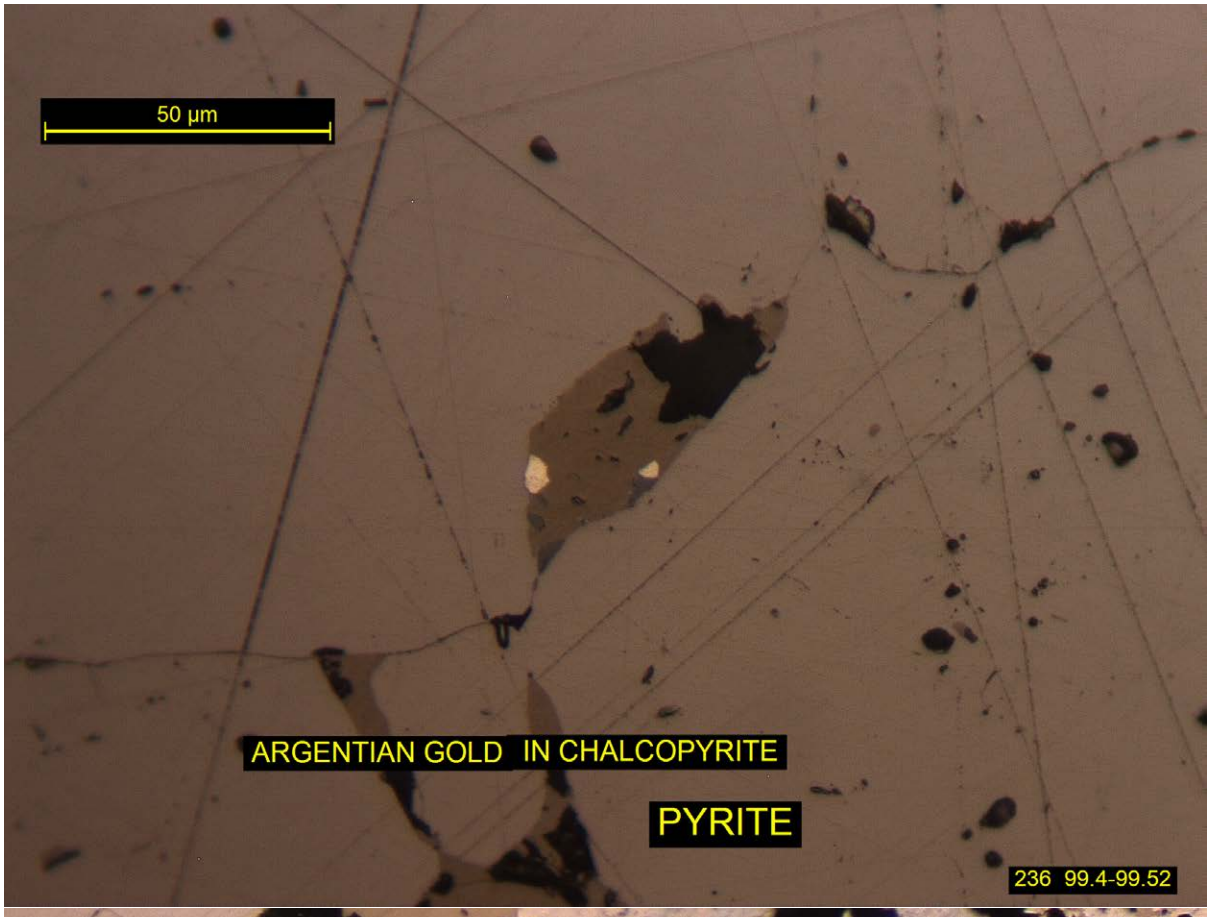

200 µm
PYRITE CHALCOPYRITE
236 99.4-99.52
200 µm
PYRITE CHALCOPYRITE
236 99.4-99.52

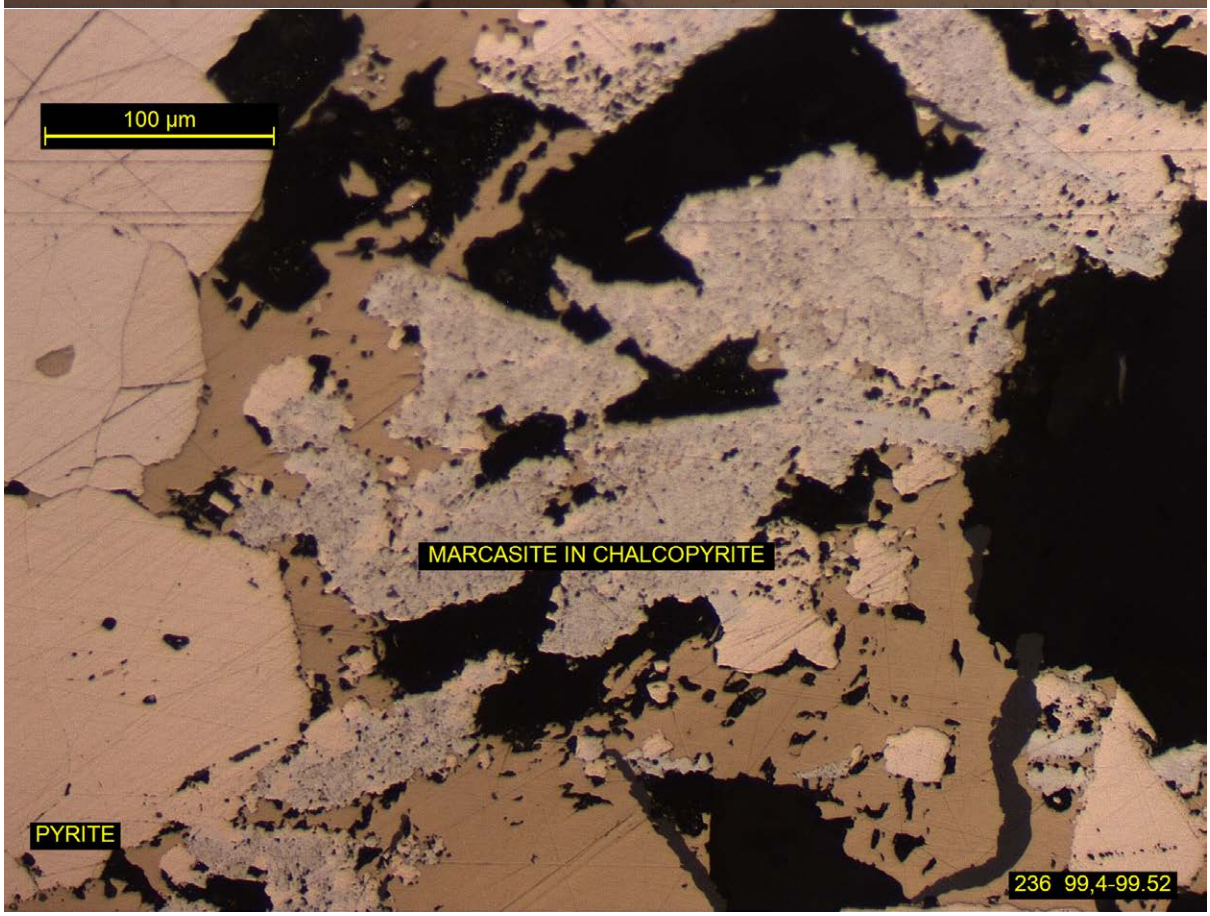

100 µm
PYRITE > SPHALERITE / CHALCOPYRITE
236 99.4-99.52


100 µm
SPHALERITE CHALCOPYRITE
236 99.4-99.52


100 µm
GALENA
PYRITE > CHALCOPYRITE >SPHALERITE
236 99.4-99.52


100 µm
MARCASITE
CHALCOPYRITE /PYRRHOTITE
236 99.4-99.52


50 µm
ARGENTIAN GOLD IN CHALCOPYRITE
PYRITE
236 99.4-99.52


100 µm
MARCASITE IN CHALCOPYRITE
PYRITE
236 99,4-99.52

SAMPLE K15-240 51.35-51.48

DRILL CORE

POLISHED THIN SECTION

GANGUE	**50%**
CARBONATES	45%
MUSCOVITE	5%
ORES.	**50%**
PYRITE	DOMINANT
SPHALERITE	MINOR
TETRAHEDRITE	MINOR
ARSENOPYRITE	MINOR
GALENA	ACCESSORY
CHALCOPYRITE	TRACE
GOLD	TRACE

CLASSIFIED AS A BANDED SEMI MASSIVE GALENA TETRAHEDRITE SPHALERITE PYRITE CARBONATE ROCK.

The carbonate texture is quite variable, and appears to contain both ankerite and calcite (SEM). Some is probably recrystallised. It is host to occasional flakes of coarse muscovite.

The sulphide texture shows considerable variation across the banding, particularly for pyrite. Much of the pyrites are part coalesced but with considerable range in grainsizes between bands from 50 to 500 µm. Some of these coalescent bands contain only low percentages of allotriomorphic interstitial sub 100 µm sphalerite. Sphalerite is also present as fines within the carbonate (ankerite). Sphalerite contains 6% iron (SEM) 51.35-51.48.

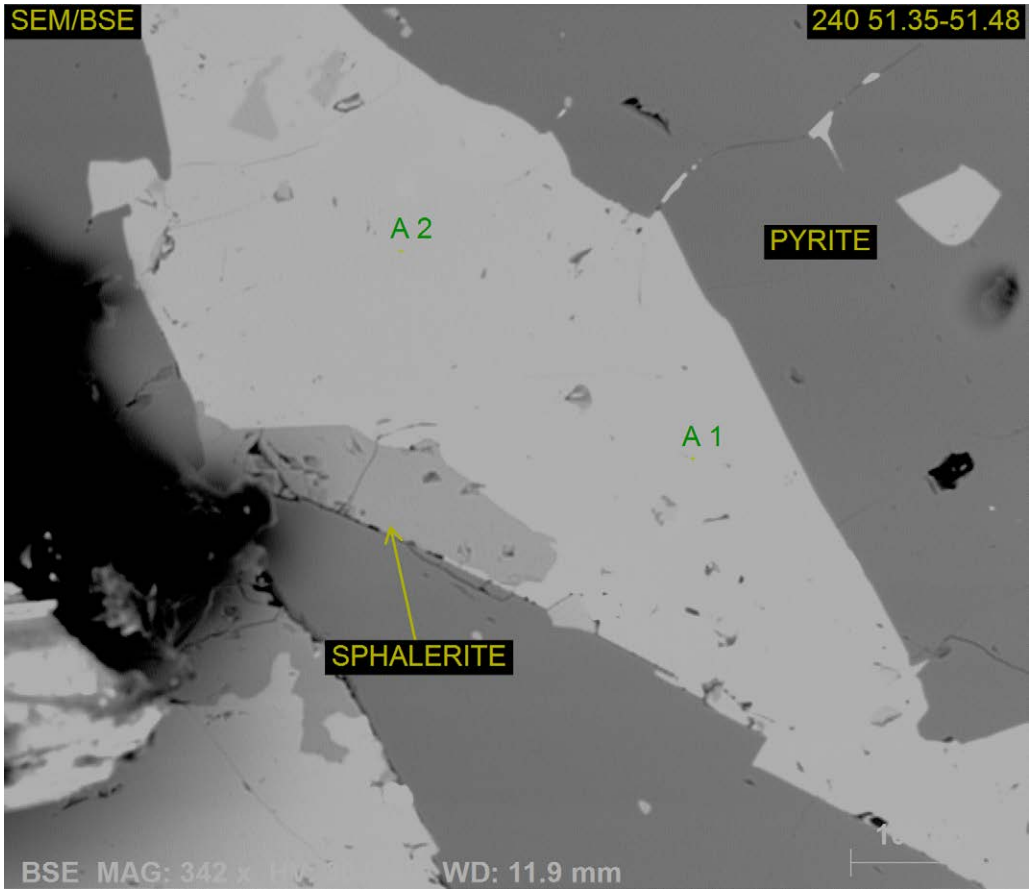
The tetrahedrite which is zincian and contains about 1% silver (SEM) is dominant in a rather coarse-grained association, to excess of a millimetre with included fine pyrite sphalerite, chalcopyrite or galena. A little tetrahedrite is present as fine blebs within the coarse pyrite. The chalcopyrite content is limited to the tetrahedrite pyrite assemblage, occurring with enclosing tetrahedrite at pyrite margins. The main galena occurrence is also present with the coarse tetrahedrite at pyrite margins. Arsenopyrite is often present in concentrations of fine rhombic crystals within coarse pyrite aggregates in several of the bands. It is also similarly concentrated in the carbonate matrix.

GOLD

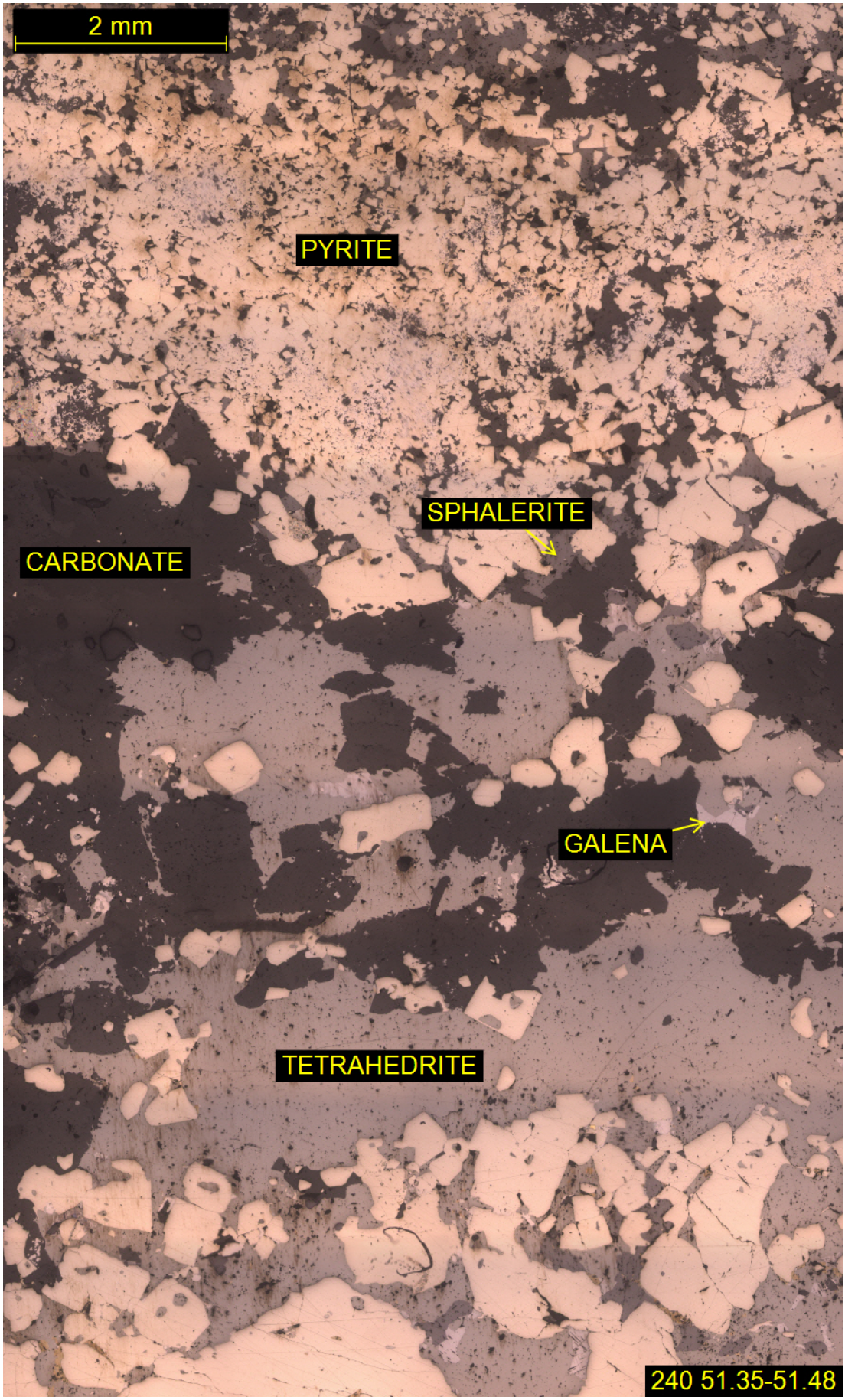
Two occurrences of gold were detected optically. These appeared low in silver.

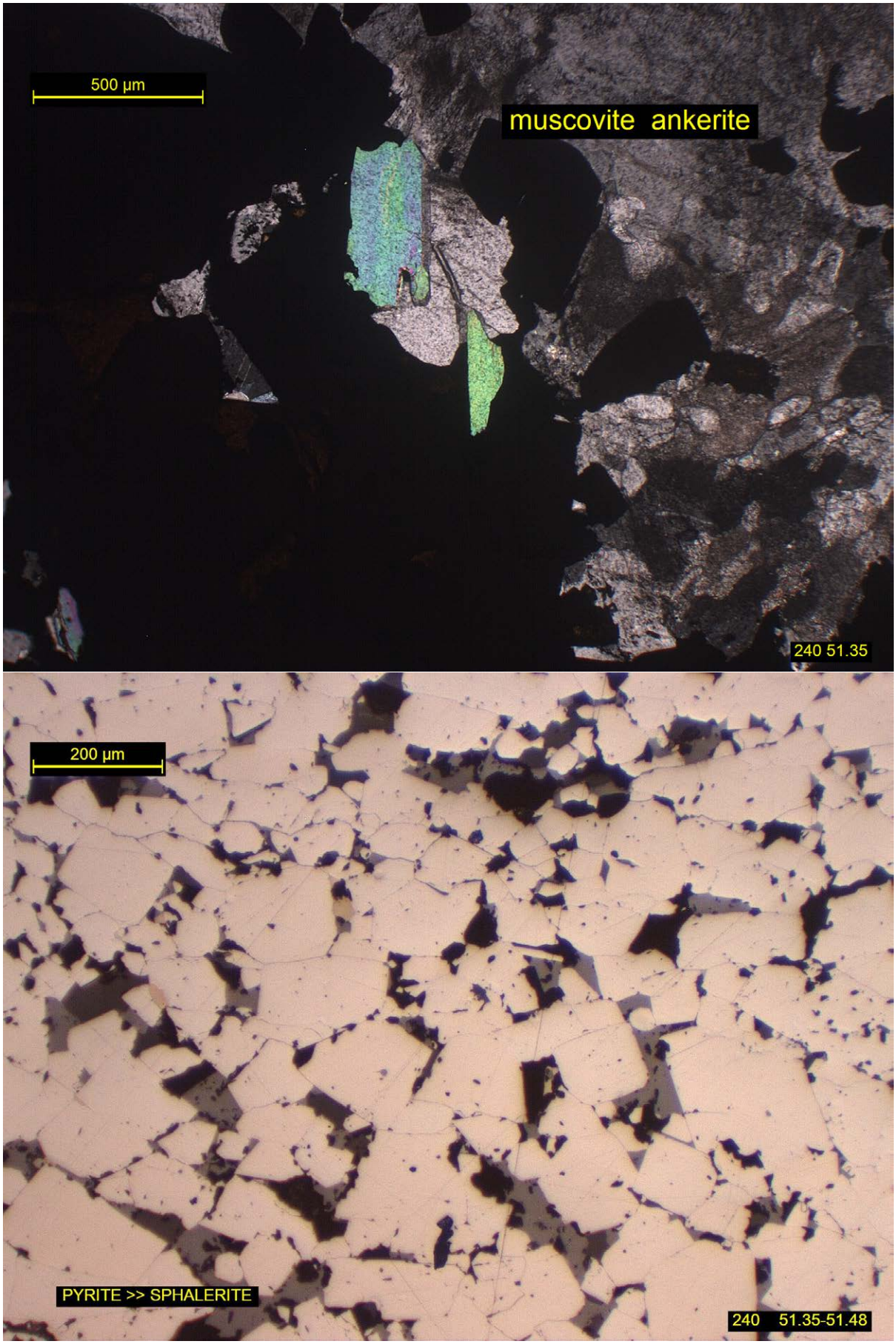
One was a 120x40 µm mass within sphalerite at a pyrite contact with associated chalcopyrite.
The second was a pair of golds, measuring 40 and 150 µm enclosed within a complex fine intergrowth of tetrahedrite chalcopyrite sphalerite and arsenopyrite.

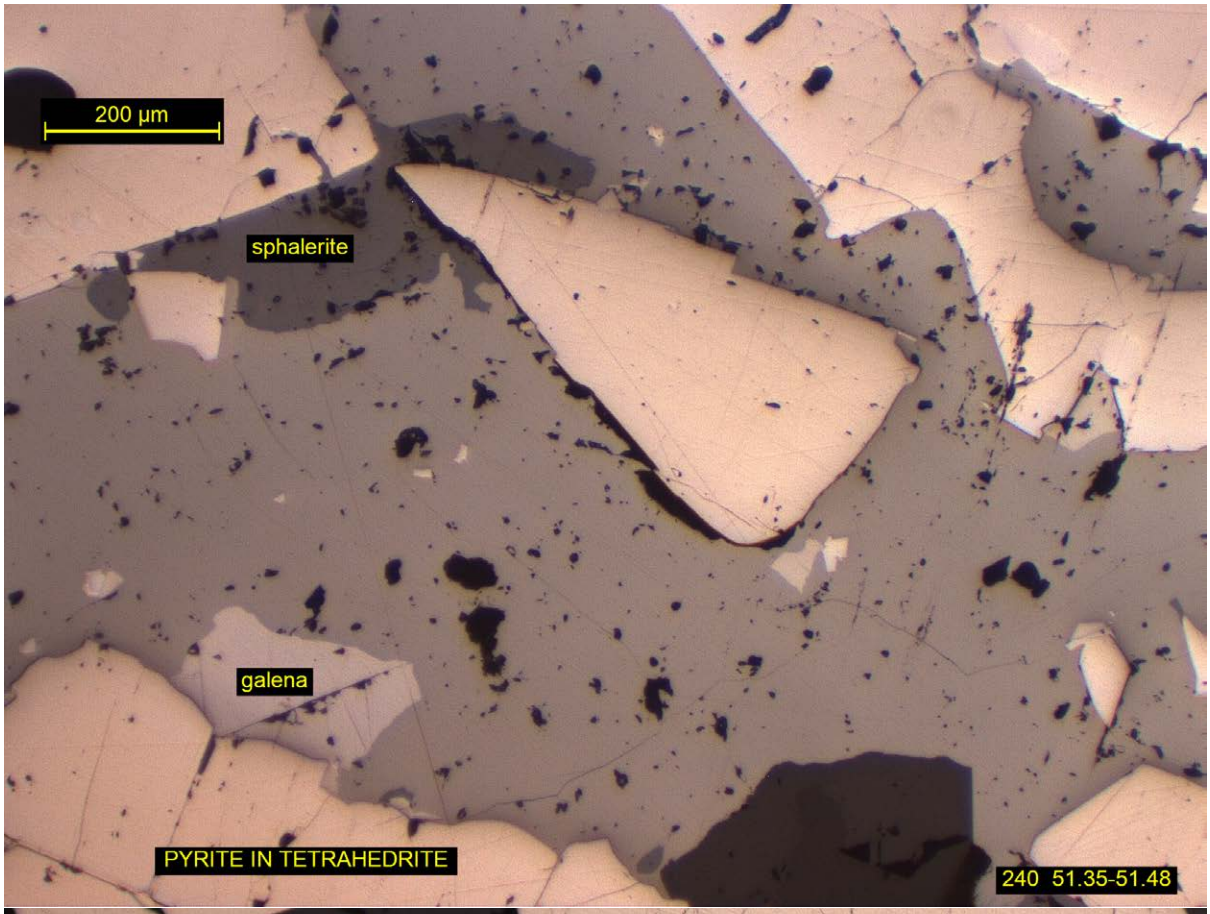
SEM/EDS ANALYSES

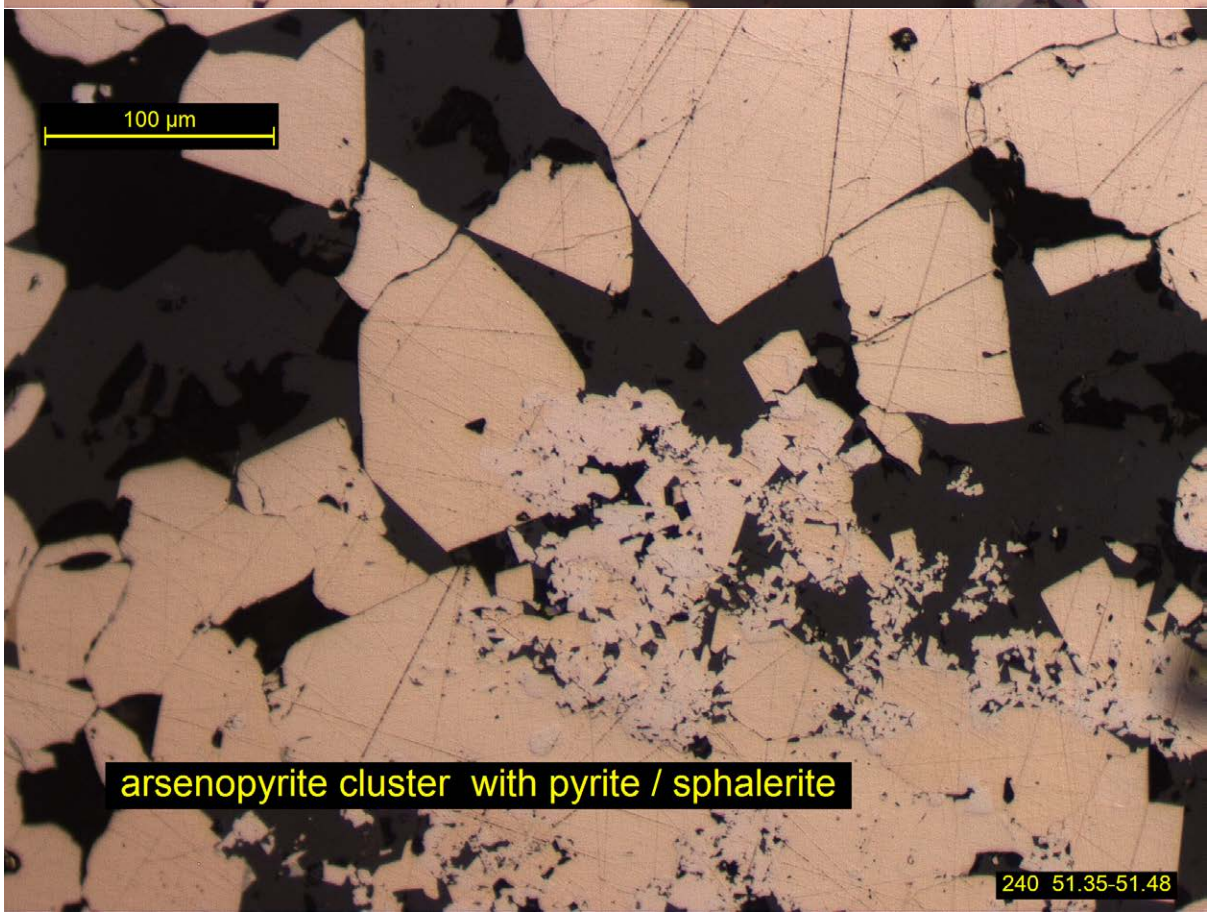


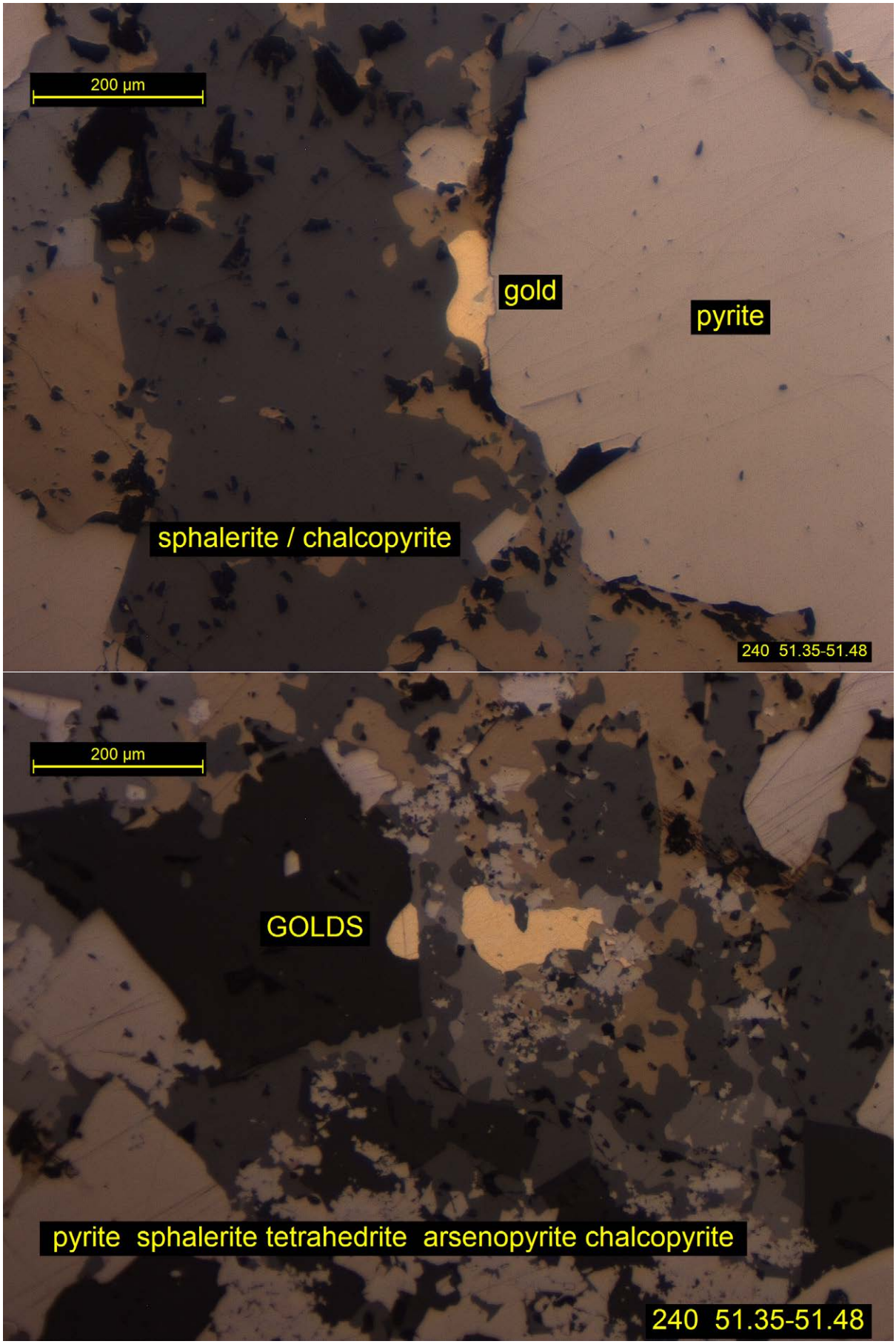
	S	Fe	Cu	Zn	As	Ag	Sb	
A 1	22.3	6.4	43.3	3.6	7.9	0.4	16.1	TETRAHEDRITE
A 2	23.6	5.6	41.6	3.5	7.5	0.9	17.3	TETRAHEDRITE


2 mm
PYRITE
SPHALERITE
CARBONATE
GALENA
TETRAHEDRITE
240 51.35-51.48


500 µm
muscovite ankerite
240 51.35
200 µm
PYRITE >> SPHALERITE
240 51.35-51.48


200 µm
sphalerite
galena
PYRITE IN TETRAHEDRITE
240 51.35-51.48


100 µm
arsenopyrite cluster with pyrite / sphalerite
240 51.35-51.48


200 µm
gold
pyrite
sphalerite / chalcopyrite
240 51.35-51.48
200 µm
GOLDS
pyrite sphalerite tetrahedrite arsenopyrite chalcopyrite
240 51.35-51.48

SAMPLE K15-243 176.57-176.74

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
CARBONATE	50%
QUARTZ	50%
ORES	**90%**
SPHALERITE	MAJOR
PYRITE	MAJOR
GALENA	MINOR
CHALCOPYRITE	MINOR
FREIBERGITE	TRACE
MAGNETITE	TRACE
ARSENOPYRITE	TRACE
STANNITE	TRACE
GOLD	TRACE

CLASSIFIED AS A BANDED MASSIVE CHALCOPYRITE GALENA AND PYRITE SPHALERITE ORE.

The fresh sulphides form a coarsely banded series of alternating galena pyrite sphalerite and chalcopyrite, galena sphalerite associations. The sulphides form coarsely interlocking textures of euhedral pyrite and anhedral sphalerite, galena and chalcopyrite. This extends for about 5 cm, with the final 1.5 cm termination of the 6.5 cm slide having a similar mineralogy but with a high degree of fines.

The non-opaque gangue content consists of roughly equal quantities of quartz and two carbonates (siderite and ankerite SEM). These occur interstitially to the sulphides, with grainsizes ranging from 100 to 500 µm.

The galena pyrite sphalerite association consists of sphalerite matrix with grain dimensions under rarely finer than 100 µm, often exceeding 200 that is host to varying proportions of the other two major sulphides. The pyrites are present as individual often euhedral isometric shapes typically between 100 and 200 µm, sometimes coalescing. Against the galena when it is a major constituent, shapes are more irregular and inclusions are common. In places the galena dominates with subordinate included sphalerite or pyrite.

The chalcopyrite galena sphalerite association has rather complex textures due to the irregular shapes of the three sulphides. Sphalerite may be dominant, with grainsizes frequently in excess of half a millimetre and then containing fines of the other two. There may be some euhedral pyrite also present.

Where galena is in contact and often enclosing the gangue silicate carbonate, the latter then may contain fines of galena.

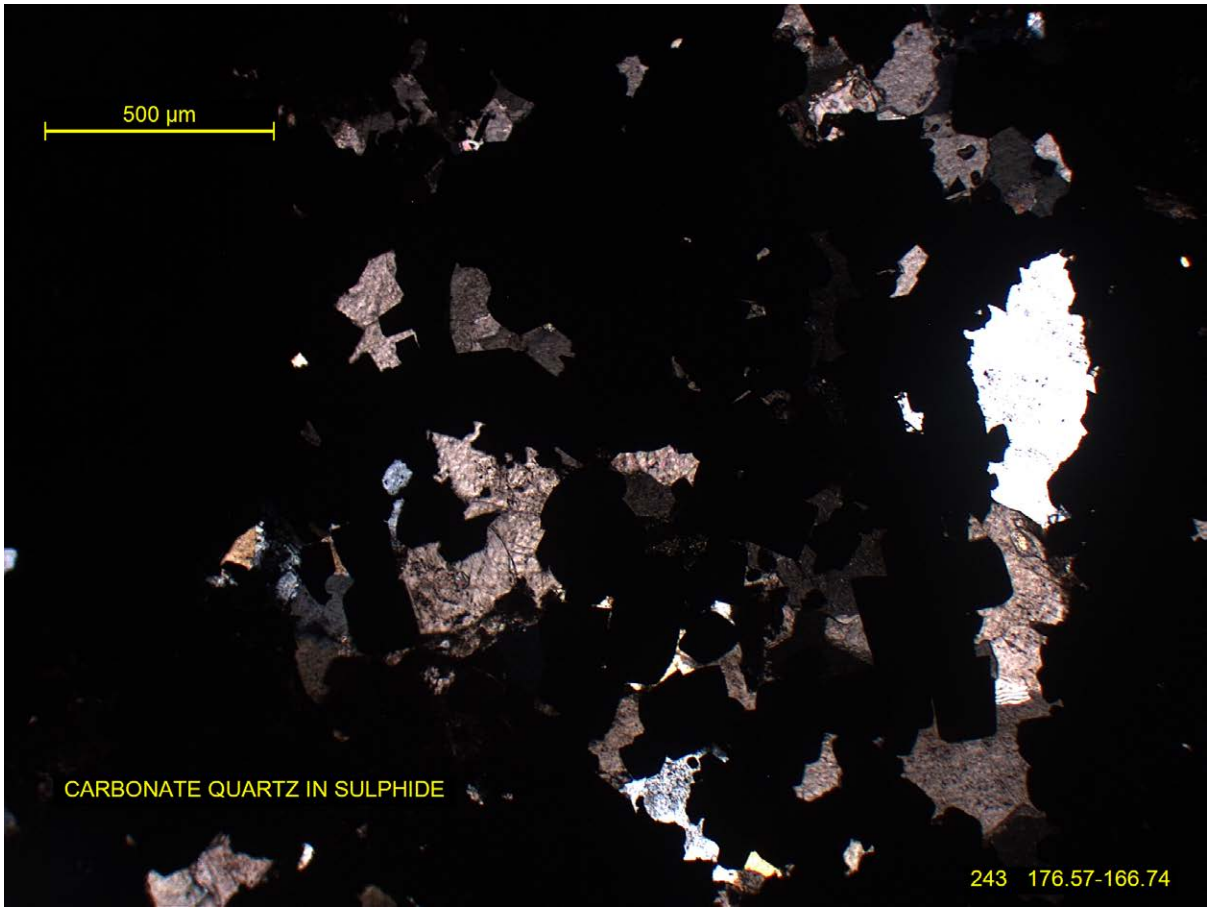
There are rare examples of a freibergite (confirmed by SEM, ~17% Ag) within the galena pyrite sphalerite in bands and examples to 200 µm within galena. This was also detected separately in sphalerite, partly in contact with galena. There were several occurrences of fine sub 50 µm stannite grains within sphalerite adjacent to galena and pyrite.

Arsenopyrite was present as rare fine rhombic crystals within coarse galena. There were rare examples of small relic magnetite within the gangue.

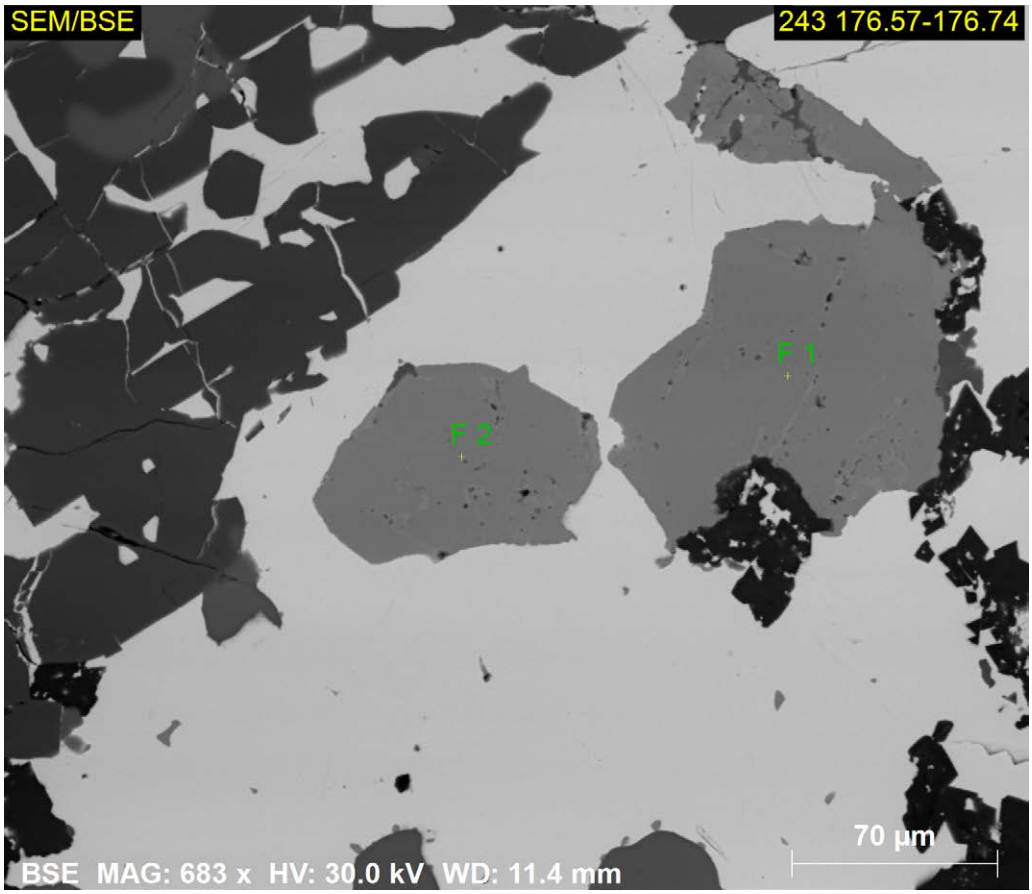
The terminal 1.5 cm piece of core is dominated by disseminated pyrite. Much of the pyrite which occurs as angular fines, down to 10 µm, in a partly fragmented sphalerite matrix, with occasional patches of irregular finer galena or chalcopyrite. There are coarse fractured pyrites veined by chalcopyrite and galena.

GOLD

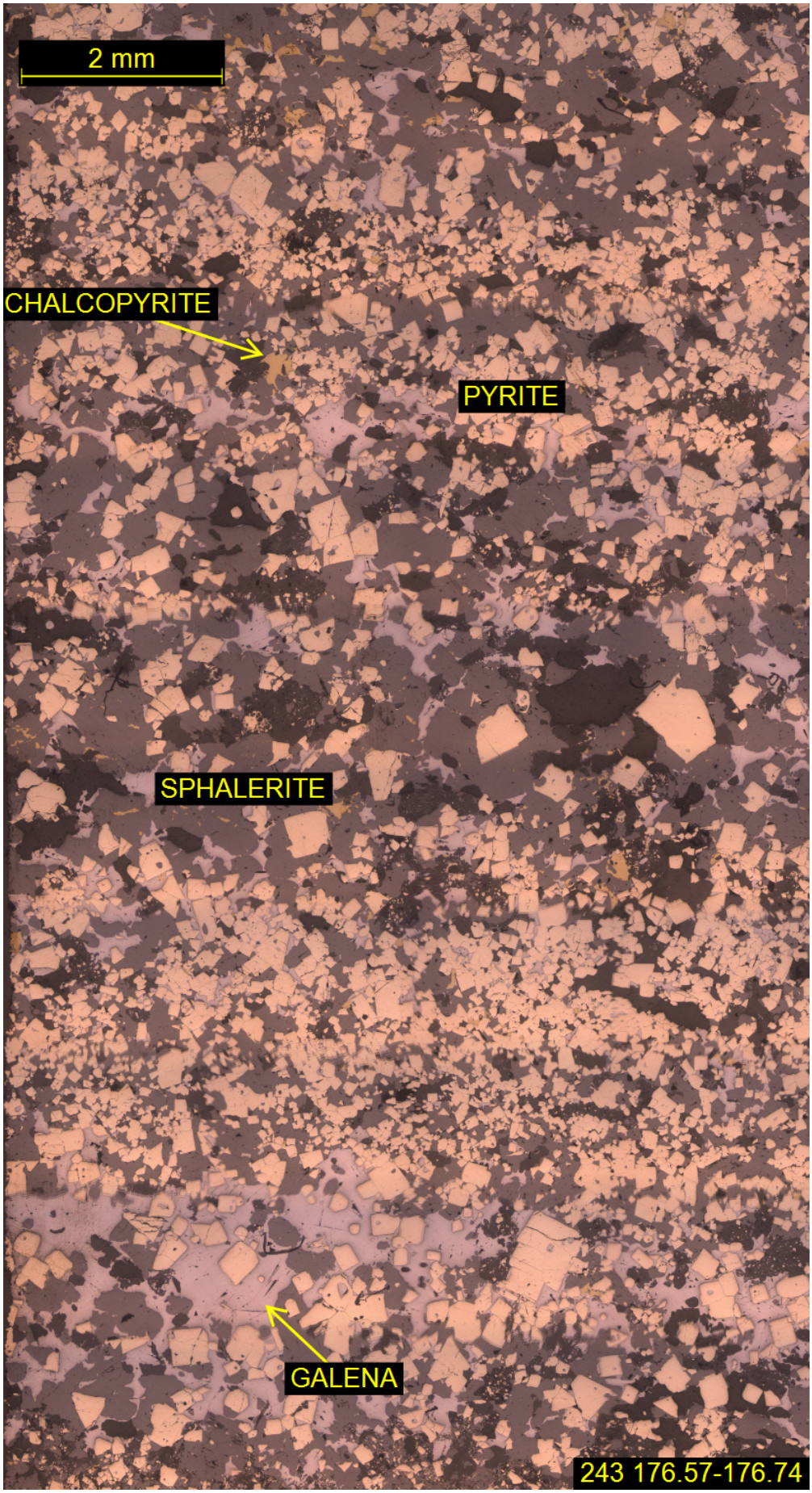
One occurrence was detected optically. This was a loose cluster of sub 5 µm fines within pyrite sphalerite and galena.

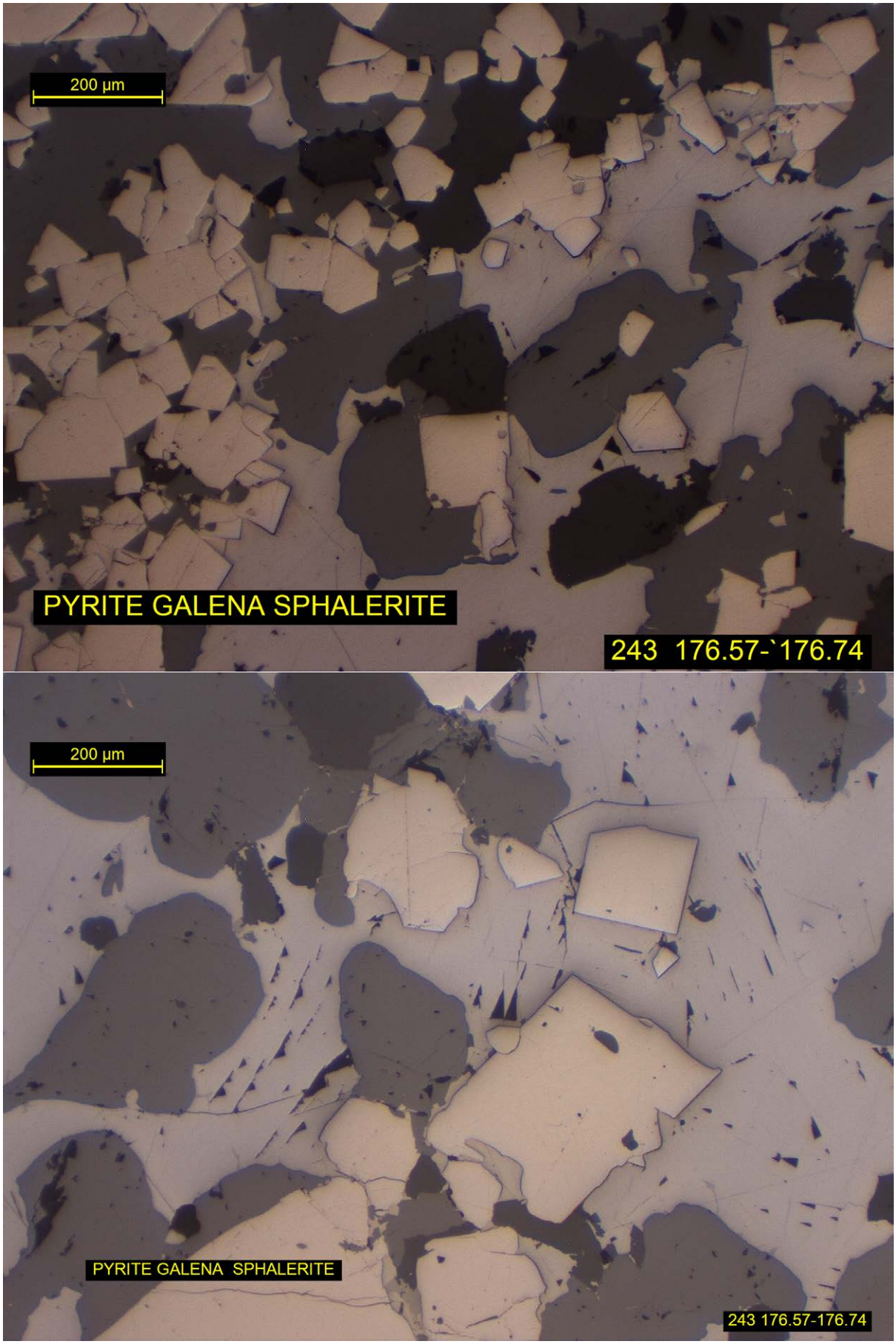


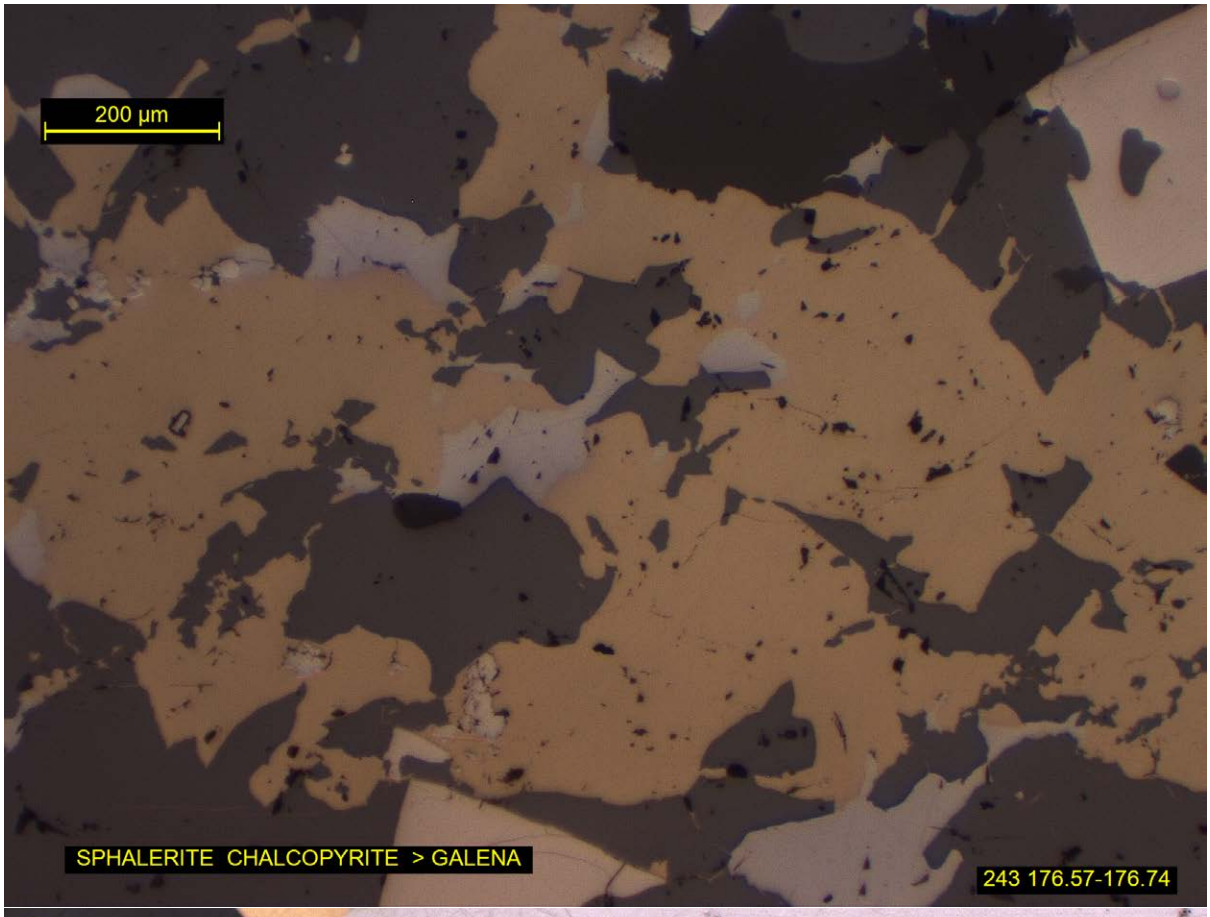
SEM/EDS ANALYSES



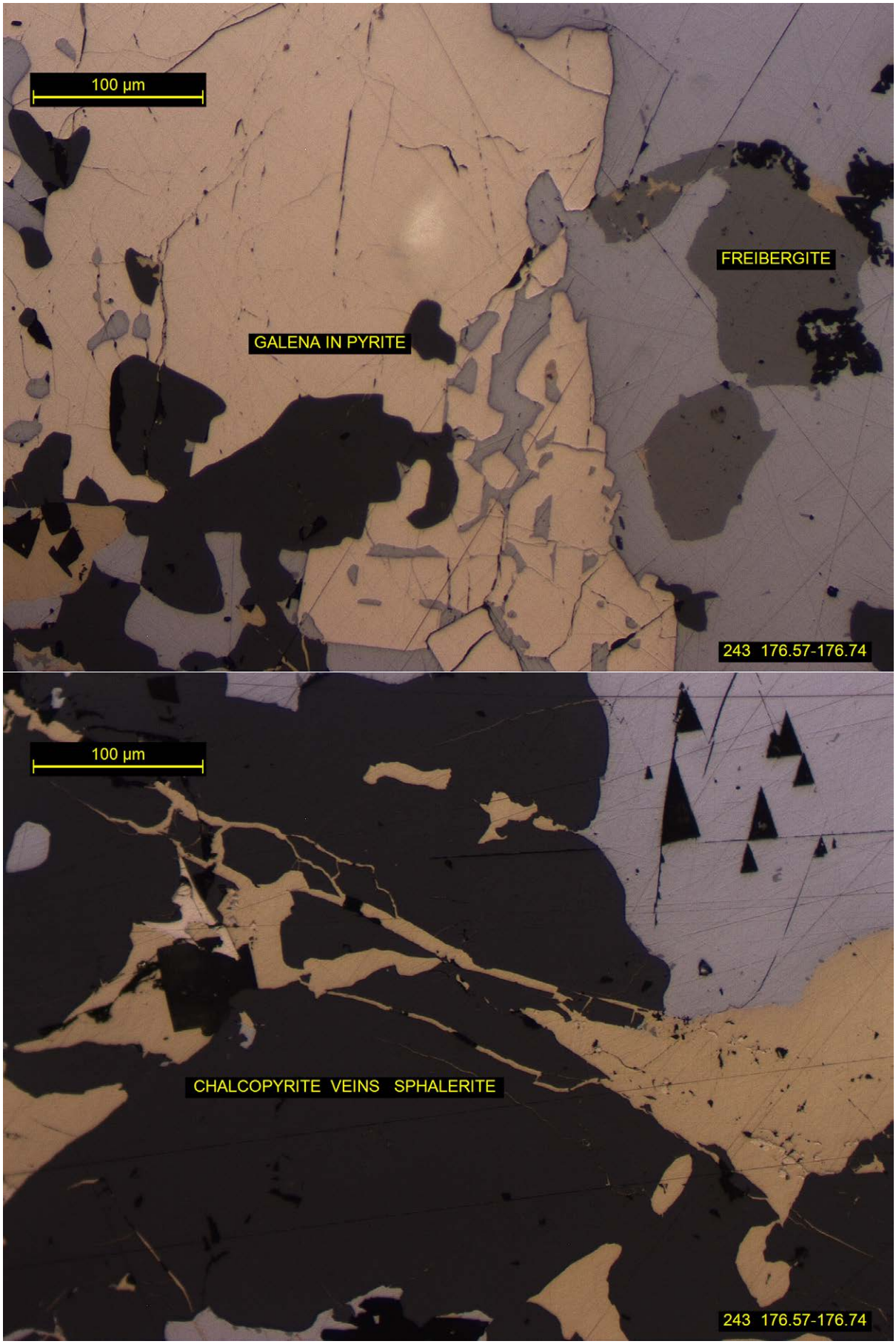
	S	Fe	Cu	Zn	As	Ag	Sb	
F 1	22.3	5.8	25.4	3.4	3.6	16.8	22.7	FREIBERGITE
F 2	23	5.5	23.6	3.2	3.2	18	23.5	FREIBERGITE

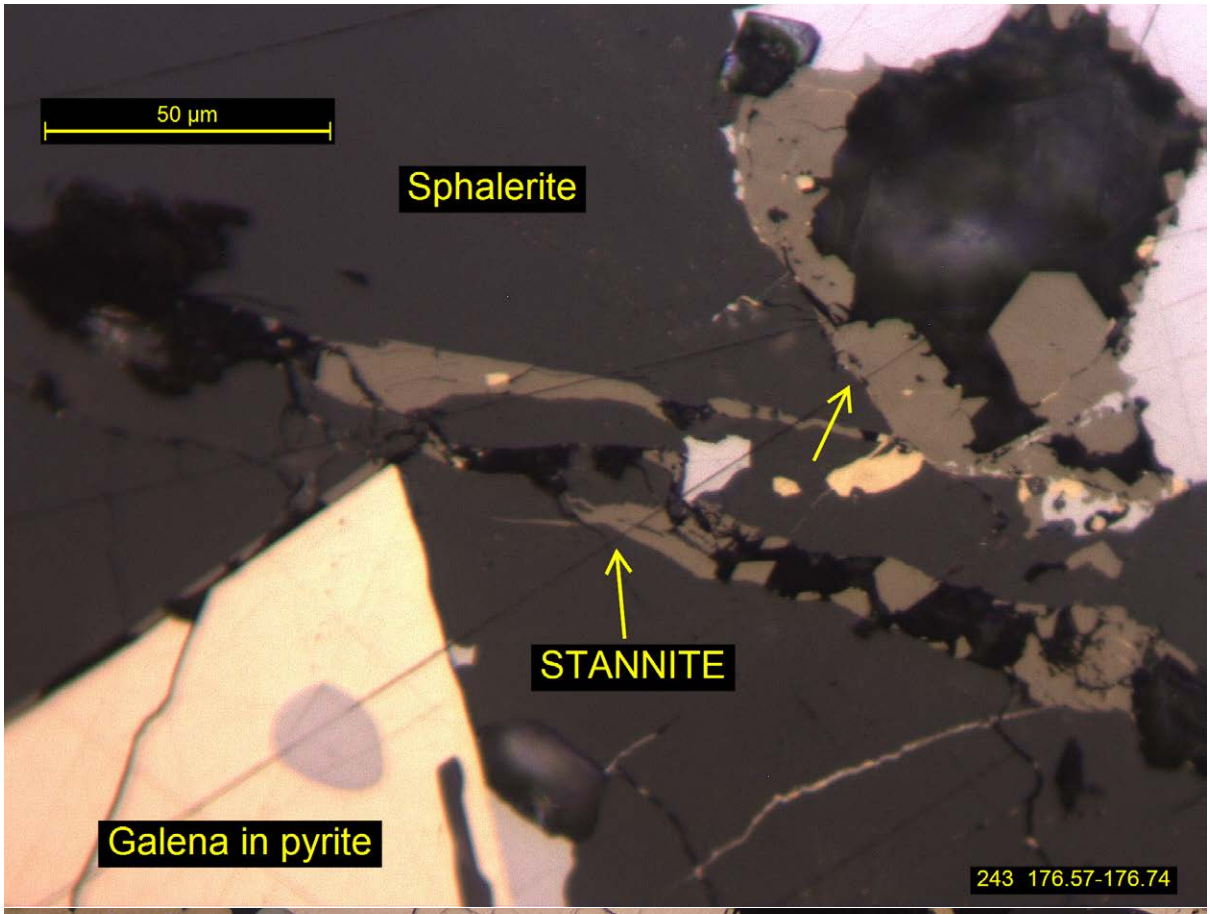

2 mm
CHALCOPYRITE
PYRITE
SPHALERITE
GALENA
243 176.57-176.74

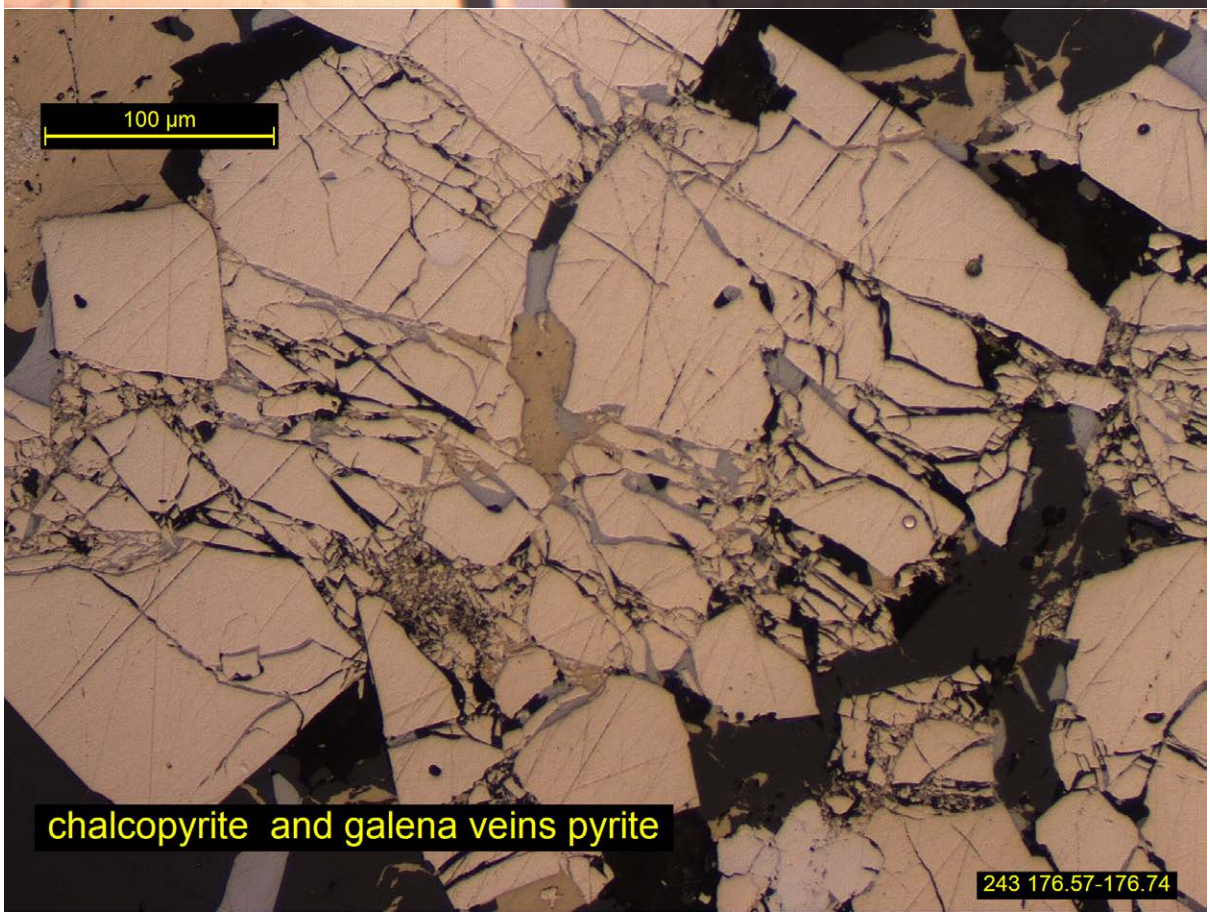

200 µm
PYRITE GALENA SPHALERITE
243 176.57-`176.74
200 µm
PYRITE GALENA SPHALERITE
243 176.57-176.74

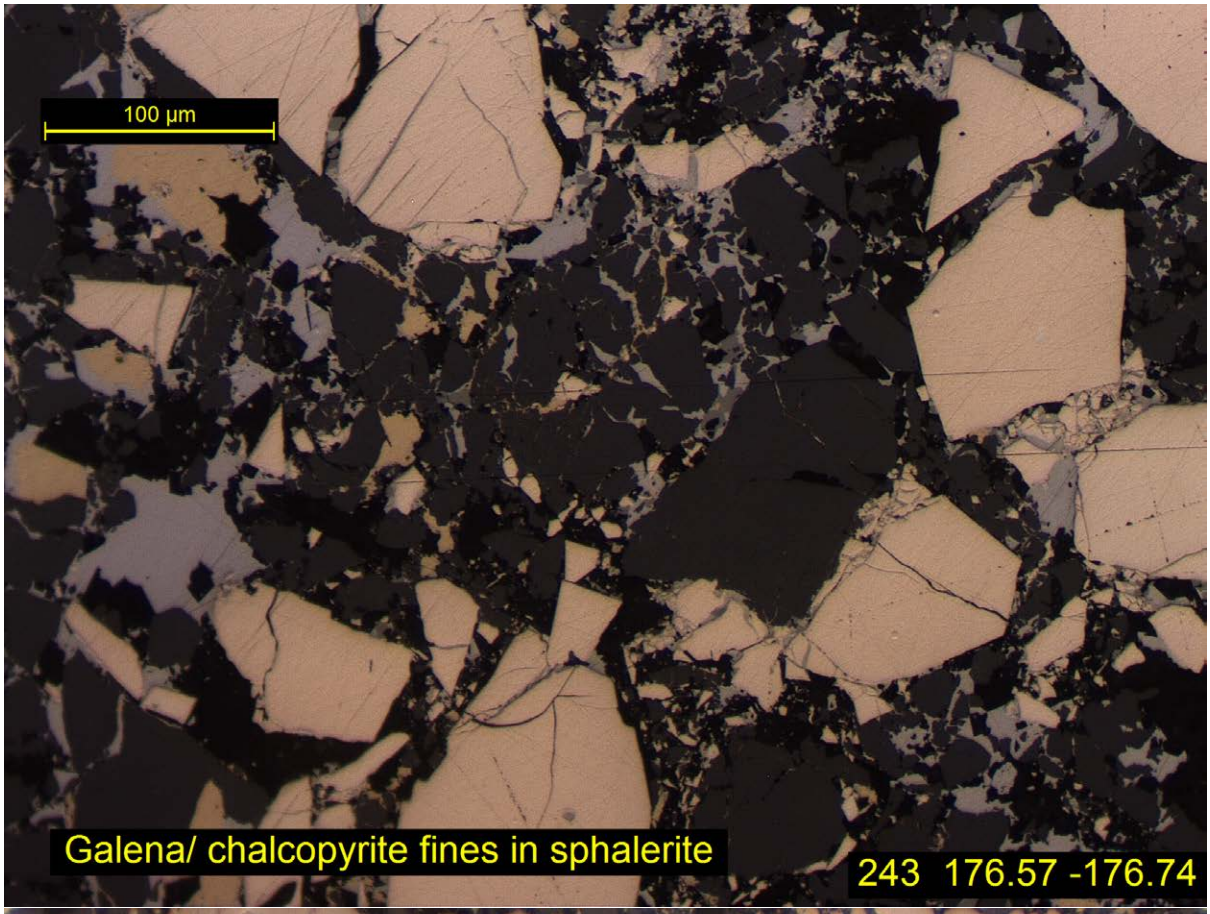

200 µm
SPHALERITE CHALCOPYRITE > GALENA
243 176.57-176.74

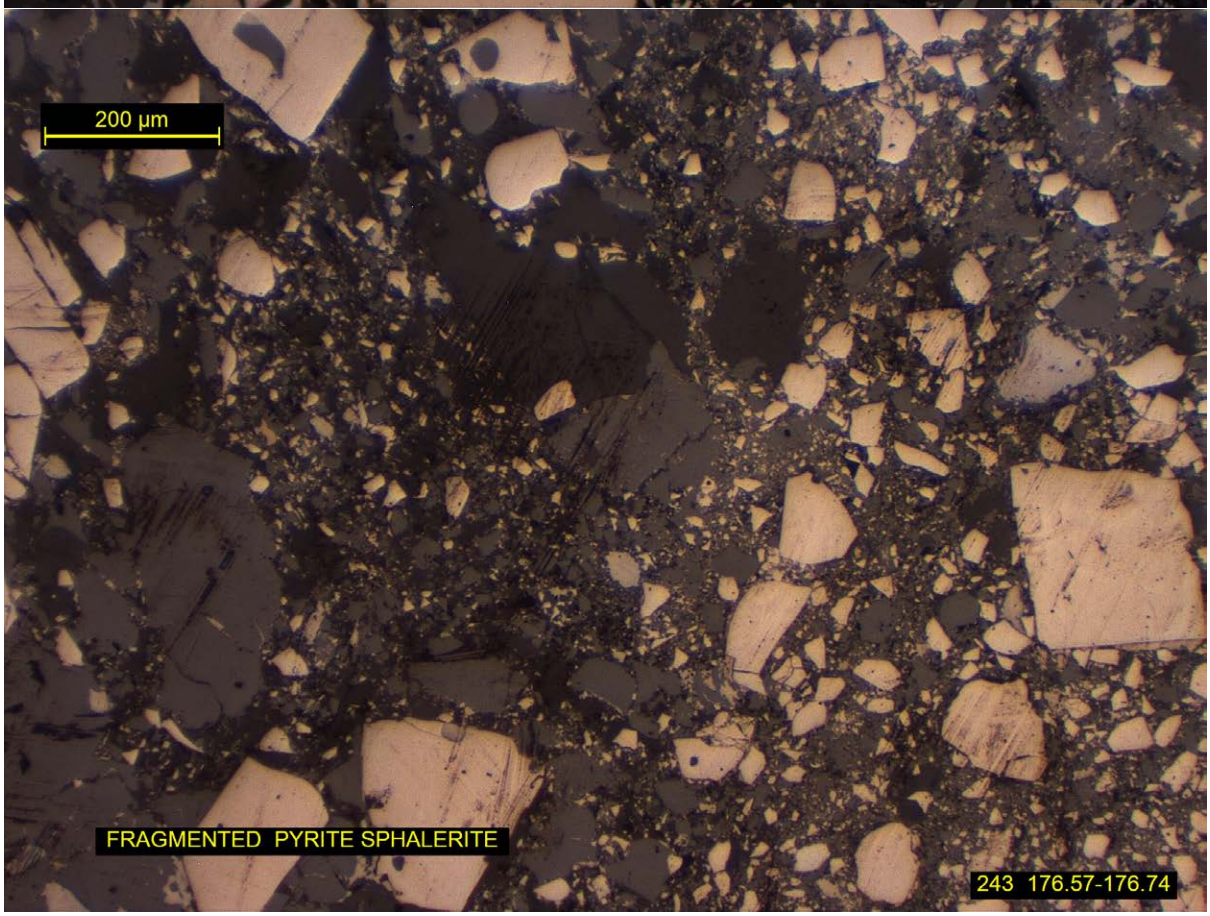

100 µm
chalcopyrite sphalerite galena
243 176.57-176.74

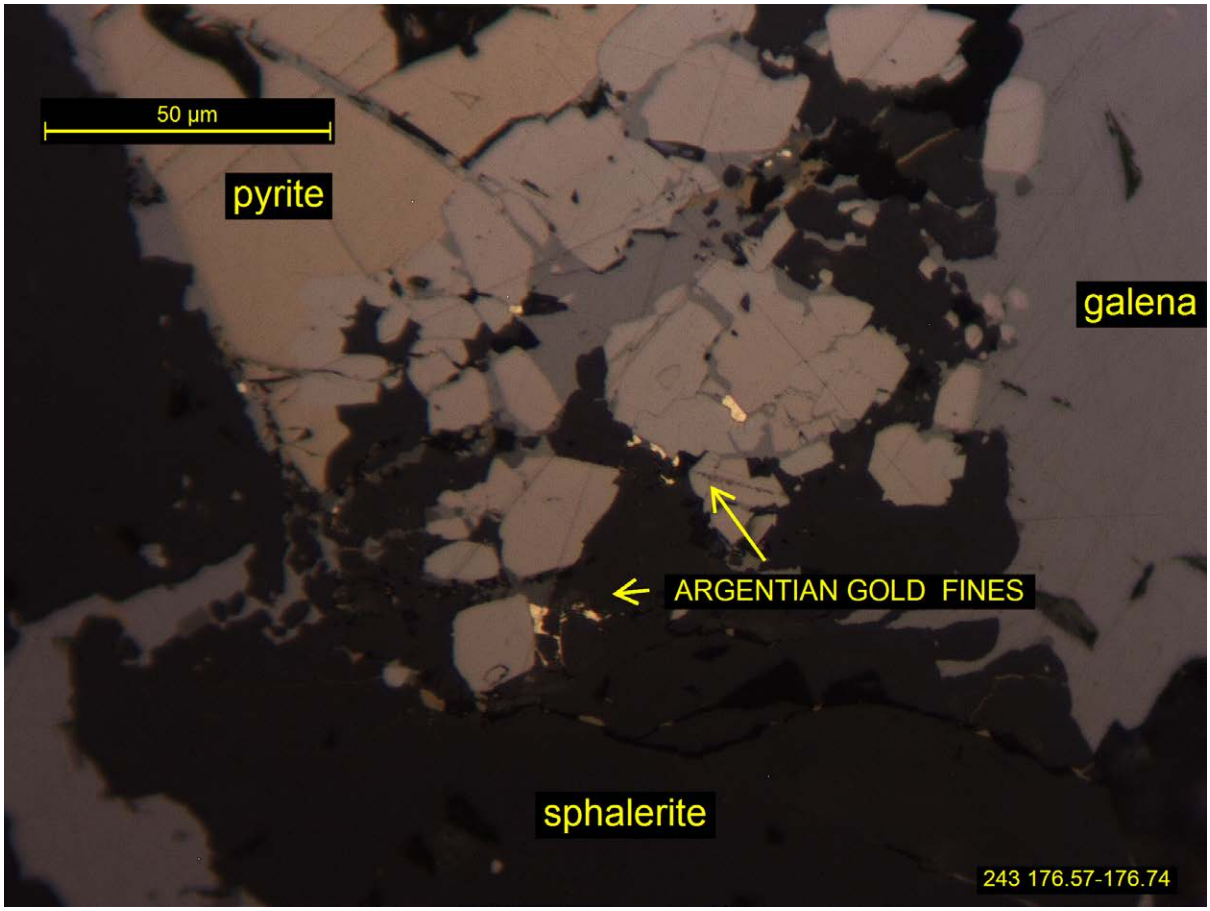

100 µm
FREIBERGITE
GALENA IN PYRITE
243 176.57-176.74
100 µm
CHALCOPYRITE VEINS SPHALERITE
243 176.57-176.74


50 µm
Sphalerite
STANNITE
Galena in pyrite
243 176.57-176.74


100 µm
chalcopyrite and galena veins pyrite
243 176.57-176.74


100 µm
Galena/ chalcopyrite fines in sphalerite
243 176.57 -176.74


200 µm
FRAGMENTED PYRITE SPHALERITE
243 176.57-176.74


50 µm
pyrite
galena
ARGENTIAN GOLD FINES
sphalerite
243 176.57-176.74

SAMPLE K15-264 155-155.16

DRILL CORE

POLISHED THIN SECTION

GANGUE	**20%**
BARITE	90%
CARBONATE	10%
ORES	**80%**
PYRITE	DOMINANT
SPHALERITE	MAJOR TO MINOR
TENNANTITE	MINOR TO ACCESSORY
GALENA	ACCESSORY
CHALCOPYRITE	ACCESSORY
ARSENOPYRITE	TRACE

CLASSIFIED AS A BANDED BARITE SPHALERITE PYRITE ORE CONTAINING LOCAL CONCENTRATIONS OF TETRAHEDRITE AND ACCESSORY GALENA.

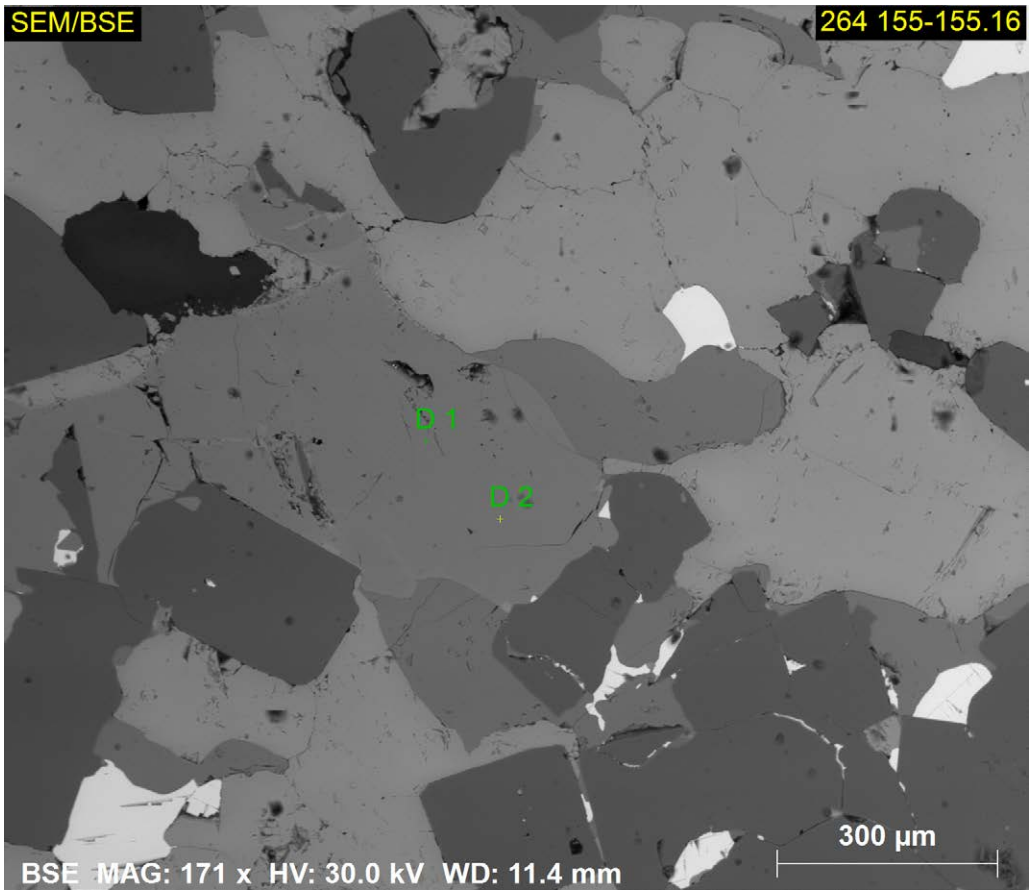
The texture is dominated by irregular bands of pyrite concentrations with individual's subhedral or coalescing, with grainsizes commonly between 200 and 300 µm. This pyrite is flanked by anhedral sphalerite that varies from larger areas enclosing several pyrites to smaller individuals in contact with single pyrites. The latter may be sub 50 µm infill at pyrite contacts. A minor proportion of the pyrites are free of sulphides entirely within the gangue

The gangue is essentially barite forming a granoblastic allotriomorphic texture against the euhedral pyrite of similar dimensions. There is local carbonate.

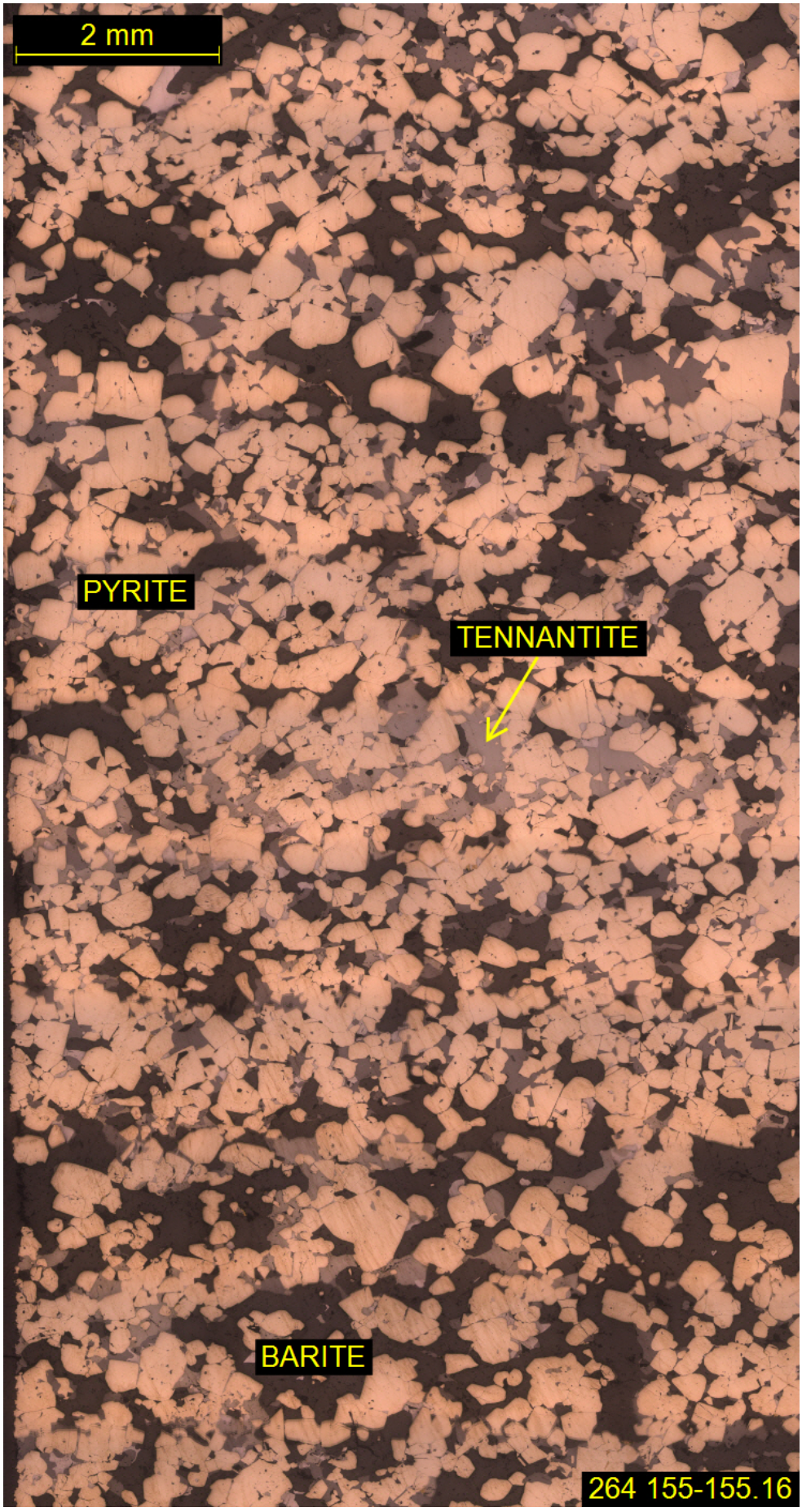
Tennantite is prominent in several pyrite bands where exceptionally it may extend as a matrix of a mm to a number of fine pyrites. More commonly it forms single masses, often in contact with galena and sphalerite to 500 µm. It may contain fines of chalcopyrite. It contains about 1% silver (SEM).

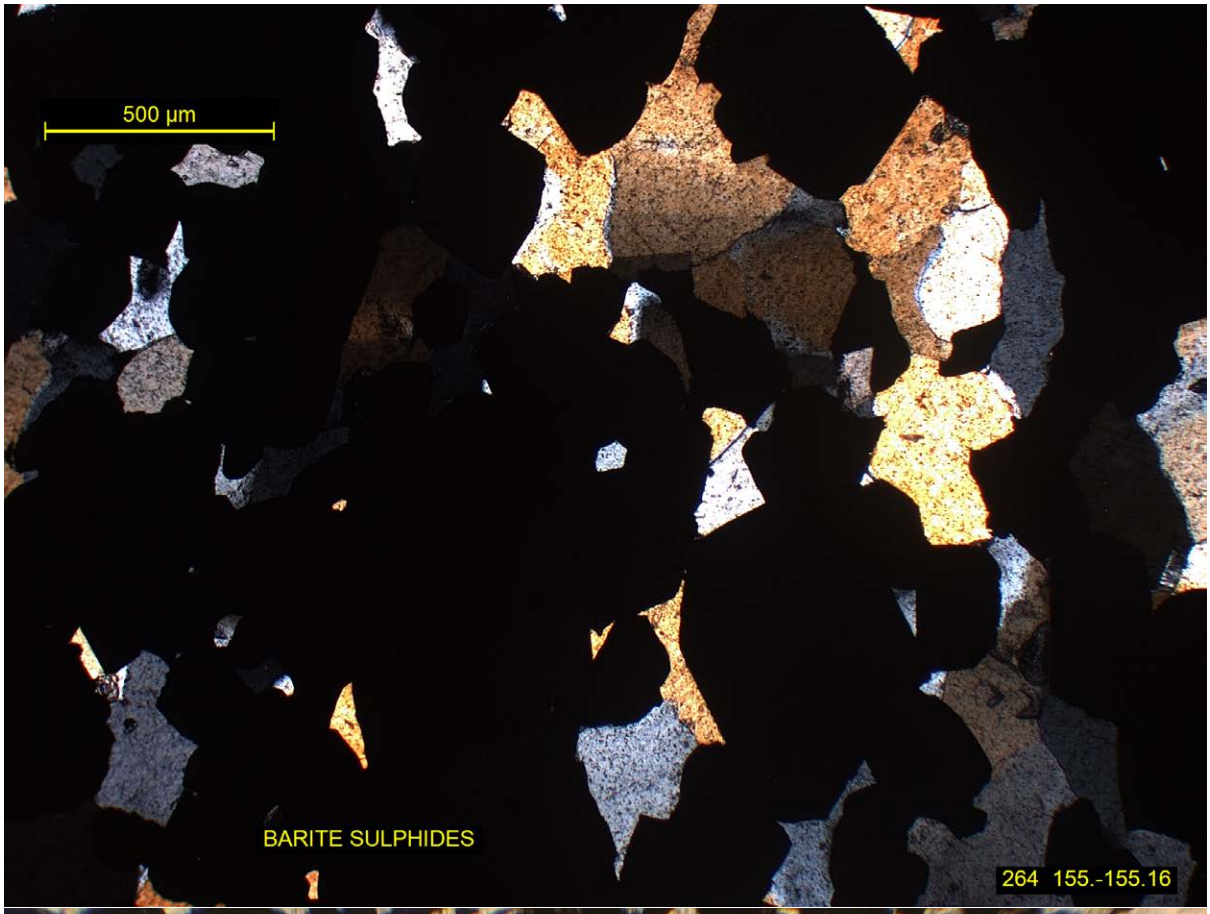
Galena has a sporadic distribution as an angular marginal phase intergrown with sphalerite and pyrite with similar grainsizes. It is also found as narrow rims between pyrites often accompanied by chalcopyrite. Galena and sphalerite as inclusions in the coarse pyrites are uncommon.

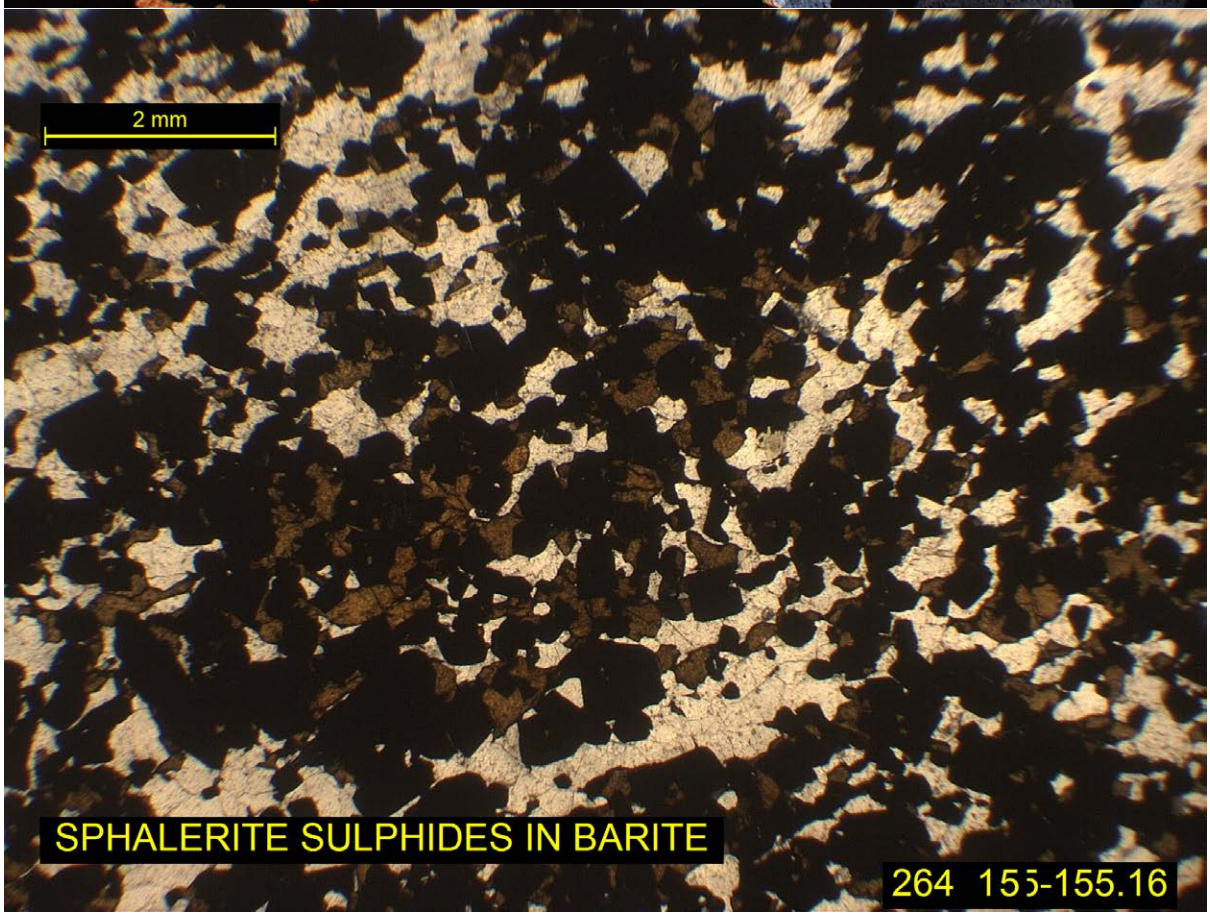
SEM/EDS ANALYSES

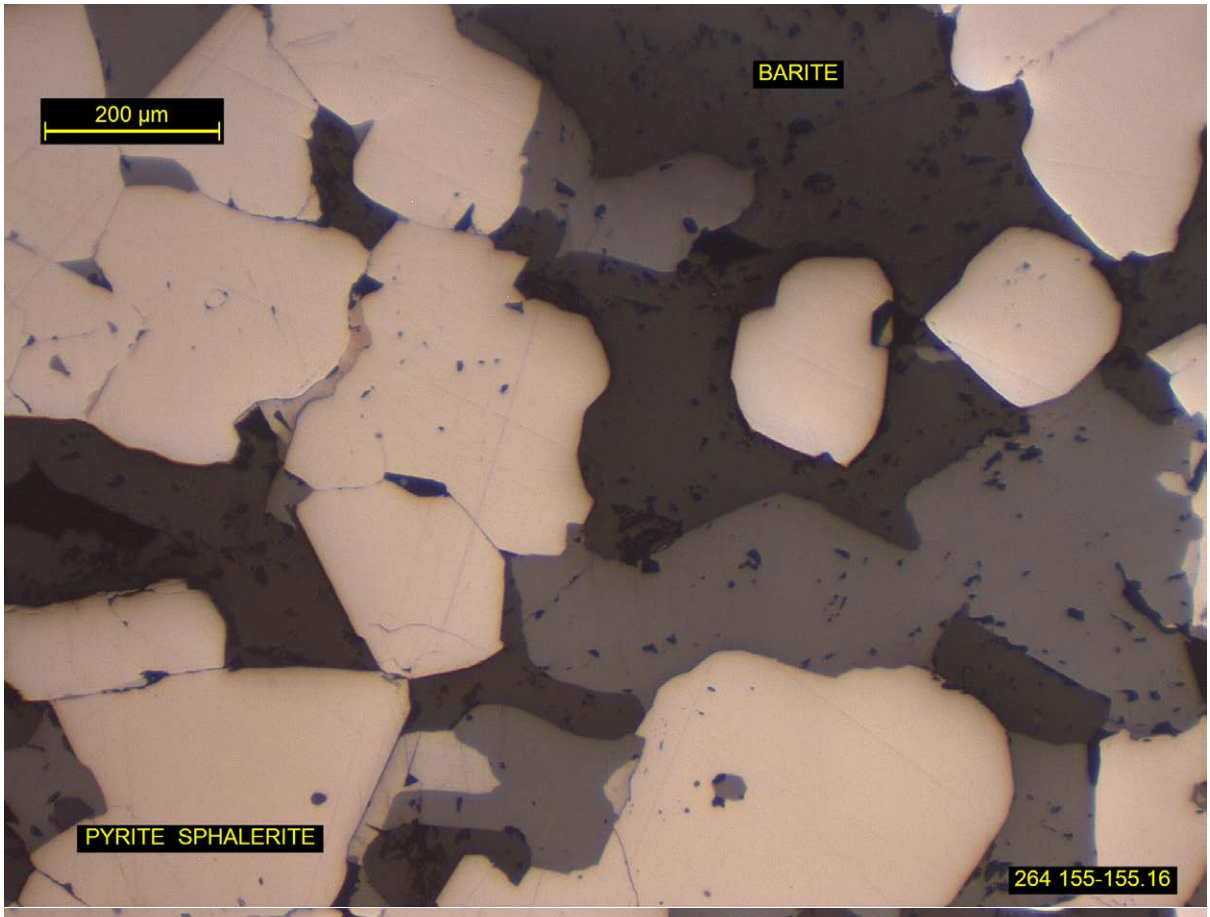


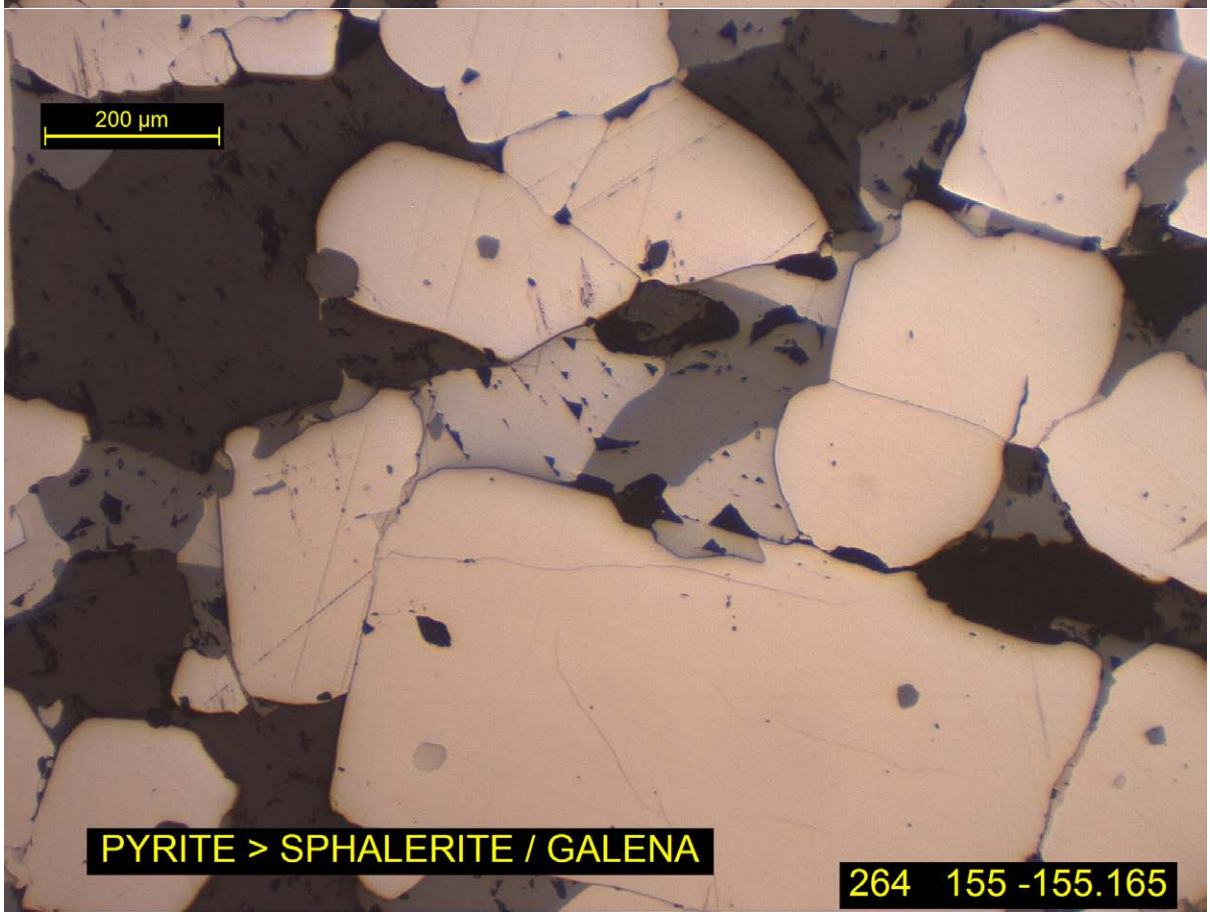
	S	Fe	Cu	Zn	As	Ag	Sb	
D 1	25.2	6.6	43.4	3.2	15.4	1.3	4.8	TENNANTITE
D 2	24.4	6.5	42.9	3.3	15.9	1.7	5.3	TENNANTITE

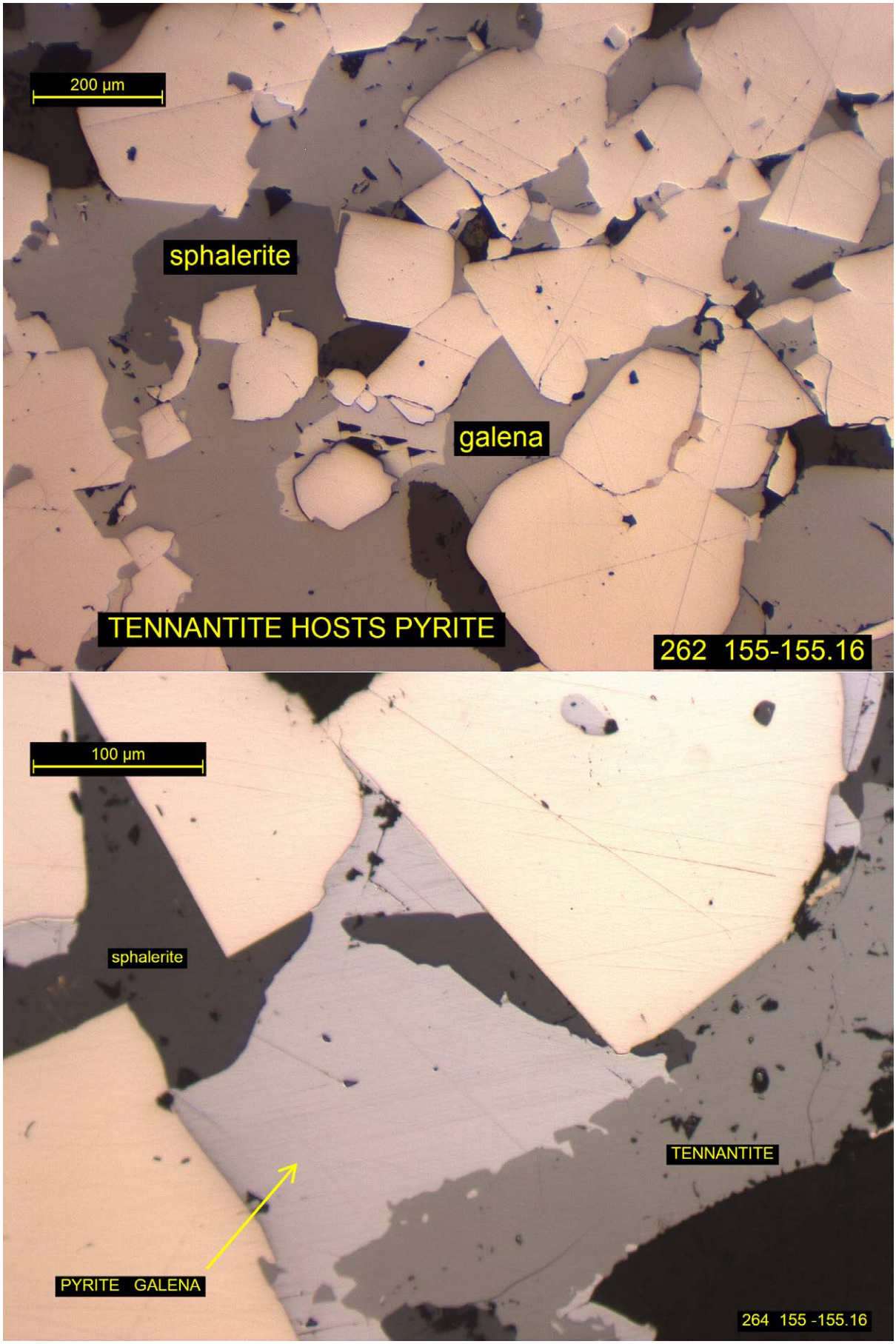

2 mm
PYRITE
TENNANTITE
BARITE
264 155-155.16

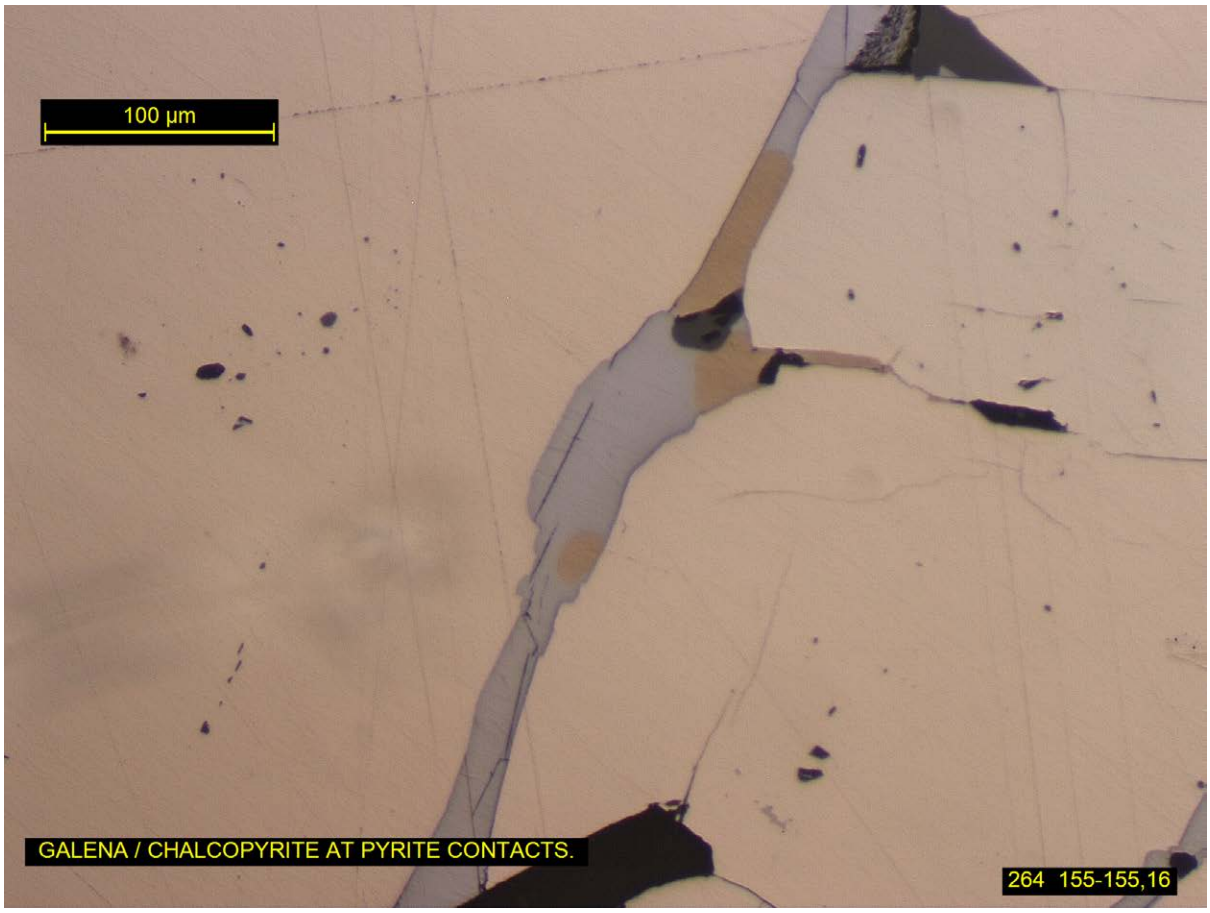

500 µm
BARITE SULPHIDES
264 155.-155.16


2 mm
SPHALERITE SULPHIDES IN BARITE
264 155-155.16


200 µm
BARITE
PYRITE SPHALERITE
264 155-155.16


200 µm
PYRITE > SPHALERITE / GALENA
264 155 -155.165


200 µm
sphalerite
galena
TENNANTITE HOSTS PYRITE
262 155-155.16
100 µm
sphalerite
TENNANTITE
PYRITE GALENA
264 155 -155.16


100 µm
GALENA / CHALCOPYRITE AT PYRITE CONTACTS.
264 155-155,16

SAMPLE K15-267 140-140.11

DRILL CORE

POLISHED THIN SECTION

GANGUE	**70%**
BARITE	50%
CARBONATE	40%
QUARTZ	<10%?
CELSIAN	TRACE
ORES	**30%**
PYRITE	DOMINANT
SPHALERITE	MAJOR
GALENA	ACCESSORY
CHALCOPYRITE	ACCESSORY
TETRAHEDRITE	ACCESSORY
ARSENOPYRITE	ACCESSORY
MAGNETITE	TRACE
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A BANDED SPHALERITE PYRITE CARBONATE BARITE ROCK.

The dominant gangue has a consistent granoblastic texture separating the sulphides with barite or carbonate (ankerite) grainsizes varying between 200 and 300 µm normally. There is a restricted occurrence of an unusually acicular form of celsian (SEM).

The sulphides occur as a series of narrow bands that are dominated by pyrite and sphalerite and show variations in texture and presence or absence of other sulphides.

The dominant sulphide texture consists of euhedral pyrite in contact with anhedral enclosing sphalerite. The sphalerite contains about 5% iron (SEM). Uncommonly the sphalerite is dominant as areas up to 700 µm enclosing 100-200 µm pyrites. Where pyrite is dominant, clusters of euhedral crystals have very subordinate marginal sphalerite under 50 µm. Pyrite is mostly free of other sulphide inclusions.

Some pyrite sphalerite associations also contain subordinate galena. Exceptionally coarser sphalerite may also have 500 µm plus galena inclusions sometimes of vein character. Galena is also present as narrow veinlets at barite margins. Chalcopyrite occurs as fines in coarser sphalerite, some are attached.

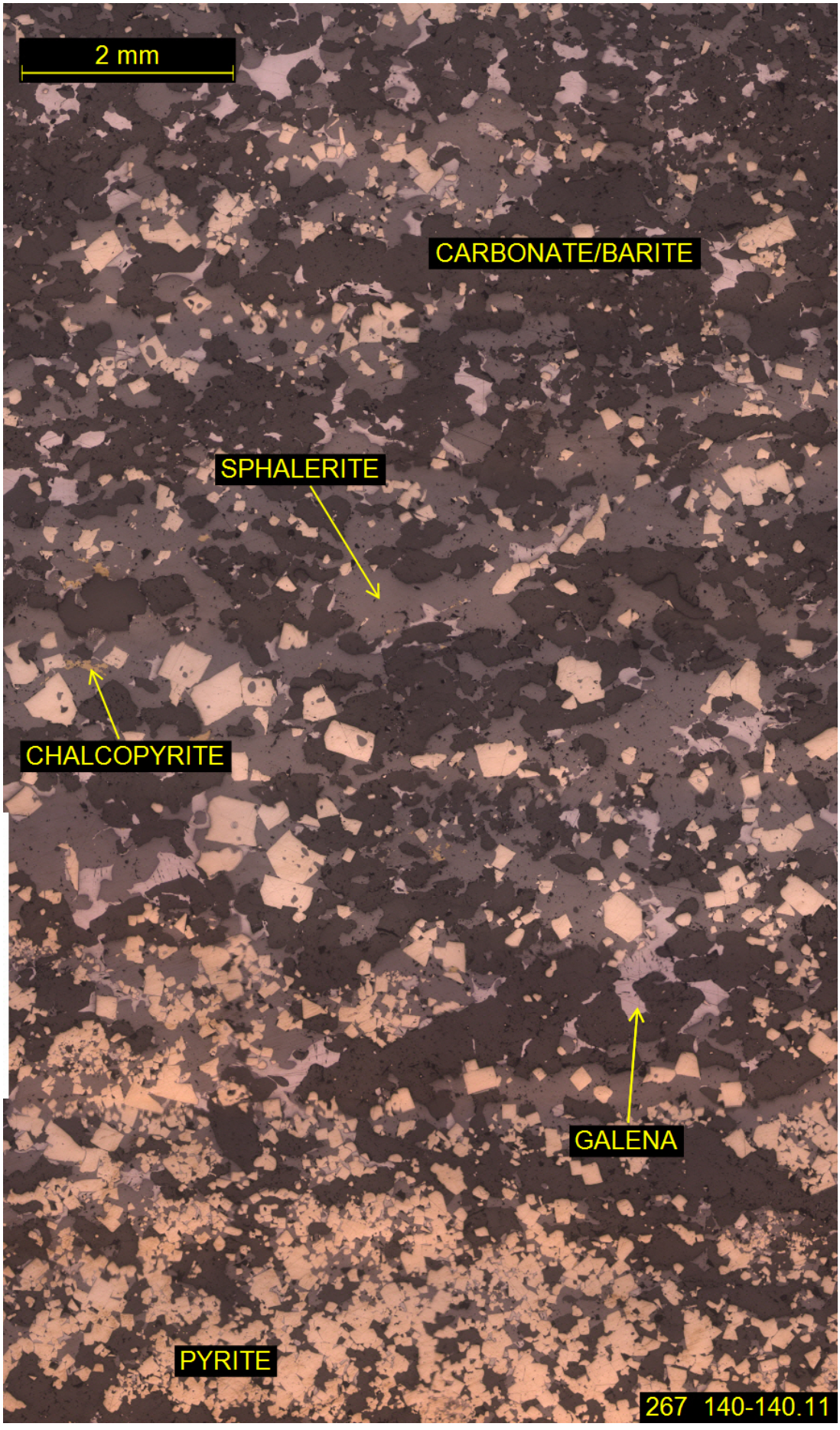
Tetrahedrite is restricted to one band with sphalerite and galena and lower pyrite. The tetrahedrite composites with sphalerite may exceed 500 µm grainsizes. Other tetrahedrite attached to galena in barite is much finer. There are some complex sulphide intergrowths involving part corroded euhedral arsenopyrite, anhedral chalcopyrite and galena in a tetrahedrite matrix.

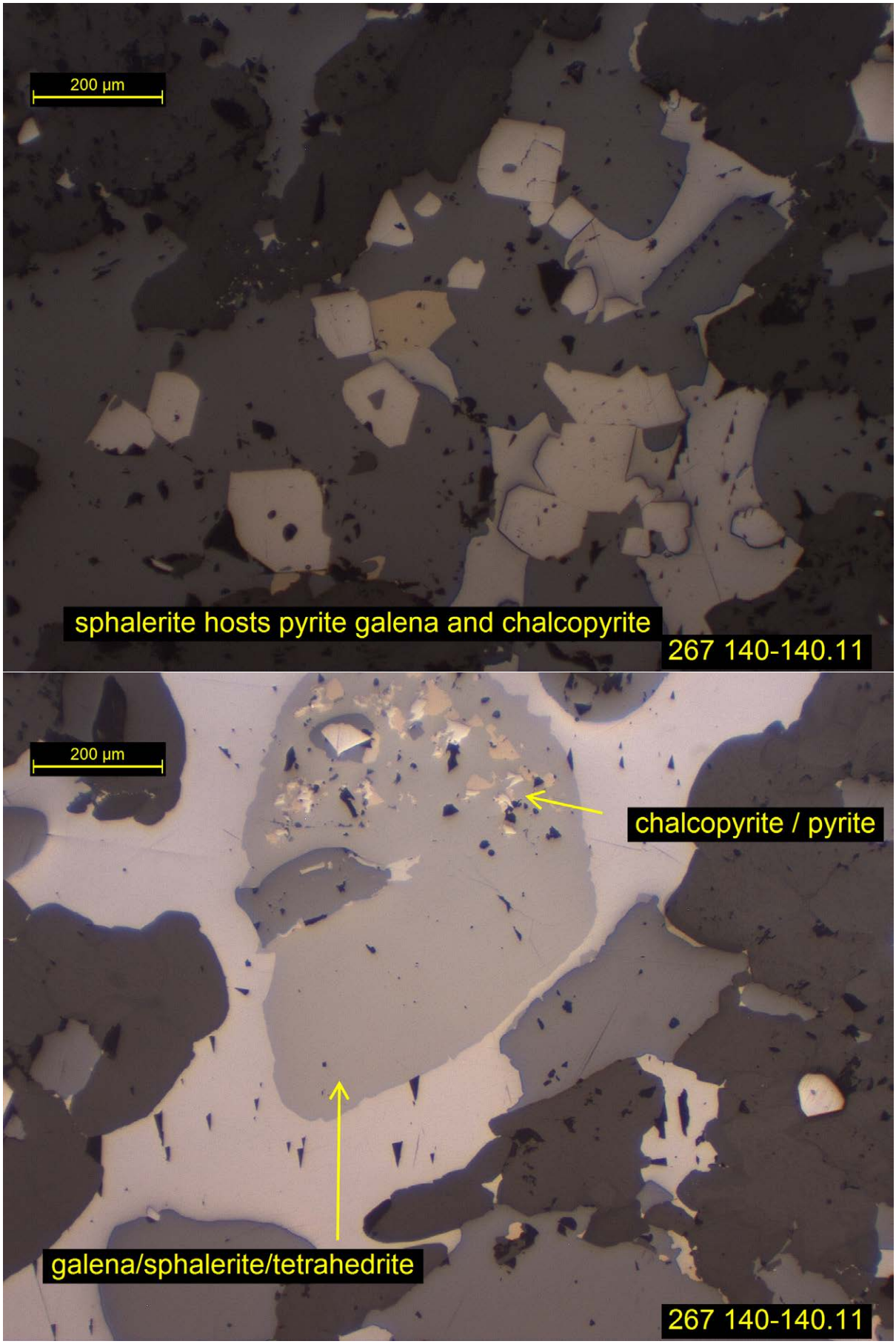
GOLD

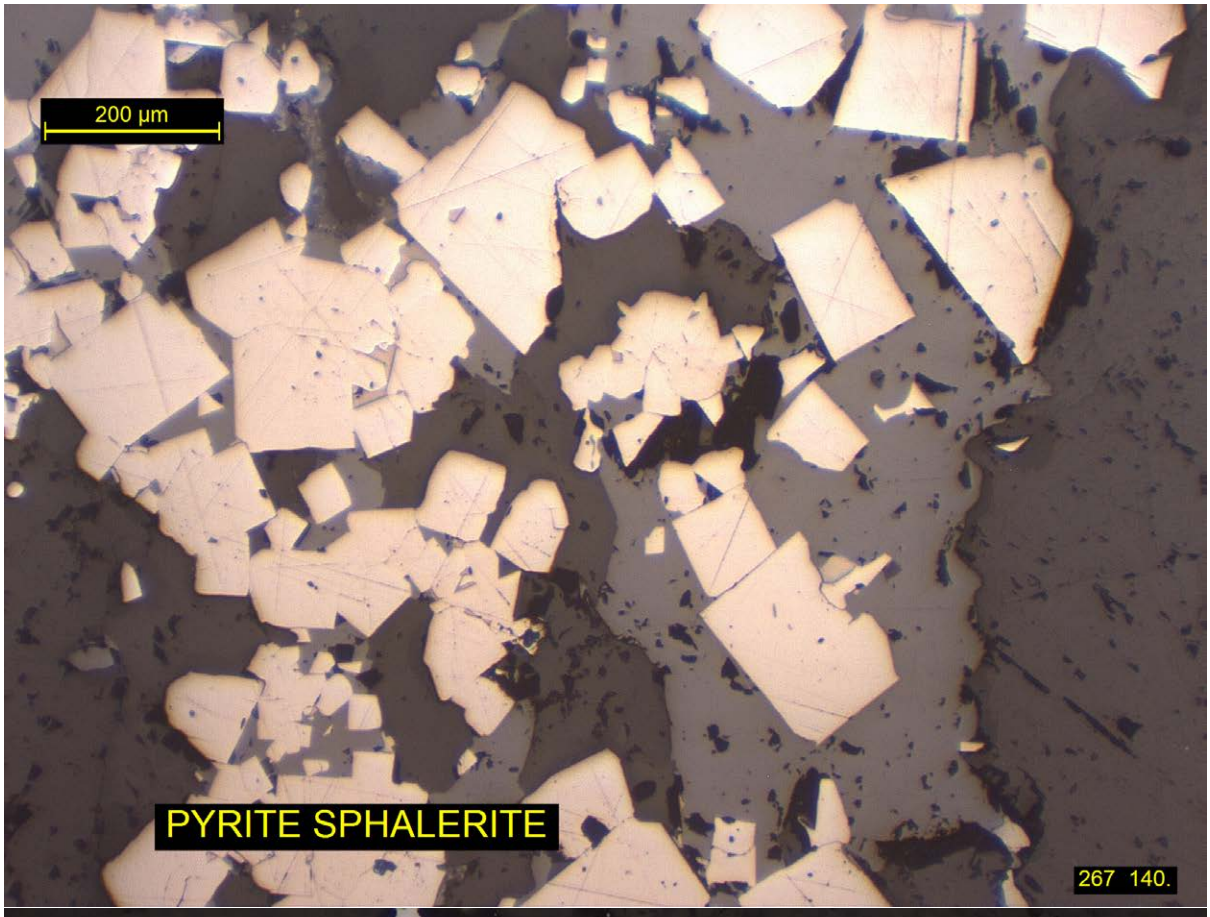
Six examples of gold were detected optically. These were all argentian.

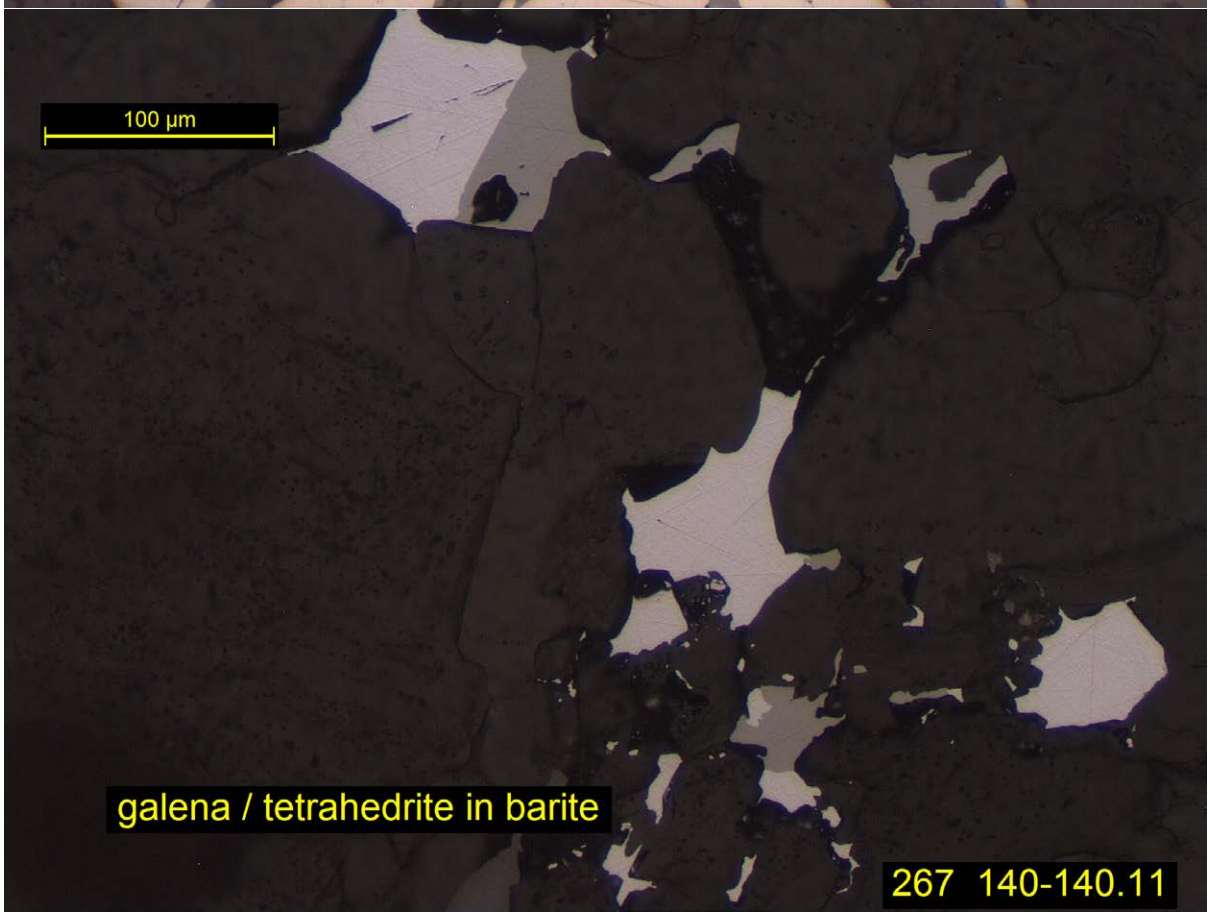
1 3 µm gold in coarse pyrite.
2 20 µm argentian gold associated with chalcopyrite, sphalerite, galena, within coarse pyrites.
3 linear argentian gold of 30 X 10 µm plus fines within the chalcopyrite margin to coarse pyrite
4 5 µm argentian gold attached to chalcopyrite/arsenopyrite inclusion in coarse tetrahedrite
5 40 X 20 µm argentian gold attached to chalcopyrite sphalerite margin with barite
6 50 µm argentian gold in core of coarse pyrite.

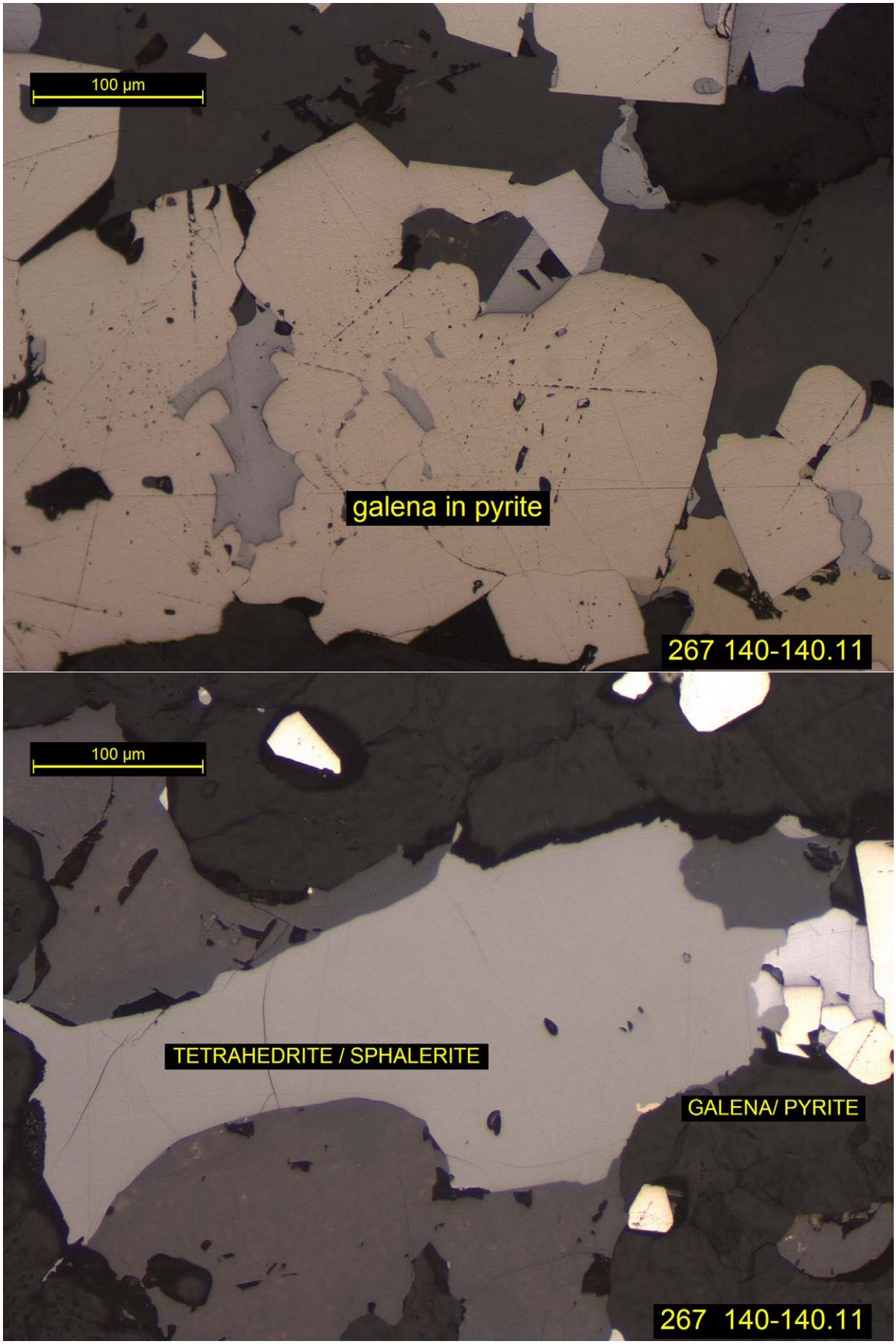


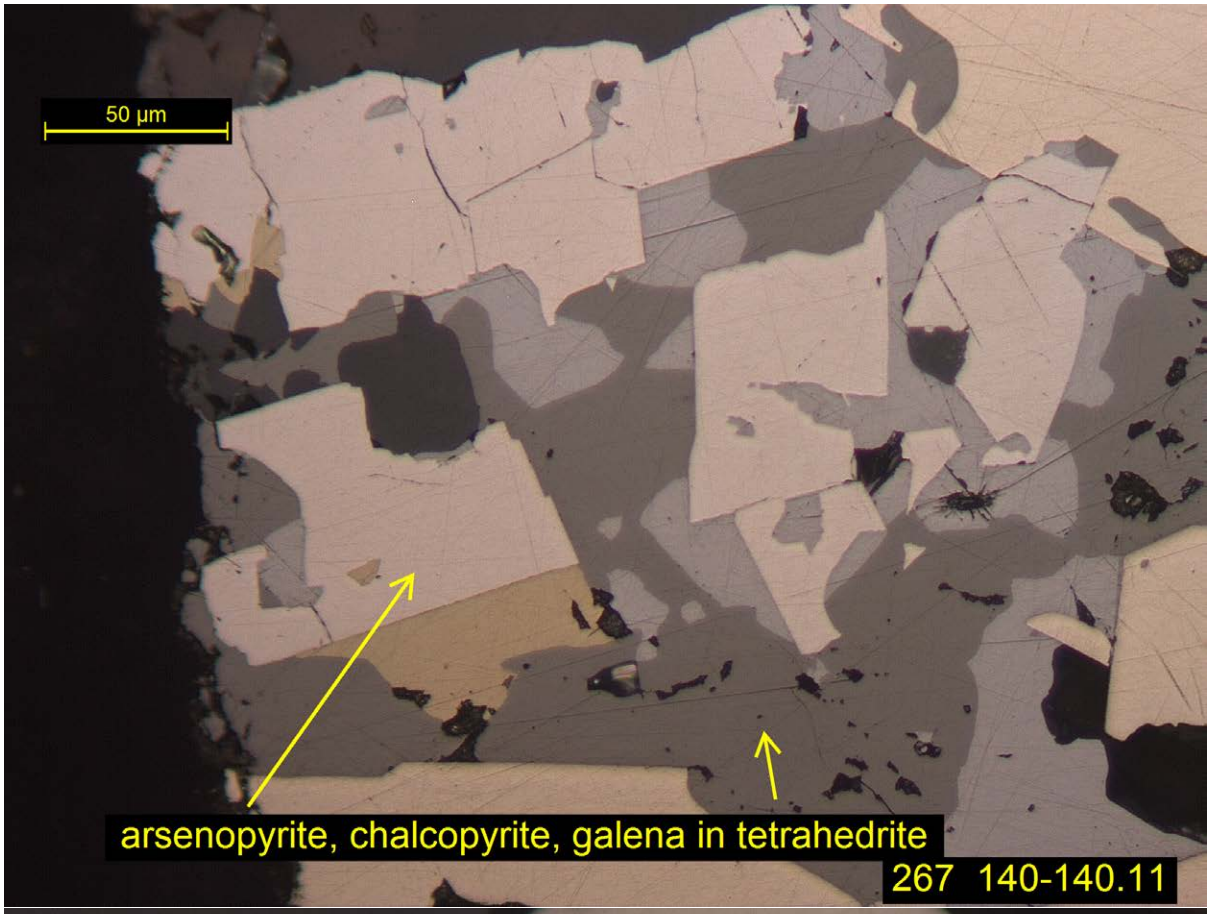

2 mm
CARBONATE/BARITE
SPHALERITE
CHALCOPYRITE
GALENA
PYRITE
267 140-140.11

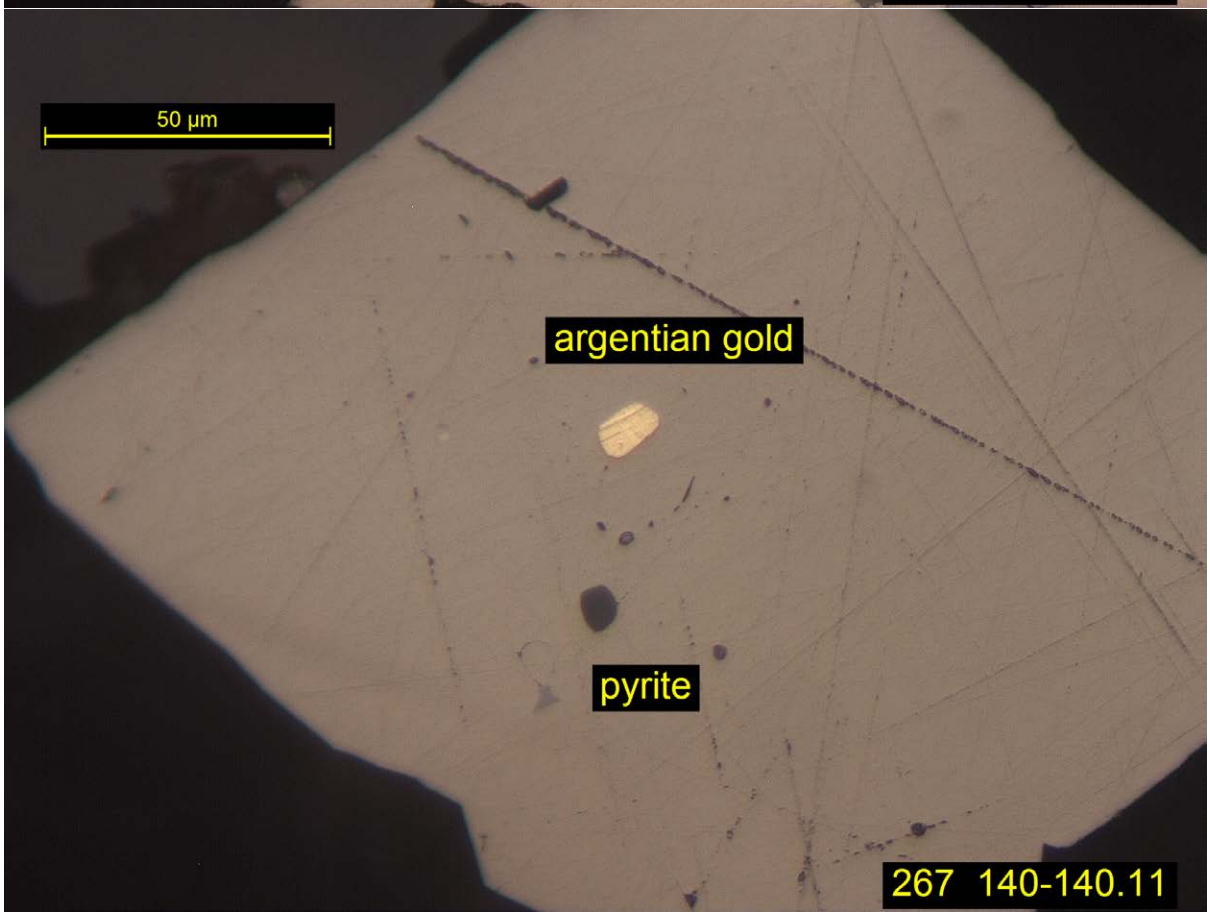

200 µm
sphalerite hosts pyrite galena and chalcopyrite
267 140-140.11
200 µm
chalcopyrite / pyrite
galena/sphalerite/tetrahedrite
267 140-140.11

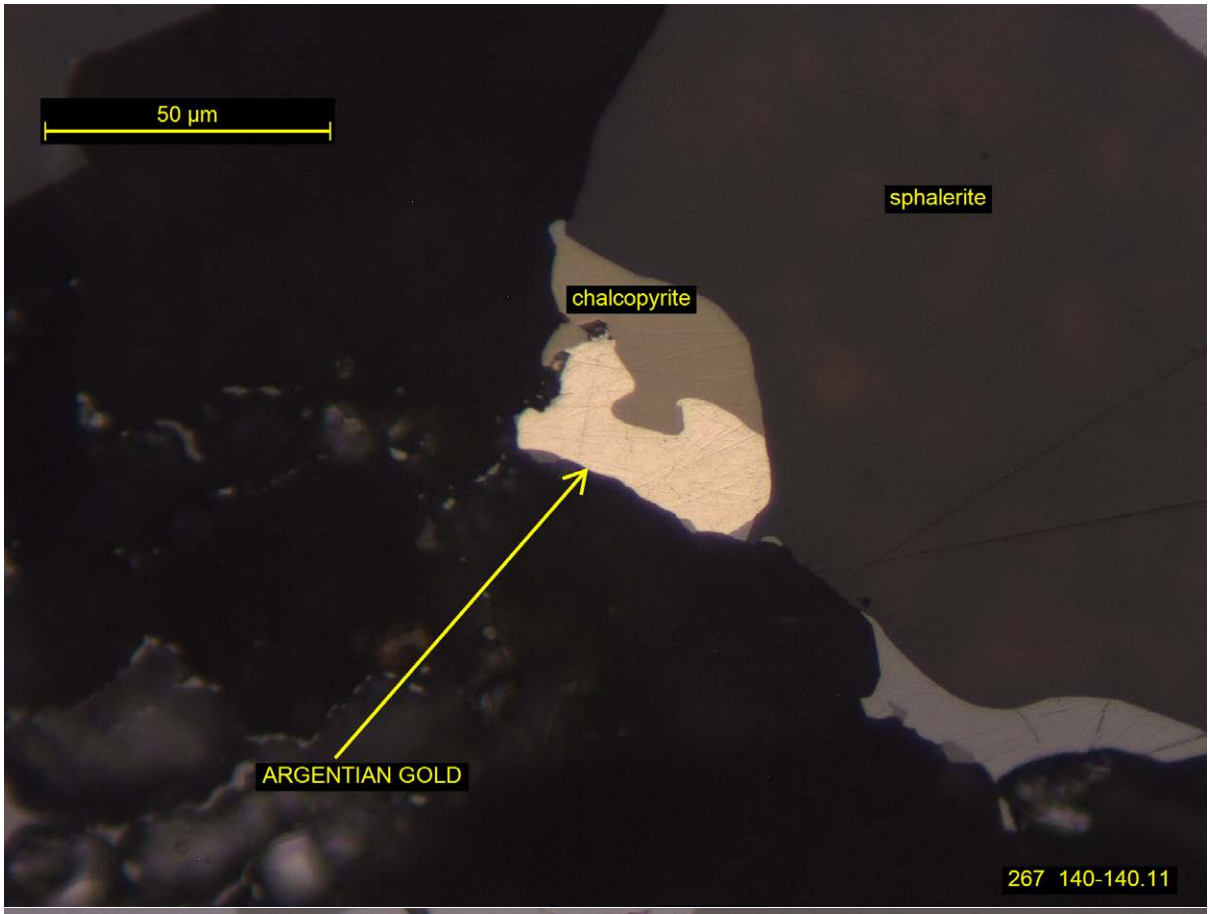

200 µm
PYRITE SPHALERITE
267 140.

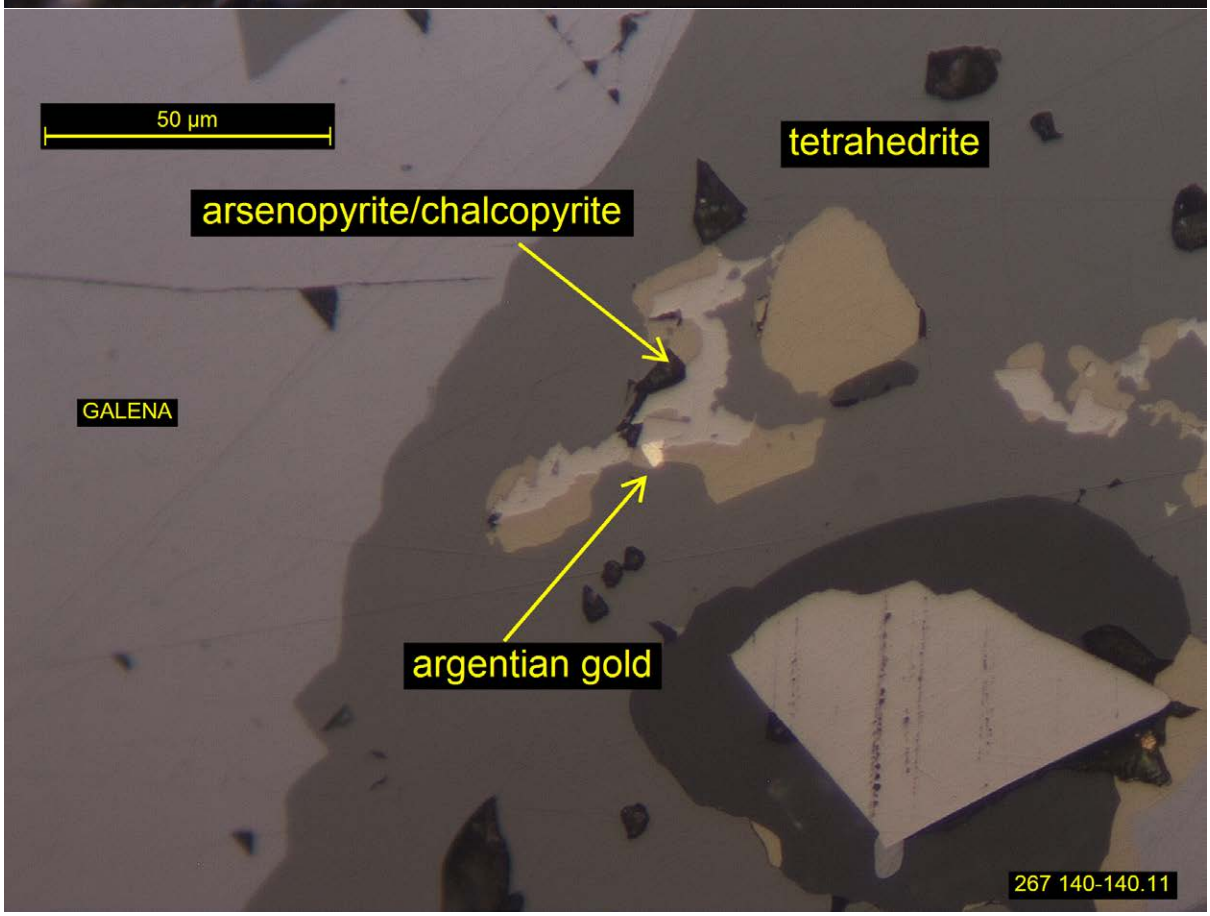

100 µm
galena / tetrahedrite in barite
267 140-140.11

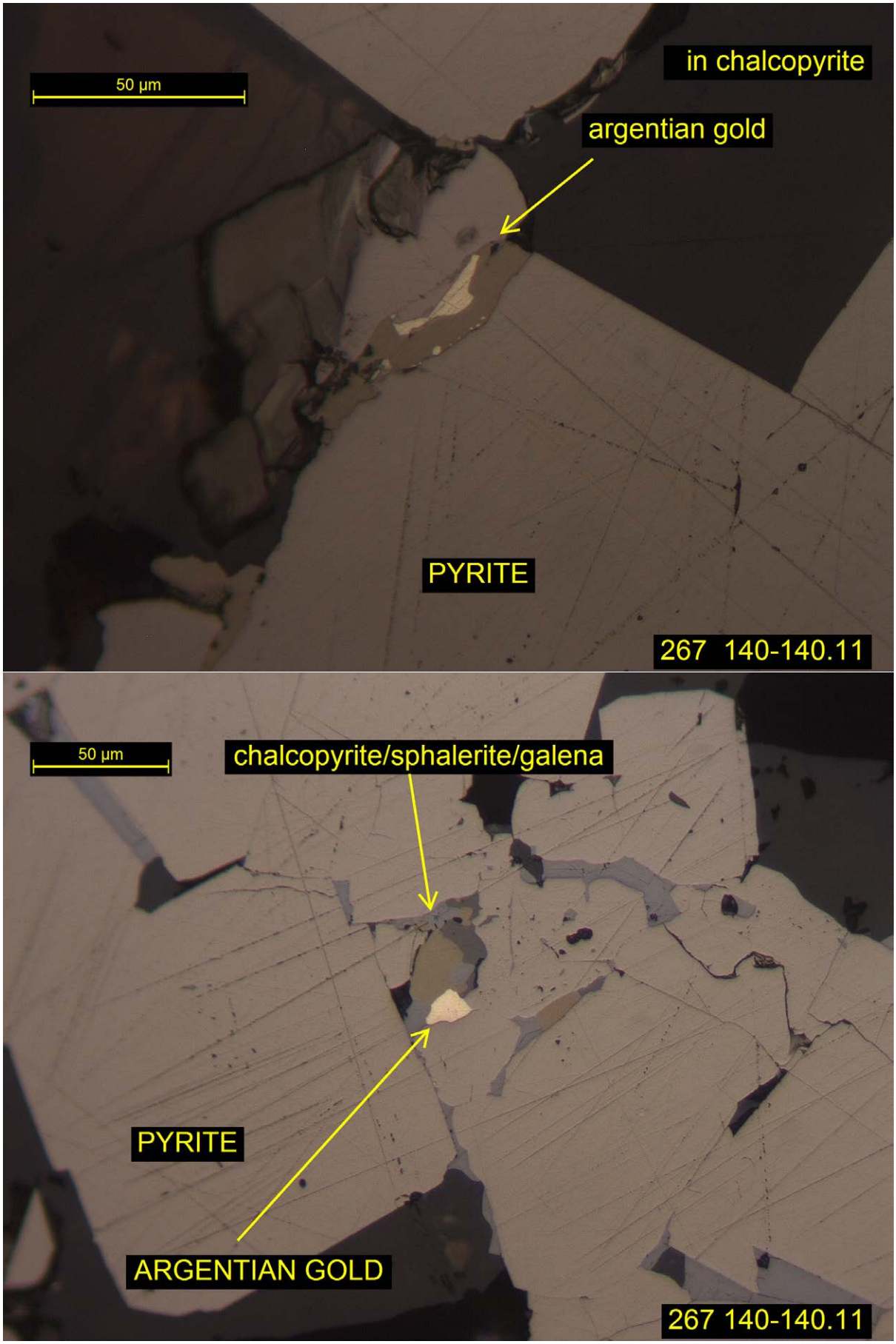

100 µm
galena in pyrite
267 140-140.11
100 µm
TETRAHEDRITE / SPHALERITE
GALENA/ PYRITE
267 140-140.11

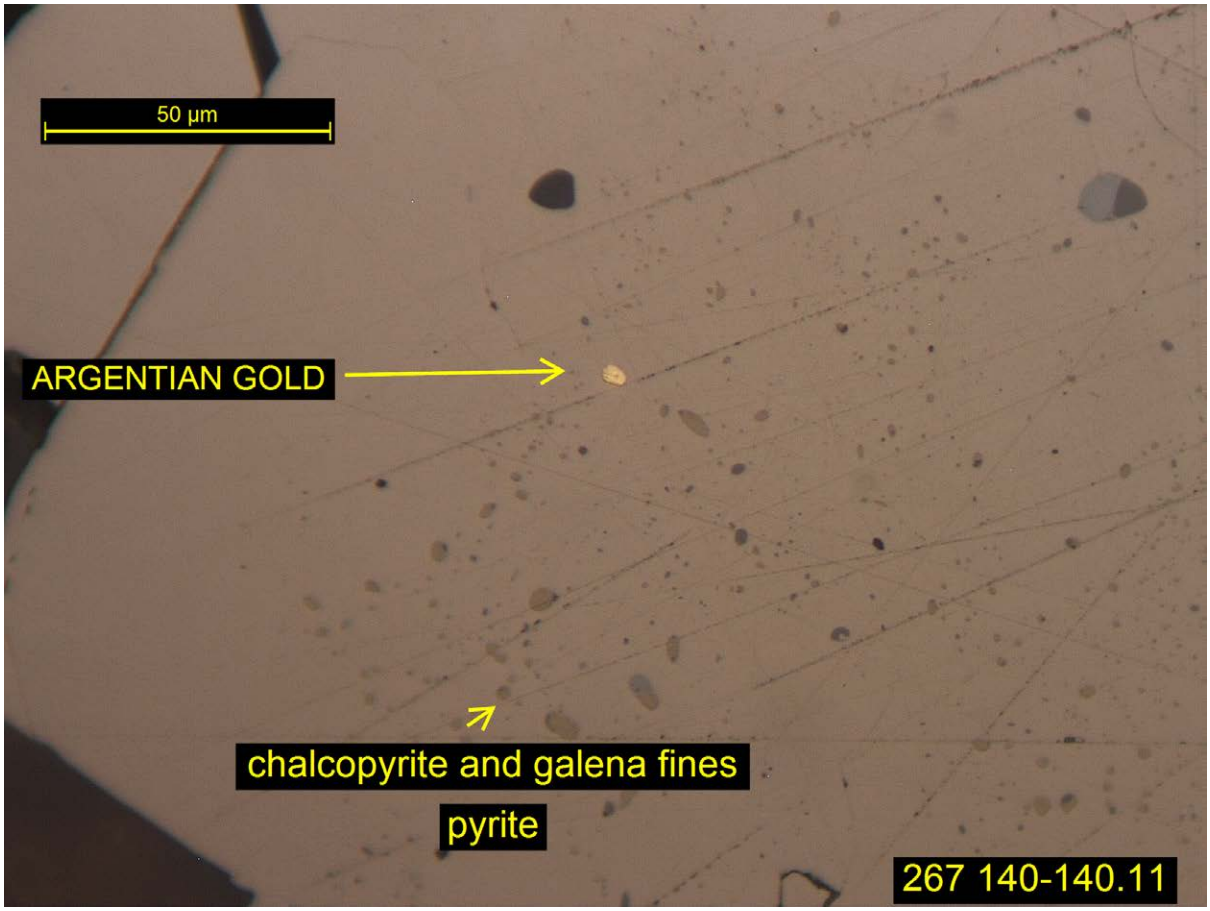

50 µm
arsenopyrite, chalcopyrite, galena in tetrahedrite
267 140-140.11


50 µm
argentian gold
pyrite
267 140-140.11


50 µm
sphalerite
chalcopyrite
ARGENTIAN GOLD
267 140-140.11


50 µm
tetrahedrite
arsenopyrite/chalcopyrite
GALENA
argentian gold
267 140-140.11


50 µm
in chalcopyrite
argentian gold
PYRITE
267 140-140.11
50 µm
chalcopyrite/sphalerite/galena
PYRITE
ARGENTIAN GOLD
267 140-140.11


50 µm
ARGENTIAN GOLD
chalcopyrite and galena fines
pyrite
267 140-140.11

SAMPLE K15-267 154.74-154.86

DRILL CORE

POLISHED THIN SECTION

GANGUE	**40%**
CARBONATE	80%
QUARTZ	20%
ORES	**60%**
PYRITE	80%
TETRAHEDRITE	15%
SPHALERITE	5%
CHALCOPYRITE	1%
ARSENOPYRITE	1%
GALENA	TRACE
ELECTRUM	TRACE

CLASSIFIED AS A TETRAHEDRITE PYRITE CARBONATE ROCK.

The drill core is a semi massive pyrite assemblage showing rough banding and a mostly consistent texture of part coalesced to coalesced pyrite. Much of the pyrite hosts interstitial carbonate (ankerite) and lesser quartz. There are occasional lenses of discontinuous bands dominated by carbonate quartz with fine sulphide inclusions.

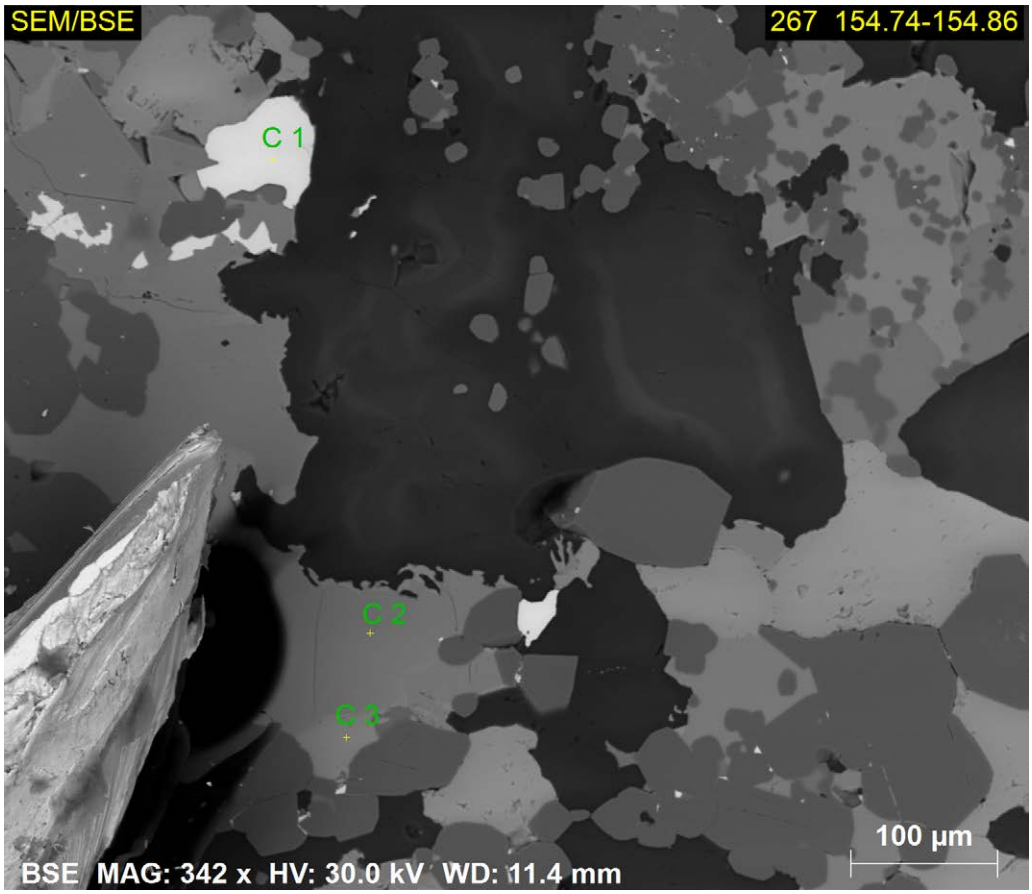
Tetrahedrite is the other significant sulphide occurring partly as allotriomorphic interstitial grains between part coalesced pyrites, the former with very irregular shapes frequently under 20 µm. The tetrahedrite also occurs within carbonate and quartz as plus half millimetre almost monominerallic masses. Uncommonly where tetrahedrite is dominant over included sub 100 µm pyrites, there is also euhedral arsenopyrite and rims of chalcopyrite. Silver was not detected in the tetrahedrite (SEM).

The galena is restricted to fines in pyrite and traces internally in pyrite aggregates. Chalcopyrite occurs uncommonly within sphalerite.

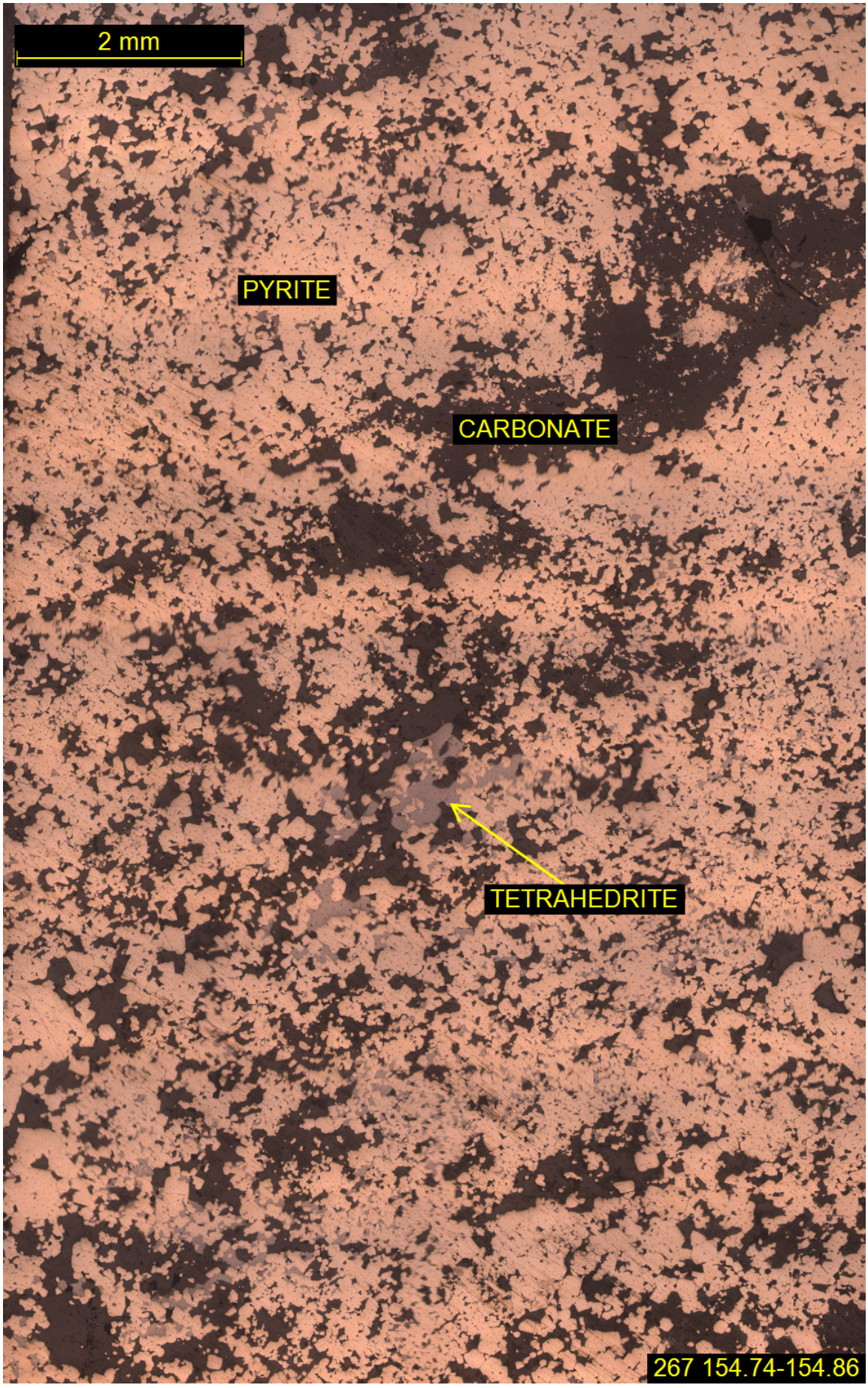
GOLD

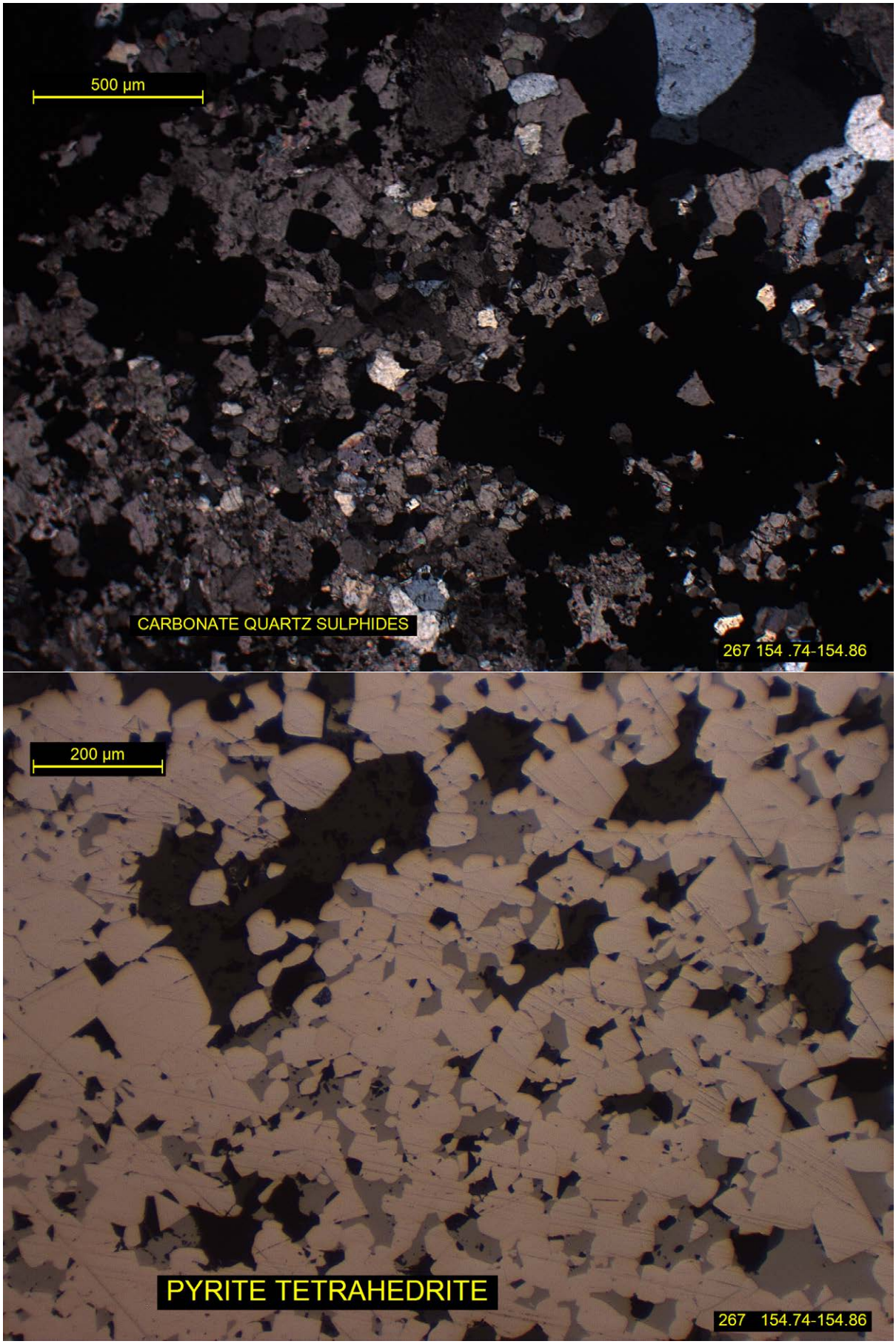
One 65 um example of silver bearing gold (16-25% silver SEM) was detected optically. This occurs at the contact between carbonate and several sulphides including arsenopyrite.

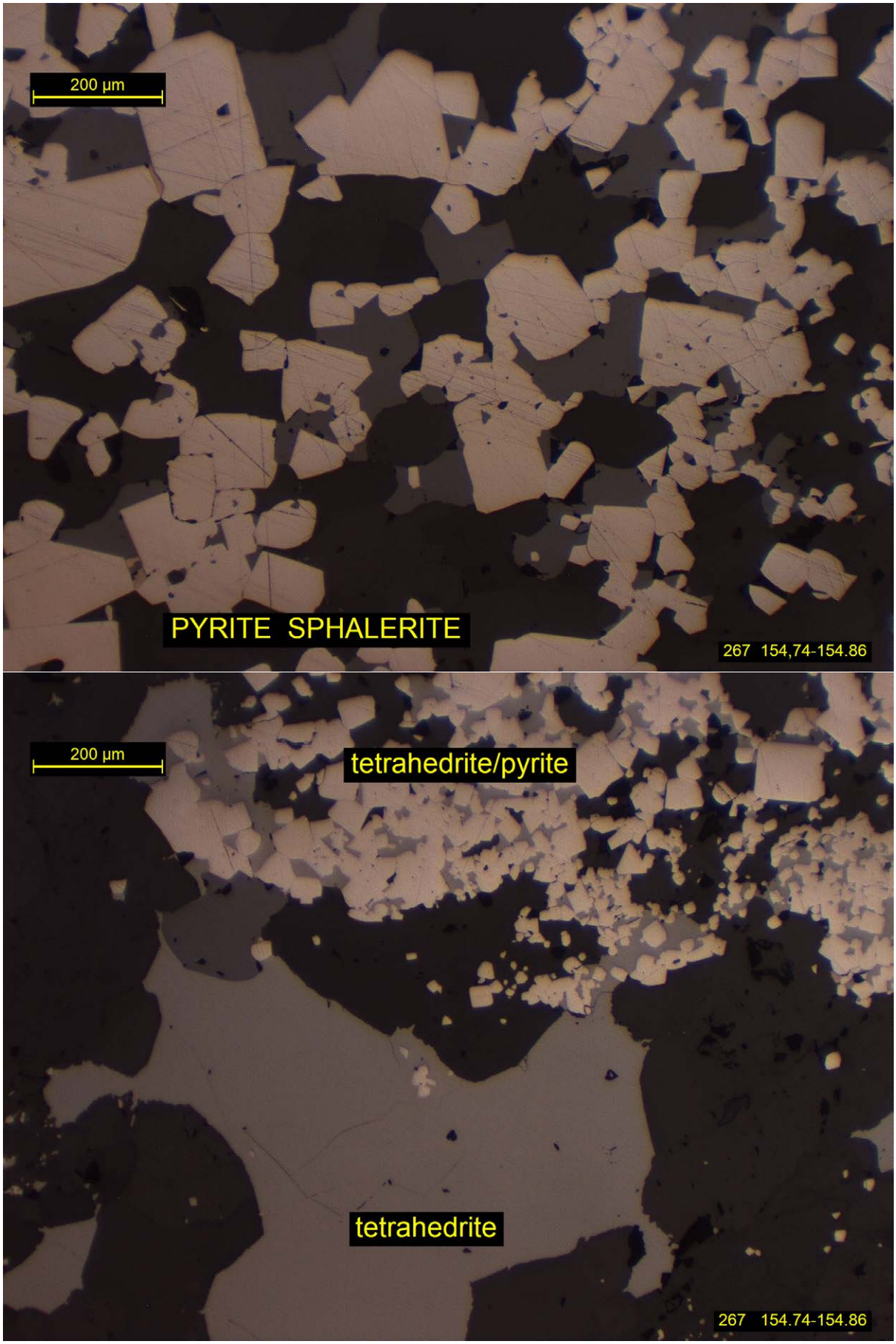
SEM/EDS ANALYSES

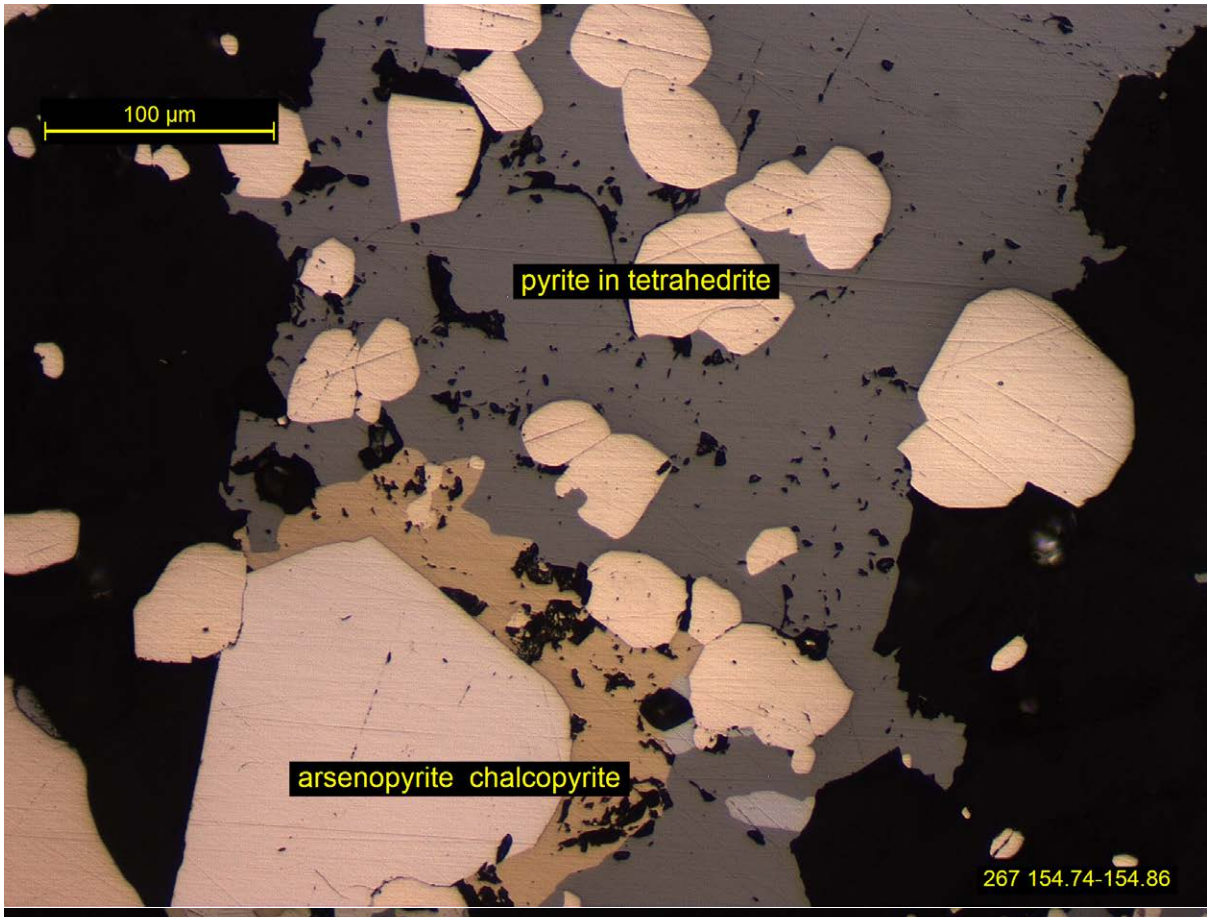


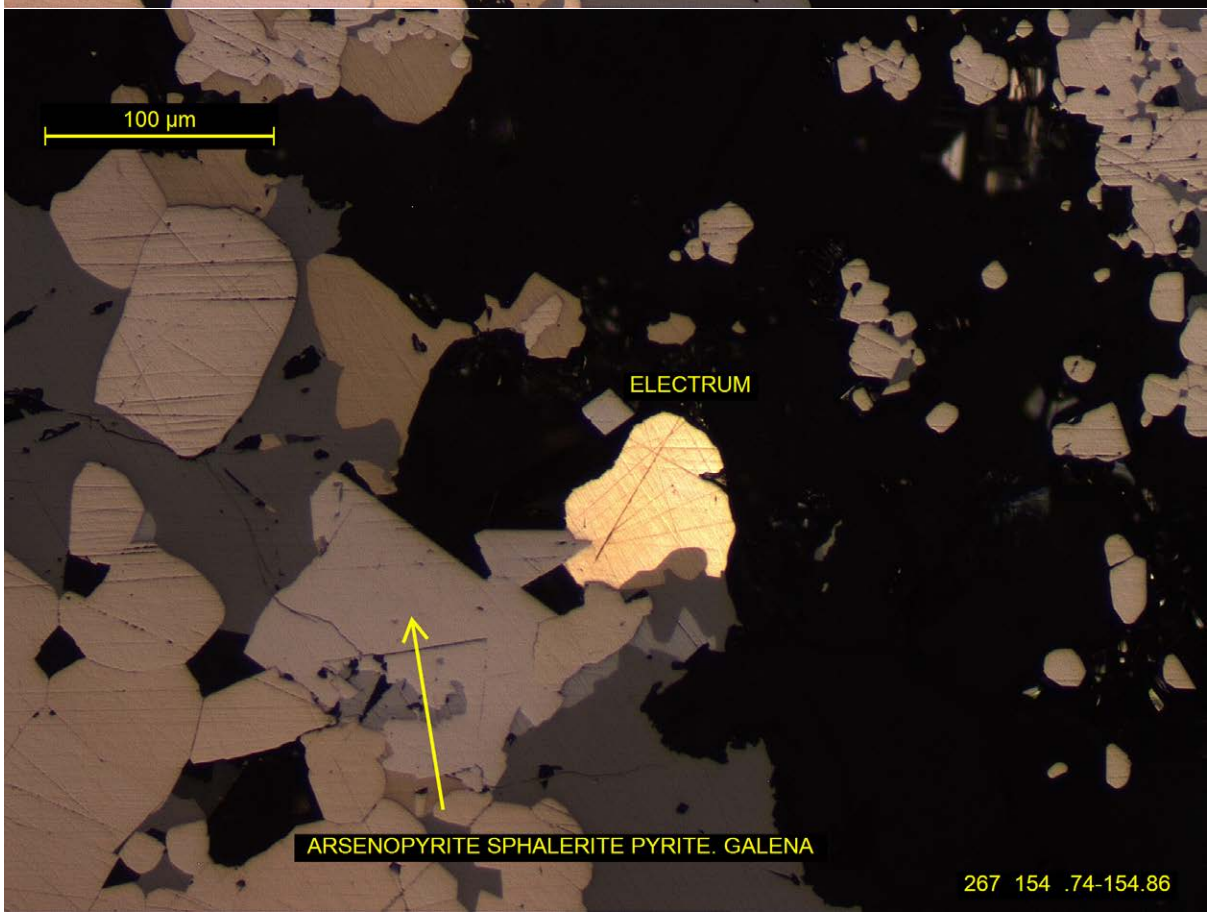
	S	Fe	Cu	Zn	As	Ag	Sb	Au	BaO	SO3	
C 1						16.4		83.6			ARGENTIAN GOLD
C 2	24	6.1	41.1	3.2	12.3	1.3	12				TETRAHEDRITE
C 3									64.6	35.4	BARITE


2 mm
PYRITE
CARBONATE
TETRAHEDRITE
267 154.74-154.86


500 µm
CARBONATE QUARTZ SULPHIDES
267 154 .74-154.86
200 µm
PYRITE TETRAHEDRITE
267 154.74-154.86


200 µm
PYRITE SPHALERITE
267 154,74-154.86
200 µm
tetrahedrite/pyrite
tetrahedrite
267 154.74-154.86


100 µm
pyrite in tetrahedrite
arsenopyrite chalcopyrite
267 154.74-154.86


100 µm
ELECTRUM
ARSENOPYRITE SPHALERITE PYRITE. GALENA
267 154 .74-154.86

SAMPLE K15-273 98-98.12

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
CARBONATE	DOMINANT
SERICITE	MINOR
ORES	**90%**
PYRITE	70%+
PYRRHOTITE (MARCASITE)	20%
CHALCOPYRITE	5%
SPHALERITE	2%
MAGNETITE	TRACE
GALENA	TRACE

CLASSIFIED AS MASSIVE PYRRHOTITE PYRITE ORE CONTAINING CHALCOPYRITE AND LOW SPHALERITE.

This is a low grade massive sulphide sample with about 10% of interstitial rounded carbonate (siderite SEM) in a matrix of fine sericite.

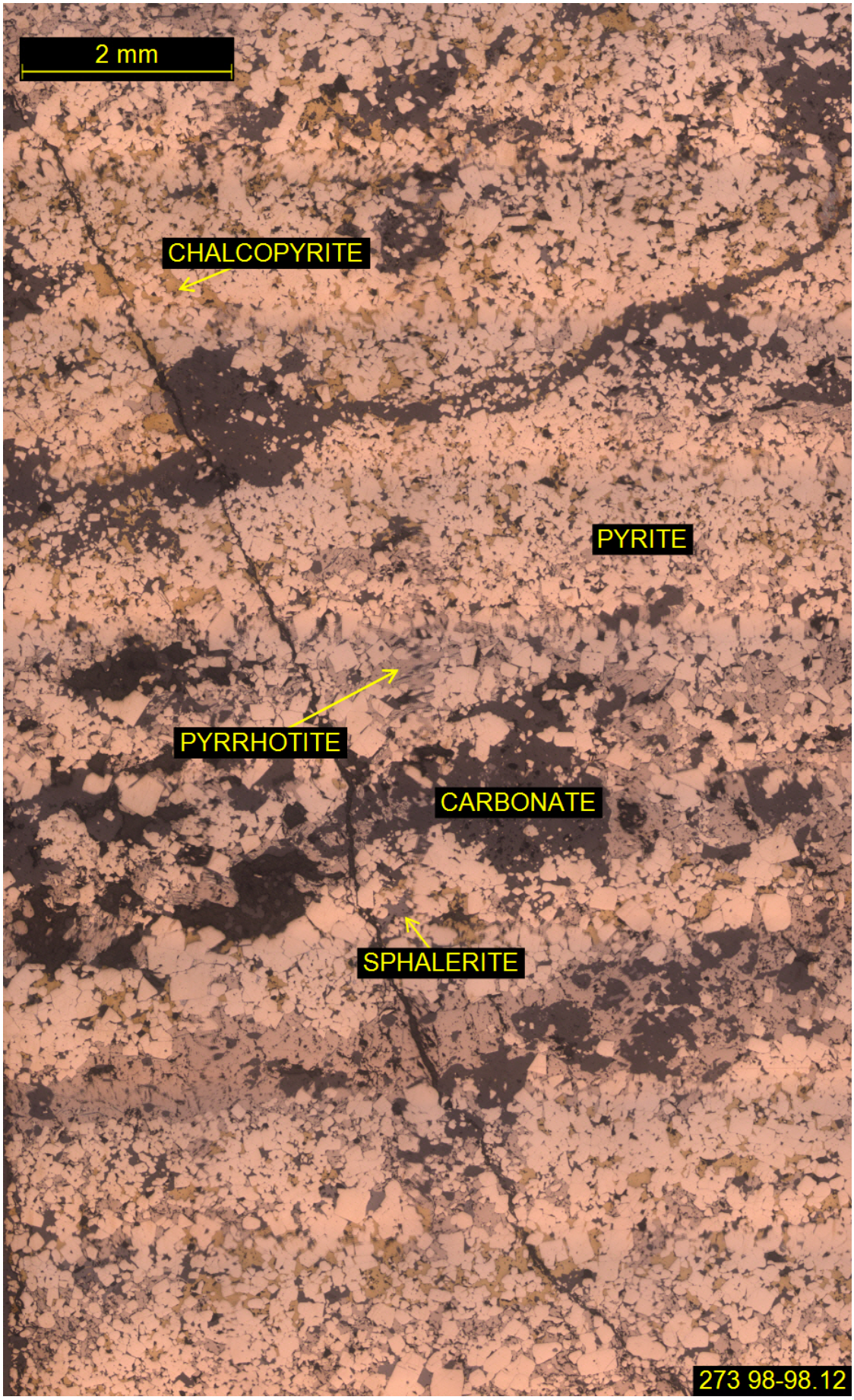
Pyrite is consistent throughout as semi coalesced to massive aggregates of euhedral pyrite with grainsizes mainly between 100 and 200 µm.

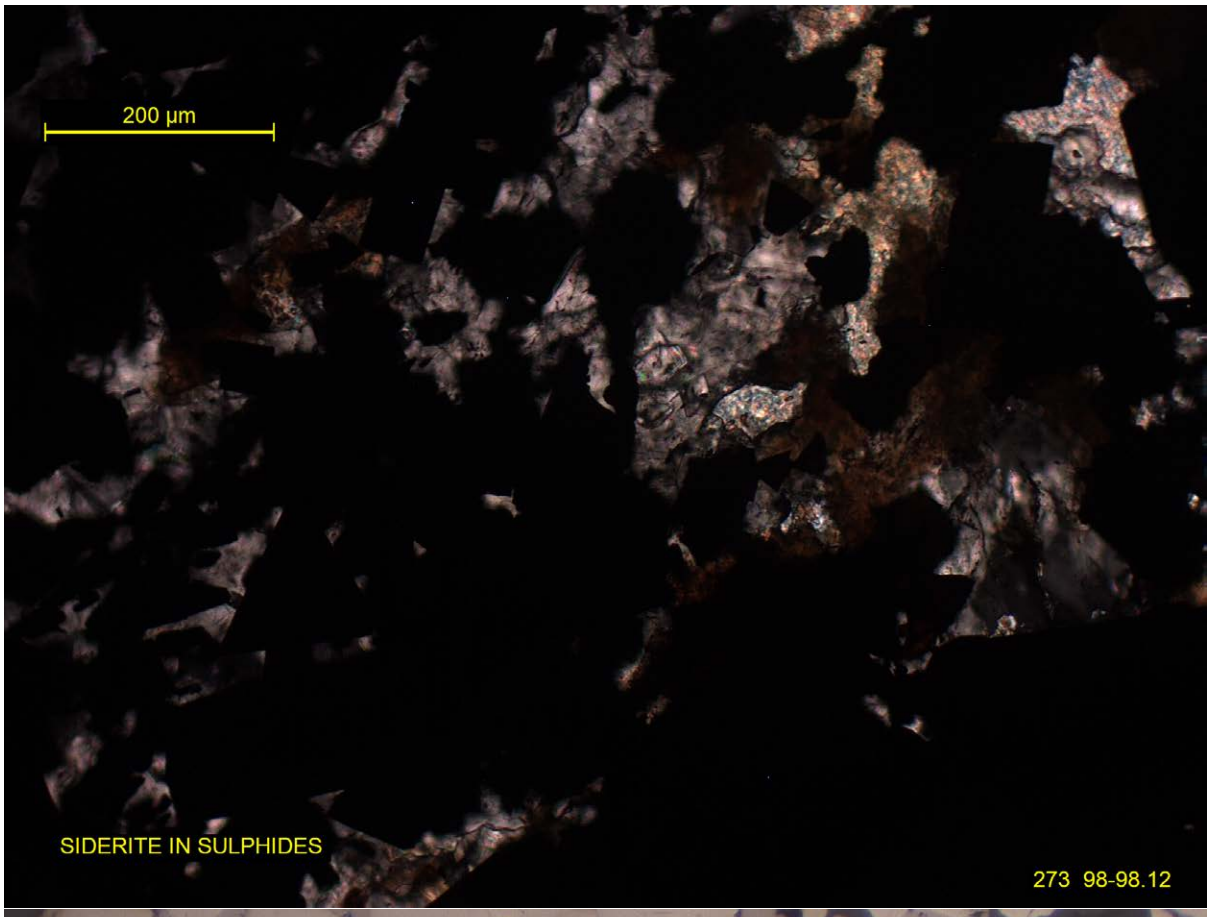
Major part of this pyrite is also accompanied by coarser pyrrhotite. In parts of the slide this pyrrhotite is part altered to a fibrolamellar marcasite, or is completely replaced.

Chalcopyrite is the major valuable ore mineral, that uncommonly is the main cement to part consolidated pyrite concentrations. Liberation sizes of chalcopyrite are less than 100 µm.

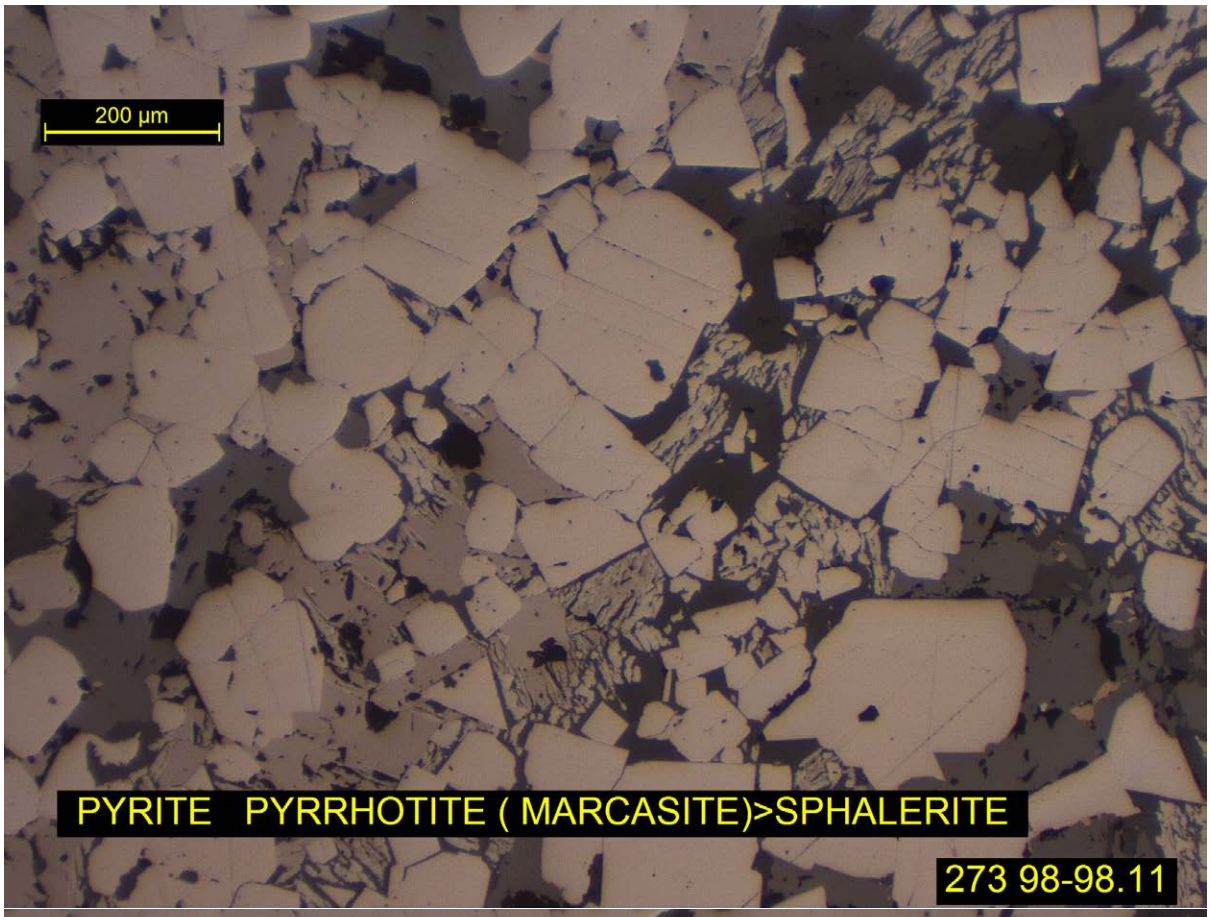
Rarely sphalerite is present as a matrix to the pyrite concentrations of similar character to the chalcopyrite. Rare galena is associated with the sphalerite.

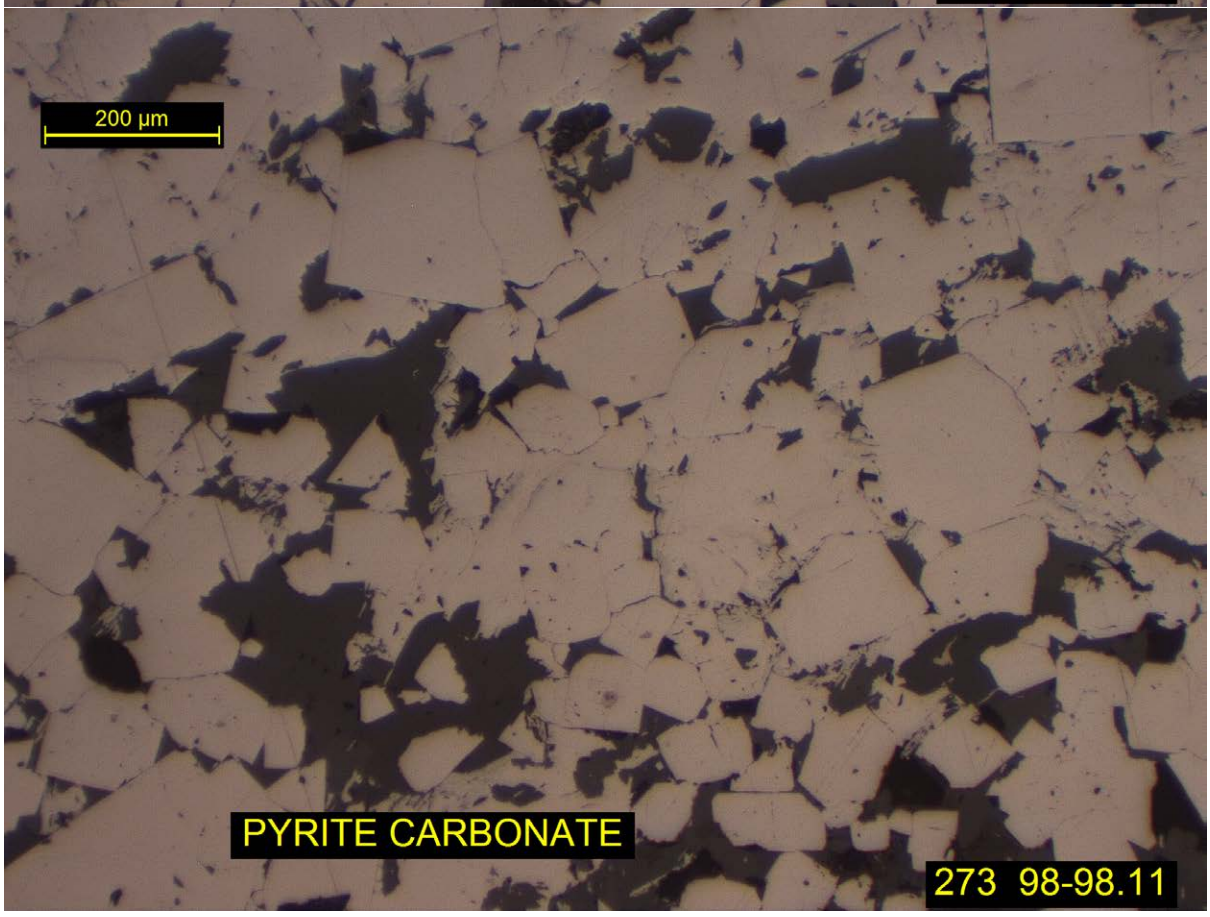
Relict habit magnetite was an uncommon component of the carbonate matrix, separate from the sulphides.

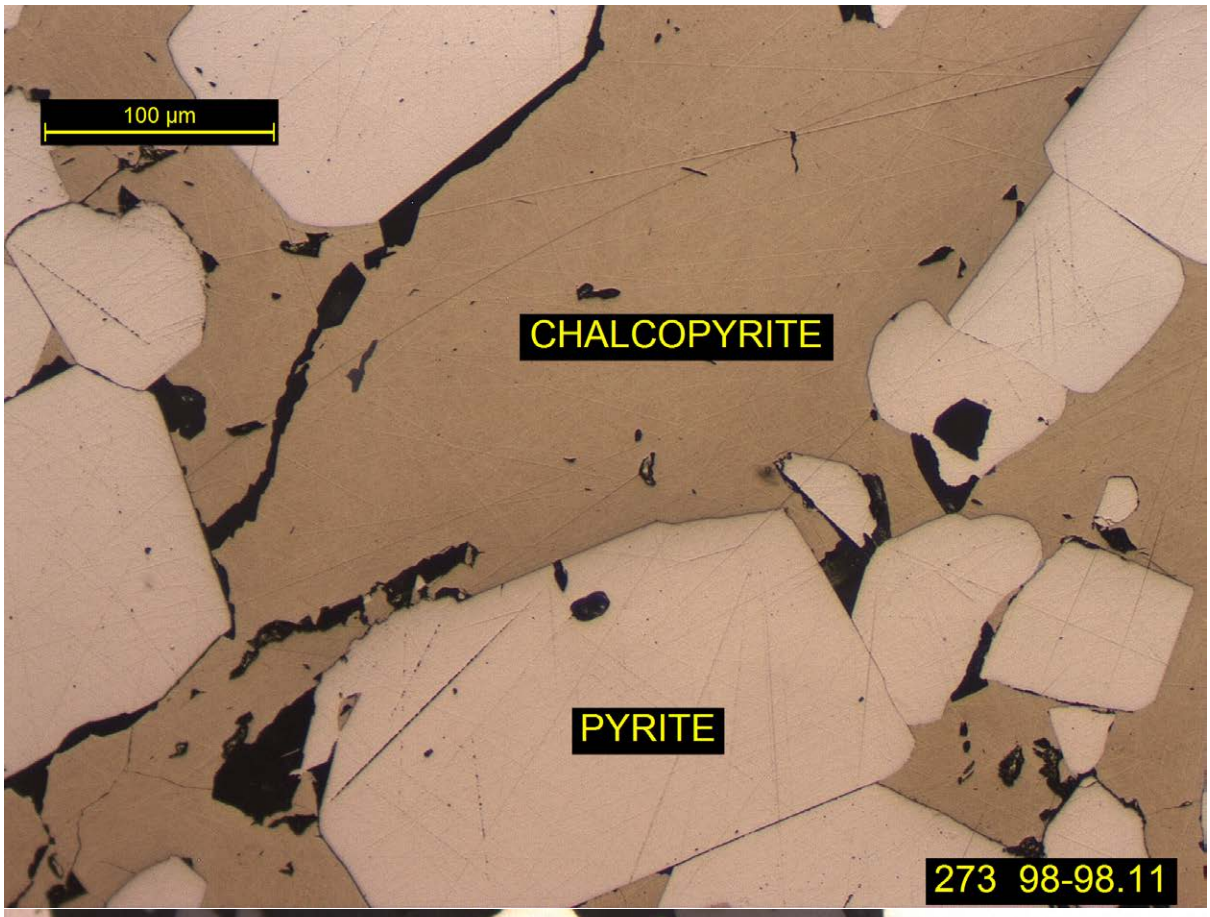

2 mm
CHALCOPYRITE
PYRITE
PYRRHOTITE
CARBONATE
SPHALERITE
273 98-98.12

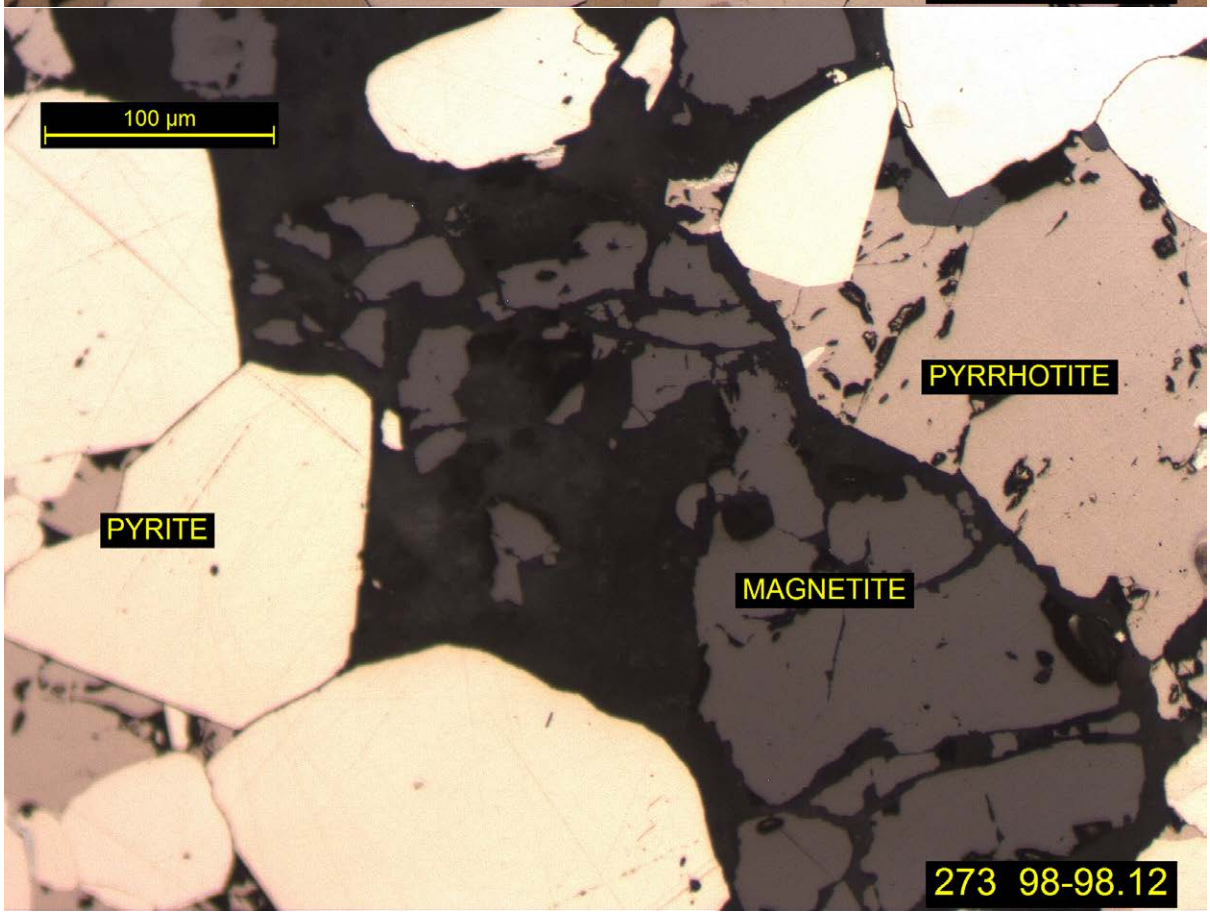

200 µm
SIDERITE IN SULPHIDES
273 98-98.12

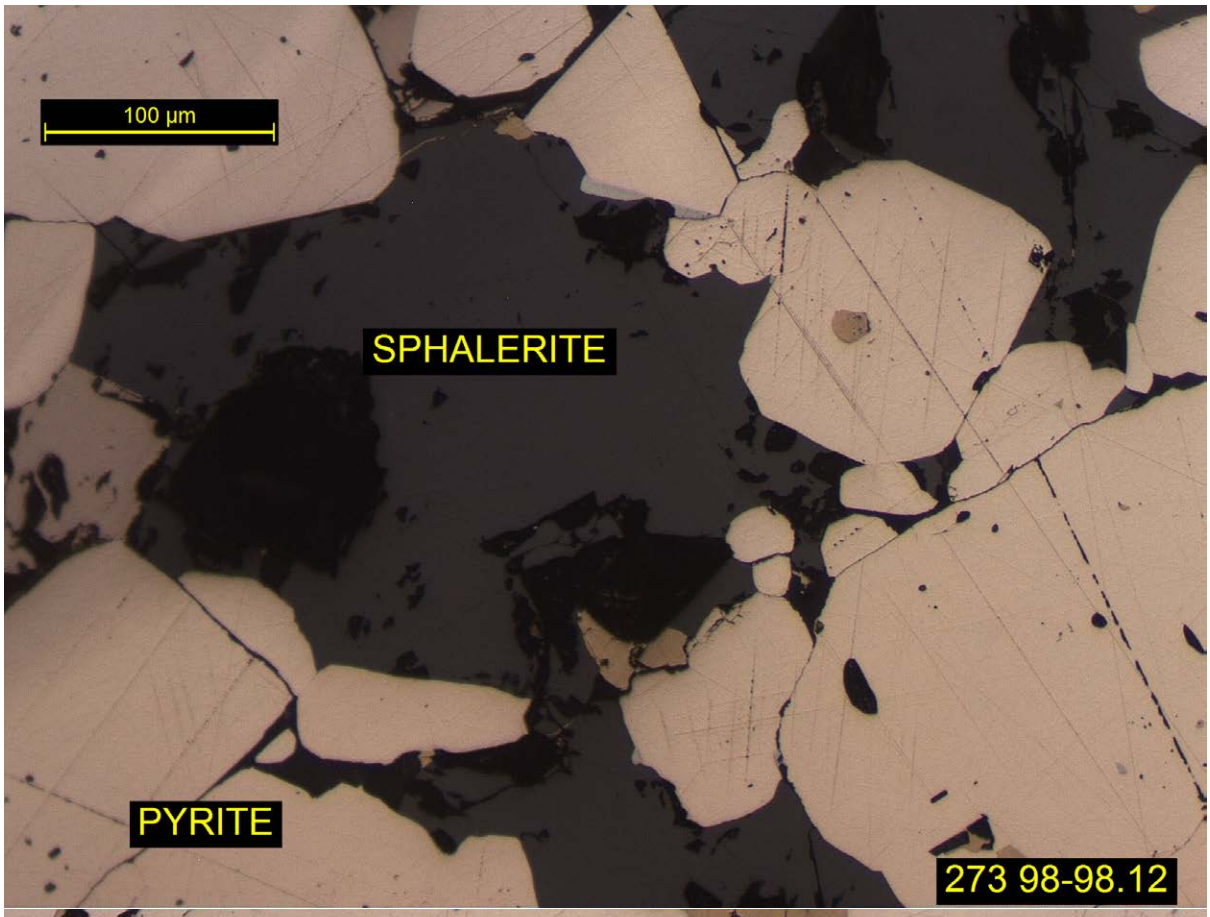

200 µm
PYRITE PYRRHOTITE CHALCOPYRITE
273 98.12

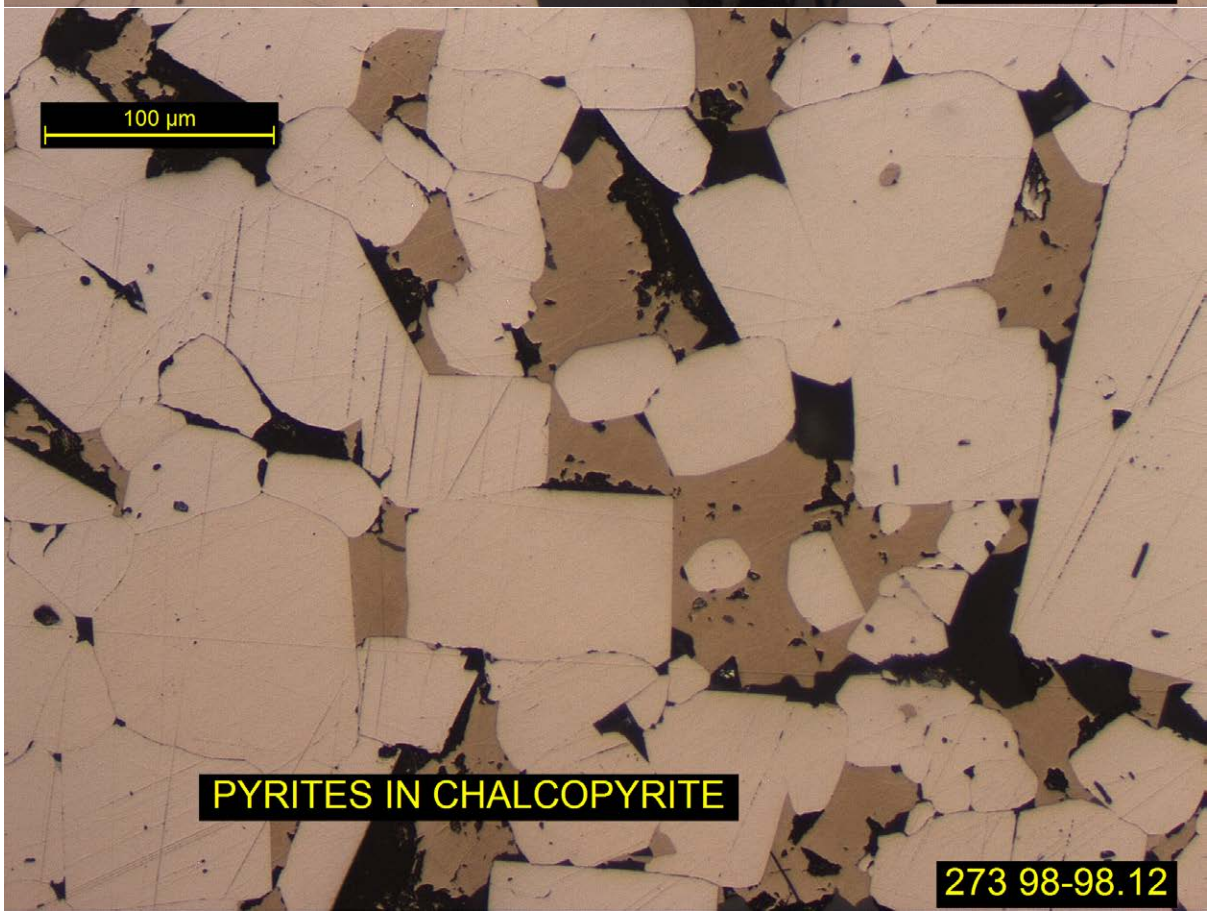

200 µm
PYRITE PYRRHOTITE (MARCASITE)>SPHALERITE
273 98-98.11

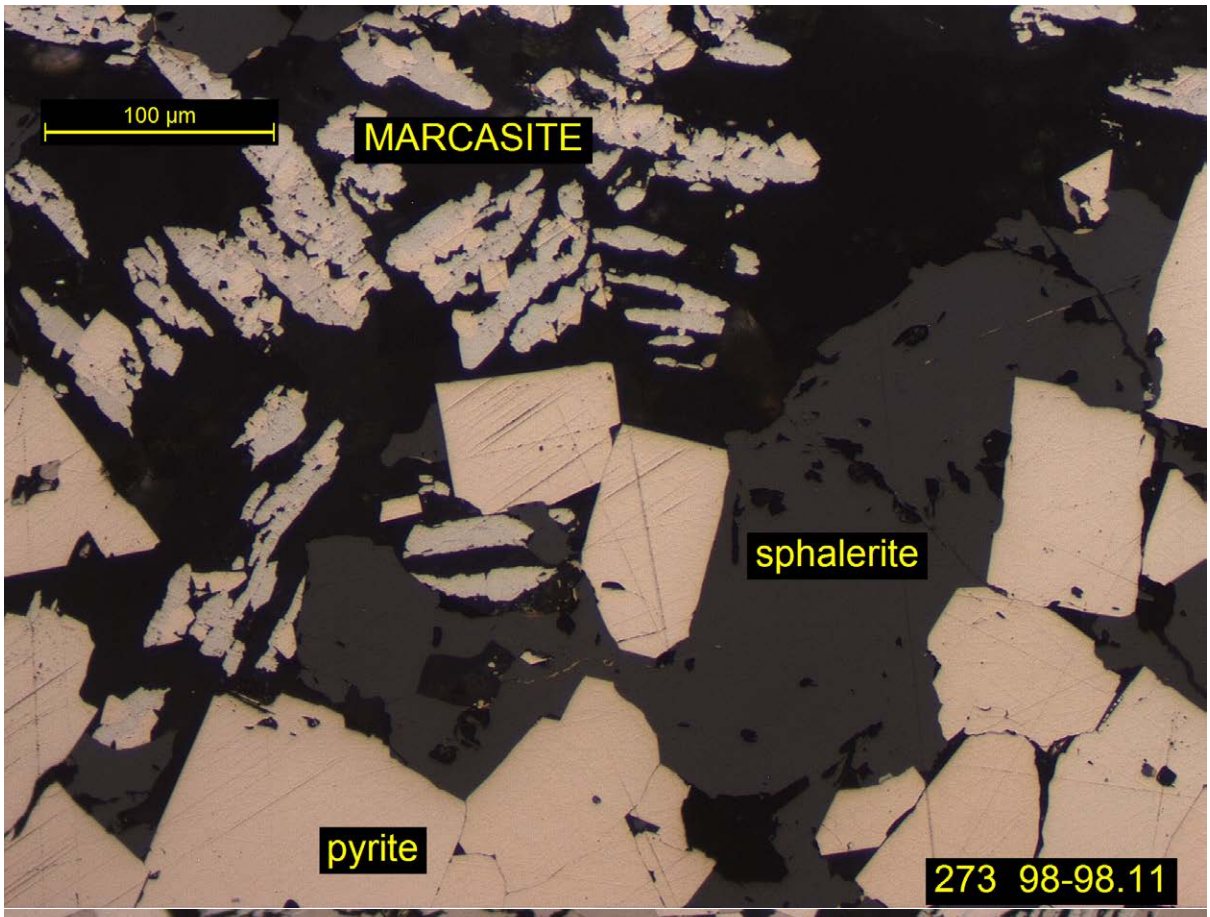

200 µm
PYRITE CARBONATE
273 98-98.11

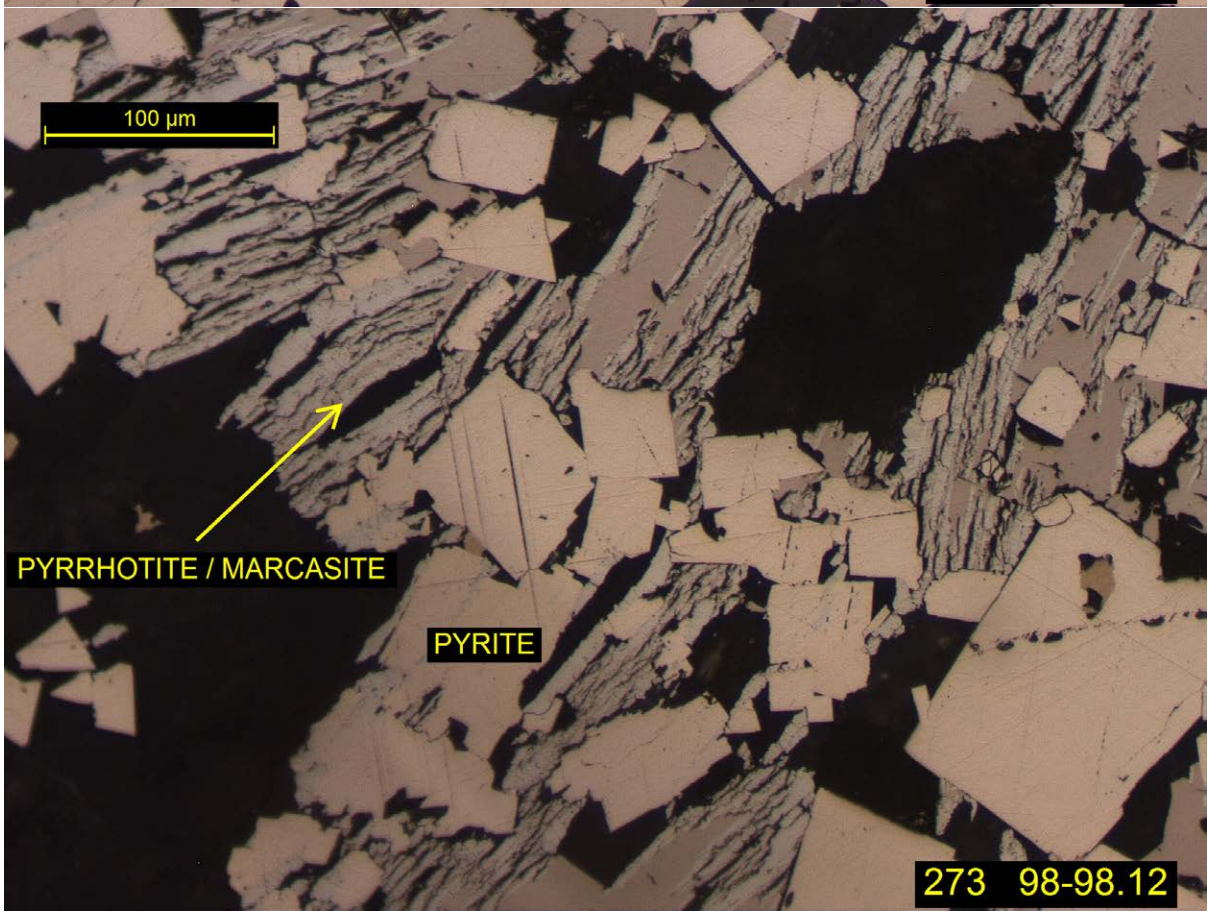

100 µm
CHALCOPYRITE
PYRITE
273 98-98.11


100 µm
PYRRHOTITE
PYRITE
MAGNETITE
273 98-98.12


100 µm
SPHALERITE
PYRITE
273 98-98.12


100 µm
PYRITES IN CHALCOPYRITE
273 98-98.12


100 µm
MARCASITE
sphalerite
pyrite
273 98-98.11


100 µm
PYRRHOTITE / MARCASITE
PYRITE
273 98-98.12

SAMPLE K15-274 85.15-85.28

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10%**
QUARTZ	55%+
CARBONATE	35%
CLAY?	<5%
ORES	**90%**
PYRITE	+75%
SPHALERITE	20%
CHALCOPYRITE	1%
GALENA	1%
ARSENOPYRITE	1%
TETRAHEDRITE	TRACE
MAGNETITE	TRACE
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A SPHALERITE PYRITE ORE.

The sample is a massive association of dominant euhedral pyrite clusters and matrix sphalerite**.** The gangue consists of a disseminated interstitial quartz and carbonate (siderite SEM) with dimensions from 50 to 400 µm. At one termination, there is a little secondary? clay.

The pyrite forms a quite regular dense aggregation sometimes coalesce into massive areas of euhedral crystals mainly between 100 and 200 µm. The pyrites contain a little sphalerite as inclusions.

The sphalerite (6% iron, SEM) in much of the slide is a consistent matrix to the dominant pyrite that occasionally becomes equal in volume, with areas exceeding 400 µm across.

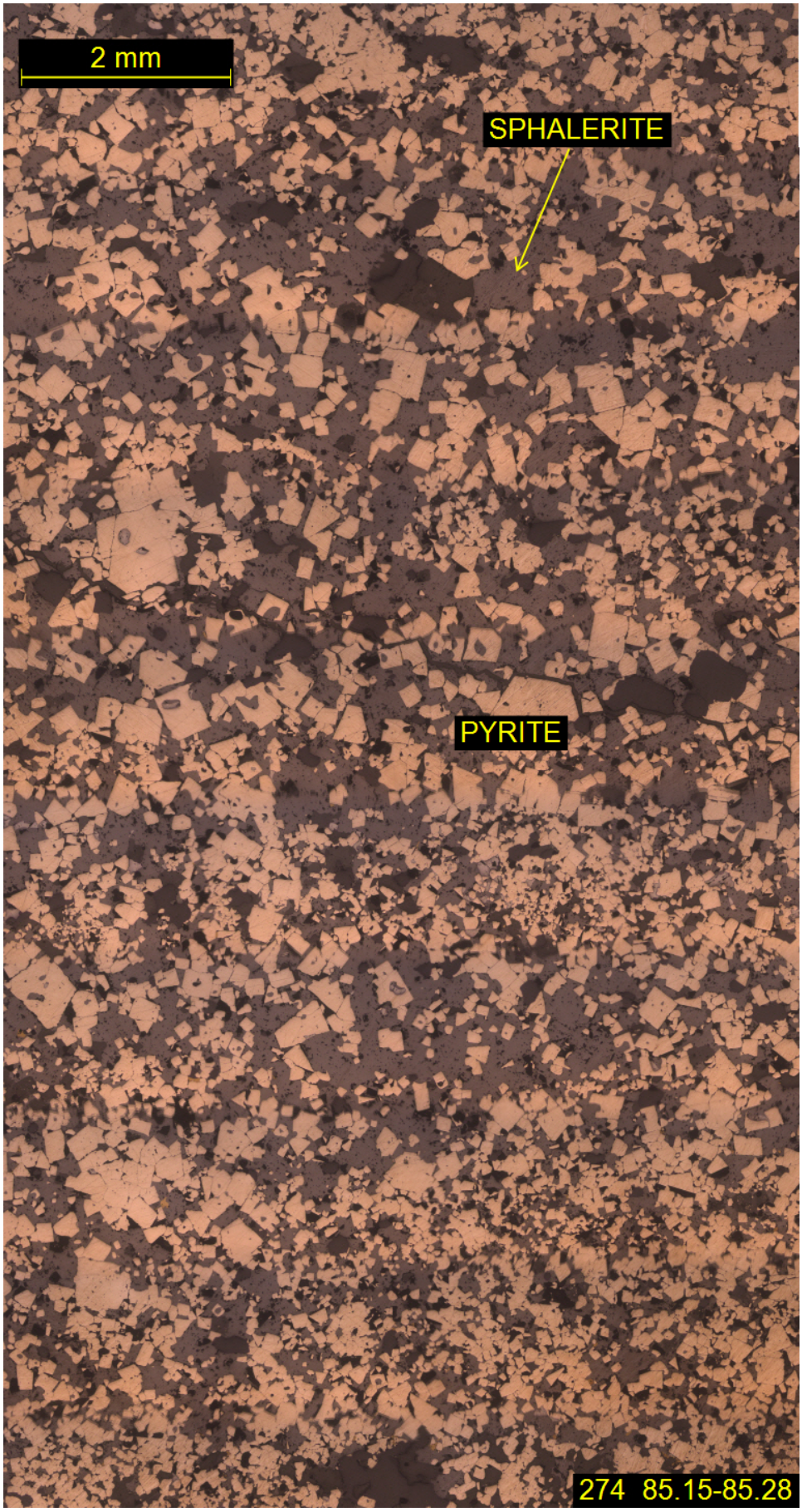
Galena is present as a sporadic but rare associate of the sphalerite, uncommonly locally dominating. Chalcopyrite has a similar distribution, with rare areas of major chalcopyrite matrix to pyrite. In one of these locations there was also fine tetrahedrite. Arsenopyrite was a rare but coarse composite with similar pyrite.

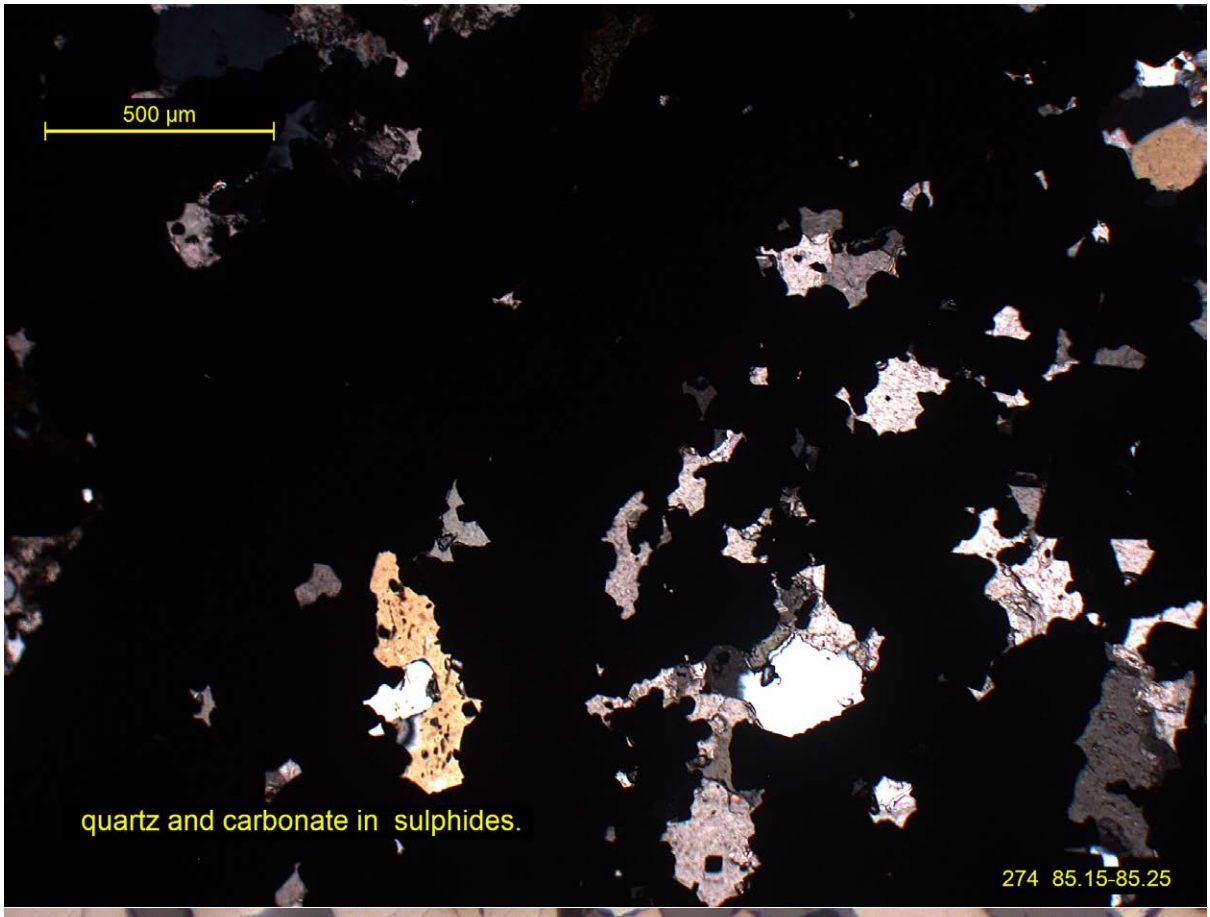
There was a trace of fine magnetite within the siderite.

GOLD

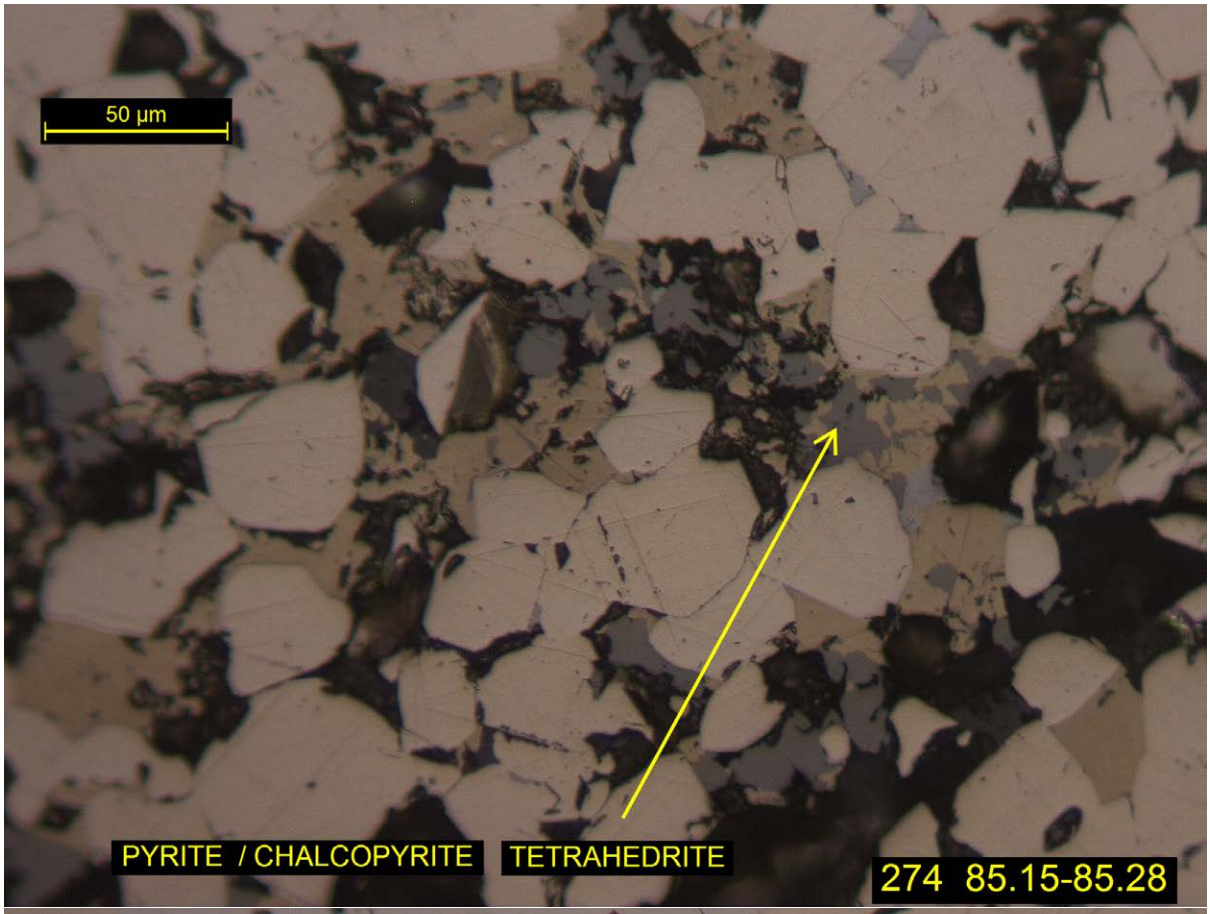
Two occurrences of gold were detected optically. These were argentian.

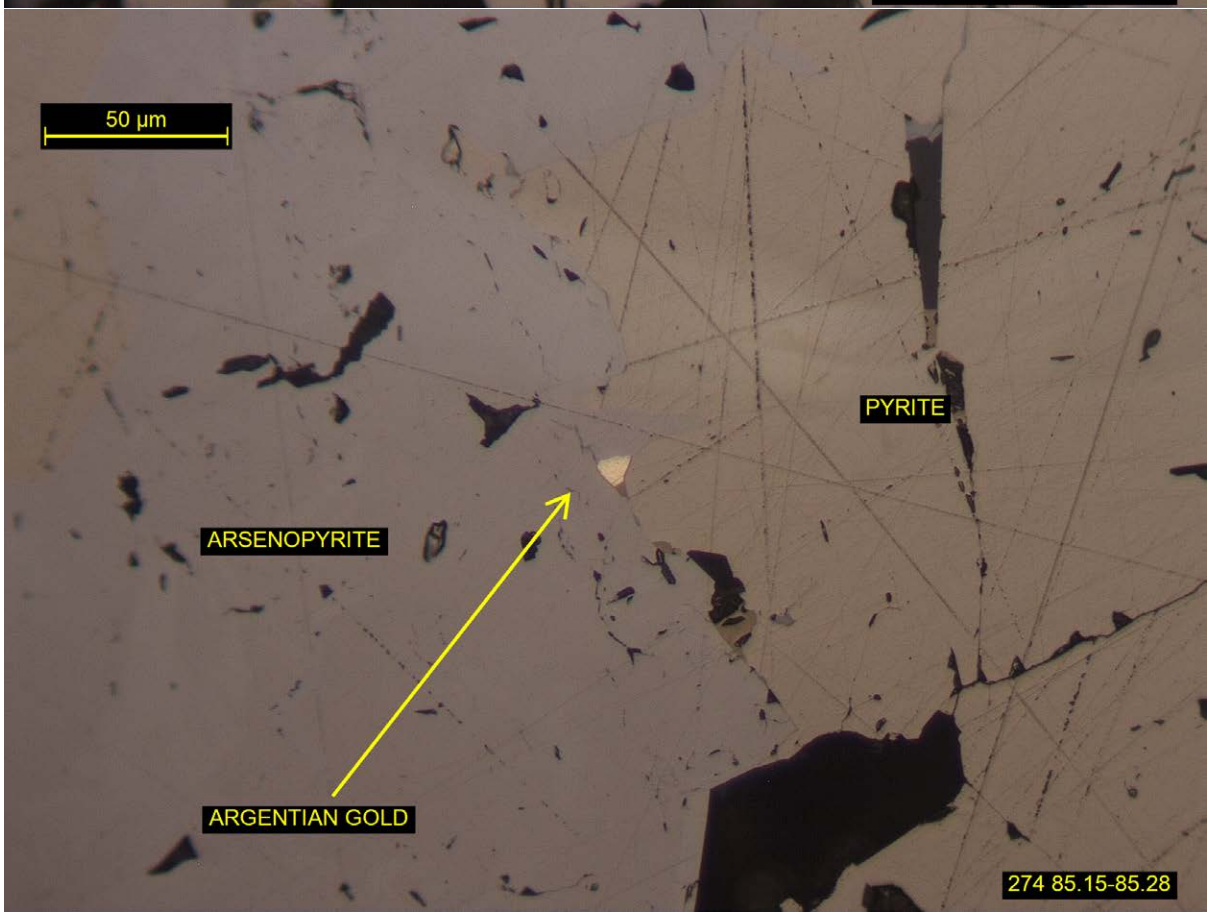
1. An 8 µm argentian gold on the margin of coarse arsenopyrite and pyrite.
2. A 50 µm argentian gold at the contact between pyrite and sphalerite.

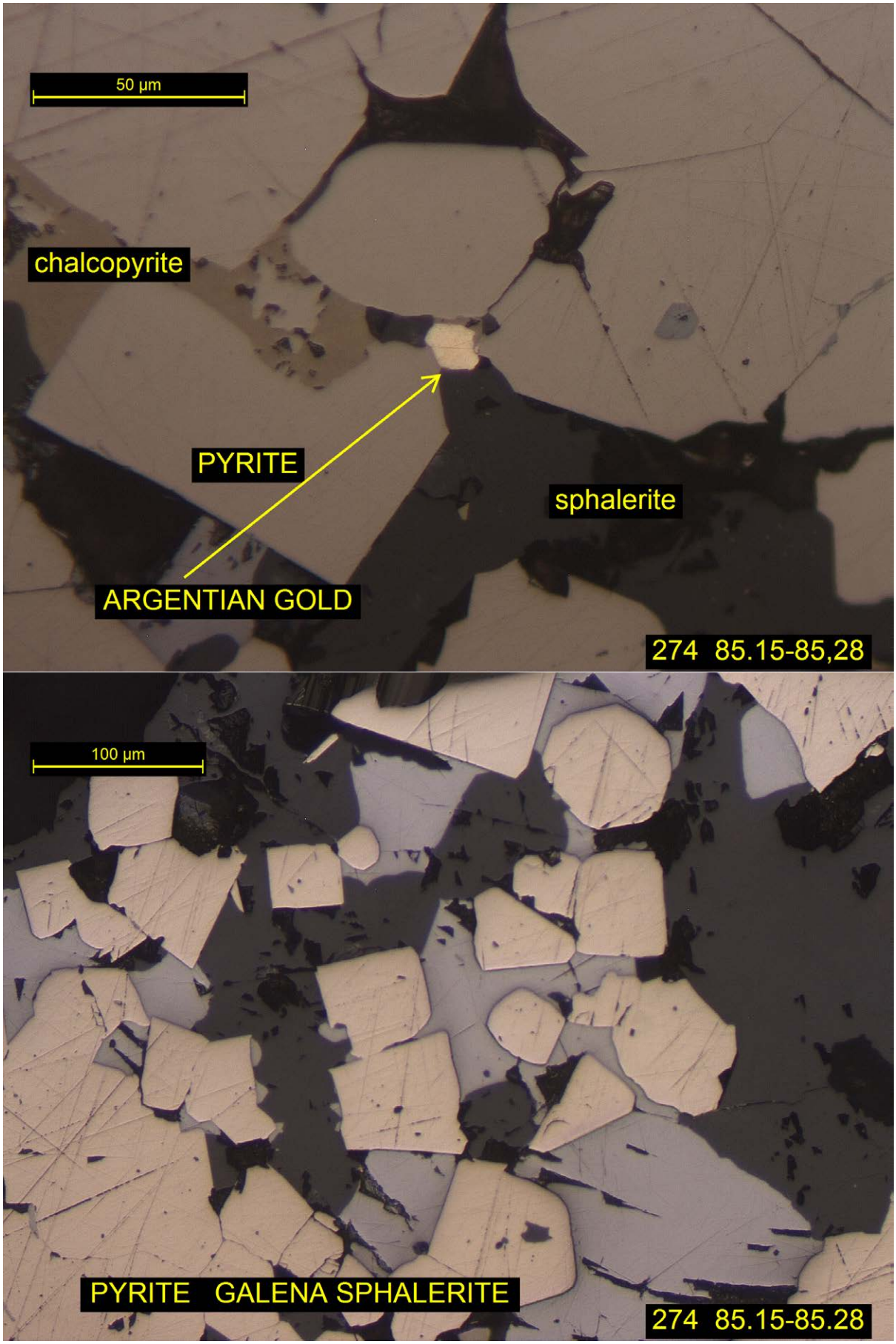

2 mm
SPHALERITE
PYRITE
274 85.15-85.28


500 µm
quartz and carbonate in sulphides.
274 85.15-85.25


200 µm
PYRITE IN SPHALERITE
274 85.15-85.28


50 µm
PYRITE / CHALCOPYRITE
TETRAHEDRITE
274 85.15-85.28


50 µm
PYRITE
ARSENOPYRITE
ARGENTIAN GOLD
274 85.15-85.28


50 µm
chalcopyrite
PYRITE
sphalerite
ARGENTIAN GOLD
274 85.15-85,28
100 µm
PYRITE GALENA SPHALERITE
274 85.15-85.28

SAMPLE K15-202 16.33-16.46

DRILL CORE

POLISHED THIN SECTION

GANGUE	**7%**
SIDERITE	95-98%
CHLORITE	3-5%
QUARTZ	<1%
MUSCOVITE	<1%
ORES	**93%**
PYRITE	35-45%
SPHALERITE	30-40%
MAGNETITE	10-20%
PYRRHOTITE	4-7%
CHALCOPYRITE	3-5%
MARCASITE	1%
GALENA	<1%
ARSENOPYRITE	<1%

CLASSIFIED AS A MAGNETITE SPHALERITE PYRITE ORE WITH DISSEMINATED PYRRHOTITE CHALCOPYRITE AND GALENA WITH A MINOR SIDERITE OVERPRINT

A consistent texture across the sample, consisting primarily of coalesced and subhedral to euhedral pyrite grains (~30 to ~600 µm) within varying levels (subordinate to dominant) of interstitial allotriomorphic sphalerite matrix. Sphalerite inclusions in pyrite are fairly common place (~75 µm average). Irregular allotriomorphic masses (~150 µm to ~2 mm) of magnetite are disseminated frequently throughout the sample, generally intergrown with sphalerite, and containing inclusions of several ores.

Pyrrhotite is consistently found as a minor component across the polished thin section, occurring as individual grains or coarser allotriomorphic aggregates (up to ~600 µm), usually moderately altered to marcasite.

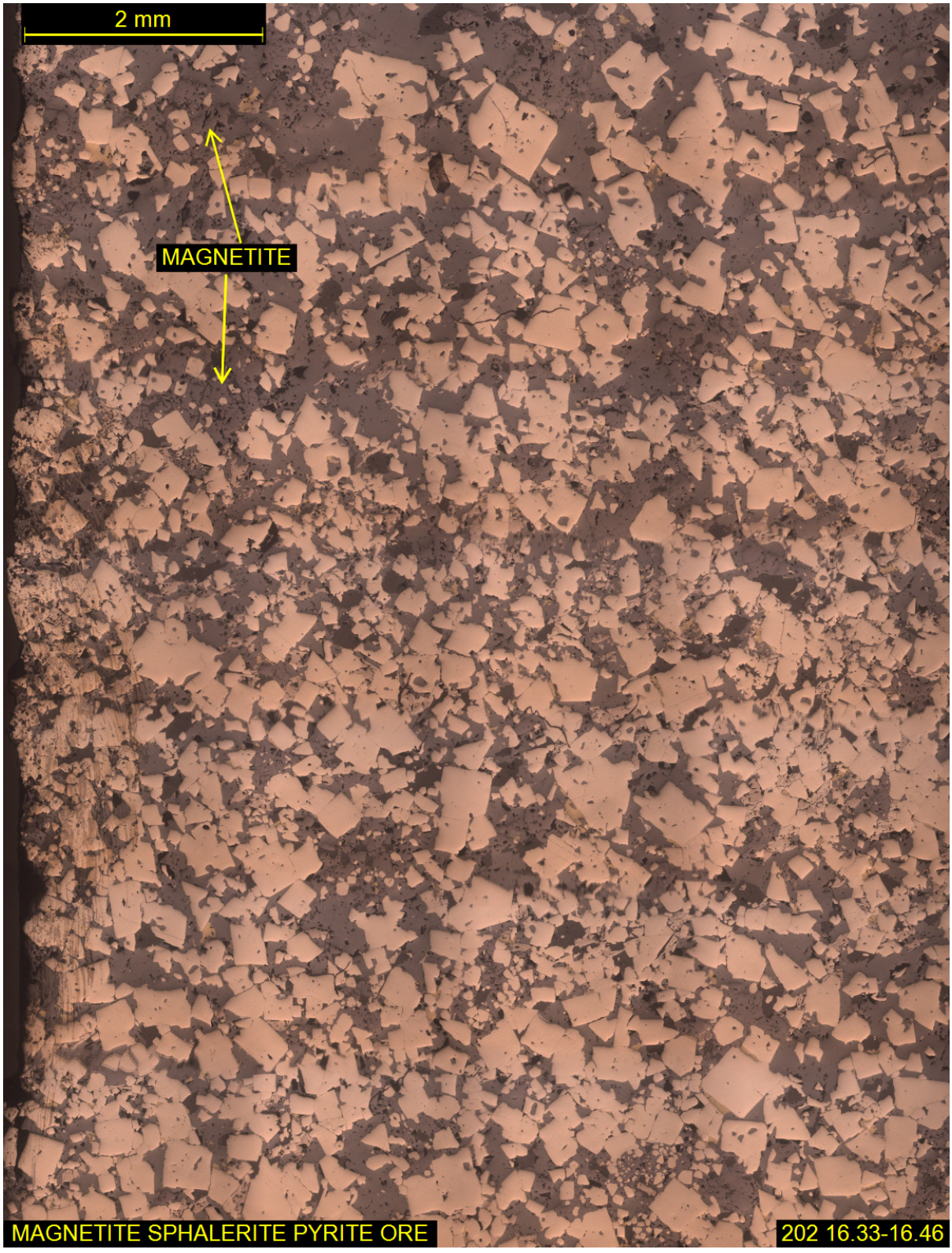
Gangue is comprised predominantly of siderite with low levels of chlorite, quartz and rare muscovite. Siderite occurs ubiquitously across the sample as discrete grains or polycrystalline aggregates (~50 to ~500 µm) in sulphides. Chlorite was occasionally found in clusters of discrete flakes or elongate aggregates (~20 to ~500 µm) within sulphides.

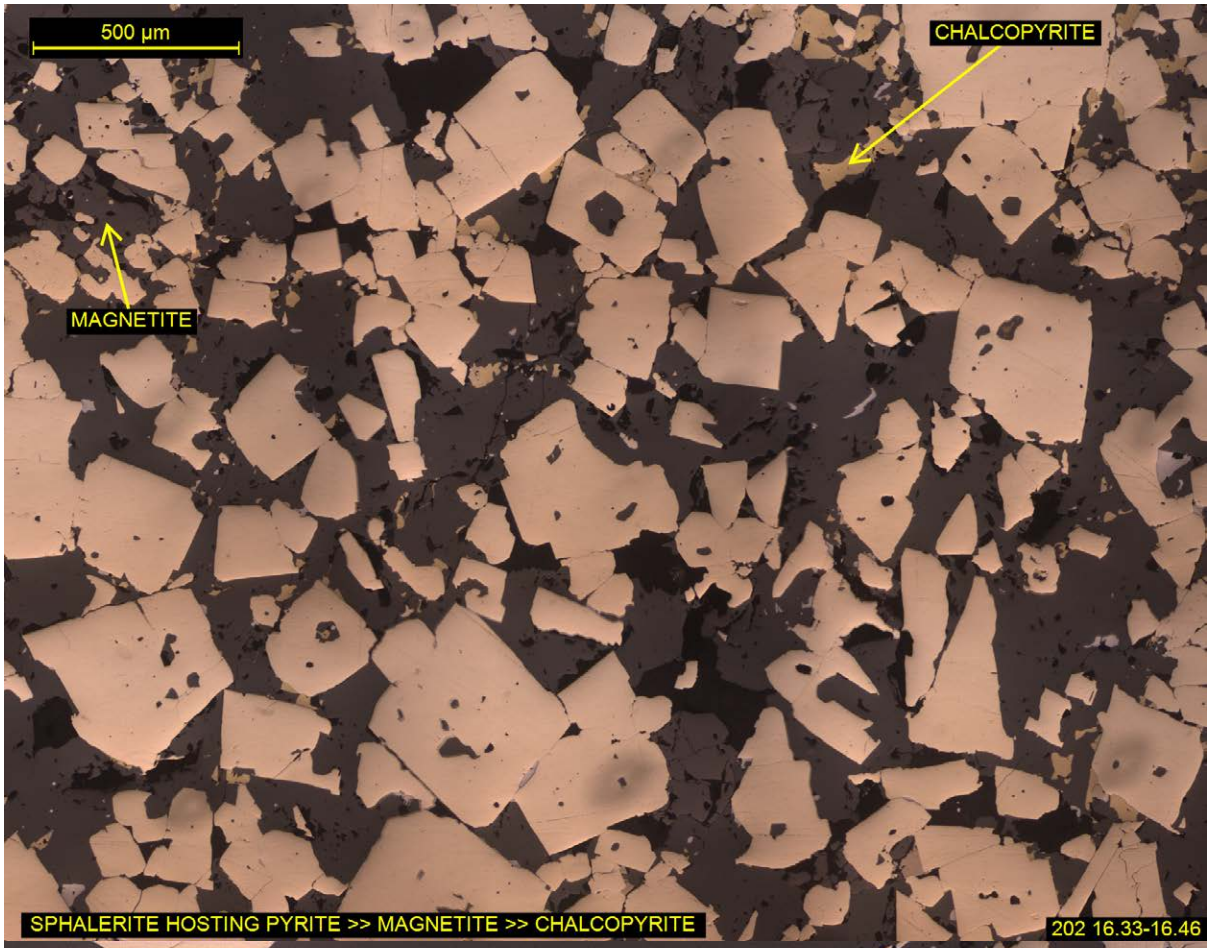
Chalcopyrite is disseminated consistently throughout, as irregular to rectangular shapes and elongate/slivers forms, that are frequently rimming pyrite, along fractures within coalesced pyrite, between pyrite euhedra, inclusions or composites with sphalerite. Additionally it was found as inclusions within magnetite, adjacent to pyrrhotite, or inclusions in pyrite. Typical sizes range from ~50 to ~100 µm.

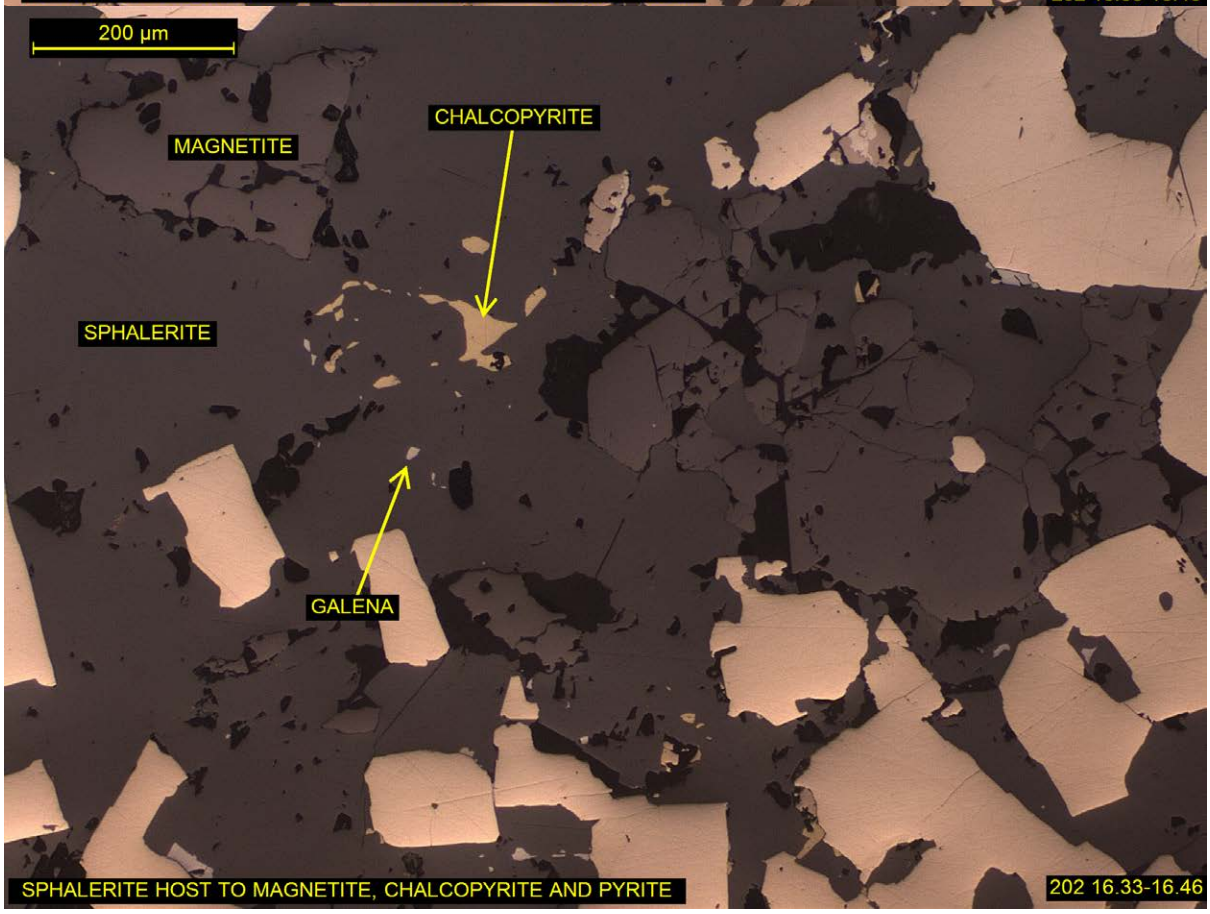
Galena generally occurs as rims on pyrite or inclusions in sphalerite, with irregular and rectangular forms, sized from ~5 to ~150 µm. Additionally, subordinate occurrences are inclusions in pyrite, associated with chalcopyrite and as inclusions in magnetite.

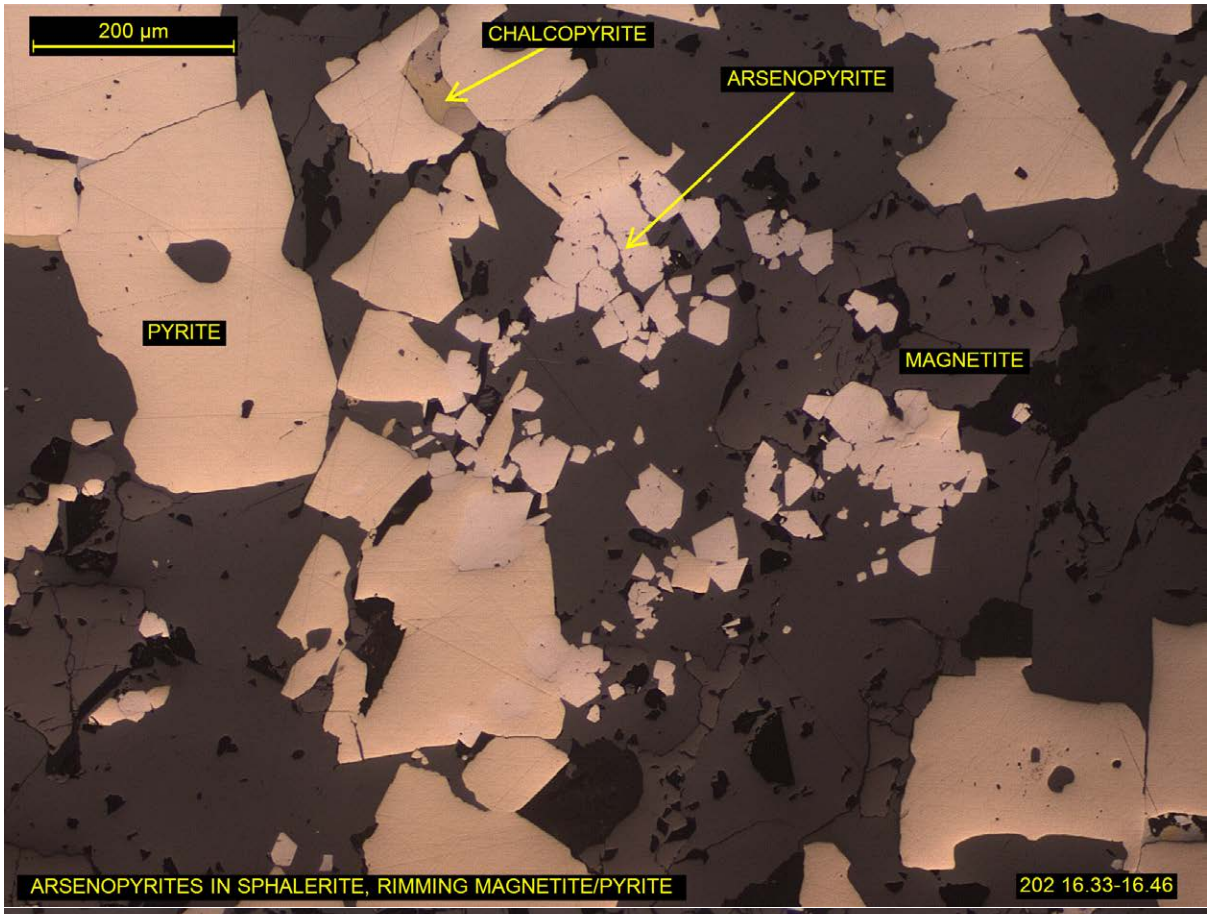
In several areas of the slide sphalerite occurs in large elongate to spherical monominerallic masses (veins?), sized from (6mm X 1.3mm, 3mm X 1.5 mm).

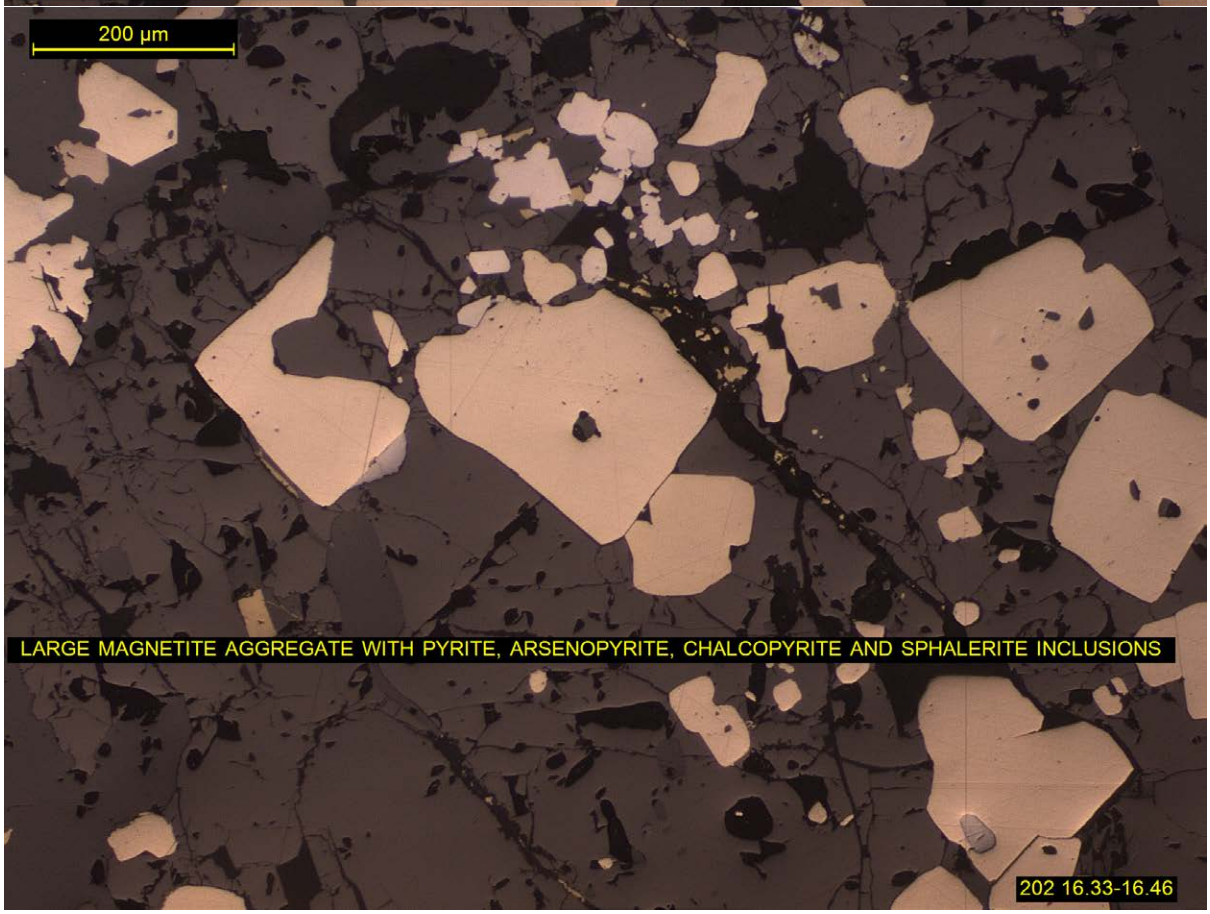
Rare arsenopyrite was found in clusters of euhedral grains (~5 to ~50 µm), in sphalerite or rimming pyrites.

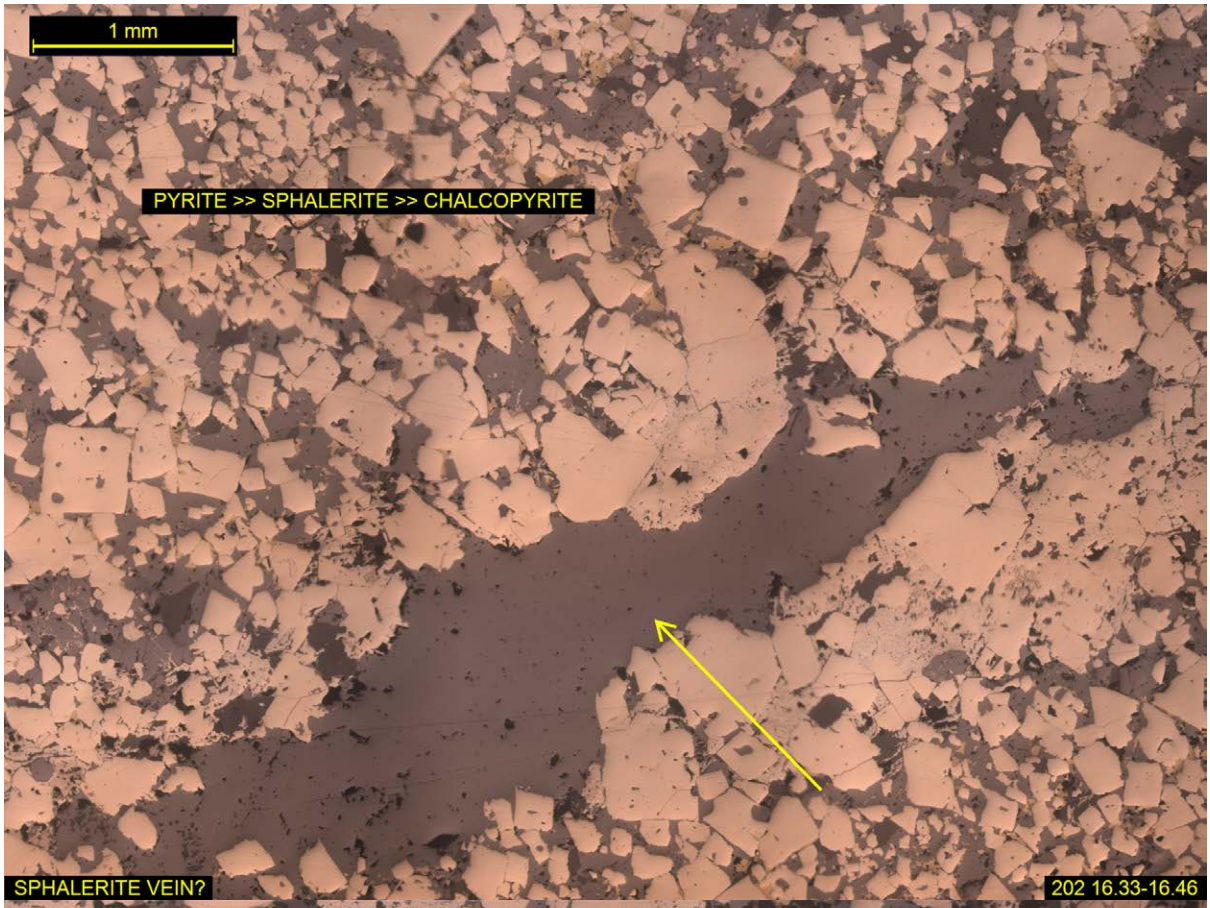

2 mm
MAGNETITE
MAGNETITE SPHALERITE PYRITE ORE
202 16.33-16.46

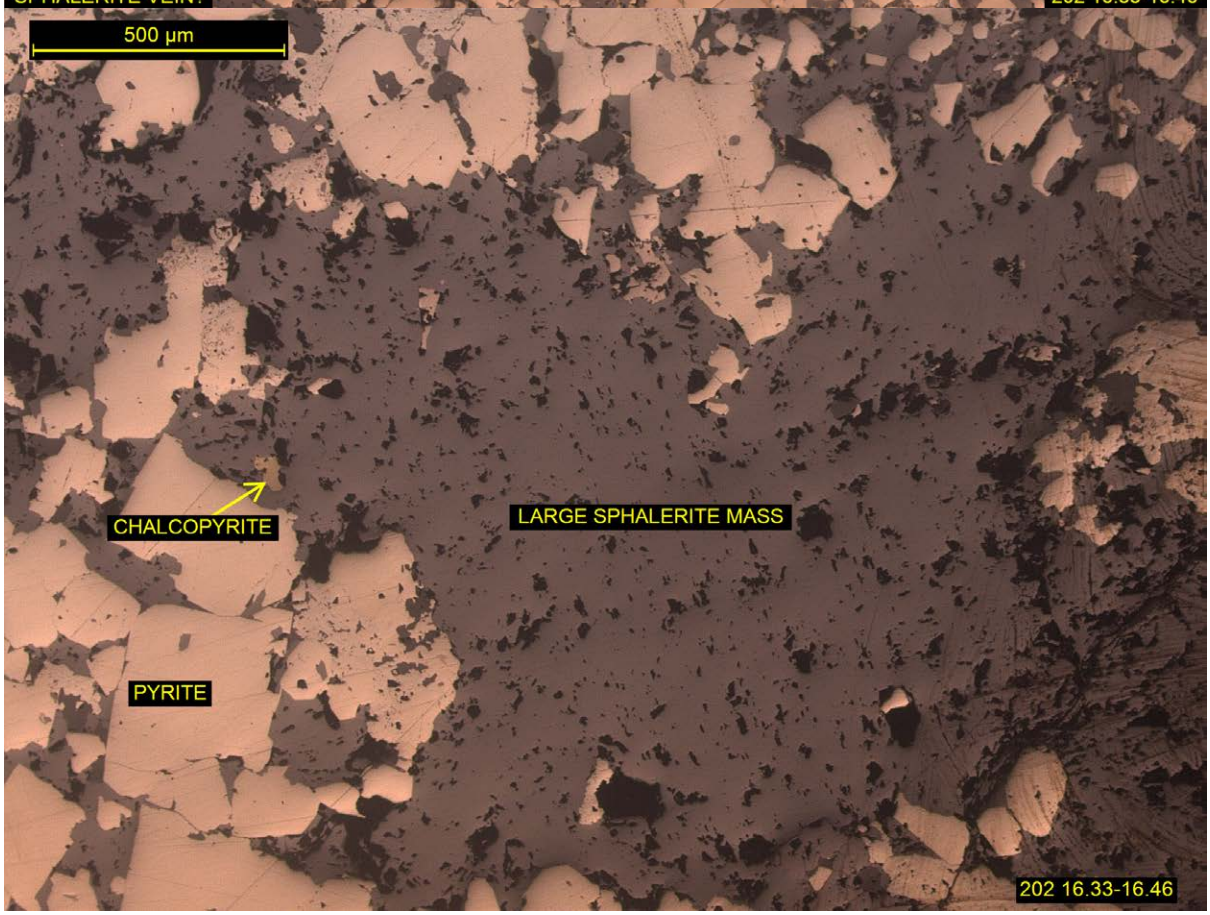

500 µm
CHALCOPYRITE
MAGNETITE
SPHALERITE HOSTING PYRITE >> MAGNETITE >> CHALCOPYRITE
202 16.33-16.46

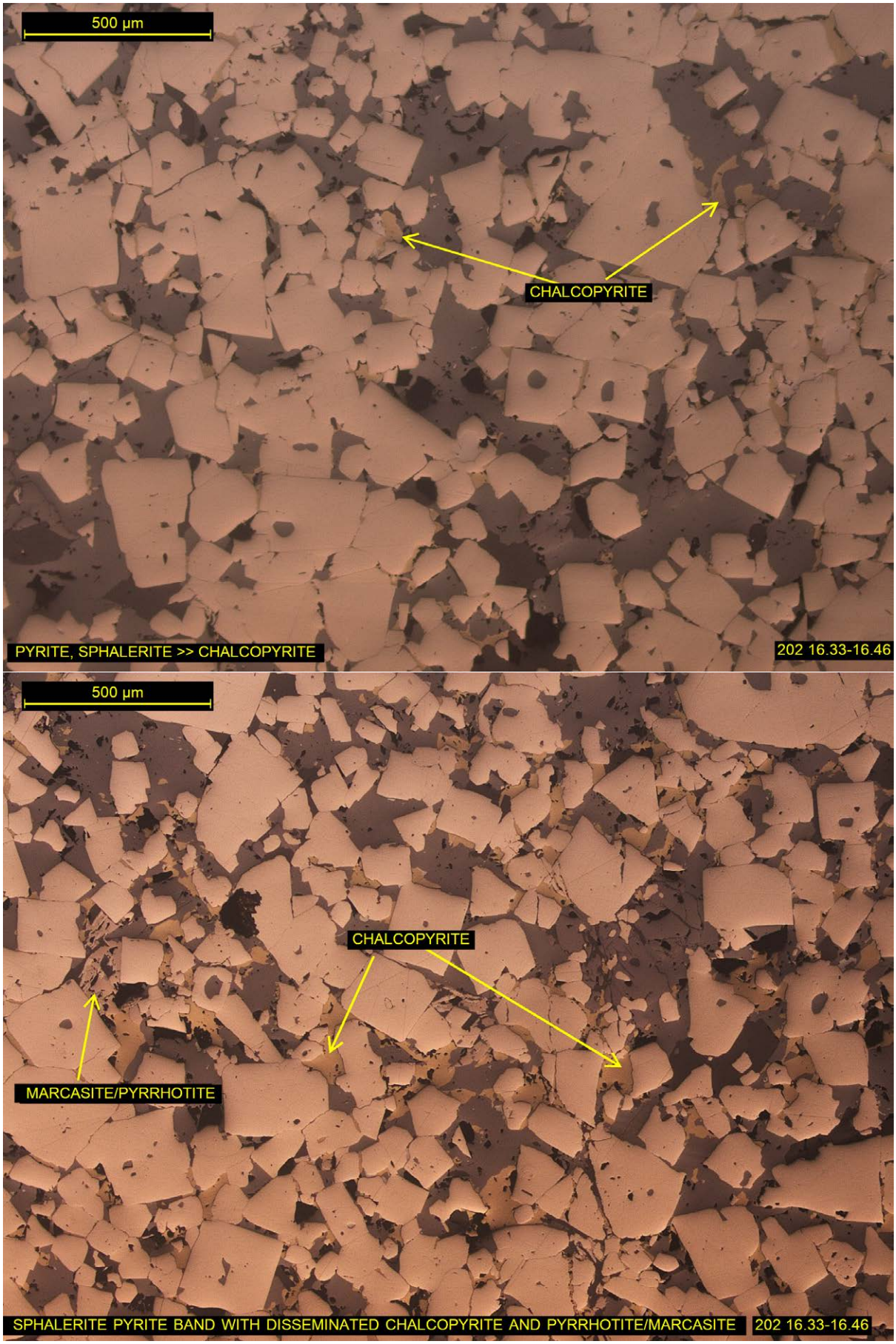

200 µm
CHALCOPYRITE
MAGNETITE
SPHALERITE
GALENA
SPHALERITE HOST TO MAGNETITE, CHALCOPYRITE AND PYRITE
202 16.33-16.46

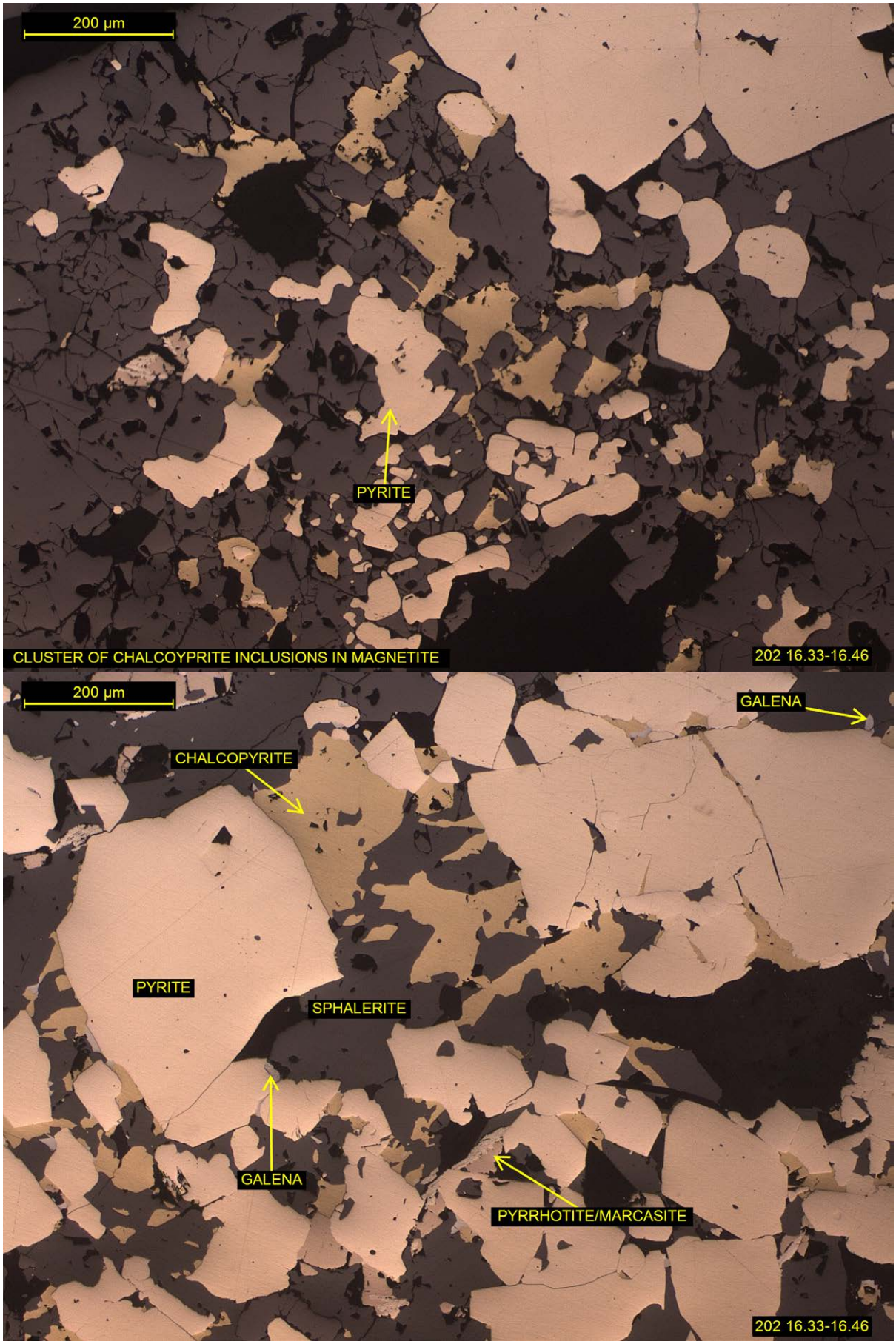

200 µm
CHALCOPYRITE
ARSENOPYRITE
PYRITE
MAGNETITE
ARSENOPYRITES IN SPHALERITE, RIMMING MAGNETITE/PYRITE
202 16.33-16.46

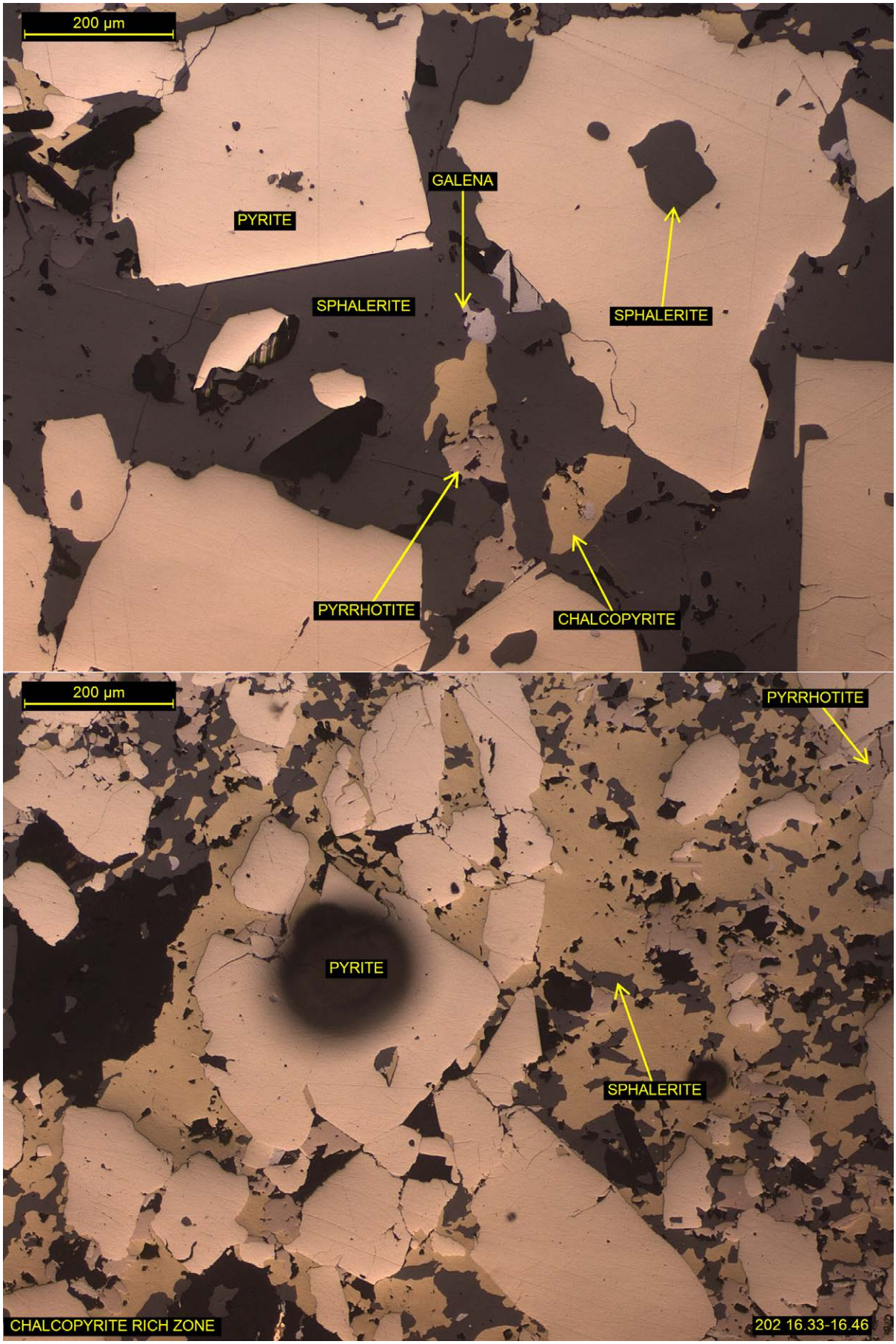

200 µm
LARGE MAGNETITE AGGREGATE WITH PYRITE, ARSENOPYRITE, CHALCOPYRITE AND SPHALERITE INCLUSIONS
202 16.33-16.46

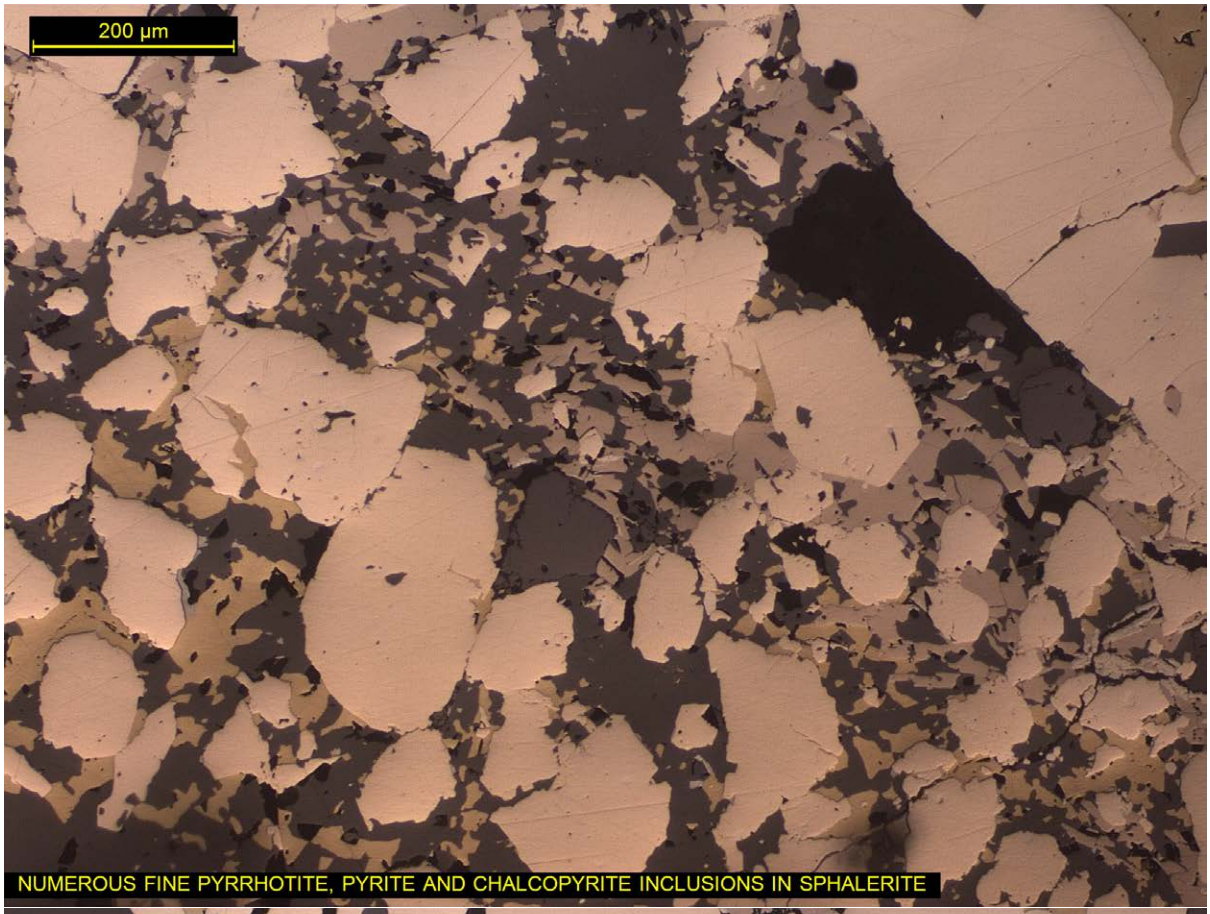

1 mm
PYRITE >> SPHALERITE >> CHALCOPYRITE
SPHALERITE VEIN?
202 16.33-16.46

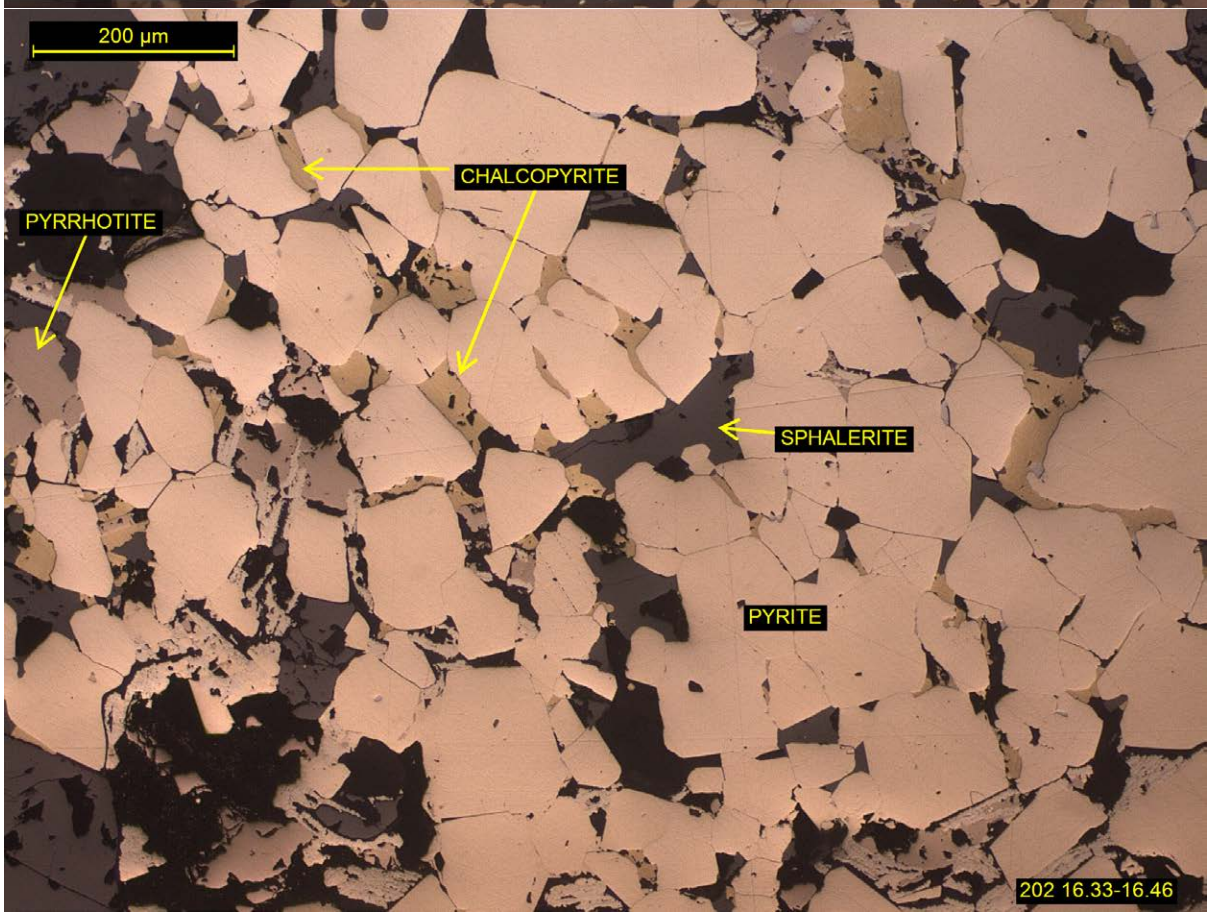

500 µm
CHALCOPYRITE
LARGE SPHALERITE MASS
PYRITE
202 16.33-16.46

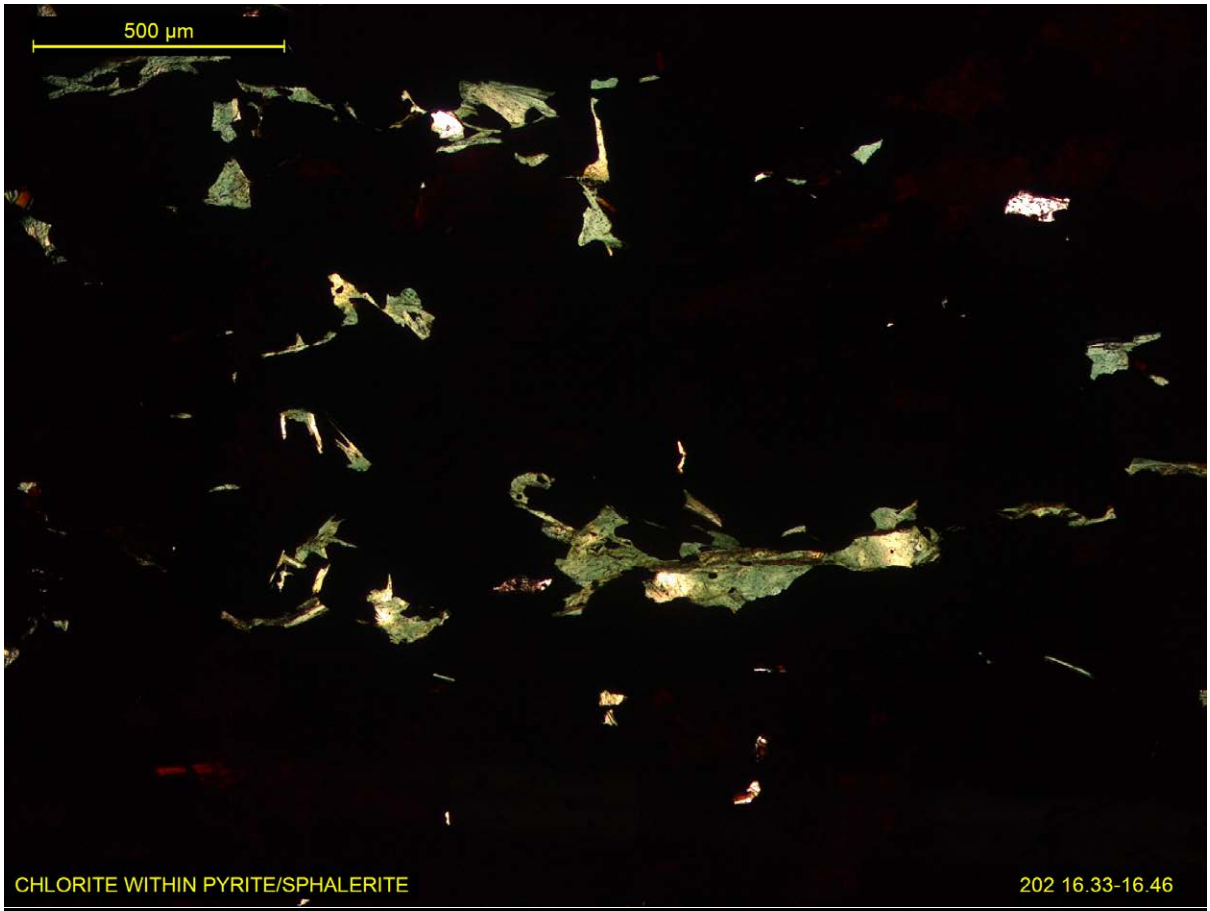

500 µm
CHALCOPYRITE
PYRITE, SPHALERITE >> CHALCOPYRITE
202 16.33-16.46
500 µm
CHALCOPYRITE
MARCASITE/PYRRHOTITE
SPHALERITE PYRITE BAND WITH DISSEMINATED CHALCOPYRITE AND PYRRHOTITE/MARCASITE
202 16.33-16.46


200 µm
PYRITE
CLUSTER OF CHALCOYPRITE INCLUSIONS IN MAGNETITE
202 16.33-16.46
200 µm
GALENA
CHALCOPYRITE
PYRITE
SPHALERITE
GALENA
PYRRHOTITE/MARCASITE
202 16.33-16.46


200 µm
GALENA
PYRITE
SPHALERITE
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
200 µm
PYRRHOTITE
PYRITE
SPHALERITE
CHALCOPYRITE RICH ZONE
202 16.33-16.46


200 µm
NUMEROUS FINE PYRRHOTITE, PYRITE AND CHALCOPYRITE INCLUSIONS IN SPHALERITE


200 µm
CHALCOPYRITE
PYRRHOTITE
SPHALERITE
PYRITE
202 16.33-16.46


500 µm
CHLORITE WITHIN PYRITE/SPHALERITE
202 16.33-16.46


500 µm
SIDERITE WITHIN PYRITE/SPHALERITE
202 16.33-16.46

SAMPLE K15-203 122.23-122.38

DRILL CORE

POLISHED THIN SECTION

GANGUE	**15%**
CHLORITE	DOMINANT
SIDERITE	MAJOR
QUARTZ	MAJOR
ALBITE	ACCESSORY
ORES	**85%**
PYRITE	MAJOR TO DOMINANT
SPHALERITE	MINOR TO MAJOR
MAGNETITE	MINOR TO MAJOR
PYRRHOTITE	ACCESSORY TO MINOR
CHALCOPYRITE	TRACE TO ACCESSORY
GALENA	TRACE

CLASSIFIED AS A BANDED MAGNETITE SPHALERITE PYRITE ORE WITH DISSEMINATED PYRRHOTITE, CHALCOPYRITE AND GALENA.

A sample with two main bands that are characterised by particular mineral associations/ratios:

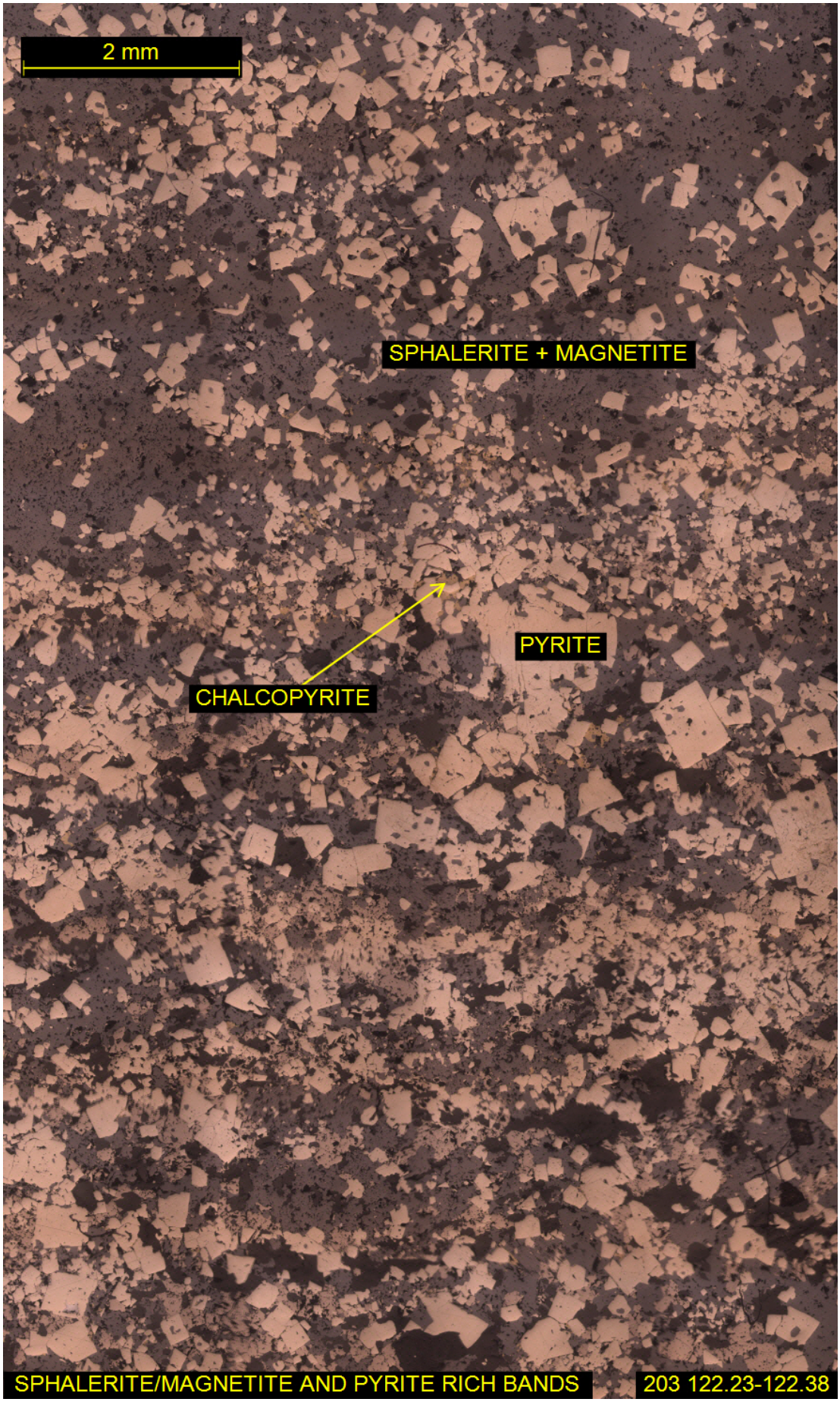
A pyrite rich band containing a relatively high level of chalcopyrite (for the sample), with moderate concentrations of sphalerite, magnetite and subordinate pyrrhotite. A dominant framework of discrete euhedral and lesser coalesced pyrites (~30 to ~700 µm) hosts mainly a subordinate interstitial matrix of sphalerite that is intergrown and consistently peppered with allotriomorphic masses (up to ~3 mm) and discrete anhedral grains of magnetite. Pyrrhotite has formed locally dominant interstitial matrixes to pyrite, rare dominant layers (up to ~1.5 mm thick) and disseminated irregular aggregates (up to ~700 µm) adjacent to pyrite and sphalerite/magnetite. Chalcopyrite is characterised by somewhat semi-continuous vein-like lineal branching patterns (matrix) through pyrite rich zones. It frequently forms rims on pyrite or local interstitial matrixes between pyrite grains, occasional inclusions within sphalerite, magnetite and pyrite, and as a rare host to several pyrite grains. Grain sizes vary from ~5 to ~550 µm.

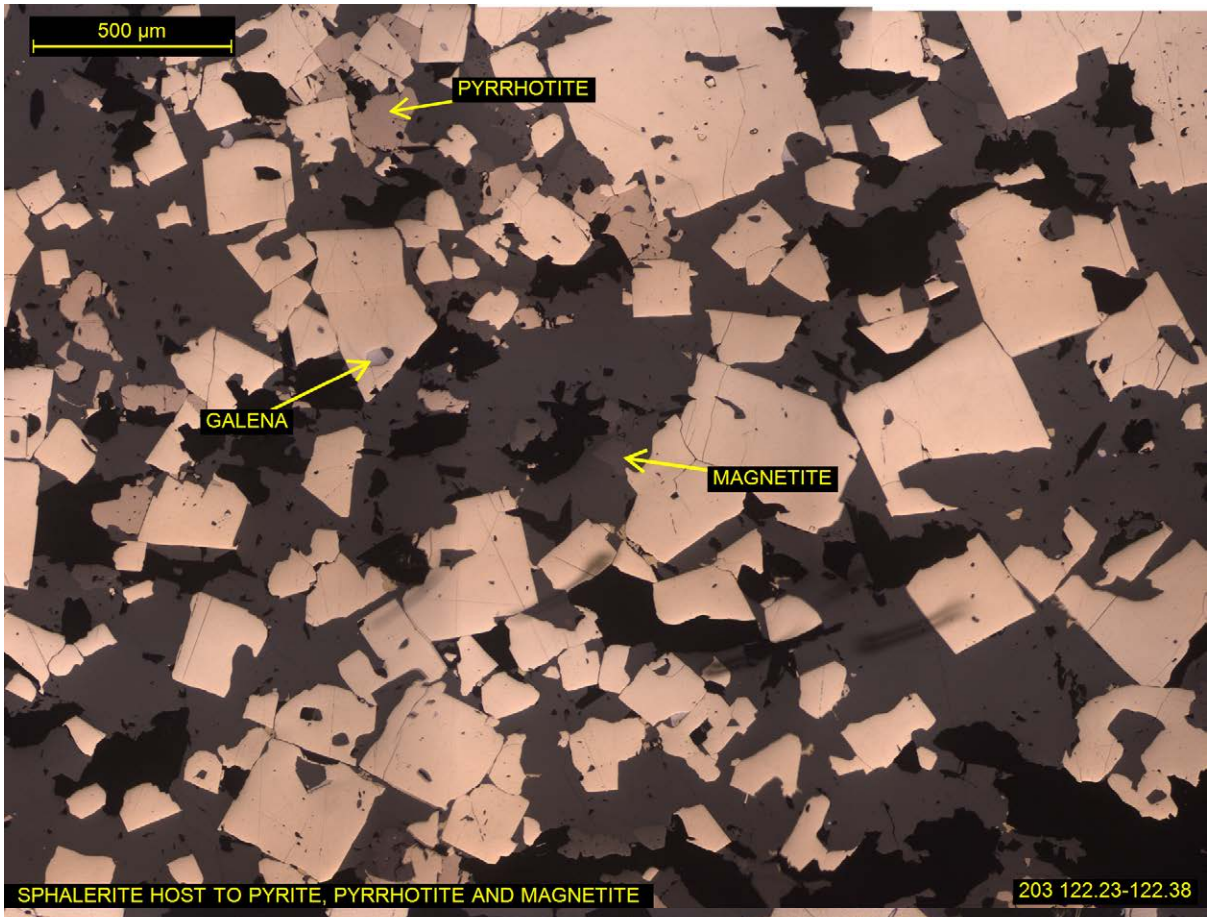
The second band differs in that sphalerite and magnetite are the dominant accumulative host, with significant disseminated euhedral discrete pyrite (~40 to ~750 µm). Magnetite occurs as frequent small to large (~100 µm to ~2 mm) allotriomorphic masses and discrete grains intergrown with a matrix and irregular grains of sphalerite. Subordinate disseminated irregular pyrrhotite aggregates frequently rim pyrite or form composites with pyrite. Chalcopyrite content is very low, found as occasional irregularly shaped grains (~10 to ~250 µm) that primarily form rims on pyrite, or occasional inclusions within sphalerite and lesser pyrite.

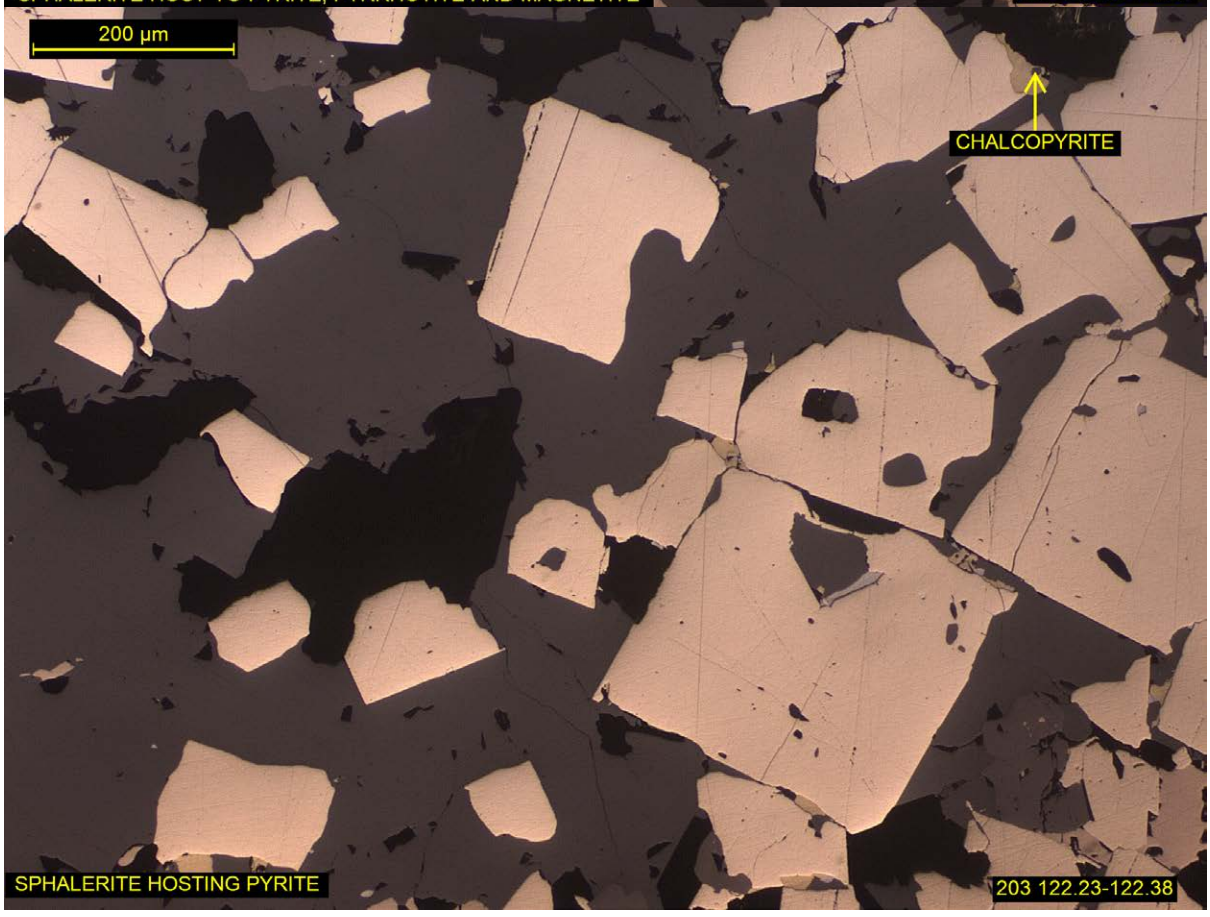
Galena is a trace component that occurs more frequently within the second band. It was found as rectangular, elongate/slivers, blebs, that most commonly rim pyrite, less often found between pyrite grains or inclusions in pyrite, is occasionally associated with chalcopyrite or inclusions in sphalerite and chalcopyrite. Grain sizes vary from ~20 to ~260 µm.

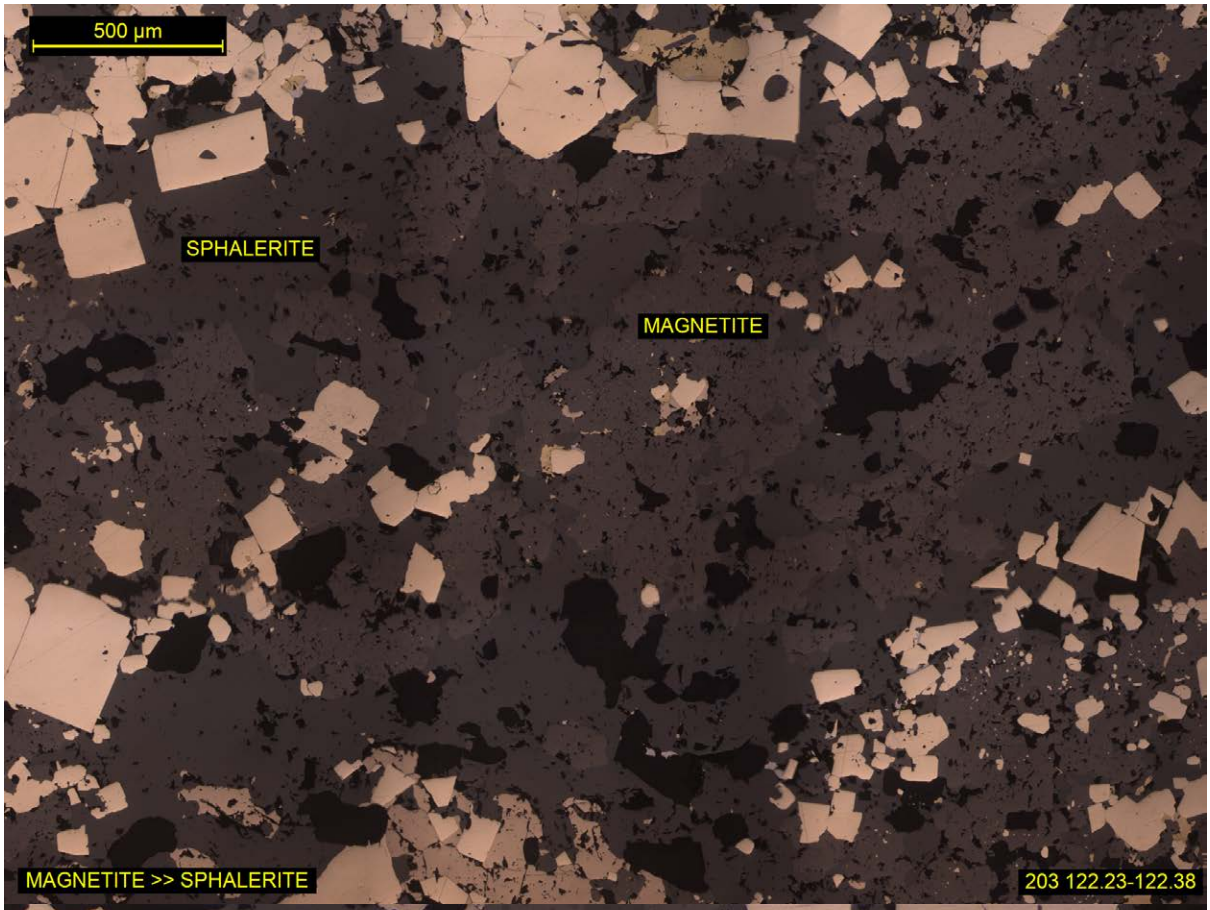
Siderite and chlorite are the main gangue present. Siderite is the dominant gangue in the pyrite rich bands, whilst chlorite and subordinate siderite are found throughout the sphalerite/magnetite >> pyrite bands. Siderite occurs as fine to medium inclusions that are discrete grains or polycrystalline aggregates (~30 to ~500 µm), with SEM and XRD analyses indicate varying composition (Mg rich and poor varieties). Chlorite flakes and aggregates are up to over a millimetre, and regular pepper localized zones. Several fine to coarse quartz grains and aggregates (up to >2 mm) and rare albite were identified.

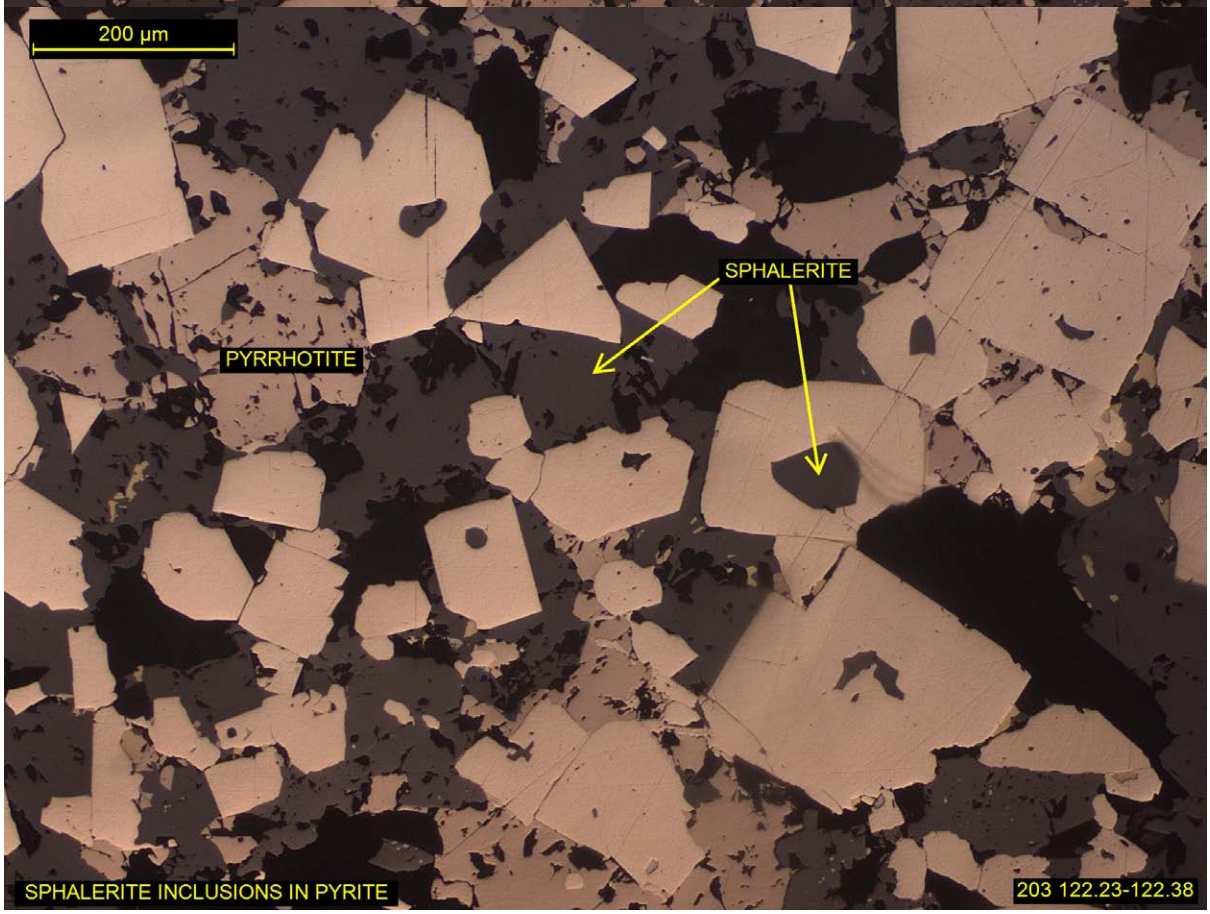

2 mm
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
MAGNETITE
PYRITE RICH BANDS
203 122.23-122.38

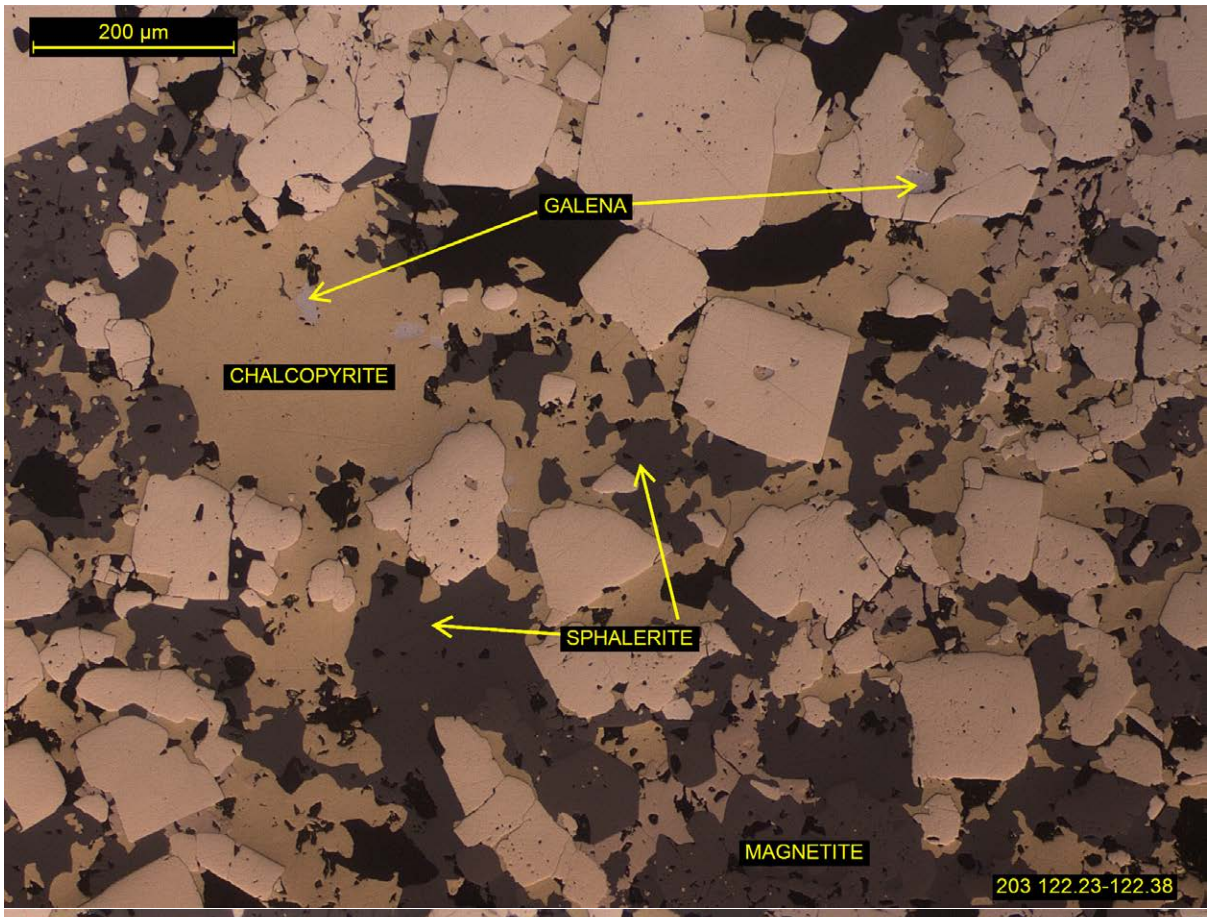

2 mm
SPHALERITE + MAGNETITE
PYRITE
CHALCOPYRITE
SPHALERITE/MAGNETITE AND PYRITE RICH BANDS
203 122.23-122.38

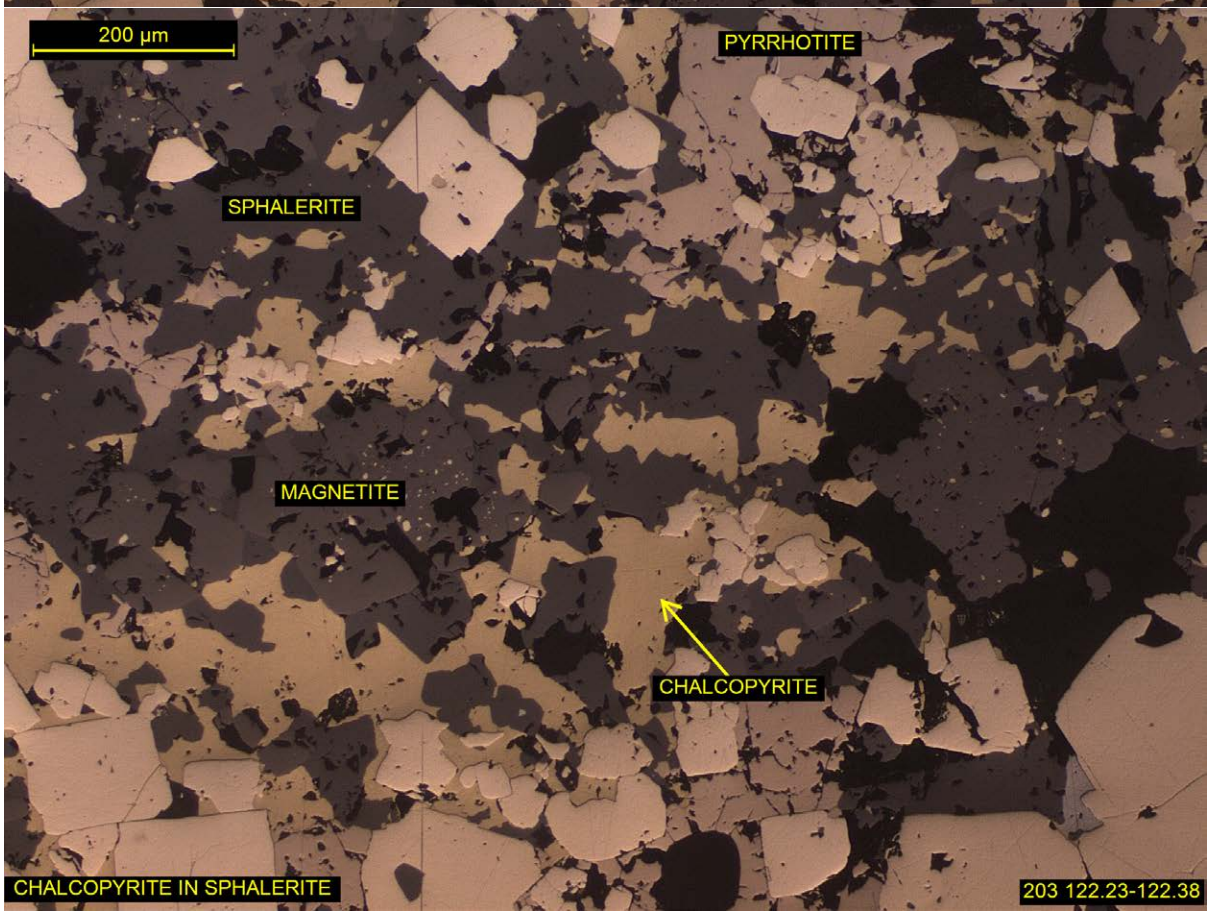

500 µm
PYRRHOTITE
GALENA
MAGNETITE
SPHALERITE HOST TO PYRITE, PYRRHOTITE AND MAGNETITE
203 122.23-122.38

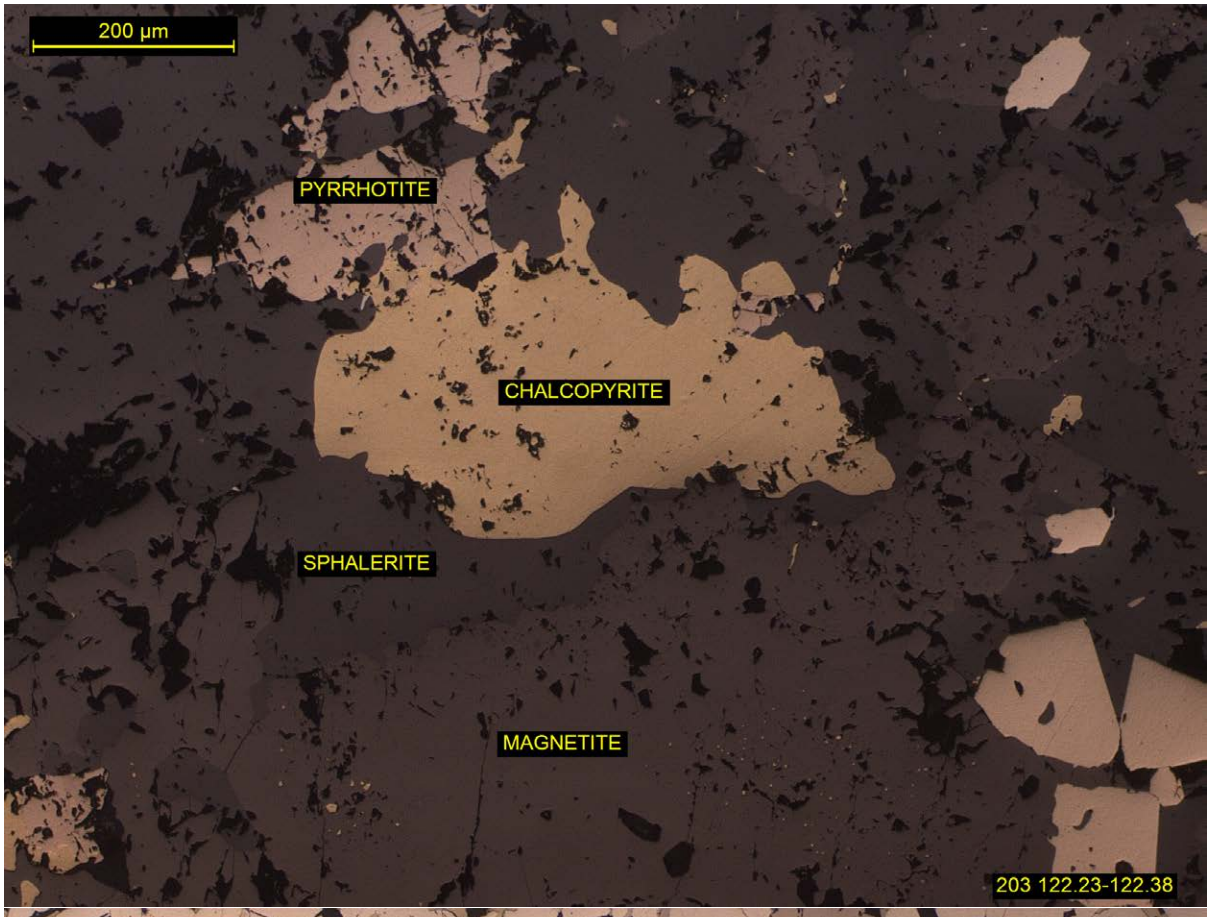

200 µm
CHALCOPYRITE
SPHALERITE HOSTING PYRITE
203 122.23-122.38

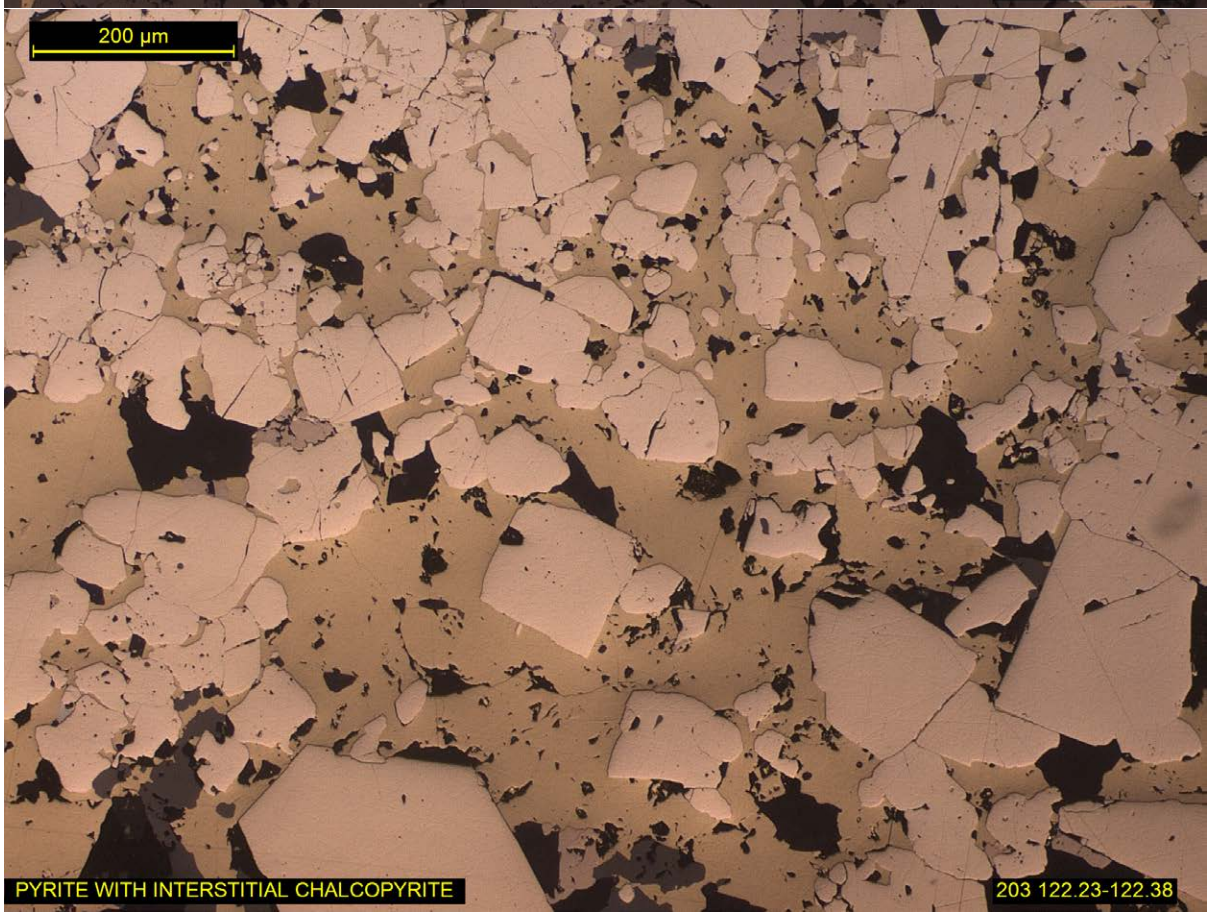

500 µm
SPHALERITE
MAGNETITE
MAGNETITE >> SPHALERITE
203 122.23-122.38

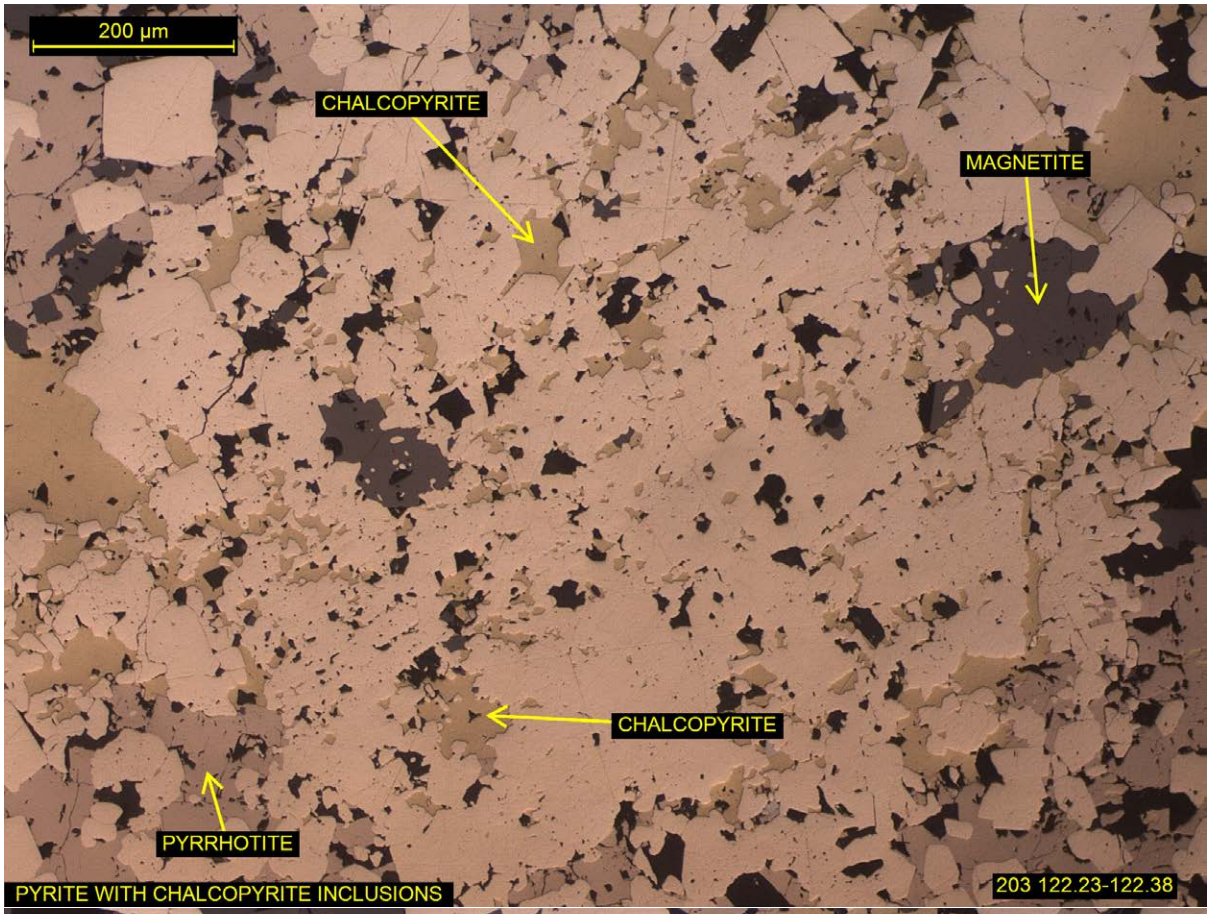

200 µm
SPHALERITE
PYRRHOTITE
SPHALERITE INCLUSIONS IN PYRITE
203 122.23-122.38

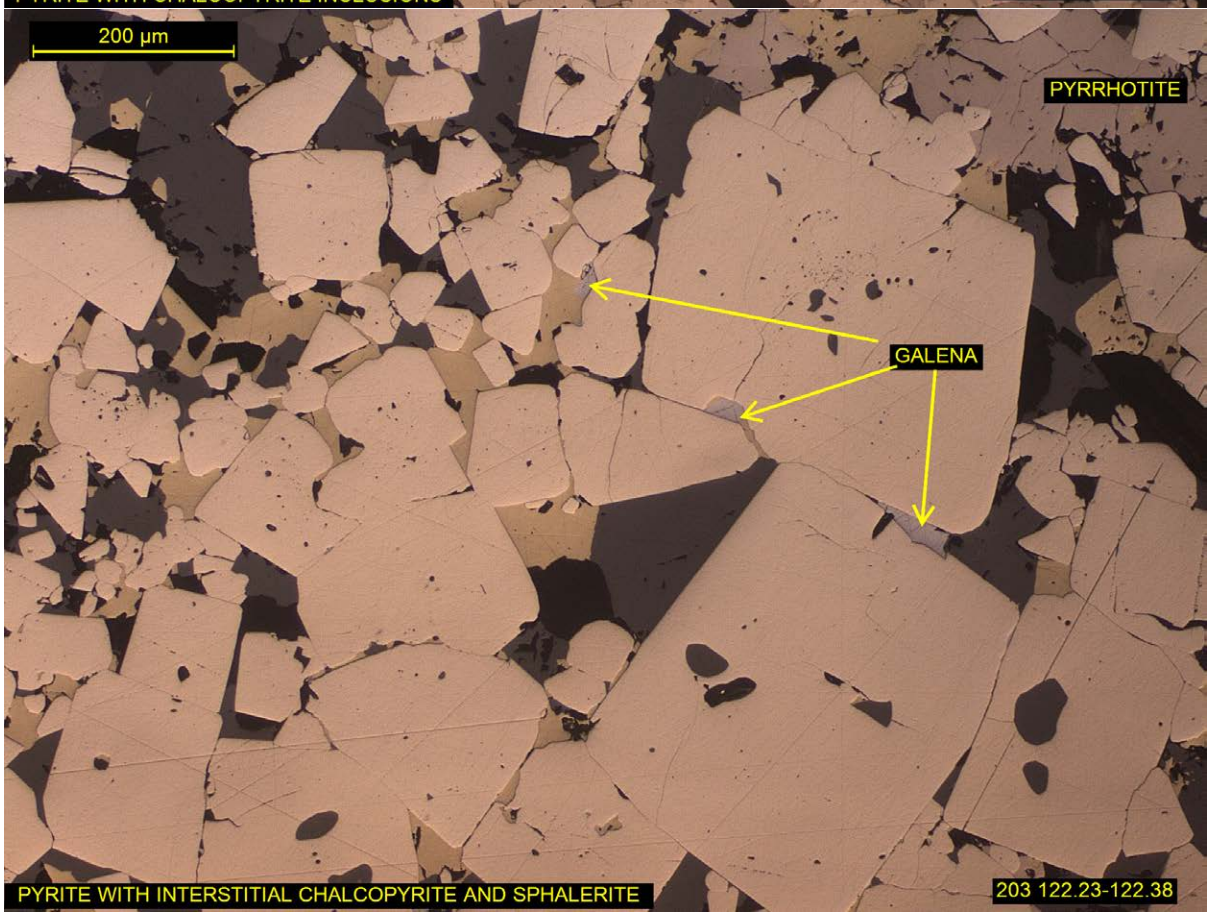

200 µm
GALENA
CHALCOPYRITE
SPHALERITE
MAGNETITE
203 122.23-122.38

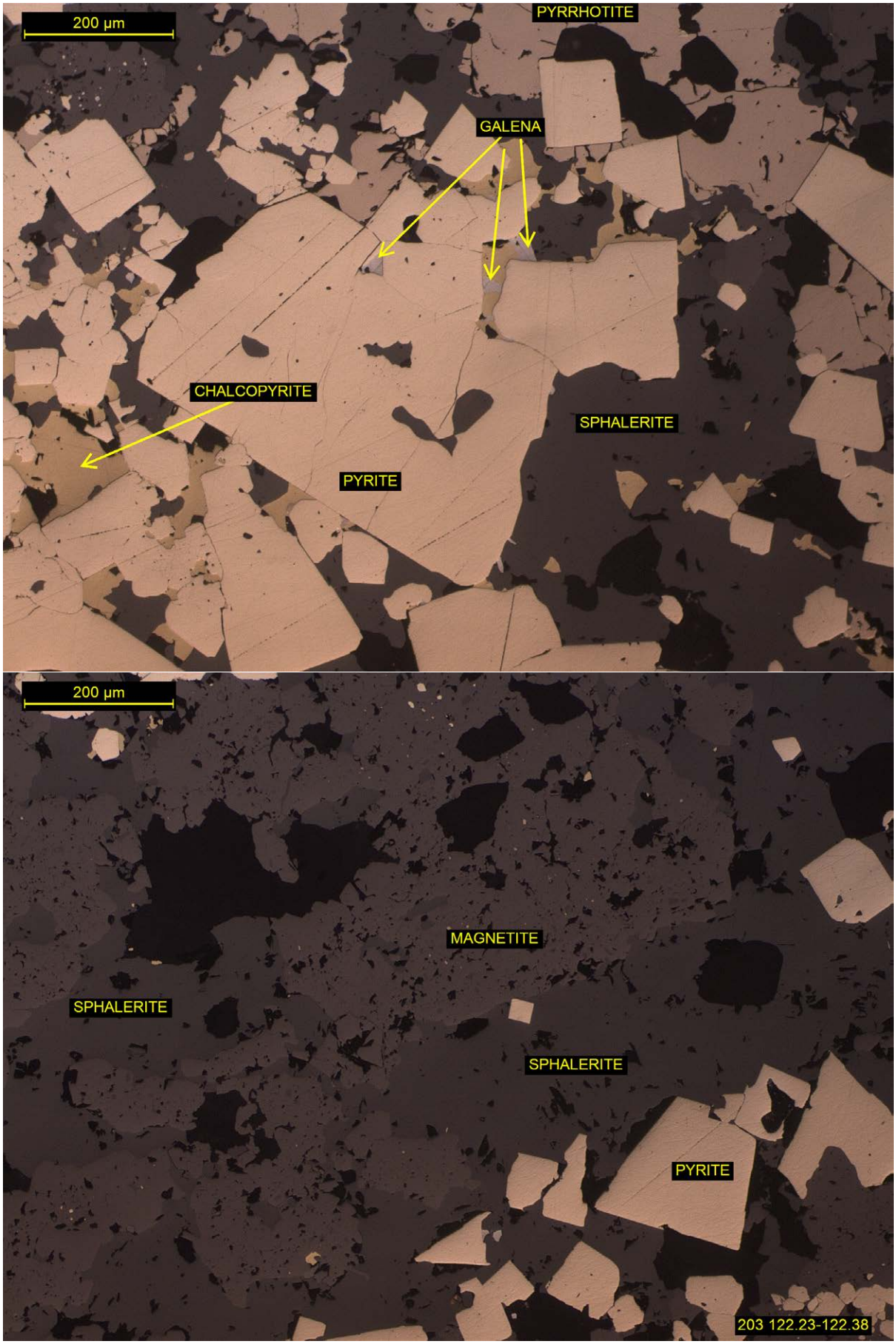

200 µm
PYRRHOTITE
SPHALERITE
MAGNETITE
CHALCOPYRITE
CHALCOPYRITE IN SPHALERITE
203 122.23-122.38

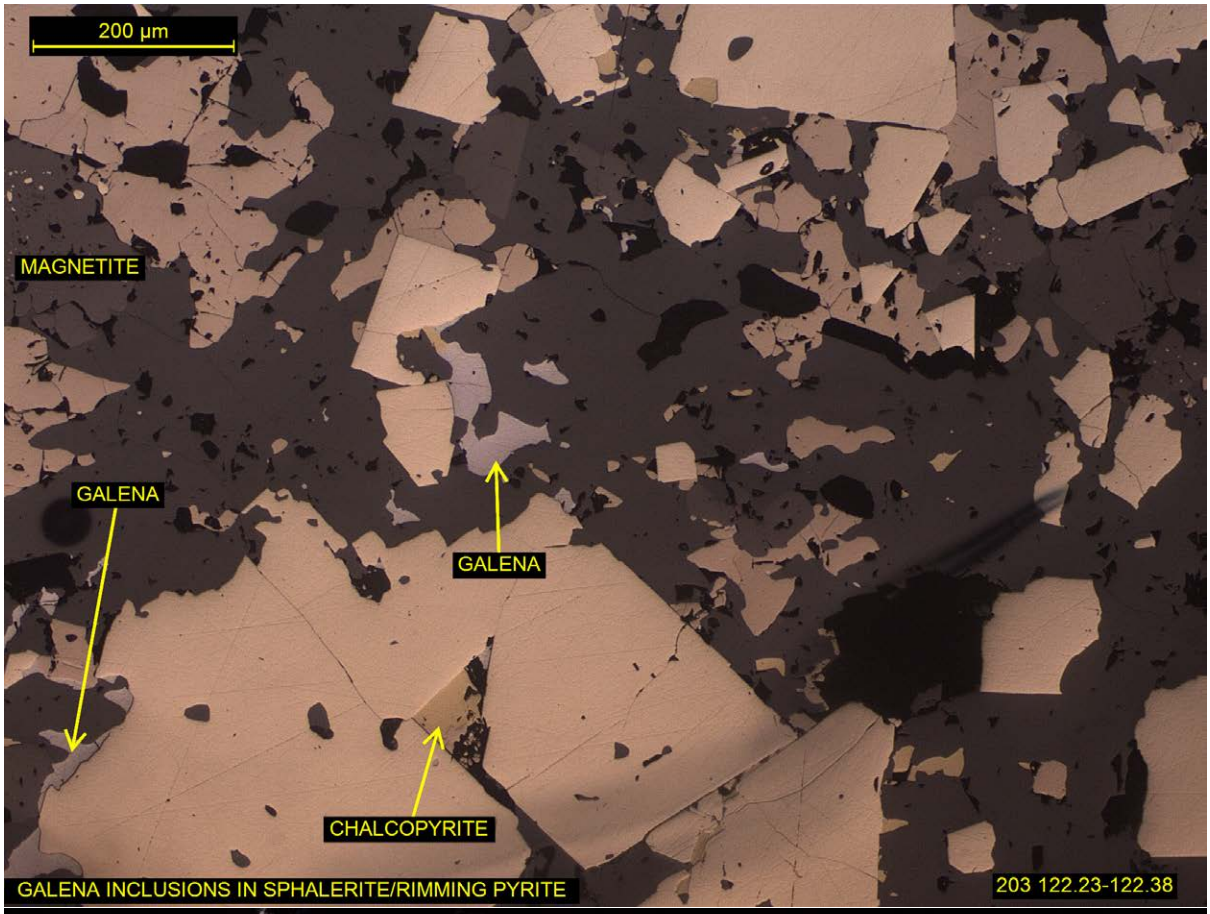

200 µm
PYRRHOTITE
CHALCOPYRITE
SPHALERITE
MAGNETITE
203 122.23-122.38

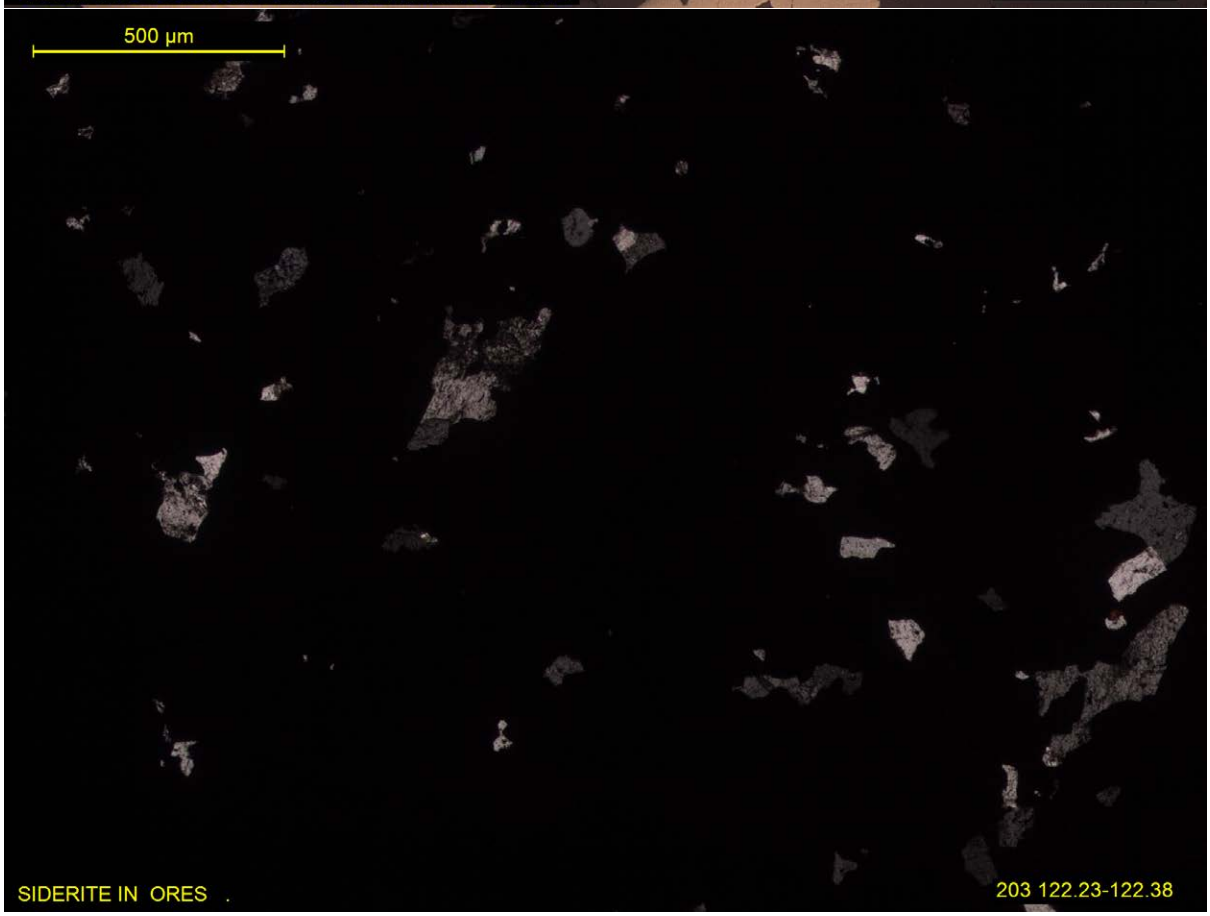

200 µm
PYRITE WITH INTERSTITIAL CHALCOPYRITE
203 122.23-122.38

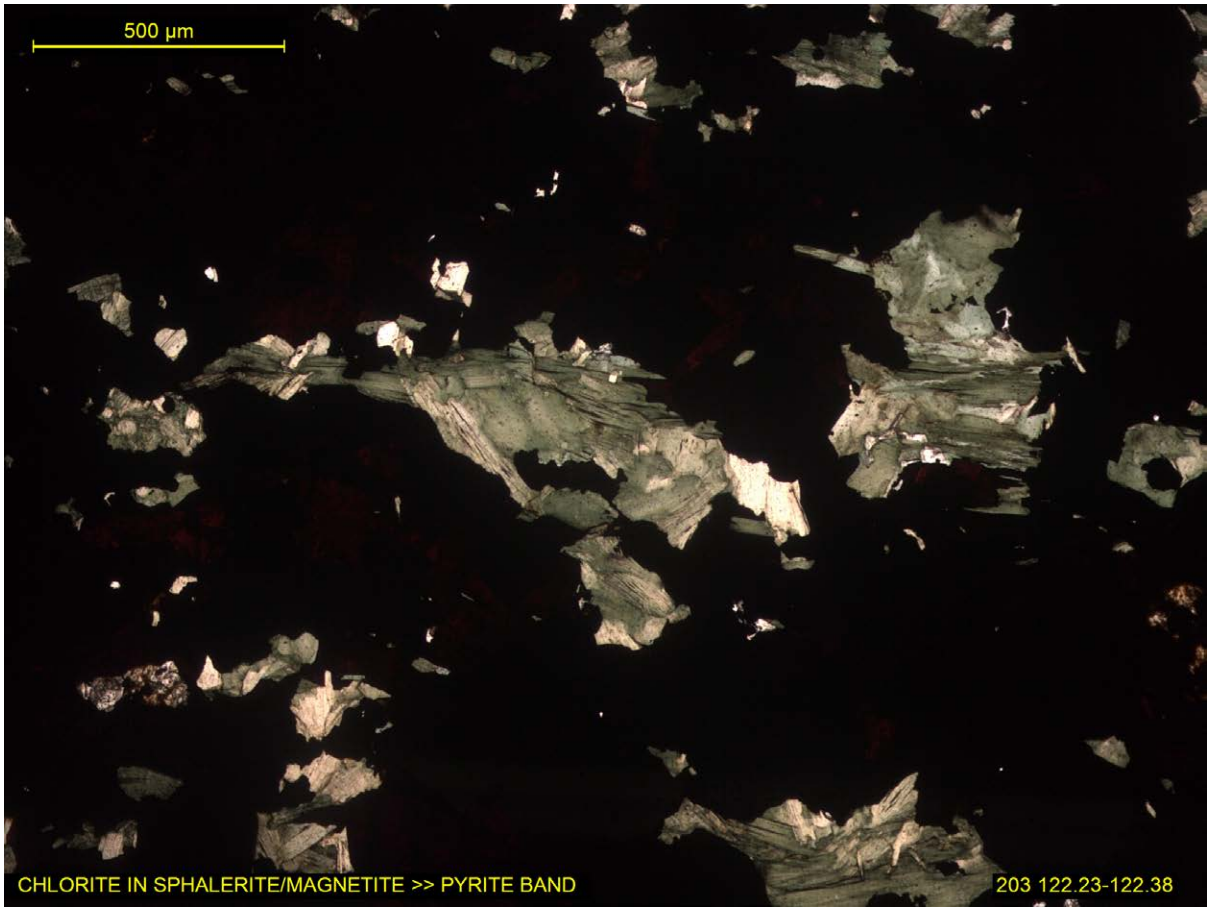

200 µm
CHALCOPYRITE
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
PYRITE WITH CHALCOPYRITE INCLUSIONS
203 122.23-122.38


200 µm
PYRRHOTITE
GALENA
PYRITE WITH INTERSTITIAL CHALCOPYRITE AND SPHALERITE
203 122.23-122.38


200 µm
PYRRHOTITE
GALENA
CHALCOPYRITE
SPHALERITE
PYRITE
200 µm
MAGNETITE
SPHALERITE
SPHALERITE
PYRITE
203 122.23-122.38


200 µm
MAGNETITE
GALENA
GALENA
CHALCOPYRITE
GALENA INCLUSIONS IN SPHALERITE/RIMMING PYRITE
203 122.23-122.38


500 µm
SIDERITE IN ORES .
203 122.23-122.38


500 µm
CHLORITE IN SPHALERITE/MAGNETITE >> PYRITE BAND
203 122.23-122.38

SAMPLE K15-207 83.2-83.34

DRILL CORE

POLISHED THIN SECTION

GANGUE	**15%**
DOLOMITE + SIDERITE	70-90%
CHLORITE	5-15%
QUARTZ	5-10%
KAOLINITE	1-3%
ORES	**85%**
PYRITE	50-60%
SPHALERITE	25-35%
MAGNETITE	10-20%
PYRRHOTITE	1-5%
CHALCOPYRITE	<1%
GALENA	<1%
MARCASITE	<1%

CLASSIFIED AS A CARBONATE CEMENTED BANDED MAGNETITE SPHALERITE PYRITE ORE WITH DISSEMINATED CHALCOPYRITE AND GALENA

The sample is comprised of two relatively thick bands consisting of sphalerite, pyrite and subordinate magnetite and an intervening pyrite dominant band. Pyrrhotite is regularly disseminated across the former, whilst chalcopyrite and galena occurrences are scarce. Gangue consists predominantly of carbonate (dolomite + siderite XRD), subordinate chlorite and rare quartz. Inclusions of carbonate regularly pepper the ores across all bands (~300 to ~600 µm).

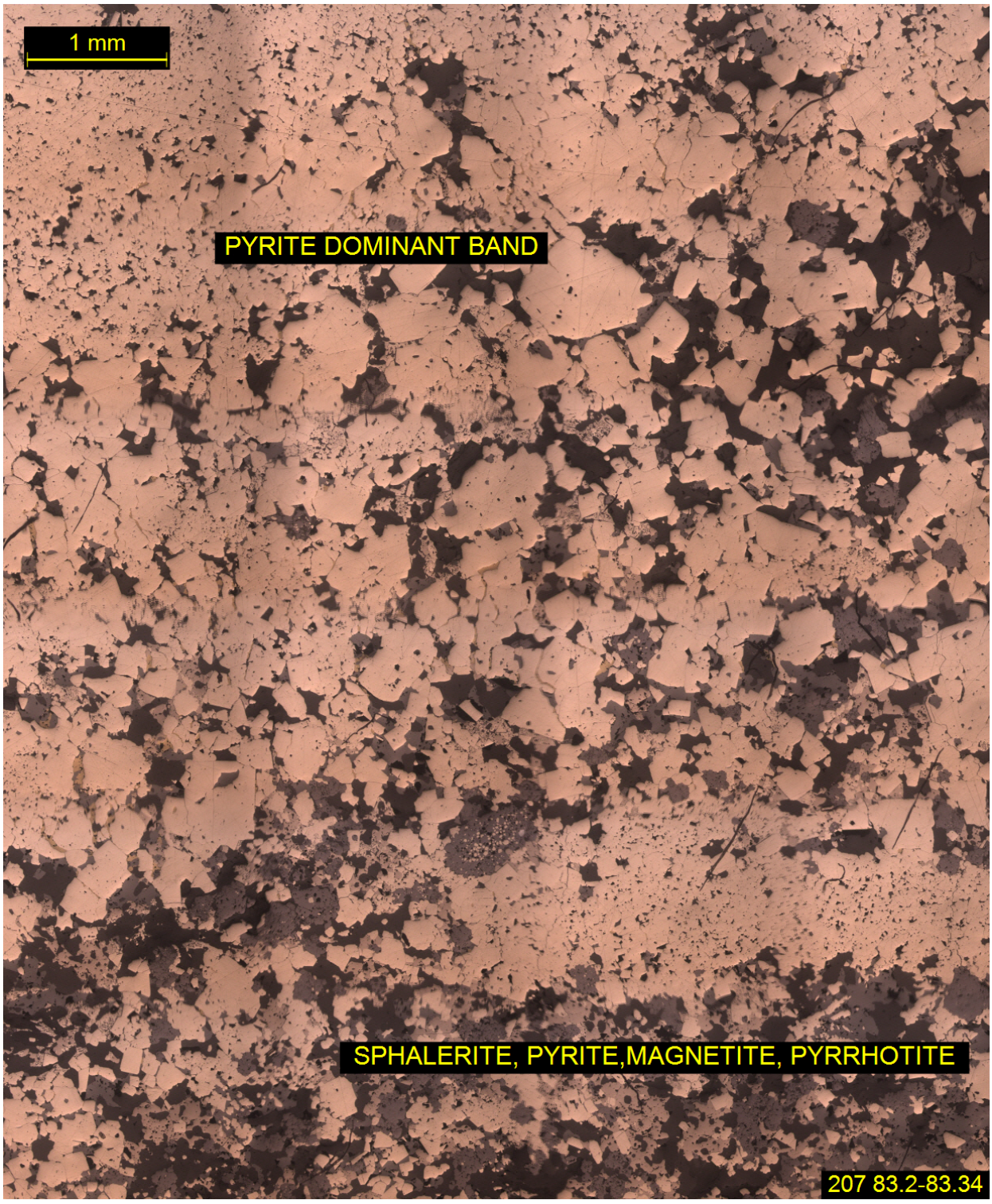
The main bands comprise a dominant sphalerite host containing significant disseminated discrete grains and lesser aggregates of euhedral pyrite (~50 to ~600 µm), and frequent irregular allotriomorphic magnetite masses (up to ~900 µm). Certain areas contain significant pyrrhotite allotriomorphic masses (up to over 1 mm), which are occasionally undergoing incipient to moderate alteration to marcasite.

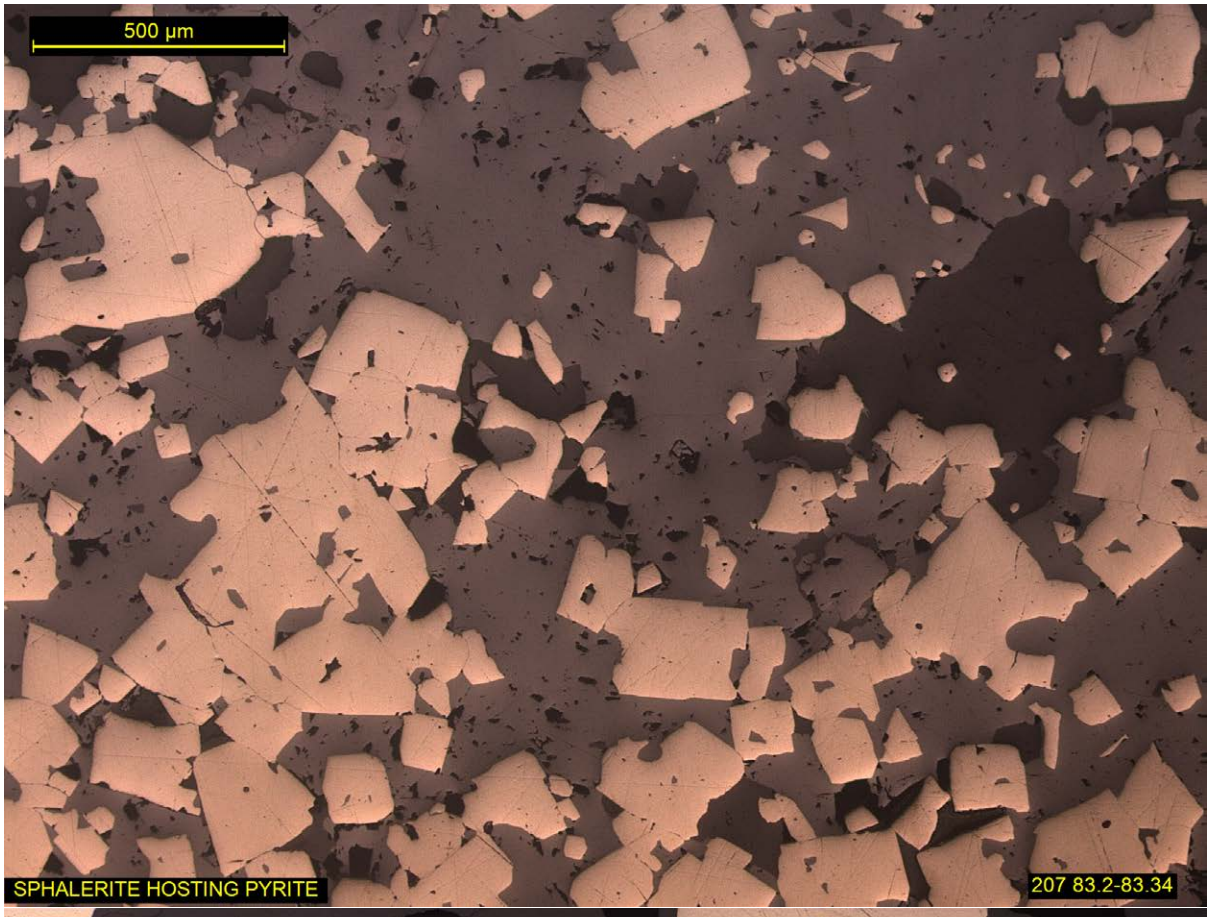
The pyrite dominant band is up to ~12mm thick, comprised of massive pyrite (subhedral/euhedral accumulations), with low proportions of interstitial carbonate and sphalerite. Fine galena and chalcopyrite are found in trace levels throughout.

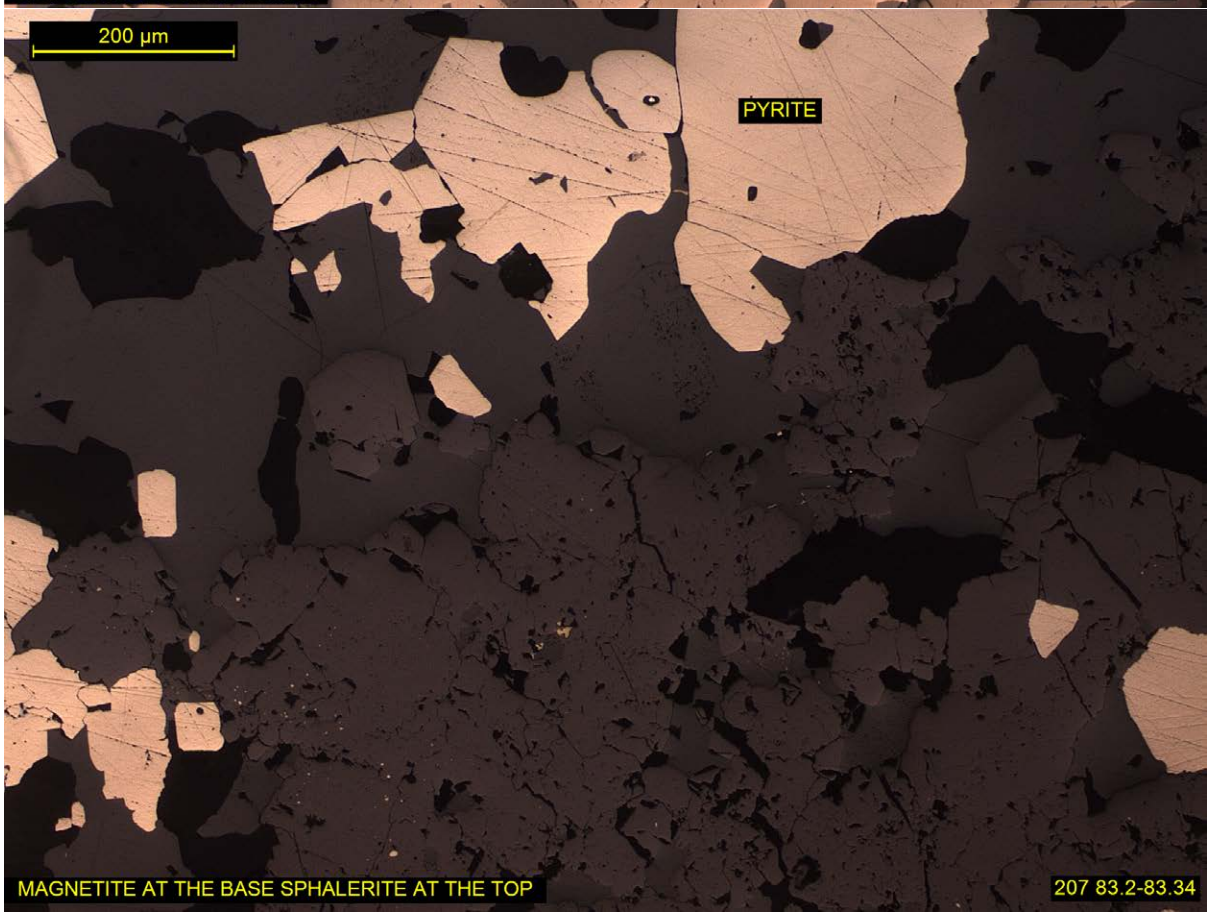
Chalcopyrite is found sporadically across the various bands most frequently associated with pyrite and sphalerite, as slivers, rectangular, irregularly shaped grains (microns to ~200 µm). It occurs as inclusions in pyrite and sphalerite, forming composites with pyrite, occasionally hosting pyrite, and as matrix to adjacent ores with grain shapes dictated by host ores.

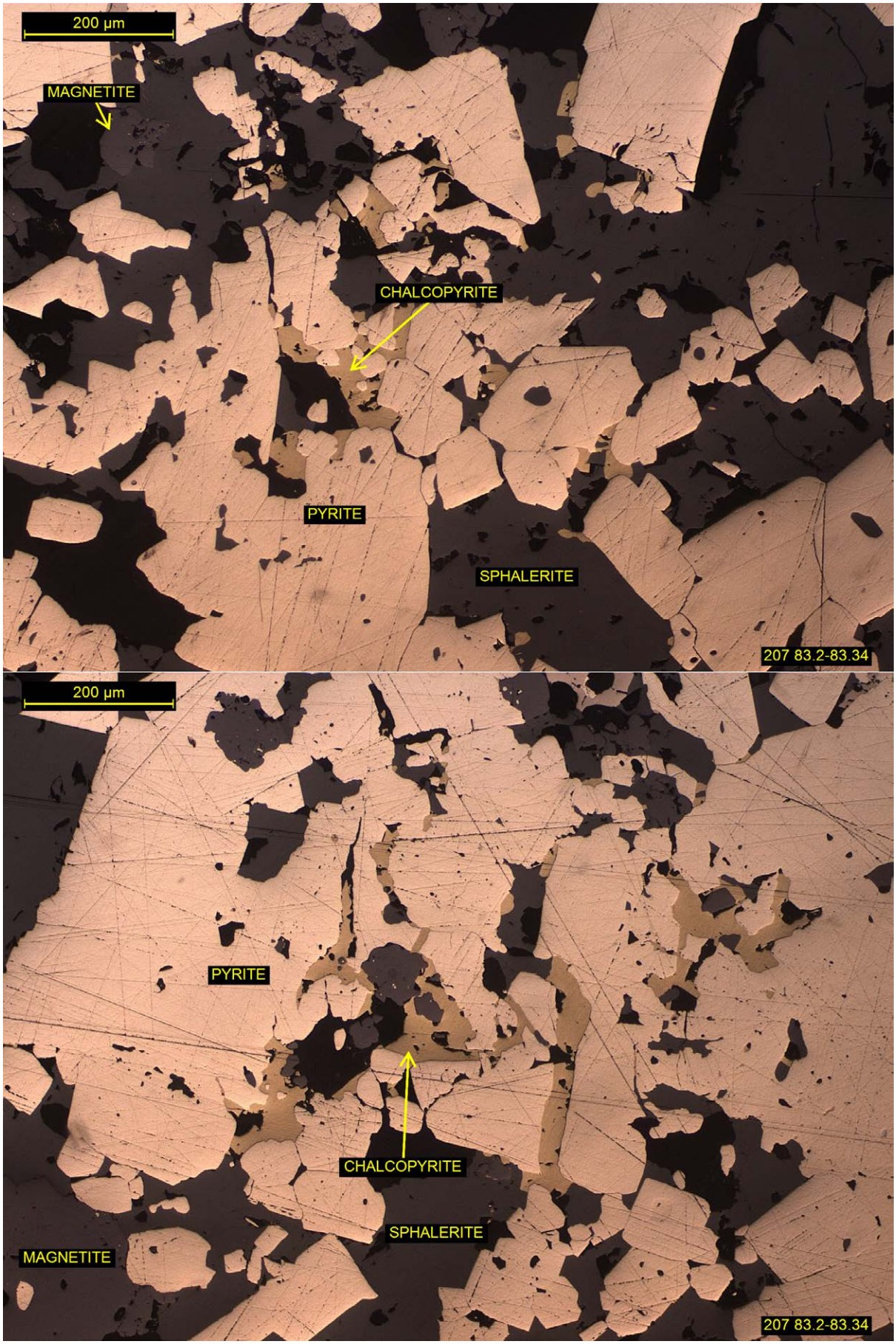
Galena is found in trace levels across all bands, occurring as fine irregularly shaped inclusions (microns to ~110 µm), generally within pyrite.

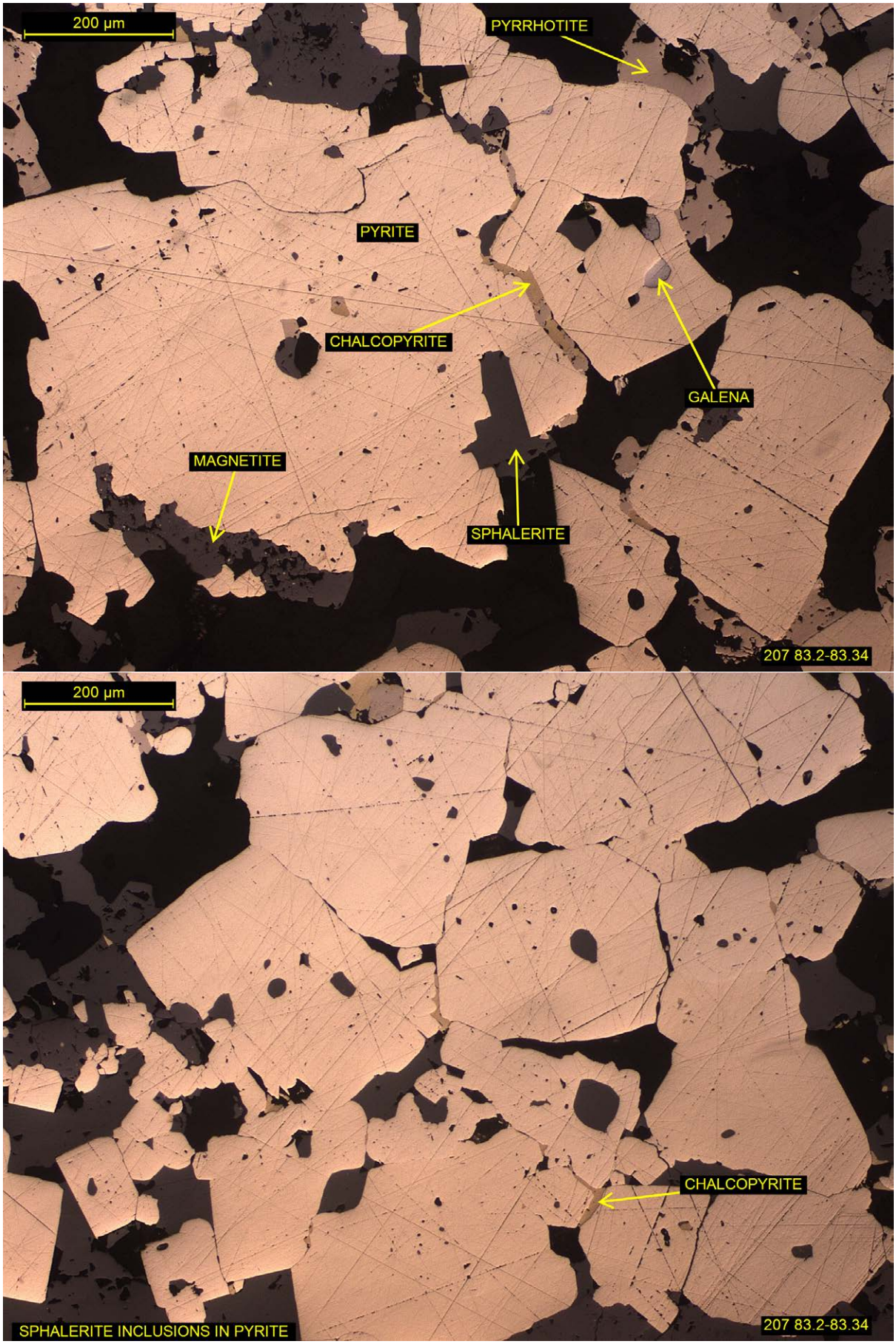

1 mm
SPHALERITE HOSTING PYRITE
207 83.2-83.34

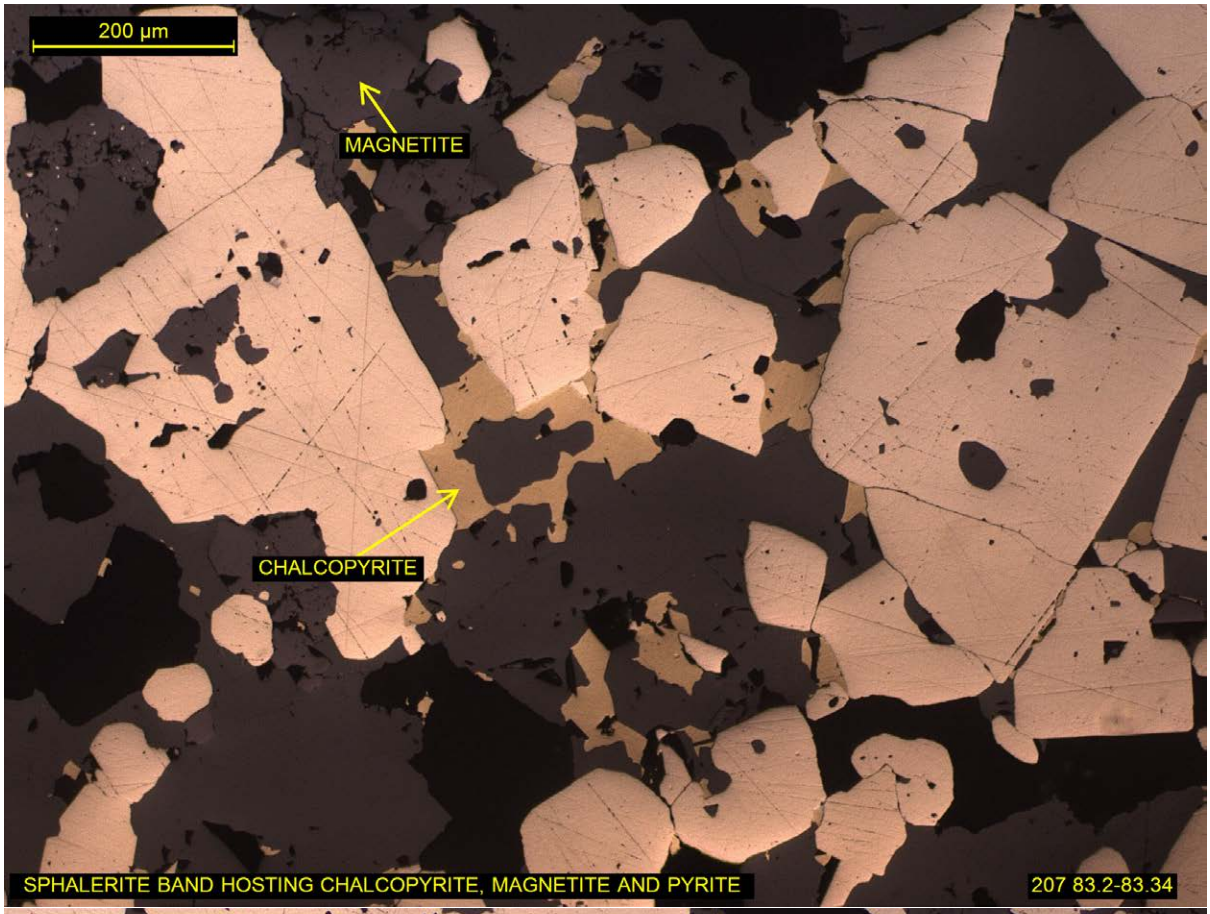

1 mm
PYRITE DOMINANT BAND
SPHALERITE, PYRITE,MAGNETITE, PYRRHOTITE
207 83.2-83.34

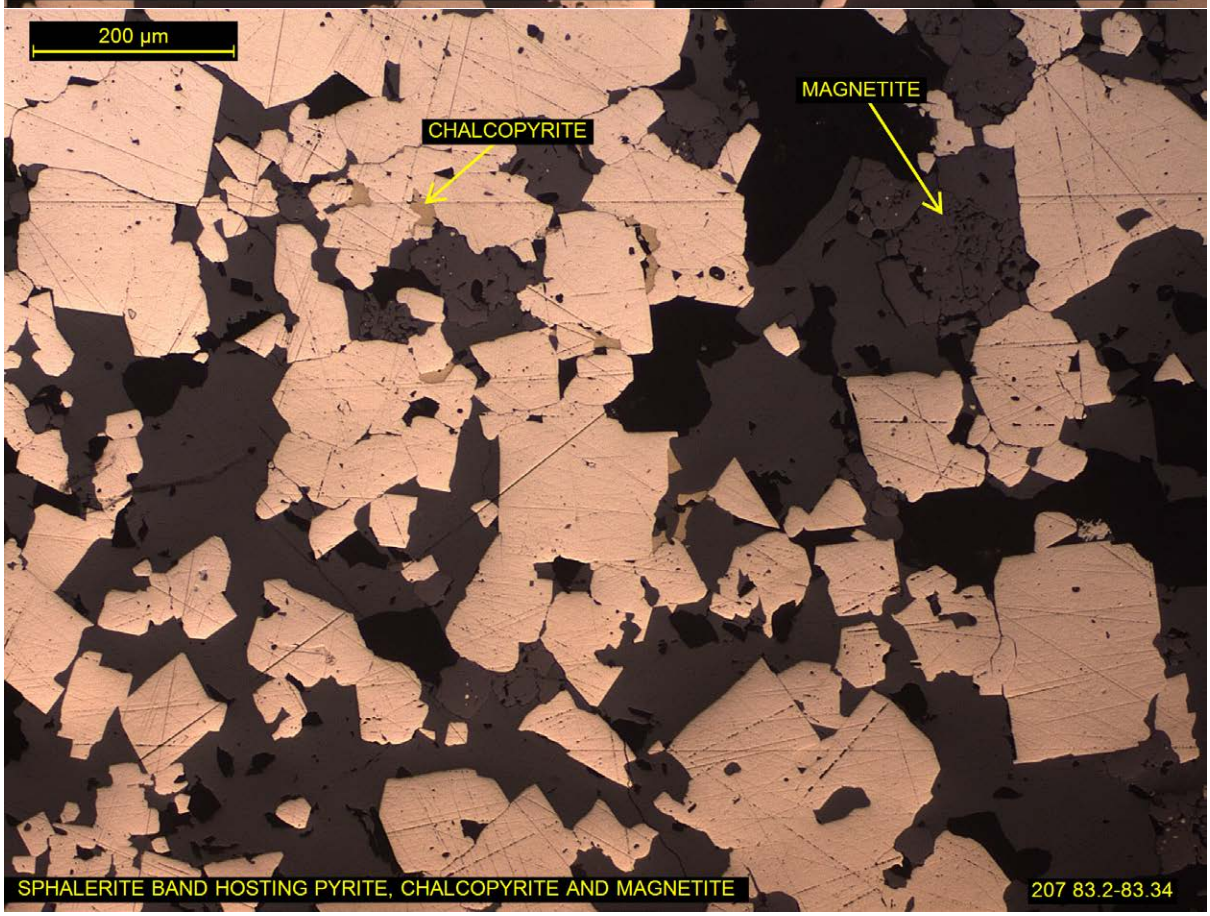

500 µm
SPHALERITE HOSTING PYRITE
207 83.2-83.34

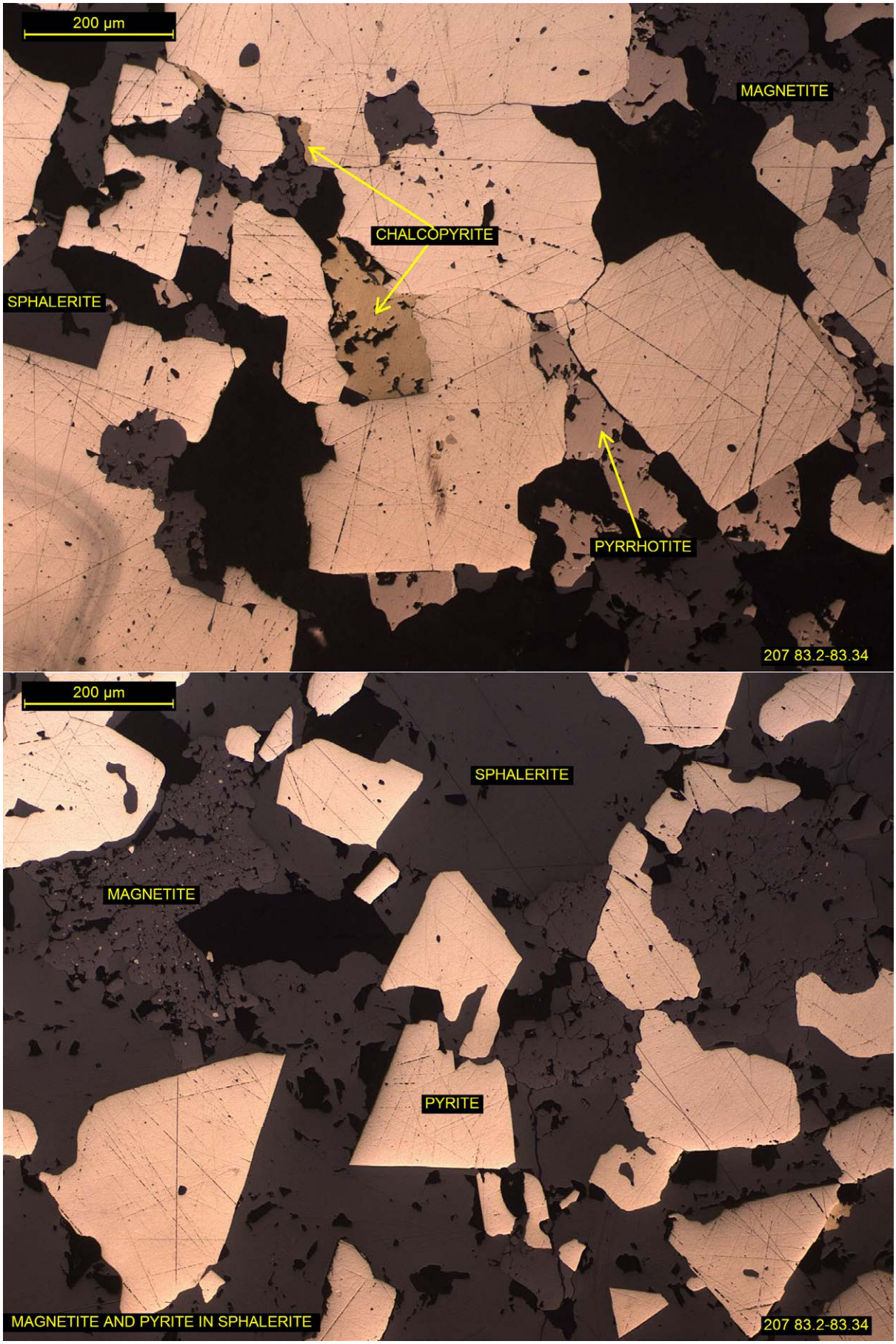

200 µm
PYRITE
MAGNETITE AT THE BASE SPHALERITE AT THE TOP
207 83.2-83.34

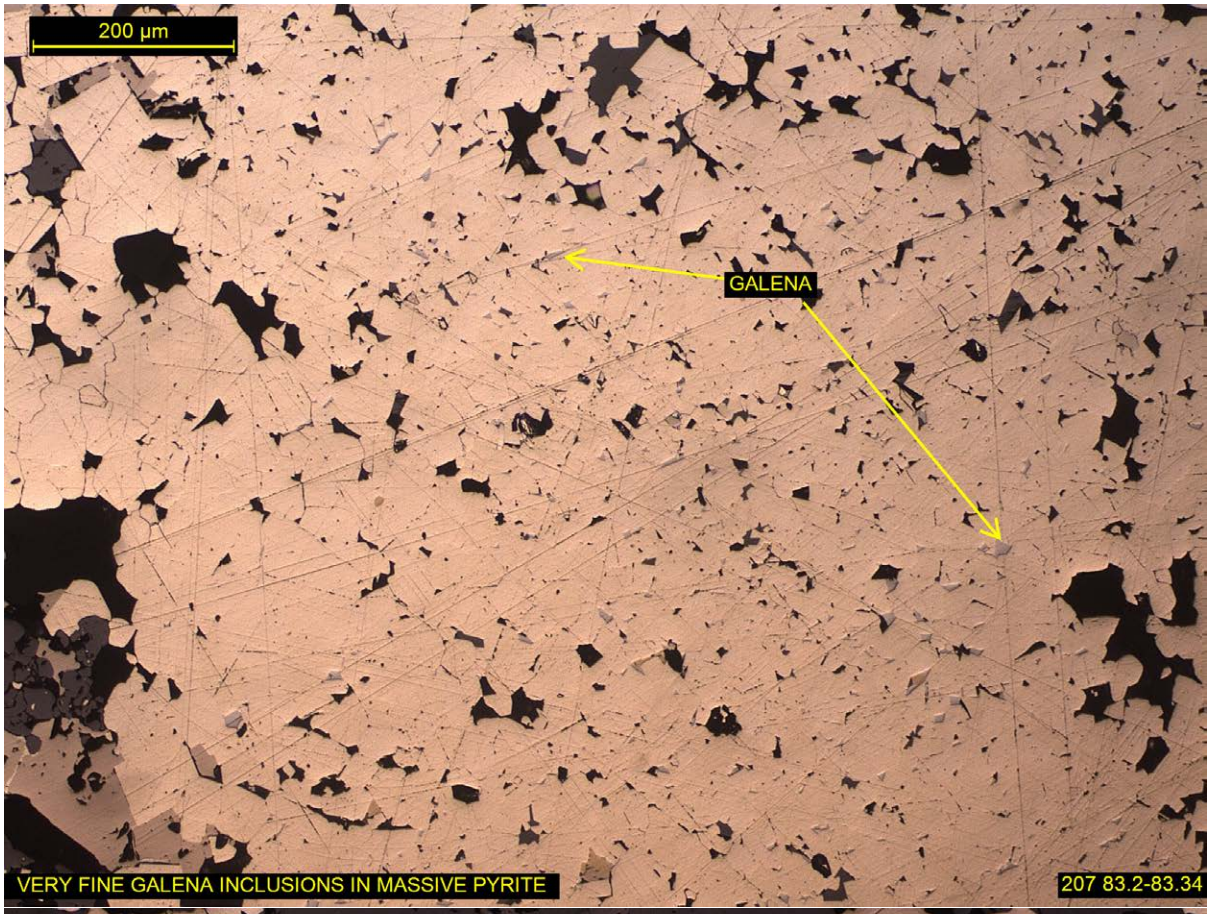

200 µm
MAGNETITE
CHALCOPYRITE
PYRITE
SPHALERITE
207 83.2-83.34
200 µm
PYRITE
CHALCOPYRITE
SPHALERITE
MAGNETITE
207 83.2-83.34

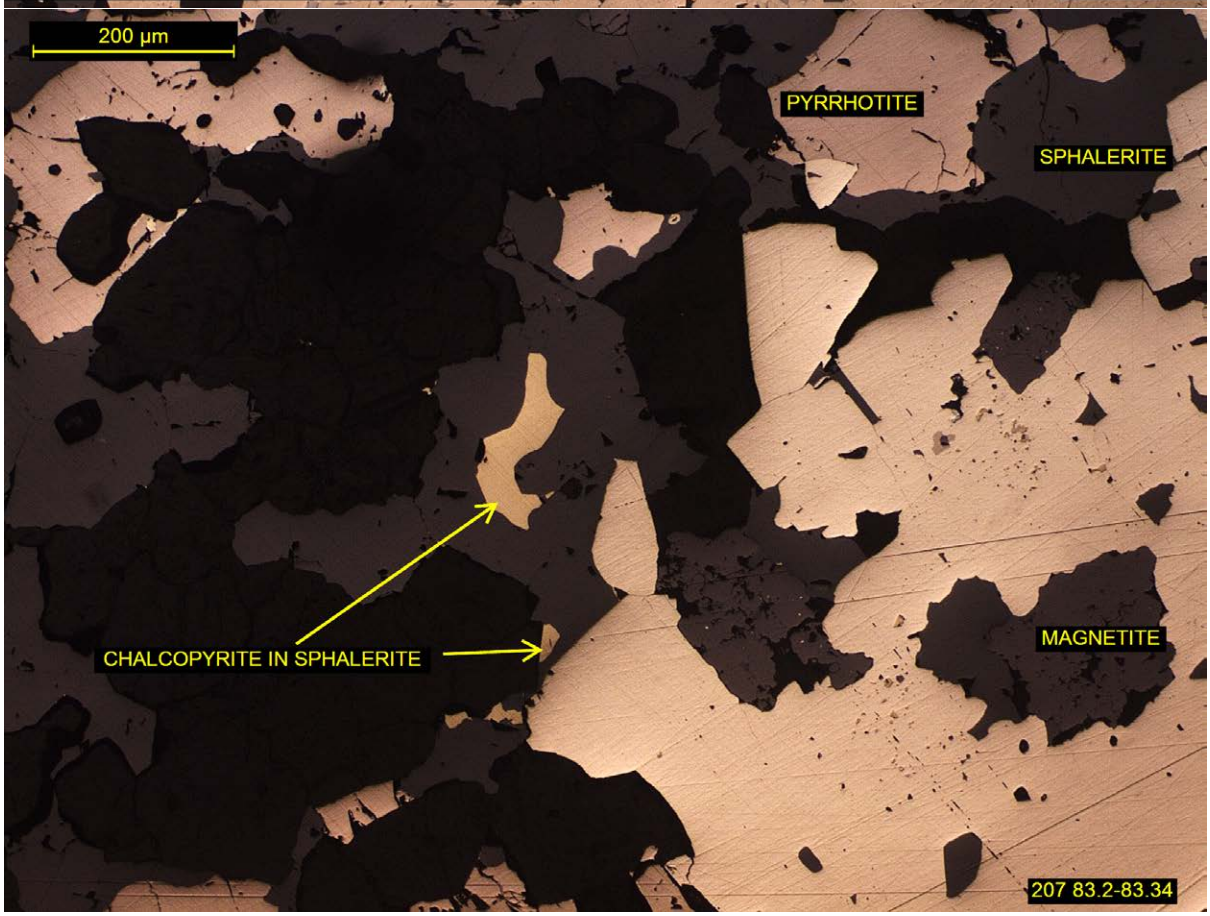

200 µm
PYRRHOTITE
PYRITE
CHALCOPYRITE
GALENA
MAGNETITE
SPHALERITE
207 83.2-83.34
200 µm
CHALCOPYRITE
SPHALERITE INCLUSIONS IN PYRITE
207 83.2-83.34

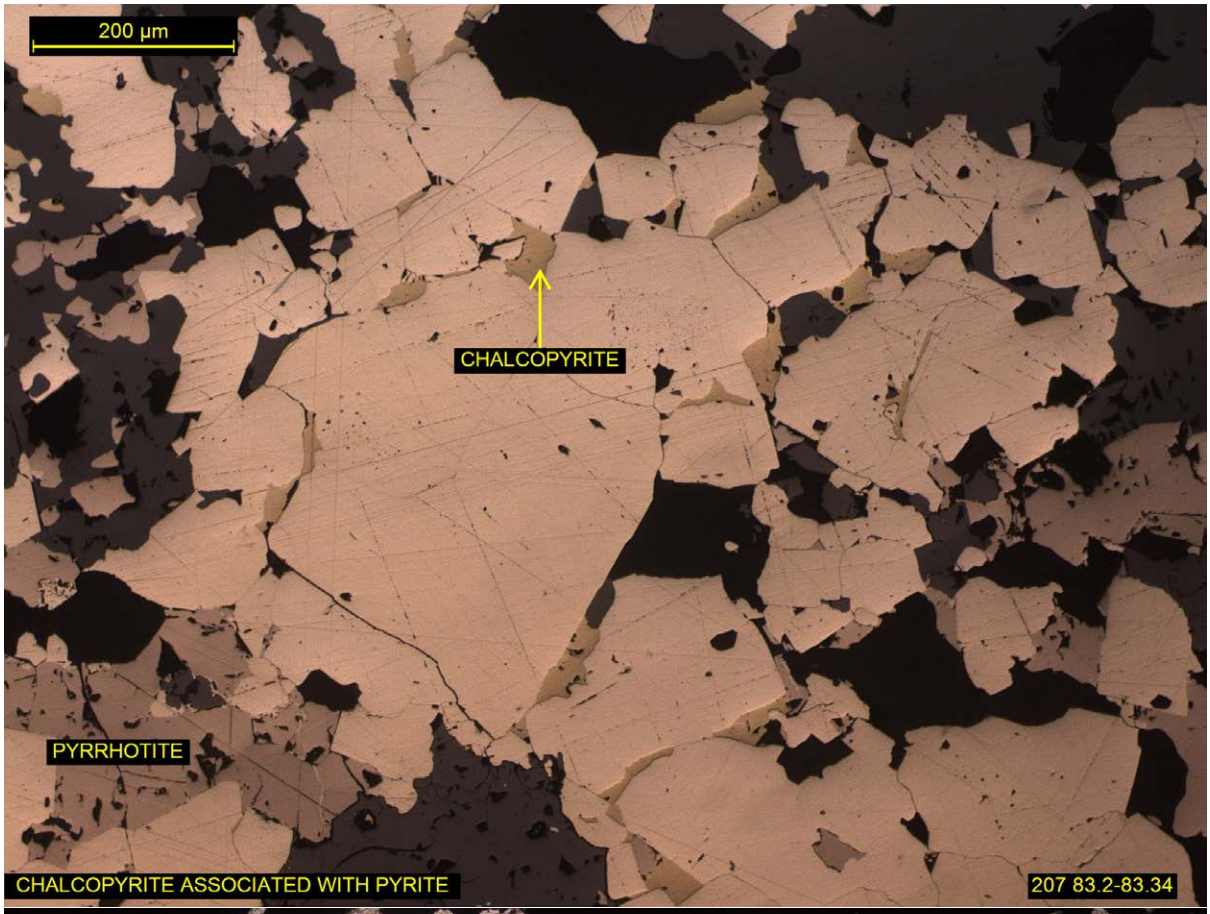

200 µm
MAGNETITE
CHALCOPYRITE
SPHALERITE BAND HOSTING CHALCOPYRITE, MAGNETITE AND PYRITE
207 83.2-83.34

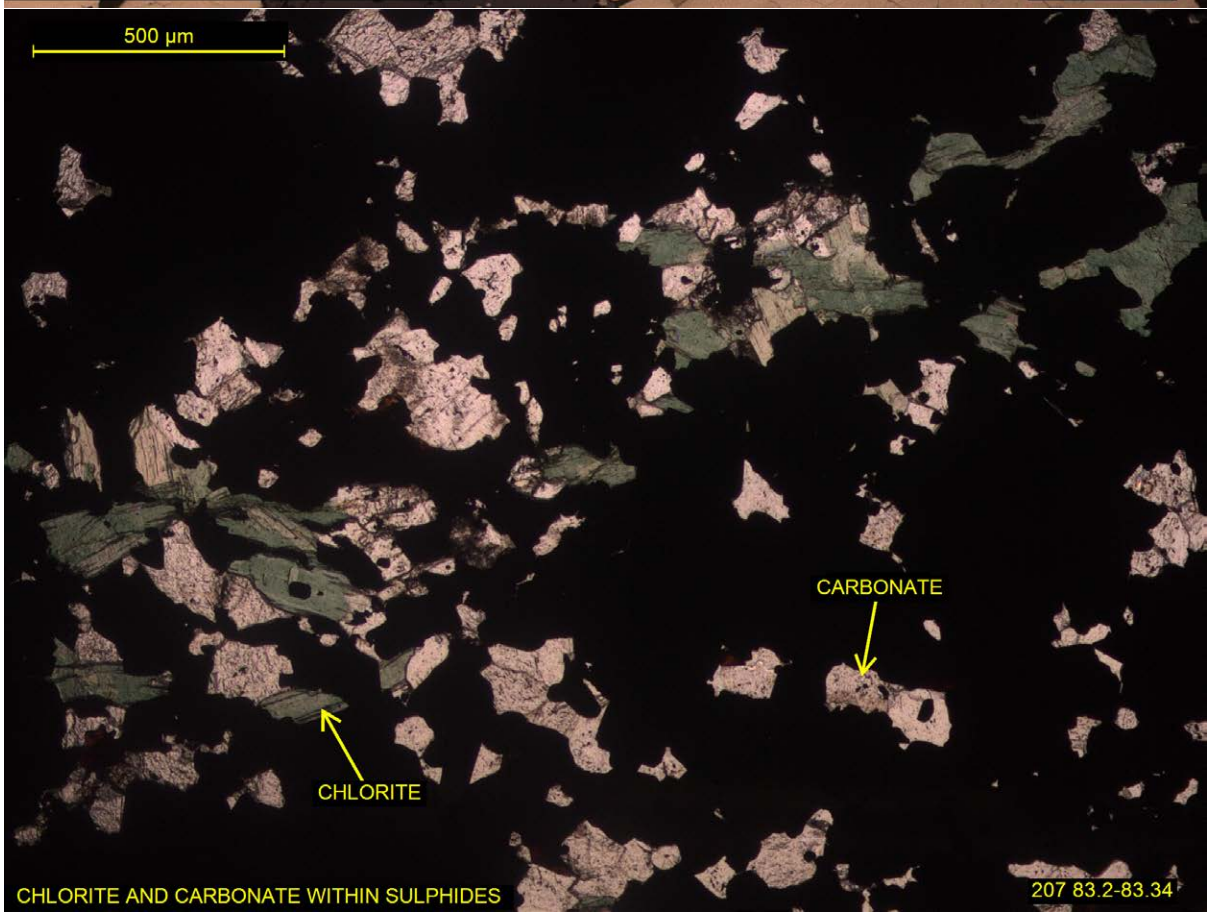

200 µm
CHALCOPYRITE
MAGNETITE
SPHALERITE BAND HOSTING PYRITE, CHALCOPYRITE AND MAGNETITE
207 83.2-83.34


200 µm
MAGNETITE
CHALCOPYRITE
SPHALERITE
PYRRHOTITE
207 83.2-83.34
200 µm
SPHALERITE
MAGNETITE
PYRITE
MAGNETITE AND PYRITE IN SPHALERITE
207 83.2-83.34


200 µm
GALENA
VERY FINE GALENA INCLUSIONS IN MASSIVE PYRITE
207 83.2-83.34


200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE IN SPHALERITE
MAGNETITE
207 83.2-83.34


200 µm
CHALCOPYRITE
PYRRHOTITE
CHALCOPYRITE ASSOCIATED WITH PYRITE
207 83.2-83.34


500 µm
CARBONATE
CHLORITE
CHLORITE AND CARBONATE WITHIN SULPHIDES
207 83.2-83.34

SAMPLE K15-236 81.5-81.6

DRILL CORE

POLISHED THIN SECTION

GANGUE	**7%**
DOLOMITE/SIDERITE	99%
QUARTZ	<1%
ORES	**93%**
PYRITE	50-60%
PYRRHOTITE	15-25%
MAGNETITE	10-20%
SPHALERITE	3-7%
CHALCOPYRITE	3-7%
GALENA	<1%
ARSENOPYRITE	<1%

CLASSIFIED AS A DOLOMITE/SIDERITE CEMENTED BANDED MAGNETITE PYRRHOTITE PYRITE ORE WITH DISSEMINATED SPHALERITE, CHALCOPYRITE AND GALENA.

The sample is characterised by a wavy roughly banded texture, comprising primarily pyrite dominant bands, and intervening lenticular intermittent pyrrhotite rich and magnetite rich laminations. Sphalerite is typically an accessory component of most bands, occurring as irregularly shaped allotriomorphic grains/grains (up to ~550 µm). Large pods (up to ~2mm) of sphalerite were occasionally observed. The gangue is comprised primarily of carbonate (dolomite and siderite), found as interstitial polycrystalline inclusions (~300 µm average).

Magnetite layers are discontinuous/intermittent in nature, around ~2mm thick, characterised mainly by allotriomorphic textures and occasional subhedral grains. Magnetite is peppered with inclusions of carbonate, pyrite, pyrrhotite, subordinate chalcopyrite and sphalerite. These ores are occasionally significant.

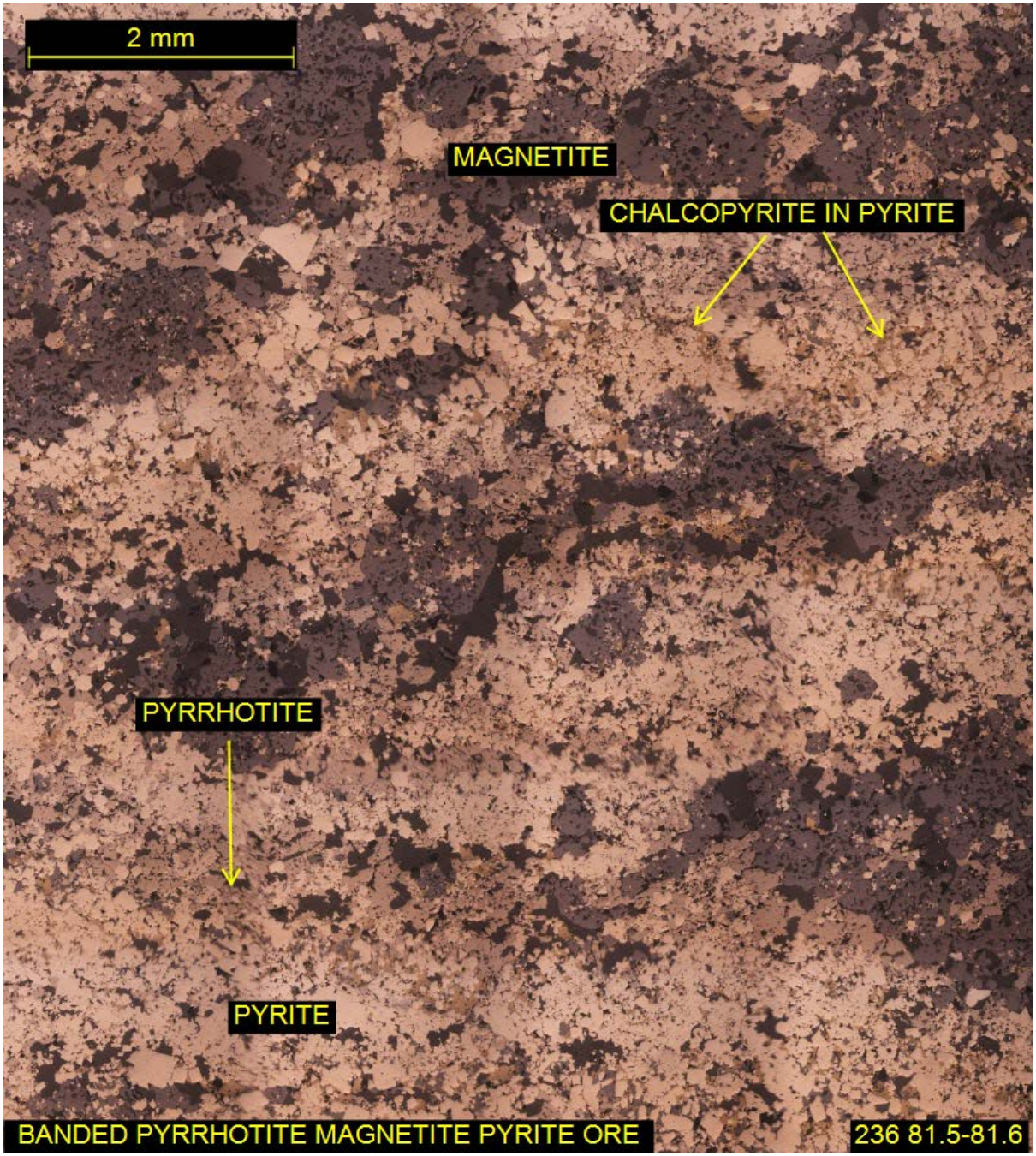
Pyrrhotite rich layers up to ~2.5mm thick are present, roughly banded, pinching in and out with the pyrite layers. Again these layers are peppered with fine (~50 to ~250 µm) carbonate and pyrite inclusions, occasionally magnetite.

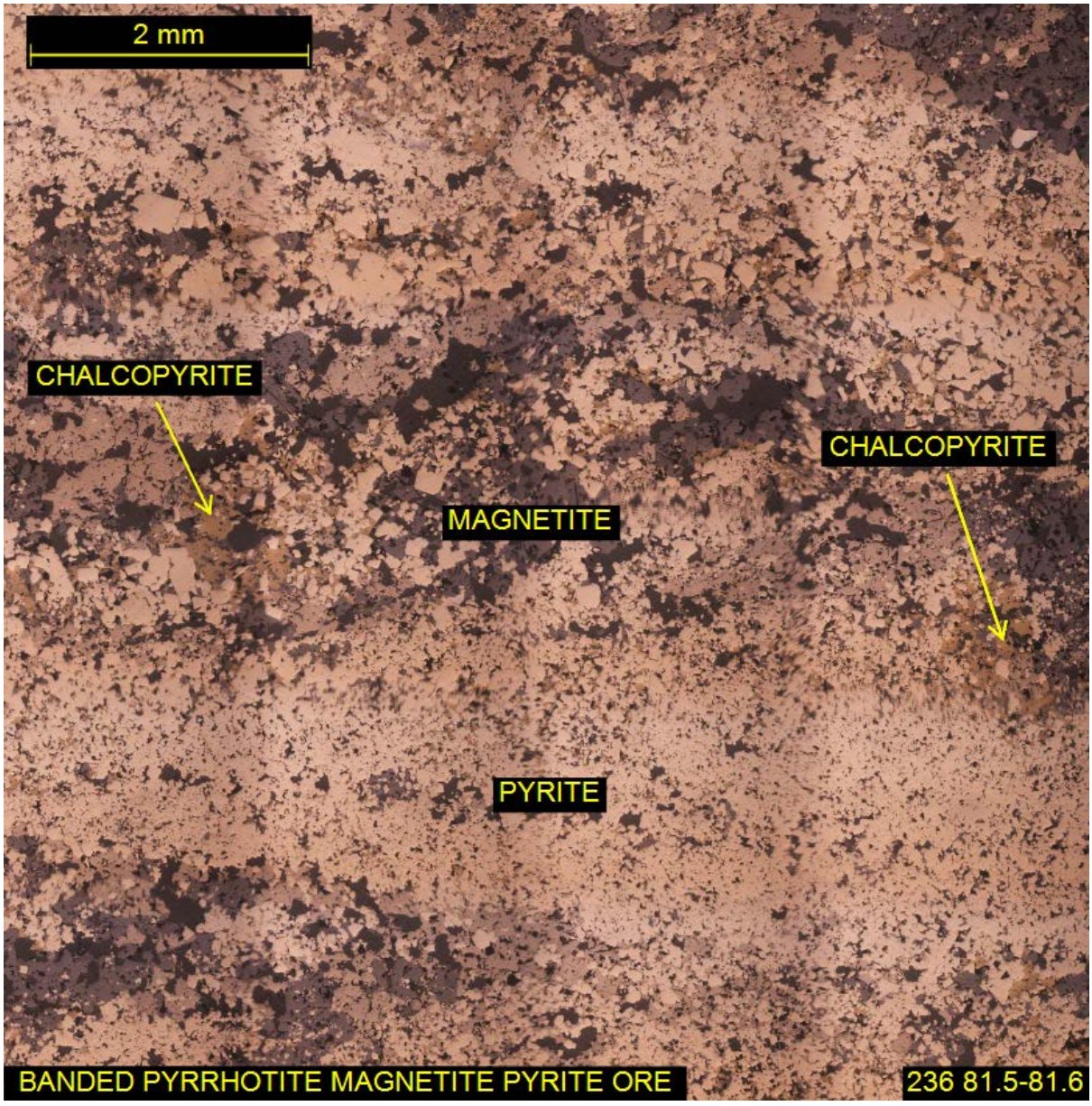
The majority of bands are pyrite rich, comprised of dominant coalesced and subordinate euhedral pyrite grains (~150 µm average), with sporadic interstitial magnetite, chalcopyrite and sphalerite, all defined by the pyrite framework (~50 to ~200 µm).

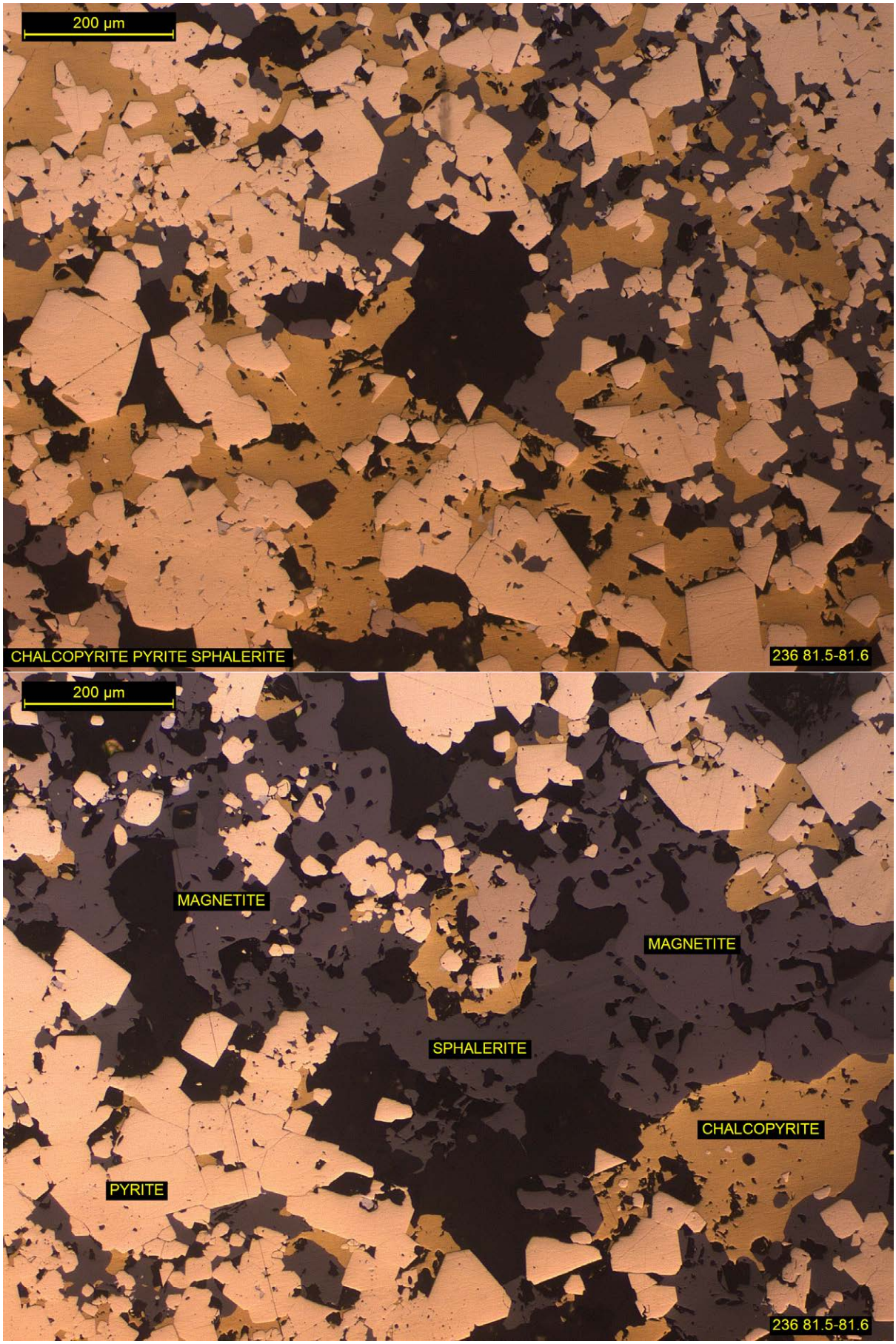
Chalcopyrite is most frequent within the pyrite bands, on occasion making up a minor/major component. Its usual texture is an interstitial matrix to the euhedral/coalesced pyrites. It forms major content in localized zones, as irregularly shaped grains/aggregates ranging from ~30 to ~500 µm. Chalcopyrite is also associated with magnetite, sphalerite, pyrrhotite and occasionally galena.

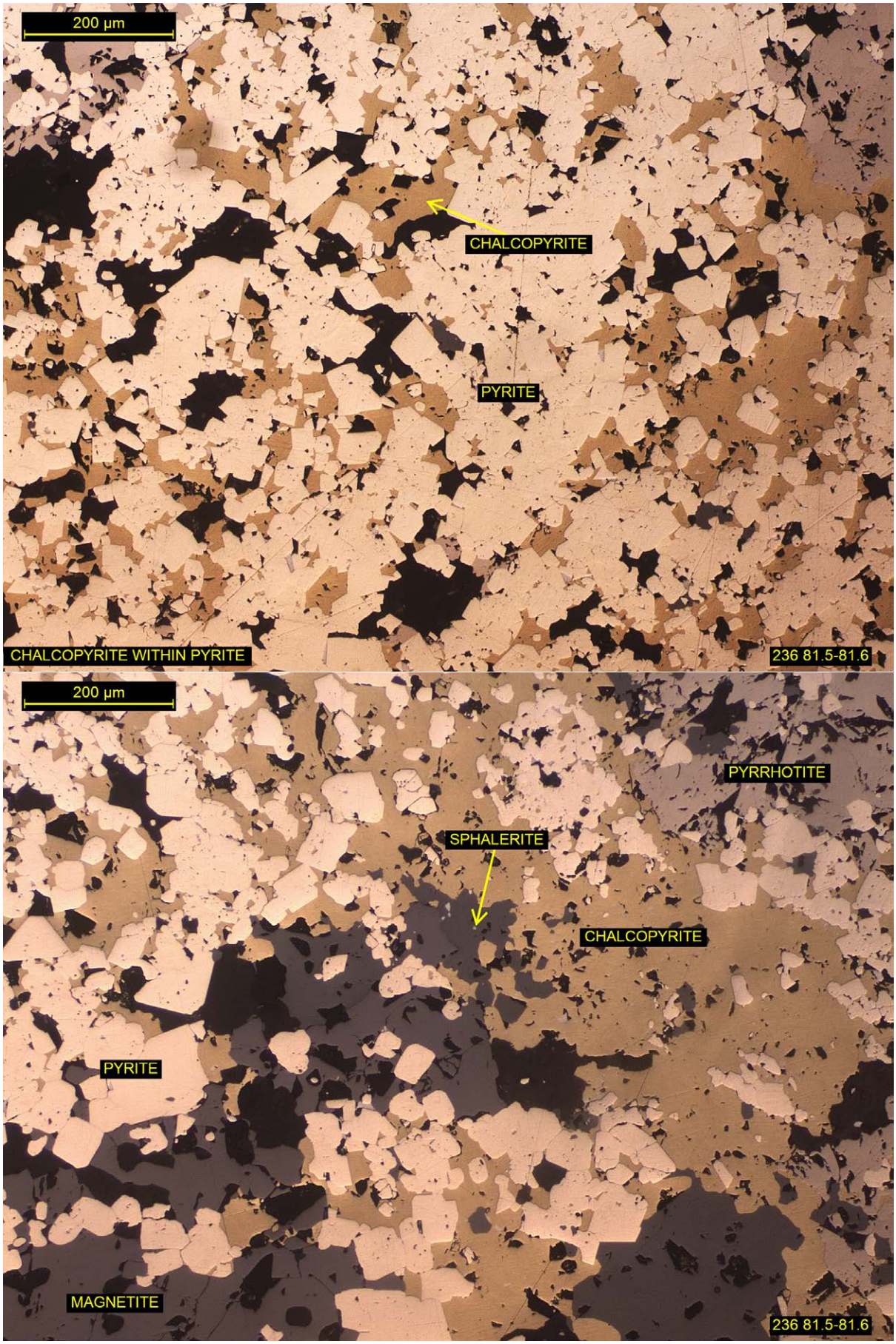
Galena is generally a trace phase, commonest occurrences include irregular fine (microns up to ~50 µm, occasionally up to ~500 µm) grains that frequently rim pyrite, as inclusions in pyrite, and associated occasionally with chalcopyrite or arsenopyrite. On rare occasions it forms localized clusters compositing with pyrite, magnetite arsenopyrite and chalcopyrite)

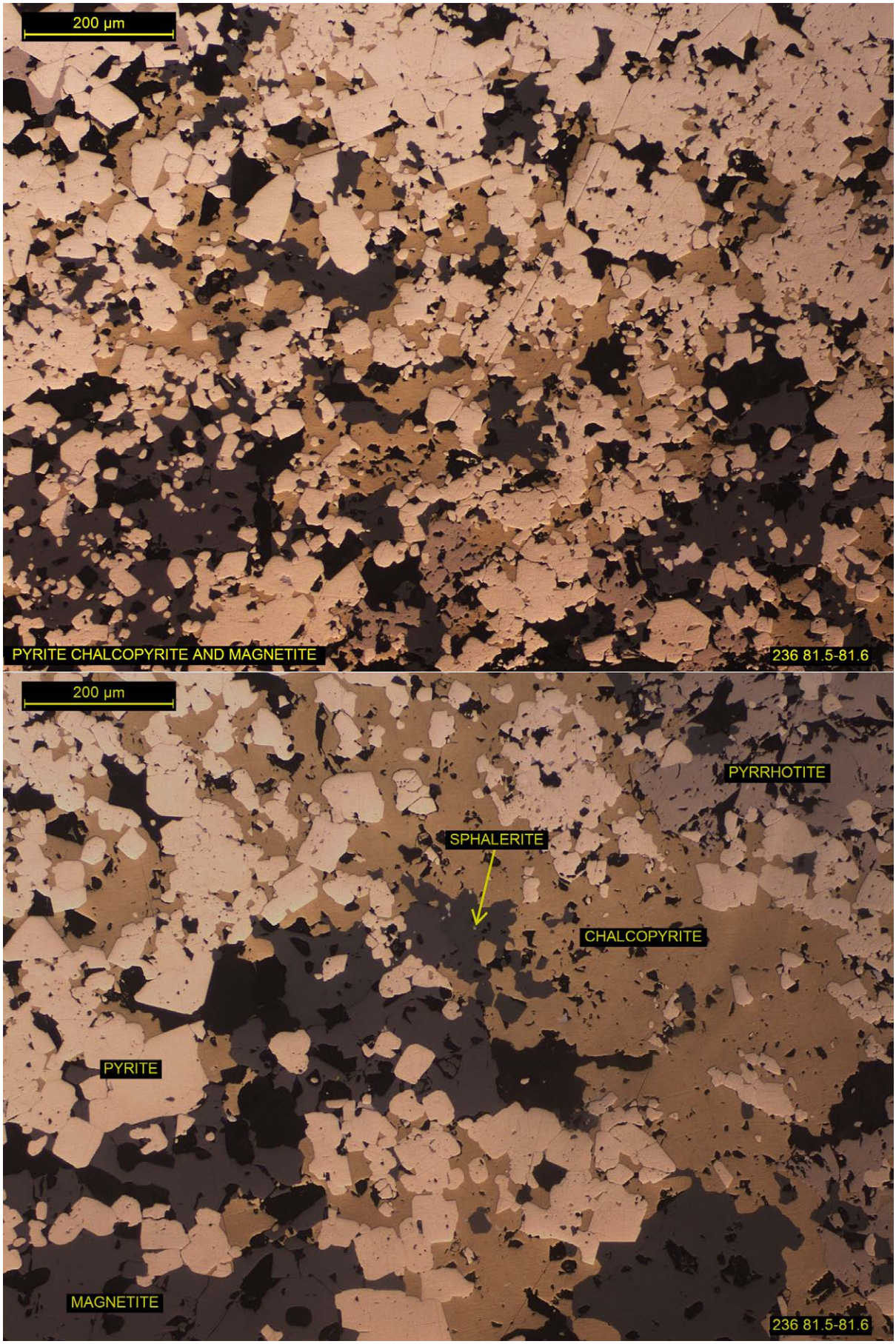
Arsenopyrite euhedral grains were found in clusters (~30 µm) grains as inclusions in magnetite, and occasionally in pyrite and pyrrhotite.

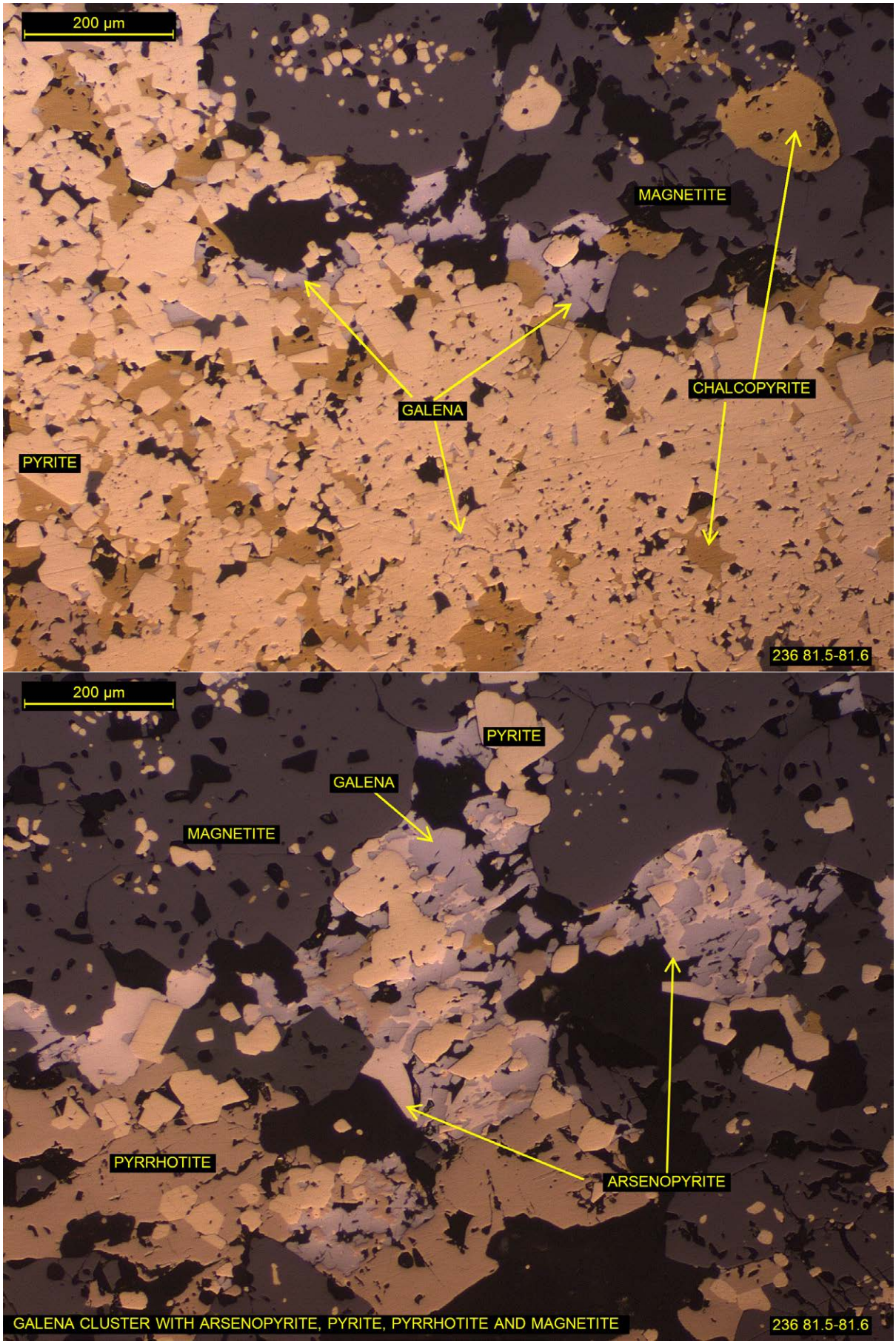


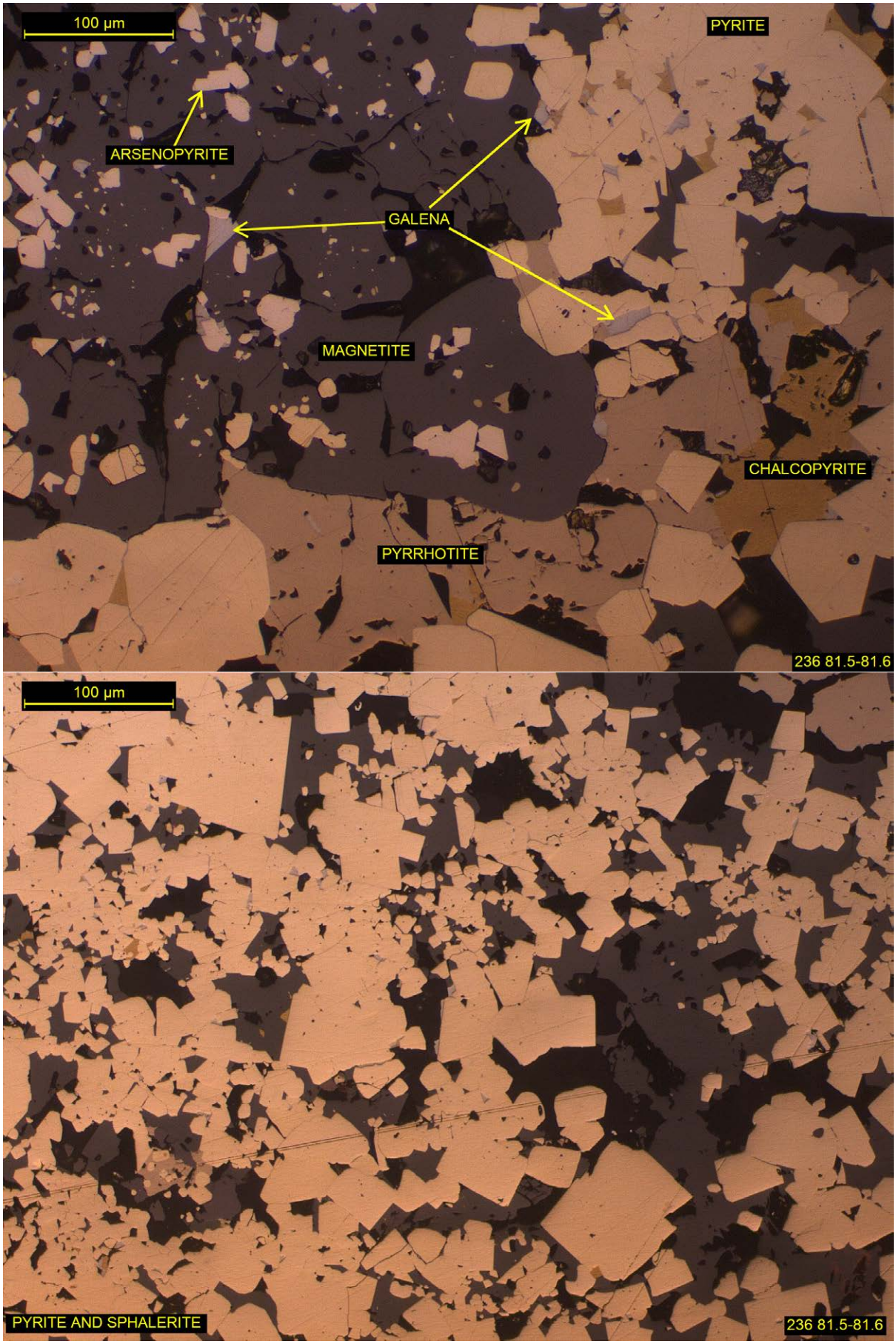

2 mm
CHALCOPYRITE
MAGNETITE
CHALCOPYRITE
PYRITE
BANDED PYRRHOTITE MAGNETITE PYRITE ORE
236 81.5-81.6

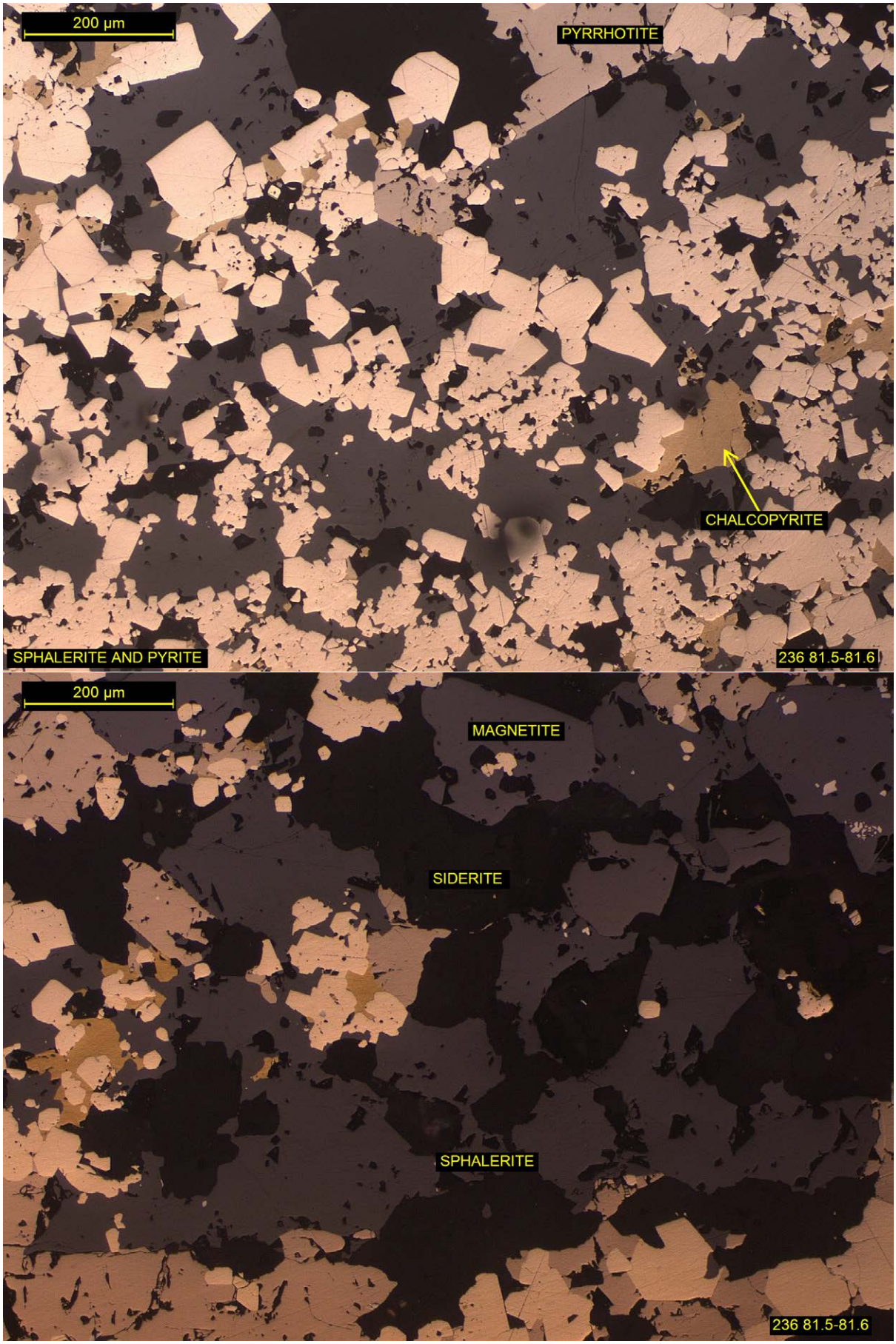

200 µm
CHALCOPYRITE PYRITE SPHALERITE
236 81.5-81.6
200 µm
MAGNETITE
MAGNETITE
SPHALERITE
CHALCOPYRITE
PYRITE
236 81.5-81.6

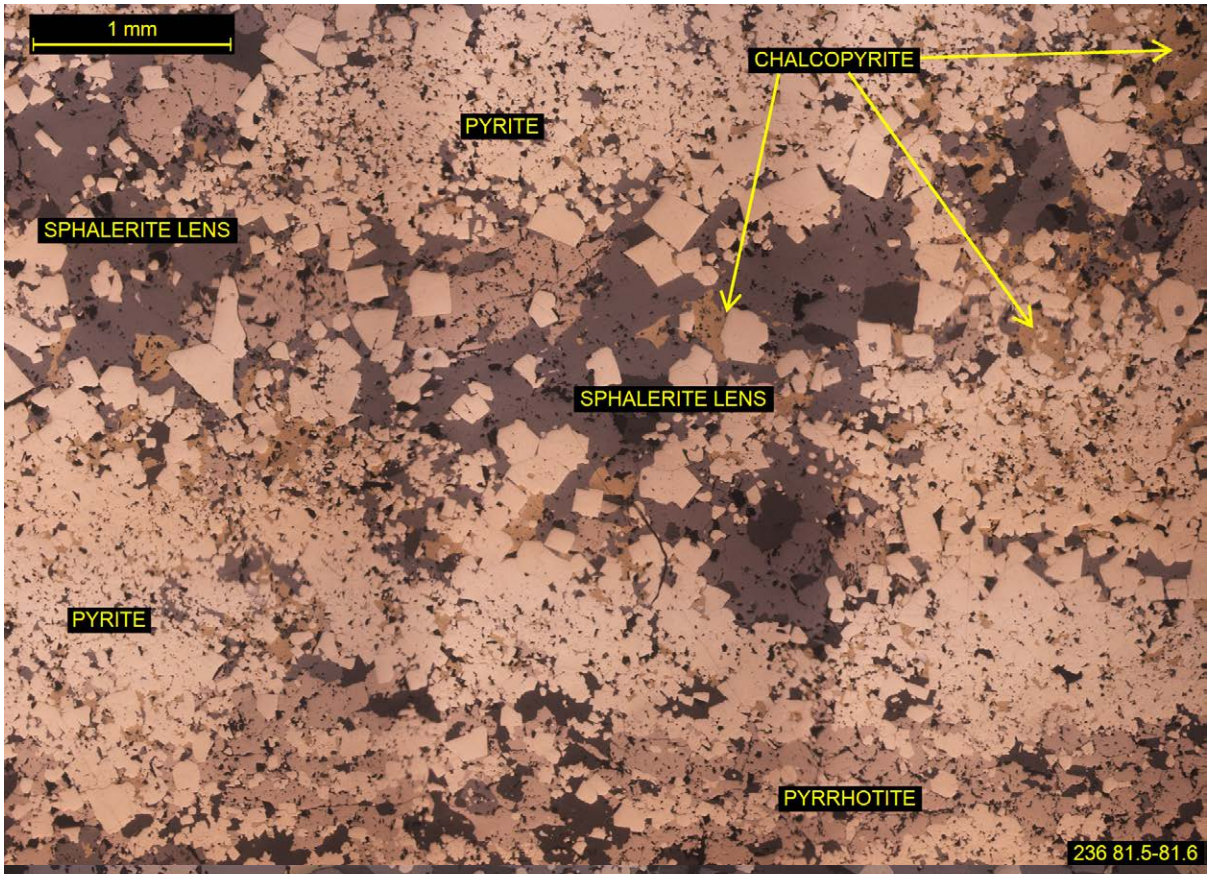

200 µm
CHALCOPYRITE
PYRITE
CHALCOPYRITE WITHIN PYRITE
236 81.5-81.6
200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
PYRITE
MAGNETITE
236 81.5-81.6

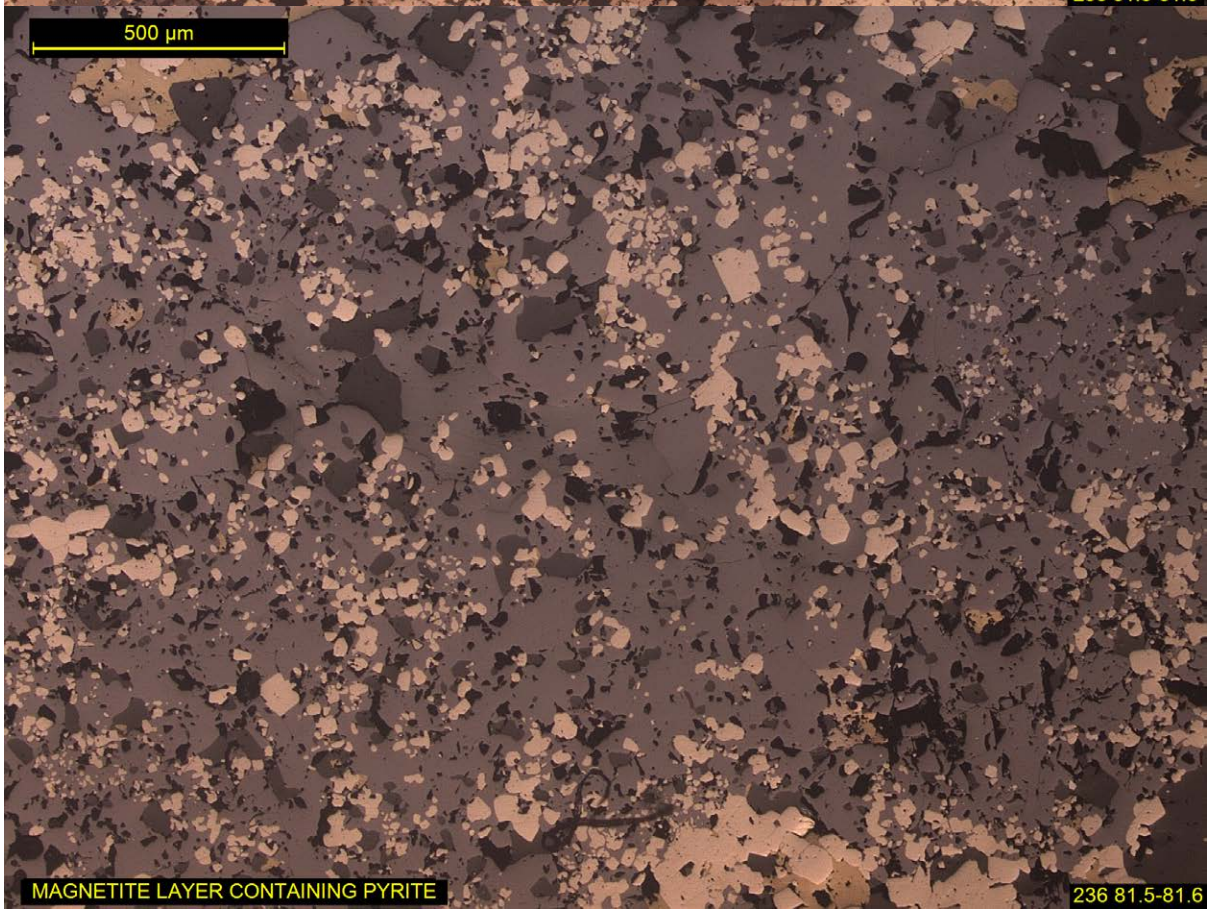

200 µm
PYRITE CHALCOPYRITE AND MAGNETITE
236 81.5-81.6
200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
PYRITE
MAGNETITE
236 81.5-81.6

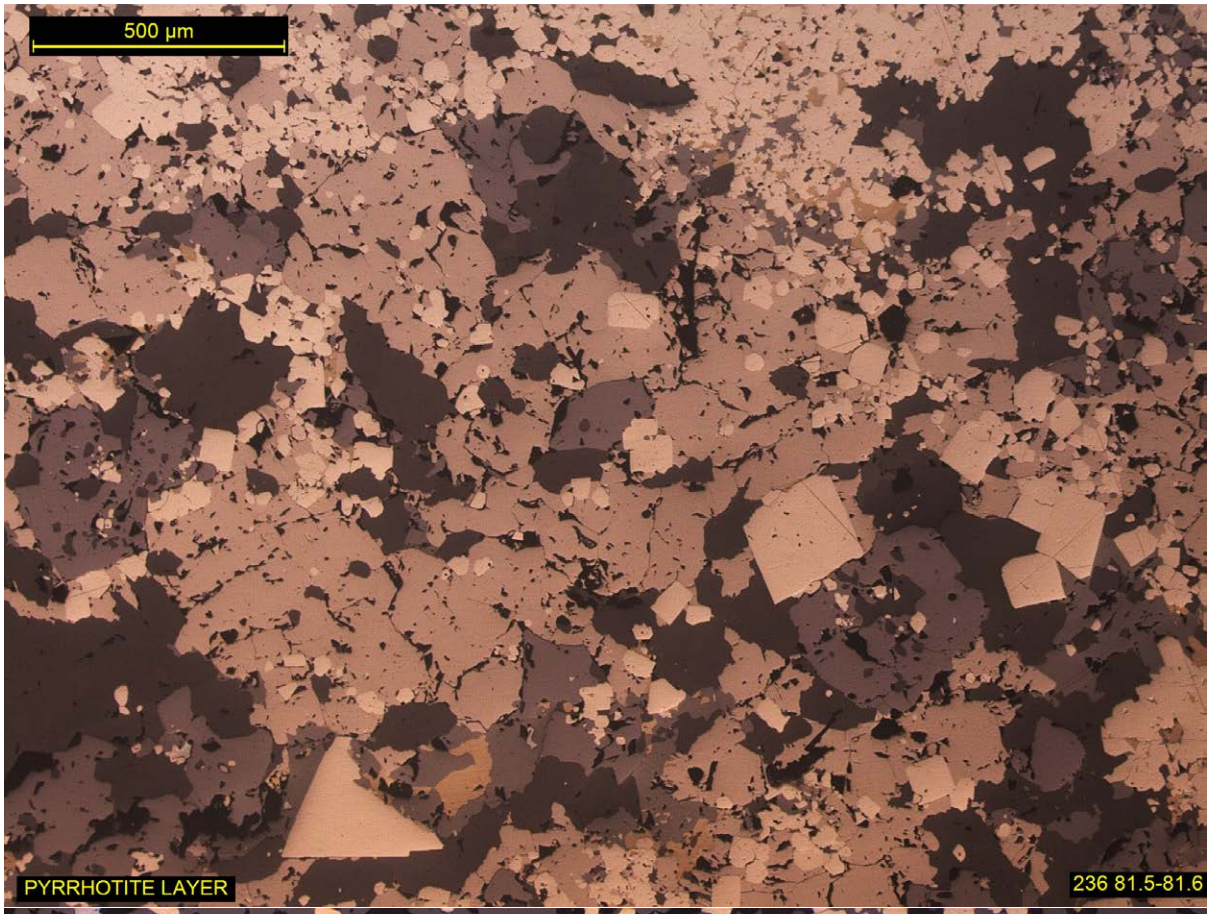

200 µm
MAGNETITE
GALENA
CHALCOPYRITE
PYRITE
236 81.5-81.6
200 µm
PYRITE
GALENA
MAGNETITE
PYRRHOTITE
ARSENOPYRITE
GALENA CLUSTER WITH ARSENOPYRITE, PYRITE, PYRRHOTITE AND MAGNETITE
236 81.5-81.6

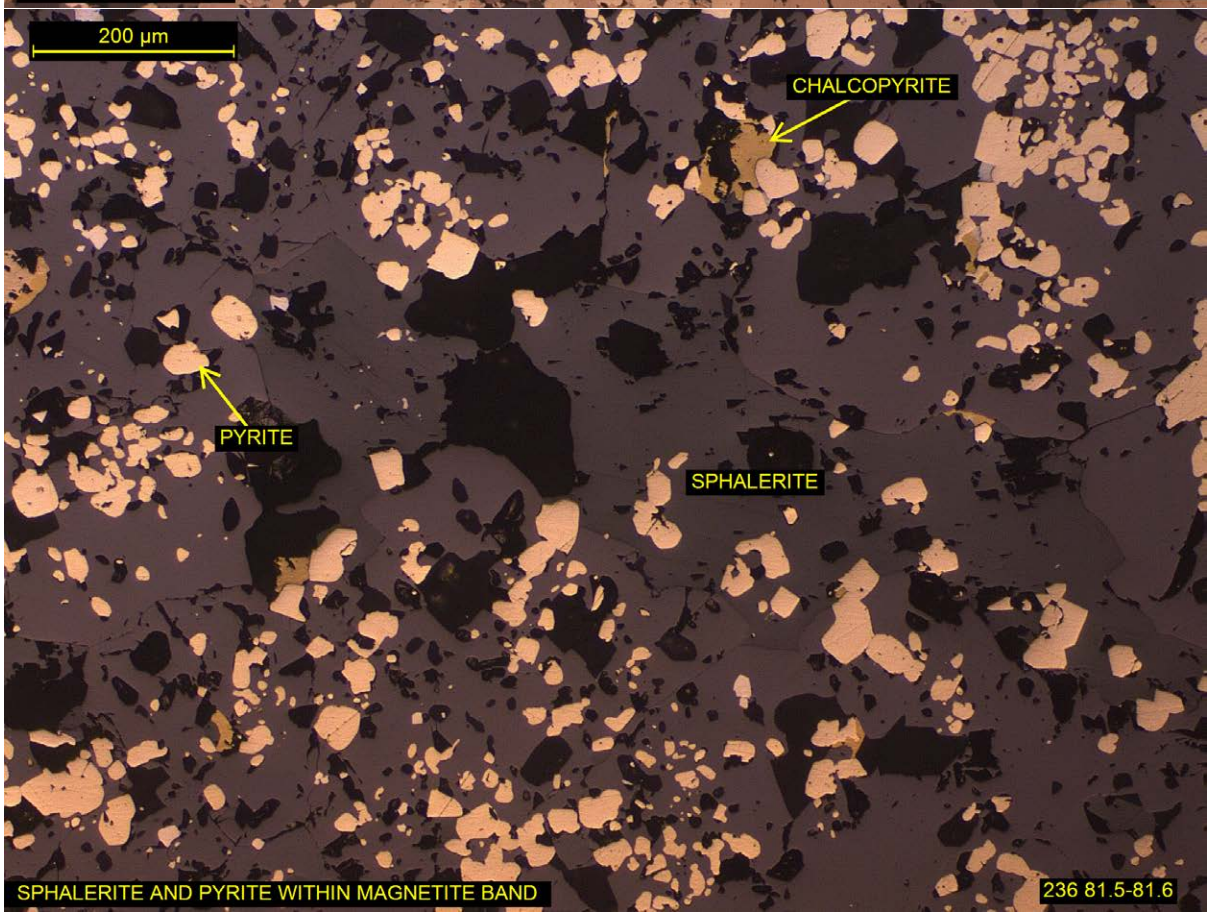

100 µm
PYRITE
ARSENOPYRITE
GALENA
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
236 81.5-81.6
100 µm
PYRITE AND SPHALERITE
236 81.5-81.6

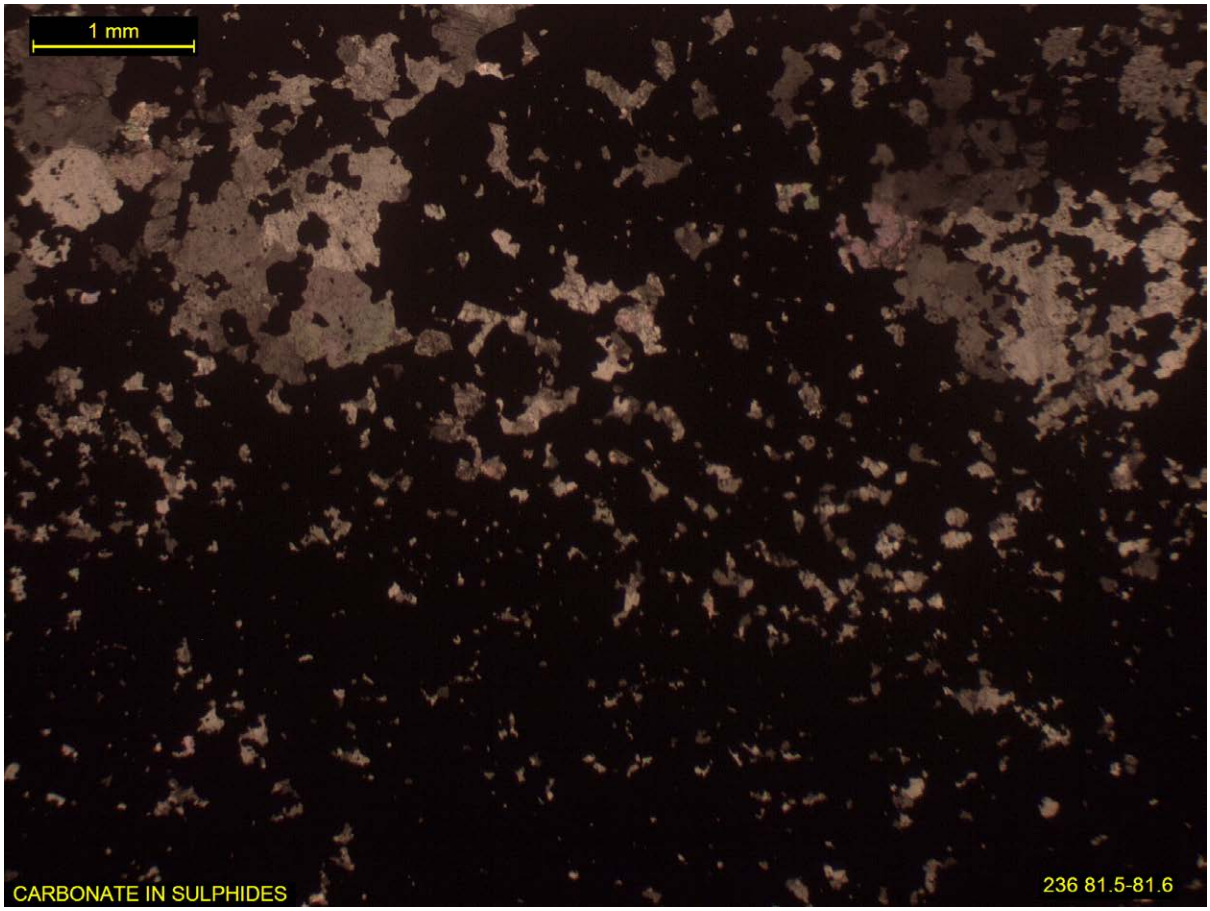

200 µm
PYRRHOTITE
CHALCOPYRITE
SPHALERITE AND PYRITE
236 81.5-81.6
200 µm
MAGNETITE
SIDERITE
SPHALERITE
236 81.5-81.6


1 mm
CHALCOPYRITE
PYRITE
SPHALERITE LENS
SPHALERITE LENS
PYRITE
PYRRHOTITE
236 81.5-81.6


500 µm
MAGNETITE LAYER CONTAINING PYRITE
236 81.5-81.6


500 µm
PYRRHOTITE LAYER
236 81.5-81.6


200 µm
CHALCOPYRITE
PYRITE
SPHALERITE
SPHALERITE AND PYRITE WITHIN MAGNETITE BAND
236 81.5-81.6


1 mm
CARBONATE IN SULPHIDES
236 81.5-81.6

SAMPLE K15-240 47.57-47.67

DRILL CORE

POLISHED THIN SECTION

GANGUE	**20%**
DOLOMITE>SIDERITE	40-60%
QUARTZ	40-60%
ORES	**80%**
PYRITE	50-60%
PYRRHOTITE	10-20%
MAGNETITE	10-20%
SPHALERITE	10-20%
GALENA	1-3%
CHALCOPYRITE	1%
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A BANDED QUARTZ SPHALERITE MAGNETITE PYRRHOTITE QUARTZ PYRITE ORE WITH DISSEMINATED CHALCOPYRITE AND GALENA, AND A DOLOMITE/SIDERITE OVERPRINT.

A sample characterised by alternating pyrite rich and subordinate quartz-carbonate-magnetite-sphalerite-pyrrhotite laminations, the latter form characterised by variation and accessory pyrite. Chalcopyrite and galena are found spasmodically in small clusters. A significant carbonate (dolomite) overprint is evident throughout most bands in addition to siderite veinlets orthogonal to banding. Preliminary XRD and SEM analyses confirmed siderite veins, and dolomite occurring in bands.

Bands of semi-coalesced pyrite is the dominant feature (~1 to ~5 mm thick), comprised of subhedral to euhedral pyrite crystals (~50 to ~500 µm). A ubiquitous subordinate interstitial matrix is present, varying in proportions and mineralogy – comprised of many phases usually magnetite, sphalerite and pyrrhotite, or quartz and dolomite in particular pyrite laminations. The size and shape of these interstitial phases are dictated to by the dominance of pyrite in that particular band (see photomicrographs).

The intervening bands are characterised by varying proportions of quartz-carbonate-magnetite-sphalerite-pyrrhotite and pyrite. Quartz rich types are defined by quartz mosaics (averaging ~300 µm) frequently overprinted by significant dolomite. Pyrrhotite varies from sporadic irregular aggregates to a major constituent of particular laminations, characterised by allotriomorphic irregular shapes (~30 µm to >1mm). Magnetite and sphalerite are frequently associated with each other in complex irregularly shaped composites peppering these bands, also commonly fringing pyrite bands, and are occasionally the dominant phases in particular bands. Both magnetite and sphalerite are allotriomorphic, sized from ~50 µm to several millimetres (including aggregates). Pyrite inclusions in magnetite and sphalerite are not uncommon, with rounded forms in magnetite and euhedral forms in sphalerite.

Chalcopyrite was observed mainly throughout the pyrite bands, frequently forming localized irregular interstitial matrix networks or a peppering of fine inclusions (slivers, interstitial forms) within pyrite bands, and occasional coarser broad equidimensional grains/aggregates (up to ~600 µm).

Galena occurs fairly regularly across the thin section, as fine (~10 to ~500 µm) inclusions in pyrite, sphalerite, magnetite, pyrrhotite and adjacent to chalcopyrite. In localized zones it is prevalent, for example numerous inclusions within a pyrite, magnetite or quartz (up to ~400 µm).

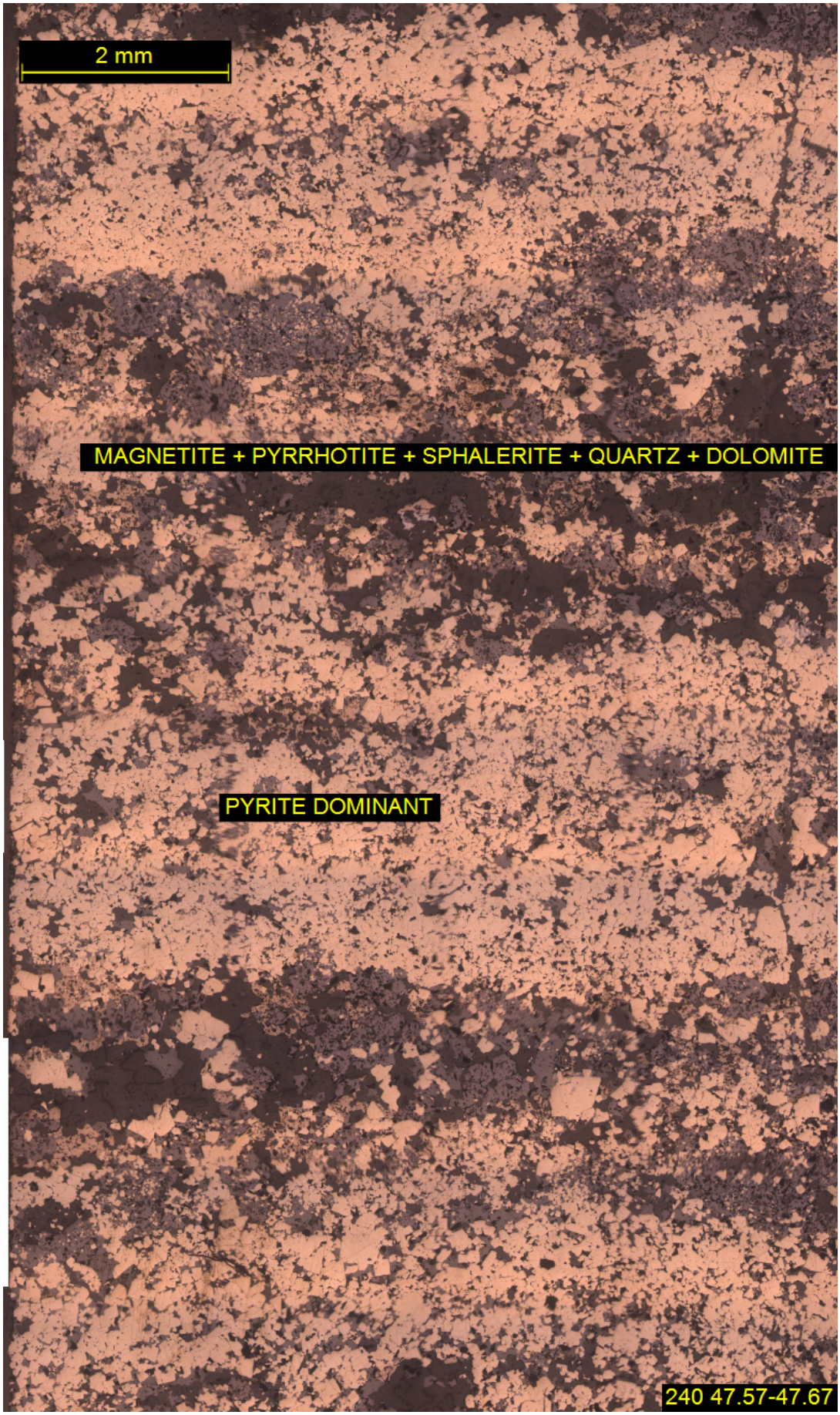
GOLD

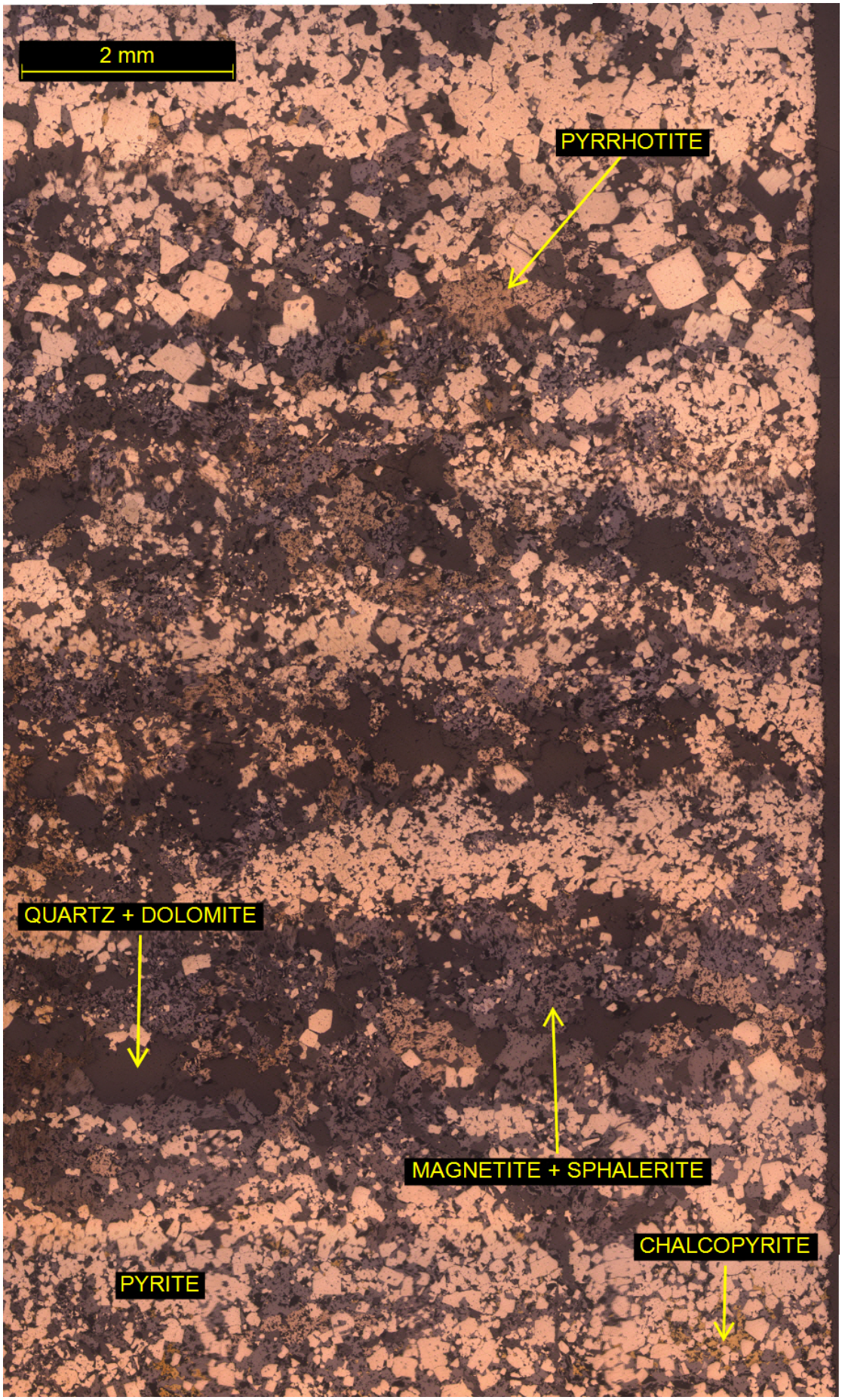
Three occurrences of gold were detected optically. All were argentian.

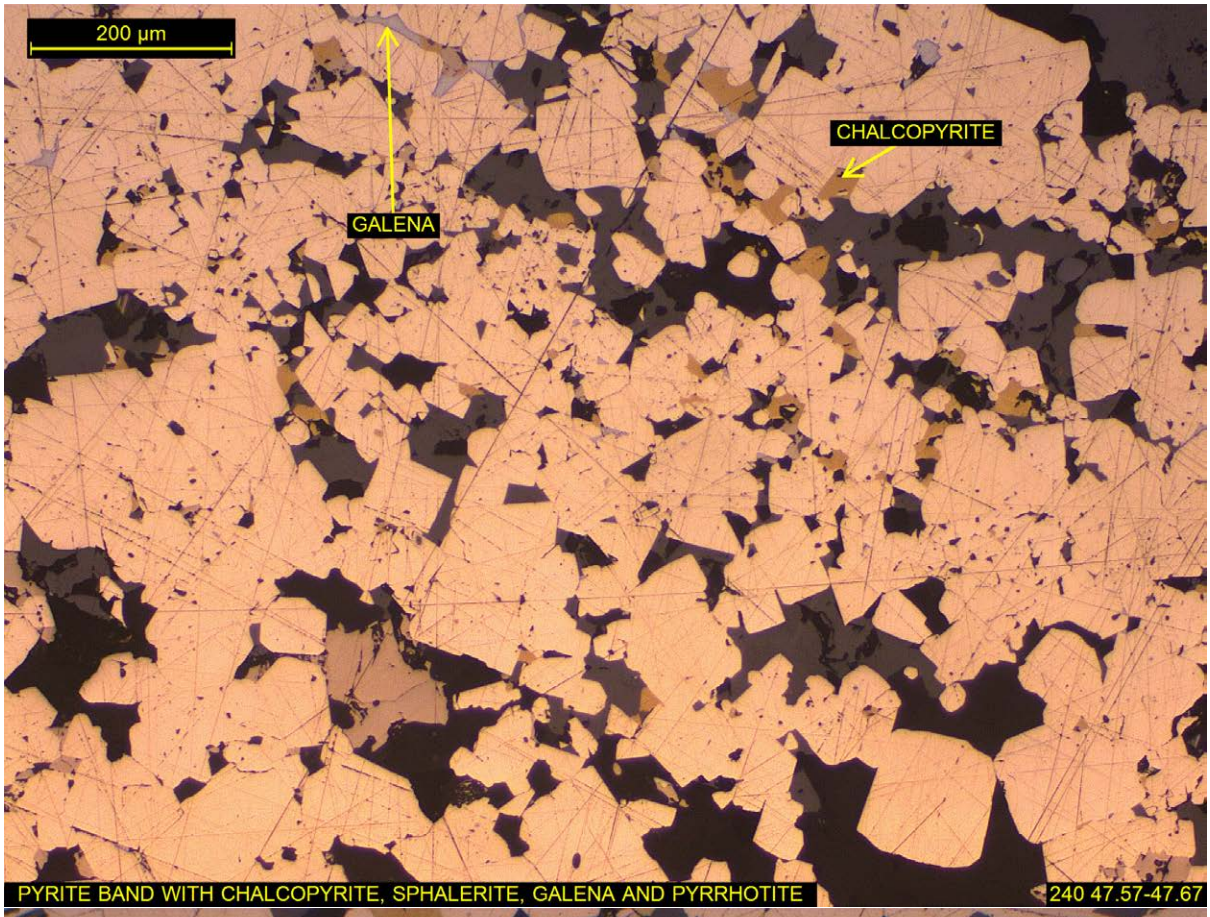
1. A 6 µm particle in a chalcopyrite inclusion within coarse pyrite.

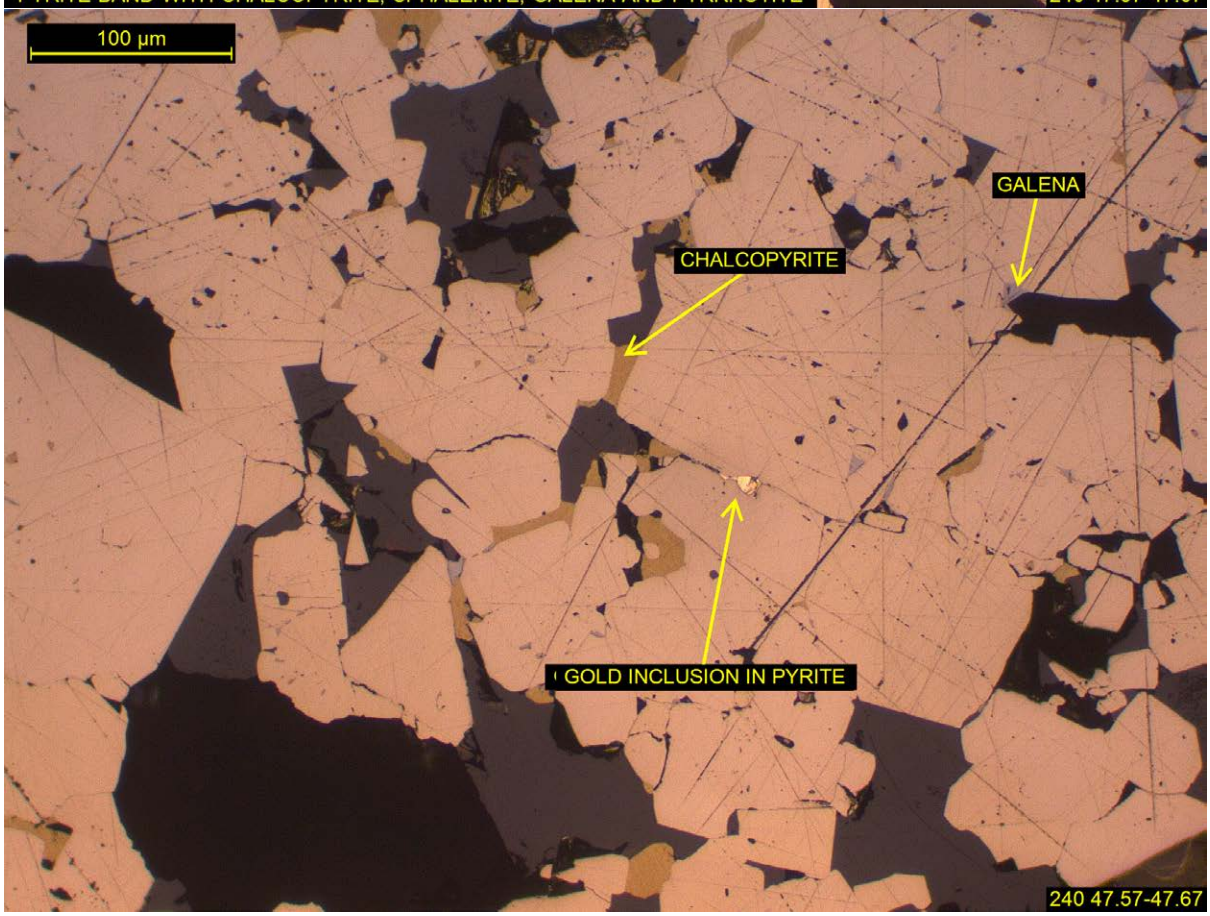
2. Three 30 X 10 µm, and 2 µm particles within pyrrhotite cementing coarse pyrite.

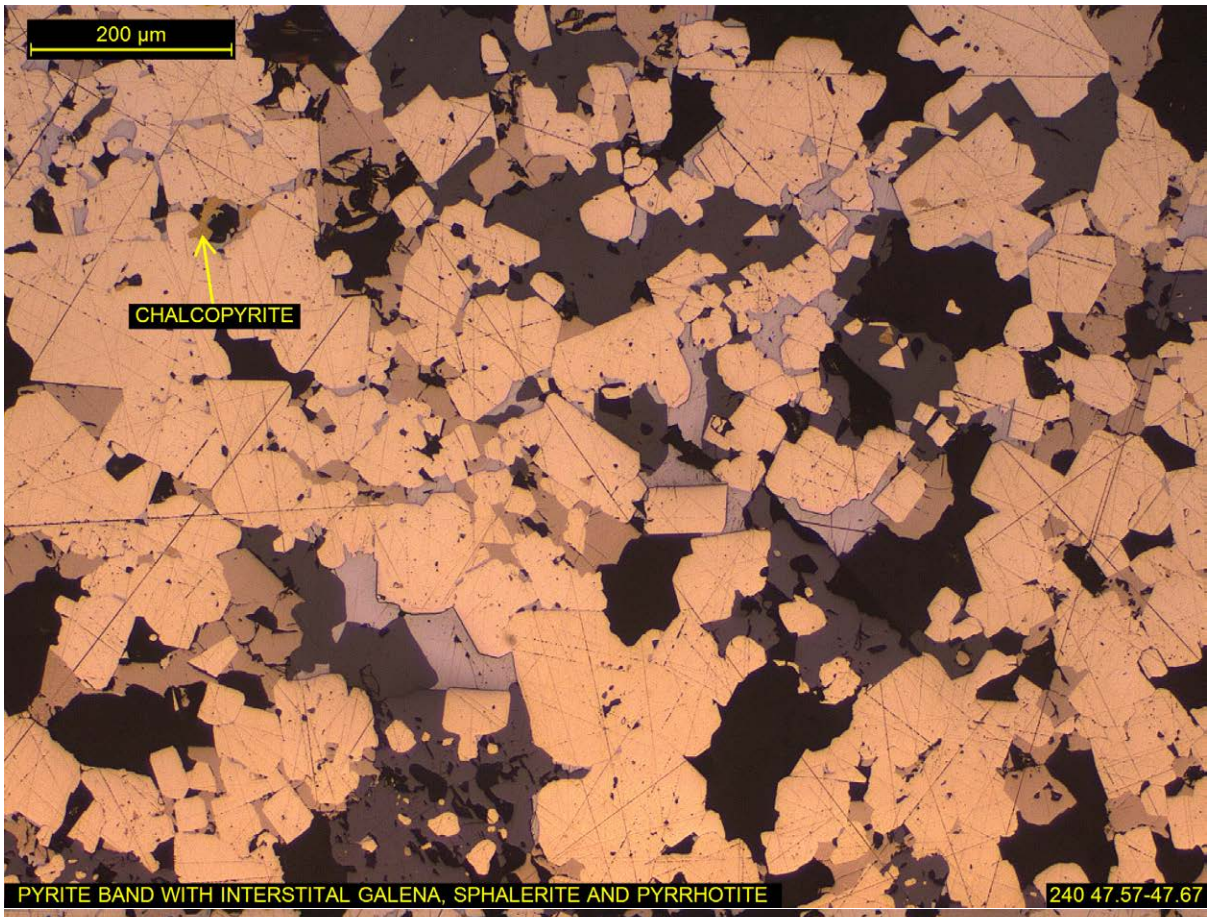
3. A ~22 µm particle within coarse pyrite.

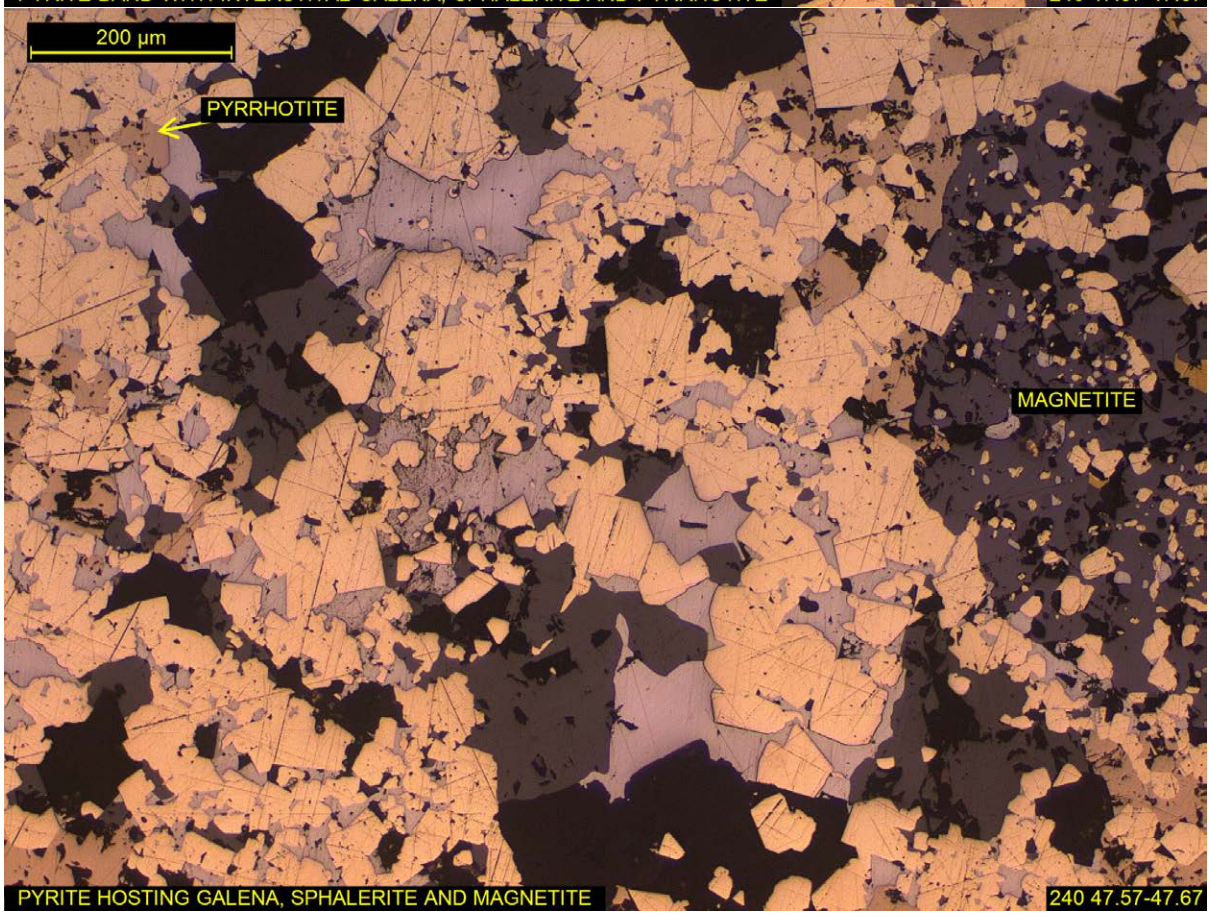

2 mm
MAGNETITE + PYRRHOTITE + SPHALERITE + QUARTZ + DOLOMITE
PYRITE DOMINANT
240 47.57-47.67

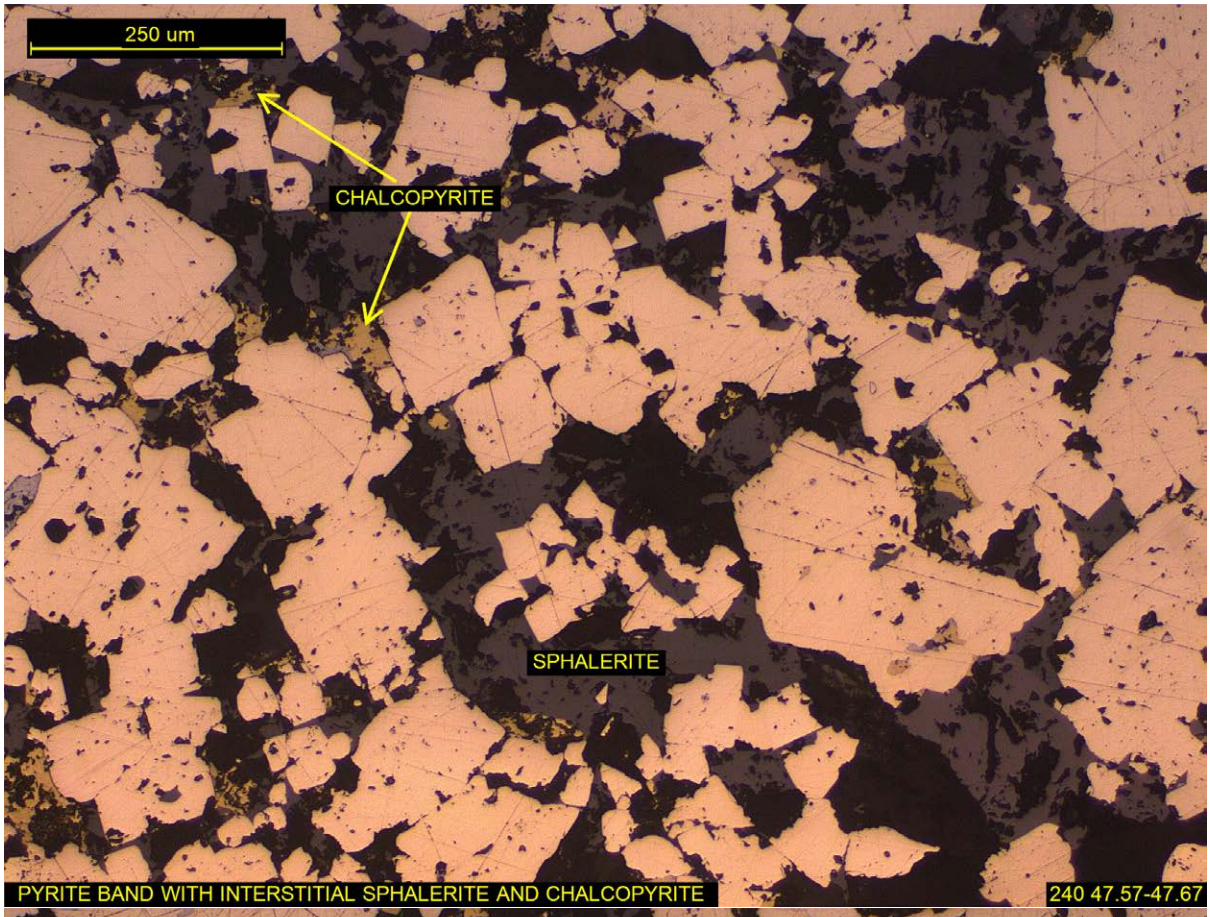

2 mm
PYRRHOTITE
QUARTZ + DOLOMITE
MAGNETITE + SPHALERITE
CHALCOPYRITE
PYRITE

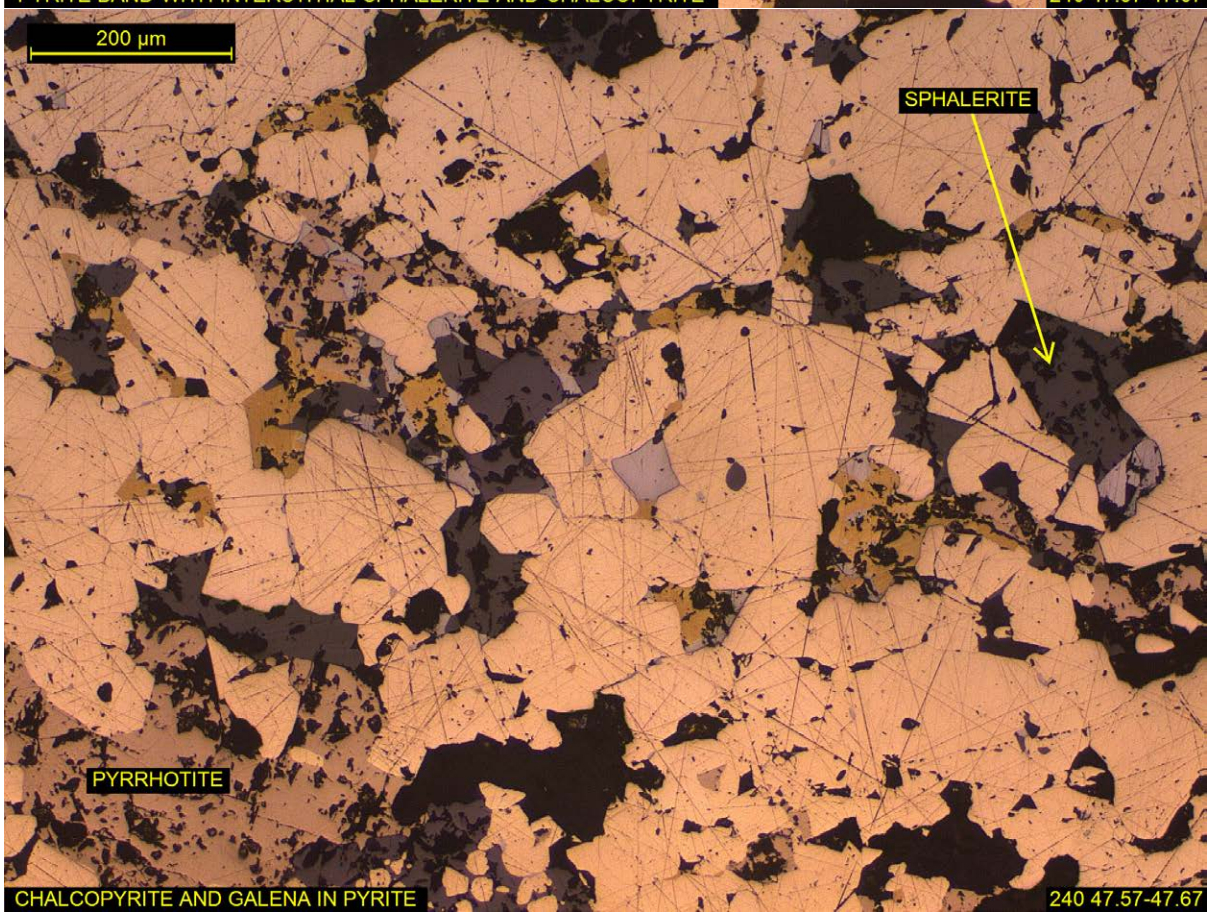

200 µm
GALENA
CHALCOPYRITE
PYRITE BAND WITH CHALCOPYRITE, SPHALERITE, GALENA AND PYRRHOTITE
240 47.57-47.67


100 µm
GALENA
CHALCOPYRITE
GOLD INCLUSION IN PYRITE
240 47.57-47.67


200 µm
CHALCOPYRITE
PYRITE BAND WITH INTERSTITAL GALENA, SPHALERITE AND PYRRHOTITE
240 47.57-47.67


200 µm
PYRRHOTITE
MAGNETITE
PYRITE HOSTING GALENA, SPHALERITE AND MAGNETITE
240 47.57-47.67


250 um
CHALCOPYRITE
SPHALERITE
PYRITE BAND WITH INTERSTITIAL SPHALERITE AND CHALCOPYRITE
240 47.57-47.67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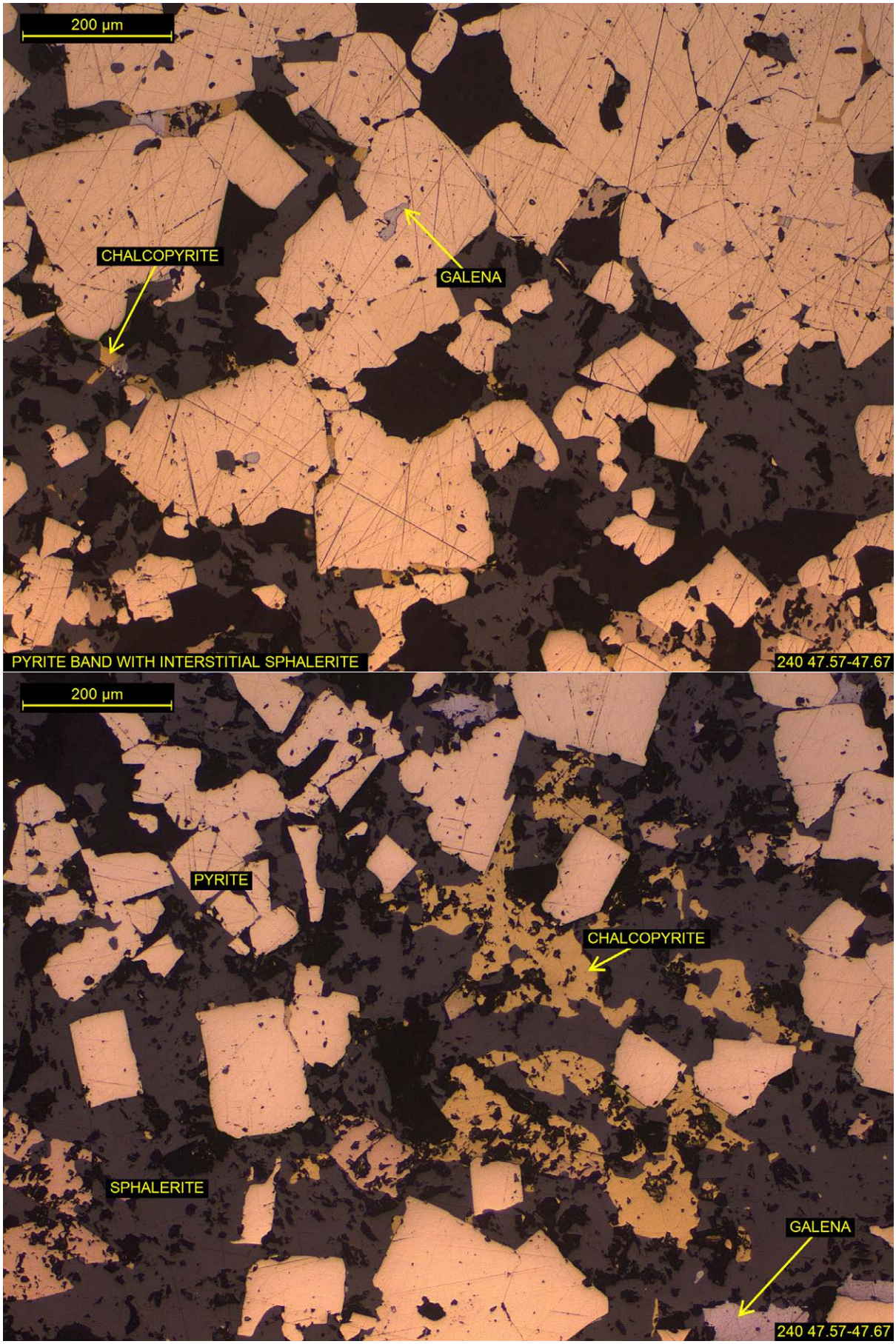
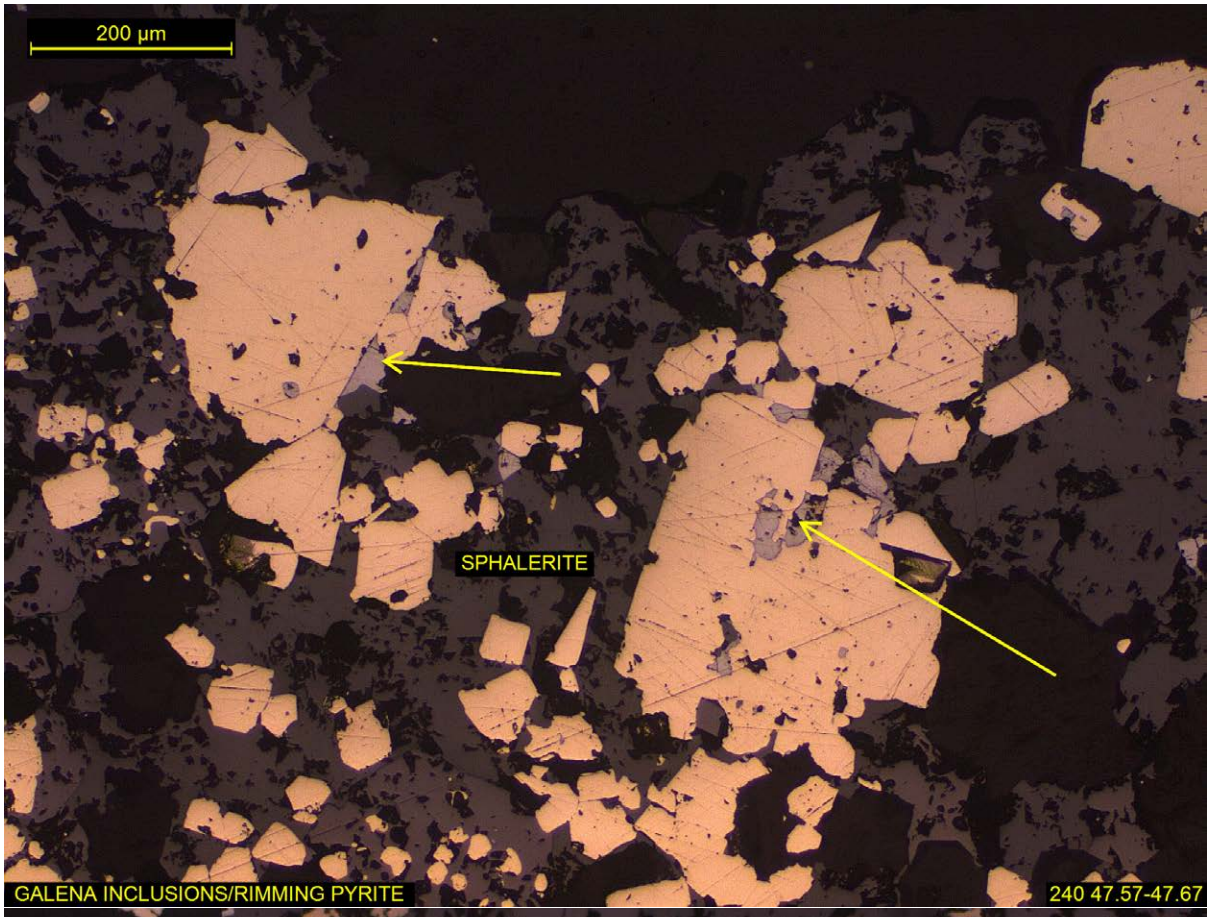
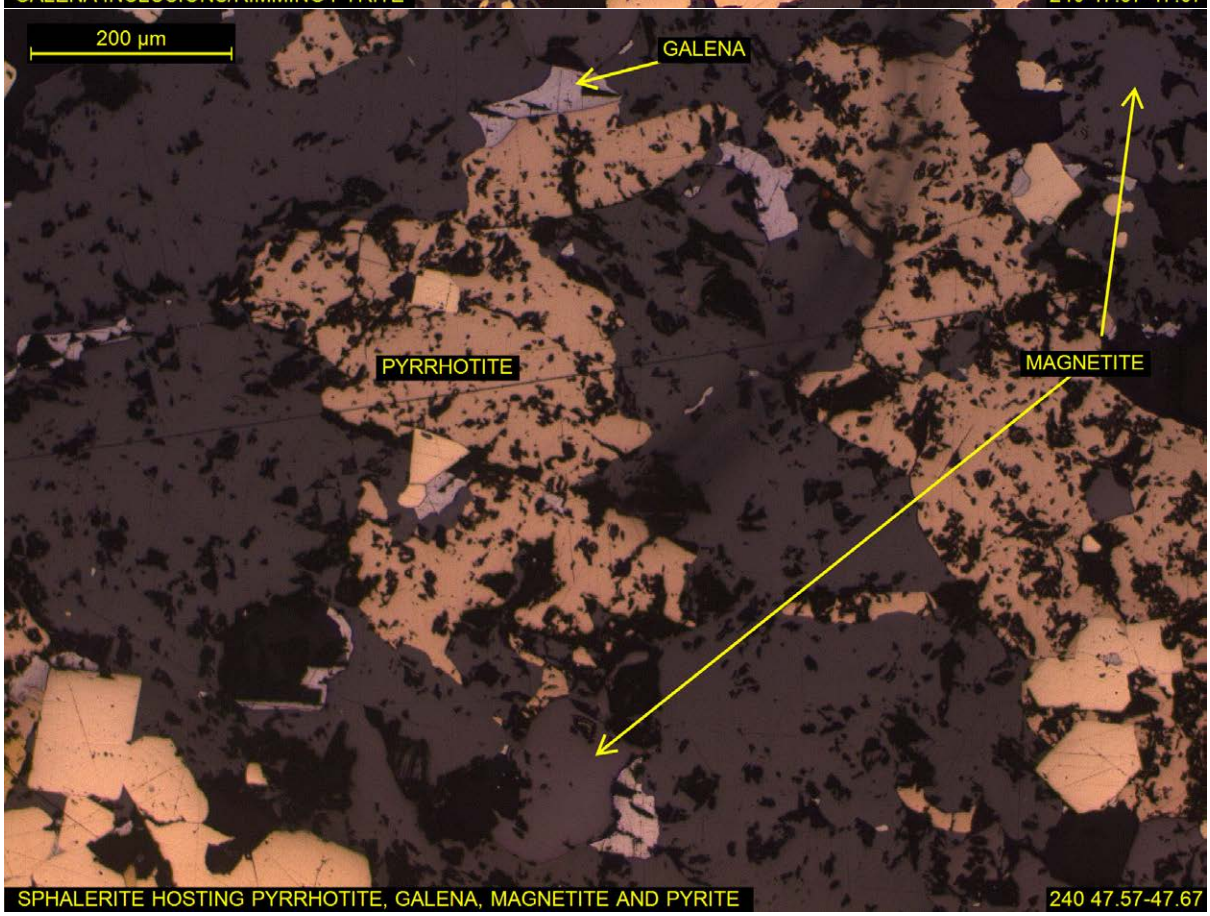
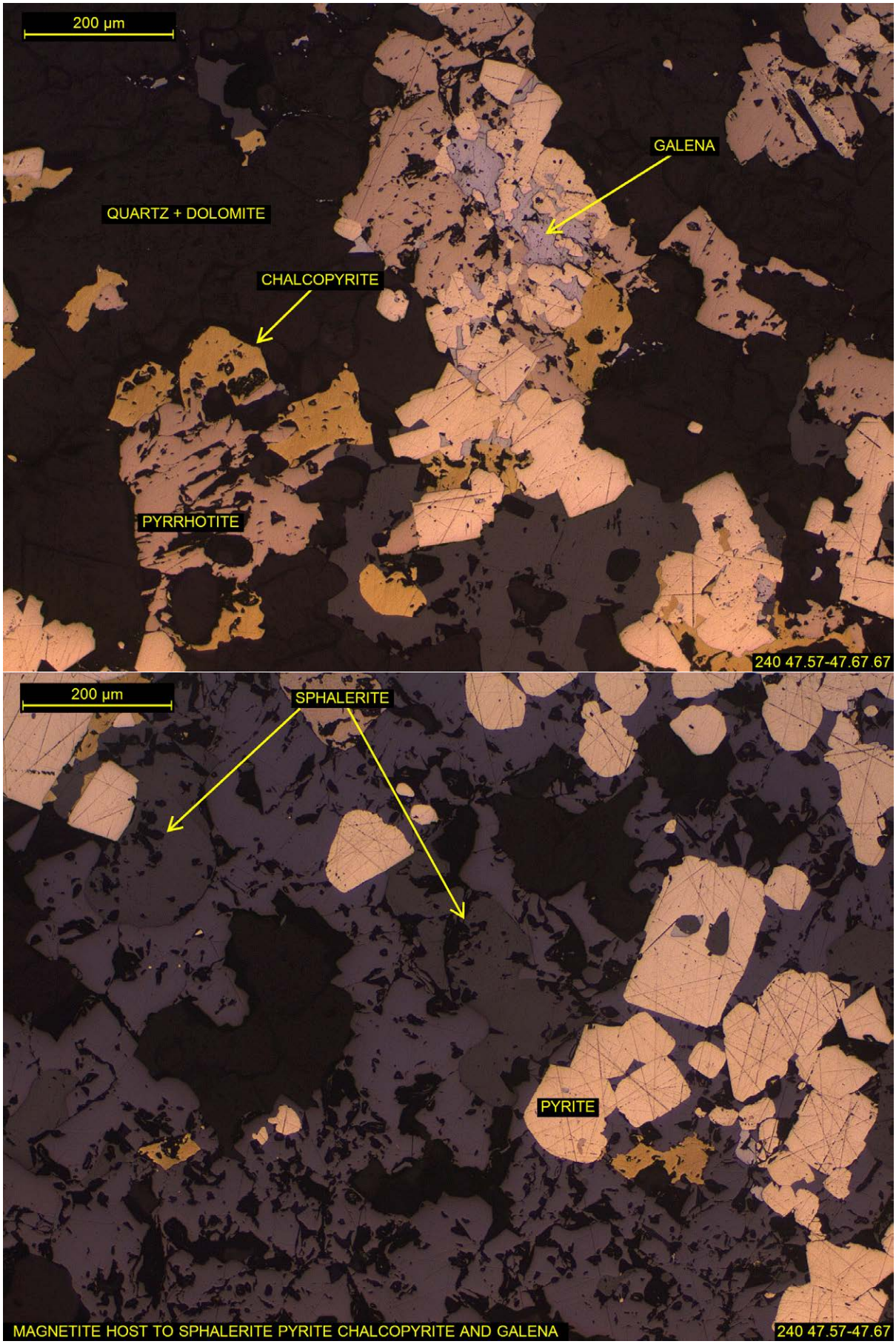
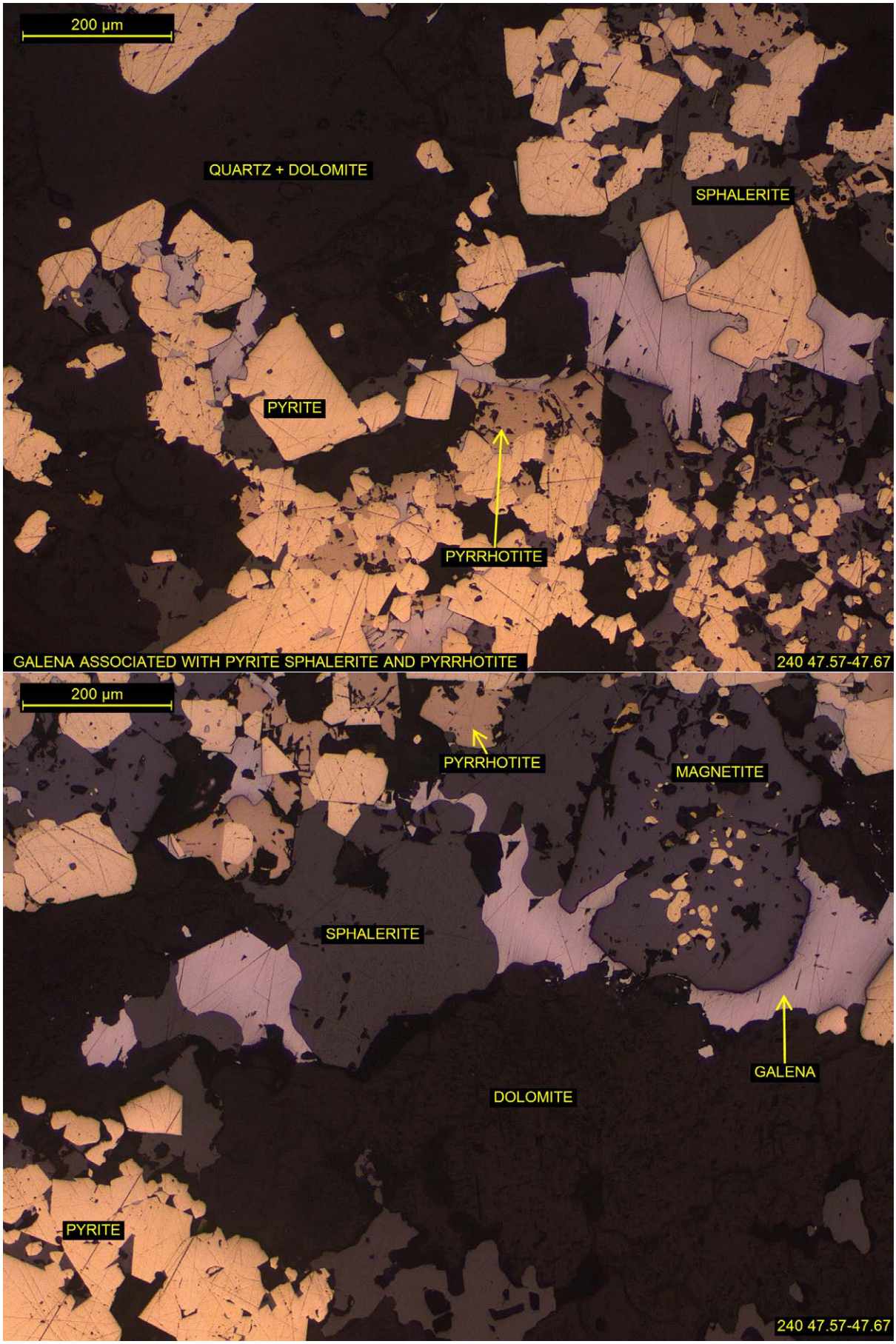
SPHALERITE
PYRRHOTITE
CHALCOPYRITE AND GALENA IN PYRITE
240 47.57-47.67

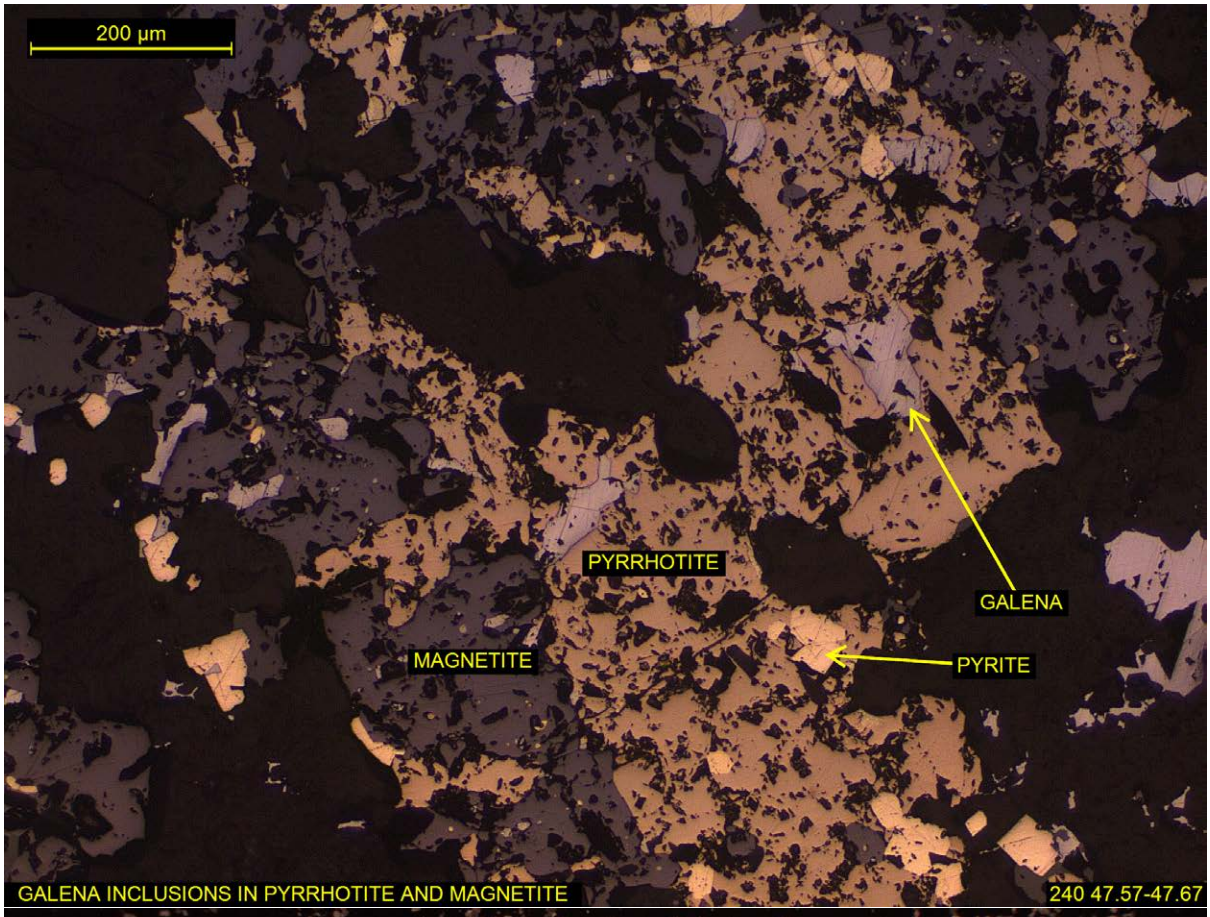

200 µm
CHALCOPYRITE
GALENA
PYRITE BAND WITH INTERSTITIAL SPHALERITE
240 47.57-47.67
200 µm
PYRITE
CHALCOPYRITE
SPHALERITE
GALENA
240 47.57-47.67


200 µm
SPHALERITE
GALENA INCLUSIONS/RIMMING PYRITE
240 47.57-47.67

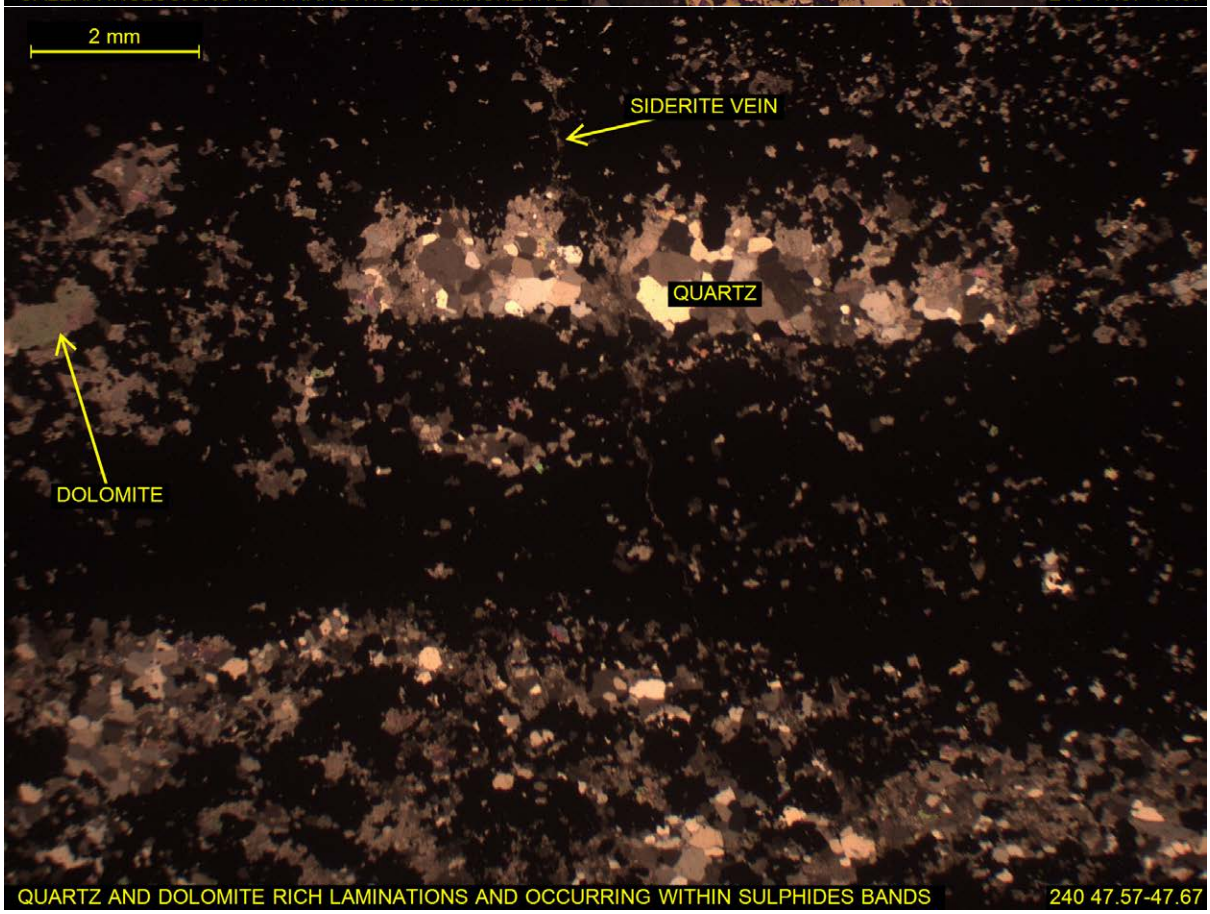

200 µm
GALENA
PYRRHOTITE
MAGNETITE
SPHALERITE HOSTING PYRRHOTITE, GALENA, MAGNETITE AND PYRITE
240 47.57-47.67


200 µm
GALENA
QUARTZ + DOLOMITE
CHALCOPYRITE
PYRRHOTITE
240 47.57-47.67.67
200 µm
SPHALERITE
PYRITE
MAGNETITE HOST TO SPHALERITE PYRITE CHALCOPYRITE AND GALENA
240 47.57-47.67


200 µm
QUARTZ + DOLOMITE
SPHALERITE
PYRITE
PYRRHOTITE
GALENA ASSOCIATED WITH PYRITE SPHALERITE AND PYRRHOTITE
240 47.57-47.67
200 µm
PYRRHOTITE
MAGNETITE
SPHALERITE
GALENA
DOLOMITE
PYRITE
240 47.57-47.67



GALENA INCLUSIONS IN PYRRHOTITE AND MAGNETITE 240 47.57-47.67



QUARTZ AND DOLOMITE RICH LAMINATIONS AND OCCURRING WITHIN SULPHIDES BANDS 240 47.57-47.67

SAMPLE K15-264 156.56-156.7

DRILL CORE

POLISHED THIN SECTION

GANGUE	**40%**
DOLOMITE	75-85%
CHLORITE	5-15%
MICA	5-15%
QUARTZ	1-3%
TOURMALINE	<1%
ORES	**60%**
PYRITE	45-55%
SPHALERITE	30-40%
CHALCOPYRITE	3-7%
MAGNETITE	3-7%
GALENA	1-3%
PYRRHOTITE	<1%

CLASSIFIED AS A BANDED GALENA DOLOMITE SPHALERITE PYRITE ORE WITH A SULPHIDE DOLOMITE VEIN

A sample consisting of several pyrite/sphalerite/dolomite bands and a thick dolomite/sulphide vein.

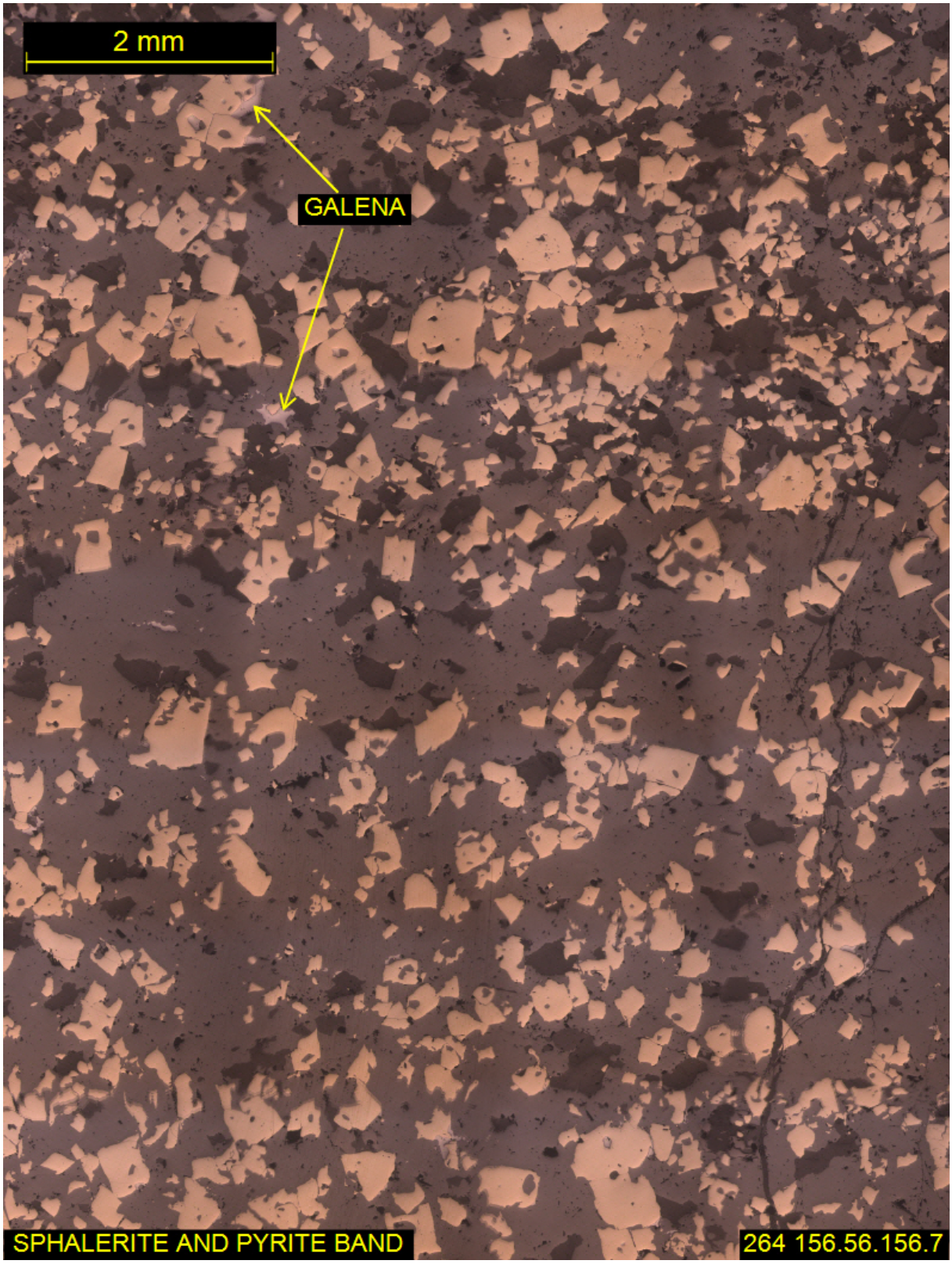
A ~20 mm thick band is present that consists of a dominant semi-massive sphalerite matrix that hosts a minor amount of disseminated discrete euhedral pyrite grains (~50 to ~450 µm). Frequently pyrite contains sphalerite inclusions. Trace galena inclusions occur sporadically in sphalerite and pyrite, found rimming pyrite, are generally irregularly shaped, sized from ~20 to ~400 µm. Occasional magnetite subhedral grains are found sporadically hosted by sphalerite. The band is riddled with interstitial (~350 µm average) dolomite.

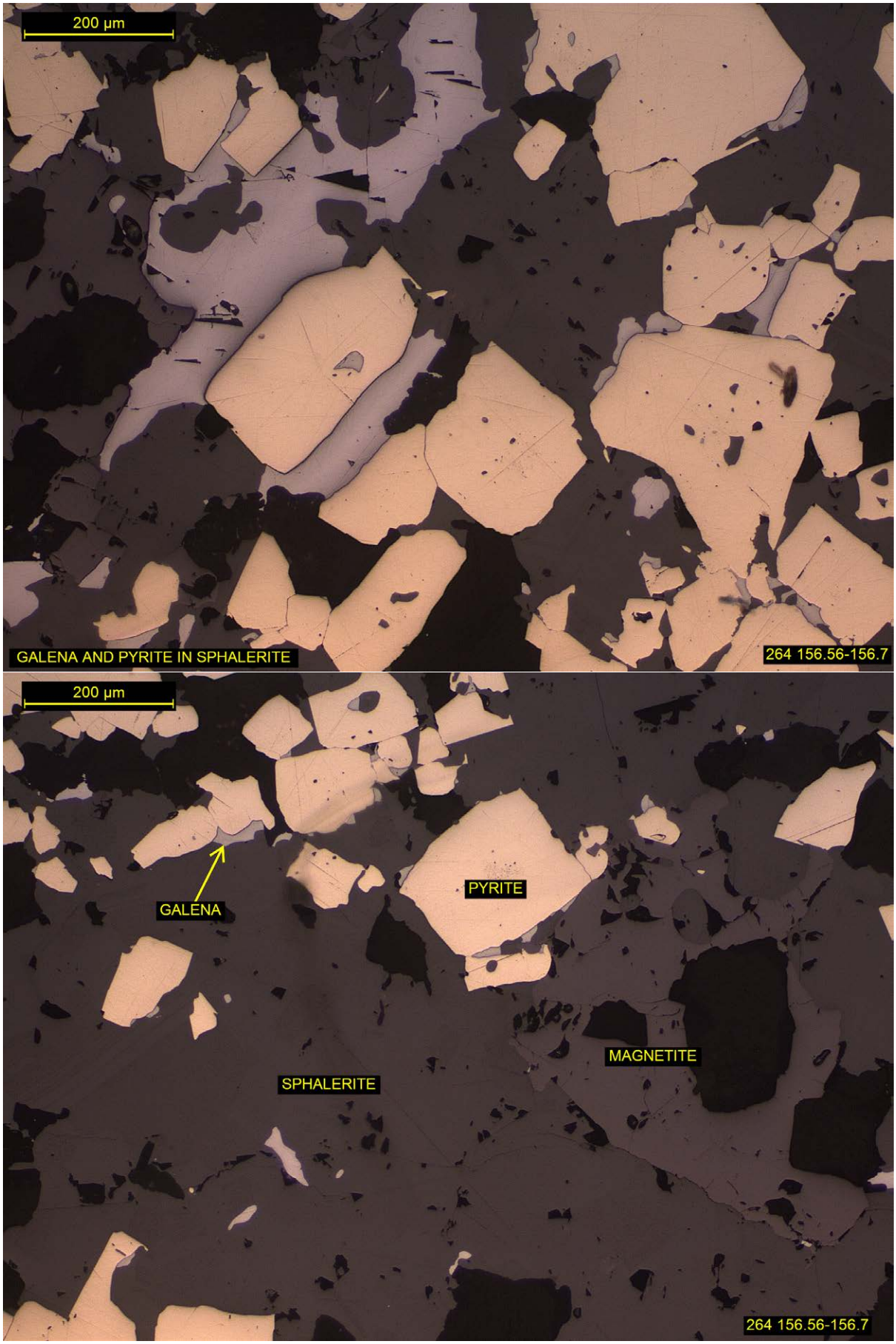
This grades into a band that is comprised primarily of euhedral pyrite and interstitial dolomite and muscovite, with sphalerite varying from dominant to major to an accessory constituent. Galena content increases, with localized zones up to 2 mm where it is the dominant interstitial matrix to pyrite.

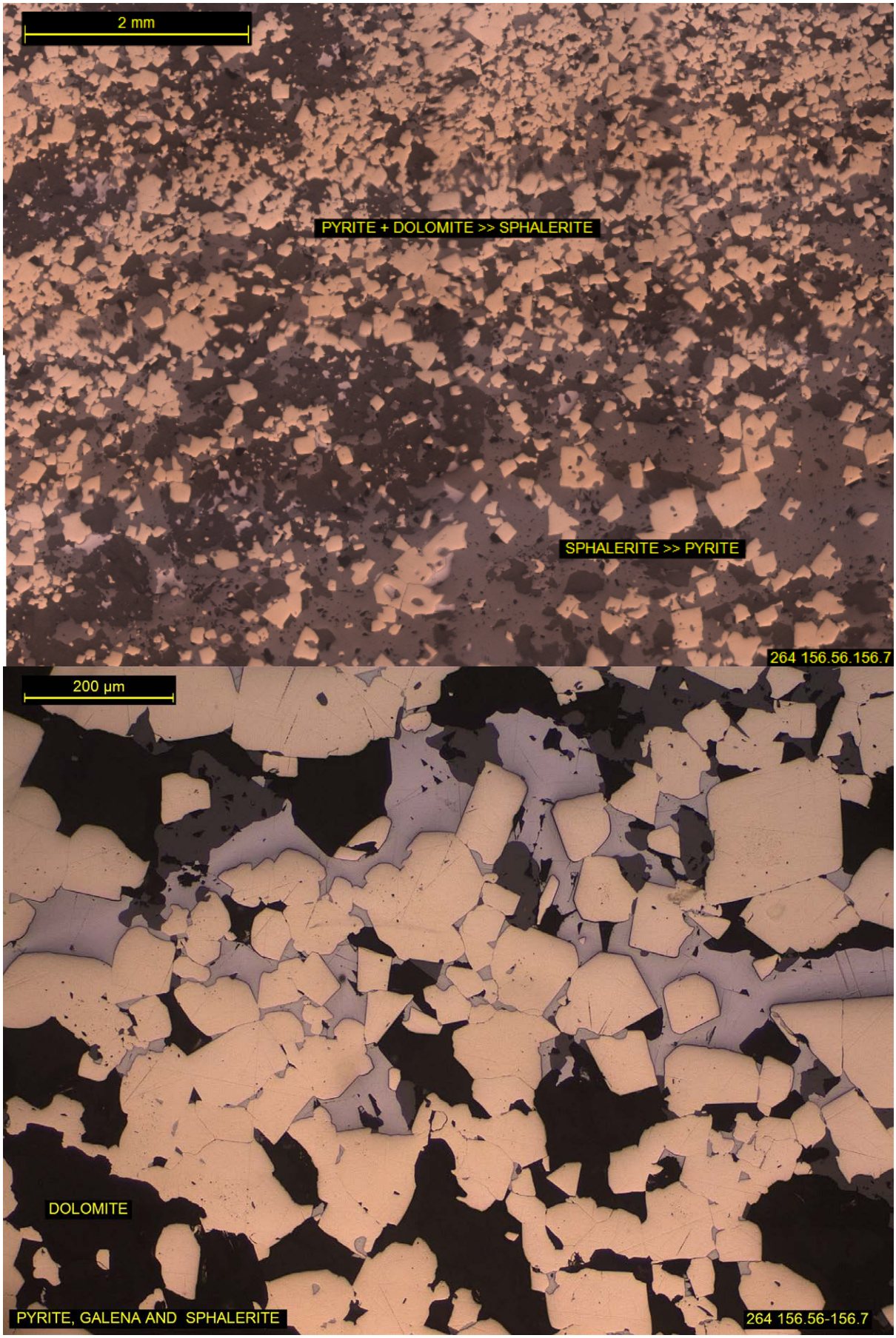
Chalcopyrite is negligible in the aforementioned bands.

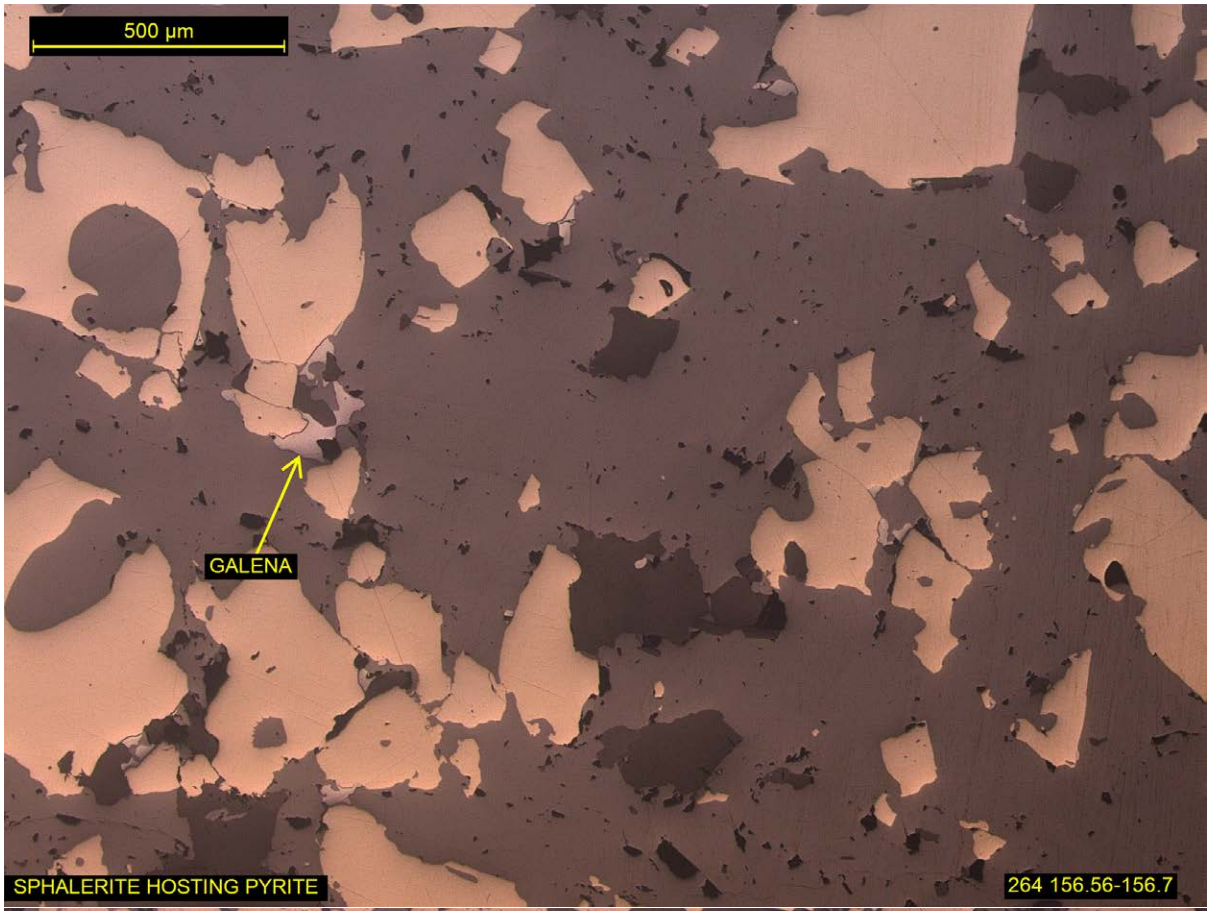
Half of the slide is a thick dolomite-sulphide vein that contains sporadic aggregates of chlorite, muscovite and coarse tourmaline. Dolomite is characterised by an interlocking anhedral (~500 µm average) texture. Pyrite is found in several ~1.5mm average thick layers comprised of ~300 µm euhedral grains. Additionally the dolomite vein is lined with a ~15mm thick pyrite band, comprised predominantly of very coarse subhedral pyrites (~1 to

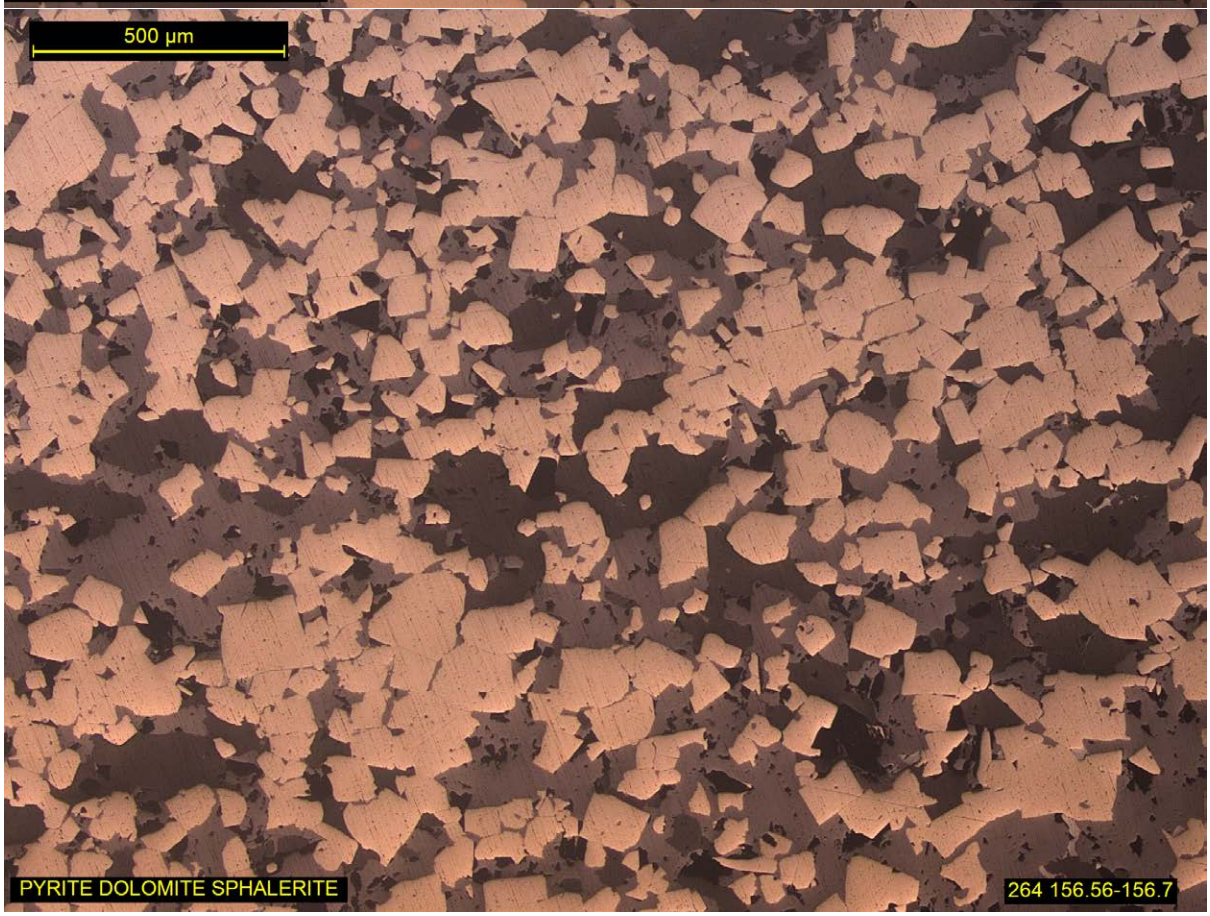
~5mm). Coarse (~0.5 to ~4 mm) chalcopyrite, galena, sphalerite and rare magnetite, are found rimming pyrite, or forming complex composites with each other and with pyrite, or in combinations of inclusions in one another. In addition, fine to coarse composites of these aforementioned ores are found sporadically throughout the dolomite vein.

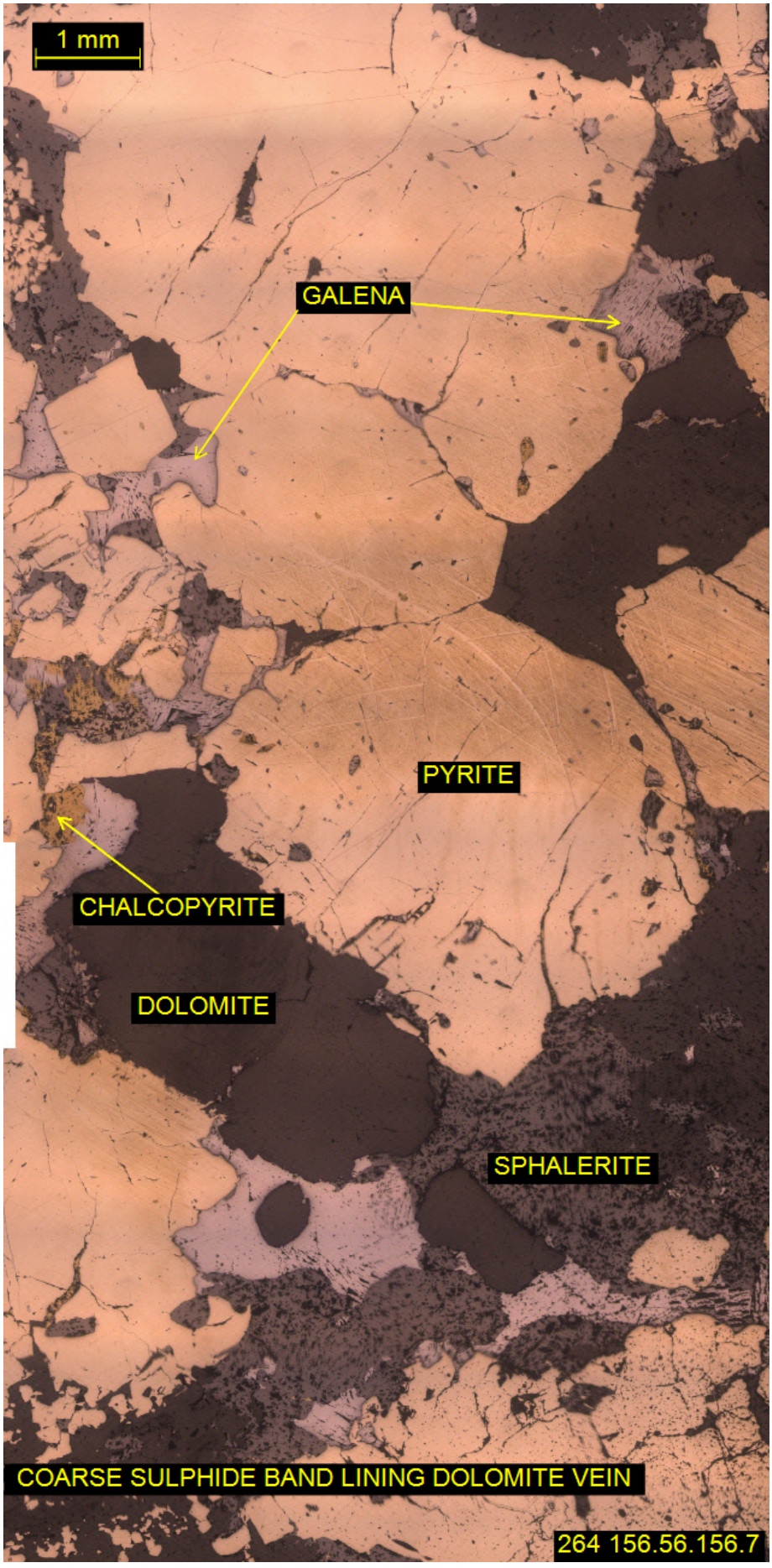


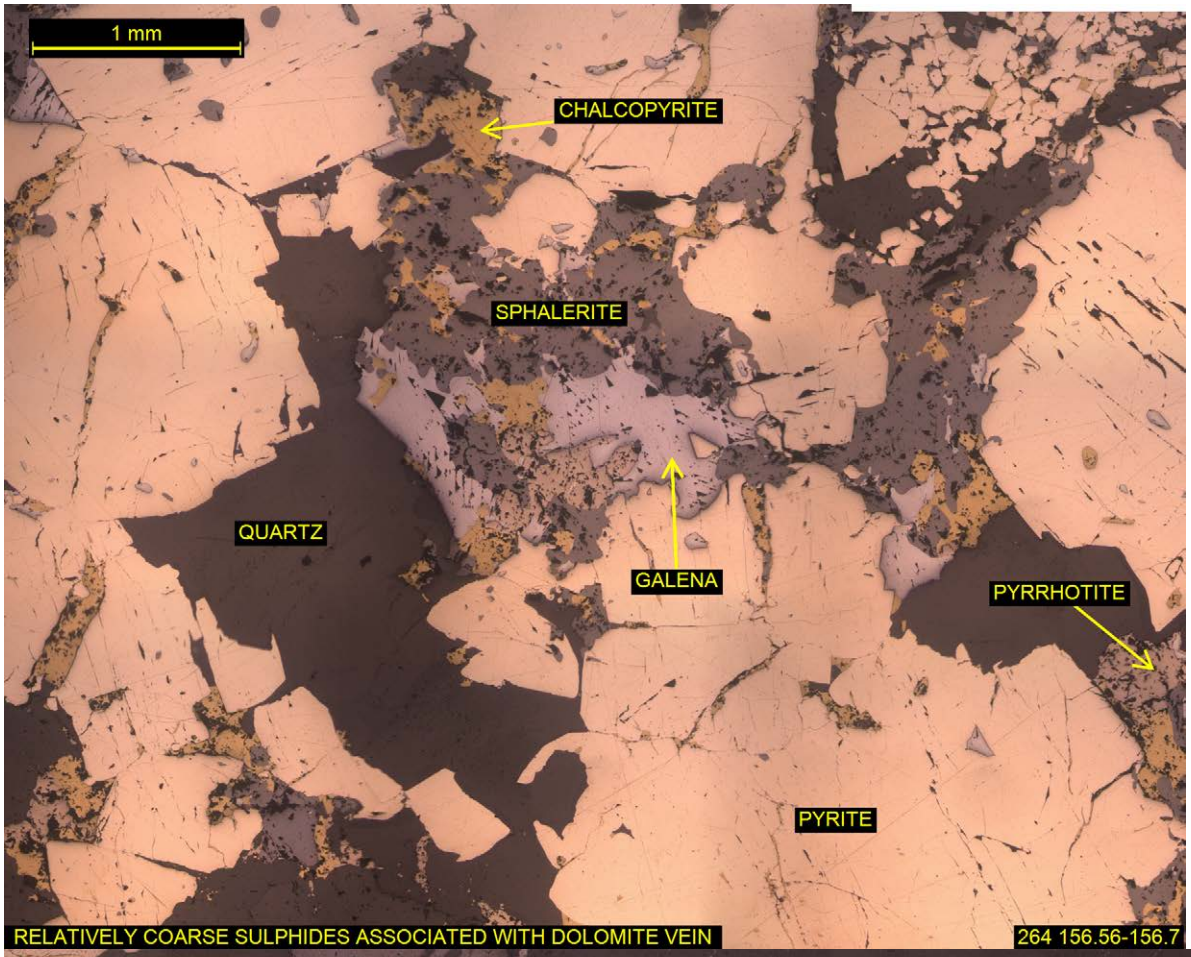

200 µm
GALENA AND PYRITE IN SPHALERITE
264 156.56-156.7
200 µm
GALENA
PYRITE
MAGNETITE
SPHALERITE
264 156.56-156.7

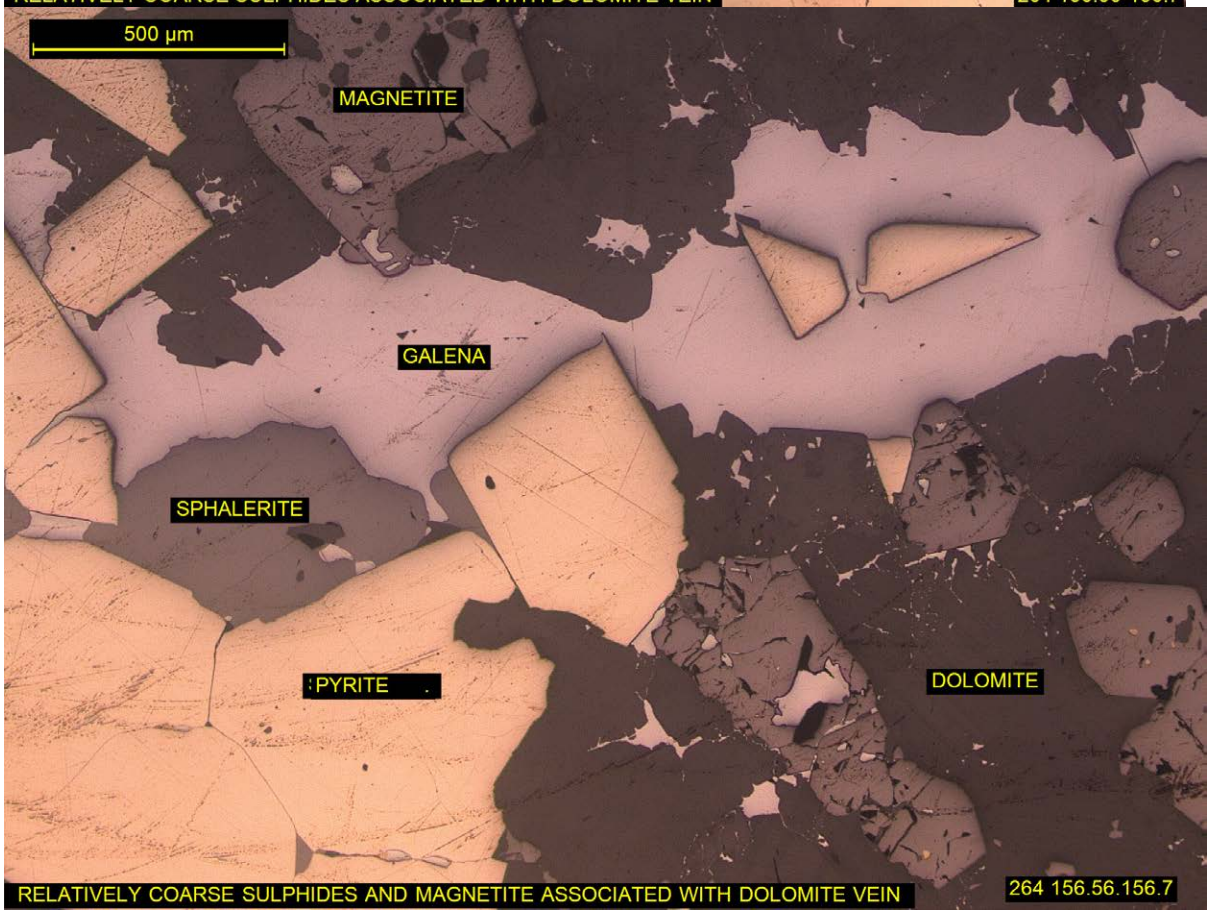

2 mm
PYRITE + DOLOMITE >> SPHALERITE
SPHALERITE >> PYRITE
264 156.56.156.7
200 µm
DOLOMITE
PYRITE, GALENA AND SPHALERITE
264 156.56-156.7

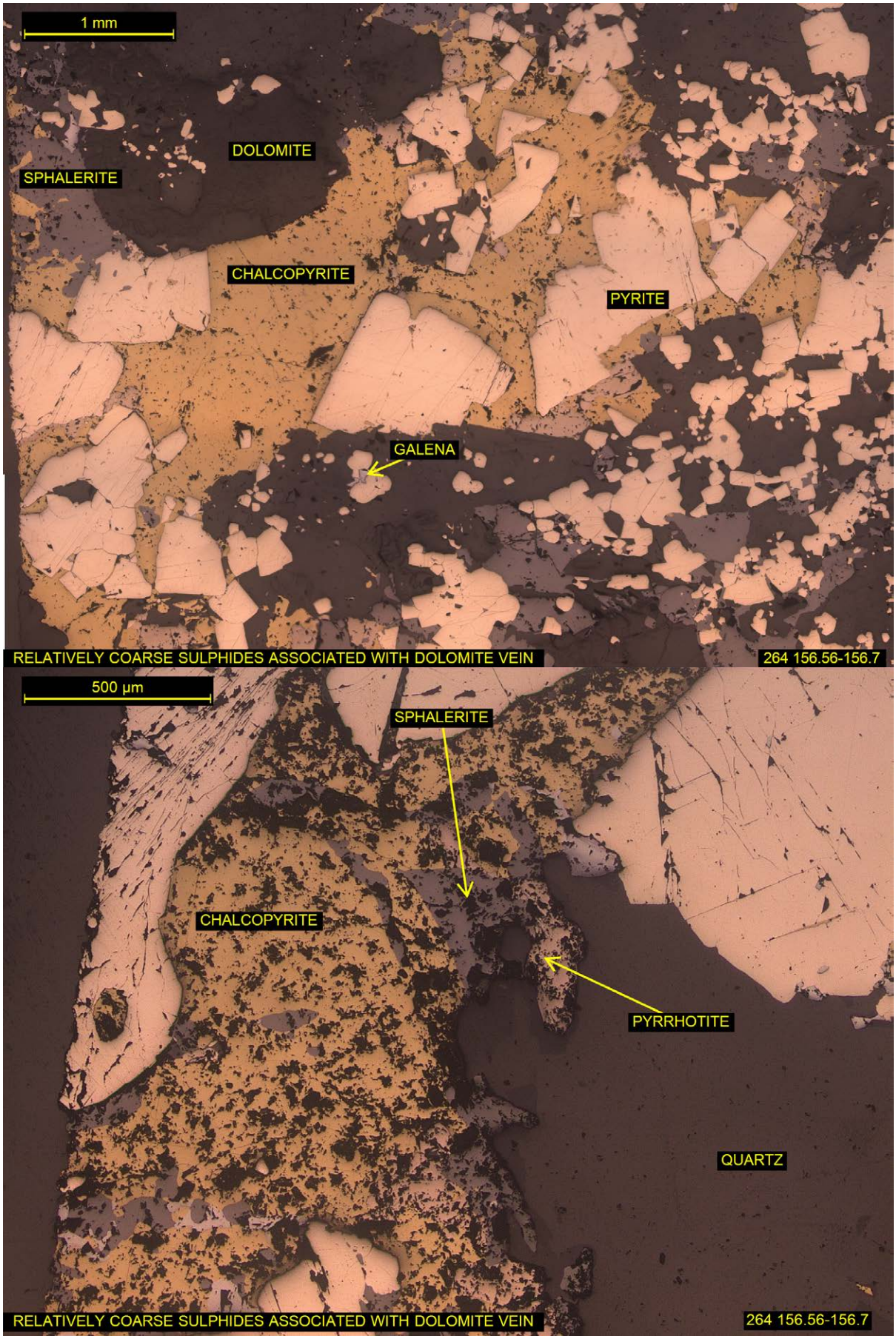

500 µm
GALENA
SPHALERITE HOSTING PYRITE
264 156.56-156.7

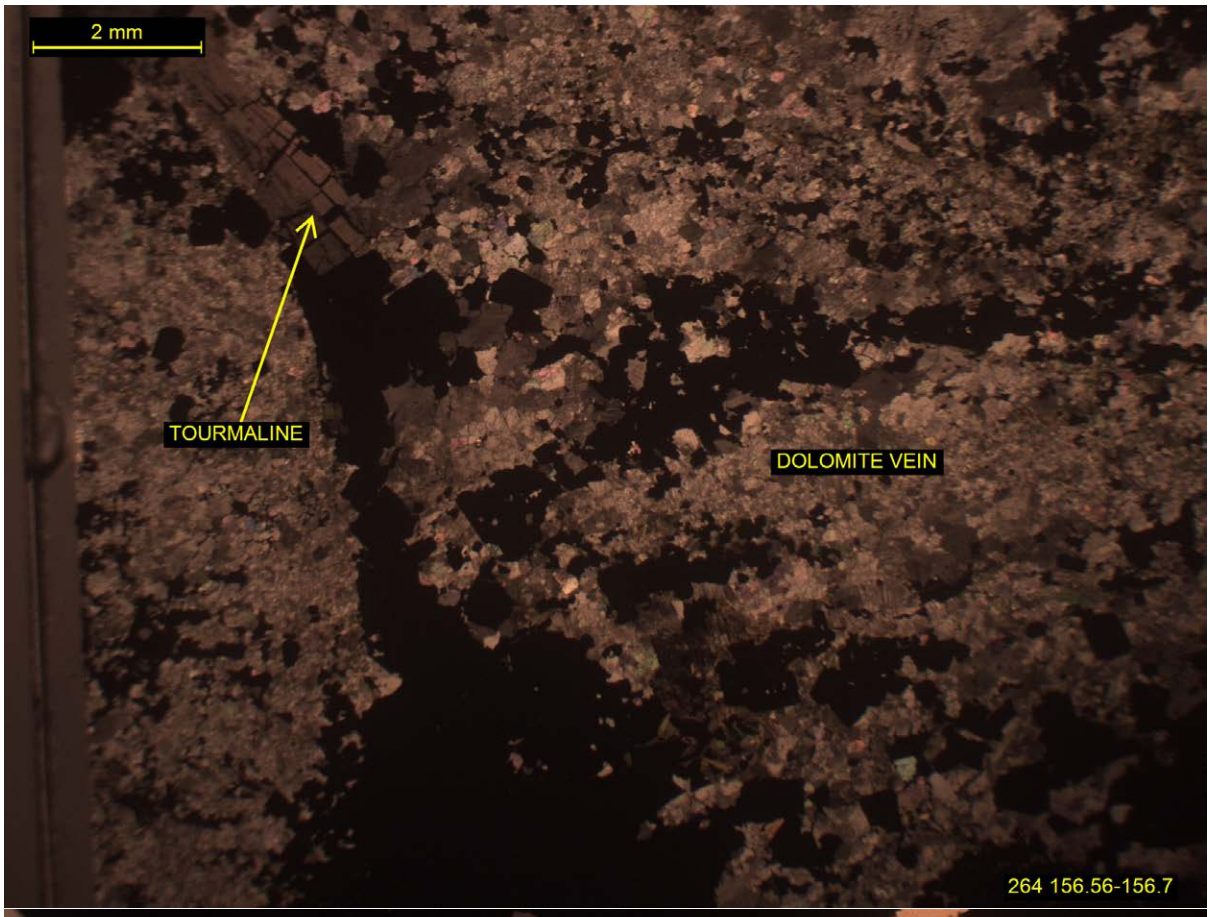

500 µm
PYRITE DOLOMITE SPHALERITE
264 156.56-156.7

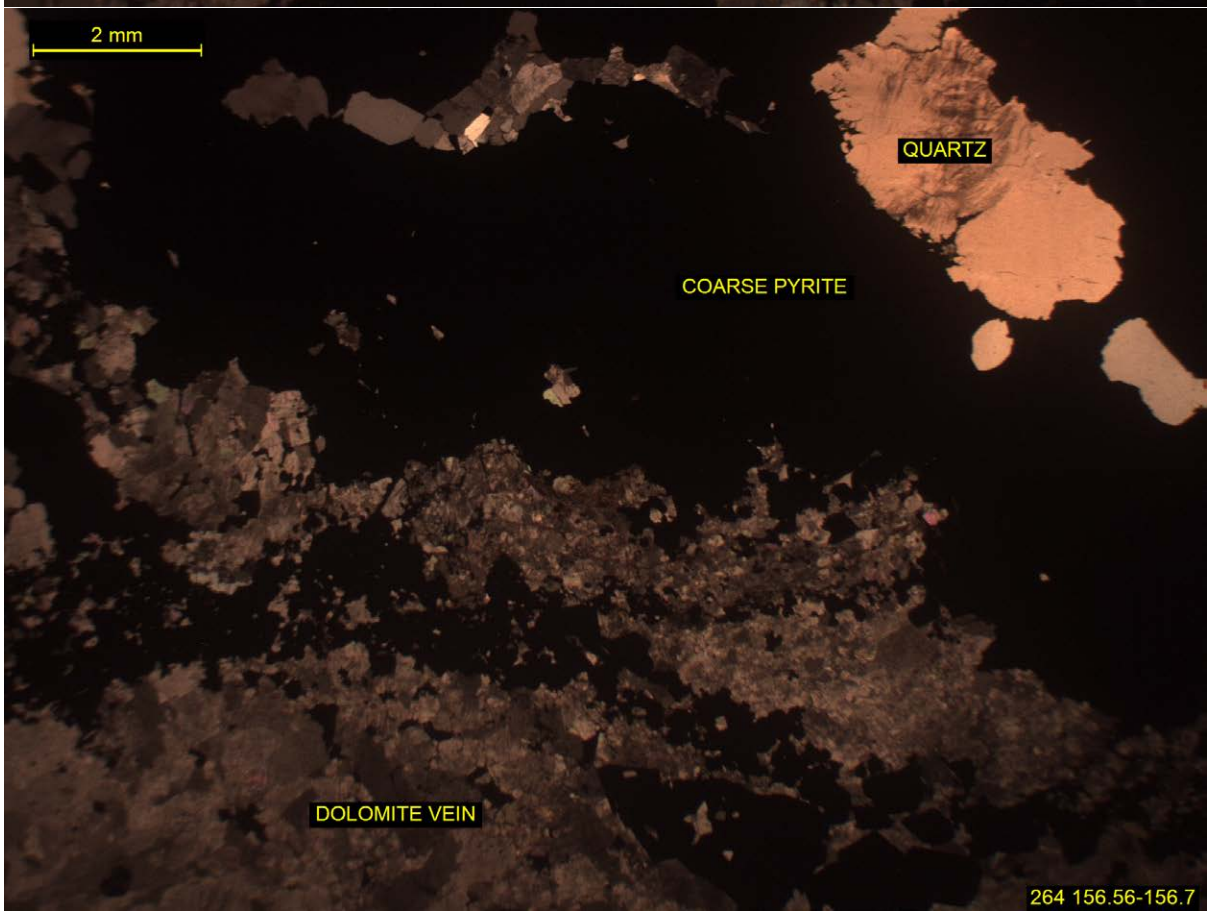

1 mm
GALENA
PYRITE
CHALCOPYRITE
DOLOMITE
SPHALERITE
COARSE SULPHIDE BAND LINING DOLOMITE VEIN
264 156.56.156.7

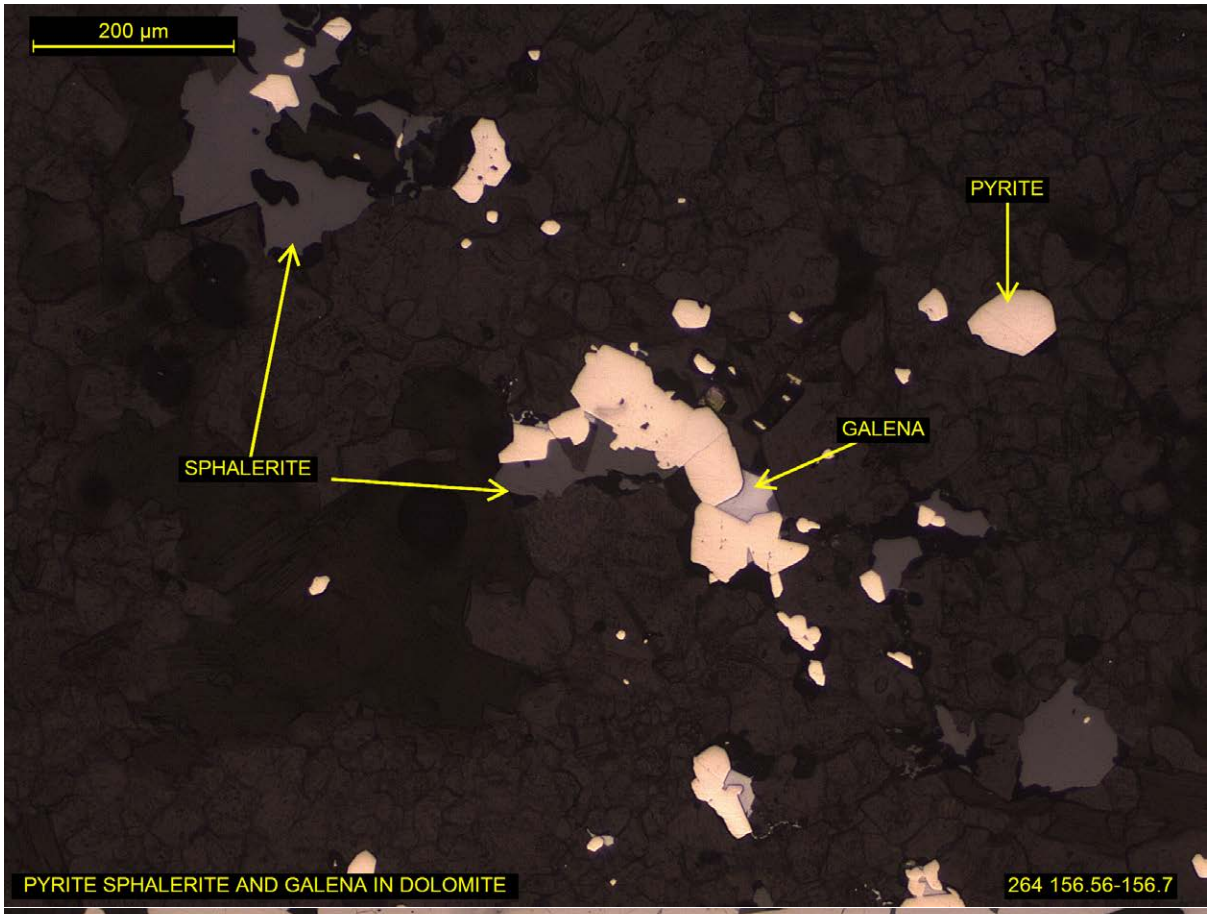

1 mm
CHALCOPYRITE
SPHALERITE
QUARTZ
GALENA
PYRRHOTITE
PYRITE
RELATIVELY COARSE SULPHIDES ASSOCIATED WITH DOLOMITE VEIN
264 156.56-156.7

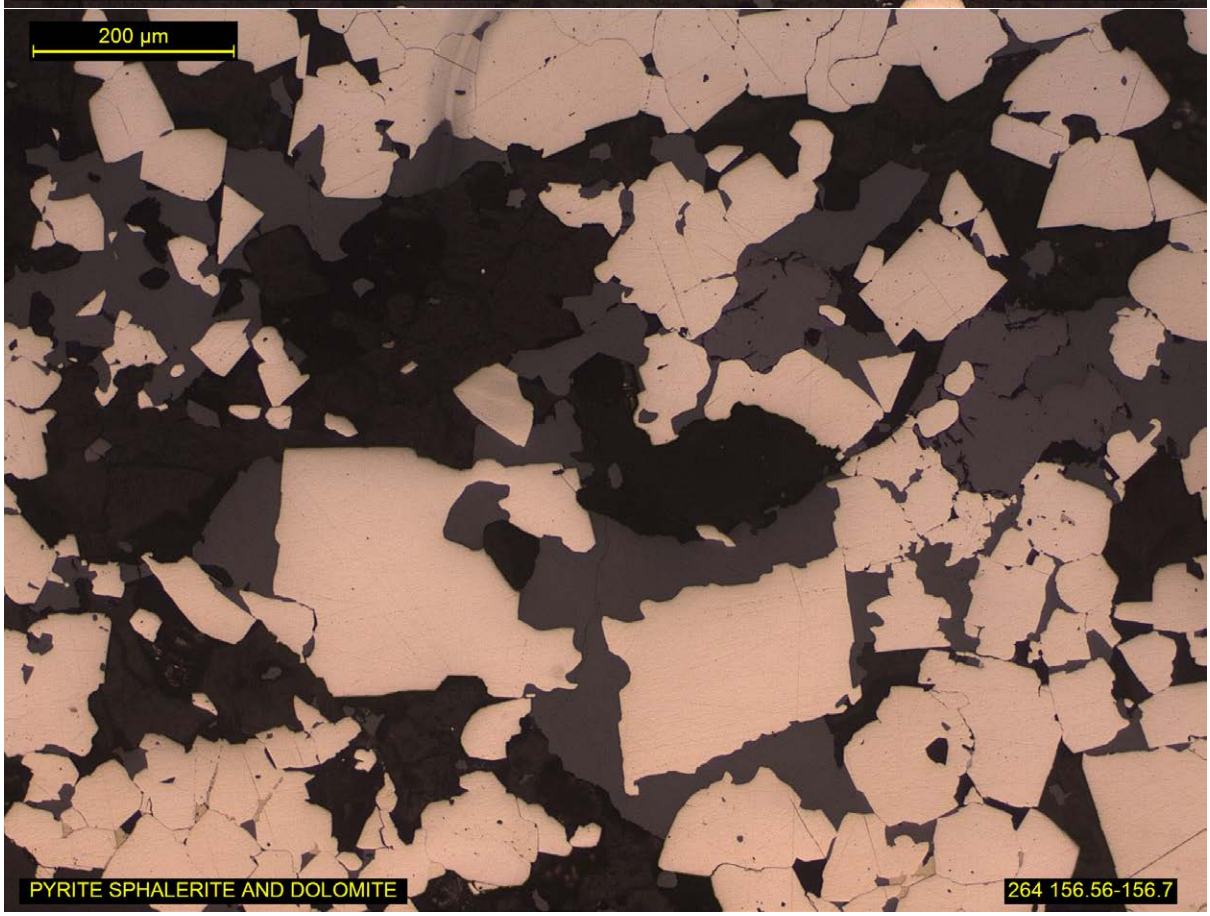

500 µm
MAGNETITE
GALENA
SPHALERITE
PYRITE
DOLOMITE
RELATIVELY COARSE SULPHIDES AND MAGNETITE ASSOCIATED WITH DOLOMITE VEIN
264 156.56.156.7

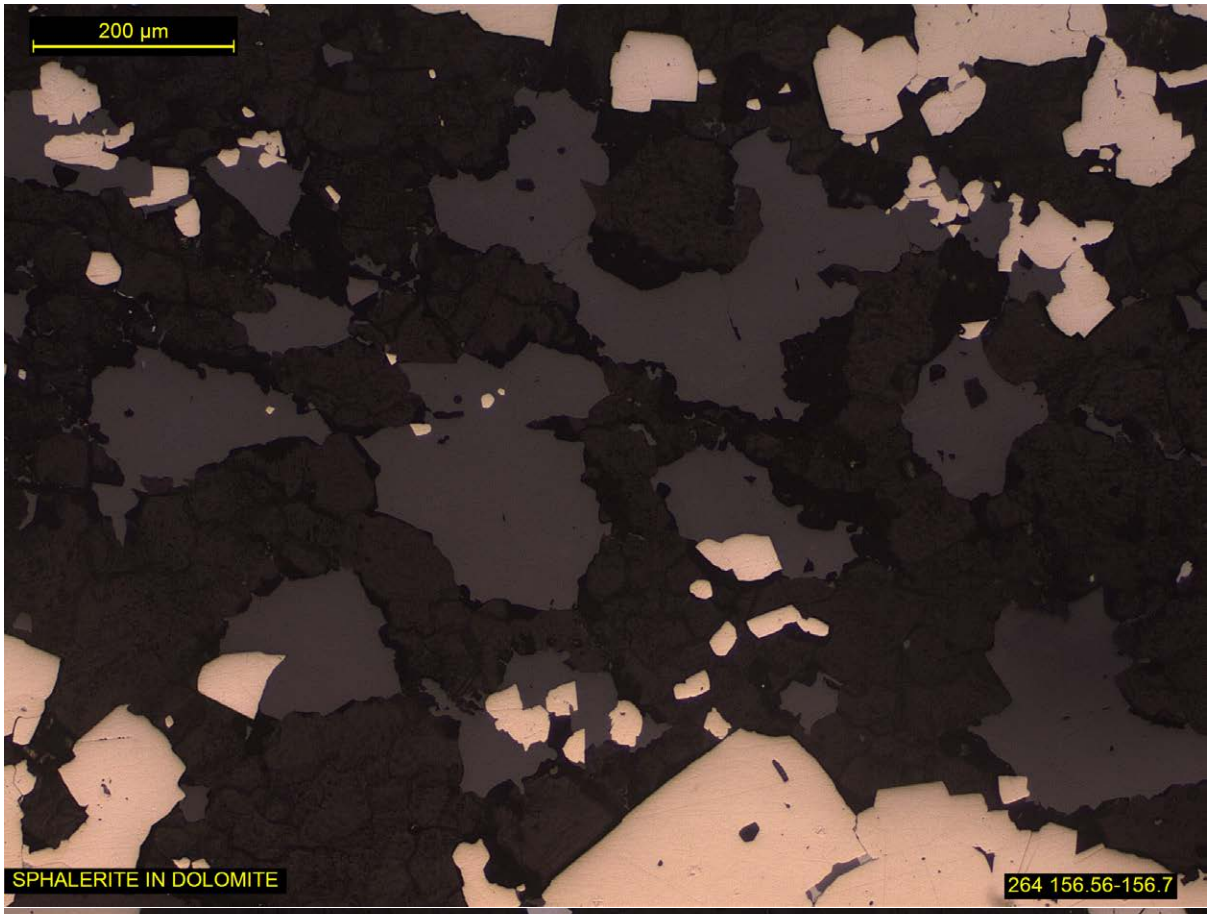

1 mm
DOLOMITE
SPHALERITE
CHALCOPYRITE
PYRITE
GALENA
RELATIVELY COARSE SULPHIDES ASSOCIATED WITH DOLOMITE VEIN
264 156.56-156.7
500 µm
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
QUARTZ
RELATIVELY COARSE SULPHIDES ASSOCIATED WITH DOLOMITE VEIN
264 156.56-156.7


2 mm
TOURMALINE
DOLOMITE VEIN
264 156.56-156.7


2 mm
QUARTZ
COARSE PYRITE
DOLOMITE VEIN
264 156.56-156.7


200 µm
PYRITE
GALENA
SPHALERITE
PYRITE SPHALERITE AND GALENA IN DOLOMITE
264 156.56-156.7


200 µm
PYRITE SPHALERITE AND DOLOMITE
264 156.56-156.7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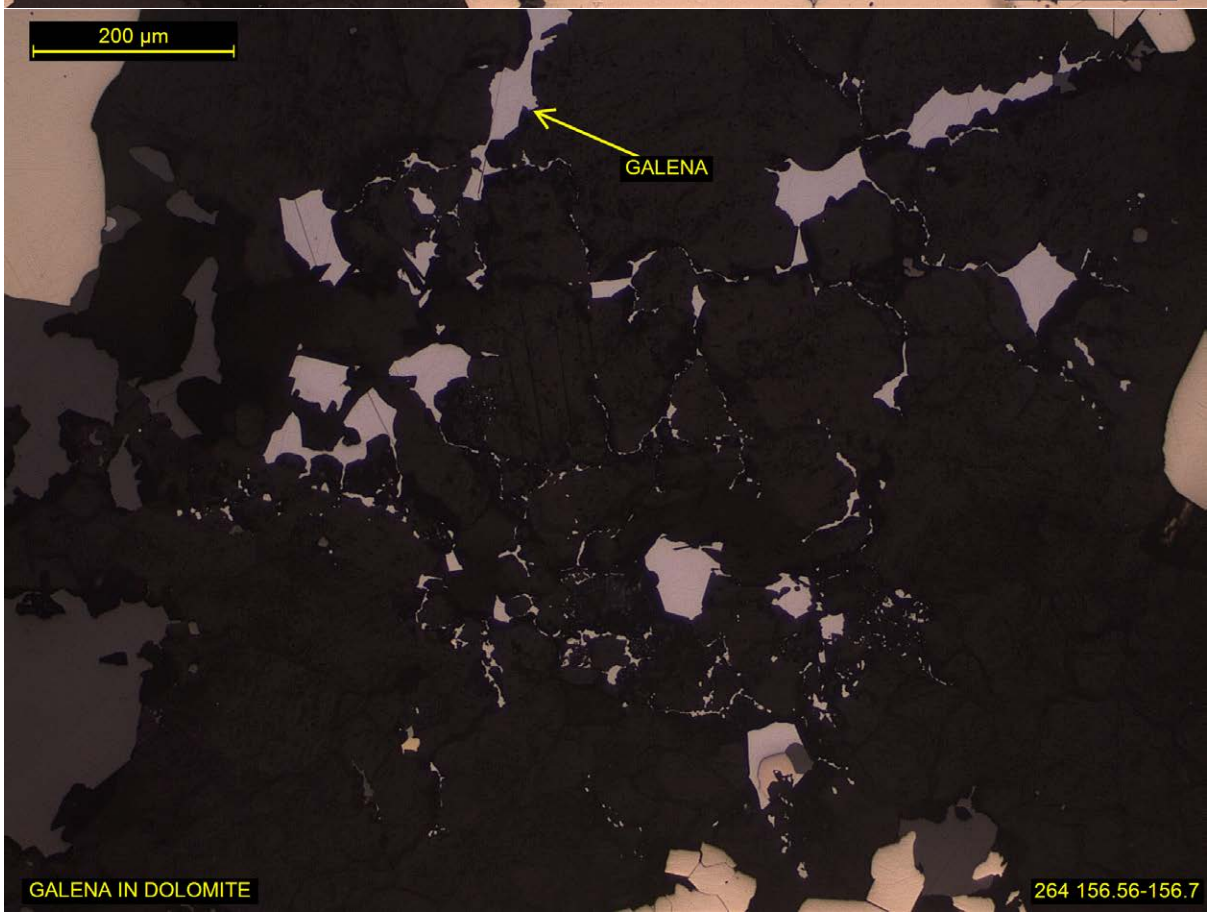
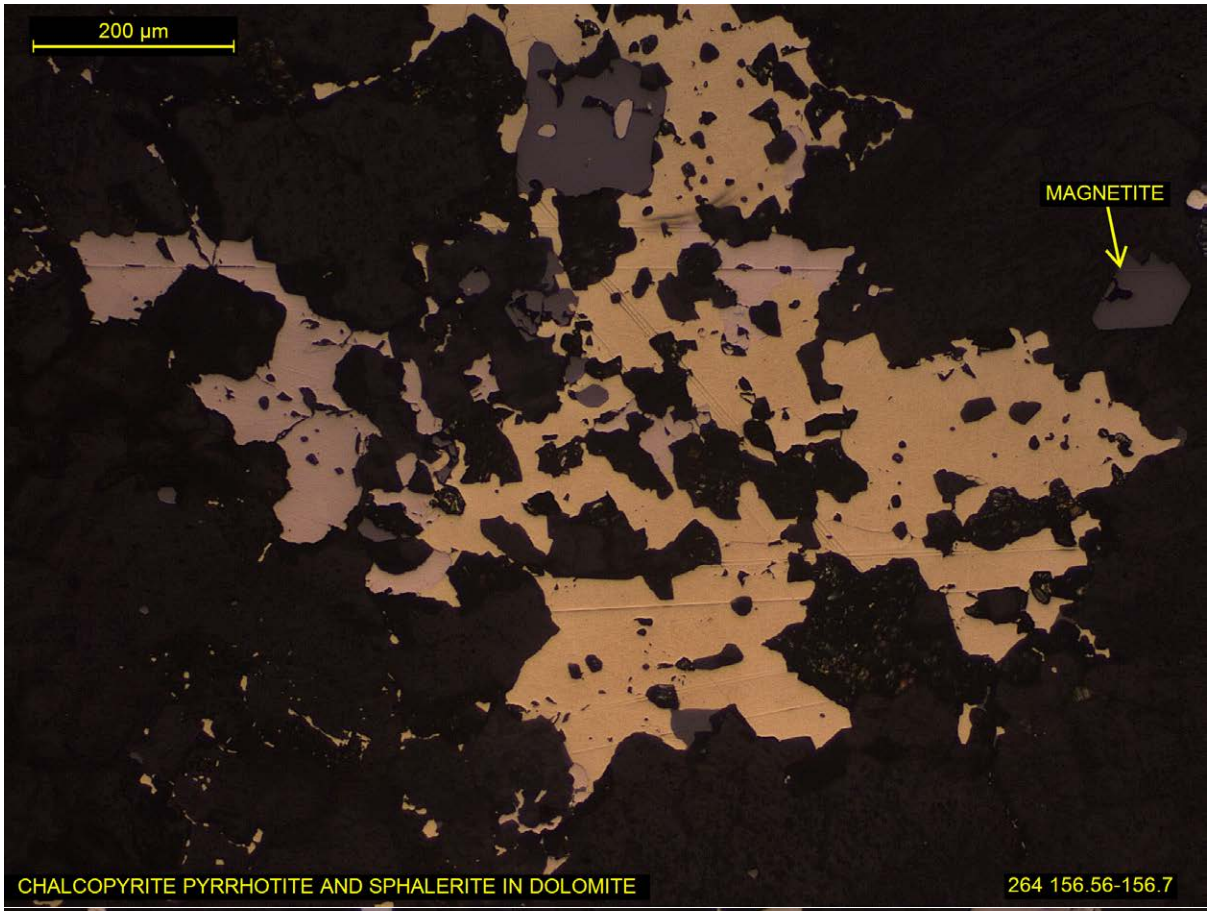
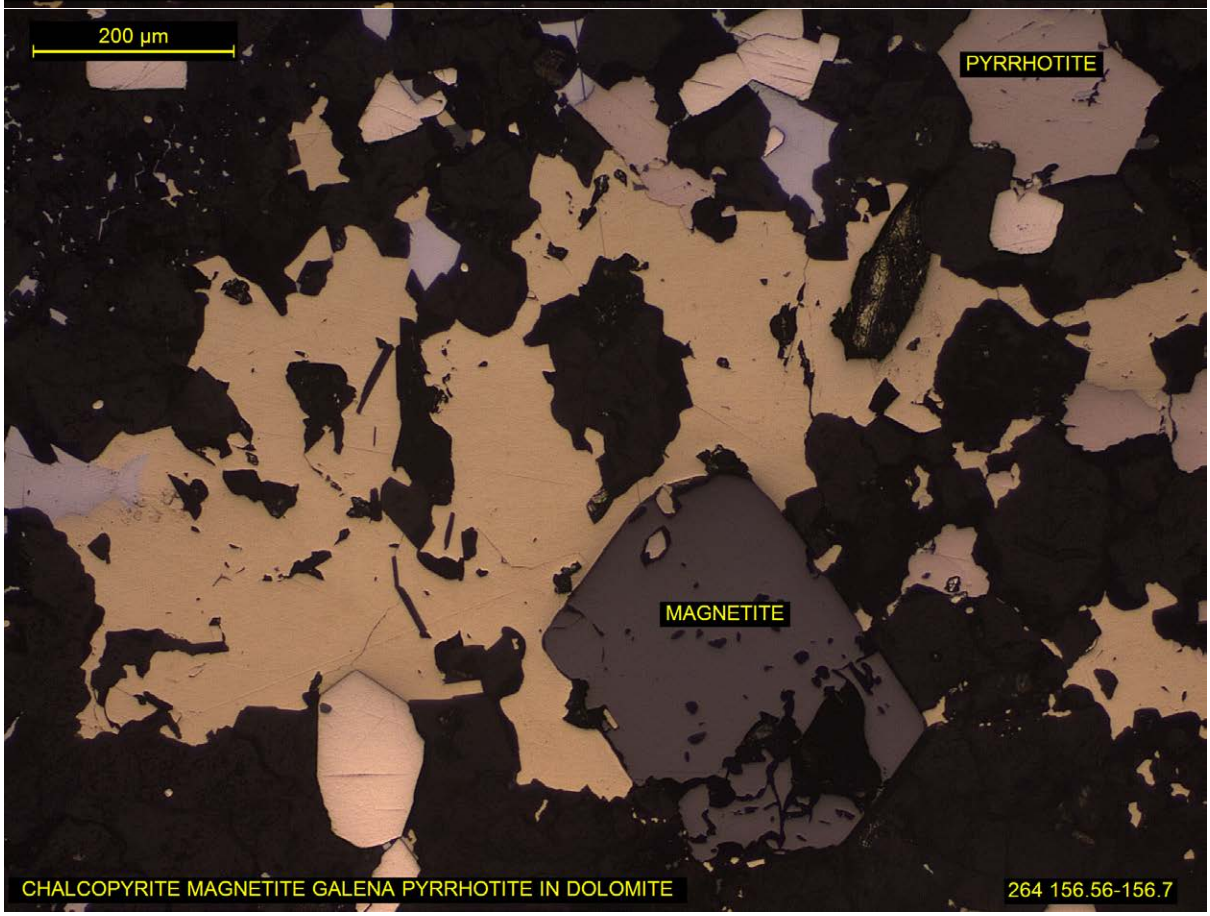
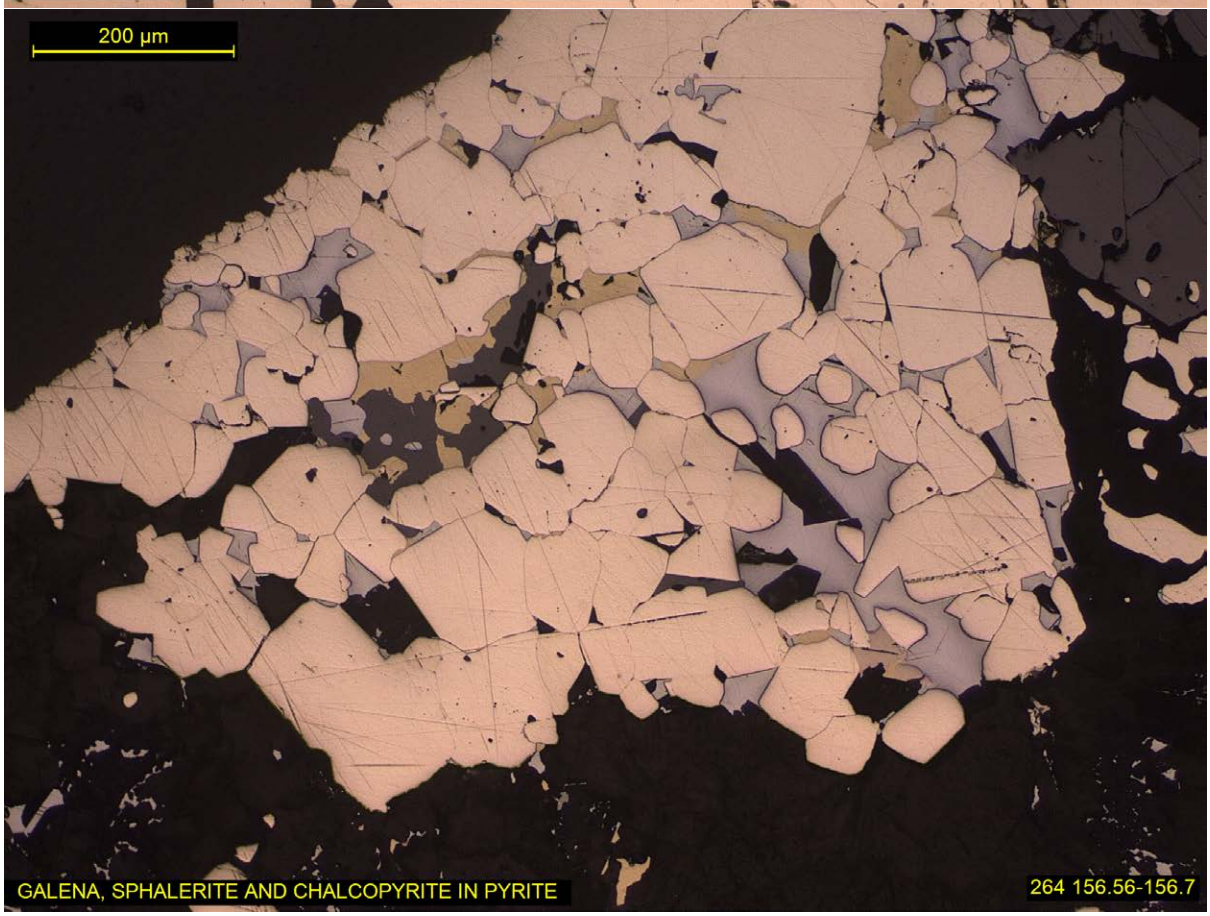
SPHALERITE IN DOLOMITE
264 156.56-156.7

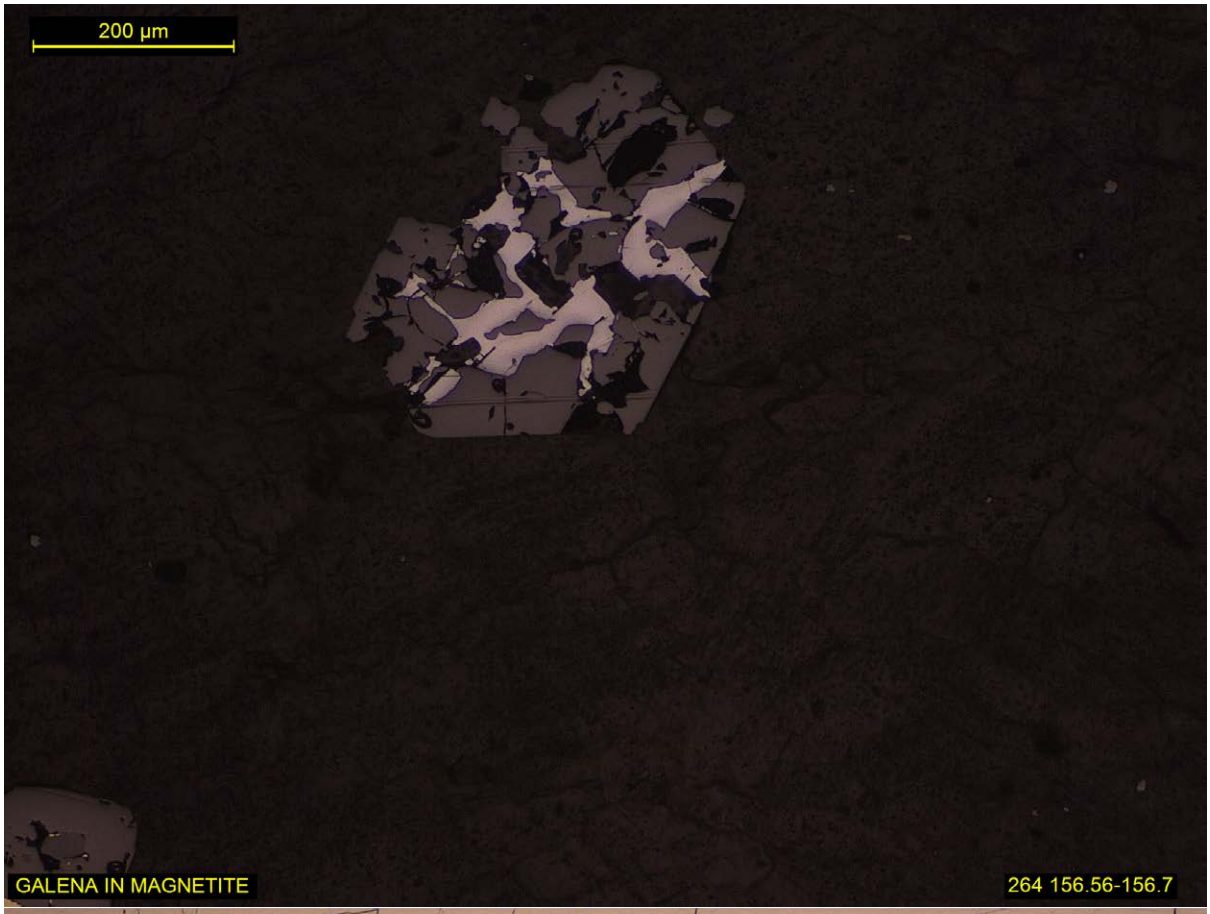

200 µm
GALENA
GALENA IN DOLOMITE
264 156.56-156.7

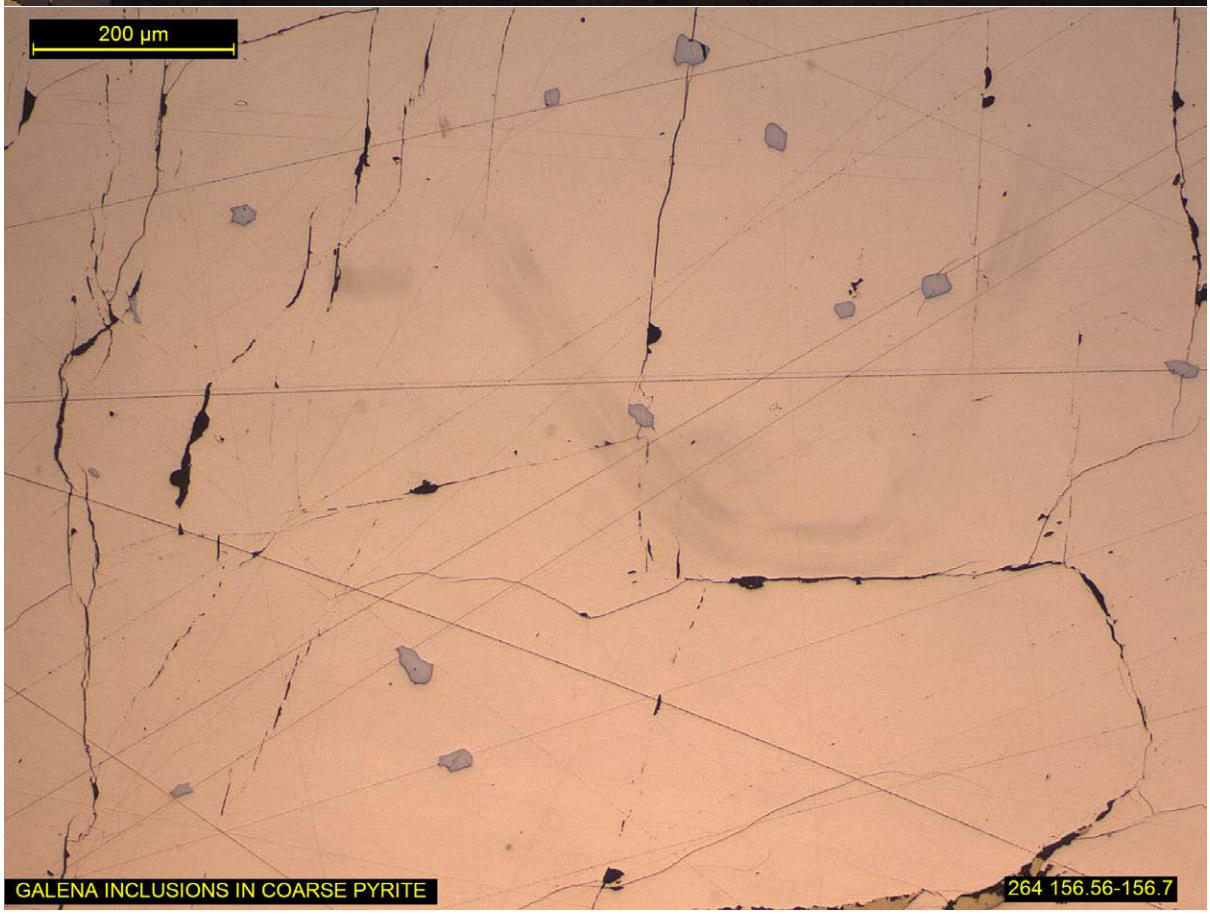

200 µm
MAGNETITE
CHALCOPYRITE PYRRHOTITE AND SPHALERITE IN DOLOMITE
264 156.56-156.7

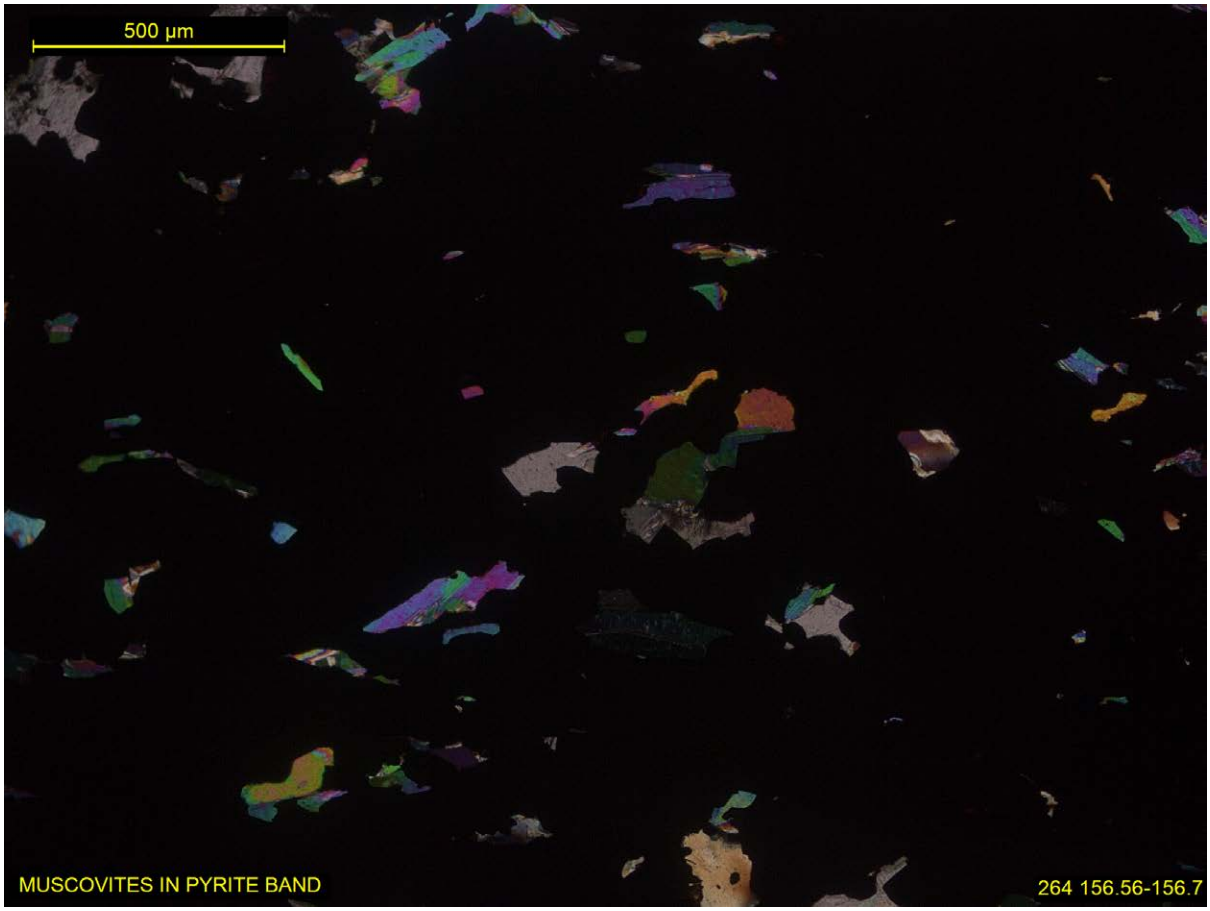

200 µm
PYRRHOTITE
MAGNETITE
CHALCOPYRITE MAGNETITE GALENA PYRRHOTITE IN DOLOMITE
264 156.56-156.7


200 µm
GALENA
FINE CHALCOPYRITE, PYRRHOTITE AND GALENA IN PYRITE
264 156.56-156.7


200 µm
GALENA, SPHALERITE AND CHALCOPYRITE IN PYRITE
264 156.56-156.7


200 µm
GALENA IN MAGNETITE
264 156.56-156.7


200 µm
GALENA INCLUSIONS IN COARSE PYRITE
264 156.56-156.7


500 µm
MUSCOVITES IN PYRITE BAND
264 156.56-156.7

SAMPLE K15-267 143.52-143.62

DRILL CORE

POLISHED THIN SECTION

GANGUE	**15%**
DOLOMITE >>SIDERITE (XRD)	99%
QUARTZ	<1%
ORES	**85%**
PYRITE	75-85%
MAGNETITE	5-15%
PYRRHOTITE	5-10%
SPHALERITE	1-3%
GALENA	1%
CHALCOPYRITE	<1%
MARCASITE	<1%

CLASSIFIED AS A BANDED MAGNETITE PYRITE ORE WITH DISSEMINATED PYRRHOTITE, SPHALERITE, RARE GALENA AND CHALCOPYRITE WITH DOLOMITE/SIDERITE OVERPRINT

A sample dominantly composed of pyrite that is primarily semi massive, characterised by coalesced grains that are discernibly euhedral (~100 to ~450 µm), with subordinate occasional roughly banded magnetite, and disseminated pyrrhotite, sphalerite, rare chalcopyrite and galena.

The gangue is primarily carbonate (dolomite and siderite (XRD)), found disseminated throughout pyrite, as several subordinate bands and rare very thin veins, averaging ~200 µm grain size.

Magnetite appears in several rough irregular discontinuous bands (up to ~2mm thick) and random equidimensional masses (up to ~1.5 mm), characterised by irregular allotriomorphic textures, and rare discrete subhedral/euhedral grains, commonly containing numerous foreign inclusions including carbonate, galena and pyrite. Frequently it is found as a composite with subordinate sphalerite.

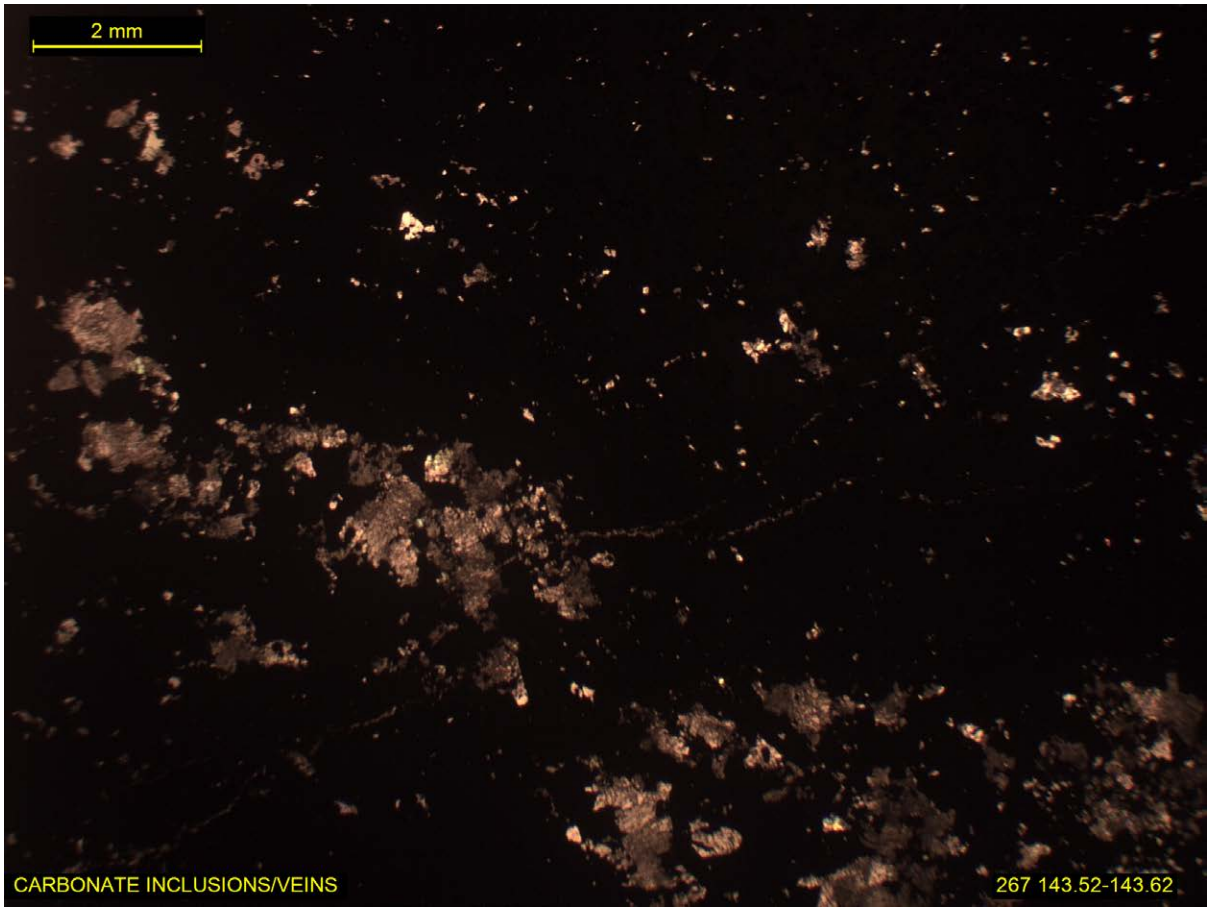
Sphalerite is found frequently as subordinate interstitial matrix component within the coalesced semi-massive pyrite. It usually forms allotriomorphic shapes dictated to by adjacent euhedral pyrites. Localized zones of equal sphalerite and pyrite are present, the latter occurring as discrete euhedral grains. Of note is the frequent occurrences of magnetite and sphalerite together.

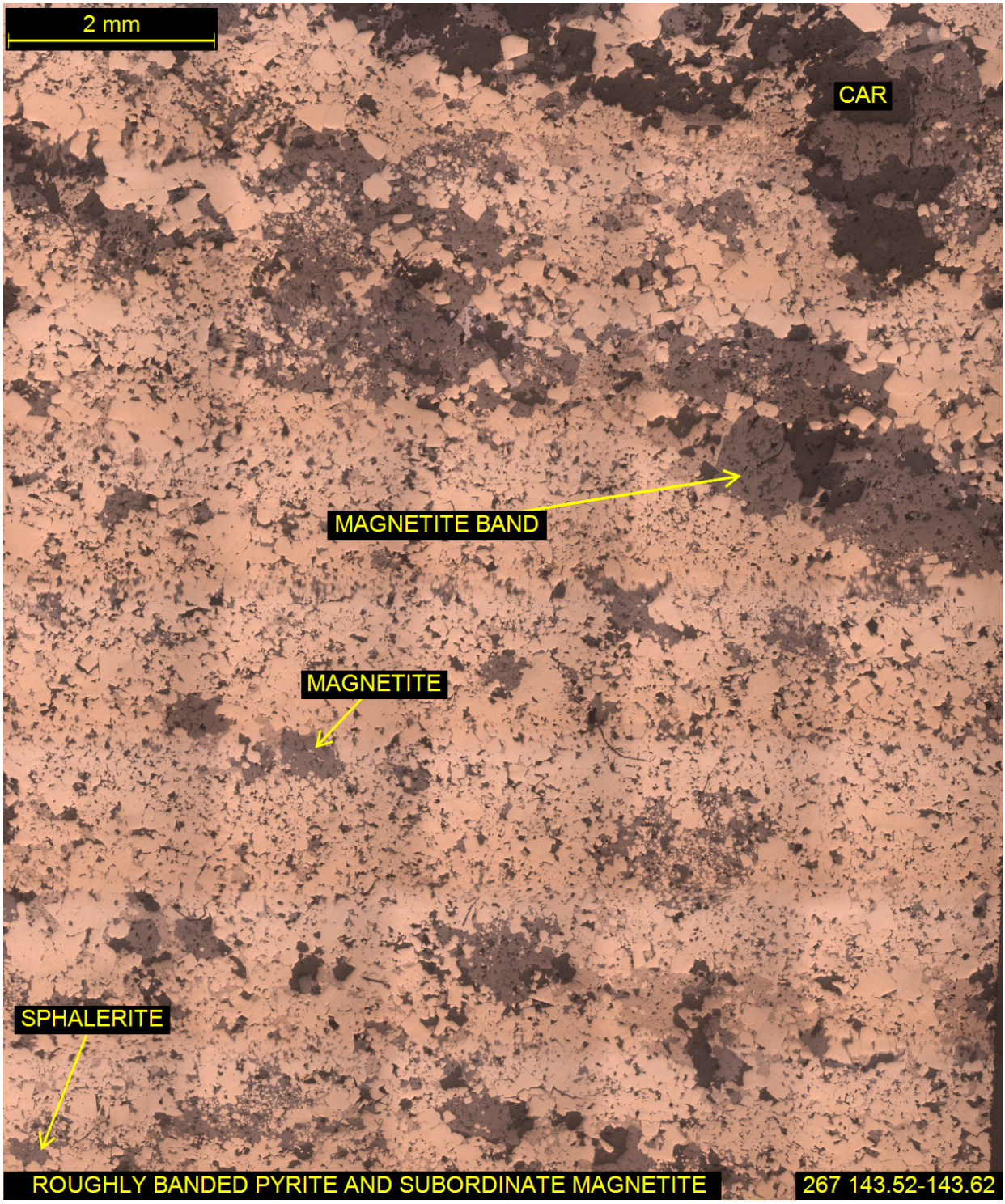
Galena is found disseminated right across the sample, as fine (sub 100 µm) grains that are commonly interstitial to euhedral pyrites, as irregular fine inclusions within pyrite coalesced masses, occasional inclusions in carbonate, and also adjacent to other sulphides including sphalerite and chalcopyrite. Rare coarse galena (up to ~1.5 mm) were found, characterised

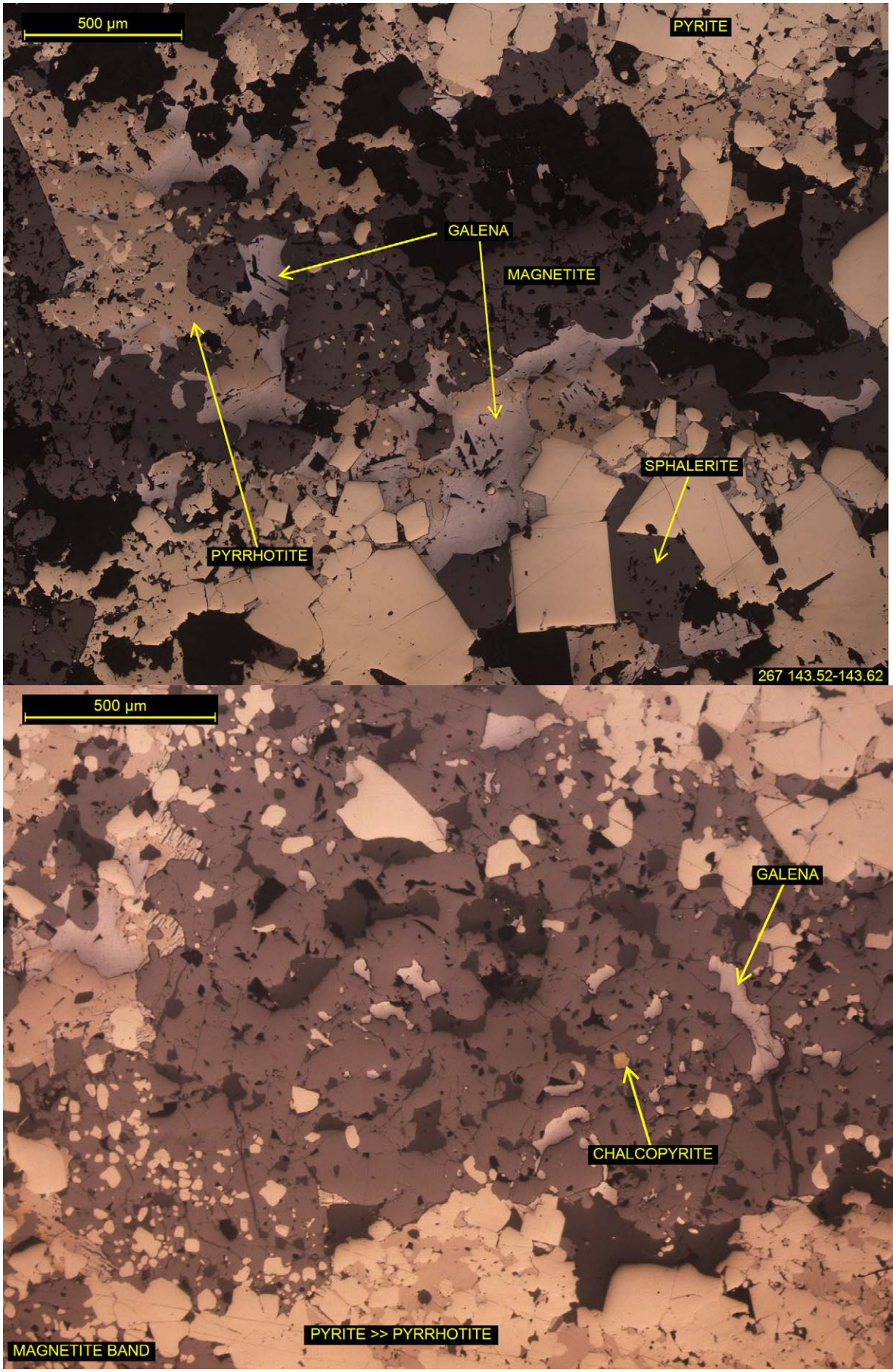
by irregular shapes composite with several minerals including magnetite, pyrrhotite, pyrite and sphalerite.

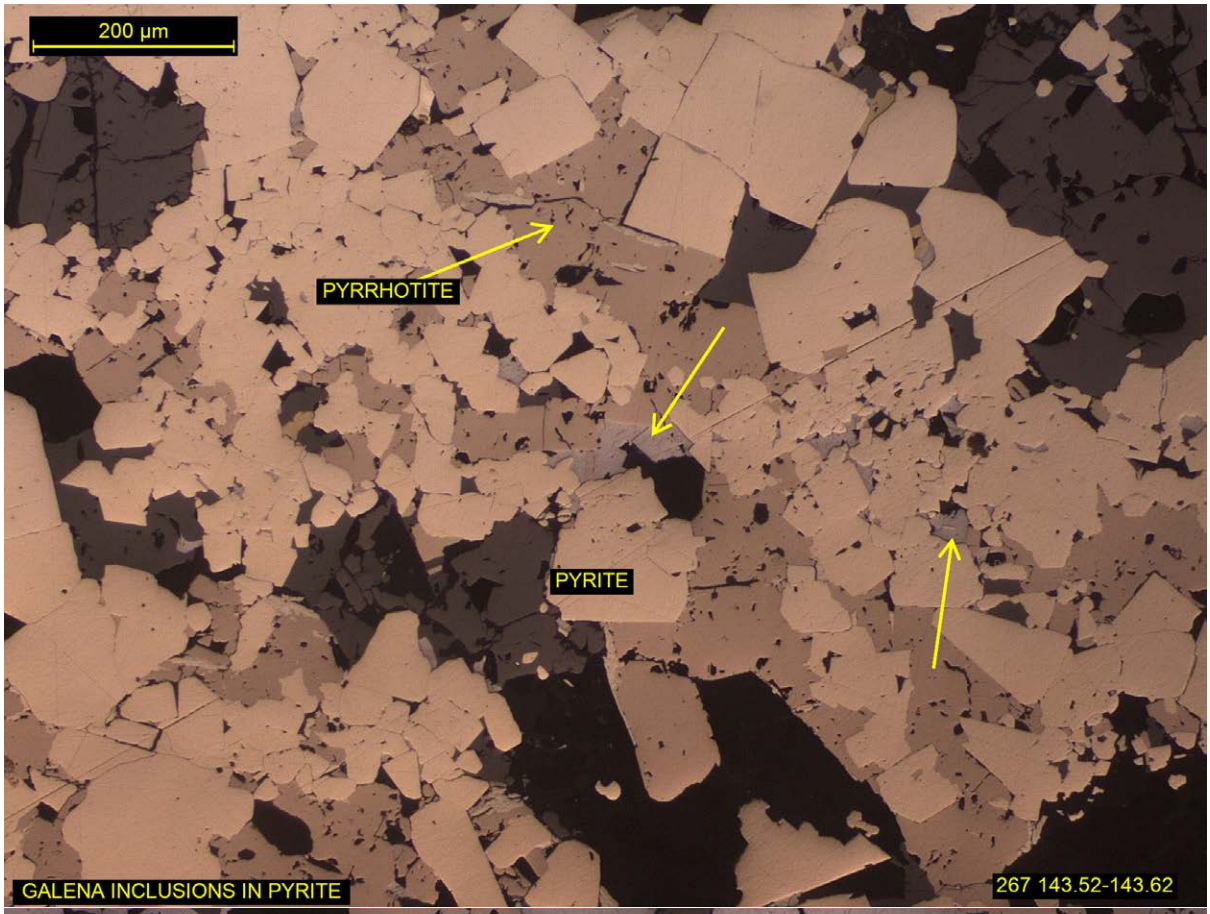
Pyrrhotite is regularly disseminated within pyrite, forming interstitial allotriomorphic masses to coalesced and euhedral pyrite, ranging from ~100 µm to ~1.5 mm. Occasionally it is undergoing incipient to moderate alteration to marcasite.

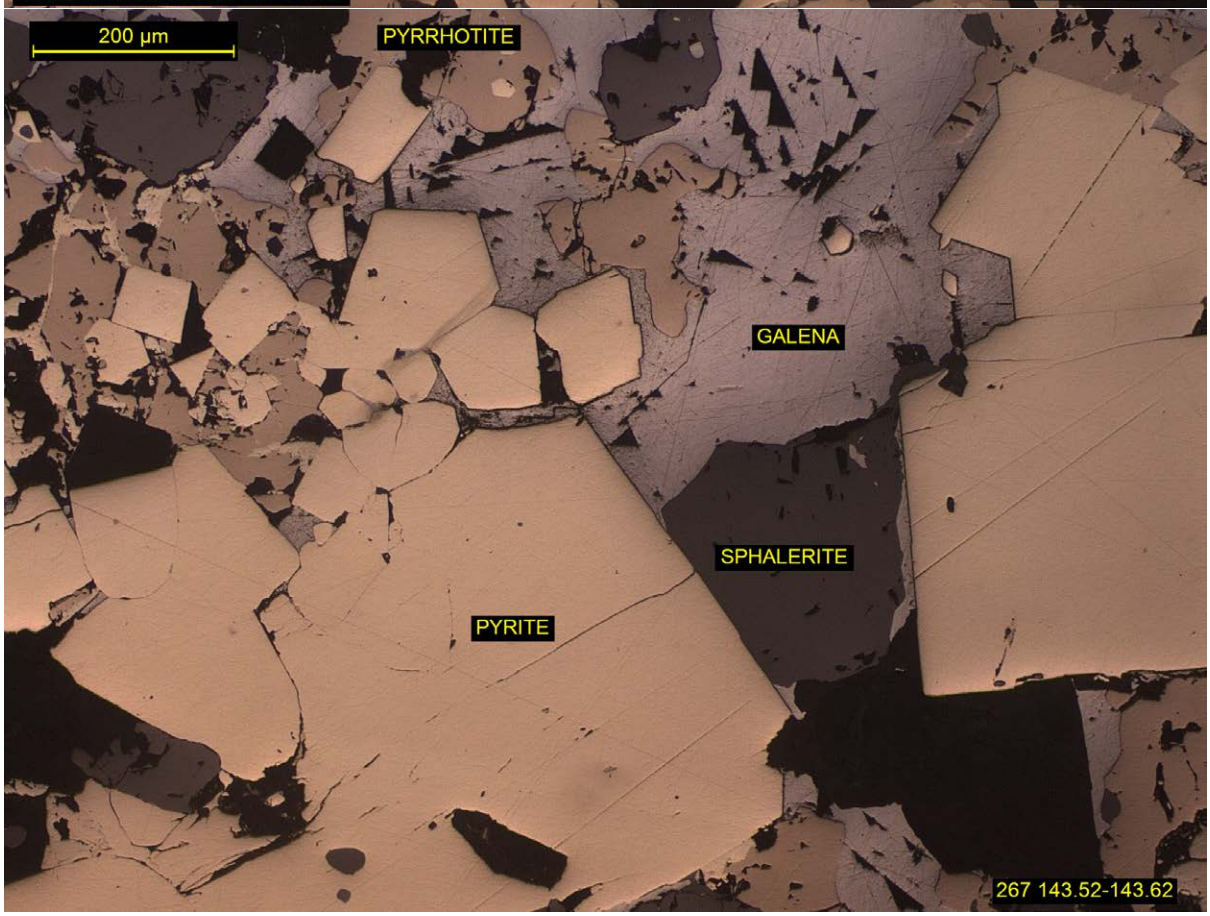
Chalcopyrite occurrence is more sporadic than galena, found as irregularly shaped and rectangular forms, as inclusions within pyrite, between euhedral pyrite grains, adjacent to sphalerite, typically forming in localized clusters, ranging in size from microns to ~100 µm. Rare slivers up to ~300 µm in length in pyrite were identified.

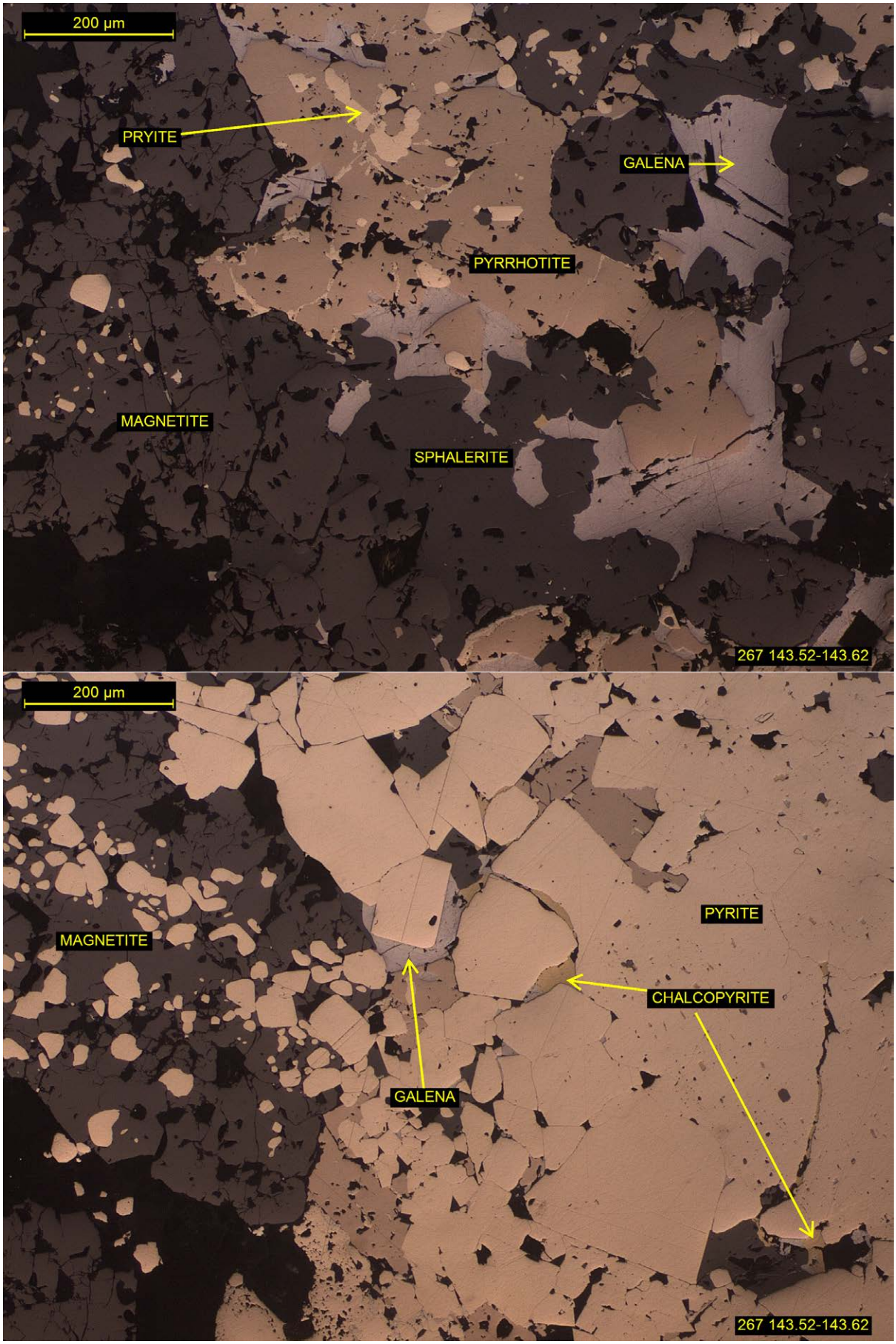


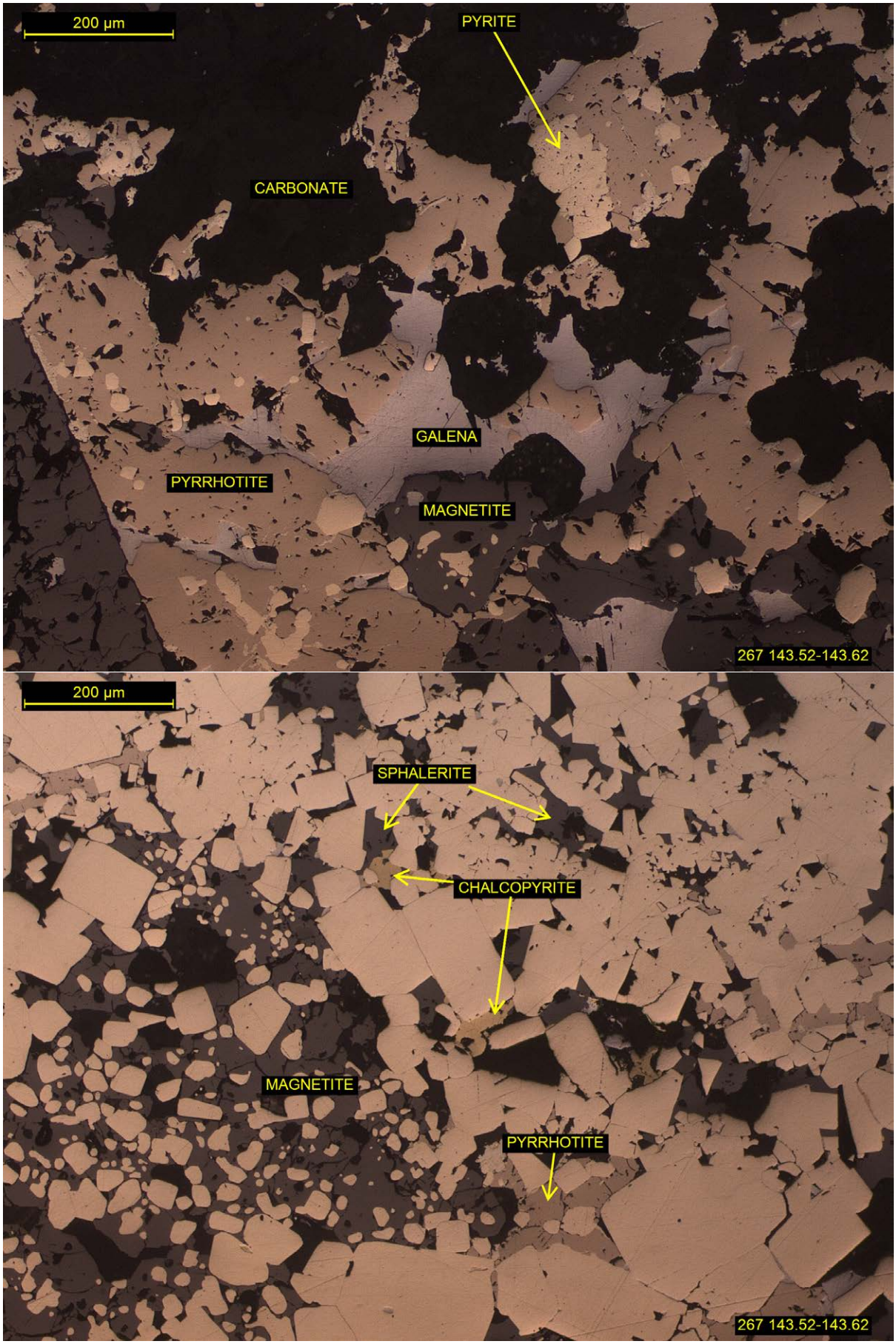

2 mm
CAR
MAGNETITE BAND
MAGNETITE
SPHALERITE
ROUGHLY BANDED PYRITE AND SUBORDINATE MAGNETITE
267 143.52-143.62

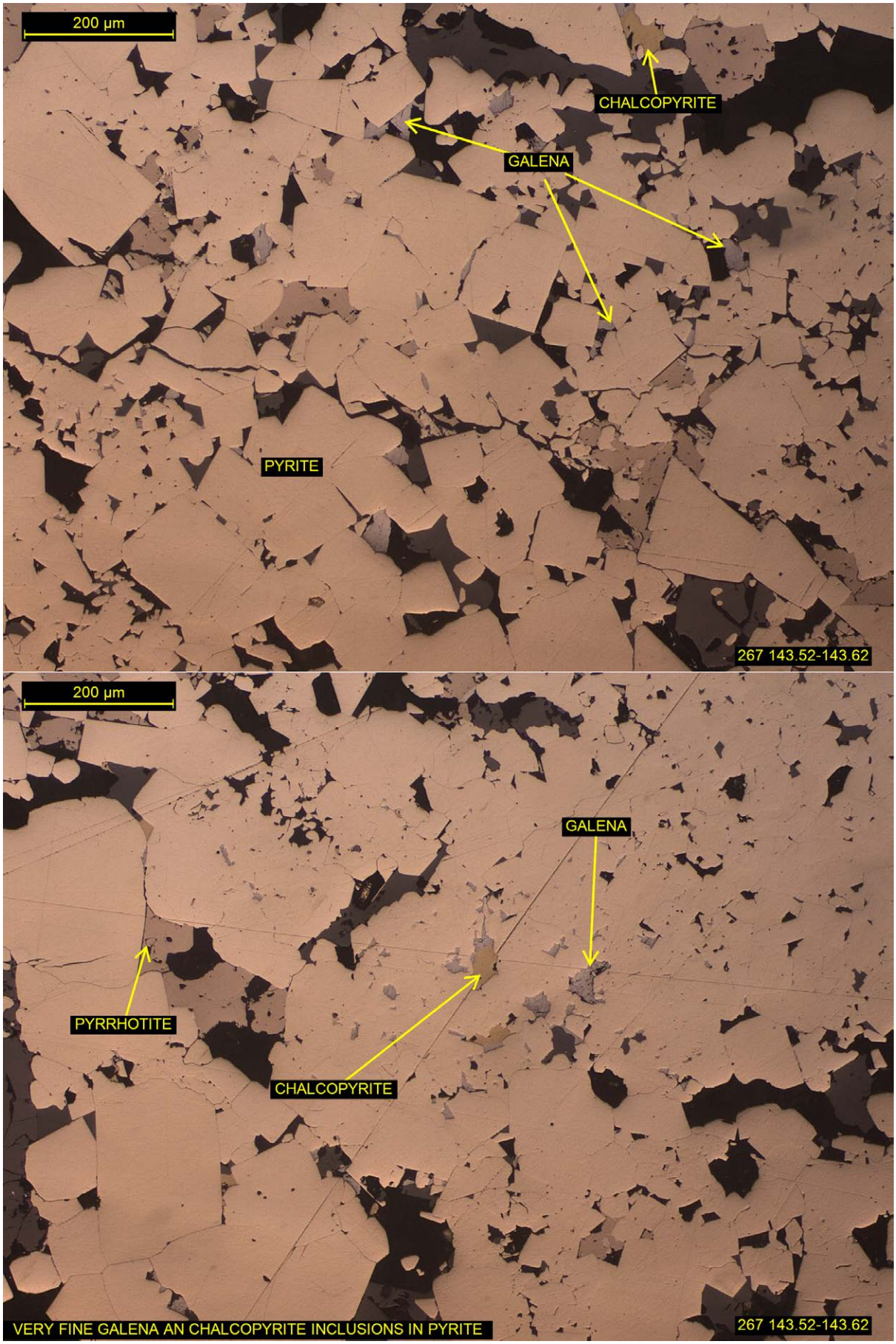

500 µm
PYRITE
GALENA
MAGNETITE
SPHALERITE
PYRRHOTITE
267 143.52-143.62
500 µm
GALENA
CHALCOPYRITE
PYRITE >> PYRRHOTITE
MAGNETITE BAND

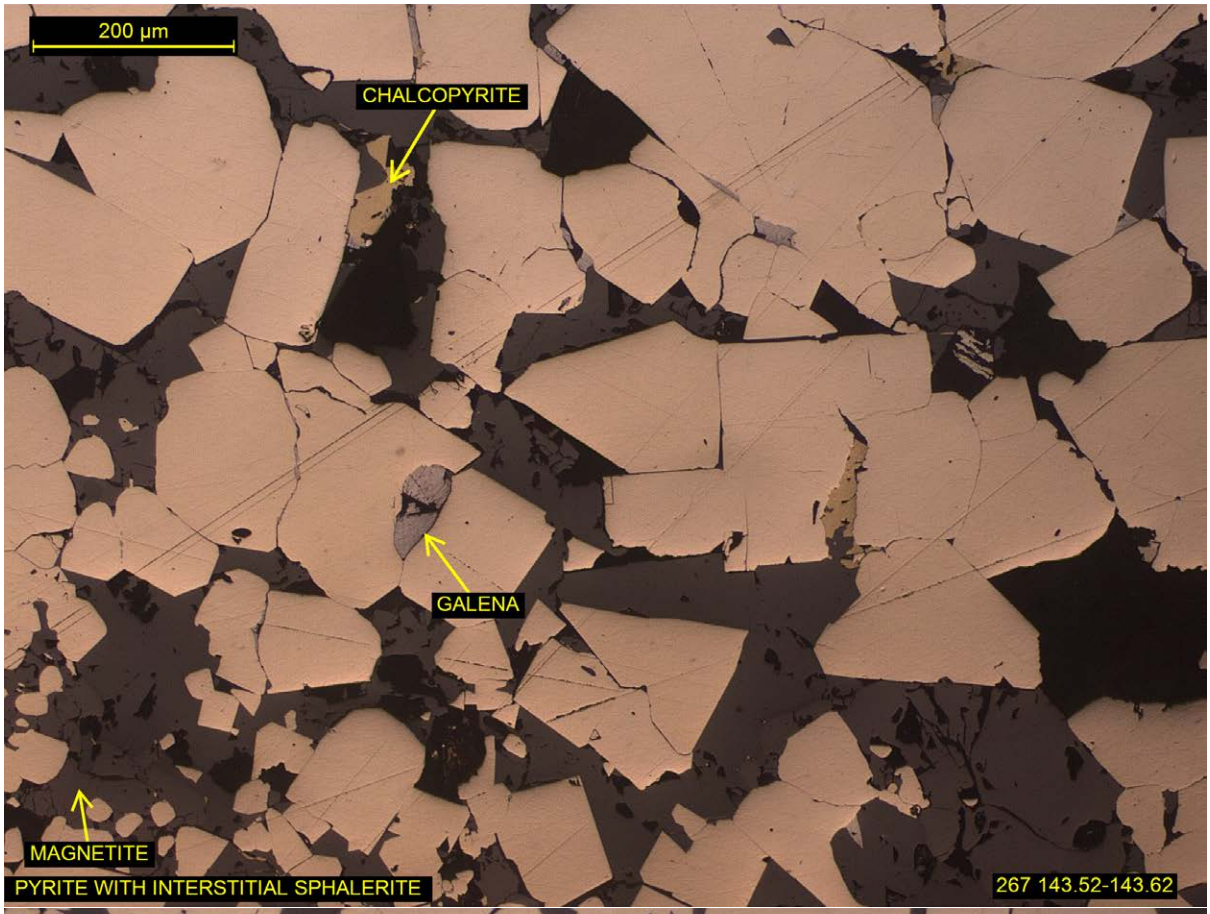

200 µm
PYRRHOTITE
PYRITE
GALENA INCLUSIONS IN PYRITE
267 143.52-143.62

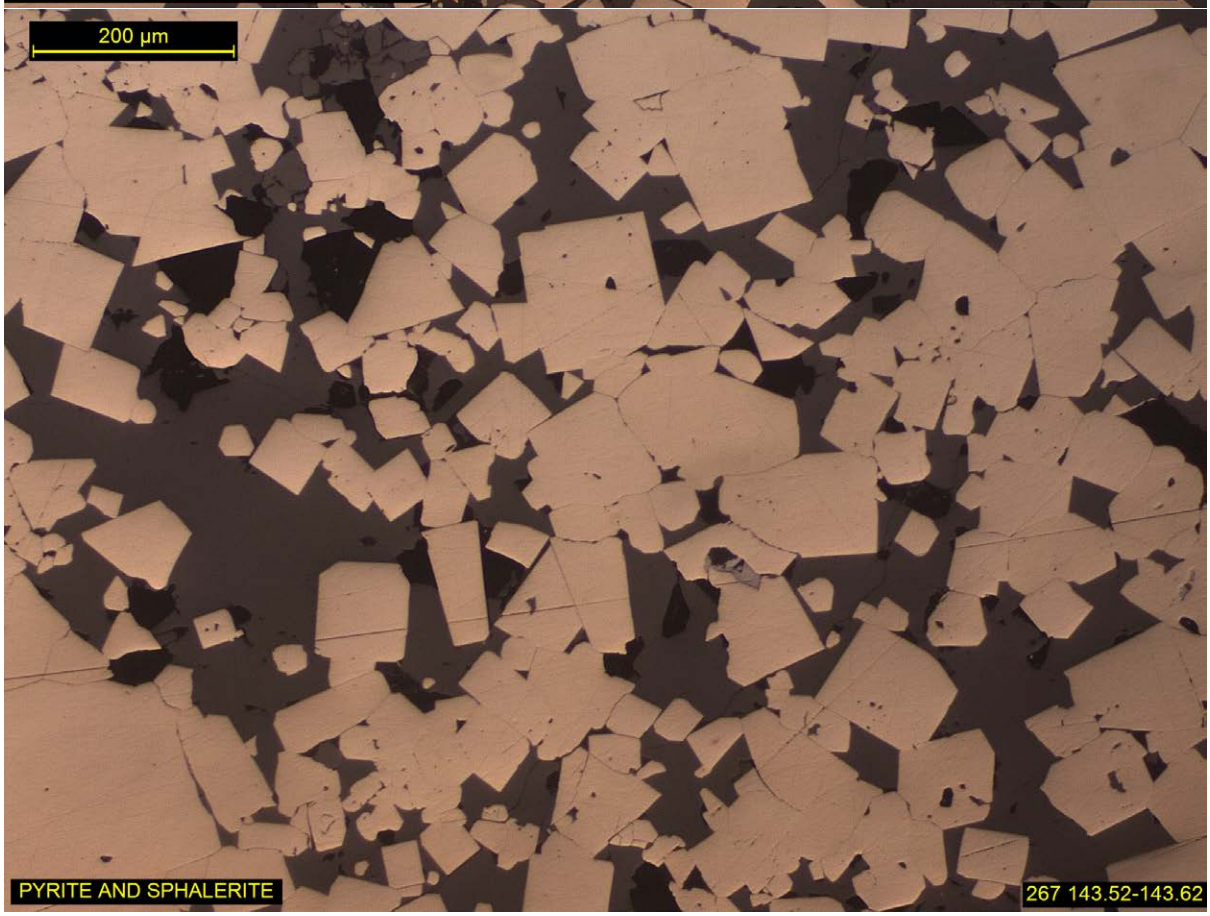

200 µm
PYRRHOTITE
GALENA
SPHALERITE
PYRITE
267 143.52-143.62

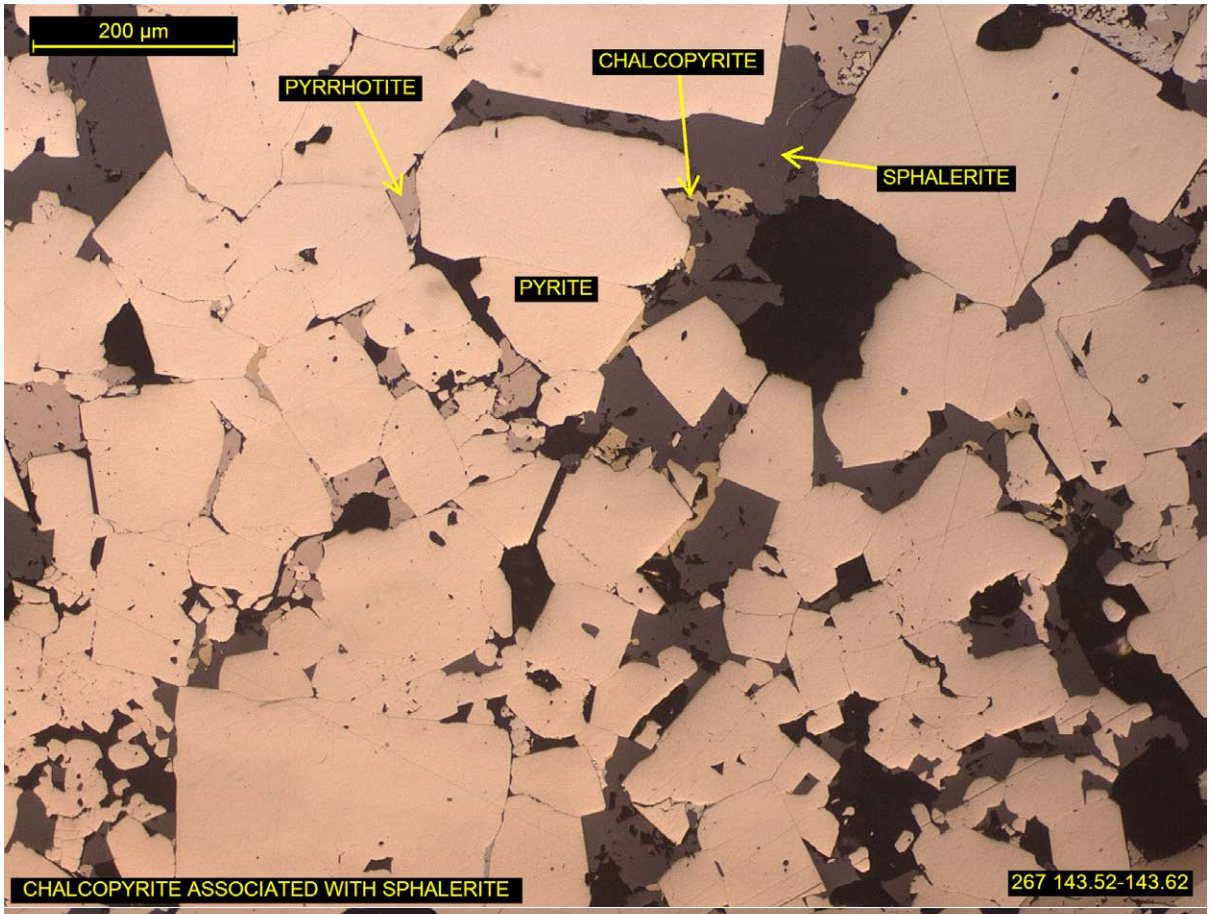

200 µm
PRYITE
GALENA
PYRRHOTITE
MAGNETITE
SPHALERITE
267 143.52-143.62
200 µm
MAGNETITE
PYRITE
CHALCOPYRITE
GALENA
267 143.52-143.62

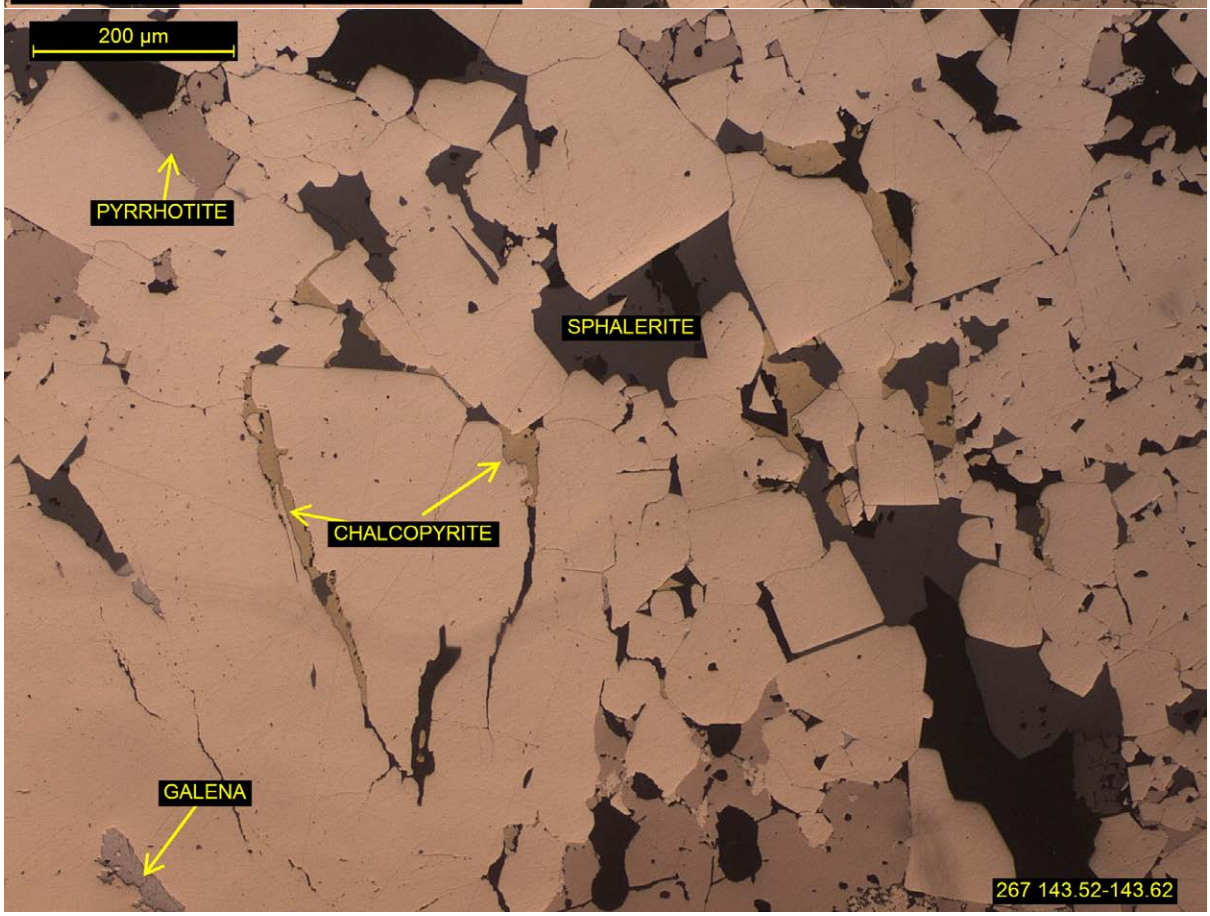

200 µm
PYRITE
CARBONATE
GALENA
PYRRHOTITE
MAGNETITE
267 143.52-143.62
200 µm
SPHALERITE
CHALCOPYRITE
MAGNETITE
PYRRHOTITE
267 143.52-143.62

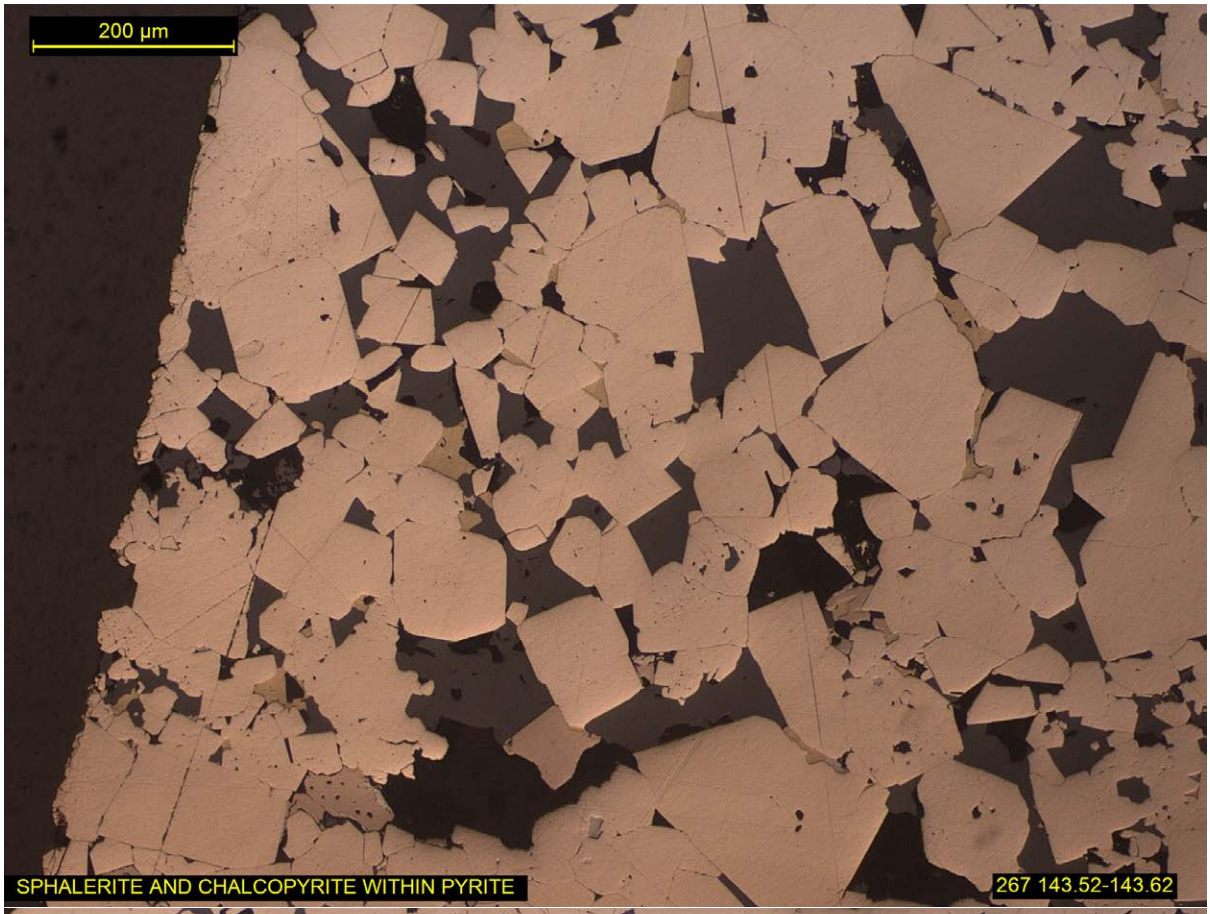

200 µm
CHALCOPYRITE
GALENA
PYRITE
267 143.52-143.62
200 µm
GALENA
PYRRHOTITE
CHALCOPYRITE
VERY FINE GALENA AN CHALCOPYRITE INCLUSIONS IN PYRITE
267 143.52-143.62


200 µm
CHALCOPYRITE
GALENA
MAGNETITE
PYRITE WITH INTERSTITIAL SPHALERITE
267 143.52-143.62


200 µm
PYRITE AND SPHALERITE
267 143.52-143.62


200 µm
PYRRHOTITE
CHALCOPYRITE
SPHALERITE
PYRITE
CHALCOPYRITE ASSOCIATED WITH SPHALERITE
267 143.52-143.62


200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
GALENA
267 143.52-143.62


200 µm
SPHALERITE AND CHALCOPYRITE WITHIN PYRITE
267 143.52-143.62


200 µm
CHALCOPYRITE
SPHALERITE
GALENA
PYRRHOTITE
CHALCOPYRITE, SPHALERITE AND GALENA INCLUSIONS IN MASSIVE PYRITE
267 143.52-143.62

SAMPLE K15-273 95.62-95.76

DRILL CORE

POLISHED THIN SECTION

GANGUE	**5%**
SIDERITE (XRD)	35-45%
CHLORITE	35-45%
MICA	15-25%
BARITE	<1%
ORES	**95%**
PYRITE	50-70%
CHALCOPYRITE	20-30%
PYRRHOTITE	5-15%
MAGNETITE	5-15%
SPHALERITE	5-10%
GALENA	<1%
ARGENTIAN GOLD	TRACE

CLASSIFIED AS A MASSIVE PYRITE ORE WITH DISSEMINATED PYRRHOTITE, MAGNETITE AND CHALCOPYRITE, WITH SIDERITE VEINS

Massive pyrite with significant ubiquitous chalcopyrite that has formed a subordinate interstitial matrix relative to the pyrite framework. Chalcopyrite varies from sporadic fine grains (sub 100 µm), through to large (over a millimetre) interstitial masses, within pyrite. Pyrrhotite and magnetite are commonly disseminated within pyrite, whilst sphalerite's presence is somewhat sporadic. Gangue is mainly chlorite, mica and siderite which erratically pepper the massive pyrite, including thin siderite veins.

Magnetite forms primarily as spherical and irregular aggregates/clusters (~500 µm to ~2 mm) of allotriomorphic grains, disseminated fairly regularly across the pyrite. Often, thin siderite veins irregular crosscut these aggregates. Pyrrhotite similarly is found regularly disseminated across the massive pyrite, occurring in irregularly shaped to occasional equidimensional and elongate aggregates (30 µm to ~1.5 mm), comprised of allotriomorphic grains.

Sphalerite content is generally low, however it forms major to dominant components of particular zones. Rare sphalerite dominant layers host subordinate to significant discrete euhedral grains and aggregates of pyrite, in addition to sporadically disseminated pyrrhotite, chalcopyrite and galena. Sphalerite also forms in localized zones, as interstitial matrix to the pyrite framework.

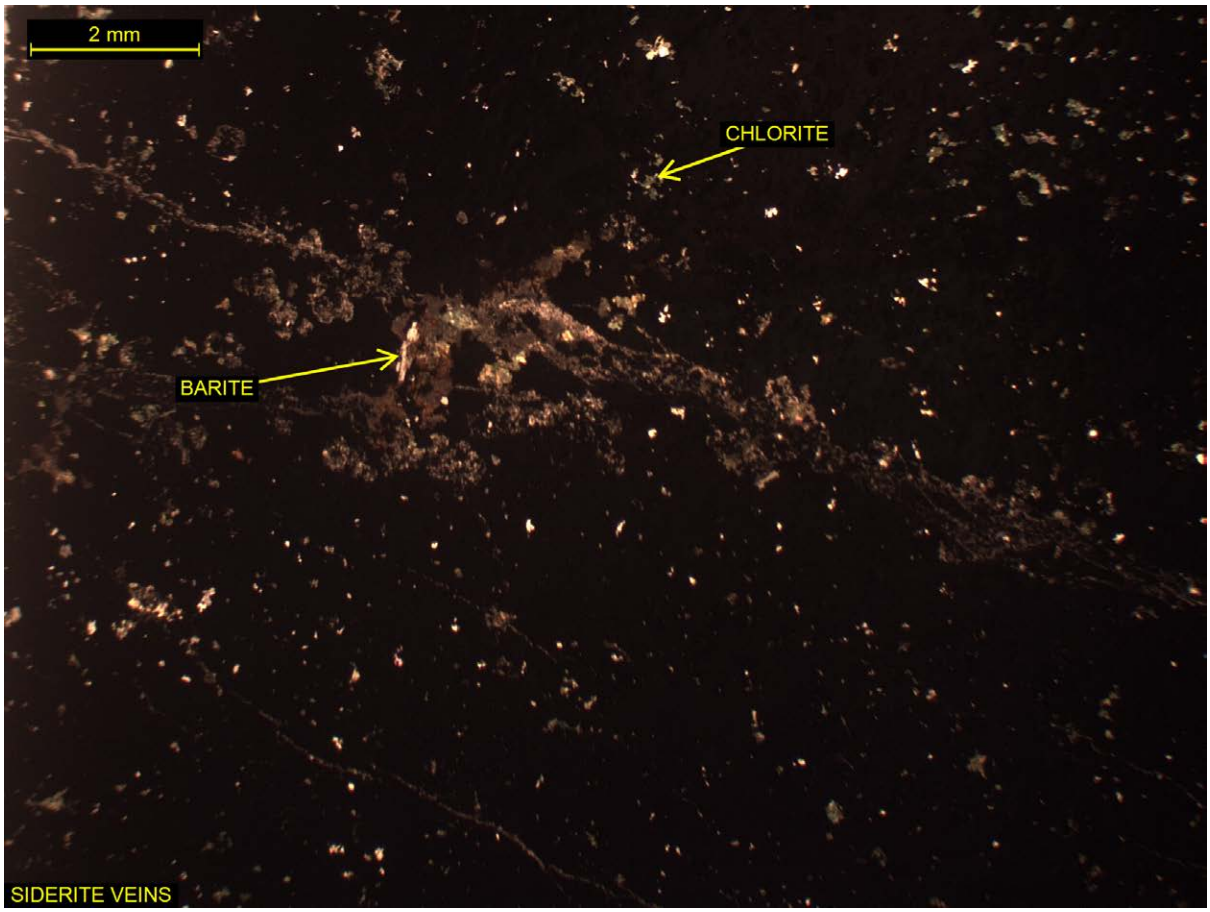
Galena occurs typically as randomly disseminated individual fine (microns to ~260 µm) irregular to equidimensional shaped grains, as inclusions within pyrite or subordinate sphalerite occasionally pyrrhotite, and frequently rimming pyrite, magnetite or lesser

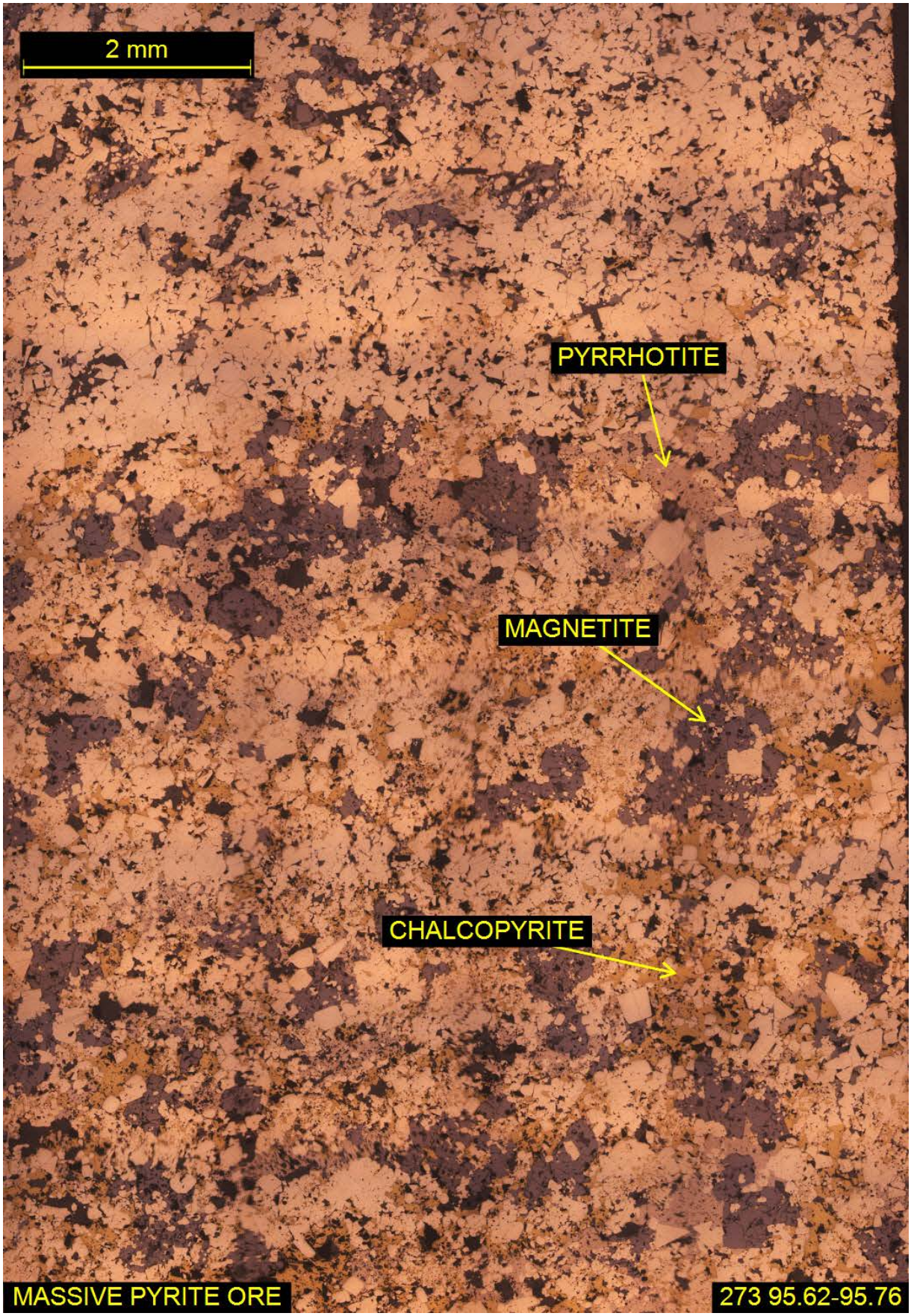
chalcopyrite. Occasionally a cluster of galena grains occurs in particular zones, forming along boundaries of sulphides with grain shapes dictated by adjacent ores.

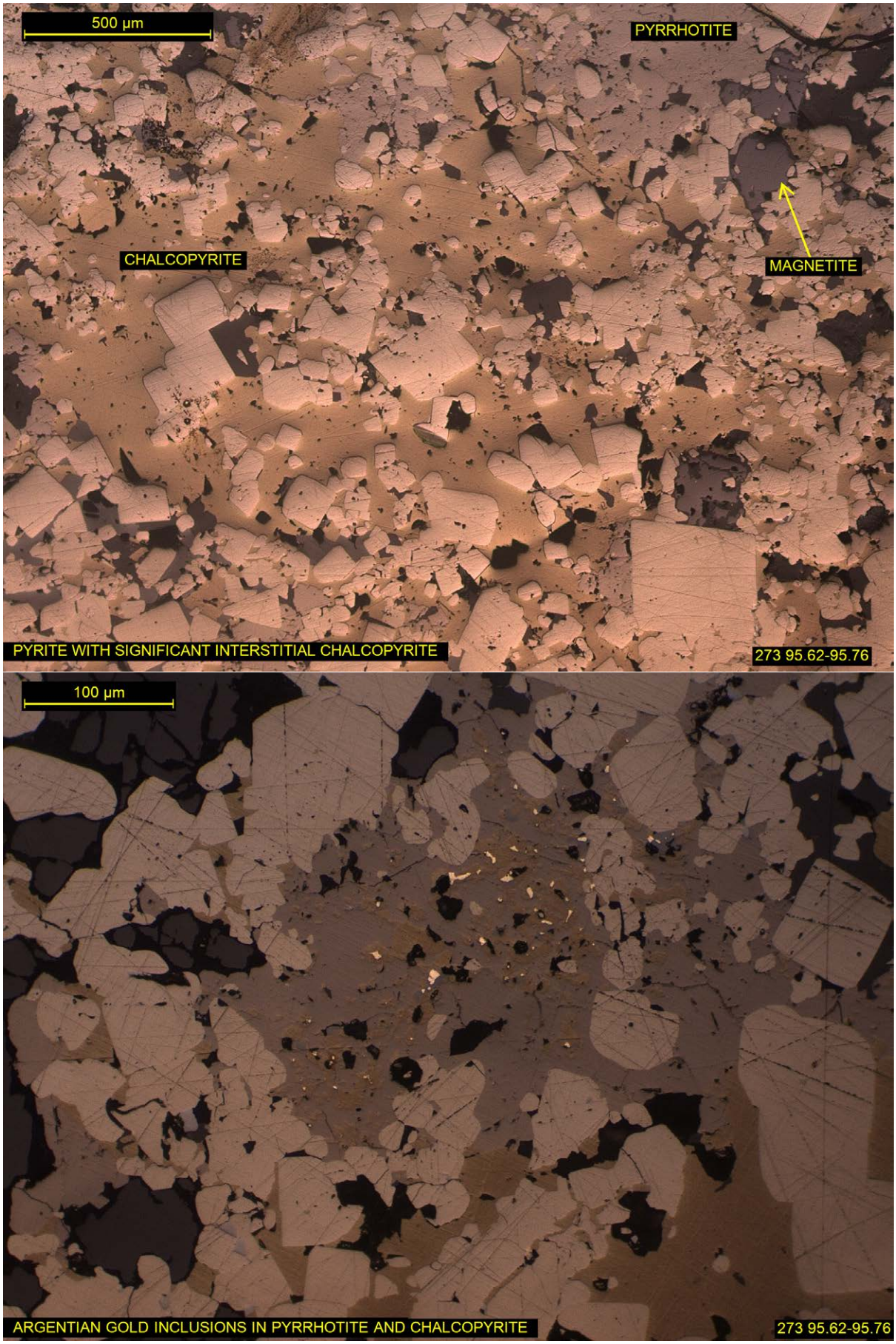
Gangue is comprised of siderite, chlorite and mica that occur in aggregates (50 to ~500 µm), sporadically throughout the massive pyrite. Chlorite occurs in aggregates of fine (~150 µm) flakes, whilst siderites are generally anhedral grains. A number of thin (sub ~150 µm) micritic siderite veinlets crosscut the pyrite. A very rare euhedral columnar barite aggregate (up to ~600 µm) was found within a siderite vein.

GOLD

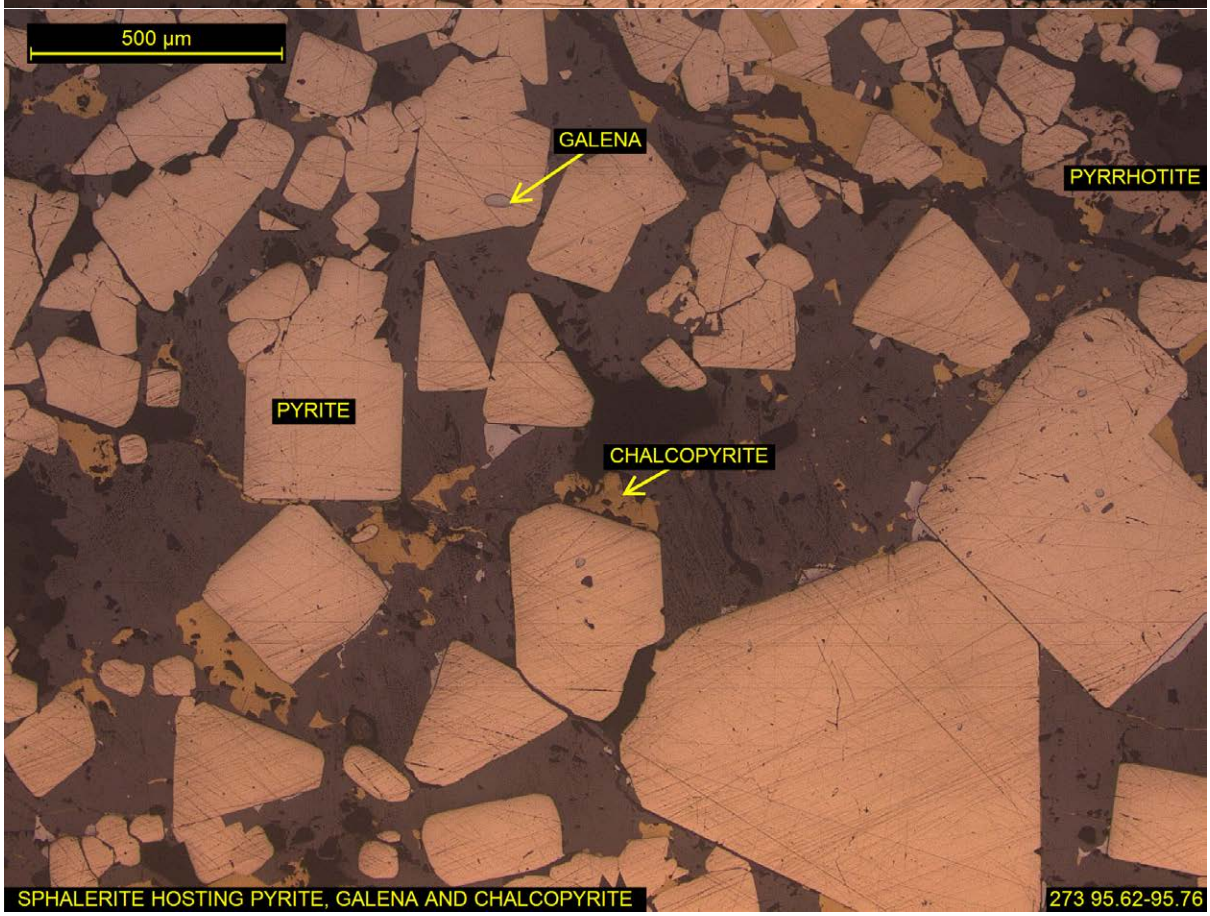
Approximately sixty grains of argentian gold were found in one location, as inclusions within chalcopyrite and subordinate pyrrhotite. The grains are equidimensional, irregularly shaped and slivers, ranging in size from less than a micron to ~16 µm.



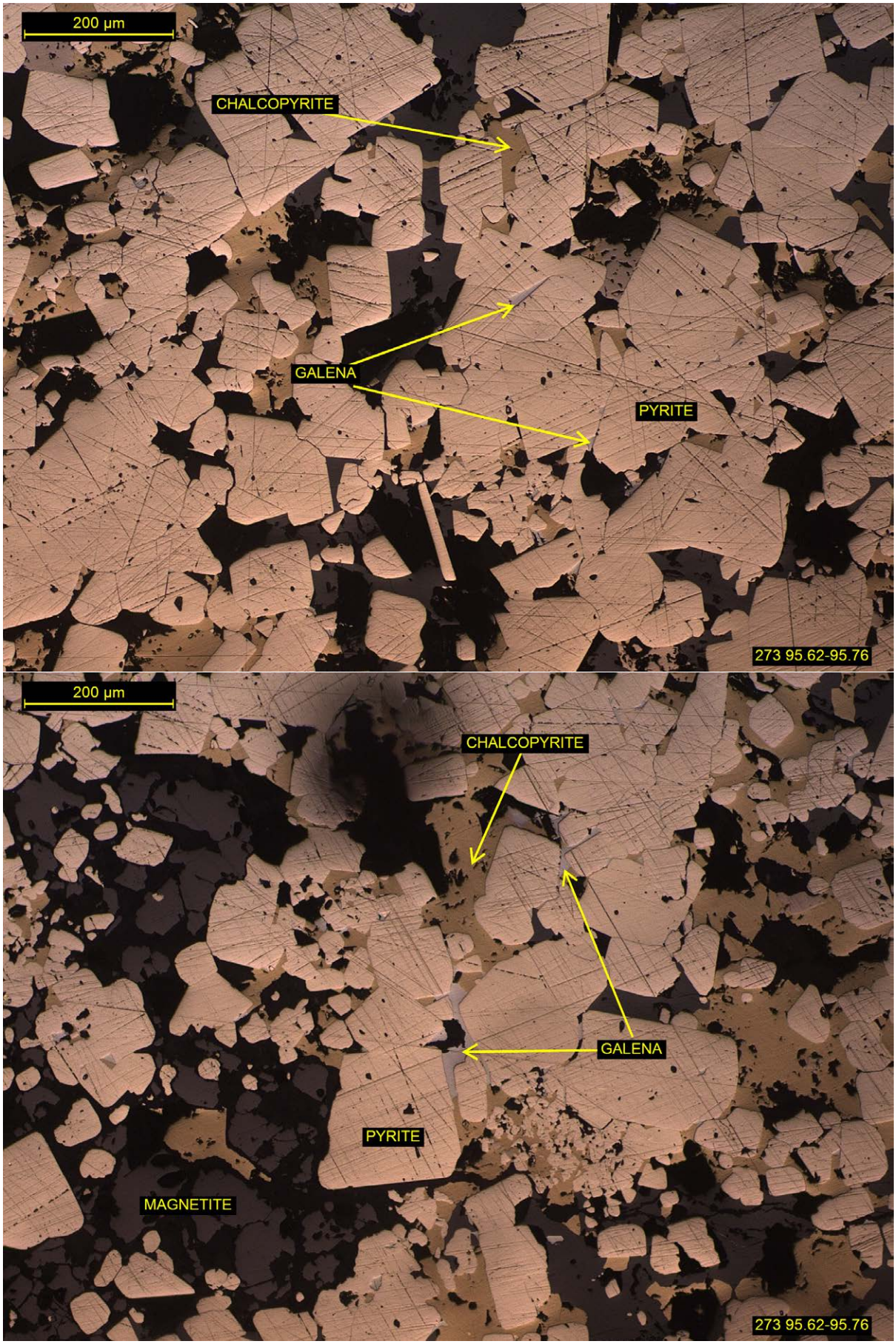

2 mm
PYRRHOTITE
MAGNETITE
CHALCOPYRITE
MASSIVE PYRITE ORE
273 95.62-95.76

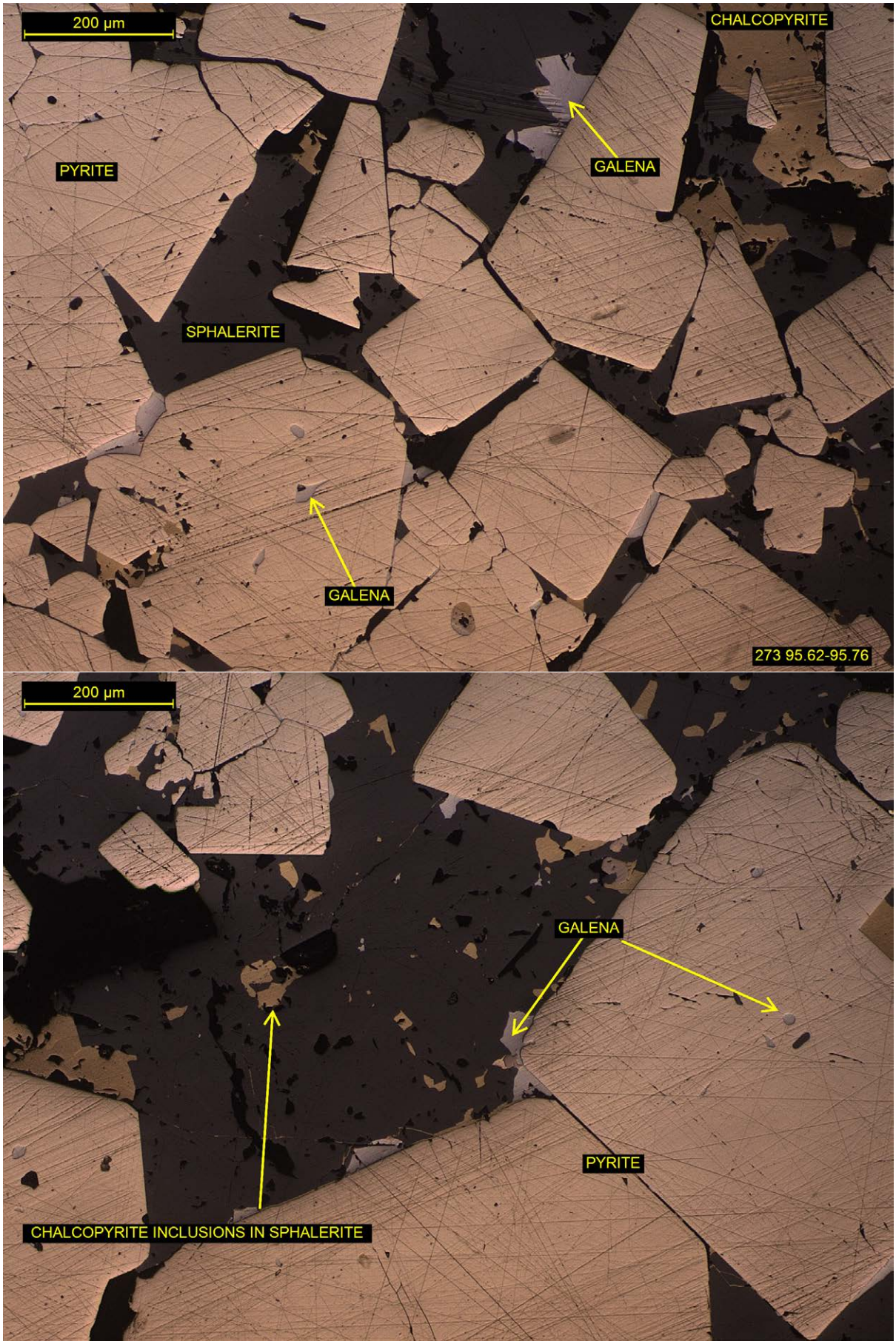

500 µm
PYRRHOTITE
CHALCOPYRITE
MAGNETITE
PYRITE WITH SIGNIFICANT INTERSTITIAL CHALCOPYRITE
273 95.62-95.76
100 µm
ARGENTIAN GOLD INCLUSIONS IN PYRRHOTITE AND CHALCOPYRITE
273 95.62-95.76

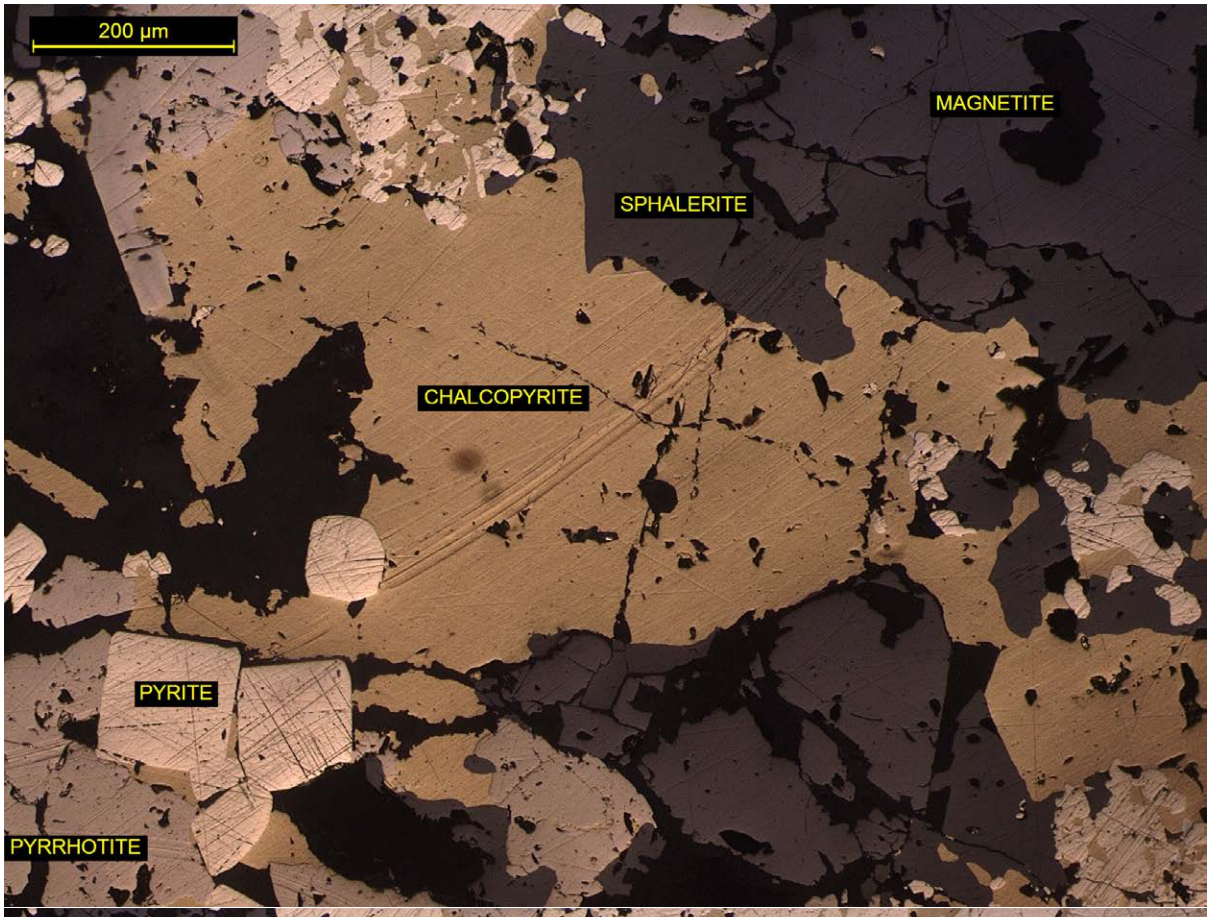

500 µm
VERY FINE CHALCOPYRITE INCLUSIONS IN PYRITE
273 95.62-95.76

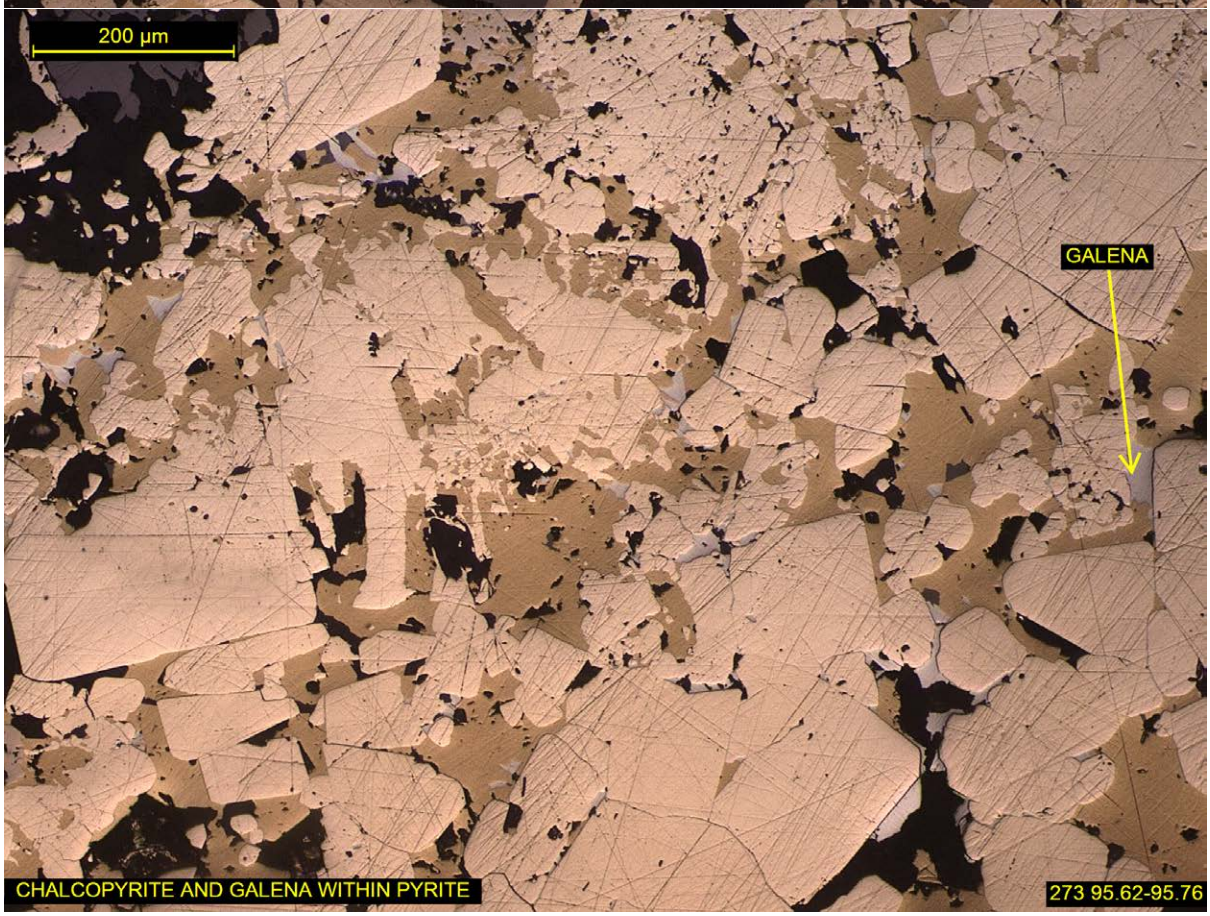

500 µm
GALENA
PYRRHOTITE
PYRITE
CHALCOPYRITE
SPHALERITE HOSTING PYRITE, GALENA AND CHALCOPYRITE
273 95.62-95.76

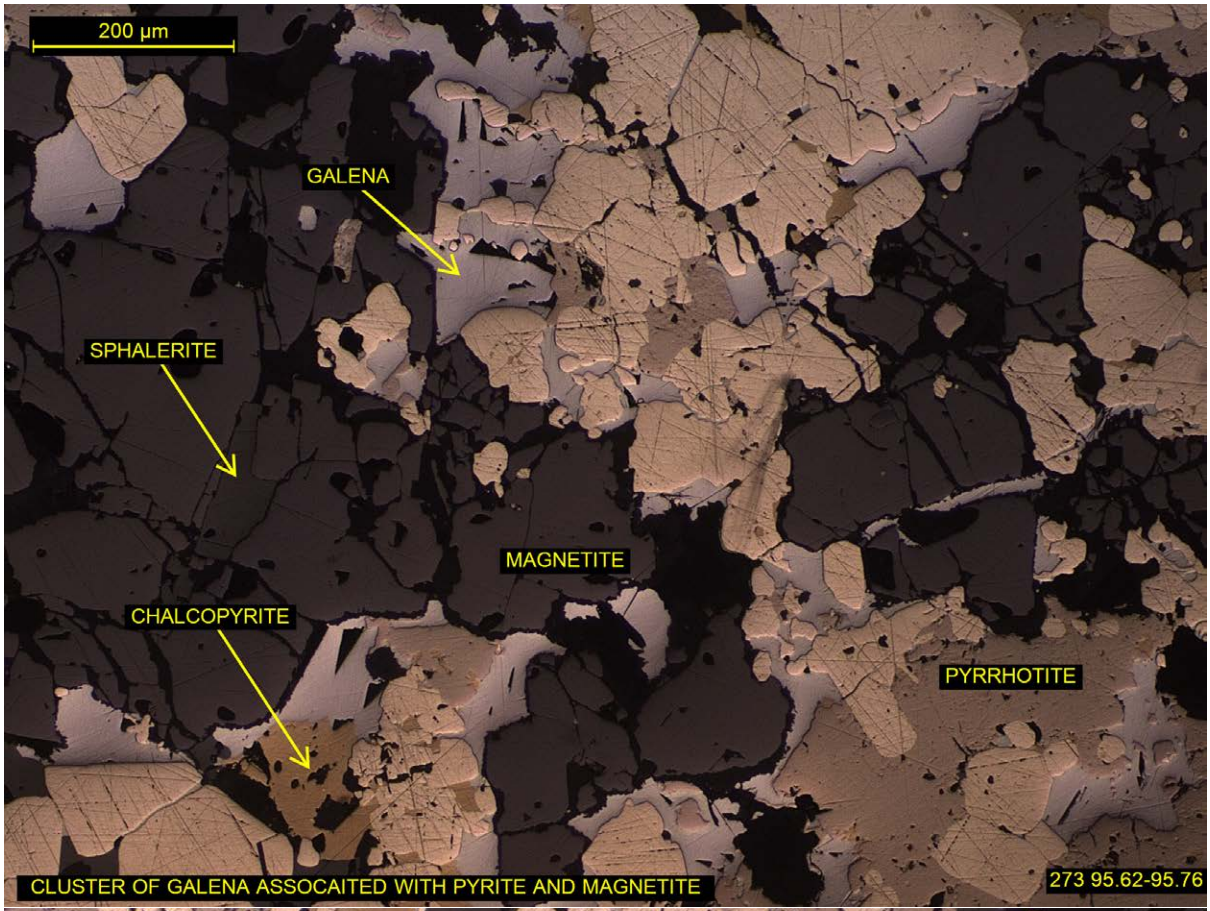

500 µm
PYRRHOTITE
CHALCOPYRITE IN PYRITE
MAGNETITE
PYRRHOTITE
MAGNETITE, PYRRHOTITE AND CHALCOPYRITE IN PYRITE
500 µm
SPHALERITE + PYRITE
PYRRHOTITE
CHALCOPYRITE
273 95.62-95.76

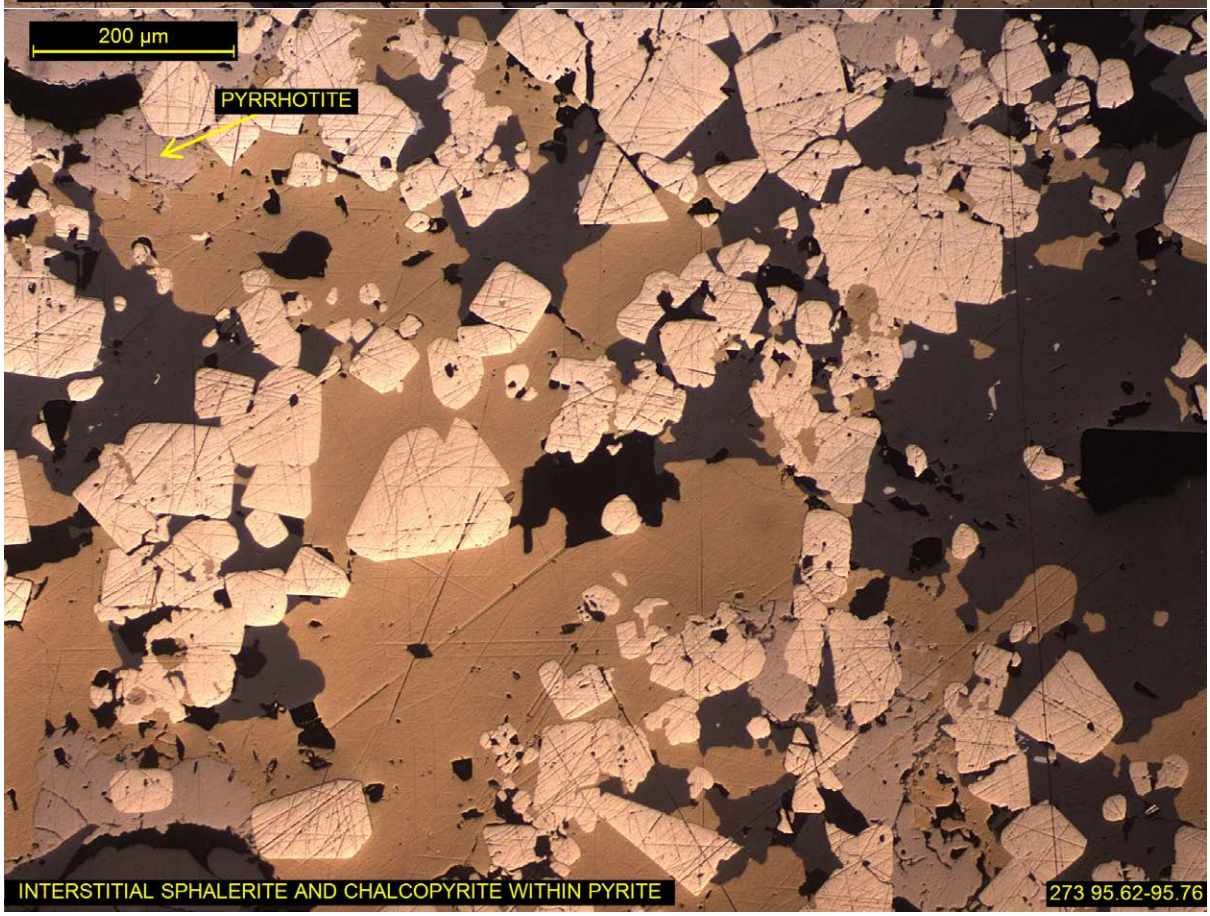

200 µm
CHALCOPYRITE
GALENA
PYRITE
273 95.62-95.76
200 µm
CHALCOPYRITE
GALENA
PYRITE
MAGNETITE
273 95.62-95.76

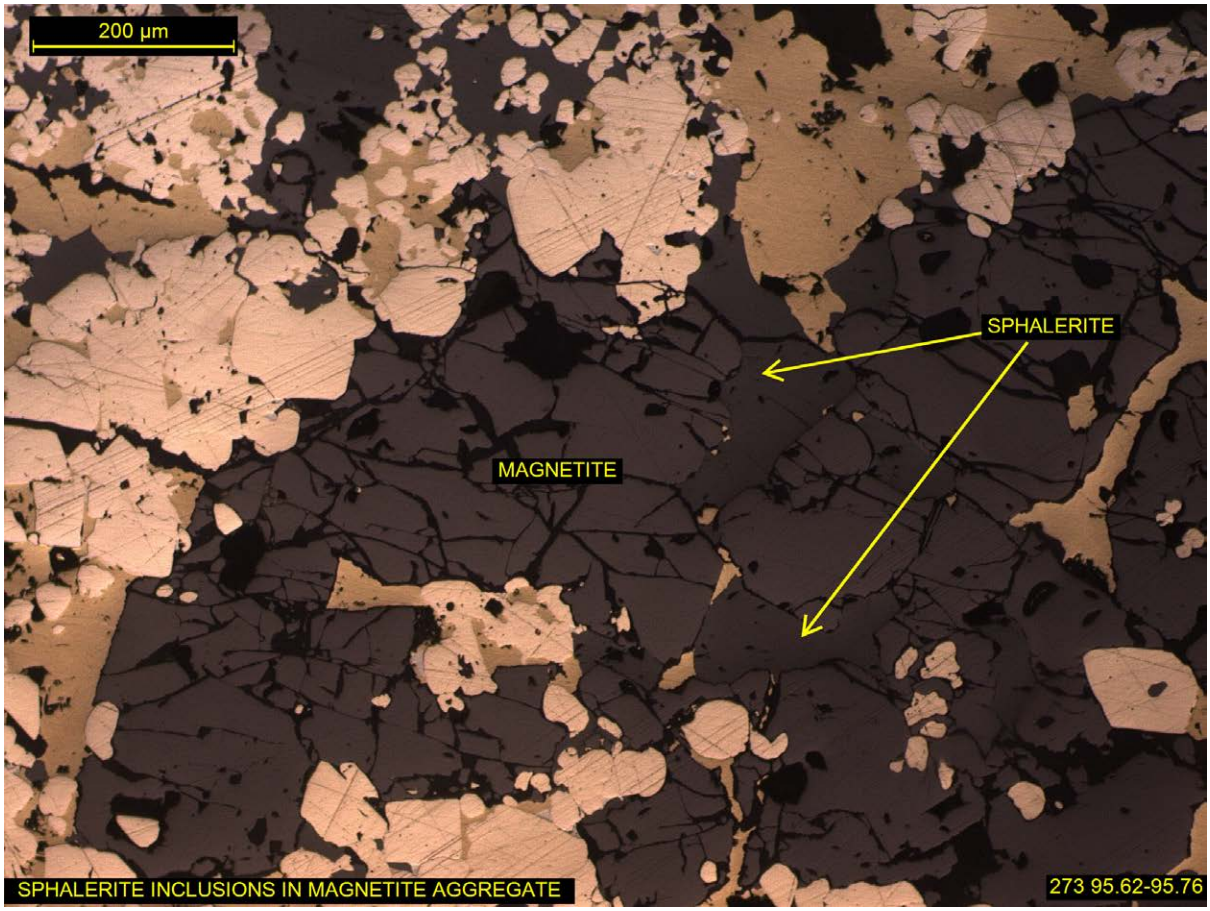

200 µm
CHALCOPYRITE
PYRITE
GALENA
SPHALERITE
GALENA
273 95.62-95.76
200 µm
GALENA
PYRITE
CHALCOPYRITE INCLUSIONS IN SPHALERITE


200 µm
MAGNETITE
SPHALERITE
CHALCOPYRITE
PYRITE
PYRRHOTITE


200 µm
GALENA
CHALCOPYRITE AND GALENA WITHIN PYRITE
273 95.62-95.76


200 µm
GALENA
SPHALERITE
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
CLUSTER OF GALENA ASSOCAITED WITH PYRITE AND MAGNETITE
273 95.62-95.76


200 µm
PYRRHOTITE
INTERSTITIAL SPHALERITE AND CHALCOPYRITE WITHIN PYRITE
273 95.62-95.76


200 µm
SPHALERITE
MAGNETITE
SPHALERITE INCLUSIONS IN MAGNETITE AGGREGATE
273 95.62-95.76

SAMPLE K15-274 59.22-59.36

DRILL CORE

POLISHED THIN SECTION

GANGUE	**5%**
SIDERITE	40-60%
QUARTZ	40-60%
ORES	**95%**
SPHALERITE	35-45%
PYRITE	30-40%
PYRRHOTITE	5-15%
MAGNETITE	5-15%
CHALCOPYRITE	2-4%
MARCASITE	<1%
GALENA	<1%

CLASSIFIED AS A BANDED QUARTZ PYRITE SPHALERITE ORE WITH DISSEMINATED MAGNETITE, PYRRHOTITE AND CHALCOPYRITE AND A SIDERITE OVERPRINT

A roughly banded rock with several mineral associations and varying mineral ratios. The most common bands are sphalerite rich types that form a matrix which hosts significant disseminated and partly coalesced euhedral pyrite (~20 to ~500 µm). Magnetite masses are sporadically disseminated, with low levels of pyrrhotite and chalcopyrite generally present. Occasionally, sphalerite content of these aforementioned bands rises significantly, with subordinate disseminated magnetite and low levels of disseminated ores such as pyrite, pyrrhotite etc. These bands are <2mm thick.

A relatively thick centrally located band (~5 mm) is comprised primarily of pyrite and pyrrhotite with subordinate magnetite, sphalerite and rare chalcopyrite. Primary texture is dominant euhedral and coalesced pyrite grains, with subordinate allotriomorphic interstitial pyrrhotite.

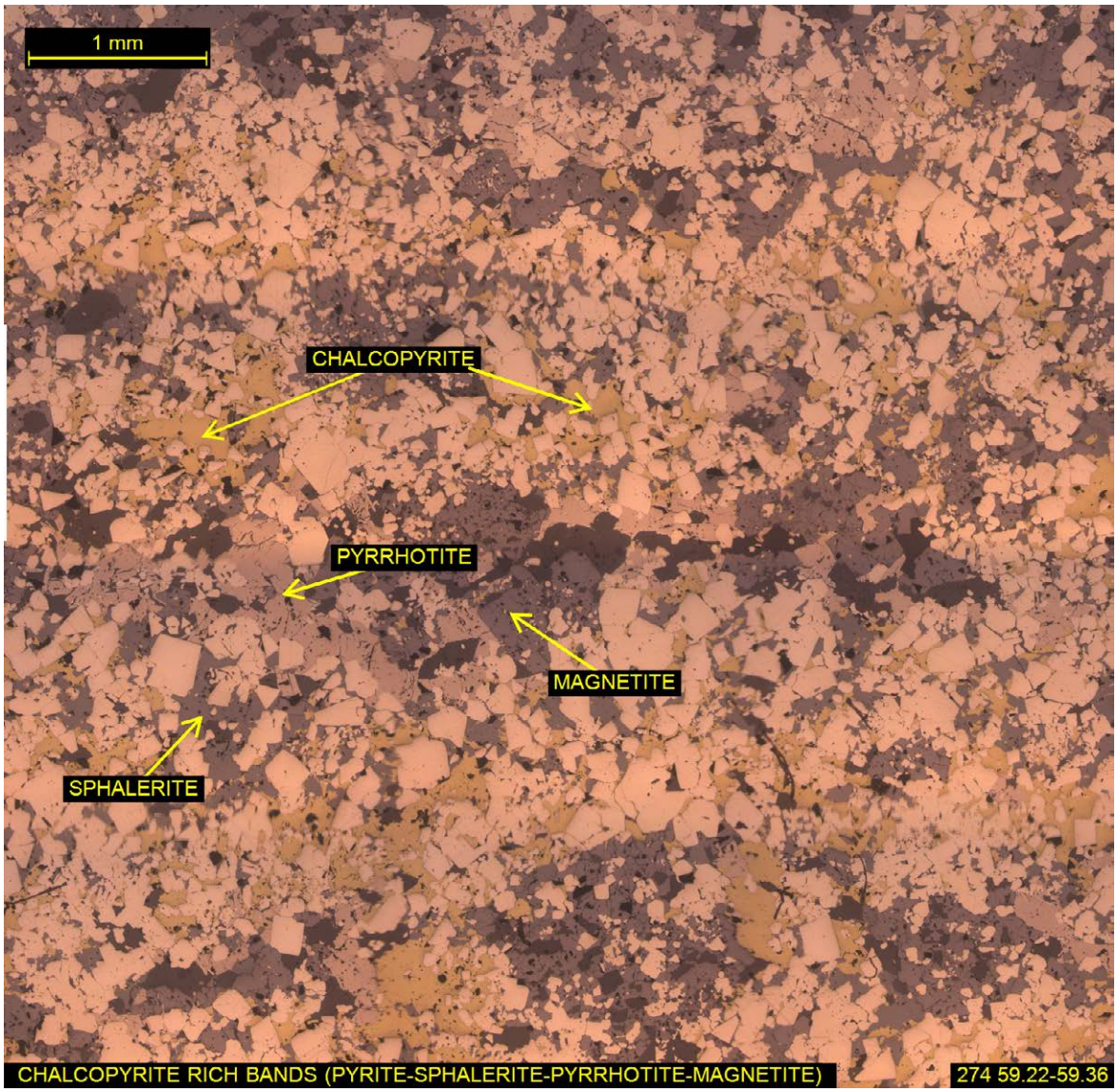
Chalcopyrite is disseminated in low amounts across the various laminations, as irregularly shaped, to rectangular grains, ranging in size from ~30 to ~200 µm. It was found as inclusions in sphalerite, occasional inclusions in pyrite and subordinate magnetite, and frequently adjacent to pyrite euhedra. Several coarse irregular chalcopyrites are present (up to ~2 mm) that form composites with pyrite and sphalerite, found associated with a siderite vein.

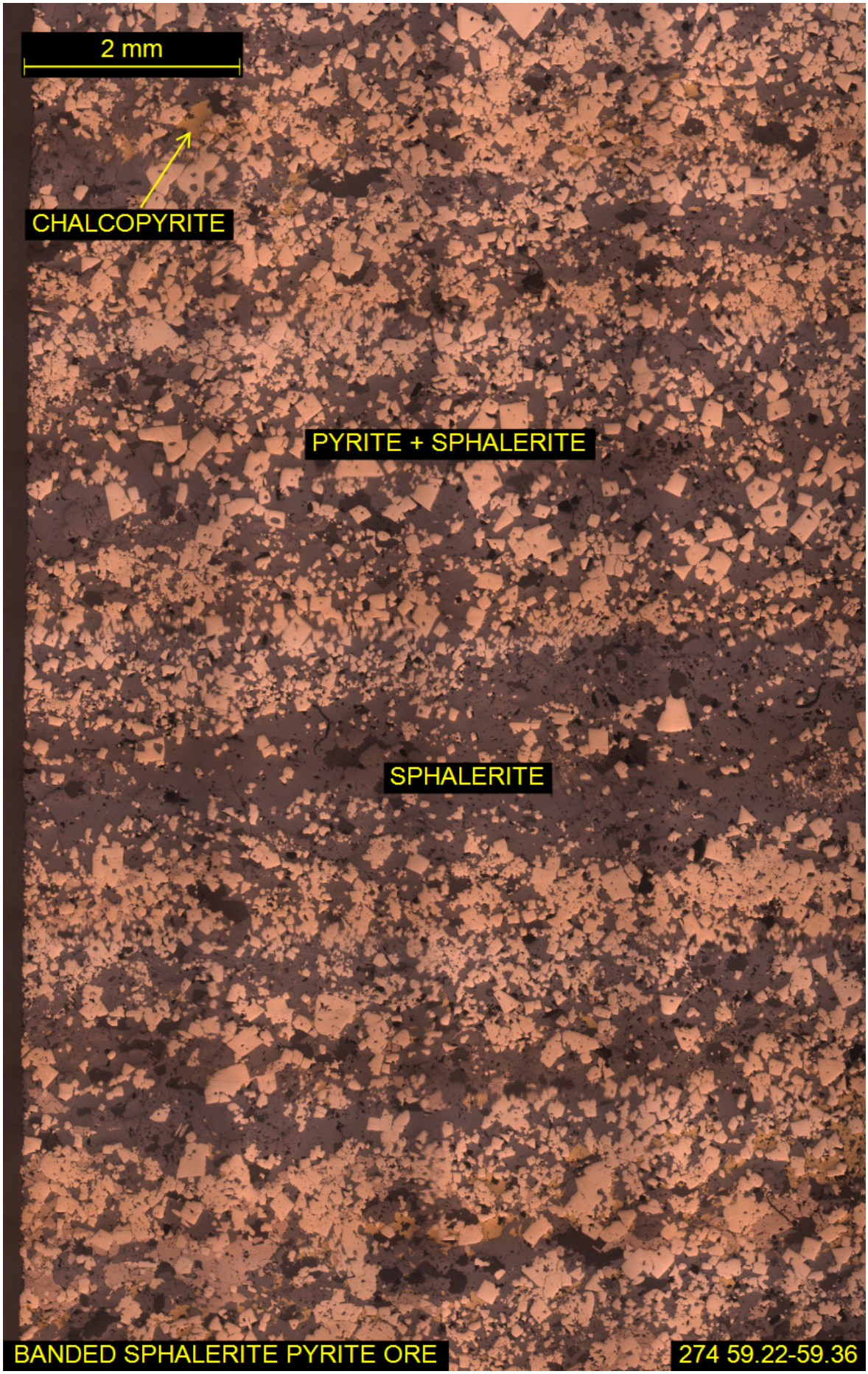
Several bands (up to ~2.5 mm thick), have an association of pyrite, pyrrhotite, magnetite, sphalerite and chalcopyrite. Chalcopyrite is at its highest content within these bands, occurring as branching networks/aggregates (~30 to ~300 µm) matrix interstitial to pyrite euhedra or hosted by sphalerite, or in some cases forming complex coarse (up to ~1 mm) composites with pyrite, magnetite, sphalerite and others. Pyrrhotite occurs in fine

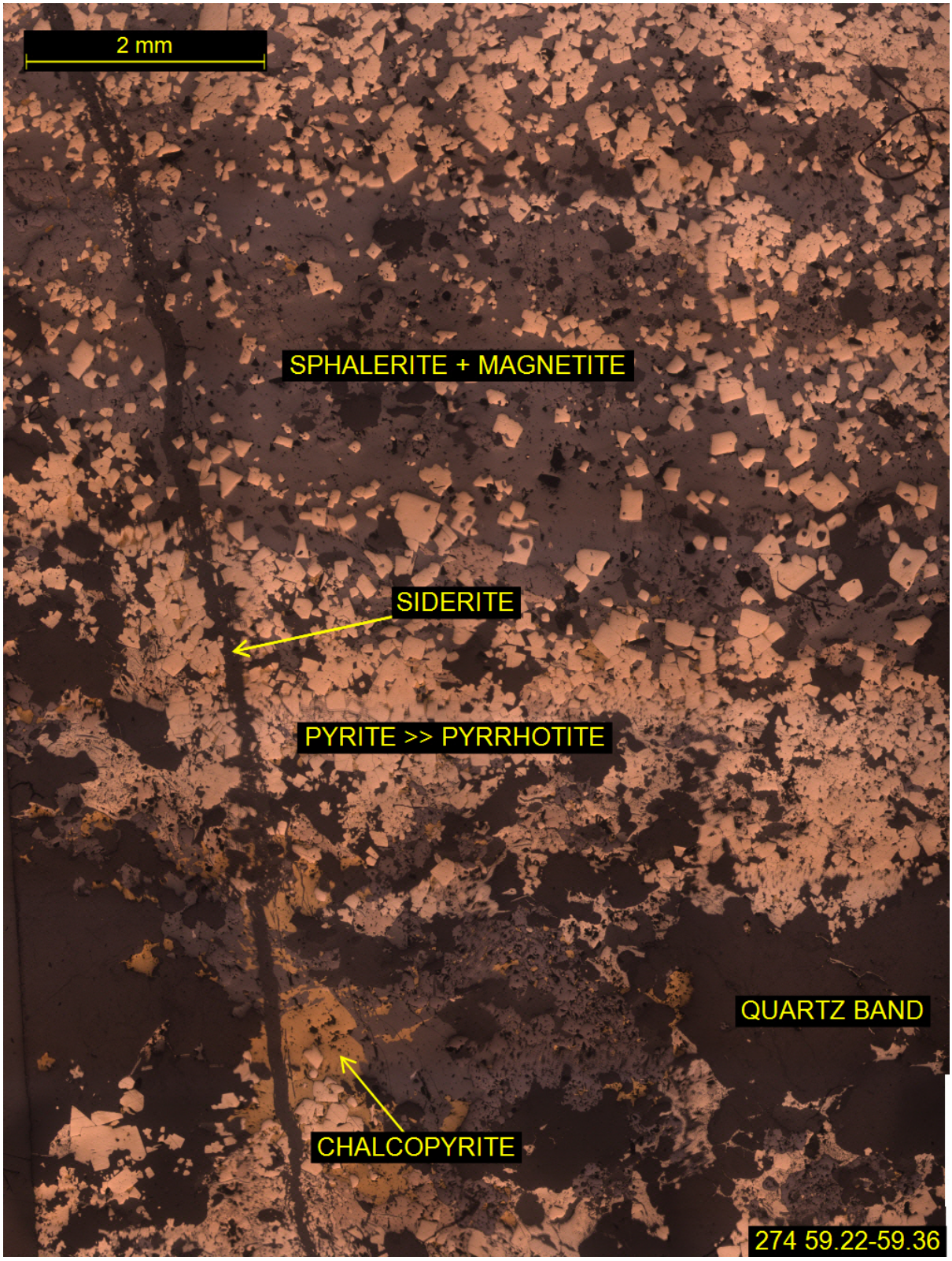
disseminations and coarse allotriomorphic (up to ~1.5 mm) masses within these bands, occasionally incipiently altered to marcasite.

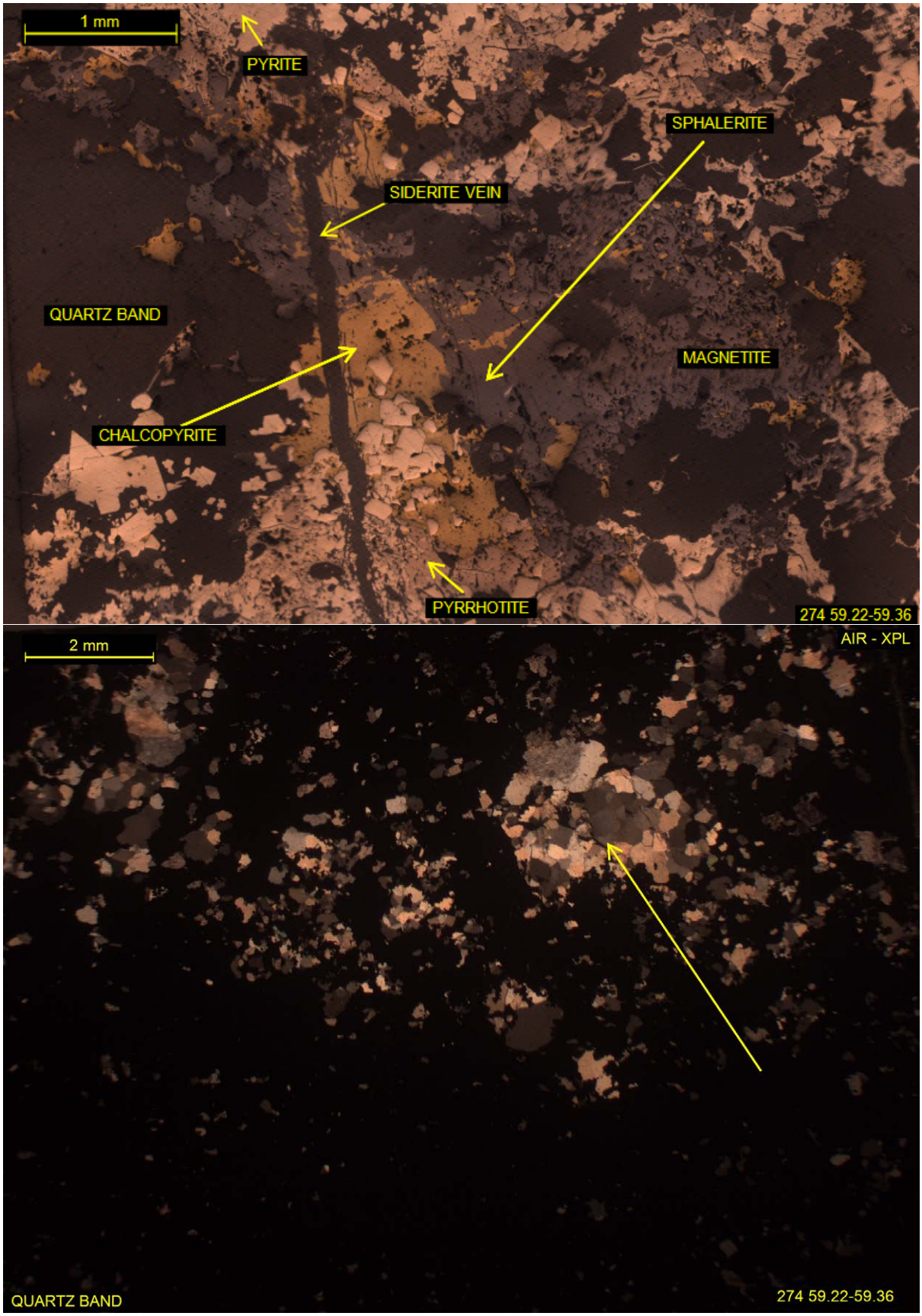
Galena is extremely rare, occurring as very fine (microns to ~50 µm) inclusions with irregular shapes and slivers, in sphalerite, and rare rims on pyrite euhedra.

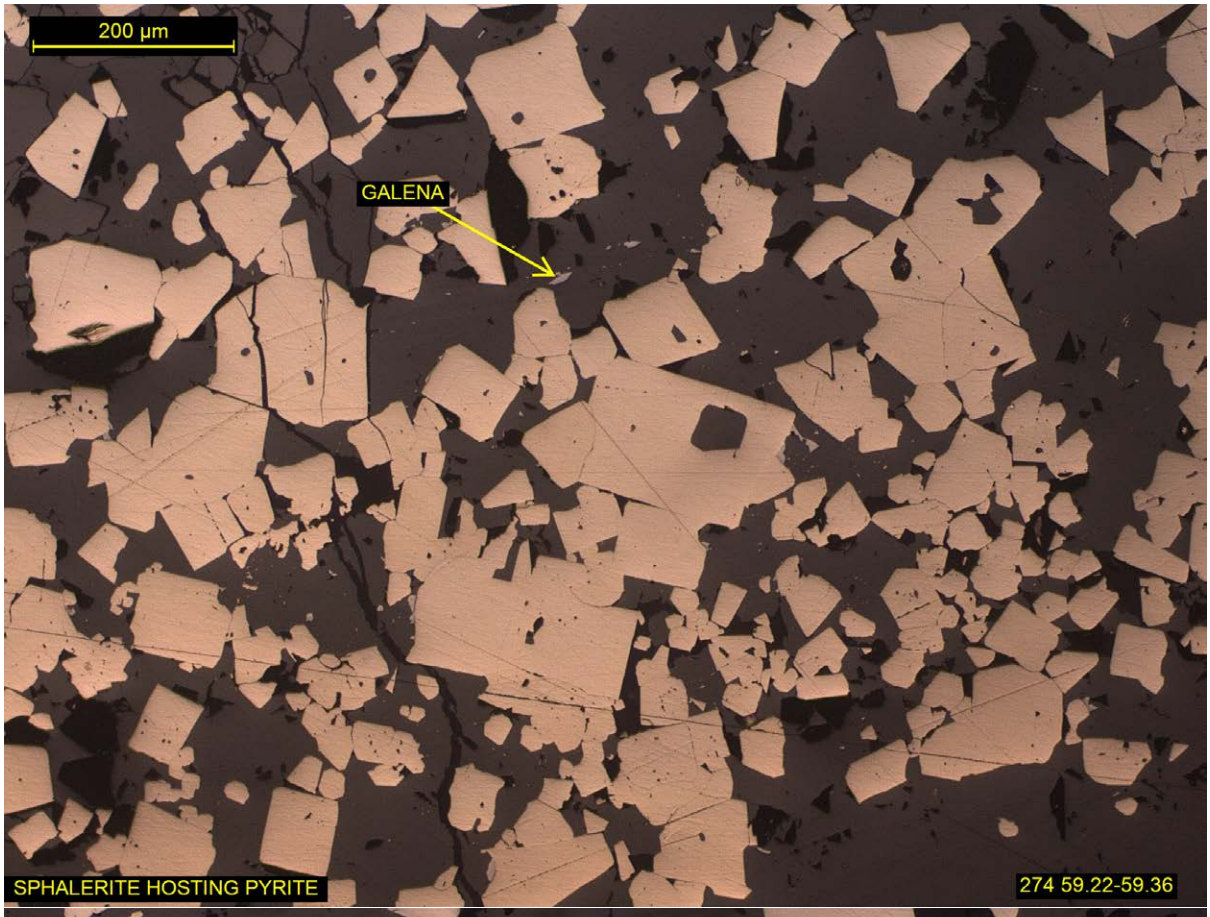
The gangue is quartz and siderite, the latter found ubiquitously across the various ore bands, occurring as discrete grains or polycrystalline aggregates (~50 to ~450 µm). Thin siderite veins are occasionally present, and SEM analyses indicates varying siderite composition (CaO, MgO and MnO ratios). Quartz is mainly found as a major constituent of a ~6mm band at the top of slide, in pockets of somewhat regular mosaics (~300 µm average), with a minor siderite overprint.

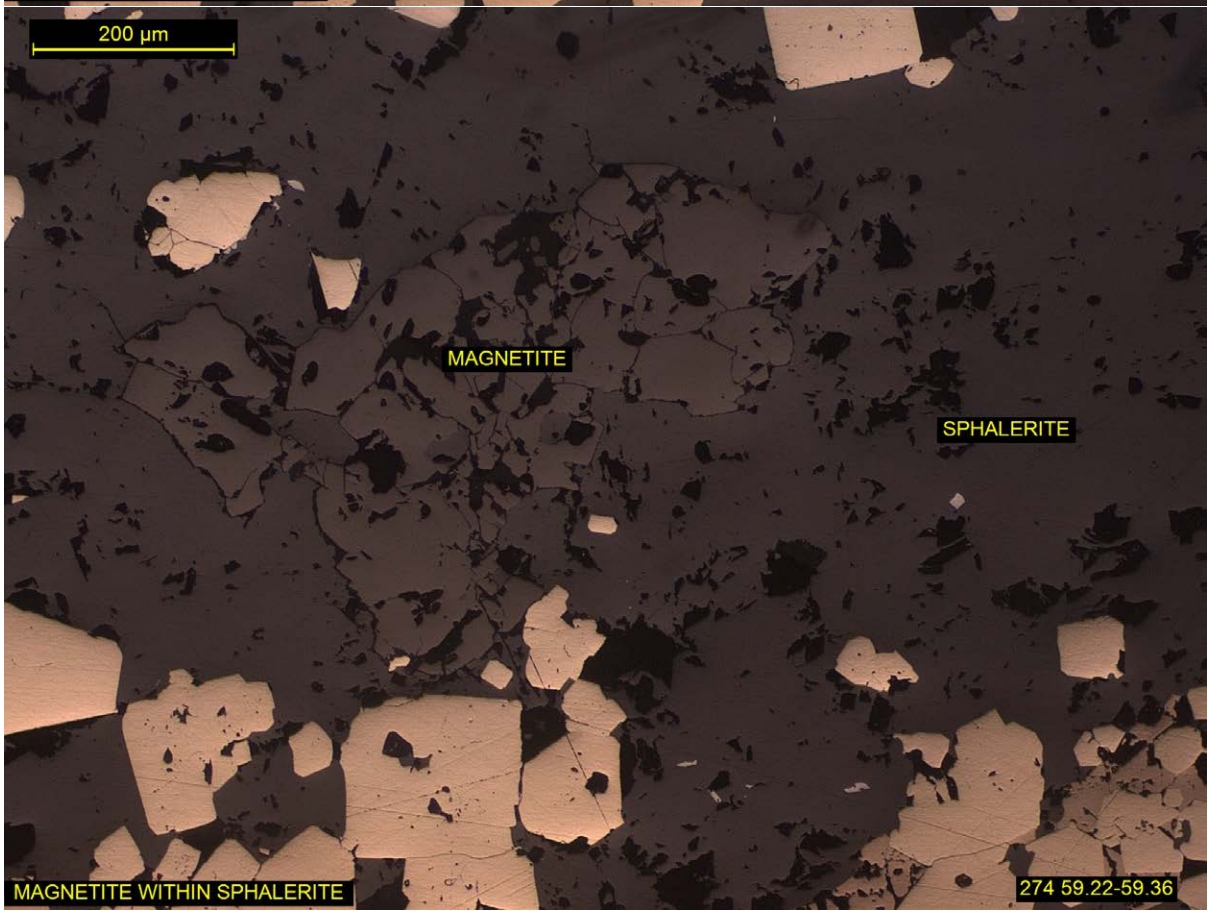


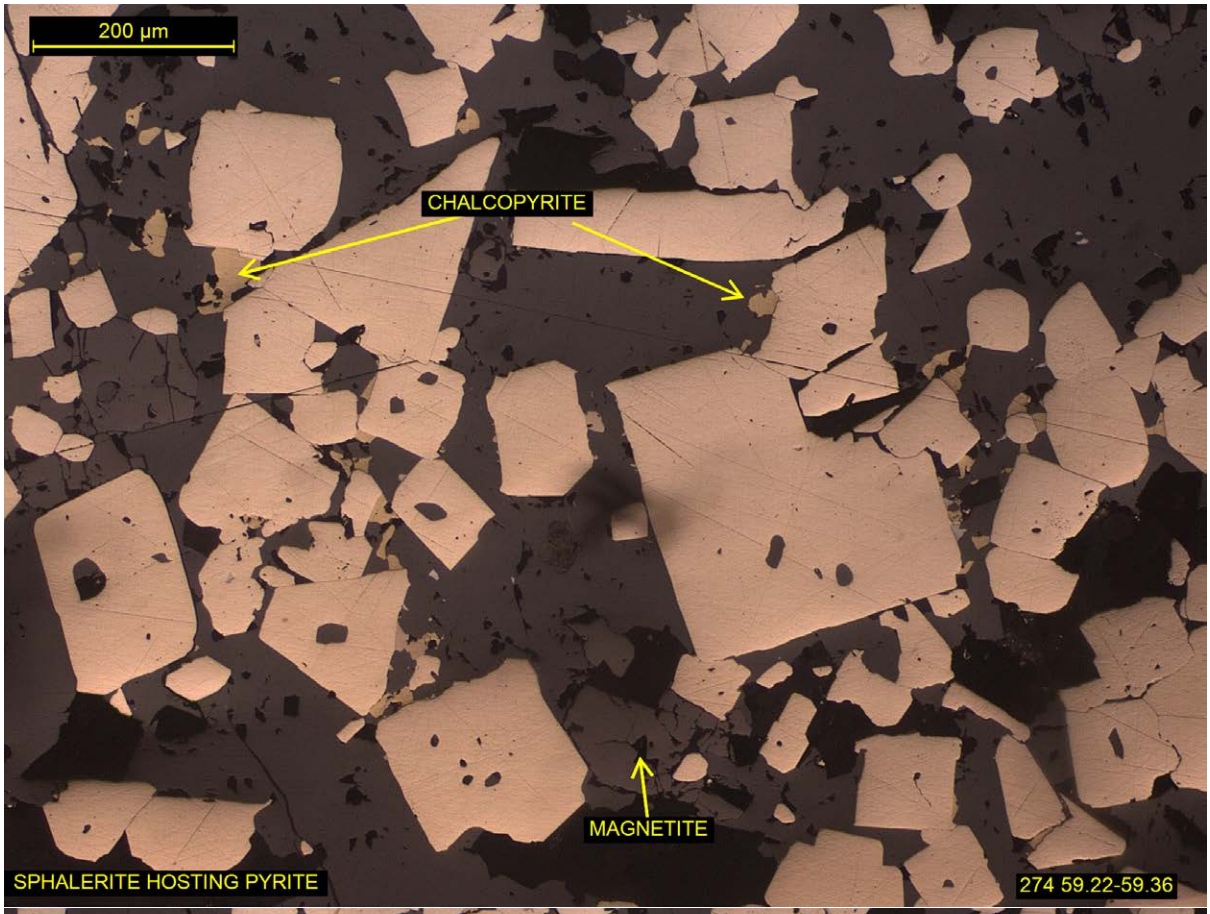

2 mm
CHALCOPYRITE
PYRITE + SPHALERITE
SPHALERITE
BANDED SPHALERITE PYRITE ORE
274 59.22-59.36

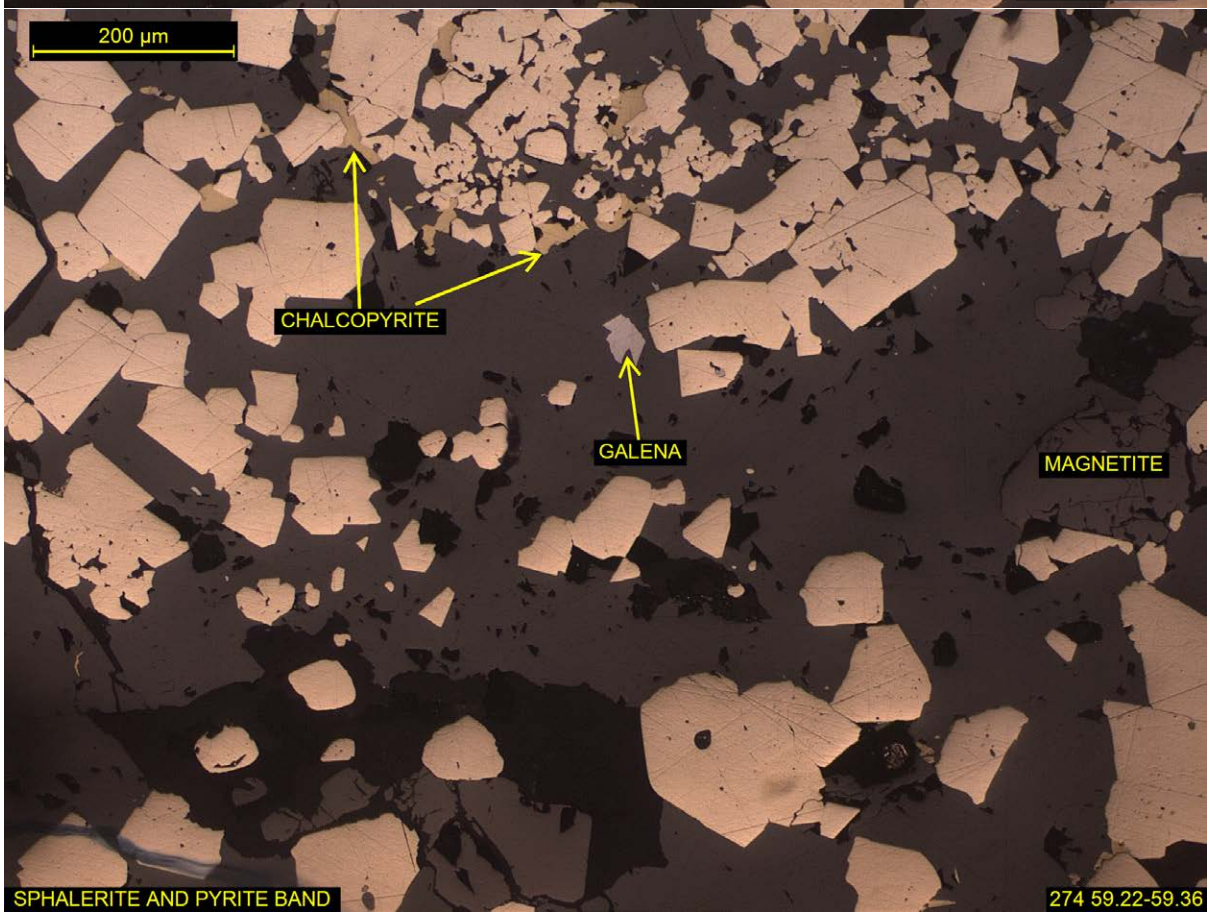

2 mm
SPHALERITE + MAGNETITE
SIDERITE
PYRITE >> PYRRHOTITE
QUARTZ BAND
CHALCOPYRITE
274 59.22-59.36

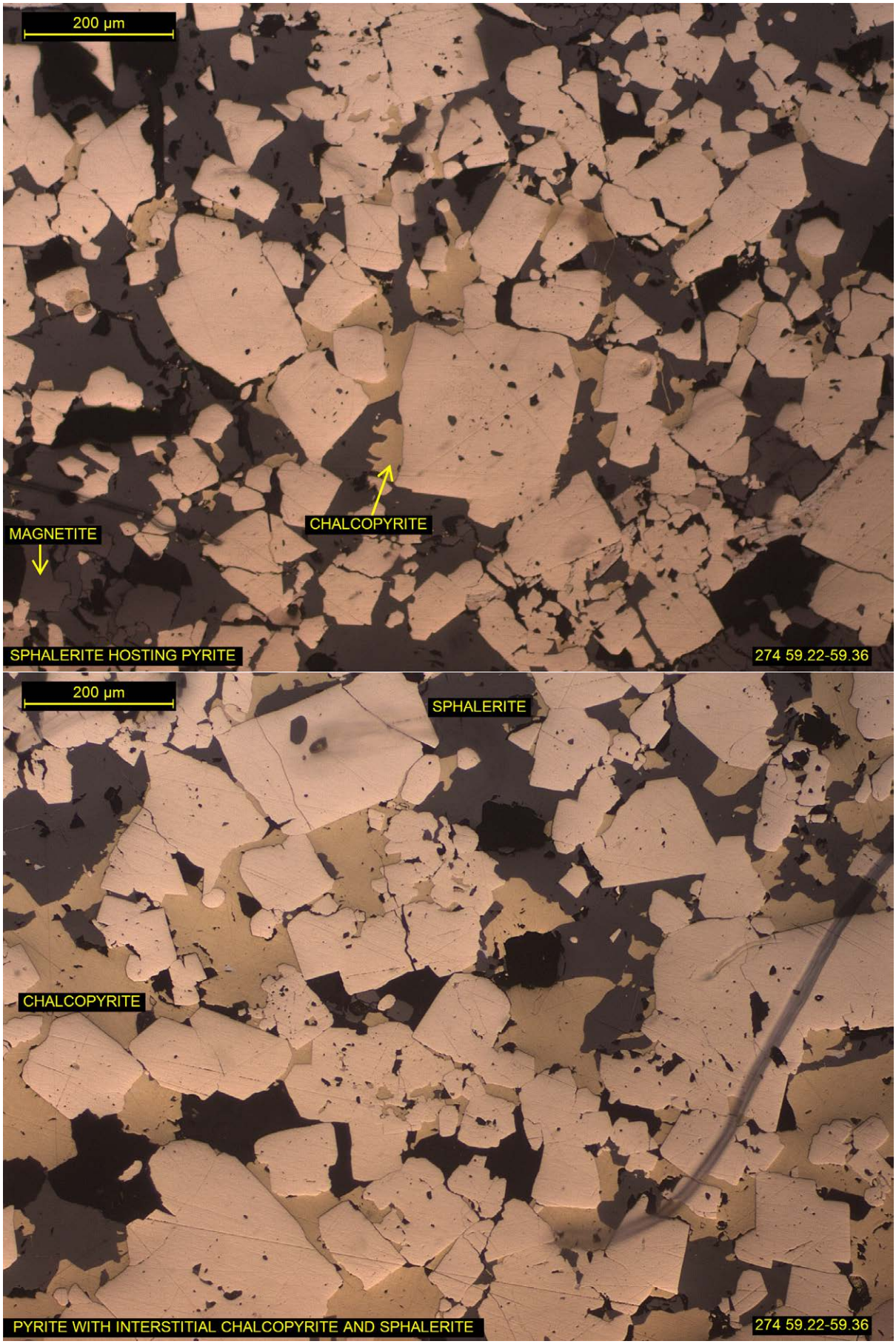

1 mm
PYRITE
SPHALERITE
SIDERITE VEIN
QUARTZ BAND
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
274 59.22-59.36
AIR - XPL
2 mm
QUARTZ BAND
274 59.22-59.36

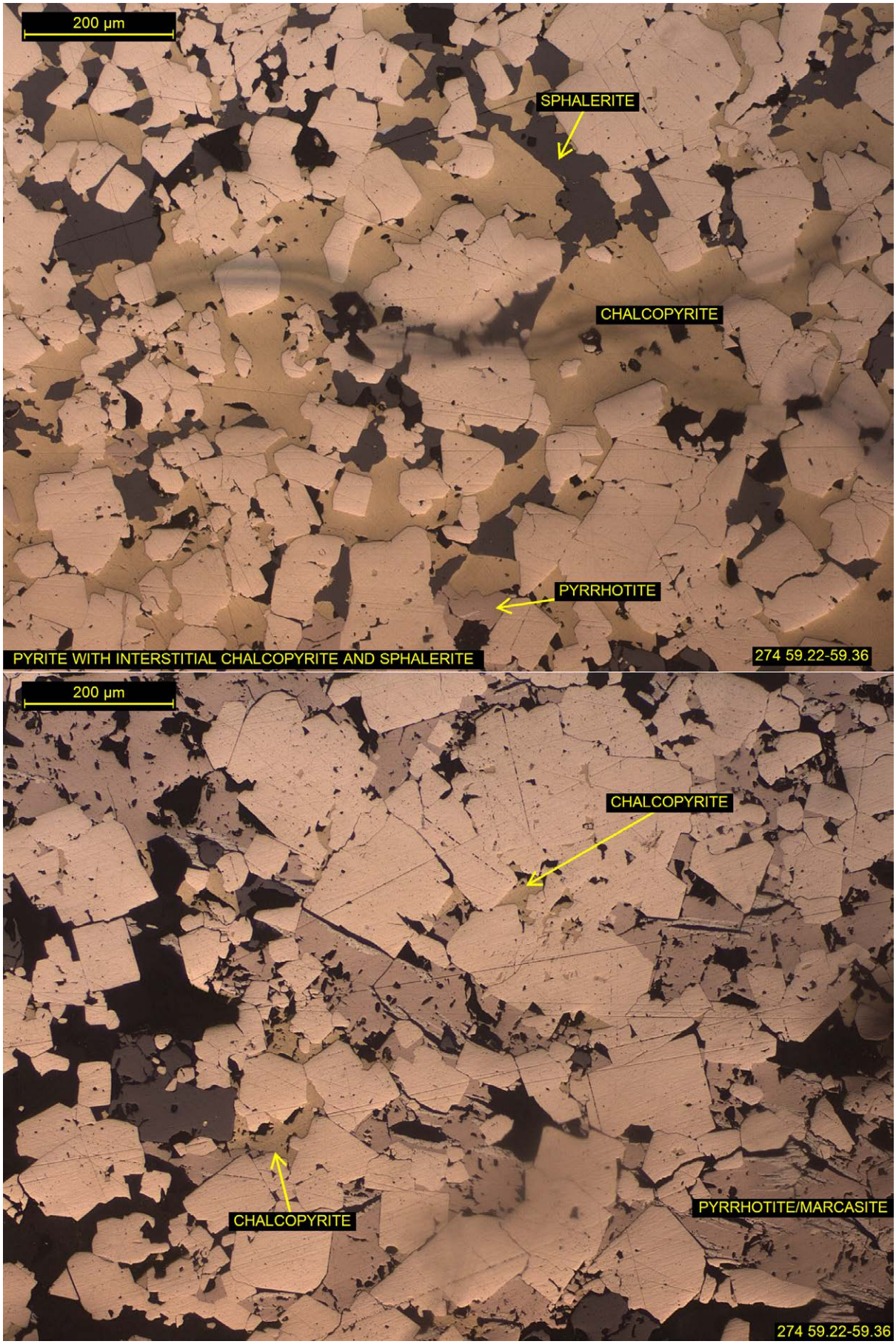

200 µm
GALENA
SPHALERITE HOSTING PYRITE
274 59.22-59.36


200 µm
MAGNETITE
SPHALERITE
MAGNETITE WITHIN SPHALERITE
274 59.22-59.36


200 µm
CHALCOPYRITE
MAGNETITE
SPHALERITE HOSTING PYRITE
274 59.22-59.36


200 µm
CHALCOPYRITE
GALENA
MAGNETITE
SPHALERITE AND PYRITE BAND
274 59.22-59.36


200 µm
MAGNETITE
CHALCOPYRITE
SPHALERITE HOSTING PYRITE
274 59.22-59.36
200 µm
SPHALERITE
CHALCOPYRITE
PYRITE WITH INTERSTITIAL CHALCOPYRITE AND SPHALERITE
274 59.22-59.36


200 µm
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
PYRITE WITH INTERSTITIAL CHALCOPYRITE AND SPHALERITE
274 59.22-59.36
200 µm
CHALCOPYRITE
CHALCOPYRITE
PYRRHOTITE/MARCASITE
274 59.22-59.36

SAMPLE K15-278 136-136.13

DRILL CORE

POLISHED THIN SECTION

GANGUE	**35%**
QUARTZ	85%
SIDERITE	10%
TALC	5%
CHLORITE	<1%
MICA	<1%
ORES	**65%**
PYRITE	MINOR TO DOMINANT
MAGNETITE	ACCESSORY TO MAJOR
SPHALERITE	ACCESSORY TO MAJOR
PYRRHOTITE	TRACE TO ACCESSORY
CHALCOPYRITE	TRACE TO ACCESSORY
GALENA	ABSENT TO TRACE

CLASSIFIED AS A BANDED QUARTZ SPHALERITE MAGNETITE PYRITE ORE WITH DISSEMINATED PYRRHOTITE AND GALENA

A varied sample comprising an overall banded texture with several mineral associations. Quartz is the main gangue present, occurring in bands and frequent pockets of grains throughout the ore bands, with subordinate siderite and talc.

A ~25 mm thick band is comprised predominantly of coalesced pyrite and subordinate discernible euhedral relatively coarse pyrite (~500 µm to ~1 mm). A relatively low additional ores content is a feature, consisting of randomly disseminated irregularly shaped pyrrhotite and magnetite aggregates (~200 µm to ~2 mm). In addition, chalcopyrite occurs as fine to coarse irregularly shaped grains/aggregates ranging in size from ~40 µm to ~2 mm, generally as inclusions in coalesced pyrite, occasionally as composites/associated with pyrrhotite or at times magnetite, quartz and sphalerite.

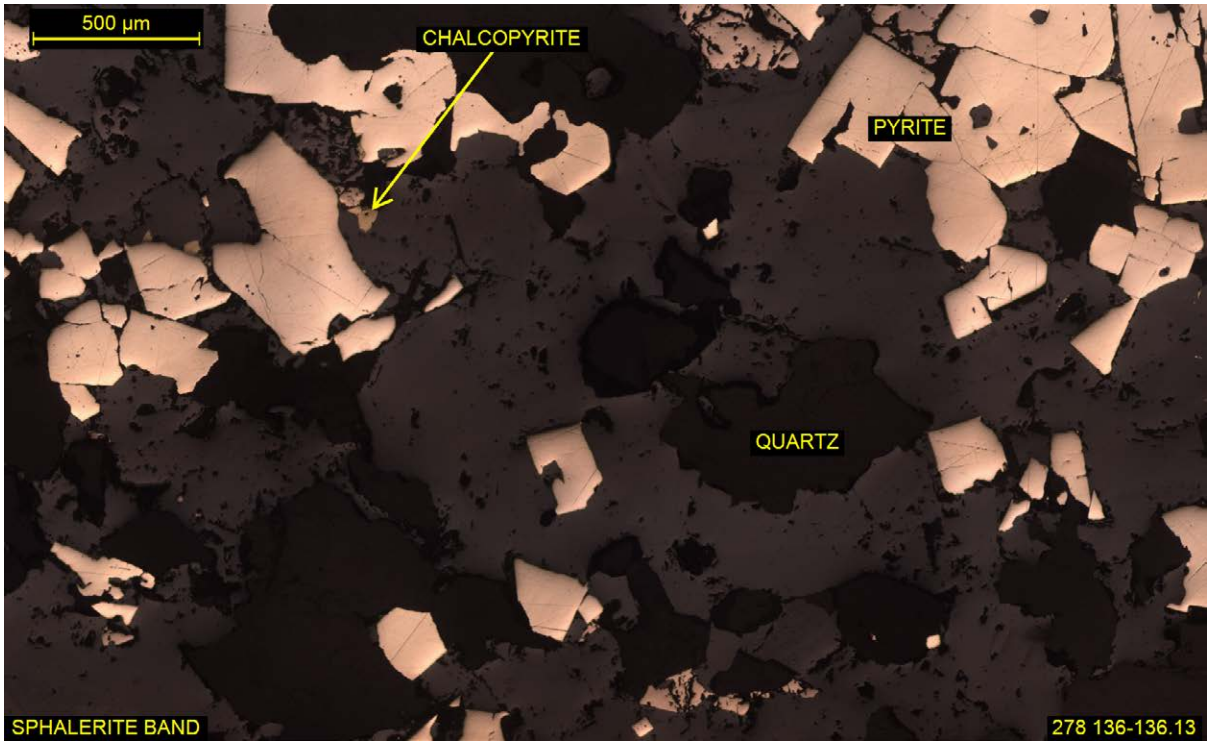
The remaining parts of the sample are characterised by roughly banded quartz rich, magnetite rich, sphalerite/magnetite rich and pyrite/quartz bands, the latter the thickest (~6mm thick).

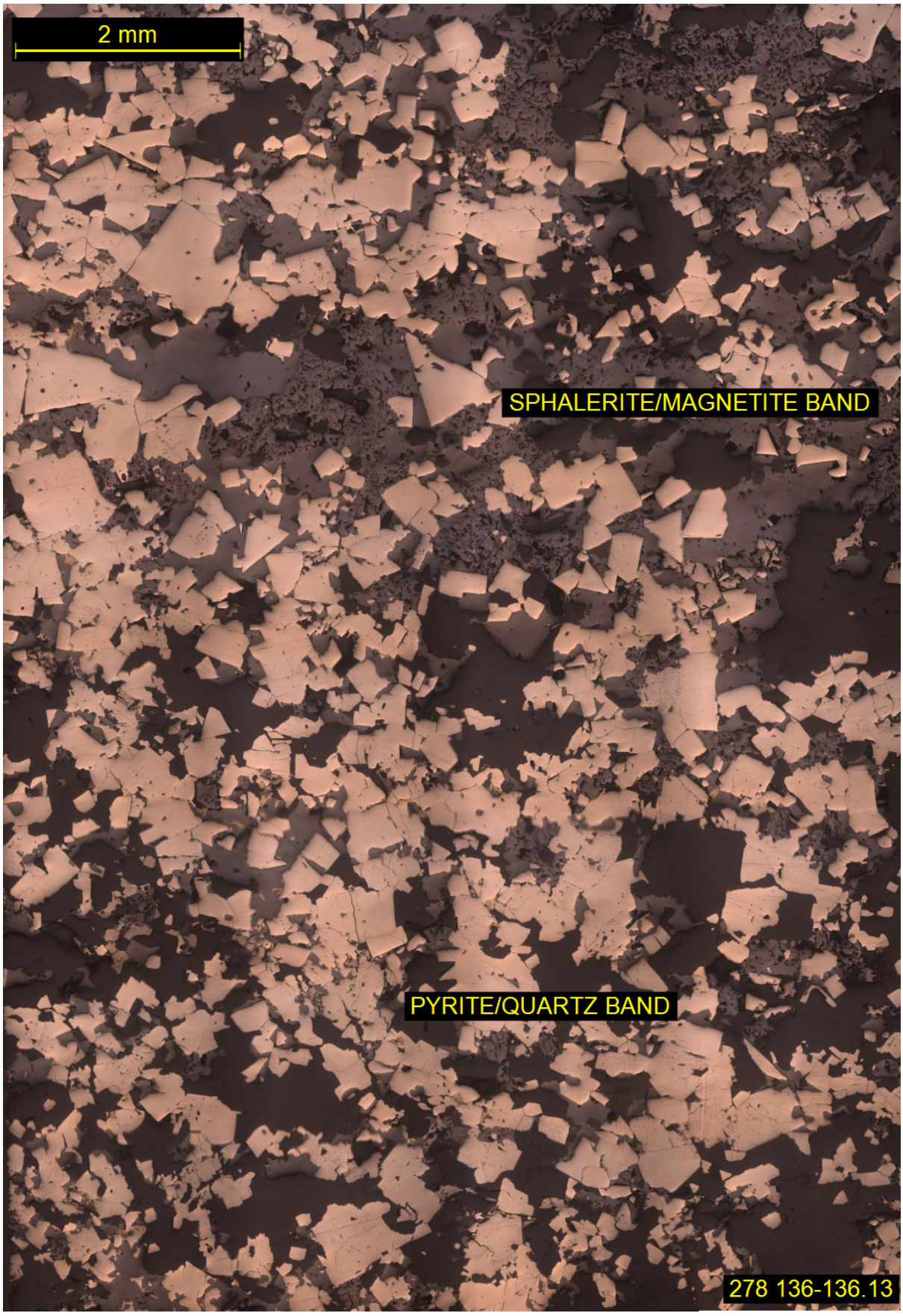
The quartz band is up to ~5mm thick, consisting of a regular mosaic of ~300 µm average quartz, containing sporadic subordinate additional gangue minerals. Magnetite rich laminations (up to ~4mm thick) lie below and above the quartz band. Allotriomorphic irregular shaped discontinuous magnetite masses are typical. Chalcopyrite is found as irregular aggregates (~30 µm to ~2 mm) across these magnetite and quartz laminations, characterised by irregular branching textures interstitial to quartz and magnetite.

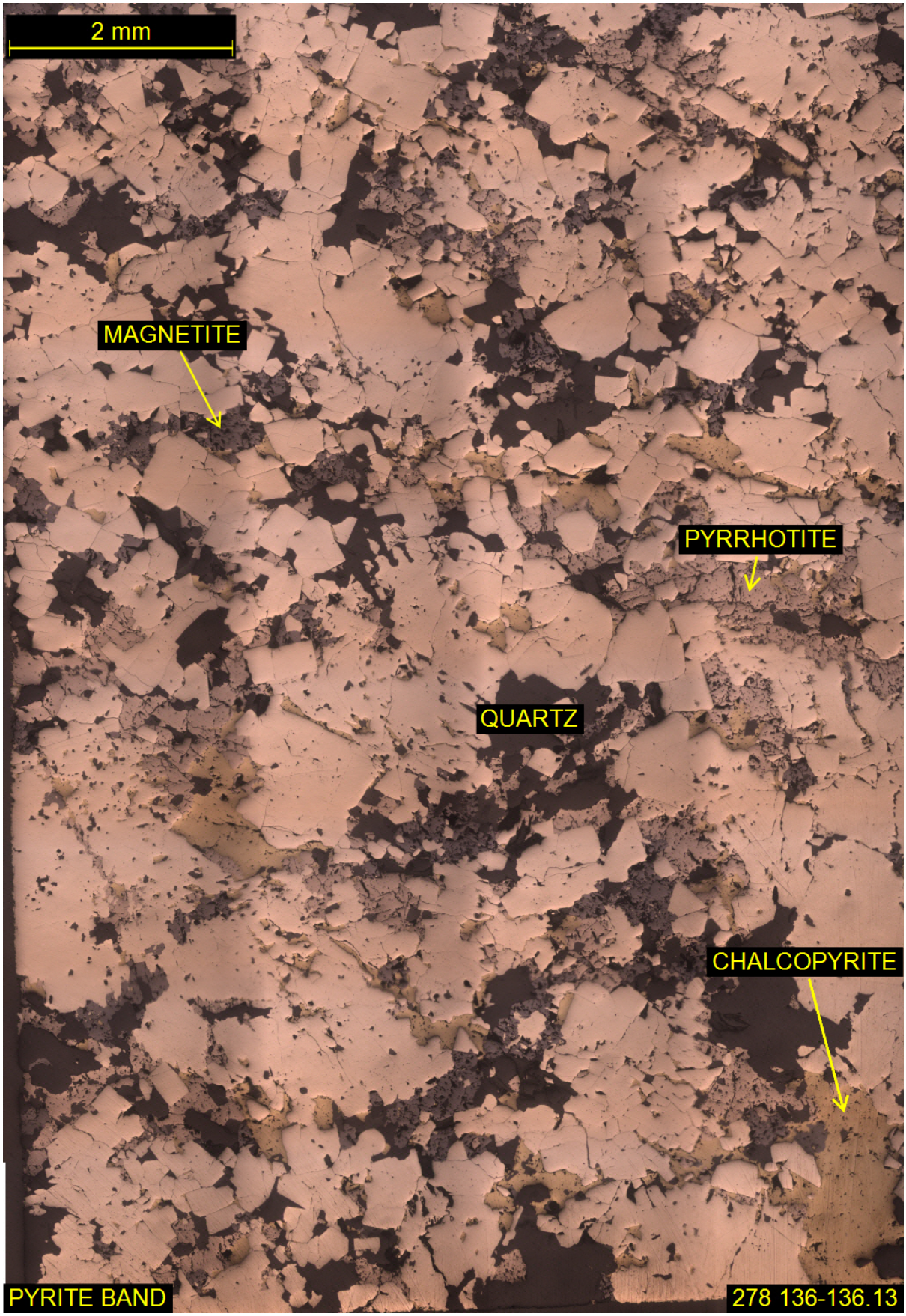
The pyrite quartz band consists primarily of clumps and discrete euhedral pyrite grains (~300 µm to ~1 mm) with significant (but subordinate) interstitial quartz mosaics (~500 µm to ~1 mm pockets). There is a very low additional ore content, comprising the occasional random magnetite or sphalerite aggregate (typically associated with one another), ranging in size from ~300 µm to ~1.5 mm.

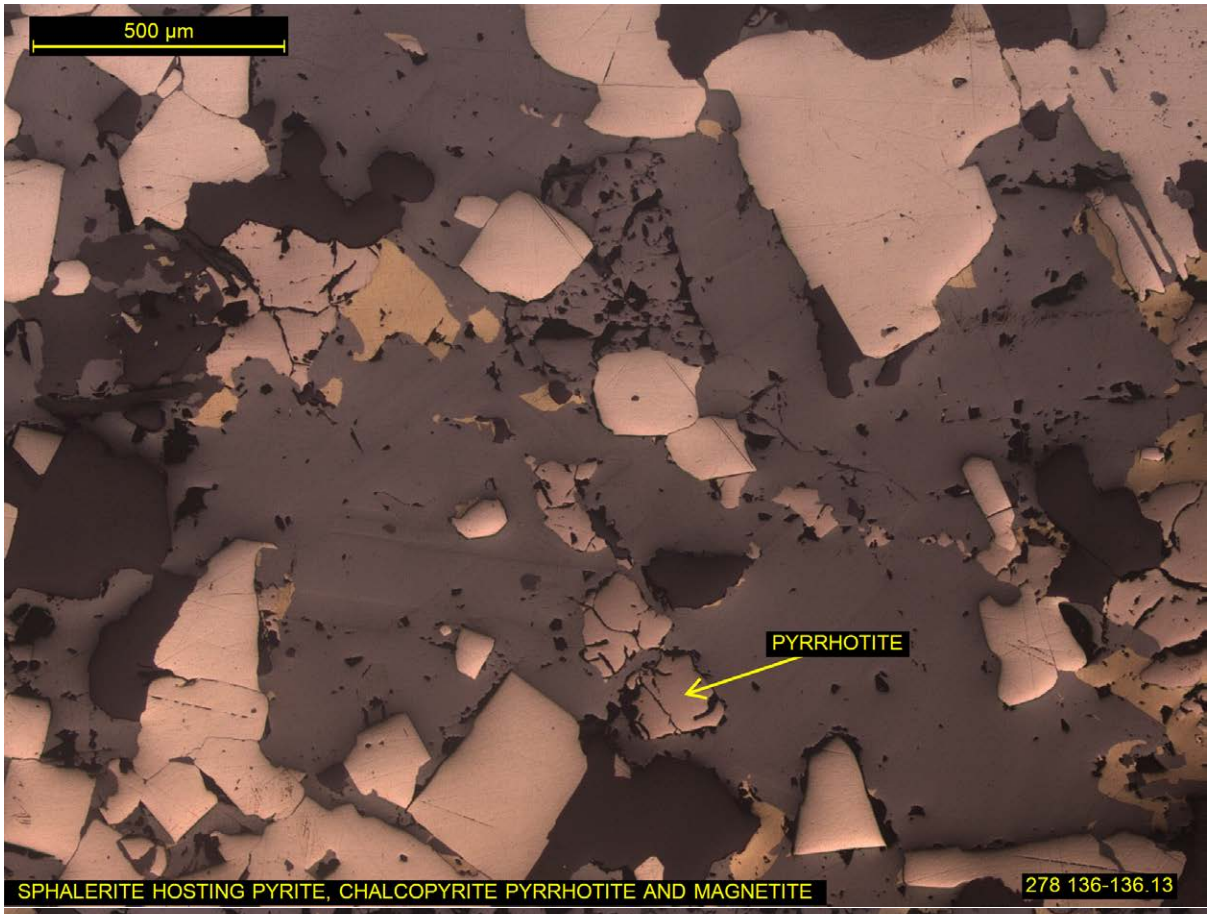
A magnetite/sphalerite rich lamination (up to ~4 mm thick) lies above the pyrite/quartz rich band. It is defined by intergrown sphalerite and magnetite masses, with significant disseminated euhedral pyrites, and pockets of quartz mosaics.

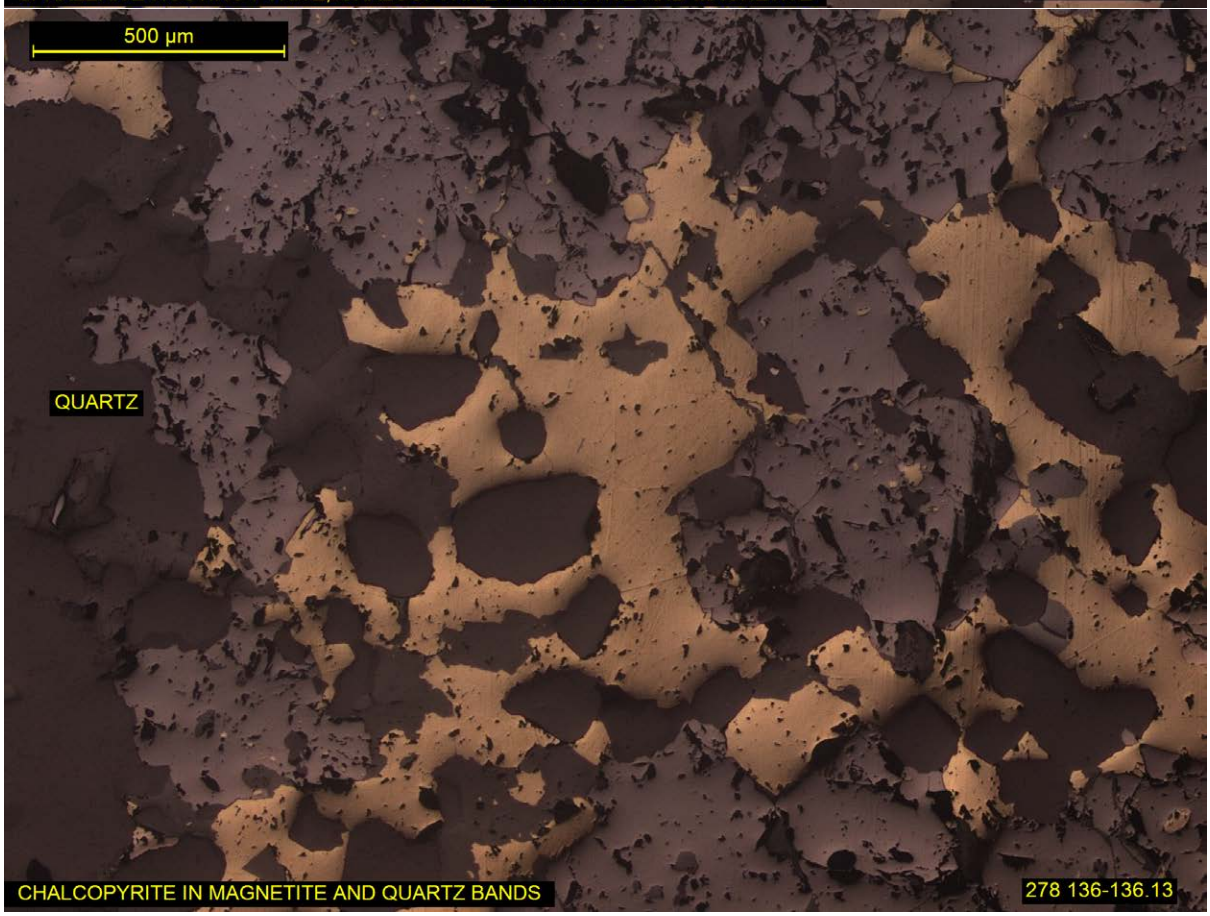
Galena was negligible, one very fine grain found (~20 µm).

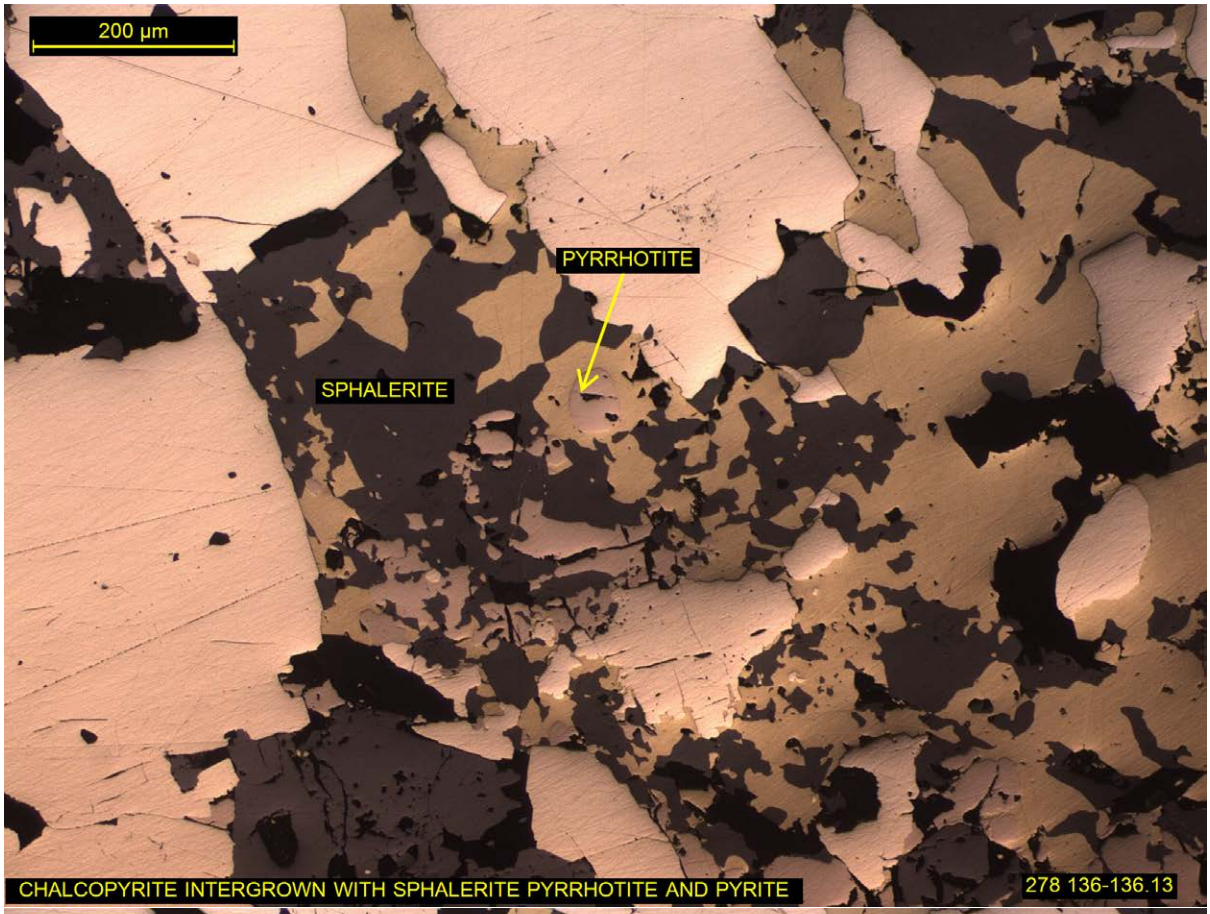


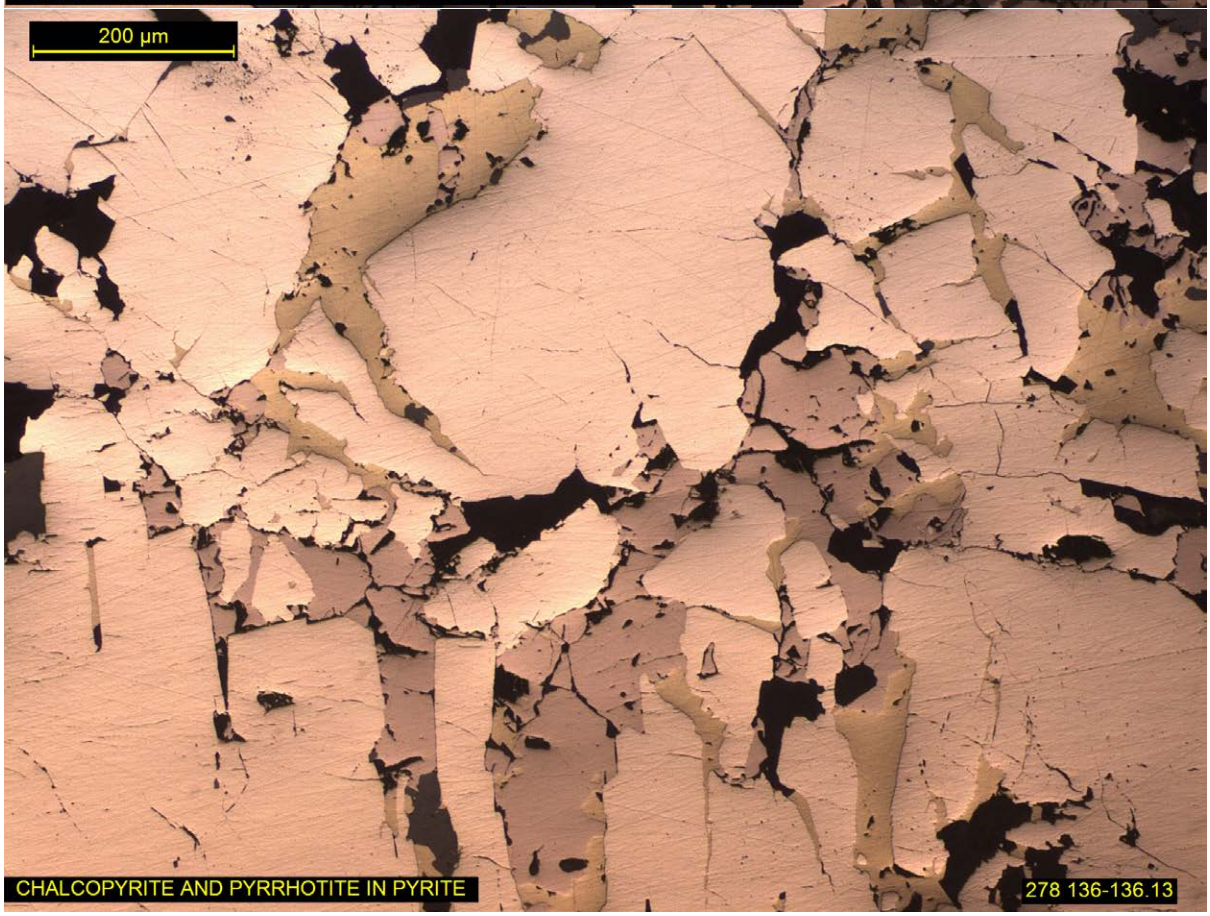

2 mm
SPHALERITE/MAGNETITE BAND
PYRITE/QUARTZ BAND
278 136-136.13

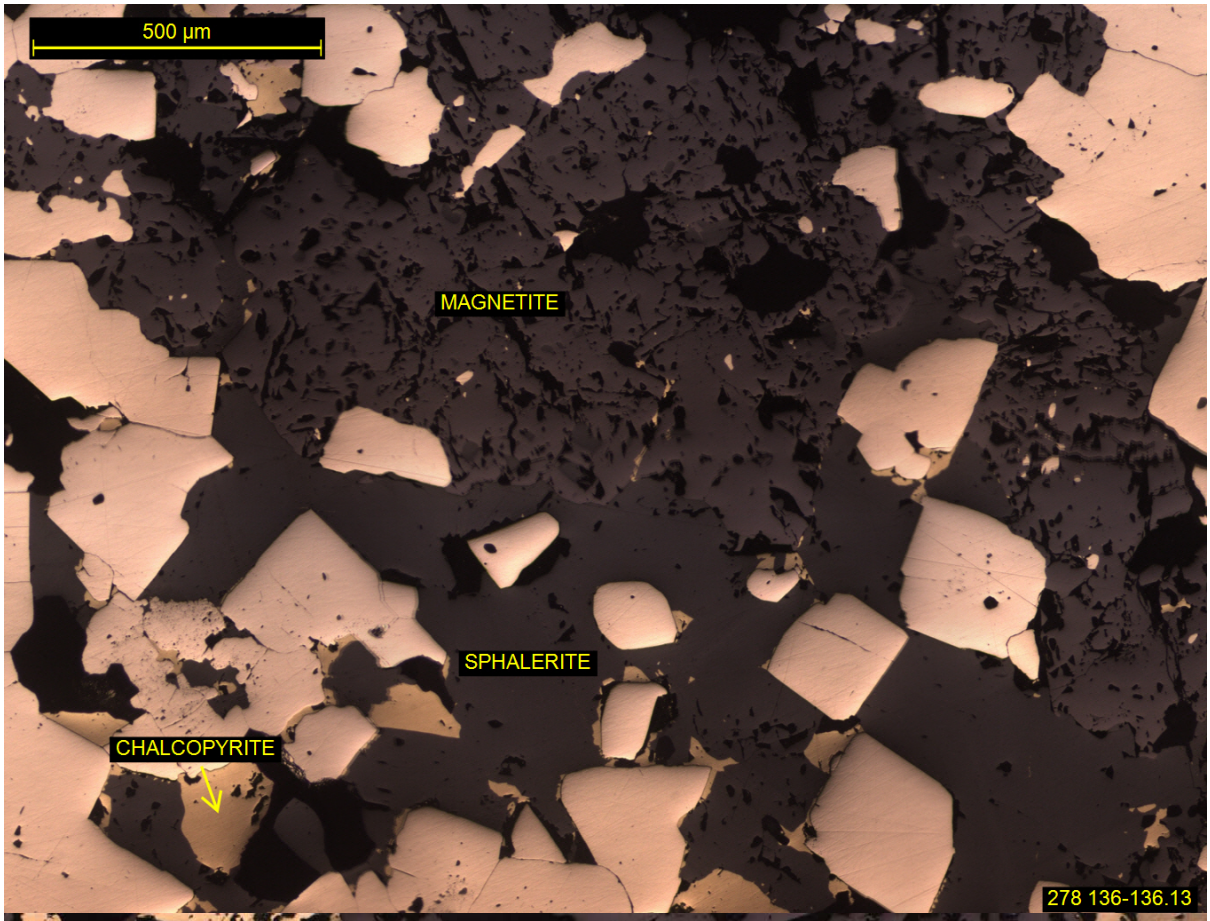

2 mm
MAGNETITE
PYRRHOTITE
QUARTZ
CHALCOPYRITE
PYRITE BAND
278 136-136.13

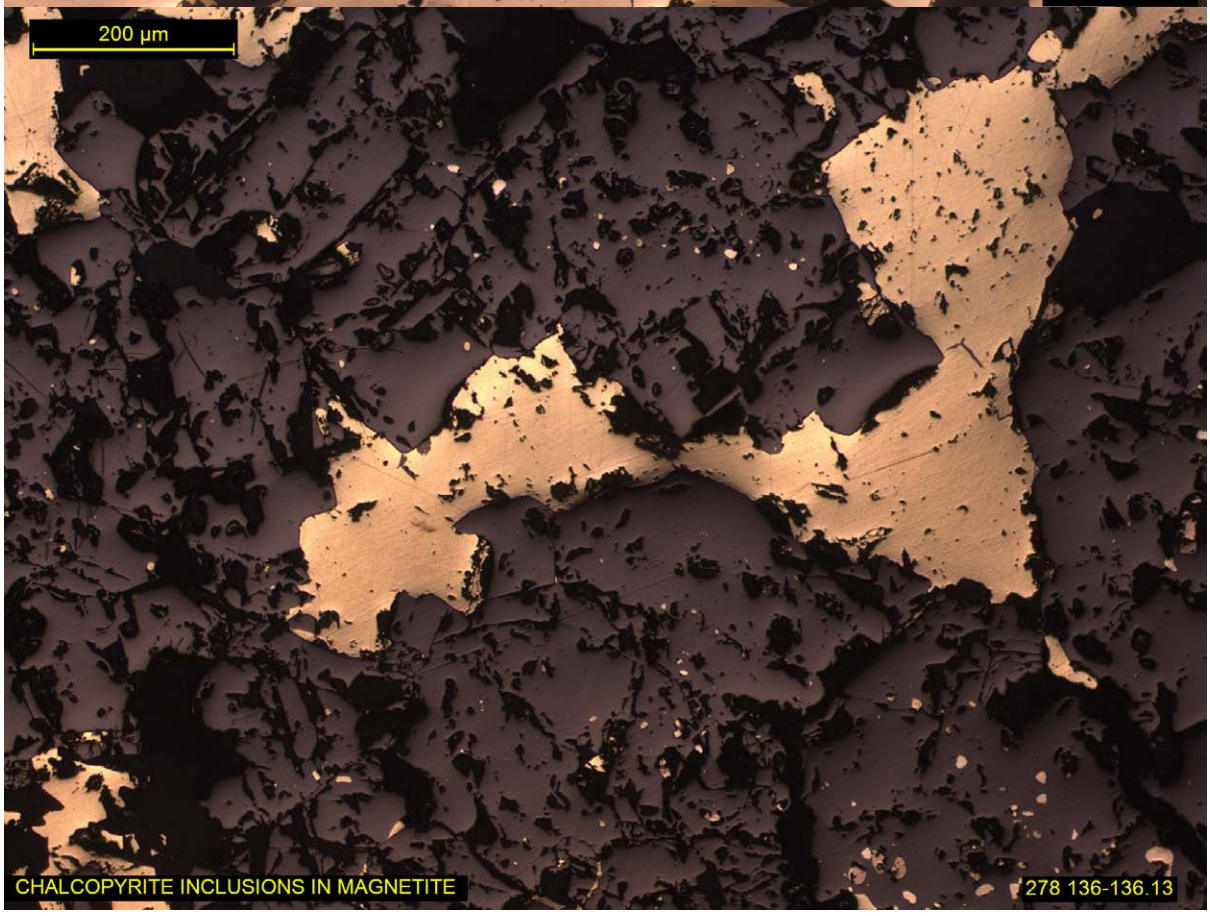

500 µm
PYRRHOTITE
SPHALERITE HOSTING PYRITE, CHALCOPYRITE PYRRHOTITE AND MAGNETITE
278 136-136.13

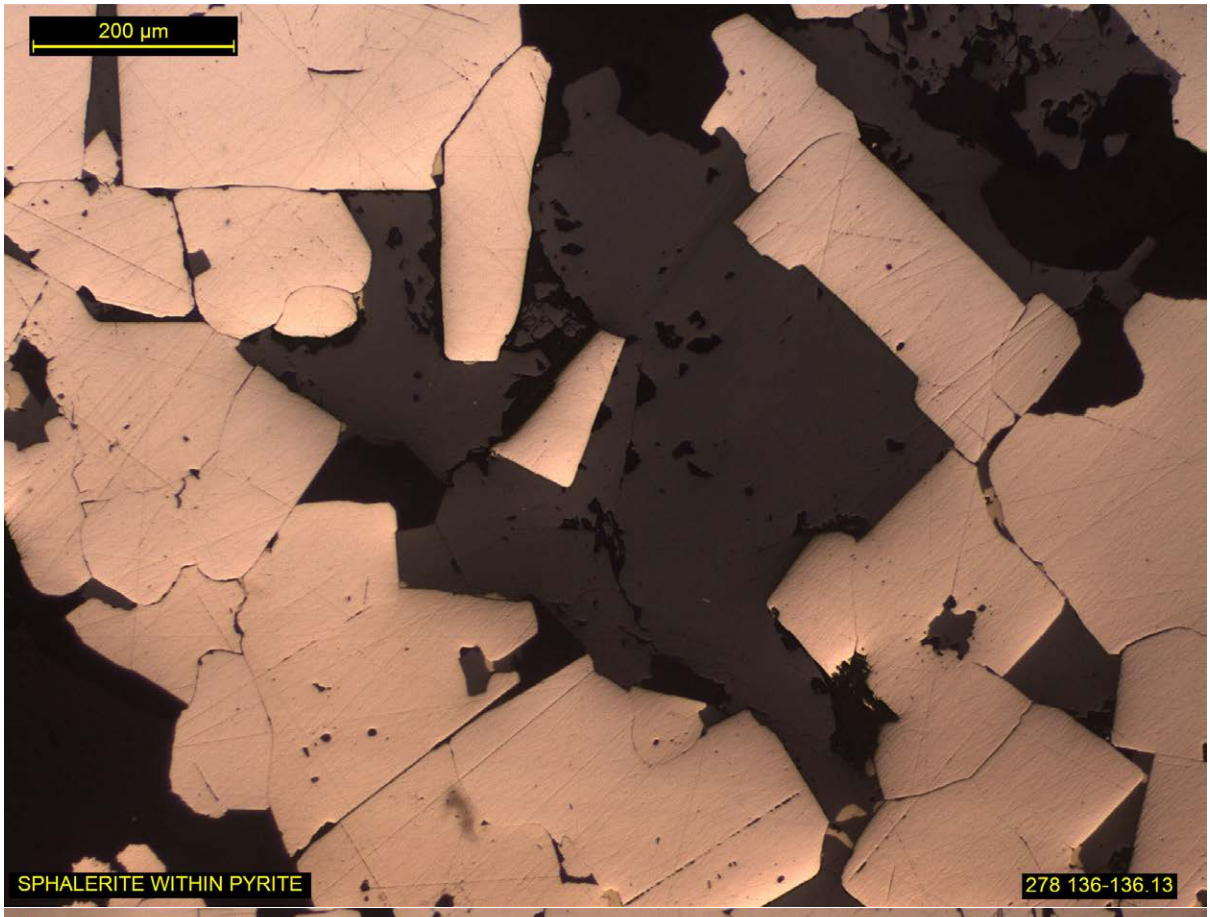

500 µm
QUARTZ
CHALCOPYRITE IN MAGNETITE AND QUARTZ BANDS
278 136-136.13

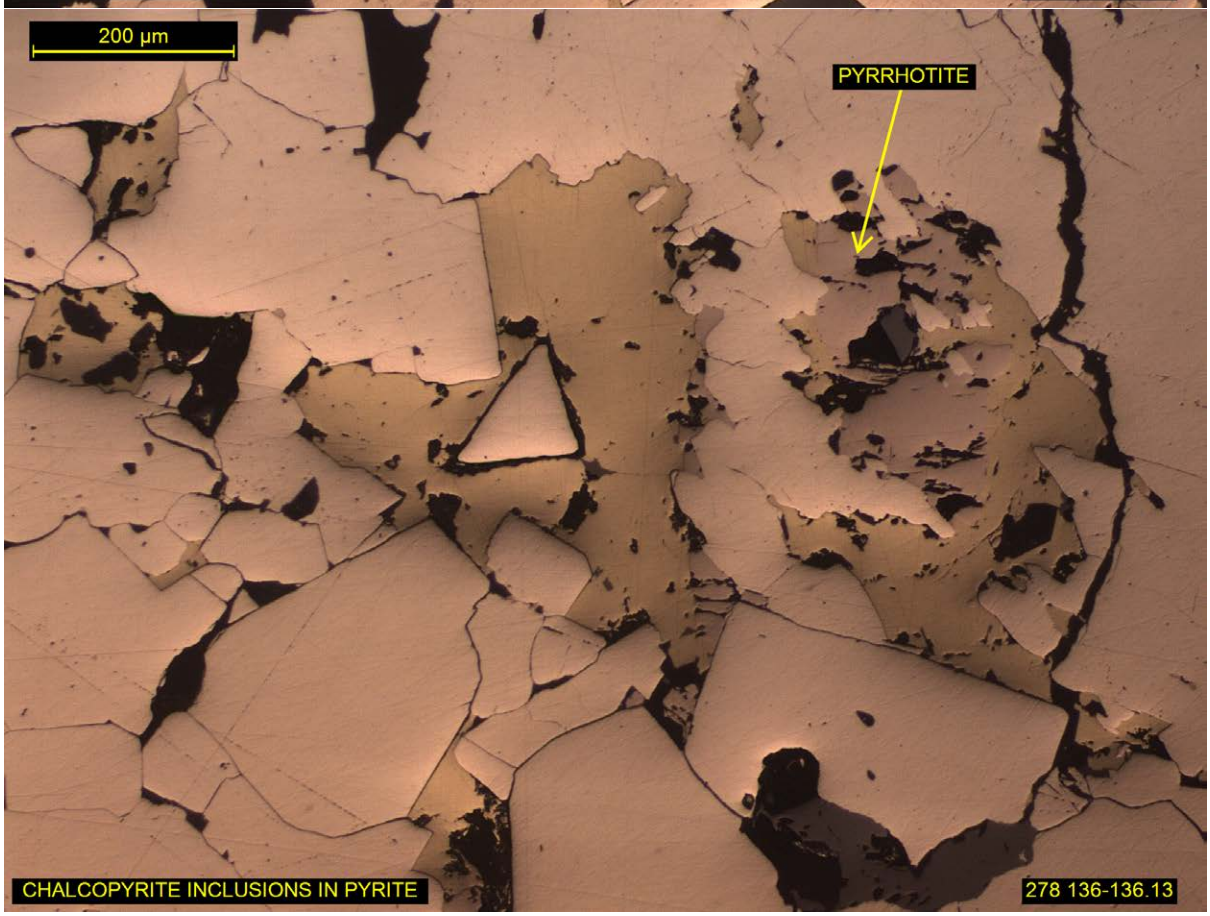

200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE INTERGROWN WITH SPHALERITE PYRRHOTITE AND PYRITE
278 136-136.13

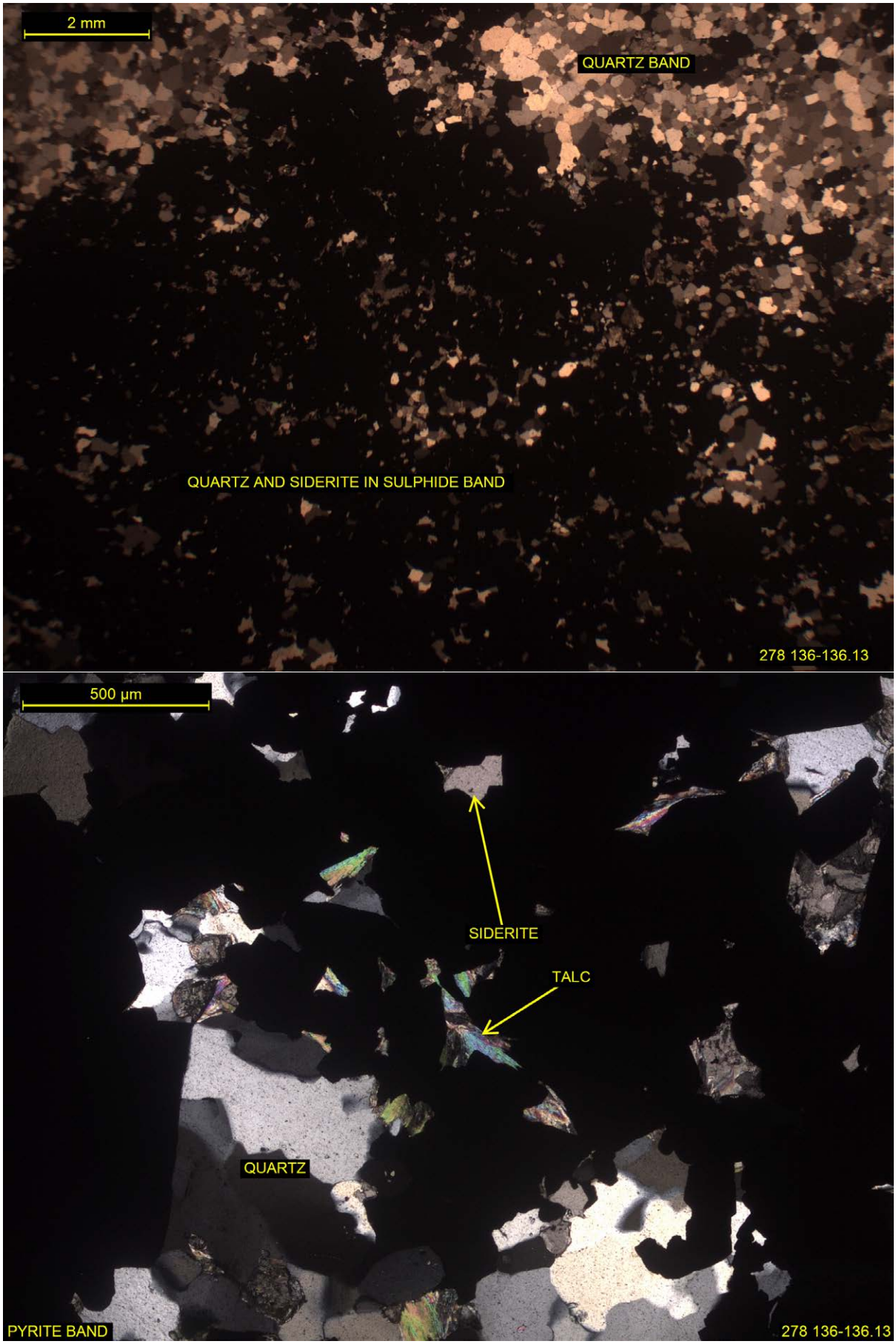

200 µm
CHALCOPYRITE AND PYRRHOTITE IN PYRITE
278 136-136.13


500 µm
MAGNETITE
SPHALERITE
CHALCOPYRITE
278 136-136.13


200 µm
CHALCOPYRITE INCLUSIONS IN MAGNETITE
278 136-136.13


200 µm
SPHALERITE WITHIN PYRITE
278 136-136.13


200 µm
PYRRHOTITE
CHALCOPYRITE INCLUSIONS IN PYRITE
278 136-136.13


2 mm
QUARTZ BAND
QUARTZ AND SIDERITE IN SULPHIDE BAND
278 136-136.13
500 µm
SIDERITE
TALC
QUARTZ
PYRITE BAND
278 136-136.13

SAMPLE K15-284 171.92-172.05

DRILL CORE

POLISHED THIN SECTION

GANGUE	**25%**
TALC	MINOR TO DOMINANT
QUARTZ	ACCESSORY TO DOMINANT
SIDERITE	ACCESSORY
CHLORITE	TRACE
ORES	**75%**
SPHALERITE	ACCESSORY TO DOMINANT
PYRITE	ABSENT TO DOMINANT
MAGNETITE	ACCESSORY TO MAJOR
PYRRHOTITE	ACCESSORY TO DOMINANT
GALENA	ACCESSORY
CHALCOPYRITE	ABSENT TO TRACE

CLASSIFIED AS A BANDED QUARTZ TALC PYRRHOTITE PYRITE MAGNETITE SPHALERITE ORE WITH DISSEMINATED GALENA AND CHALCOPYRITE

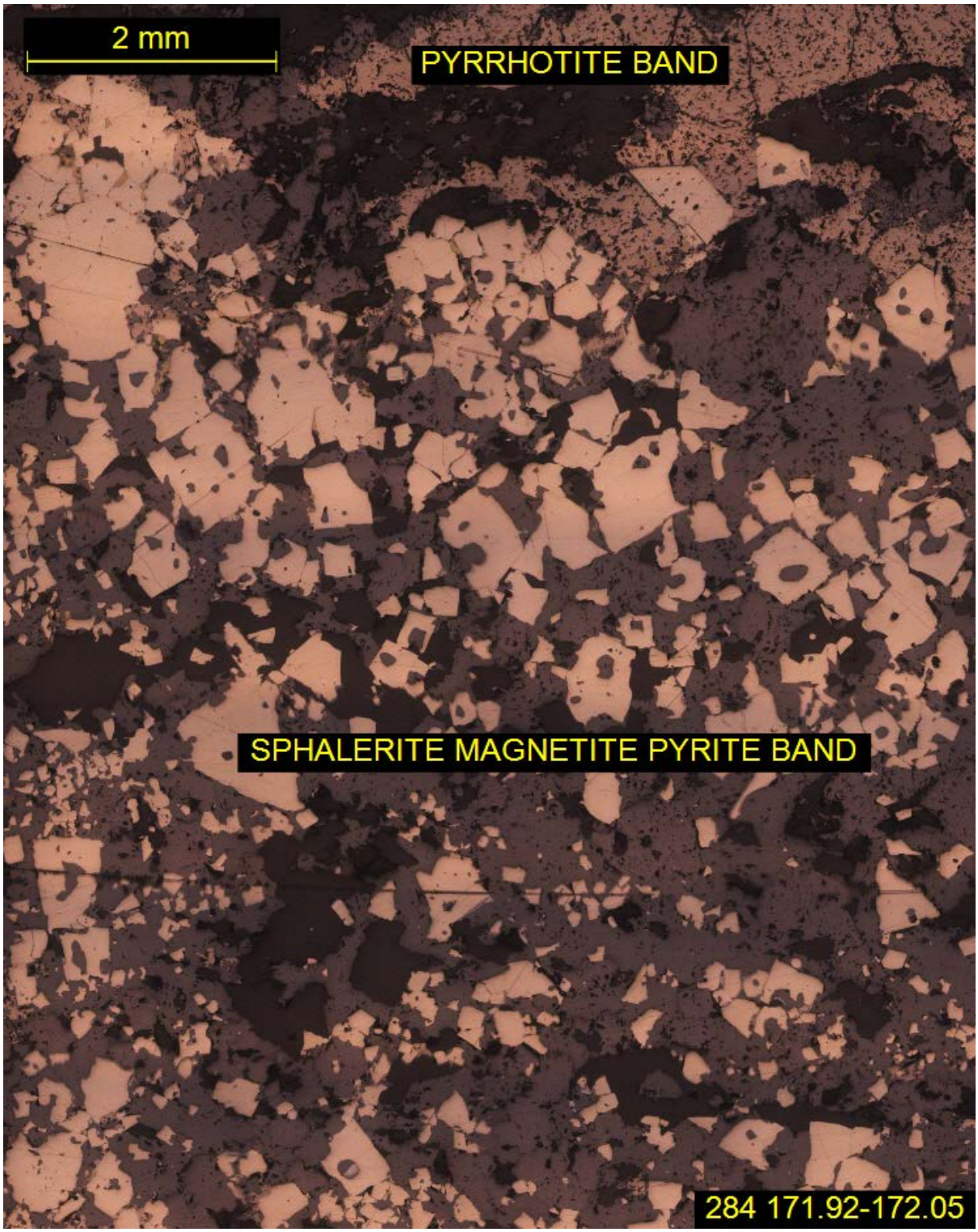
A roughly banded ore comprised of pyrite dominant, pyrrhotite dominant and sphalerite/magnetite dominant bands. Gangue makes up minor to major contents of all bands as interstitial aggregates, consisting primarily of talc aggregates, quartz mosaics (in sphalerite/magnetite bands) the occasional anhedral siderite grain, and rare chlorite flakes.

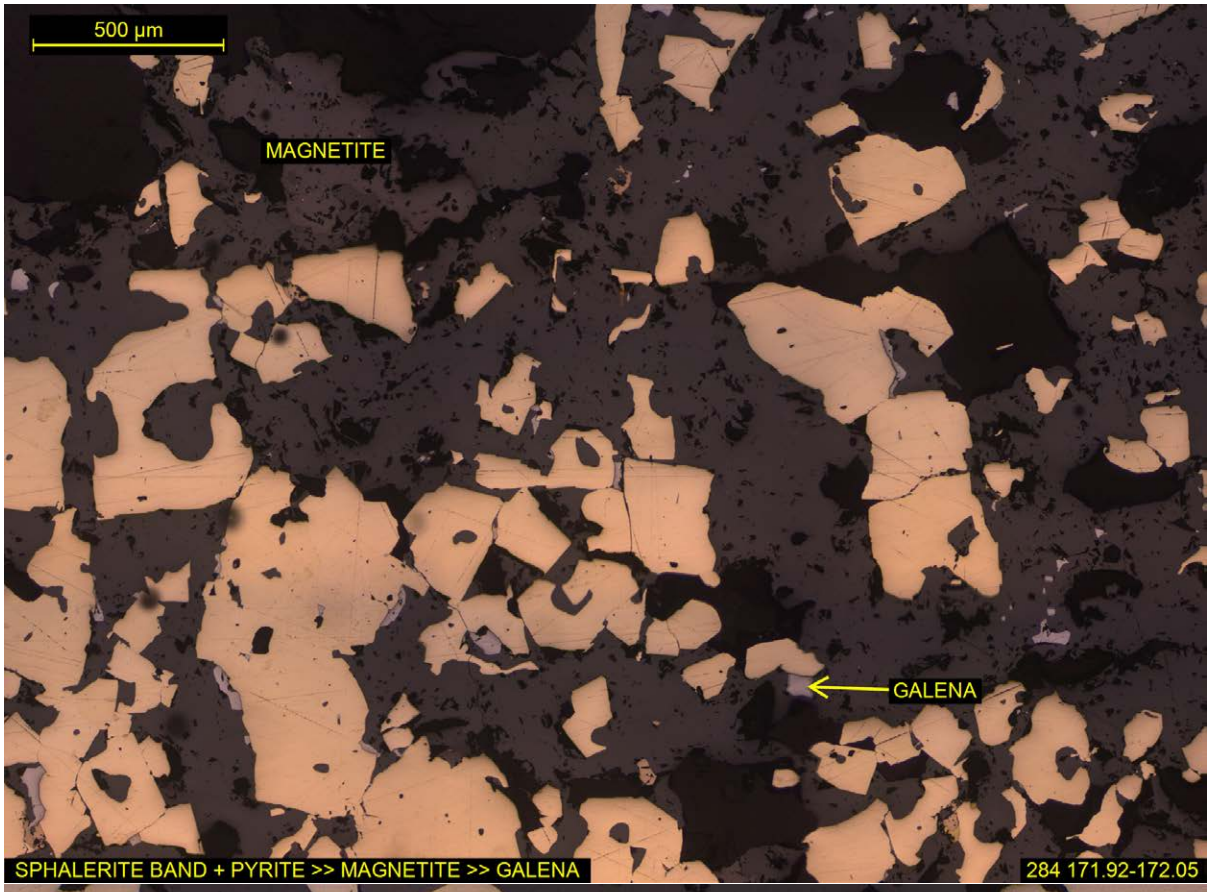
Several bands, ranging in thickness from 10 to over 20 mm, comprise a significant sphalerite and magnetite matrix that is host to minor to major sporadically disseminated discrete subhedral/euhedral pyrites (~100 to ~900 µm), and occasional irregular inclusions of galena, chalcopyrite and pyrrhotite. Magnetite is locally dominant, as large irregular aggregates or discontinuous layers (up to 5 millimetres), found containing numerous fine inclusions of galena, sphalerite and others, in particular examples. Galena is found fairly regularly rimming pyrite, as inclusions in magnetite or sphalerite, with irregularly shaped grains (~50 to ~400 µm). Chalcopyrite is scarce, found associated with galena, pyrite or sphalerite (~100 µm average). Sphalerite inclusions (~200 µm average) are frequently found in pyrites. Quartz is mainly found within these bands.

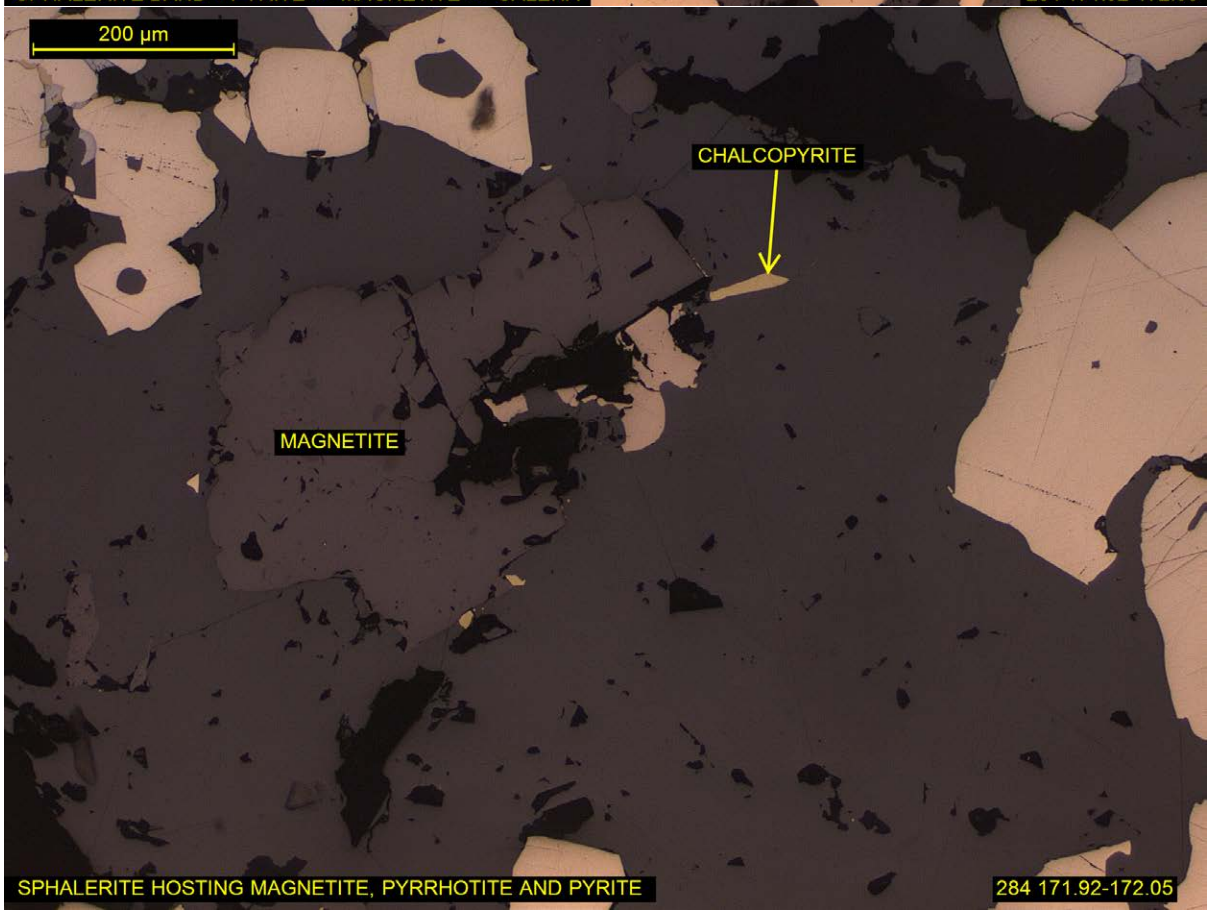
A central pyrrhotite dominant band (up to ~15mm thick) comprises irregular to elongate allotriomorphic masses of pyrrhotite, the latter parallel to banding, with a major interstitial talc component. Magnetite and subordinate sphalerite occur in elongate trains or discrete grains sporadically (~50 to ~1.5 mm). Chalcopyrite is absent, whilst trace galena occurs as irregular shaped grains rimming pyrrhotite, magnetite or sphalerite (~50 to ~450 µm.

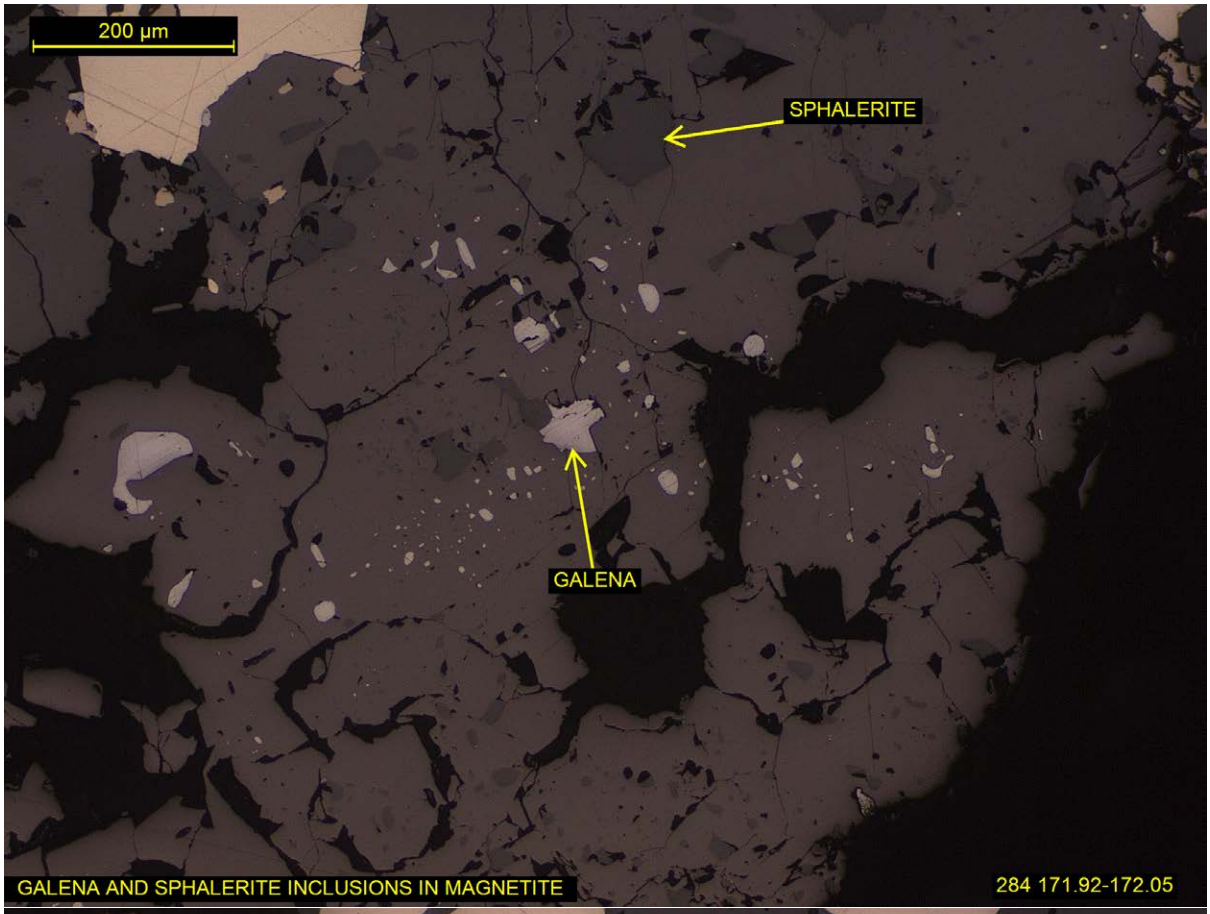
A couple of pyrite dominant bands are present (~10 mm thick), comprising varying levels (major to accessory) of interstitial ores. Pyrite occurs as discrete and semi-coalesced euhedral forms (~100 to 600 µm), with interstitial sphalerite, chalcopyrite, galena,

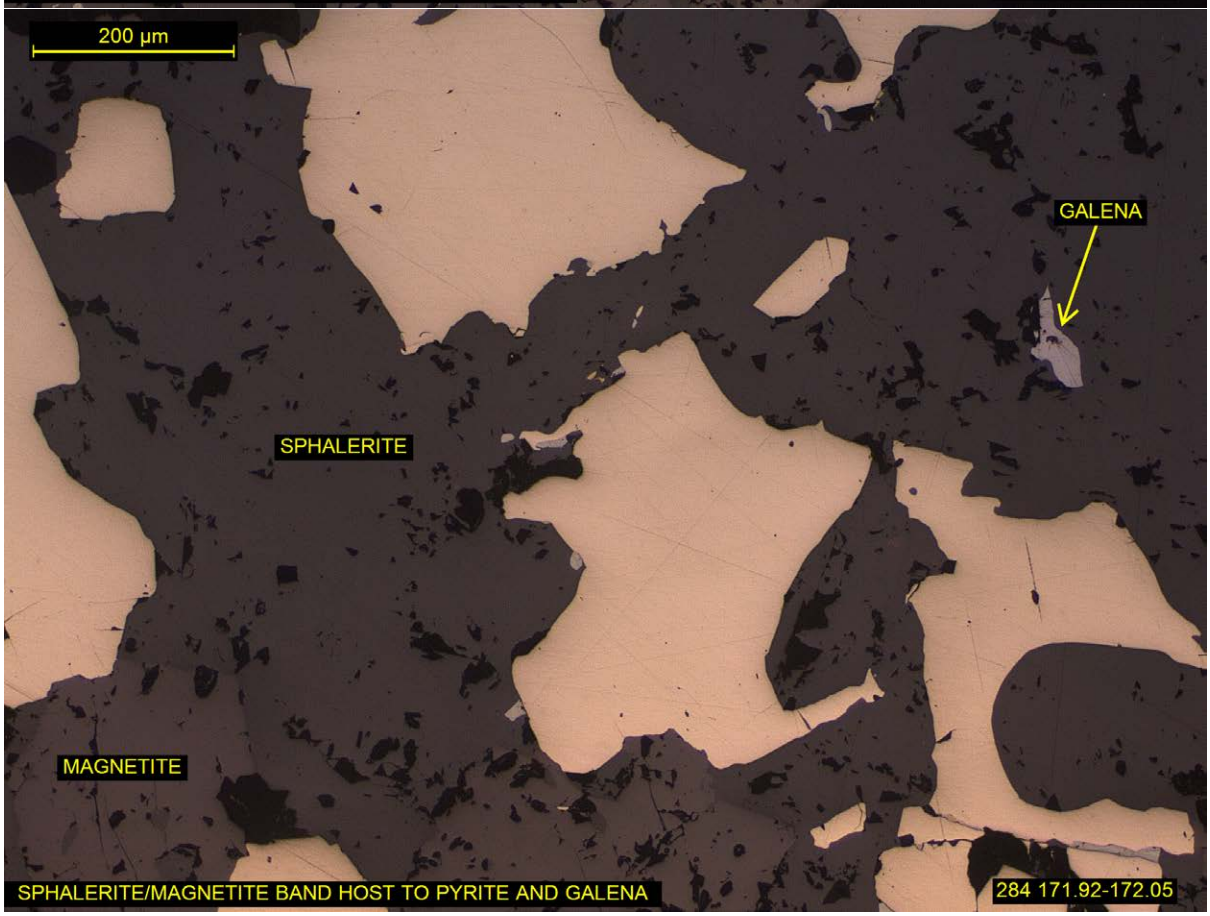
magnetite and pyrrhotite. Chalcopyrite occurs typically as irregularly shaped aggregates interstitial to pyrite, rimming pyrite or intergrown with sphalerite/magnetite, a size range of ~50 to ~600 µm, occasionally over a millimetre. Galena is found as irregularly shaped inclusions in pyrite, rimming pyrite and interstitial to pyrite associated with other ores (typical ~30 to ~350 µm).

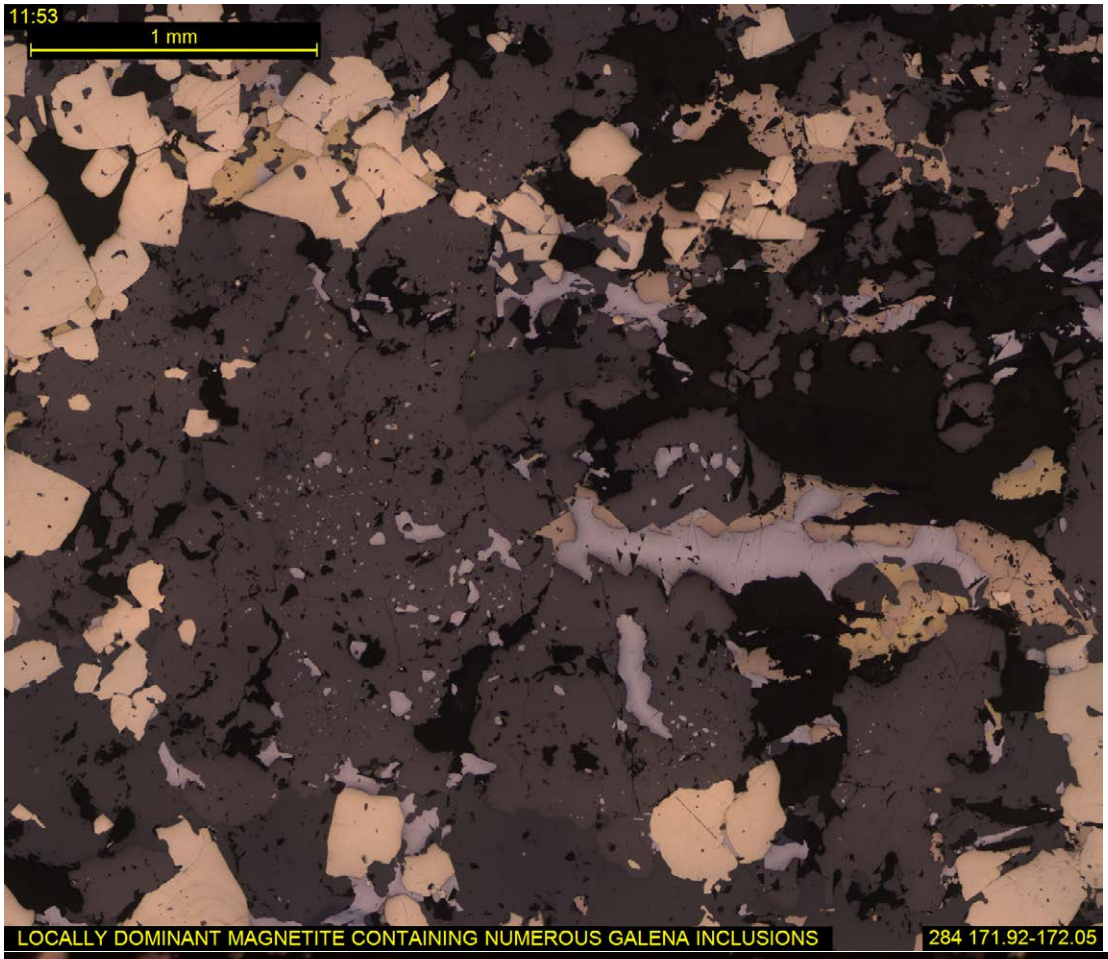


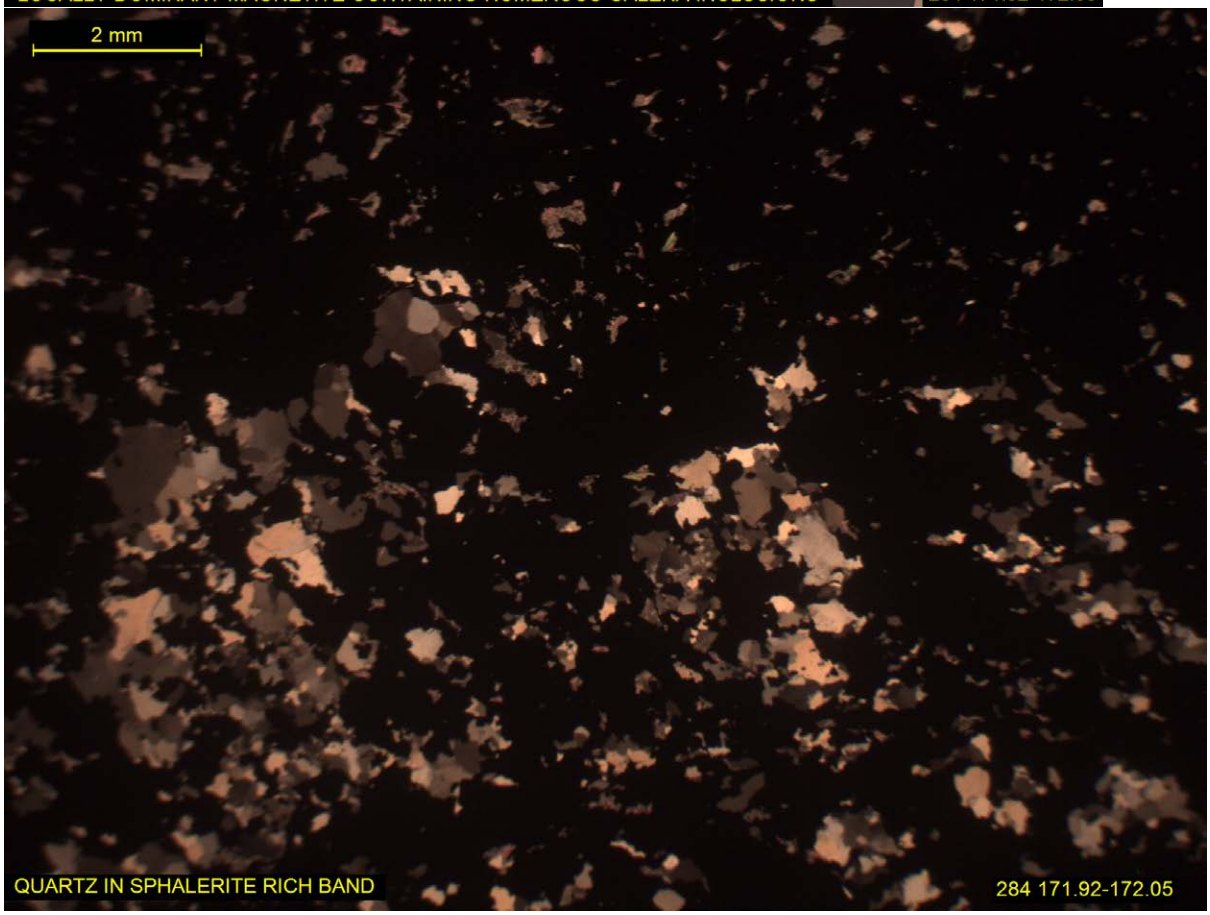

500 µm
MAGNETITE
GALENA
SPHALERITE BAND + PYRITE >> MAGNETITE >> GALENA
284 171.92-172.05

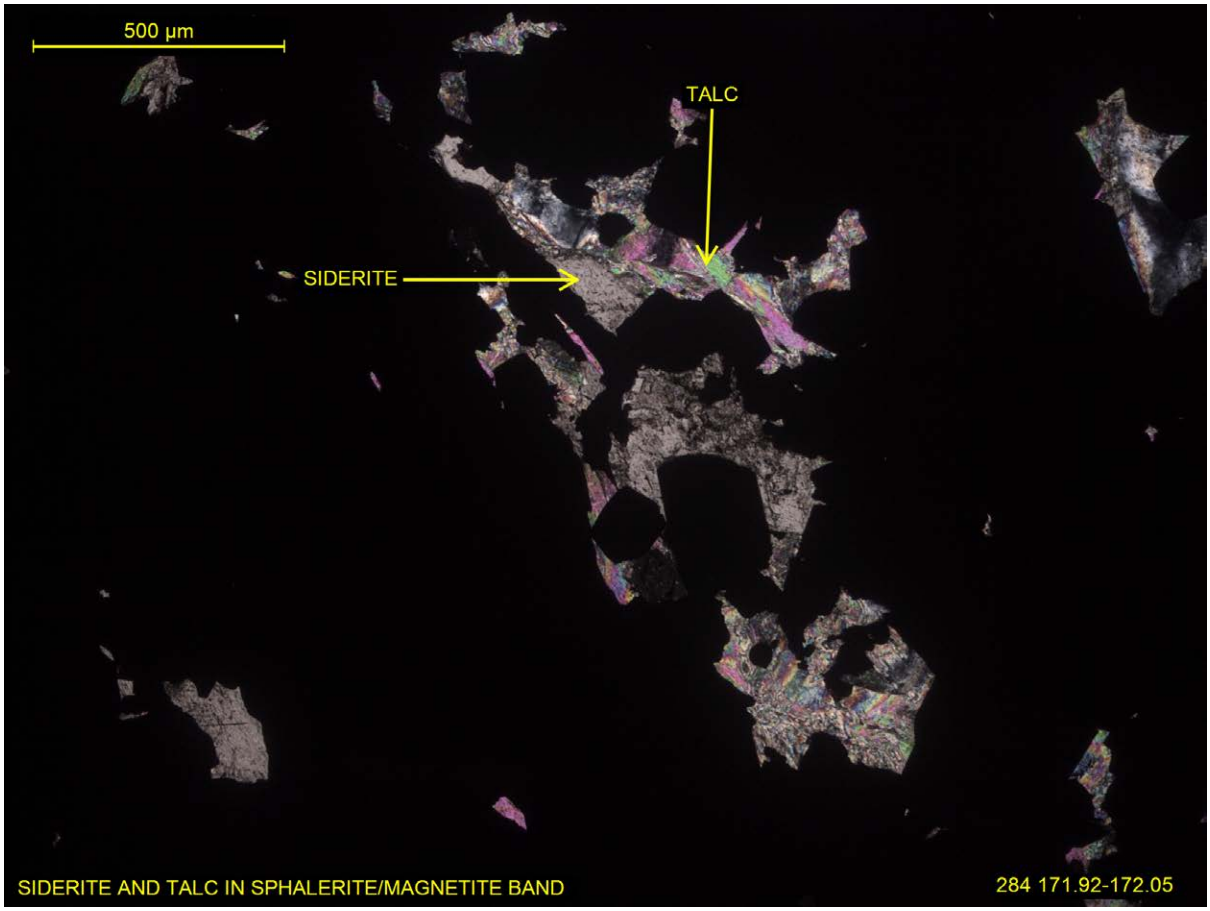

200 µm
CHALCOPYRITE
MAGNETITE
SPHALERITE HOSTING MAGNETITE, PYRRHOTITE AND PYRITE
284 171.92-172.05

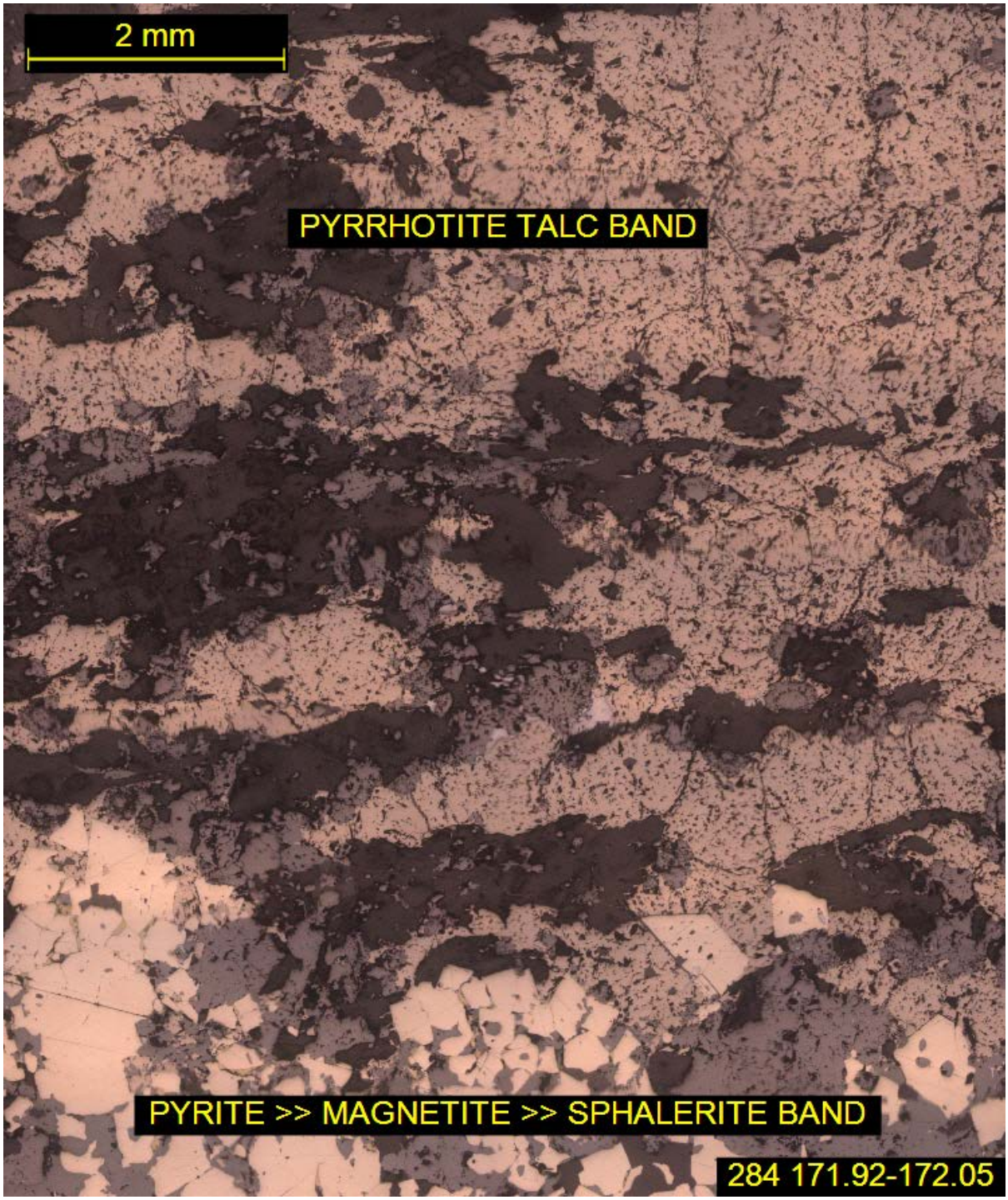

200 µm
SPHALERITE
GALENA
GALENA AND SPHALERITE INCLUSIONS IN MAGNETITE
284 171.92-172.05

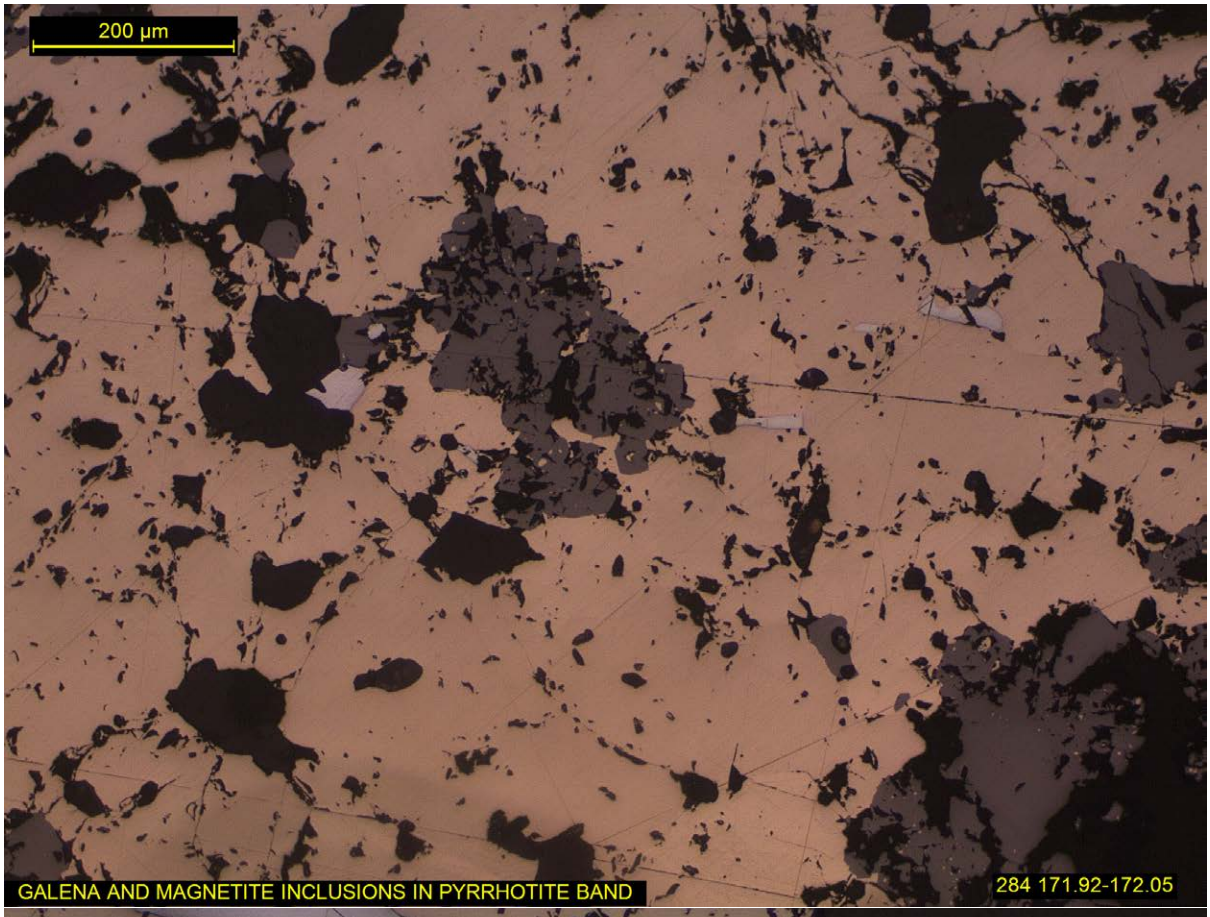

200 µm
GALENA
SPHALERITE
MAGNETITE
SPHALERITE/MAGNETITE BAND HOST TO PYRITE AND GALENA
284 171.92-172.05


11:53
1 mm
LOCALLY DOMINANT MAGNETITE CONTAINING NUMEROUS GALENA INCLUSIONS
284 171.92-172.05

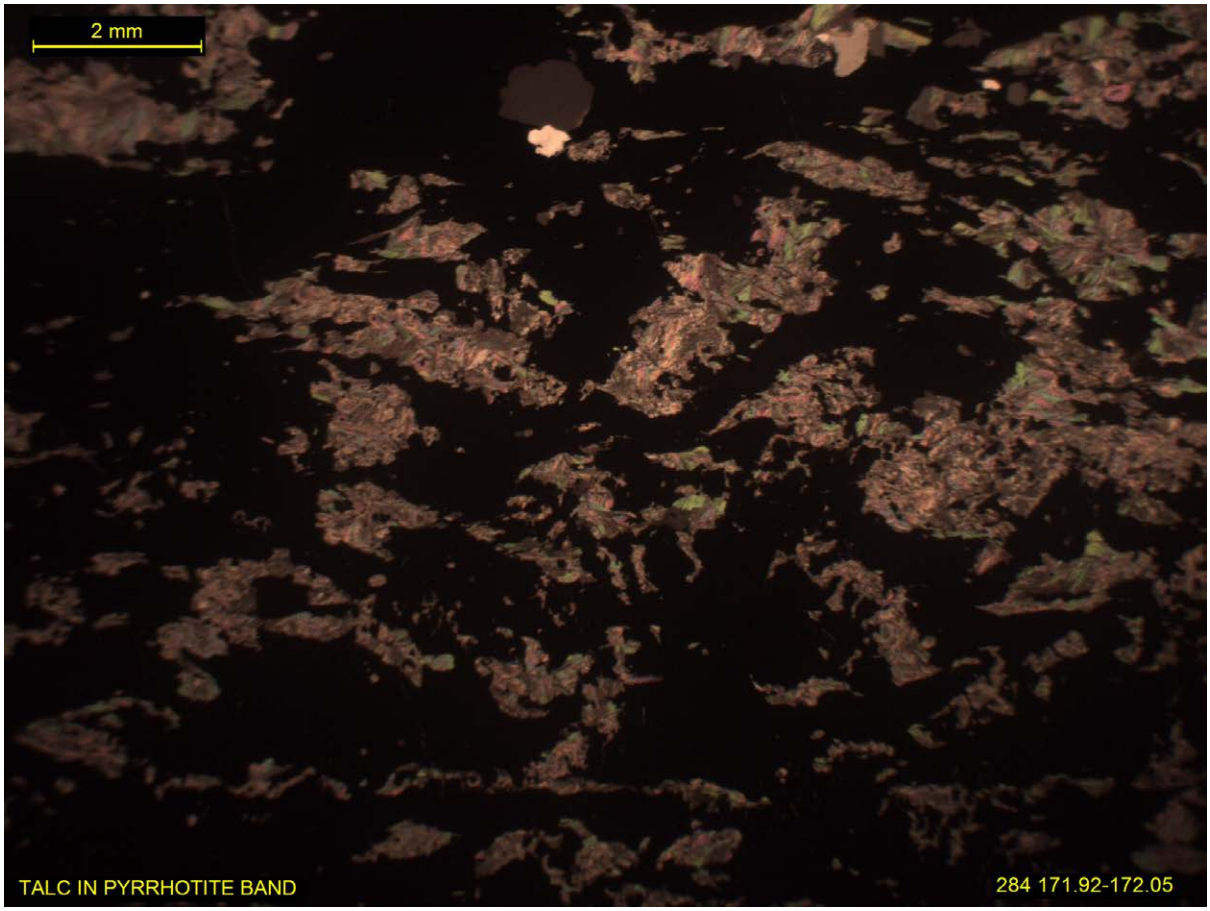

2 mm
QUARTZ IN SPHALERITE RICH BAND
284 171.92-172.05

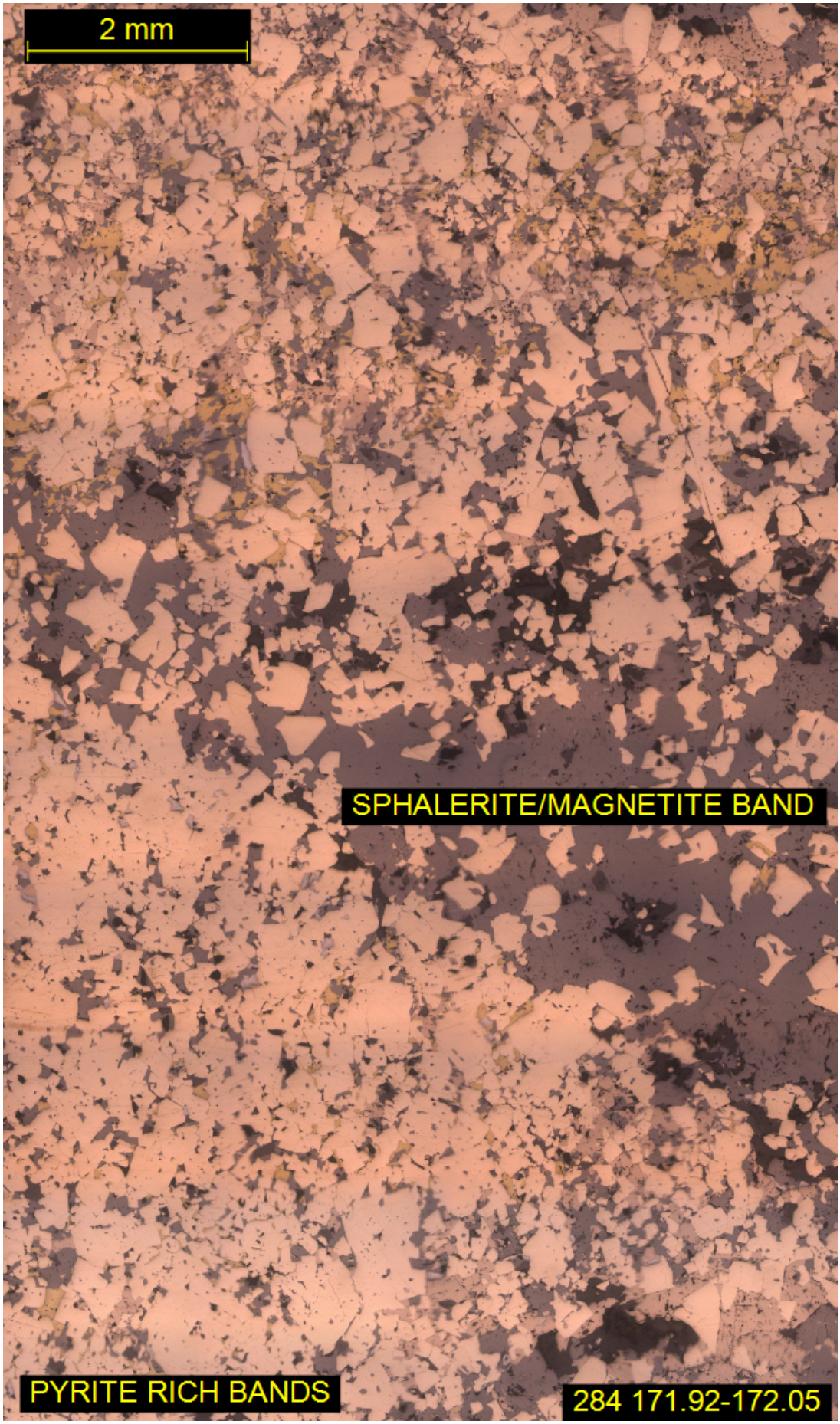

500 µm
TALC
SIDERITE
SIDERITE AND TALC IN SPHALERITE/MAGNETITE BAND
284 171.92-172.05

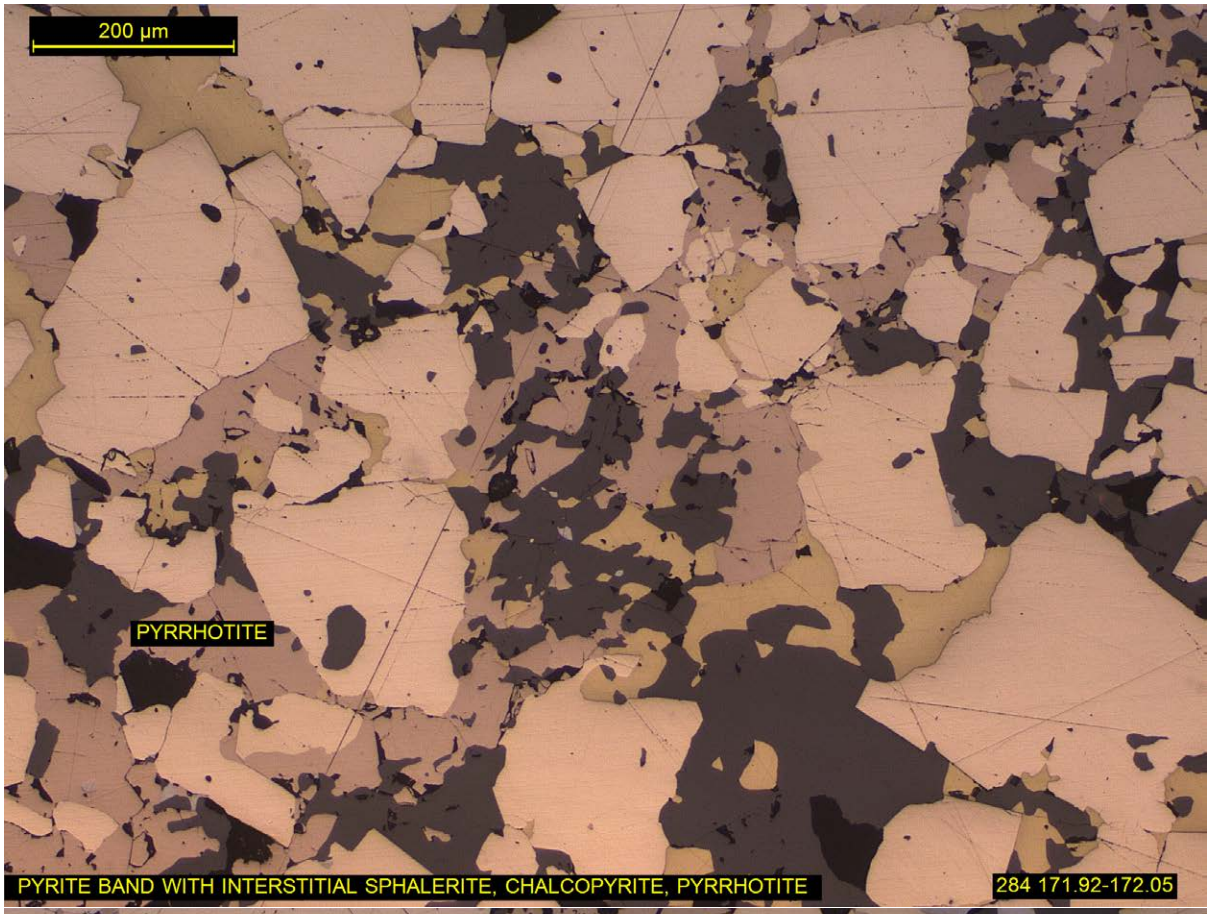

2 mm
PYRRHOTITE TALC BAND
PYRITE >> MAGNETITE >> SPHALERITE BAND
284 171.92-172.05

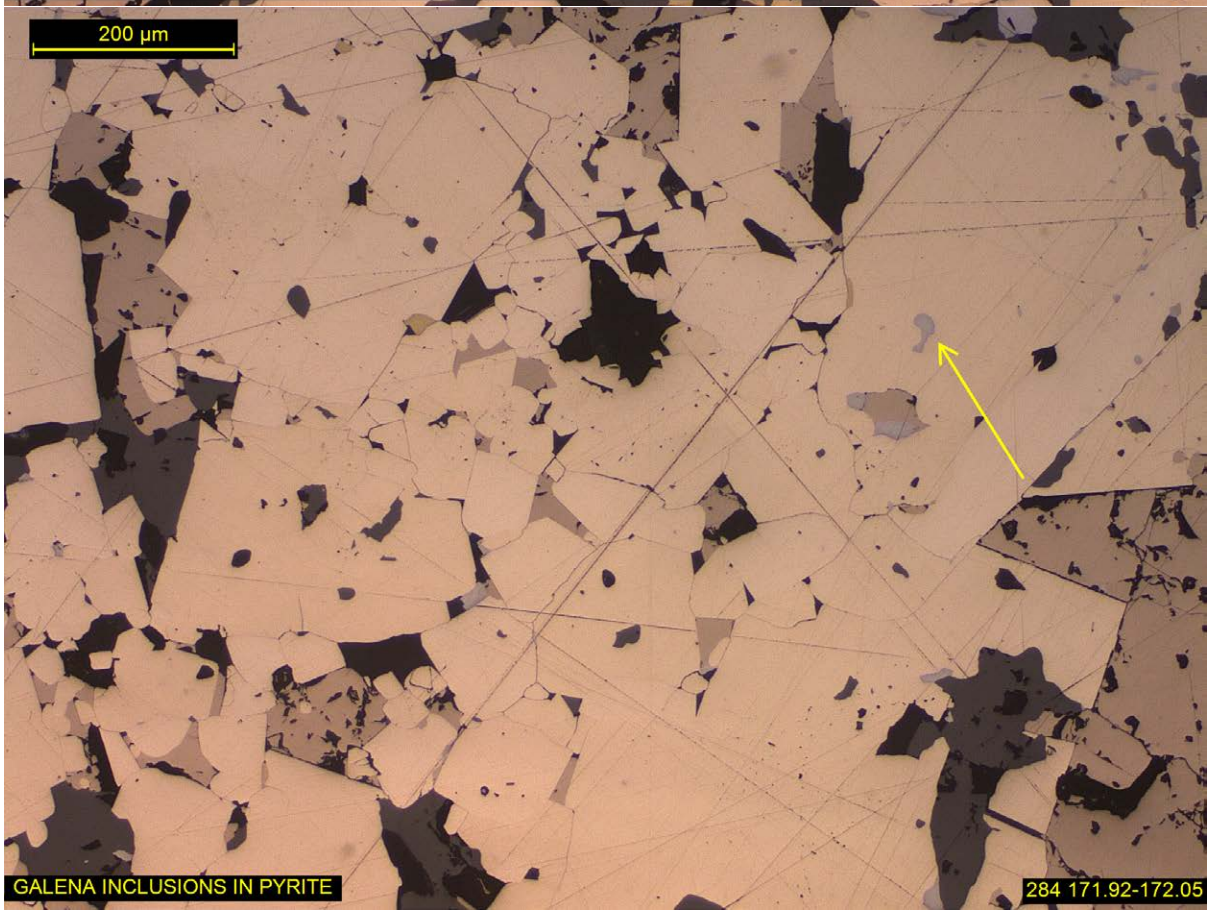

200 µm
GALENA AND MAGNETITE INCLUSIONS IN PYRRHOTITE BAND
284 171.92-172.05

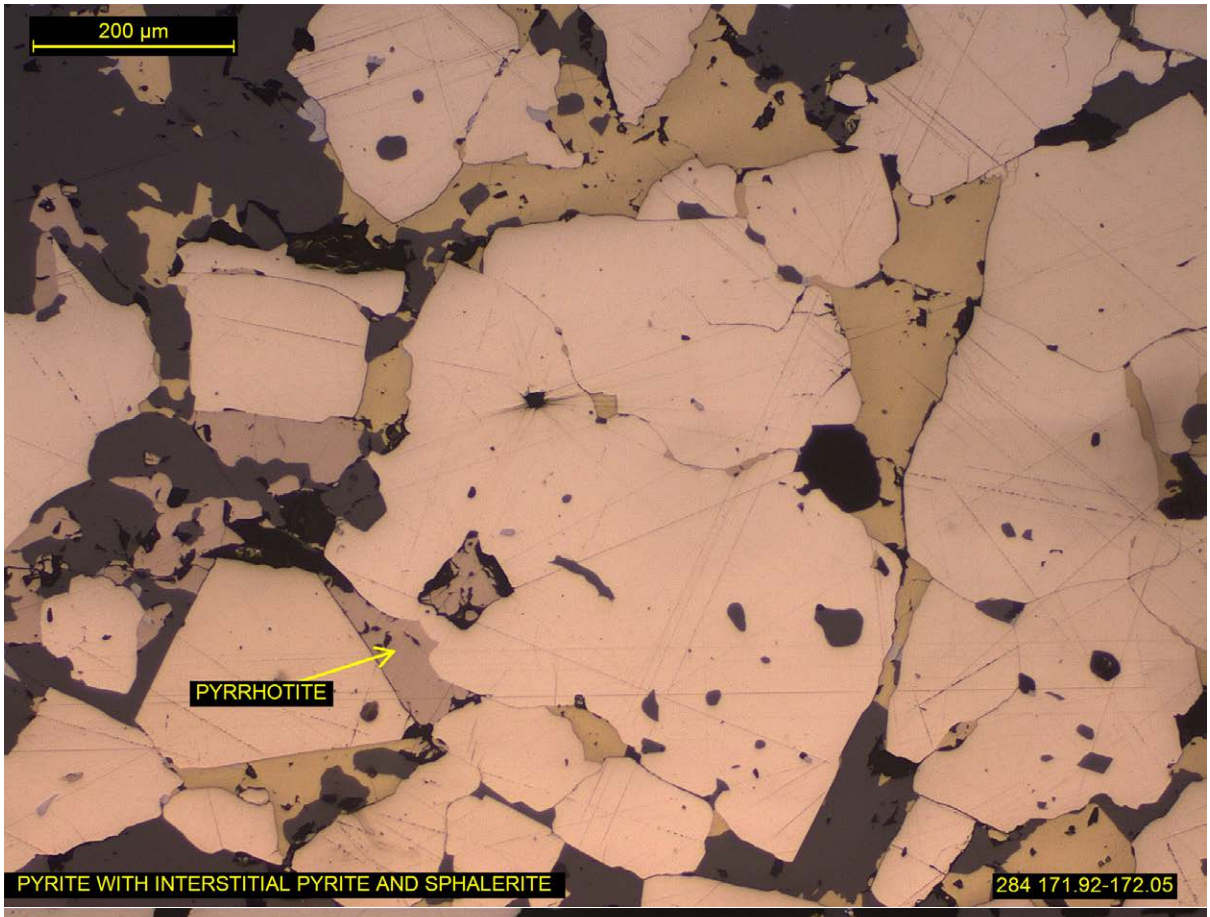

200 µm
QUARTZ
GALENA
PYRRHOTITE
SPHALERITE
TALC
284 171.92-172.05

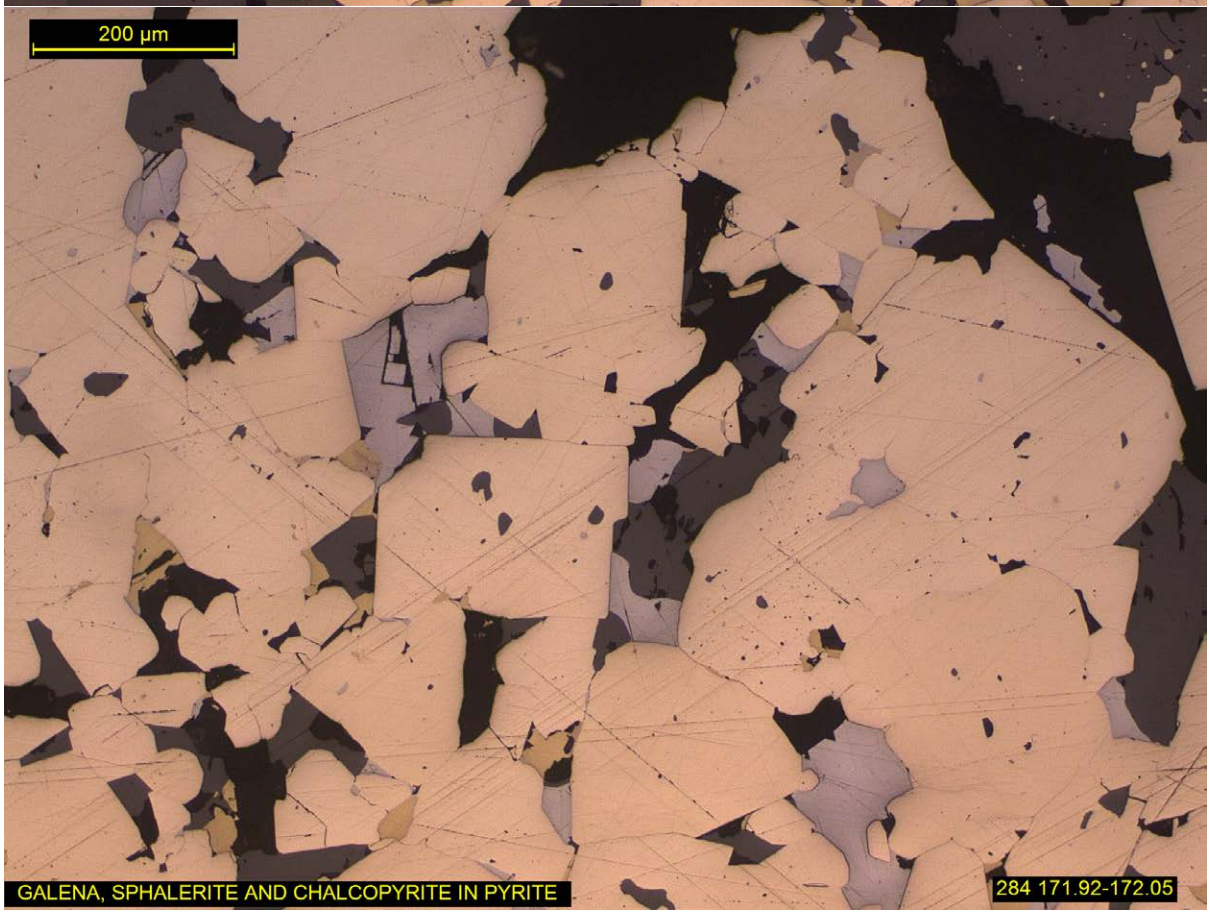

2 mm
TALC IN PYRRHOTITE BAND
284 171.92-172.05

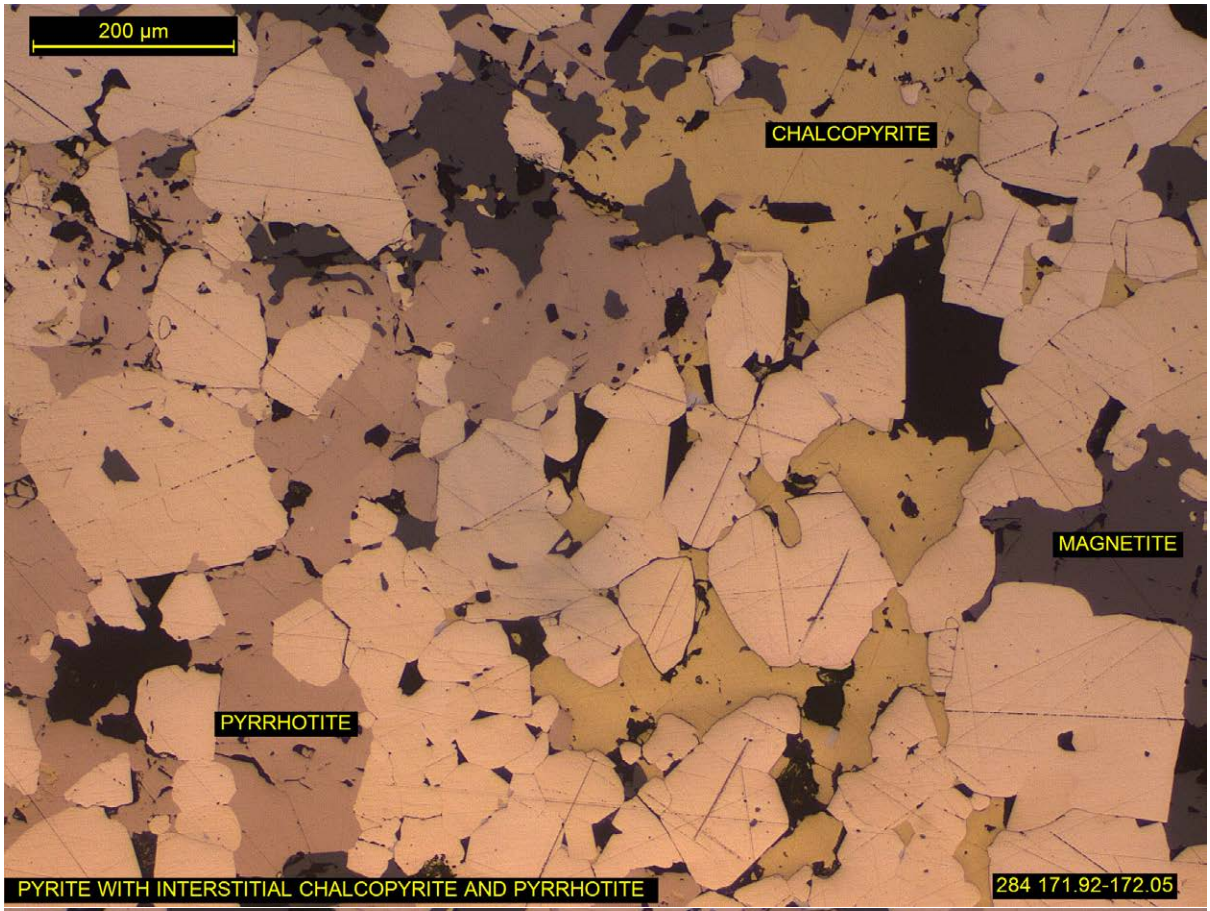

2 mm
SPHALERITE/MAGNETITE BAND
PYRITE RICH BANDS
284 171.92-172.05

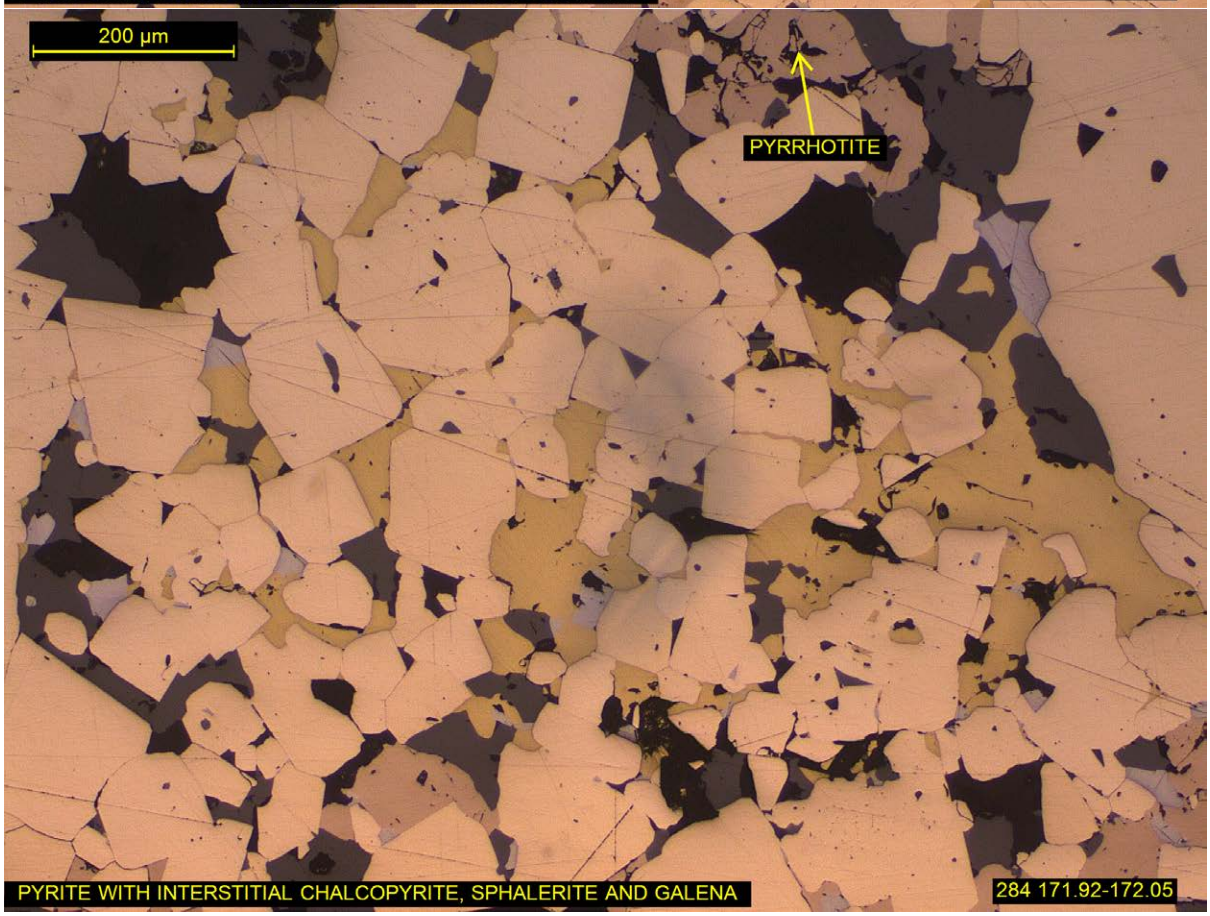

200 µm
PYRRHOTITE
PYRITE BAND WITH INTERSTITIAL SPHALERITE, CHALCOPYRITE, PYRRHOTITE
284 171.92-172.05


200 µm
GALENA INCLUSIONS IN PYRITE
284 171.92-172.05


200 µm
PYRRHOTITE
PYRITE WITH INTERSTITIAL PYRITE AND SPHALERITE
284 171.92-172.05


200 µm
GALENA, SPHALERITE AND CHALCOPYRITE IN PYRITE
284 171.92-172.05


200 µm
CHALCOPYRITE
MAGNETITE
PYRRHOTITE
PYRITE WITH INTERSTITIAL CHALCOPYRITE AND PYRRHOTITE
284 171.92-172.05


200 µm
PYRRHOTITE
PYRITE WITH INTERSTITIAL CHALCOPYRITE, SPHALERITE AND GALENA
284 171.92-172.05

SAMPLE K15-287 50.98-51.23

DRILL CORE

POLISHED THIN SECTION

GANGUE	**15%**
CHLORITE	DOMINANT
SIDERITE	MAJOR
KAOLINITE	MINOR
MICA (BARIUM BEARING)	ACCESSORY
QUARTZ	ACCESSORY
ORES	**85%**
PYRITE	MAJOR TO DOMINANT
MAGNETITE	ACCESSORY TO MAJOR
SPHALERITE	ACCESSORY TO MAJOR
CHALCOPYRITE	ACCESSORY TO MAJOR
PYRRHOTITE	ABSENT TO ACCESSORY
MARCASITE	ABSENT TO ACCESSORY
GALENA	TRACE

CLASSIFIED AS A BANDED CHALCOPYRITE SPHALERITE MAGNETITE PYRITE ORE

A roughly banded sample that is defined by varying concentrations of pyrite, magnetite, sphalerite and chalcopyrite. Pyrite is intermittently undergoing incipient to moderate alteration to marcasite. Most bands are riddled with gangue – chlorite and siderite mainly occurring as interstitial matrix (typically ~400 to ~1. 5mm), occasionally relatively large pockets up to ~5 mm.

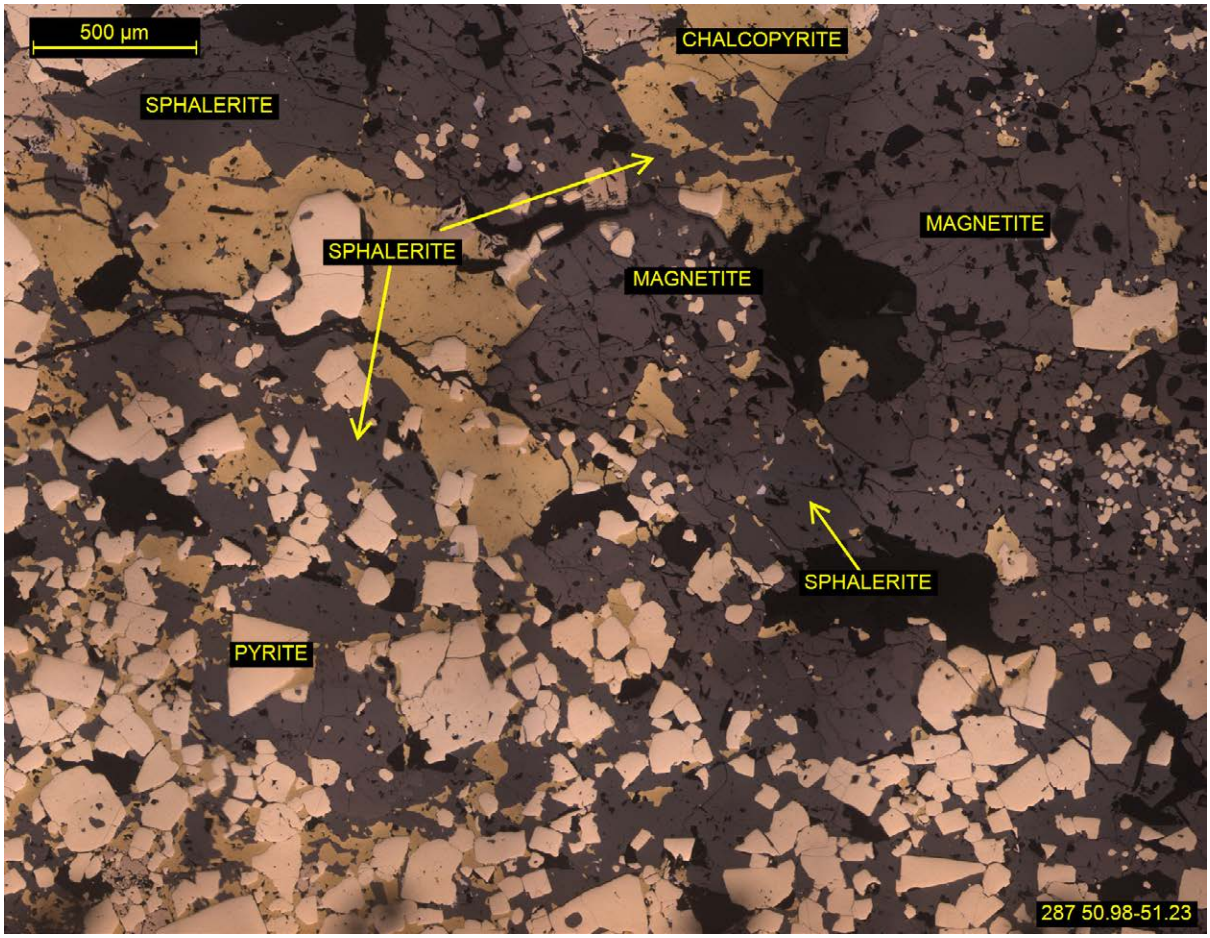
Particular laminations are dominantly pyrite with only accessory levels of interstitial (sub 150 µm) sphalerite, magnetite and chalcopyrite. Pyrites are predominantly discrete euhedral and subordinate subhedral grains (~50 to ~450 µm). Chalcopyrite content is relatively high in localized zones, occurring as interstitial matrix (~50 to ~400 µm) to pyrites. Irregular allotriomorphic magnetite masses (~300 µm to ~2 mm) are found sporadically whilst sphalerite only occasionally occurs as interstitial material within pyrite.

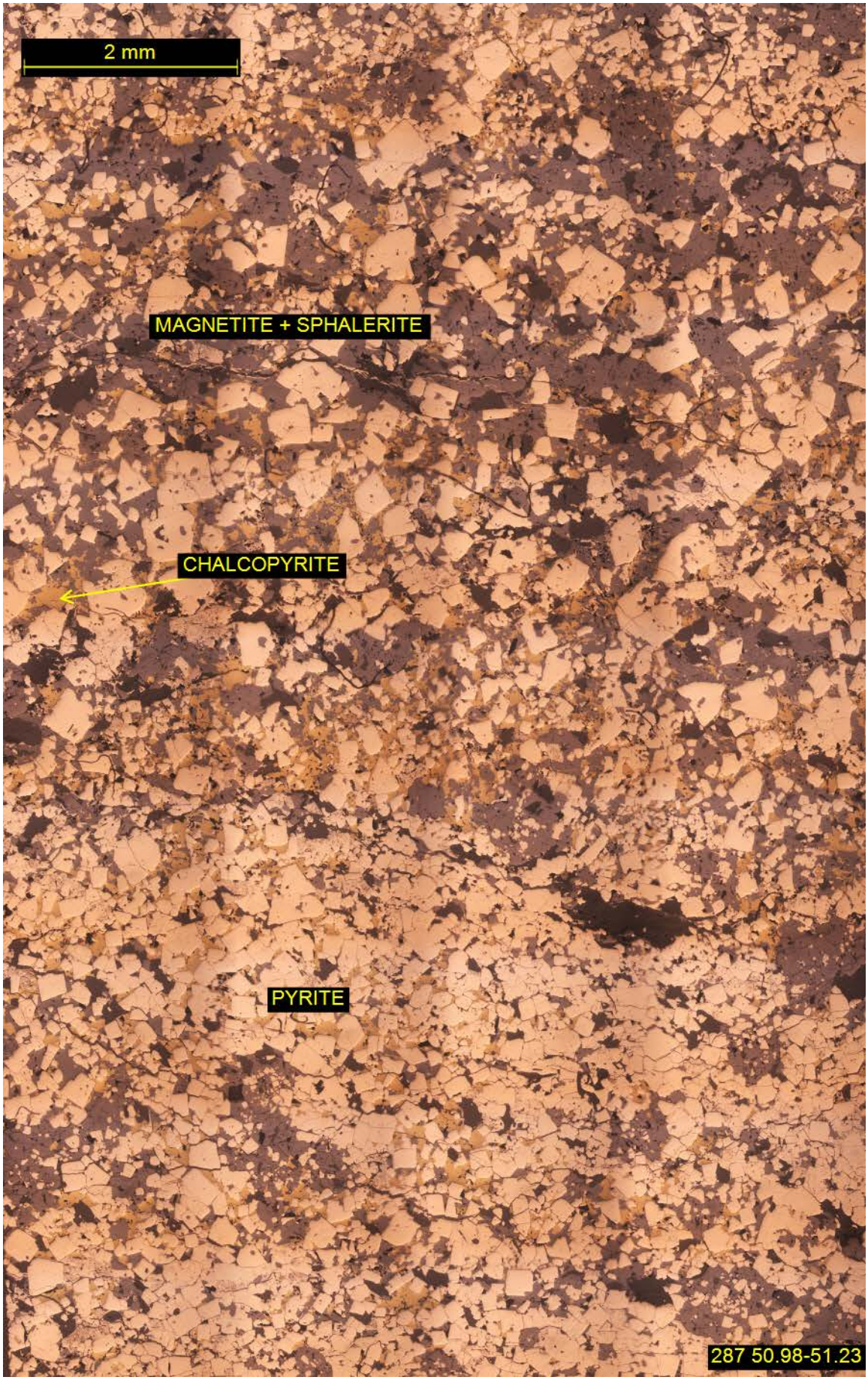
A second band (~4.5mm) is comprised primarily of a dominant sphalerite and magnetite matrix that hosts disseminated subordinate pyrite and chalcopyrite. Sphalerite and magnetite are frequently intergrown/associated, the latter occurring in small to large irregular masses/aggregates. Discrete euhedral pyrite grains (averaging ~400 µm), and irregularly shaped chalcopyrite grains (averaging ~160 µm) are randomly disseminated. The latter commonly rims or forms composites with pyrite, and also is frequently associated with magnetite and sphalerite.

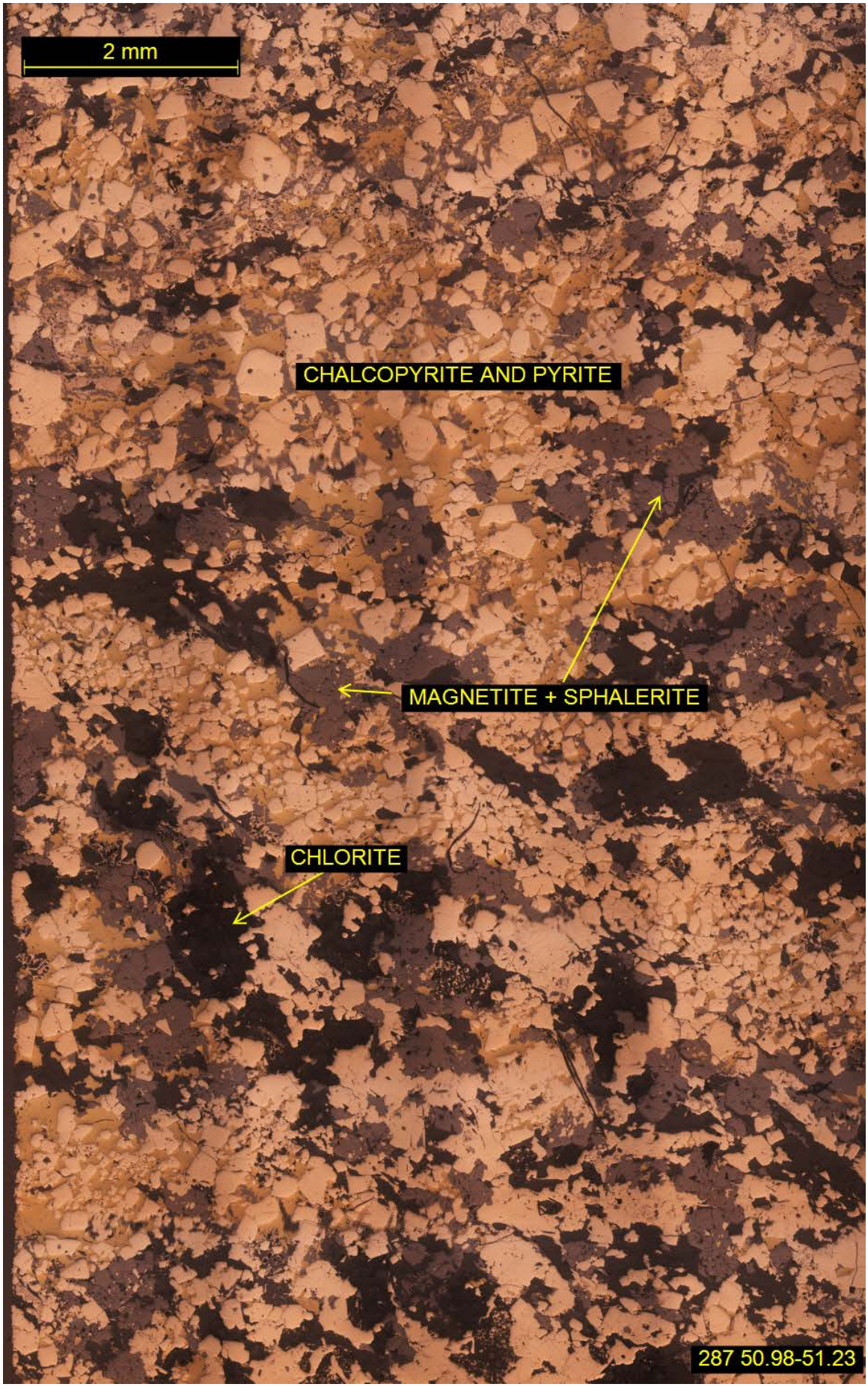
This aforementioned layer grades into a band where sphalerite/magnetite content lessens, whilst chalcopyrite increases and pyrrhotite is present, altering to marcasite. Pyrite grains form a consistent major framework of discrete euhedral grains, with interstitial complex intergrowths of chalcopyrite, sphalerite, pyrrhotite and magnetite.

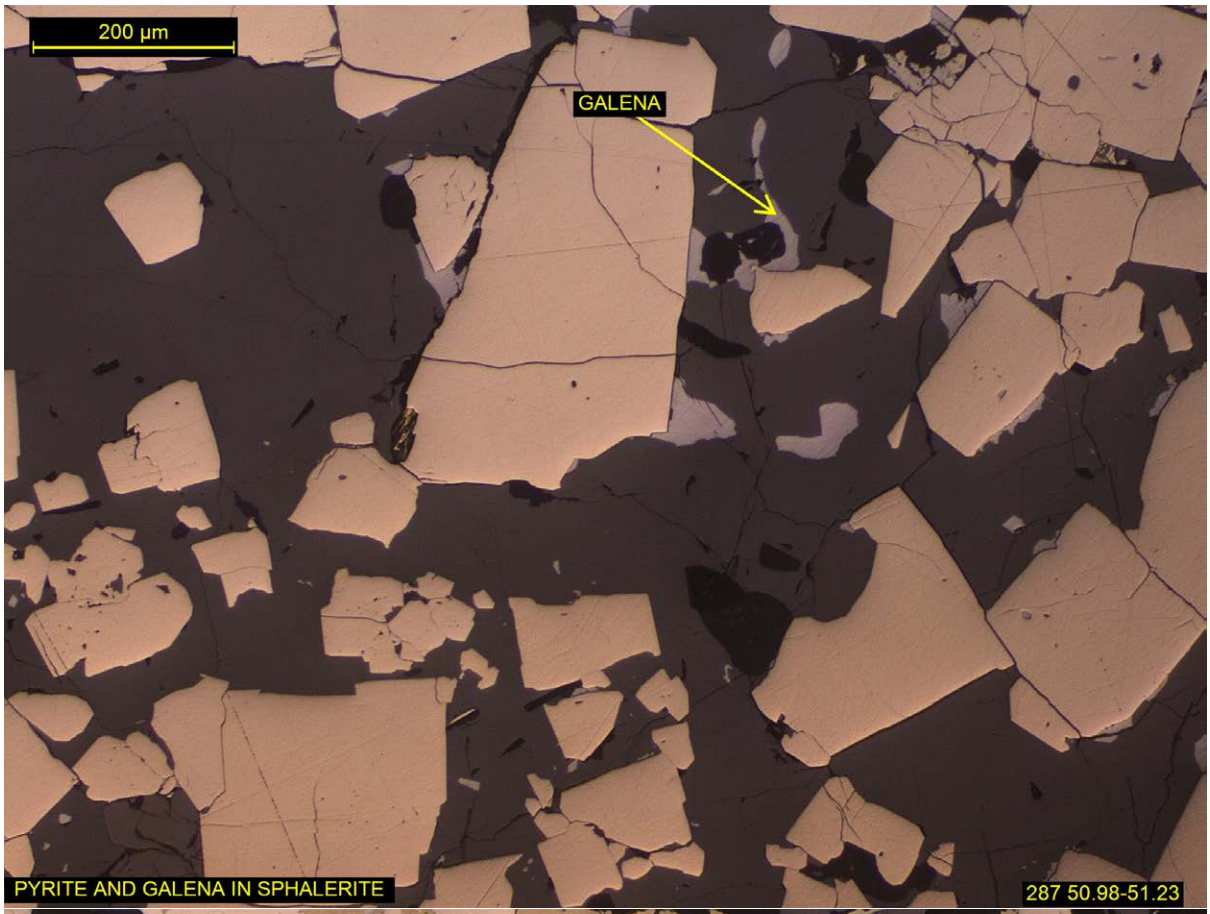
The ~9mm thick area at the base of the thin section, is irregular and complex, containing large aggregates of chlorite and occasional muscovite, with haphazard layering/aggregates of euhedral pyrite, zones of intergrowths of magnetite and sphalerite, and occasional part altered pyrrhotite (to marcasite). Chalcopyrite is frequently an interstitial matrix to the pyrite.

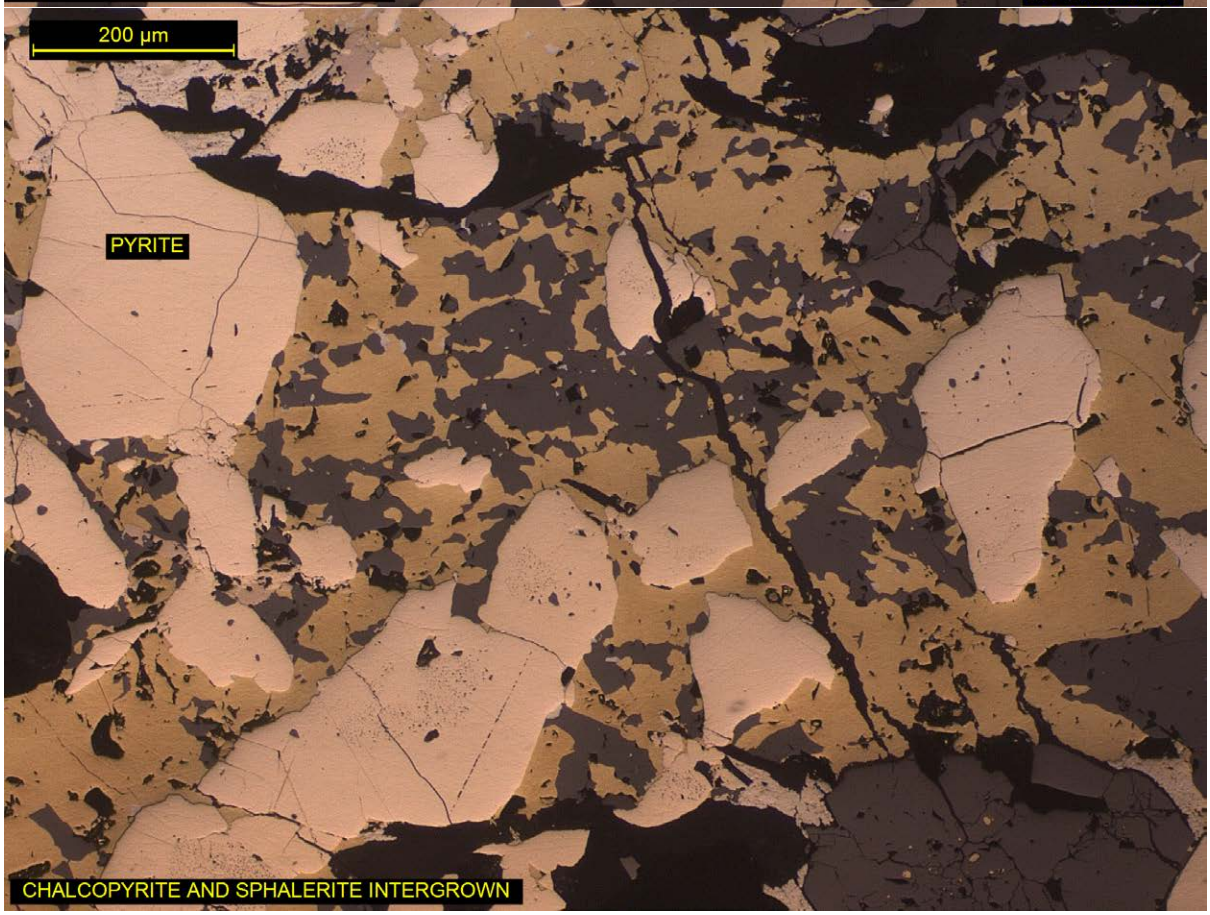
Galena is found randomly disseminated across the entire thin section, a trace component, found mainly as irregularly shaped to rectangular fine (microns to ~200 µm) inclusions in sphalerite, pyrite and subordinate chalcopyrite.

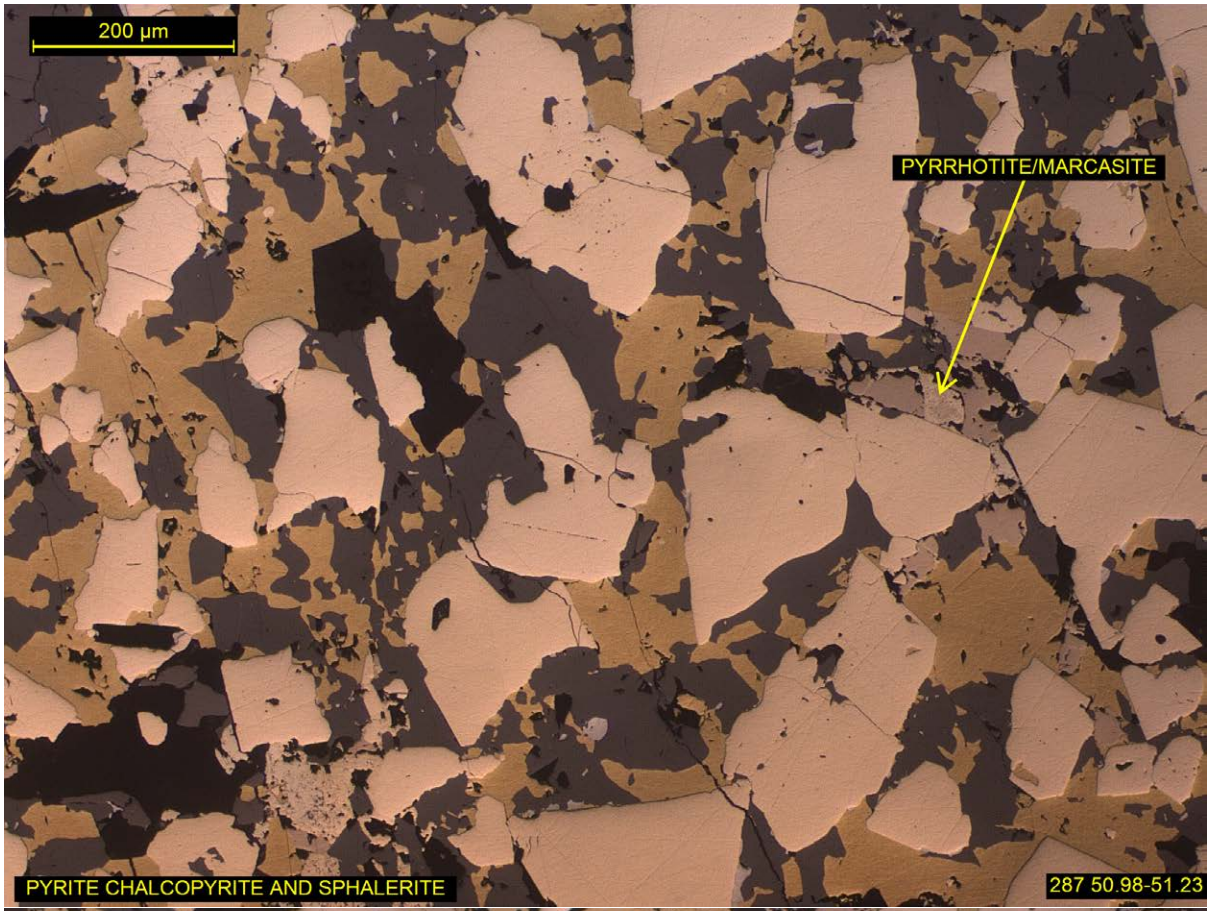


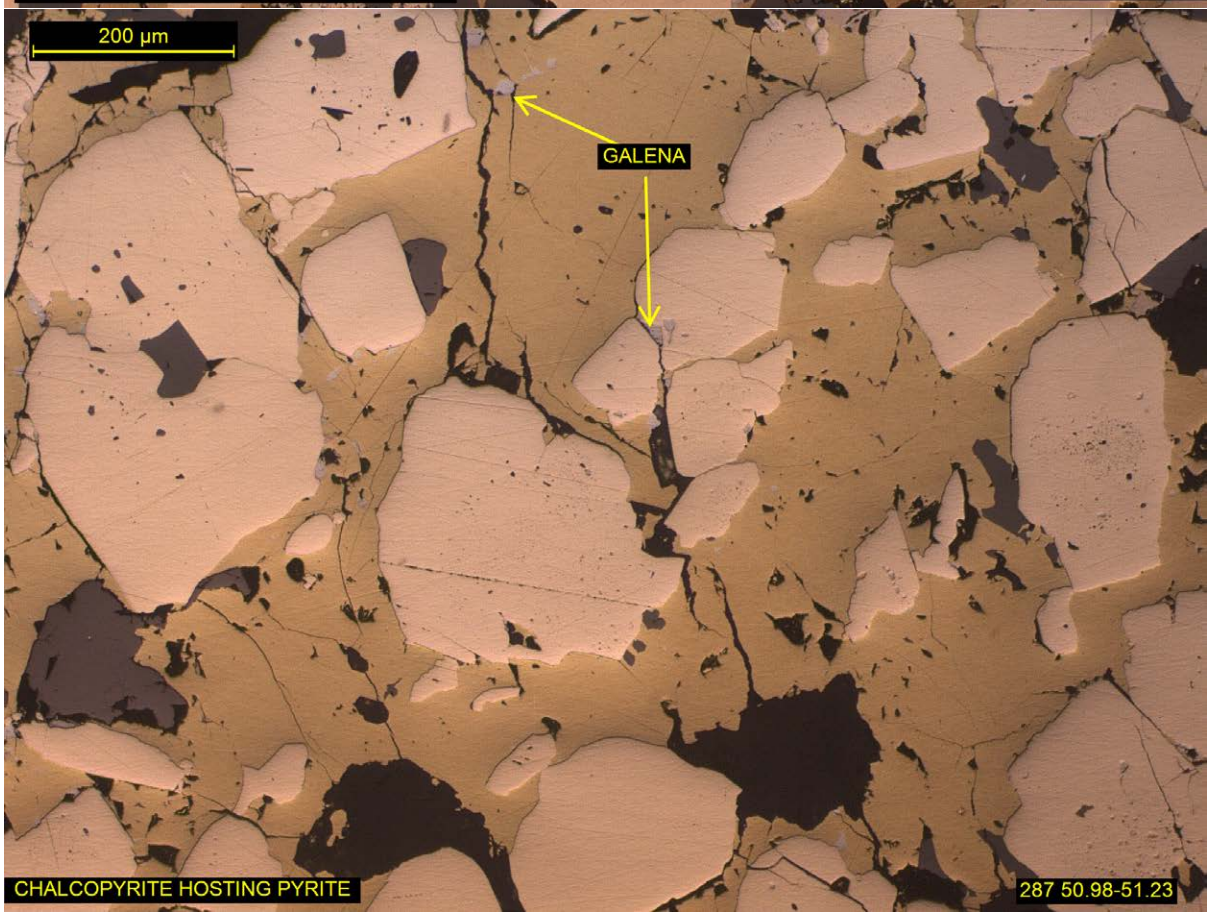

2 mm
MAGNETITE + SPHALERITE
CHALCOPYRITE
PYRITE
287 50.98-51.23

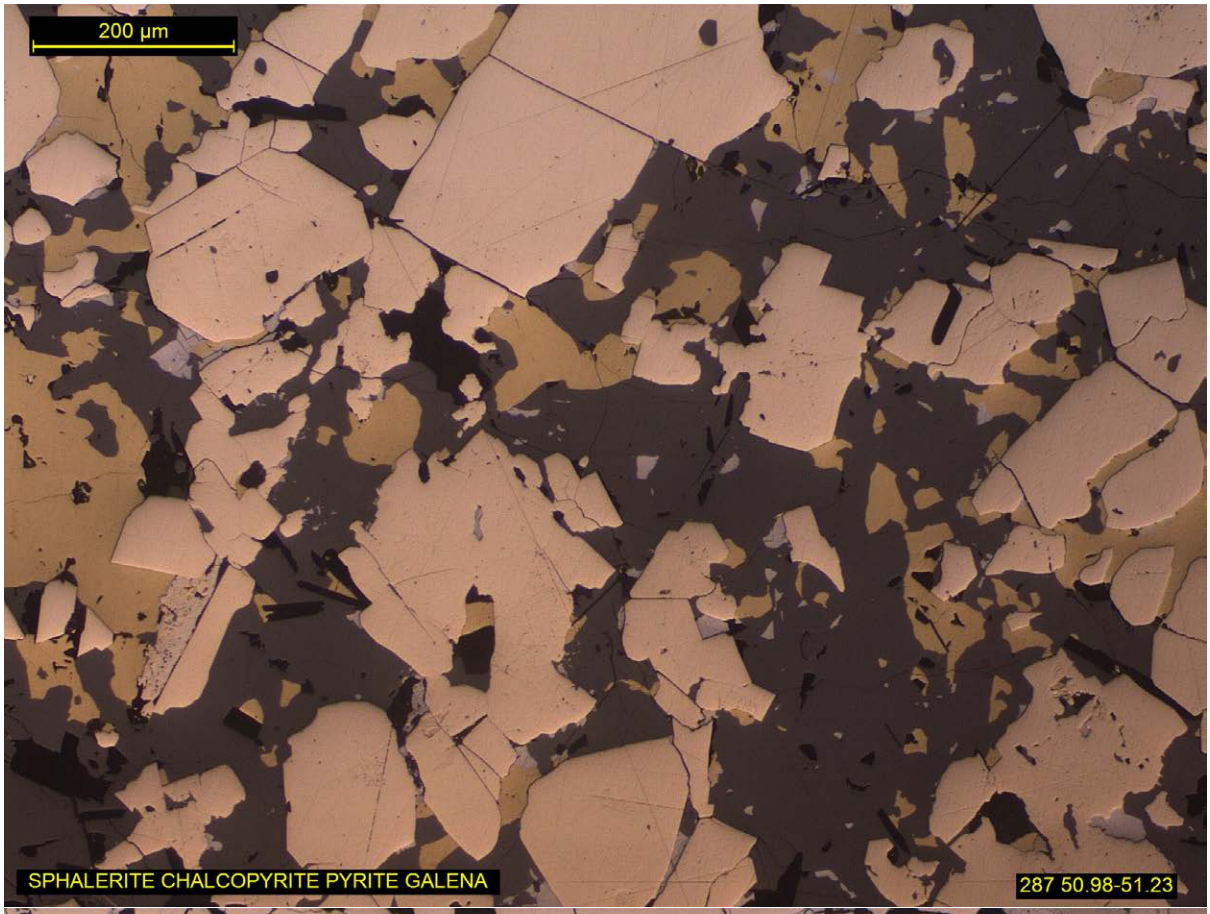

2 mm
CHALCOPYRITE AND PYRITE
MAGNETITE + SPHALERITE
CHLORITE
287 50.98-51.23

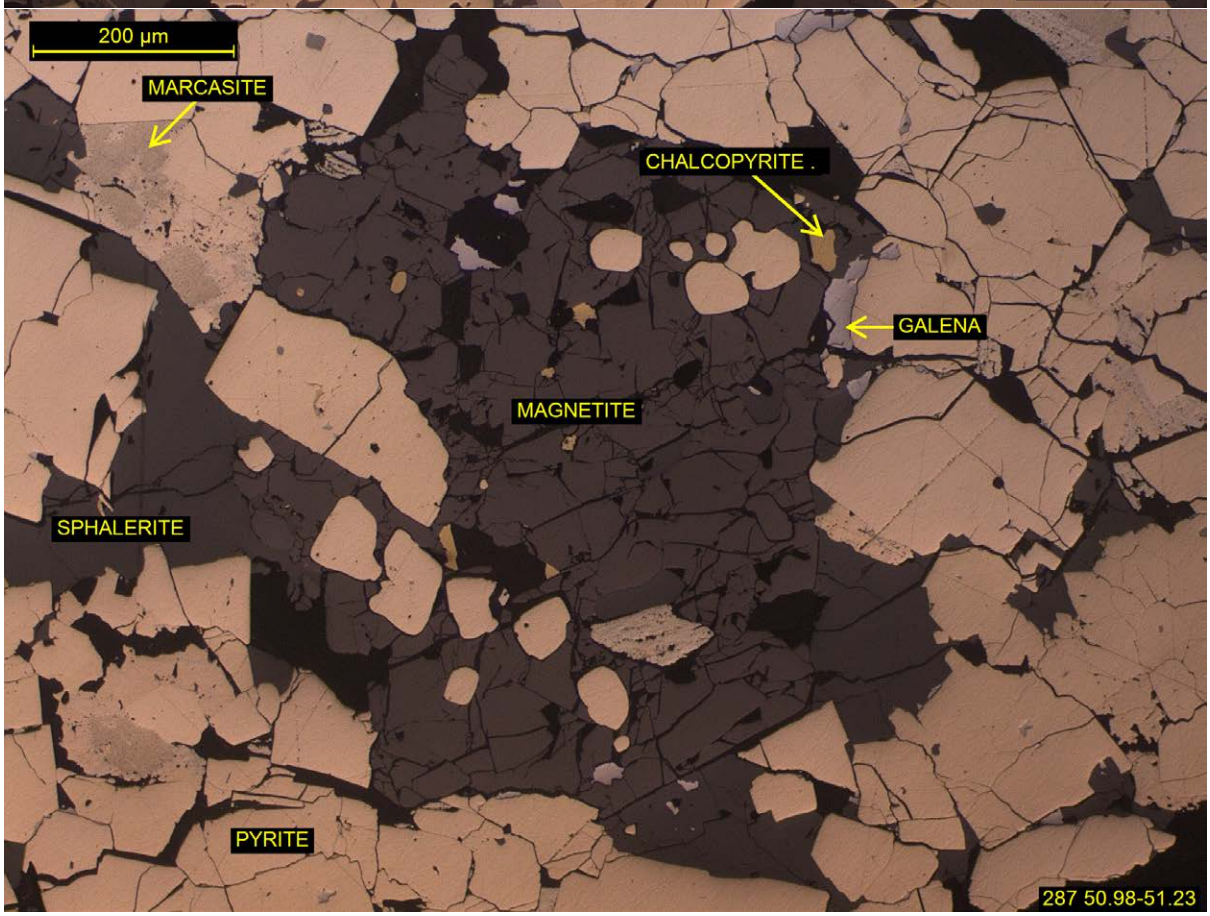

200 µm
GALENA
PYRITE AND GALENA IN SPHALERITE
287 50.98-51.23

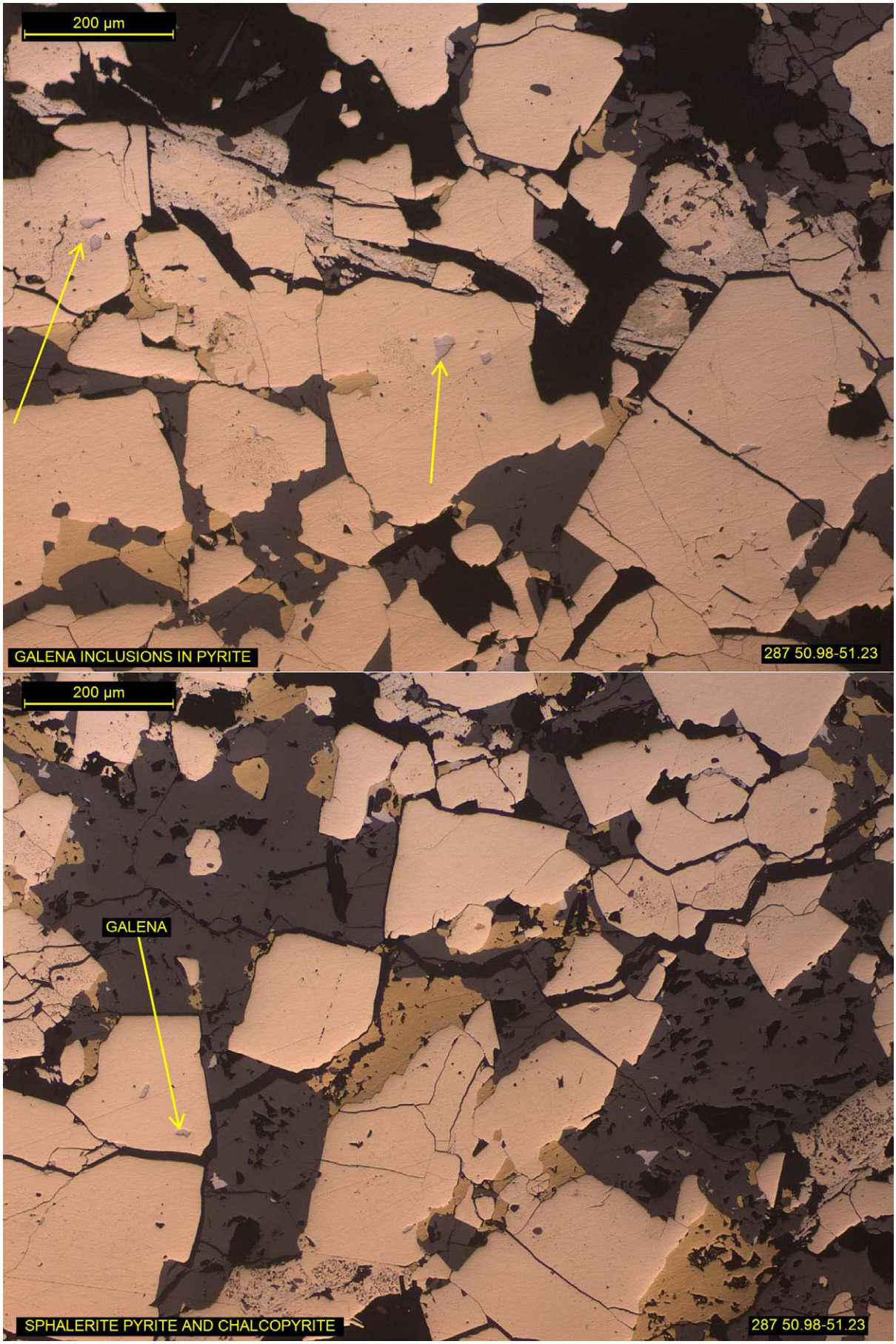

200 µm
PYRITE
CHALCOPYRITE AND SPHALERITE INTERGROWN

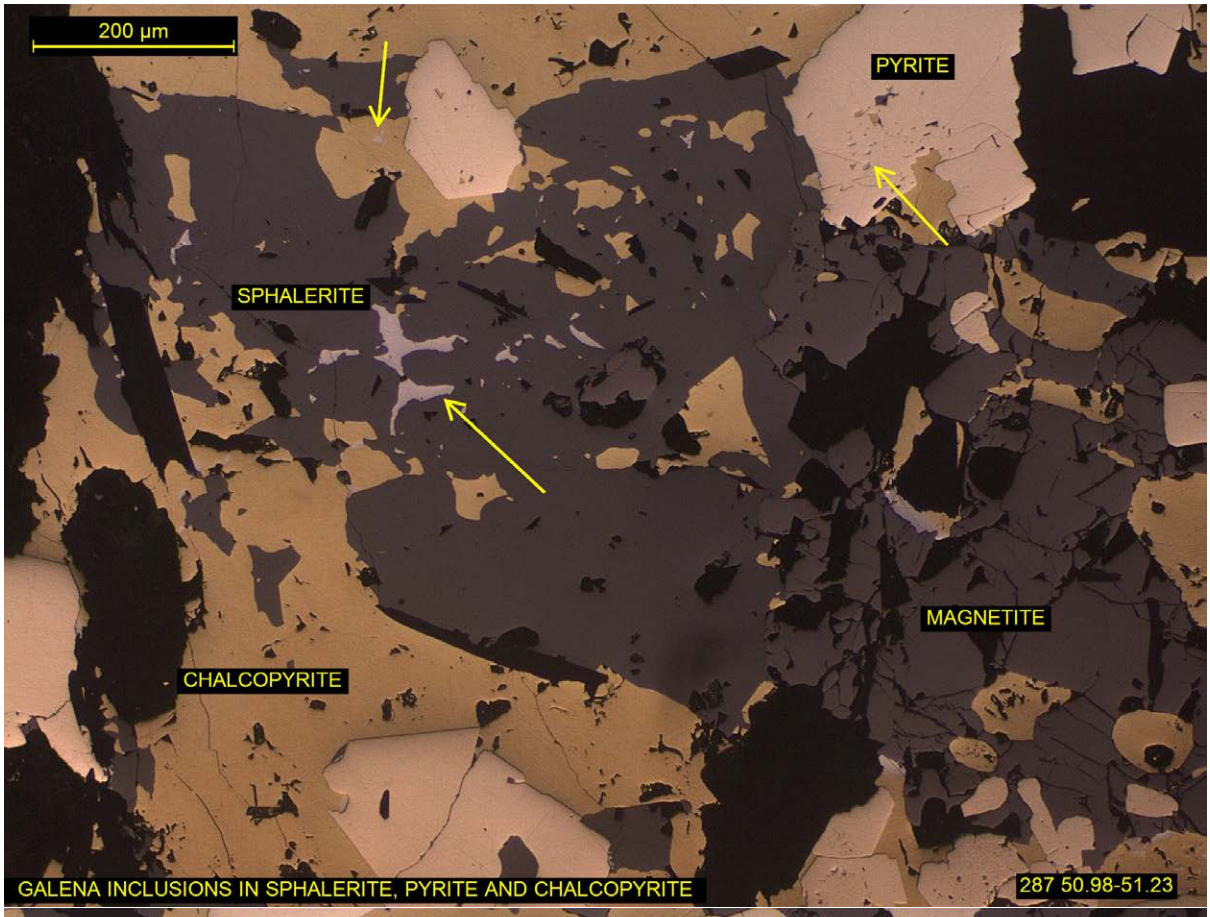

200 µm
PYRRHOTITE/MARCASITE
PYRITE CHALCOPYRITE AND SPHALERITE
287 50.98-51.23

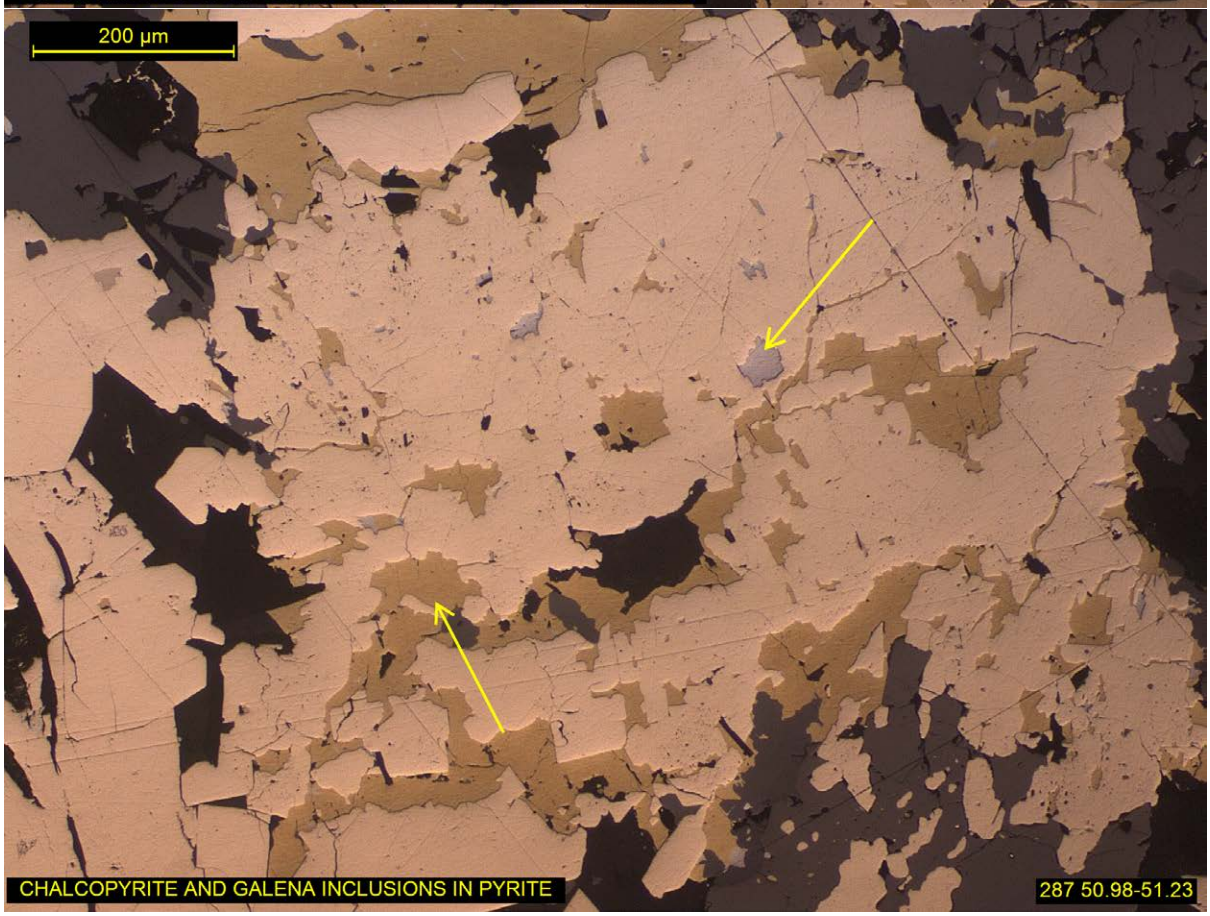

200 µm
GALENA
CHALCOPYRITE HOSTING PYRITE
287 50.98-51.23

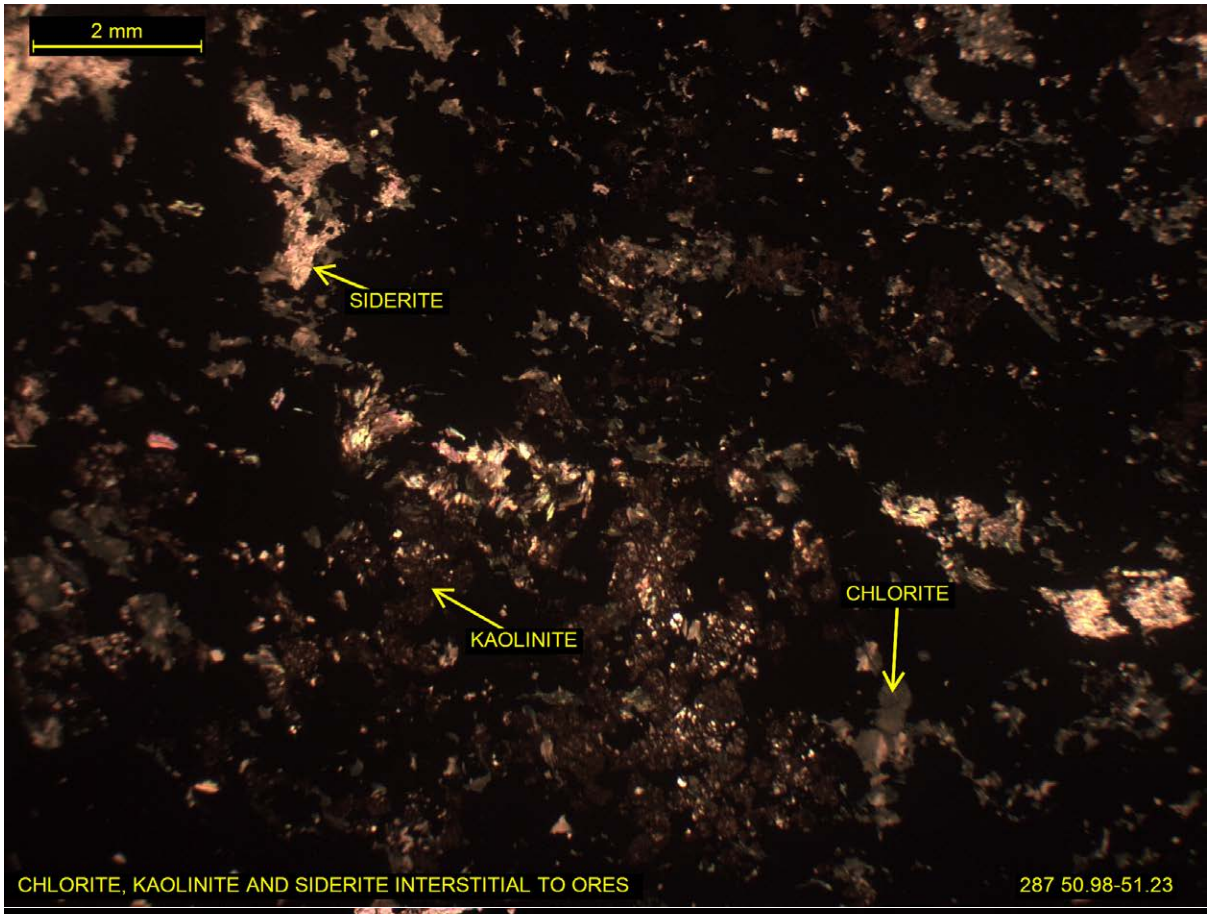

200 µm
SPHALERITE CHALCOPYRITE PYRITE GALENA
287 50.98-51.23

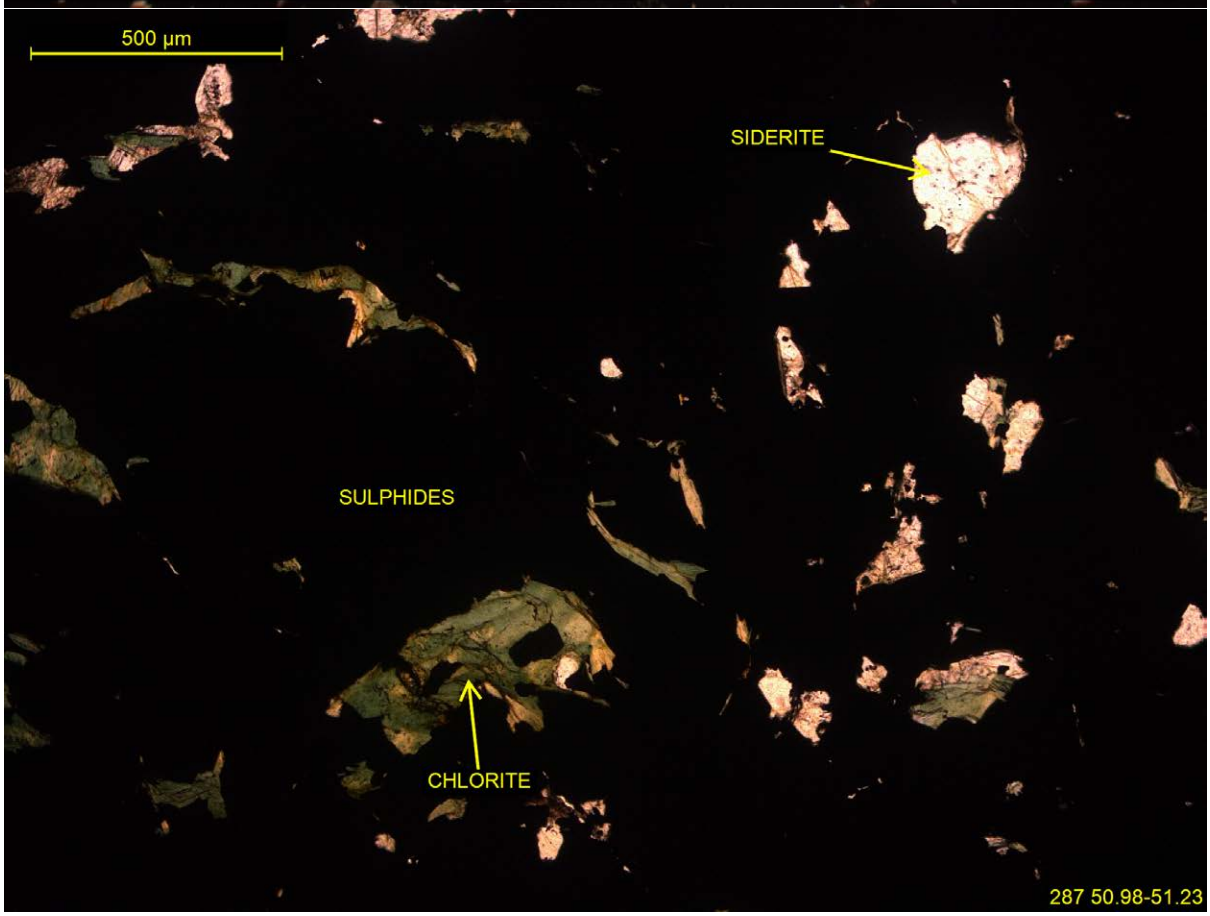

200 µm
MARCASITE
CHALCOPYRITE .
GALENA
MAGNETITE
SPHALERITE
PYRITE
287 50.98-51.23


200 µm
GALENA INCLUSIONS IN PYRITE
287 50.98-51.23
200 µm
GALENA
SPHALERITE PYRITE AND CHALCOPYRITE
287 50.98-51.23


200 µm
PYRITE
SPHALERITE
MAGNETITE
CHALCOPYRITE
GALENA INCLUSIONS IN SPHALERITE, PYRITE AND CHALCOPYRITE
287 50.98-51.23


200 µm
CHALCOPYRITE AND GALENA INCLUSIONS IN PYRITE
287 50.98-51.23


2 mm
SIDERITE
KAOLINITE
CHLORITE
CHLORITE, KAOLINITE AND SIDERITE INTERSTITIAL TO ORES
287 50.98-51.23


500 µm
SIDERITE
SULPHIDES
CHLORITE
287 50.98-51.23

SAMPLE K15-203 101.3-101.42

DRILL CORE

POLISHED THIN SECTION

GANGUE	**10-15%**
MUSCOVITE	50-60%
CHLORITE	20-30%
BIOTITE	10-15%
SIDERITE	3-7%
ALBITE MACROCRYSTS/PHYLLOSILICATE(S)	**15-20%**
ORES	**65%**
CHALCOPYRITE	70-80%
PYRITE	10-20%
PYRRHOTITE	5-10%
SPHALERITE	1-5%
MARCASITE	1-3%
GALENA	<1%
TETRAHEDRITE (SILVER BEARING)	<1%
NATIVE BISMUTH	<1%

CLASSIFIED AS A SEMI-MASSIVE MICA-CHLORITE CHALCOPYRITE ORE WITH DISSEMINATED PYRITE, SPHALERITE AND ALTERED ALBITE MACROCRYSTS

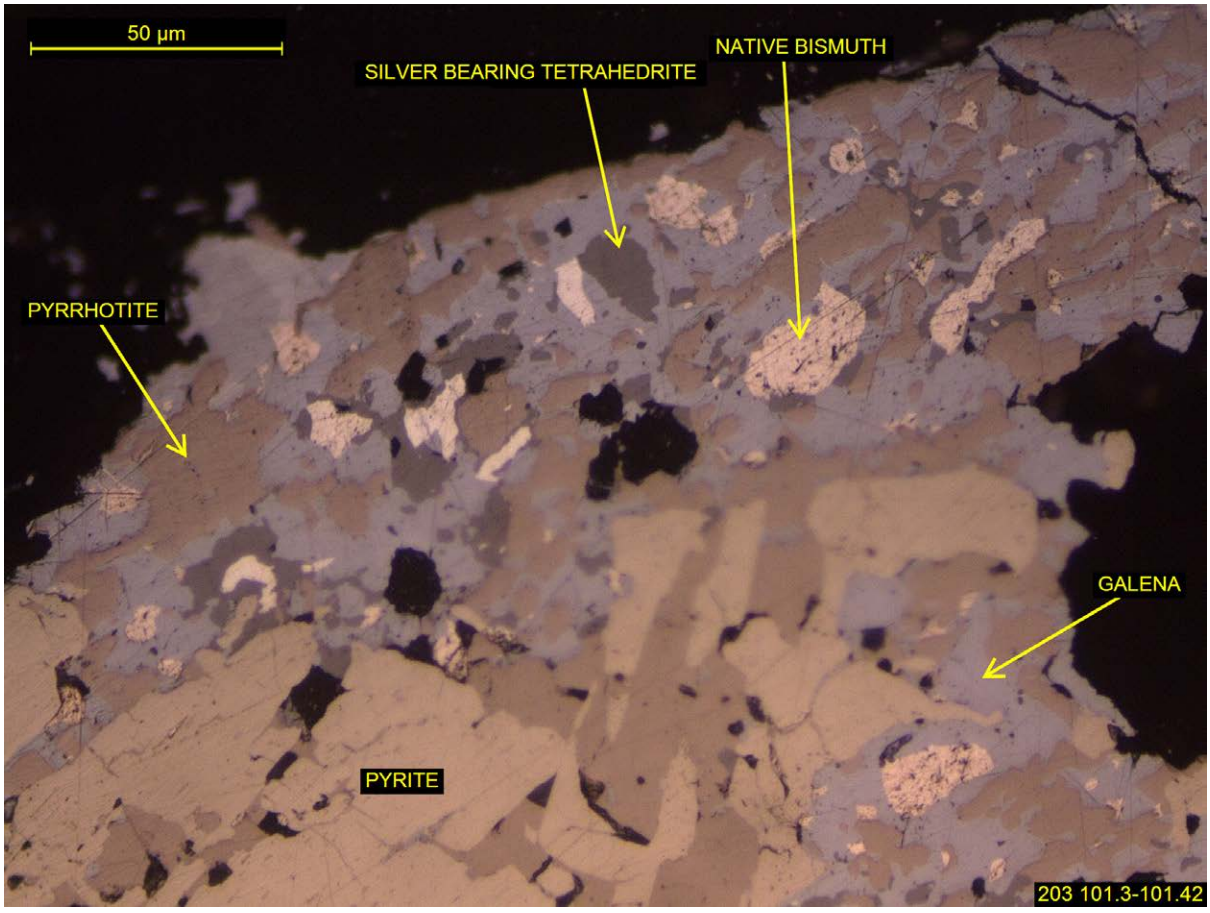
A sample that is characterised predominantly by a semi-massive chalcopyrite framework, containing significant disseminated relatively coarse (~1 to ~2mm) pyrite, subordinate pyrrhotite and scarce sphalerite. The semi-massive chalcopyrite is host to numerous partial to fully altered albite macrocrysts (~1 to ~7 mm), replaced by unidentified phyllosilicates, and secondly quite a number of moderately oriented aggregates (up to ~10mm) of muscovite, lesser biotite and chlorite (~50 to ~600 µm flakes). In addition, there are occasional occurrences of siderite aggregates found in semi-massive chalcopyrite (up to ~10 mm).

Chalcopyrite primarily forms a dominant coalesced matrix, however is occasionally present as fine (~50 to ~300 µm) disseminated irregularly shaped grains within gangue. Discrete subhedral to euhedral pyrites are disseminated regularly within the chalcopyrite, typical size range ~200 µm to ~1.5 mm, occasionally coarser aggregates. There are several zones (up to ~1 mm diameter) of massive chalcopyrite peppered with fine to very fine (~10 to ~200 µm) irregularly shaped and euhedral pyrite grains. Additional textures include pyrite aggregates that have undergone partial replacement by chalcopyrite, leaving a relic subordinate pyrite fine intricate network in dominant chalcopyrite matrix. Pyrite is occasionally moderately to significantly altered to marcasite (large zones up to ~1.5 mm), and rare relic radial pyrite growth textures observed.

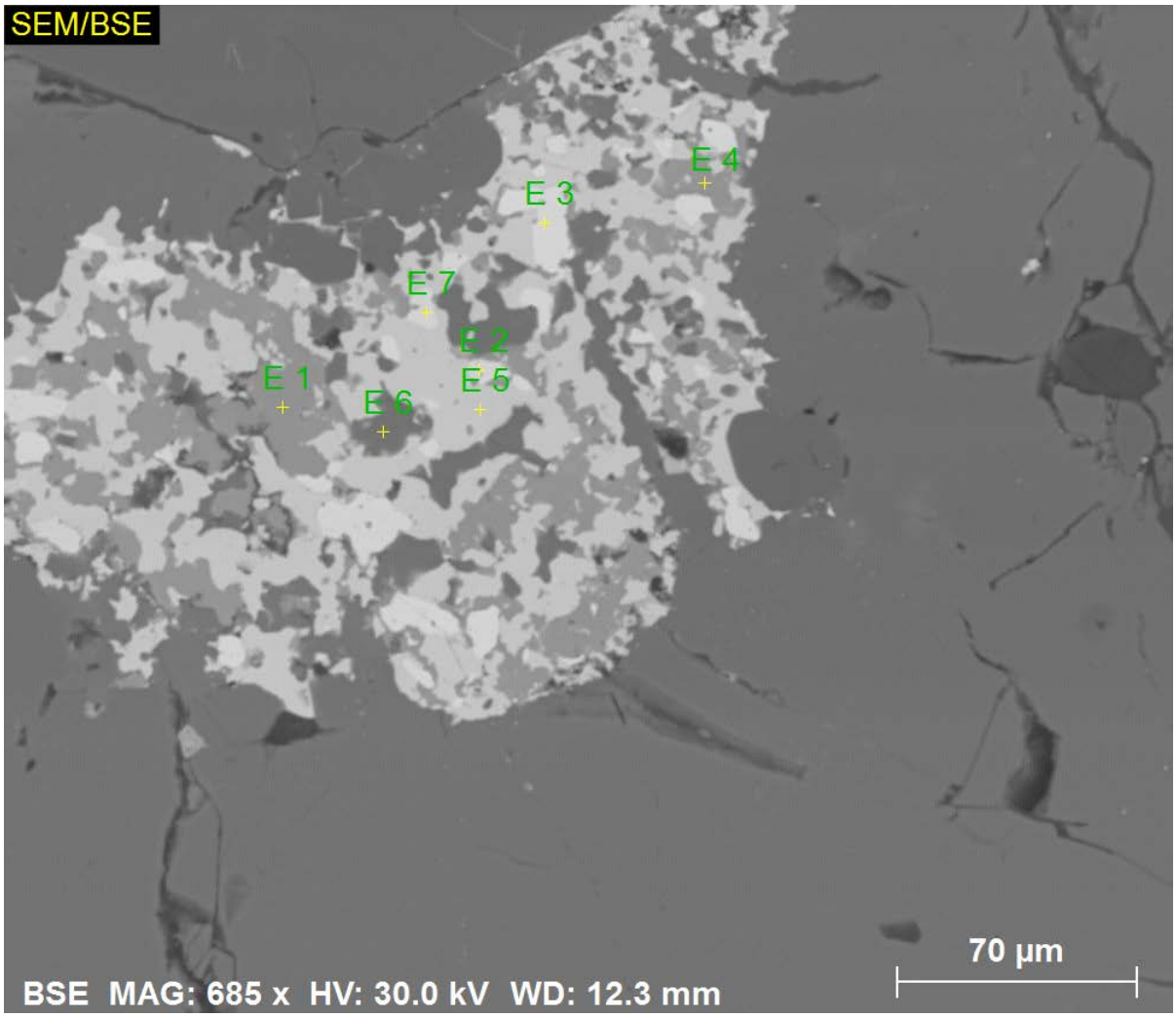
Pyrrhotite (magnetic) aggregates are disseminated throughout the chalcopyrite, generally as sub-round to rectangular anhedral/subhedral aggregates (~100 to ~800 µm), frequently associated with pyrite, and intermittently incipiently altered to marcasite. In addition it occasionally forms long rims (up to ~4 mm in length) along chalcopyrite/gangue boundaries.

Sphalerite occurs sporadically across the sample, with a size range of ~40 µm to ~3 mm. It frequently is associated with pyrite, forming complex composites with chalcopyrite and pyrite. Fine (sub 200 µm) sphalerite inclusions in chalcopyrite are present, and it also occurs in a large mass (~3mm), that is host to subordinate pyrite and chalcopyrite grains.

Galena is a trace component that is found fairly often in zones (up to ~300 µm), that are complex vermicular intergrowths with pyrrhotite, tetrahedrite and native bismuth. SEM analyses indicate tetrahedrite is silver bearing, and galena is selenium bearing. Galena also occurs as fine grains (sub 120 µm, rarely up to ~400 µm) that rim pyrite, and as inclusions in sphalerite and pyrite.

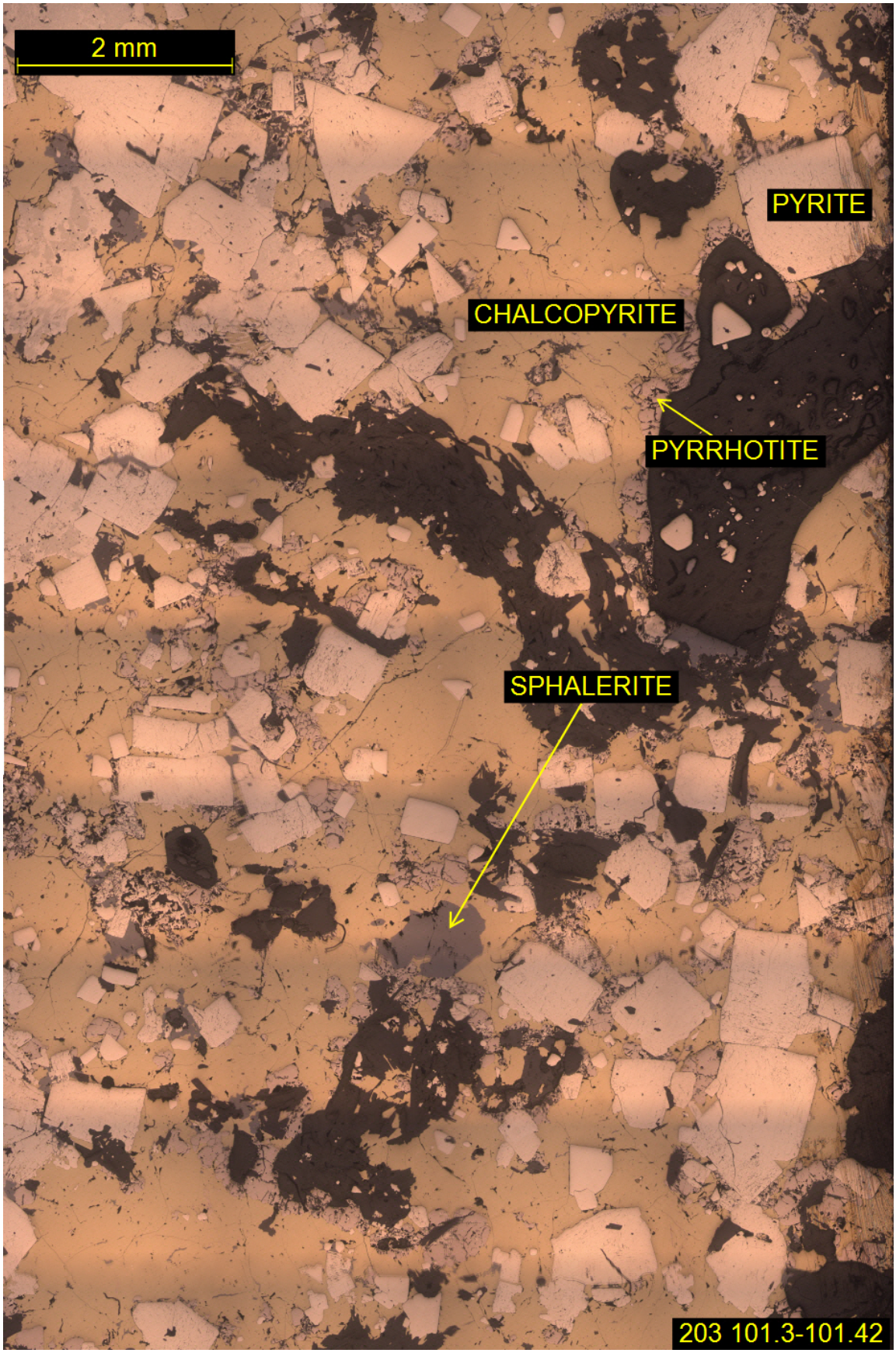


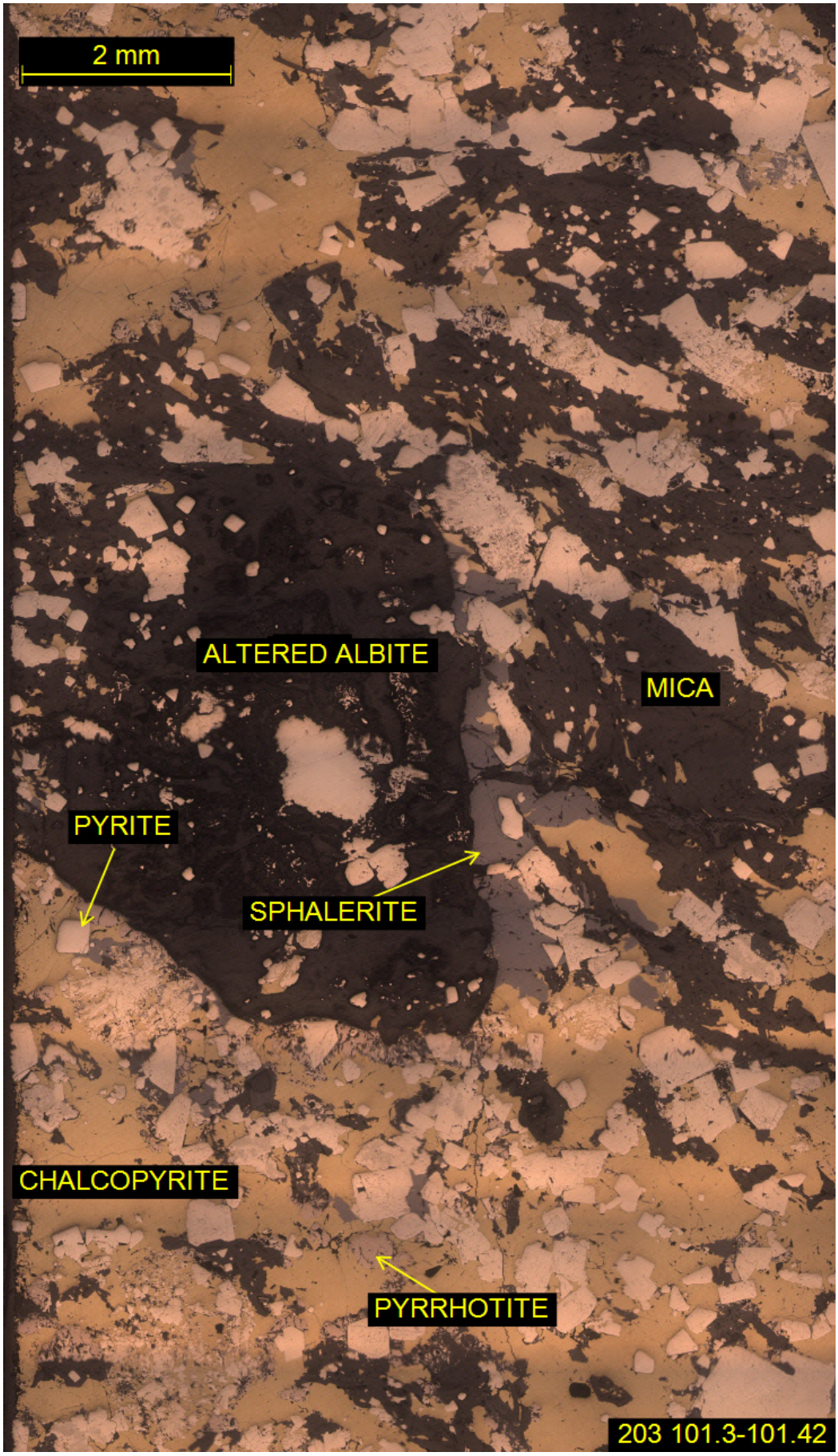
SEM/EDS ANALYSES

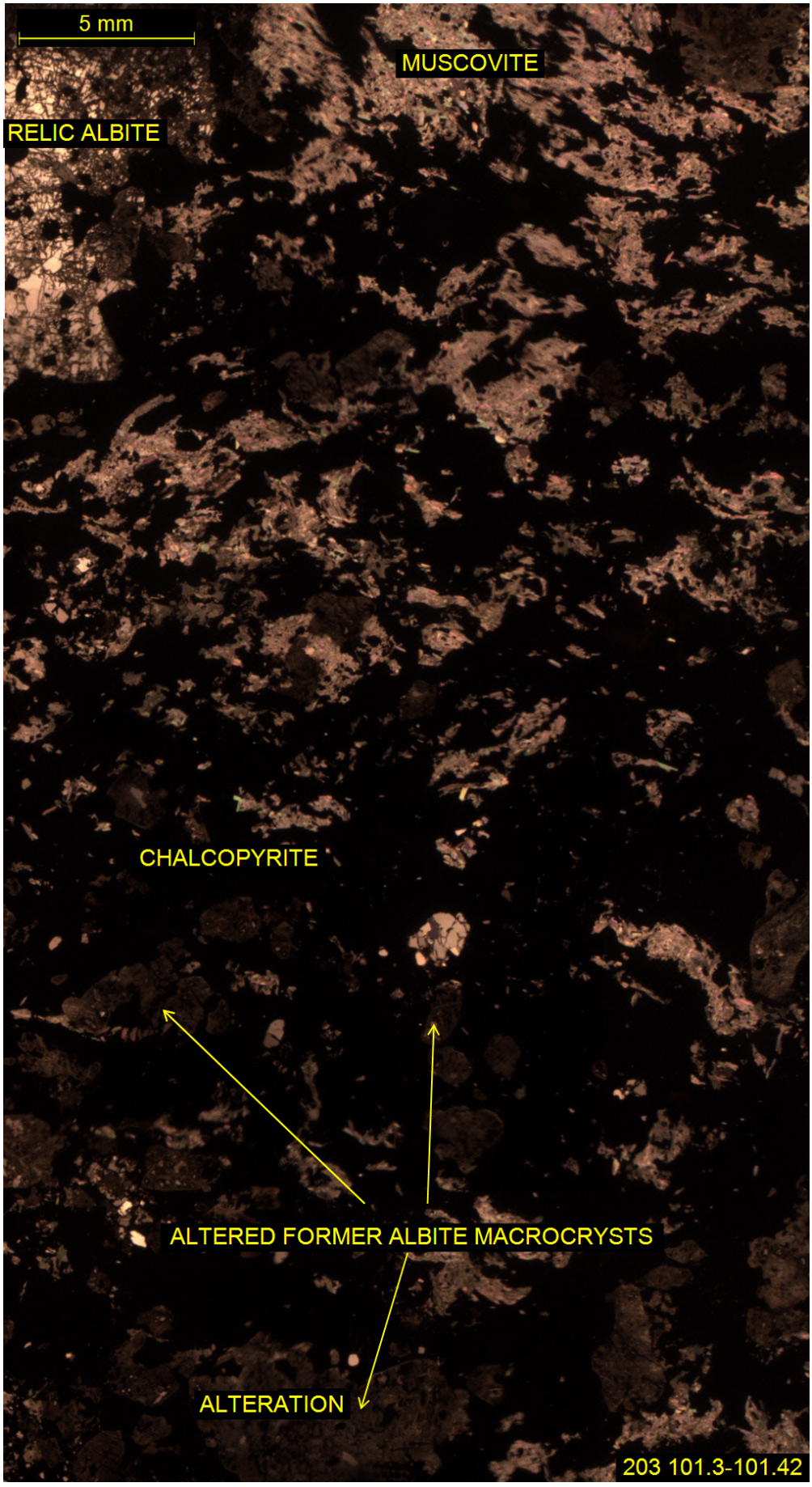


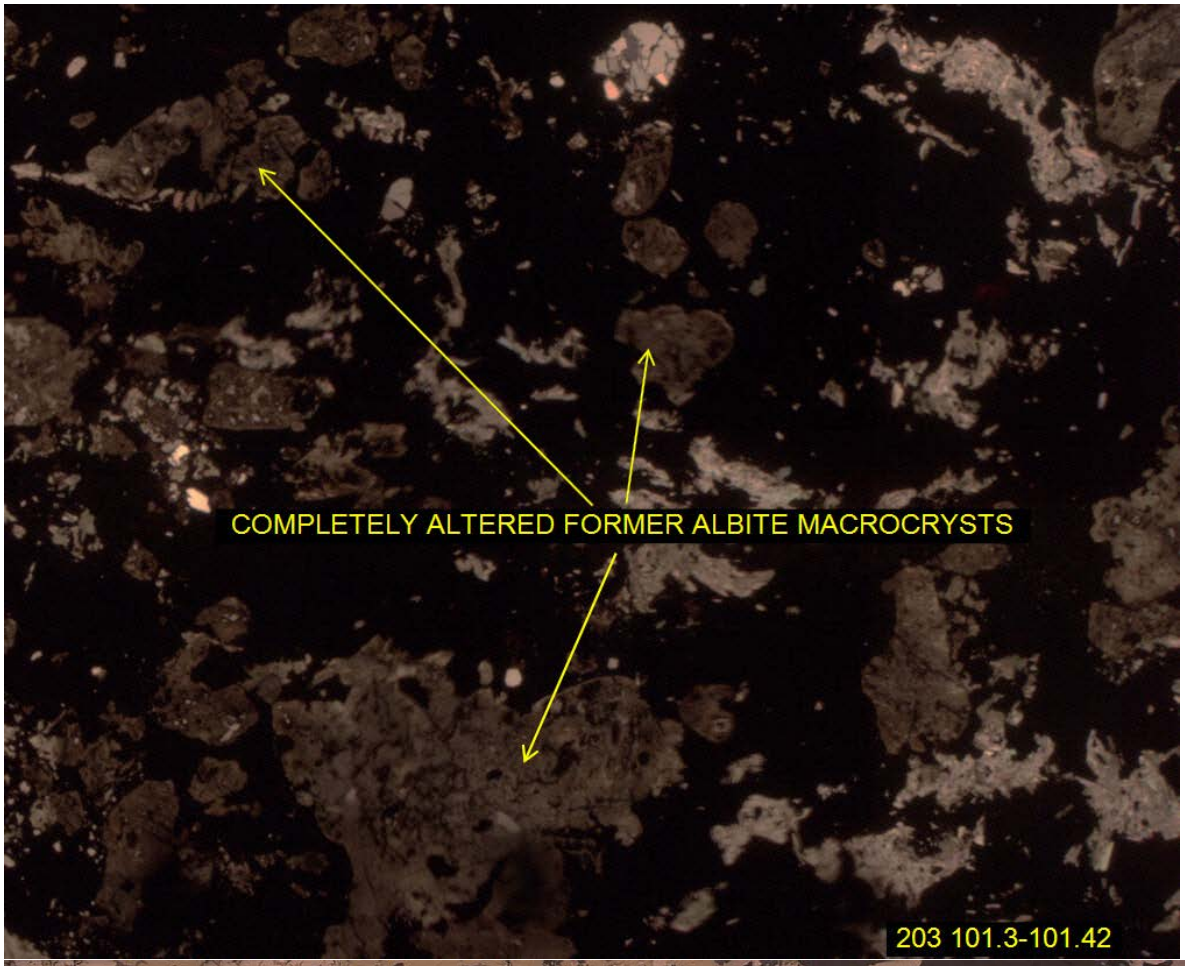
	S	Fe	Cu	Se	Ag	Sb	Pb	Bi	
E 1	21.7	9.1	23.6		19.7	25.9			TETRAHEDRITE
E 2								100	BISMUTH
E 3								100	BISMUTH
E 4	24.9	9.3	19.4		20.4	26.0			TETRAHEDRITE
E 5	6.7			9.3			84		GALENA
E 6	37	63							FE SULPHIDE
E 7	31.1	68.9							FE SULPHIDE

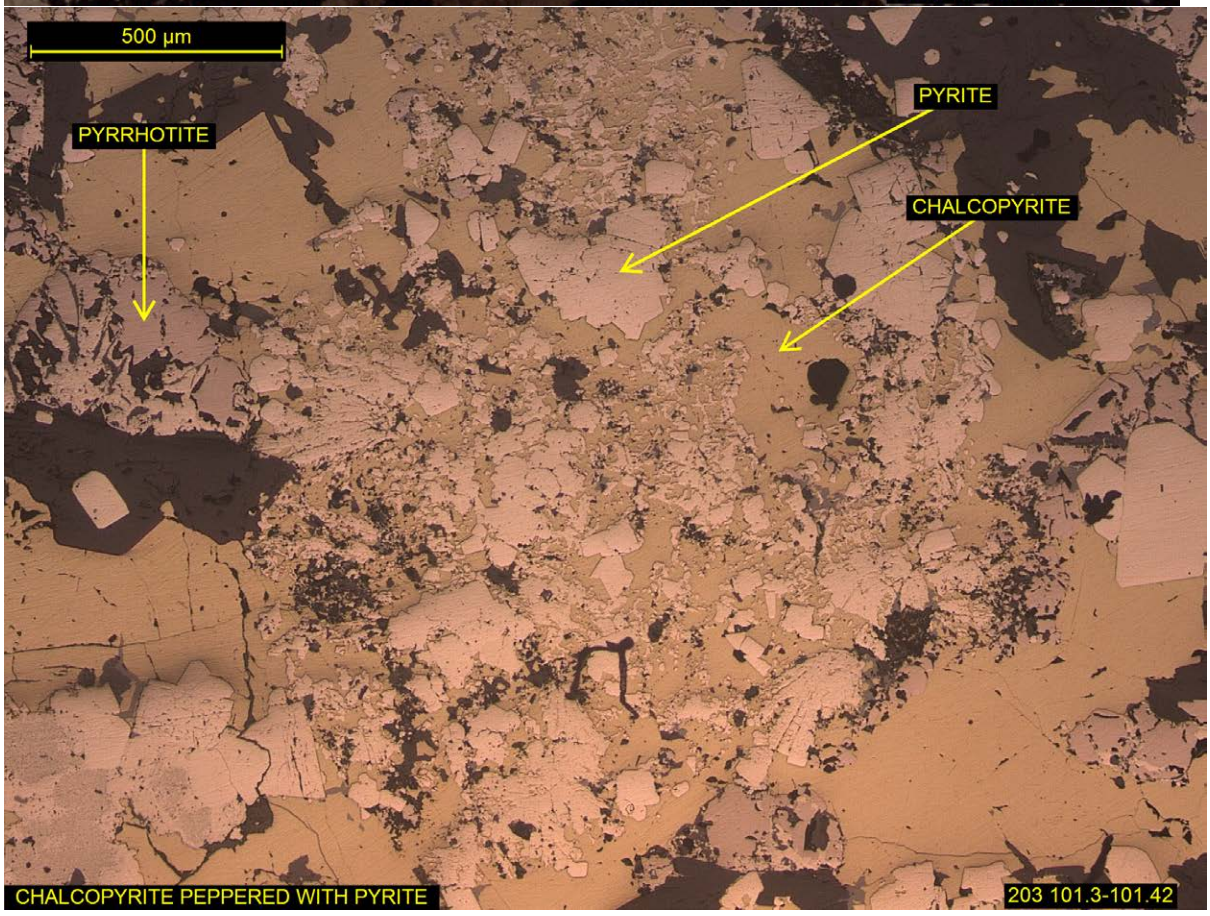
Note. Values are in weight percent.

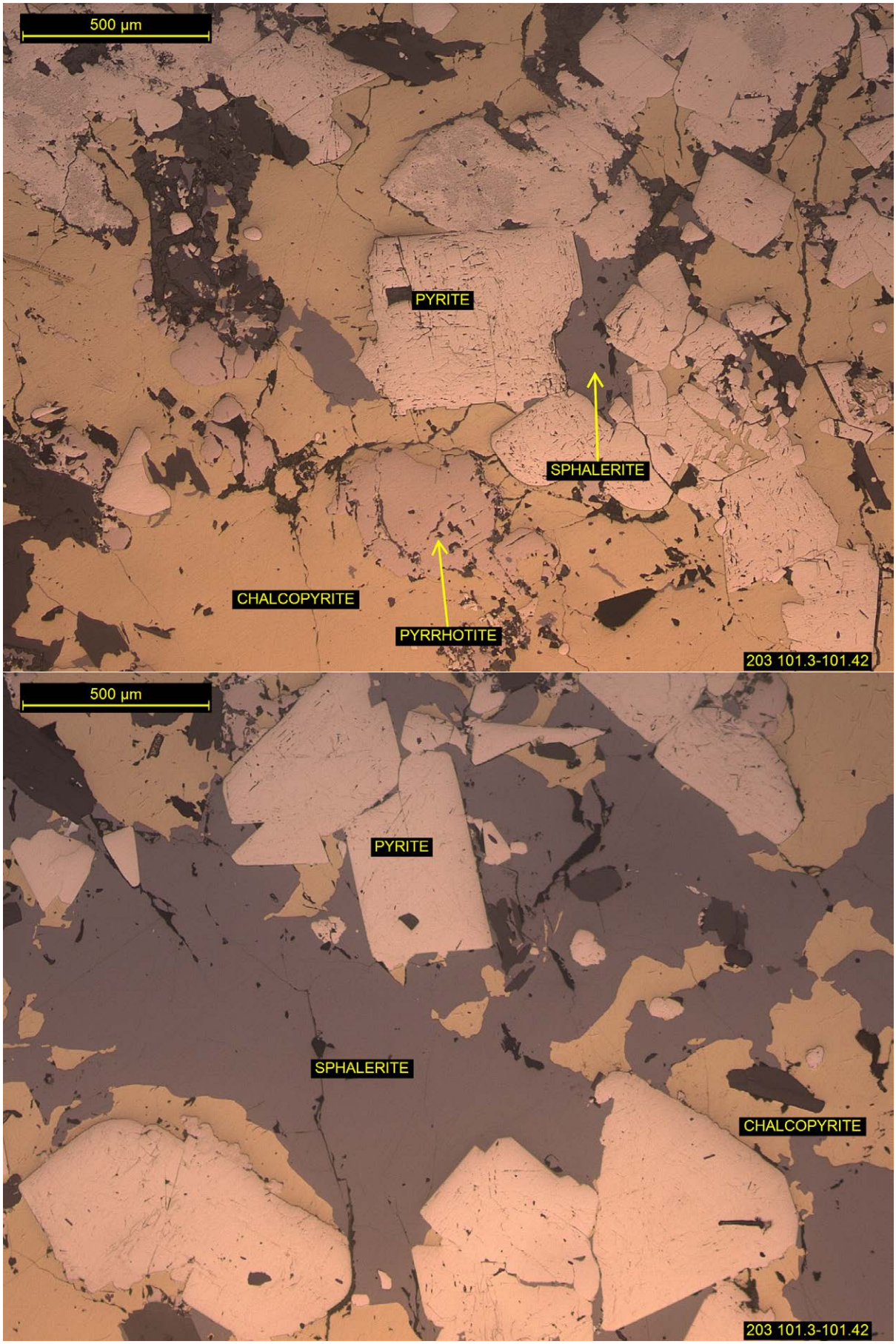

2 mm
PYRITE
CHALCOPYRITE
PYRRHOTITE
SPHALERITE
203 101.3-101.42

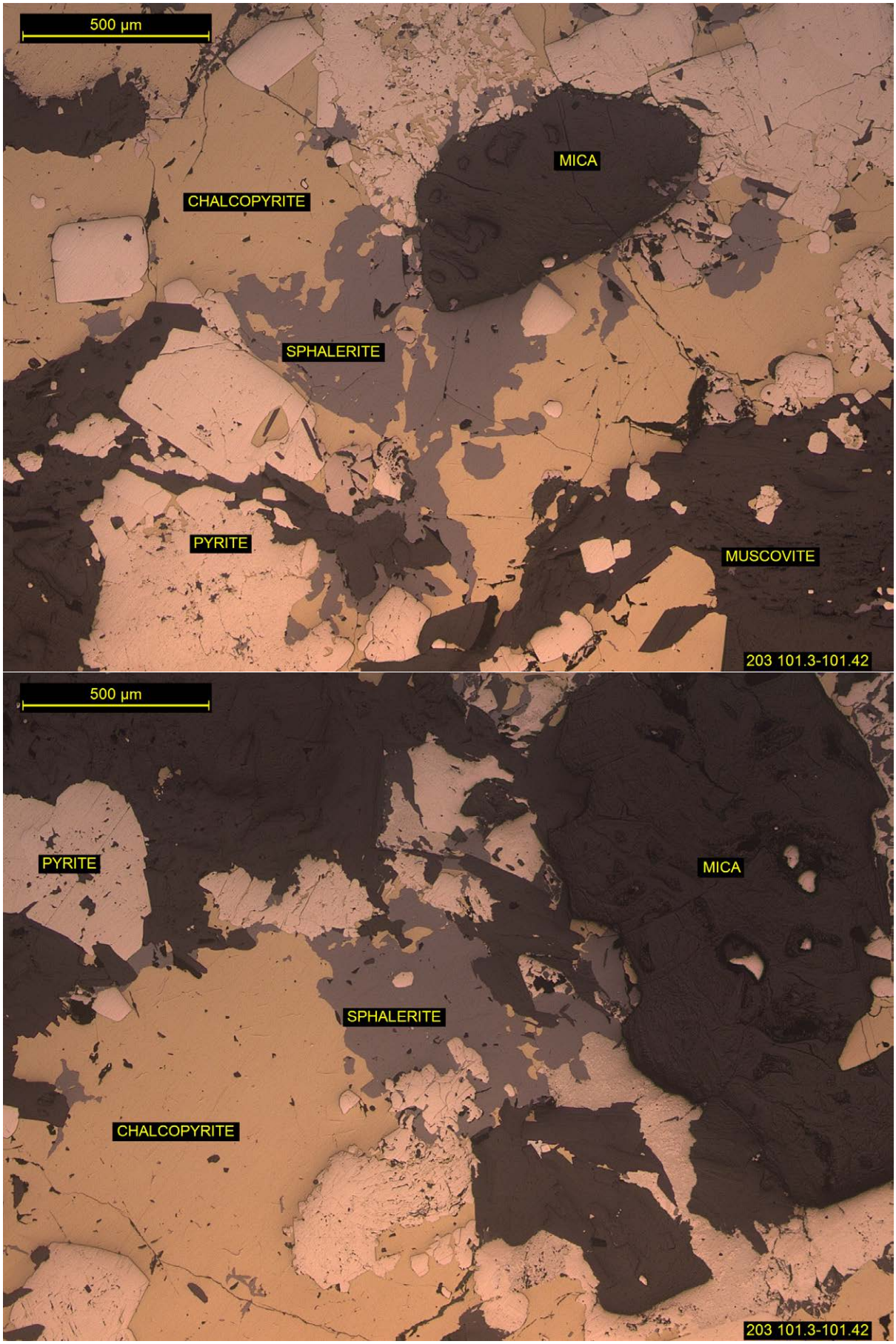

2 mm
ALTERED ALBITE
MICA
PYRITE
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
203 101.3-101.42

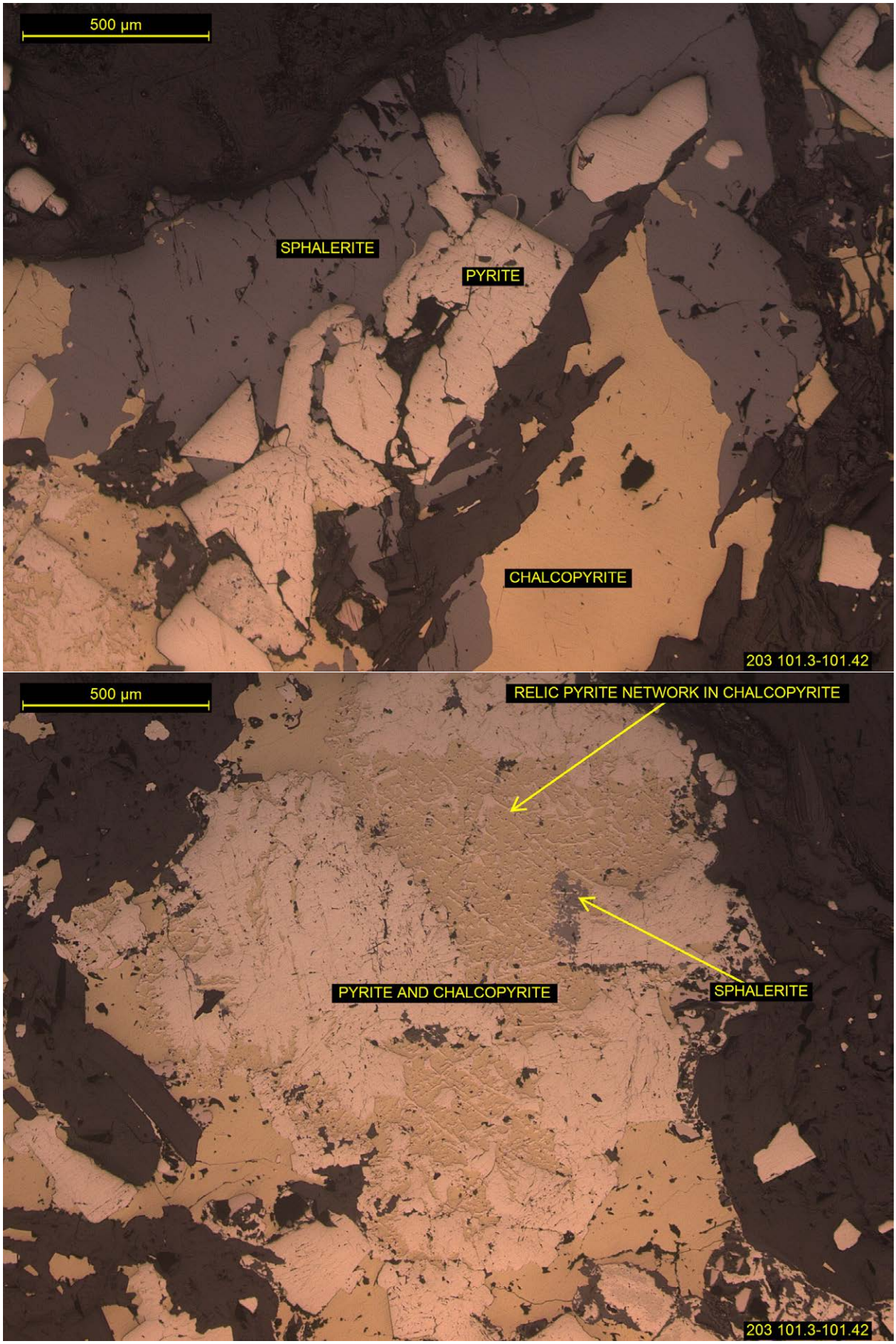

5 mm
MUSCOVITE
RELIC ALBITE
CHALCOPYRITE
ALTERED FORMER ALBITE MACROCRYSTS
ALTERATION
203 101.3-101.42

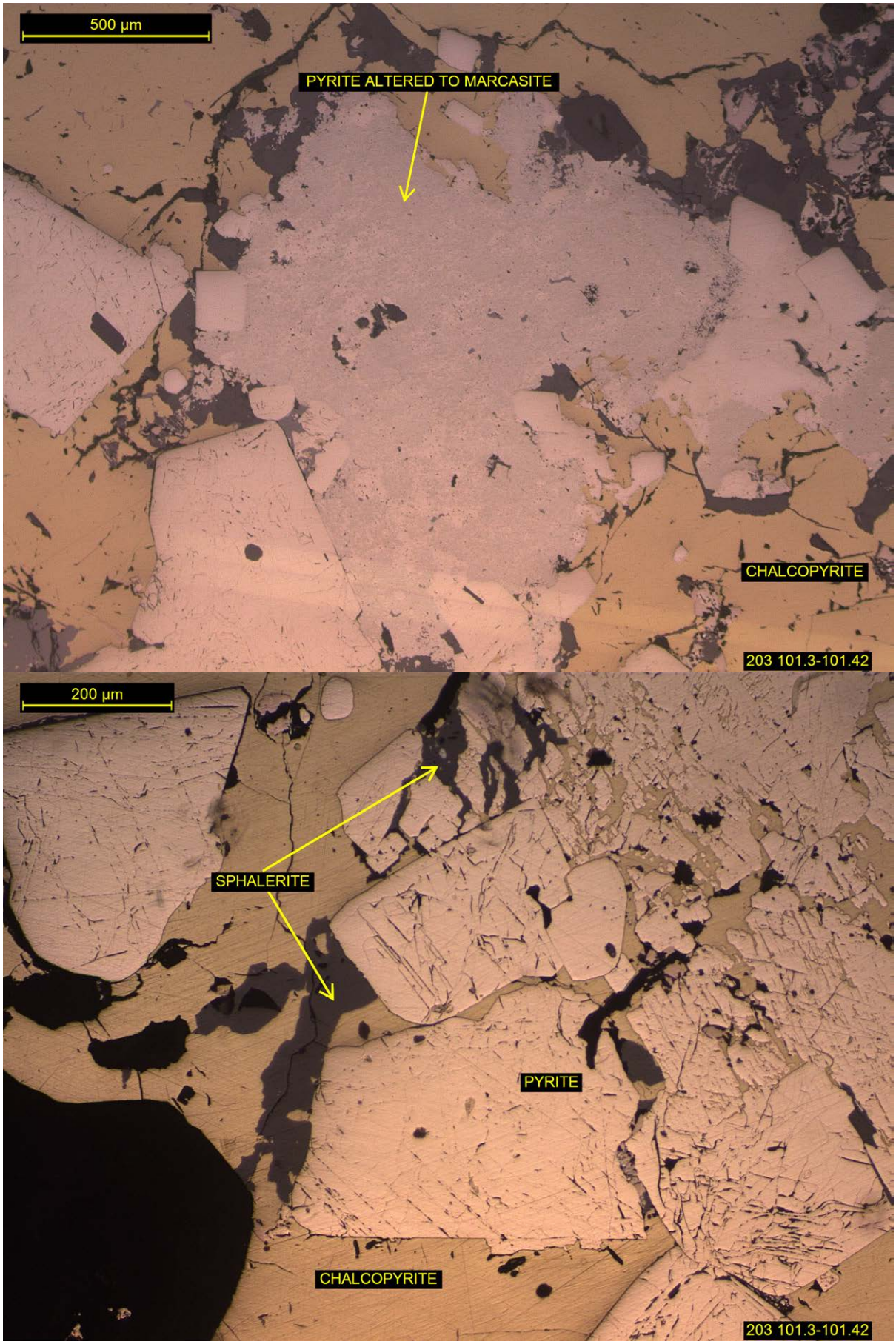

COMPLETELY ALTERED FORMER ALBITE MACROCRYSTS
203 101.3-101.42

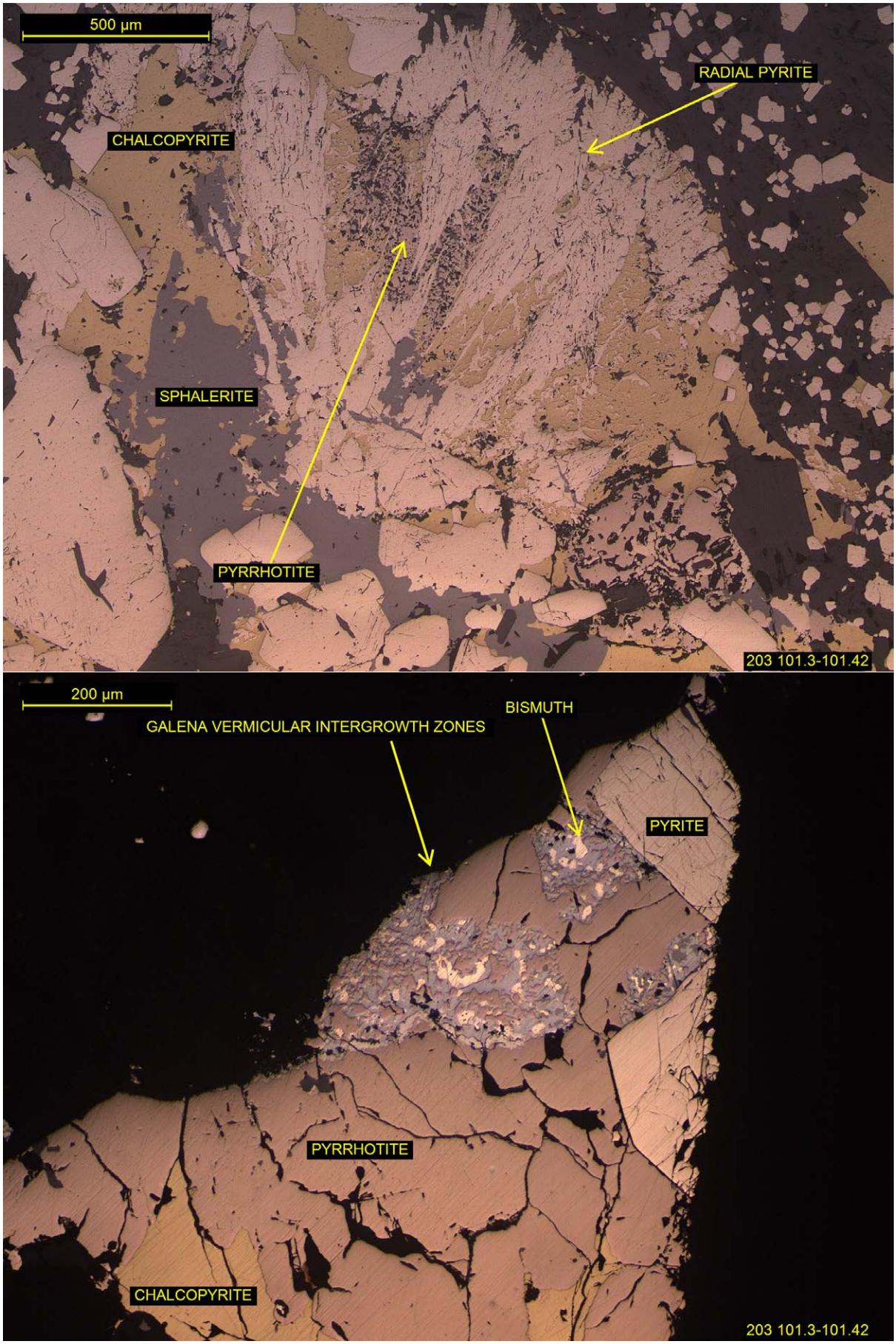

500 µm
PYRRHOTITE
PYRITE
CHALCOPYRITE
CHALCOPYRITE PEPPERED WITH PYRITE
203 101.3-101.42

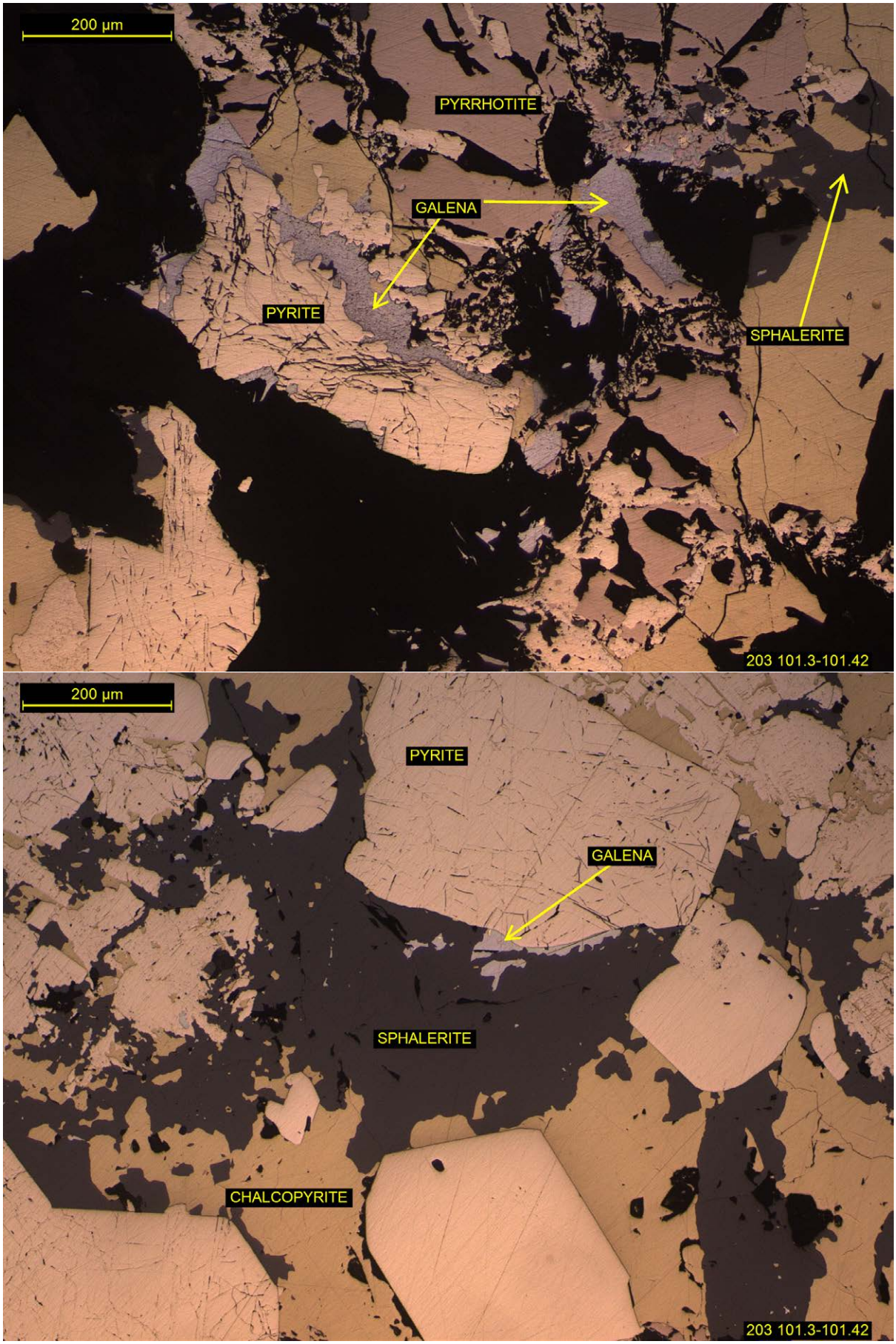

500 µm
PYRITE
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
203 101.3-101.42
500 µm
PYRITE
SPHALERITE
CHALCOPYRITE
203 101.3-101.42

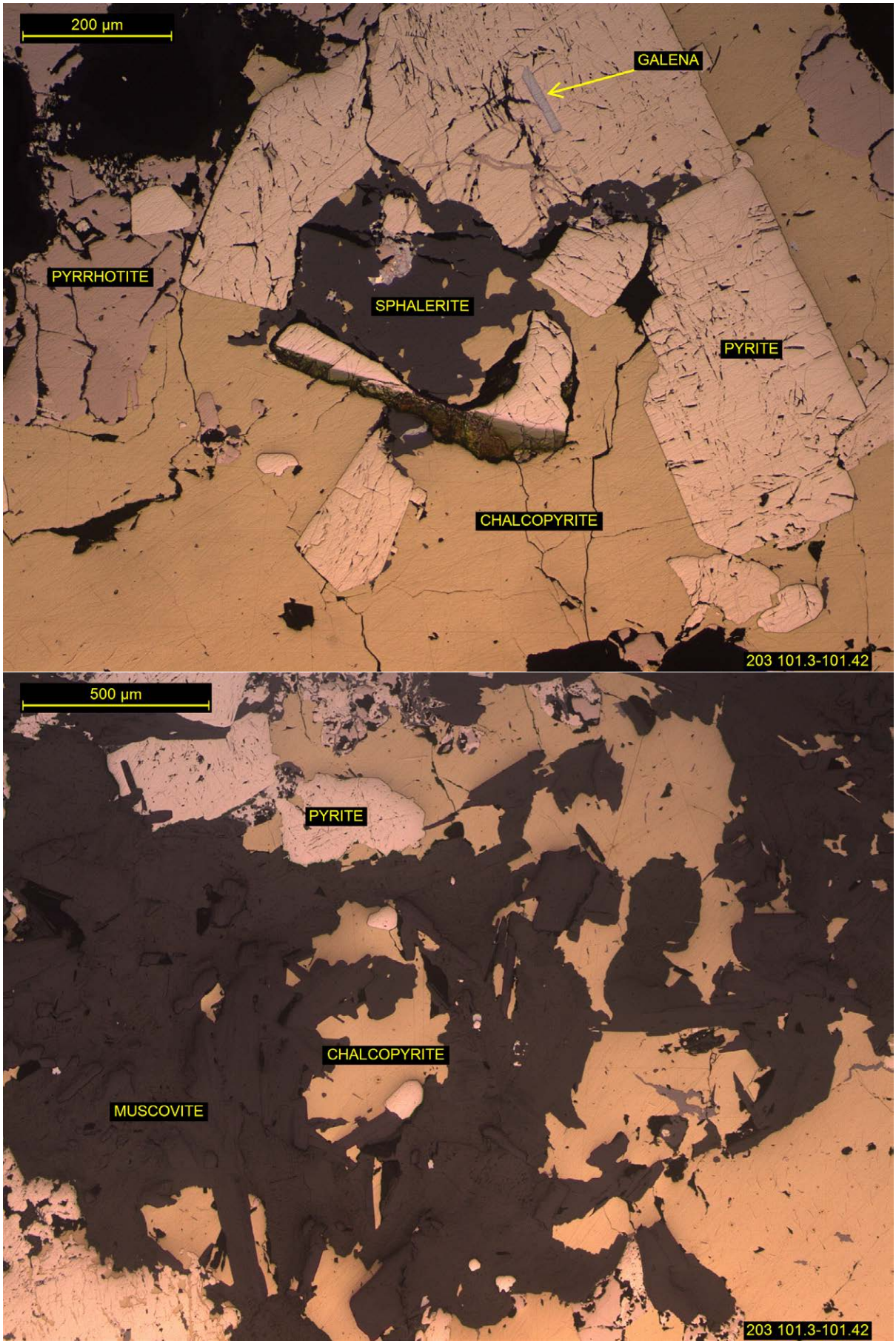

500 µm
MICA
CHALCOPYRITE
SPHALERITE
PYRITE
MUSCOVITE
203 101.3-101.42
500 µm
PYRITE
MICA
SPHALERITE
CHALCOPYRITE
203 101.3-101.42

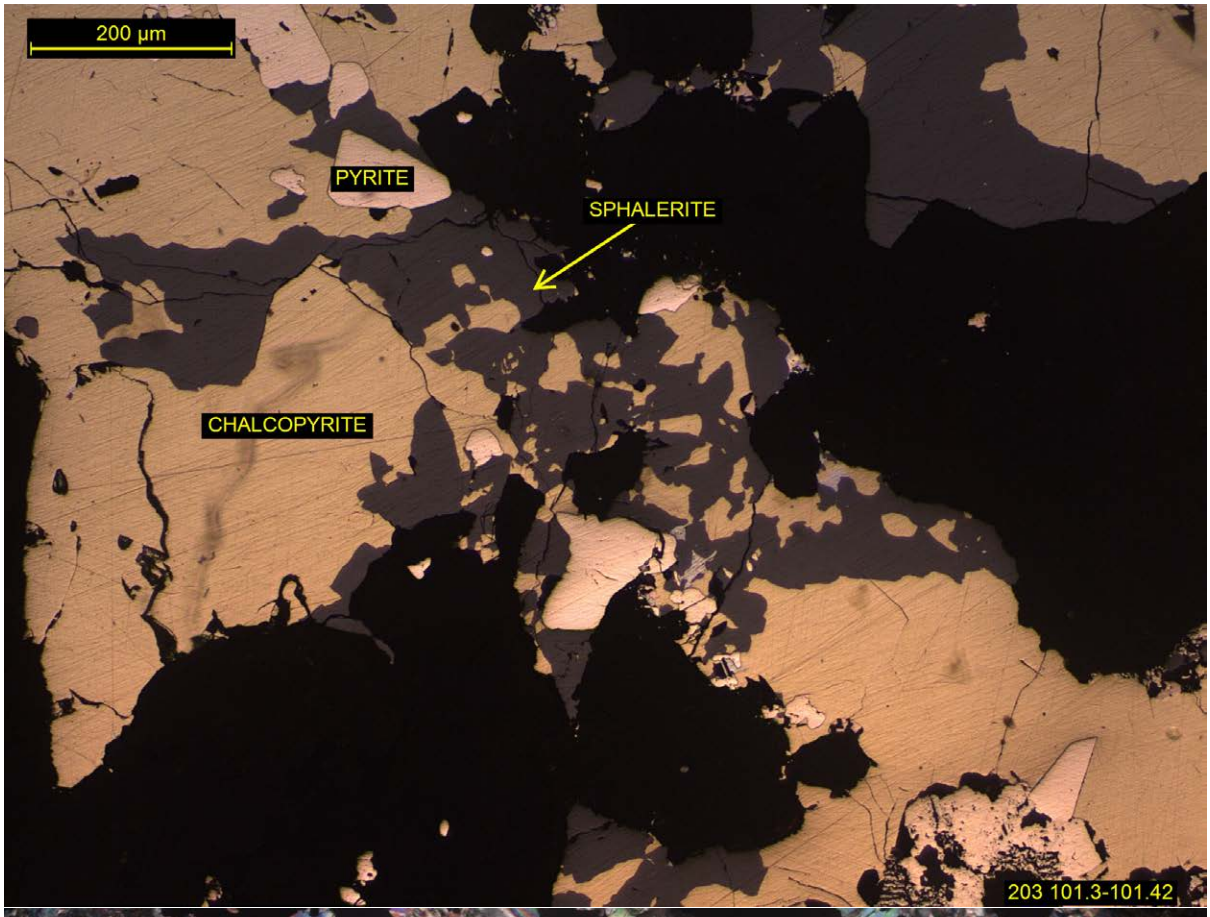

500 µm
SPHALERITE
PYRITE
CHALCOPYRITE
203 101.3-101.42
500 µm
RELIC PYRITE NETWORK IN CHALCOPYRITE
PYRITE AND CHALCOPYRITE
SPHALERITE
203 101.3-101.42

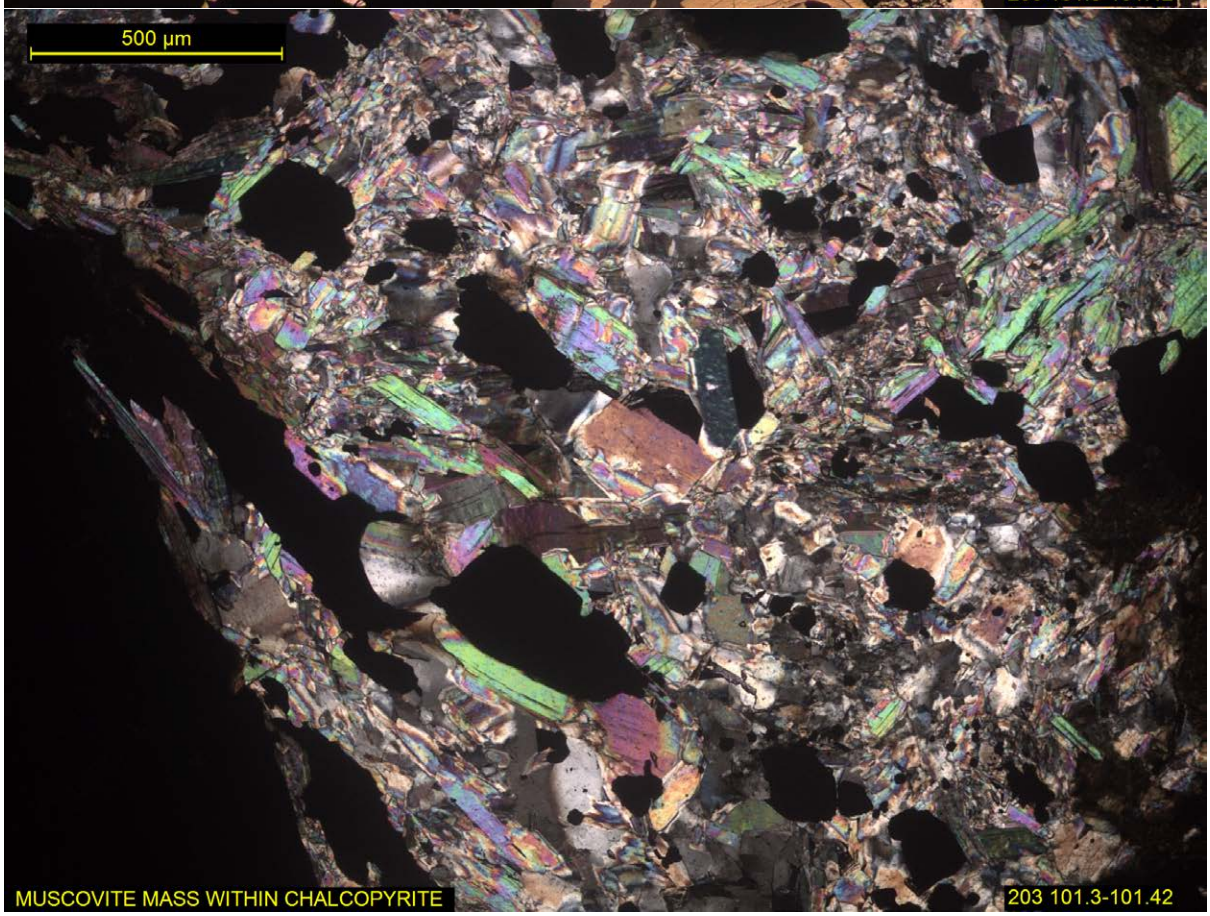

500 µm
PYRITE ALTERED TO MARCASITE
CHALCOPYRITE
203 101.3-101.42
200 µm
SPHALERITE
PYRITE
CHALCOPYRITE
203 101.3-101.42

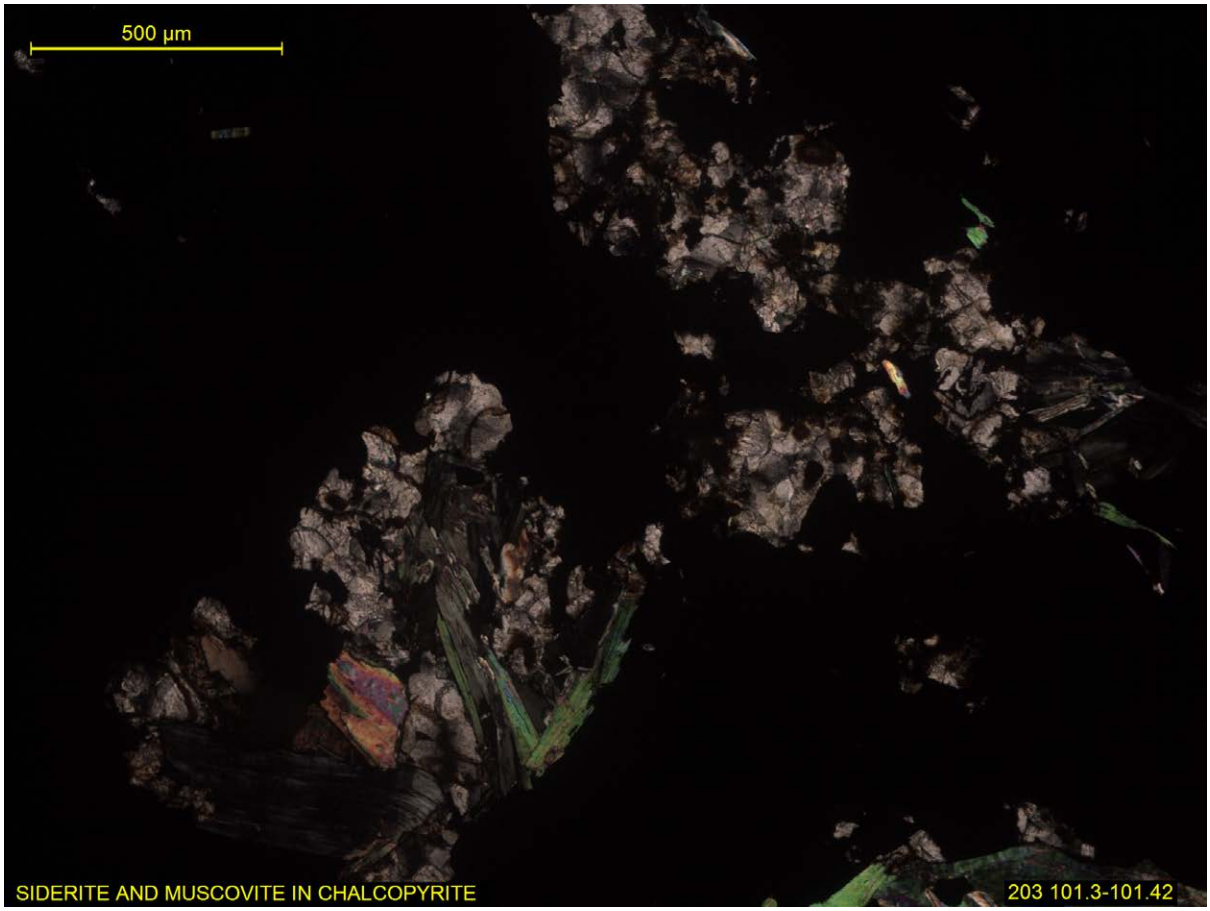

500 µm
RADIAL PYRITE
CHALCOPYRITE
SPHALERITE
PYRRHOTITE
203 101.3-101.42
200 µm
GALENA VERMICULAR INTERGROWTH ZONES
BISMUTH
PYRITE
PYRRHOTITE
CHALCOPYRITE
203 101.3-101.42


200 µm
PYRRHOTITE
GALENA
PYRITE
SPHALERITE
203 101.3-101.42
200 µm
PYRITE
GALENA
SPHALERITE
CHALCOPYRITE
203 101.3-101.42


200 µm
GALENA
PYRRHOTITE
SPHALERITE
PYRITE
CHALCOPYRITE
203 101.3-101.42
500 µm
PYRITE
CHALCOPYRITE
MUSCOVITE
203 101.3-101.42


200 µm
PYRITE
SPHALERITE
CHALCOPYRITE
203 101.3-101.42


500 µm
MUSCOVITE MASS WITHIN CHALCOPYRITE
203 101.3-101.42


500 µm
SIDERITE AND MUSCOVITE IN CHALCOPYRITE
203 101.3-101.42

SAMPLE K15-203 102.76-102.87

DRILL CORE

POLISHED THIN SECTION

GANGUE	**5%**
SIDERITE	30-40%
MUSCOVITE	30-40%
CHLORITE	30-40%
ALBITE	1-5%
ORES	**95%**
SPHALERITE	60-70%
CHALCOPYRITE	15-25%
PYRITE	10-20%
PYRRHOTITE	5-15%
MAGNETITE	5-10%
GALENA	<1%
NATIVE BISMUTH	<1%

CLASSIFIED AS A MASSIVE SPHALERITE ORE WITH BANDED CHALCOPYRITE, DISSEMINATED PYRITE AND PYRRHOTITE

The sample is characterised by a dominant sphalerite host matrix, containing numerous subordinate sulphides including chalcopyrite, pyrrhotite and pyrite that are somewhat banded and disseminated, plus magnetite, all defined by a variety of textures and associations. Gangue is an accessory component, occurring in random disseminated pockets (~200 to ~600 µm) of siderite, chlorite, muscovite, rare discrete albite grains, within sphalerite.

Chalcopyrite occurs in a somewhat roughly banded manner (up to ~3mm thick), where a sphalerite host contains subordinate to equal levels of interconnected irregularly shaped vein-like intermittent chalcopyrite networks. It also regularly forms composites with pyrrhotite and pyrite, often.

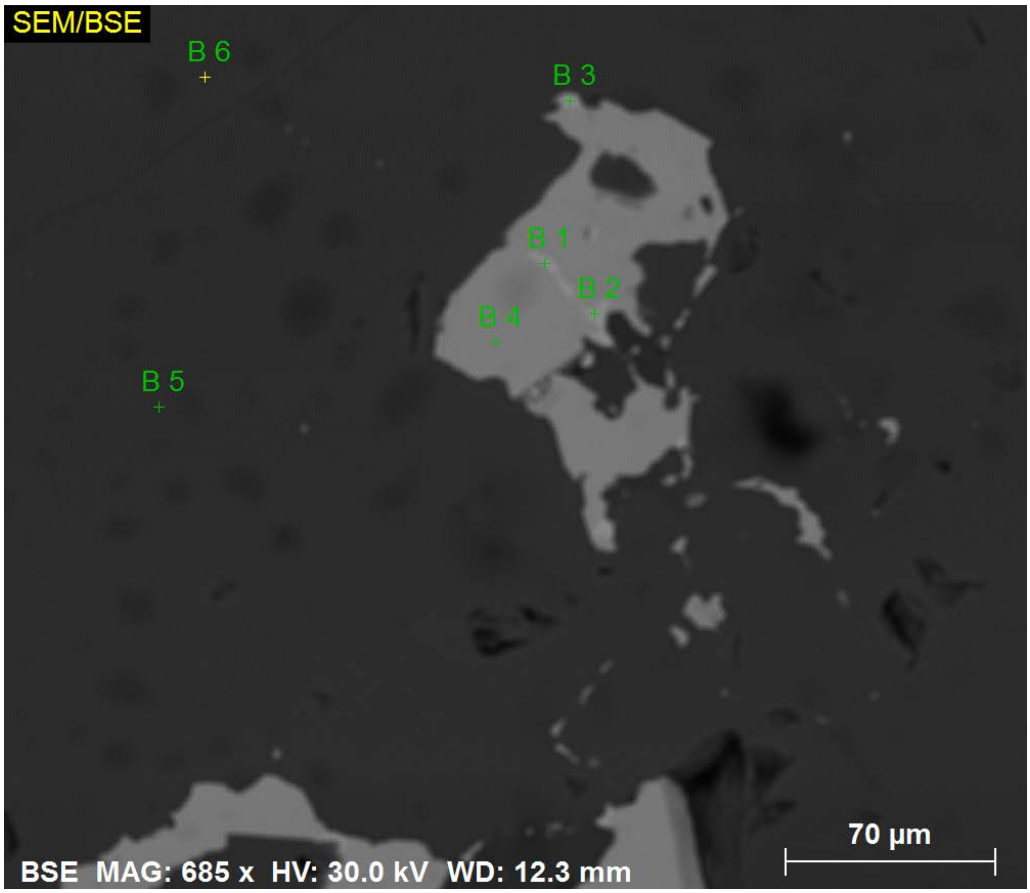
Pyrite's textures are varied, including clusters of discrete euhedral grains (~50 to ~250 µm) sitting in sphalerite, and occasionally in chalcopyrite. It also forms somewhat round large (~1 to ~7 mm) coalesced masses that contains a subordinate interstitial chalcopyrite component.

Pyrrhotite occurs as randomly disseminated allotriomorphic aggregates that are frequently composite with pyrite and chalcopyrite, hosted by sphalerite. Roughly banded pyrrhotite is another occurrence, ranging in thickness from ~500 µm to ~2 mm, frequently with a chalcopyrite and pyrite component.

Galena (selenium bearing) is found as a trace component generally occurring as inclusions in sphalerite and in pyrite. It frequently occurs as numerous fine (sub 50 µm) inclusions in the pyrite/chalcopyrite masses. It was observed commonly as clusters of irregularly shaped, elongate and sub-round inclusions (microns to ~200 µm) in sphalerite, where it occasionally forms composites with pyrrhotite and pyrite. Native bismuth was found associated with galena, occurring as fine inclusions and rims on galena.

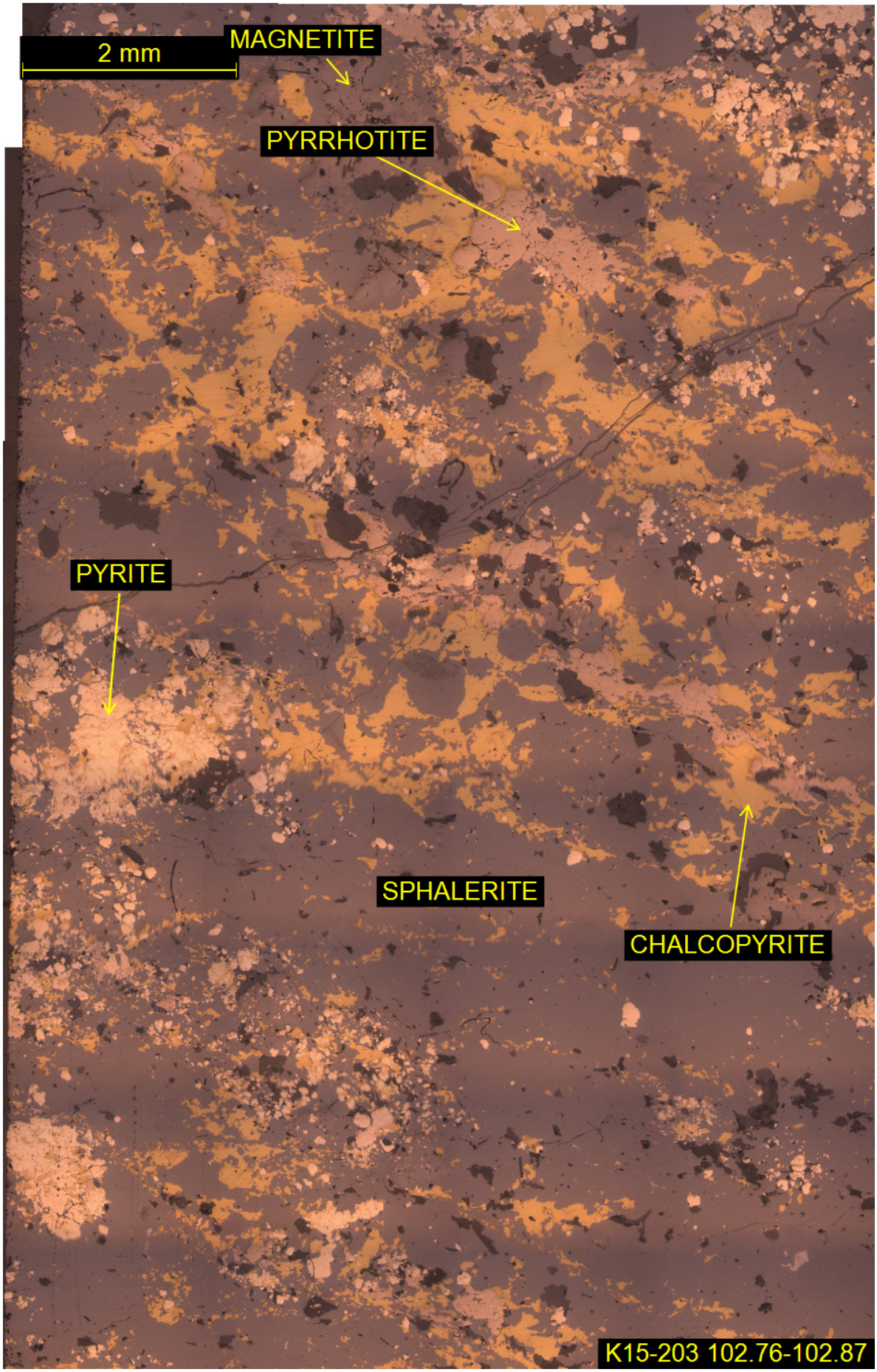
Magnetite was observed as random disseminated subhedral grains and allotriomorphic masses within sphalerite (~300 µm to ~2.5 mm), occasionally forming intermittent bands in sphalerite.

SEM ANALYSES

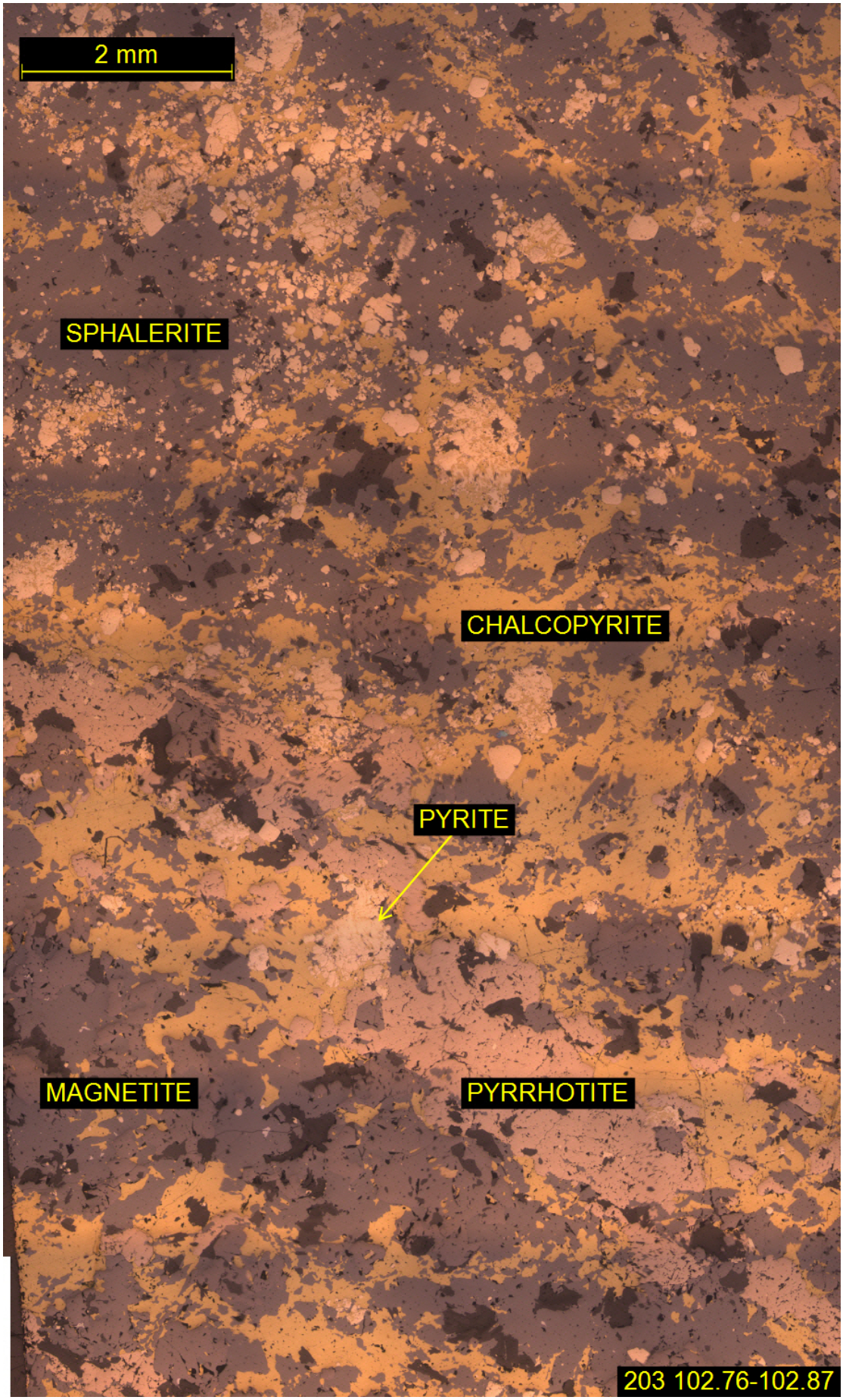


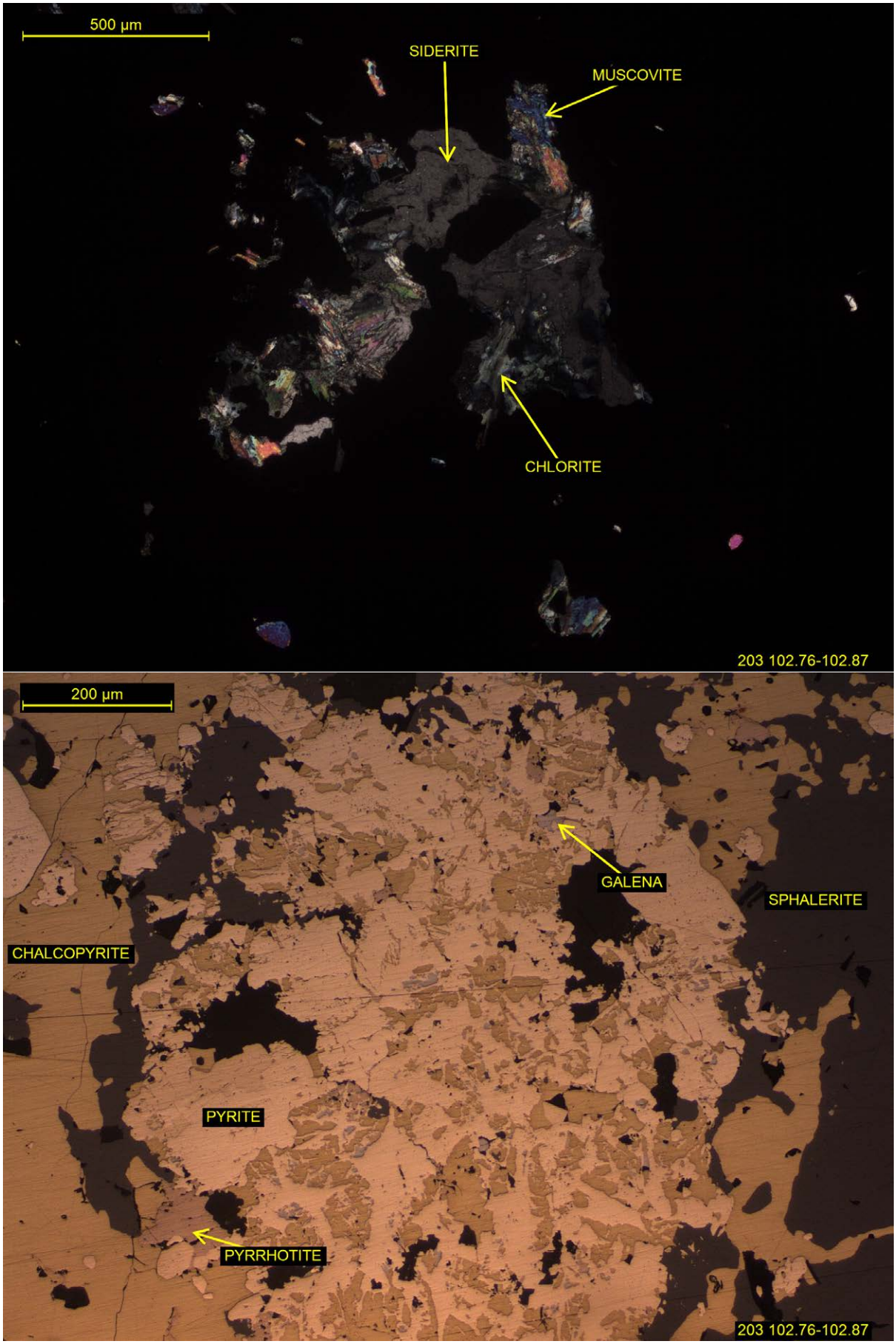
	S	Fe	Zn	Se	Pb	Bi	
B 1						100	BISMUTH
B 2						100	BISMUTH
B 3						100	BISMUTH
B 4	10.4			1.9	87.7		GALENA
B 5	27.5	10.3	62.1				SPHALERITE
B 6	27.4	10.6	62				SPHALERITE

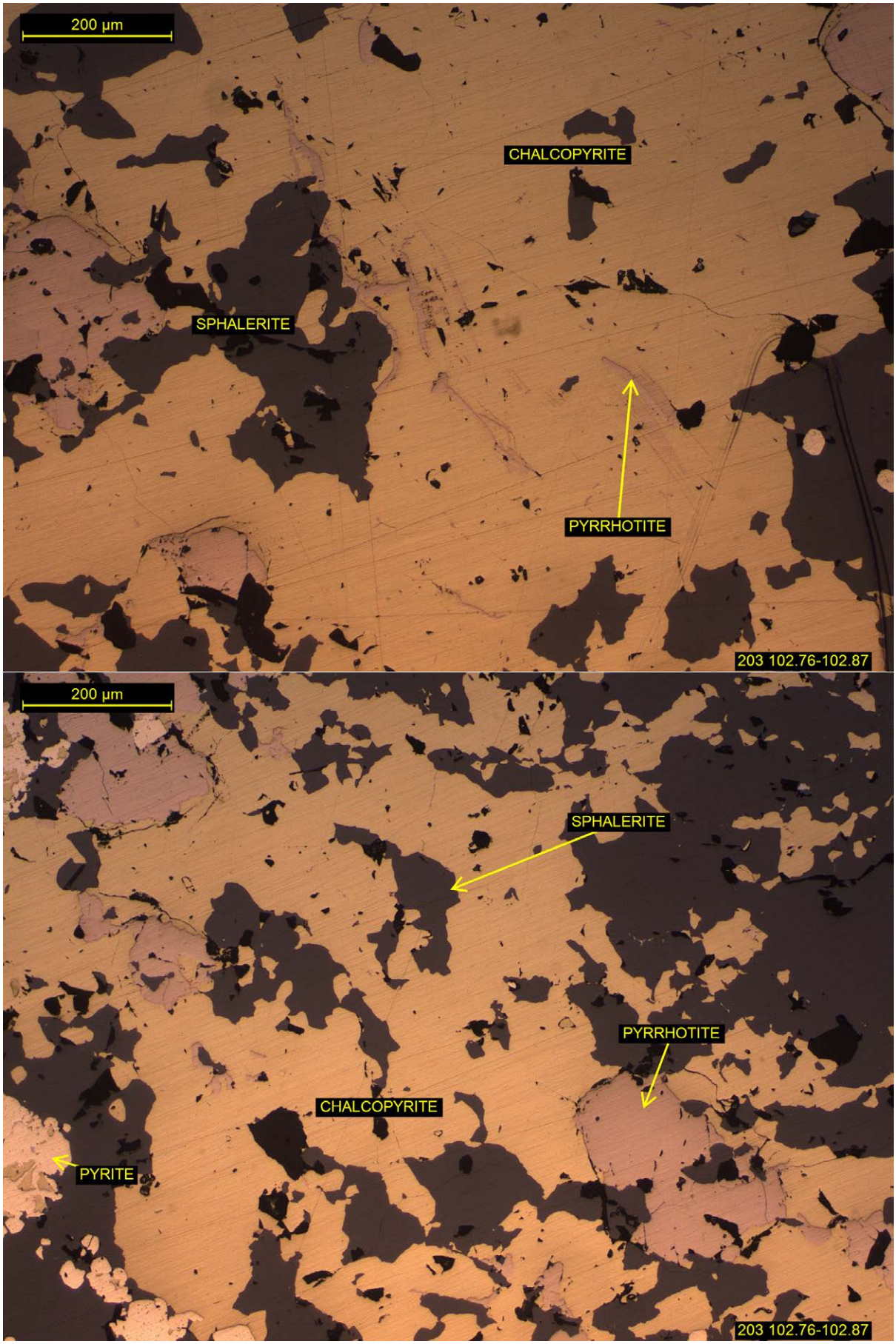
Note. Values are in weight percent.

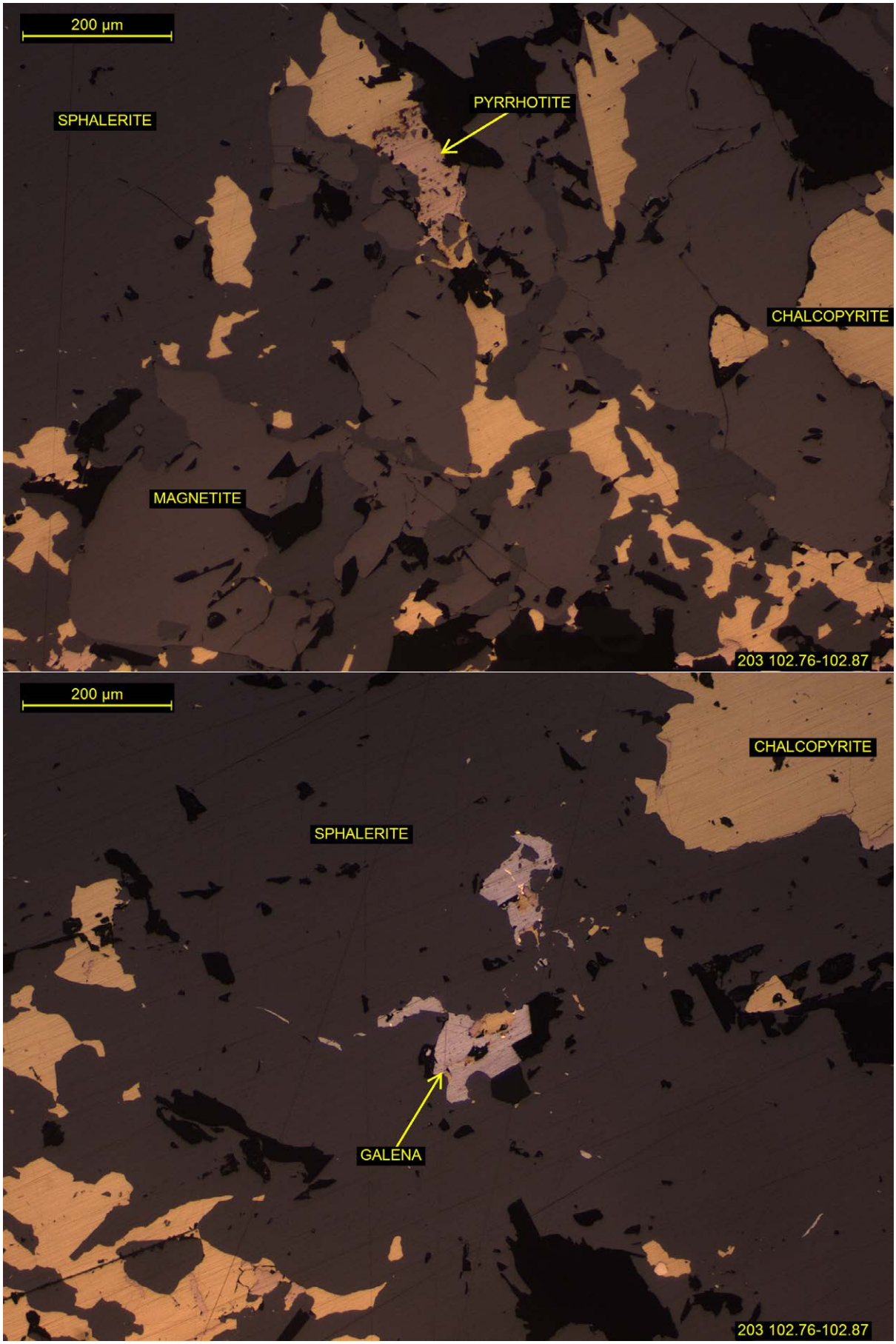

2 mm
MAGNETITE
PYRRHOTITE
PYRITE
SPHALERITE
CHALCOPYRITE
K15-203 102.76-102.87

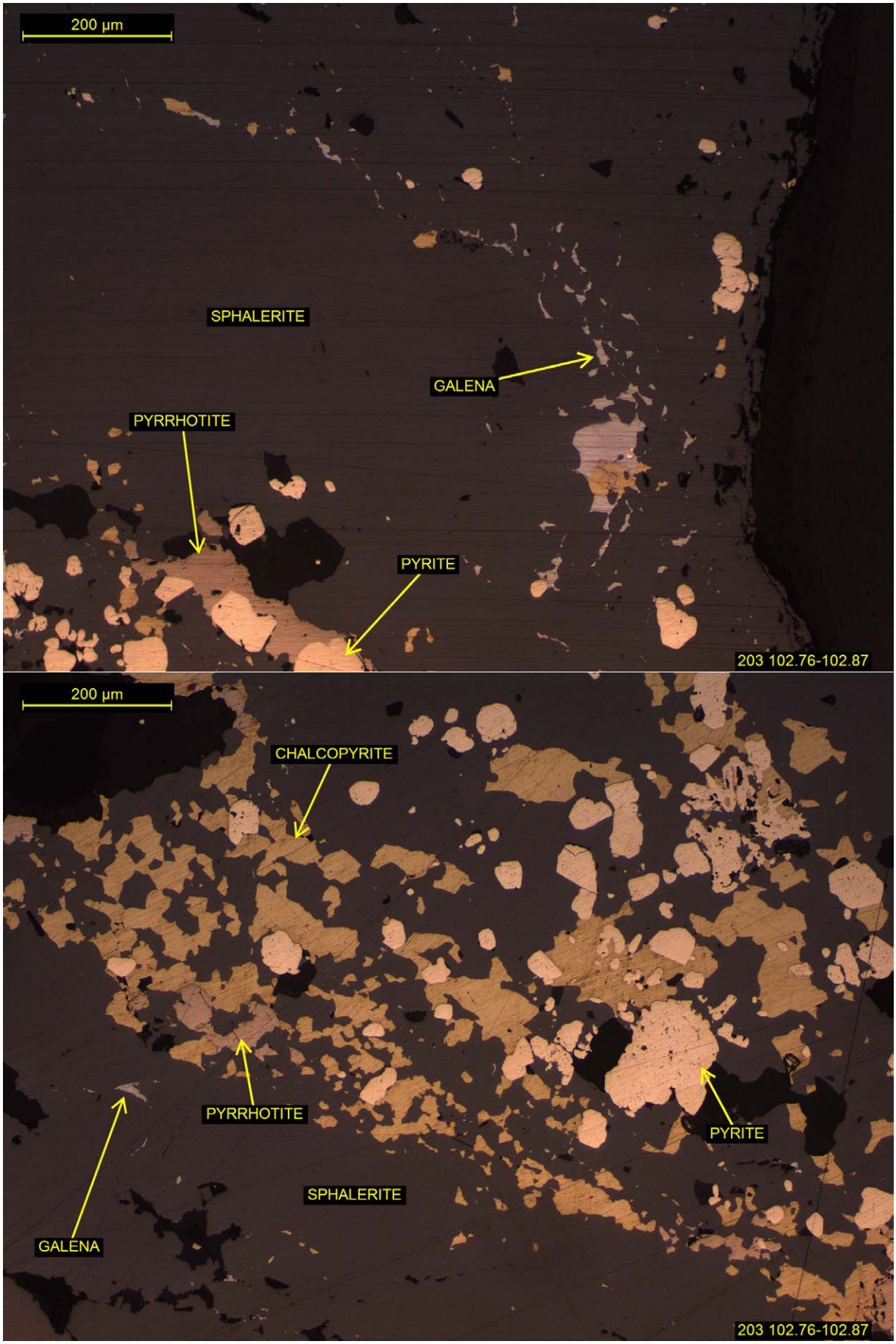

1 mm
PYRRHOTITE
PYRITE>>CHALCOPYRITE MASS
SPHALERITE
K15-203 102.76-102.87

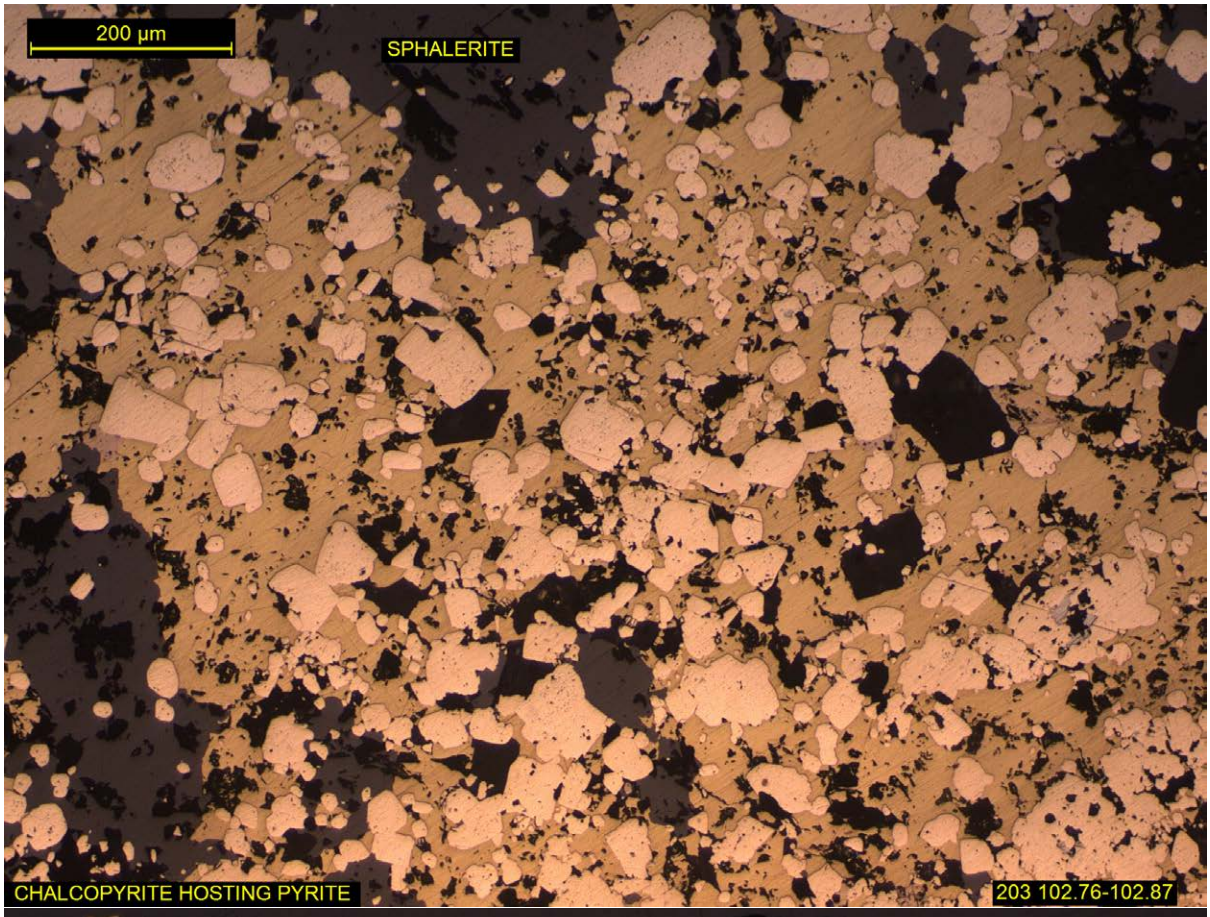

2 mm
SPHALERITE
CHALCOPYRITE
PYRITE
MAGNETITE
PYRRHOTITE
203 102.76-102.87

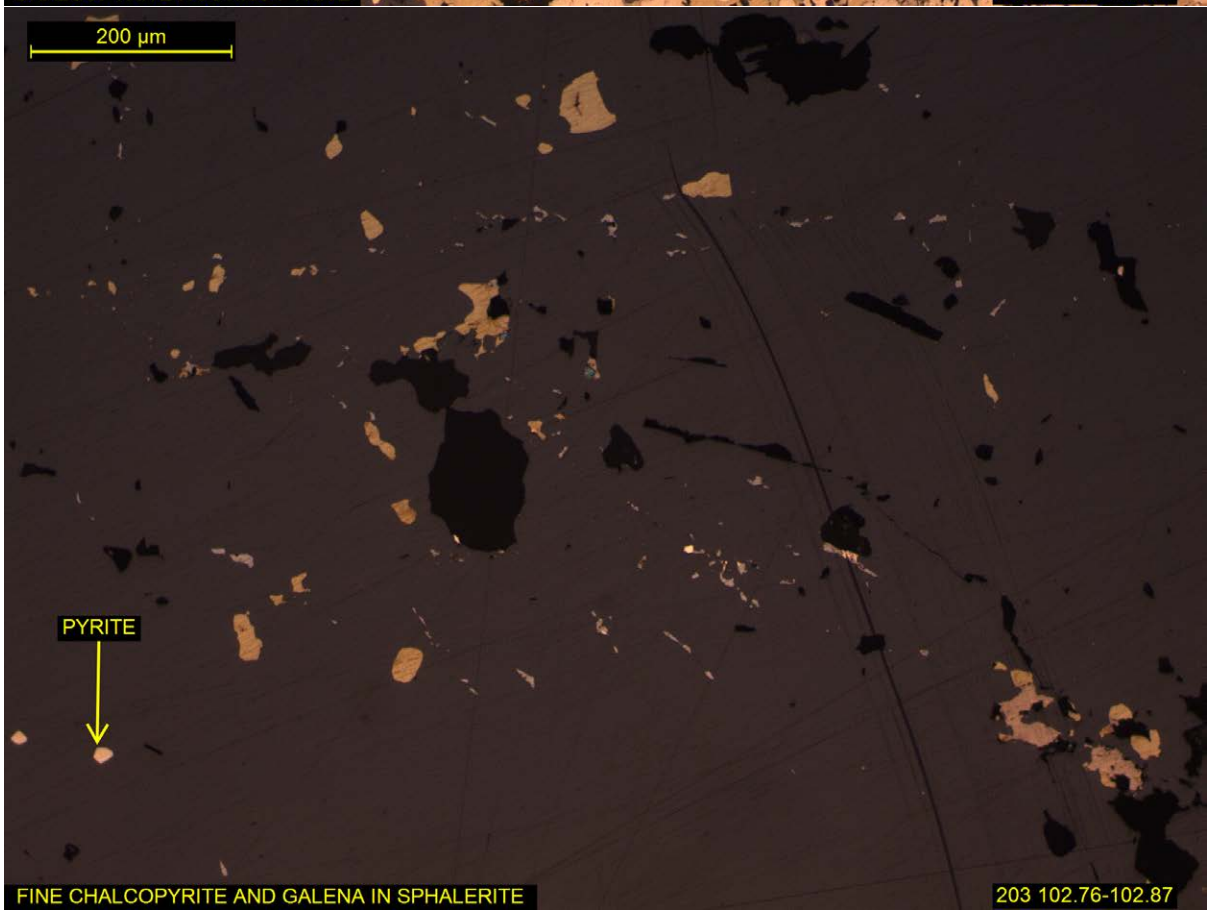

500 µm
SIDERITE
MUSCOVITE
CHLORITE
203 102.76-102.87
200 µm
GALENA
SPHALERITE
CHALCOPYRITE
PYRITE
PYRRHOTITE
203 102.76-102.87

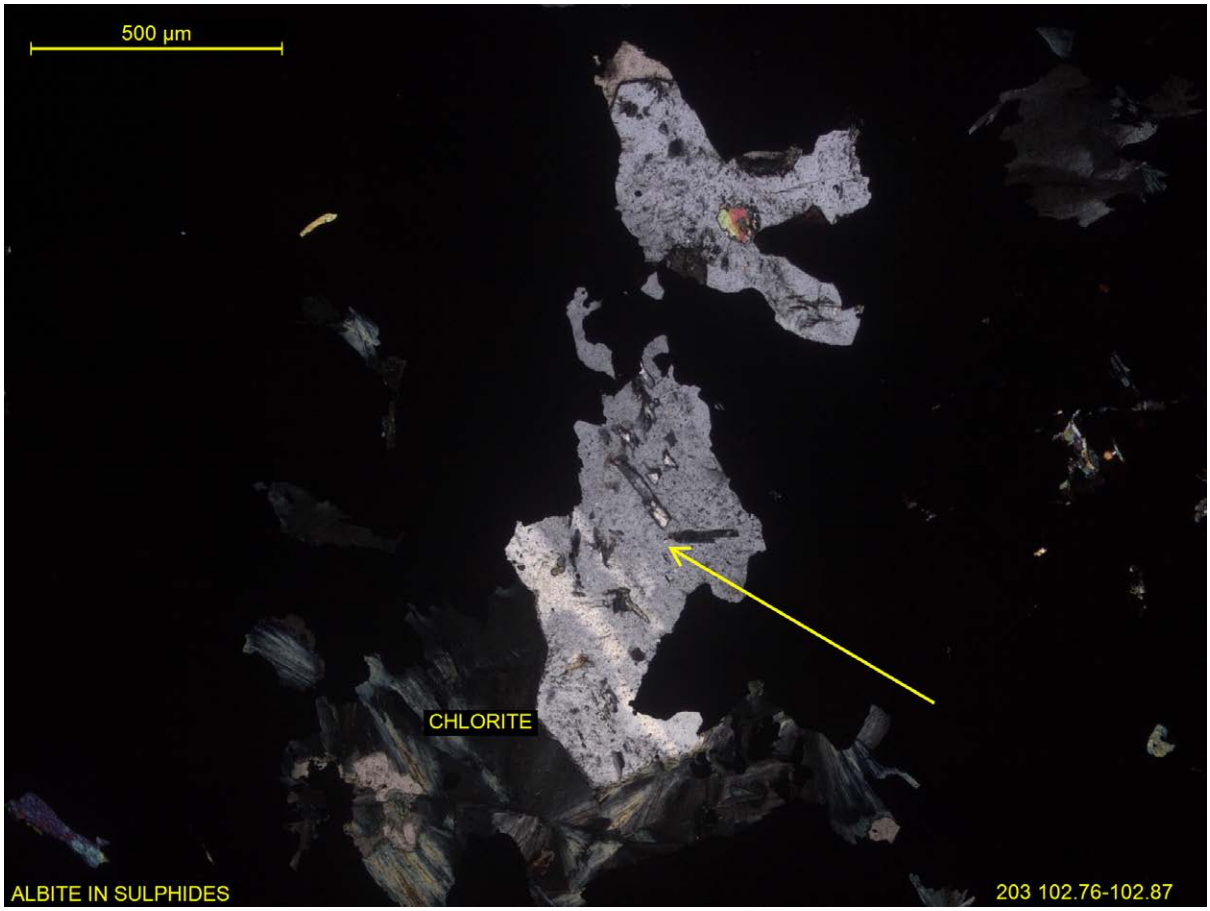

200 µm
CHALCOPYRITE
SPHALERITE
PYRRHOTITE
203 102.76-102.87
200 µm
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
PYRITE
203 102.76-102.87


200 µm
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
MAGNETITE
203 102.76-102.87
200 µm
CHALCOPYRITE
SPHALERITE
GALENA
203 102.76-102.87


200 µm
SPHALERITE
GALENA
PYRRHOTITE
PYRITE
203 102.76-102.87
200 µm
CHALCOPYRITE
PYRRHOTITE
PYRITE
SPHALERITE
GALENA
203 102.76-102.87


200 µm
SPHALERITE
CHALCOPYRITE HOSTING PYRITE
203 102.76-102.87


200 µm
PYRITE
FINE CHALCOPYRITE AND GALENA IN SPHALERITE
203 102.76-102.87


500 µm
CHLORITE
ALBITE IN SULPHIDES
203 102.76-102.87

SAMPLE K15-238 175.32-175.43

DRILL CORE

POLISHED THIN SECTION

SCHIST/QUARTZITE	**90%**
QUARTZ	45-55%
CHLORITE	20-30%
MUSCOVITE	20-30%
SIDERITE	1-2%
ANATASE	1-2%
TOURMALINE	<1%
SULPHIDE-QUARTZ VEINS	**10%**
QUARTZ	45-55%
PYRITE	10-20%
CHALCOPYRITE	10-25%
SPHALERITE	5-15%
PYRRHOTITE	5%
GALENA	5%
ARSENOPYRITE	1-2%

CLASSIFIED AS A MUSCOVITE CHLORITE QUARTZ SCHIST/MICACEOUS QUARTZITE WITH QUARTZ-SULPHIDE VEINS

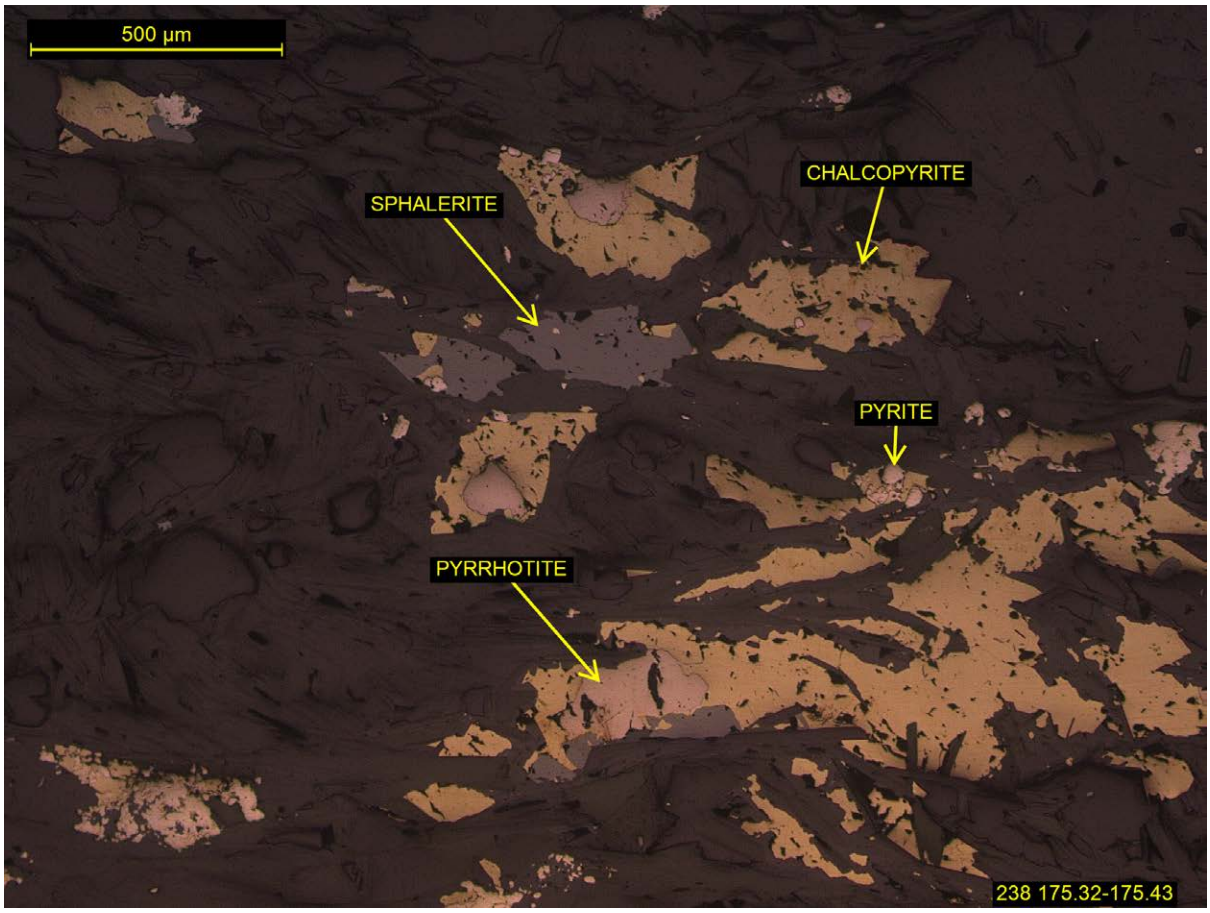
The sample is comprised of alternating bands of quartzite and chlorite-mica schist, the latter characterised by several foliations and a schistose fabric. Several minor quartz-sulphide veins cross-cut the sample.

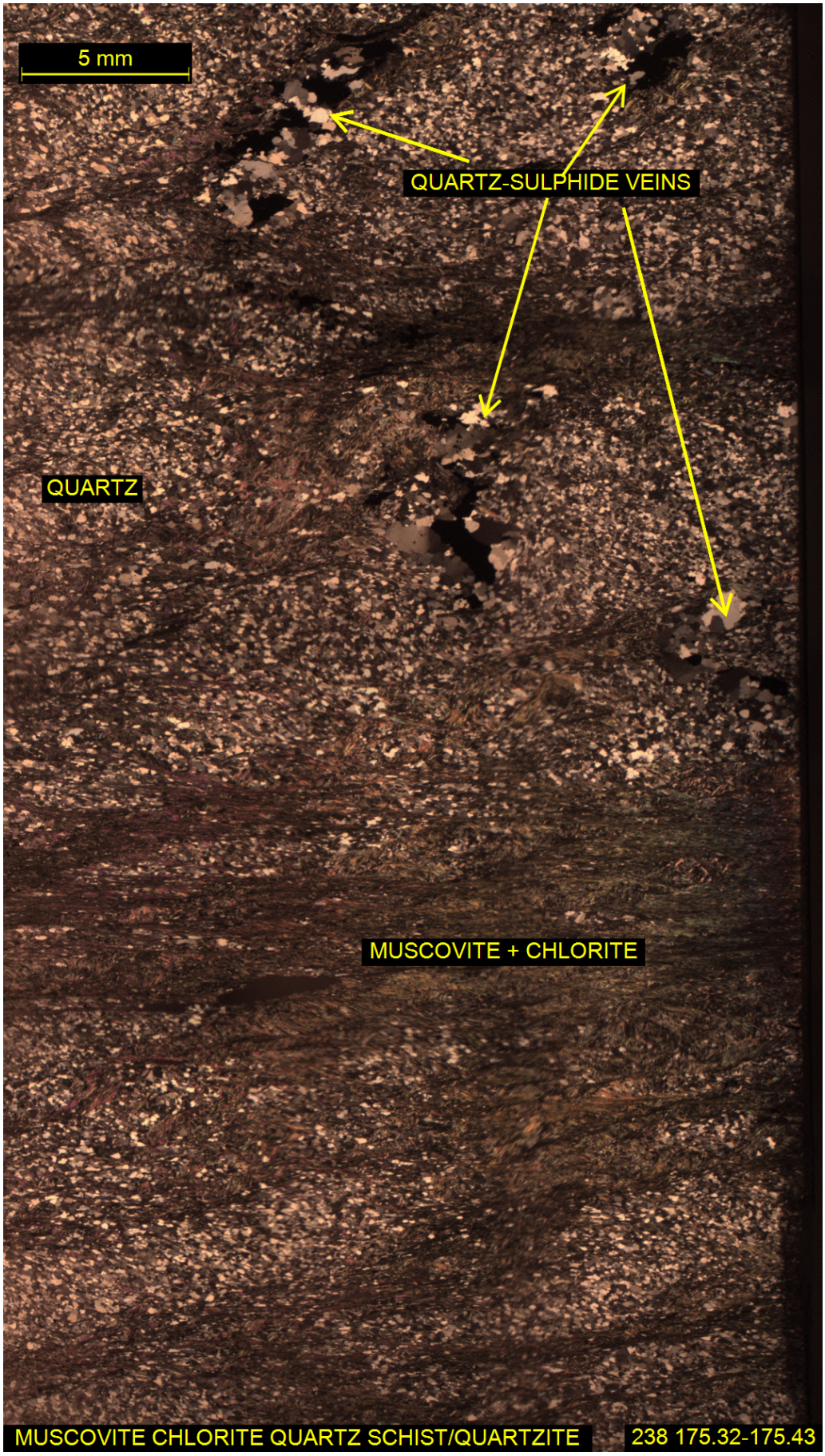
The quartzite bands are granoblastic regular mosaics of moderately equigranular (~150 µm average), equidimensional quartz grains. There is generally an accessory component of disseminated fine (~170 µm average) simple schistose discrete/aggregates or thin layers of chlorite and mica flakes within the quartzite bands.

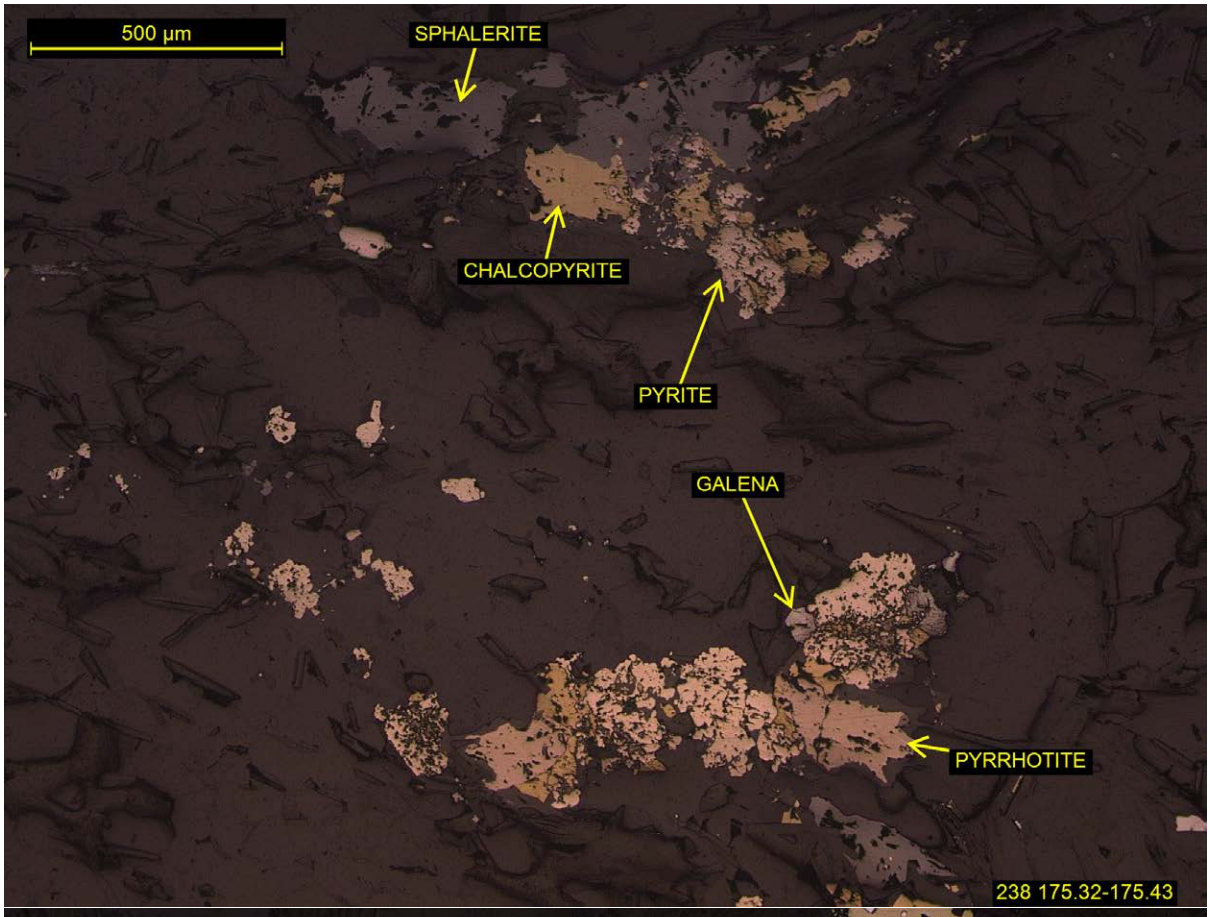
The muscovite-chlorite bands are defined by a strong fabric defined by two foliations, one that is almost orthogonal to the other, the latter parallel to overall rock compositional banding. Chlorite and muscovite are closely intergrown, consisting of euhedral flakes that have a typical size range of ~100 to ~300 µm. Rare occurrences of siderite are found in these bands, siderite is highly affected/displaced by the fabric, grains found parallel to both foliations, particular examples are extremely elongate grains (up to several millimetres in length). Fine (sub 250 µm) anatase are found sporadically throughout the rock, fairly regularly.

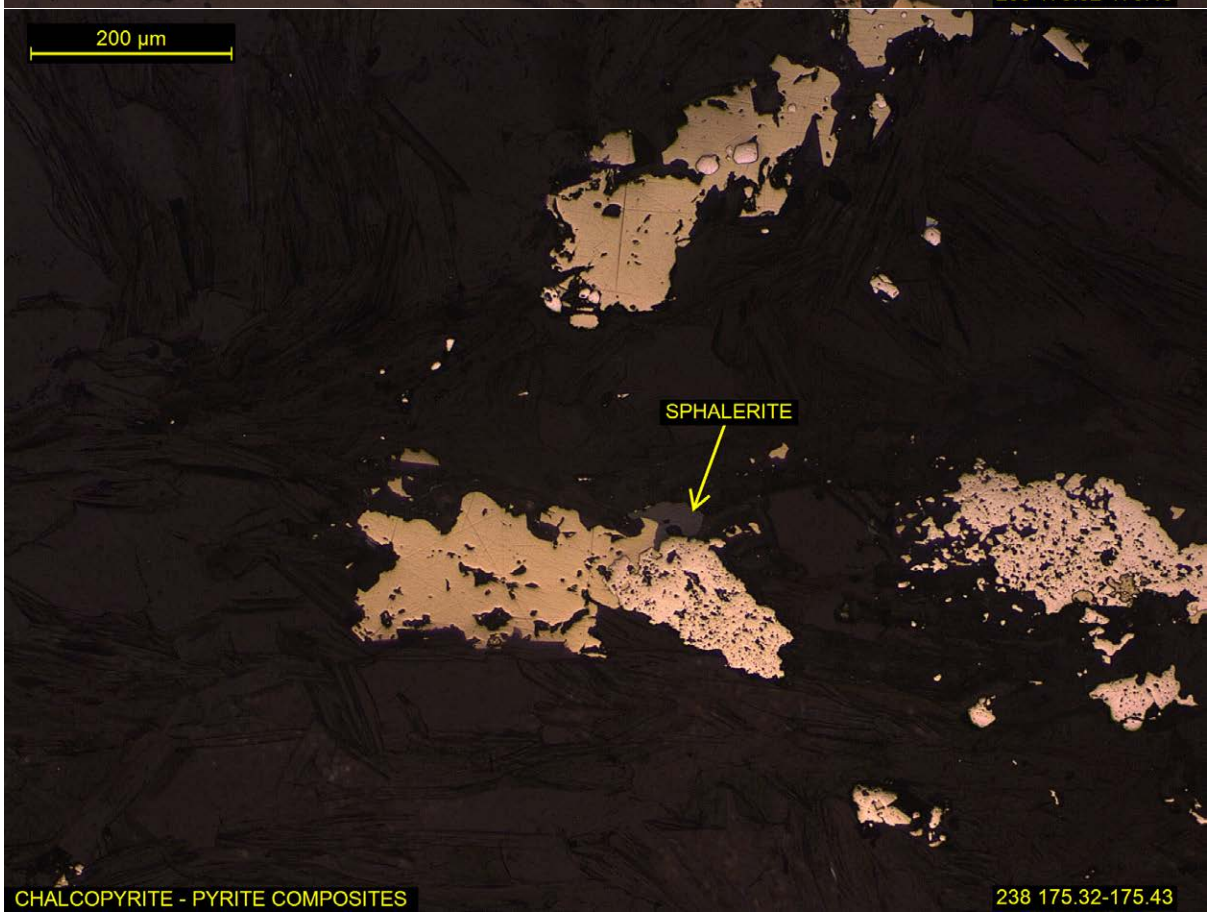
A quartz-sulphide vein crosscuts across the schist in a somewhat intermittent sporadic manner. Sulphides occur primarily in composite aggregates of the following ores: pyrite,

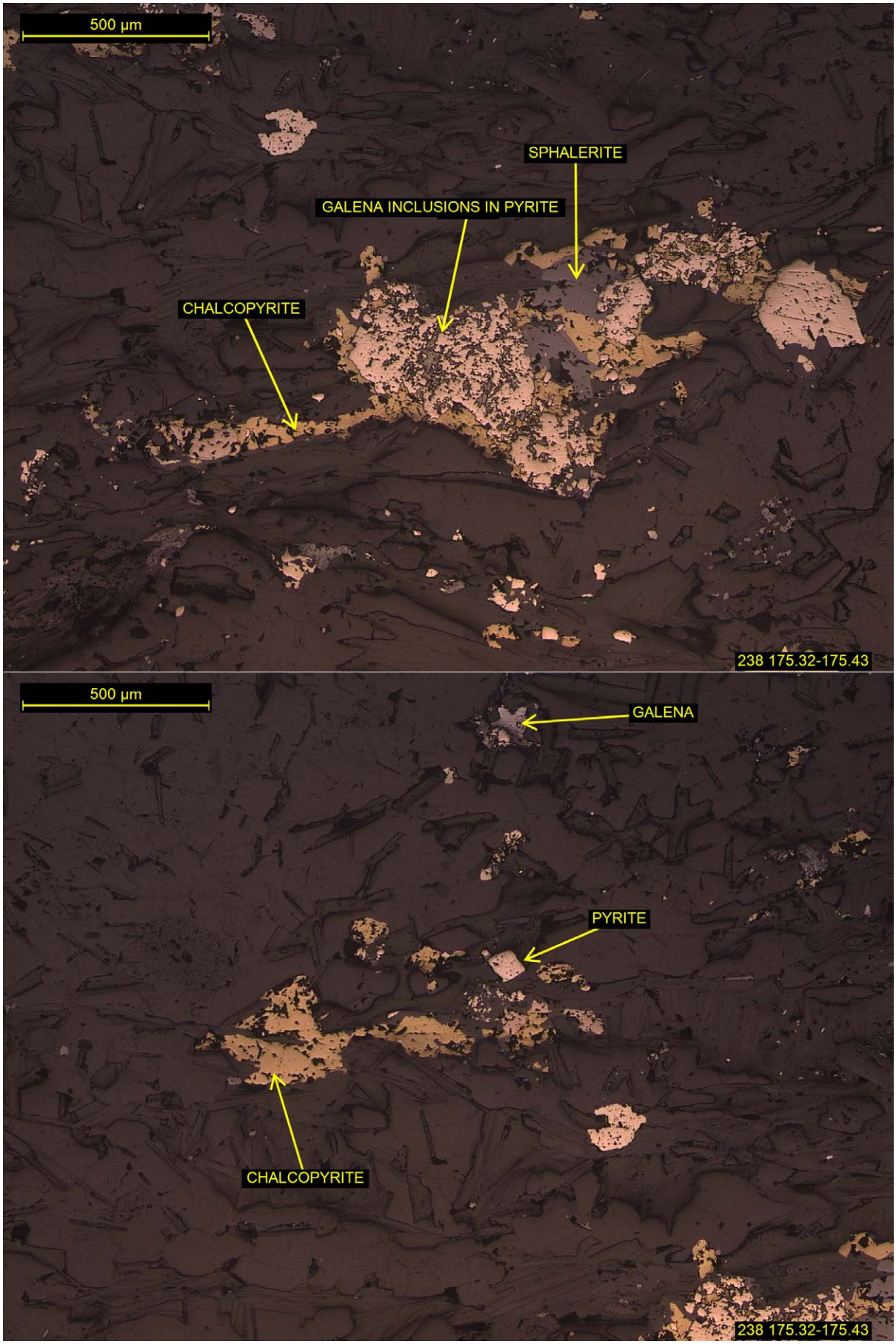
chalcopyrite, sphalerite, arsenopyrite/marcasite, subordinate pyrrhotite and galena. These composites are irregularly shaped, and range in size from ~100 µm to ~3 mm. There is such a variety in combinations and textures it is best to see photomicrographs which show the majority of composites present in the thin section. For example there are chalcopyrites with pyrrhotite inclusions, sphalerites with chalcopyrite rims, chalcopyrite-pyrrhotite-sphalerite composites and pyrite-pyrrhotite-chalcopyrite-galena composites, to name a few. Of note are the varied textures of the pyrite, including bunches of euhedral pyrites grains (averaging ~200 µm) that are composites with several other sulphides. Particularly interesting examples include a large chalcopyrite or sphalerite hosting many euhedral pyrite grains. Another interesting example are very finely intergrown pyrite with galena. Rare discrete grains of pyrite or chalcopyrite are occasionally present. Very rare occurrences of disseminated sulphides in quartzite of chlorite-mica bands are present.

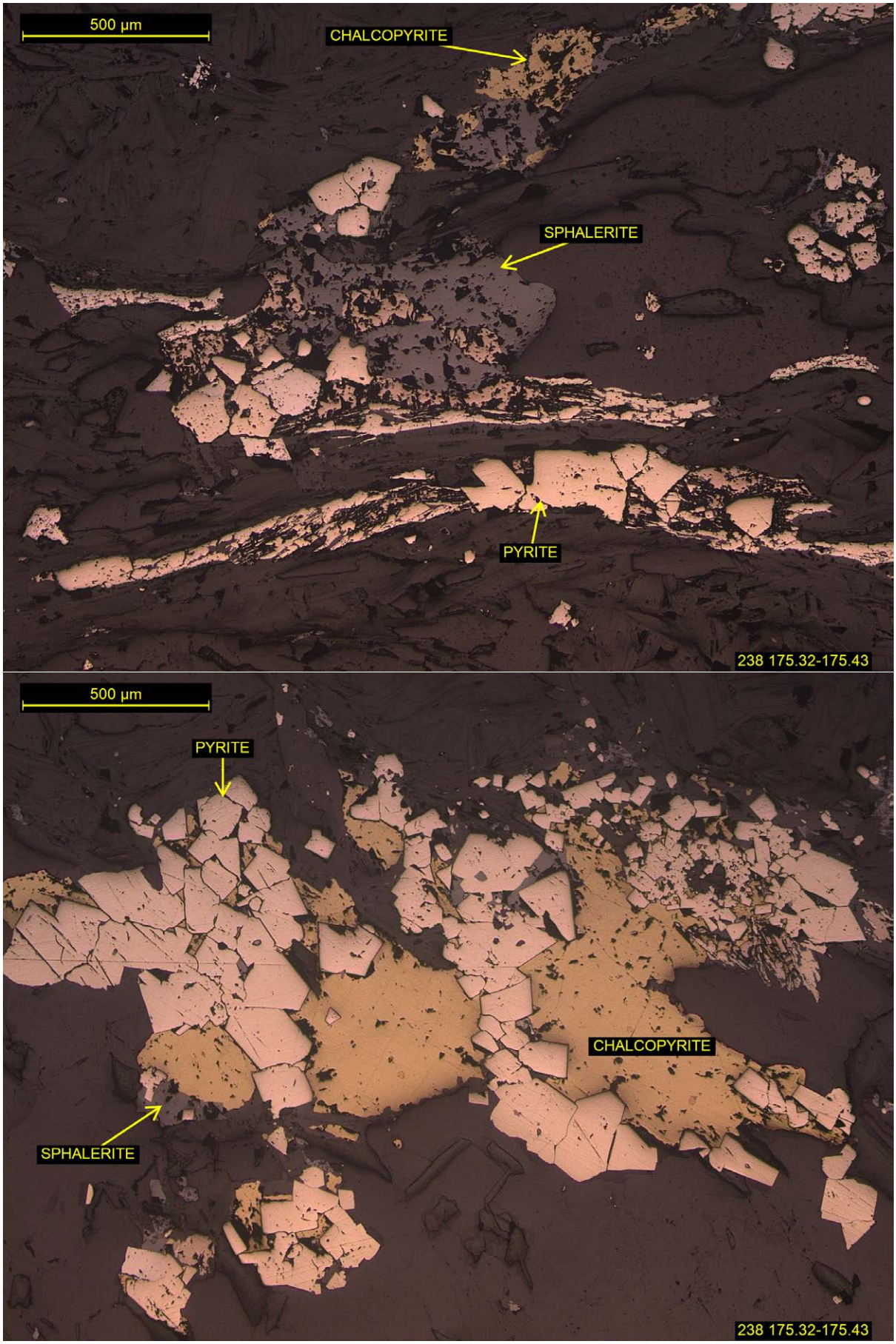


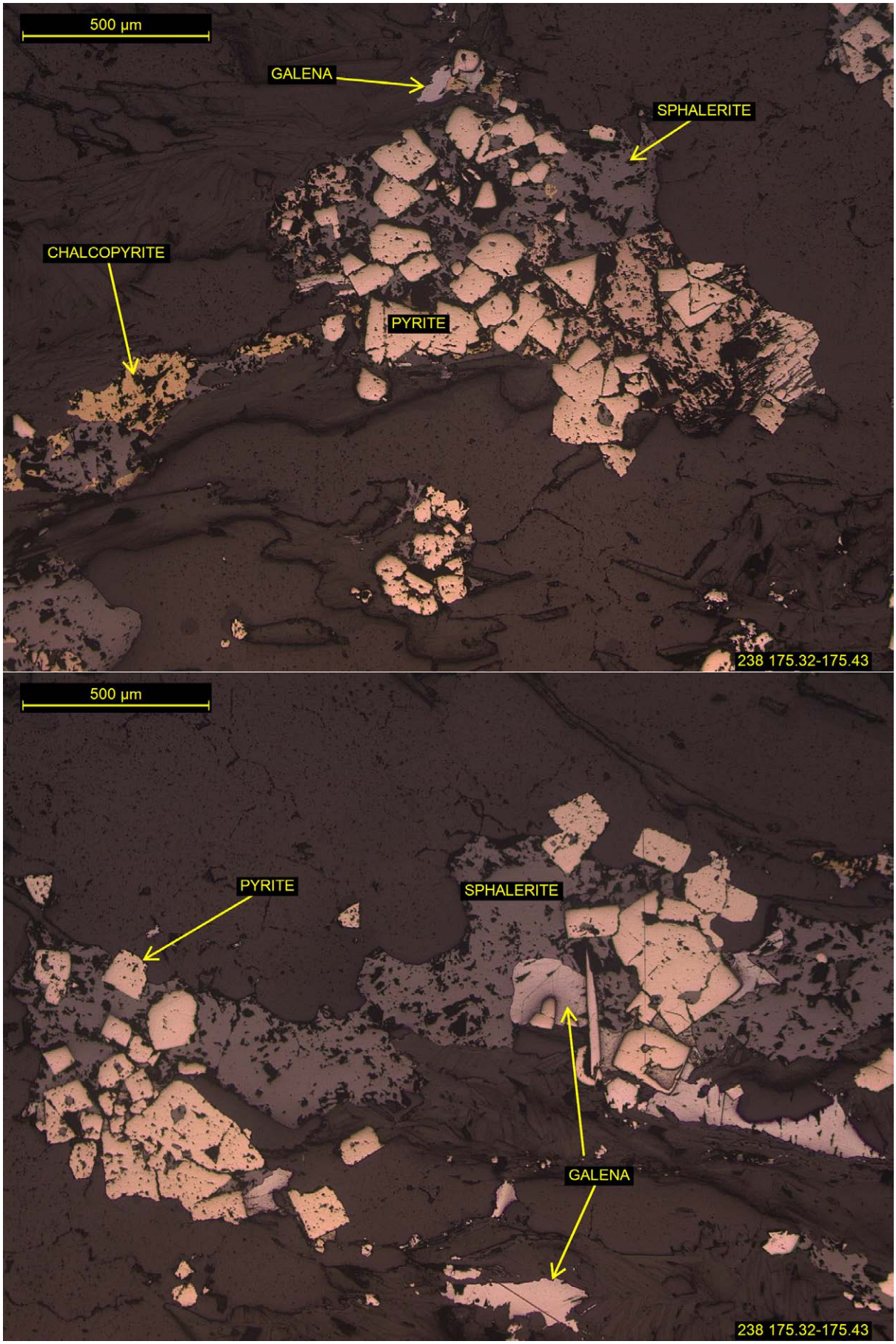

5 mm
QUARTZ-SULPHIDE VEINS
QUARTZ
MUSCOVITE + CHLORITE
MUSCOVITE CHLORITE QUARTZ SCHIST/QUARTZITE
238 175.32-175.43

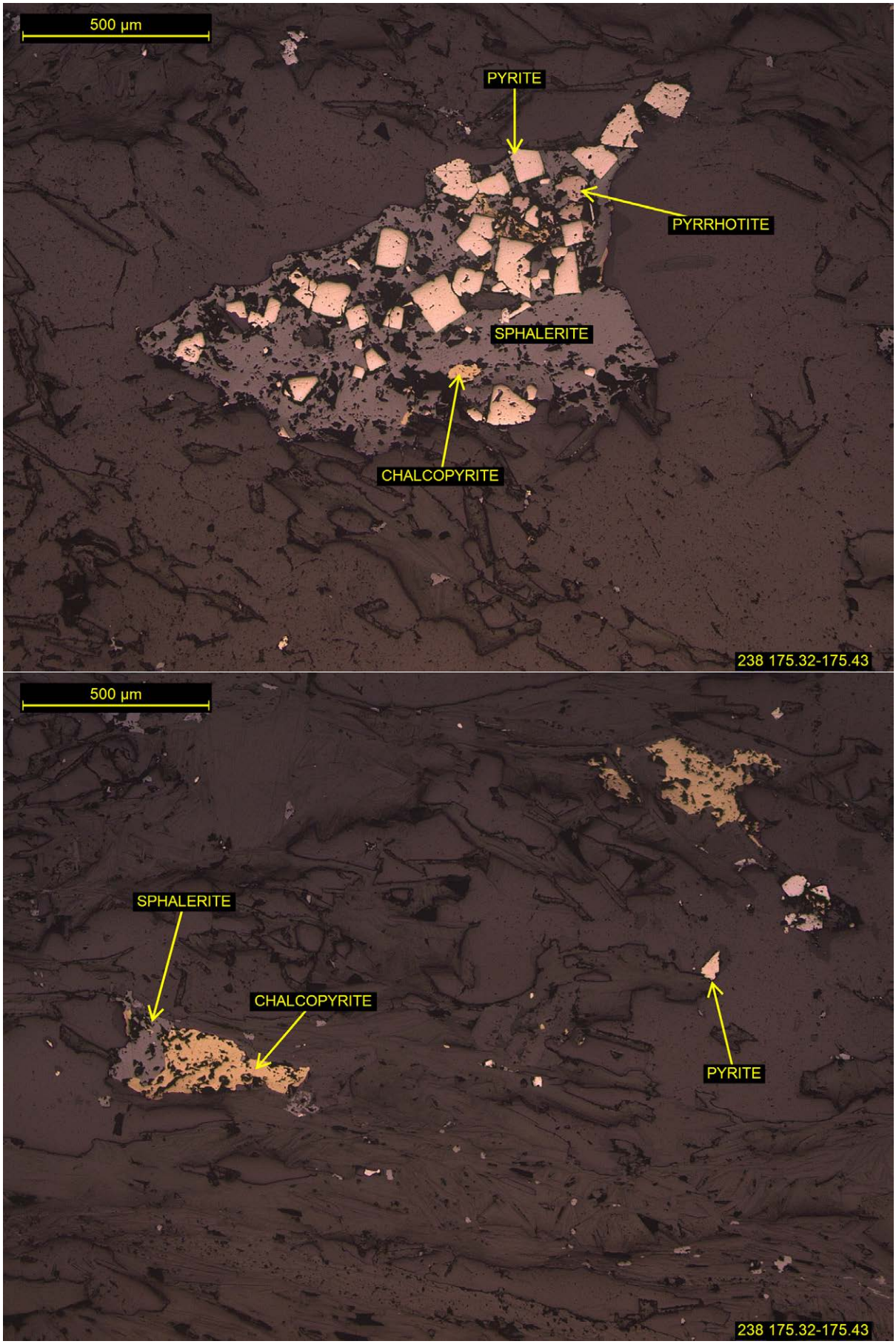

500 µm
SPHALERITE
CHALCOPYRITE
PYRITE
GALENA
PYRRHOTITE
238 175.32-175.43

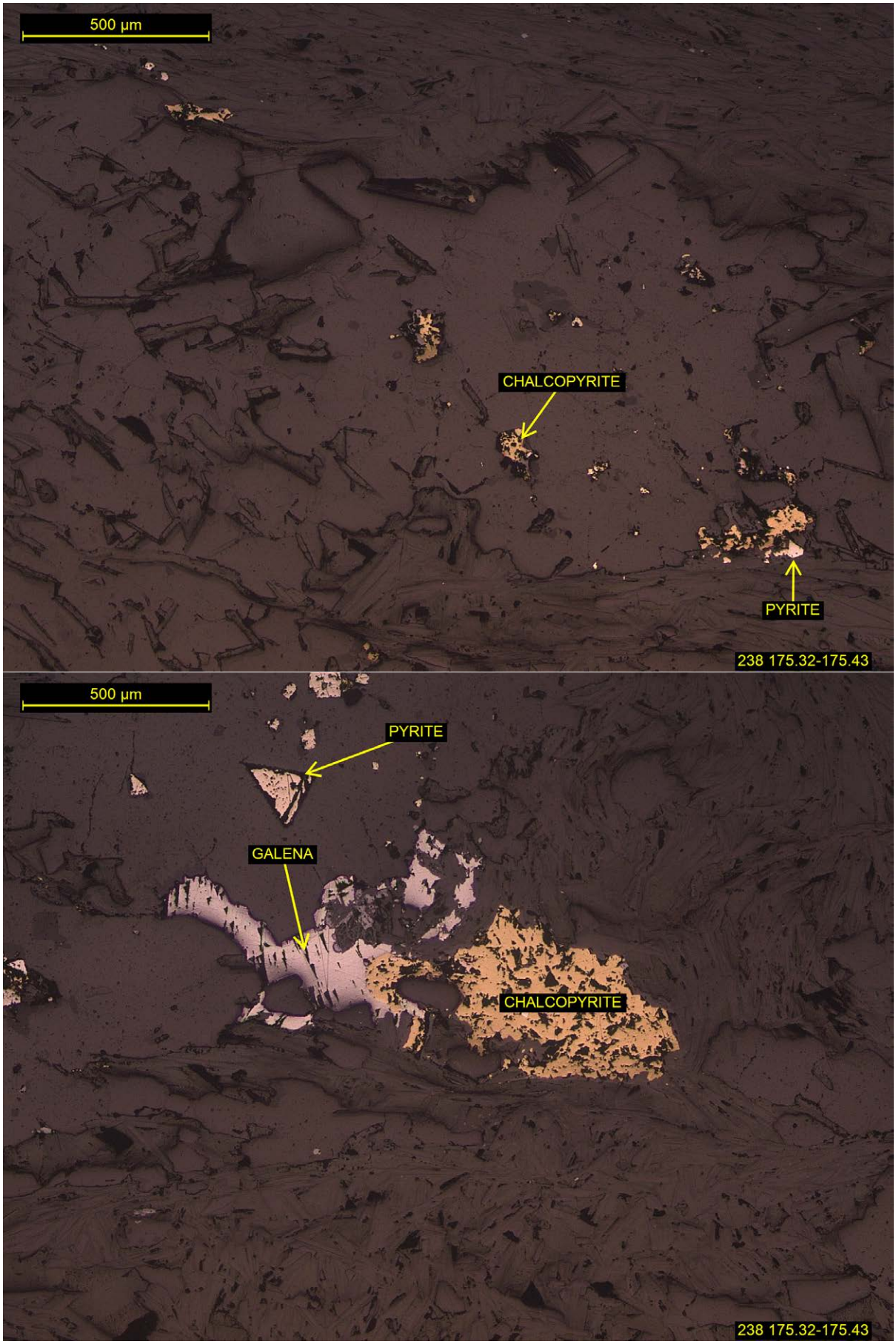

200 µm
SPHALERITE
CHALCOPYRITE - PYRITE COMPOSITES
238 175.32-175.43

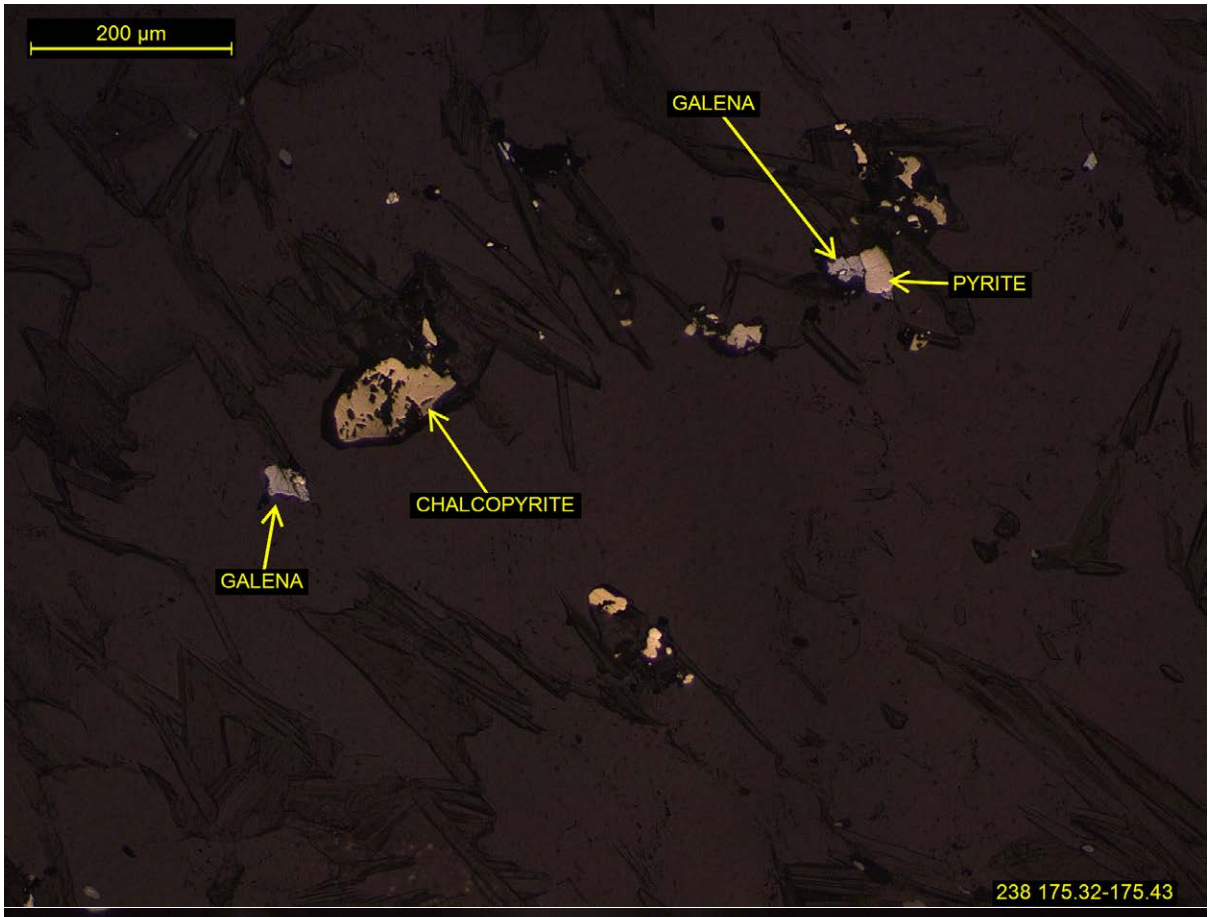

500 µm
SPHALERITE
GALENA INCLUSIONS IN PYRITE
CHALCOPYRITE
238 175.32-175.43
500 µm
GALENA
PYRITE
CHALCOPYRITE
238 175.32-175.43

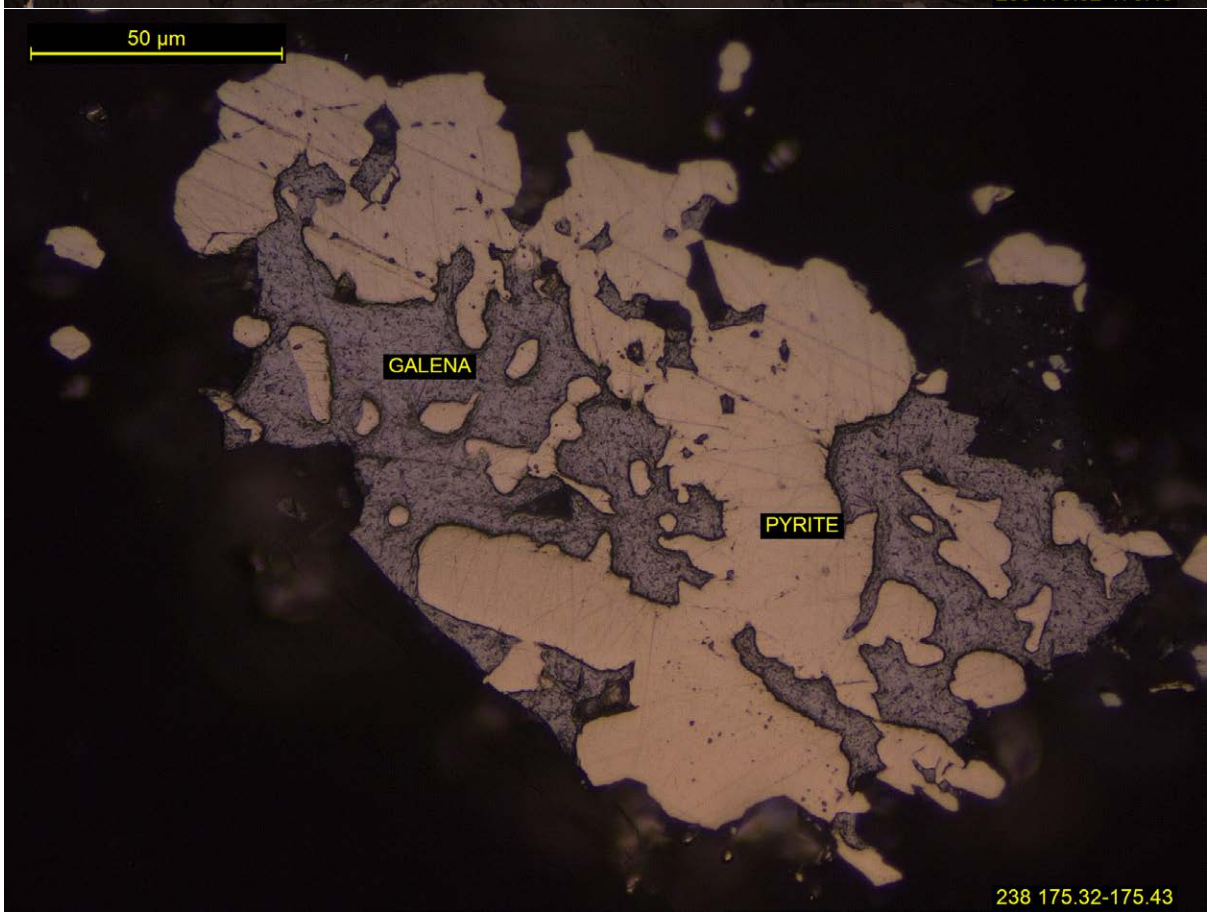

500 µm
CHALCOPYRITE
SPHALERITE
PYRITE
238 175.32-175.43
500 µm
PYRITE
CHALCOPYRITE
SPHALERITE
238 175.32-175.43

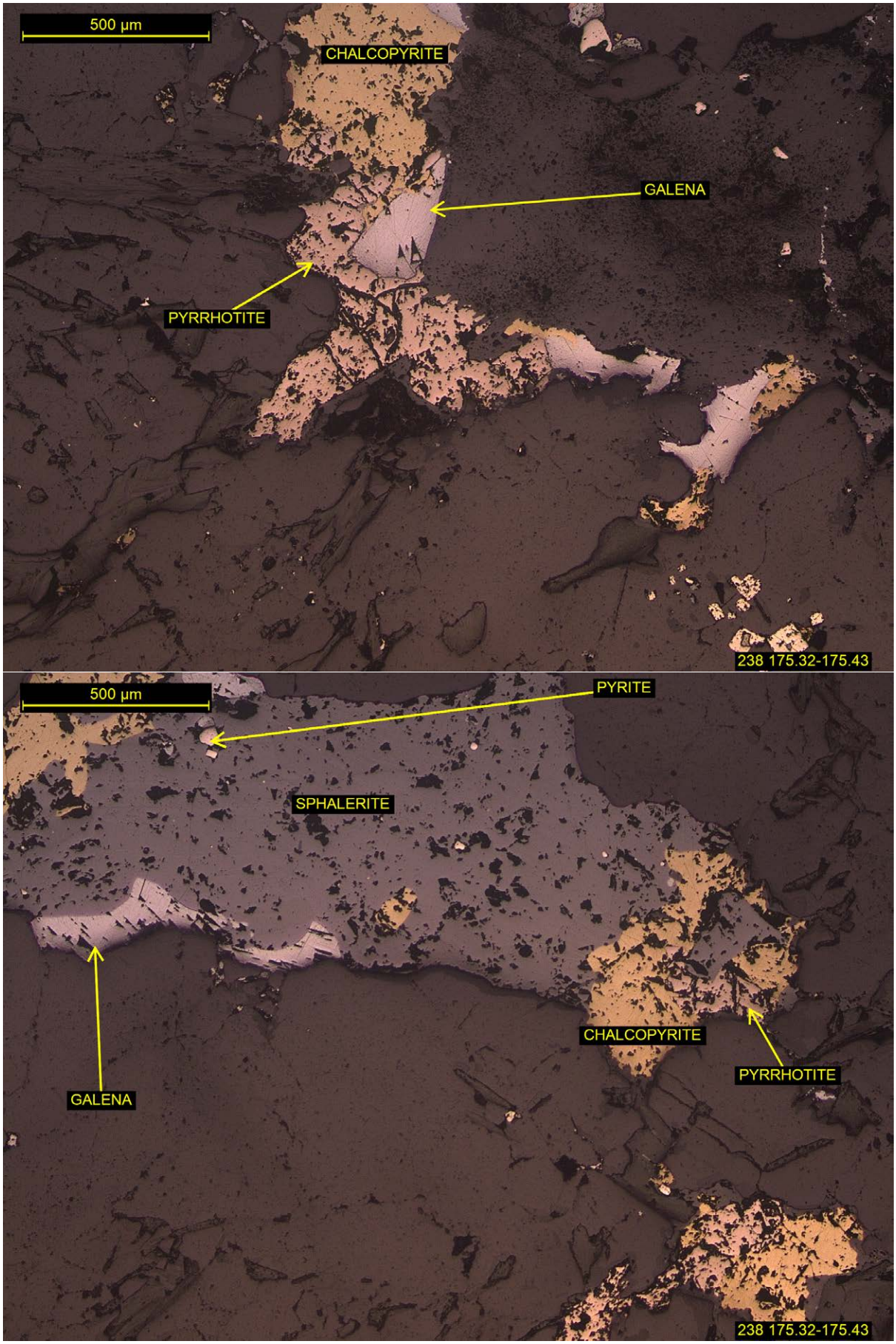

500 µm
GALENA
SPHALERITE
CHALCOPYRITE
PYRITE
238 175.32-175.43
500 µm
PYRITE
SPHALERITE
GALENA
238 175.32-175.43

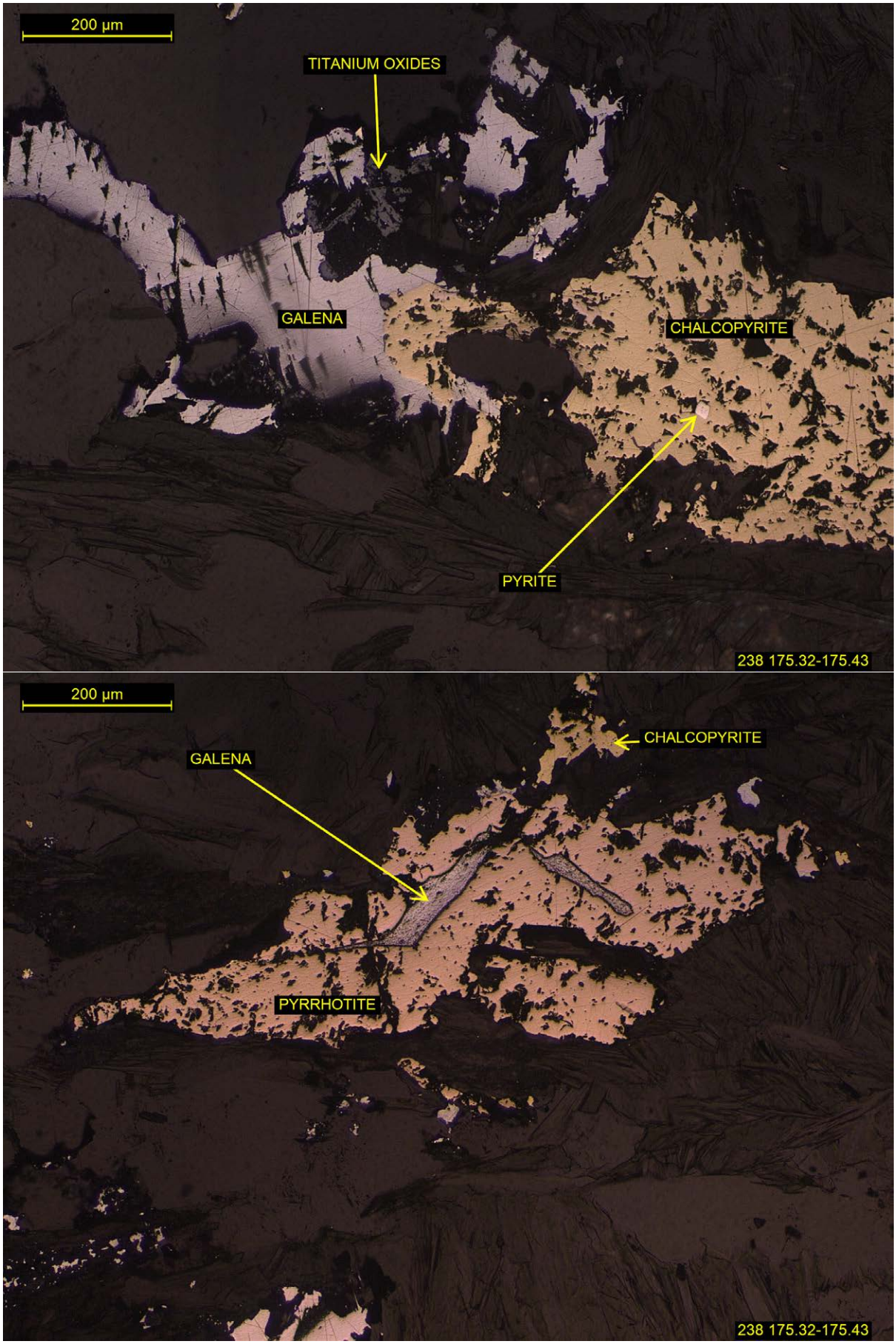

500 µm
PYRITE
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
238 175.32-175.43
500 µm
SPHALERITE
CHALCOPYRITE
PYRITE
238 175.32-175.43

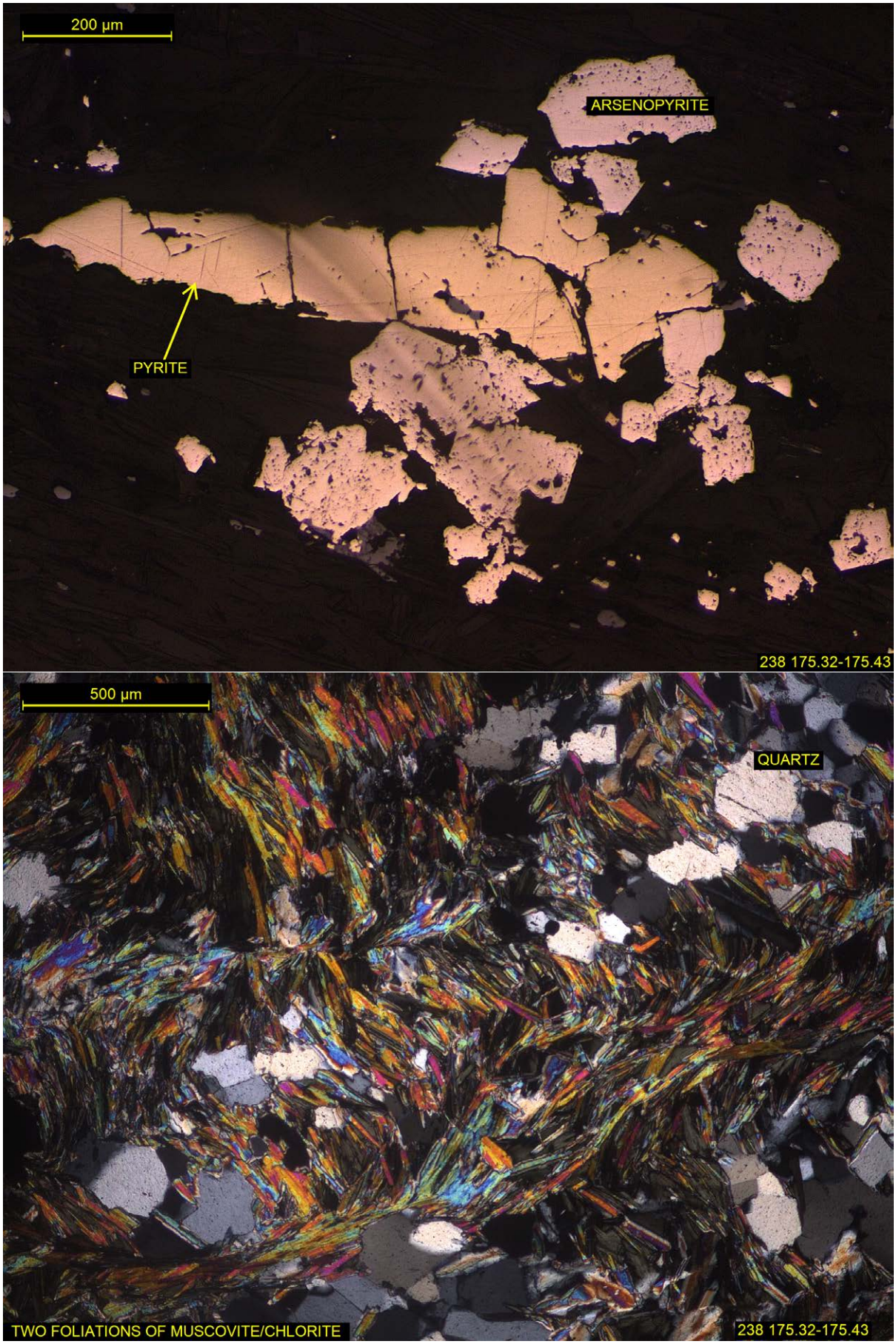

500 µm
CHALCOPYRITE
PYRITE
238 175.32-175.43
500 µm
PYRITE
GALENA
CHALCOPYRITE
238 175.32-175.43

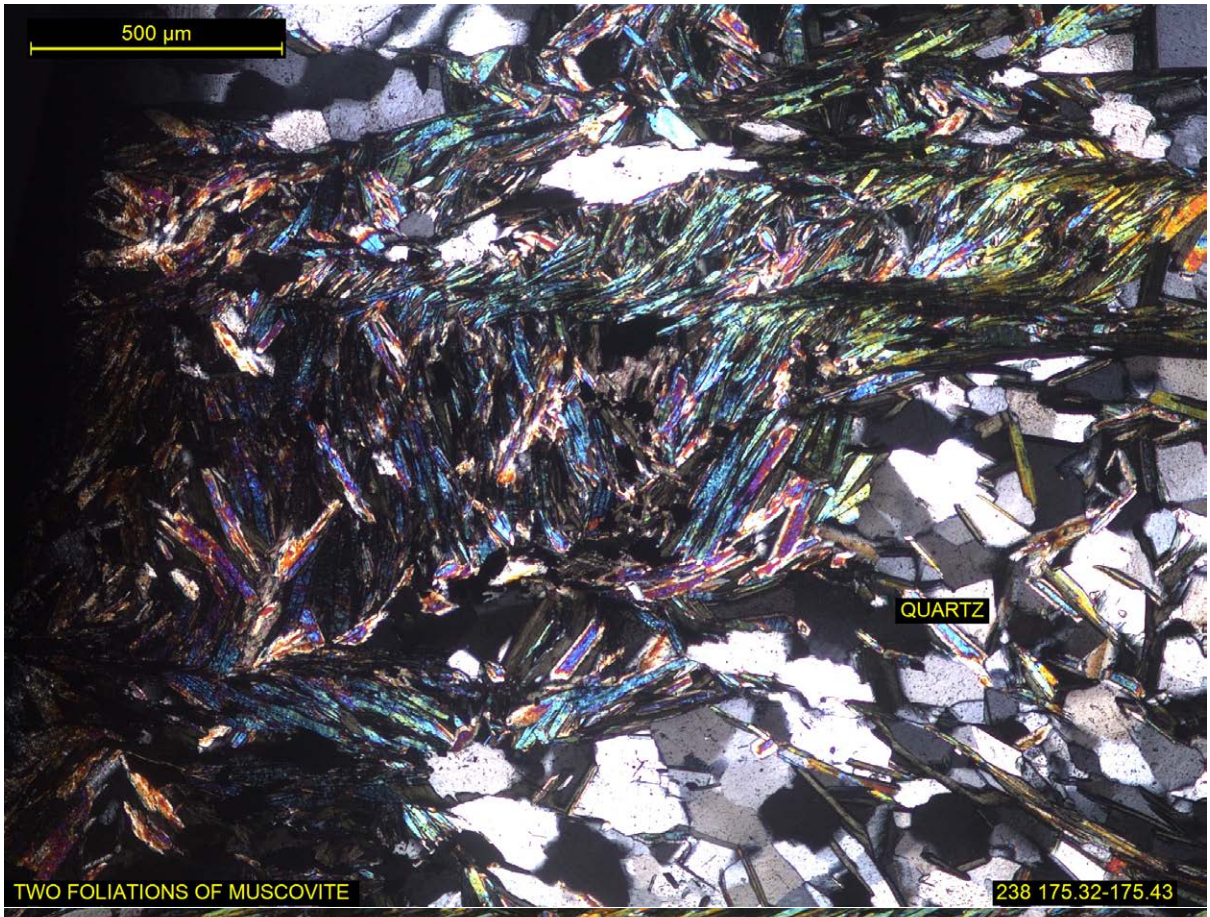

200 µm
GALENA
PYRITE
CHALCOPYRITE
GALENA
238 175.32-175.43

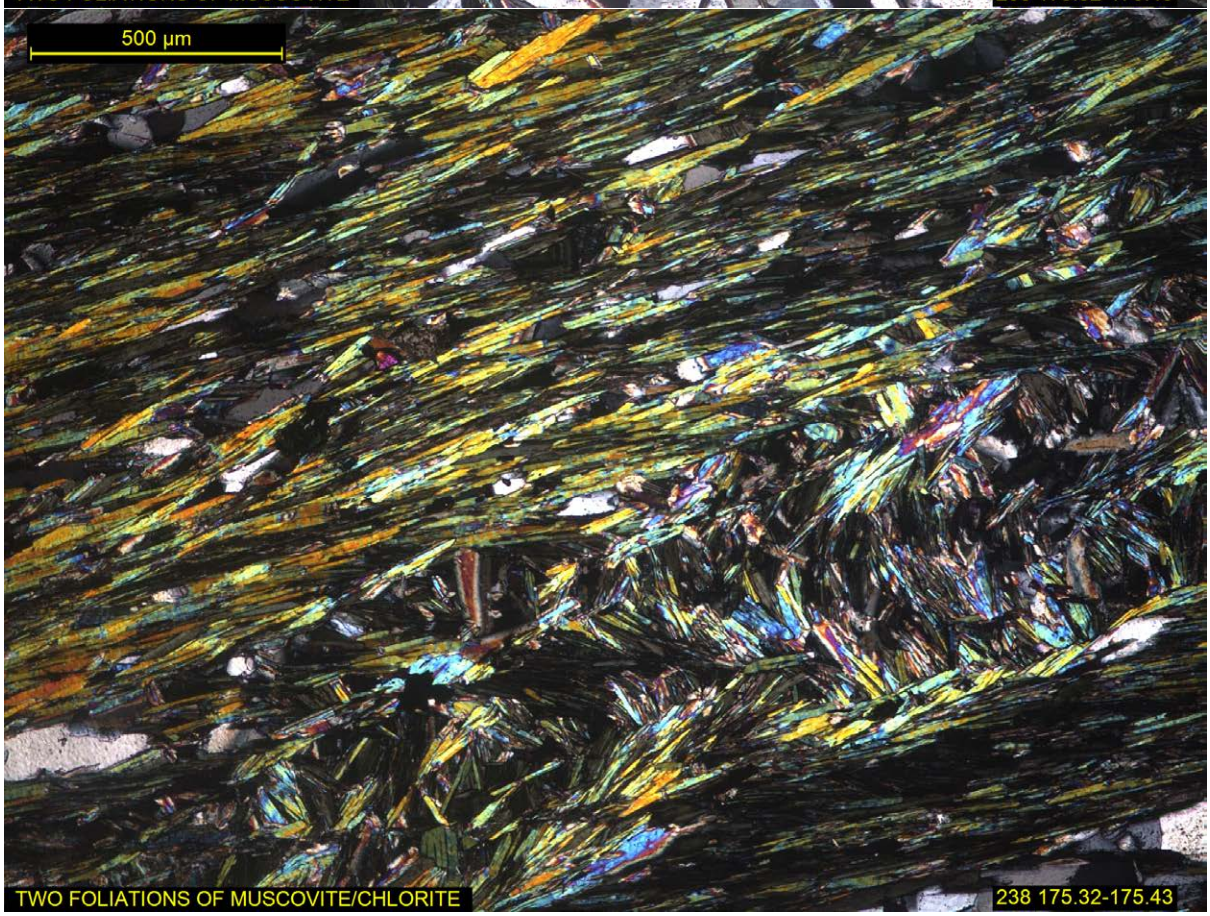

50 µm
GALENA
PYRITE
238 175.32-175.43

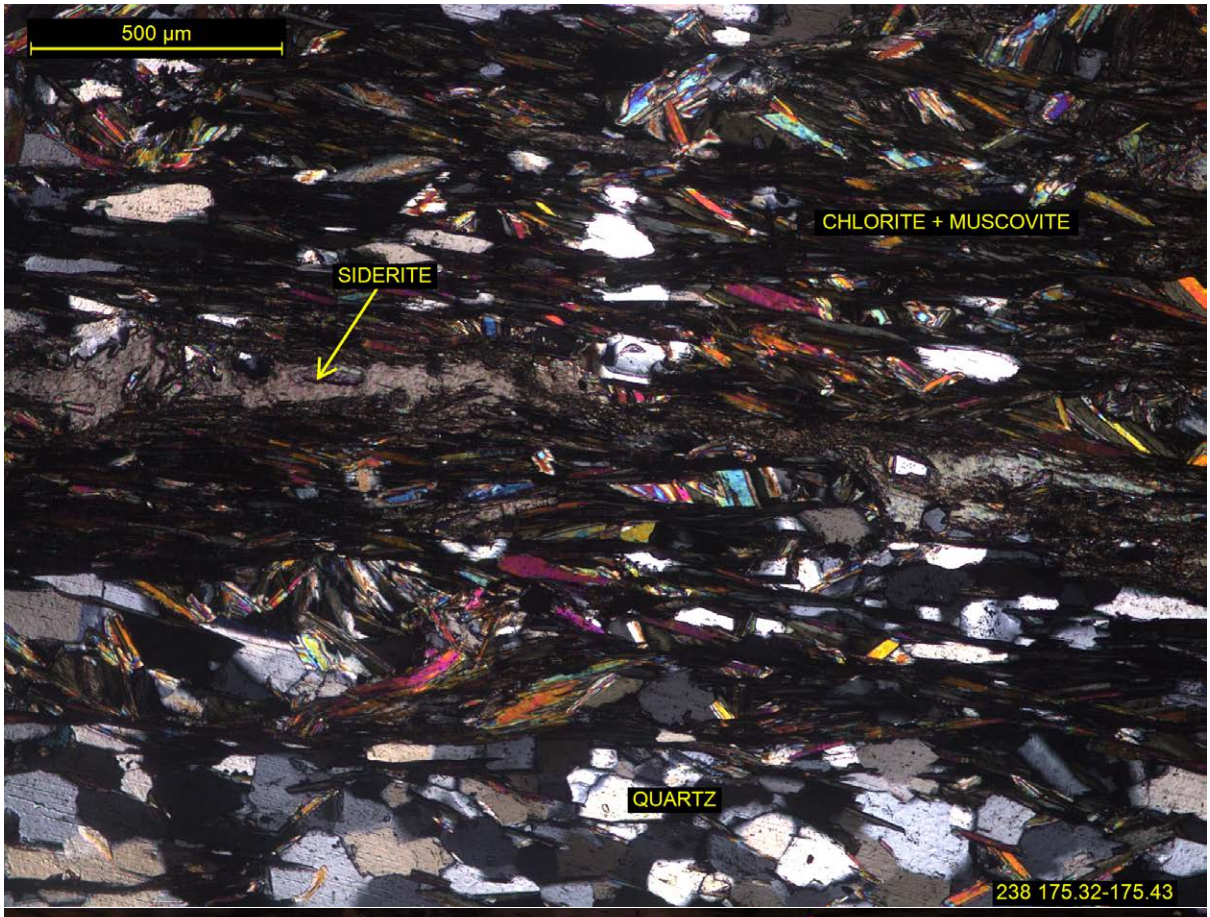

500 µm
CHALCOPYRITE
GALENA
PYRRHOTITE
238 175.32-175.43
500 µm
PYRITE
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
GALENA
238 175.32-175.43

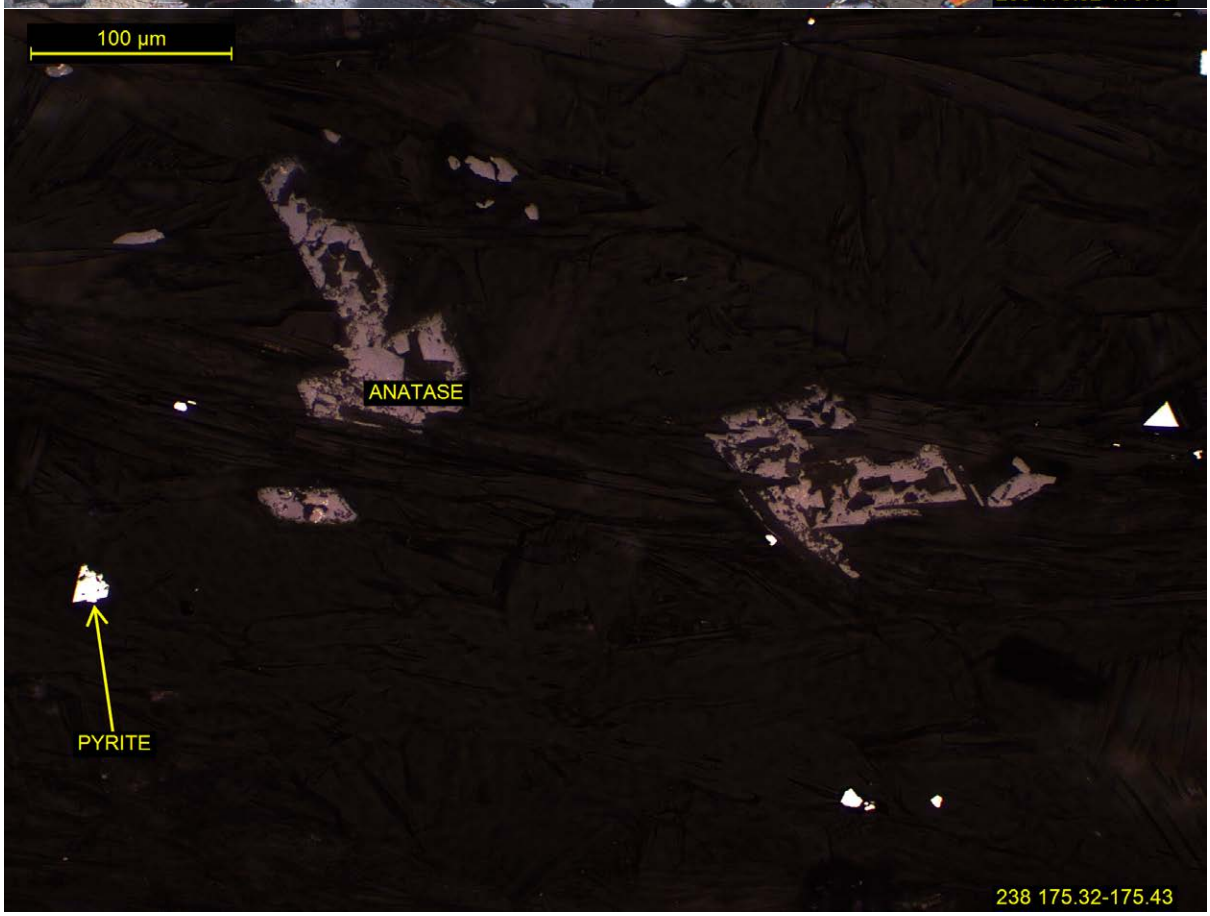

200 µm
TITANIUM OXIDES
GALENA
CHALCOPYRITE
PYRITE
238 175.32-175.43
200 µm
CHALCOPYRITE
GALENA
PYRRHOTITE
238 175.32-175.43


200 µm
ARSENOPYRITE
PYRITE
238 175.32-175.43
500 µm
QUARTZ
TWO FOLIATIONS OF MUSCOVITE/CHLORITE
238 175.32-175.43


500 µm
QUARTZ
TWO FOLIATIONS OF MUSCOVITE
238 175.32-175.43


500 µm
TWO FOLIATIONS OF MUSCOVITE/CHLORITE
238 175.32-175.43


500 µm
CHLORITE + MUSCOVITE
SIDERITE
QUARTZ
238 175.32-175.43


100 µm
ANATASE
PYRITE
238 175.32-175.43

SAMPLE K15-242 92.24-92.36

DRILL CORE

POLISHED THIN SECTION

MICA SCHIST	**40%**
MUSCOVITE	70-80%
CHLORITE	20-30%
BIOTITE	5-15%
ALBITE MACROCRYSTS	**2%**
DOLOMITE-SULPHIDE VEINS	**58%**
DOLOMITE	30-40%
PYRRHOTITE	30-40%
SPHALERITE	10-20%
CHALCOPYRITE	2-5%
GALENA	<1%
PYRITE	<1%
MARCASITE	<1%

CLASSIFIED AS A BLASTOPORPHYRITIC MICA SCHIST OVERPRINTED BY EXTENSIVE SPHALERITE-PYRRHOTITE-DOLOMITE VEINS

A chlorite-biotite-muscovite schist defined by a strong schistose fabric that has been extensively overprinted by pervasive dolomite-sulphide that has aligned with the schist fabric – giving the rock an overall roughly banded texture of alternating schist and dolomite/sulphides. Several albite macrocrysts are present, some up to ~10 mm in size.

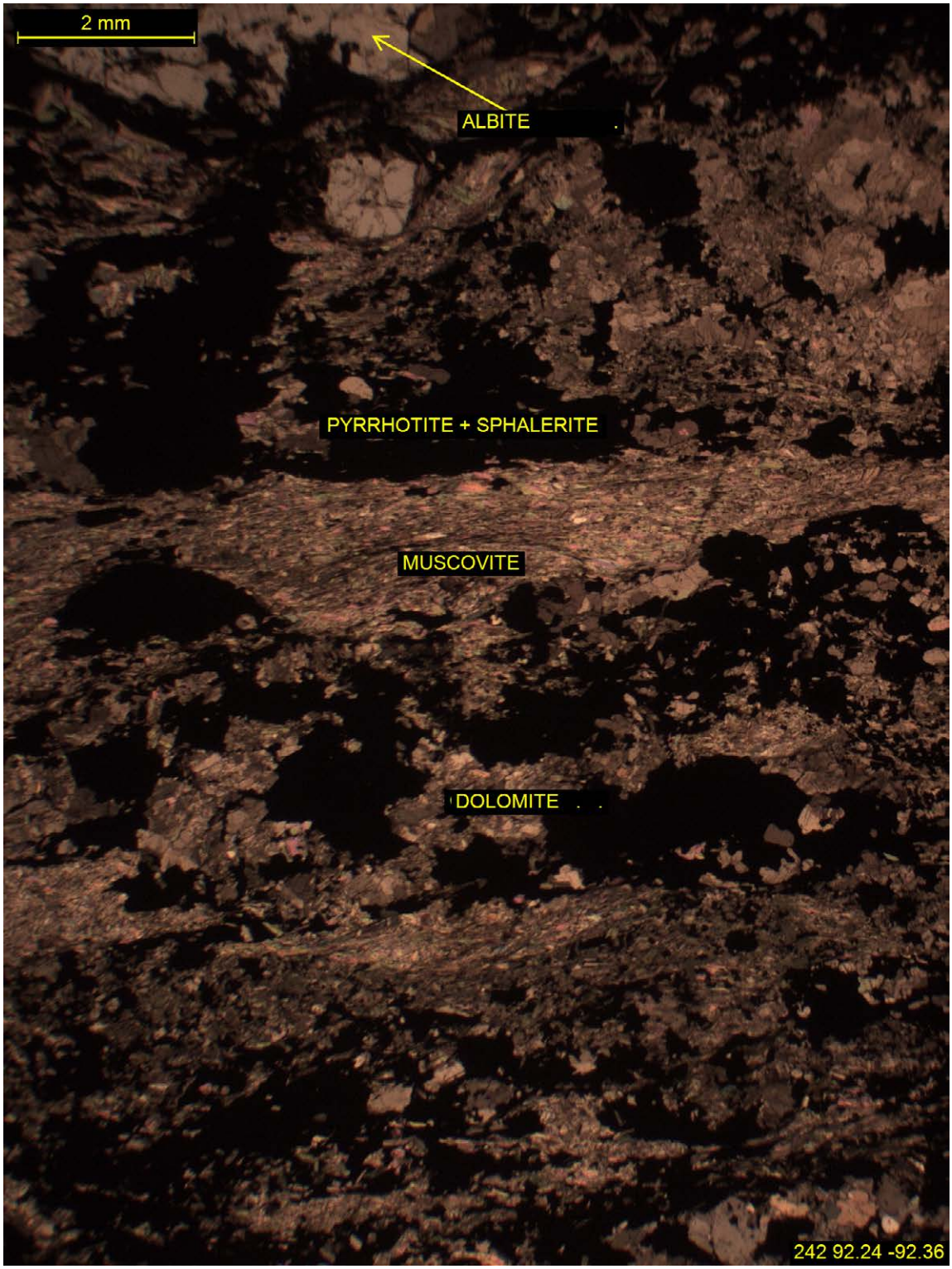
The dolomite-sulphide overprint is comprised mainly of dolomite, pyrrhotite and subordinate sphalerite. Pyrrhotite (magnetic) and sphalerite always occur together in semi-banded/laminated composite aggregates that are highly irregularly shaped (up to ~4mm) somewhat elongate parallel to banding. Typical textures are one sulphide rimming the other, occasionally inclusions of one in the other. These ore composites frequently are intergrown or have inclusions of dolomite, which occur as discrete grains or polycrystalline mosaics (~200 µm average). The sulphides are found within muscovite, chlorite and biotite as well.

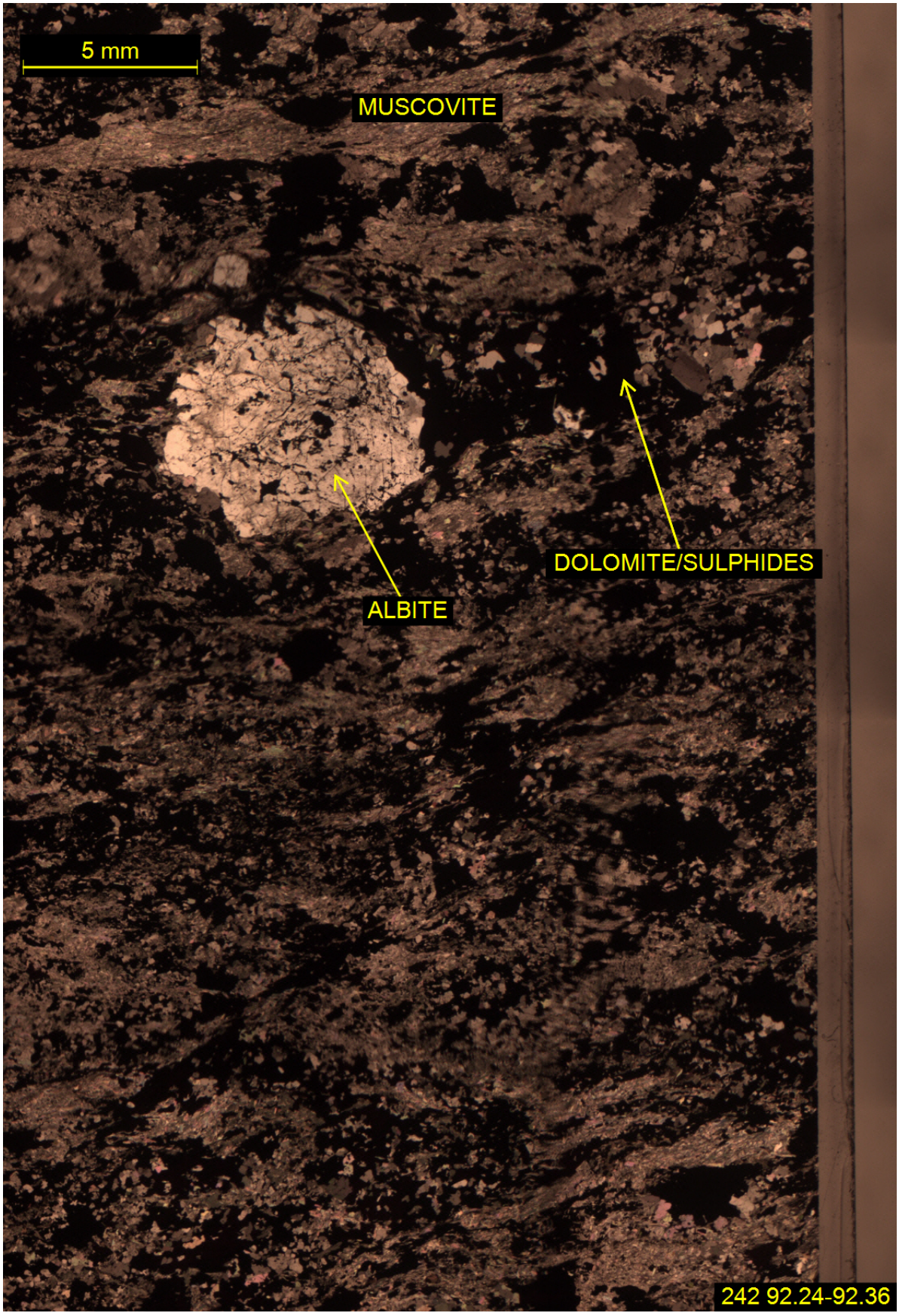
Muscovite and chlorite/biotite laminations have a strong preferentially aligned schistose texture, the former consisting of euhedral flakes (averaging ~200 µm). Intervening biotite laminations are undergoing replacement by chlorite.

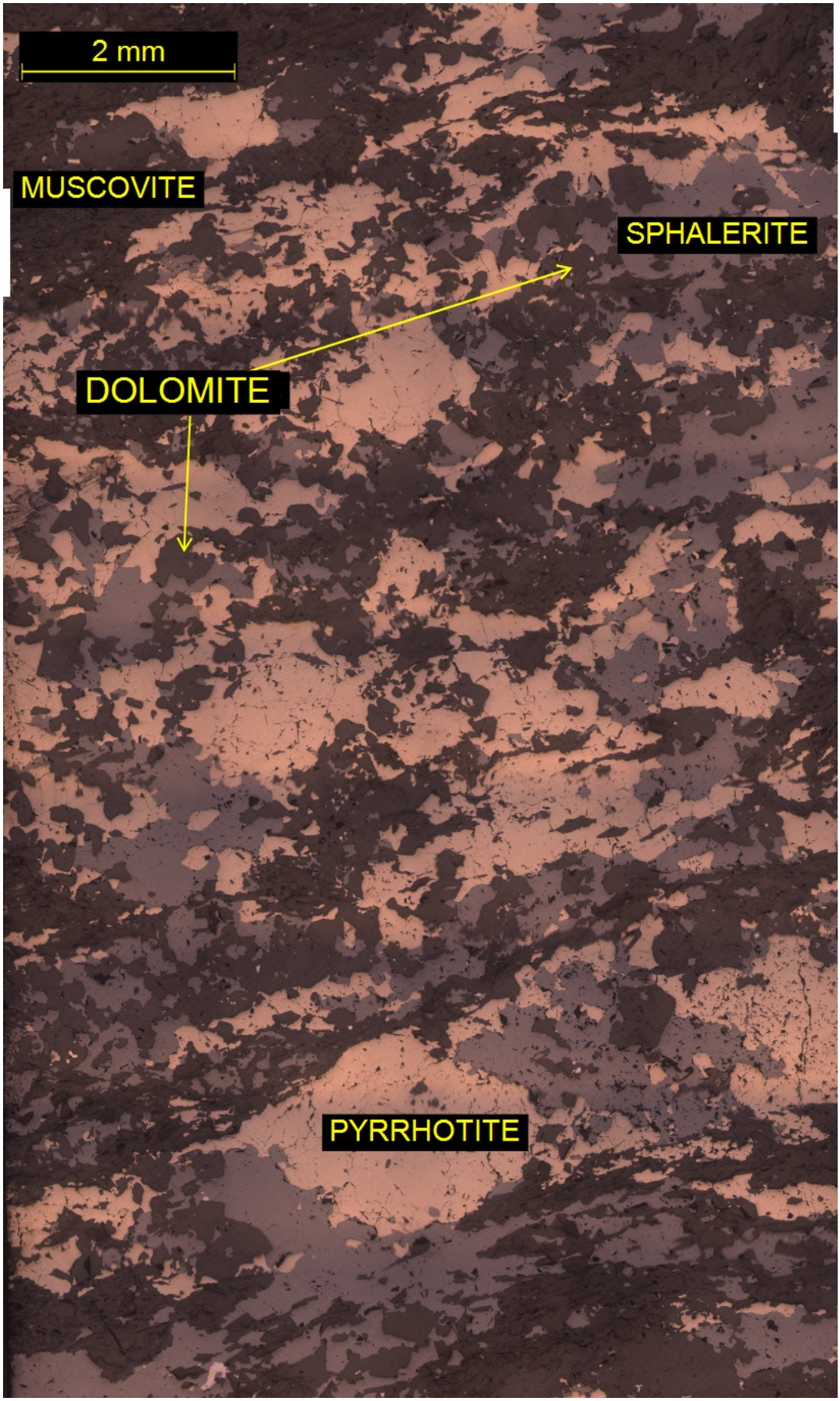
Chalcopyrite occurs randomly disseminated, typically in low amounts across the thin section, as discrete grains in silicates/carbonate, as thin rims on pyrrhotite and sphalerite (generally sized from microns to ~150 µm. In one particular band it is more enriched

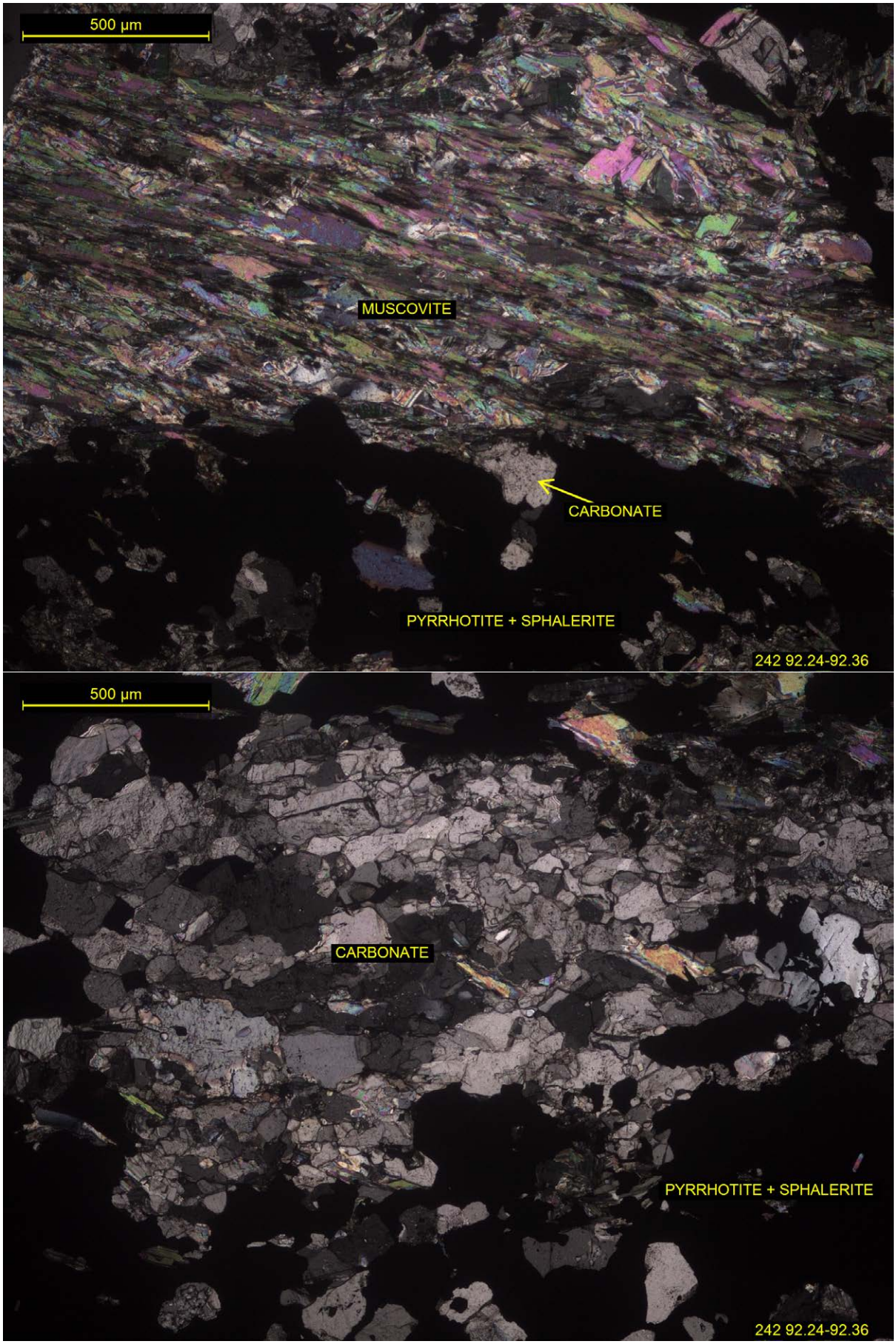
occurring in numerous coarser complex composites with sphalerite and pyrrhotite (up to ~500 µm) – see photomicrographs.

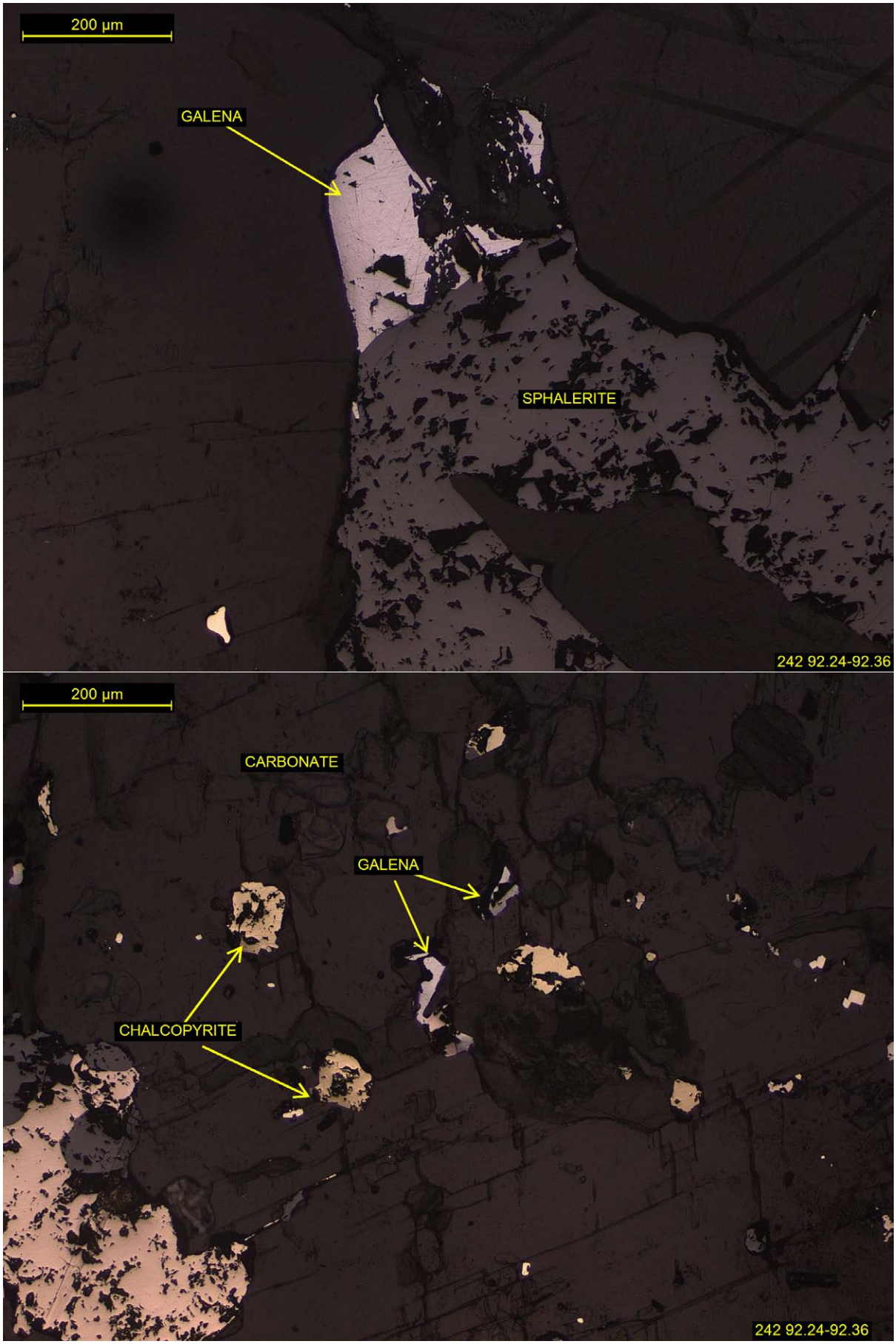
Galena is found sporadically disseminated across the sample, most frequently rimming sphalerite, or occurring as inclusions in the gangue. Additionally, it was found as composites with pyrrhotite, chalcopyrite or as inclusions in sphalerite. The grains are angular, irregular, elongate varying in size from microns to ~350 µm.

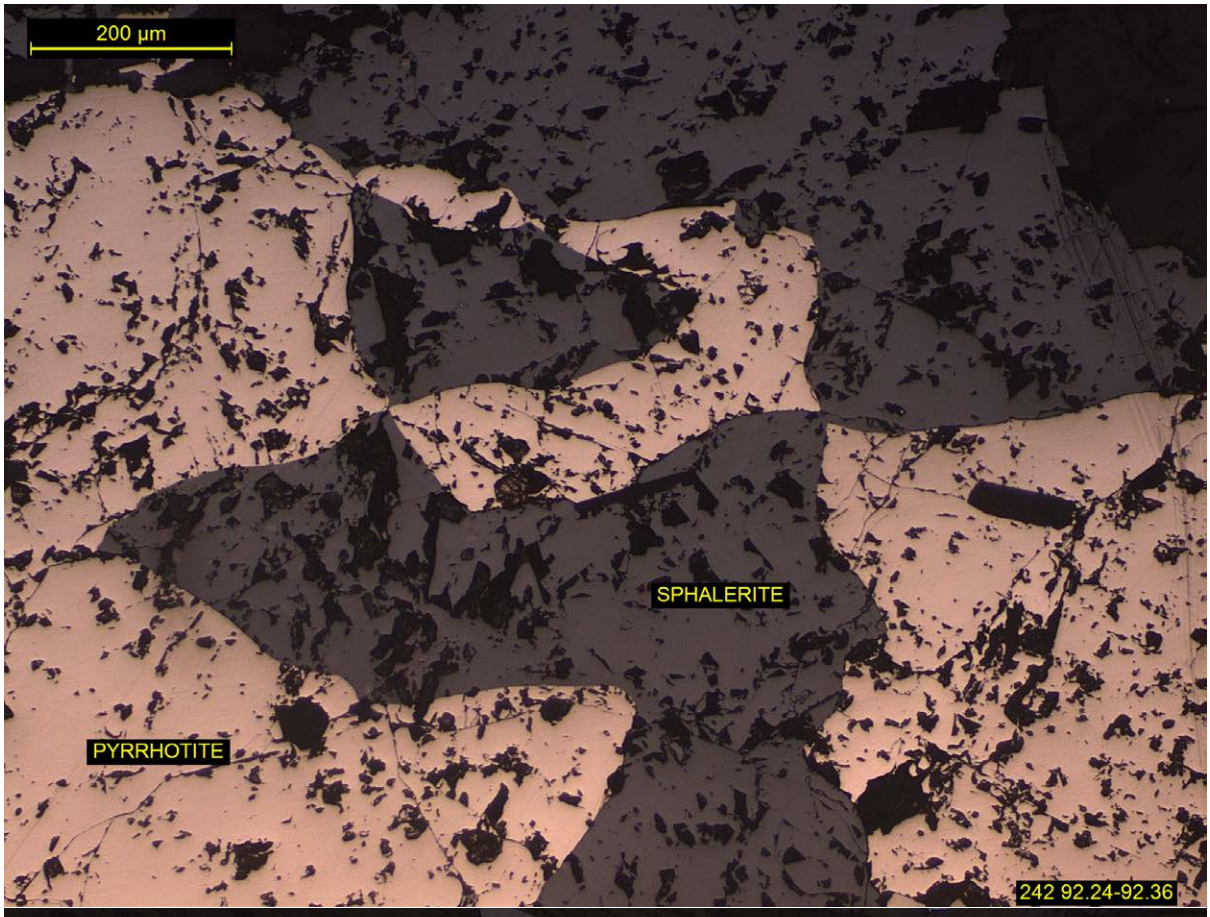


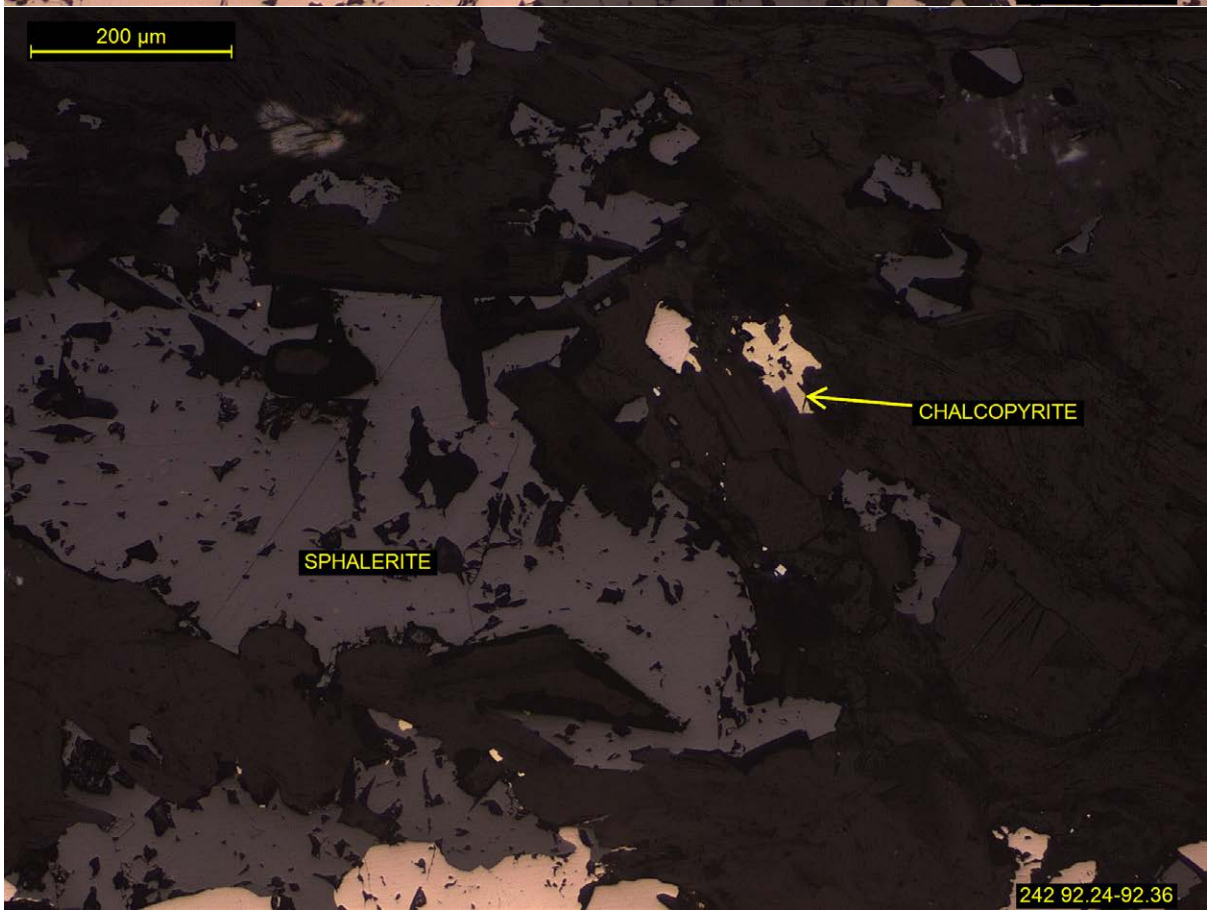

5 mm
MUSCOVITE
DOLOMITE/SULPHIDES
ALBITE
242 92.24-92.36

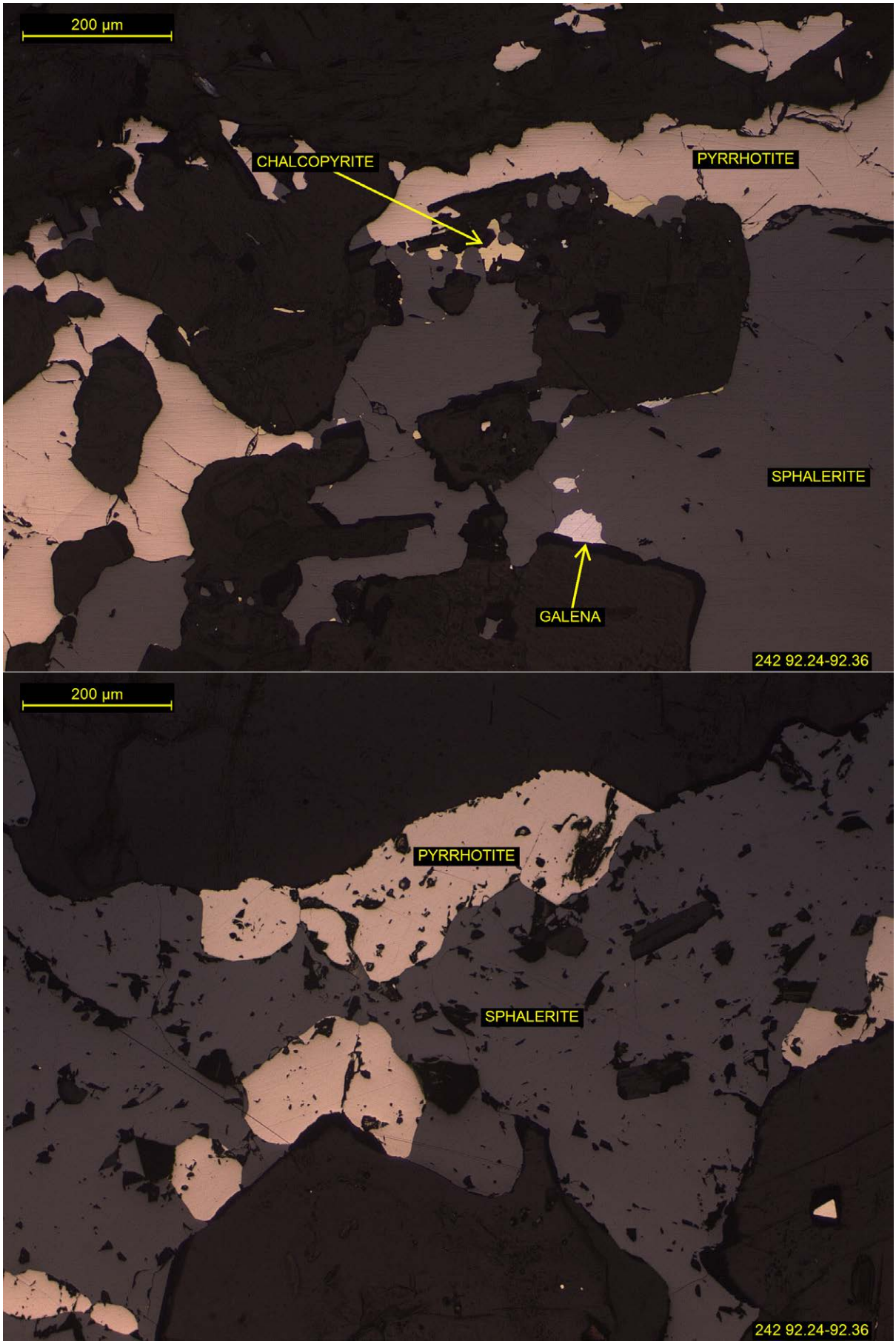

2 mm
MUSCOVITE
SPHALERITE
DOLOMITE
PYRRHOTITE

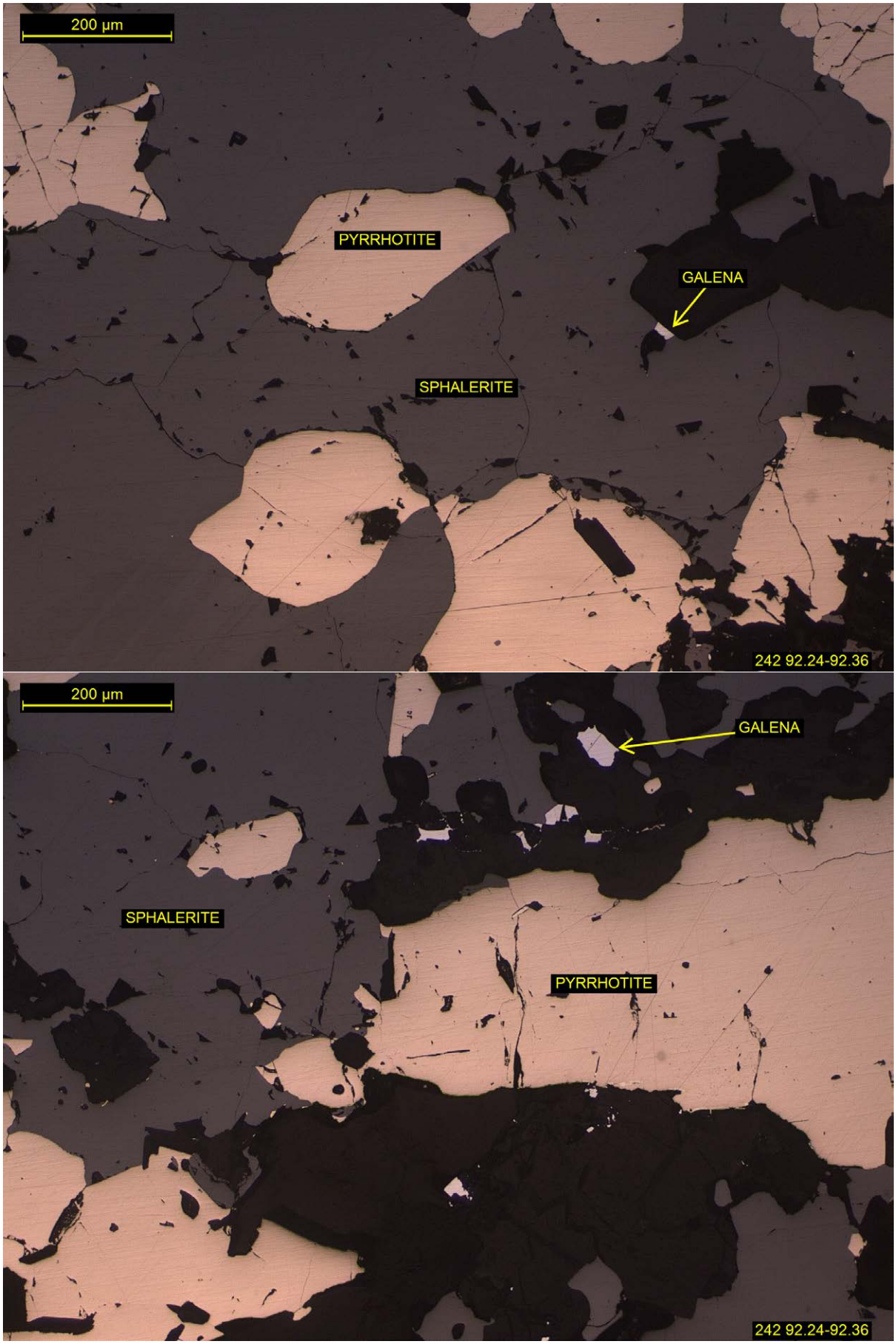

500 µm
MUSCOVITE
CARBONATE
PYRRHOTITE + SPHALERITE
242 92.24-92.36
500 µm
CARBONATE
PYRRHOTITE + SPHALERITE
242 92.24-92.36

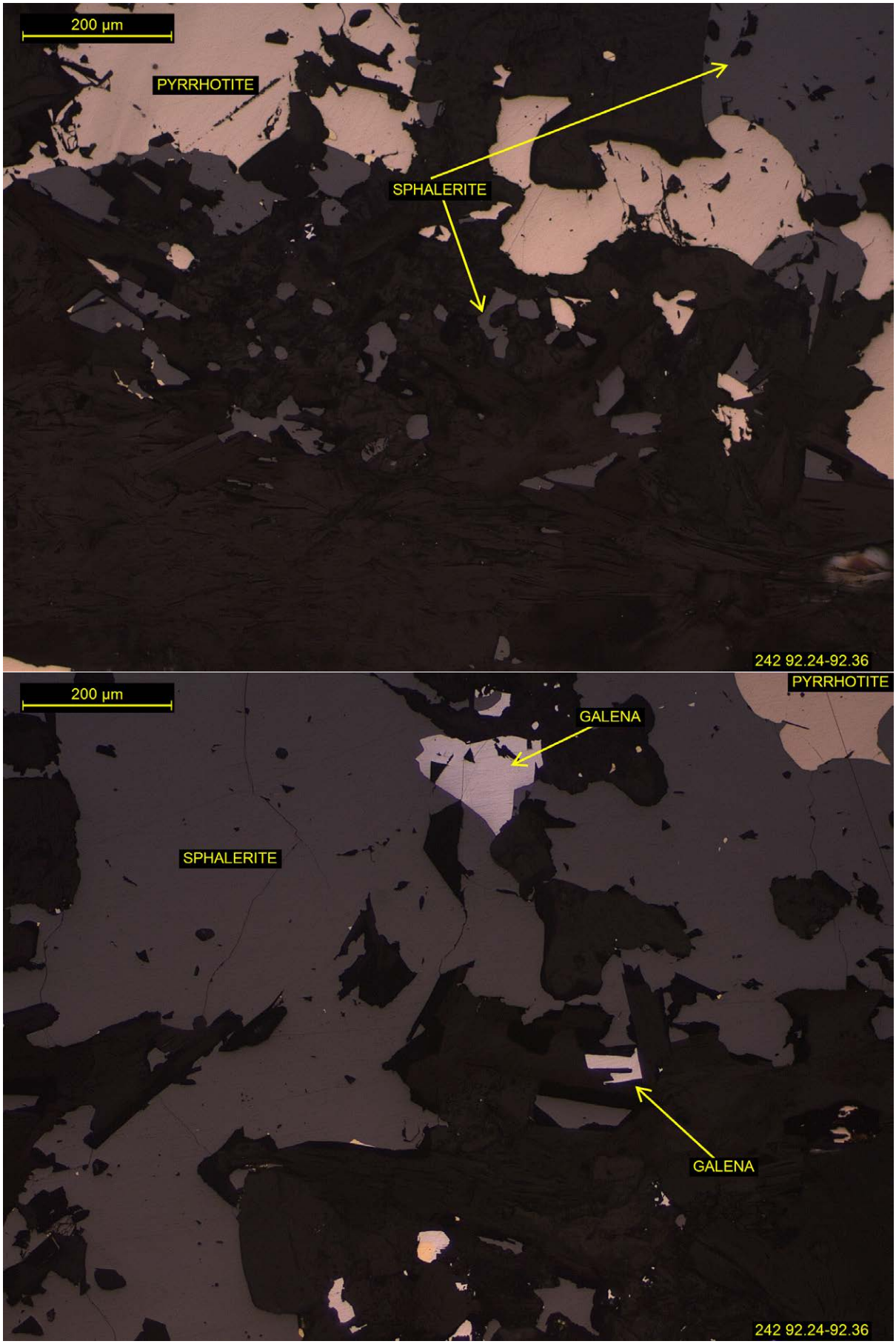

200 µm
GALENA
SPHALERITE
242 92.24-92.36
200 µm
CARBONATE
GALENA
CHALCOPYRITE
242 92.24-92.36

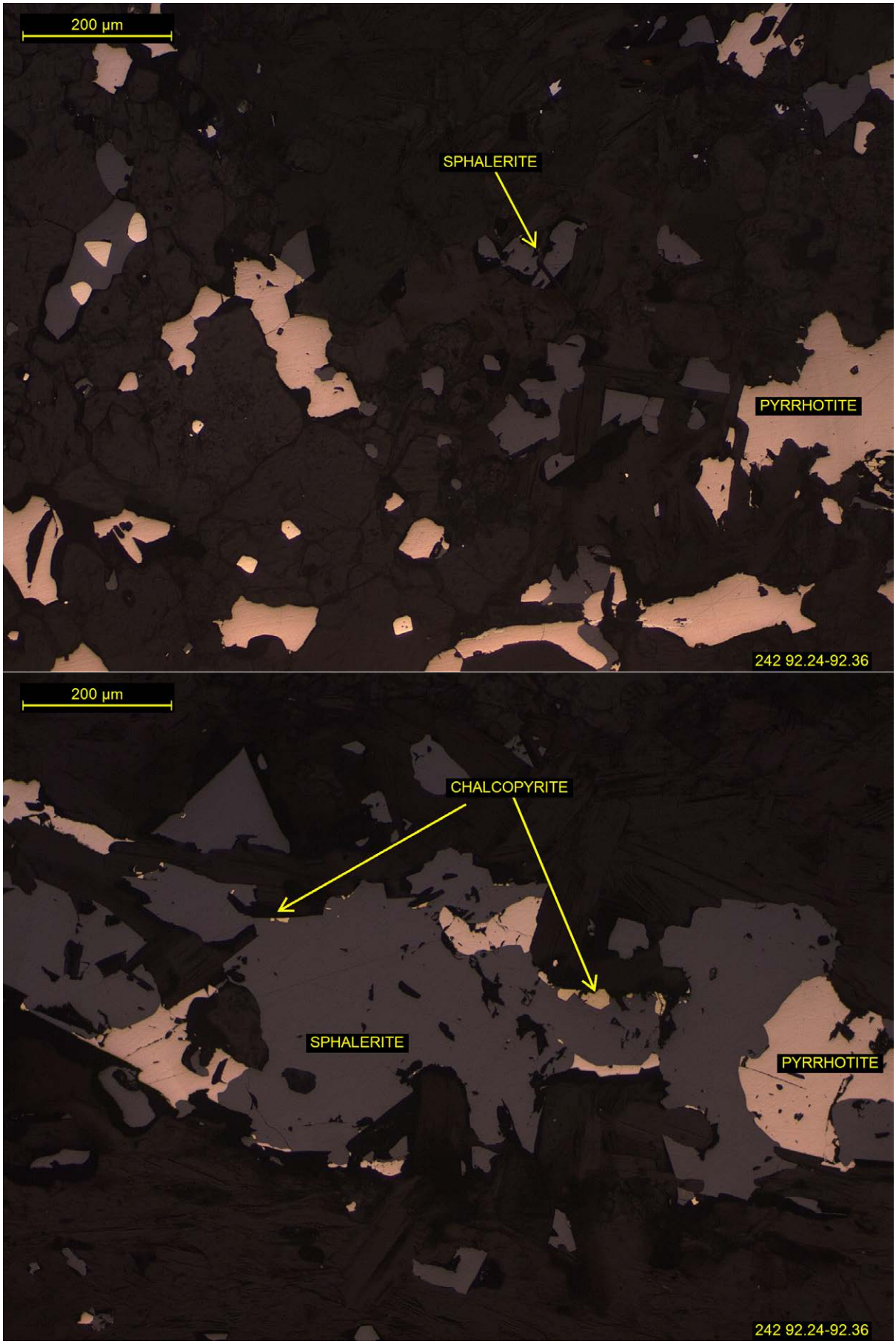

200 µm
SPHALERITE
PYRRHOTITE
242 92.24-92.36

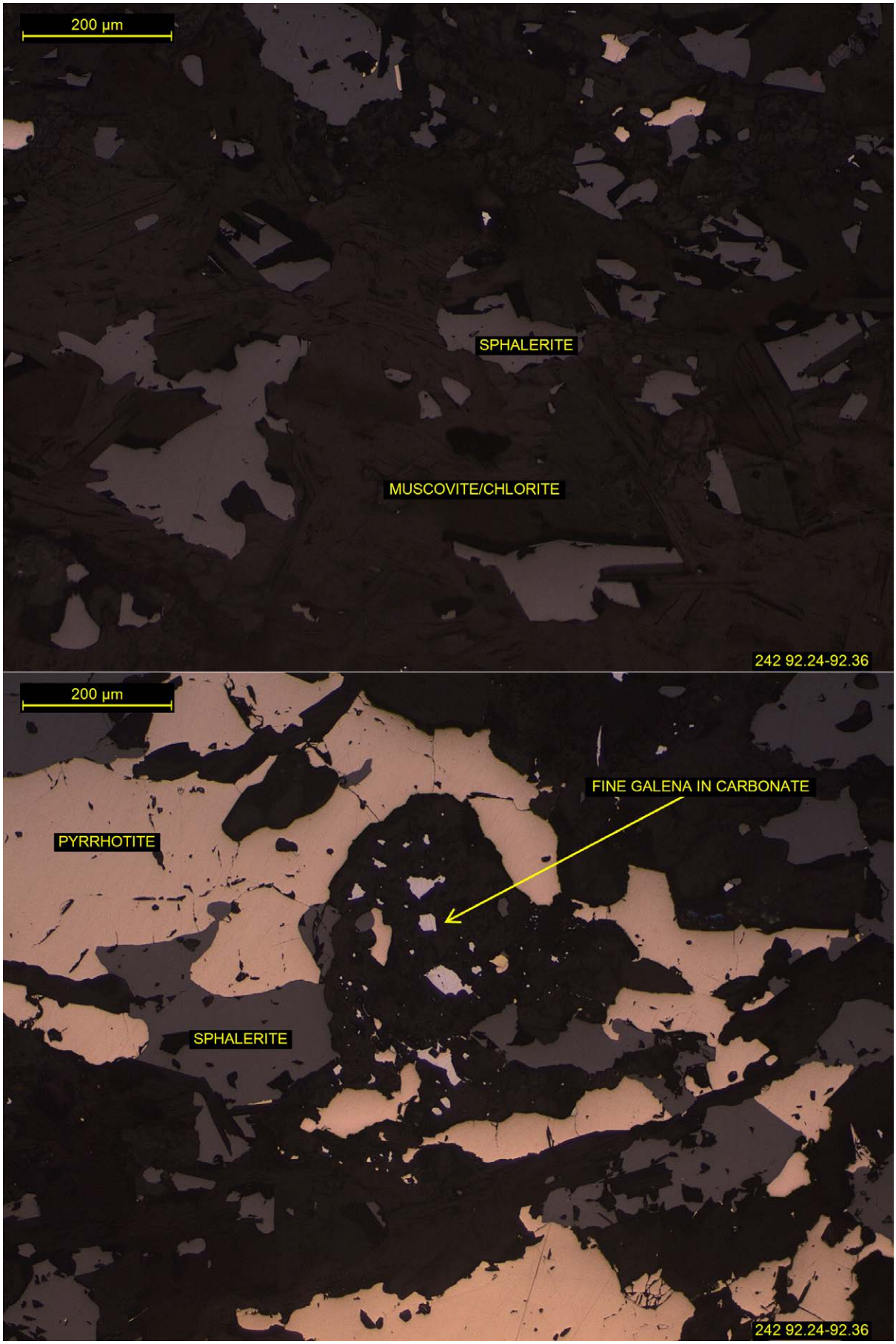

200 µm
CHALCOPYRITE
SPHALERITE
242 92.24-92.36

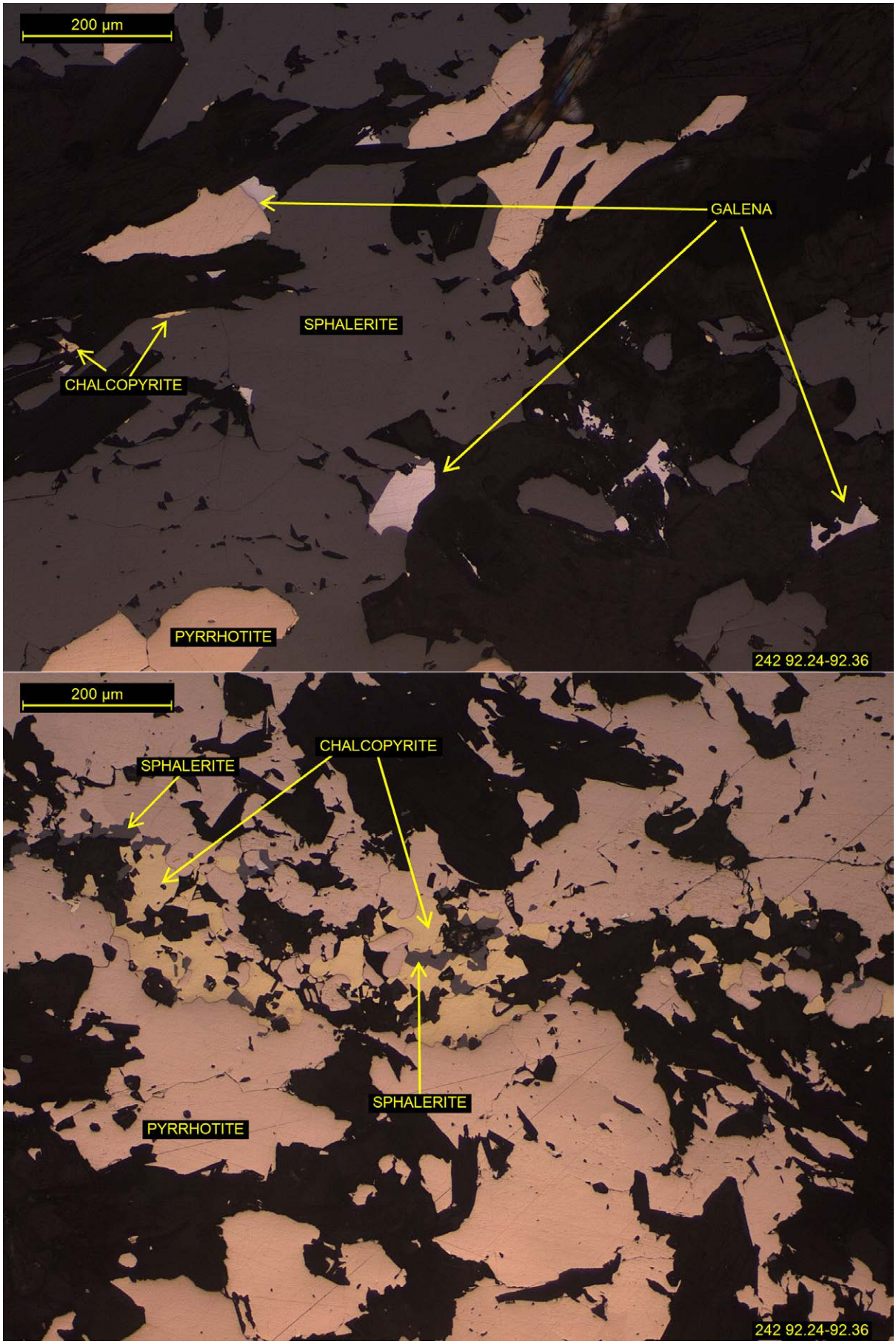

200 µm
CHALCOPYRITE
PYRRHOTITE
SPHALERITE
GALENA
242 92.24-92.36
200 µm
PYRRHOTITE
SPHALERITE
242 92.24-92.36

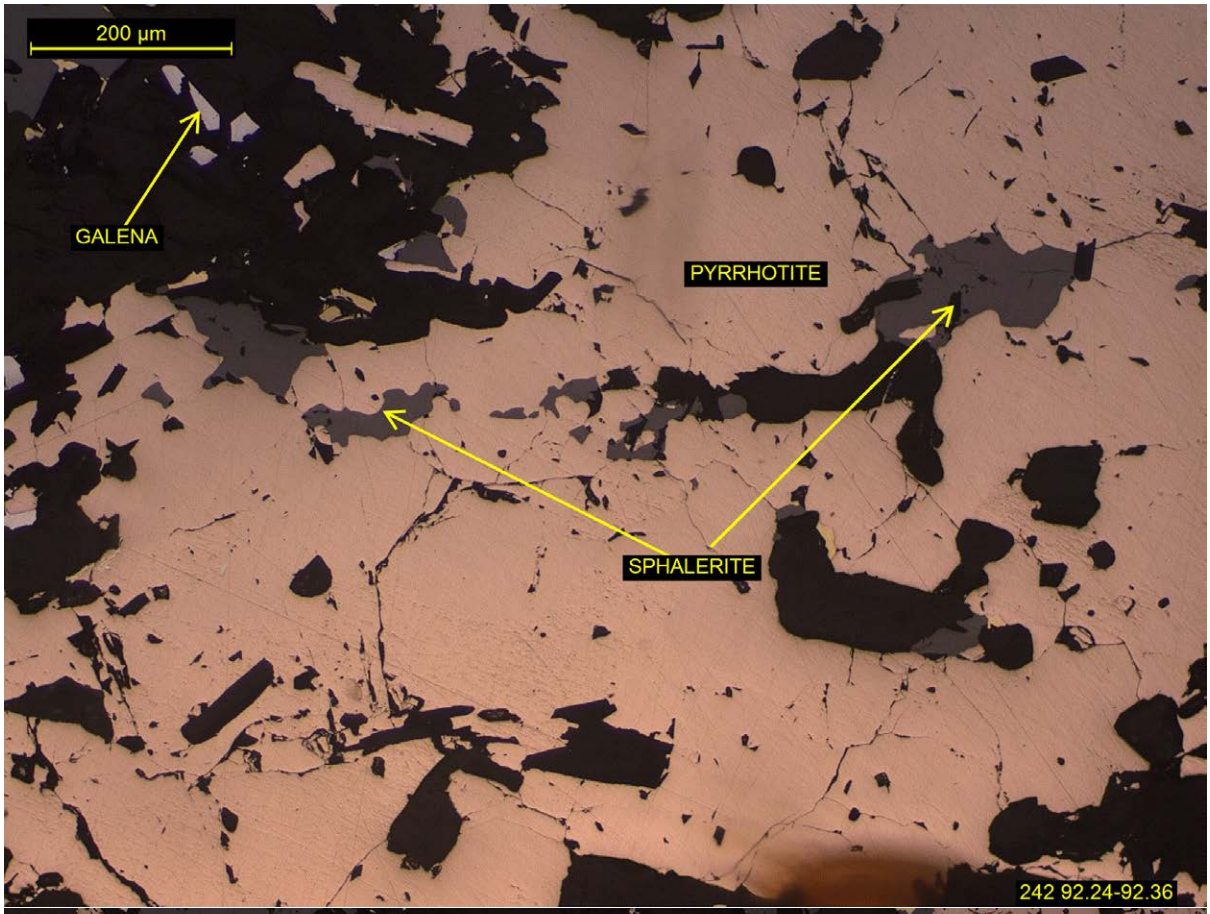

200 µm
PYRRHOTITE
GALENA
SPHALERITE
242 92.24-92.36
200 µm
GALENA
SPHALERITE
PYRRHOTITE
242 92.24-92.36

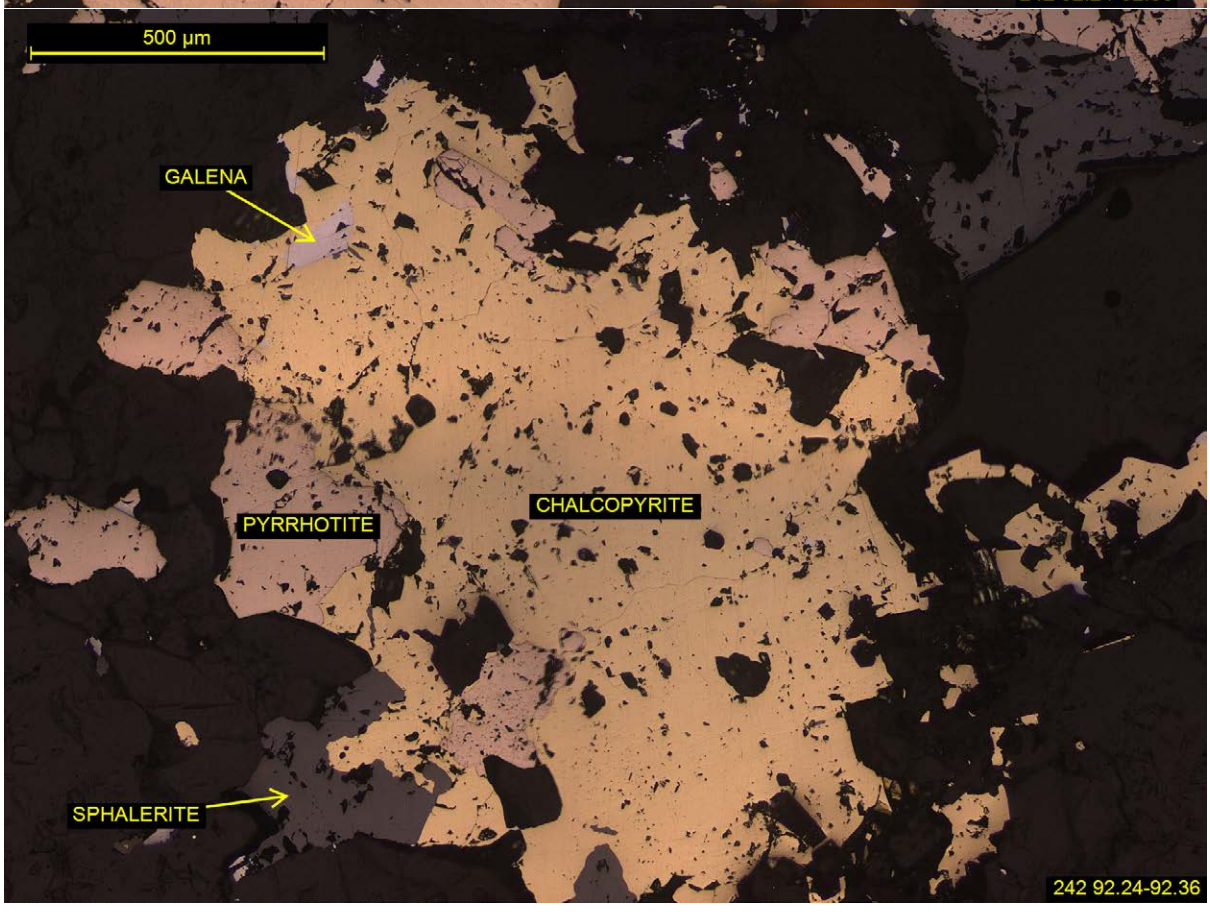

200 µm
PYRRHOTITE
SPHALERITE
242 92.24-92.36
200 µm
PYRRHOTITE
GALENA
SPHALERITE
GALENA
242 92.24-92.36

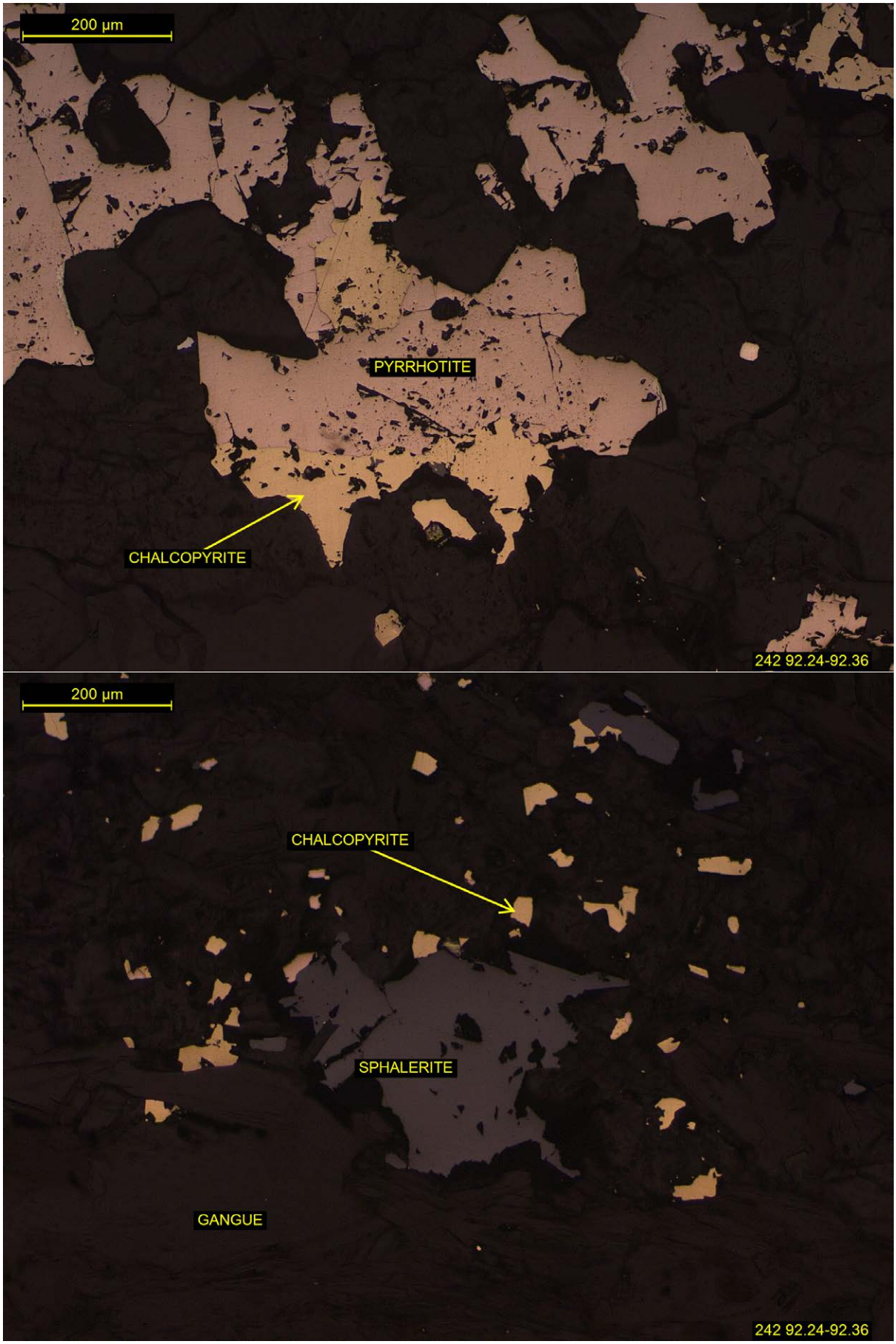

200 µm
SPHALERITE
PYRRHOTITE
242 92.24-92.36
200 µm
CHALCOPYRITE
SPHALERITE
PYRRHOTITE
242 92.24-92.36

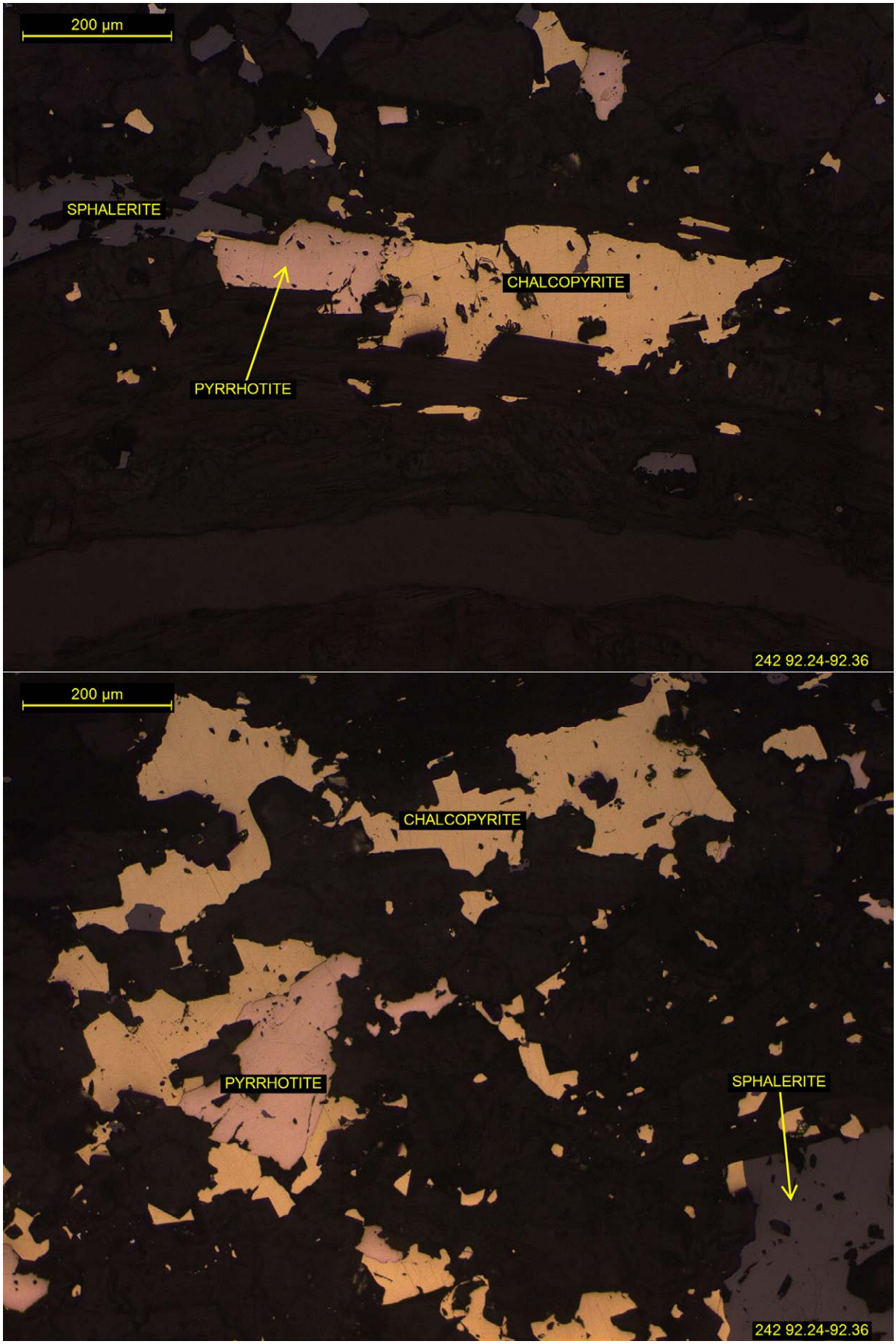

200 µm
SPHALERITE
MUSCOVITE/CHLORITE
242 92.24-92.36
200 µm
FINE GALENA IN CARBONATE
PYRRHOTITE
SPHALERITE
242 92.24-92.36

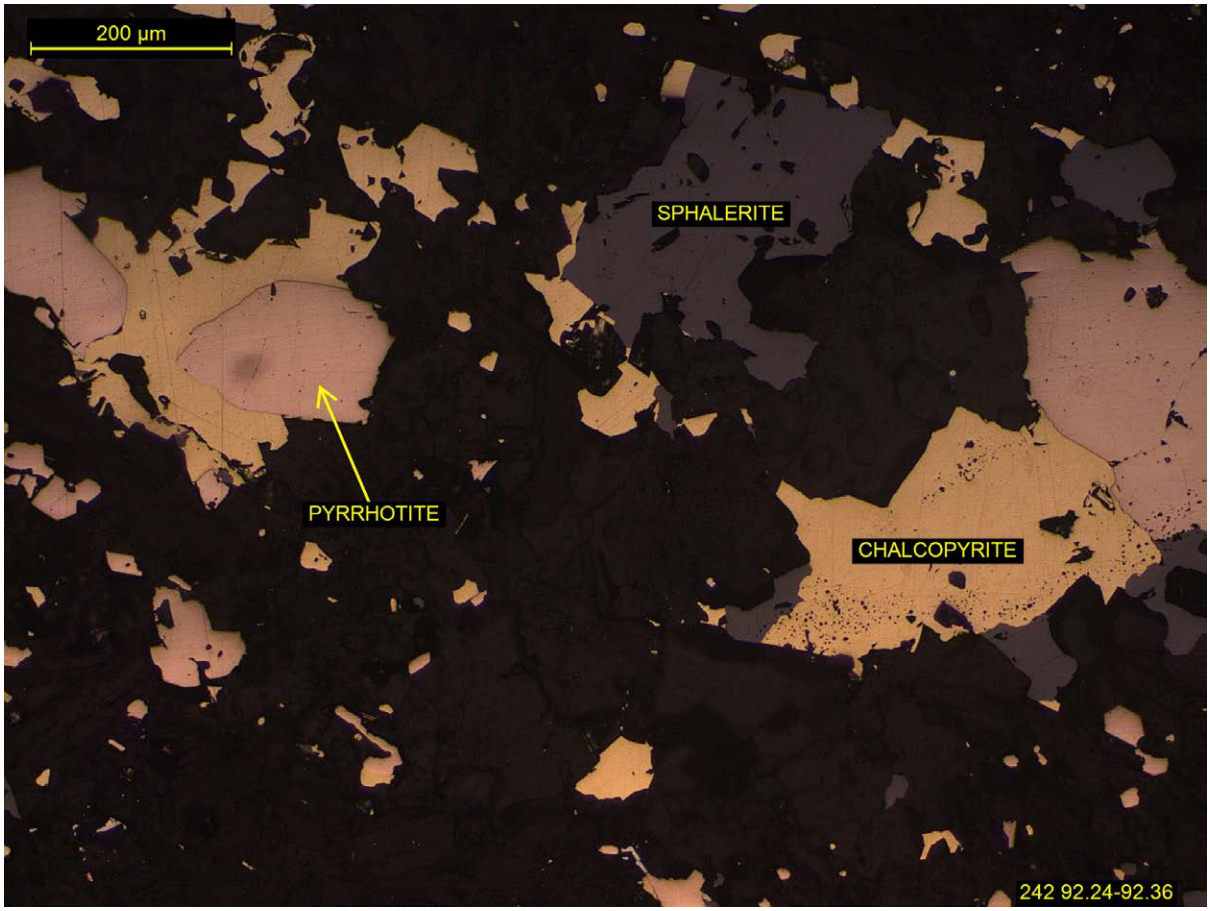

200 µm
GALENA
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
242 92.24-92.36
200 µm
CHALCOPYRITE
SPHALERITE
SPHALERITE
PYRRHOTITE
242 92.24-92.36


200 µm
GALENA
PYRRHOTITE
SPHALERITE
242 92.24-92.36


500 µm
GALENA
PYRRHOTITE
CHALCOPYRITE
SPHALERITE
242 92.24-92.36


200 µm
PYRRHOTITE
CHALCOPYRITE
242 92.24-92.36
200 µm
CHALCOPYRITE
SPHALERITE
GANGUE
242 92.24-92.36


200 µm
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
242 92.24-92.36
200 µm
CHALCOPYRITE
PYRRHOTITE
SPHALERITE
242 92.24-92.36


200 µm
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
242 92.24-92.36

SAMPLE K15-259 49.5-49.87

DRILL CORE

POLISHED THIN SECTION

ALBITITE ROCK FRAGMENTS	**10%**
TITANIUM OXIDES	**<1%**
BARITE	**<1%**
ORES	**65%**
PYRITE	40-50%
CHALCOPYRITE	30-40%
PYRRHOTITE	10-20%
SPHALERITE	3-5%
MARCASITE	1-3%
GALENA	1-2%
VEINS	**30%**
CARBONATE (SIDERITE>>DOLOMITE-XRD)	70-80%
MUSCOVITE>>BIOTITE	15-25%
QUARTZ	1-5%

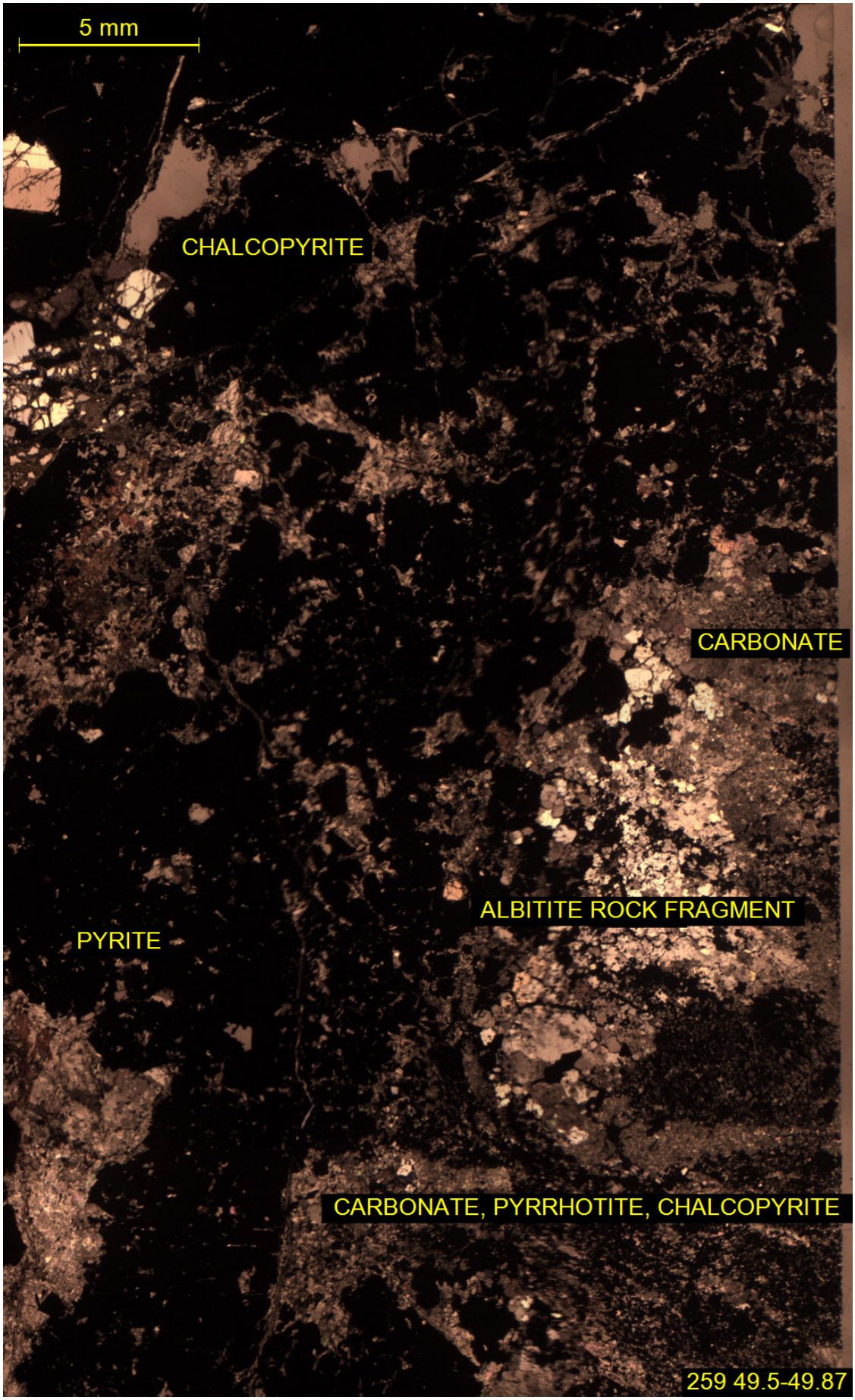
CLASSIFIED AS A MICA CARBONATE CEMENTED/VEINED SPHALERITE PYRRHOTITE CHALCOPYRITE PYRITE ORE WITH ALBITITE ROCK FRAGMENTS

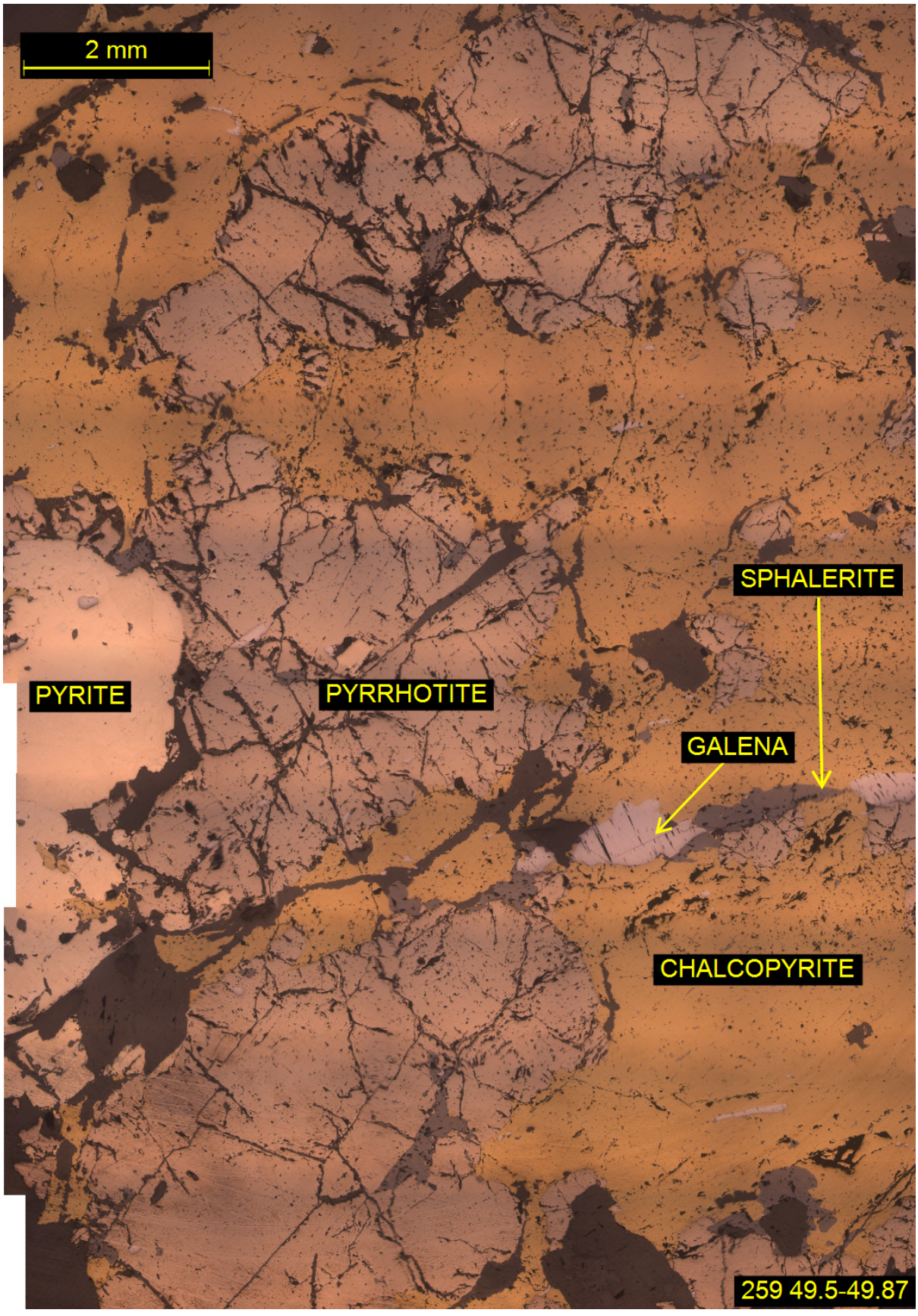
A varied complex array of textures, consisting primarily of large masses of chalcopyrite and pyrite with disseminated pyrrhotite, lesser sphalerite and galena, cemented/veined mainly by carbonate and subordinate muscovite.

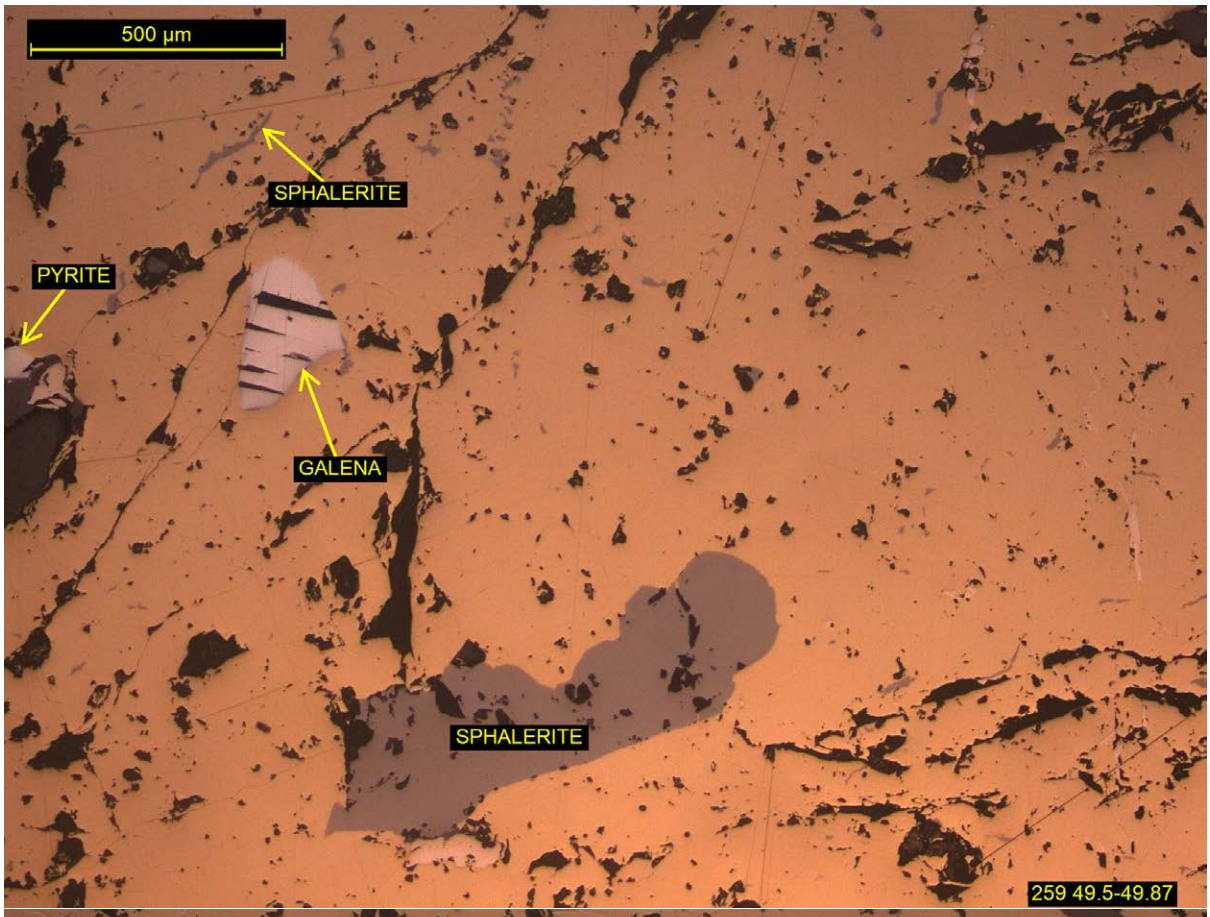
The top ~20mm of the slide is a somewhat massive chalcopyrite mass that contains numerous additional sulphide inclusions, and is veined by carbonate, muscovite and quartz. Several coarse albite polycrystalline fragments (up to ~5 mm) are hosted by chalcopyrite as well, that are commonly veined by intricate fine barite. Small (<1 mm) to large (up to ~7mm) allotriomorphic pyrrhotite inclusions are common. Frequent sphalerite inclusions were observed, ranging in size from microns to ~2 mm, and are irregularly shaped sitting mainly in chalcopyrite and the aforementioned pyrrhotite. Sub-round galena inclusions were frequently found within chalcopyrite and pyrrhotite, typical size range of ~100 µm to ~1.5 mm.

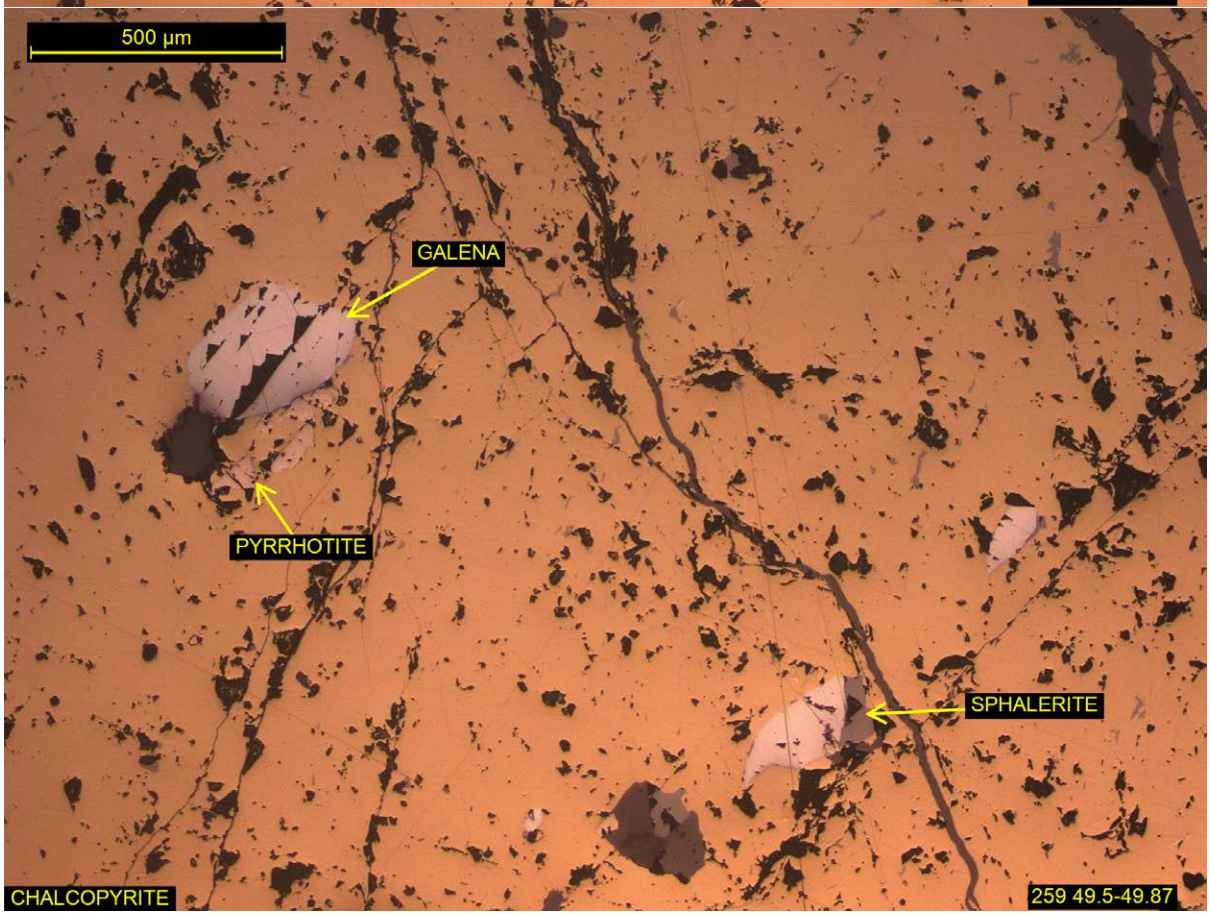
A large section of the rest of the thin section is a huge pyrite mass, incipiently altered to marcasite, with a relatively low content of additional sulphide inclusions, primarily (~100 to ~600 µm) irregular pyrrhotite grains, with frequent pockets (~400 µm) and veins of carbonate. Fine to coarse (~200 µm to ~5 mm) sphalerite grains are found rimming pyrite or occasionally included in pyrite, rare galena (~30 to ~250 µm) inclusions and rims are associated with pyrite, as are chalcopyrite (up to ~2mm) grains.

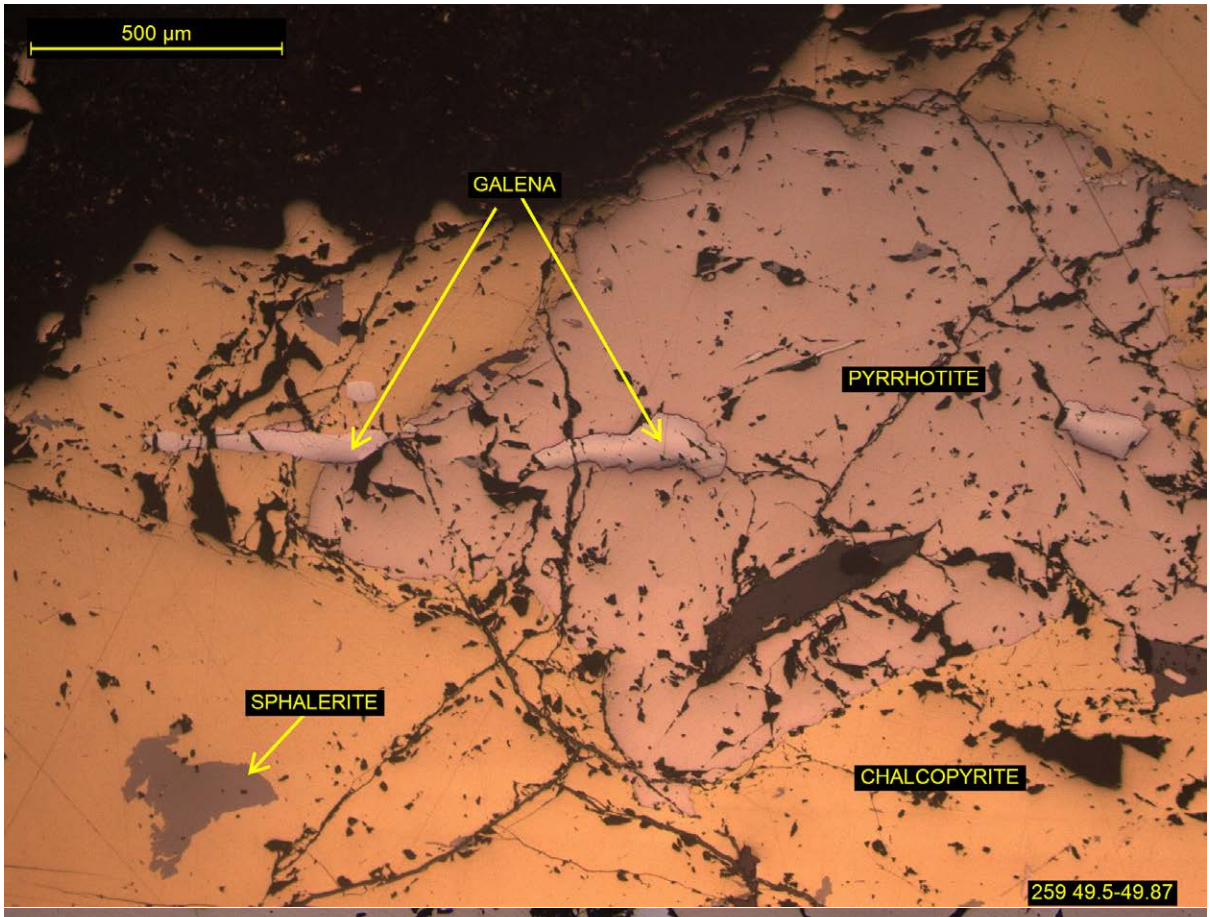
The remaining sections of the thin sections are gangue rich, consisting primarily of an interlocking/mosaic (~200 µm average) of carbonate (vein), subordinate muscovite and lesser biotite, and large fragments of coarse grained (~0.4 to ~2.5 mm) albitite rock and albite macrocrysts, showing twinning. Chalcopyrite and pyrrhotite form large irregular networks throughout these gangue dominant areas. Pyrrhotite is undergoing incipient alteration to marcasite, whilst sporadic euhedral pyrite and irregularly shaped sphalerite grains are also occasionally present (generally sub 400 µm).

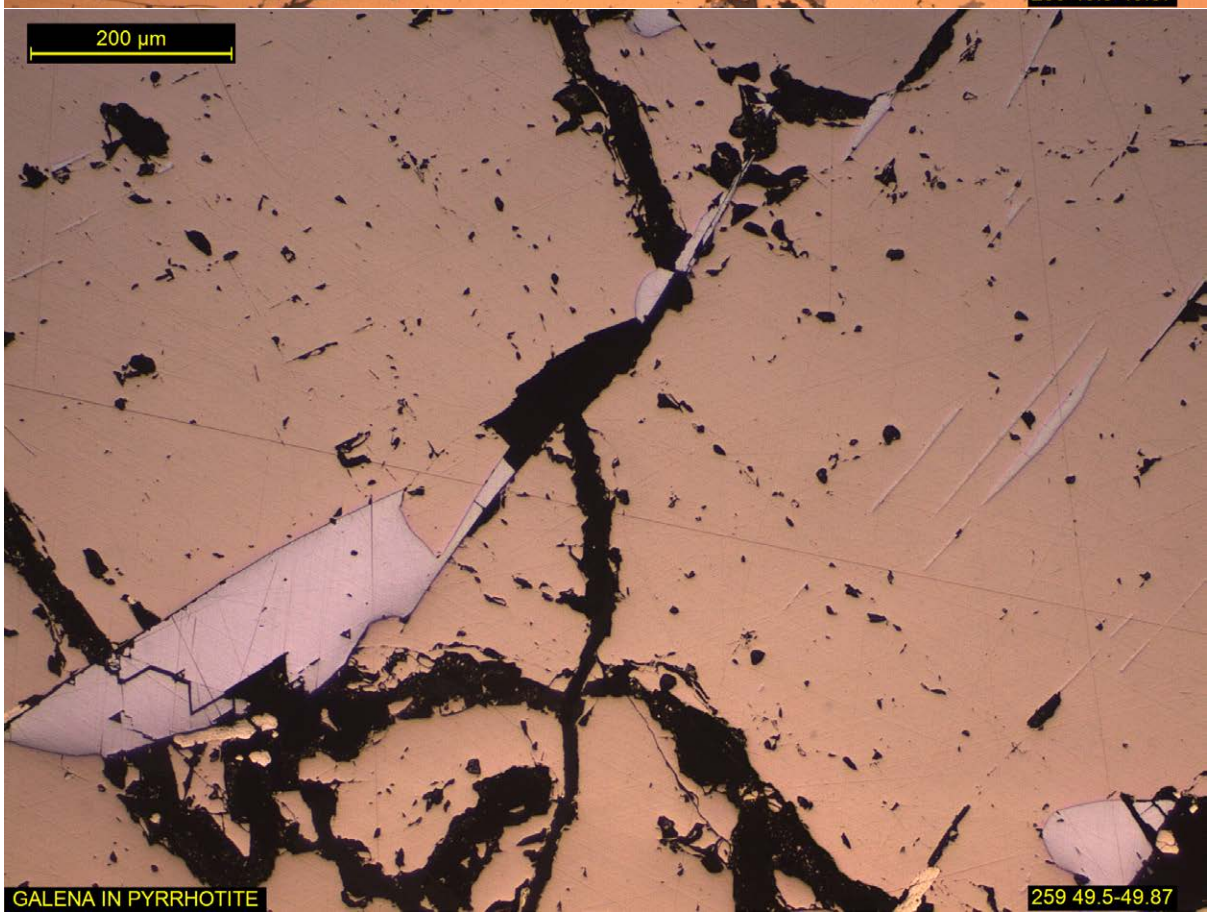

5 mm
CHALCOPYRITE
CARBONATE
ALBITITE ROCK FRAGMENT
PYRITE
CARBONATE, PYRRHOTITE, CHALCOPYRITE
259 49.5-49.87

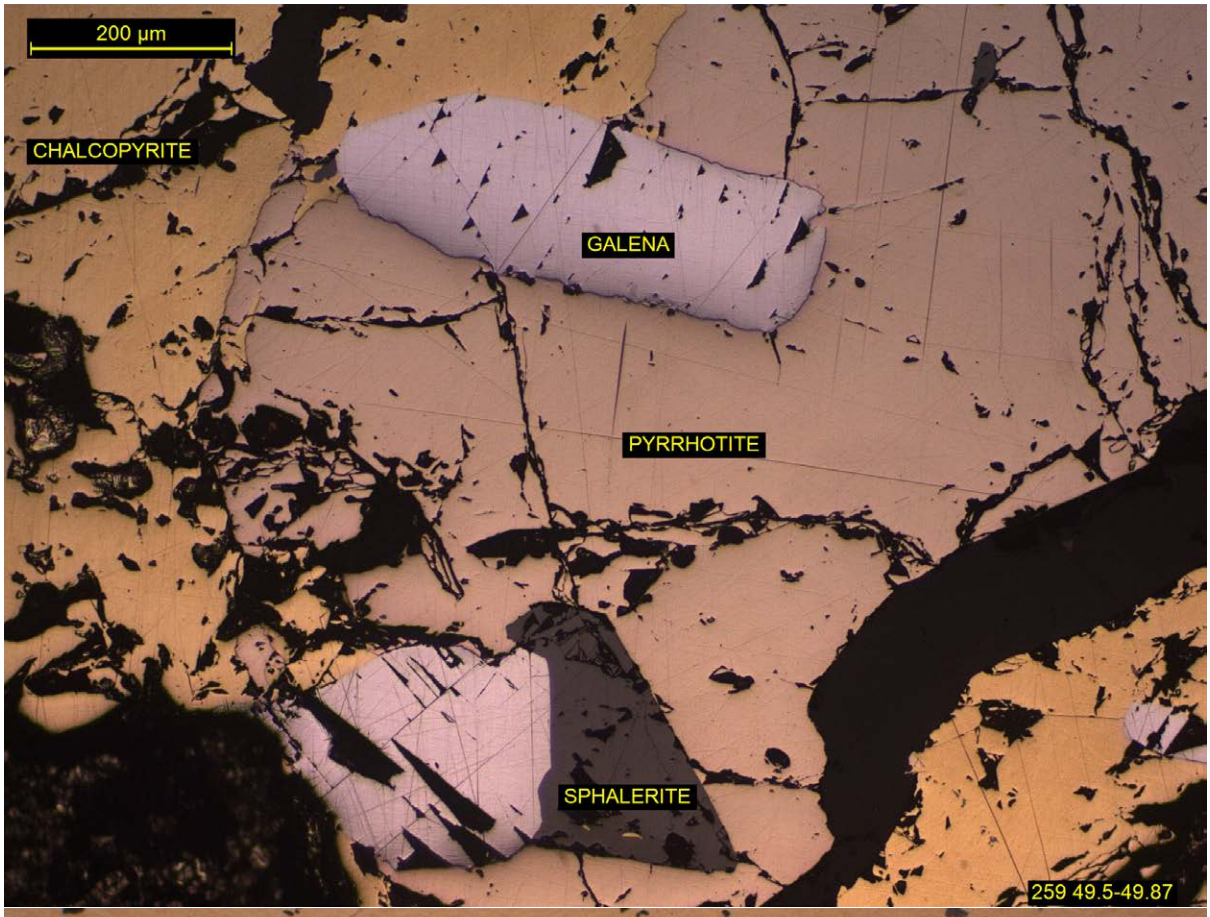

2 mm
SPHALERITE
PYRITE
PYRRHOTITE
GALENA
CHALCOPYRITE
259 49.5-49.87

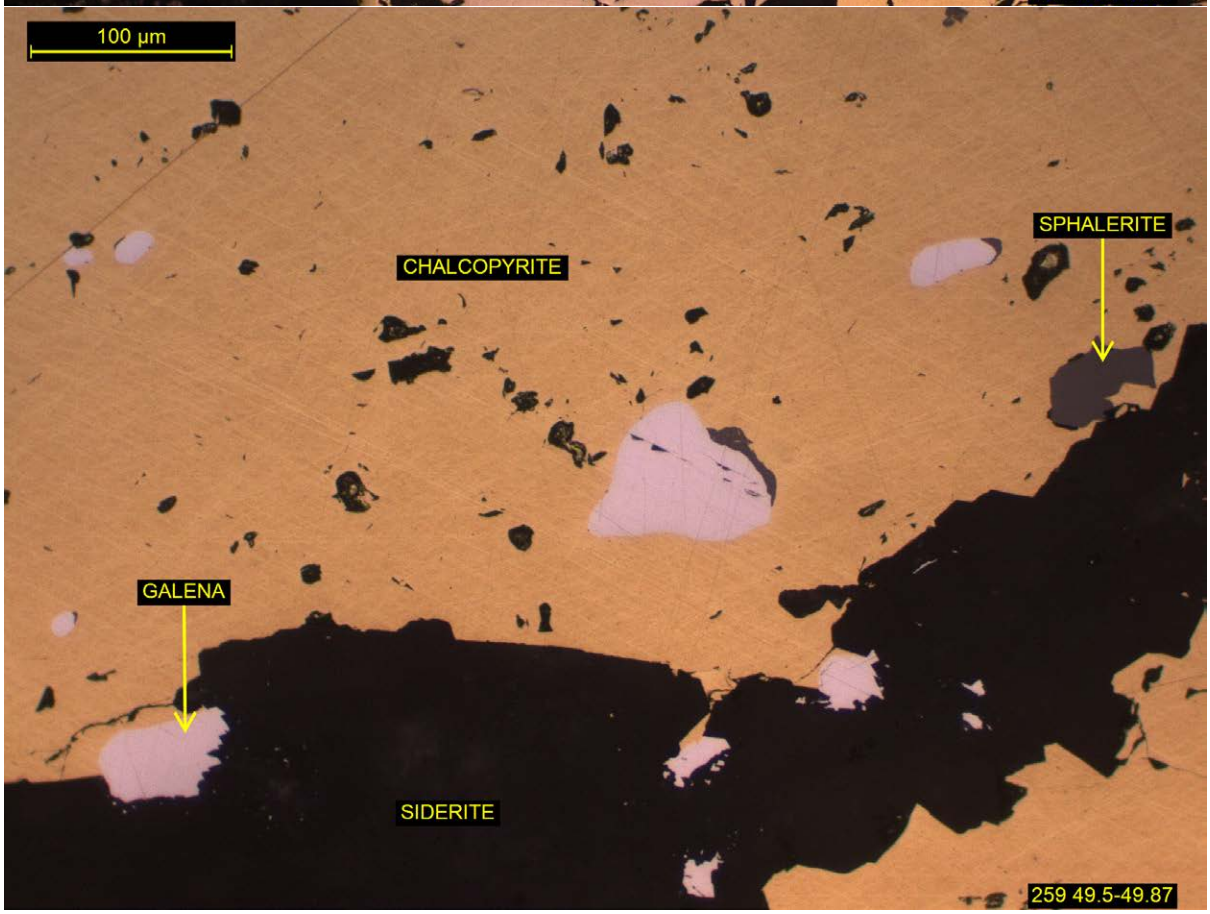

500 µm
SPHALERITE
PYRITE
GALENA
SPHALERITE
259 49.5-49.87

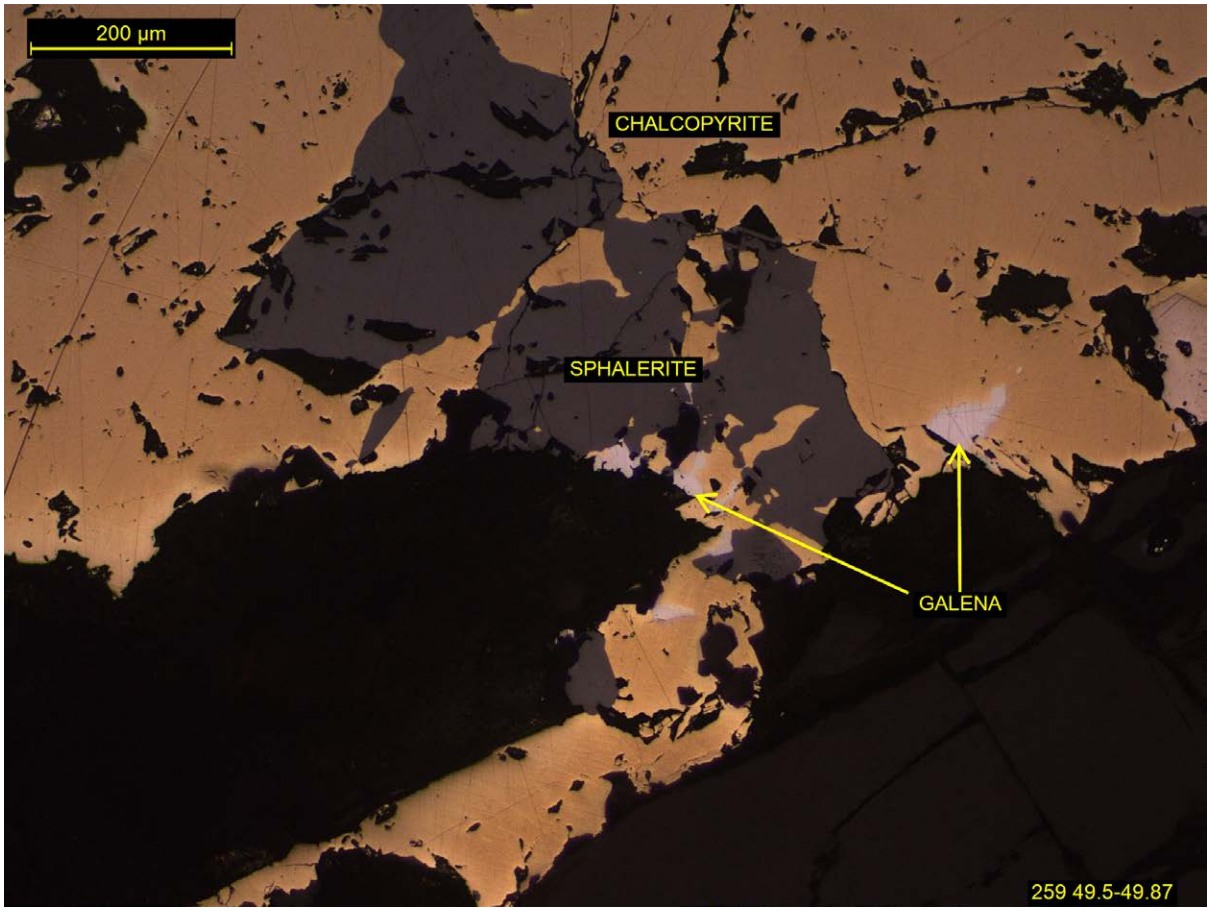

500 µm
GALENA
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
259 49.5-49.87

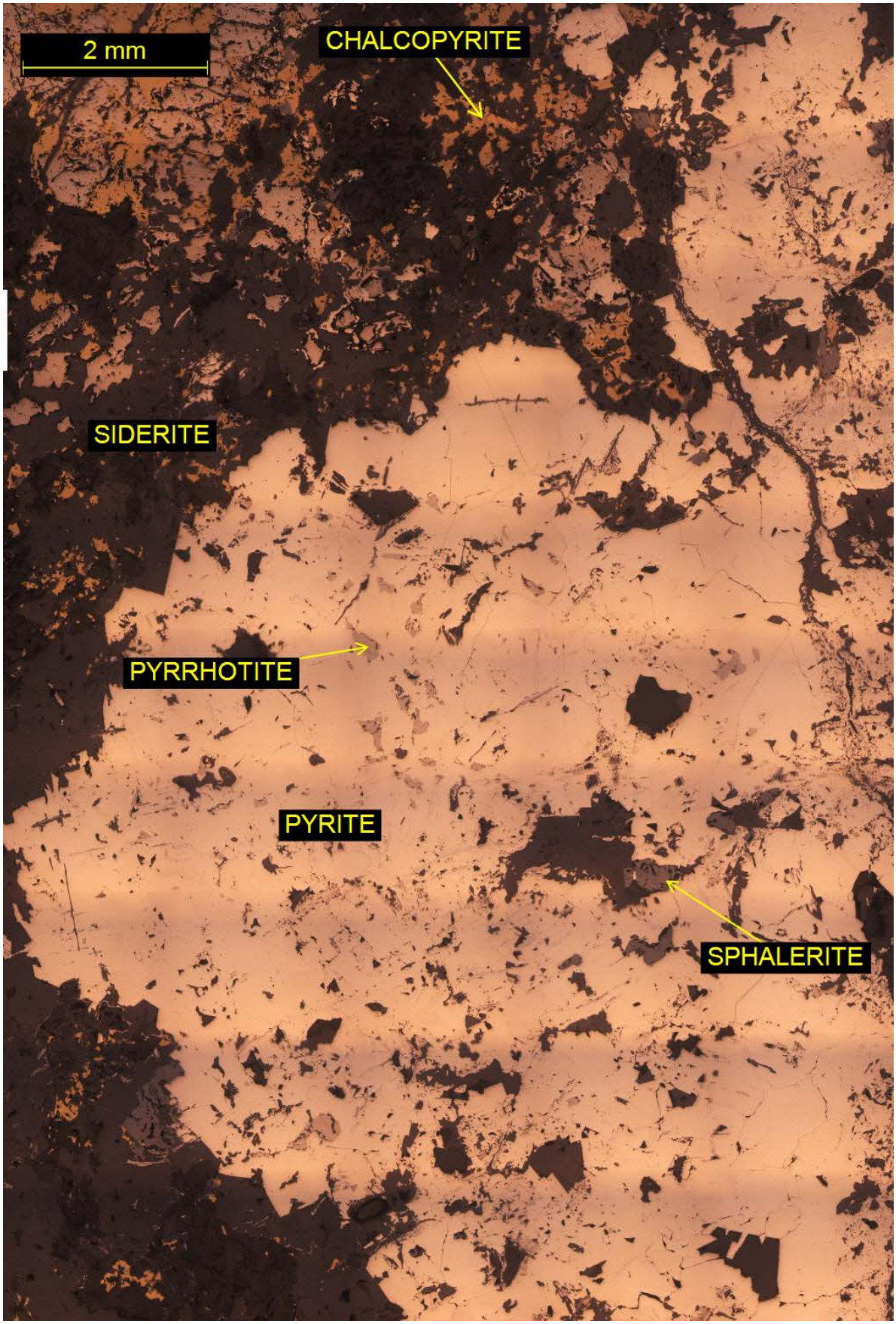

500 µm
GALENA
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
259 49.5-49.87

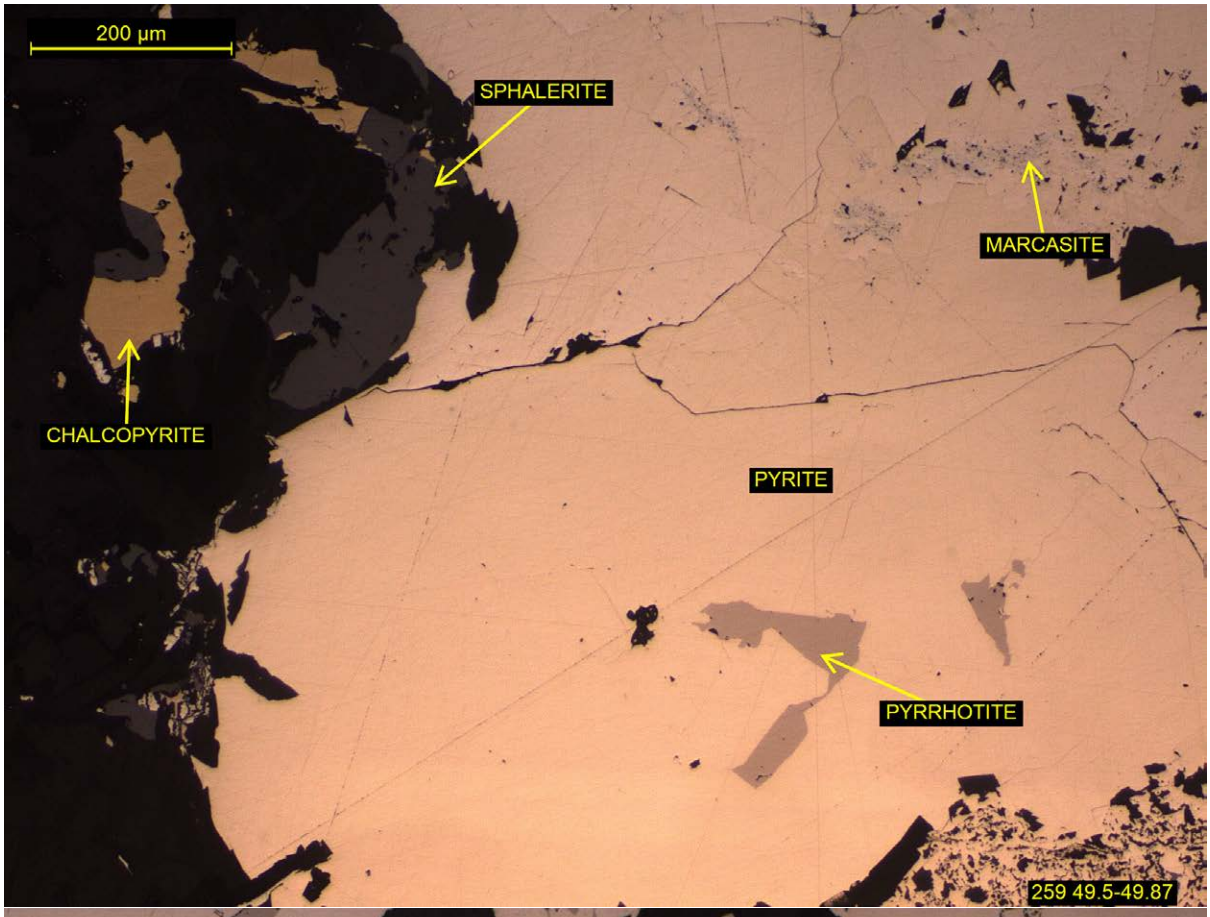

200 µm
GALENA IN PYRRHOTITE
259 49.5-49.87

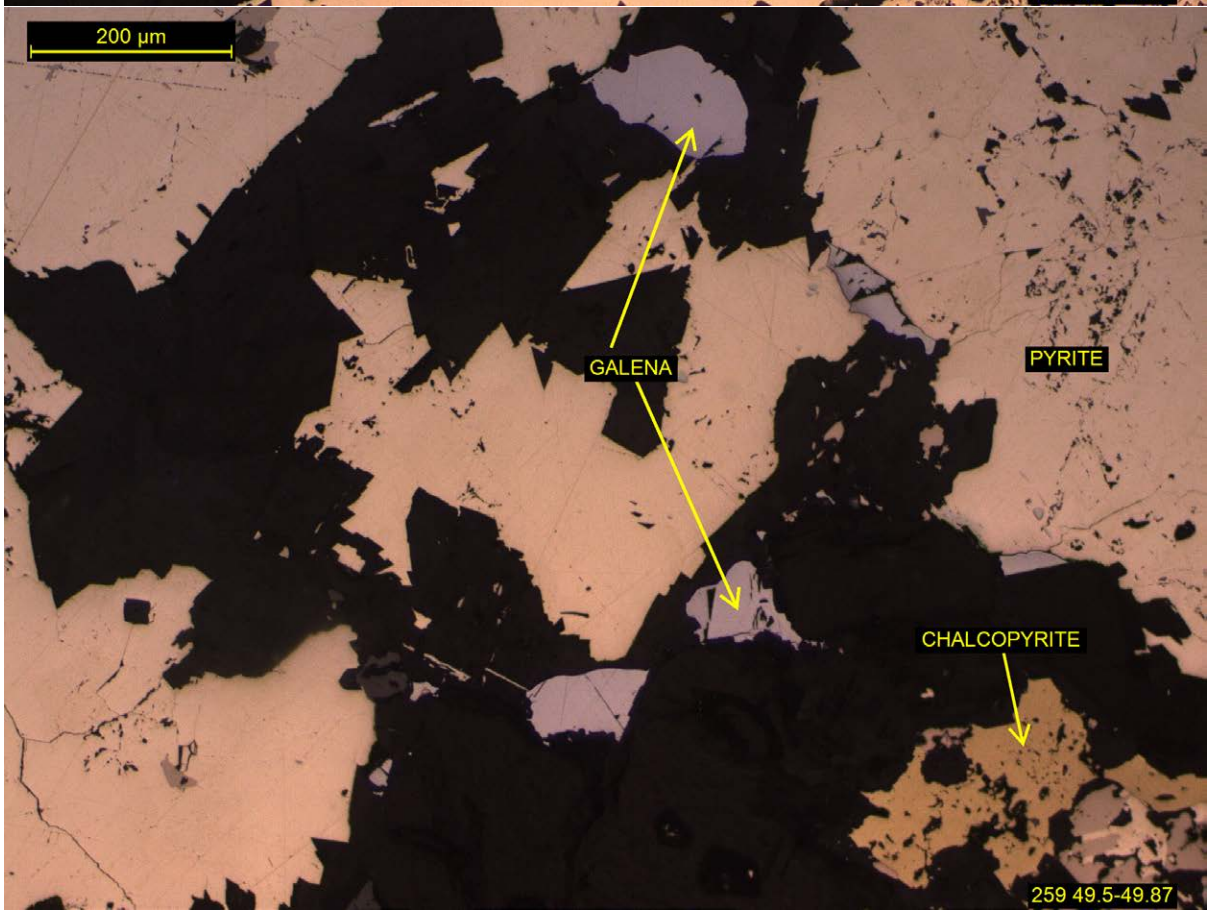

200 µm
CHALCOPYRITE
GALENA
PYRRHOTITE
SPHALERITE
259 49.5-49.87

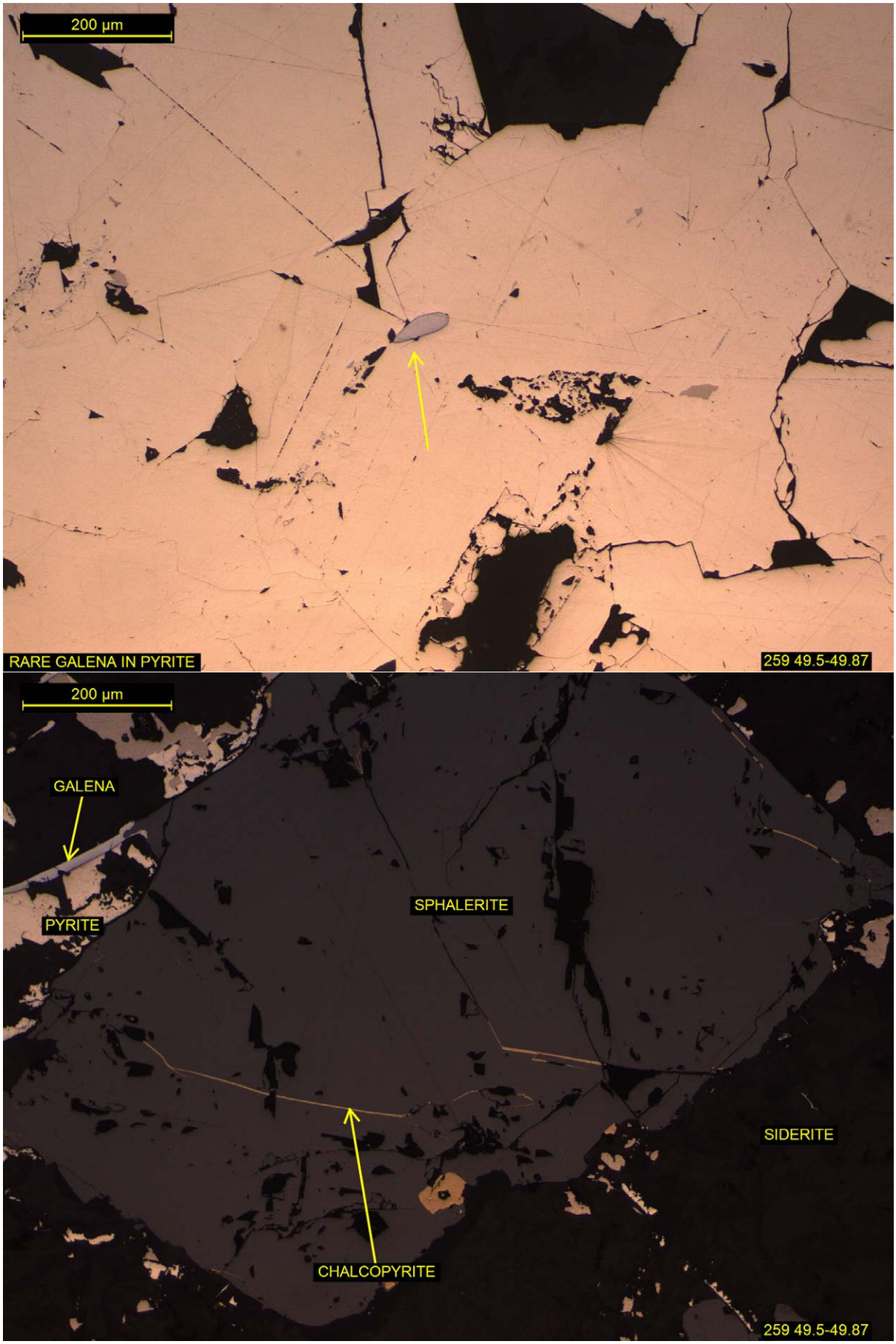

100 µm
CHALCOPYRITE
SPHALERITE
GALENA
SIDERITE
259 49.5-49.87

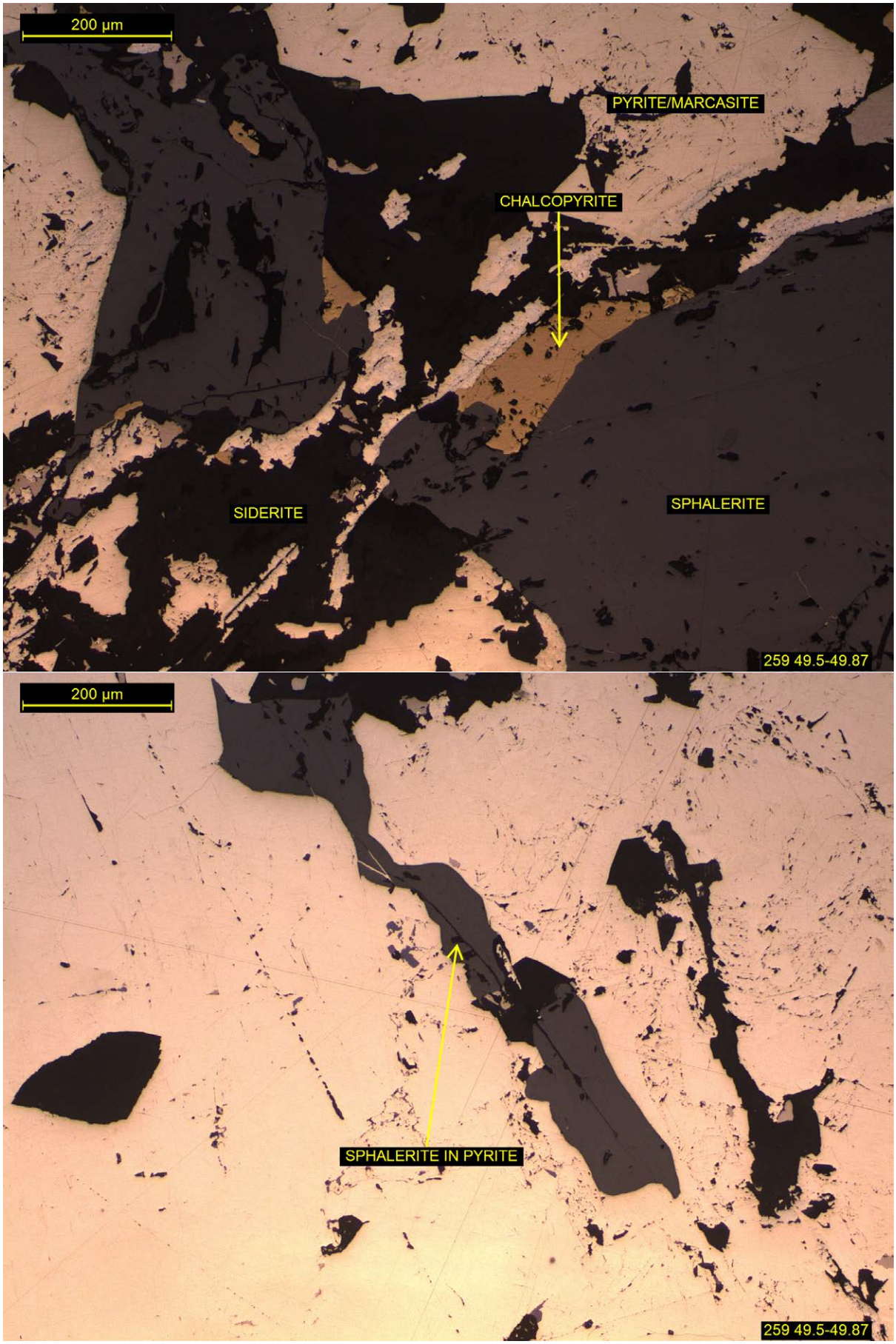

200 µm
CHALCOPYRITE
SPHALERITE
GALENA
259 49.5-49.87

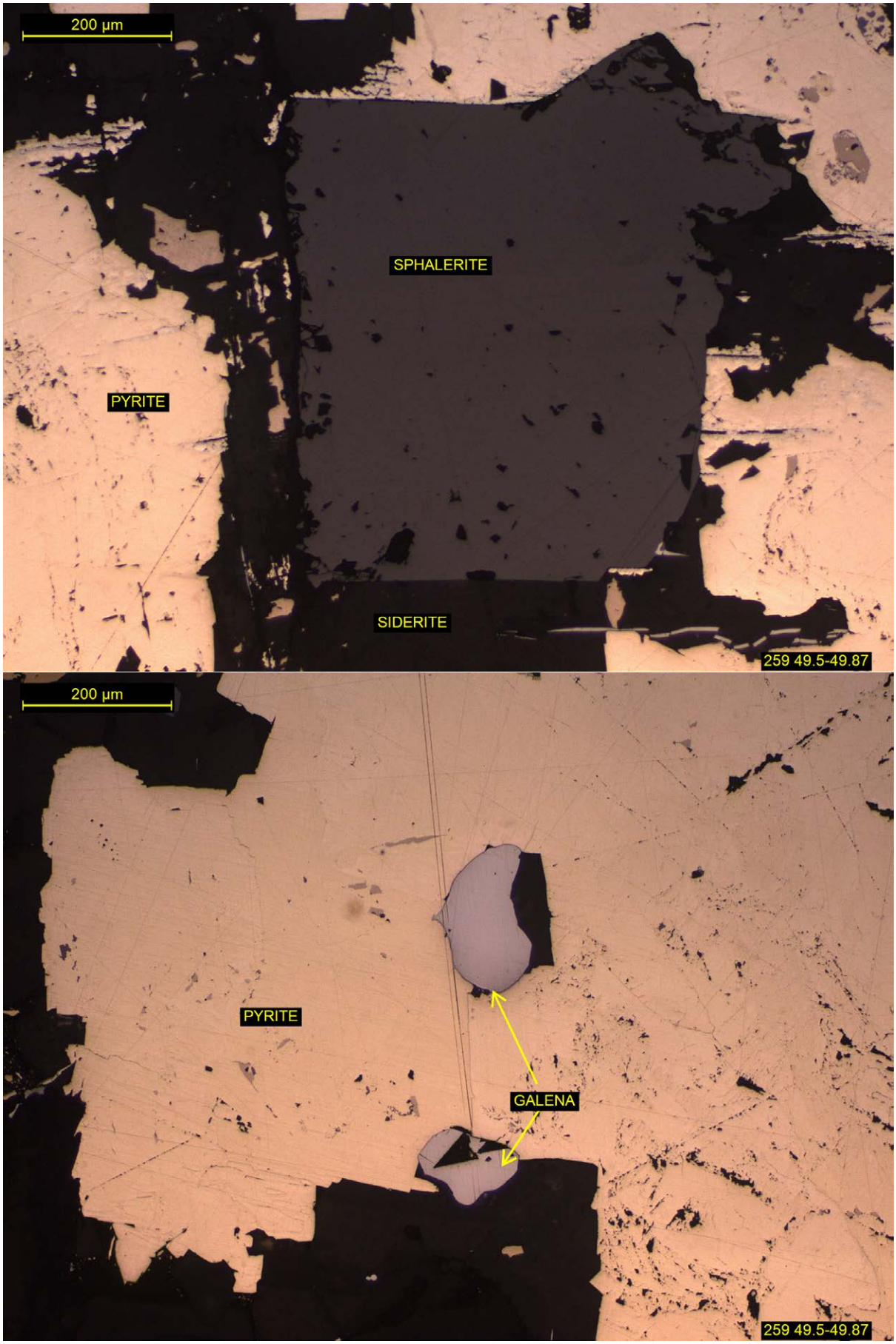

2 mm
CHALCOPYRITE
SIDERITE
PYRRHOTITE
PYRITE
SPHALERITE

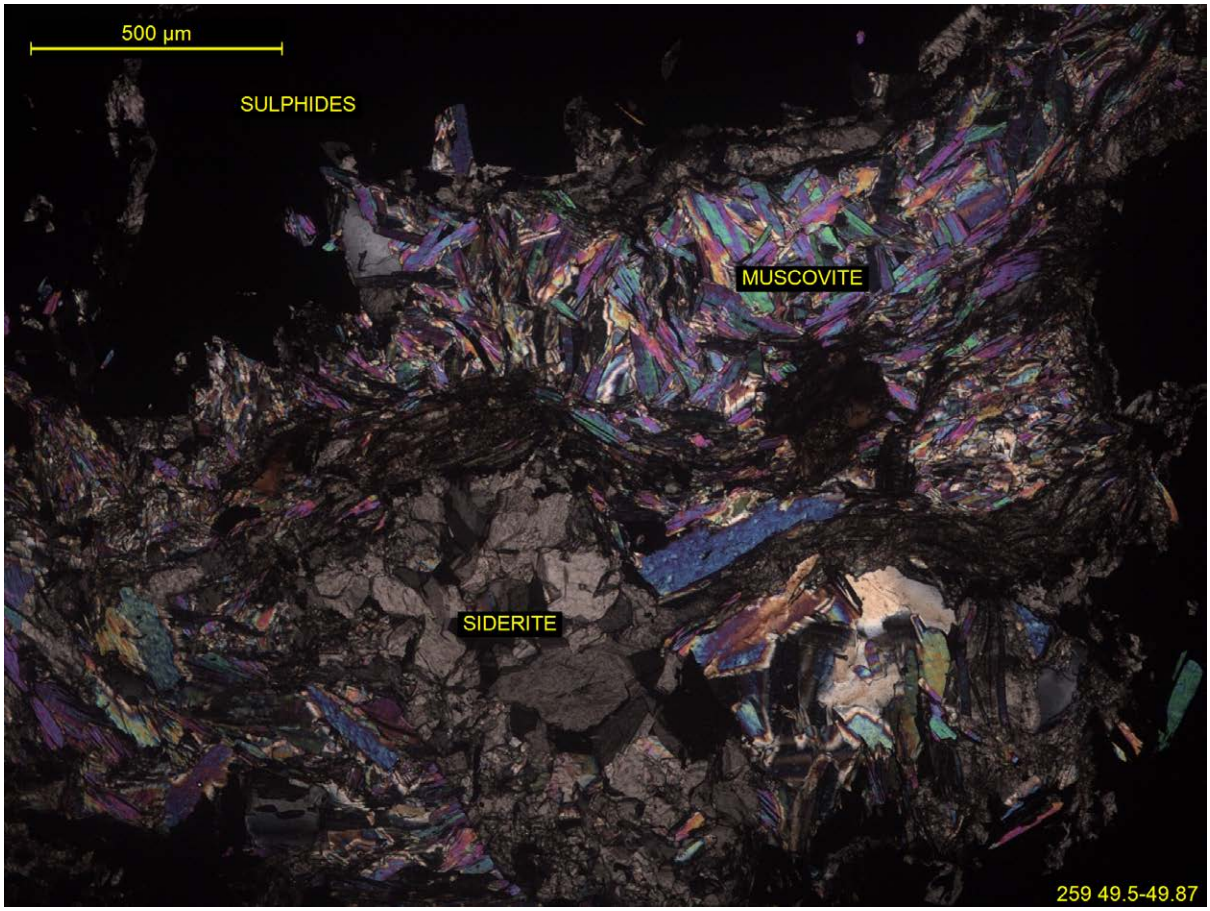

200 µm
SPHALERITE
MARCASITE
CHALCOPYRITE
PYRITE
PYRRHOTITE
259 49.5-49.87

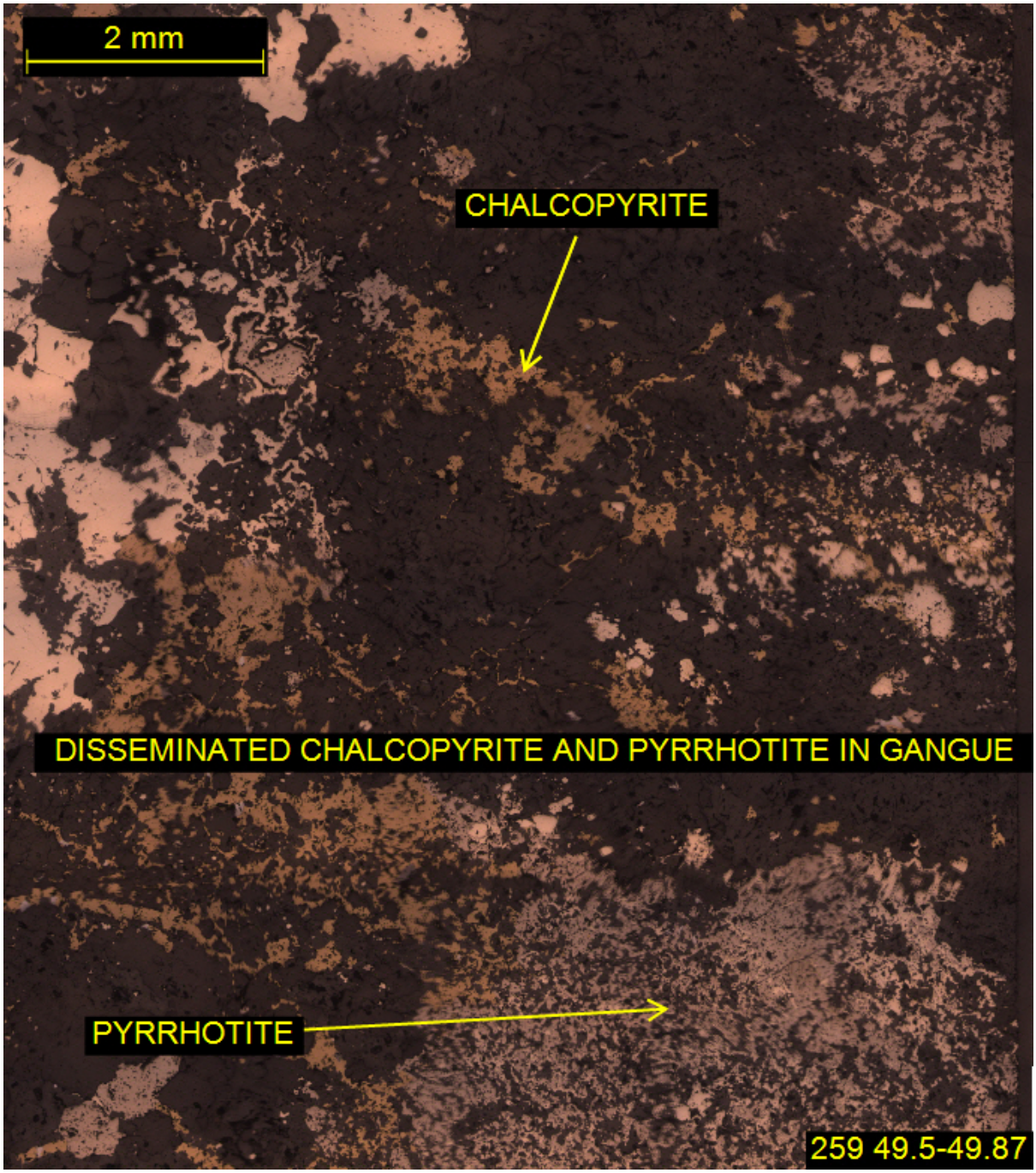

200 µm
GALENA
PYRITE
CHALCOPYRITE
259 49.5-49.87

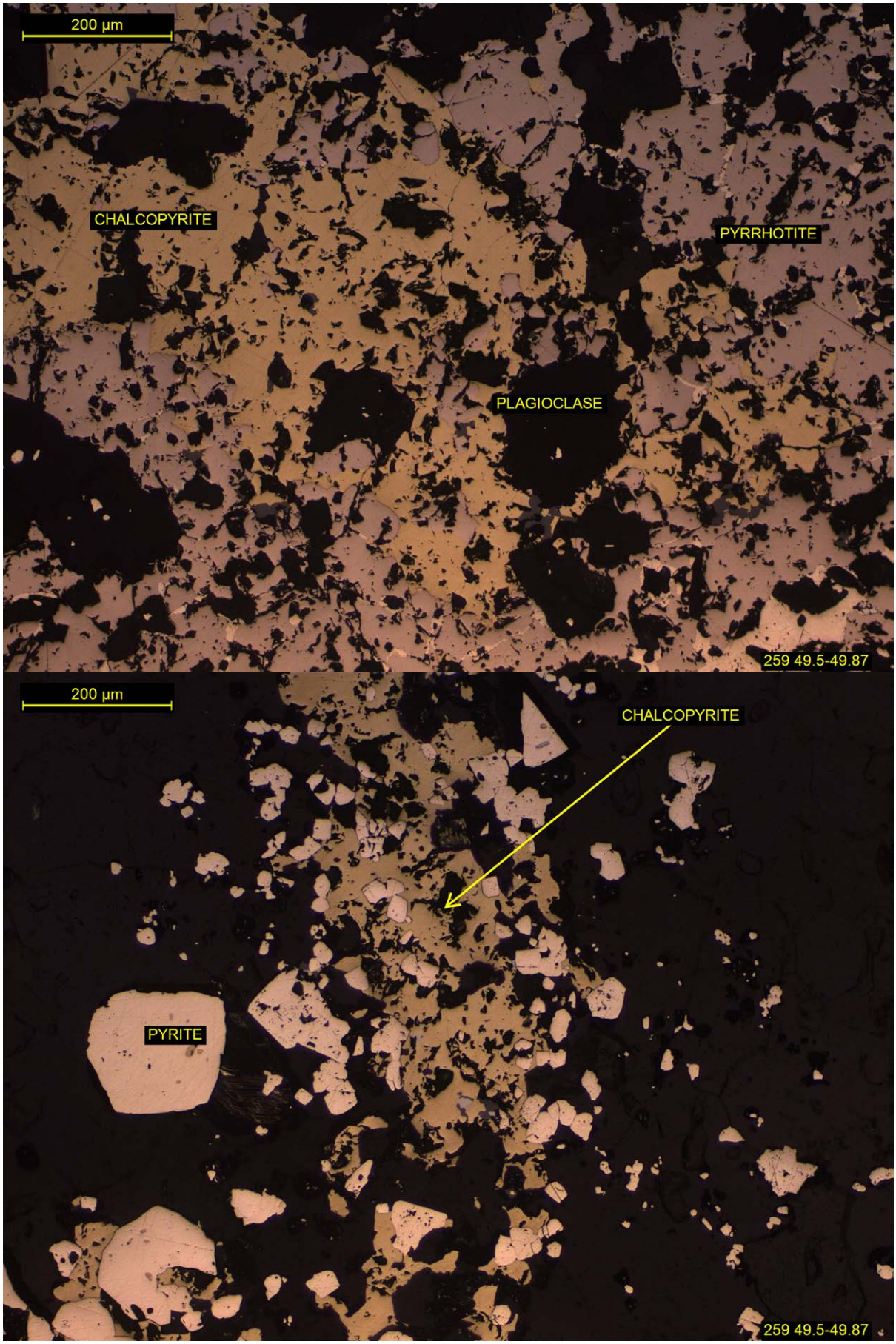

200 µm
RARE GALENA IN PYRITE
259 49.5-49.87
200 µm
GALENA
PYRITE
SPHALERITE
SIDERITE
CHALCOPYRITE
259 49.5-49.87

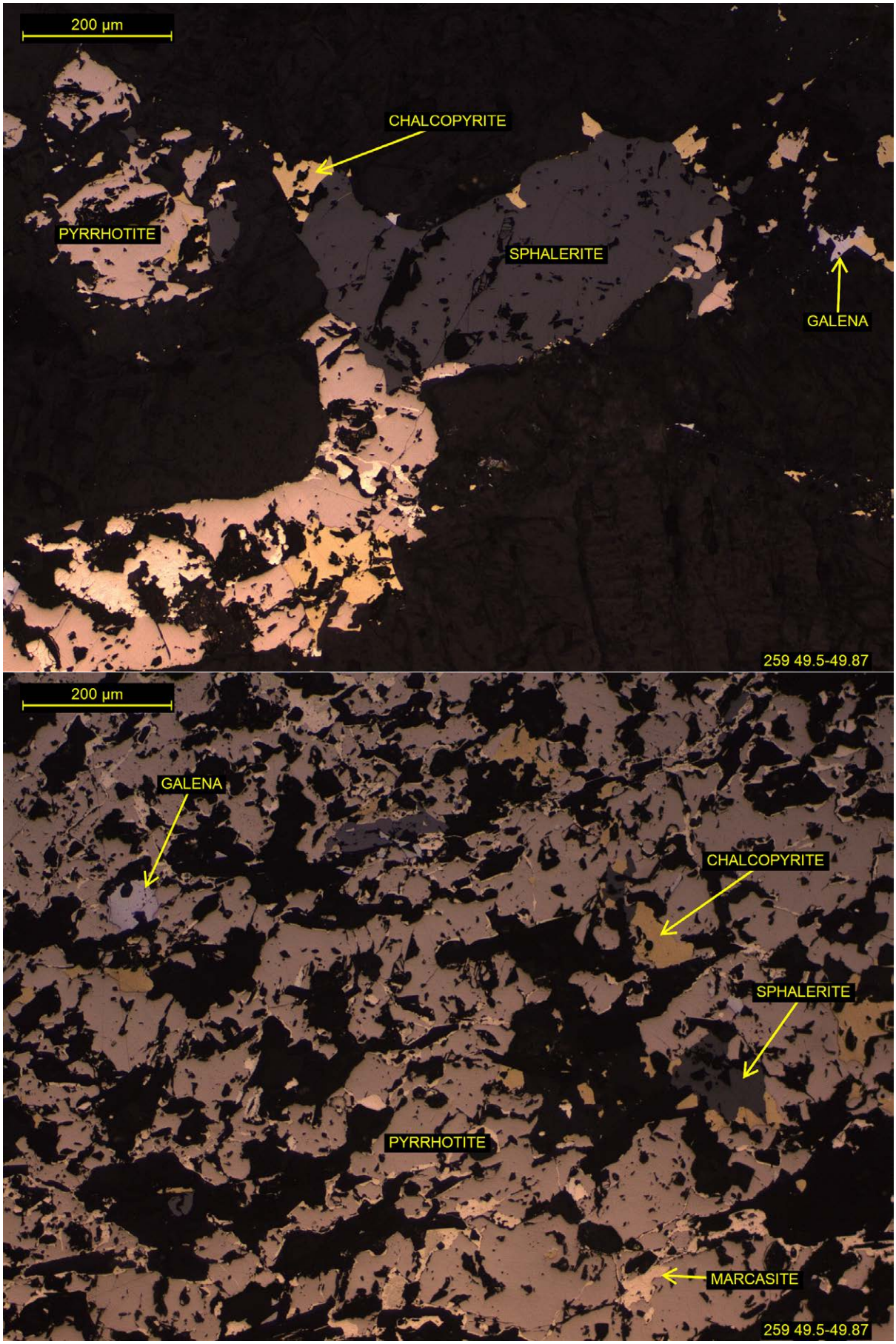

200 µm
PYRITE/MARCASITE
CHALCOPYRITE
SIDERITE
SPHALERITE
259 49.5-49.87
200 µm
SPHALERITE IN PYRITE
259 49.5-49.87

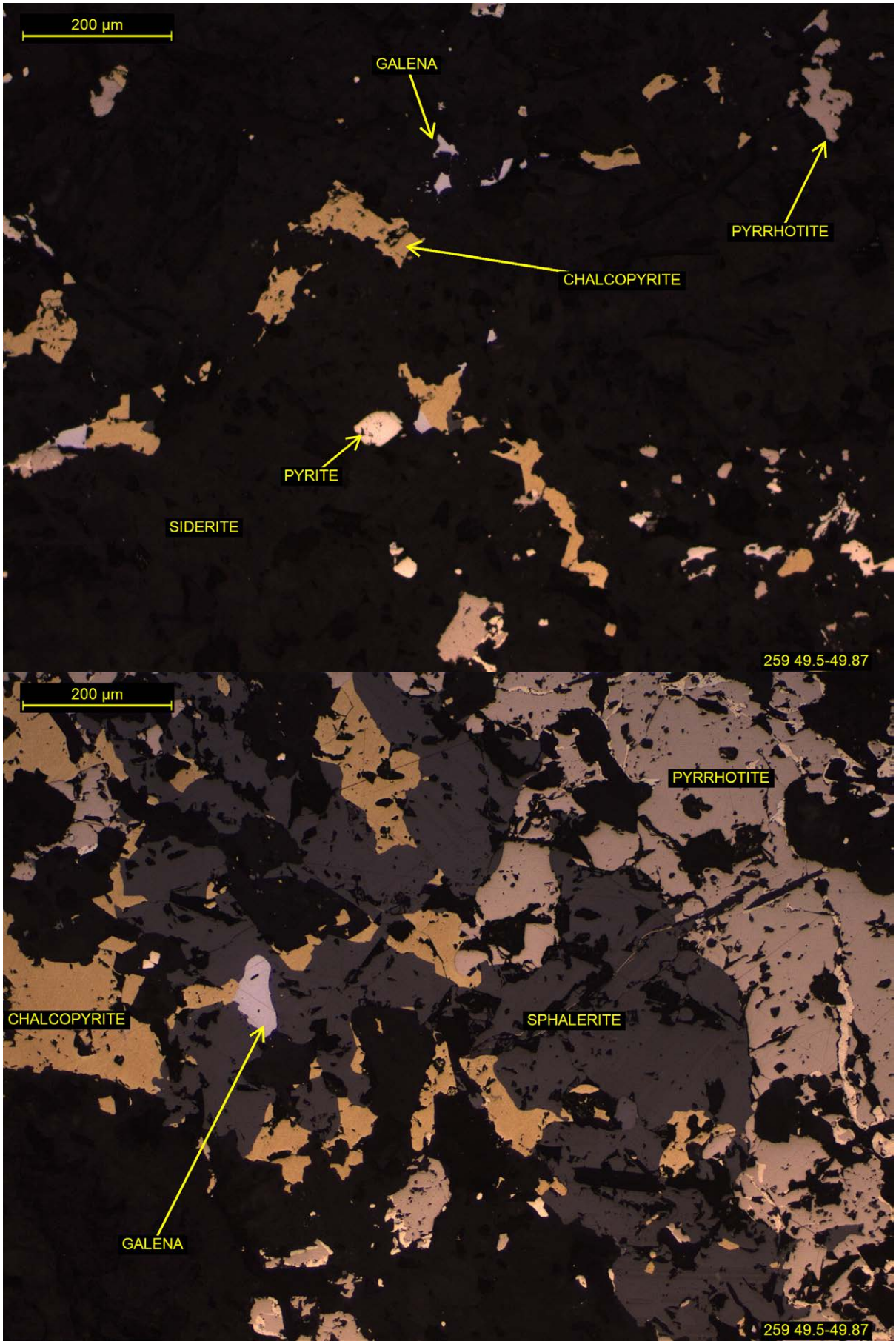

200 µm
SPHALERITE
PYRITE
SIDERITE
259 49.5-49.87
200 µm
PYRITE
GALENA
259 49.5-49.87

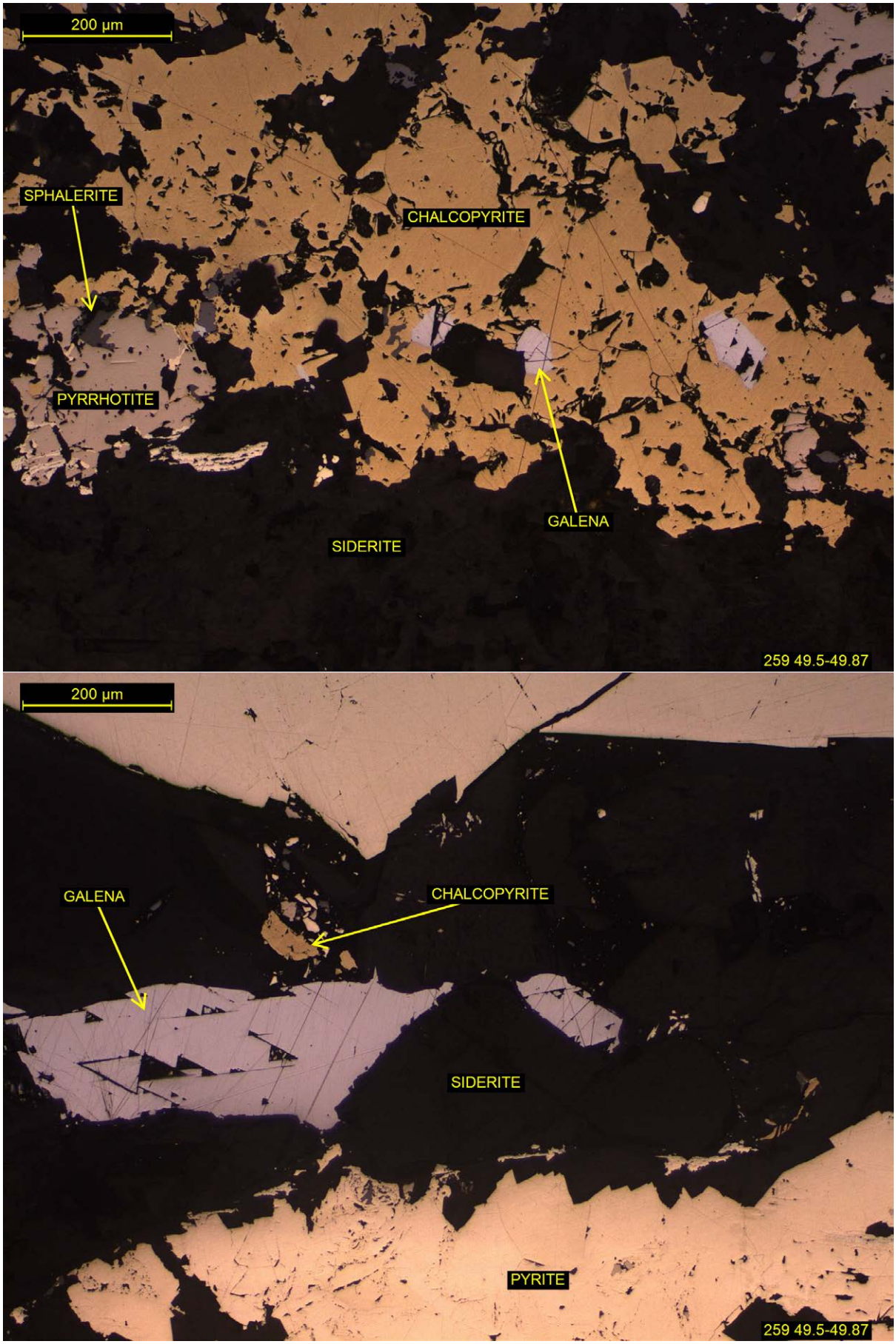

500 µm
SULPHIDES
MUSCOVITE
SIDERITE
259 49.5-49.87


2 mm
CHALCOPYRITE
DISSEMINATED CHALCOPYRITE AND PYRRHOTITE IN GANGUE
PYRRHOTITE
259 49.5-49.87


200 µm
CHALCOPYRITE
PYRRHOTITE
PLAGIOCLASE
259 49.5-49.87
200 µm
CHALCOPYRITE
PYRITE
259 49.5-49.87


200 µm
CHALCOPYRITE
PYRRHOTITE
SPHALERITE
GALENA
259 49.5-49.87
200 µm
GALENA
CHALCOPYRITE
SPHALERITE
PYRRHOTITE
MARCASITE
259 49.5-49.87


200 µm
GALENA
PYRRHOTITE
CHALCOPYRITE
PYRITE
SIDERITE
259 49.5-49.87
200 µm
PYRRHOTITE
CHALCOPYRITE
SPHALERITE
GALENA
259 49.5-49.87


200 µm
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
GALENA
SIDERITE
259 49.5-49.87
200 µm
GALENA
CHALCOPYRITE
SIDERITE
PYRITE
259 49.5-49.87

SAMPLE K15-260 155.67-155.78

DRILL CORE

POLISHED THIN SECTION

MICA-CHLORITE-QUARTZITE	**85%**
QUARTZ	45-55%
CHLORITE	20-30%
MUSCOVITE	5-15%
BIOTITE	1-3%
CHALCOPYRITE	1-3%
TOURMALINE	1-2%
PYRRHOTITE	<1%
ILMENITE	<1%
SPHALERITE	<1%
GALENA	<1%
CARBONATE-SULPHIDE VEINS	**15%**
SIDERITE	35-45%
CHALCOPYRITE	25-35%
PYRRHOTITE	20-30%
SPHALERITE	1-2%
GALENA	1%
PYRITE	1%
MARCASITE	<1%

CLASSIFIED AS A BANDED MUSCOVITE CHLORITE QUARTZITE WITH SPHALERITE-PYRRHOTITE-CHALCOPYRITE-SIDERITE VEINS

A quartzite that contains several thin to thick bands of foliated biotite-muscovite-chlorite, with quite large siderite-chalcopyrite-pyrrhotite veins crosscutting irregularly across the quartzite. A low content of disseminated ores are found associated with the mica-chlorite bands.

The quartzite is characterised by a somewhat regular mosaic of equi-granular (~100 to ~450 µm) equidimensional grains. Bunches of euhedral columnar tourmalines are found sporadically within the quartzites (up to ~1 mm in length), with a pleochroism from pale to dark zoned green/blue.

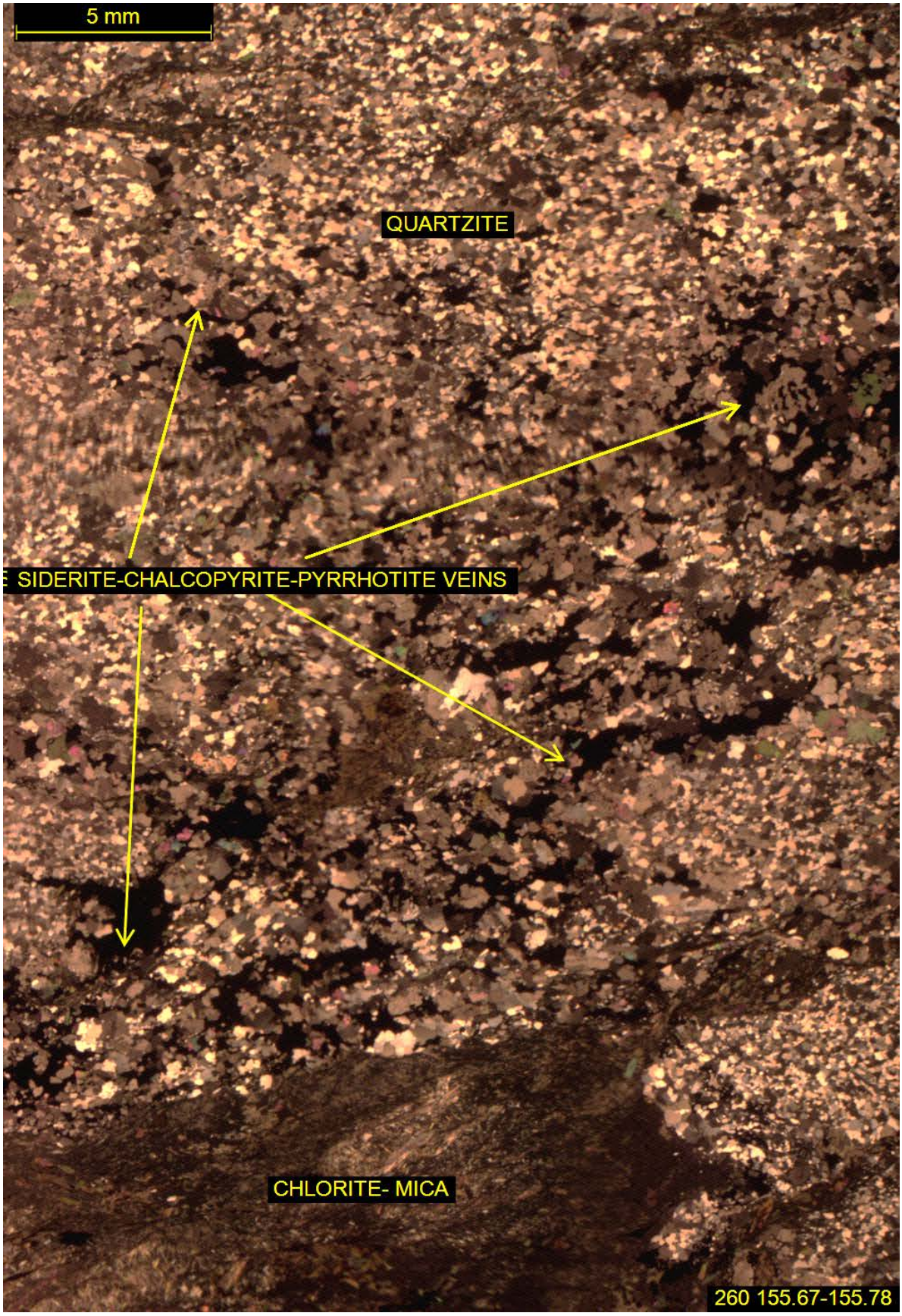
Several mica-chlorite bands are present, including a ~20mm example at the base of thin section, in addition to several discontinuous types (~1 to ~2mm thick) occurring randomly throughout the quartzite. These are comprised of layers of chlorite that have a strongly preferentially aligned fabric of ~200 µm flakes, with intervening laminations of muscovite (~150 µm average flakes) that also have a preferential fabric, aligned with the chlorite fabric, and in particular cases orthogonally aligned to this (two foliations). Chlorite is

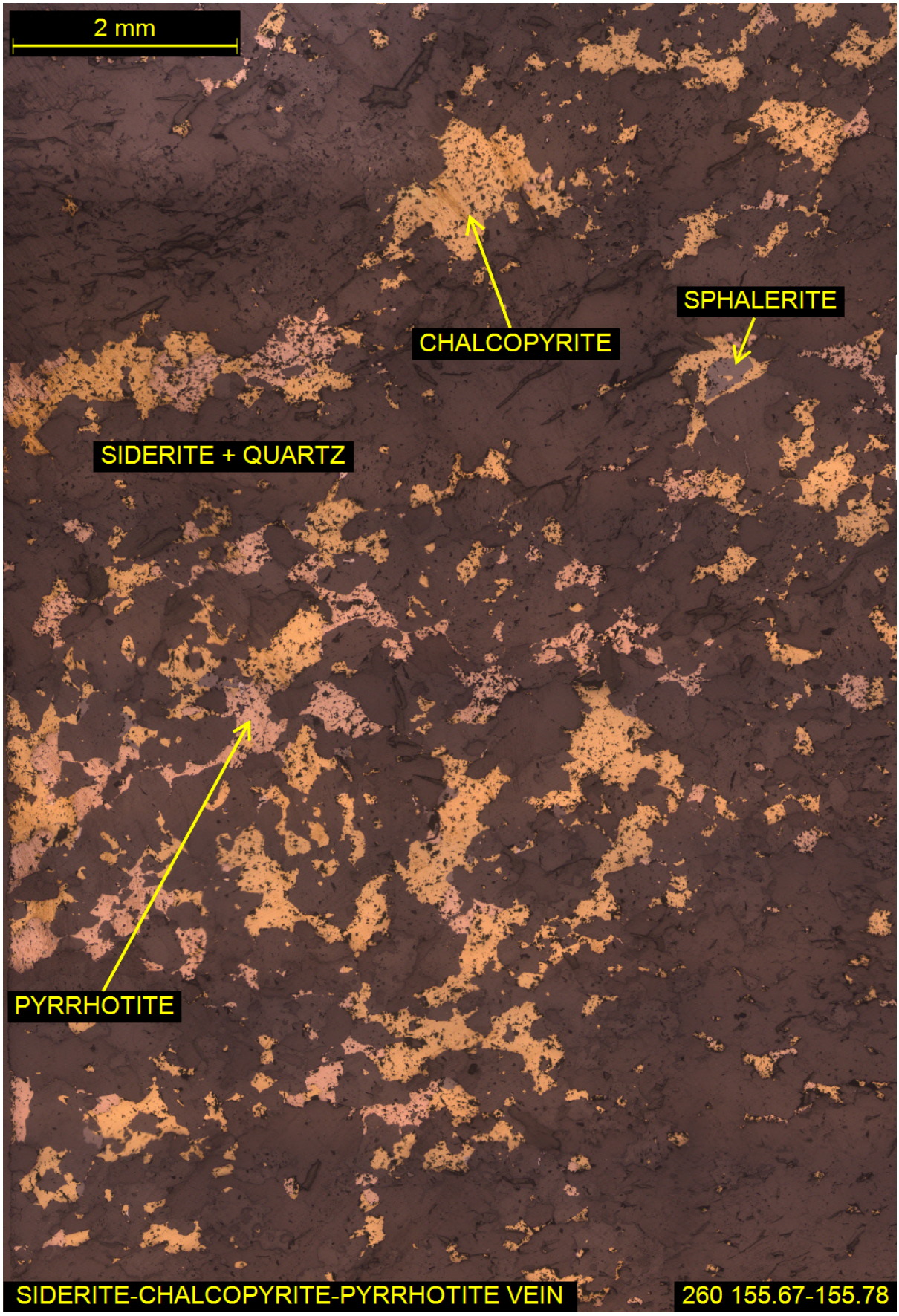
generally a major component of these muscovite layers. Random clusters of biotite flakes (~100 to ~600 µm) are found sporadically, peppered with fine subhedral elongate ilmenites (~75 µm average), appearing to be undergoing chlorite alteration. Discrete grains of tourmaline were found, rarely, within chlorite.

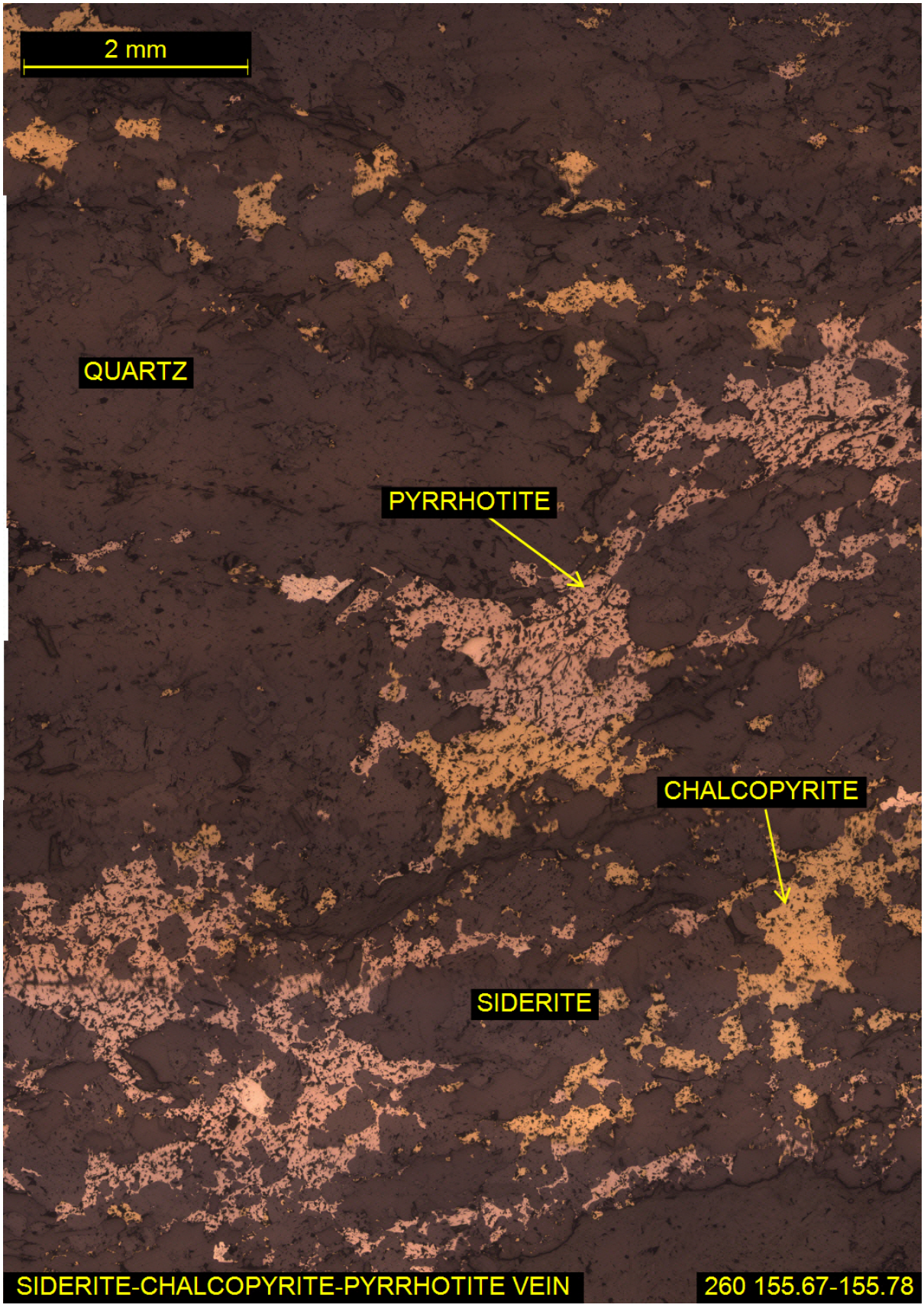
There is a low randomly disseminated ore component in the large mica-chlorite band, consisting of chalcopyrite, subordinate pyrrhotite, galena, sphalerite and ilmenite. Frequently chalcopyrite forms composites with pyrrhotite and sphalerite, sized ~300 to ~1mm, outliers up to ~4mm.

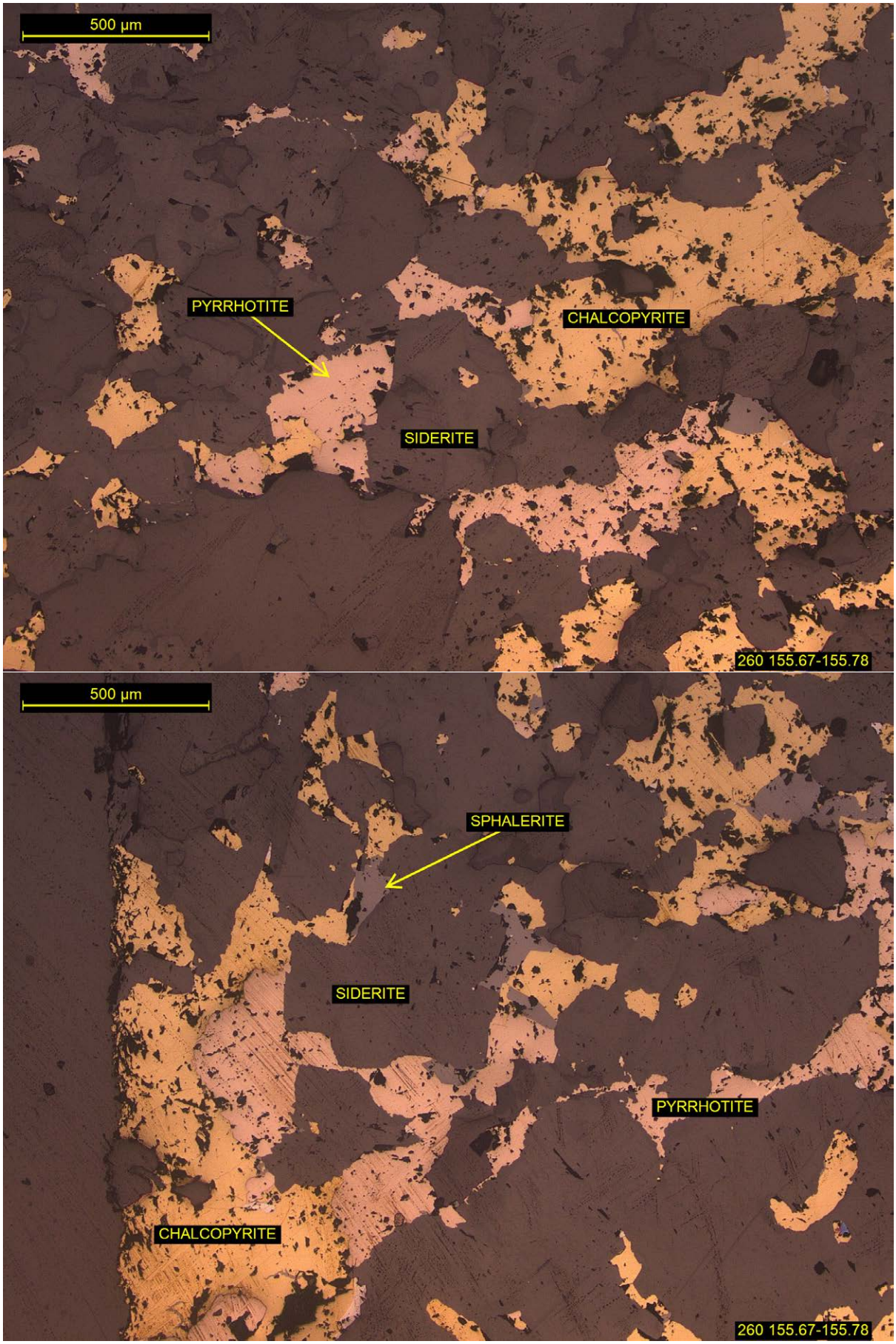
A ~5 to ~10 mm thick siderite-chalcopyrite-pyrrhotite vein crosscuts and partially overprints the quartzite. The vein is comprised primarily of (~300 µm to ~1.3 mm) anhedral equi-dimensional siderite grains. Irregularly shaped somewhat interconnected chalcopyrite and subordinate pyrrhotite (magnetic) aggregates and composites are disseminated regularly throughout the vein, varying in size from ~100 µm through to over 3 mm, the coarser fraction generally composites of the two sulphides. Irregular grains of pyrite altering to marcasite are found composite with chalcopyrite and pyrrhotite. Rare irregularly shaped to equidimensional sphalerites are present (~100 to ~500 µm), generally found rimming chalcopyrite.

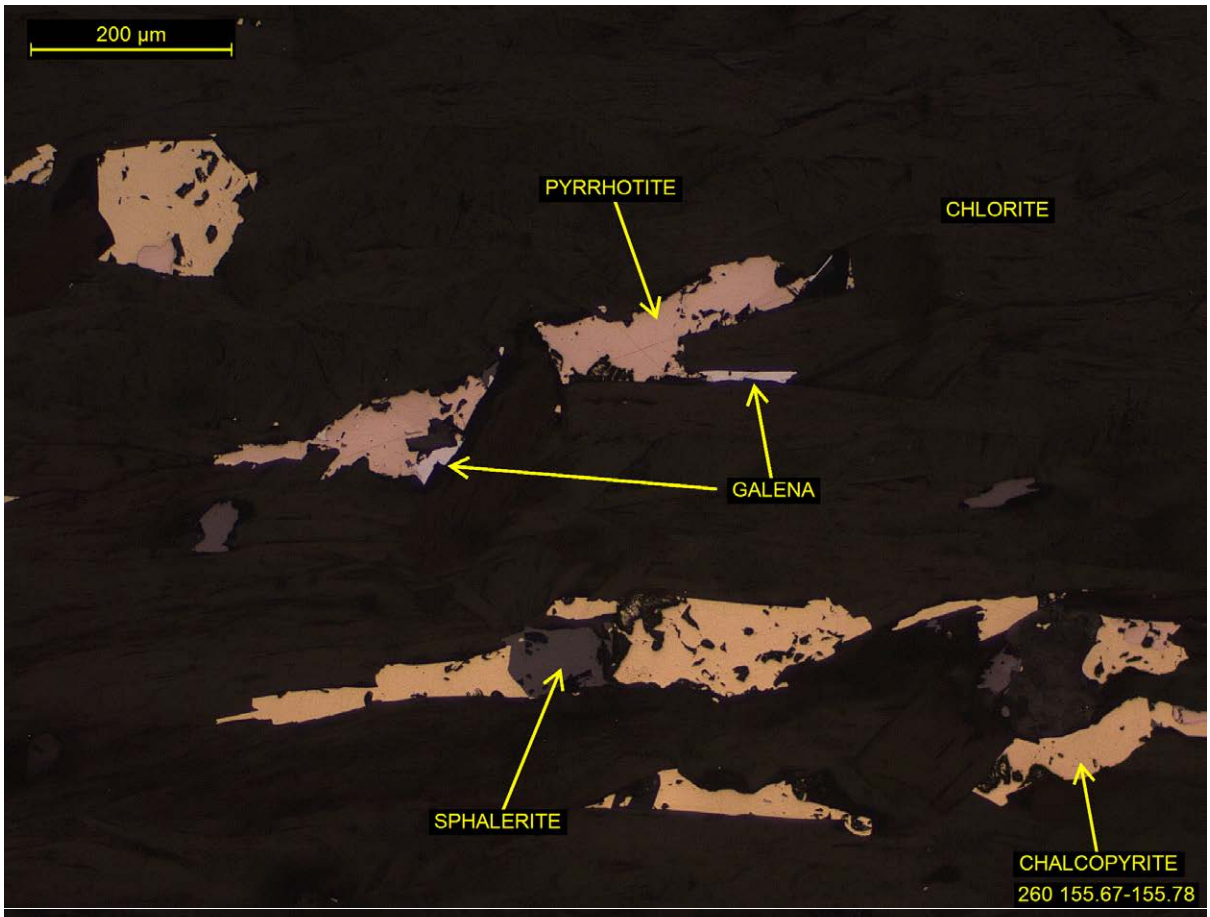
Galena was observed in trace quantities across the entire sample, as elongate and irregular forms, identified rimming pyrrhotite and chalcopyrite, rare coarse composites with pyrrhotite, and discrete grains in chlorite, ranging in size from ~20 to ~400 µm.

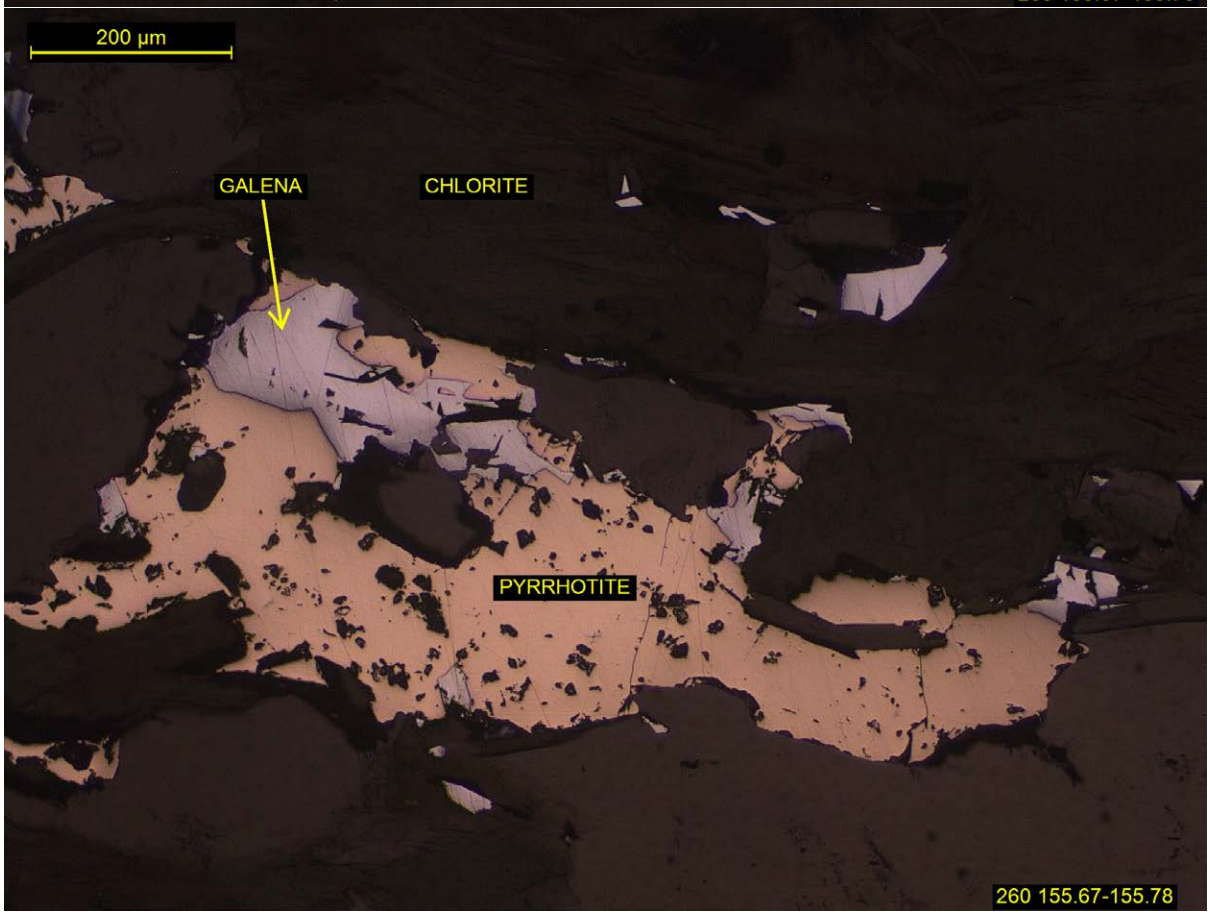

5 mm
QUARTZITE
SIDERITE-CHALCOPYRITE-PYRRHOTITE VEINS
CHLORITE- MICA
260 155.67-155.78


2 mm
CHALCOPYRITE
SPHALERITE
SIDERITE + QUARTZ
PYRRHOTITE
SIDERITE-CHALCOPYRITE-PYRRHOTITE VEIN
260 155.67-155.78

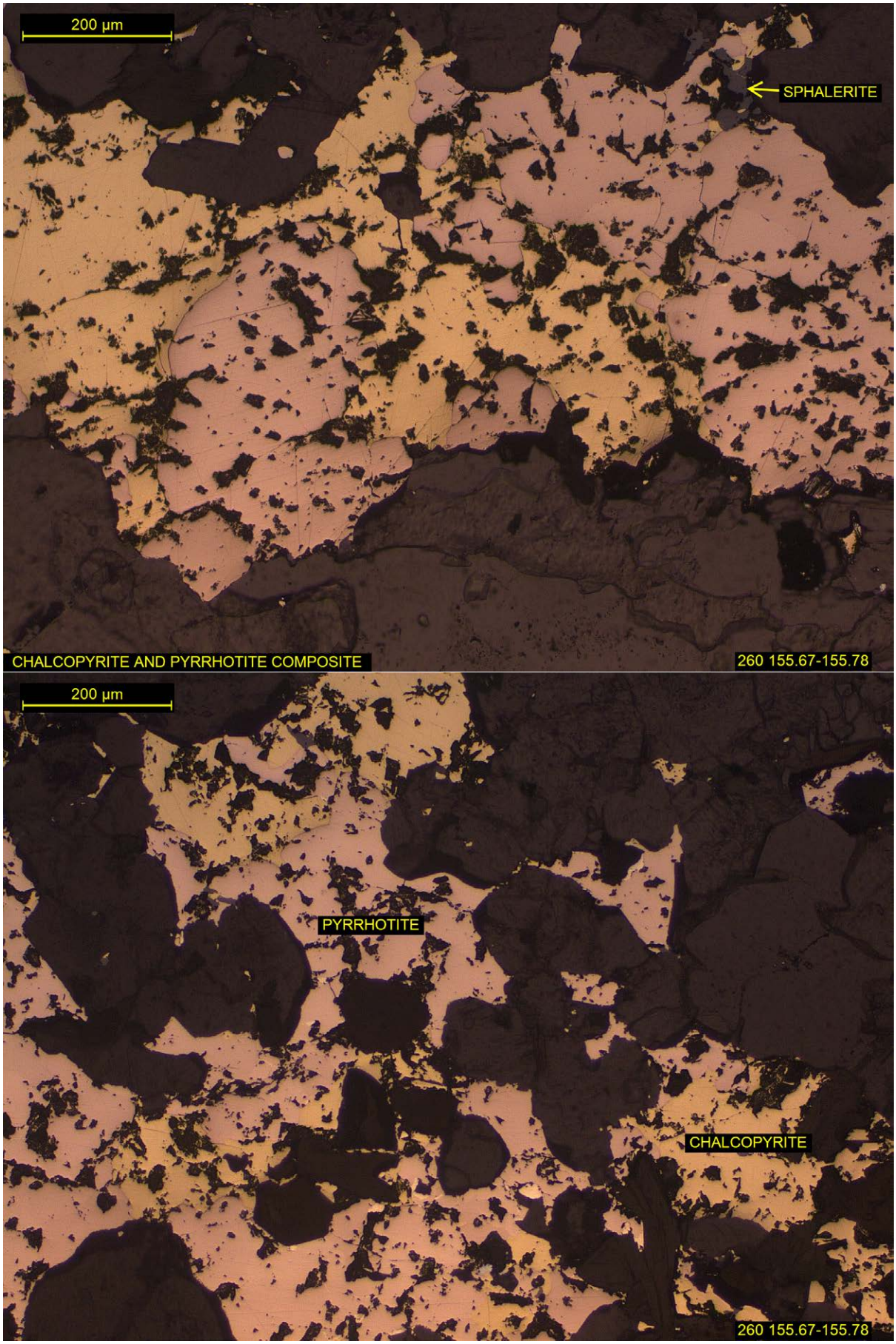

2 mm
QUARTZ
PYRRHOTITE
CHALCOPYRITE
SIDERITE
SIDERITE-CHALCOPYRITE-PYRRHOTITE VEIN
260 155.67-155.78

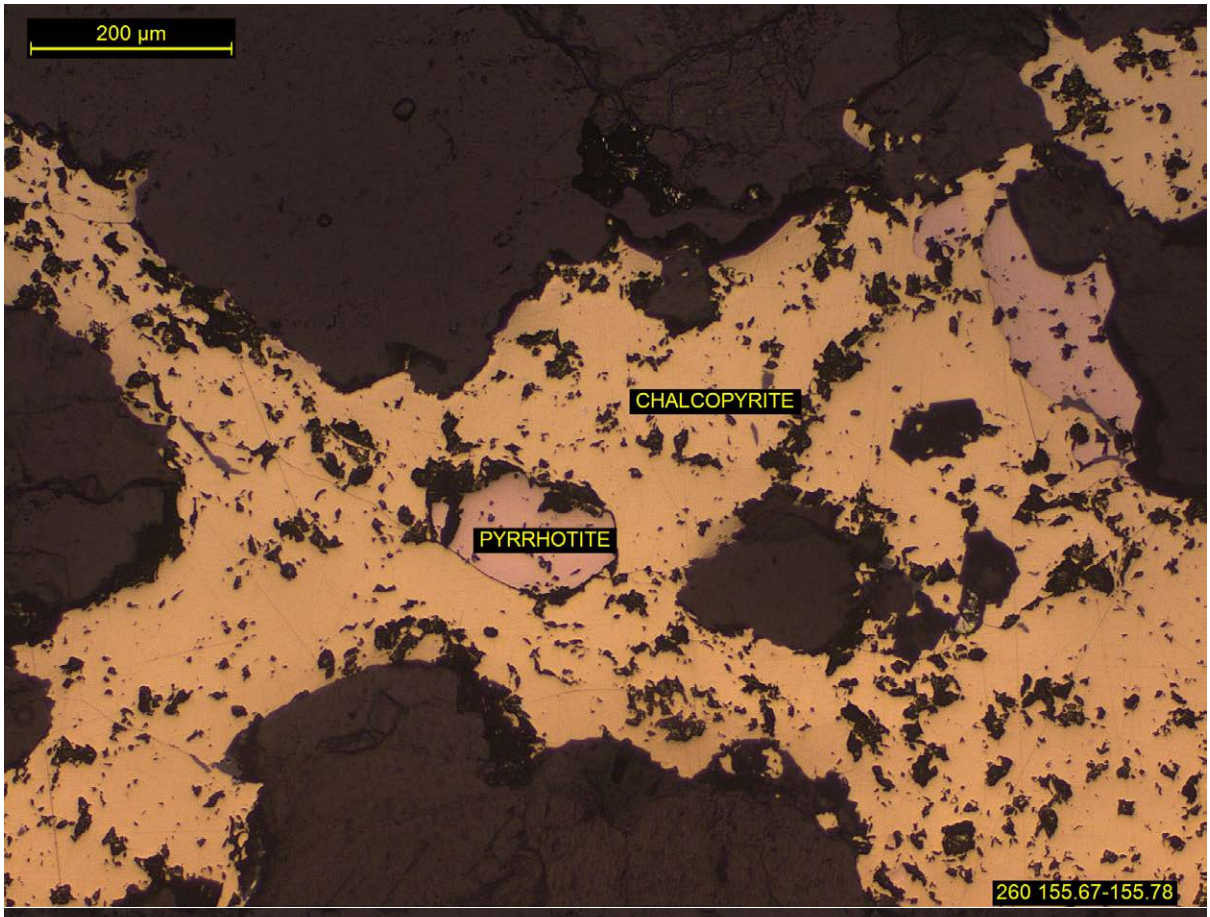

500 µm
PYRRHOTITE
CHALCOPYRITE
SIDERITE
260 155.67-155.78
500 µm
SPHALERITE
SIDERITE
PYRRHOTITE
CHALCOPYRITE
260 155.67-155.78

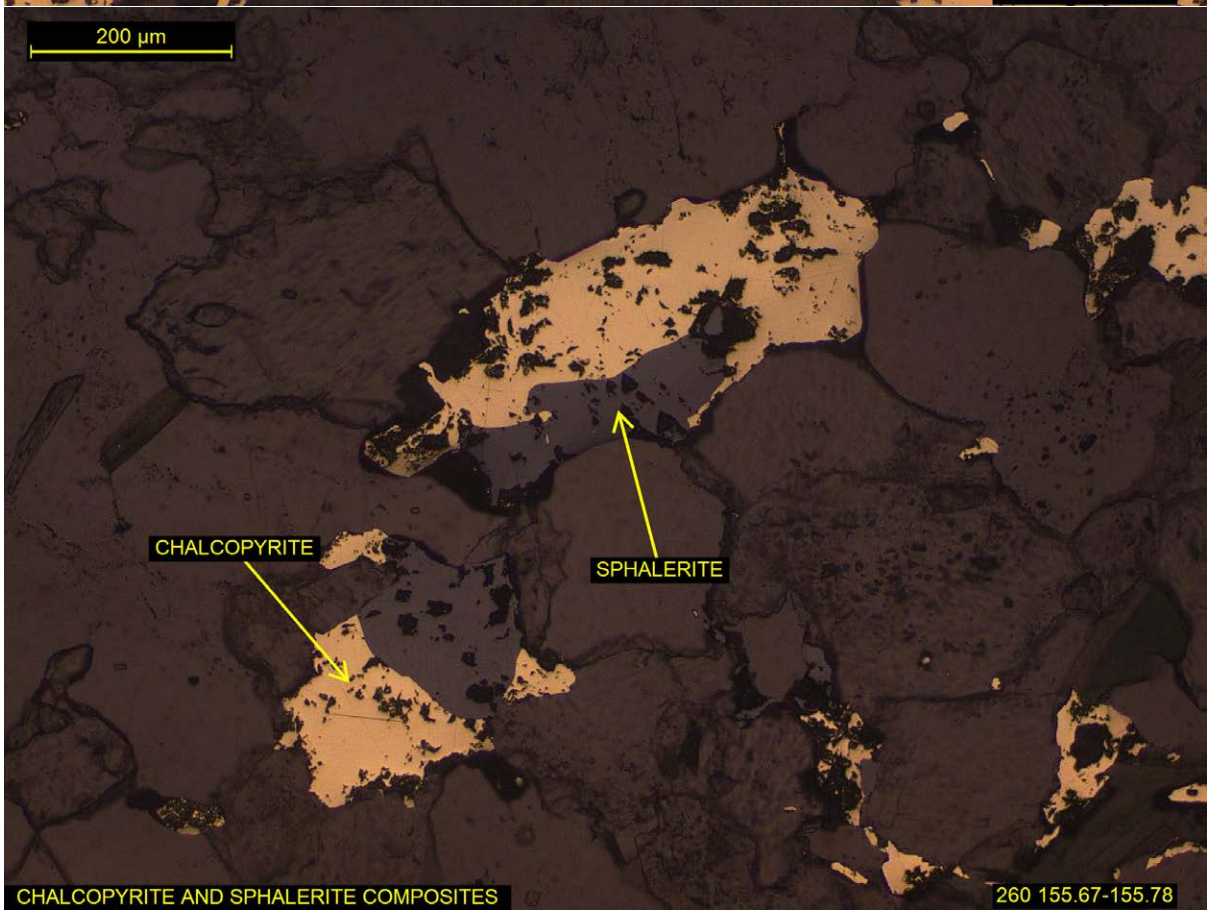

200 µm
PYRRHOTITE
CHLORITE
GALENA
SPHALERITE
CHALCOPYRITE
260 155.67-155.78

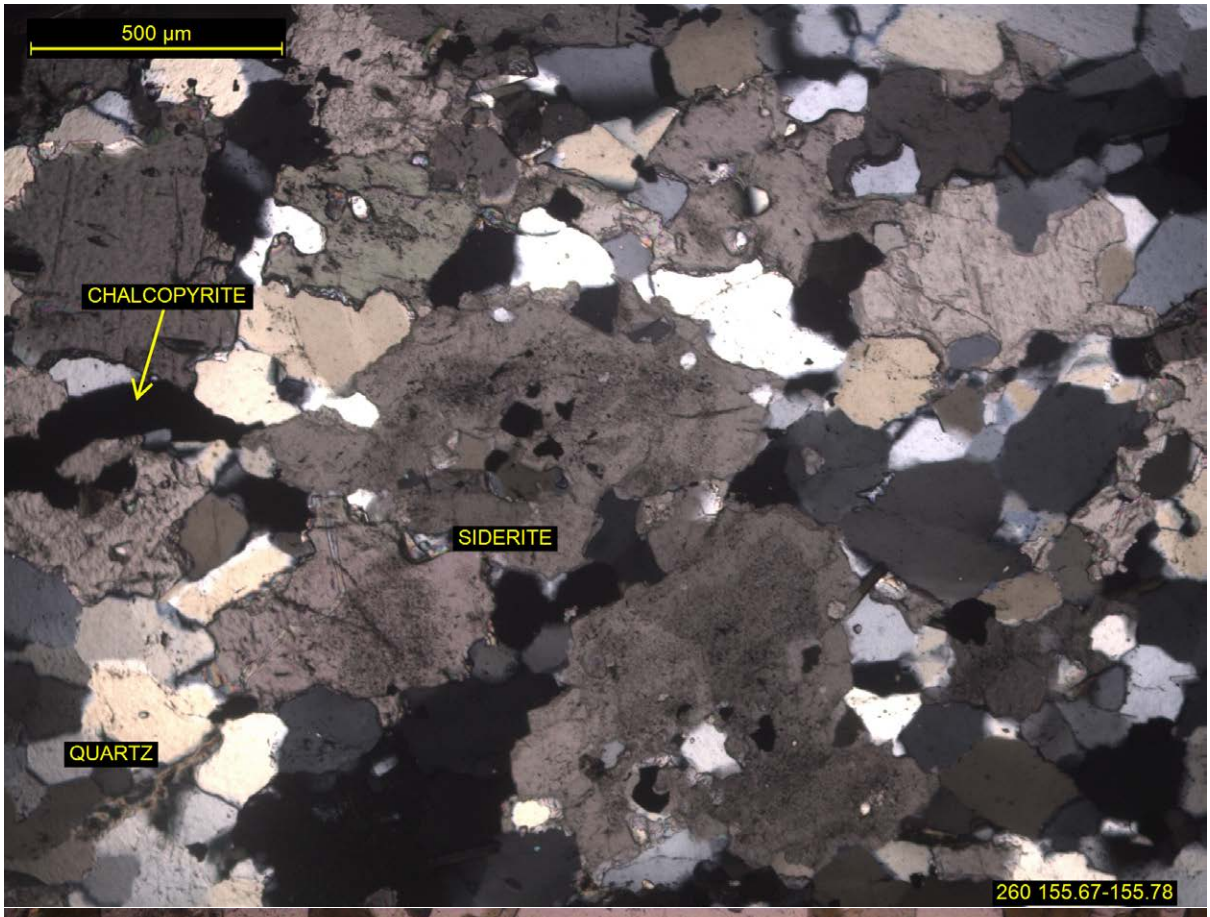

200 µm
GALENA
CHLORITE
PYRRHOTITE
260 155.67-155.78

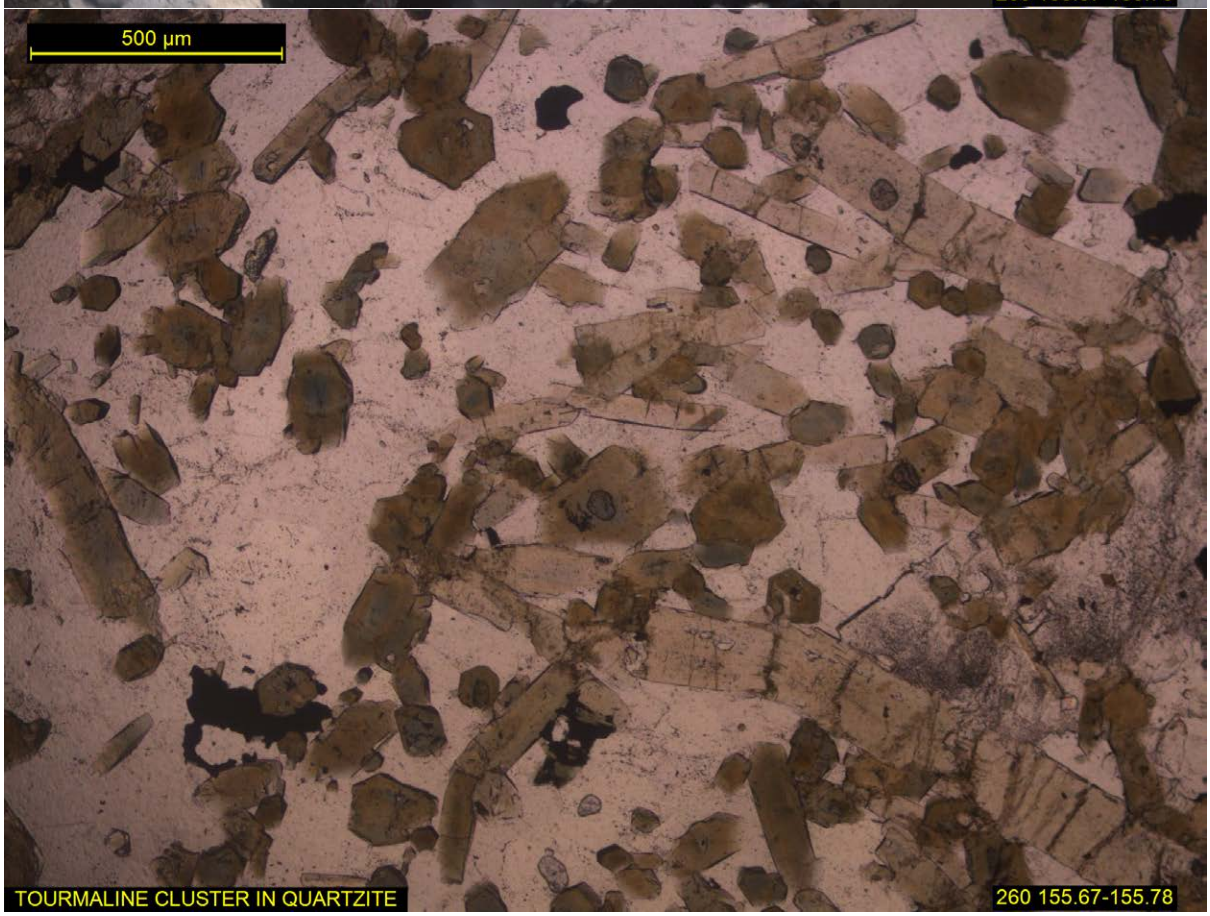

200 µm
GALENA
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
CHALCOPYRITE PYRRHOTITE COMPOSITE
260 155.67-155.78
200 µm
GALENA
VERY FINE CHALCOPYRITE ASSOCIATED WITH CHLORITE
260 155.67-155.78


200 µm
SPHALERITE
CHALCOPYRITE AND PYRRHOTITE COMPOSITE
260 155.67-155.78
200 µm
PYRRHOTITE
CHALCOPYRITE
260 155.67-155.78

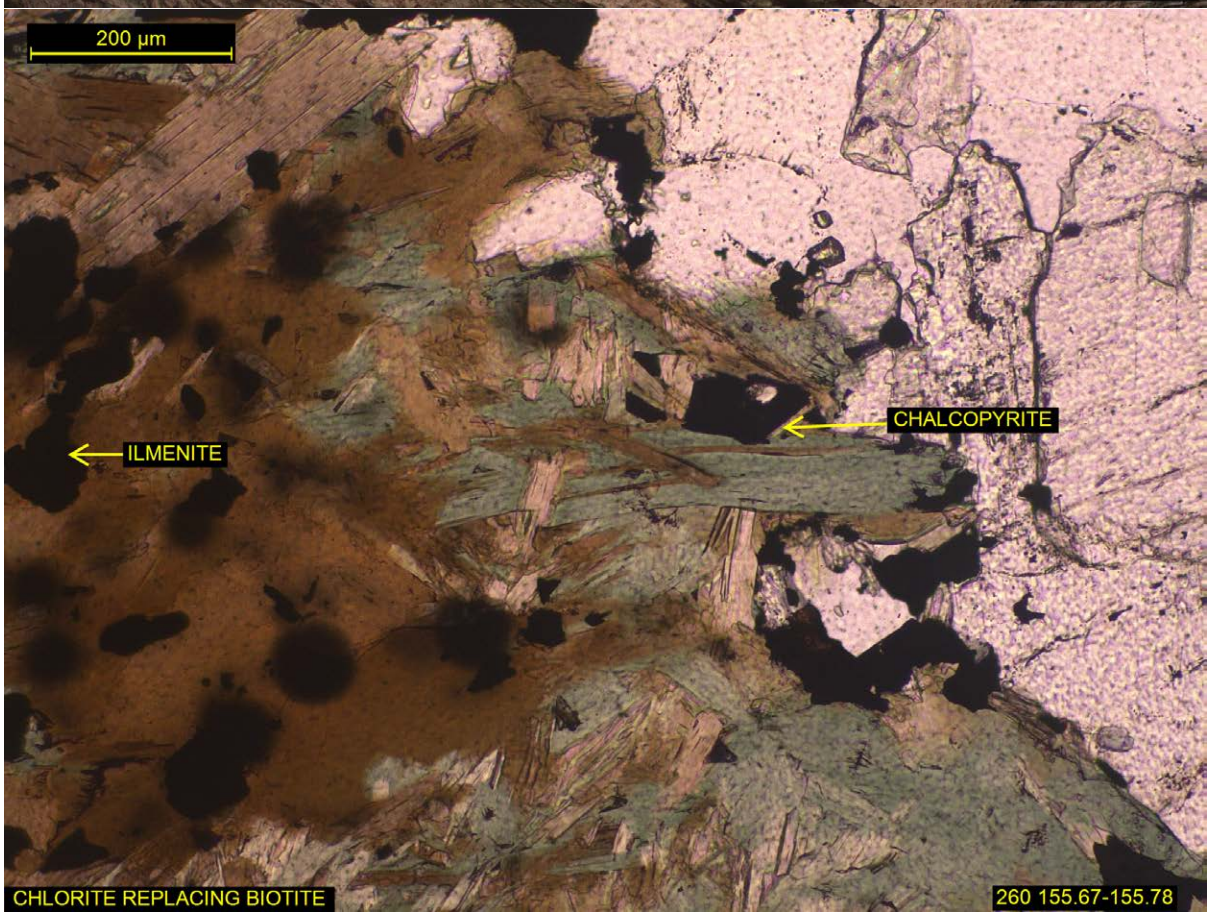

200 µm
CHALCOPYRITE
PYRRHOTITE
260 155.67-155.78


200 µm
CHALCOPYRITE
SPHALERITE
CHALCOPYRITE AND SPHALERITE COMPOSITES
260 155.67-155.78


500 µm
CHALCOPYRITE
SIDERITE
QUARTZ
260 155.67-155.78


500 µm
TOURMALINE CLUSTER IN QUARTZITE
260 155.67-155.78


500 µm
CHLORITE
MUSCOVITE
CHLORITE AND MUSCOVITE
260 155.67-155.78


200 µm
CHALCOPYRITE
ILMENITE
CHLORITE REPLACING BIOTITE
260 155.67-155.78

SAMPLE K15-264 149.32-149.45

DRILL CORE

POLISHED THIN SECTION

1. MICA SCHIST	**20%**
MUSCOVITE	60-70%
CHLORITE	10-20%
BIOTITE	10-20%
ALBITE MACROCRYSTS	**1%**
2. SIDERITE-SULPHIDE OVERPRINT	**80%**
CHALCOPYRITE	50-60%
SIDERITE	15-25%
PYRITE	15-25%
PYRRHOTITE	15-25%
SPHALERITE	1-3%
ELECTRUM (GOLD/SILVER)	<1%
GALENA	TRACE

CLASSIFIED AS A BIOTITE-CHLORITE-MUSCOVITE SCHIST SIGNIFICANTLY OVERPRINTED BY A SIDERITE CEMENTED ELECTRUM BEARING MASSIVE CHALCOPYRITE WITH DISSEMINATED PYRITE, PYRRHOTITE AND SPHALERITE

The thin section comprises two main zones:

MICA SCHIST

A small section of the slide contains relic schist (somewhat lacking any overprint), comprised primarily of muscovite that is characterised by a strong fabric and several foliations, one almost orthogonal to the other, in addition to subordinate biotite, which is partially replaced by chlorite.

Sulphide content is low, consisting of numerous irregular composites of chalcopyrite, pyrite and subordinate pyrrhotite (~1 to ~ 4mm), in addition to numerous disseminated fine (~30 to ~300 µm) subhedral pyrite grains.

SIDERITE-SULPHIDE OVERPRINT

Approximately three quarters of the slide is semi-massive chalcopyrite containing subordinate disseminated pyrite, pyrrhotite, rare sphalerite, peppered with siderite and other gangue. Chalcopyrite is a semi-massive coalesced matrix, with monominerallic zones, that hosts sporadically disseminated euhedral pyrite discrete grains (~100 to ~800 µm, outliers up to ~2mm), and occasional semi-coalesced irregular pyrite aggregates (up to ~2

mm). Occasionally chalcopyrite occurs as crude fine networks and fine inclusions within pyrite grains/aggregates.

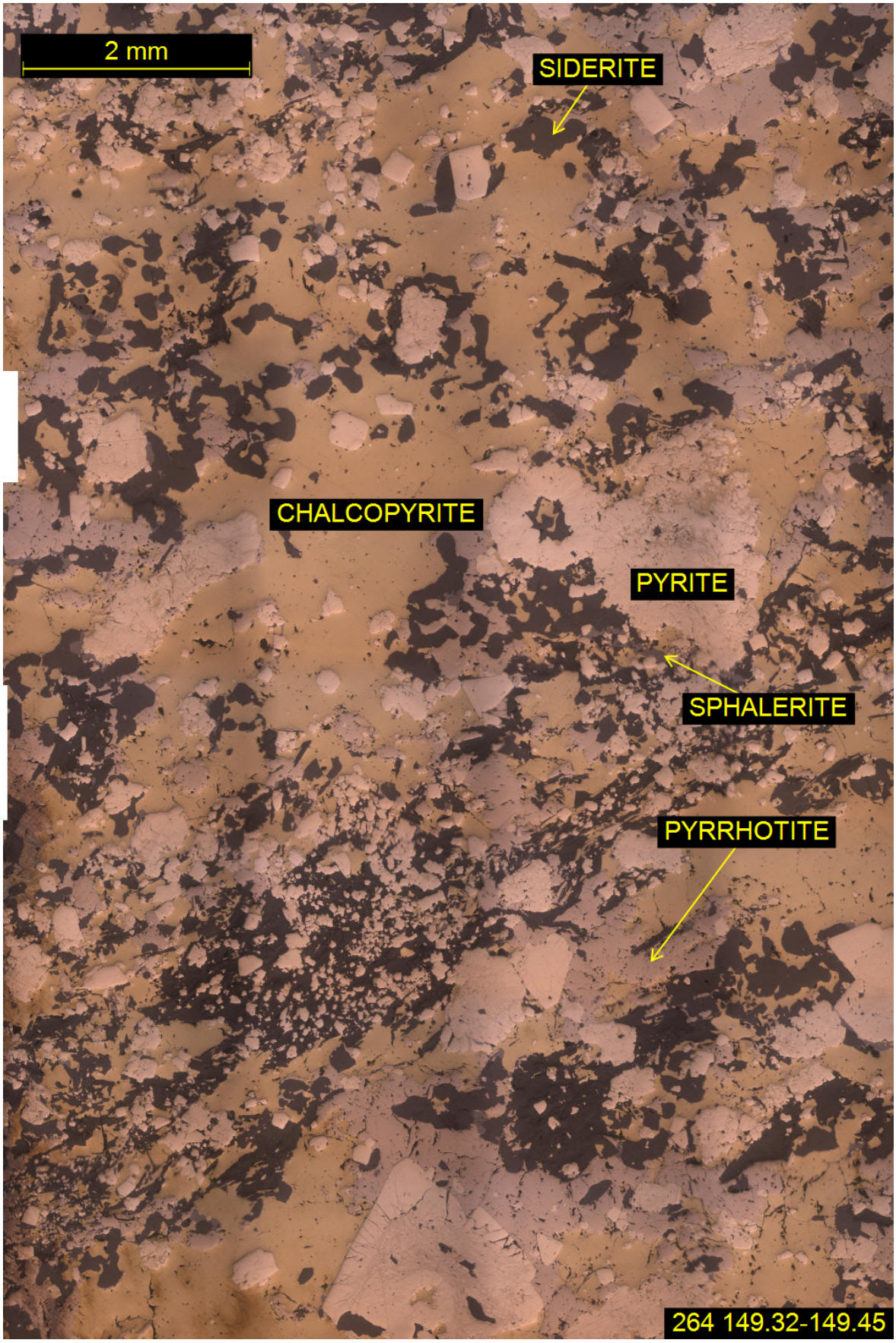
Pyrrhotites are ubiquitous, sporadic, fine, anhedral grains and large irregular allotriomorphic masses (~100 µm to over five millimetres), that frequently composite with pyrite. Of note is the common intricate veining of pyrite by pyrrhotite. Gangue content consists predominantly of ubiquitous peppering of polycrystalline siderite aggregates (~200 µm to ~2 mm), in addition to subordinate chlorite, aggregates of muscovite, biotite and a green mica, and rare coarse (~5mm) albite macrocrysts. These macrocrysts enclose sulphides, and are undergoing marginal replacement by green chlorite.

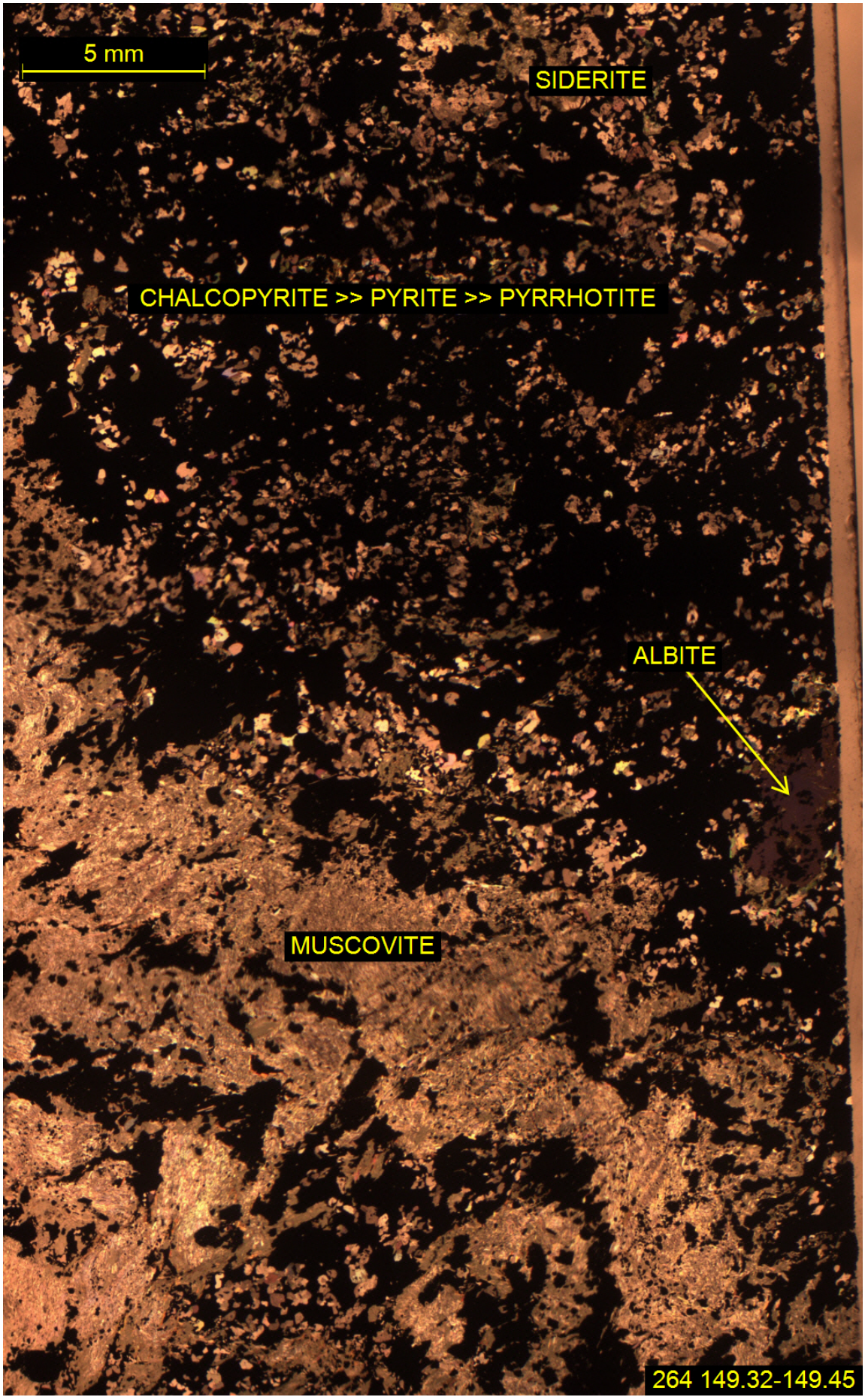
Sphalerite occurs as an accessory component mainly within the massive chalcopyrite zone, commonly found in complex composites with chalcopyrite and pyrite, occasionally pyrrhotite. It sometimes rims pyrite, are inclusions in chalcopyrite and pyrite, and is found on few occasions containing numerous inclusions of pyrite. Grain sizes vary from ~40 to ~400 µm generally, outliers up to ~750 µm, with broad grain shapes, elongate shapes to slivers, and irregular forms.

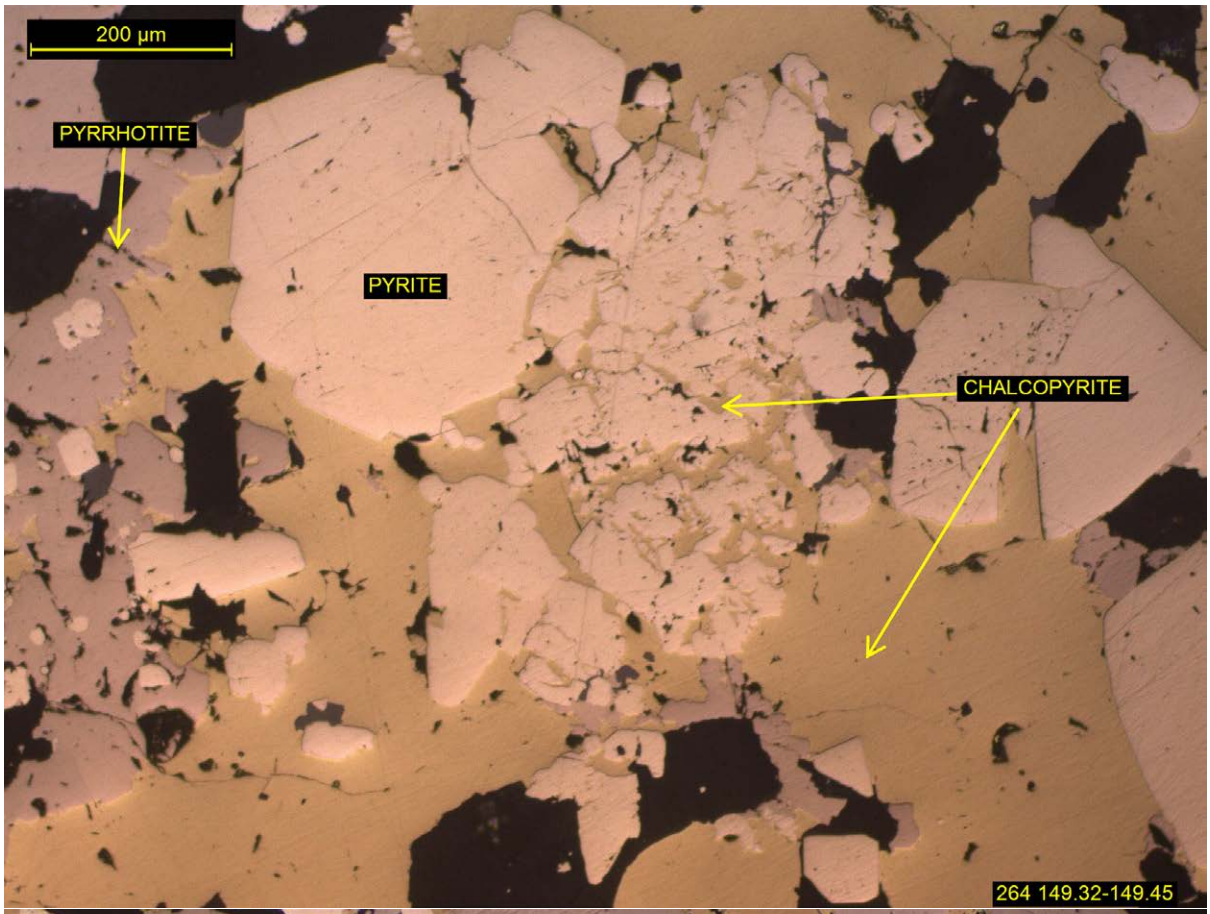
Galena was extremely rare, found most commonly as inclusions in sphalerite, and occasional rims on sphalerite or as discrete grains in gangue. Grain sizes vary from a few microns to 50 µm, typically as irregularly shaped forms.

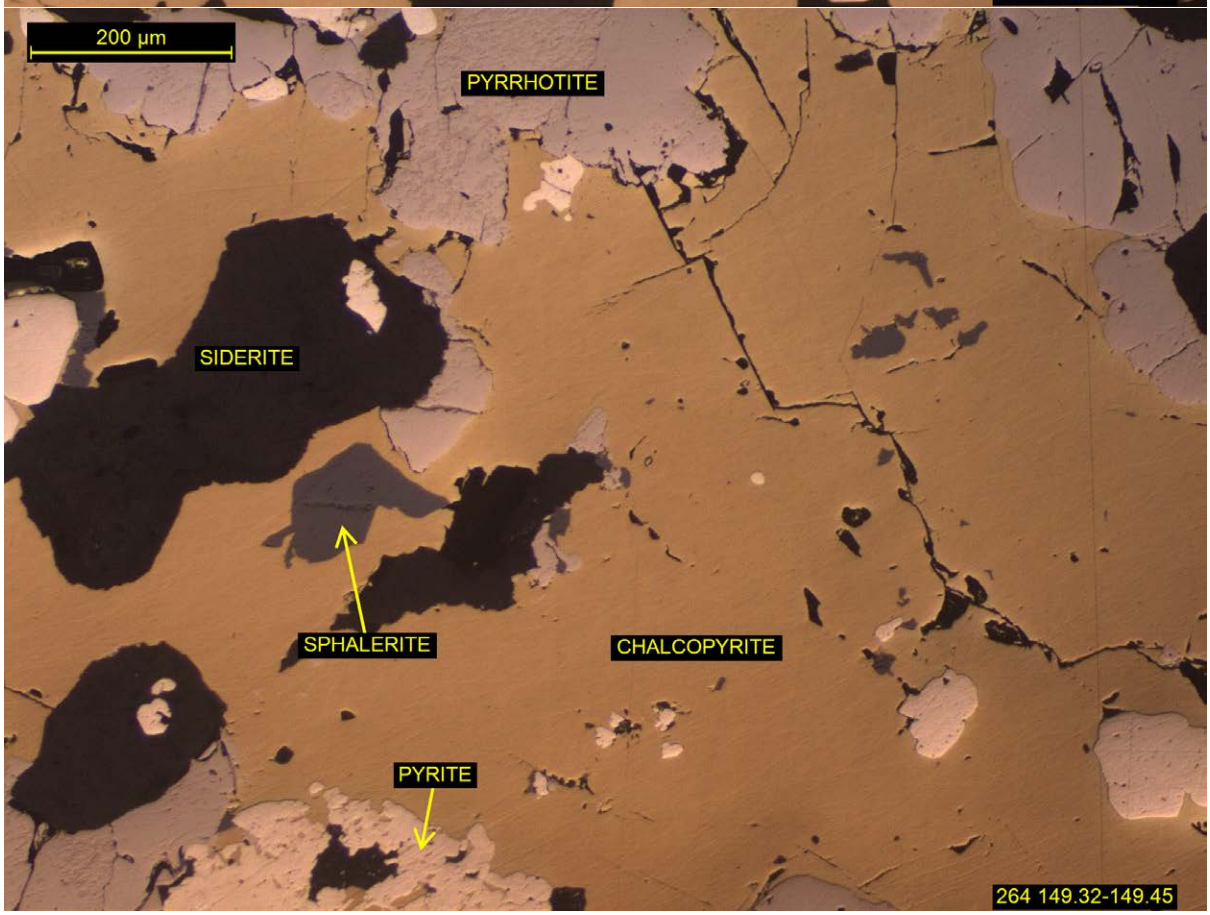
GOLD

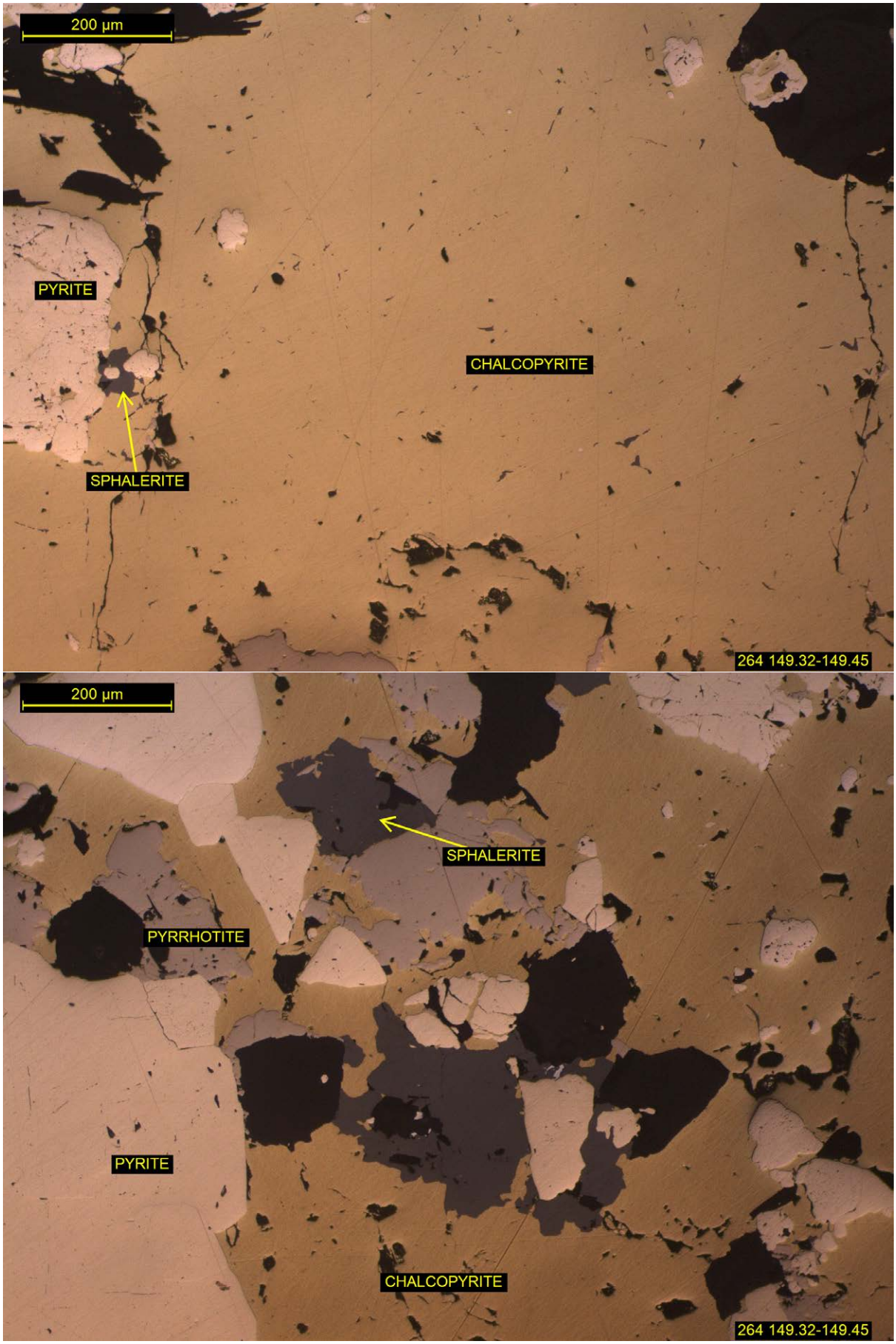
Silver rich (~40%) gold (electrum) was found regularly within the massive chalcopyrite zone, in at least ten field of views, in clusters ranging from 2 to approximately 40 grains, totaling at least 150 grains across the polished thin section. Electrum mainly occurs as inclusions in chalcopyrite and pyrrhotite, followed by inclusions in pyrite – some within fractures, occasionally as rims on pyrite and sphalerite, in addition to inclusions in sphalerite, galena and rarely in gangue. The grains range in size from a micron to ~100 µm, and grain size distribution is fairly consistent across this entire size range. The grains are irregularly shaped to elongate/slivers and blebs.

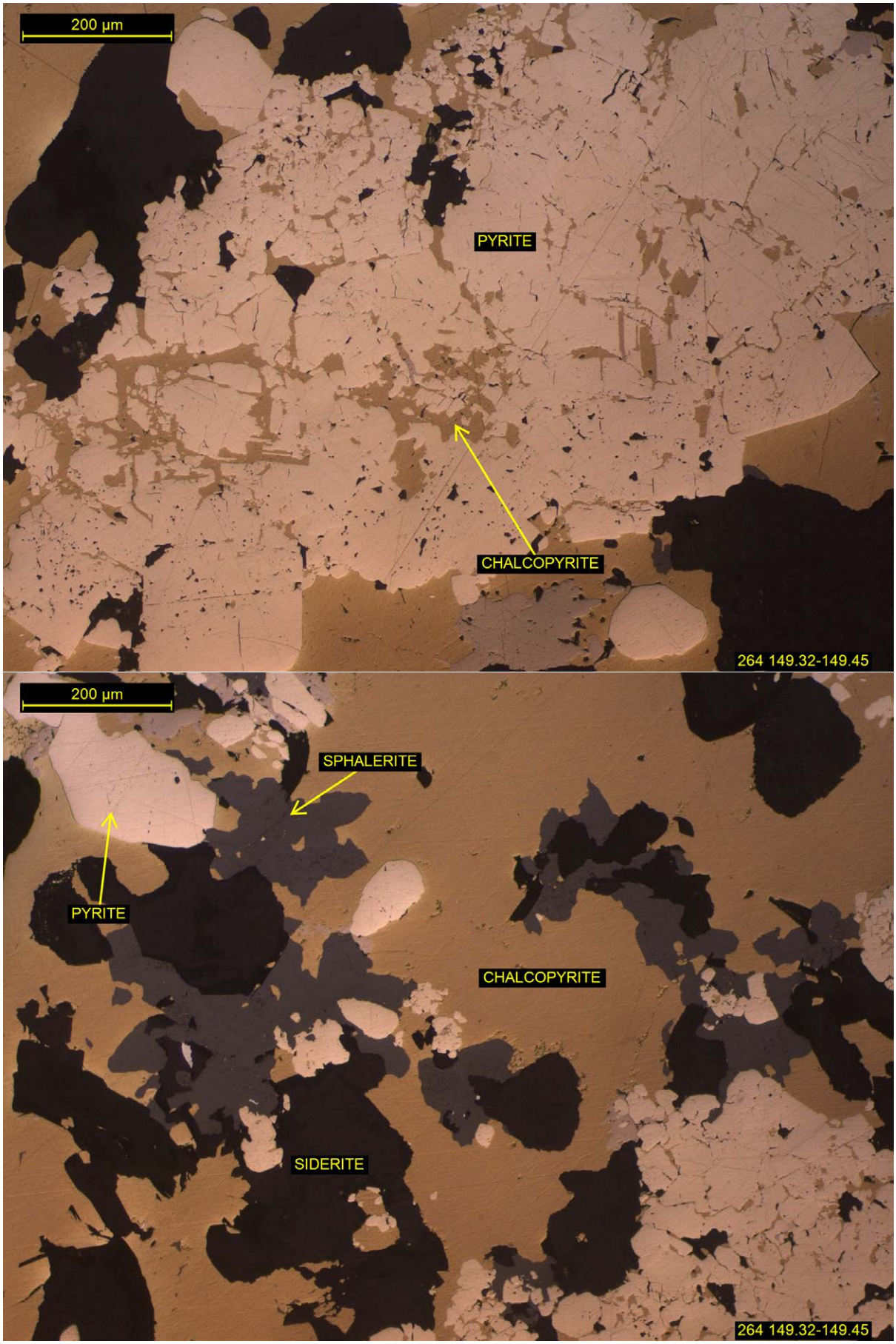

2 mm
SIDERITE
CHALCOPYRITE
PYRITE
SPHALERITE
PYRRHOTITE
264 149.32-149.45

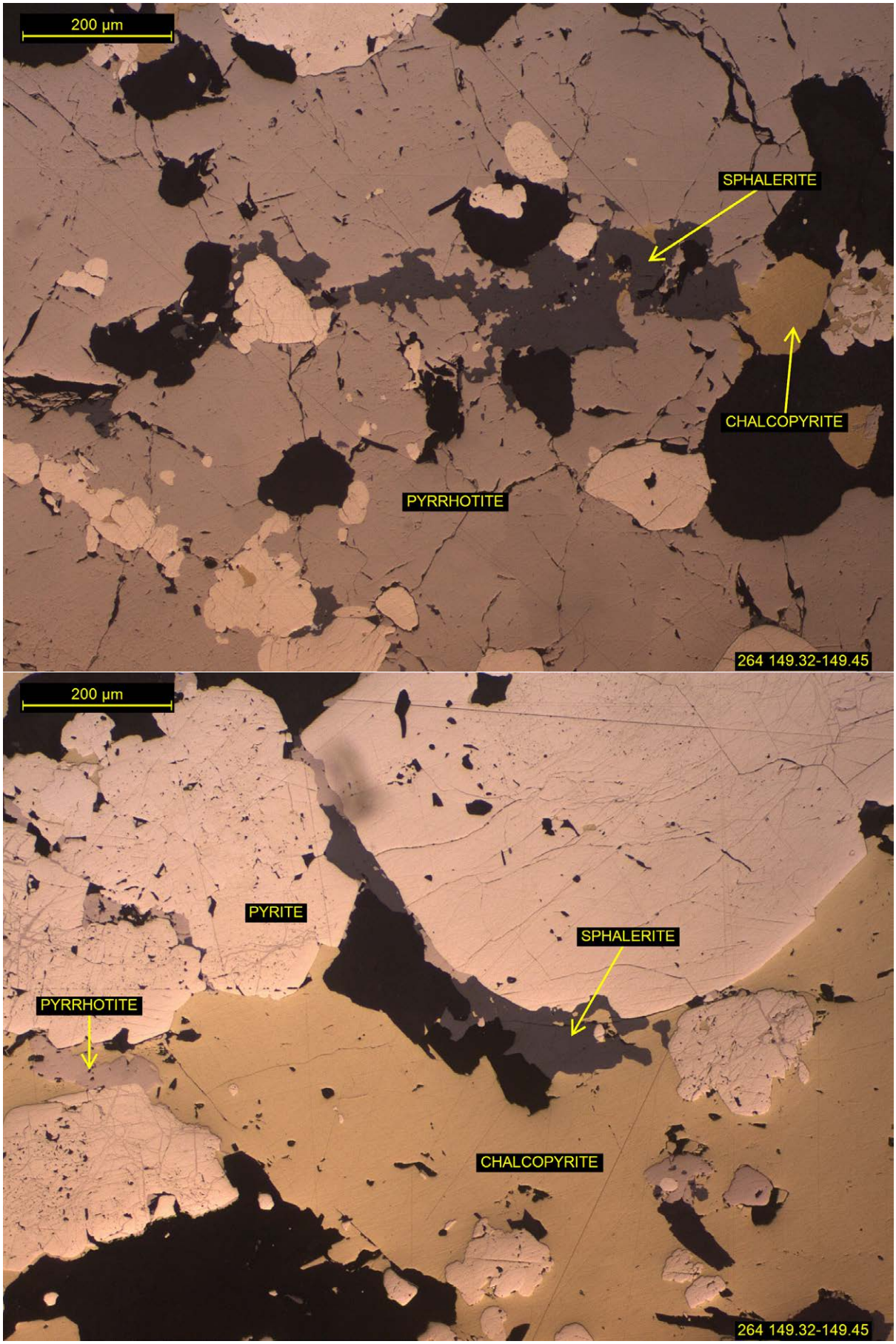

5 mm
SIDERITE
CHALCOPYRITE >> PYRITE >> PYRRHOTITE
ALBITE
MUSCOVITE
264 149.32-149.45

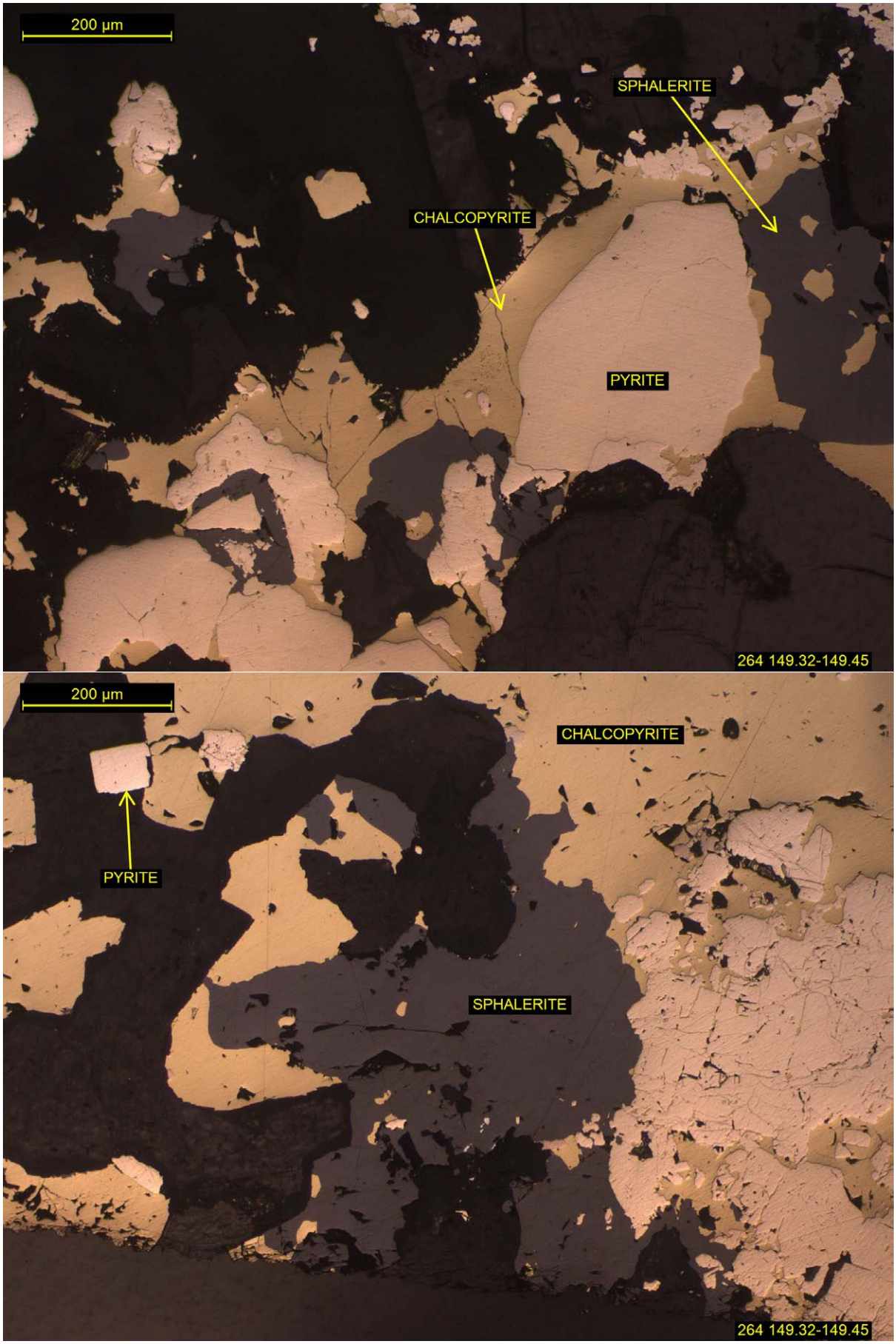

200 µm
PYRRHOTITE
PYRITE
CHALCOPYRITE
264 149.32-149.45

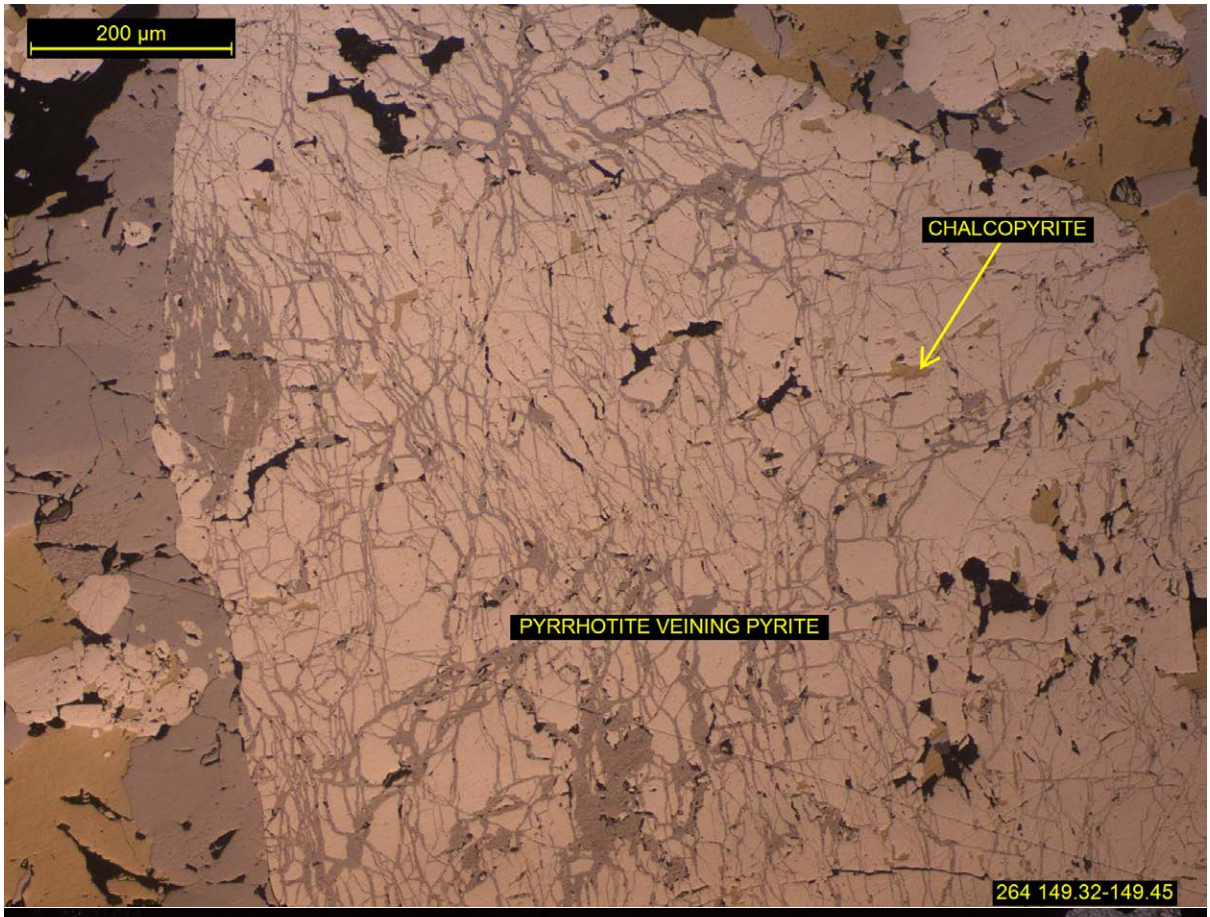

200 µm
PYRRHOTITE
SIDERITE
SPHALERITE
CHALCOPYRITE
PYRITE
264 149.32-149.45

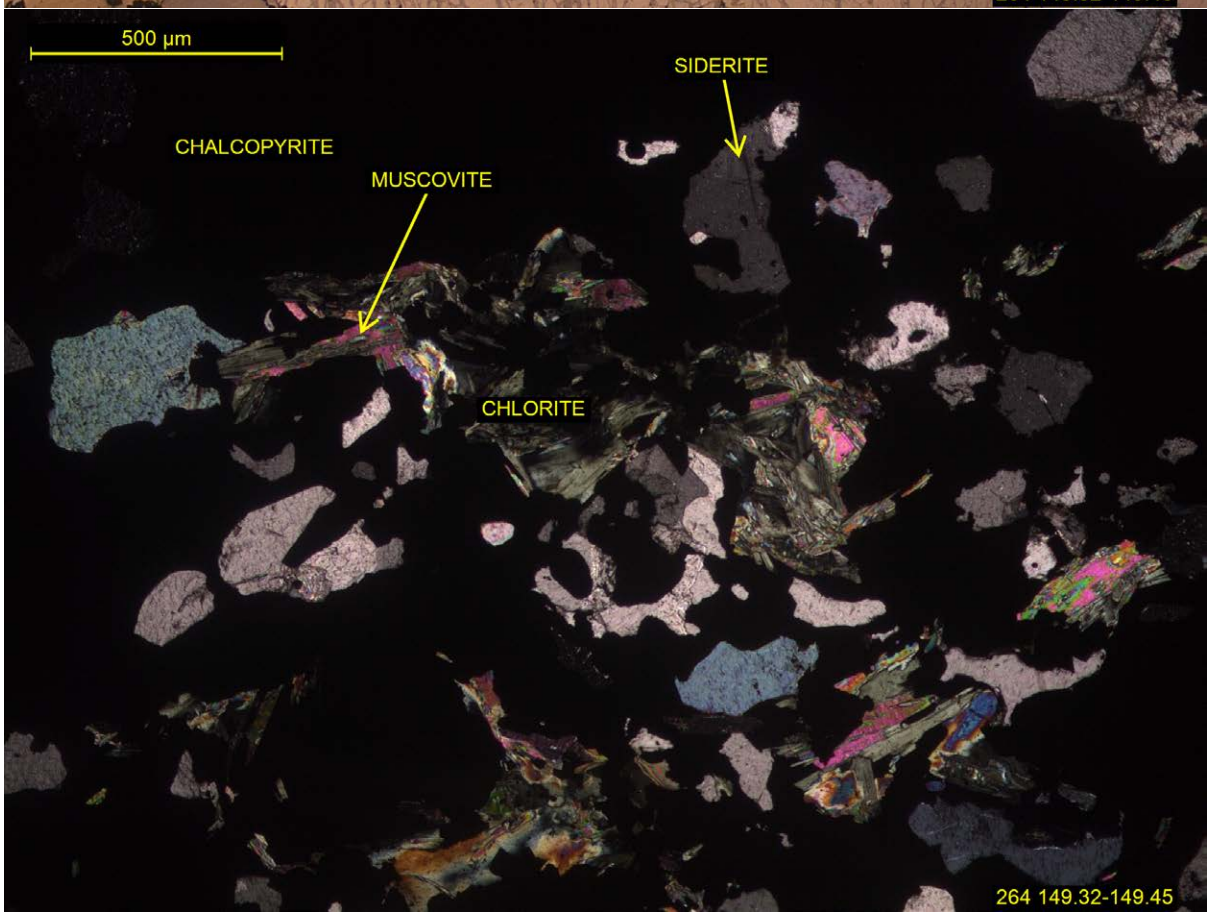

200 µm
PYRITE
CHALCOPYRITE
SPHALERITE
264 149.32-149.45
200 µm
SPHALERITE
PYRRHOTITE
PYRITE
CHALCOPYRITE
264 149.32-149.45

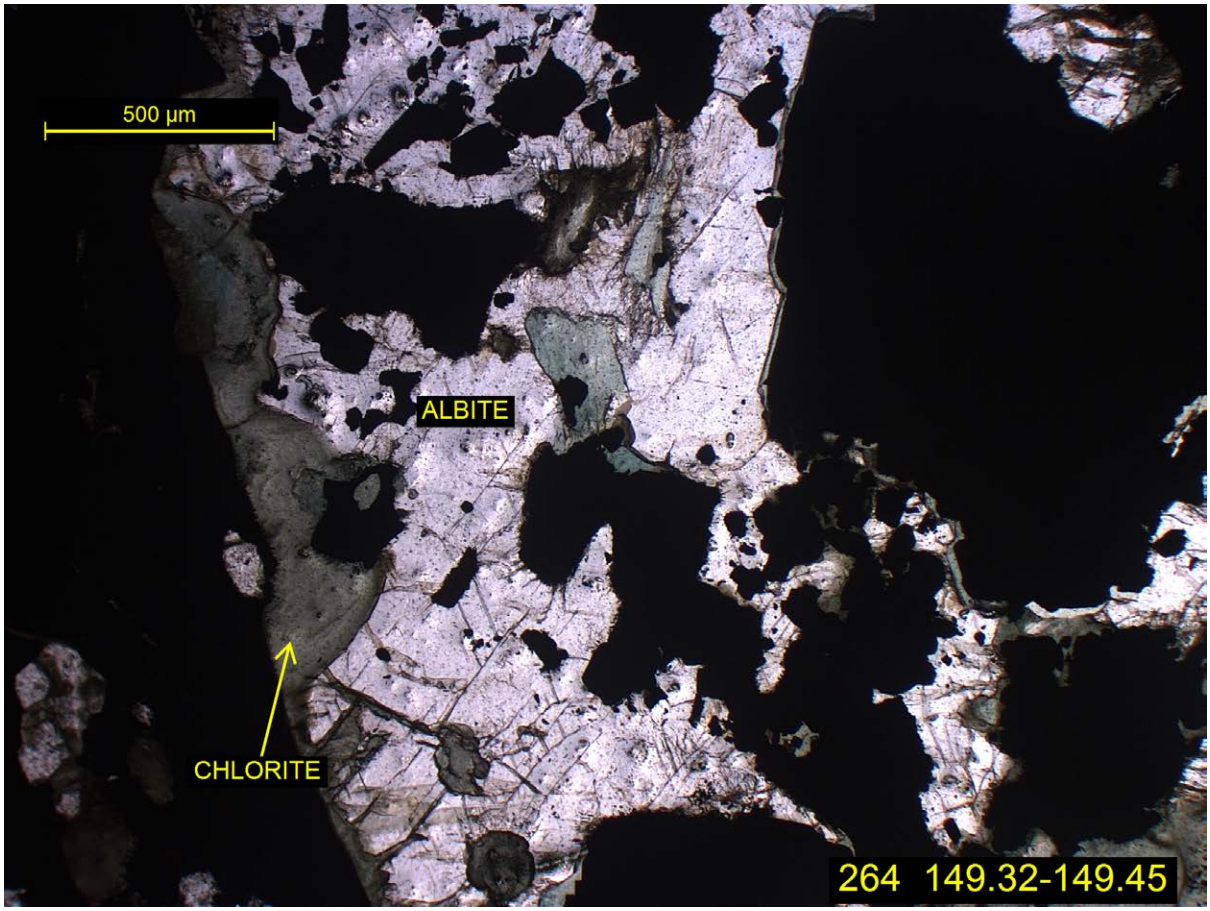

200 µm
PYRITE
CHALCOPYRITE
264 149.32-149.45
200 µm
SPHALERITE
PYRITE
CHALCOPYRITE
SIDERITE
264 149.32-149.45

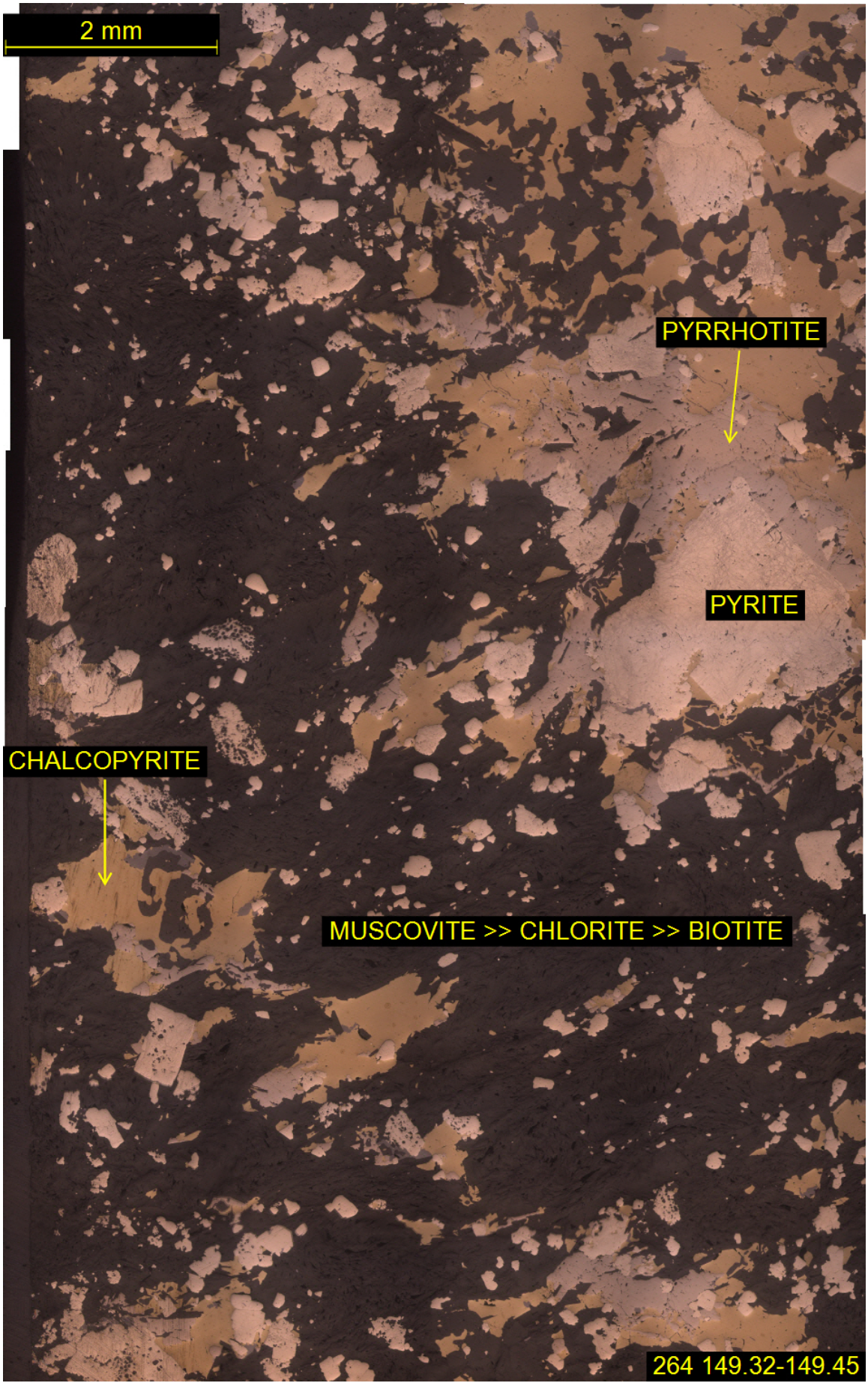

200 µm
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
264 149.32-149.45
200 µm
PYRITE
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
264 149.32-149.45

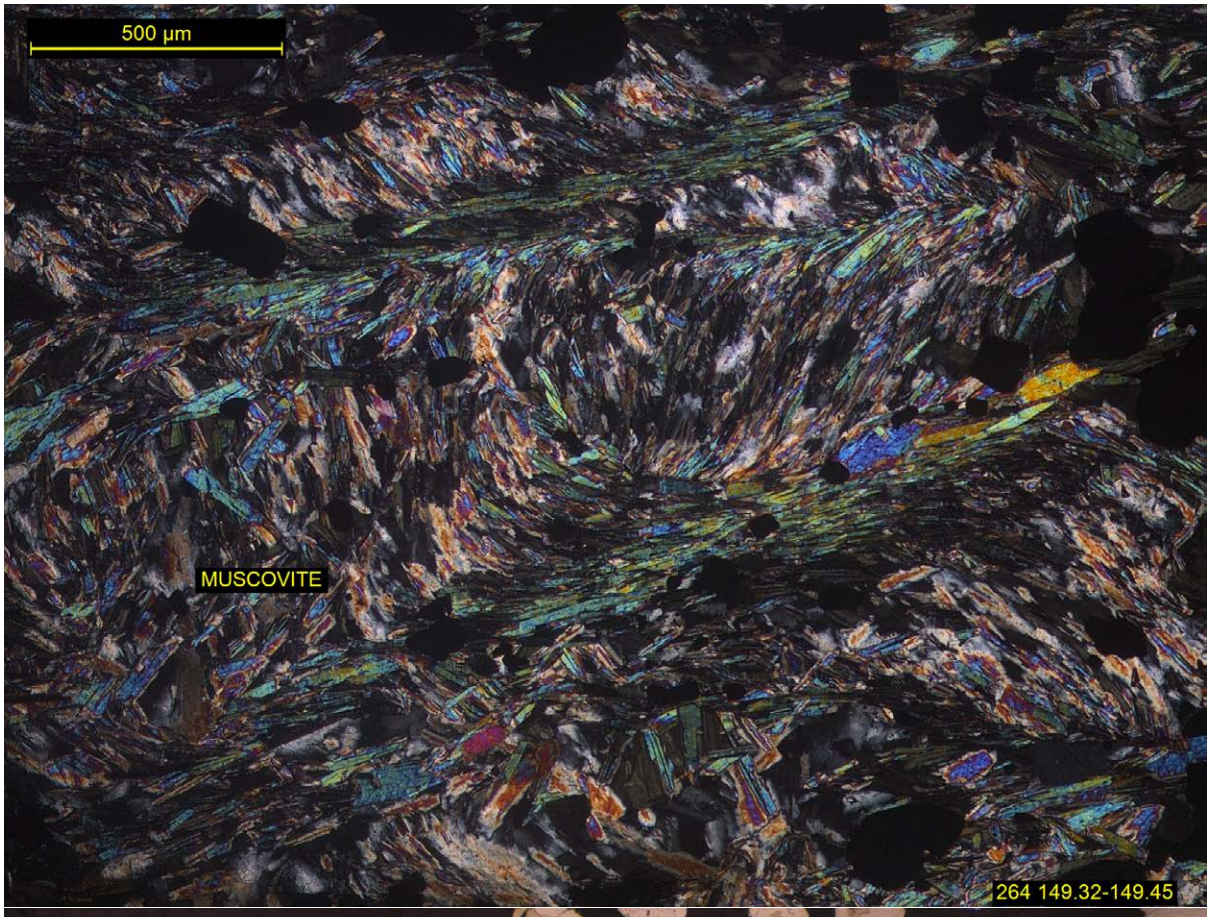

200 µm
SPHALERITE
CHALCOPYRITE
PYRITE
264 149.32-149.45
200 µm
CHALCOPYRITE
PYRITE
SPHALERITE
264 149.32-149.45

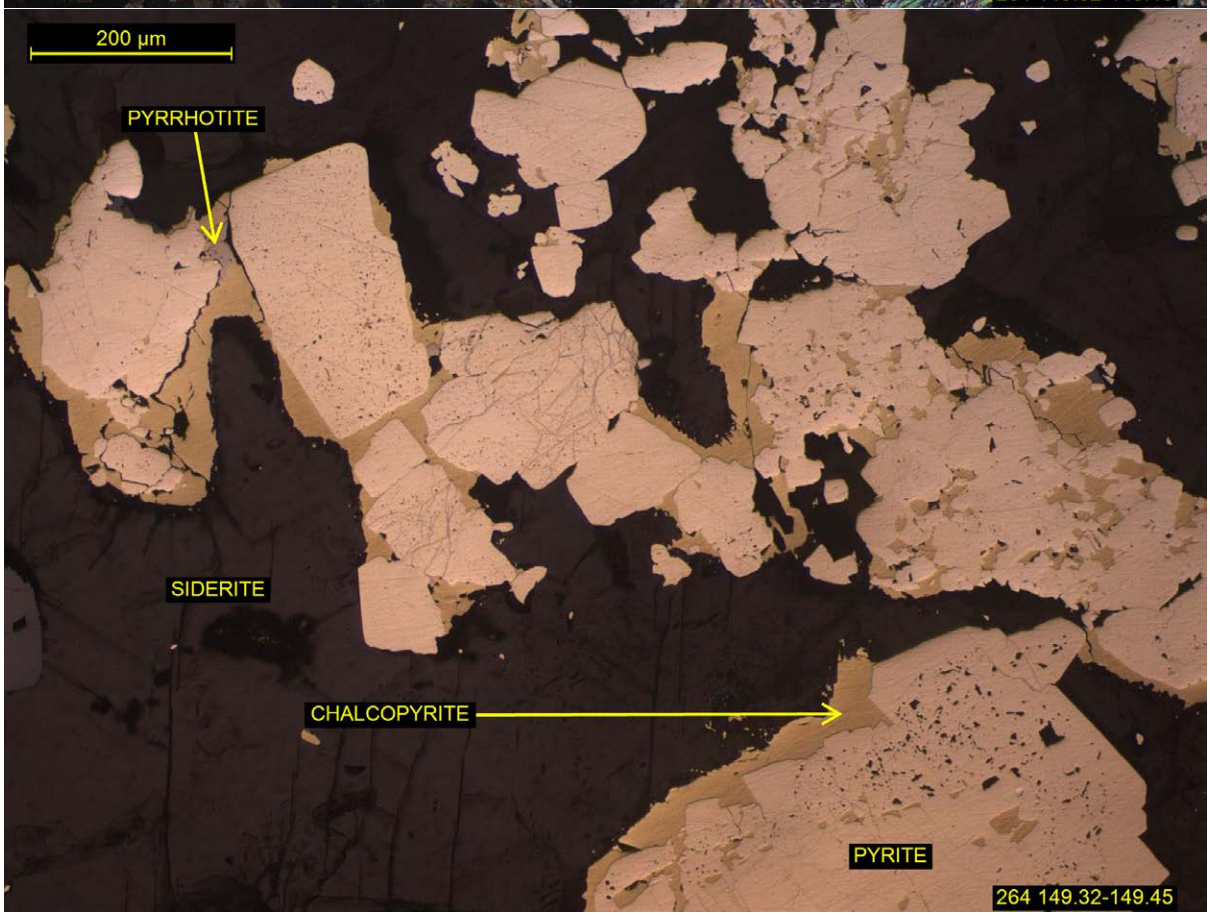

200 µm
CHALCOPYRITE
PYRRHOTITE VEINING PYRITE
264 149.32-149.45

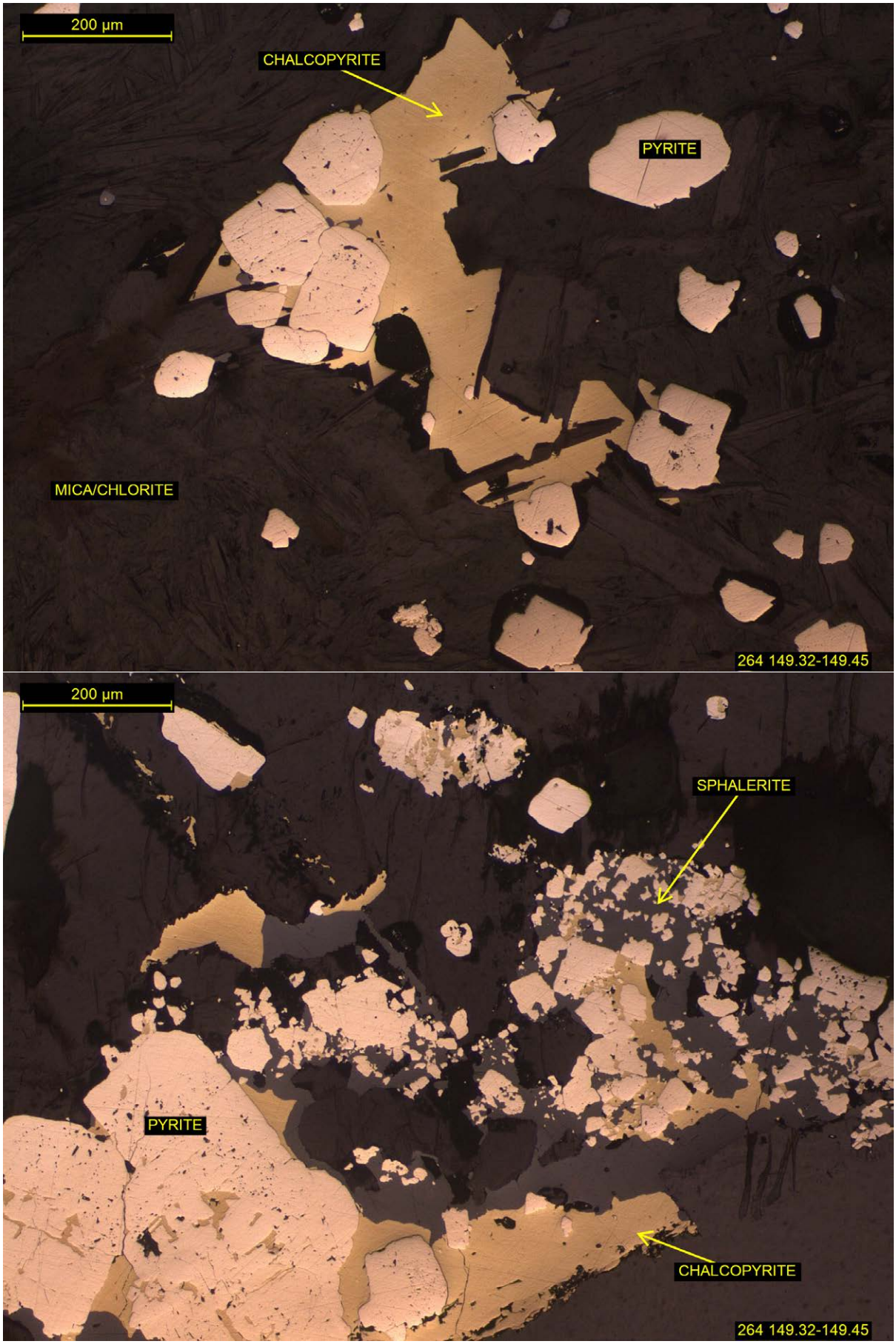

500 µm
SIDERITE
CHALCOPYRITE
MUSCOVITE
CHLORITE
264 149.32-149.45

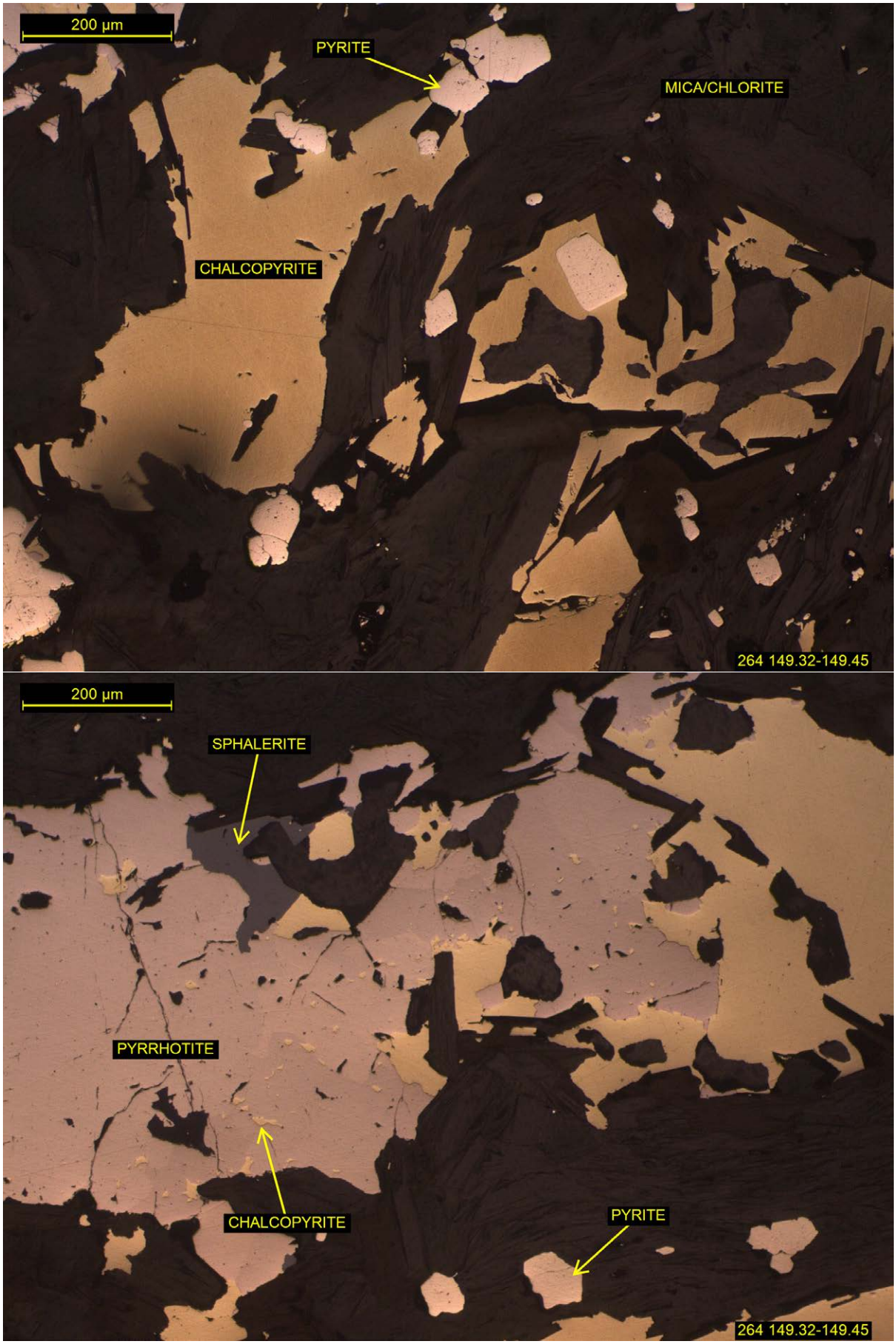

500 µm
ALBITE
CHLORITE
264 149.32-149.45

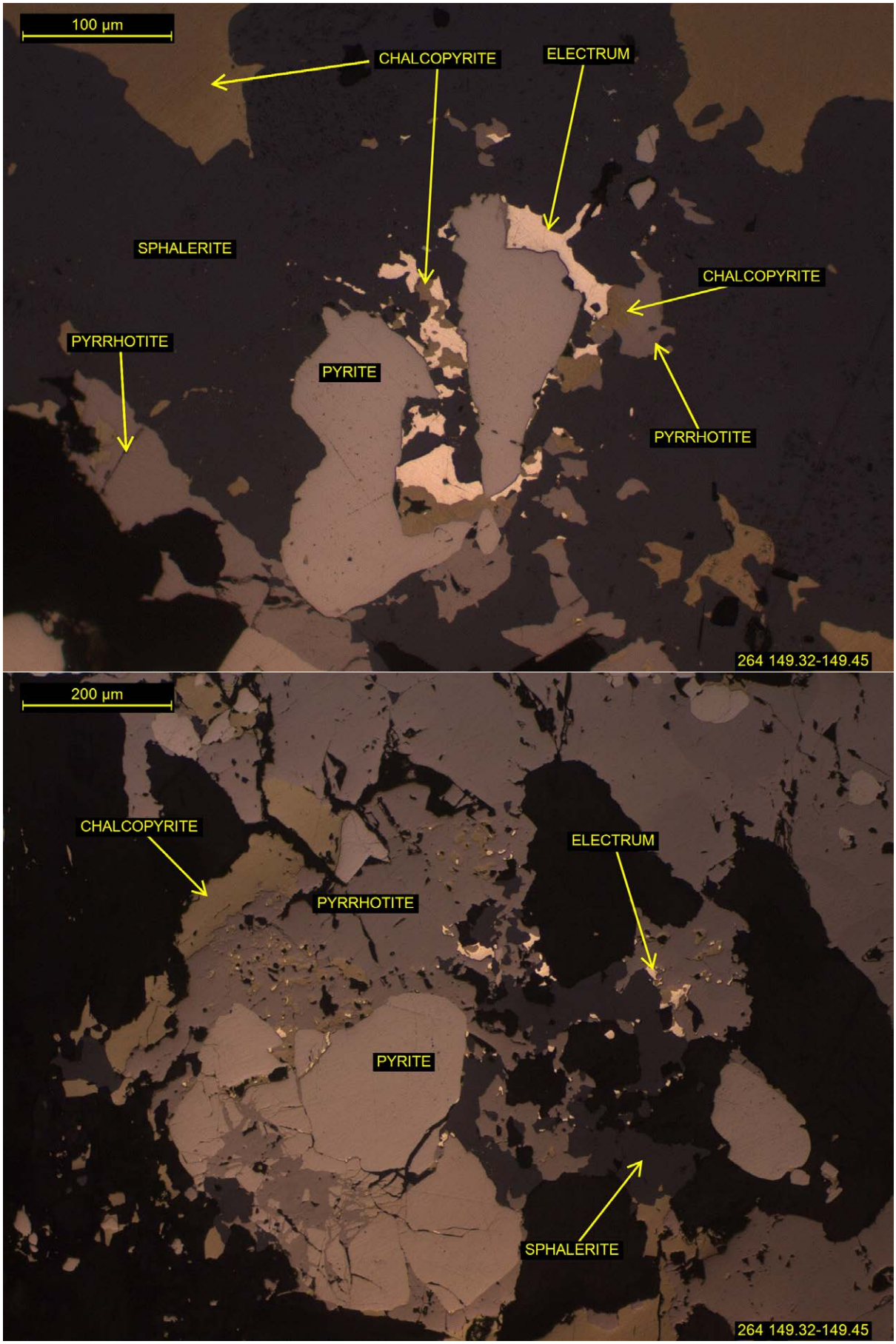

2 mm
PYRRHOTITE
PYRITE
CHALCOPYRITE
MUSCOVITE >> CHLORITE >> BIOTITE
264 149.32-149.45

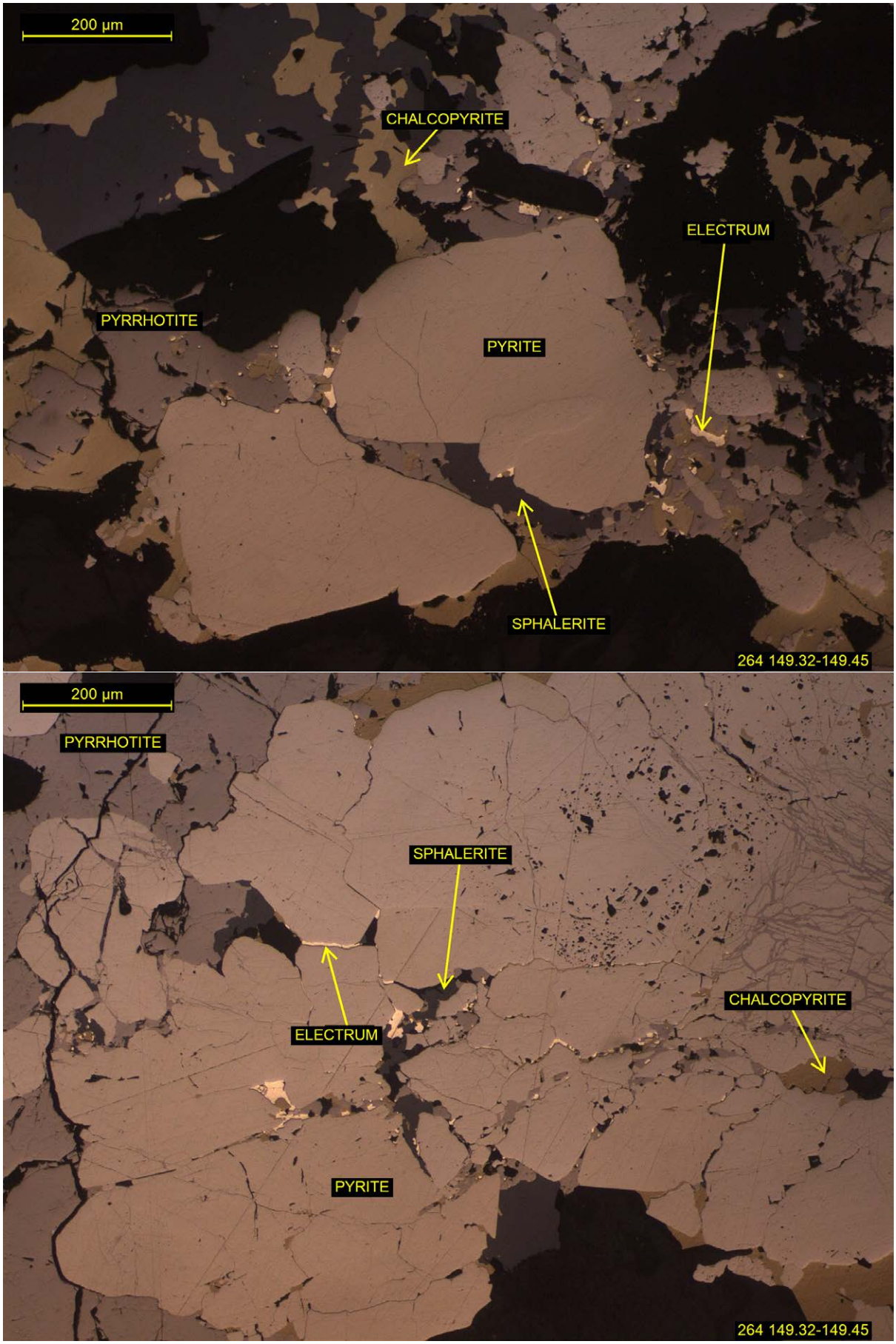

500 µm
MUSCOVITE
264 149.32-149.45

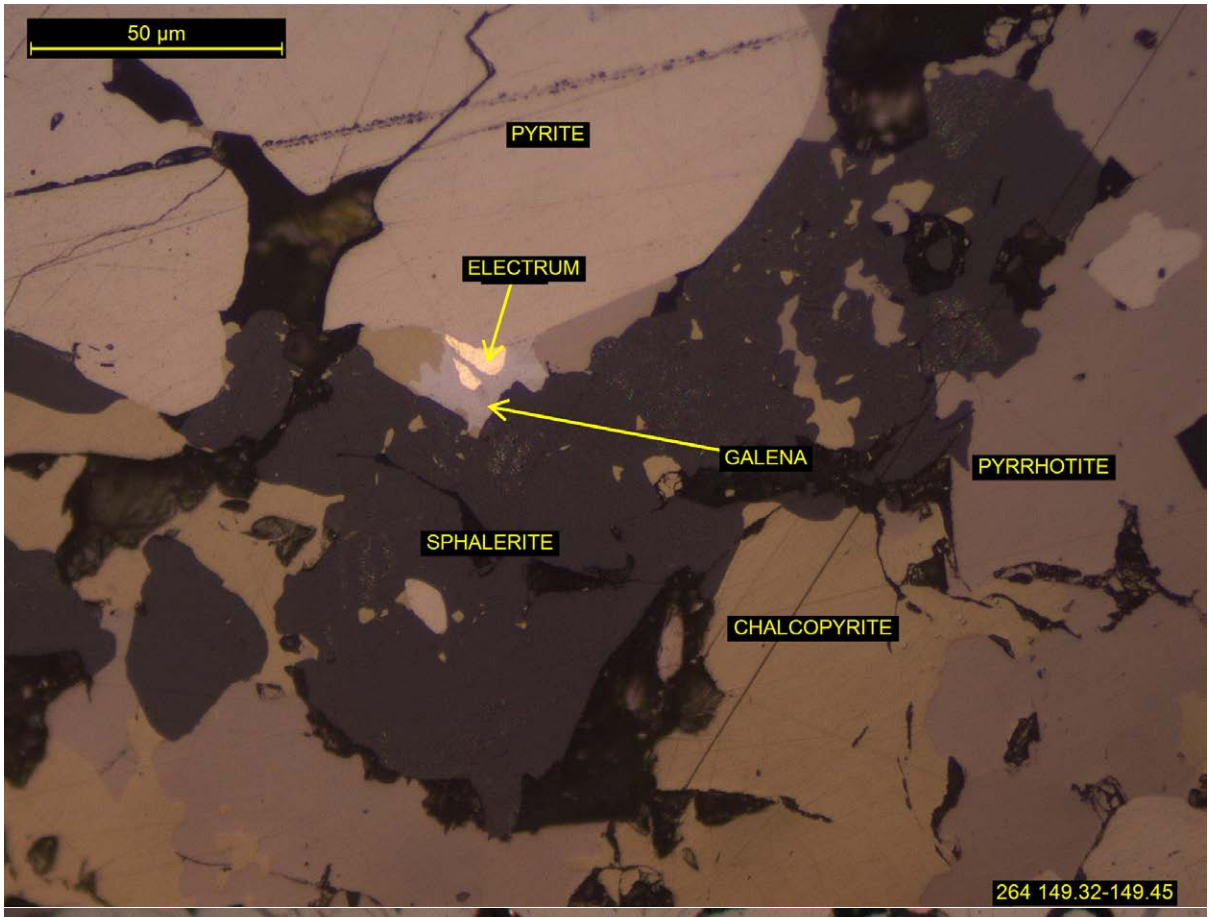

200 µm
PYRRHOTITE
SIDERITE
CHALCOPYRITE
PYRITE
264 149.32-149.45

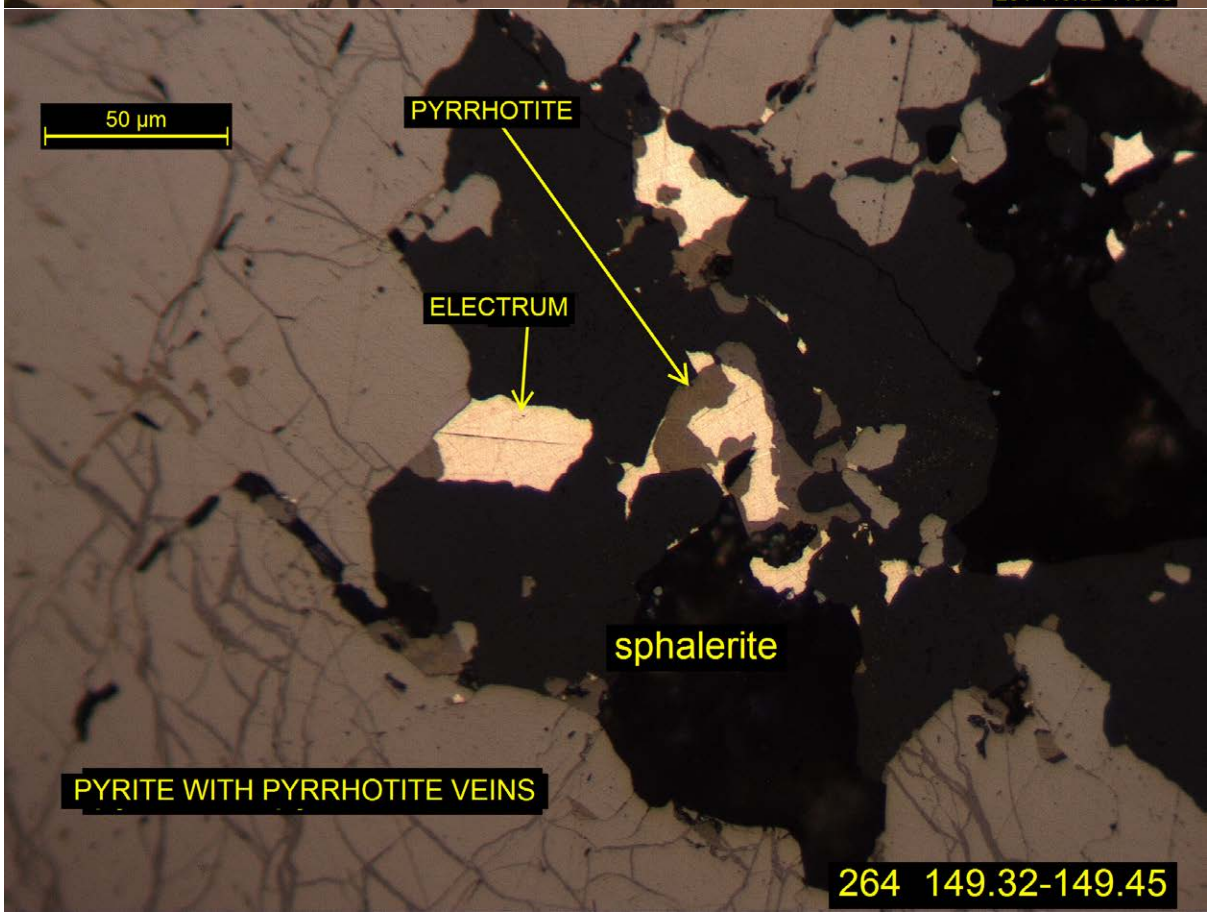

200 µm
CHALCOPYRITE
PYRITE
MICA/CHLORITE
264 149.32-149.45
200 µm
SPHALERITE
PYRITE
CHALCOPYRITE
264 149.32-149.45


200 µm
PYRITE
MICA/CHLORITE
CHALCOPYRITE
264 149.32-149.45
200 µm
SPHALERITE
PYRRHOTITE
CHALCOPYRITE
PYRITE
264 149.32-149.45

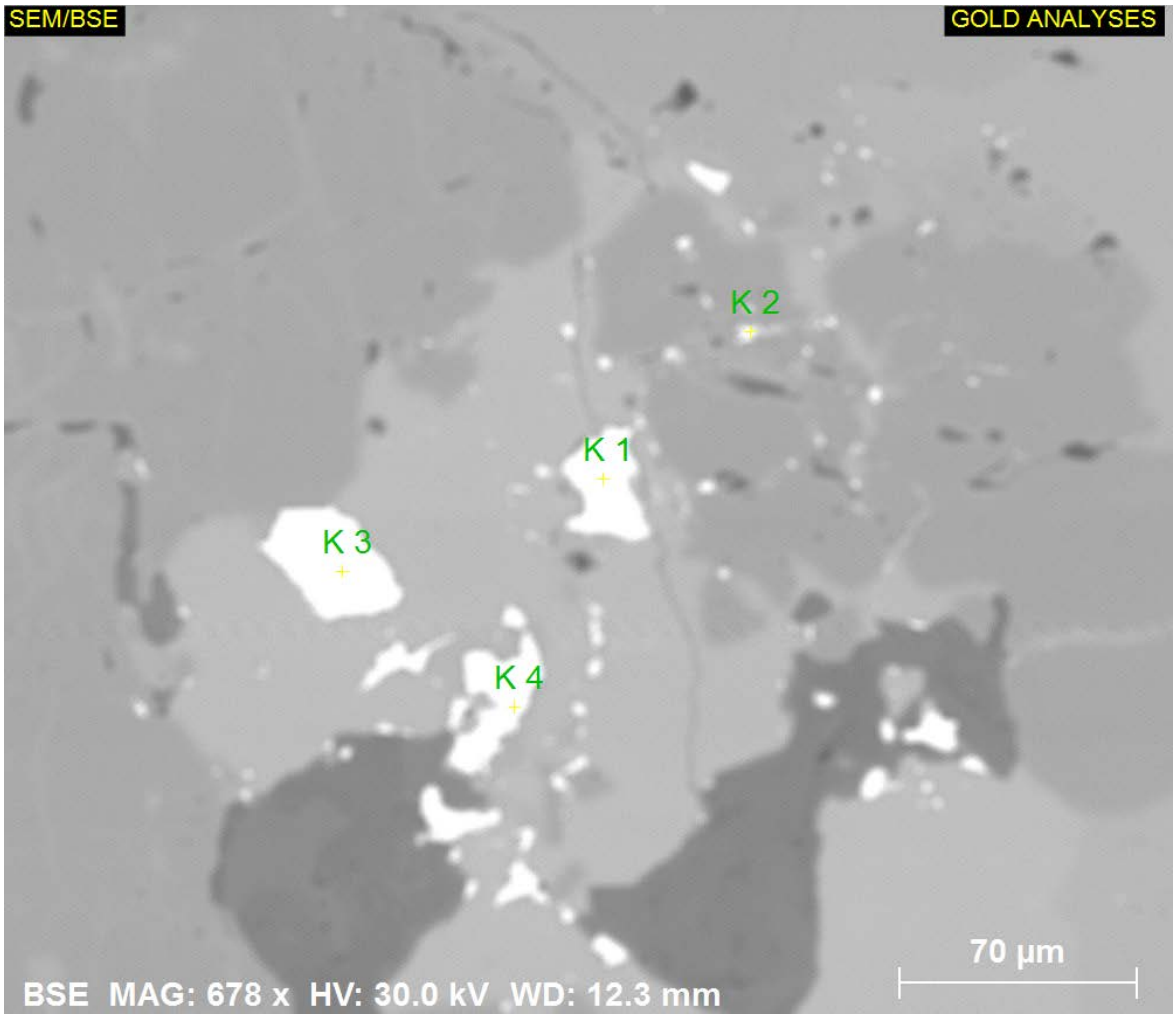

100 µm
CHALCOPYRITE
ELECTRUM
SPHALERITE
CHALCOPYRITE
PYRRHOTITE
PYRITE
PYRRHOTITE
264 149.32-149.45
200 µm
CHALCOPYRITE
ELECTRUM
PYRRHOTITE
PYRITE
SPHALERITE
264 149.32-149.45


200 µm
CHALCOPYRITE
ELECTRUM
PYRRHOTITE
PYRITE
SPHALERITE
264 149.32-149.45
200 µm
PYRRHOTITE
SPHALERITE
ELECTRUM
CHALCOPYRITE
PYRITE
264 149.32-149.45


50 µm
PYRITE
ELECTRUM
GALENA
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
264 149.32-149.45


50 µm
PYRRHOTITE
ELECTRUM
sphalerite
PYRITE WITH PYRRHOTITE VEINS
264 149.32-149.45

SEM/EDS ANALYSES



	Ag	Au
K 1	39.6	60.4
K 2	40.7	59.3
K 3	35.5	64.5
K 4	41.9	58.1

SAMPLE K15-264 164.7-164.81

DRILL CORE

POLISHED THIN SECTION

MUSCOVITE SCHIST	**90%**
MUSCOVITE	90%
QUARTZ	10-20%
TITANIUM OXIDES	1%
APATITE	1%
SIDERITE	<1%
SIDERITE VEIN	**1%**
ORES	**10%**
PYRITE	30-40%
PYRRHOTITE	20-30%
MARCASITE	20-30%
SPHALERITE	5-15%
CHALCOPYRITE	5-15%
GALENA	<1%

CLASSIFIED AS A MUSCOVITE SCHIST WITH LAYERED ORES AND RARE SIDERITE VEINS

A sample that is dominated by muscovite that has an extremely strong preferentially aligned fabric – a schistose texture, comprised of flakes sized generally between ~100 and ~650 µm. Lenticular pockets and discontinuous layers of polycrystalline quartz (~75 µm) are found periodically between muscovite layers. Rare subhedral elongate apatites (~750 µm) and elongate titanium oxides are sporadically present.

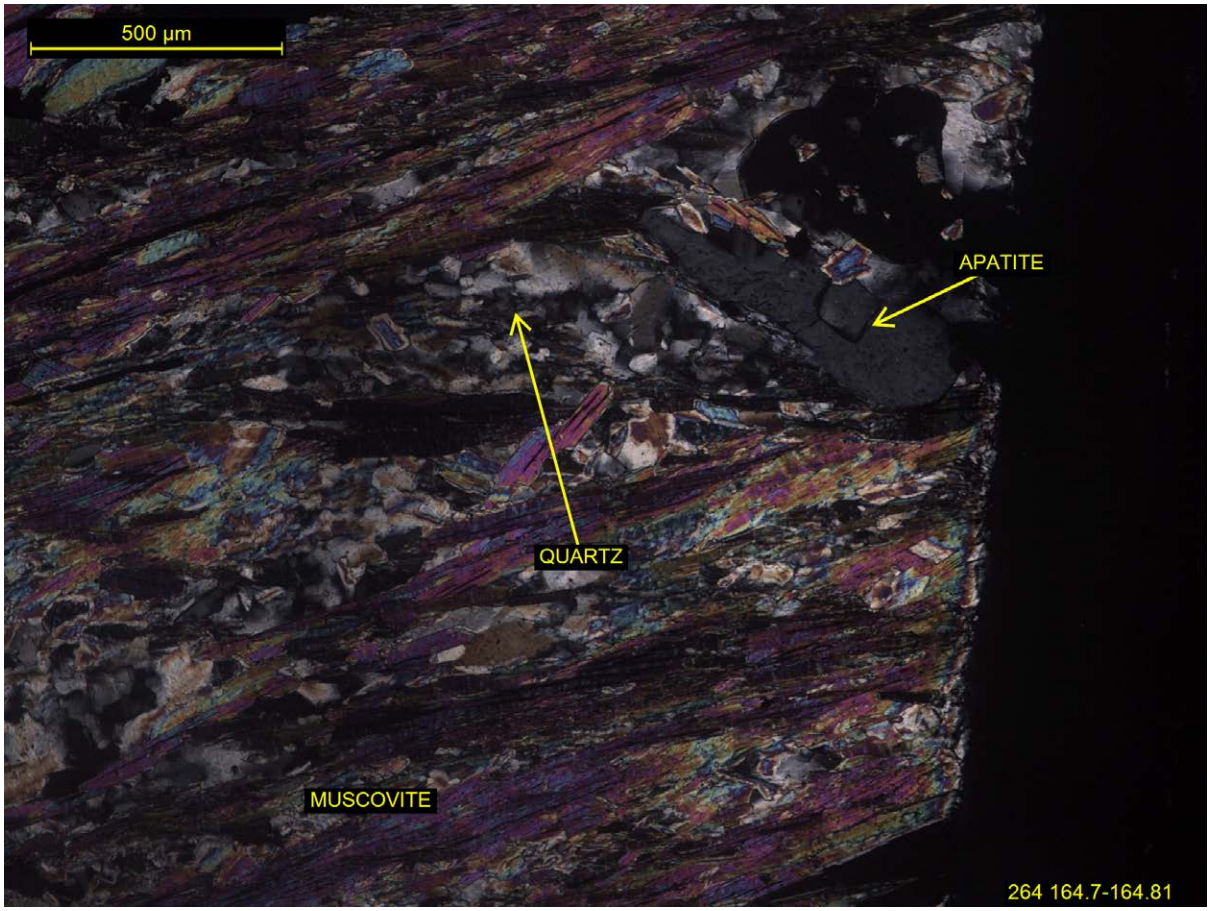
Within the thin section there are approximately nine layers that contain a minor to major content of disseminated ores including pyrite altering to marcasite, pyrrhotite, subordinate chalcopyrite and sphalerite. These laminations vary in thickness from ~1 to ~6mm.

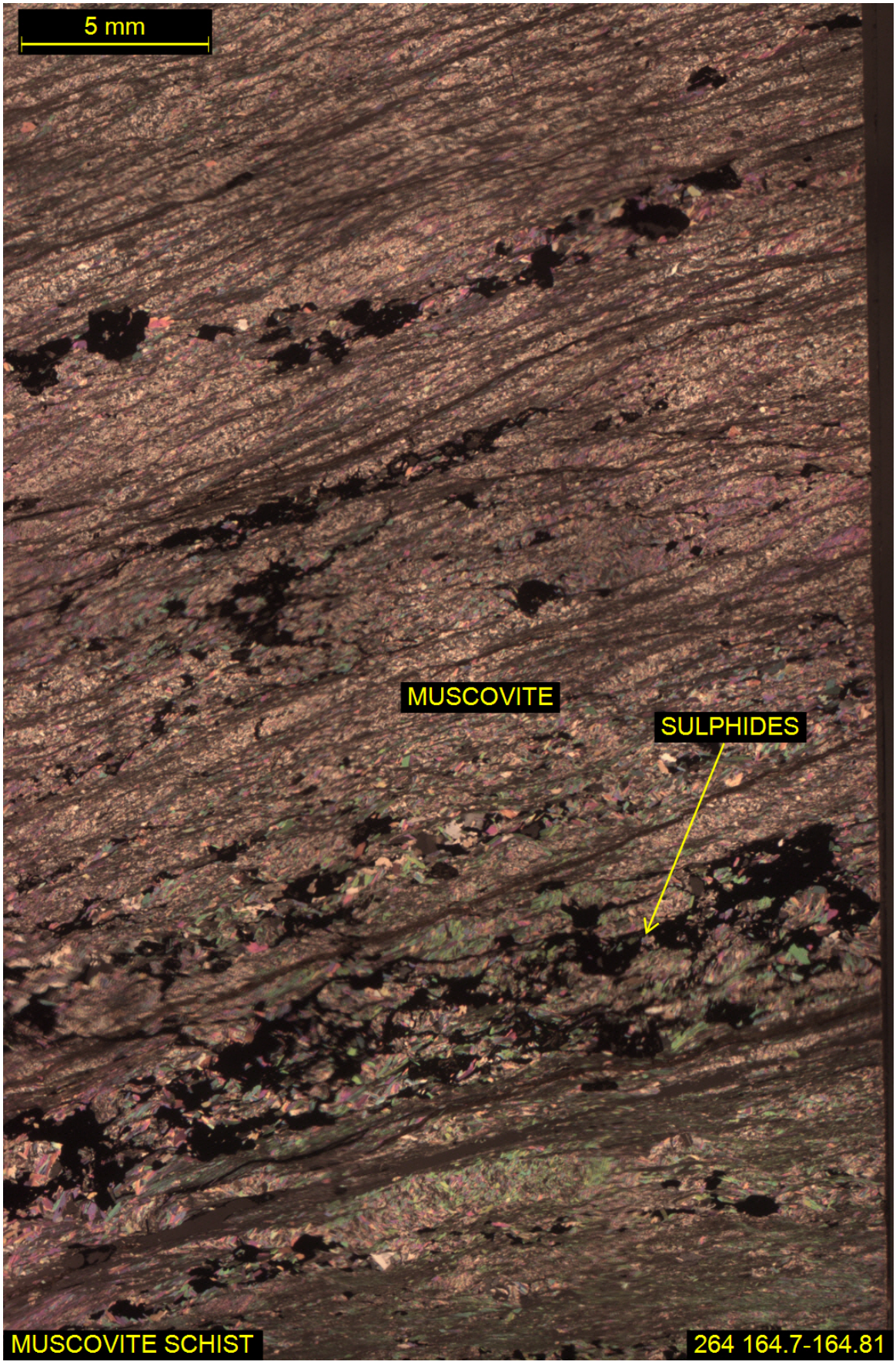
The ores are comprised mainly of pyrite that are significantly altered to marcasite, often with a texture that suggests shearing – elongate and stringy aggregates parallel to the schistose fabric. Colloform siderite regularly lines these pyrite aggregates. Several thin (up to ~150 µm thick) siderite veins are also present, parallel to the fabric. Pyrrhotite is also a major ore mineral, occurring in irregularly shaped, equidimensional and elongate masses/grains (~50 µm to several millimetres), frequently composite or rimmed by other ores, with alteration to marcasite (thin rims) observed intermittently.

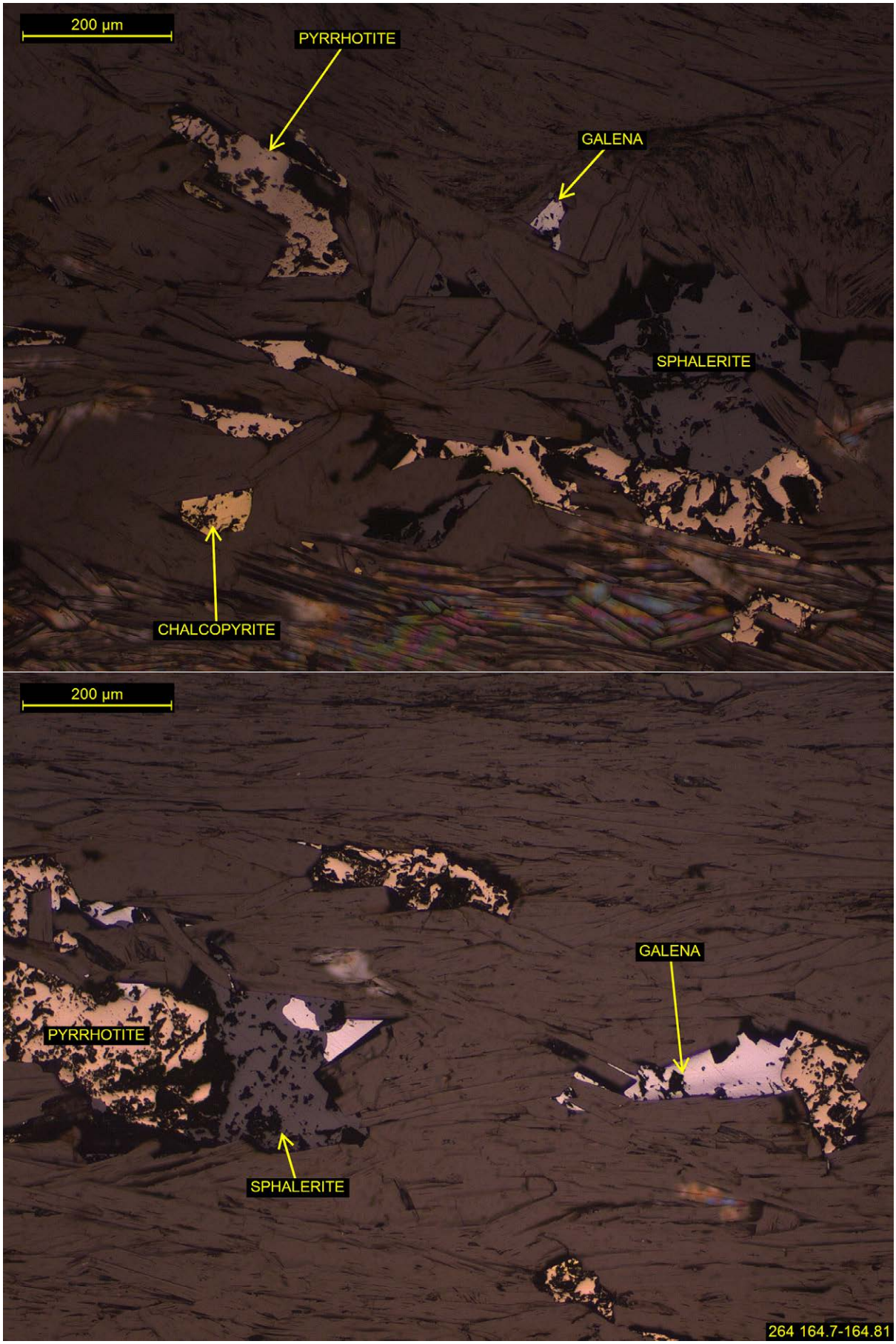
Sphalerite is found sporadically across the ore laminations, found mainly as rims on pyrrhotite, or composites with chalcopyrite and pyrrhotite - particular composites finely intergrown. Grain sizes vary from ~50 to ~800 µm.

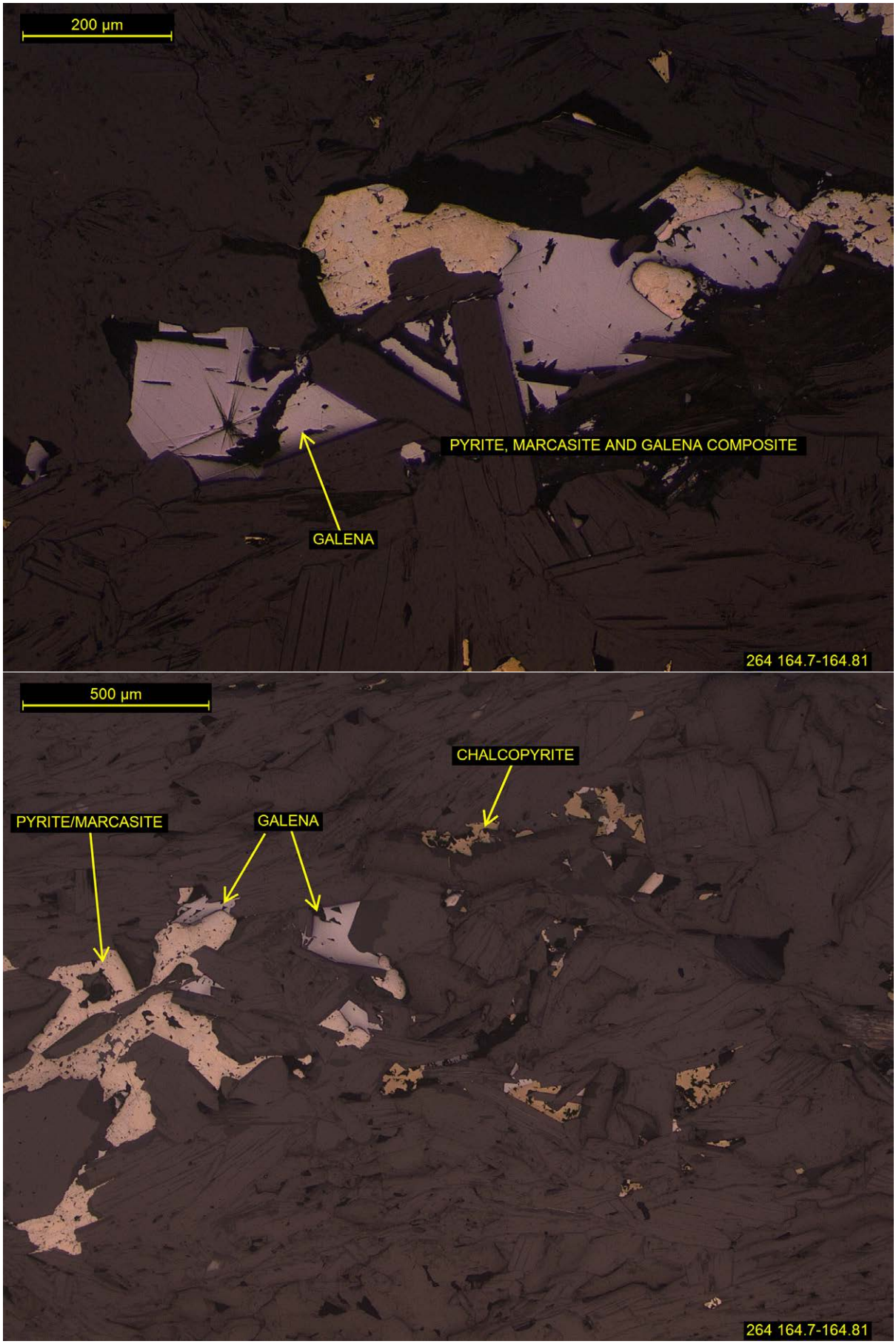
Chalcopyrites are similarly sporadically found, mainly as composites with pyrrhotite, sphalerite and pyrite/marcasite (occasionally quite complex intergrowths). Discrete irregularly shaped grains and elongate forms (almost string-like), parallel to the schistose fabric, are found in muscovite. Grain sizes range in size from ~20 µm to several millimetres.

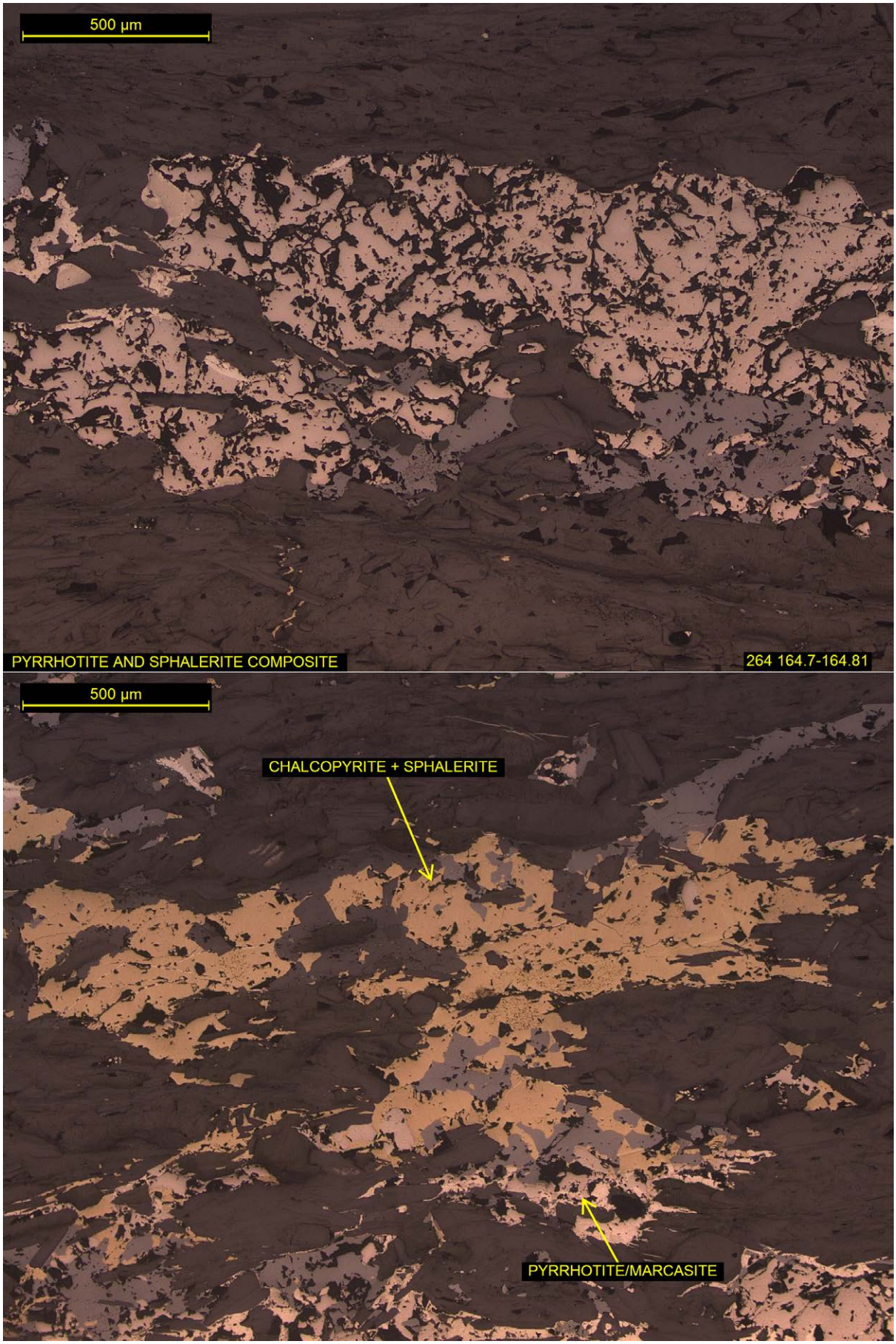
Galena occurs as rims on pyrrhotite and sphalerite, composites with pyrrhotite and pyrite, and inclusions in sphalerite, pyrite and muscovite. Grains are irregularly shaped, triangular, elongate and round, ranging in size from ~15 µm to ~450 µm.



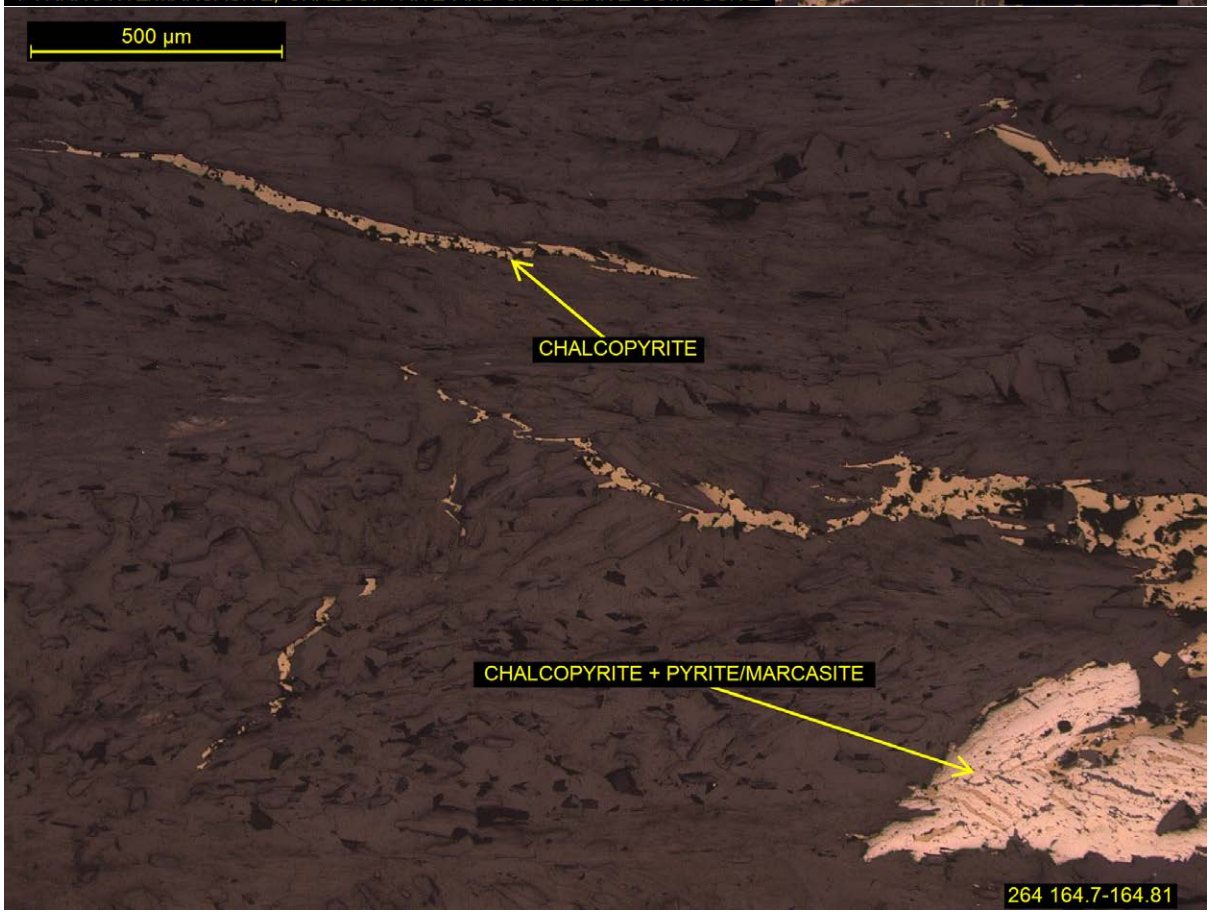

5 mm
MUSCOVITE
SULPHIDES
MUSCOVITE SCHIST
264 164.7-164.81

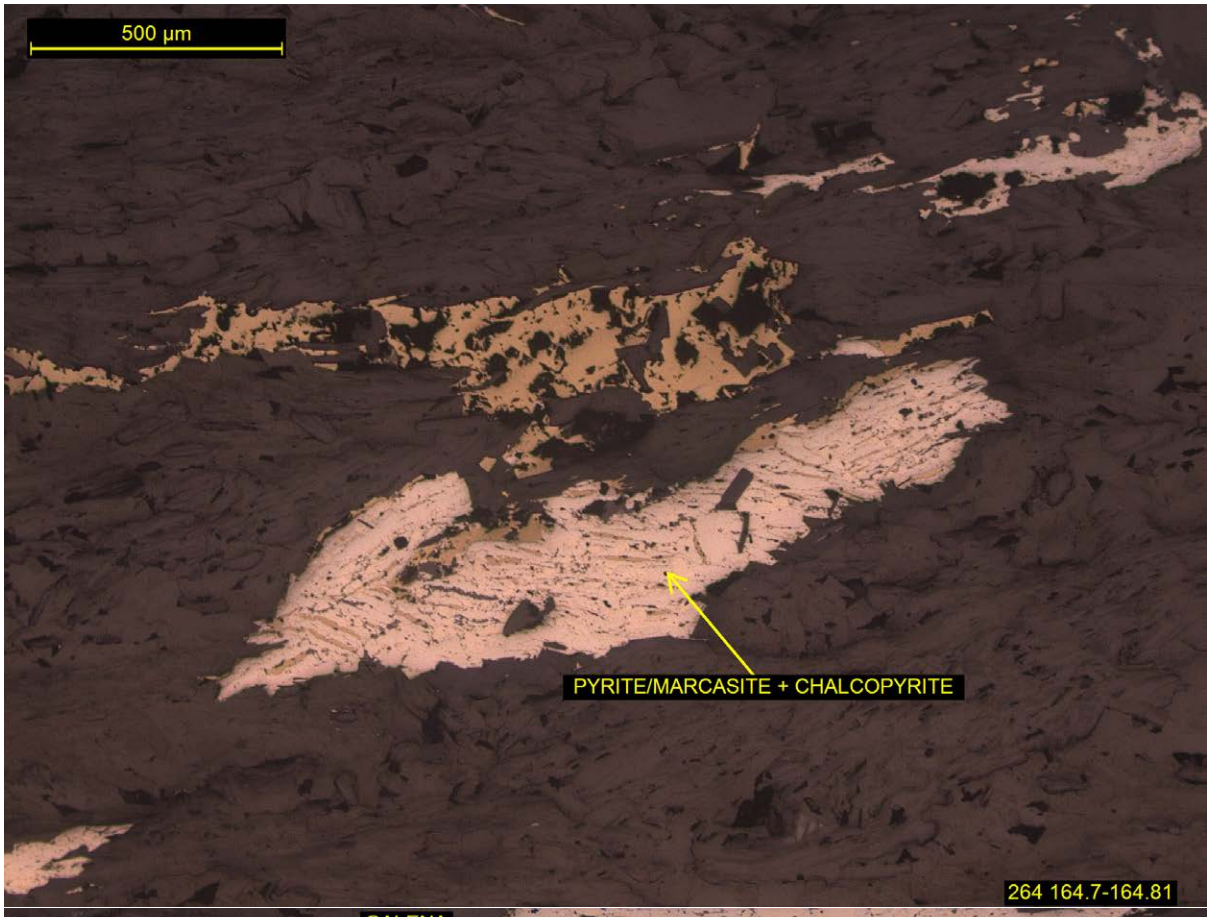

200 µm
PYRRHOTITE
GALENA
SPHALERITE
CHALCOPYRITE
200 µm
GALENA
PYRRHOTITE
SPHALERITE
264 164.7-164.81


200 µm
PYRITE, MARCASITE AND GALENA COMPOSITE
GALENA
264 164.7-164.81
500 µm
CHALCOPYRITE
PYRITE/MARCASITE
GALENA
264 164.7-164.81

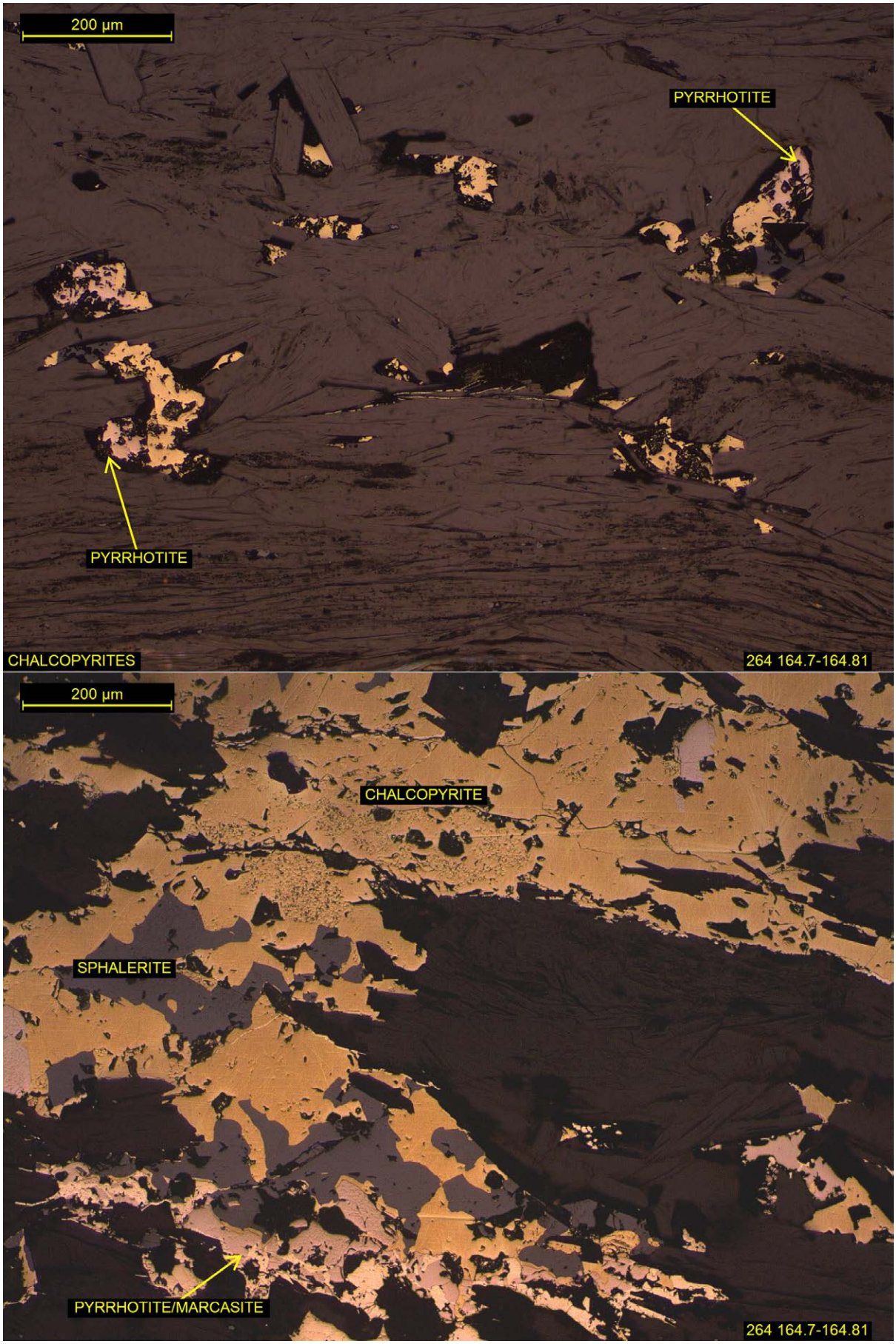

500 µm
PYRRHOTITE AND SPHALERITE COMPOSITE
264 164.7-164.81
500 µm
CHALCOPYRITE + SPHALERITE
PYRRHOTITE/MARCASITE

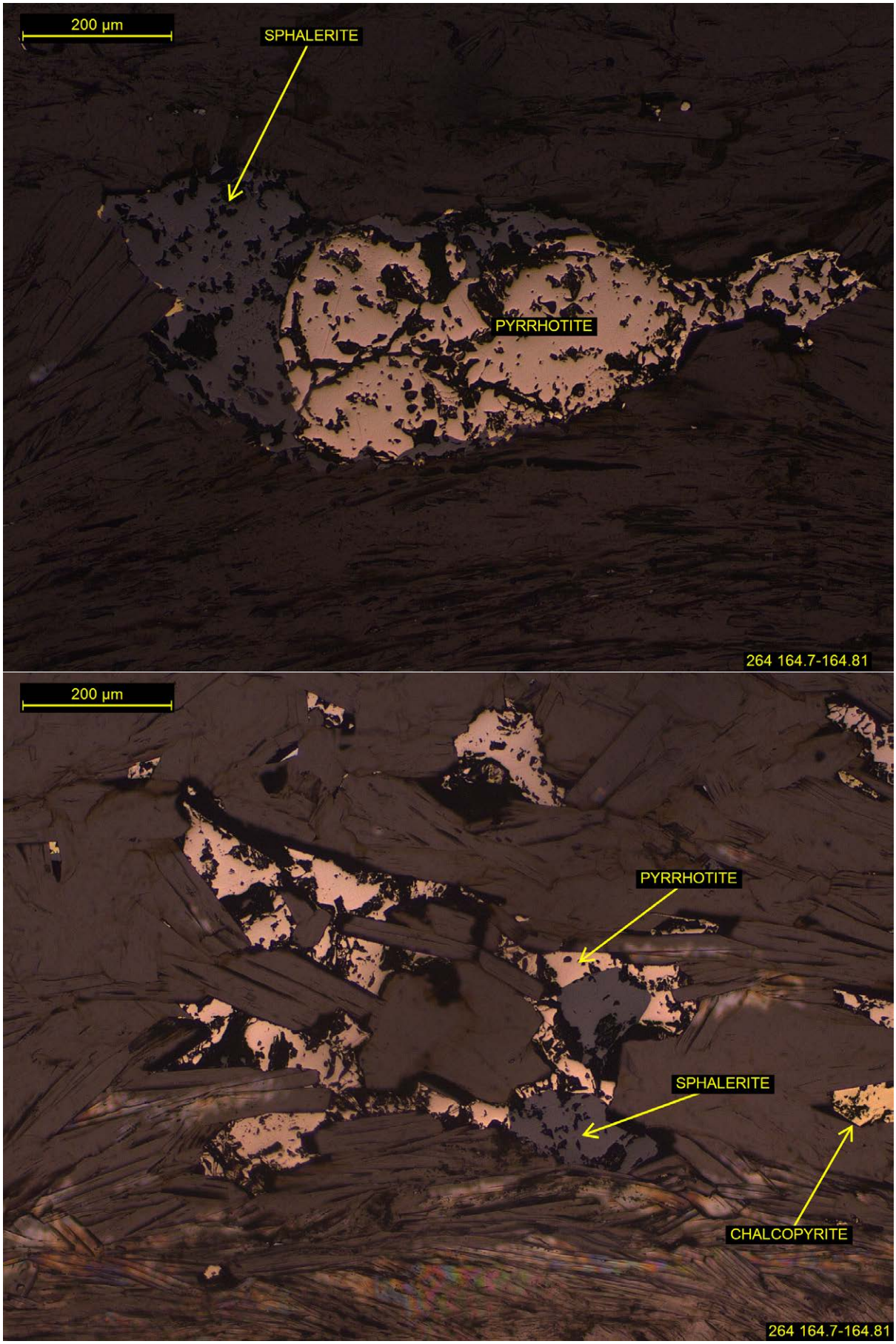

500 µm
GALENA
PYRRHOTITE/MARCASITE, CHALCOPYRITE AND SPHALERITE COMPOSITE
264 164.7-164.81

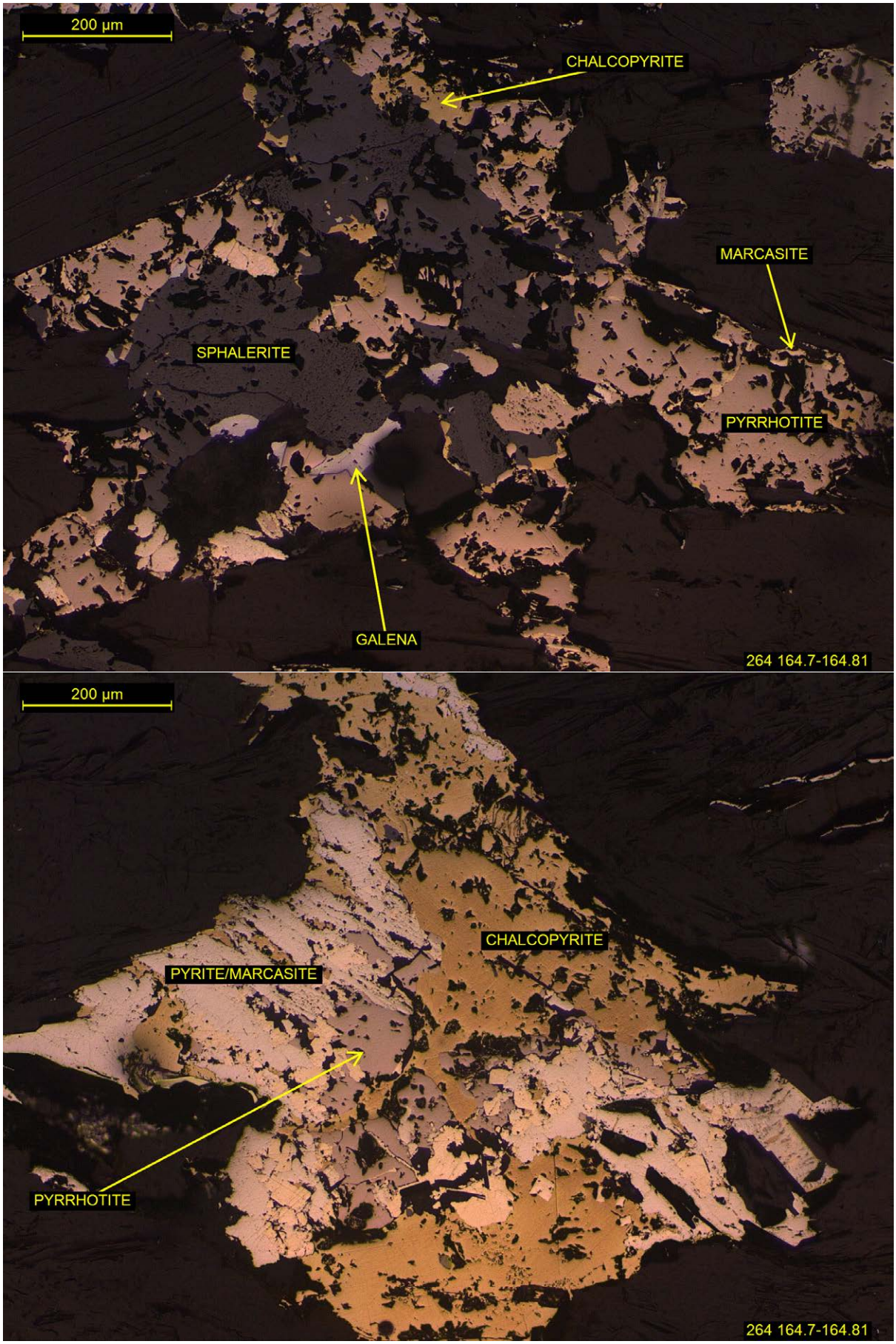

500 µm
CHALCOPYRITE
CHALCOPYRITE + PYRITE/MARCASITE
264 164.7-164.81

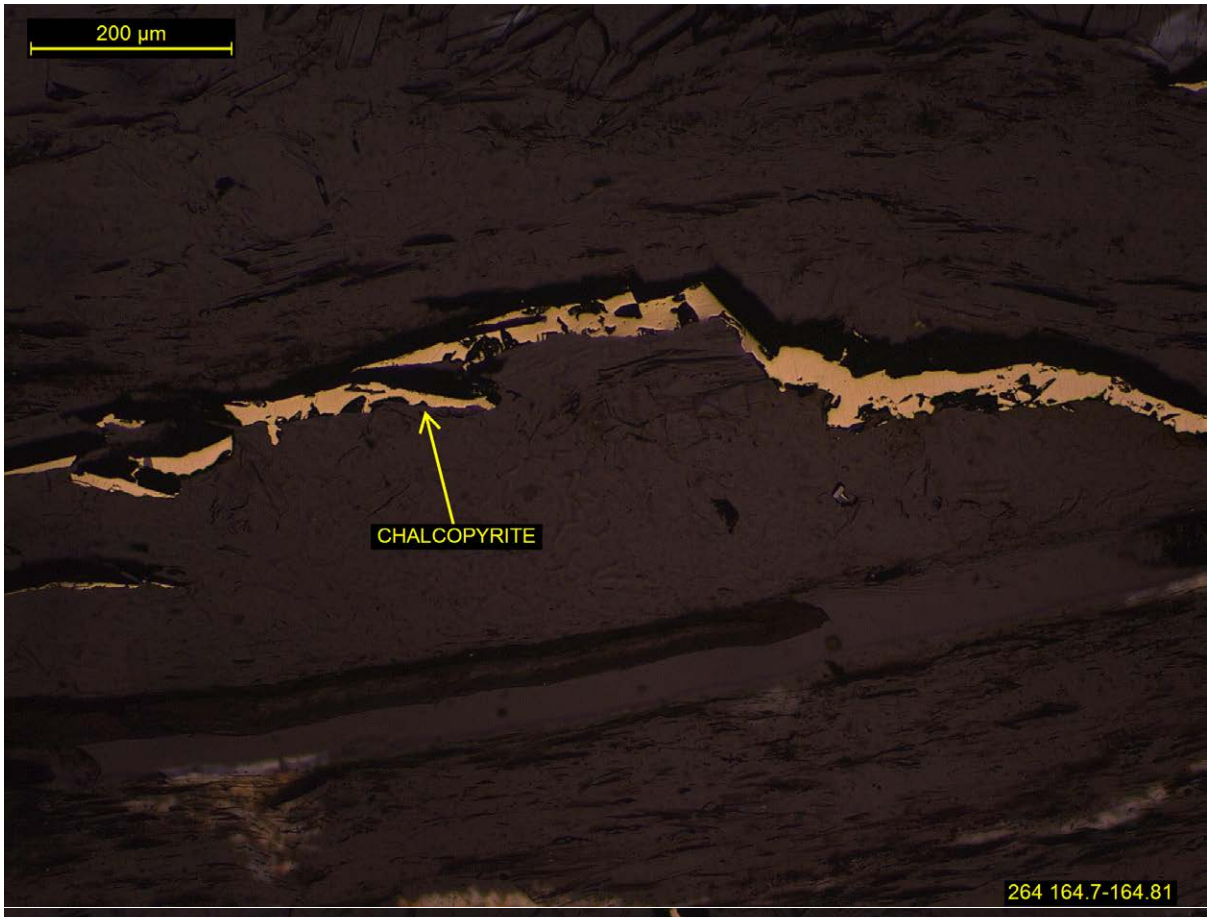

500 µm
PYRITE/MARCASITE + CHALCOPYRITE
264 164.7-164.81

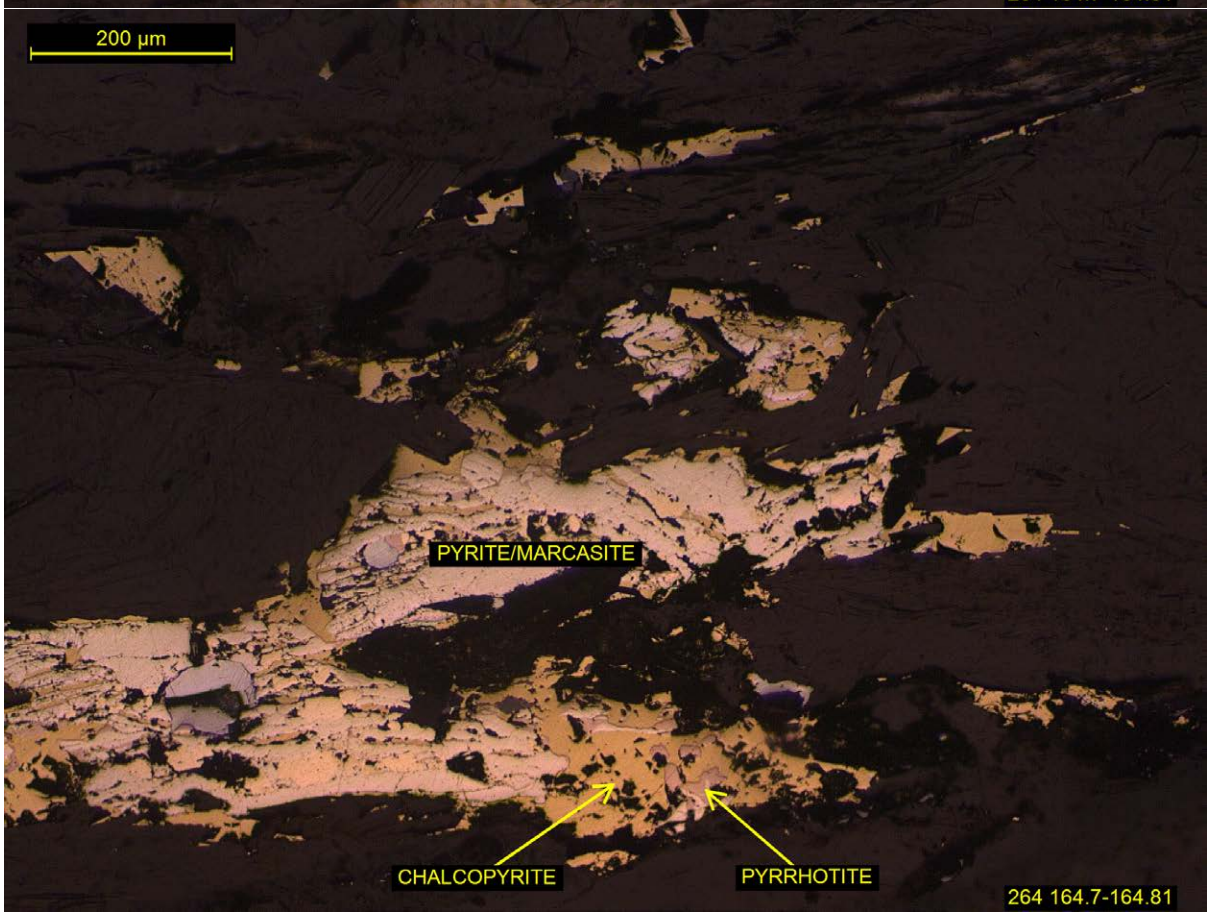

500 µm
GALENA
PYRITE/MARCASITE
CHALCOPYRITE
264 164.7-164.81

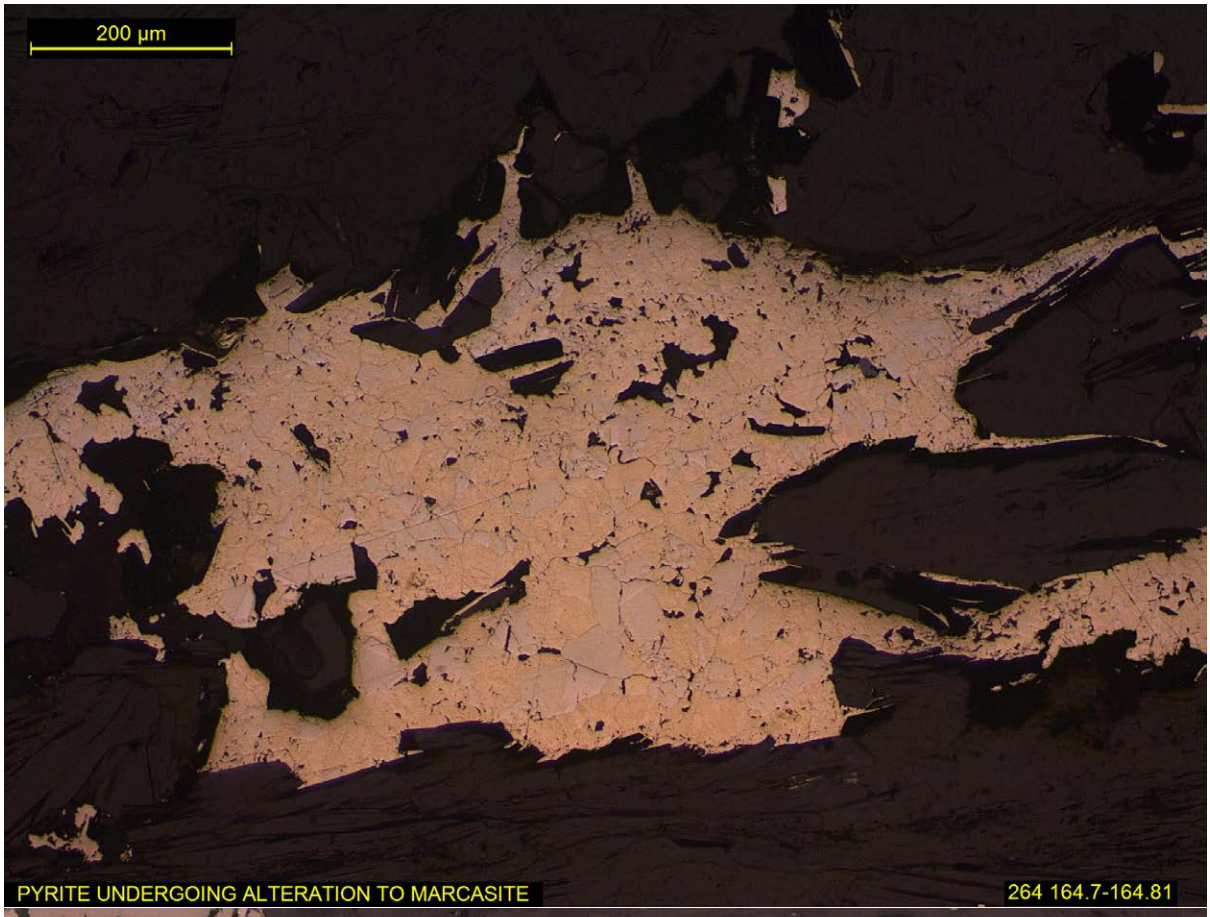

200 µm
PYRRHOTITE
PYRRHOTITE
CHALCOPYRITES
264 164.7-164.81
200 µm
CHALCOPYRITE
SPHALERITE
PYRRHOTITE/MARCASITE
264 164.7-164.81

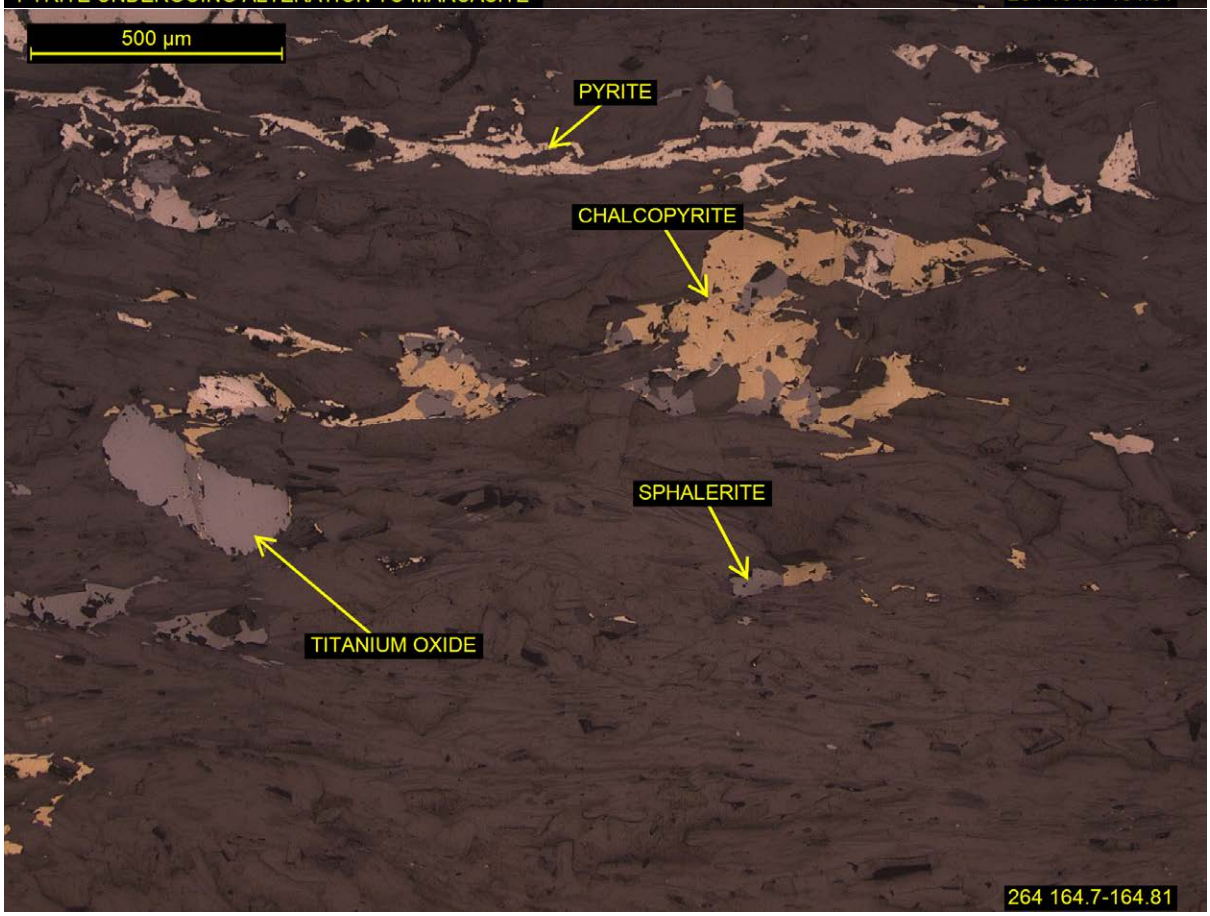

200 µm
SPHALERITE
PYRRHOTITE
264 164.7-164.81
200 µm
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
264 164.7-164.81

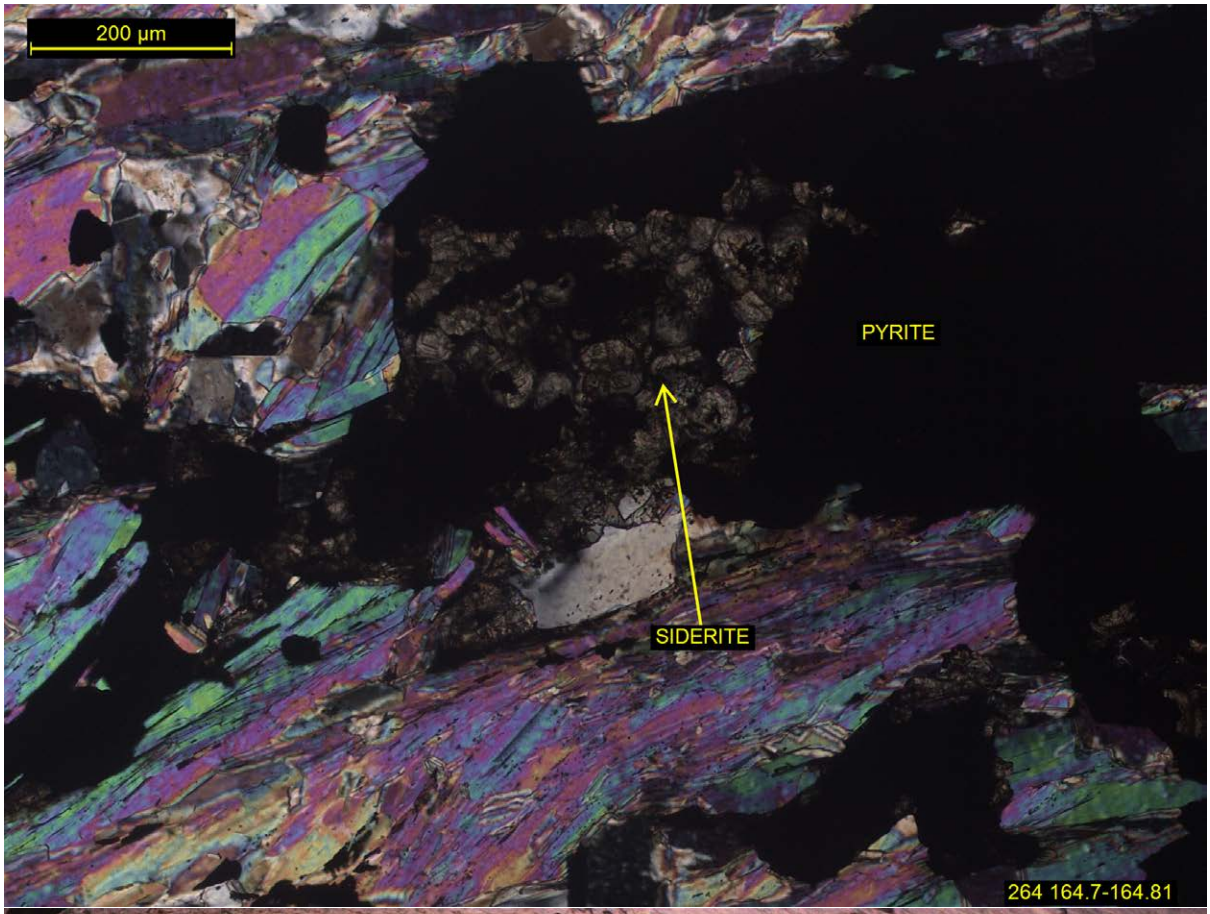

200 µm
CHALCOPYRITE
MARCASITE
SPHALERITE
PYRRHOTITE
GALENA
264 164.7-164.81
200 µm
CHALCOPYRITE
PYRITE/MARCASITE
PYRRHOTITE
264 164.7-164.81

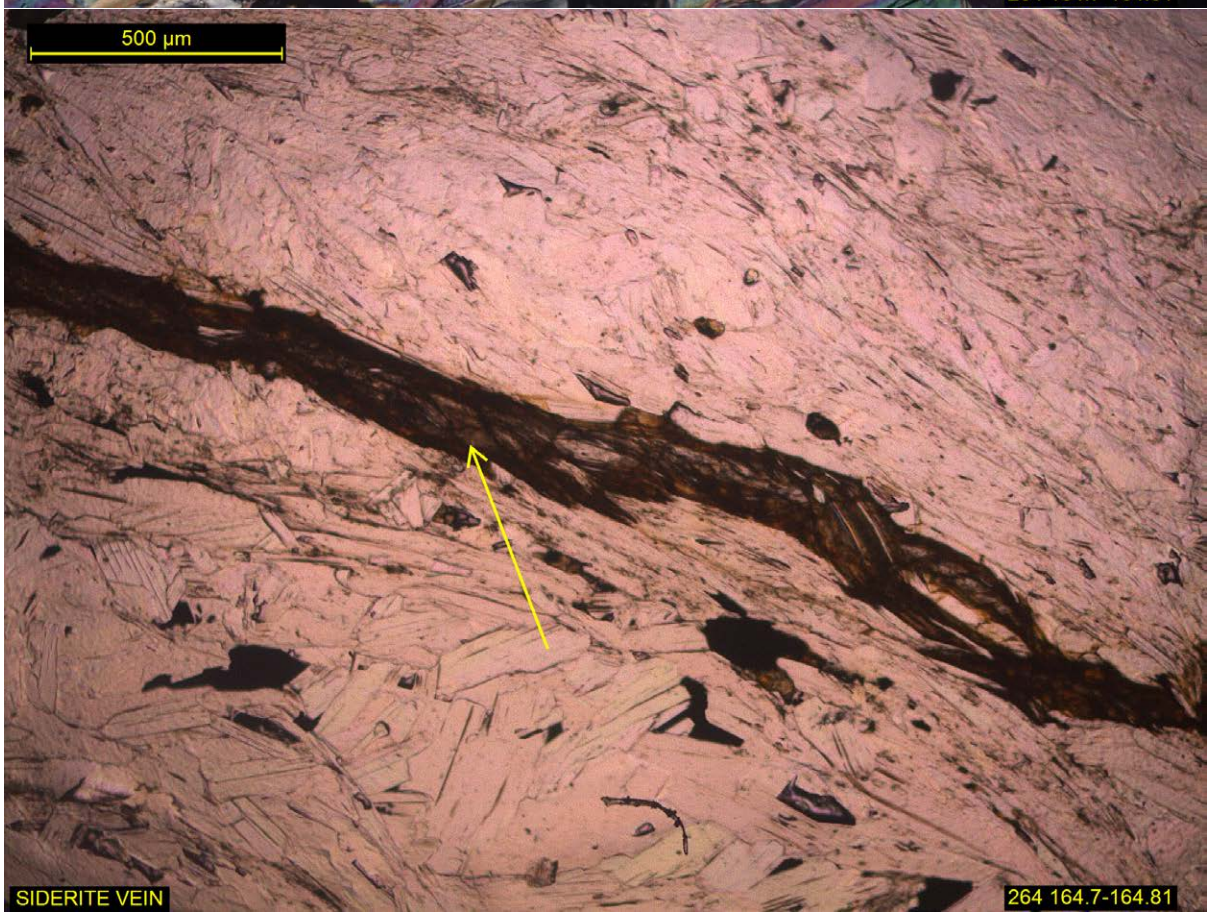

200 µm
CHALCOPYRITE
264 164.7-164.81


200 µm
PYRITE/MARCASITE
CHALCOPYRITE
PYRRHOTITE
264 164.7-164.81


200 µm
PYRITE UNDERGOING ALTERATION TO MARCASITE
264 164.7-164.81


500 µm
PYRITE
CHALCOPYRITE
SPHALERITE
TITANIUM OXIDE
264 164.7-164.81


200 µm
PYRITE
SIDERITE
264 164.7-164.81


500 µm
SIDERITE VEIN
264 164.7-164.81

SAMPLE K15-273 91.55-91.69

DRILL CORE

POLISHED THIN SECTION

GANGUE	**5%**
SIDERITE	70-80%
TALC	10-20%
CLAY	5-10%
CHLORITE	1-5%
ORES	**95%**
CHALCOPYRITE	40-50%
PYRITE	30-40%
MAGNETITE	10-20%
PYRRHOTITE	10-20%
SPHALERITE	5-10%
MARCASITE	<1%
GALENA	TRACE

CLASSIFIED AS A MASSIVE PYRITE CHALCOPYRITE ORE WITH BANDED MAGNETITE PYRRHOTITE AND DISSEMINATED SPHALERITE WITH A SIDERITE OVERPRINT

A sample that is primarily comprised of chalcopyrite and pyrite, the latter occurring mainly as subhedral discrete grains (~100 to ~300 µm) and subordinate aggregates sitting in a significant (equal to greater) interstitial host semi-massive chalcopyrite matrix.

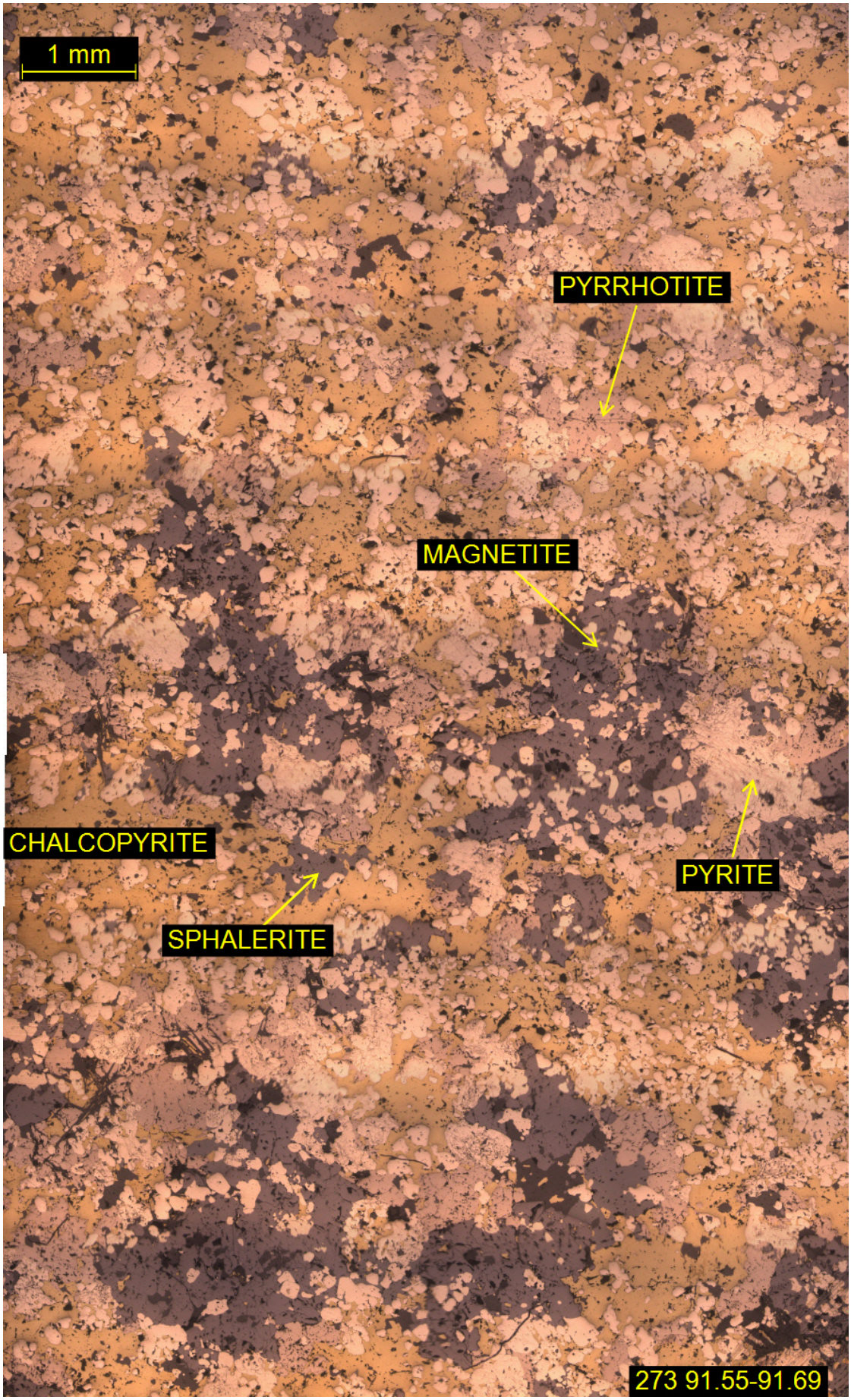
A roughly banded texture is defined by intermittent pyrrhotite rich and magnetite rich bands. Discrete irregular aggregates of (~150 to ~850 µm) pyrrhotite are found disseminated within pyrite/chalcopyrite. Rare incipient alteration of pyrrhotite to marcasite was observed.

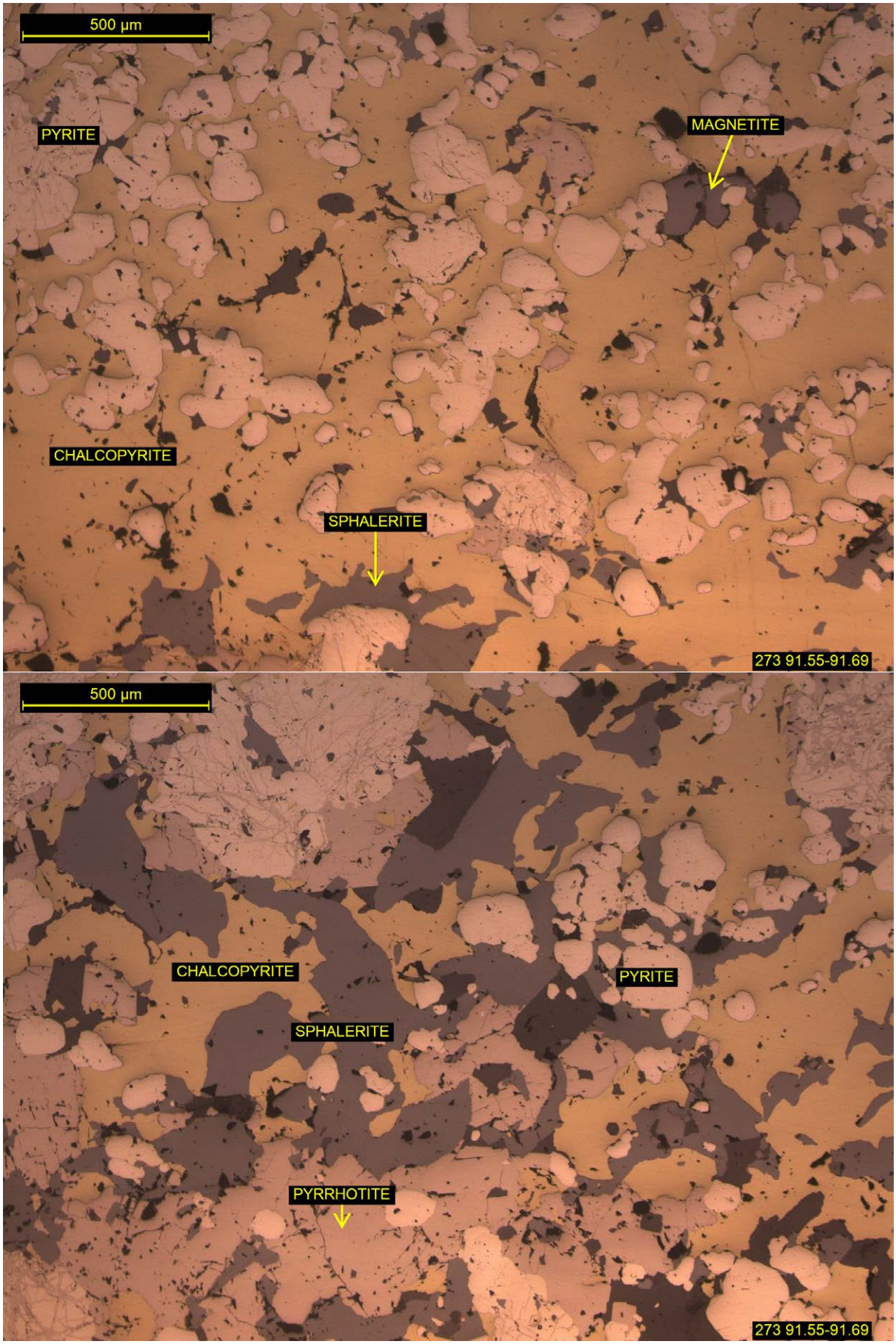
Similarly, particular bands contain numerous large irregular magnetite allotriomorphic masses (~300 µm to ~2.5 mm), that typically contain pyrite inclusions that have a sub-round form. Associated with these magnetite masses is generally a subordinate sphalerite component. Sphalerite also occurs in zones of up to ~3 mm, as interstitial matrix host to numerous sulphides.

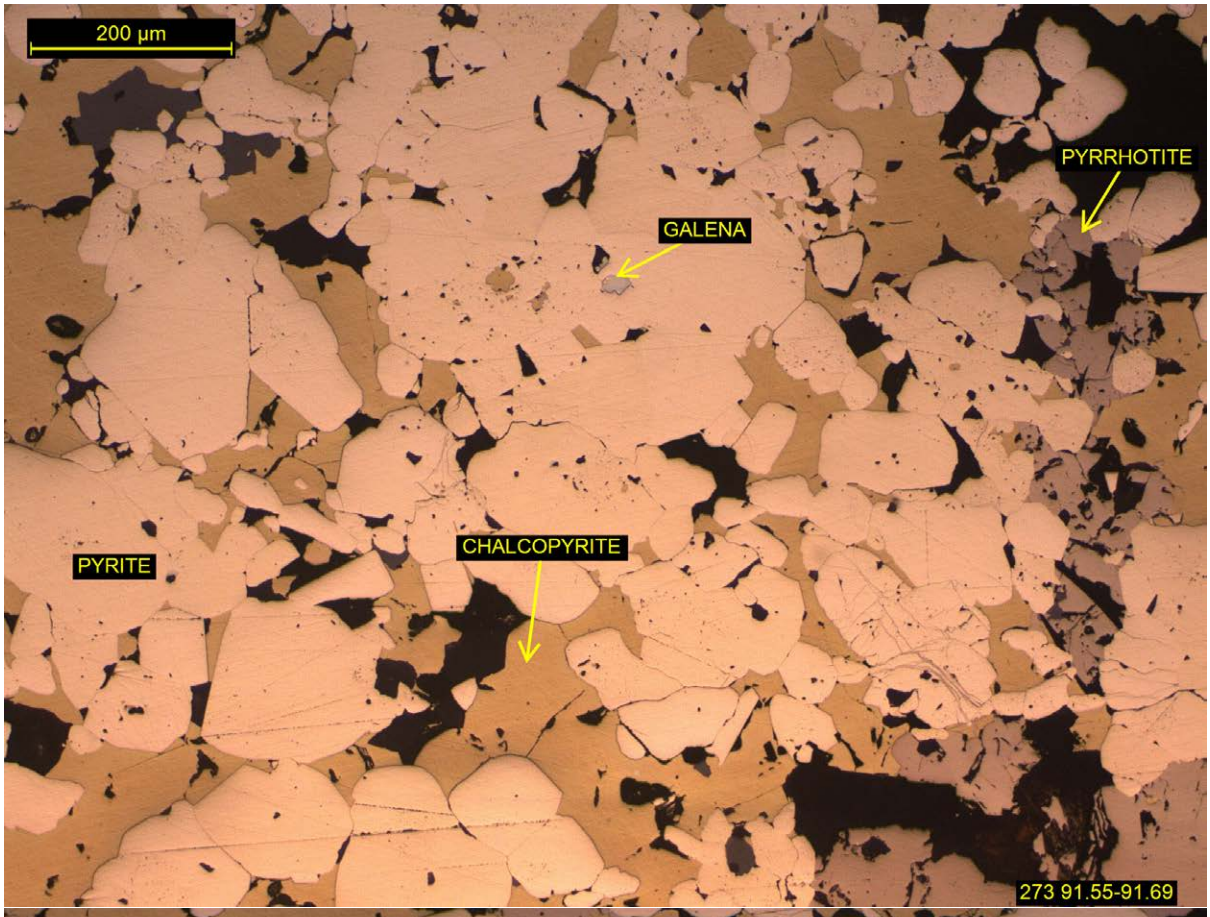
Fairly often pyrite aggregates were intricately veined by pyrrhotite (single pyrrhotite grain). Occasionally large coalesced masses of pyrite are present, with subordinate fine (sub 120 µm) chalcopyrite interstitial inclusions. Most pyrites though, are free of chalcopyrite inclusions.

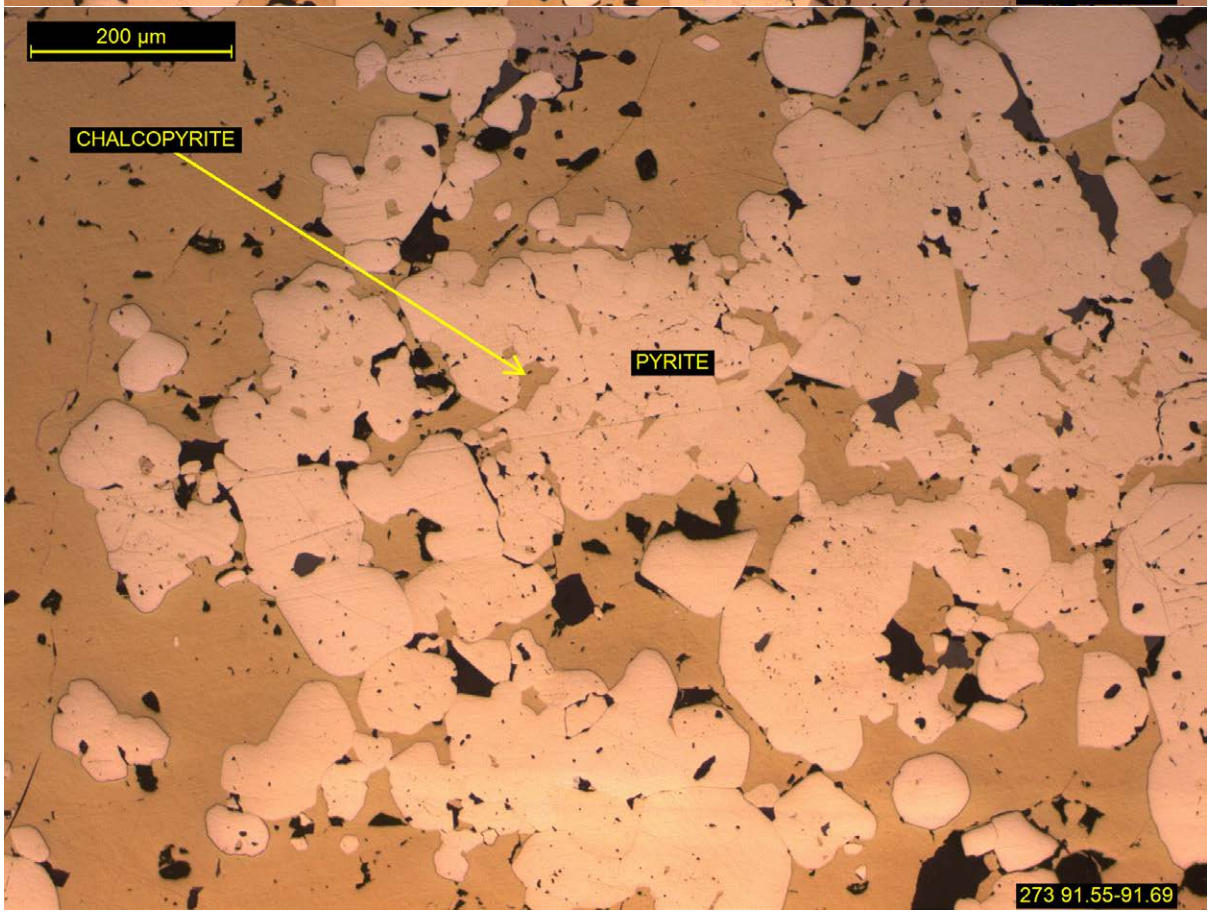
Galena content is almost negligible, only several grains found across the entire thin sections. These were fine (~30 µm) grains, found within pyrite and sphalerite.

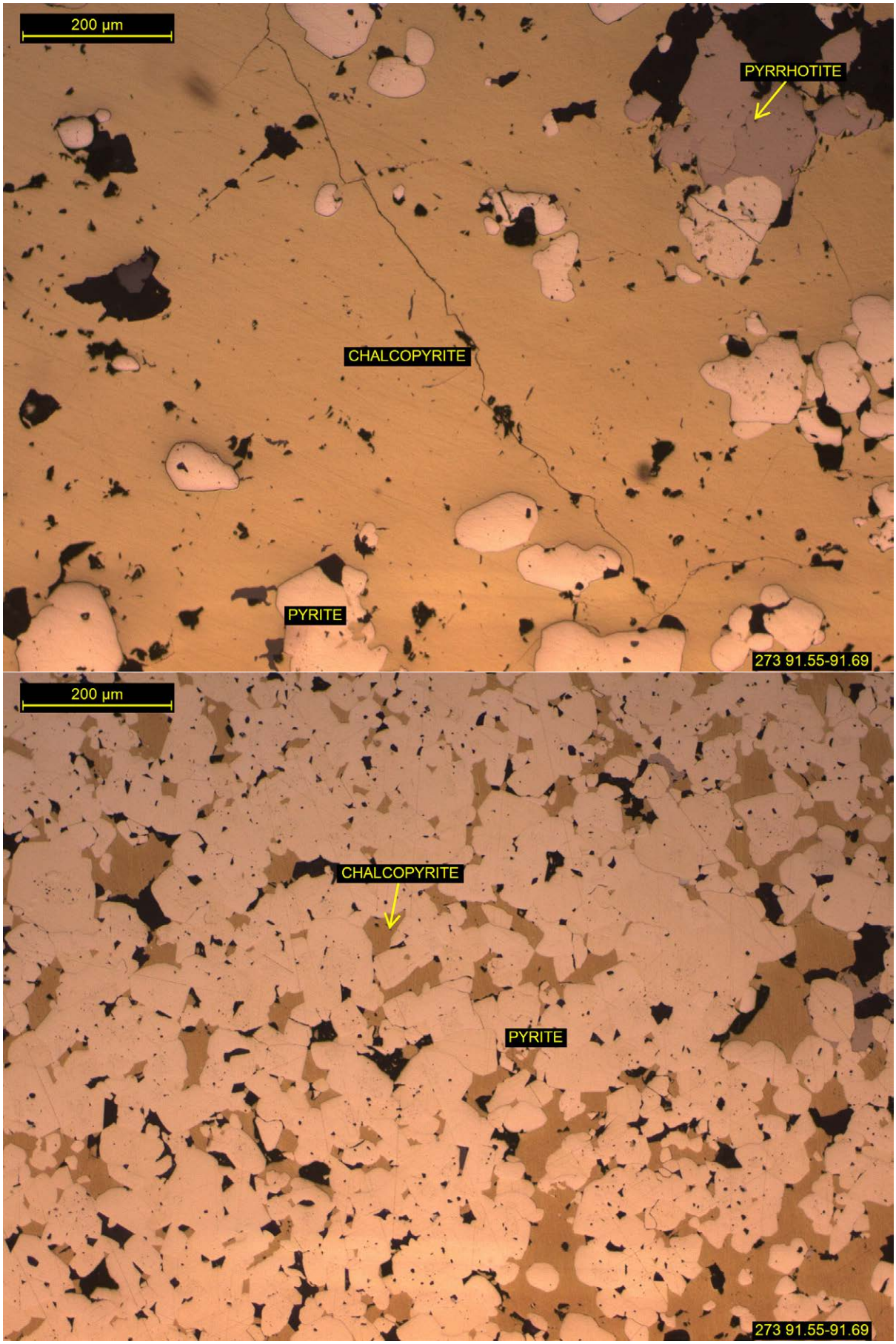
The gangue component is comprised of small pockets (~100 to ~600 µm) of primarily polycrystalline siderite, and discrete grains and aggregates of talc and chlorite. XRD indicates the possibility of trace clay. In particular instances angular fine (~10 to 200 µm) chalcopyrite grains are intimately intergrown with the phyllosilicates.

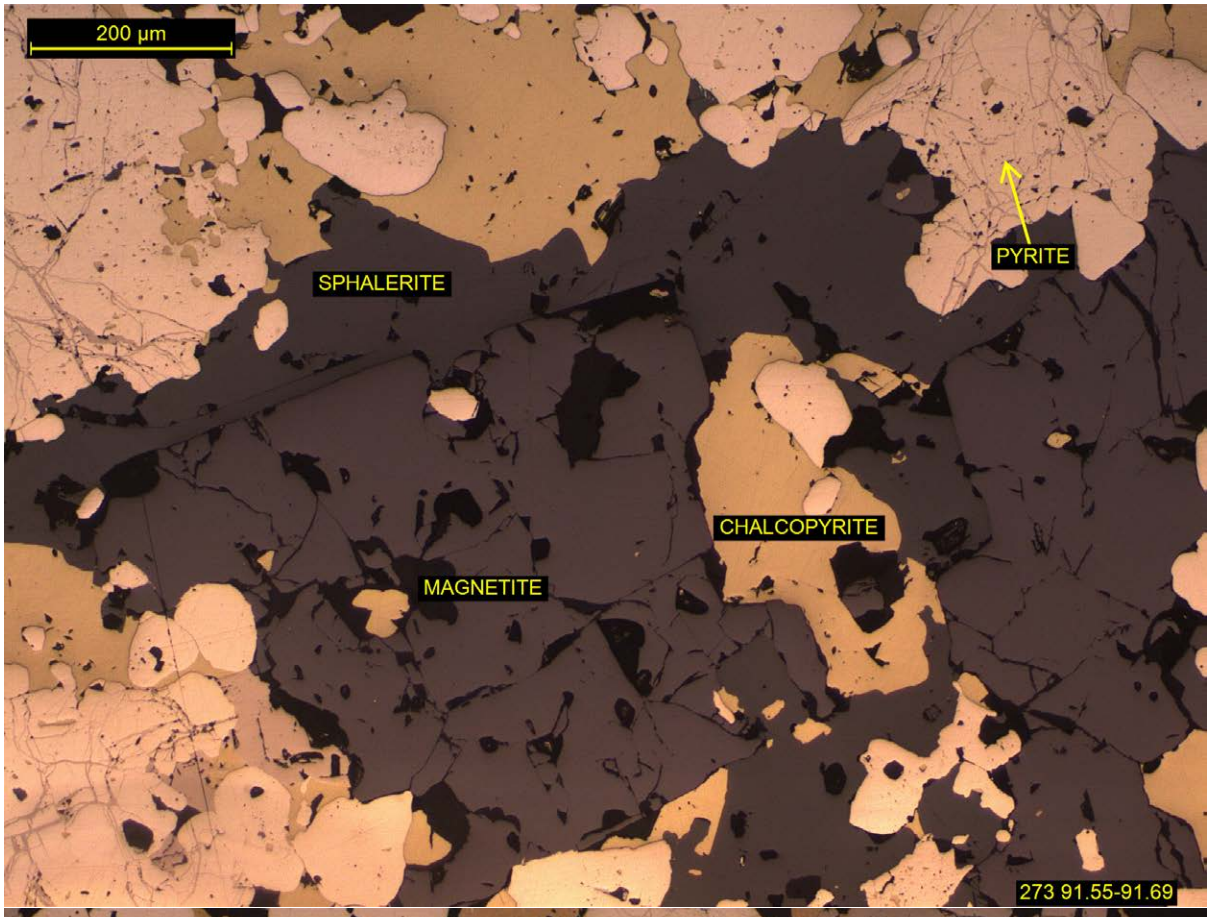

1 mm
PYRRHOTITE
MAGNETITE
CHALCOPYRITE
PYRITE
SPHALERITE
273 91.55-91.69

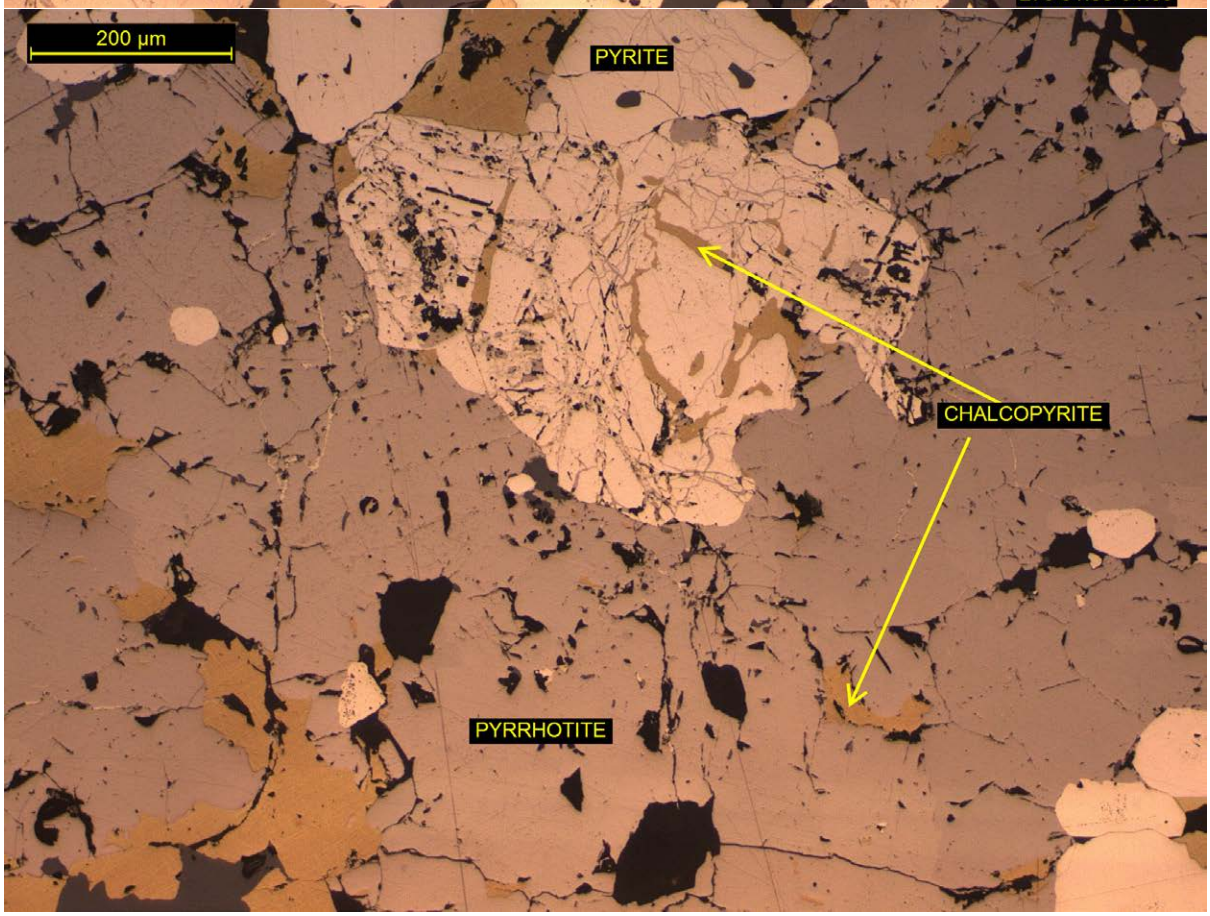

500 µm
PYRITE
MAGNETITE
CHALCOPYRITE
SPHALERITE
273 91.55-91.69
500 µm
CHALCOPYRITE
PYRITE
SPHALERITE
PYRRHOTITE
273 91.55-91.69

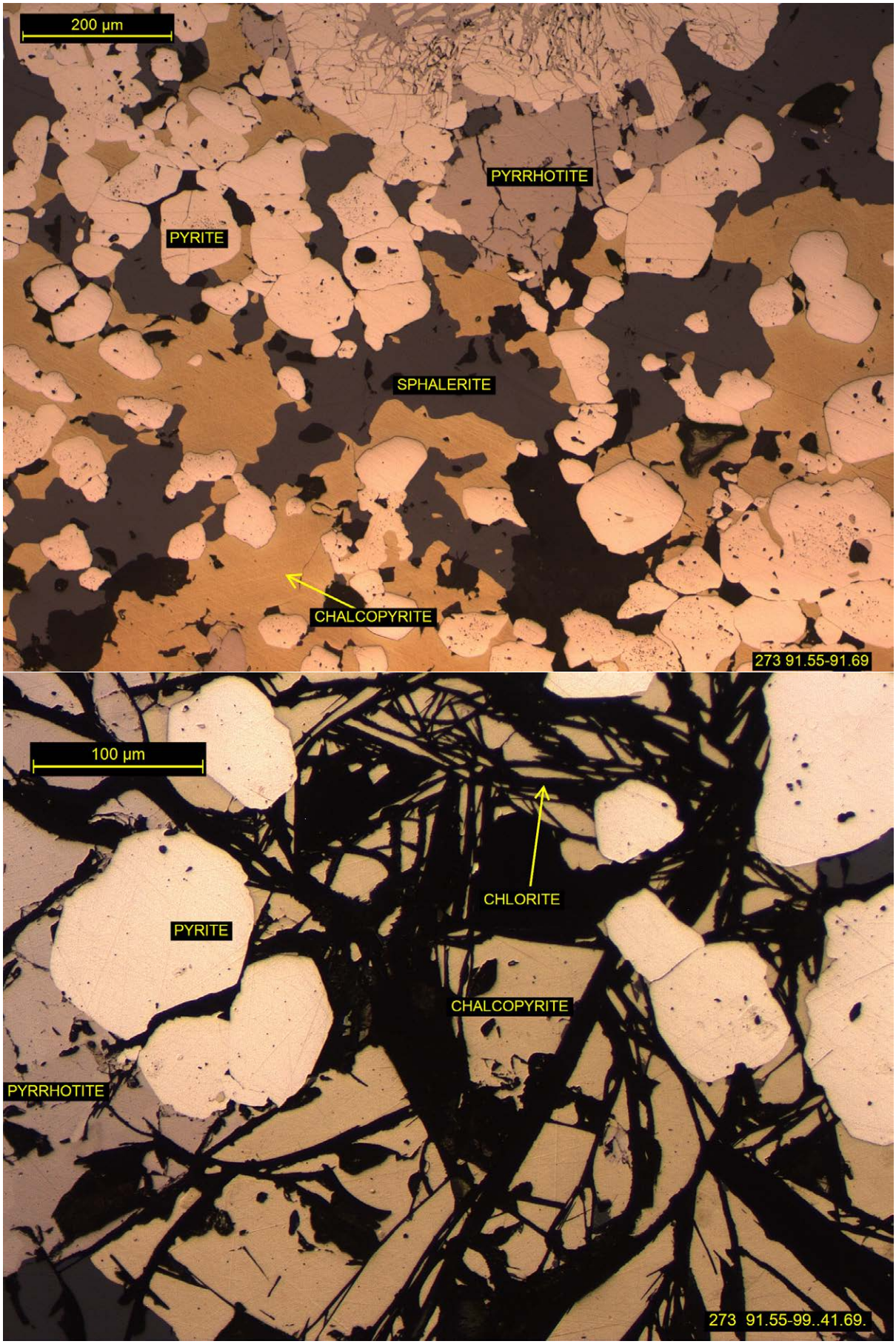

200 µm
PYRRHOTITE
GALENA
PYRITE
CHALCOPYRITE
273 91.55-91.69

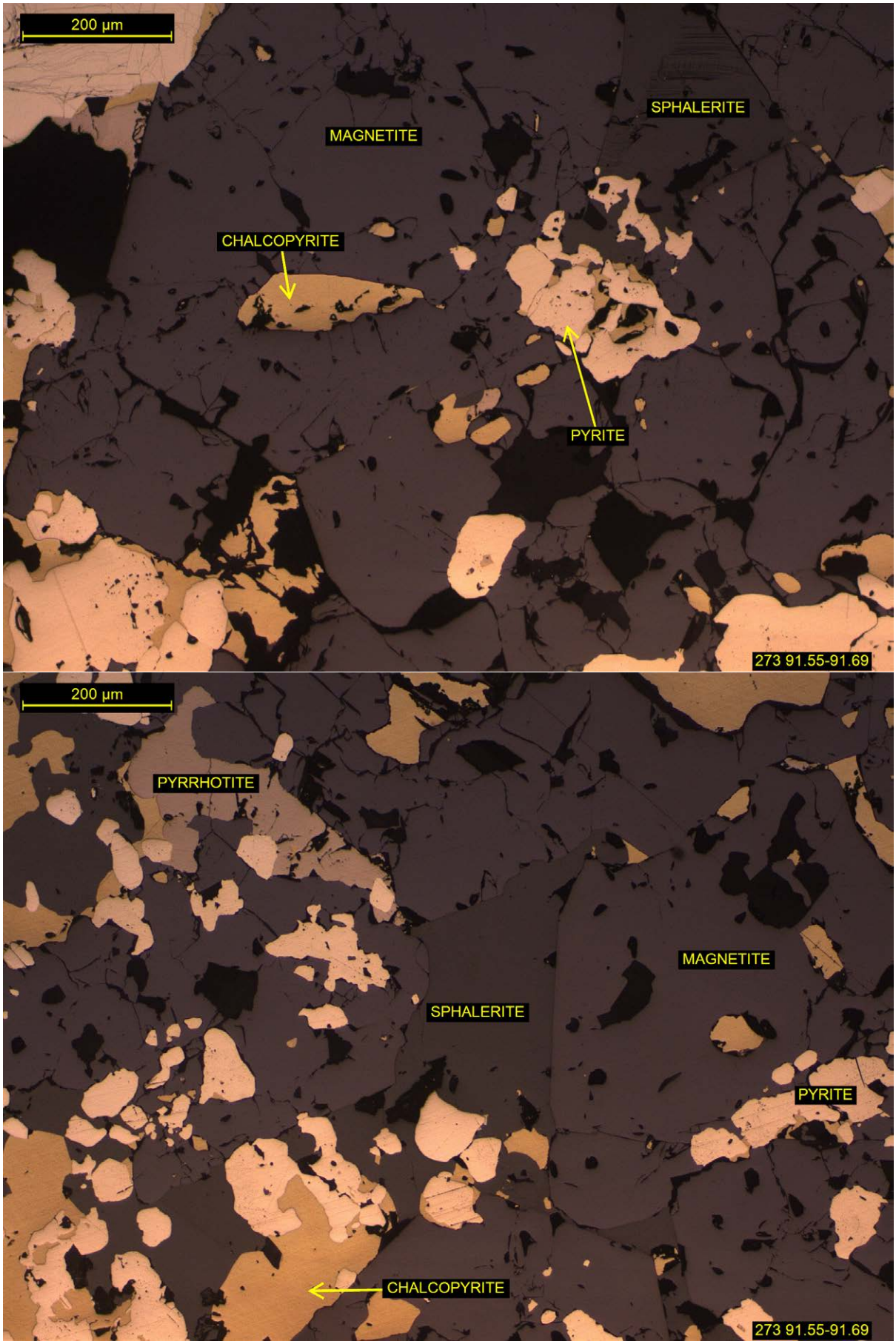

200 µm
CHALCOPYRITE
PYRITE
273 91.55-91.69

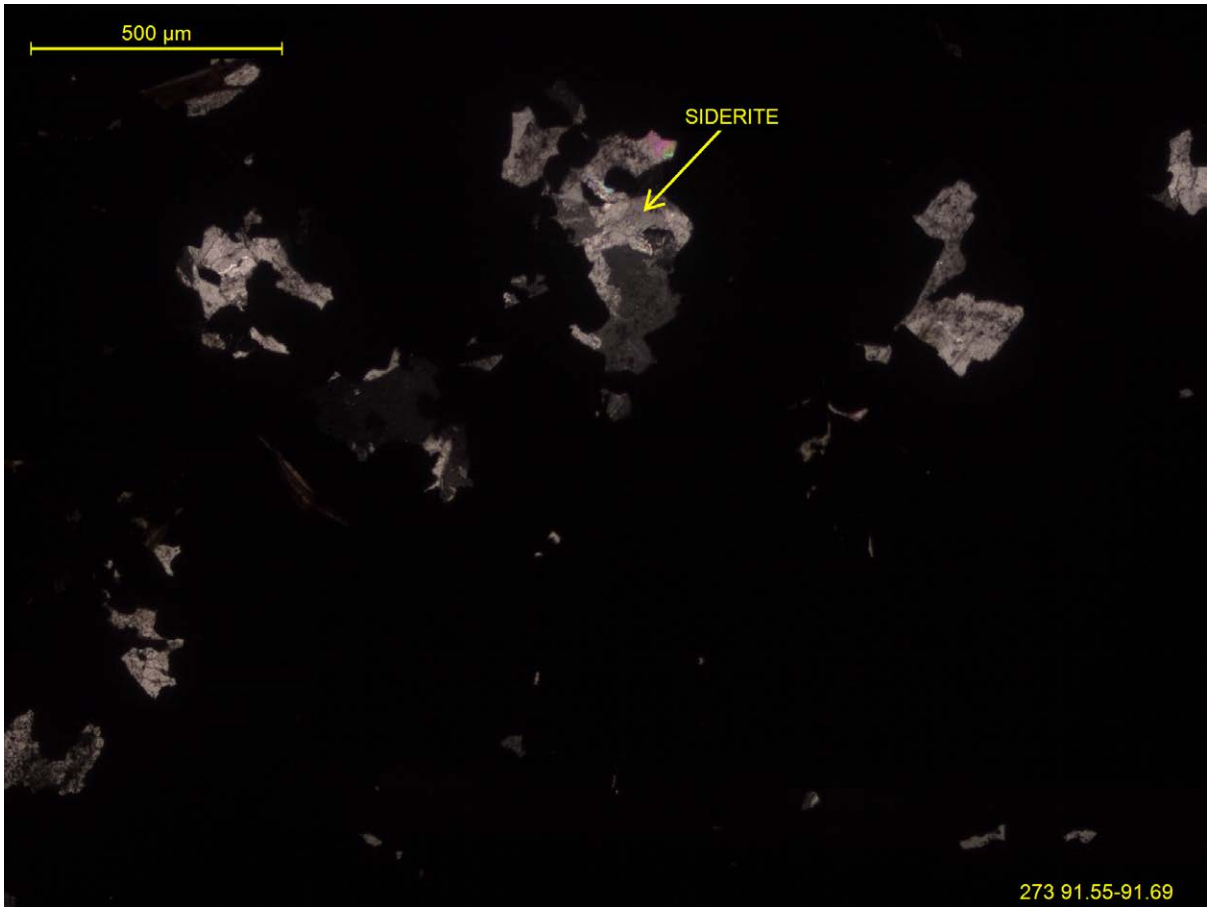

200 µm
PYRRHOTITE
CHALCOPYRITE
PYRITE
273 91.55-91.69
200 µm
CHALCOPYRITE
PYRITE
273 91.55-91.69


200 µm
SPHALERITE
PYRITE
CHALCOPYRITE
MAGNETITE
273 91.55-91.69


200 µm
PYRITE
CHALCOPYRITE
PYRRHOTITE


200 µm
PYRRHOTITE
PYRITE
SPHALERITE
CHALCOPYRITE
273 91.55-91.69
100 µm
CHLORITE
PYRITE
CHALCOPYRITE
PYRRHOTITE
273 91.55-99..41.69.


200 µm
MAGNETITE
SPHALERITE
CHALCOPYRITE
PYRITE
273 91.55-91.69
200 µm
PYRRHOTITE
MAGNETITE
SPHALERITE
PYRITE
CHALCOPYRITE
273 91.55-91.69


500 µm
SIDERITE
273 91.55-91.69

SAMPLE K15-284 180.76-180.91

DRILL CORE

POLISHED THIN SECTION

ALBITITE ROCK	**75%**
GANGUE	**60%**
ALBITE	65-75%
SIDERITE	15-25%
MUSCOVITE	5-10%
BIOTITE	5-10%
QUARTZ	1-10%
CHLORITE	1-10%
ORES	**40%**
PYRITE	20-30%
MAGNETITE	20-30%
PYRRHOTITE	20-30%
CHALCOPYRITE	5-10%
ILMENITE	1-2%
SPHALERITE	<1%
MUSCOVITE SCHIST BANDS	**25%**
MUSCOVITE	80-90%
PYRITE	10-15%
ILMENITE	1-2%
PYRRHOTITE	1%
QUARTZ	1%
MAGNETITE	1%
CHLORITE	1%
CHALCOPYRITE	<1%
TOURMALINE	<1%

CLASSIFIED AS AN ALBITITE ROCK WITH MAGNETITE, PYRRHOTITE AND PYRITE BANDS, DISSEMINATED CHALCOPYRITE PLUS PYRITIC MUSCOVITE SCHIST BANDS.

A sample comprised mainly of irregular ore bands that are hosted in a coarse grained albitite rock (~1 to ~3 mm). Irregular and discontinuous linear aggregates of chlorite and subordinate green and brown biotite, are found lying along albite grain boundaries, or crosscutting grains.

Two main ore textures exist: The first are near massive pyrite bands (~5 to ~10 mm thick) comprised mainly of coalesced pyrite, with discernible subhedral/euhedral pyrite grains. Additional ore content is low, consisting of occasional disseminated pyrrhotite grains (~200 µm), chalcopyrite (broad to slivers inclusions in coalesced pyrite and along fractures – ~15

to ~300 µm) and magnetite. A major gangue component consists mainly of aggregates of muscovite or albite and subordinate siderite, chlorite, quartz and biotite.

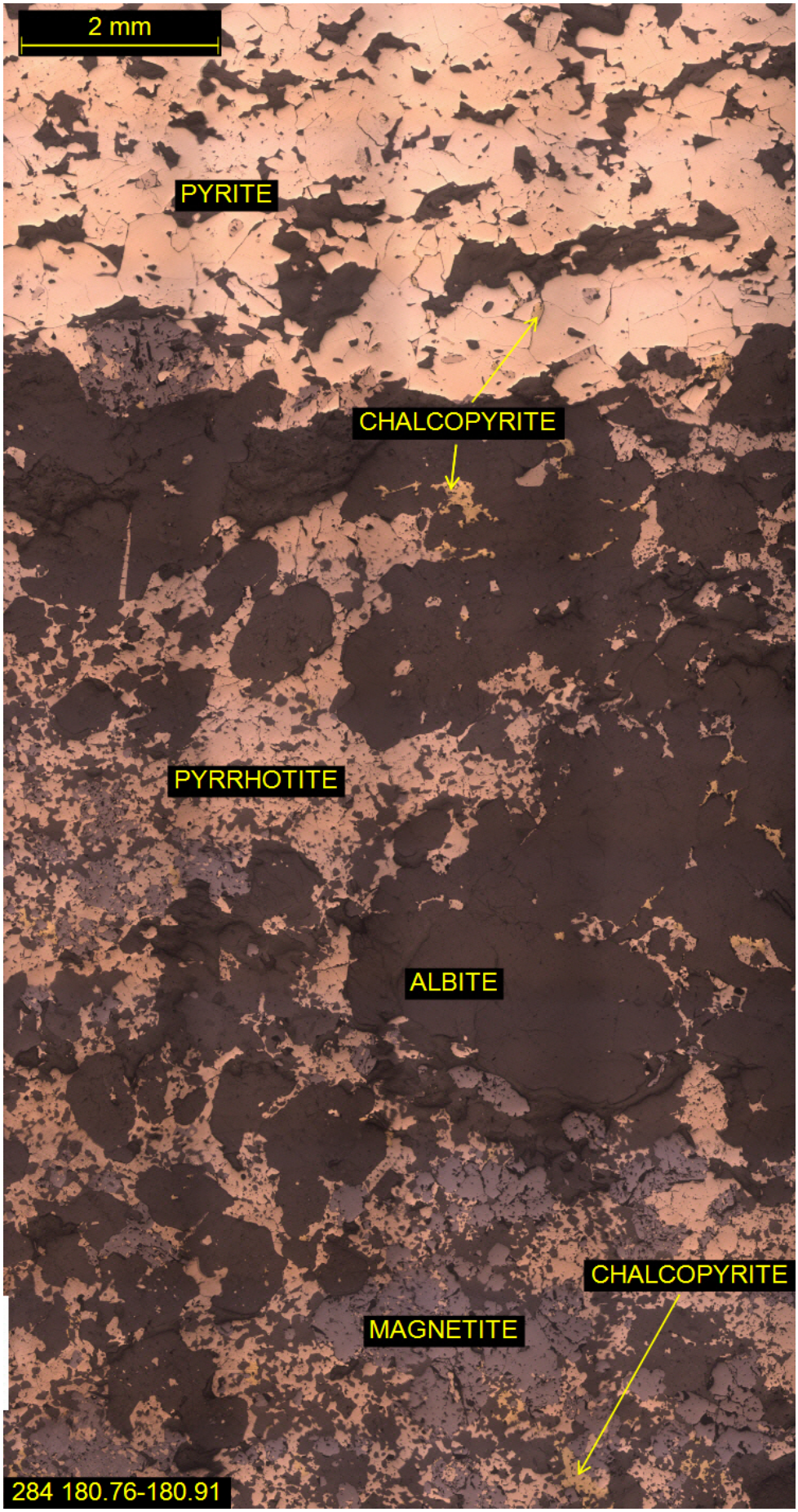
The second type are intervening dominant thick (~5 to ~20 mm) bands, comprised of varying (minor to major/dominant) levels of large masses and highly irregular disseminated magnetite and pyrrhotite aggregates/composites (100 µm to ~3 mm) peppered with siderite and mica, quartz mosaics (~500 µm), and coarse (~1.5 µm average) albite.

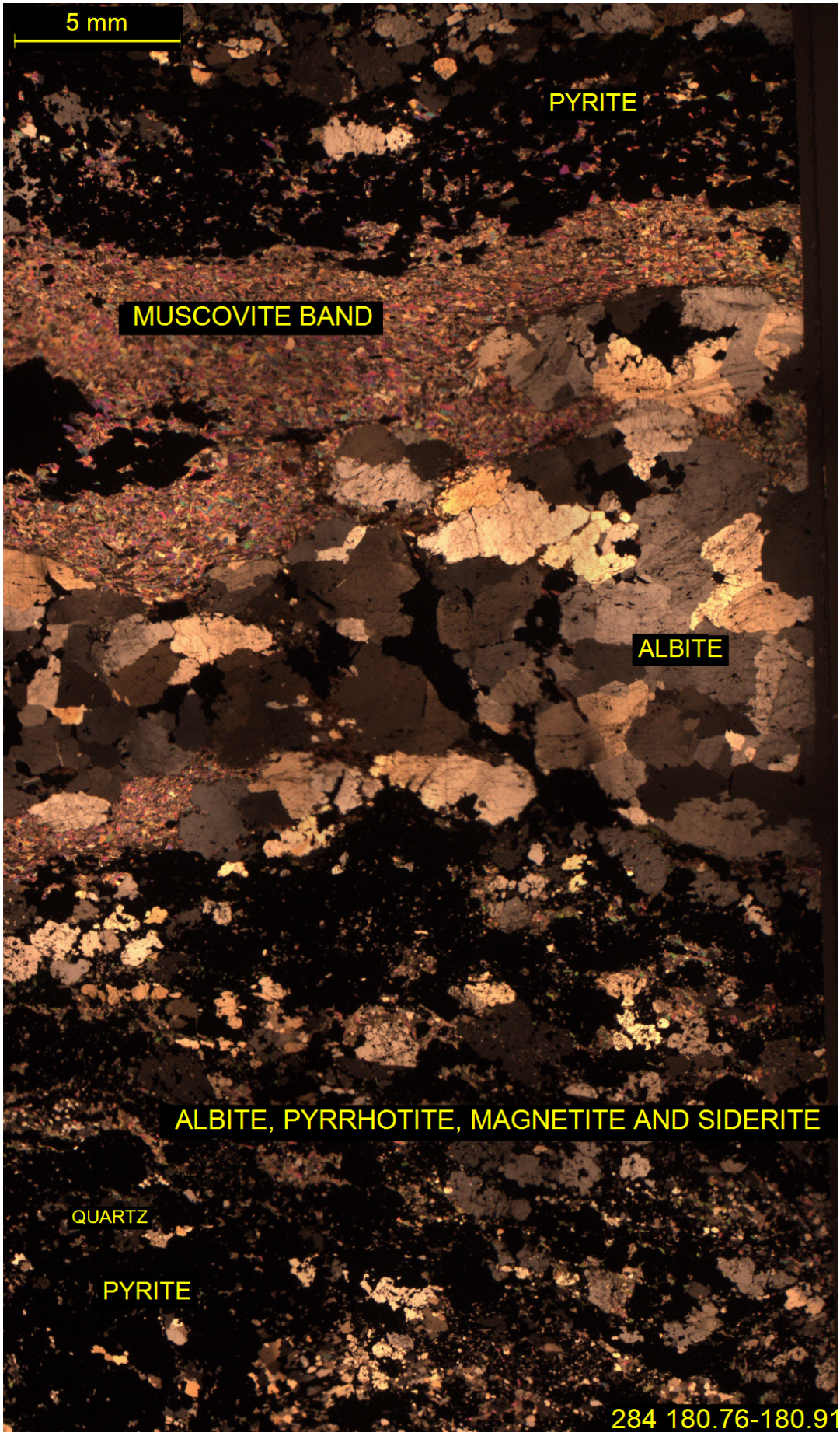
Chalcopyrite occurs sporadically throughout the two major aforementioned ore bands, mainly in a large vein up to ~2mm in length in pyrite. It was also found as discrete inclusions and slivers along fractures in pyrite, composites with pyrrhotite and pyrite, rims on pyrite, inclusions in magnetite, and discrete grains in the non-ores (gangue). Size ranges generally are from ~50 to ~700 µm. In addition it occurs in a central albite dominant band (~6mm thick) as a number of coarse linear-elongate grains that are discrete or composite with magnetite and pyrrhotite, varying in size from ~200 µm to 3.5 mm.

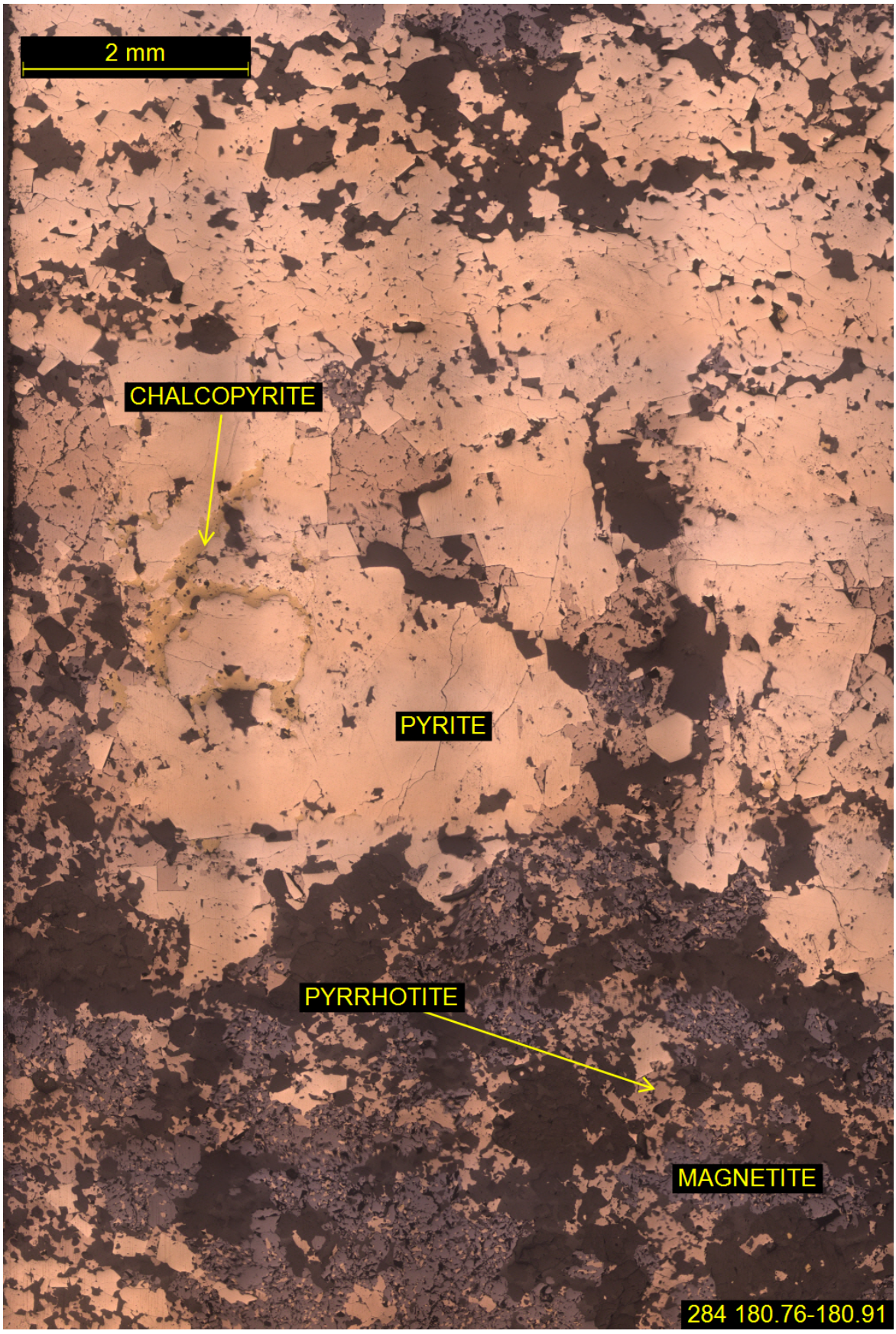
Sphalerite was very rarely identified, found as fine (~70 to ~150 µm) inclusions in chalcopyrite or a chalcopyrite/magnetite/pyrrhotite composite.

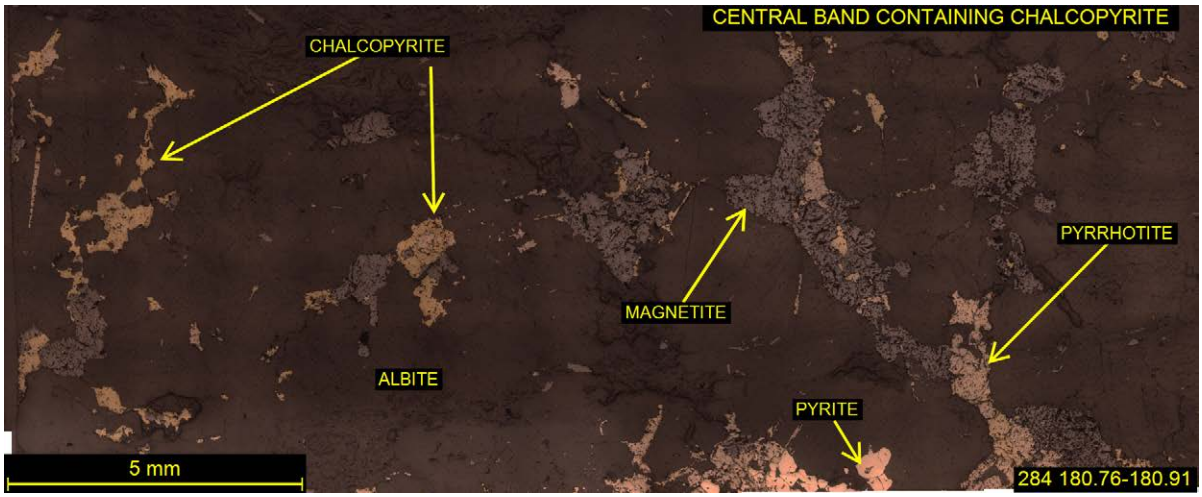
MUSCOVITE BANDS

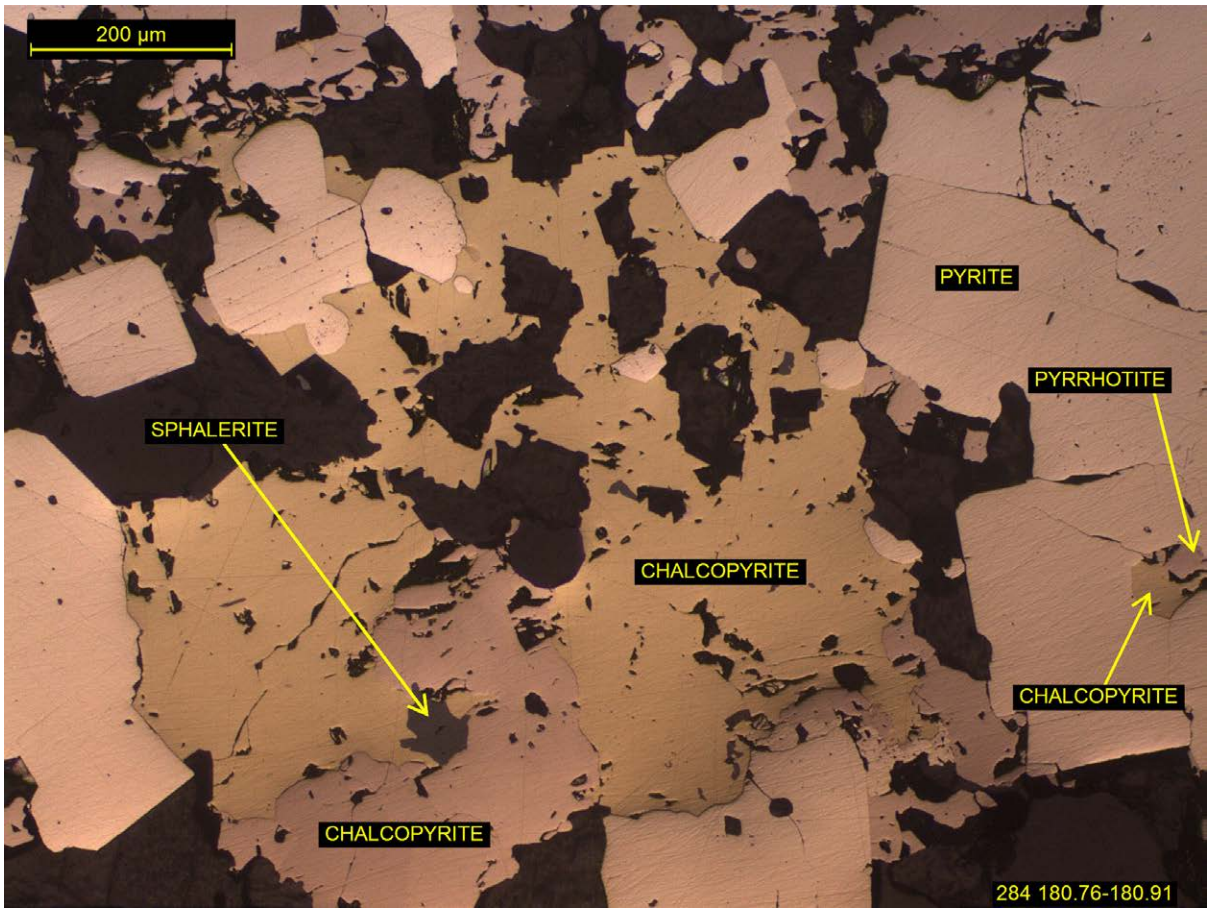
Two central bands (~2 to ~10 mm thick), alternating with albite, are both somewhat discontinuous, comprised predominantly of muscovite, characterised by a moderate preferred alignment of grains. Muscovite flakes are euhedral, averaging ~250 µm. Disseminated subhedral/euhedral elongate ilmenites, and rare large (up to ~5 mm) composites of pyrite, subordinate pyrrhotite, pyrrhotite, magnetite and chalcopyrite are present.

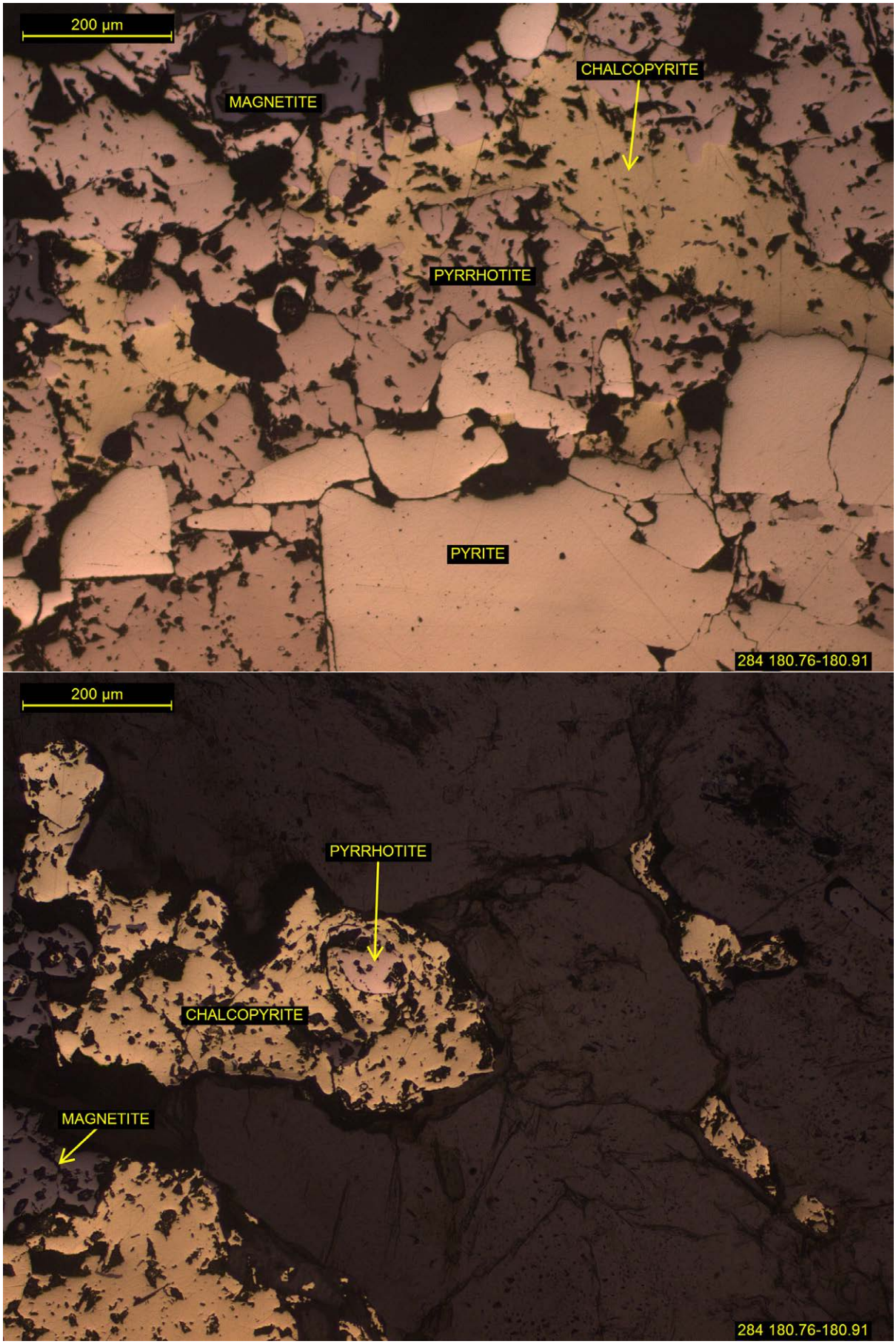

2 mm
PYRITE
CHALCOPYRITE
PYRRHOTITE
ALBITE
CHALCOPYRITE
MAGNETITE
284 180.76-180.91

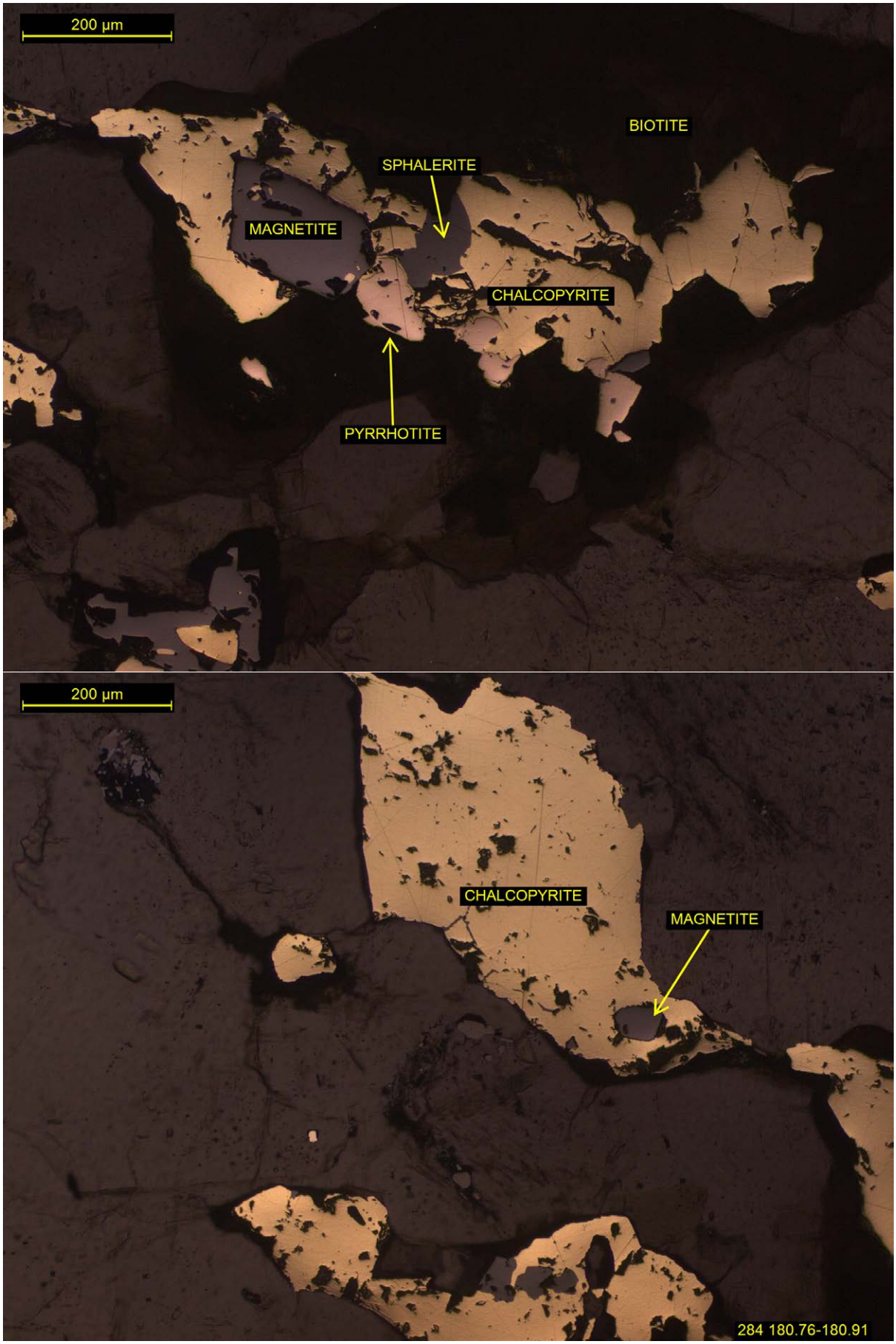

5 mm
PYRITE
MUSCOVITE BAND
ALBITE
ALBITE, PYRRHOTITE, MAGNETITE AND SIDERITE
QUARTZ
PYRITE
284 180.76-180.91

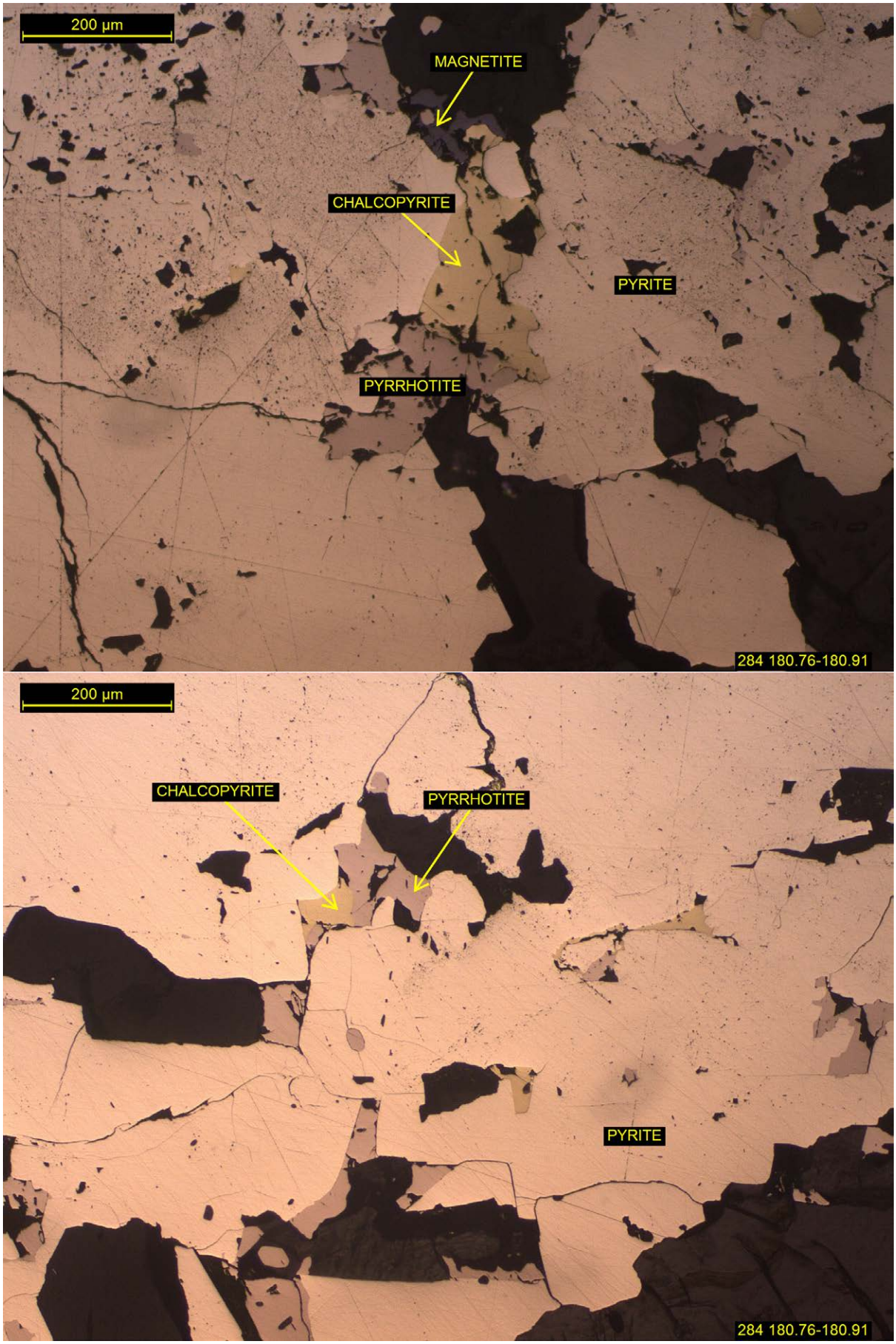

2 mm
CHALCOPYRITE
PYRITE
PYRRHOTITE
MAGNETITE
284 180.76-180.91

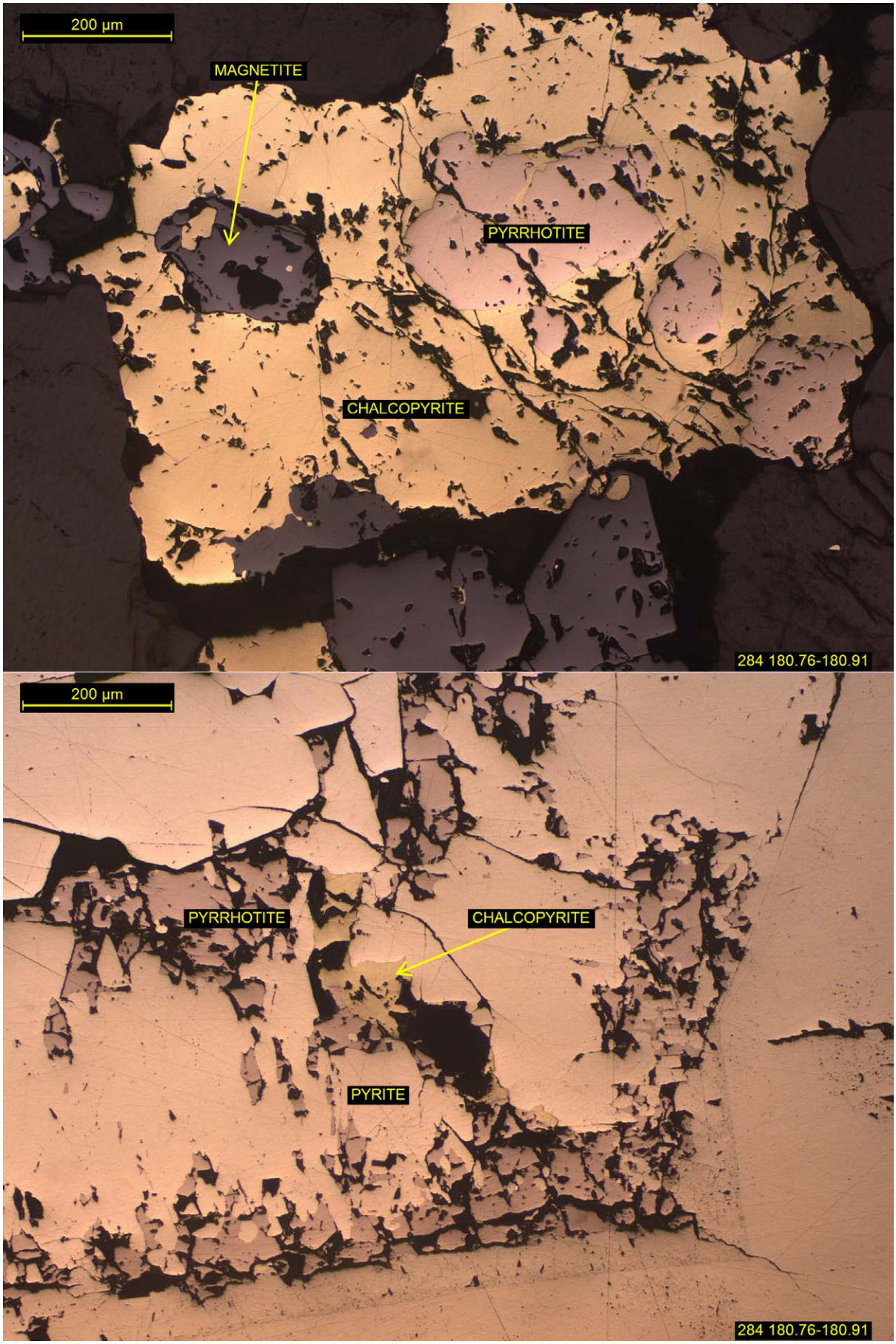

CENTRAL BAND CONTAINING CHALCOPYRITE
CHALCOPYRITE
PYRRHOTITE
MAGNETITE
ALBITE
PYRITE
5 mm
284 180.76-180.91

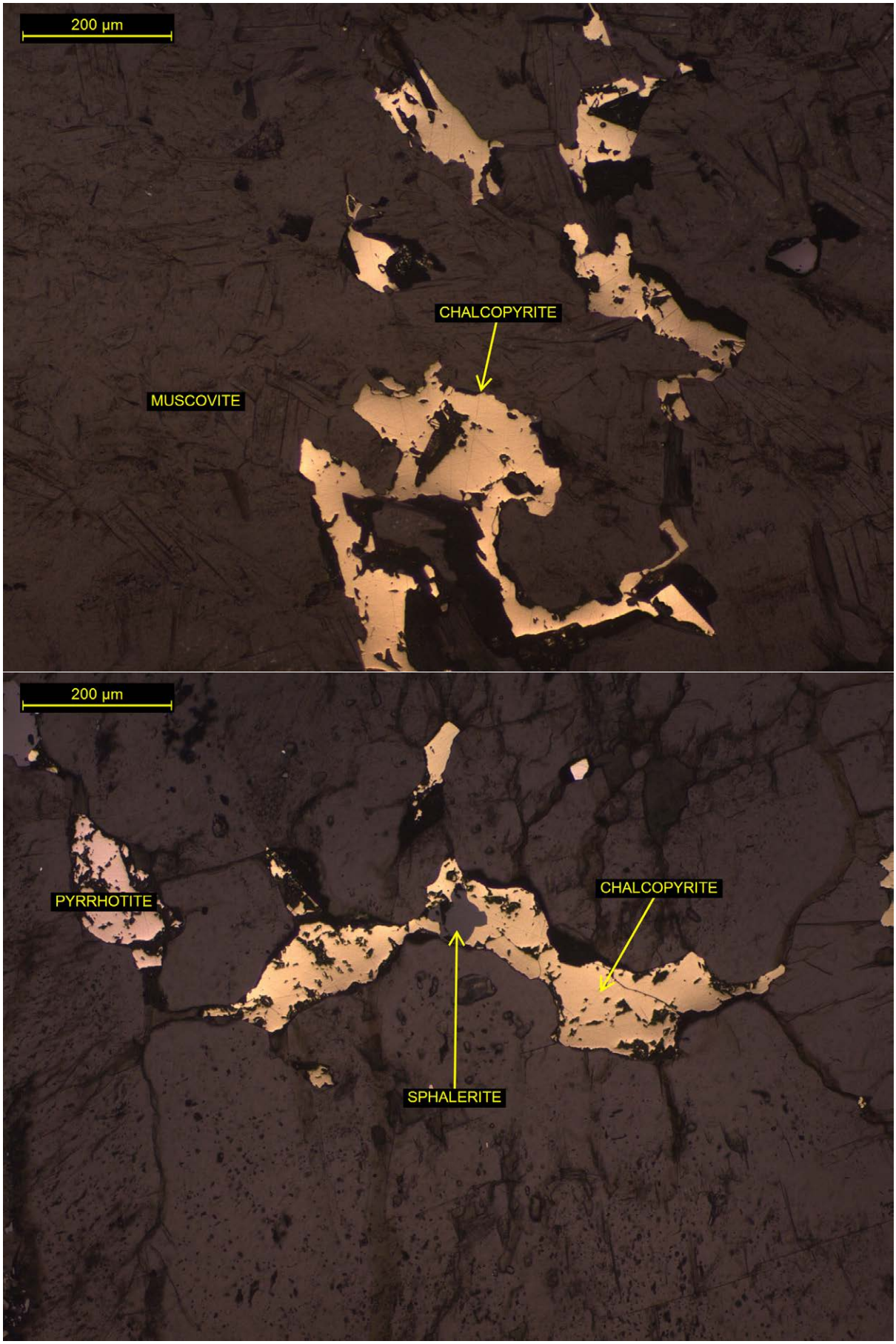

200 µm
PYRITE
PYRRHOTITE
SPHALERITE
CHALCOPYRITE
CHALCOPYRITE
CHALCOPYRITE
284 180.76-180.91

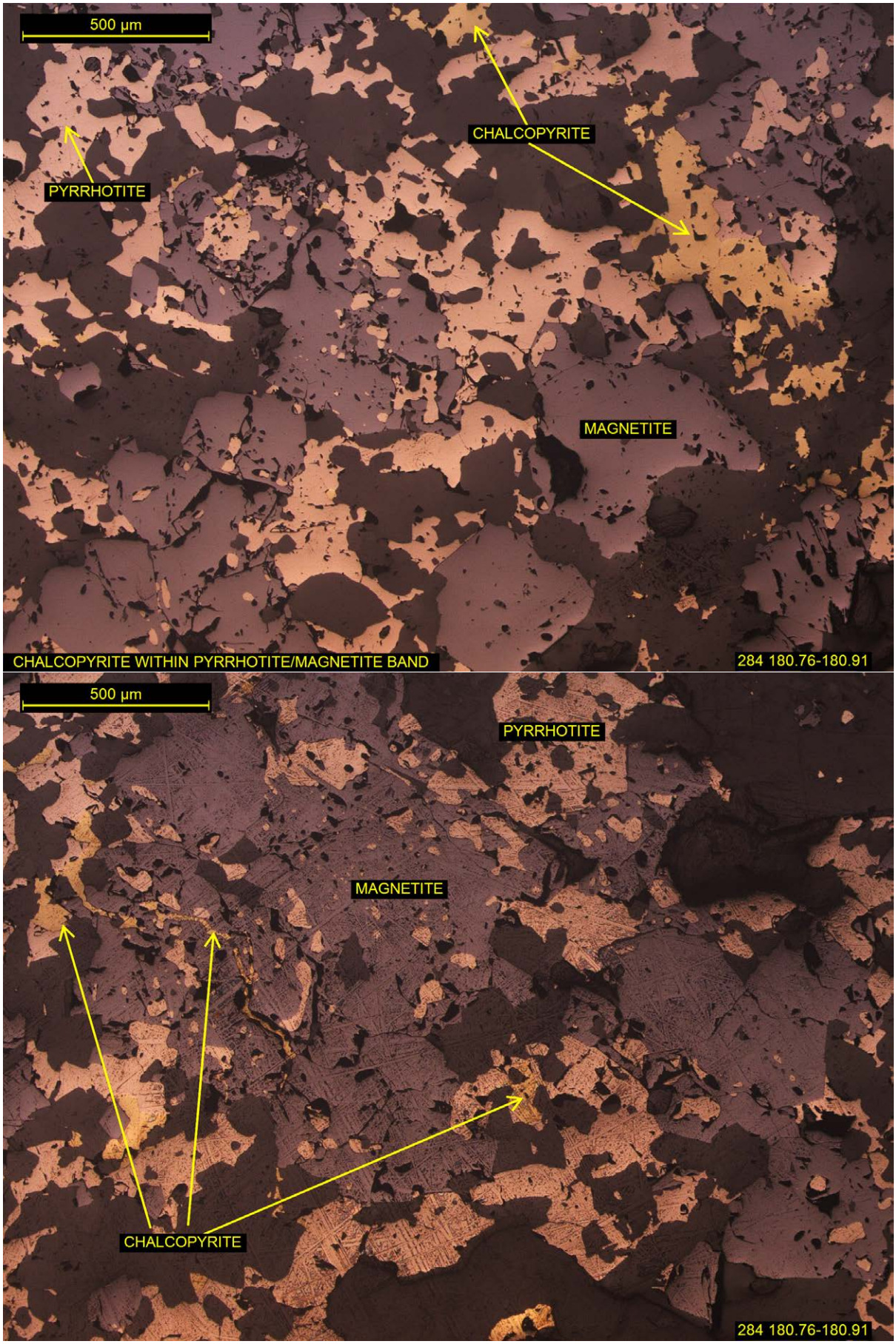

200 µm
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
PYRITE
284 180.76-180.91
200 µm
PYRRHOTITE
CHALCOPYRITE
MAGNETITE
284 180.76-180.91

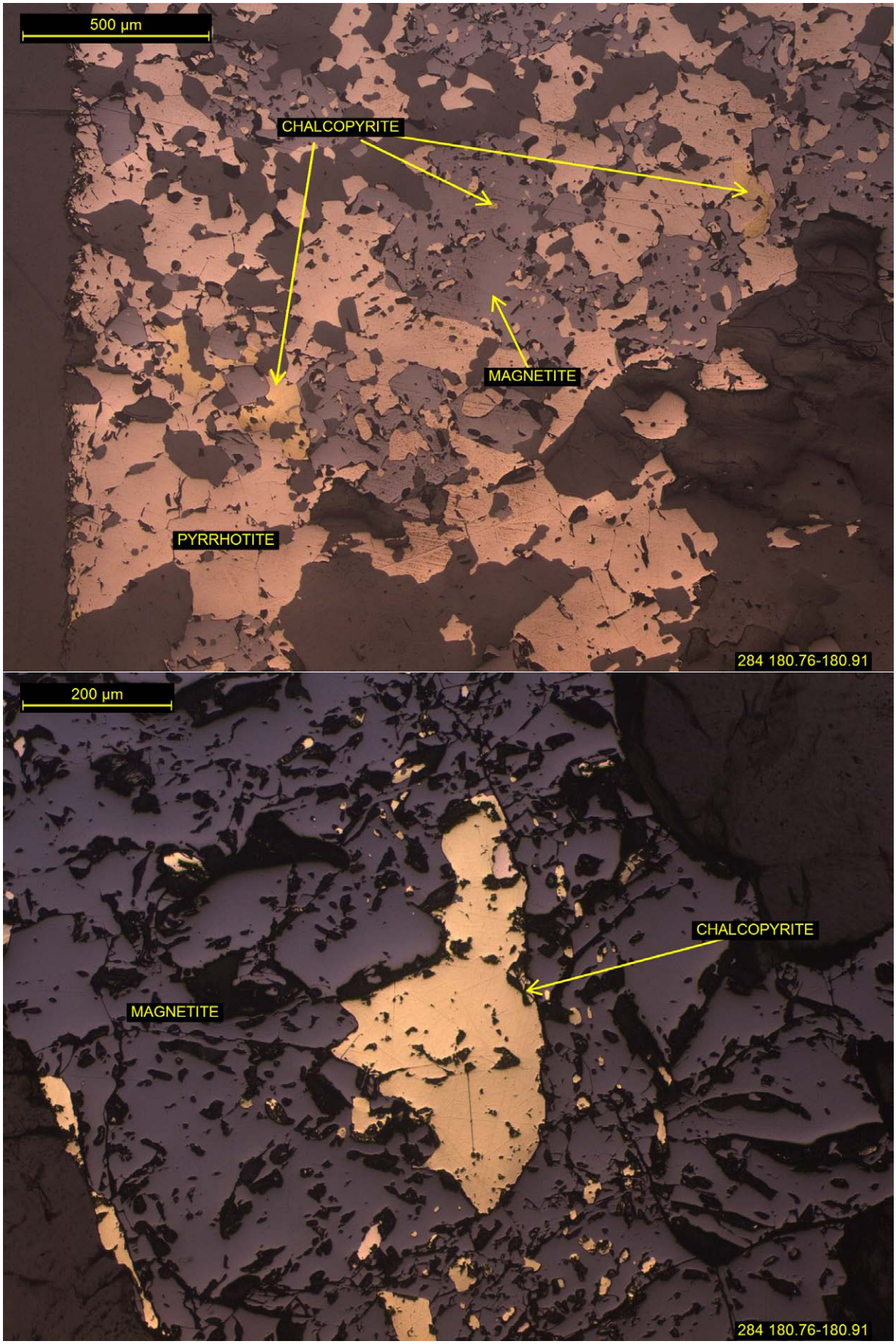

200 µm
BIOTITE
SPHALERITE
MAGNETITE
CHALCOPYRITE
PYRRHOTITE
200 µm
CHALCOPYRITE
MAGNETITE
284 180.76-180.91

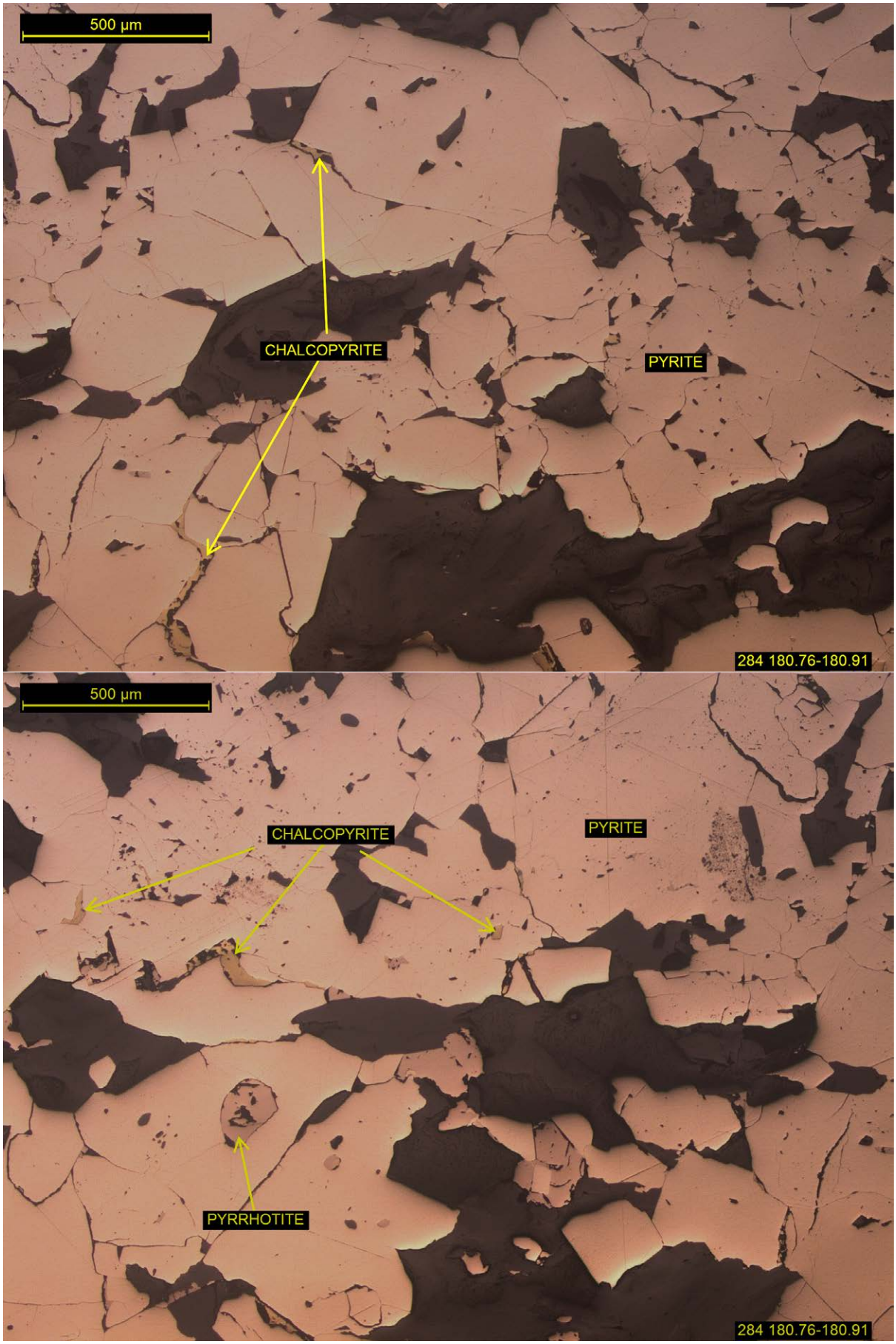

200 µm
MAGNETITE
CHALCOPYRITE
PYRITE
PYRRHOTITE
284 180.76-180.91
200 µm
CHALCOPYRITE
PYRRHOTITE
PYRITE
284 180.76-180.91

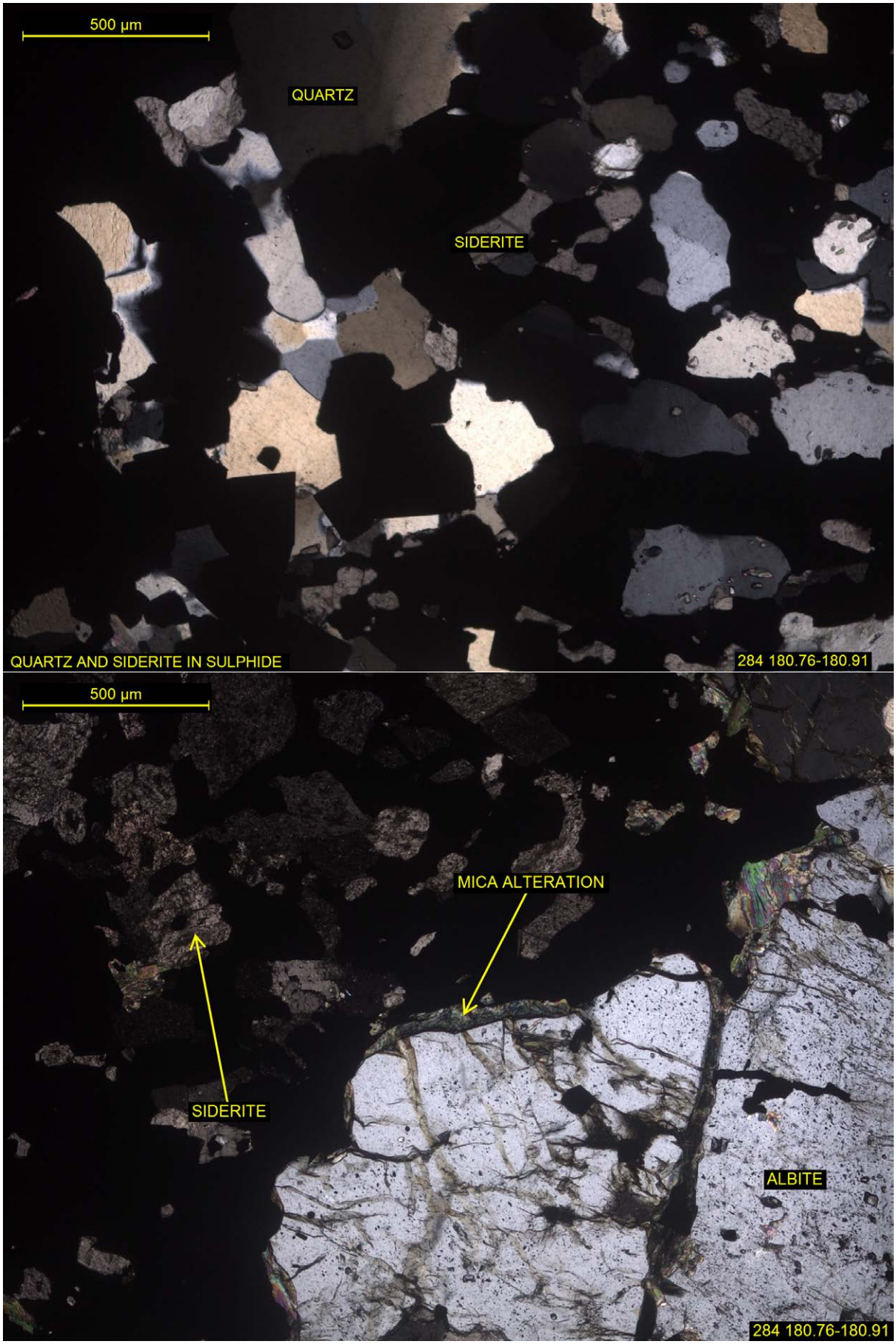

200 µm
MAGNETITE
PYRRHOTITE
CHALCOPYRITE
284 180.76-180.91
200 µm
PYRRHOTITE
CHALCOPYRITE
PYRITE
284 180.76-180.91


200 µm
CHALCOPYRITE
MUSCOVITE
200 µm
PYRRHOTITE
CHALCOPYRITE
SPHALERITE


500 µm
CHALCOPYRITE
PYRRHOTITE
MAGNETITE
CHALCOPYRITE WITHIN PYRRHOTITE/MAGNETITE BAND
284 180.76-180.91
500 µm
PYRRHOTITE
MAGNETITE
CHALCOPYRITE
284 180.76-180.91


500 µm
CHALCOPYRITE
MAGNETITE
PYRRHOTITE
284 180.76-180.91
200 µm
CHALCOPYRITE
MAGNETITE
284 180.76-180.91


500 µm
CHALCOPYRITE
PYRITE
284 180.76-180.91
500 µm
CHALCOPYRITE
PYRITE
PYRRHOTITE
284 180.76-180.91


500 µm
QUARTZ
SIDERITE
QUARTZ AND SIDERITE IN SULPHIDE
284 180.76-180.91
500 µm
MICA ALTERATION
SIDERITE
ALBITE
284 180.76-180.91

SAMPLE K15-284 182.35-182.48

DRILL CORE

POLISHED THIN SECTION

SCHIST	**95%**
MUSCOVITE	70-80%
QUARTZ	10-20%
DOLOMITE	1-3%
ALBITE MACROCRYSTS /CLAY	**1-3%**
ORES	**5%**
PYRRHOTITE	60-70%
PYRITE	20-30%
TITANIUM OXIDES	5%
CHALCOPYRITE	5%
GALENA	<1%
MARCASITE	<1%

CLASSIFIED AS A BLASTOPORPHYRITIC QUARTZ MUSCOVITE SCHIST WITH DISSEMINATED PYRRHOTITE, PYRITE AND CHALCOPYRITE.

The sample is comprised predominantly of laminated muscovite and subordinate quartz, the former characterised by an extremely strong preferred schistose fabric. Muscovite flakes range have a typical size range of ~100 to ~500 µm. Quartz occurs in thin layers and lenses, up to ~3mm in thickness comprised of ~200 to ~400 µm mosaics. In addition, sporadic relatively coarse (up to ~3 mm) anhedral to euhedral albite macrocrysts are found sporadically and in bands across the sample, typically undergoing moderate alteration to a dark yellow/green phase (mica/clay?). Scarce sporadic dolomite grains and polycrystalline aggregates (sized from ~300 µm to ~ 1.5mm) are also present.

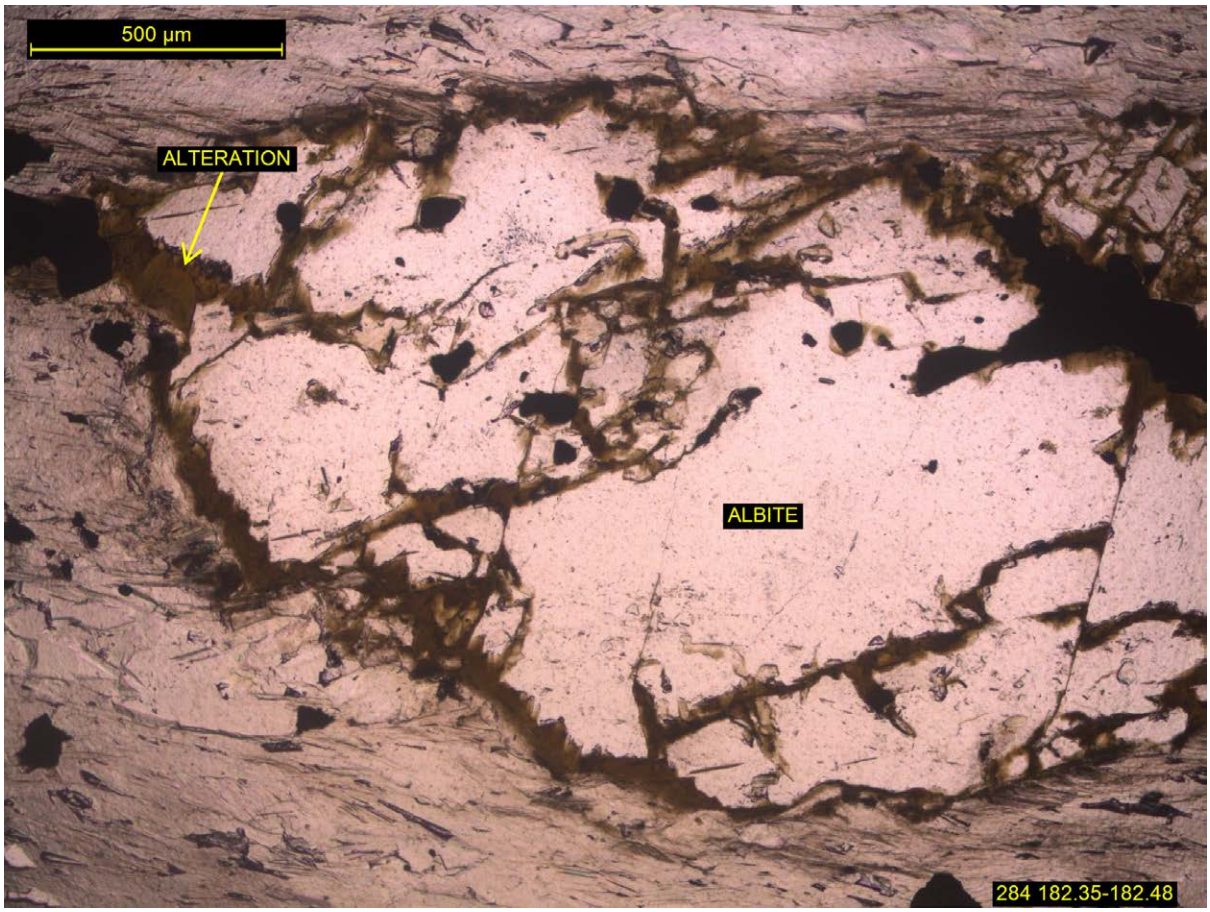
SULPHIDES

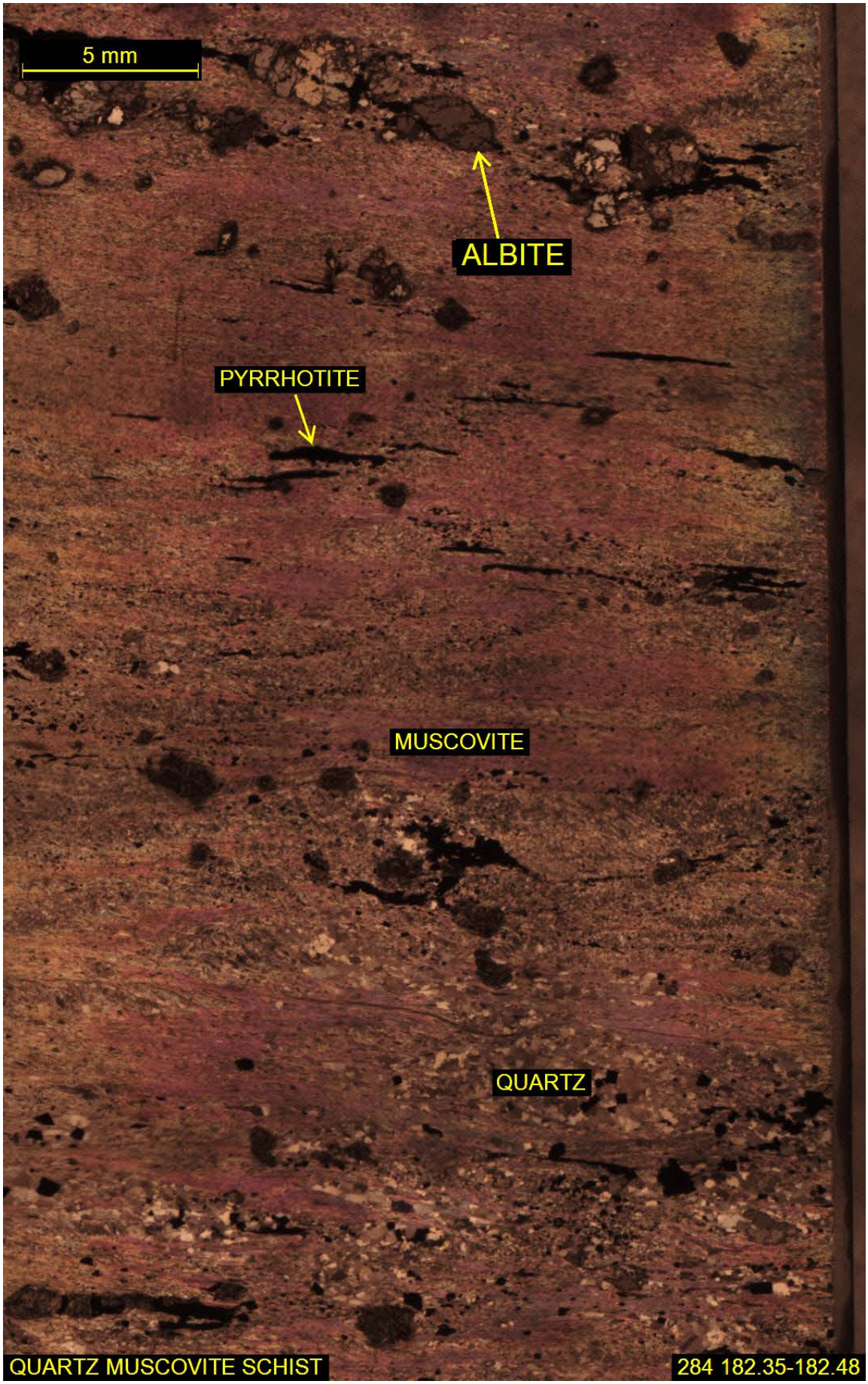
A relatively low ore content relative to other samples, consisting mainly of pyrrhotite and pyrite. Pyrrhotite forms elongate trains, parallel to the fabric, up to ~5mm in length, and discrete irregularly shaped to rectangular grains (~50 to ~500 µm), occasionally incipiently altered to marcasite, within dominant muscovite.

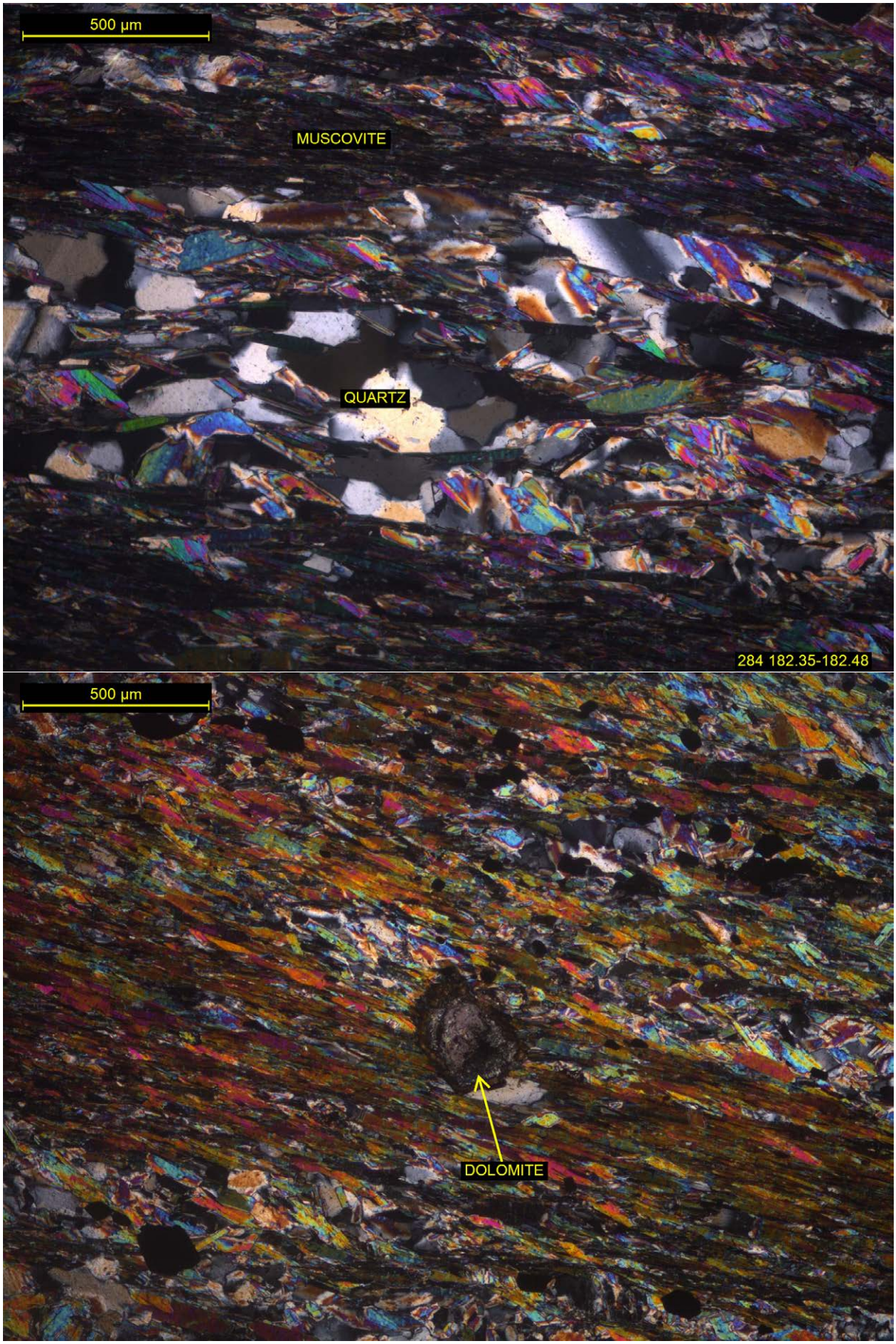
Pyrites are found primarily in layers of discrete euhedral grains (~10 to ~200 µm), sitting in dominant muscovite. Composites of pyrite and pyrrhotite are not that uncommon.

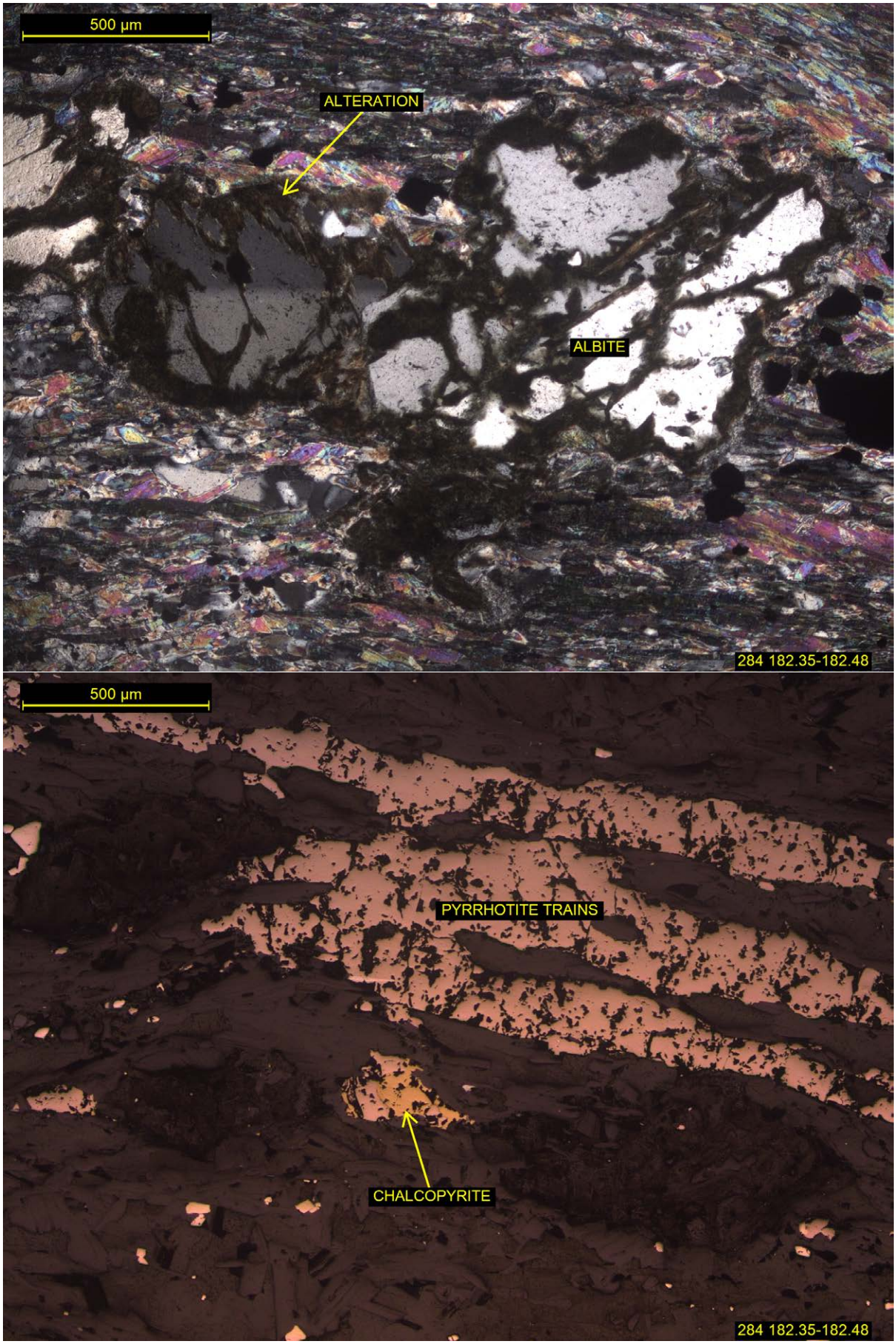
Chalcopyrite occurs mainly as composites with pyrrhotite and subordinate pyrite, rims on pyrrhotite, occasional inclusions in pyrrhotite and rare very fine (sub 10 µm) discrete grains in muscovite (sub 10 µm), sometimes associated with galena. Its typical size range is from ~50 to ~300 µm, outliers up to ~1 mm.

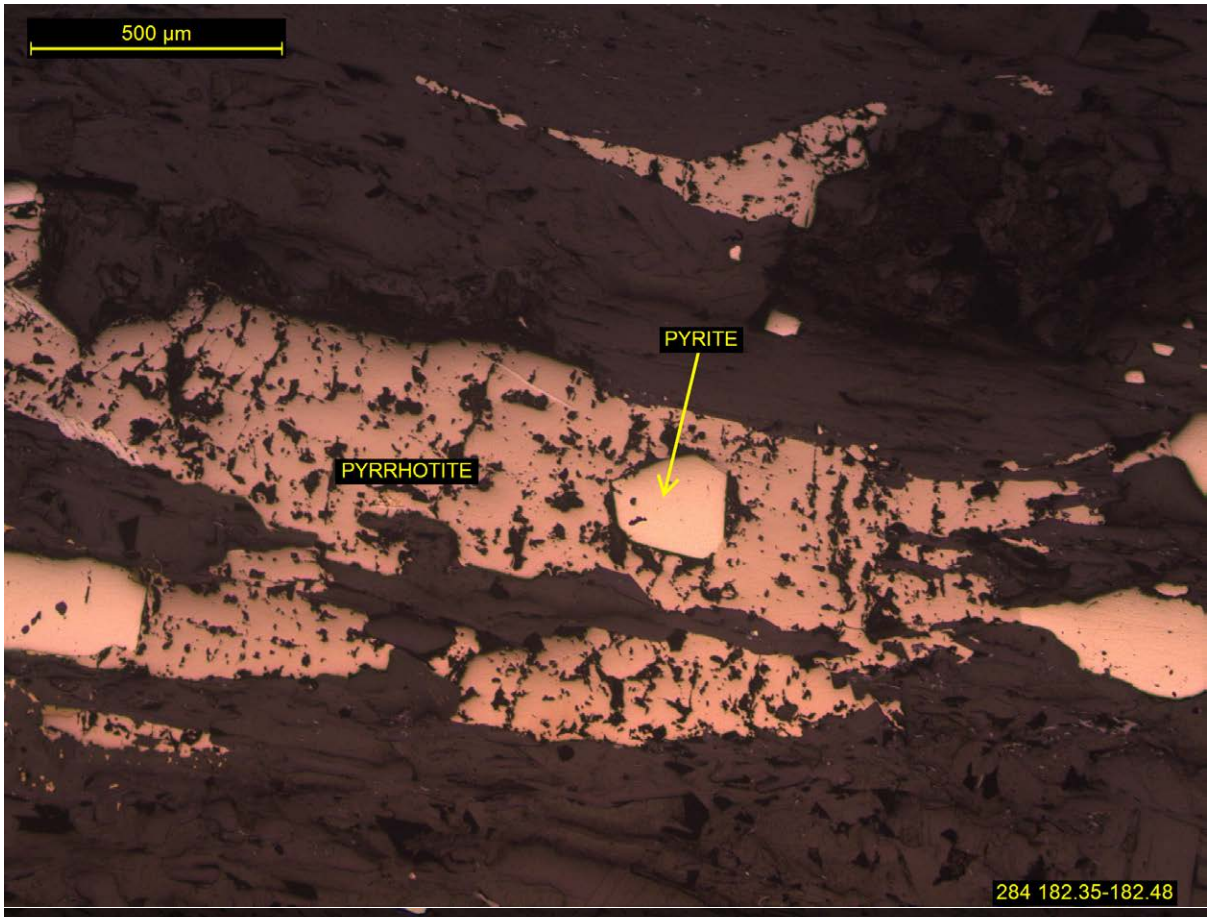
Galena occurrences were very rare, found as elongate and irregular rims on chalcopyrite, pyrrhotite and pyrite, inclusions in pyrrhotite and muscovite, and sitting between euhedral pyrites, sized from ~20 to ~60 µm. SEM/EDS analyses indicate galena is selenium bearing.

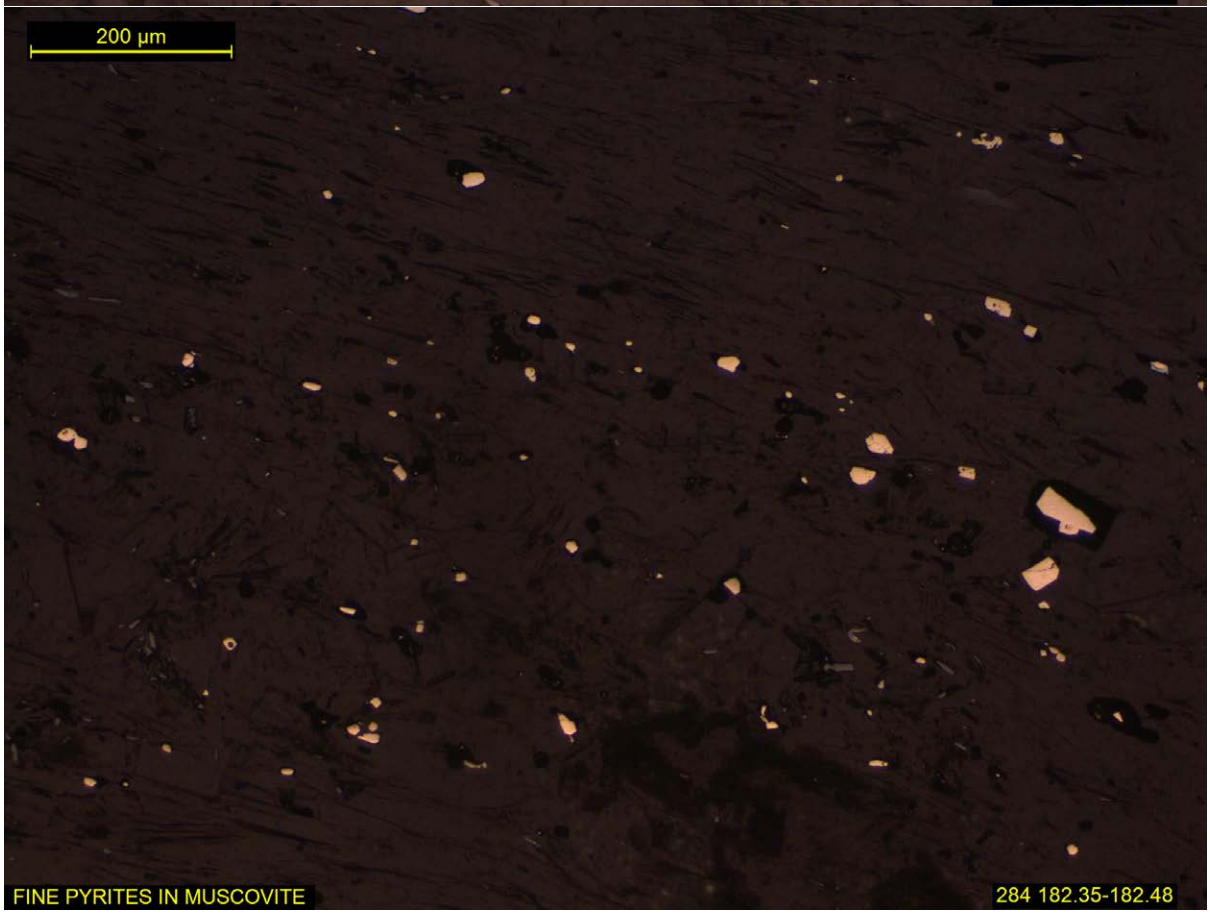



5 mm
ALBITE
PYRRHOTITE
MUSCOVITE
QUARTZ
QUARTZ MUSCOVITE SCHIST
284 182.35-182.48


500 µm
MUSCOVITE
QUARTZ
284 182.35-182.48
500 µm
DOLOMITE


500 µm
ALTERATION
ALBITE
284 182.35-182.48
500 µm
PYRRHOTITE TRAINS
CHALCOPYRITE
284 182.35-182.48


500 µm
PYRITE
PYRRHOTITE
284 182.35-182.48


200 µm
FINE PYRITES IN MUSCOVITE
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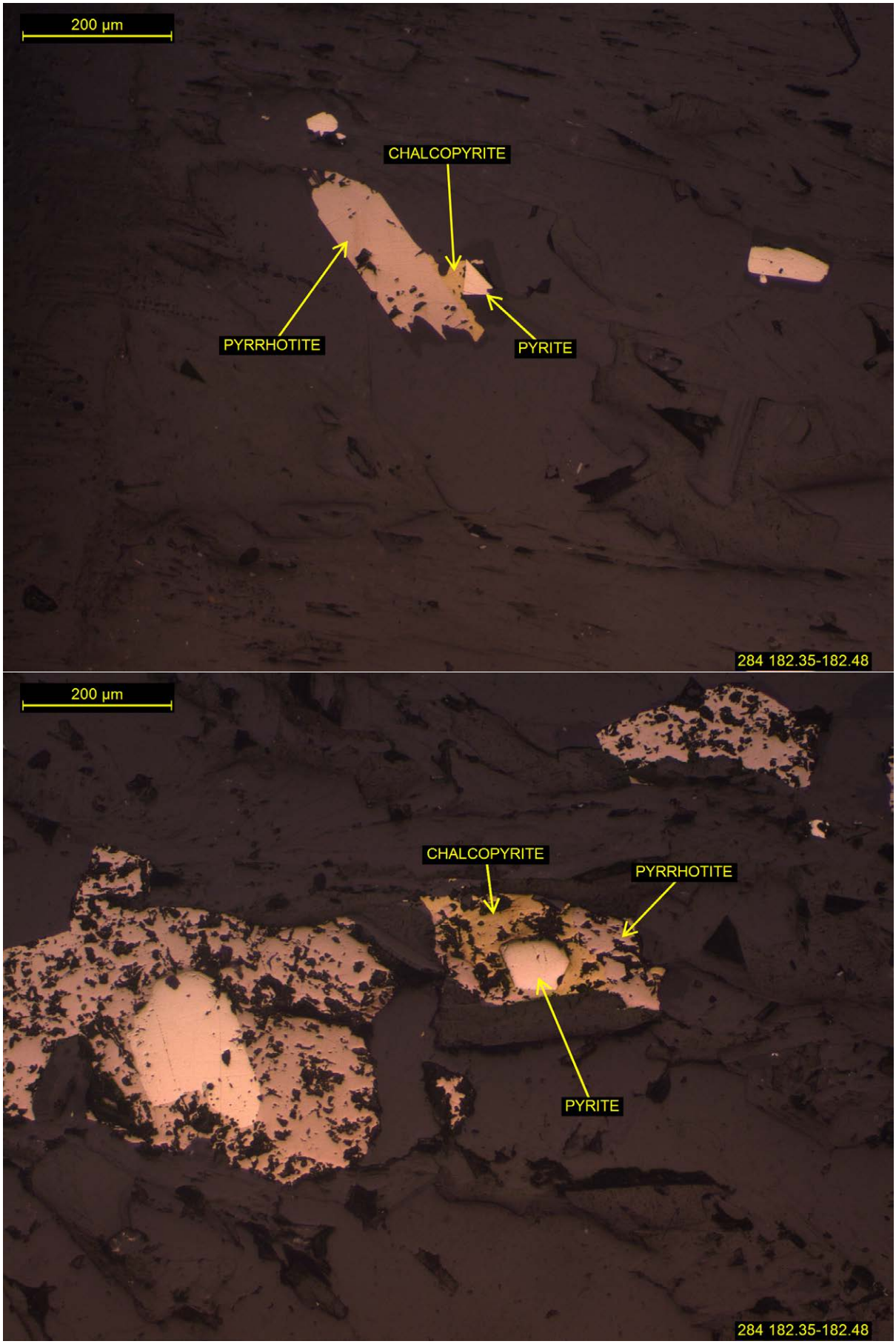
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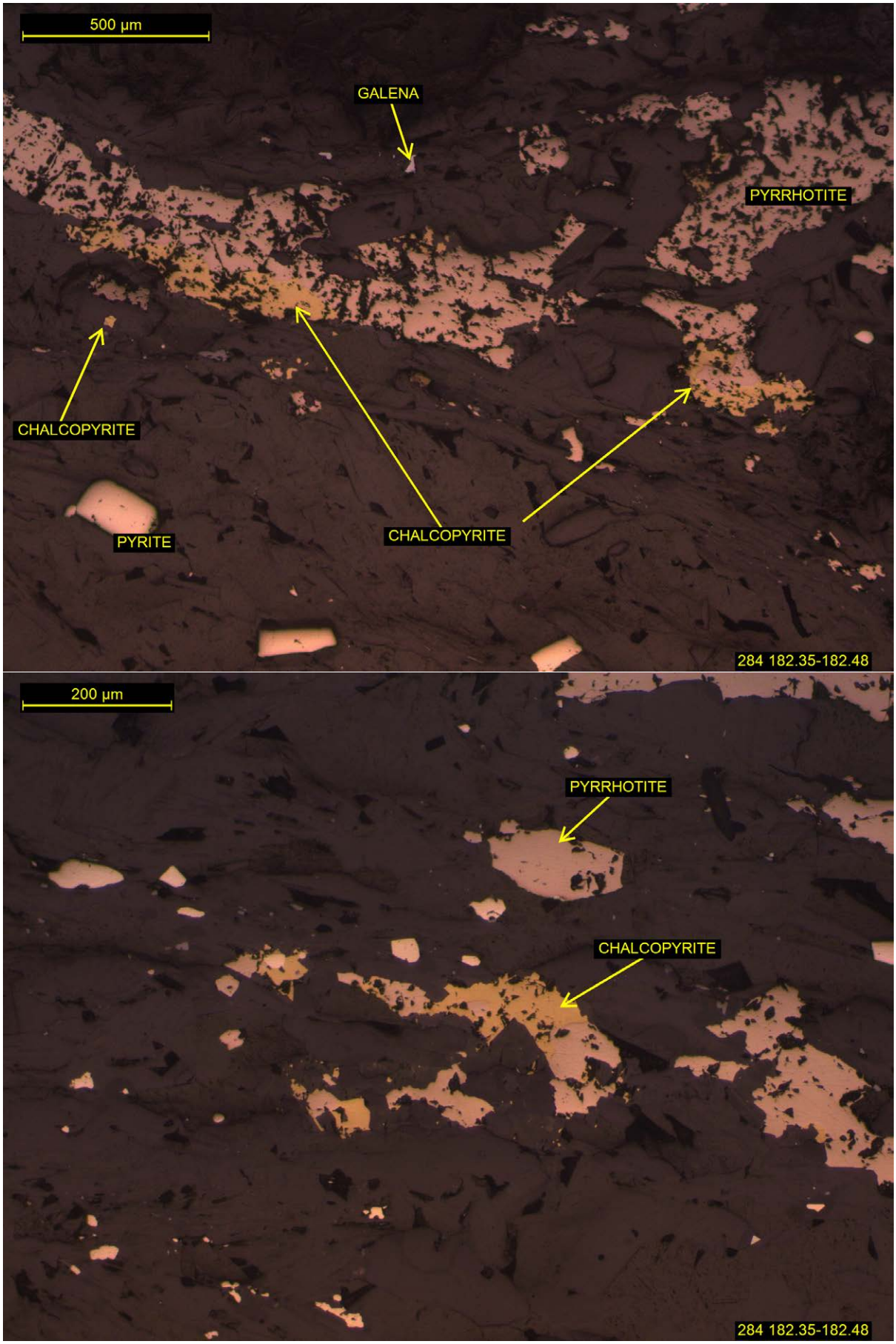
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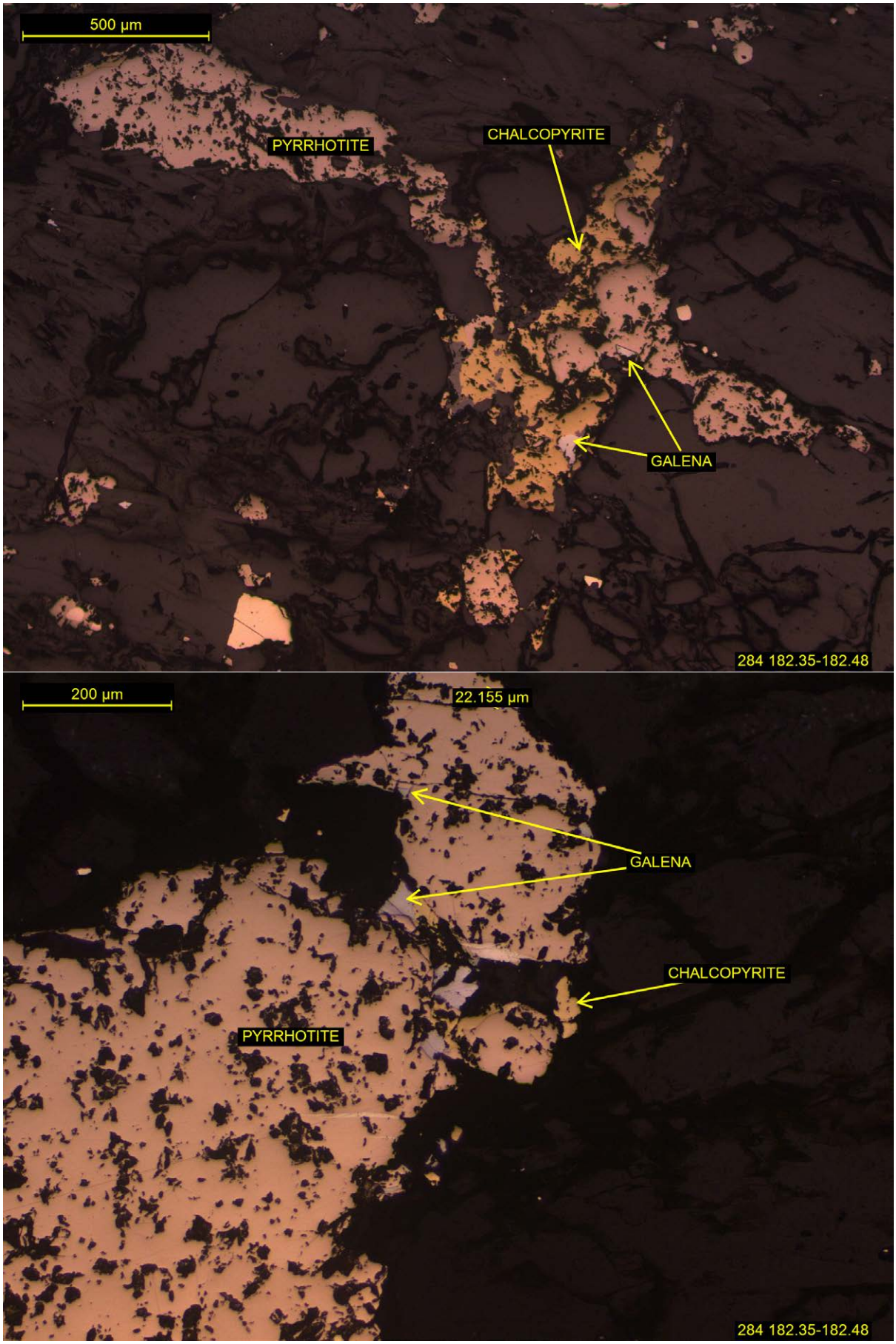
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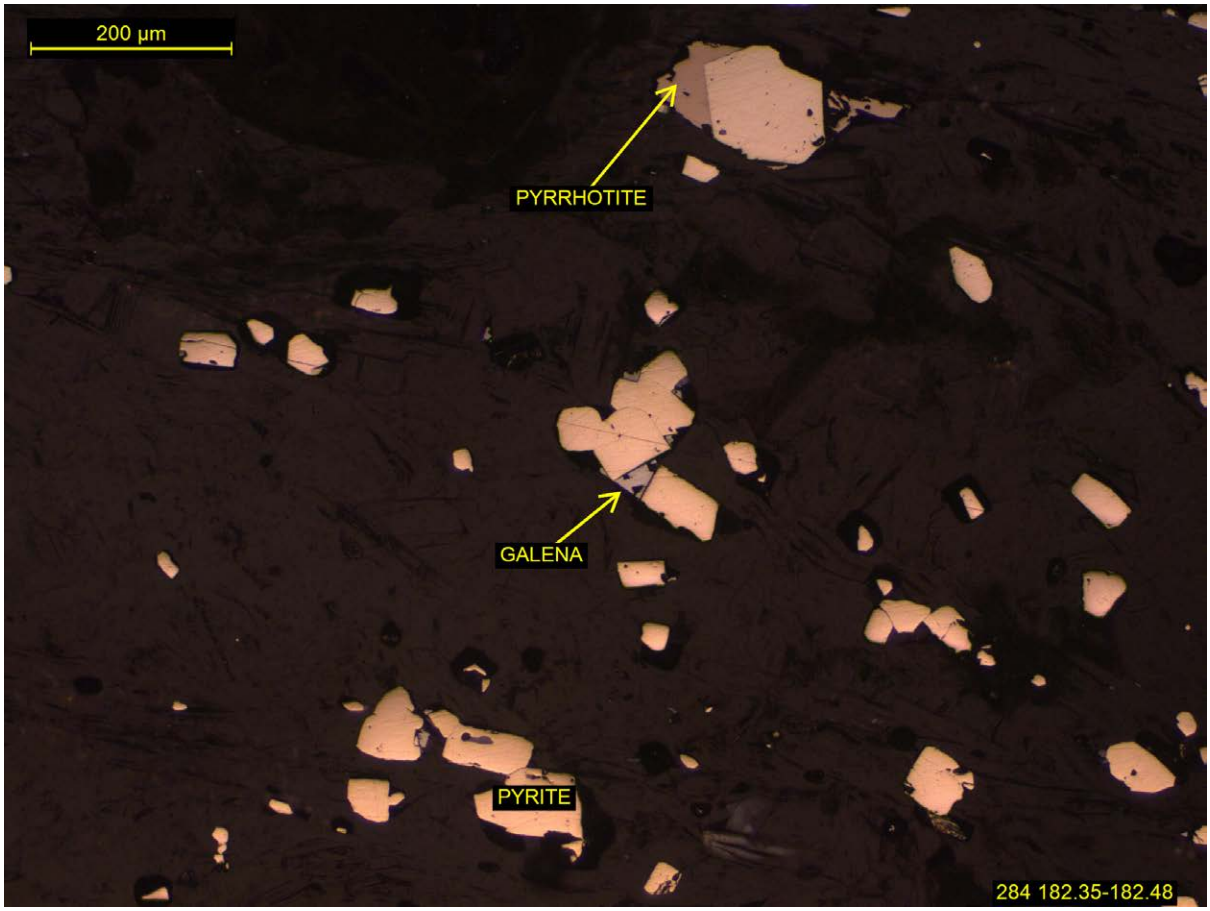
200 µm
PYRRHOTITE
GALENA
PYRITE
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PETROGRAPHIC REPORT ON 17 SAMPLES OF MASSIVE SULFIDES

Report for: Murray Jones/Trevor Rabb
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Dec. 22, 2015.

SUMMARY:

This suite of 17 samples mostly represent crudely to locally vaguely banded/laminated, or in a few cases, relatively unbanded, massive sulfides composed mainly of euhedral pyrite, local magnetite, in a matrix of sphalerite-variable lesser galena/minor chalcopyrite-pyrrhotite-arsenopyrite-trace sulfosalt(s) with gangues of carbonate-local, variable quartz, probable barite, sericite or muscovite, chlorite or green biotite, rarely cordierite (?). These samples typically show sulfide/gangue ratios in the 65-75/35-25 range, and discontinuous banding/lamination is poorly defined by compositional variations from pyrite-rich with variable sphalerite and galena, or locally chalcopyrite and/or pyrrhotite concentrations, or gangue-rich, particularly carbonate- or sericite-rich, locally barite?-rich (the latter typically associated with sphalerite and especially galena-rich zones, suggestive of the approach to the upper portions of a volcanogenic massive sulfide deposit). Sphalerite varies from pale orange-brown (Fe-poor) to more common dark orange-brown or intense red-brown (Fe-rich), sometimes even only a few meters apart. Locally, chalcopyrite, pyrrhotite, coarser sphalerite, galena and sulfosalts, appear to be associated with coarser-grained, possibly remobilized, carbonate ±quartz bearing bands/veins that could represent remobilization of more volatile portions of the deposit during metamorphism/deformation (alternatively, some might represent former stringers?). In general, deformation seems likely to have caused the softer sulfides (galena, sphalerite, pyrrhotite, chalcopyrite) to recrystallize or "flow" to form the matrix to the much harder, ubiquitous euhedral pyrite (and local subhedral magnetite, which has fractured and been partly altered to carbonate, chlorite or sericite, local sphene). Carbonate varies from calcite (typically in bands/veins or distinctly later planar veinlets, or in places in the matrix) to mostly dolomite (gangue matrix) to locally ankerite or even rarely siderite (?). In a few samples, the Fe-carbonate appears to rim or enclose the calcite or dolomite. Chlorite or green (possibly ferriferous?) biotite appears likely to have replaced former biotite.

Sulfosalts appear to be mainly of two types, mainly within or closely associated with galena, particularly where in contact with sphalerite, chalcopyrite or pyrrhotite: first, one which is anisotropic under crossed polars but with only barely detectable, slightly lower reflectance and olive-grey colour compared to galena (could be any one of numerous Pb-Sb-As±Ag sulfosalts?), and second, grey, apparently isotropic (likely tennantite-tetrahedrite, could be Ag-bearing?). SEM analysis is recommended to identify these sulfosalts and their possible Ag contents. No gold was seen, in spite of detailed search at high magnification; again, SEM analysis might reveal gold particles.

In two samples (K15-224 196 and K98-197 133.9) sulfides are lesser/relatively minor, and include much more abundant quartz, local alkali feldspar (Kspar), mica (sericite/muscovite, biotite or green biotite, chlorite), plus epidote, tourmaline and Fe-carbonate. Tourmaline appears on the basis of dark bluish green colour to be Fe-rich, schorl, not suggestive of Mg-rich dravite commonly considered to be of exhalative origin in VMS deposits. Epidote is relatively colourless, possibly Fe-poor (clinozoisite). These samples appear to represent meta-volcanic rocks (one possibly felsic since it contains what appear to be relict alkali feldspar and possible quartz phenocrysts, somewhat elongated and flattened in the plane of banding/foliation).

Capsule descriptions are as follows:

K15-282 302.56-302.69m: fine-grained, crudely banded/laminated, semi-massive sulfides (pyrite-sphalerite-minor chalcopyrite-galena-trace sulfosalt) in carbonate-minor quartz-accessory chlorite gangue)

K15-282 311.32-311.45m: massive, vaguely banded fine-grained pyrite-sphalerite-minor magnetite-trace galena with carbonate-very minor quartz gangue, cut by a central band/vein of coarser carbonate containing significant chalcopyrite, sphalerite, galena but only minor pyrite and magnetite, local pyrrhotite; trace sulfosalt (tetrahedrite?) is rarely included in galena.

K15-315 102.69-102.79m: massive, only faintly banded, pyrite-sphalerite-minor galena intergrown with mixed gangues of carbonate (calcite?)-chlorite or green biotite (rarely containing euhedral marcasite)-lesser quartz.

K15-314 27.5-27.63m: banded/laminated, weakly foliated, fine-grained semi-massive pyrite-minor sphalerite-arsenopyrite-galena-trace chalcopyrite-rare sulfosalt (tennantite?) in sericite-very minor quartz gangue.

K15-314 70.92-71m: crudely banded, pyrite-lesser sphalerite- minor galena in carbonate gangue, with local coarser-grained bands of carbonate-significant chalcopyrite-sphalerite but only minor pyrite, rare galena, possible tetrahedrite, pyrrhotite, cut by late veins of calcite.

K15-297 293.1-293.22m: semi-massive pyrite-sphalerite-minor galena-magnetite-trace chalcopyrite (rare sulfosalts, tetrahedrite and unidentified?) in gangue of carbonate-local quartz-minor chlorite. Chalcopyrite and sulfosalts are mostly in a coarser, carbonate-quartz rich band.

K15-297 296.66-296.8m: massive pyrite-sphalerite-minor chalcopyrite-galena-arsenopyrite-trace pyrrhotite-magnetite (rare sulfosalt, tetrahedrite?) in gangue of carbonate-quartz-minor chlorite-sericite. Arsenopyrite and sulfosalt may be mostly in remobilized carbonate-quartz rich bands.

K15-304 166.21-166.33: massive pyrite-sphalerite-minor arsenopyrite-galena-chalcopyrite trace sulfosalts (unidentified, and tennantite?) in gangue of carbonate-barite?-minor quartz. Arsenopyrite may replace pyrite, and sulfosalt may be mostly in remobilized coarse chalcopyrite-sphalerite-galena-carbonate-barite? rich bands.

K15-224 196-199: weakly foliated massive sulfide (pyrite subhedra in matrix of pyrrhotite-sphalerite-minor galena-trace chalcopyrite ±sulfosalt, likely tetrahedrite?) intercalated with gangue-rich bands of sericite (muscovite)-quartz-biotite ±chlorite, epidote, sphene and schorlitic tourmaline; trace carbonate occurs only in late thin veinlets.

K15-315 134.6-134.71: massive, crudely banded, fine-grained pyrite-sphalerite-minor magnetite-pyrrhotite-galena-arsenopyrite-chalcopyrite with carbonate-sericite (local blastic, partly chloritized cordierite?) gangue. Pyrrhotite (partly replaced by marcasite) is closely associated with chalcopyrite; arsenopyrite appears to largely replace pyrite.

K15-315 135.21-135.3: massive pyrite-sphalerite-galena-arsenopyrite-minor chalcopyrite-trace sulfosalt (tennantite?) inter-banded with gangues of carbonate-lesser barite?, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-307 188.09-188.19: finer-grained pyrite-minor sphalerite-galena-trace chalcopyrite in contact with coarser, more massive pyrite-sphalerite-galena-trace arsenopyrite-magnetite-sulfosalts; gangues vary from carbonate-quartz-minor barite in the first type to quartz-carbonate in the second.

K98-197 133.9-134.08: altered, felsic meta-volcanic (?) schist/gneiss with minor sulfides consisting mainly of weakly foliated, vaguely banded/laminated quartz-alkali feldspar or micas (muscovite, biotite, chlorite)-epidote-minor tourmaline-accessory monazite, in places with discontinuous sulfide bands or laminae composed of pyrite-sphalerite-pyrrhotite-galena-minor magnetite-chalcopyrite.

K98-193 176.78-176.96: medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite and significant galena with local concentrations of pyrrhotite but only trace chalcopyrite-arsenopyrite, with gangue inclusions of carbonate-chlorite/green biotite, minor barite?

K98-188 79.39-79.5: medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite, local pyrrhotite, significant galena, local relict magnetite, trace arsenopyrite, chalcopyrite, gangue inclusions of carbonate-quartz-chlorite/green biotite, rare schorlitic tourmaline.

K15-292 221.18-221.37: fine-grained, faintly banded massive sulfide in which euhedral pyrite and minor magnetite are enclosed in a matrix of sphalerite, lesser galena, minor chalcopyrite and sulfosalt (likely tetrahedrite?), lensy gangues are carbonate-quartz-local barite (?).

K15-292 234.13-234.31: massive, vaguely banded fine-grained pyrite-sphalerite-minor chalcopyrite – galena-pyrrhotite-arsenopyrite with carbonate-sericite-minor quartz gangue, cut by bands/veins of coarser carbonate locally with significant chalcopyrite, sphalerite, galena, pyrrhotite; trace sulfosalts (unidentified, tetrahedrite?) are rare in galena. Late carbonate veins are associated with fracturing.

Detailed petrographic descriptions and photomicrographs are appended (by CD/email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

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K15-282 302.56-302.69m: FINE-GRAINED, CRUDELY BANDED/LAMINATED, SEMI-MASSIVE SULFIDES (PYRITE-SPHALERITE-MINOR CHALCOPYRITE-GALENA-TRACE SULFOSALT) IN CARBONATE-MINOR QUARTZ-ACCESSORY CHLORITE GANGUE)

Hand sample not supplied; etched offcut shows fine-grained, dark grey, crudely banded/laminated semi-massive sulfide composed mainly of pyrite and sphalerite, with carbonate gangue. The rock shows trace magnetism, widespread but slow reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (50%)

Carbonate (mainly calcite/dolomite?)	90%
Quartz	7%
Chlorite	3%

Ore (50%)

Pyrite	60%
Sphalerite	30%
Chalcopyrite	5%
Galena	5%
Sulfosalt (Pb-Sb, Bi or Ag sulfosalt?)	<1%
Pyrrhotite	trace

Gangue minerals are dominated by carbonate, forming sub- to rarely euhedral crystals mainly in the 0.5 mm (locally <0.1, or less commonly up to almost 1 mm) range. The carbonate species is difficult to be sure of due to the HF attack (for Kspar staining) damaging the surface and making it less reactive; it may be calcite and/or dolomite (?). Minor quartz forms subhedral, mostly <0.5 mm crystals to irregular anhedra up to almost 2 mm across; most crystals are apparently relatively unstrained, but the larger ones show mild undulose extinction with no sub-grain development or suturing of grain boundaries. Scattered flakes of chlorite are mostly euhedral, randomly oriented, up to about 1 mm in diameter, with pale green pleochroism and distinctly length-fast, weakly anomalous greenish birefringence suggestive of Fe:Fe+Mg, or F:M, ratio slightly less than 0.5 (?). Rarely, it is intergrown with (likely replacing) relict biotite with pale yellow-brownish or distinctly green pleochroism and length-slow, significantly higher birefringence.

Ore minerals are crudely arranged in bands or laminations mostly <1 mm thick but aggregating to about 0.5 cm thick, highlighted by compositional variation (pyrite-rich, sphalerite-chalcopyrite or sphalerite-galena-rich). Galena rarely contains or is intergrown with very minor sulfosalt of uncertain identity, and chalcopyrite very rarely contains trace inclusions of pyrrhotite (that probably account for the trace magnetism detected in hand specimen). Almost all sulfides contain inclusions of each other, e.g. pyrite within a matrix of sphalerite and/or galena, pyrite within chalcopyrite, and to a lesser degree sphalerite or galena, but not chalcopyrite, within pyrite.

Pyrite forms generally cubic euhedra up to about 1 mm in diameter. Arsenopyrite was not detected. Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.75 mm in diameter but commonly in aggregates up to 2 mm thick, elongated in the plane of banding and intergrown with galena as irregular masses up to 2 mm long by 1 mm thick. Sphalerite shows medium red-brown colour suggestive of moderate Fe content, and is generally devoid of fine chalcopyrite inclusions. Chalcopyrite occurs as irregular-shaped masses generally <1 mm across intergrown with sphalerite and wrapped around pyrite. Sulfosalt included within galena is difficult to identify. It forms stubby to elongate sub/euhedral crystals <0.5 mm long and shows reflectance very similar to that of galena, in fact it is only really distinguishable by its distinct (but not strong) anisotropism from dark grey to medium grey under crossed polars. In plane light, it is slightly darker than and shows slightly olive-greenish tints compared to adjacent galena. It could be any one of a wide variety of Pb-Sb, Bi or Ag-bearing sulfosalts, only determinable by SEM (scanning electron microscope) or possibly microprobe studies. Very rare pyrrhotite detected within chalcopyrite forms rounded subhedra <0.1 mm in size.

K15-282 311.32-311.45m: MASSIVE, VAGUELY BANDED FINE-GRAINED PYRITE-SPHALERITE-MINOR MAGNETITE-TRACE GALENACARBONATE-VERY MINOR QUARTZ GANGUE, CUT BY A CENTRAL BAND/VEIN OF COARSER CARBONATE-CHALCOPYRITE, SPHALERITE, GALENA-MINOR PYRITE-MAGNETITE-PYRRHOTITE-TRACE SULFOSALT

Hand sample not supplied; etched offcut shows fine-grained, grey, crudely banded/ laminated massive sulfide composed mainly of pyrite and lesser sphalerite, with mainly carbonate gangue. There is a central ~1cm band of coarser, carbonate-chalcopyrite rich rock. The rock is strongly magnetic, shows widespread but slow reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (35%)

Carbonate (mainly dolomite?)	97%
Quartz	3%
Sericite	<1%

Ore (65%)

Pyrite	70%
Sphalerite	15%
Magnetite	5%
Chalcopyrite	5%
Galena	3%
Pyrrhotite	1%
Sulfosalt (tetrahedrite-tennantite?)	<1%

Gangue minerals are almost entirely carbonate, forming sub- to anhedral crystals mainly in the 0.5 to <0.1 mm size range where intermixed with the massive sulfides, or up to almost 1 mm within the central band or vein-like area. The carbonate species is difficult to be sure of but in areas of the side of the offcut where the HF attack is not as effective, reaction is still slow; suggesting it may be mostly dolomite (?). Very minor quartz forms subhedra or irregular anhedra mostly <0.5 mm across; most crystals are apparently relatively unstrained. Quartz is almost completely absent from the central band or vein, except near its margins. In places the massive sulfides are cut by narrow veinlets <0.1 mm thick in which shattered pyrite is accompanied by what appears to be minor sericite (?) as randomly oriented subhedral flakes<30 μm in diameter, although it is difficult to distinguish from very fine-grained carbonate of similar size it is intimately mixed with.

In the fine-grained massive sulfides, ore minerals are crudely arranged in poorly defined bands or laminations mostly <1 mm thick but aggregating to about 0.5 cm thick, highlighted by compositional variation (pyrite-minor magnetite rich, or sphalerite-carbonate rich). Pyrite forms generally cubic euhedra mainly in the 0.1-0.5 mm range (arsenopyrite not detected). Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.65 mm long but locally in aggregates to 2 mm long, elongated in the plane of banding and intergrown with galena as subhedra <0.4 mm. Sphalerite shows dark red-brown colour suggestive of high Fe content. In general, galena is very minor, mainly <0.1 mm and interstitial to the other sulfides and magnetite, which forms sub/euhedra mainly <0.5 mm (local aggregates to ~1 mm, distinguished by minute inclusions of pyrite or galena <50 μm). Chalcopyrite occurs only as rare subhedra <35 μm within carbonate.

In the central band or vein, chalcopyrite is common and coarse-grained (ragged anhedral aggregates to almost 2 mm), containing or intergrown in places with minor pyrrhotite as subhedra <0.6 mm. Sphalerite occurs as irregular subhedra to ~1 mm, galena as irregular subhedra to 1.5 mm; local pyrite forms sub/euhedra <0.4 mm, in places included within galena or chalcopyrite. Magnetite is uncommon, forming subhedra mainly <0.2 mm. Galena rarely contains symplectic intergrowths of trace grey, apparently isotropic sulfosalt (tetrahedrite-tennantite?) <50 μm, that might be Ag-bearing.

In summary, this is massive, vaguely banded fine-grained pyrite-sphalerite-minor magnetite-trace galena with carbonate-very minor quartz gangue, cut by a central band/vein of coarser carbonate

containing significant chalcopyrite, sphalerite, galena but only minor pyrite and magnetite, local pyrrhotite; trace sulfosalt (tetrahedrite?) is rarely included in galena.

K15-315 102.69-102.79m: MASSIVE, ONLY FAINTLY BANDED, PYRITE-SPHALERITE-MINOR GALENA INTERGROWN WITH MIXED GANGUES OF CARBONATE (CALCITE?)-CHLORITE OR GREEN BIOTITE (RARELY CONTAINING EUHEDRAL MARCASITE)-LESSER QUARTZ

Hand sample not supplied; etched offcut shows fine-grained, grey, only faintly banded massive sulfide composed mainly of pyrite and lesser sphalerite, with relatively minor gangue. The rock is not magnetic, shows local, rapid reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (25%)

Carbonate (mainly calcite?)	55%
Chlorite/green biotite	30%
Quartz	15%

Ore (75%)

Pyrite	65%
Sphalerite	30%
Galena	~5%
Marcasite	<1%

Gangue minerals include carbonate, lesser chlorite or green biotite, and quartz. Carbonate forms sub- to irregular anhedral crystals optically continuous for up to ~1 mm, with a slight tendency to elongation (length:width up to 1.5:10 in the plane of banding, sub-parallel to common alignment of mica flakes. The carbonate is likely mainly calcite to judge by the strong reaction to cold dilute HCl in the offcut. The mica, which forms mainly euhedral flakes up to about 1 mm in diameter, shows pale green pleochroism typical of a chlorite but has length-slow, moderate birefringence suggestive of green biotite (typically, green biotite is ferriferous, or Fe-rich, but the pleochroism in this case is relatively weak, leaving the identity of this mineral phase uncertain). In places the pale green mica is associated with patches of pale yellowish-green, much finer-grained (10-20 μm) mica in patches to ~1 mm across that are partly rimmed by carbonate and may contain quartz. Quartz is less common than the other gangues minerals, typically forming subhedra to irregular/locally skeletal anhedra mostly <0.5, rarely to ~1 mm in diameter that show only mild strain (weak undulose extinction).

Ore minerals are mainly pyrite in a matrix of sphalerite and minor galena, with rare marcasite included in chlorite/green biotite. Vague banding is caused by irregular variation from pyrite-sphalerite-minor galena rich to gangue-rich zones mostly <2 mm thick, sub-parallel to crude alignment of chlorite/green biotite flakes.

Pyrite forms almost universally euhedral cubic crystals in the 0.5-1.0 mm size range, or locally in poorly-defined bands <1 mm thick of cubic crystals in the 0.1-0.4 mm range. Inclusions of sphalerite or galena are uncommon, mainly <50 μm in diameter. Sphalerite typically forms a matrix to the pyrite, where it occurs as somewhat rounded, sub- to locally euhedral crystals mostly <1 mm in diameter with medium orange-brown colour suggestive of moderate Fe content. Galena is typically interstitial to both sphalerite and galena, forming irregular an- to subhedra <0.5 mm but in places wispy aggregating to ~1 mm across. Sulfosalt was not detected in the galena, and chalcopyrite was not seen in the section. Rarely, bladed euhedral marcasite up to 0.6 mm long occurs included within (and parallel to the foliation in) chlorite/green biotite.

In summary, this is massive, only faintly banded, pyrite-sphalerite-minor galena intergrown with mixed gangues of carbonate (calcite?)-chlorite or green biotite (rarely containing euhedral marcasite)-quartz.

K15-314 27.5-27.63m: BANDED/LAMINATED, WEAKLY FOLIATED, FINE-GRAINED SEMI-MASSIVE PYRITE-MINOR SPHALERITE-ARSENOPYRITE-GALENA-TRACE CHALCOPYRITE-RARE SULFOSALT (TENNANTITE?) IN SERICITE-VERY MINOR QUARTZ GANGUE

Hand sample not supplied; etched offcut shows fine-grained, grey, finely banded/laminated semi-massive sulfide composed mainly of pyrite and sphalerite, with carbonate gangue. The rock shows trace magnetism, widespread but slow reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (45%)	
Sericite/muscovite	99%
Quartz	1%
Ore (55%)	
Pyrite	80%
Sphalerite	10%
Arsenopyrite	~5%
Galena	3-5%
Chalcopyrite	<1%
Sulfosalt (tennantite-tetrahedrite?)	trace

This sample consists of alternating bands or laminae rich in pyrite-minor sphalerite-interstitial galena-arsenopyrite-trace chalcopyrite, or rich in sericite (very minor quartz) gangue. The bands or laminae are lensy and discontinuous but range from about 1 mm up to 5 mm, especially for the sulfide-rich ones.

Sericite or muscovite-rich laminae consist of matted, mainly euhedral flakes in the <0.1-0.5 mm size range, typically either randomly oriented (within the center of the laminae) or more or less aligned sub-parallel to the compositional lamination, particularly at the margins, imparting a weak foliation to the rock. Quartz is widely scattered, forming subhedra mainly <0.5 but rarely to 0.75 mm, mostly mixed with sulfides at the margins of or around the sericite-rich laminae. The quartz locally shows moderate undulose extinction, but no sub-grain development or suturing of grain boundaries, indicating weak strain.

Pyrite forms sub- to euhedral cubic or rectangular crystals mostly in the 0.5-1.0 mm size range, somewhat flattened with a slight tendency to elongation (length:width up to 2:1) in the poorly defined plane of foliation. In some laminae, arsenopyrite is found as clusters <0.5 mm across of bladed/radiating euhedral rhomb-shaped crystals mainly <0.1 mm long, with random orientations, typically contained within the pyrite. Sphalerite is much subordinate to and typically interstitial to pyrite, forming subhedra rarely more than 0.4 mm in diameter with deep red-brown colour suggestive of high Fe content, generally closely associated with minor galena that occurs interstitial to pyrite and sphalerite as sub/anhedra mostly < Chalcopyrite is relatively uncommon, generally found only in certain laminations, forming subhedra <0.2 mm (local aggregates to ~0.5 mm) interstitial to pyrite, rarely intergrown or associated with traces of grey, apparently isotropic possible sulfosalt (tennantite-tetrahedrite?) as subhedra <50 μm. The chalcopyrite typically occurs intergrown with sphalerite or galena, and associated with arsenopyrite-rich zones.

In summary, this is banded/laminated, weakly foliated, fine-grained semi-massive pyrite-minor sphalerite-arsenopyrite-galena-trace chalcopyrite-rare sulfosalt (tennantite?) in sericite-very minor quartz gangue.

K15-314 70.92-71m: CRUDELY BANDED, PYRITE-LESSER SPHALERITE- MINOR GALENA IN CARBONATE GANGUE, WITH LOCAL COARSER-GRAINED BANDS OF CARBONATE-SIGNIFICANT CHALCOPYRITE-SPHALERITE BUT ONLY MINOR PYRITE, RARE GALENA, TETRAHEDRITE?, PYRRHOTITE, CUT BY LATE VEINS OF CALCITE

Hand sample not supplied; etched offcut shows fine-grained, dark grey, crudely banded massive sulfide composed mainly of pyrite and sphalerite, with carbonate gangue (especially notable in banding-parallel coarser-grained zones), and cut by white carbonate veins sub-perpendicular to banding. The rock is not magnetic, shows widespread but slow reaction to cold dilute HCl (except rapid in carbonate veins), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (40%)

Carbonate (calcite veins, wallrock mainly dolomite?)	100%

Ore (60%)

Pyrite	75%
Sphalerite	20%
Galena	3%
Chalcopyrite	1-2%
Sulfosalt (argentian tetrahedrite?)	trace
Pyrrhotite	trace

Gangue appears to be entirely carbonate, forming sub- to rarely euhedral crystals mainly in the 0.5 mm (locally <0.1, or less commonly up to almost 1 mm) range. The carbonate species intergrown with sulfides in wallrock or in the coarser-grained carbonate-rich bands is difficult to be sure of due to the HF attack making the offcut less reactive; it may be calcite and/or dolomite (?). However, carbonate in the veins is calcite, forming much coarser (up to 3 mm long) subhedra somewhat aligned subparallel to the vein wals.

Ore minerals are very crudely arranged in bands or laminations ranging from <1 to almost 2 cm thick, defined by compositional variation (pyrite-rich, pyrite-sphalerite-minor galena rich, or coarse carbonate-chalcopyrite-sphalerite). Pyrite is commonly included within a matrix of sphalerite and minor galena or less commonly within chalcopyrite; inclusions of sphalerite or galena, but not chalcopyrite, are small and not common within pyrite.

Pyrite forms generally cubic euhedra up to about 1 mm in diameter, but in massive finer-grained bands, crystals are generally subhedral and in the 0.1-0.5 mm size range. Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.75 mm in diameter but commonly it forms a matrix to pyrite as aggregates up to almost 1 cm thick (somewhat elongated in the plane of banding) and variably intergrown with galena as irregular masses up to 1 mm long. Sphalerite shows medium red/orange-brown colour suggestive of moderate Fe content, and lacks fine chalcopyrite inclusions.

Chalcopyrite is virtually absent from the vaguely banded sulfides, but occurs commonly in the coarser-grained, carbonate rich band/vein sub-parallel to banding as irregular-shaped masses generally <1 mm across intergrown with sphalerite and wrapped around or including pyrite; only very minor galena occurs in this band. Only trace rare sulfosalt (greenish-grey, apparently isotropic, possibly argentian tetrahedrite?) occurs as minute subhedra mainly <15 μm included within sphalerite, although associated with galena that contains traces of chalcopyrite. Very rare pyrrhotite detected within chalcopyrite forms rounded subhedra <25 μm in size.

In summary, this is crudely banded, pyrite-lesser sphalerite- minor galena in carbonate gangue, with local coarser-grained bands of carbonate-significant chalcopyrite-sphalerite but only minor pyrite, rare galena, possible tetrahedrite, pyrrhotite, cut by late veins of calcite.

K15-297 293.1-293.22m: SEMI-MASSIVE PYRITE-SPHALERITE-MINOR GALENA-MAGNETITE-TRACE CHALCOPYRITE (RARE SULFOSALTS, TETRAHEDRITE AND UNIDENTIFIED?) IN GANGUE OF CARBONATE-LOCAL QUARTZ-MINOR CHLORITE

Hand sample not supplied; etched offcut shows fine-grained, grey, crudely banded/laminated semi-massive sulfide composed mainly of pyrite and sphalerite in abundant carbonate gangue. The rock is distinctly magnetic, shows widespread but slow reaction to cold dilute HCl (except veins), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (60%)

Carbonate (mainly calcite/dolomite?)	85%
Quartz (mainly in central band/vein)	13%
Chlorite	2%

Ore (40%)

Pyrite	75%
Sphalerite	20%
Galena	2%
Magnetite	2%
Chalcopyrite	<1%
Sulfosalt1 (Pb-Sb, Bi or Ag?)	<1%
Sulfosalt2 (tetrahedrite?)	<1%

Gangue minerals are dominated by carbonate, forming sub- to rarely euhedral crystals mainly in the 0.5 mm (locally <0.1, or less commonly up to almost 1 mm) range. The carbonate species is difficult to be sure of due to the HF attack damaging the surface and making it less reactive; it may include calcite and dolomite (?). Minor quartz forms subhedral, mostly <0.5 mm crystals except in a central band/vein with irregular anhedra up to 1 mm, in aggregates to ~3 mm long. Most crystals are apparently relatively unstrained; even the larger ones show only mild undulose extinction with no sub-grain development or suturing of grain boundaries, but are locally cut by hairline fractures of chlorite (minute flakes <15 μm). Scattered coarse euhedral flakes of chlorite are randomly oriented, up to about 1 mm, with pale green pleochroism and length-slow, low to moderate birefringence suggestive of F:M slightly more than 0.5 (or it may replace relict biotite) There are also patches of the very fine-grained chlorite (minute flakes <15 μm) with pale yellow-brownish/greenish pleochroism and length-slow, but low, birefringence; similar material replaces magnetite along fractures.

Ore minerals are crudely arranged in bands or laminations mostly <2 mm thick but loosely aggregating to about 0.5 cm thick, highlighted by compositional variation (pyrite-rich, sphalerite-galena rich, or rarely carbonate-rich, minor chalcopyrite-sulfosalts bearing). Magnetite is widely scattered as subhedra <0.5 mm, mainly in sulfide-rich bands. Much pyrite occurs within what is almost a matrix of sphalerite and minor galena, and locally, fine sphalerite or galena is included in pyrite.

Pyrite forms generally cubic euhedra up to about 1 mm in diameter, locally aggregating to 2 mm. Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.75 mm in diameter but commonly in aggregates up to several mm thick, elongated in the plane of banding and intergrown with galena as irregular masses mostly <0.5 mm. Sphalerite shows medium red-brown colour suggestive of moderate Fe content, and only rarely contains chalcopyrite <50 μm. Most chalcopyrite occurs as subhedra <0.3 mm intergrown with sphalerite in the carbonate-rich band/vein. Sulfosalt forming stubby to elongate sub/euhedral crystals <0.5 mm long shows reflectance somewhat less than that of galena, with weak but distinct anisotropism from dark grey to medium grey under crossed polars. In plane light, it shows slightly olive-greenish tints compared to galena, and could be any one of a wide variety of Pb-Sb, Bi or Ag-bearing sulfosalts, only determinable by SEM or microprobe studies. A different sulfosalt (grey, apparently isotropic) forming subhedra <0.1 mm characteristically intergrown with chalcopyrite is likely tetrahedrite (?).

In summary, this is semi-massive pyrite-sphalerite-minor galena-magnetite-trace chalcopyrite (rare sulfosalts, tetrahedrite and unidentified?) in gangue of carbonate-local quartz-minor chlorite. Chalcopyrite and sulfosalts are mostly in a coarser, carbonate-quartz rich band.

K15-297 296.66-296.8m: MASSIVE PYRITE-SPHALERITE-MINOR CHALCOPYRITE-GALENA-ARSENOPYRITE-TRACE PYRRHOTITE-MAGNETITE (RARE SULFOSALT, TETRAHEDRITE?) IN GANGUE OF CARBONATE-QUARTZ-MINOR CHLORITE-SERICITE

Hand sample not supplied; etched offcut shows fine-grained, grey, crudely banded/laminated massive sulfide composed mainly of pyrite and sphalerite in abundant carbonate gangue. The rock is locally magnetic, shows widespread slow reaction to cold dilute HCl (where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (40%)

Carbonate (mainly dolomite?)	50%
Quartz (most abundant in remobilized band/veins)	47%
Chlorite	2%
Sericite/muscovite	1%

Ore (60%)

Pyrite	70%
Sphalerite	15%
Chalcopyrite	~5%
Galena	~5%
Arsenopyrite	3-5%
Pyrrhotite (locally partly altered to marcasite)	~1%
Magnetite (relict, partly altered to sphene?)	<1%
Sulfosalt (tetrahedrite?)	<1%

Gangue minerals are roughly equal proportions of carbonate (subhedral to ragged anhedral crystals mainly in the 0.5 to almost 1 mm range, likely mainly dolomite?) and quartz (subhedra to anhedra to 1.2 mm, aggregates to 2 mm). Most quartz crystals show only mild strain (indicated by only mild undulose extinction with no sub-grain development or suturing of grain boundaries) but locally show triple junctions indicative of annealing post-deformation. Scattered euhedral flakes of chlorite are randomly oriented, up to about 1 mm, with pale brownish green pleochroism and length-slow, low to moderate birefringence suggestive of F:M slightly more than 0.5 (may replace relict biotite?). There are also scattered flakes of sericite/muscovite (euhedral, <0.5 mm).

Ore minerals are crudely arranged in bands or laminations mostly <2 mm thick but loosely aggregating to about 0.7 cm thick, highlighted by compositional variation (pyrite-rich, commonly with a chalcopyrite matrix, or sphalerite-galena rich, alternating with gangue-rich bands). The latter have the appearance of remobilized sulfides/gangue, with coarser chalcopyrite (associated with pyrrhotite), sphalerite, and very minor sulfosalt intergrown with galena, plus local arsenopyrite. Magnetite (relict, apparently partly replaced by sphene?) is rare as subhedra <0.5 mm. Much pyrite occurs within a semi-matrix of sphalerite and minor galena or of chalcopyrite; locally, fine sphalerite or galena is included in pyrite. Pyrite forms generally cubic euhedra up to about 1 mm, but there are bands in which they average <0.1 mm (in a matrix of galena, sphalerite or chalcopyrite; these could represent relict primary sea-floor sulfides?). Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.75 mm but commonly in aggregates up to several mm long, elongated in the plane of banding and intergrown with galena as irregular masses mostly <0.5 mm. Sphalerite shows medium red-brown colour suggestive of moderate Fe content, and only rarely contains chalcopyrite <50 μm. Most chalcopyrite occurs as subhedra <0.3 mm (matrix to pyrite) or as masses to 0.75 mm containing pyrrhotite to 0.35 mm, intergrown with sphalerite in the remobilized bands/veins. Arsenopyrite occurs as either clusters of minute (<0.1 mm) euhedra or subhedra to 0.4 mm replacing margins of adjacent pyrite, apparently also associated with the margins of the remobilized band/vein. Sulfosalt forming sub/euhedra <0.15 mm is grey, apparently isotropic (likely tetrahedrite?) and intergrown with galena and sphalerite, also possibly associated with the remobilized band/veins.

In summary, this is massive pyrite-sphalerite-minor chalcopyrite-galena-arsenopyrite-trace pyrrhotite-magnetite (rare sulfosalt, tetrahedrite?) in gangue of carbonate-quartz-minor chlorite-sericite. Arsenopyrite and sulfosalt may be mostly in remobilized carbonate-quartz rich bands.

K15-304 166.21-166.33: MASSIVE PYRITE-SPHALERITE-MINOR ARSENOPYRITE-GALENA-CHALCOPYRITE TRACE SULFOSALTS (UNIDENTIFIED, AND TENNANTITE?) IN GANGUE OF CARBONATE-BARITE?-MINOR QUARTZ. ARSENOPYRITE MAY REPLACE PYRITE, AND SULFOSALT MAY BE MOSTLY IN REMOBILIZED, COARSE CHALCOPYRITE-SPHALERITE-GALENA-CARBONATE-BARITE? RICH BANDS

Hand sample not supplied; etched offcut shows fine-grained, grey, crudely banded/laminated pyrite-sphalerite rich massive sulfide with lensy or augen-like carbonate gangue. The rock is locally very slightly magnetic, shows widespread slow reaction to cold dilute HCl (only where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (35%)

Carbonate (mainly dolomite?)	60%
Sulfate (likely barite?)	37%
Quartz (mainly in central band/vein)	3%

Ore (65%)

Pyrite	65%
Sphalerite	15%
Arsenopyrite	10%
Galena	~5%
Chalcopyrite	~3%
Sulfosalt 1 (Pb-As, Bi or Ag?)	<1%
Sulfosalt 2 (tennantite-tetrahedrite?)	<1%

This section is over-thinned, making identifications of gangues difficult, but they seem to be sub-equal proportions of carbonate (subhedral to ragged anhedral crystals mainly in the 0.5 to almost 1 mm range, likely mainly dolomite?) and probable sulfate, most likely barite to judge by the relief only slightly negative compared to carbonate, although cleavage is not well developed/interference figures are difficult to obtain (similar sized, rounded sub/anhedral crystals), plus very minor quartz (subhedra mostly <0.5 mm). Most quartz crystals show only mild undulose extinction. The gangue minerals are typically concentrated in lensy bands or augen<2 mm thick by up to 2 cm long.

Ore minerals are crudely arranged in bands or laminations mostly <2 mm thick but loosely aggregating to about 1cm thick, highlighted by compositional variation (pyrite ±arsenopyrite-rich, commonly with a sphalerite ±galena rich matrix, alternating with gangue-rich bands). The latter have the appearance of remobilized sulfides/gangue, with coarser chalcopyrite, sphalerite, galena and minor sulfosalts. Most pyrite occurs within a semi-matrix of sphalerite and minor galena but not chalcopyrite, suggesting this sample comes from an upper level of volcanogenic massive sulfide (Pb-Zn zone), supported by the presence of possible barite. Pyrite forms generally cubic euhedra in the 0.1-0.5 mm range, commonly mixed with (partly replaced by?) arsenopyrite as euhedra that average <0.1 mm (locally in a matrix of sphalerite or galena, but only rare chalcopyrite). Sphalerite forms sub- to rarely euhedral, somewhat rounded crystals mostly <0.5 mm intergrown with galena as irregular masses mostly <0.5 mm. Sphalerite shows pale orange-brown colour suggestive of low Fe content, and only rarely contains chalcopyrite <50 μm. Chalcopyrite (subhedra <0.3 mm) is relatively rare in the banded sulfides; most chalcopyrite occurs as masses to 3.5 mm long, intergrown with sphalerite and galena in what appear to be remobilized bands/veins that also appear to contain most of the sulfosalts. Sulfosalts include one with nearly the same colour/reflectance as galena but weak anisotropism under crossed polars (possibly Pb-Sb like bournonite, or Pb-As?) forming sub/euhedra similar in size to galena, and a second one (grey, apparently isotropic, likely tetrahedrite?) forming symplectic intergrowths with galena, mostly <0.25 mm long.

In summary, this is massive pyrite-sphalerite-minor arsenopyrite-galena-chalcopyrite trace sulfosalts (unidentified, and tennantite?) in gangue of carbonate-barite?-minor quartz. Arsenopyrite may replace pyrite, and sulfosalt may be mostly in remobilized coarse chalcopyrite-sphalerite-galena-carbonate-barite rich bands.

K15-224 196-199: WEAKLY FOLIATED MASSIVE SULFIDE (PYRITE SUBHEDRA IN MATRIX OF PYRRHOTITE-SPHALERITE-MINOR GALENA-TRACE CHALCOPYRITE ±SULFOSALT, LIKELY TETRAHEDRITE?) INTERCALATED WITH GANGUE-RICH BANDS OF SERICITE (MUSCOVITE)-QUARTZ-BIOTITE ±CHLORITE, EPIDOTE, SPHENE AND TOURMALINE; TRACE CARBONATE OCCURS ONLY IN LATE THIN VEINLETS

Hand sample not supplied; etched offcut shows fine-grained, dark grey/black, crudely banded massive sulfide and gangue each up to several cm thick. The rock is strongly magnetic, shows no reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (35%)

Muscovite, sericite	60%
Quartz	15%
Biotite	15%
Epidote	5%
Chlorite (after biotite?)	3%
Sphene (accessory, in "augen" with quartz)	<1%
Tourmaline (schorl)	<1%
Carbonate (late veinlets only)	<1%

Ore (65%)

Pyrite	35%
Pyrrhotite	30%
Sphalerite	30%
Galena	3-5%
Chalcopyrite	<1%
Sulfosalt 2 (tetrahedrite?)	<1%

This sample is significantly different from the preceding 8 samples, consisting of massive sulfide (pyrite in matrix of pyrrhotite-sphalerite-galena-minor chalcopyrite-trace sulfosalt) alternating with gangue-rich bands.

Gangue-rich bands up to 1.5 cm thick consist mainly of muscovite or sericite (mostly euhedral flakes up to almost 1 mm in diameter, more or less aligned to impart a foliation to the rock) and lesser, variable quartz (rounded sub/anhedra mainly <0.5 mm commonly in "augen" up to 2.5 mm in size that also contain sphene as blastic-looking euhedra up to almost 2 mm), commonly mixed with biotite (sub/euhedral flakes to 0.75 mm with pale brown pleochroism, locally apparently partly replaced by chlorite as subhedral flakes <0.1 mm with brownish-green colour). The quartz shows only mild undulose extinction (local triple junctions); sphene shows pale reddish-brown pleochroism. Epidote forms mostly euhedral, lath-like crystals up to 1 mm long with faint yellow pleochroism (low Fe content). Rarely, dark green pleochroic tourmaline (stubby euhedral prisms to 0.2 mm, likely schorl with F:M ~0.7-0.8?) occurs. Carbonate is confined to rare thin late veinlets <0.1 mm thick.

Massive sulfide bands up to 2.5 cm thick consist of sub- to locally euhedral pyrite (cubic crystals up to 15 mm) generally contained in a matrix composed of variable proportions of subhedral pyrrhotite (ragged, irregular crystals mostly <0.7 mm, weakly elongated in the plane of foliation and banding), sphalerite (mostly <1 mm, locally semi-continuous for up to several mm along foliation, with dark red-brown colour indicative of high Fe content), lesser galena (wispy, irregular, interstitial, mostly <0.5 mm) plus only rare chalcopyrite (ragged, irregular subhedra <0.2 mm) that is rarely associated with traces of pale grey, apparently isotropic sulfosalt (tetrahedrite, could be Ag-rich?) <0.1 mm in size. Similar sulfosalt also occurs rarely as inclusions <50 μm in galena, typically where associated/intergrown with the minor chalcopyrite.

In summary, this is weakly foliated massive sulfide (pyrite subhedra in matrix of pyrrhotite-sphalerite-minor galena-trace chalcopyrite ±sulfosalt, likely tetrahedrite?) intercalated with gangue-rich bands of sericite (muscovite)-quartz-biotite ±chlorite, epidote, sphene and schorlitic tourmaline; trace carbonate occurs only in late thin veinlets.

K15-315 134.6-134.71: MASSIVE, CRUDELY BANDED, FINE-GRAINED PYRITE-SPHALERITE-MINOR MAGNETITE-PYRRHOTITE-GALENA-ARSENOPYRITE-CHALCOPYRITE WITH CARBONATE-SERICITE (LOCAL BLASTIC, PARTLY CHLORITIZED CORDIERITE?) GANGUE. PYRRHOTITE (PARTLY REPLACED BY MARCASITE) IS CLOSELY ASSOCIATED WITH CHALCOPYRITE; ARSENOPYRITE APPEARS TO LARGELY REPLACE PYRITE

Hand sample not supplied; etched offcut shows fine-grained, dark grey, crudely banded/ laminated massive sulfide composed mainly of pyrite and lesser sphalerite and magnetite, with only minor gangue. The rock is strongly magnetic, but shows no reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (25%)

Carbonate (dolomite or ankerite?)	60%
Sericite	35%
Cordierite (?) (one large porphyroblast, altered to chlorite)	5%

Ore (75%)

Pyrite	60%
Sphalerite	20%
Magnetite	7%
Pyrrhotite (partly altered to marcasite)	5%
Galena	3%
Arsenopyrite	3%
Chalcopyrite	2%

Gangue minerals consist of carbonate, forming sub- to anhedral crystals mainly in the 0.1 to 0.5 mm size range where intergrown with the massive sulfides, and sericite (muscovite) as sub- to euhedral flakes up to ~1 mm in diameter, typically somewhat aligned with the banding to impart a weak foliation. The carbonate species is difficult to be sure of due to the HF attack; lack of reaction suggests it may be dolomite or ankerite (?). Quartz is not identified, but widely scattered, large blastic crystals of possible cordierite (?) with subhedral outlines up to 3.5 mm are altered at margins and along fractures to chlorite (matted subhedral flakes mainly <0.1 mm) and carbonate.

In the fine-grained massive sulfides, ore minerals are crudely arranged in poorly defined bands or laminations mostly <1 mm thick but aggregating to about 4 mm thick, highlighted by slight compositional variation (pyrite-lesser magnetite rich, or sphalerite-pyrrhotite/marcasite-minor galena, chalcopyrite rich; arsenopyrite distribution is variable). Pyrite forms generally cubic euhedra mainly in the 0.1-0.5 mm range, locally intergrown with fine-grained arsenopyrite (euhedra <0.1 mm) or replaced by euhedra up to 0.4 mm. Sphalerite (dark red-brown colour suggestive of high Fe content) forms somewhat rounded sub- to rarely euhedral crystals mostly <0.5 mm but locally in aggregates to 1 mm long in the plane of banding, and intergrown with galena as skeletal subhedra <0.6 mm. Magnetite forms rounded sub/euhedral, typically strongly fractured crystals up to almost 1mm in diameter, immersed in the matrix of sphalerite-gangues. Pyrrhotite forms sub- to anhedral crystals mostly <0.4 mm, commonly partly replaced by very fine-grained (<25 μm) marcasite that locally pseudomorphs it. In general, chalcopyrite is minor, mainly <0.1 mm and interstitial to the other sulfides and closely associated with chalcopyrite that occurs as ragged, irregular subhedra mostly < 0.5 mm with local inclusions of pyrrhotite or galena. Sulfosalt(s) were searched for but not found in this sample.

In summary, this is massive, crudely banded, fine-grained pyrite-sphalerite-minor magnetite-pyrrhotite-galena-arsenopyrite-chalcopyrite with carbonate-sericite (local blastic, partly chloritized cordierite?) gangue. Pyrrhotite (partly replaced by marcasite) is closely associated with chalcopyrite; arsenopyrite appears to largely replace pyrite.

K15-315 135.21-135.3: MASSIVE PYRITE-SPHALERITE-GALENA-ARSENOPYRITE-MINOR CHALCOPYRITE-TRACE SULFOSALT (TENNANTITE?) INTER-BANDED WITH GANGUES OF CARBONATE-LESSER BARITE?

Hand sample not supplied; etched offcut shows fine-grained, dark grey, crudely banded/ laminated massive sulfide composed mainly of pyrite and lesser sphalerite, with only minor gangue. The rock is locally slightly magnetic, but shows no reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (35%)

Carbonate (dolomite or ankerite?)	65%
Sulfate (likely barite?)	35%

Ore (65%)

Pyrite	55%
Sphalerite	25%
Galena	10%
Arsenopyrite	7-8%
Chalcopyrite	1-2%
Sulfosalt 2 (tennantite-tetrahedrite?)	<1%

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite-lesser sphalerite-significant galena-arsenopyrite-very minor chalcopyrite-trace sulfosalt, alternating with poorly defined, discontinuous bands of gangues (mainly carbonate, lesser barite?).

Gangue minerals are locally concentrated into bands up to about 0.5 cm thick, parallel to the poorly defined banding in the sulfides. Carbonate forming the bulk of the gangues occurs as tightly interlocking, sub- to anhedral crystals mostly <0.5 mm, but in places mostly <0.1 mm where intergrown with fine sulfides of similar size. The complete lack of reaction to cold dilute HCl, even where powdered, suggests it may be ankerite (?). It is intergrown with lesser amounts of what is tentatively identified as barite, forming mostly rounded sub- to anhedral crystals <0.75 mm in size, locally in aggregates to about 2 mm across. The barite (?) is identified on the basis of relief close to that of carbonate, small positive 2V, and poorly developed cleavage at right angles.

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <2 mm thick, but coalescing in places to almost 2 cm. They vary from pyrite (±arsenopyrite) rich to sphalerite (±galena) rich, the latter more commonly associated with gangues of barite (?) and carbonate. Pyrite typically occurs as euhedral cubic crystals ranging from 0.1 to 1.0 mm, but is locally partly to strongly replaced at the margins, or set in a matrix of, fine- to very fine-grained arsenopyrite forming mainly euhedral crystals <0.1 mm (commonly <50 μm; only rarely to 0.25 mm). The distribution of the arsenopyrite replacements, however, is commonly sub-parallel to the banding. Sphalerite forms sub- to locally euhedral crystals mostly in the 0.5-1.0 mm range, with medium orange-brown colour suggestive of moderate Fe content, and commonly intergrown with or containing inclusions of galena (only rare chalcopyrite). Galena occurs as 1) very fine-grained inclusions in or matrix to pyrite, locally accompanied by arsenopyrite, 2) subhedral, interstitial crystals rarely over 0.6 mm across, or 3) coarser-grained aggregates up to 5 mm long; again, the concentrations tend to follow the banding, and to follow the concentrations of sphalerite. Chalcopyrite is relatively uncommon, mostly confined to the gangue-rich bands (or relict veins?) where it occurs as irregular masses up to 3 mm long, again distributed along the banding, and mixed with galena or sphalerite as a matrix to pyrite. Occurrences of the grey, apparently isotropic sulfosalt (tennantite-tetrahedrite?) are relatively rare, confined to sub/euhedral crystals rarely over 75 μm typically located at the margins of galena where associated with chalcopyrite.

In summary, this is massive pyrite-sphalerite-galena-arsenopyrite-minor chalcopyrite-trace sulfosalt (tennantite?) inter-banded with gangues of carbonate-lesser barite?, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-307 188.09-188.19: FINE-GRAINED PYRITE-MINOR SPHALERITE-GALENA-TRACE CHALCOPYRITE/COARSER, MORE MASSIVE PYRITE-SPHALERITE-GALENA-TRACE ARSENOPYRITE-MAGNETITE-SULFOSALTS; GANGUES CARBONATE-QUARTZ-BARITE

Etched offcut shows fine-grained, dark grey, crudely banded massive sulfide (pyrite with lesser sphalerite, minor gangue), in contact with more massive, pyrite-sphalerite-galena rich sulfides. The latter is weakly magnetic, but shows no reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (50%)

Carbonate (dolomite/ankerite?)	60%
Quartz	25%
Barite (?)	15%
Chlorite	<1%

Ore (50%)

Pyrite	55%
Sphalerite	35%
Galena	13%
Arsenopyrite (typically as inclusions within galena)	<1%
Magnetite (partly altered to carbonate)	<1%
Chalcopyrite	<1%
Sulfosalt 2 (tennantite-tetrahedrite?)	<1%
Sulfosalt (Pb-Sb, Bi or Ag sulfosalt?)	<1%

Approximately one-half of this slide consists of relatively fine-grained, pyrite-dominated massive sulfides (minor sphalerite, galena as matrix to pyrite; gangues of carbonate, barite and quartz, locally in augen-like concentrations that may contain sphalerite at the core, plus traces of chlorite). The other half, across a short transition, is more massive, with coarser-grained pyrite in a matrix of major sphalerite, lesser galena (locally containing arsenopyrite, or rarely sulfosalts), rare chalcopyrite and relict magnetite, also containing "augen" composed mainly of carbonate (lesser quartz).

In the first type, pyrite forms mostly cubic euhedra in the <0.1-0.25 mm size range (rarely to 0.5 mm, typically where adjacent to linear, <1 mm thick, quartz-barite-carbonate gangue zones sub-parallel to the contact and serving to define the crude banding. Minor sphalerite, forming sub- to anhedral crystals mostly <0.25 mm but aggregating to 0.5 mm, forms a matrix to pyrite, typically containing minor, interstitial galena as wispy anhedra <0.2 mm. Chalcopyrite is very rare, forming wispy interstitial anhedra <0.1 mm. Sulfosalts are not seen. Augen-like gangue concentrations have rounded to oval outlines up to ~4 mm across, composed of interlocking carbonate as sub/anhedra to about 1 mm size (possibly dolomite or even ankerite to judge by the lack of reaction to HCl in the offcut), or in places quartz and barite (?) of similar size (both rounded anhedra <1 mm).

In the second type, pyrite forms coarser, again mostly cubic euhedra up to about 1 mm in diameter, in a matrix of sphalerite (subhedra of similar size, but commonly aggregating to several mm across, with pale orange-brown colour suggestive of relatively low Fe content) and lesser galena (wispy sub/anhedra also mainly <1 mm long, distinctly interstitial to sphalerite and pyrite). Gangues are mostly quartz (rounded sub/anhedra to almost 1 mm) or, in "augen", mainly carbonate (subhedra to 1.25 mm); barite is not seen. In places, especially near the contact, galena occurs as fine-grained masses to 2.5 mm across with myriads of arsenopyrite inclusions as minute euhedra mostly <25 μm long, with random orientations. Magnetite occurs in the matrix of sphalerite as widely scattered, euhedra <0.25 mm, typically strongly fractured and partly replaced by what appears to be very fine-grained (<20 μm) carbonate. Rarely, near carbonate "augen", galena contains inclusions of both sulfosalts (one only slightly darker than galena, weakly anisotropic; the second grey, apparently isotropic, likely tennantite-tetrahedrite?) as subhedra <0.25 and 0.5 mm respectively.

In summary, this is finer-grained pyrite-minor sphalerite-galena-trace chalcopyrite in contact with coarser, more massive pyrite-sphalerite-galena-trace arsenopyrite-magnetite-sulfosalts; gangues vary from carbonate-quartz-minor barite in the first type to quartz-carbonate in the second.

K98-197 133.9-134.08:PYRITE-SPHALEITE-PYRRHOTTIE-GALENA±MAGNETITE-CHALCO-BANDS IN QUARZ-KSPAR-SERICITE-BIOTITE-CHLORITE-EPIDOTE-TOURMALINE ROCK

Etched offcut shows fine-grained, pale grey-white, crudely banded/laminated minor to locally semi-massive sulfides (major gangues intercalated with the sulfides). The rock is distinctly magnetic, shows no reaction to cold dilute HCl, and minor yellow stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (85%)

Quartz	30%
Alkali feldspar (mainly Kspar?)	15%
Muscovite, sericite	15%
Biotite	15%
Chlorite/green biotite (after biotite?)	15%
Epidote	7-8%
Tourmaline (schorl)	1-2%
Fe-carbonate, minor monazite (?)	<1%

Ore (15%)

Pyrite (partly secondary, after pyrrhotite?)	50%
Sphalerite	30%
Pyrrhotite	10%
Galena	7%
Magnetite	2%
Chalcopyrite	~1%

This sample is more of an altered, felsic meta-volcanic (?) schist or gneiss with minor sulfides than massive sulfide; it consists mainly of weakly foliated, vaguely banded/laminated (1-5 mm) quartz-alkali feldspar or micas (muscovite, biotite, chlorite)-epidote-minor tourmaline-accessory monazite rich bands, in places with poorly defined or discontinuous sulfide bands or laminae composed of pyrite-sphalerite-pyrrhotite-galena-minor magnetite-chalcopyrite.

In wallrock, scattered, somewhat flattened relict feldspar and possible quartz crystals (former phenocrysts?), and the mineral composition, suggests a felsic volcanic protolith. The relict feldspar crystals have rounded subhedral outlines mostly <1.25 mm but locally aggregate to ~2 mm, and appear to be mainly Kspar to judge by the negative relief compared t adjacent quartz, and yellow stain in etched offcut. Possible relict quartz "eyes" have lens-like outlines up to 3.5 mm long (elongated in the plane of foliation; could represent metamorphic "sweat" veinlets) composed of interlocking sub/anhedra <1 mm. The groundmass consists of finer-grained, interlocking quartz sub/anhedra mainly <0.2 mm with interstitial lath-like alkali feldspar of similar size, mostly partly altered to minute flakes of sericite. Alternating with these felsic laminae are bands rich in micas and epidote or locally tourmaline, suggestive of more mafic protolith. Muscovite forming mainly euhedral flakes <0.5 mm in size, typically strongly aligned to define the foliation, are mixed with variable biotite (similar sized, less well aligned sub/euhedral flakes showing variable, pale brown, greenish brown, almost black, or distinctly green pleochroism implying a variable F:M ratio from normal to ferriferous) or chlorite (similar sized euhedral flakes, pale green pleochroism but length-slow birefringence suggestive of having replaced biotite). Epidote occurs as fractured, ragged euhedral crystals to 0.7 mm, somewhat aligned in the foliation, with no yellow colour, implying low Fe content (clinozoisite?). Tourmaline forms stubby sub/euhedra up to 1.5 mm long, more or less aligned in the foliation, with dark green colour (F:M ~0.7-0.8?), and there are races of Fe-carbonate <0.3 mm and monazite (?) as euhedra <0.15 mm surrounded by radiation damaged haloes in biotite.

Pyrite-rich laminae consist of either subhedra to 2 mm (aligned in the foliation, with included pyrrhotite) or wispy anhedra <0.2 mm (likely after pyrrhotite, which nearby forms subhedra to 0.4 mm). Both are locally intergrown with sphalerite (dark red-brown, Fe-rich subhedra <1 mm long), galena (wispy anhedra to 1.2 mm long), local magnetite (highly fractured subhedra <0.5 mm) and traces of chalcopyrite (subhedra <0.5 mm). Sulfosalts were searched for but not observed.

K98-193 176.78-176.96: MEDIUM-GRAINED MASSIVE SULFIDE (EUHEDRAL PYRITE ENCLOSED IN MATRIX OF ABUNDANT, FE-RICH SPHALERITE AND SIGNIFICANT GALENA WITH LOCAL CONCENTRATIONS OF PYRRHOTITE BUT ONLY TRACE CHALCOPYRITE-ARSENOPYRITE; GANGUE INCLUSIONS OF CARBONATE-CHLORITE/GREEN BIOTITE, MINOR BARITE?

Etched offcut shows medium-grained, grey, massive sulfide composed mainly of pyrite and sphalerite, with only minor, likely mostly carbonate gangue. The rock is weakly magnetic, shows spotty reaction to cold dilute HCl (even where not scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (15%)

Carbonate (mainly calcite?)	85%
Chlorite/green biotite	12%
Barite (?)	~3%

Ore (85%)

Pyrite	55%
Sphalerite	30%
Galena	12%
Pyrrhotite	~2%
Chalcopyrite	~1%
Arsenopyrite	<1%

This is medium-grained massive sulfide composed mainly of abundant pyrite in a matrix of almost as abundant sphalerite, lesser galena, minor pyrrhotite and trace chalcopyrite-arsenopyrite; poikilitically included gangues are mostly carbonate and lesser chlorite/green biotite, rare possible barite (?). Banding is essentially absent, although there is some tendency to galena-rich and pyrrhotite-rich zones, sub-parallel to each other.

Pyrite forms euhedral cubic crystals up to about 1.5 mm in diameter, locally aggregating to 2.5 mm. They contain minor inclusions of rounded subhedral sphalerite <0.15 mm, or rarely bleb-like galena <0.1 mm. Sphalerite forming the bulk of the matrix occurs as interlocking, sub- to euhedral crystals to 1.5 mm diameter, with deep red colour indicative of high Fe content. Galena making up most of the rest of the matrix occurs as irregular, interstitial sub/anhedral crystals up to almost 2 mm across. Pyrrhotite shows a much more limited distribution, occurring only in certain zones in aggregates up to 1.5 mm long composed of interlocking subhedra mainly <0.75 mm. Some pyrrhotite may locally replace the margins of pyrite crystals. Chalcopyrite is very minor, occurring as elongated, subhedral crystals <0.5 mm interstitial to the other sulfides, intergrown with galena and associated with pyrrhotite; arsenopyrite occurs rarely apparently replacing the cores of pyrite crystals. Sulfosalts were searched for but not found in the section.

Gangue inclusions in the massive sulfides are mostly irregular in outline, up to about 3 mm across, and consist mainly of carbonate (interlocking sub- to anhedral crystals mostly <1 mm in diameter, possibly mostly calcite to judge by the reaction in offcut) and lesser chlorite or green biotite (pale green or locally yellowish-brownish green pleochroism, but generally length-slow, low to moderate birefringence) that may be intimately intergrown with (altered to?) carbonate, where it may be associated with traces of minute galena <25 μm in size. Minor barite (?) is as described for previous samples, forming rounded anhedra mostly lacking cleavage, identified mainly on the lack of strong relief against carbonate, and poorly seen small positive 2V.

In summary, this is medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite and significant galena with local concentrations of pyrrhotite but only trace chalcopyrite-arsenopyrite, with gangue inclusions of carbonate-chlorite/green biotite, minor barite?

K98-188 79.39-79.5: MEDIUM-GRAINED MASSIVE SULFIDE (EUHEDRAL PYRITE IN MATRIX OF ABUNDANT, FE-RICH SPHALERITE, LOCAL PYRRHOTITE, SIGNIFICANT GALENA, LOCAL RELICT MAGNETITE, TRACE CHALCOPYRITE, GANGUE INCLUSIONS OF CARBONATE-QUARTZ-CHLORITE/GREEN BIOTITE, RARE TOURMALINE

Etched offcut shows medium-grained, grey, massive sulfide composed mainly of pyrite and sphalerite, with only minor, likely mostly carbonate gangue. The rock is weakly magnetic, shows spotty reaction to cold dilute HCl (even where not scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (20%)

Carbonate (mainly calcite?)	75%
Quartz	20%
Chlorite/green biotite	1-2%
Sericite/muscovite	1-2%
Tourmaline (schorlitic)	1%

Ore (80%)

Pyrite	50%
Sphalerite	30%
Pyrrhotite	10%
Galena	8-10%
Magnetite (relict, altered to pyrrhotite-chlorite-sericite)	~1%
Arsenopyrite	<1%
Chalcopyrite	trace

This is medium-grained massive sulfide composed mainly of abundant pyrite in a matrix of almost as abundant sphalerite, lesser pyrrhotite and galena, trace magnetite (relict) and very rare chalcopyrite; poikilitic included gangues are mostly carbonate and lesser quartz, minor chlorite/green biotite and sericite, rare tourmaline. Banding is essentially absent, although there is some tendency to pyrrhotite-rich or lesser galena-rich zones up to ~2 mm thick sub-parallel to each other.

Pyrite forms euhedral cubic crystals up to about 1.5 mm in diameter, locally aggregating to 3.5 mm. They contain minor inclusions of rounded subhedral sphalerite to 0.25 mm, or lesser bleb-like galena <0.2 mm. Sphalerite forming the bulk of the matrix occurs as interlocking, sub- to euhedral crystals to 1.5 mm diameter, with deep red colour indicative of high Fe content. Pyrrhotite shows a much more limited distribution, occurring only in certain zones in aggregates up to 1.5 mm long composed of interlocking subhedra up to 1.5 mm. Some pyrrhotite may locally replace the margins of pyrite crystals. Galena making up portions of the rest of the matrix occurs as irregular, interstitial sub/anhedral crystals up to almost 2 mm across. Magnetite occurs as widely scattered sub- to euhedral relicts, partly altered to variable mixtures of fine-grained chlorite, sericite and pyrrhotite. Chalcopyrite is very rare, occurring as elongated, subhedral crystals <0.3 mm interstitial to the other sulfides, intergrown with galena and associated with pyrrhotite; arsenopyrite occurs rarely apparently replacing the cores of pyrite crystals Sulfosalts were searched for but not found in the section.

Gangue inclusions in the massive sulfides are mostly irregular in outline, up to about 2 mm across, and consist mainly of carbonate (interlocking sub- to anhedral crystals mostly <1 mm in diameter, possibly mostly calcite to judge by the reaction in offcut) and lesser quartz as rounded sub/anhedra up to about 1.25 mm in diameter, with relatively little strain (very mild undulose extinction), chlorite or green biotite (pale green or locally yellowish-brownish green pleochroism, but generally length-slow, low to moderate birefringence suggestive of being after biotite) that may be intimately intergrown with (altered to?) carbonate, or sericite/muscovite as euhedral flakes <0.5 mm. Relatively rare tourmaline forms stubby euhedral prisms to 0.7 mm long with dark green colour indicative of F:M around 0.7-0.8 (?).

In summary, this is medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite, pyrrhotite, galena, relict magnetite, trace arsenopyrite, chalcopyrite, gangue inclusions of carbonate-quartz-chlorite/green biotite, rare schorlitic tourmaline.

K15-292 221.18-221.37: FINE-GRAINED, FAINTLY BANDED MASSIVE SULFIDE (EUHEDRAL PYRITE/MINOR MAGNETITE ENCLOSED IN MATRIX OF SPHALERITE, LESSER GALENA, MINOR CHALCOPYRITE AND SULFOSALT, LIKELY TETRAHEDRITE?), LENSY GANGUES ARE CARBONATE-QUARTZ-LOCAL BARITE (?)

Etched offcut shows fine-grained, dark grey, crudely banded massive sulfide (pyrite with lesser sphalerite, galena, minor gangue). The rock is strongly magnetic, shows minor, but rapid reaction to cold dilute HCl (mainly where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (30%)

Carbonate (calcite, ankerite/siderite?)	60%
Quartz	25%
Barite (?)	15%

Ore (70%)

Pyrite	60%
Sphalerite	25%
Galena	10%
Magnetite (partly altered to carbonate)	3-5%
Chalcopyrite	1%
Sulfosalt 2 (tennantite-tetrahedrite?)	<1%

This is fine-grained, faintly banded massive sulfide composed mainly of pyrite and minor magnetite in a matrix of sphalerite, lesser galena, and minor chalcopyrite; lensy included gangues are mostly carbonate, lesser quartz, minor barite (?). Banding is poorly defined by a tendency to sphalerite-rich or lesser galena (±local chalcopyrite)-rich zones up to ~6 mm thick sub-parallel to each other.

Pyrite forms euhedral cubic crystals mostly < 1 mm in diameter, locally aggregating to ~2mm. They contain minor inclusions of rounded subhedral sphalerite to 0.2 mm, or lesser bleb-like galena <0.1 mm. Sphalerite forming the bulk of the matrix occurs as interlocking, sub- to euhedral crystals mainly <0.75 mm, with orange-brown colour indicative of moderate Fe content. Galena making up portions of the rest of the matrix occurs as irregular, interstitial sub/anhedral crystals/aggregates up to 2.5 mm across; galena and sphalerite locally have the appearance of having been remobilized or recrystallized into interstitial position around the pyrite and magnetite during deformation. Magnetite occurs as commonly fractured sub/euhedra, partly altered at margins to minor fine-grained carbonate, embedded in sphalerite or galena, and with inclusions as for pyrite. Chalcopyrite is minor, occurring in certain 2-3 mm thick zones as subhedra <0.5 mm interstitial to the other sulfides, intergrown with galena and sphalerite. Grey, isotropic sulfosalt (tennantite-tetrahedrite?) is relatively abundant in this sample compared to others, occurring included in/mixed with galena as subhedra up to about 1 mm across

Gangue inclusions in the massive sulfides are mostly lens-like or discontinuous bands, up to about 2 mm thick, and consist mainly of carbonate (interlocking sub- to anhedral crystals mostly <015 mm in diameter (including calcite to judge by the reaction in offcut and significant Fe-carbonate with strong positive relief against calcite, minute inclusions, suggestive of ankerite or siderite?), plus lesser quartz (rounded sub/anhedra mostly <0.75 mm, with relatively little strain/mild undulose extinction), and local probable barite (?) as rounded anhedra <0.6 mm long that are distinguished from quartz only by “mottled” extinction and positive relief (cleavage not visible).

In summary, this is fine-grained, faintly banded massive sulfide in which euhedral pyrite and minor magnetite are enclosed in a matrix of sphalerite, lesser galena, minor chalcopyrite and sulfosalt (likely tetrahedrite?), lensy gangues are carbonate-quartz-local barite (?).

K15-292 234.13-234.31: MASSIVE, VAGUELY BANDED FINE-GRAINED PYRITE-SPHALERITE-MINOR CHALCOPYRITE –GALENA-PYRRHOTITE-ARSENOPYRITE WITH CARBONATE-SERICITE-MINOR QUARTZ GANGUE, CUT BY BANDS/VEINS OF COARSER CARBONATE LOCALLY WITH SIGNIFICANT CHALCOPYRITE, SPHALERITE, GALENA, PYRRHOTITE; TRACE SULFOSALTS (UNIDENTIFIED, TETRAHEDRITE?) IN GALENA

Etched offcut shows fine-grained, dark grey, crudely banded massive sulfide (pyrite with lesser sphalerite, galena, minor gangue), cut by local veinlets sub-parallel or oblique to banding. The rock is locally weakly magnetic, shows minor, slow reaction to cold dilute HCl (where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (30%)

Carbonate (dolomite, ankerite?)	75%
Sericite/muscovite	20%
Quartz	5%

Ore (70%)

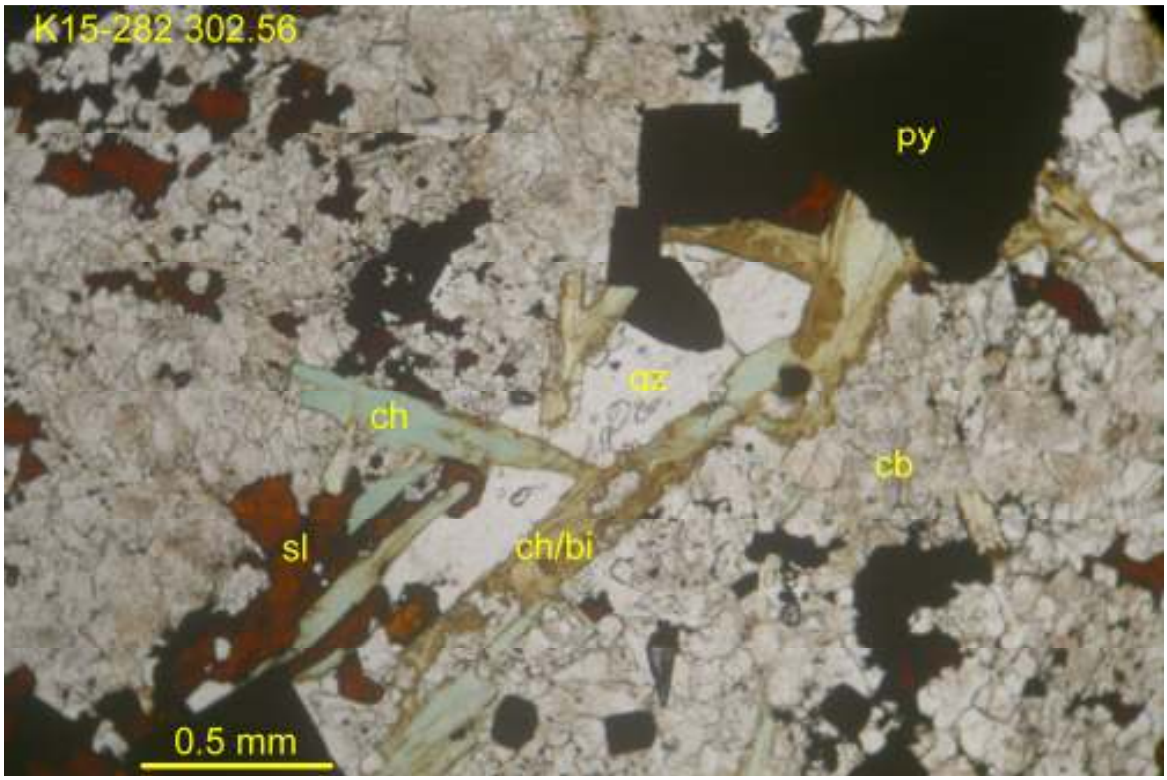
Pyrite	70%
Sphalerite (Fe-rich)	20%
Chalcopyrite	5%
Galena	3%
Pyrrhotite (slightly altered to marcasite)	~1%
Arsenopyrite (interstitial, with chalcopyrite, pyrrhotite)	~1%
Sulfosalts (1, Pb-As-Sb?, 2, tennantite-tetrahedrite?)	<1%

Gangue minerals are mainly carbonate, forming sub- to anhedral crystals mainly in the 0.1 to 0.5 mm size range where intermixed with the massive sulfides, or up to about 3 mm within the irregular band or vein-like areas. The carbonate species is difficult to be sure of but in areas of the side of the offcut where the HF attack was not so effective, reaction is slow even where scratched; suggesting it may be dolomite and ankerite (?). Locally, especially near and along the veins, there is significant muscovite as euhedral flakes to ~1 mm, with mostly random orientations. Minor quartz forms subhedra or irregular anhedra mostly <0.75 mm long, locally in aggregates up to 1.2 mm along the banding; most crystals are apparently relatively unstrained. In places the massive sulfides are cut by distinctive narrow planar veinlets <1 mm thick sub-parallel to banding, in which carbonate subhedra to 1.5mm long are accompanied by margins of shattered pyrite and sphalerite <30 μm in diameter.

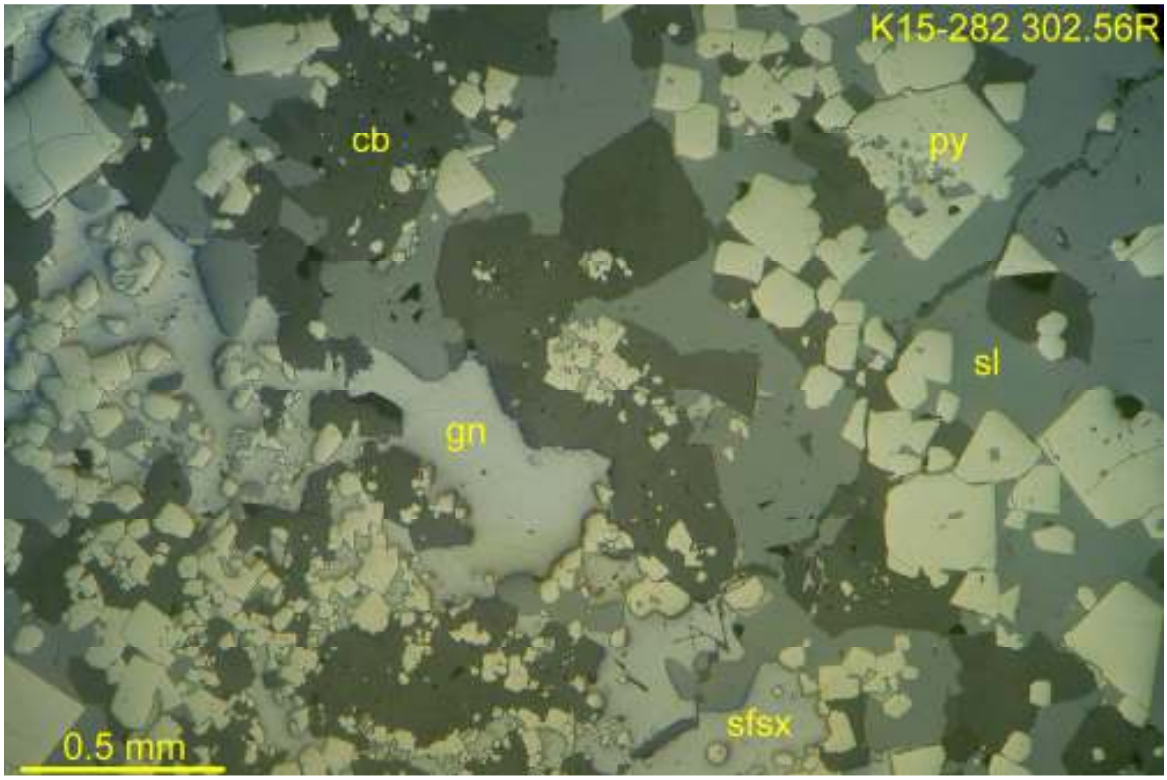
In the fine-grained massive sulfides, ore minerals are crudely arranged in vaguely defined bands or laminations mostly <1 mm thick but aggregating to about 0.5 cm thick, highlighted by compositional variation (pyrite-rich, sphalerite-minor galena, or locally chalcopyrite- rich). Pyrite forms generally cubic euhedra mainly in the 0.1-0.5 mm range (arsenopyrite detected locally as minute euhedra <0.1 mm long with random orientations, mixed with chalcopyrite and pyrrhotite). Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.5 mm long but locally in aggregates to 3 mm long, elongated in the plane of banding and intergrown with chalcopyrite or galena as subhedra <0.4 mm. Sphalerite shows dark red-brown colour suggestive of high Fe content, and is locally intimately intergrown with the muscovite. In general, galena is very minor, mainly <0.2 mm and interstitial to or included in sphalerite or chalcopyrite. Chalcopyrite forms sub/euhedra mainly <0.5 mm (local aggregates to ~1 mm, distinguished by minute inclusions of pyrite or galena <50 μm), is commonly closely associated with or includes pyrrhotite (subhedra <0.25 mm). Galena rarely contains symplectic intergrowths <50 μm of grey, apparently isotropic sulfosalt 2 (tetrahedrite-tennantite?) or lesser, pale greenish grey anisotropic sulfosalt 1 (Pb-As-Sb?) as subhedra <0.2 mm.

In the irregular bands/veins, chalcopyrite is more common and coarse-grained (ragged anhedral aggregates to 1 mm), containing or intergrown in places with minor pyrrhotite as subhedra <0.3 mm. Sphalerite occurs as irregular subhedra to ~1 mm, galena as irregular subhedra to 0.5 mm; local pyrite forms sub/euhedra <0.4 mm, in places included within galena or chalcopyrite.

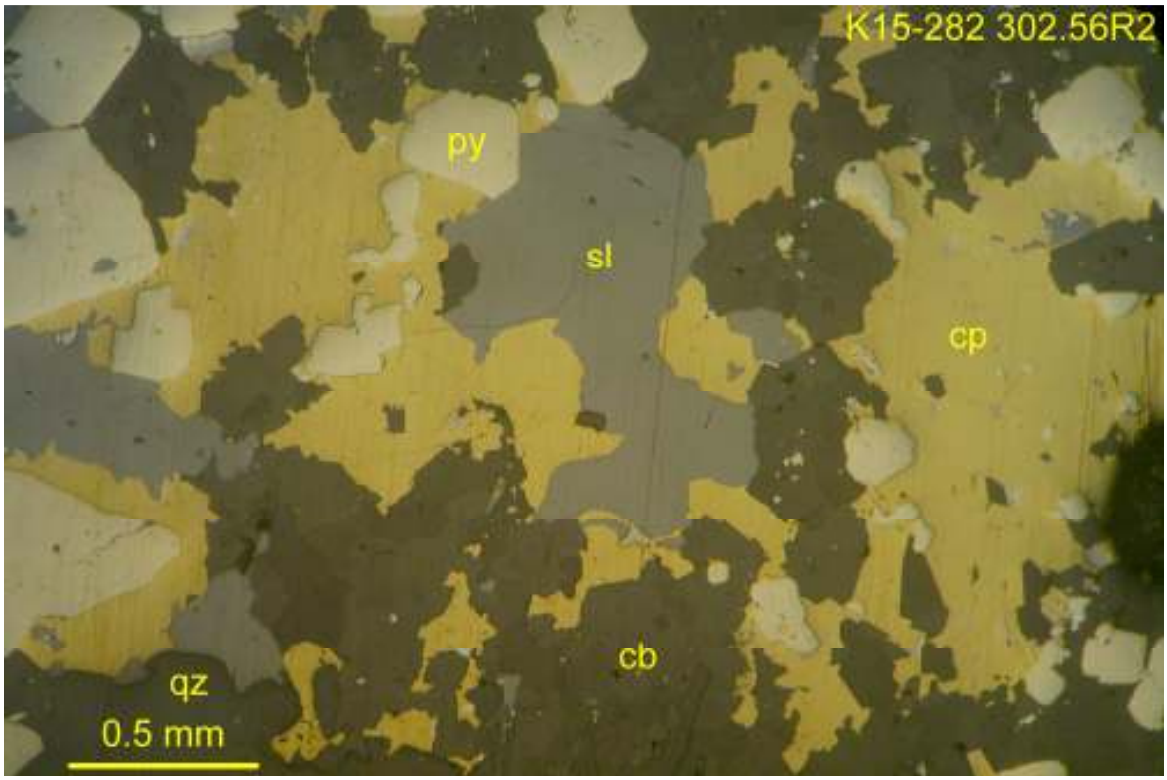
In summary, this is massive, vaguely banded fine-grained pyrite-sphalerite-minor chalcopyrite –galena-pyrrhotite-arsenopyrite with carbonate-sericite-minor quartz gangue, cut by bands/veins of coarser carbonate locally with significant chalcopyrite, sphalerite, galena, pyrrhotite; trace sulfosalts (unidentified, tetrahedrite?) are rare in galena. Late carbonate veins are associated with fracturing.



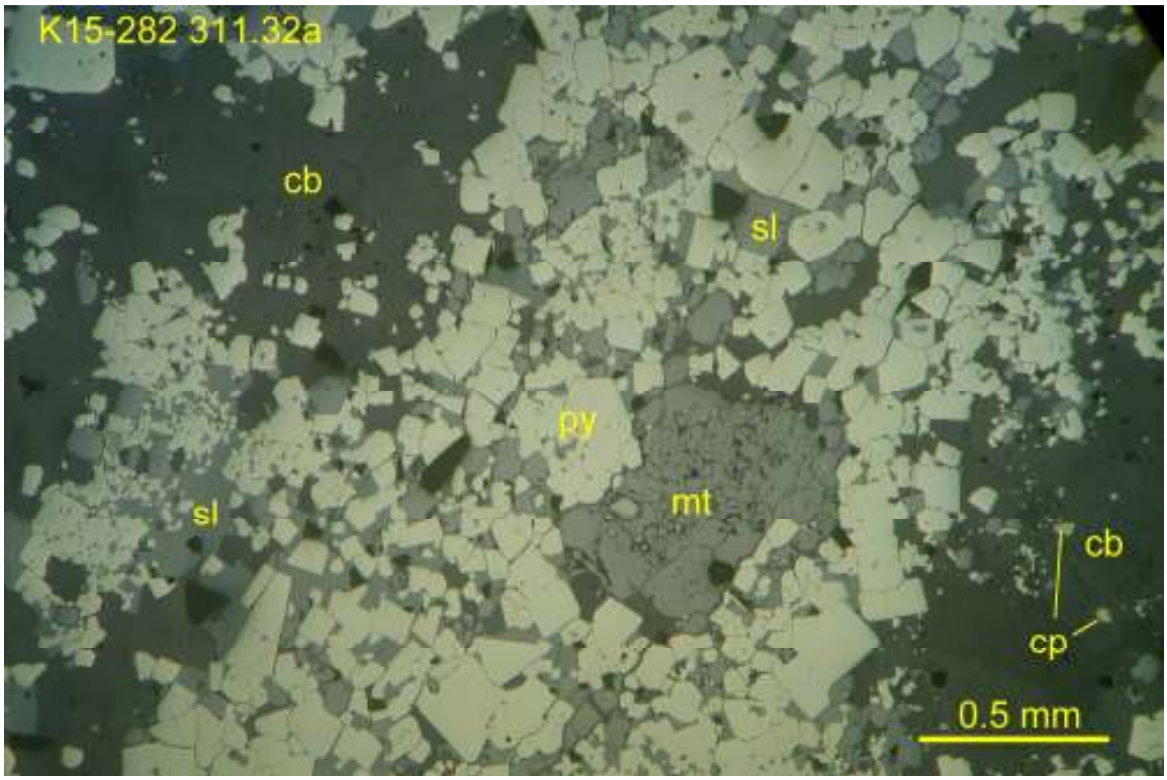
K15-282 302.56-302.69: carbonate gangue containing minor quartz (qz) and pale green chlorite (ch) or chloritized biotite (ch/bi). Sulfides are mostly euhedral pyrite (py) or red-brown sphalerite (sl). Transmitted plane light, field of view ~3 mm wide.



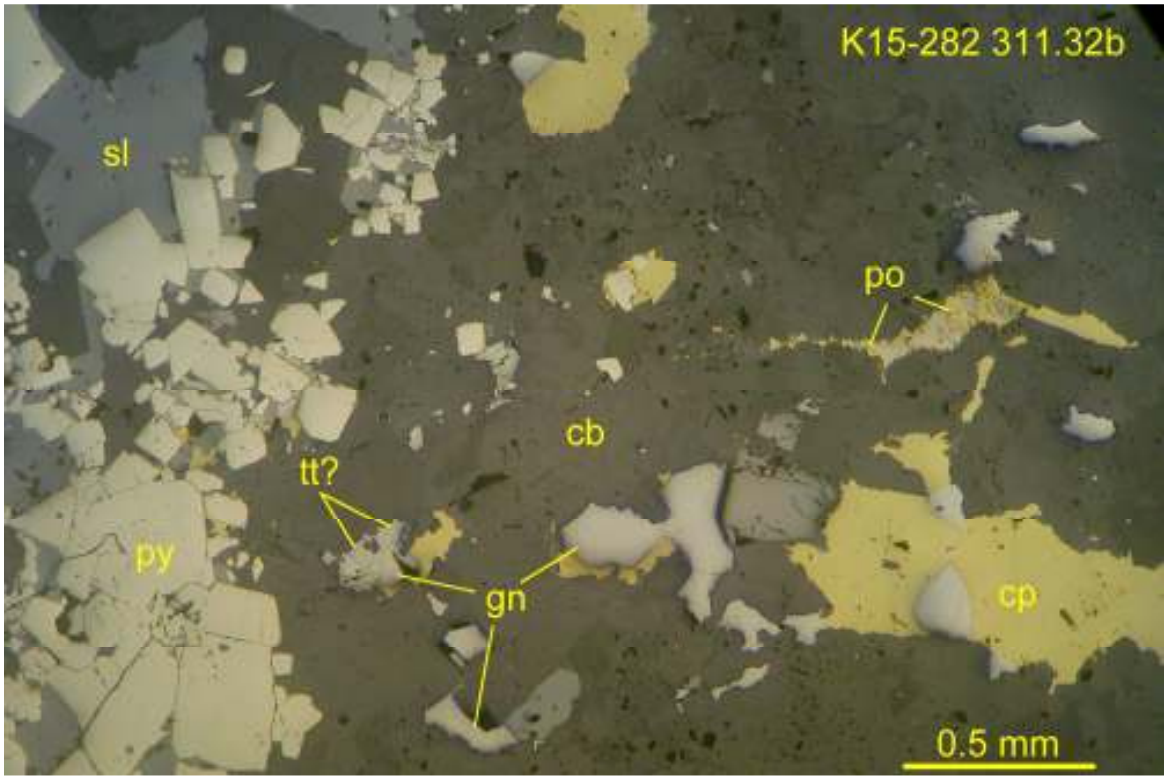
K15-282 302.56-302.69R: typical sphalerite (sl)-galena (gn) rich band with euhedral pyrite (some of which contain minute inclusions of sphalerite or galena). One crystal of sulfosalt (sfsx) is intergrown with and almost impossible to distinguish from host galena. Reflected light, uncrossed polars, field of view ~3 mm wide.



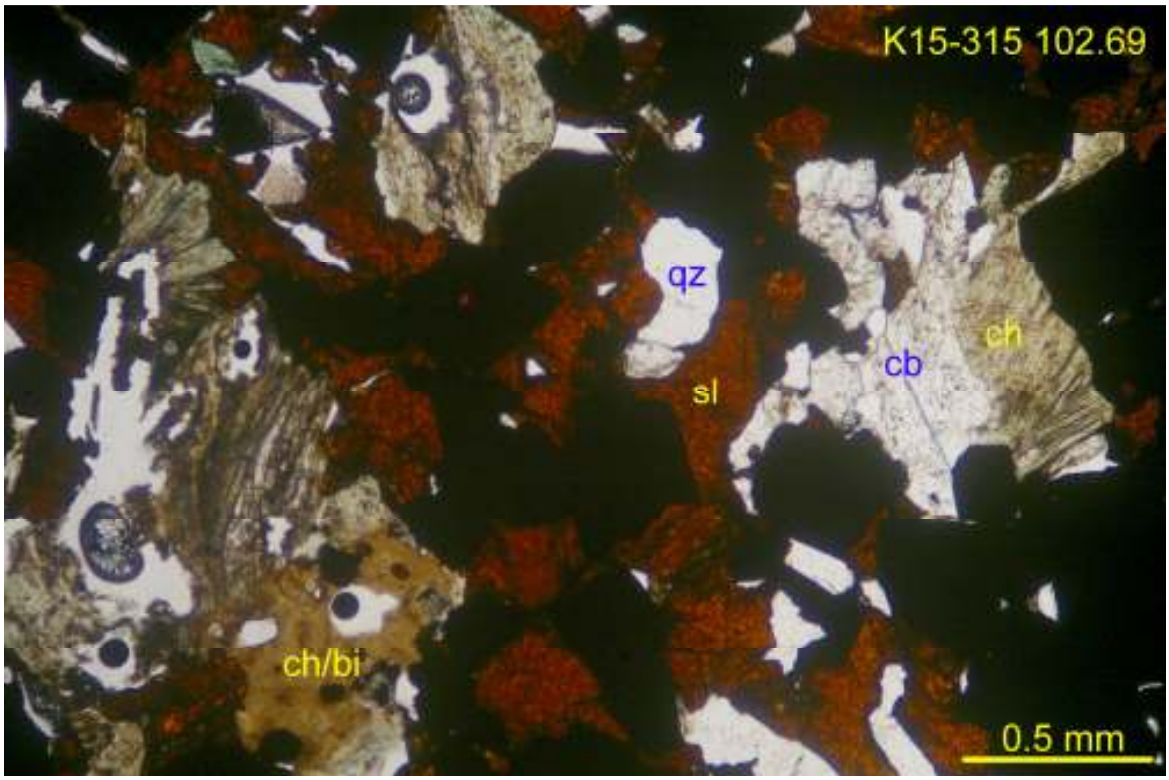
K15-282 302.56-302.69R2: typical intergrowth of chalcopyrite (cp) with sphalerite and euhedral pyrite; galena is rare. Gangues are mostly carbonate (cb) but carbonate is locally intergrown with larger, irregular crystals of quartz (qz). Reflected light, uncrossed polars, field of view ~3 mm wide.



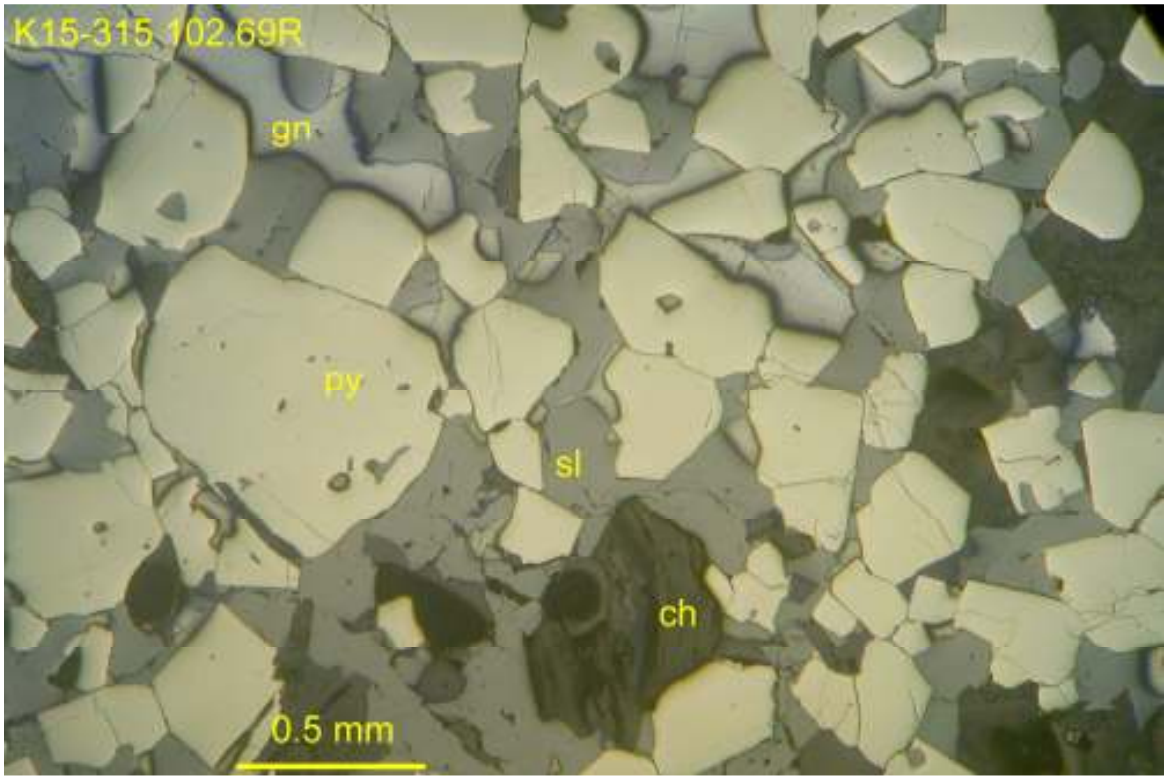
K15-282 311.32-311.45a: typical massive sulfides composed of euhedral pyrite, lesser sphalerite (difficult to distinguish from local magnetite, mt, forming subhedral blastic aggregates) and trace galena (interstitial to pyritel, or as inclusions in magnetite). Chalcopyrite occurs only in carbonate gangue. Reflected light, uncrossed polars, field of view ~3 mm wide.



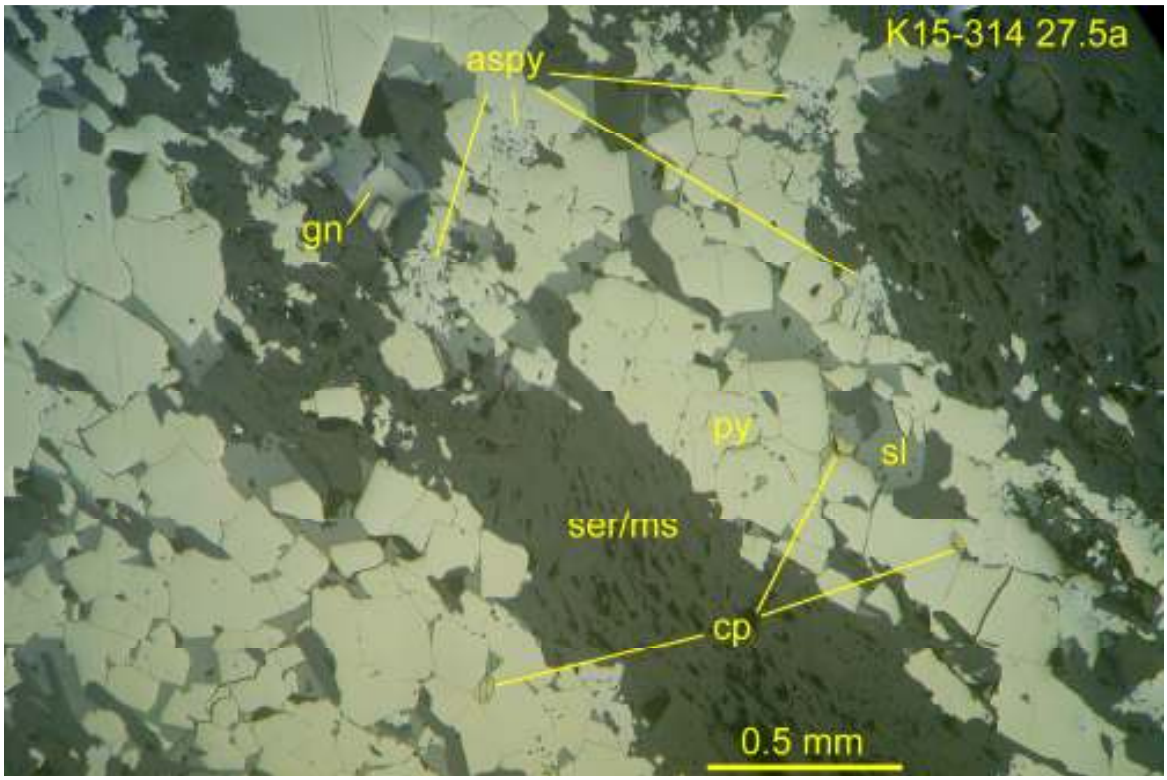
K15-282 311.32-311.45b: margin of central band/vein of coarser carbonate with significant chalcopyrite (containing local pyrrhotite, po), sphalerite (intergrown with cubic pyrite along the margin; difficult to distinguish from euhedral magnetite) and galena (rarely containing inclusions of grey isotropic sulfosalt, possibly tetrahedrite, tt?). Reflected light, uncrossed polars, field of view ~3 mm wide.



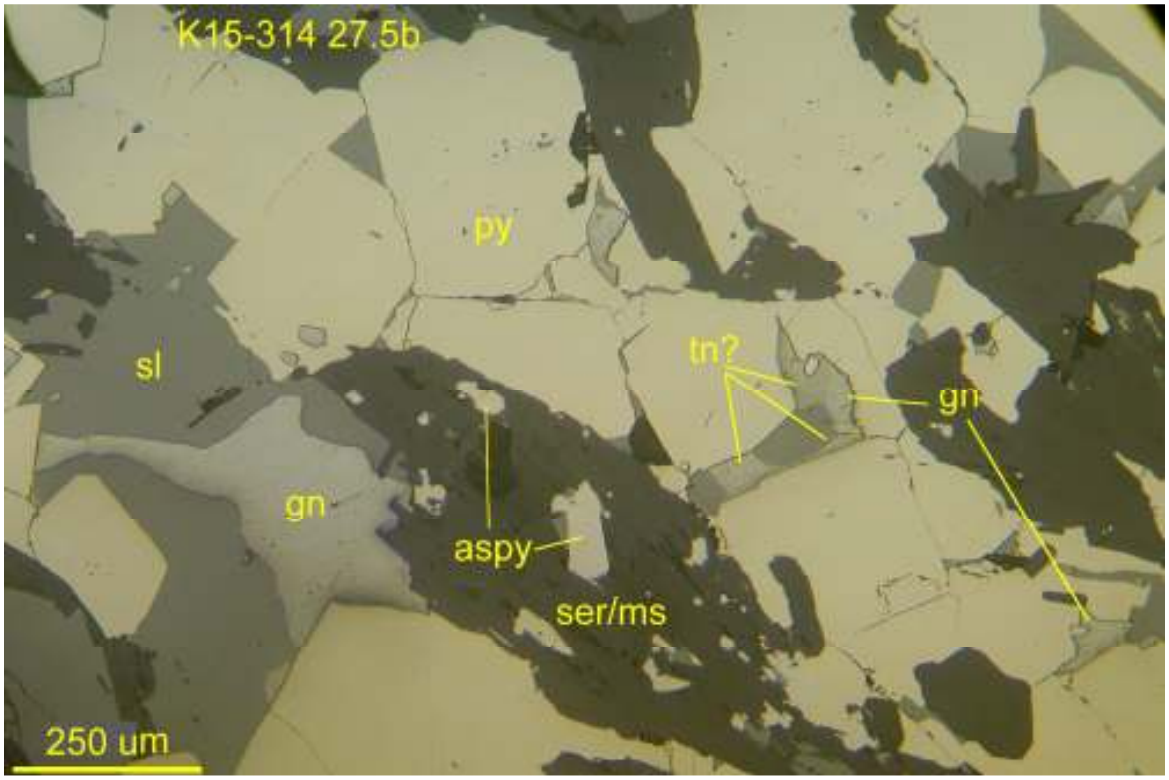
K15-315 102.69-102.79: gangue assemblage of carbonate (likely mainly calcite), pale green chlorite/green biotite (locally in patches that may represent pseudomorphs of some other former mafic mineral) and quartz, hosting subequal proportions of orange-brown sphalerite and pyrite (opaque). Transmitted plane light, field of view~3 mm wide.



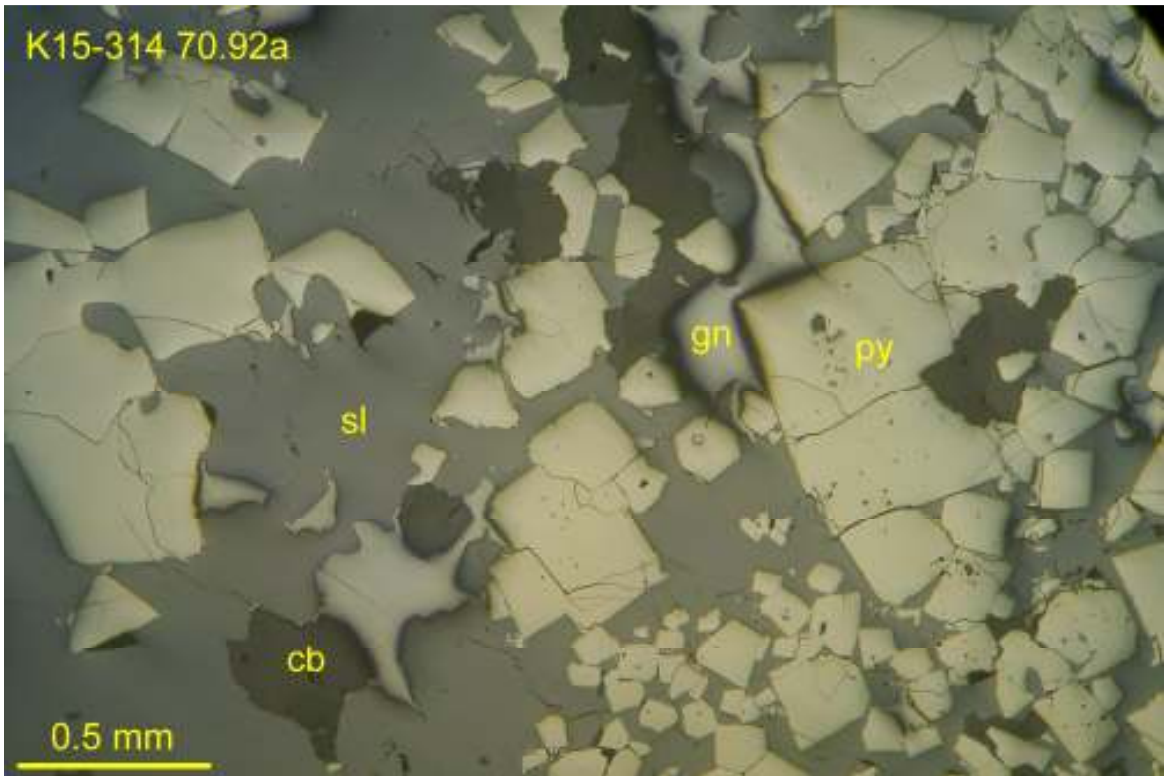
K15-315 102.6-102.79R: almost same area to show cubic pyrite in matrix of subhedral sphalerite and minor interstitial, anhedral galena. Reflected light, uncrossed polars, field of view ~3 mm wide.



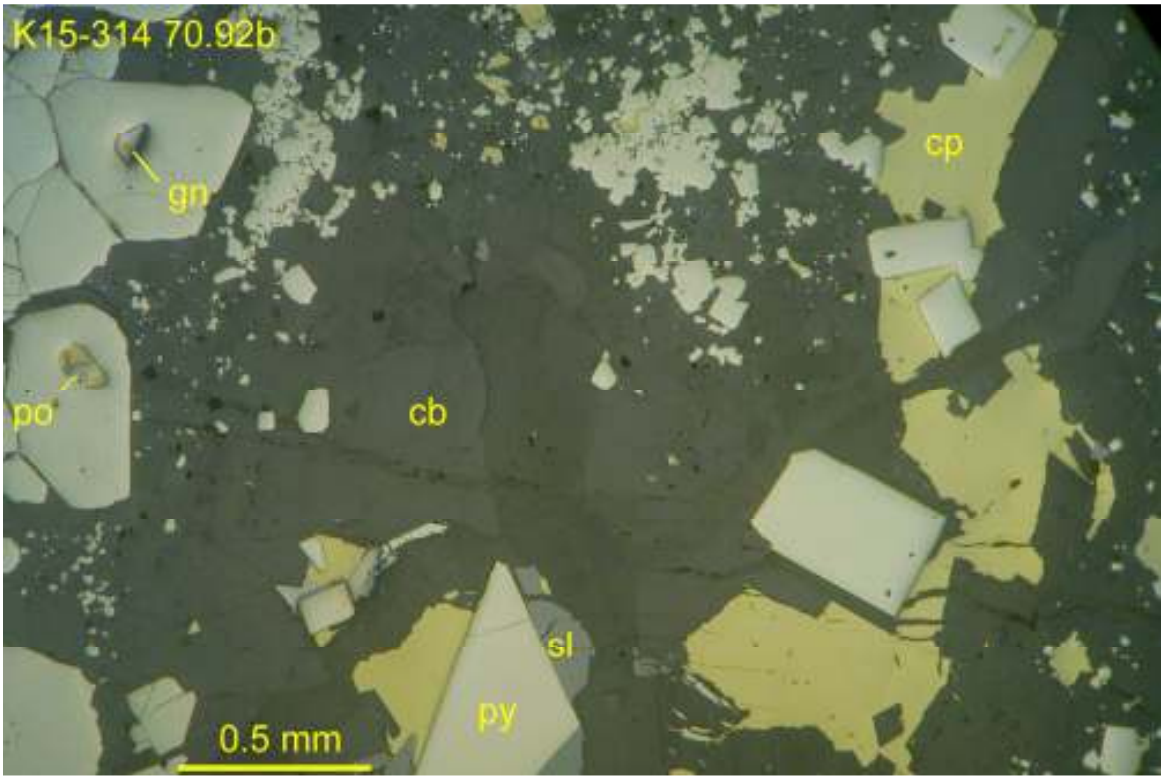
K15-314 27.5-27.63a: alternating bands/laminae of pyrite-minor arsenopyrite (aspy, difficult to distinguish from pyrite)-sphalerite-galena-rare chalcopyrite, or sericite/muscovite (dark grey, flakes somewhat aligned to impart a weak foliation parallel to banding/laminae). Reflected light, uncrossed polars, field of view ~3 mm wide.



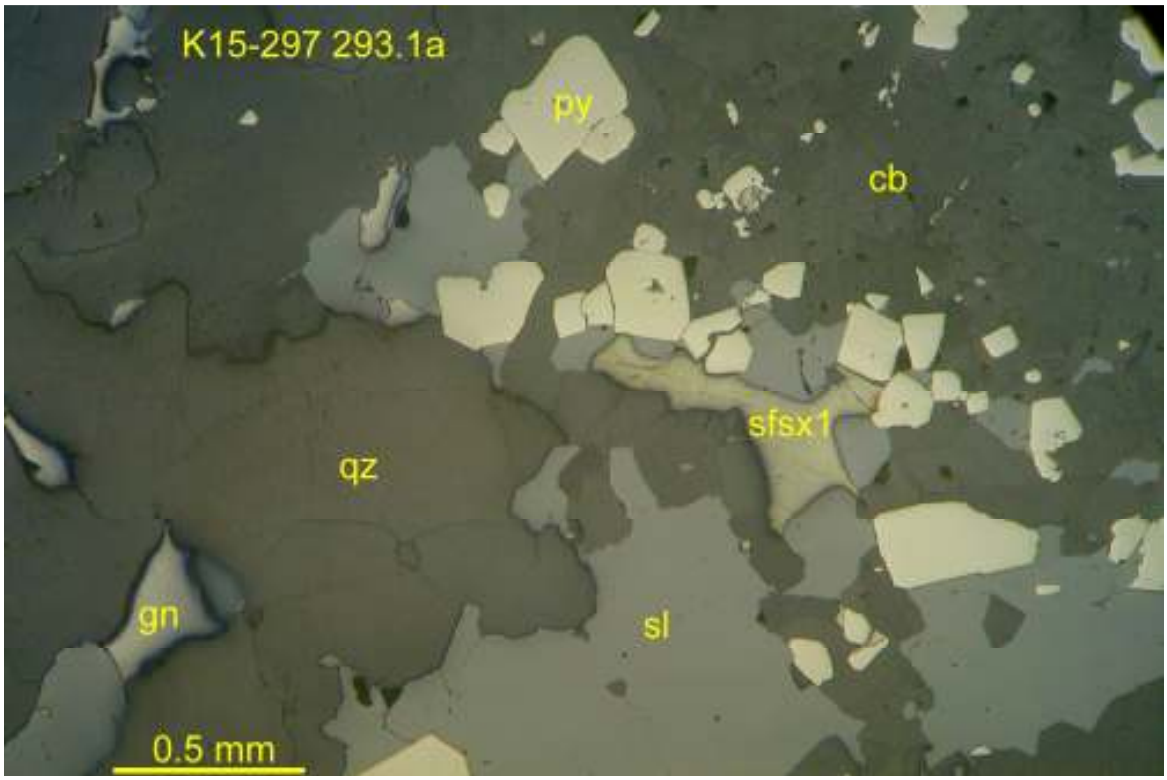
K15-314 27.5-27.63b: detailed view to show subhedral grey sulfosalt (tennantite, tn?) intergrown with galena, sphalerite and trace chalcopyrite, interstitial to pyrite (note minor arsenopyrite at margins of pyrite, near and within sericite gangues). Reflected light, uncrossed polars, field of view ~1.5 mm wide.



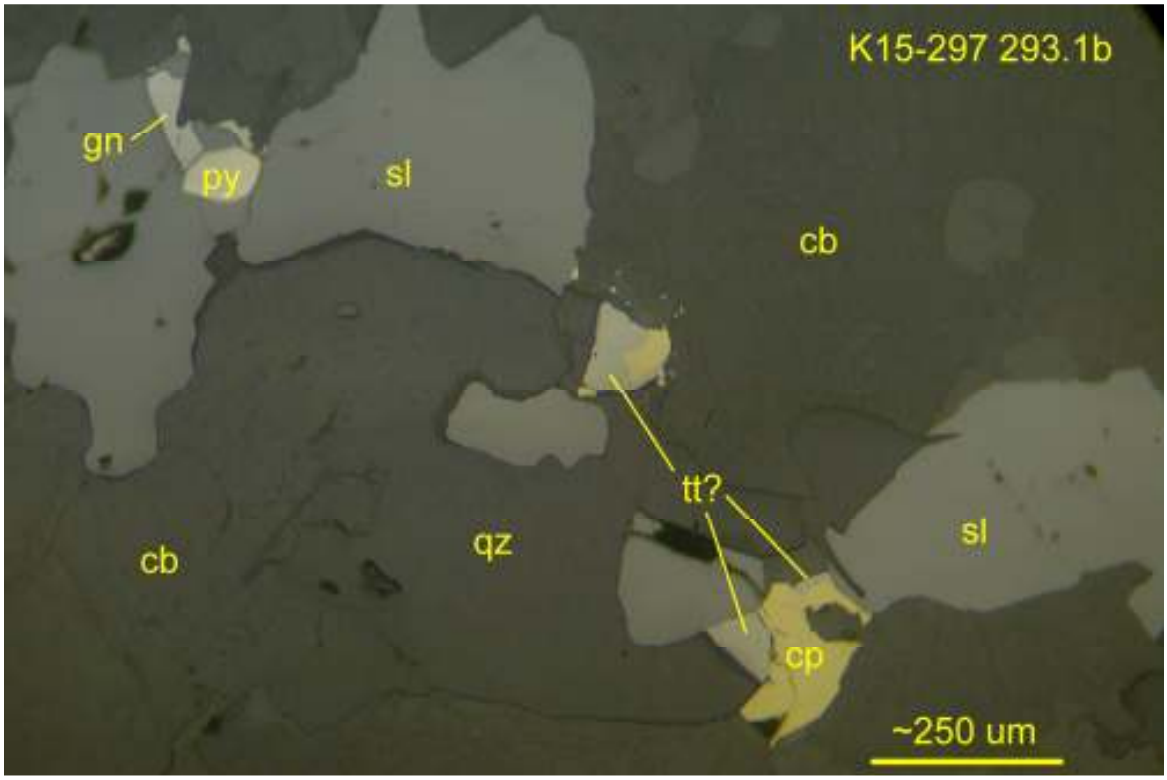
K15-314 70.92-71a: boundary between sphalerite-lesser pyrite-minor galena rich band (on left) and pyrite-lesser sphalerite-trace galena rich band, in crudely banded massive sulfides. Gangue (dark grey) is entirely carbonate, possibly mostly dolomite. Reflected light, uncrossed polars, field of view ~3 mm wide.



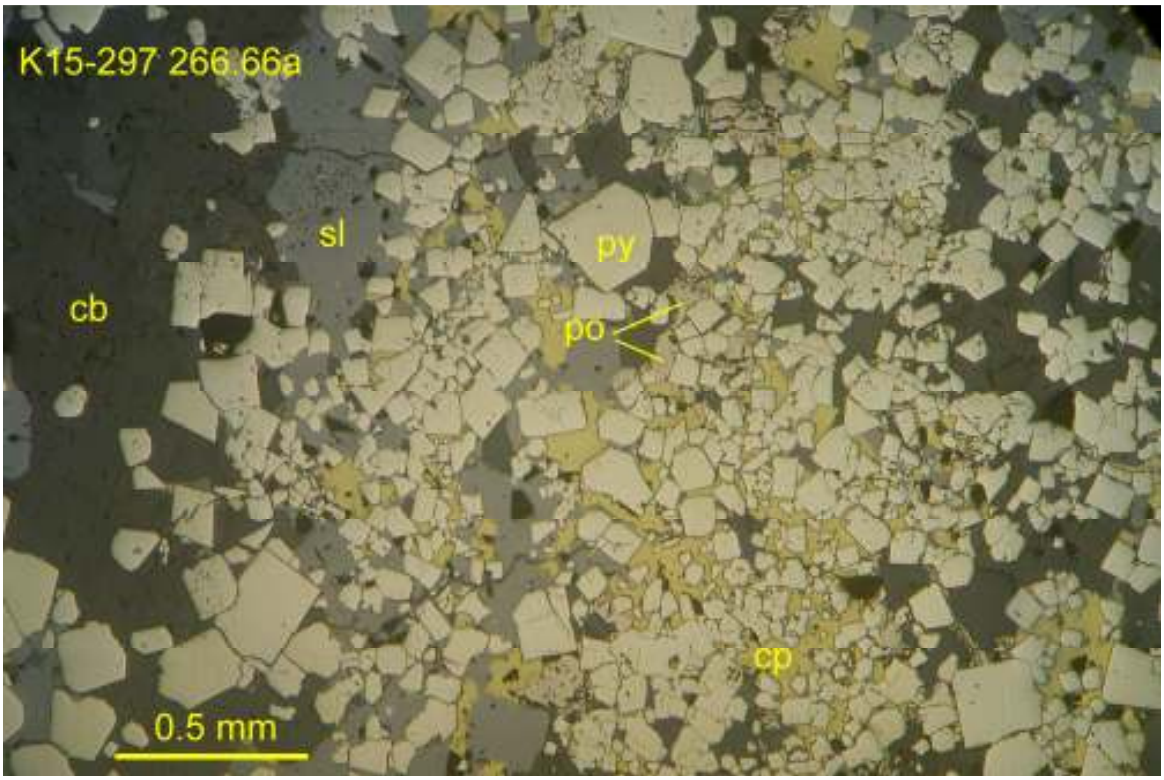
K15-314 70.92-71b: view across coarser-grained band/vein of carbonate containing significant chalcopyrite and sphalerite but lesser pyrite; note inclusions of galena and chalcopyrite (the latter containing minor pyrrhotite) in pyrite at margin of band/vein. Reflected light, uncrossed polars, field of view ~3 mm wide.



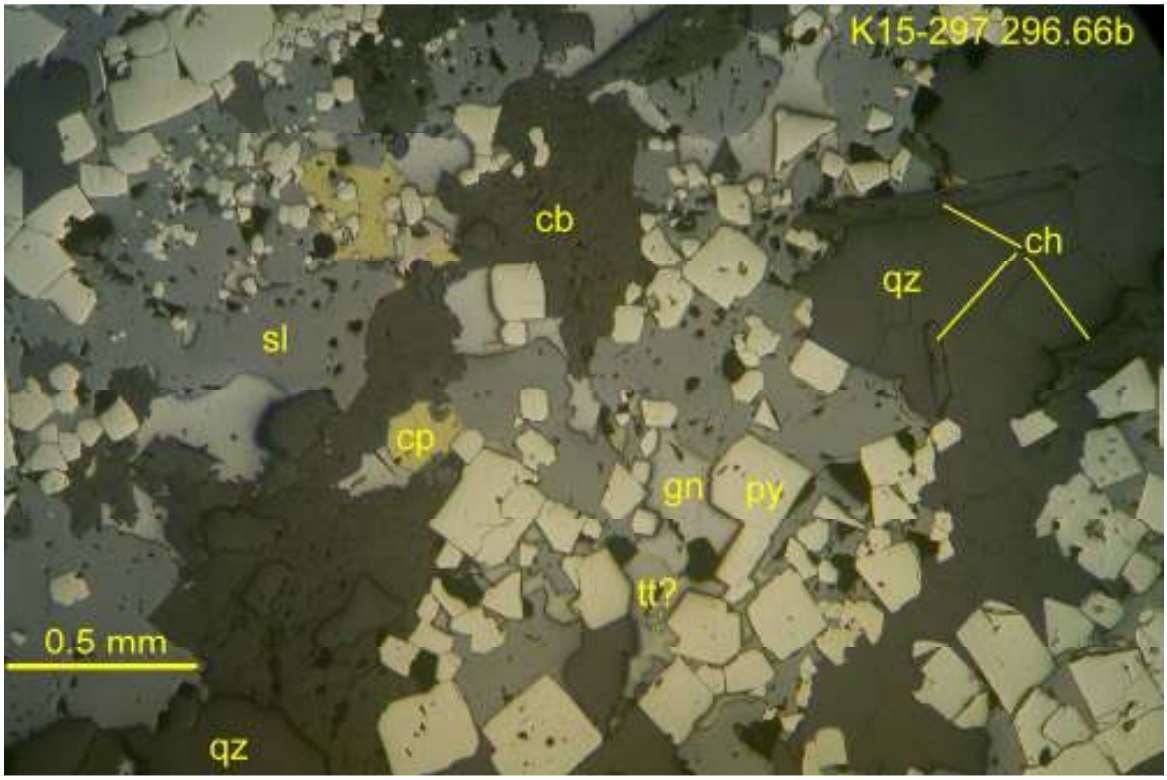
K15-297 293.1-293.22a: overview of coarse carbonate-rich band containing sphalerite, pyrite, minor galena and local sulfosalt 1 (slightly darker, with olive tint compared to galena) in gangues of carbonate and significant quartz. Reflected light, uncrossed polars, field of view ~3 mm wide.



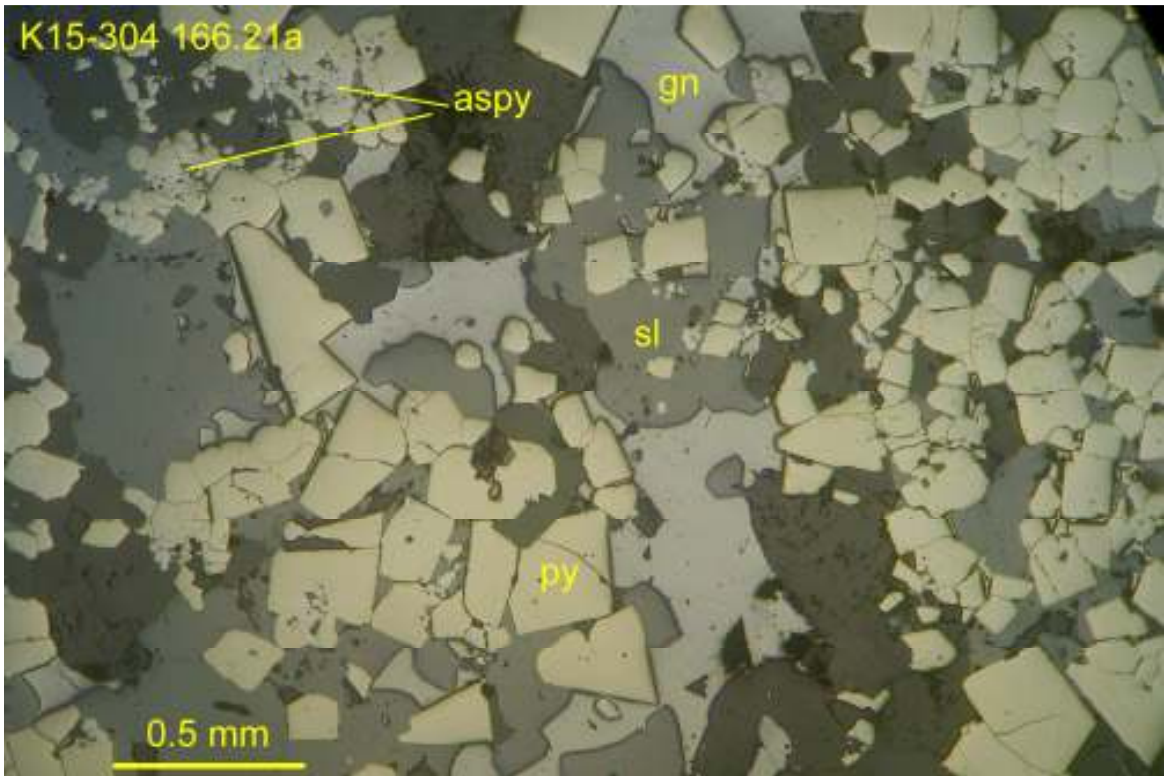
K15-297 293.1-293.22b: detailed view to show grey, apparently isotropic sulfosalt 2 (possibly tetrahedrite?) intergrown with chalcopyrite associated with sphalerite, minor galena and pyrite, also closely associated with quartz in otherwise carbonate-rich gangue. Reflected light, uncrossed polars, field of view ~1.5 mm wide.



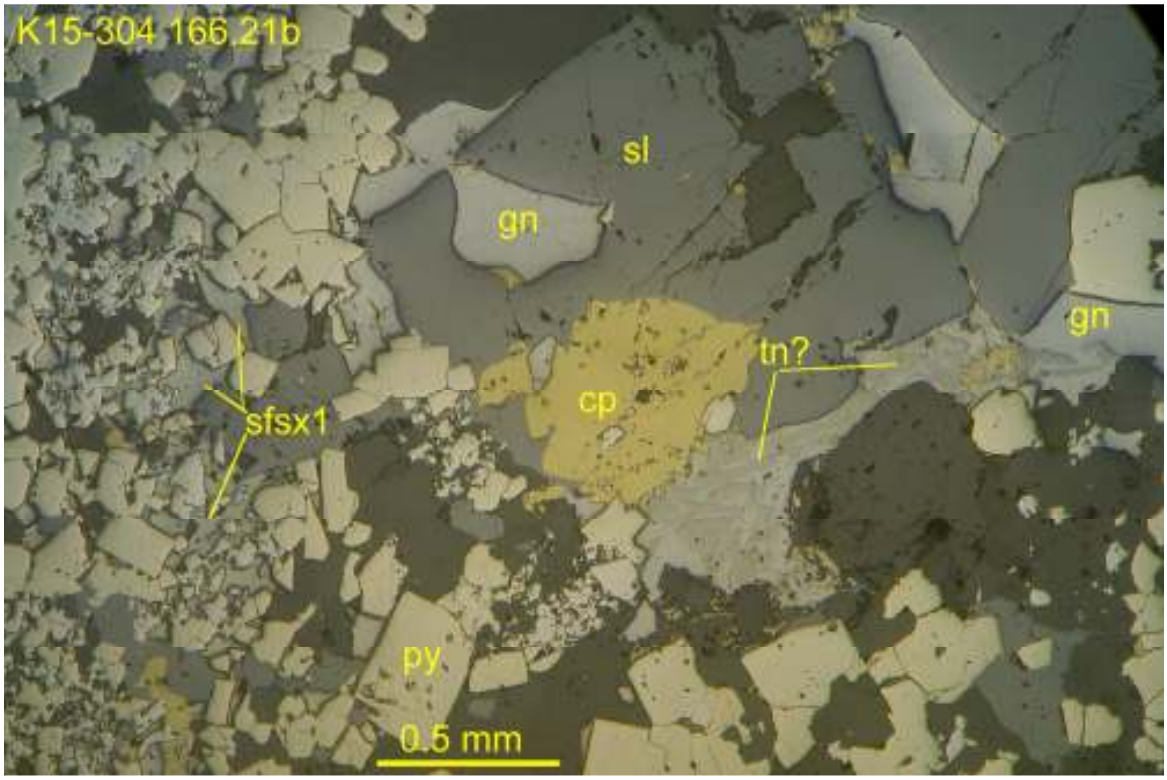
K15-297 296.66-296.8a: alternating pyrite-chalcopyrite or pyrite-sphalerite rich bands with gangue-rich (mainly carbonate) bands in fine-grained massive sulfides. Note minor pyrrhotite associated with chalcopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



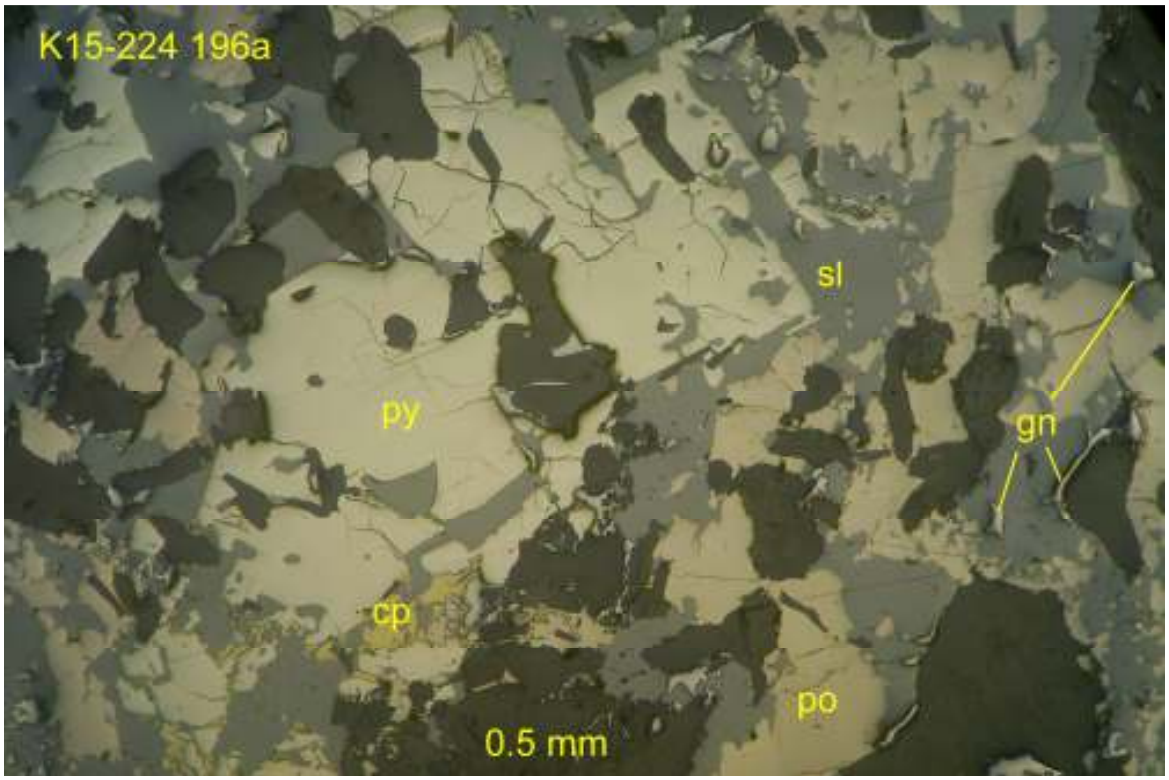
K15-297 296.66-296.8b: margin of possibly remobilized band with coarser chalcopyrite (±minor pyrrhotite), sphalerite, and galena (locally containing minor grey sulfosalt, possibly tetrahedrite, tt?), associated with coarser quartz, carbonate, and minor chlorite (ch) as euhedral flakes. Reflected light, uncrossed polars, field of view ~3 mm wide.



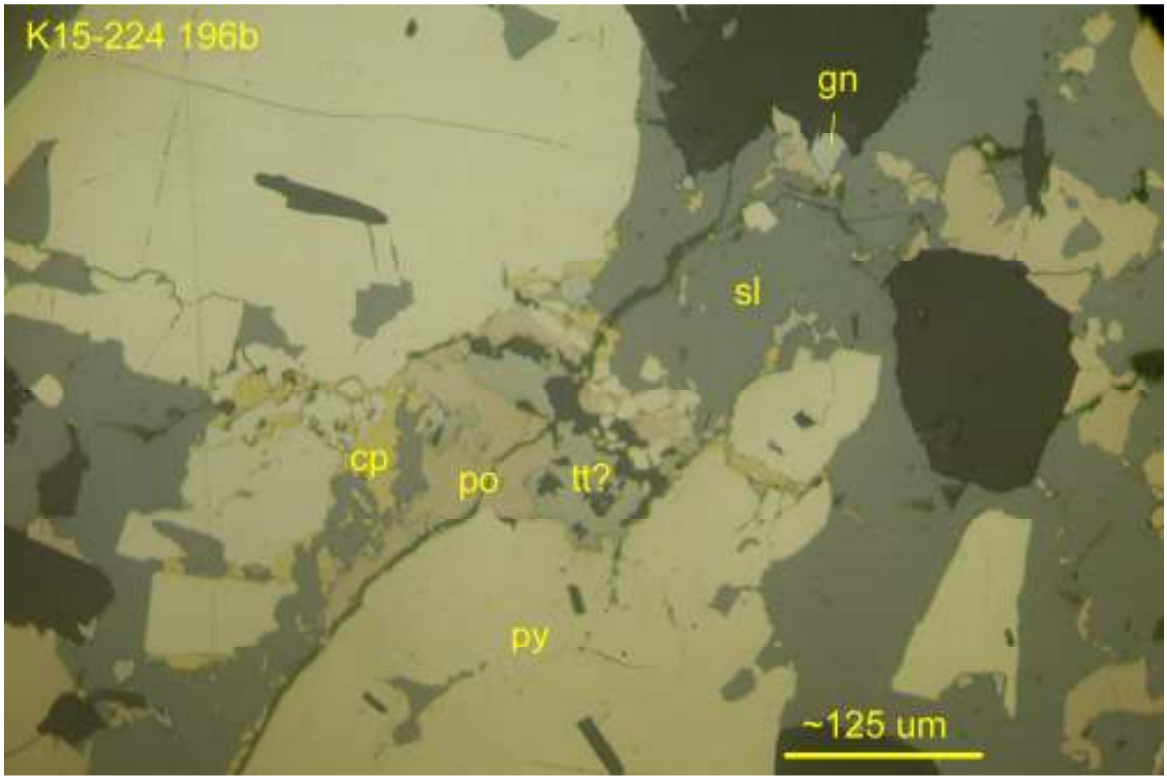
K15-304 166.21-166.33a: overview of massive sulfides showing crudely defined alternating pyrite (±fine-grained arsenopyrite), sphalerite-galena rich or carbonate-barite (?) bands. Reflected light, uncrossed polars, field of view ~3 mm wide.



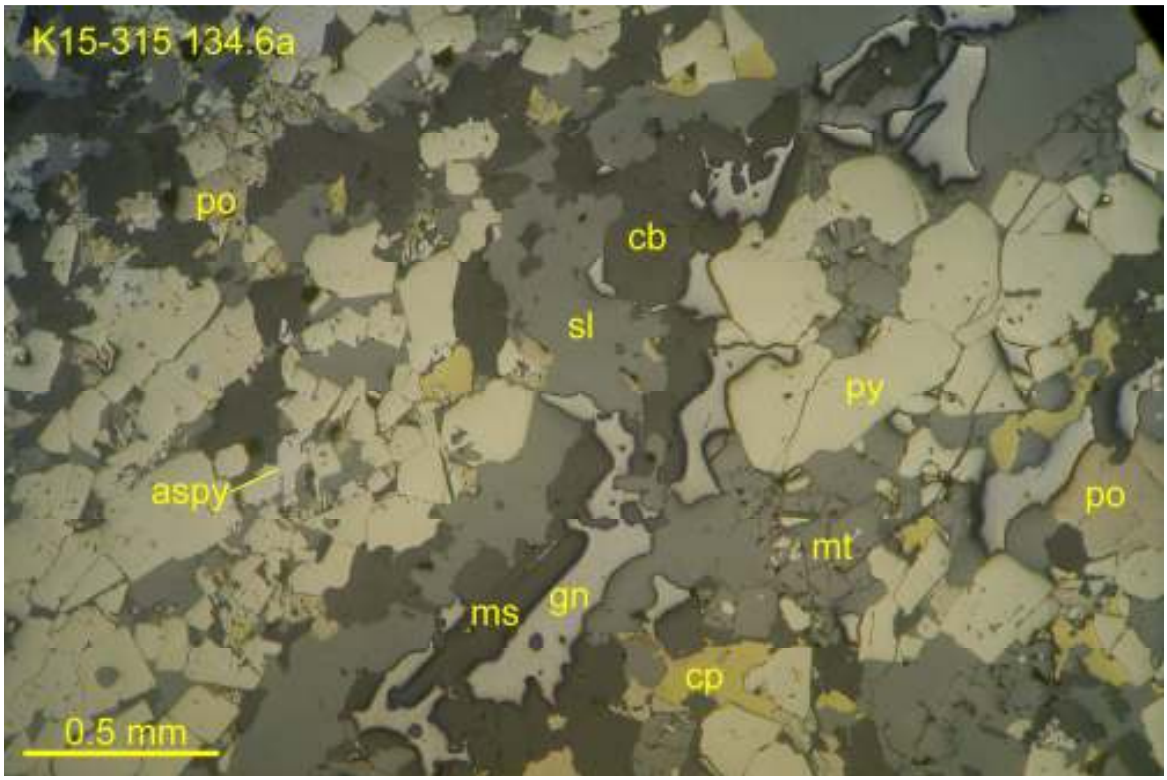
K15-304 166.21-166.33b: overview of coarser, possibly remobilized, chalcopyrite-sphalerite-galena band with sulfosalt 1 (Pb-Sb-As?) separate but difficult to distinguish from galena, and sulfosalt 2 (tennantite, tn?) as symplectic intergrowth within galena; gangues include carbonate and probable barite. Reflected light, uncrossed polars, field of view ~3 mm.



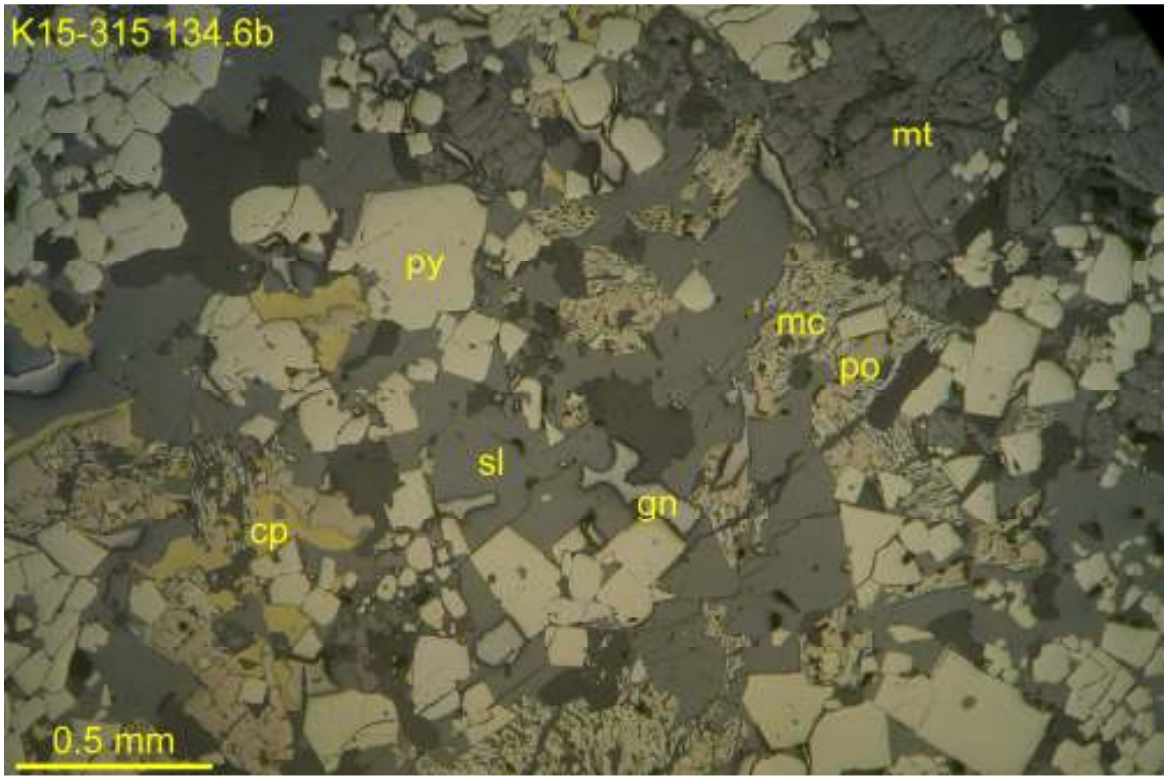
K15-224 196-199a: typical massive sulfides composed of subhedral, locally skeletal pyrite crystals in a weakly foliated matrix of intergrown pyrrhotite, sphalerite, lesser galena and relatively rare chalcopyrite; gangues are mainly sericite, biotite, quartz and local epidote. Reflected light, uncrossed polars, field of view ~3 mm wide.



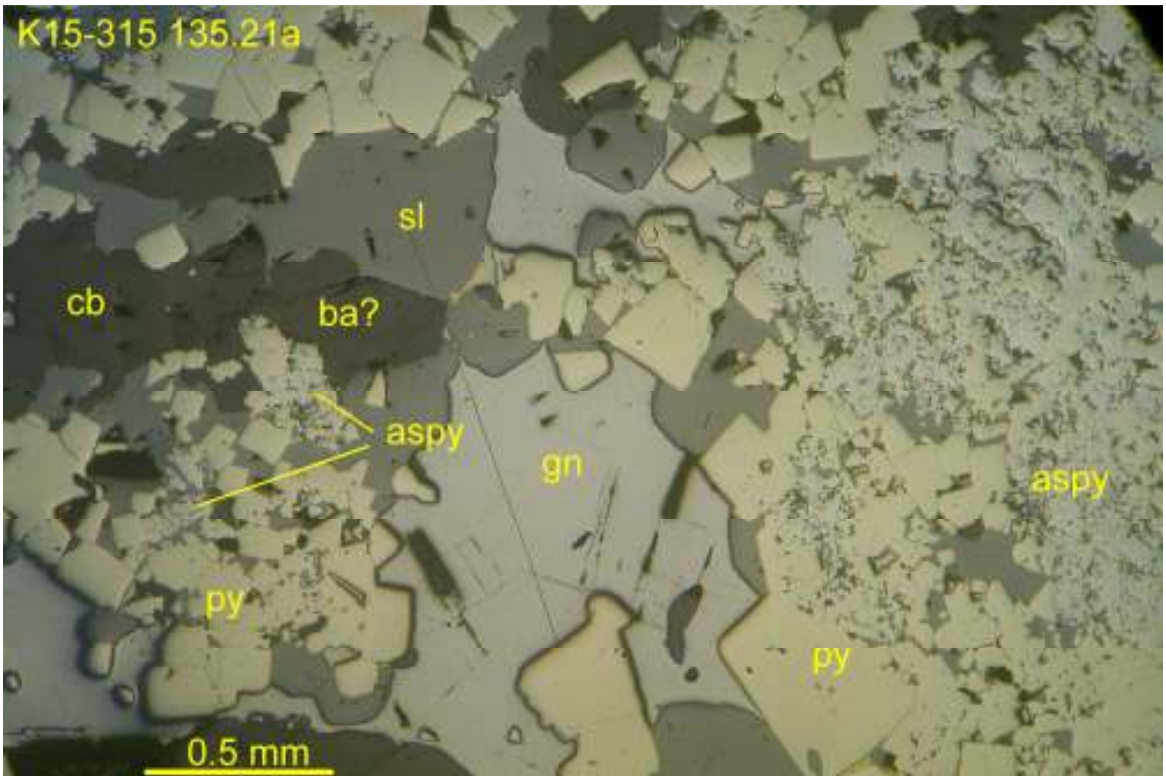
K15-224 196-199b: very detailed view to show fine-grained, grey, apparently isotropic sulfosalt (tetrahedrite, tt?) intergrown with pyrrhotite and chalcopyrite, in sphalerite matrix to pyrite crystals. Reflected light, uncrossed polars, field of view ~0.75 mm wide.



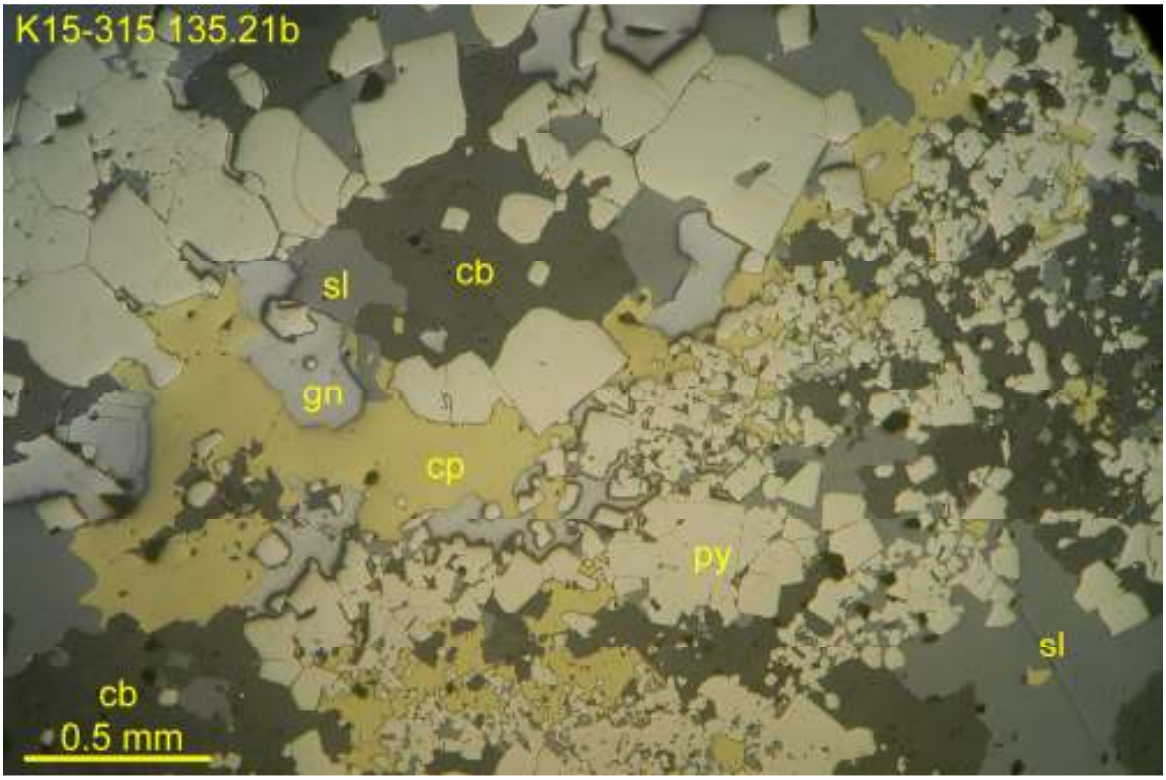
K15-315 134.6-134.71a: massive sulfides crudely segregated into bands of pyrite (partly replaced by arsenopyrite)-blastic magnetite-lesser pyrrhotite (partly replaced by very fine-grained marcasite) with variable sphalerite-lesser galena-local chalcopyrite matrix; gangues are carbonate and local muscovite. Reflected light, uncrossed polars, field of view ~3 mm.



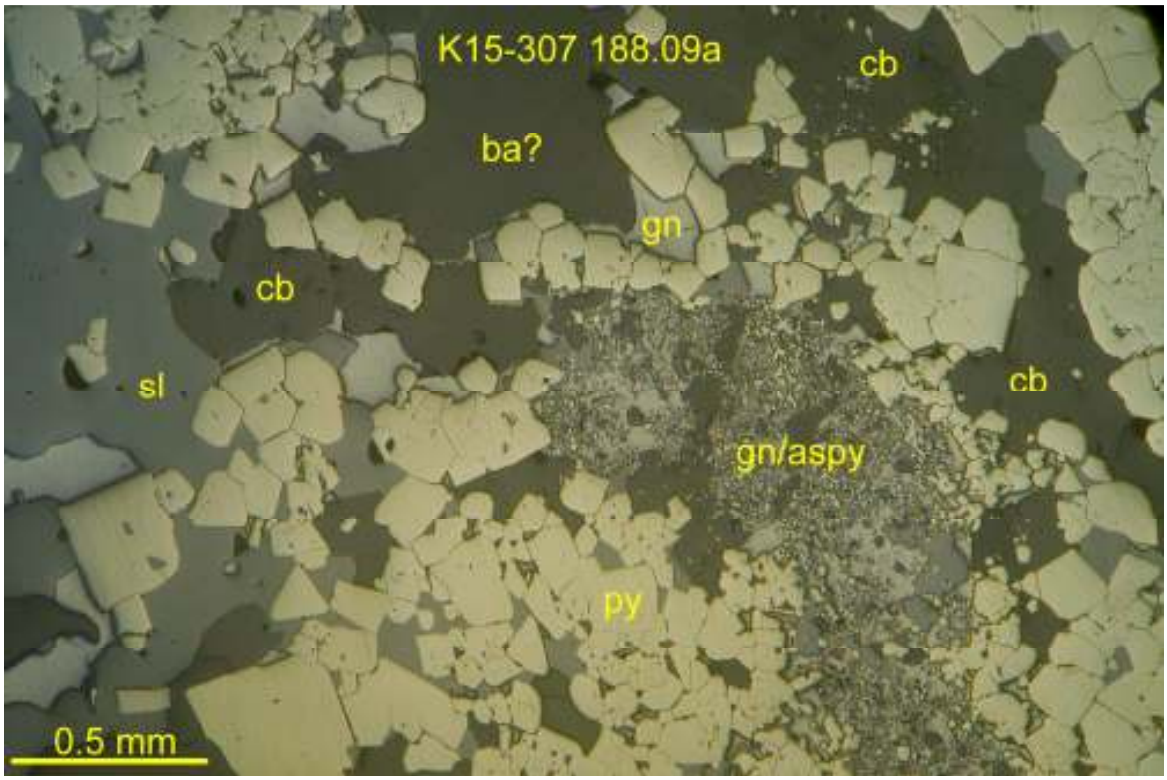
K15-315 134.6-134.71b: lamellar textured marcasite locally pseudomorphing pyrrhotite, intergrown with pyrite, blastic magnetite, in matrix of sphalerite, minor chalcopyrite and galena; gangue is mostly carbonate, local muscovite. Reflected light, uncrossed polars, field of view ~3 mm wide.



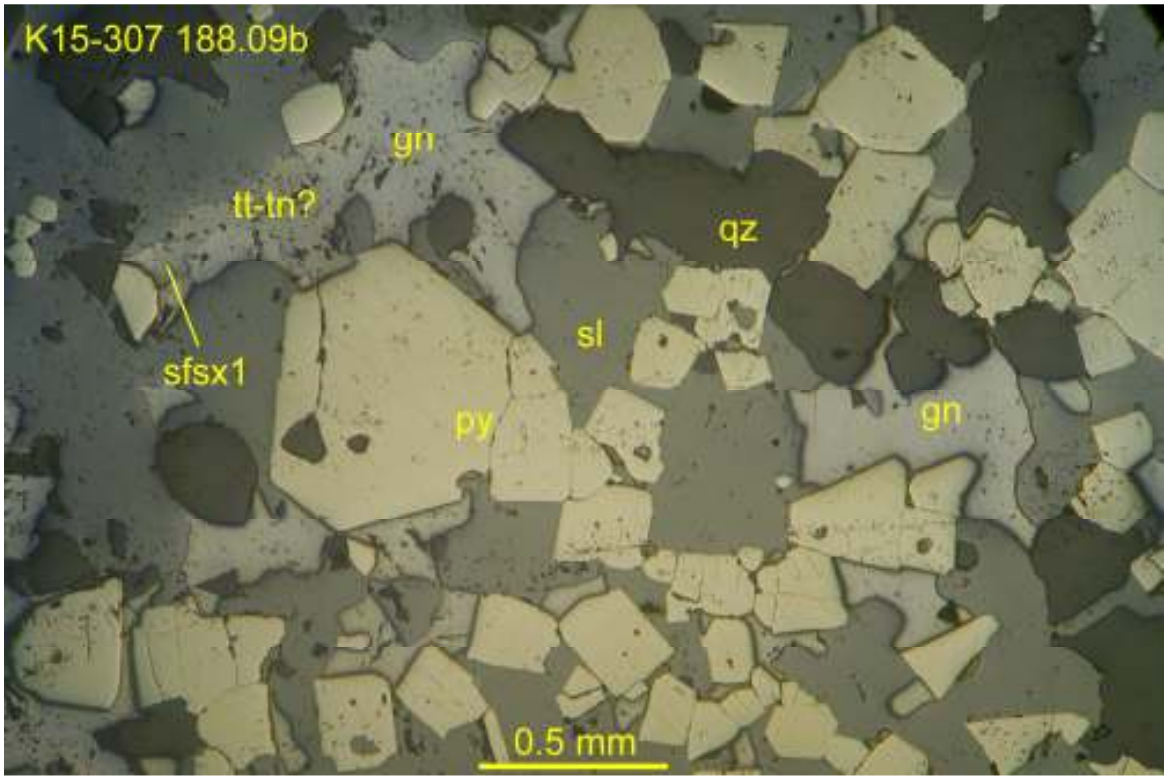
K15-315 135.21-135.3a: view along east-west, Pb-Zn rich band composed of sphalerite, galena, pyrite (the latter locally partly replaced by swarms of fine arsenopyrite crystals and with myriads of galena inclusions), associated with gangues of barite (ba?) and carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



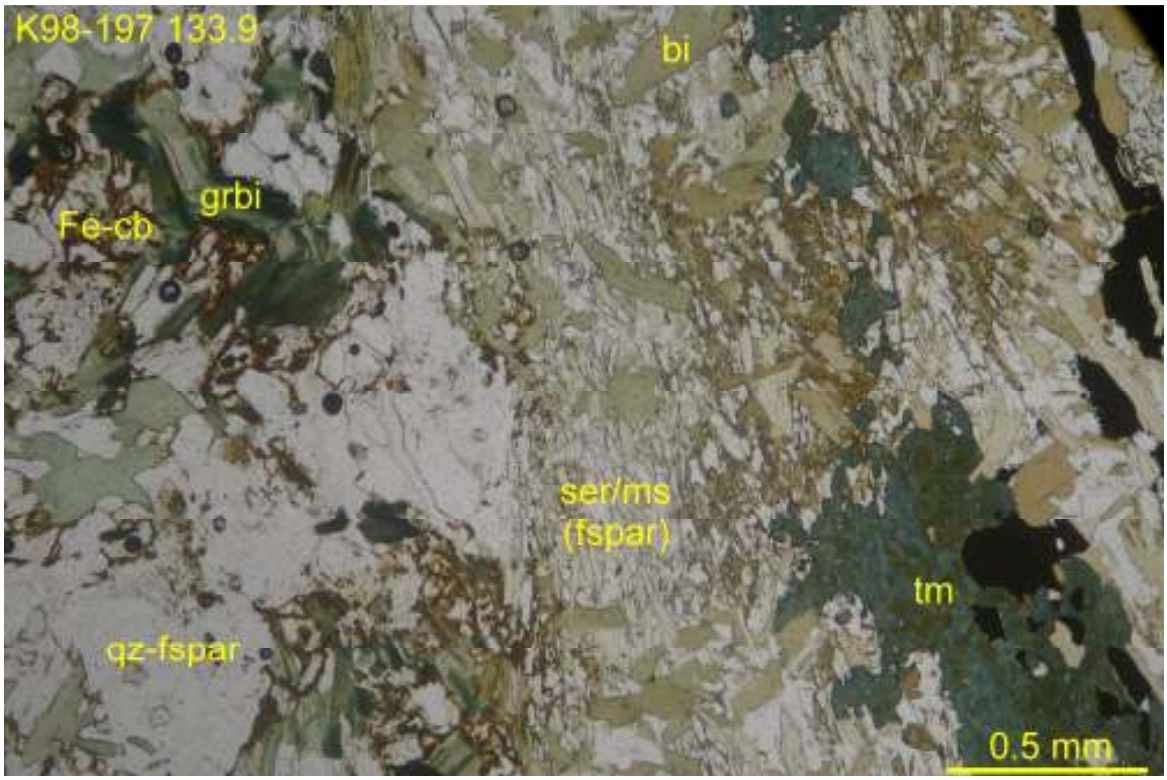
K15-315 135.21-135.3b: crudely banded, coarse pyrite-sphalerite-galena or chalcopyrite-fine pyrite rich massive sulfides; gangues are mostly carbonate in this exposure. Minute, trace sulfosalt (tennantite?) occurs to the NE of this view, along strike. Reflected light, uncrossed polars, field of view ~3 mm wide.



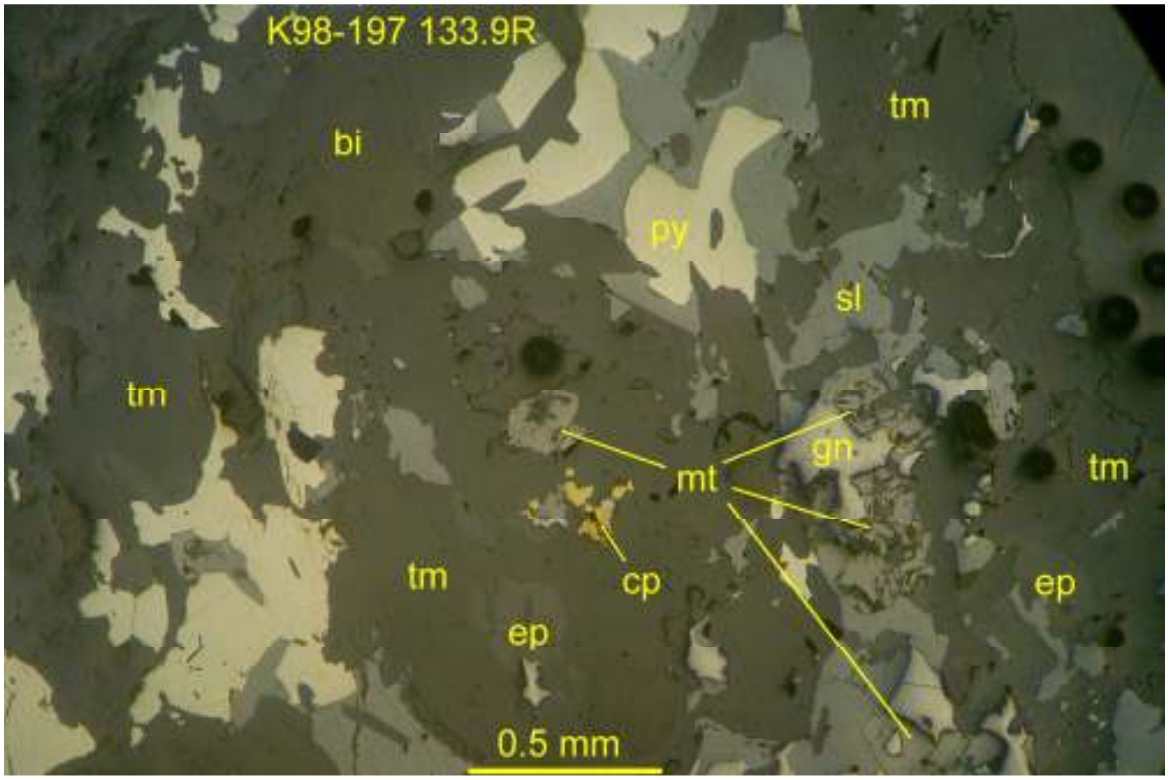
K15-307 188.09-188.19a: contact between fine-grained, pyrite-rich massive sulfide and coarser-grained, sphalerite-galena rich matrix massive sulfides; note patch of galena with minute arsenopyrite inclusions near/along contact, gangues of carbonate and probable barite (ba?). Reflected light, uncrossed polars, field of view ~3 mm wide.



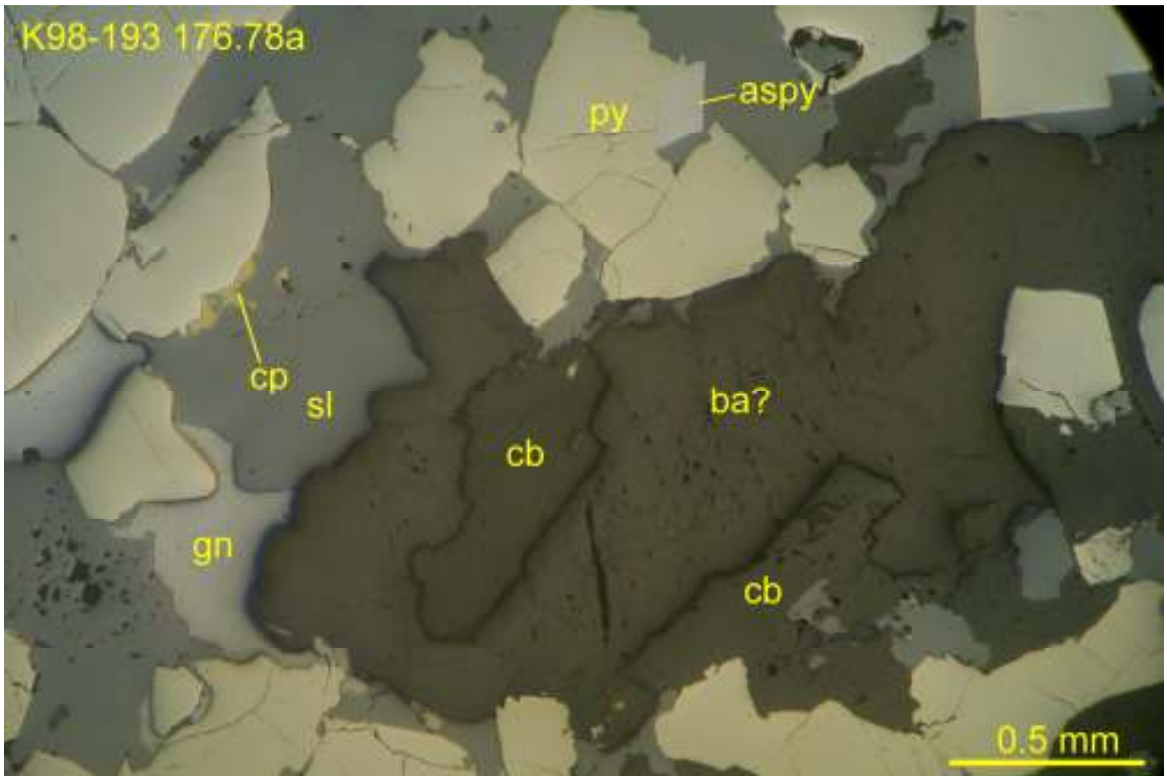
K15-307 188.09-188.19b: coarser-grained massive sulfides composed of sphalerite-galena rich matrix to pyrite crystals, gangue is quartz except carbonate-rich "augen" to N; note two sulfosalts included in galena (first is difficult to see, sfsx; second is grey, possible tennantite-tetrahedrite, tn-tt?) Reflected light, uncrossed polars, field of view ~3 mm wide.



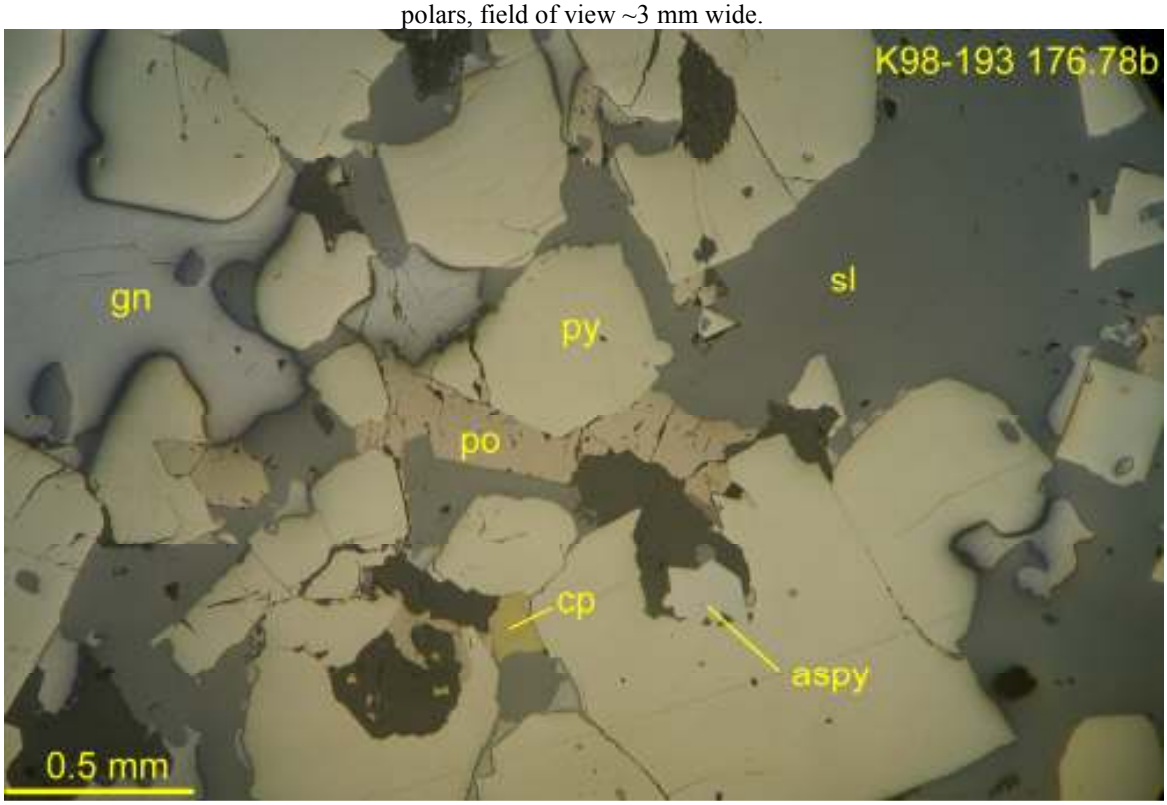
K98-197 133.9-134.08: boundary between quartz-feldspar-minor dark green biotite-local Fe-carbonate (?) and muscovite-pale greenish brown biotite-local dark green (schorlitic) tourmaline bands in weakly foliated, possible meta-volcanic rock. Transmitted plane light, field of view ~3 mm wide.



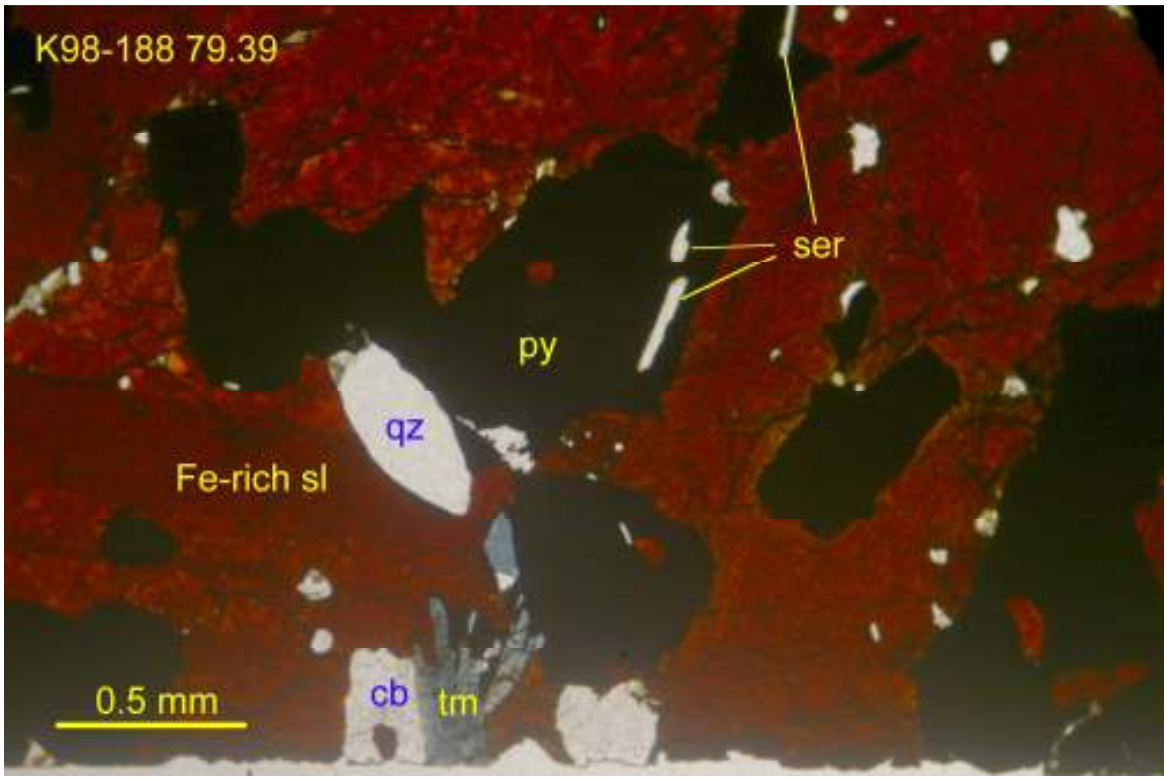
K98-197 133.9-134.08R: poorly defined sulfide band composed of pyrite (coarse, subhedral, or finer, possibly after pyrrhotite?), lesser sphalerite, galena, minor blastic magnetite and trace chalcopyrite, the latter closely associated with rounded blastic tourmaline (tm) aggregate. Reflected light, uncrossed polars, field of view ~3 mm wide.



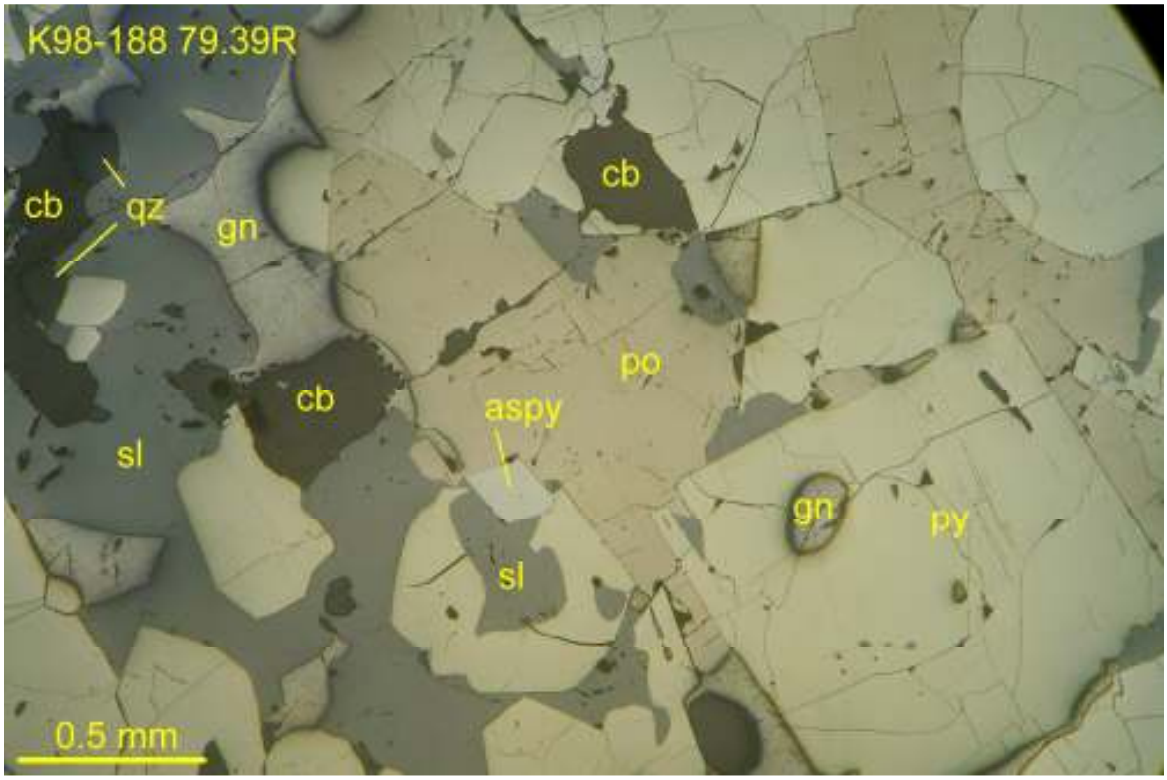
K98-193 176.78-176.96a: gangue inclusions of carbonate (cb) and probable barite (ba?) poikilitically enclosed in massive sulfides comprising pyrite in a matrix of sphalerite, lesser galena and trace chalcopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



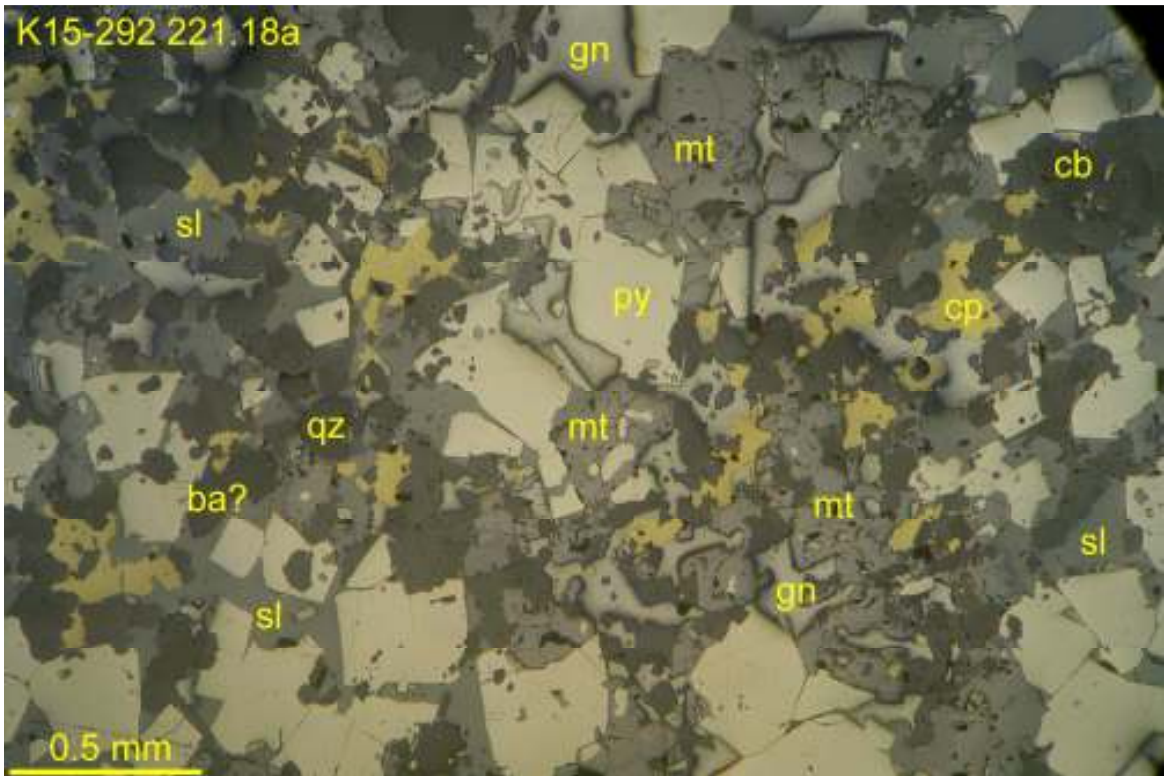
K98-193 176.78-176.96: boundary between sphalerite-rich and galena-rich matrix to euhedral pyrite cubes; note local pyrrhotite and trace chalcopyrite associated with sphalerite matrix, and rare arsenopyrite found in core of pyrite crystal. Reflected light, uncrossed polars, field of view ~3 mm wide.



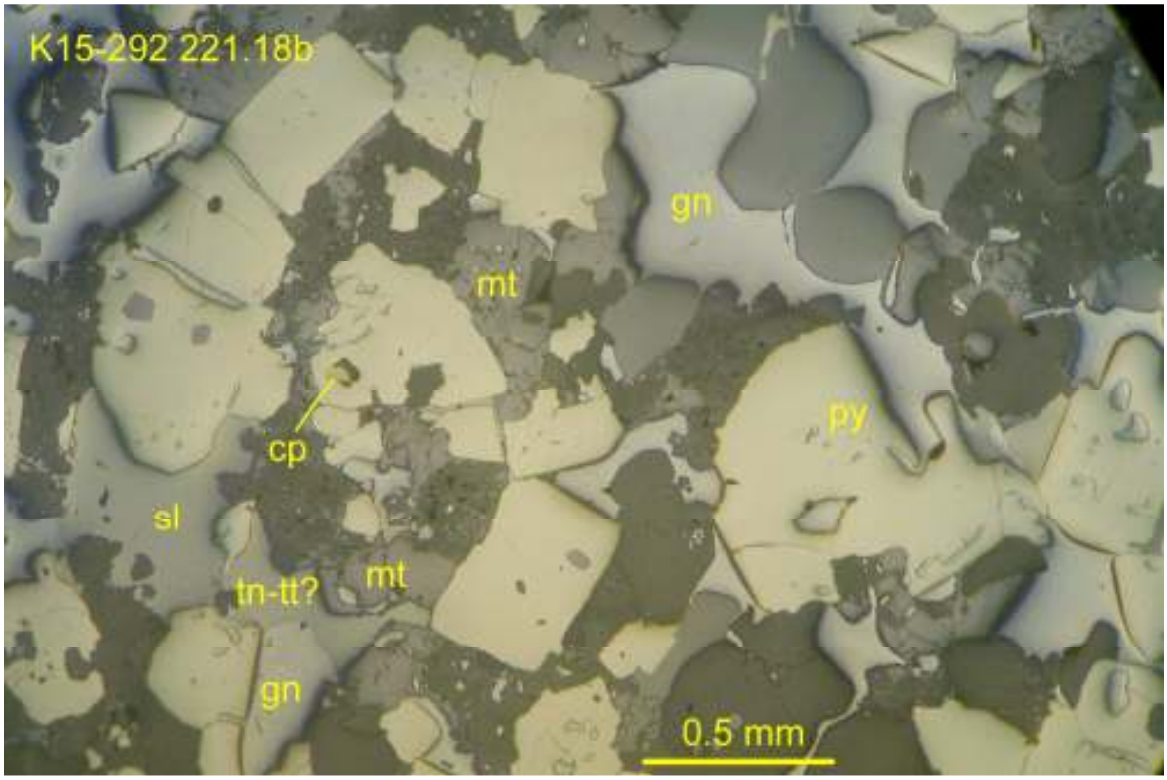
K98-188 79.39-79.5: deep red, Fe-rich sphalerite matrix to cubic pyrite crystals; gangues included in the massive sulfides include subhedral quartz, carbonate, local euhedral dark green tourmaline, and sericite/muscovite. Transmitted plane light, field of view ~3 mm wide.



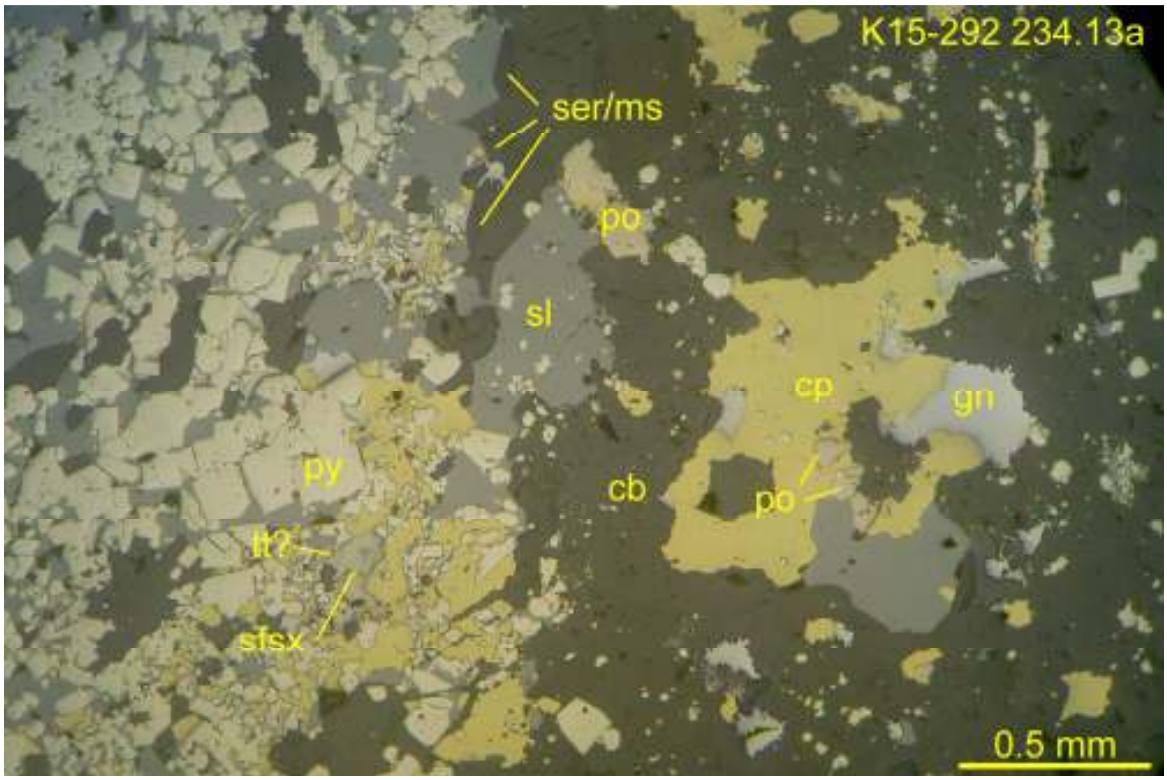
K98-188 79.39-79.5R: matrix of sphalerite, pyrrhotite, and galena to cubic pyrite crystals (rare arsenopyrite may partly replace pyrite?). Reflected light, uncrossed polars, field of view ~3 mm wide.



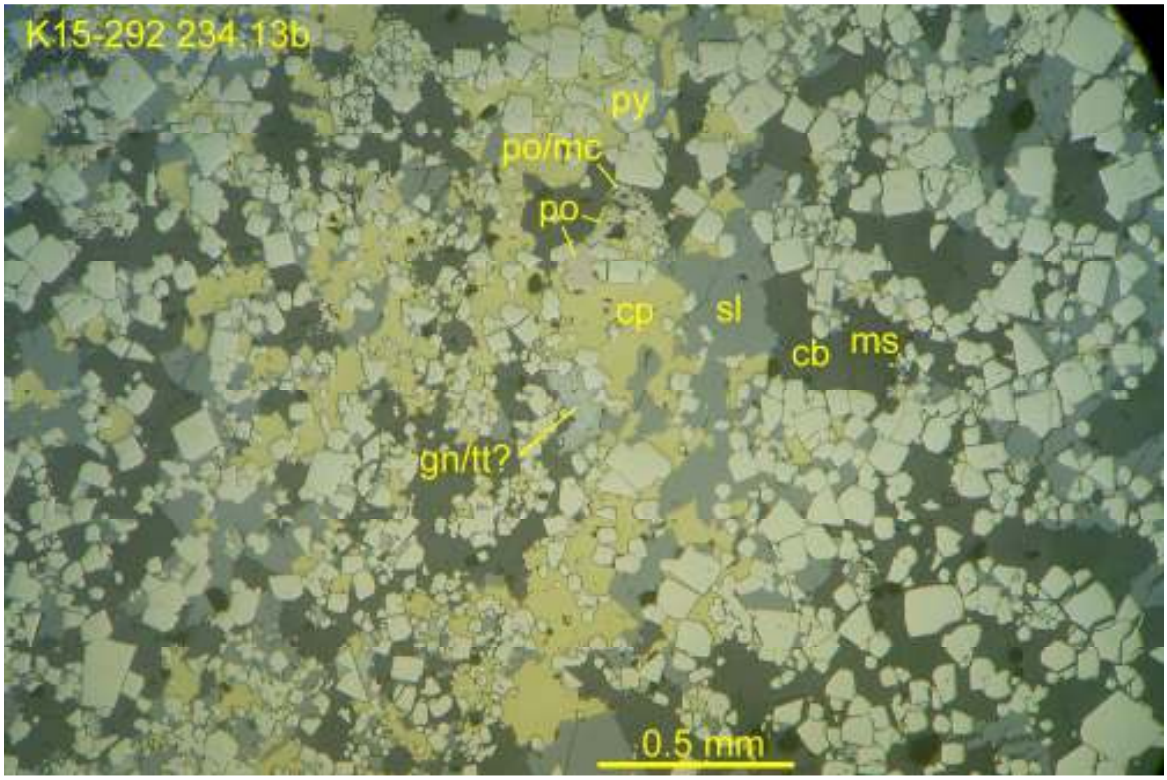
K15-292 221.18-221.37a: poorly defined, sphalerite-galena and locally chalcopyrite-rich band of massive sulfides in which the base-metal sulfides form a matrix (with gangues of carbonate, quartz, local barite?) to cubic euhedra of pyrite and significant fractured subhedra of magnetite. Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-292 221.18-221.37b: euhedral pyrite, lesser fractured subhedral magnetite contained within sphalerite-galena rich matrix that here contains significant, relatively coarse-grained grey isotropic sulfosalt (possibly tennantite-tetrahedrite, tn-tt?) up to almost 1 mm across, within galena. Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-292 234.13-234.31a: margin of carbonate band/vein in which chalcopyrite, sphalerite and galena are associated with pyrrhotite; note euhedral flakes of muscovite along margin, and traces of sulfosalts (sfsx, and tt?) in galena of sphalerite matrix to euhedral pyrite in wallrock massive sulfides. Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-292 234.13-234.31b: massive sulfides of euhedral pyrite in matrix of sphalerite-minor galena with faint compositional banding highlighted by chalcopyrite-rich zone; galena rarely contains symplectic intergrowths of sulfosalt2 (tennantite-tetrahedrite, tn?). Reflected light, uncrossed polars, field of view ~3 mm wide.

Overviews of thin sections and offcuts (blue semi-circles mark photomicrograph locations).





PETROGRAPHIC REPORT ON 11 SAMPLES OF MASSIVE SULFIDES

Report for: Murray Jones/Trevor Rabb
Equity Exploration Consultants Ltd.
1510-250 Howe Street
Vancouver, B.C. V6C 3R8 (604) 688-9806

Invoice 150890

Jan. 4, 2016.

SUMMARY:

This suite of 11 samples mostly represent crudely to locally vaguely banded/laminated, or in a few cases, relatively unbanded, massive sulfides composed mainly of euhedral pyrite, local magnetite, in a matrix of sphalerite-variable lesser galena-minor chalcopyrite-local pyrrhotite (largely altered to pyrite/marcasite)-arsenopyrite-trace sulfosalt(s) with gangues of carbonate-local, variable quartz, probable barite, sericite/muscovite, chlorite or rare biotite. The massive sulfide samples typically show sulfide/gangue ratios in the 70-80/30-20 range, with semi-massive sulfide samples in the 30-50/70-50 range. In both types, discontinuous banding/lamination is poorly defined by compositional/grain size variation from pyrite-rich with variable sphalerite and galena or locally chalcopyrite and/or (relict) pyrrhotite concentrations, to gangue-rich, particularly carbonate- or sericite-, locally barite?-rich (the latter typically associated with sphalerite and especially galena-rich zones, suggestive of the approach to the upper portions of a volcanogenic massive sulfide deposit). Weak foliation is locally defined by aligned mica flakes, sub-parallel to elongation of quartz or carbonate crystals/aggregates.

Pyrite is typically euhedral, rarely replaced at cores by arsenopyrite, and set (as is sporadic magnetite) in a variable matrix of the base-metal sulfides. Sphalerite varies from pale yellow-brown (Fe-poor) to more common dark orange-brown or intense red-brown (Fe-rich), sometimes even only a few meters apart. Locally, chalcopyrite, pyrrhotite, coarser sphalerite, galena and sulfosalts, appear to be associated with coarser-grained, possibly remobilized, carbonate ±quartz or barite bearing bands/veins that could represent remobilization of more volatile portions of the deposit during metamorphism/deformation (or might represent former stringers?). In general, deformation seems likely to have caused the softer sulfides (galena, sphalerite, pyrrhotite, chalcopyrite) to recrystallize or "flow" to form the matrix to the much harder, ubiquitous euhedral pyrite (and local subhedral magnetite, which has fractured and been partly altered to carbonate). Carbonate varies from calcite (typically in bands/veins or distinctly later planar veinlets) to mostly dolomite (gangue matrix) or locally ankerite (?). In some samples, the Fe-carbonate appears to rim or enclose the calcite/dolomite; in others, it may form the core. Chlorite may have replaced former pale brown biotite.

Sulfosalts appear to be mainly of two types, mostly within or closely associated with galena, particularly where in contact with sphalerite, chalcopyrite or pyrrhotite: first, one which is anisotropic under crossed polars but with only barely detectable, slightly lower reflectance and olive-grey colour compared to galena (could be any one of numerous Pb-Sb-As±Ag sulfosalts?), and second, grey, apparently isotropic (likely tennantite-tetrahedrite, could be Ag-bearing?). SEM analysis is recommended to identify these sulfosalts and their possible Ag contents. No gold was seen, in spite of detailed search at high magnification; again, SEM analysis might reveal gold particles.

Capsule descriptions are as follows:

K15-317 87.29-87.44: semi-massive pyrite-sphalerite-arsenopyrite- minor galena-trace sulfosalts (tennantite?/ unidentified)-chalcopyrite in gangue of barite?-minor carbonate-trace biotite, quartz. Arsenopyrite may replace pyrite, and sulfosalt may be mostly in barite-rich (±sphalerite-galena-carbonate) bands.

K15-319 168.68-168.83: semi-massive, disrupted-looking pyrite-sphalerite-chalcopyrite (local pyrrhotite inclusions)-minor galena (trace included sulfosalt, tetrahedrite?) with mainly carbonate gangue; a band/vein of coarser carbonate-minor quartz-sericite contains significant chalcopyrite, sphalerite, minor galena. There are late carbonate (possibly calcite) veinlets.

K15-209 22.37-22.5: massive pyrite-sphalerite-galena-chalcopyrite-significant sulfosalt (tetrahedrite?)-trace arsenopyrite, inter-banded with gangues of barite?-lesser carbonate, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-209 25.5-25.63: vaguely banded/ contorted massive pyrite-sphalerite-chalcopyrite-magnetite-arsenopyrite-pyrrhotite/marcasite-sulfosalts (boulangerite?/tennantite?)-galena, with carbonate ± quartz, sericite gangue.

K15-209 36.8-36.9: semi-massive pyrite (in part after pyrrhotite, with marcasite)-sphalerite-chalcopyrite-minor magnetite in gangue of carbonate-sericite/muscovite-minor chlorite. Chalcopyrite and sphalerite are mostly concentrated in thin bands that alternate with pyrite or gangue-rich bands.

K15-223 10.88-11.01: massive pyrite-sphalerite-magnetite-minor galena-chalcopyrite-trace sulfosalts (Pb-Sb-As?, tetrahedrite?), inter-banded with gangues of barite?-lesser carbonate, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-228 23.66-23.77: relatively unbanded massive pyrite-sphalerite-galena-arsenopyrite-minor sulfosalts (boulangerite?/unidentified?/tennantite?)-trace chalcopyrite-pyrrhotite, with quartz-carbonate-minor barite? ± possible limonite/sericite gangue.

K15-296 19.66-19.79: massive pyrite-minor sphalerite-chalcopyrite-magnetite-relict pyrrhotite (altered to marcasite)-galena/sulfosalt (mainly Pb-Sb-As?, trace tetrahedrite?), inter-banded with gangues of carbonate, minor quartz.

K15-296 23.8-23.93: massive pyrite-lesser sphalerite-minor galena-magnetite (altered to carbonate)-trace chalcopyrite-rare sulfosalt (tetrahedrite?), inter-banded with gangues of quartz-carbonate-minor sericite, possibly from the upper zones of a volcanogenic massive sulfide deposit.

K15-312 62.4-62.5: relatively un- or crudely banded massive pyrite-sphalerite-galena-trace sulfosalts (unidentified/tennantite?)-trace chalcopyrite, with carbonate-barite?-minor quartz ± possible apatite gangue.

K15-314 135.82-135.93: semi-massive pyrite (in part after pyrrhotite?)-sphalerite-galena-minor arsenopyrite-chalcopyrite±tetrahedrite? in gangues of quartz-carbonate-sericite/muscovite. Sphalerite and galena are mostly concentrated in thin bands with pyrite that alternate with gangue-rich bands.

Detailed petrographic descriptions and photomicrographs are appended (by email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

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K15-317 87.29-87.44: SEMI-MASSIVE PYRITE-SPHALERITE-ARSENOPYRITE- MINOR GALENA-TRACE SULFOSALTS (TENNANTITE?, UNIDENTIFIED)-CHALCOPYRITE IN GANGUE OF BARITE?-MINOR CARBONATE-TRACE BIOTITE, QUARTZ; ARSENOPYRITE MAY REPLACE PYRITE, AND SULFOSALT MAY BE MOSTLY IN BARITE-RICH (±SPHALERITE-GALENA-CARBONATE) BANDS

Hand sample not supplied; etched offcut shows fine-grained, grey, crudely banded/laminated pyrite-sphalerite rich semi-massive sulfide with significant lensy gangue inclusions. The rock is not magnetic, shows no reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (50%)

Sulfate (likely barite?)	90%
Carbonate (mainly dolomite/ankerite?)	10%
Biotite	<<1%
Quartz (mainly in central band/vein)	<<1%

Ore (50%)

Pyrite	65%
Sphalerite	15%
Arsenopyrite	12%
Galena	~7%
Sulfosalt 2 (tennantite-tetrahedrite?)	~1%
Chalcopyrite	<1%
Sulfosalt 1 (Pb-As, Bi or Ag?)	<<1%

Gangues appears to consist mainly of probable sulfate, most likely barite to judge by the relief only slightly negative compared to carbonate, although cleavage is not well developed/interference figures are difficult to obtain (rounded sub/anhedral crystals mainly 0.5-1 mm), minor carbonate (smaller subhedral/ragged anhedral crystals mainly 0.1-0.5 mm, likely dolomite or ankerite?), plus traces of biotite (pale brown pleochroic, euhedral flakes <0.2 mm typically aligned with the banding, only in certain bands) and rare quartz (subhedra mostly <0.15 mm with only mild undulose extinction. The gangue minerals are typically concentrated in lensy bands <2 mm thick by up to 2.5 cm long.

Ore minerals are crudely arranged in bands or laminations mostly <2 mm thick but loosely aggregating to about 1cm thick, highlighted by compositional variation (pyrite ±arsenopyrite-rich, commonly with discontinuous sphalerite ±galena rich matrix, alternating with gangue-rich bands). The latter typically contain most of the sulfosalts, intimately intergrown with sphalerite, galena, and contain the traces of biotite and quartz. Most pyrite occurs with sphalerite and minor galena but there is no chalcopyrite, suggesting this sample comes from an upper level of volcanogenic massive sulfide (Pb-Zn zone), supported by the presence of abundant barite (?). Pyrite forms generally cubic euhedra in the 0.1-0.5 mm range, commonly mixed with (partly replaced by?) arsenopyrite as euhedra that average <0.1 mm (rarely to 0.2 mm, locally in irregular patches up t ~1 mm across). Sphalerite forms sub- to rarely euhedral, somewhat rounded crystals mostly <1 mm intergrown with galena as irregular masses mostly <0.65 mm. Sphalerite shows pale orange-brown colour suggestive of low Fe content; no chalcopyrite inclusions were noted. Rare chalcopyrite occurs as anhedra <0.1 mm between pyrite and sphalerite. Sulfosalts are mostly grey, apparently isotropic (likely tennantite-tetrahedrite given the abundance of arsenopyrite in the sample) forming symplectic intergrowths with galena, mostly <0.35 mm long, but include traces of one with nearly the same colour/reflectance as galena but weak anisotropism under crossed polars (possibly Pb-Sb-rich like bournonite, or Pb-As?) forming sub/euhedra mostly <50 µm.

In summary, this is semi-massive pyrite-sphalerite-arsenopyrite- minor galena-trace sulfosalts (tennantite?, unidentified)-chalcopyrite in gangue of barite?-minor carbonate-trace biotite, quartz. Arsenopyrite may replace pyrite, and sulfosalt may be mostly in barite-rich (±sphalerite-galena-carbonate) bands.

K15-319 168.68-168.83: SEMI-MASSIVE, DISRUPTED-LOOKING PYRITE-SPHALERITE-CHALCOPYRITE (LOCAL PYRRHOTITE INCLUSIONS)-MINOR GALENA (TRACE INCLUDED SULFOSALT, TETRAHEDRITE?) WITH MAINLY CARBONATE GANGUE; A BAND/VEIN OF COARSER CARBONATE-MINOR QUARTZ-SERICITE CONTAINS SIGNIFICANT CHALCOPYRITE, SPHALERITE, MINOR GALENA

Hand sample not supplied; etched offcut shows fine/medium-grained, grey, disrupted-looking semi-massive sulfide composed mainly of pyrite, lesser sphalerite, chalcopyrite, in carbonate gangue somewhat segregated into ~2 cm bands of coarser, carbonate ±chalcopyrite rich rock. The rock is locally magnetic, shows widespread but very slow reaction to cold dilute HCl (mainly only where scratched) and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (50%)

Carbonate (mainly dolomite?)	95%
Quartz	3-5%
Sericite	1-2%

Ore (50%)

Pyrite	70%
Sphalerite	15%
Chalcopyrite	10%
Galena	3-5%
Pyrrhotite	<1%
Sulfosalt (tetrahedrite?)	<1%

Gangue minerals are almost entirely carbonate, forming sub- to anhedral crystals mainly in the 0.5 to 1.0 mm range where intermixed with the massive sulfides, or up to almost 2 mm within the coarser band or vein-like area. The carbonate species is difficult to be sure of but reaction is very slow; suggesting it may be dolomite or even ankerite (?), except in distinct later veinlets up to ~1 mm thick where reaction is stronger, suggestive of calcite. The late calcite veins are locally accompanied by narrow veinlets <0.15 mm thick along which pyrite is shattered. Local minor quartz forms subhedra or locally zoned euhedra mostly <0.5 but up to almost 1mm long, especially in the coarse band or vein; most quartz crystals are apparently relatively unstrained. Locally there is also minor sericite (?) as randomly oriented subhedral flakes<1 mm in diameter.

In the gangue-rich band or vein, chalcopyrite is common, forming ragged sub/anhedral aggregates to almost 2 mm, containing traces of pyrrhotite (subhedra <0.1 mm), and intergrown with sphalerite as irregular subhedra to ~2 mm, galena as irregular subhedra to 0.5 mm; pyrite forms mostly euhedra to 1.5 mm. Galena does not appear to contain sulfosalt.

In the somewhat finer-grained semi-massive sulfide portion of the sample, ore minerals are not obviously banded but aggregate to about 2 cm thick; as in the carbonate rich portion, some areas are rich in coarse chalcopyrite. Pyrite forms generally cubic euhedra in the 0.5-1.0 mm range, but locally super-crystals up to 3 mm across contain inclusions of sphalerite and galena mainly <0.5 mm; rare chalcopyrite inclusions are <0.2 mm. Arsenopyrite is not detected in the sample. Sphalerite forms sub- to rarely euhedral crystals mostly <1 mm long but locally in aggregates to 2 mm long, associated or intergrown with the coarsest pyrite and chalcopyrite, local galena crystals. Sphalerite shows dark red-brown colour suggestive of high Fe content. Chalcopyrite forms ragged subhedra up to 3 mm across, locally containing inclusions of pyrrhotite as clusters of subhedra <0.5 mm across, or as thin veinlets <0.1 mm within sphalerite. In general, galena is minor, mainly <0.5 mm, intergrown with or included in sphalerite (local aggregates to ~1 mm). Galena contains most of the minor grey, apparently isotropic sulfosalt (tetrahedrite-tennantite?) as symplectic intergrowths <0.5 mm,

In summary, this is semi-massive, disrupted-looking pyrite-sphalerite-chalcopyrite (local pyrrhotite inclusions)-minor galena (trace included sulfosalt, tetrahedrite?) with mainly carbonate gangue; a band/vein of coarser carbonate-minor quartz-sericite contains significant chalcopyrite, sphalerite, minor galena. There are late carbonate, possibly calcite, veinlets.

K15-209 22.37-22.5: MASSIVE PYRITE-SPHALERITE-GALENA-CHALCOPYRITE-SIGNIFICANT SULFOSALT (TETRAHEDRITE?)-TRACE ARSENOPYRITE, INTER-BANDED WITH GANGUES OF BARITE?-LESSER CARBONATE, PRESUMABLY FROM THE UPPER ZONES OF A VOLCANOGENIC MASSIVE SULFIDE DEPOSIT

Hand sample not supplied; etched offcut shows mainly fine-grained, dark grey, crudely banded/laminated massive sulfide composed mainly of pyrite and sphalerite, with only minor gangue. The rock is locally slightly magnetic, but shows no reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (25%)

Sulfate (likely barite?)	65%
Carbonate (dolomite or ankerite?)	35%

Ore (75%)

Pyrite	60%
Sphalerite	30%
Galena	5%
Chalcopyrite	3-5%
Sulfosalt 2 (tennantite-tetrahedrite?)	~1%
Arsenopyrite (only with chalcopyrite/sulfosalt)	trace

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite-lesser sphalerite-significant galena-chalcopyrite-minor sulfosalt, alternating with poorly defined, discontinuous bands of gangues (mainly barite, lesser carbonate).

Gangue minerals are locally concentrated into discontinuous bands up to about 2 mm thick, parallel to the poorly defined banding in the sulfides. Barite (?) forming the bulk of the gangues occurs as sub- to anhedral, irregular crystals mostly <1.2 mm long, commonly more or less aligned (length:width up to 3:1) in the plane of banding. Carbonate crystals typically intergrown with the barite (?) occur as ragged, irregular to skeletal anhedra mostly <0.6 mm that lack elongation in the plane of banding. The complete lack of reaction to cold dilute HCl, even where powdered, suggests it may be ankerite (?). If quartz is present it is not readily detectable.

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <1 mm thick, but coalescing in places to almost 0.5 cm. They vary from pyrite rich (±chalcopyrite, sulfosalt, trace arsenopyrite) to sphalerite (±galena) rich, the latter more commonly associated with gangues of barite (?) and carbonate. Pyrite typically occurs as euhedral cubic crystals ranging from 0.1 to 1.0 mm; the coarser crystals are somewhat blastic, set in a background of the finer crystals, in a matrix of sphalerite-galena-minor local chalcopyrite. Sphalerite forms sub- to locally euhedral crystals mostly in the 0.5-1.0 mm range, with pale yellow-brown colour suggestive of low Fe content, and commonly intergrown with or containing inclusions of galena (anhedral, <1 mm) or locally chalcopyrite (fine-grained, <0.1 mm). Galena also occurs as 1) fine-grained inclusions in or matrix to pyrite, or 2) subhedral, interstitial crystals rarely over 0.4 mm across; the concentrations tend to follow the banding, and to follow the concentrations of sphalerite. Chalcopyrite is much less common, mostly as irregular masses up to 3 mm long, distributed along the banding, mixed with sphalerite or galena as a matrix to pyrite, and with significant amounts of the grey, apparently isotropic sulfosalt (tennantite-tetrahedrite?) forming irregular masses also up to ~3 mm long typically located at the margins of chalcopyrite where associated with sphalerite or galena.

In summary, this is massive pyrite-sphalerite-galena-chalcopyrite-significant sulfosalt (tetrahedrite?)-trace arsenopyrite, inter-banded with gangues of barite?-lesser carbonate, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-209 25.5-25.63: VAGUELY BANDED/ CONTORTED MASSIVE PYRITE-SPHALERITE-CHALCOPYRITE-MAGNETITE-ARSENOPYRITE-PYRRHOTITE/MARCASITE-SULFOSALTS (BOULANGERITE?/TENNANTITE?)-GALENA, WITH CARBONATE ± QUARTZ, SERICITE

Hand sample not supplied; etched offcut shows fine/medium-grained, grey, disrupted-looking massive sulfide composed mainly of pyrite-lesser sphalerite-magnetite in carbonate gangue (partly segregated into contorted, <2 cm bands of coarser, carbonate ±chalcopyrite, local arsenopyrite, pyrrhotite). The rock is strongly magnetic, shows very slow reaction to cold dilute HCl (mostly where scratched) and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (25%)

Carbonate (mainly dolomite or ankerite?)	98%
Quartz	~1%
Sericite	~1%

Ore (75%)

Pyrite	65%
Sphalerite	15%
Chalcopyrite	10%
Magnetite	3%
Arsenopyrite	2%
Pyrrhotite (partly altered to marcasite)	2%
Marcasite (likely after pyrrhotite)	2%
Sulfosalt 1 (Pb-As-Sb?)	<1%
Sulfosalt 2 (tetrahedrite?)	<1%
Galena	<1%

This sample consists of possibly formerly crudely banded, but now contorted/crenulated, massive sulfides (mainly pyrite; matrix of sphalerite-local chalcopyrite-magnetite-arsenopyrite-pyrrhotite (partly/largely replaced by marcasite)-minor sulfosalts (one of which may be mixed with trace galena?). The massive sulfide "bands" appear to be <1 cm thick (except where apparently thickened in the hinges of folds to ~2 cm), crudely alternating with thinner, poorly defined, discontinuous or disrupted "bands" richer in gangues (mainly carbonate, with only traces of quartz and sericite).

The bulk of the sulfide bands consists of pyrite, forming either tightly interlocking, 0.1-0.5 mm sub/anhedra, or 0.5-1.0 mm sub/euhedra, set in a matrix of variable sphalerite, chalcopyrite, carbonate and magnetite. Carbonate forms tightly interlocking, sub- to locally euhedral crystals mainly <0.5, but up to 1.25 mm in size; it could be dolomite or possibly ankerite to judge by lack of reaction to HCl in the offcut. Magnetite occurs as scattered, fractured subhedra mostly <0.35 mm. Rare quartz (irregular sub/anhedra <0.35 mm) and sericite (sub/euhedral flakes to 0.5 mm, locally with pale green/brownish colour suggestive of being after former biotite?) occur in carbonate.

The sphalerite typically forms interlocking, subhedral crystals <1.5 mm but locally aggregating to ~6 mm, with deep, dark red colour indicative of high Fe content, and is intergrown with or contains inclusions of, chalcopyrite as sub/anhedra <1 mm (but aggregating in places to ~3 mm), closely associated with pyrrhotite (irregular masses to 3 mm of subhedra mostly <0.8 mm) and arsenopyrite as partly fractured euhedra up to ~1 mm. The pyrrhotite is commonly partly, to locally completely, replaced by lamellar-textured marcasite as fine, needle-like subhedra mainly <20 μm thick by up to 0.2 mm long, probably aligned with the axis of the original pyrrhotite crystals. In places, sulfosalt is relatively common, forming skeletal-shaped masses up to almost 0.5 cm across composed mainly of subhedra <0.5 mm that are slightly darker than the galena it is mixed with, with a faintly olive-green tint, and distinctly to strongly anisotropic in shades of grey under crossed polars (likely Pb-As/Sb sulfosalt such as boulangerite?). Galena is relatively rare, forming subhedra <0.5 mm; there is also very minor sulfosalt 2 (grey, isotropic, likely tennantite-tetrahedrite?) as subhedral inclusions <0.15 mm, mostly around the margins of sulfosalt 1. In summary, this is vaguely banded/ contorted massive pyrite-sphalerite-chalcopyrite-magnetite-arsenopyrite-pyrrhotite/marcasite-sulfosalts (boulangerite?/tennantite?)-galena, with carbonate ± quartz, sericite gangue.

K15-209 36.8-36.9: SEMI-MASSIVE PYRITE (IN PART AFTER PYRRHOTITE, WITH MARCASITE)-SPHALERITE-CHALCOPYRITE-MINOR MAGNETITE IN GANGUE OF CARBONATE-SERICITE/MUSCOVITE-MINOR CHLORITE. CHALCOPYRITE AND SPHALERITE ARE MOSTLY CONCENTRATED IN THIN BANDS THAT ALTERNATE WITH PYRITE OR GANGUE-RICH BANDS

Hand sample not supplied; etched offcut shows fine-grained, grey, finely banded/laminated semi-massive sulfide composed mainly of pyrite and sphalerite in abundant carbonate gangue. The rock is distinctly magnetic, shows no discernible reaction to cold dilute HCl (even where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is roughly:

Gangue (70%)

Carbonate (mainly ankerite?)	65%
Sericite/muscovite	30%
Chlorite	5%

Ore (30%)

Pyrite (primary?)	20%
(±marcasite, after former pyrrhotite?)	20%
Sphalerite	30%
Chalcopyrite	25%
Magnetite	2-3%
Pyrrhotite (partly/largely altered to pyrite/marcasite)	2-3%

This sample consists of thin bands or laminae (mostly 1-2 mm thick, but aggregating to ~1 cm) of sulfide-rich (variably pyrite, sphalerite, chalcopyrite, or pyrrhotite altered to pyrite-marcasite, local magnetite-rich) or gangue-rich (mainly carbonate-sericite/muscovite, local chlorite/relict biotite).

Gangue minerals are dominated by intimately intermixed carbonate and sericite or muscovite. The carbonate forms sub- to rarely euhedral crystals mainly in the 0.5 mm (locally <0.1, or less commonly up to almost 1 mm) range, the latter mostly n rounded “augen”. The carbonate species is difficult to be sure of due to the HF attack damaging the surface and making it less reactive; it may be dolomite or ankerite (?). Sericite or muscovite forms coarse euhedral flakes up to about 1 mm, mostly aligned in the plane of banding/foliation. In some laminae/foliae, minor chlorite of similar size to biotite shows pale yellow-green pleochroism and length-slow, low to moderate birefringence suggestive of F:M slightly more than 0.5 (or it may replace relict biotite).

Ore mineral bands or laminations are highlighted by compositional variation (pyrite-rich, sphalerite- or chalcopyrite-rich, relict pyrrhotite altered to pyrite-marcasite rich). Magnetite is widely scattered as subhedra <0.5 mm, mainly in sulfide-rich bands. Most sulfides occur separately within the matrix of carbonate-sericite. Pyrite forms generally cubic sub/euhedra <0.5 mm in diameter, but where it is after pyrrhotite (relics with subhedral outlines <0.65 mm), it occurs as sub/anhedral aggregates of similar size with fine internal texture, locally intermixed with minor marcasite <0.1 mm in size. Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.75 mm in diameter but commonly in aggregates up to 2 mm long, elongated in the plane of banding; galena is not seen. Sphalerite shows very dark red-brown colour suggestive of high Fe content. Chalcopyrite occurs as subhedra mostly <0.7 mm but also in aggregates to 1.5 mm long aligned in the foliation; they are commonly intergrown with sphalerite or with relict pyrrhotite or secondary pyrite/marcasite aggregates after pyrrhotite, but less commonly with pyrite considered to be likely primary.

In summary, this is semi-massive pyrite (in part after pyrrhotite, with marcasite)-sphalerite-chalcopyrite-minor magnetite in gangue of carbonate-sericite/muscovite-minor chlorite. Chalcopyrite and sphalerite are mostly concentrated in thin bands that alternate with pyrite or gangue-rich bands.

K15-223 10.88-11.01: MASSIVE PYRITE-SPHALERITE-MAGNETITE-MINOR GALENA-CHALCOPYRITE-TRACE SULFOSALTS (PB-SB-AS?, TETRAHEDRITE?), INTER-BANDED WITH GANGUES OF BARITE?-LESSER CARBONATE, PRESUMABLY FROM THE UPPER ZONES OF A VOLCANOGENIC MASSIVE SULFIDE DEPOSIT

Hand sample not supplied; etched offcut shows mainly fine-grained, dark grey, crudely banded/ laminated massive sulfide composed mainly of pyrite and sphalerite, with only minor gangue. The rock is strongly magnetic, shows minor reaction to cold dilute HCl (only where scratched), and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (25%)

Sulfate (likely barite?)	65%
Carbonate (mainly dolomite?)	35%

Ore (75%)

Pyrite	70%
Sphalerite	20%
Magnetite	7%
Galena	3%
Chalcopyrite	<1%
Sulfosalt 2 (tennantite-tetrahedrite?)	trace
Sulfosalt 1 (Pb-As-Sb?)	trace

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite-lesser sphalerite-significant magnetite-minor galena-trace chalcopyrite- sulfosalt, alternating with poorly defined, discontinuous bands of gangues (mainly barite, lesser carbonate).

Gangue minerals are locally concentrated into discontinuous bands up to about 2 mm thick, parallel to the poorly defined banding in the sulfides. Barite (?) forming the bulk of the gangues occurs as sub- to anhedral, irregular crystals mostly <1.2 mm long, commonly more or less aligned in the plane of banding (length:width locally up to ~3:1). Carbonate crystals typically intergrown with the barite (?) occur as ragged, irregular to skeletal anhedra mostly <0.6 mm that lack elongation in the plane of banding (but may occur in elongated aggregates to 1.5 mm long, in the plane of banding or foliation). The slow reaction to cold dilute HCl, only where powdered, suggests it is likely dolomite (?). If quartz is present it is not readily detectable.

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <2 mm thick, but coalescing in places to almost 1 cm. They vary from pyrite rich (±magnetite, minor local chalcopyrite) to sphalerite-magnetite rich (±galena, traces of sulfosalt), the former more commonly associated with gangues of carbonate and the latter more commonly associated with gangues of barite (?) and carbonate. Pyrite typically occurs as euhedral cubic crystals ranging from 0.2 to 1.5 mm; the coarser crystals are somewhat blastic, set in a background of the finer crystals, with or without magnetite as highly fractured, ragged subhedra up to ~1.5 mm (local aggregates to almost 4 mm). The magnetite crystals commonly contain fine, rounded inclusions of pyrite, less common galena or sphalerite, rare chalcopyrite, and are partly altered to carbonate along fractures. Both pyrite and magnetite are set in a poorly developed matrix of sphalerite-galena-minor local chalcopyrite; arsenopyrite was not found. Sphalerite forms sub- to locally euhedral crystals mostly in the 0.5-1.0 mm range, with medium orange-brown colour suggestive of moderate Fe content, and commonly intergrown with or containing inclusions of galena (ragged, anhedral, <1 mm) or locally chalcopyrite (subhedral, <0.5 mm). The concentrations of galena tend to follow the banding, and to follow the concentrations of sphalerite; chalcopyrite is much less common, but where present, also appears to be distributed along the banding. Galena contains only traces of either sulfosalt 1 (almost indistinguishable from galena except by weak anisotropism under crossed polars, subhedra <0.1 mm) or the grey, apparently isotropic sulfosalt (tennantite-tetrahedrite?) as subhedral inclusions <25 μm.

In summary, this is massive pyrite-sphalerite-magnetite-minor galena-chalcopyrite-trace sulfosalts (Pb-Sb-As?, tetrahedrite?), inter-banded with gangues of barite?-lesser carbonate, presumably from the upper zones of a volcanogenic massive sulfide deposit.

K15-228 23.66-23.77: RELATIVELY UNBANDED MASSIVE PYRITE-SPHALERITE-GALENA-ARSENOPYRITE-MINOR SULFOSALT (BOULANGERITE?/UNIDENTIFIED?/TENNANTITE?) -TRACE CHALCOPYRITE-PYRRHOTITE, WITH QUARTZ-CARBONATE-MINOR BARITE? ± POSSIBLE LIMONITE/SERICITE GANGUE

Hand sample not supplied; etched offcut shows fine/medium-grained, grey, almost unbanded massive sulfide composed mainly of pyrite-lesser sphalerite in lesser gangue (locally segregated into discontinuous, <3 mm bands of coarser, partly Fe-stained carbonate). The rock is locally slightly magnetic, shows very slow reaction to cold dilute HCl (mostly where scratched) except rapid in thin bands and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (30%)

Quartz	80%
Carbonate (dolomite except veins of Fe-calcite?)	15%
Barite (?)	~5%
Limonite, sericite (?)	<1%

Ore (70%)

Pyrite	70%
Sphalerite	25%
Galena	3%
Arsenopyrite	1-2%
Sulfosalt 1 (Pb-As-Sb?)	<1%
Sulfosalt 2 (tetrahedrite?)	trace
Chalcopyrite	trace
Pyrrhotite (associated with chalcopyrite, sulfosalts)	trace

This sample consists of possibly formerly crudely banded, but now almost massive, sulfides (mainly pyrite; matrix of sphalerite-local galena-minor arsenopyrite-sulfosalt(s)-trace chalcopyrite-pyrrhotite); gangues are mainly quartz, lesser carbonate, minor barite. The massive sulfide "bands" appear to be 1-2 cm thick locally alternating with thinner, poorly defined, discontinuous or disrupted "bands" richer in carbonate (locally Fe-stained, possibly with minor limonite and/or sericite?). <u>These carbonate-rich bands appear to be associated with the bulk of the sulfosalts.</u>

The bulk of the sulfide bands consist of pyrite, forming either tightly interlocking, 0.1-0.5 mm sub/anhedra, or 0.5-1.0 mm sub/euhedra, set in a matrix of variable sphalerite, minor galena, quartz and carbonate. The pyrite is locally partly replaced at the core by arsenopyrite as euhedra mostly <0.1 mm. Sphalerite typically forms interlocking, subhedral crystals <0.5 mm (locally aggregating to ~2 mm) with medium orange-brown colour indicative of moderate Fe content. It is intergrown with or contains inclusions of galena as ragged, locally skeletal anhedra rarely >1 mm, closely associated with or including sulfosalts (irregular masses also to ~1 mm of locally bladed subhedra mostly <0.4 mm that are slightly or distinctly darker than the galena, with a faint to distinct olive-green tint, and distinctly to strongly anisotropic in shades of grey under crossed polars, likely Pb-As/Sb sulfosalt such as boulangerite and/or unidentified?). Chalcopyrite is relatively rare, forming subhedra <0.1 mm; intergrown with traces of sulfosalt 2 (grey, isotropic, likely tennantite-tetrahedrite?) as subhedral inclusions <50 µm, and rare pyrrhotite as subhedra <25 µm.

In summary, this is relatively unbanded massive pyrite-sphalerite-galena-arsenopyrite-minor sulfosalts (boulangerite?/unidentified?/tennantite?)-trace chalcopyrite-pyrrhotite, with quartz-carbonate-minor barite? ± possible limonite/sericite gangue.

K15-296 19.66-19.79: MASSIVE PYRITE-MINOR SPHALERITE-CHALCOPYRITE-MAGNETITE-RELICT PYRRHOTITE (ALTERED TO MARCASITE)-GALENA/SULFOSALT (MAINLY PB-SB-AS?, TRACE TETRAHEDRITE?), INTER-BANDED WITH GANGUES OF CARBONATE, MINOR QUARTZ

Hand sample not supplied; etched offcut shows mainly very fine-grained, dark grey, crudely banded/ laminated massive sulfide composed mainly of pyrite but with local chalcopyrite- or sphalerite-rich bands, and only minor gangue. The rock is distinctly to strongly magnetic, but shows only minor reaction to cold dilute HCl (only where scratched), and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (20%)

Carbonate (dolomite or ankerite?)	85%
Quartz	15%

Ore (80%)

Pyrite	85%
Sphalerite	5%
Chalcopyrite	5%
Magnetite	2-3%
Pyrrhotite (partly/largely altered to pyrite/marcasite)	2-3%
Galena	<1%
Sulfosalt 1 (Pb-As-Sb?)	<1%
Sulfosalt 2 (tetrahedrite?)	trace

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite with only minor sphalerite-chalcopyrite-magnetite-pyrrhotite (mainly replaced by marcasite), local galena and sulfosalt, alternating with poorly defined, discontinuous bands of gangues (mainly carbonate, less quartz).

Gangue minerals locally concentrated into discontinuous bands up to about 2 mm thick are parallel to the poorly defined banding in the sulfides. Carbonate forming the bulk of the gangues occurs as sub- to anhedral, irregular crystals mostly <1.2 mm long, but locally in aggregates up to 3 mm long (length:width up to 3:1) more or less aligned in the plane of banding. Quartz crystals typically intergrown with the carbonate occur as irregular to rounded sub/anhedra mostly <1 mm that lack elongation in the plane of banding. The very slow reaction to cold dilute HCl, only where powdered, suggests it is likely dolomite and ankerite (?). If barite is present it is not readily detectable.

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <3 mm thick, but commonly coalescing to almost 2 cm. They vary from pyrite rich (±chalcopyrite, relict pyrrhotite replaced by marcasite) to sphalerite (±galena, sulfosalt) rich, the latter more commonly associated with gangues of carbonate and quartz. Pyrite typically occurs as interlocking, sub- to euhedral cubic crystals ranging from 0.1 to 0.5 mm, locally with a matrix of chalcopyrite and/or pyrrhotite (largely altered to marcasite) or magnetite. The chalcopyrite is typically interstitial to pyrite, fine-grained (irregular to locally subhedral, <0.1 mm but aggregating to 1.5 mm). Pyrrhotite occurs as subhedra to 0.4 mm almost everywhere replaced by lamellar-textured marcasite as subhedral needles <0.1 mm long. Magnetite occurs as fractured subhedra or irregular aggregates rarely over 1 mm across. Sphalerite is only locally present, forming sub- to locally euhedral crystals mostly in the 0.2-0.5 mm range, with orange-brown to dark red-brown colour suggestive of fairly high Fe content, only rarely intergrown or associated with irregular crystals of galena (anhedral, <1 mm) and anisotropic sulfosalt (boulangerite/unidentified?) forming highly irregular masses mostly <0.5 mm long (composed of sub/anhedra mainly <0.25mm), typically located at the margins of, or included within, pyrite where associated with sphalerite or galena. This sulfosalt rarely contains inclusions of grey, apparently isotropic sulfosalt (likely tetrahedrite <50 μm in size.

In summary, this is massive pyrite-minor sphalerite-chalcopyrite-magnetite-relict pyrrhotite (altered to marcasite)-galena/sulfosalt (mainly Pb-Sb-As?, trace tetrahedrite?), inter-banded with gangues of carbonate, minor quartz.

K15-296 23.8-23.93: MASSIVE PYRITE-LESSER SPHALERITE-MINOR GALENA-MAGNETITE (ALTERED TO CARBONATE)-TRACE CHALCOPYRITE-RARE SULFOSALT (TETRAHEDRITE?), BANDED WITH GANGUES OF QUARTZ-CARBONATE±SERICITE

Hand sample not supplied; etched offcut shows mainly fine-grained, dark grey, crudely banded/laminated massive sulfide composed mainly of pyrite and sphalerite, with only minor gangue. The rock is locally distinctly magnetic, and shows minor reaction to cold dilute HCl (mainly where scratched), but no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (20%)

Quartz	50%
Carbonate (calcite, dolomite?)	45%
Sericite (muscovite)	<5%

Ore (80%)

Pyrite	60%
Sphalerite	30%
Galena	3-5%
Magnetite (altered to carbonate)	1-2%
Chalcopyrite	<1%
Sulfosalt 2 (tetrahedrite?)	trace

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite-significant sphalerite-lesser galena-trace chalcopyrite, alternating with poorly defined, discontinuous bands of gangues (containing mainly roughly equal proportions of quartz and carbonate; local minor sericite).

Gangue minerals are locally concentrated into discontinuous bands mainly <2 mm thick, parallel to the poorly defined banding in the sulfides. Quartz content is variable, locally forming the bulk of the gangue, or in places subordinate to carbonate. Quartz occurs as sub- to anhedral, irregular crystals mostly <0.65 mm, locally in aggregates with rounded outlines to ~1 mm; the crystals are typically randomly oriented. Carbonate crystals typically intergrown with the quartz occur as ragged, irregular to skeletal anhedra mostly <0.6 mm that where in aggregates locally show elongation in the plane of banding. The variable reaction to cold dilute HCl, strongest where powdered, suggests it may be calcite and dolomite (?). Minor sericite or muscovite is locally present as ragged, subhedral flakes rarely over 0.6 mm in diameter, separately or mixed with carbonate, generally not aligned.

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <1 mm thick, but commonly coalescing in places to almost 1 cm. They vary from pyrite rich (±chalcopyrite) to sphalerite (±galena, magnetite) rich; there is no obvious relation with quartz-carbonate variation. Pyrite typically occurs as euhedral cubic crystals ranging from 0.1 to 0.5 mm; set in a matrix of sphalerite-minor galena-rare local chalcopyrite. Sphalerite forms sub- to locally euhedral crystals mostly in the 0.5-1.0 mm range, with medium orange-brown colour suggestive of moderate Fe content, and commonly intergrown with or containing inclusions of galena (ragged, anhedral/skeletal, to ~1 mm) or very rarely chalcopyrite (fine-grained, interstitial, <0.1 mm). Galena rarely contains trace amounts of the grey, apparently isotropic sulfosalt (tennantite-tetrahedrite?) as subhedra <50 μm typically located at the margins of galena. Magnetite occurs sporadically as ragged, fractured subhedra mostly <0.5 mm, typically partly altered to carbonate along the fractures; carbonate appears to include both slightly coarser, lower-relief calcite (subhedra to 0.2 mm) and finer-grained, higher-relief dolomite or ankerite (?) as granular subhedra mostly <35 μm.

In summary, this is massive pyrite-lesser sphalerite-minor galena-magnetite (altered to carbonate)-trace chalcopyrite-rare sulfosalt (tetrahedrite?), inter-banded with gangues of quartz-carbonate-minor sericite, possibly from the upper zones of a volcanogenic massive sulfide deposit.

K15-312 62.4-62.5: RELATIVELY UN- OR CRUDELY BANDED MASSIVE PYRITE-SPHALERITE-GALENA-TRACE SULFOSALTS (UNIDENTIFIED?/TENNANTITE?)-TRACE CHALCOPYRITE, WITH CARBONATE-BARITE?-MINOR QUARTZ± APATITE? GANGUE

Hand sample not supplied; etched offcut shows fine/medium-grained, grey, almost unbanded massive sulfide composed mainly of pyrite-sphalerite in lesser gangue (locally segregated into ~1 cm bands of coarser carbonate). The rock is locally very slightly magnetic, shows slow reaction to cold dilute HCl (mostly where scratched, mainly in the coarser bands), and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (30%)

Carbonate (dolomite except veins of Fe-calcite?)	80%
Barite (?)	15%
Quartz	~5%
Apatite (?)	<1%

Ore (70%)

Pyrite	55%
Sphalerite	35%
Galena	10%
Chalcopyrite	trace
Sulfosalt 1 (Pb-As-Sb?)	trace
Sulfosalt 2 (tetrahedrite?)	trace

This sample consists of very crudely banded, almost massive, sulfides (pyrite in significant matrix of sphalerite-galena-very rare sulfosalt(s)-chalcopyrite); gangues are mainly quartz, lesser carbonate, minor barite. The massive sulfide bands are 2-3 cm thick locally alternating with poorly defined, discontinuous or disrupted bands up to 1 cm thick rich in gangues (mainly carbonate, locally with barite (?), very minor quartz, rare apatite?). Thin, late carbonate veinlets are sub-perpendicular to the crude banding.

The bulk of the sulfide bands consist of pyrite and sphalerite, lesser galena. Pyrite forming either tightly interlocking, 0.1-0.5 mm subhedra, or 0.5-1.0 mm euhedra (in places segregated into poorly defined bands <2-3 mm thick), is set in a variable but locally almost continuous matrix of variable sphalerite, galena, and minor carbonate. The pyrite locally contains inclusions of galena or sphalerite as rounded subhedra mostly <0.1 mm. Sphalerite typically forms interlocking, subhedral crystals <1.5 mm (locally semi-continuous aggregates to ~5 mm) with medium to dark orange-brown colour indicative of moderate/high Fe content. It is intergrown with or contains common inclusions of galena as ragged, locally skeletal anhedra commonly up to 2 mm across, very rarely including sulfosalts (irregular subhedral masses <0.1 mm that are slightly anisotropic in shades of grey under crossed polars, possibly Pb-As/Sb sulfosalt?, or traces of grey, isotropic sulfosalt 2, likely tennantite-tetrahedrite? as subhedral inclusions <50 μm). Chalcopyrite is relatively rare, forming subhedra <0.1 mm; intergrown with or included within sphalerite, only in the coarse carbonate band.

Gangue-rich bands, especially the coarse-grained one, consist of interlocking carbonate (subhedra that are semi-continuous for up to about 3 mm, although somewhat recrystallized, with undulose or variable extinction suggestive of deformation; could be dolomite?), lesser probable barite (?) as rounded subhedra to 1.2 mm with locally visible cleavage, and relief near that of carbonate compared to relatively rare quartz of similar size and shape (the quartz is also distinguishable in reflected light by its strong positive relief). Rarely, rounded subhedra <0.5 mm of similar appearance to barite, within the massive sulfide, appear to give uniaxial negative interference figures, suggestive of apatite (?). Late, planar veinlets up to 1.5 mm thick consist of interlocking, relatively clear carbonate (calcite?) as subhedra to almost 2 mm long.

In summary, this is relatively un- or crudely banded massive pyrite-sphalerite-galena-trace sulfosalts (unidentified?/tennantite?)-trace chalcopyrite, with carbonate-barite?-minor quartz- ± possible apatite gangue.

K15-314 135.82-135.93: SEMI-MASSIVE PYRITE (IN PART AFTER PYRRHOTITE?)-SPHALERITE-GALENA-MINOR ARSENOPYRITE-CHALCOPYRITE-TRACE SULFOSALT IN GANGUES OF QUARTZ-CARBONATE-SERICITE/MUSCOVITE

Hand sample not supplied; etched offcut shows fine-grained, grey, finely banded/laminated semi-massive sulfide composed mainly of pyrite and sphalerite in abundant quartz?-carbonate gangue. The rock is not magnetic, shows slow reaction to cold dilute HCl (mainly where scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (65%)

Quartz	60%
Carbonate (mainly dolomite?)	20%
Sericite/muscovite	20%

Ore (35%)

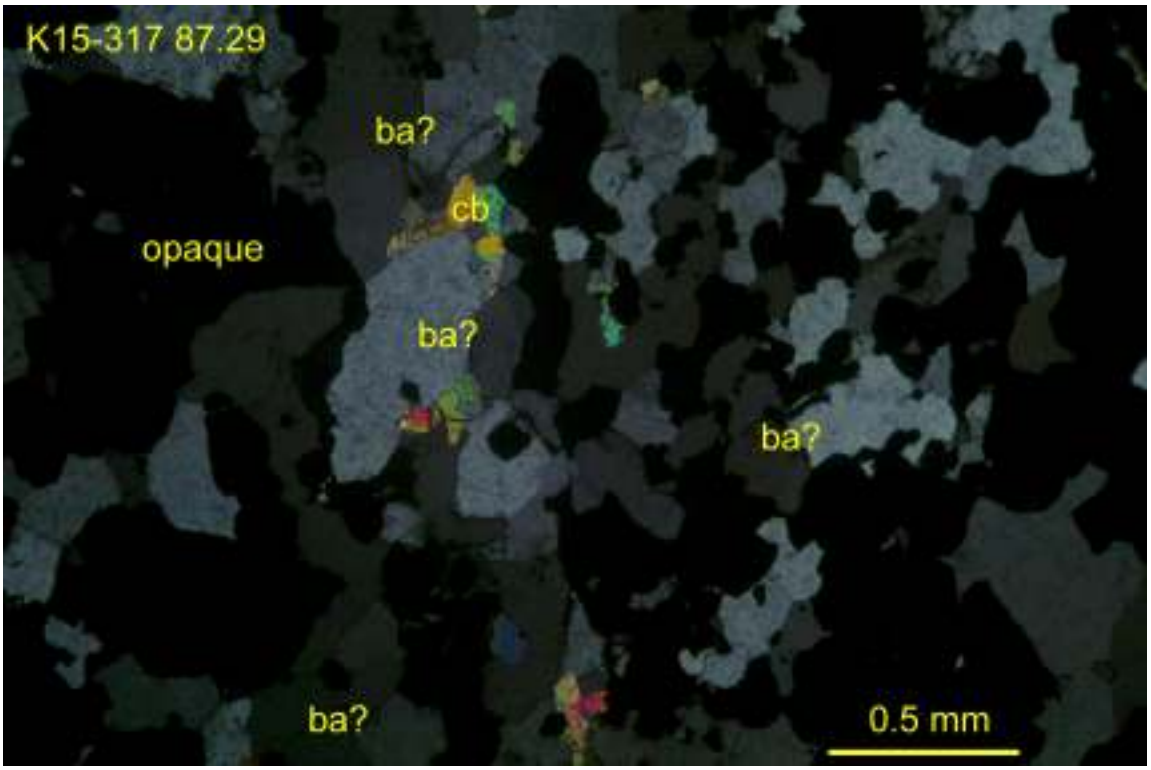
Pyrite	75%
Sphalerite	15%
Galena	3-5%
Arsenopyrite	1-2%
Chalcopyrite	<1%
Sulfosalt 2 (tennantite-tetrahedrite?)	trace

This sample consists of poorly defined, partly discontinuous, thin bands or laminae (mostly 1-2 mm thick, but aggregating to ~1 cm) of sulfide-rich (pyrite, variable sphalerite, galena, arsenopyrite, minor local chalcopyrite) or gangue-rich (mainly quartz-lesser carbonate-sericite/muscovite) rock.

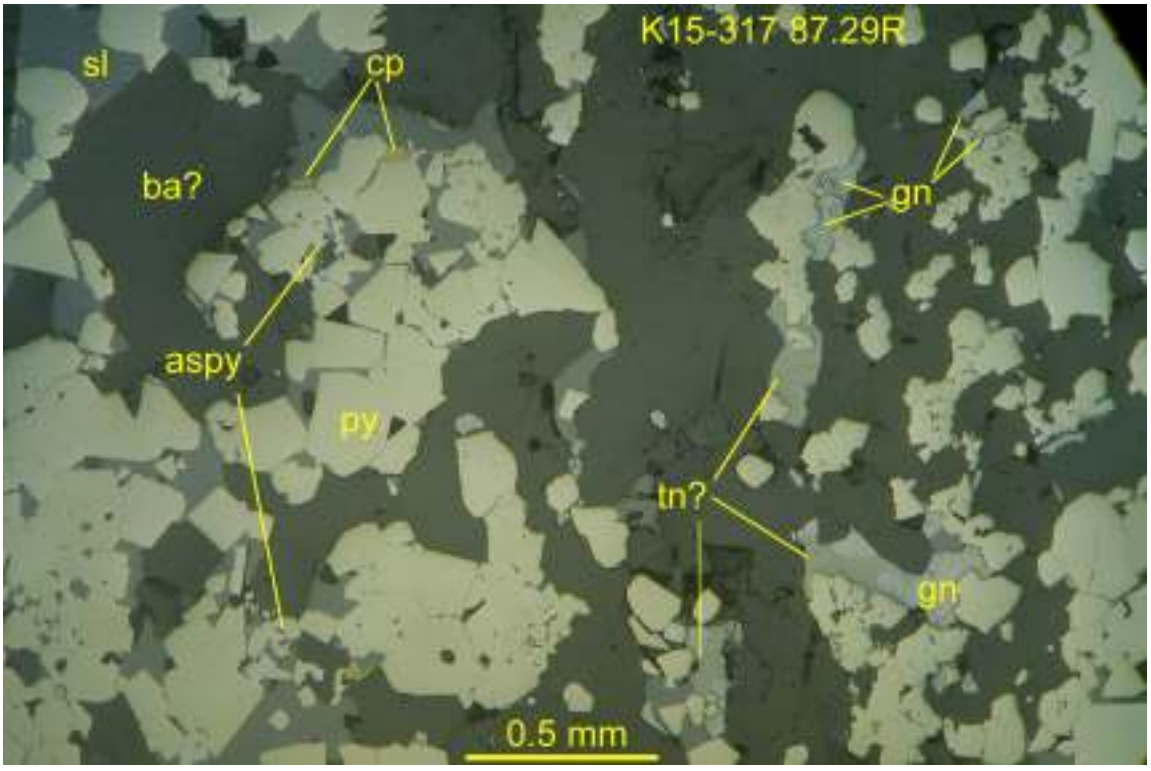
Gangue minerals are dominated by quartz, but in places with intimately intermixed carbonate and sericite/muscovite. Quartz forms interlocking, locally somewhat rounded sub/anhedra mainly in the 0.5-1.0 mm range, but locally forming lensy aggregates up to 2 mm long (aligned with the banding, somewhat elongated to ~3:1 length:width ratio). Only mild undulose extinction, no sub-grain development or suturing of grain boundaries suggests either weak deformation or post-deformation annealing; the latter is supported by poorly developed triple junctions. The carbonate typically forms sub- to anhedral crystals mainly in the 0.5 mm up to almost 1 mm range, the latter locally in lenses up to ~4 mm long also with elongation in the plane of banding/foliation. The carbonate species is difficult to be sure of due to the HF attack damaging the surface and making it less reactive, but is likely dolomite (?). Sericite or muscovite forms coarse euhedral flakes up to about 1 mm, mostly aligned in the plane of banding/foliation. In some laminae/foliae, sericite or muscovite dominates as aligned flakes that impart a foliation.

Ore mineral bands or laminations are highlighted by grain size or compositional variation (pyrite-rich, with sphalerite- or galena-rich, local arsenopyrite; chalcopyrite is much more restricted in its distribution). Pyrite forms generally cubic sub/euhedra <0.5 mm in diameter, or in some bands mainly in the 20 μm-0.1 mm range (the latter could in part possibly be after former pyrrhotite relics with sub/anhedral outlines <0.65 mm?). Arsenopyrite is locally recognized as euhedra to 0.3 mm, at the cores of (possibly replacing?) pyrite aggregates. Sphalerite forms somewhat rounded sub- to rarely euhedral crystals mostly <0.5 mm in diameter commonly mixed with galena forming ragged subhedral to skeletal crystals also <0.5 mm that tend to be tarnished (poorly polished) making search for possible sulfosalt 1 difficult. Both galena and to a lesser extent sphalerite locally show atoll texture, filling the cores of pyrite crystals (possible remnants of original sea-bed sulfides?). Sphalerite shows dark orange-brown colour suggestive of moderate/high Fe content. Chalcopyrite occurs only sparsely as sub/anhedra or aggregates mostly <0.2 mm, commonly intergrown with galena; here, traces of grey, apparently isotropic sulfosalt (tennantite-tetrahedrite?) occur included in galena as subhedra <0.1 mm.

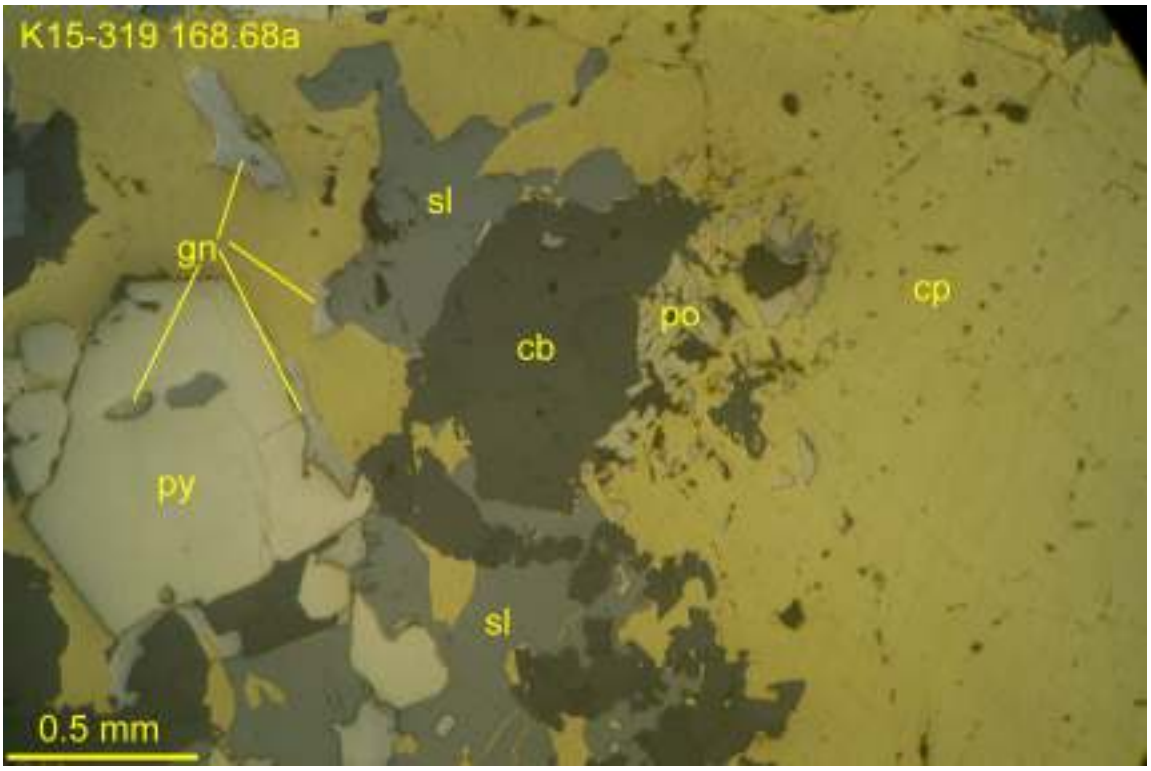
In summary, this is semi-massive pyrite (in part after pyrrhotite?)-sphalerite-galena-minor arsenopyrite-chalcopyrite±tetrahedrite? in gangues of quartz-carbonate-sericite/muscovite. Sphalerite and galena are mostly concentrated in thin bands with pyrite that alternate with gangue-rich bands.



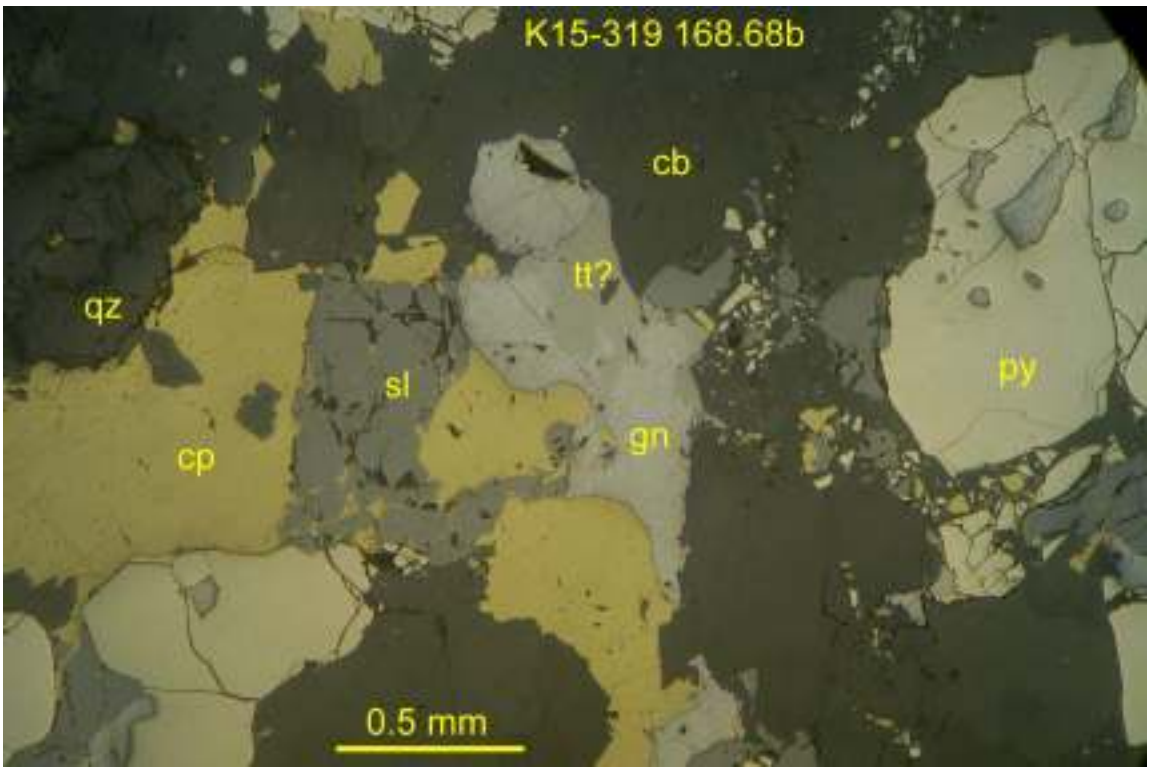
K15-317 87.29-87.44: gangue-rich band composed mainly of probable barite (ba?) with only minor carbonate (cb); opaque is mainly sulfide ±sulfosalt (see below). Transmitted light, crossed polars, field of view ~3 mm wide.



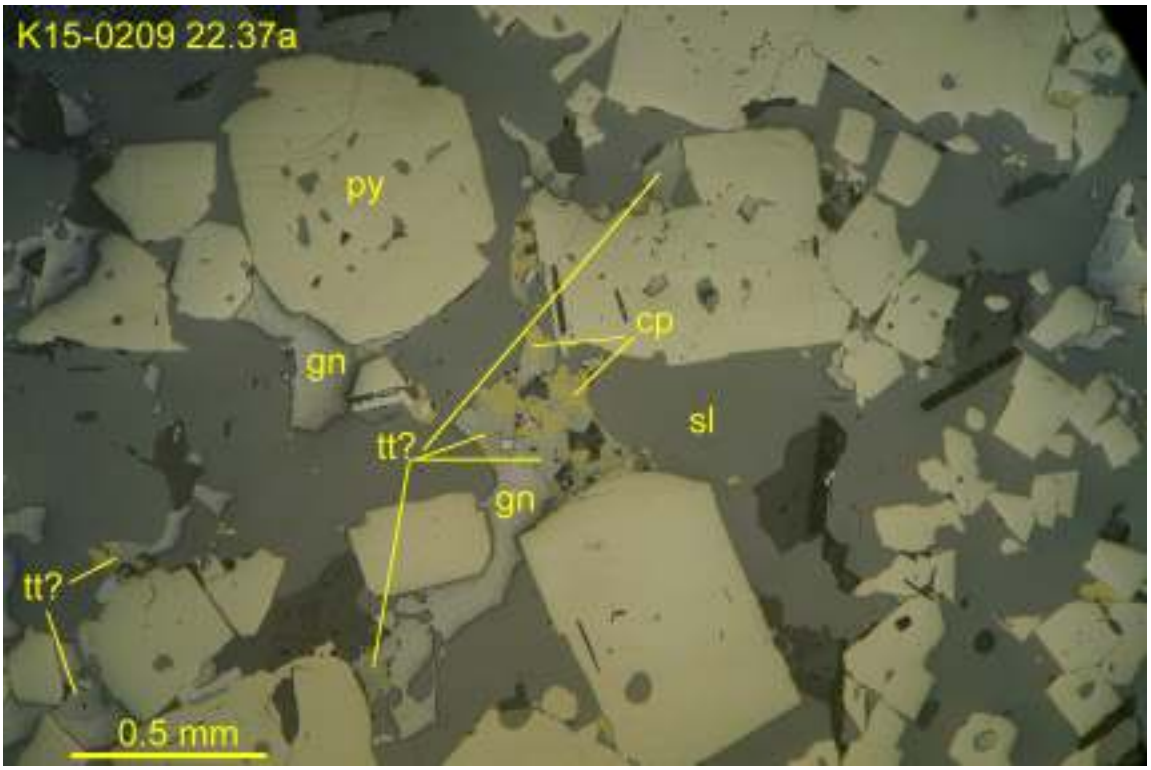
K15-317 87.29-87.44R: approximately same view as above to show grey sulfosalt (tennantite-tetrahedrite, tn?) with galena (gn) and sphalerite (sl) in gangue-rich band, flanked by pyrite (py)-minor arsenopyrite (aspy) rich bands also containing sphalerite and traces of chalcopyrite (cp). Reflected light, uncrossed polars, field of view ~3 mm wide.



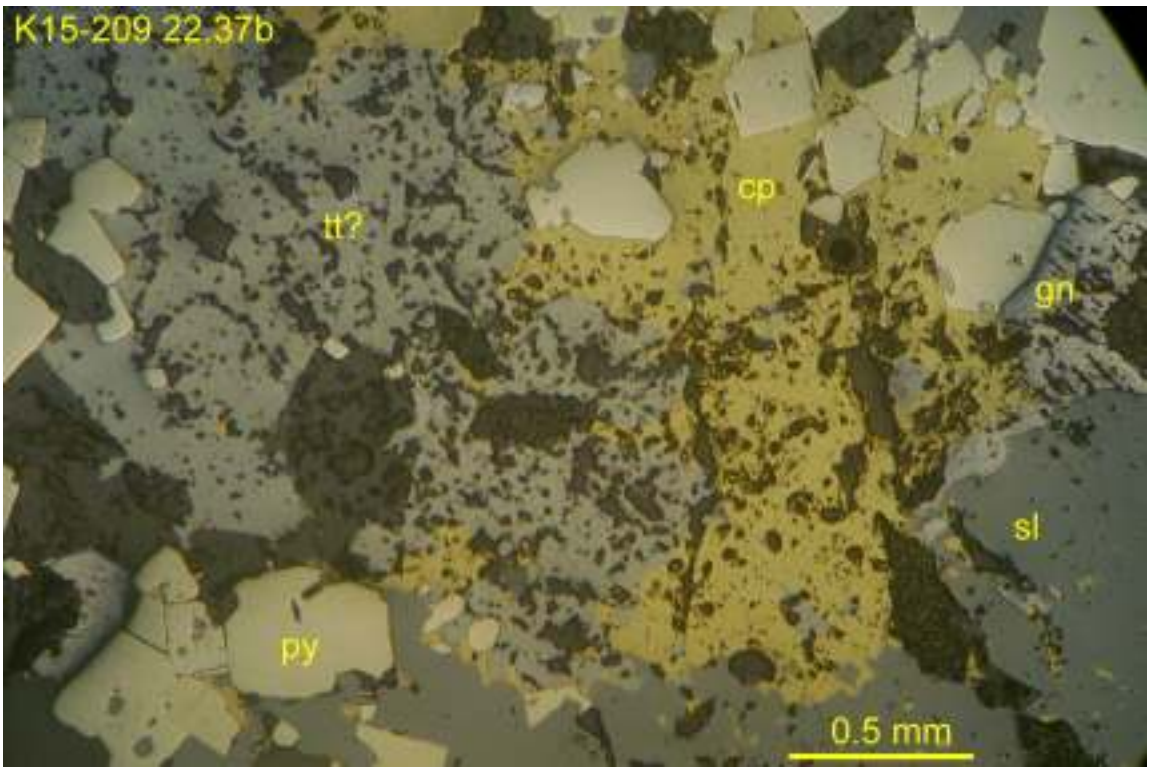
K15-319 168.68-168.83a: abundant, coarse-grained chalcopyrite (with minor inclusions of galena or local pyrrhotite, po), intergrown with or partly remobilized into adjacent sphalerite, surrounding euhedral pyrite that may contain inclusions of galena; gangues are mostly carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



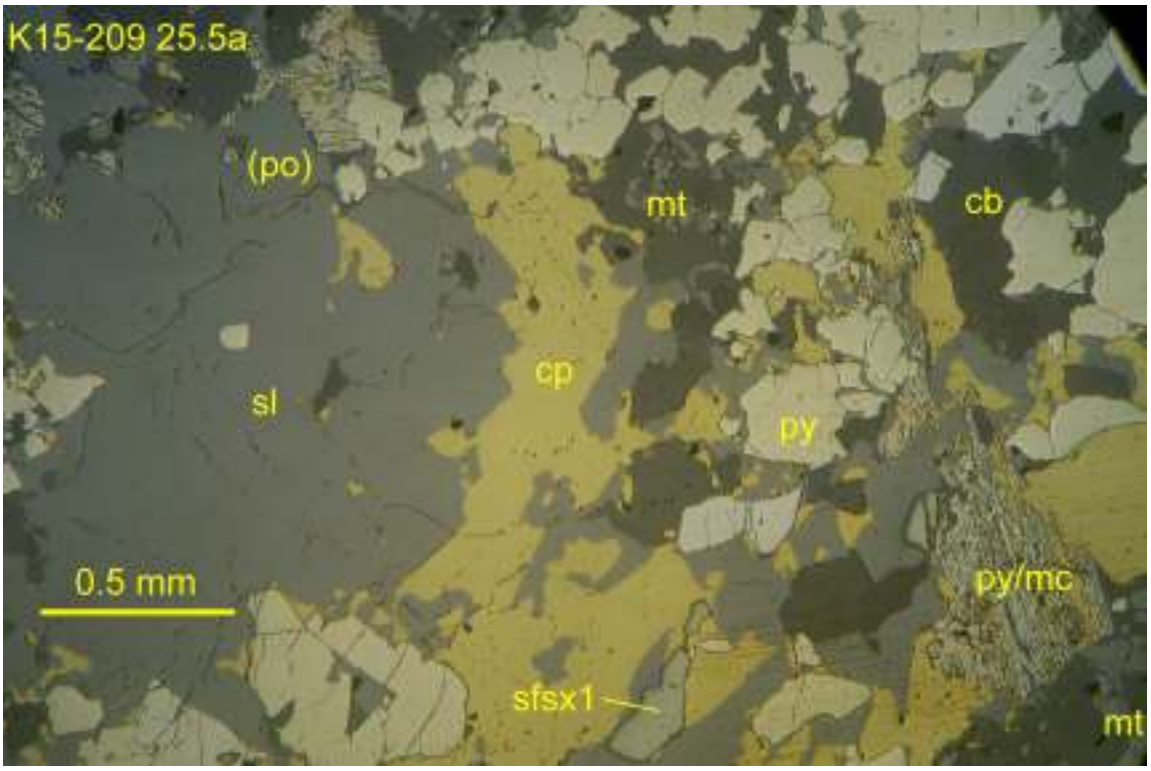
K15-319 168.68-168.83b: galena containing symplectic intergrowths/inclusions of grey isotropic sulfosalt (tetrahedrite tt?), intergrown with subhedral pyrite, chalcopyrite and sphalerite (micro-veinlets of chalcopyrite in sphalerite, galena inclusions in pyrite). Gangues are carbonate/minor quartz (qz). Reflected light, uncrossed polars, field of view~3 mm.



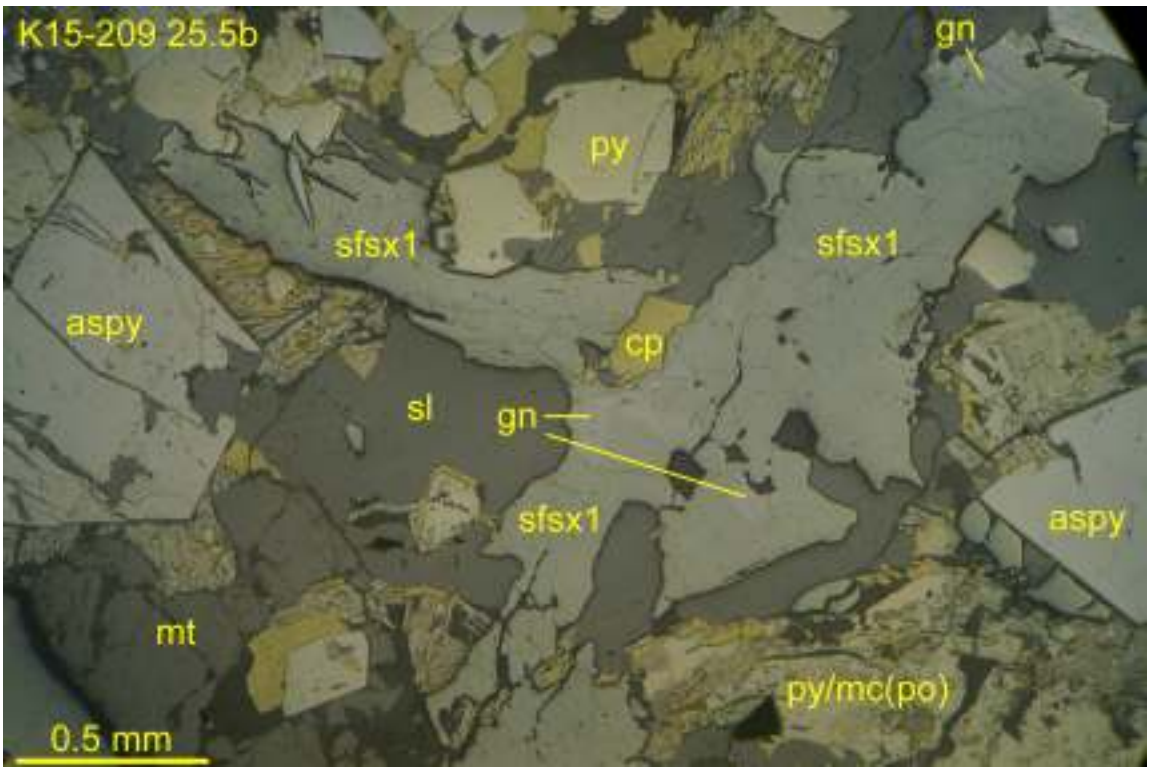
K15-209 22.37-22.5a: Zn-Pb rich band composed of matrix of sphalerite-minor galena (locally containing chalcopyrite-grey sulfosalt, likely tetrahedrite?), with coarser pyrite as cubic euhedra than in adjacent, pyrite-rich bands which contain finer-grained pyrite; gangues are barite and carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



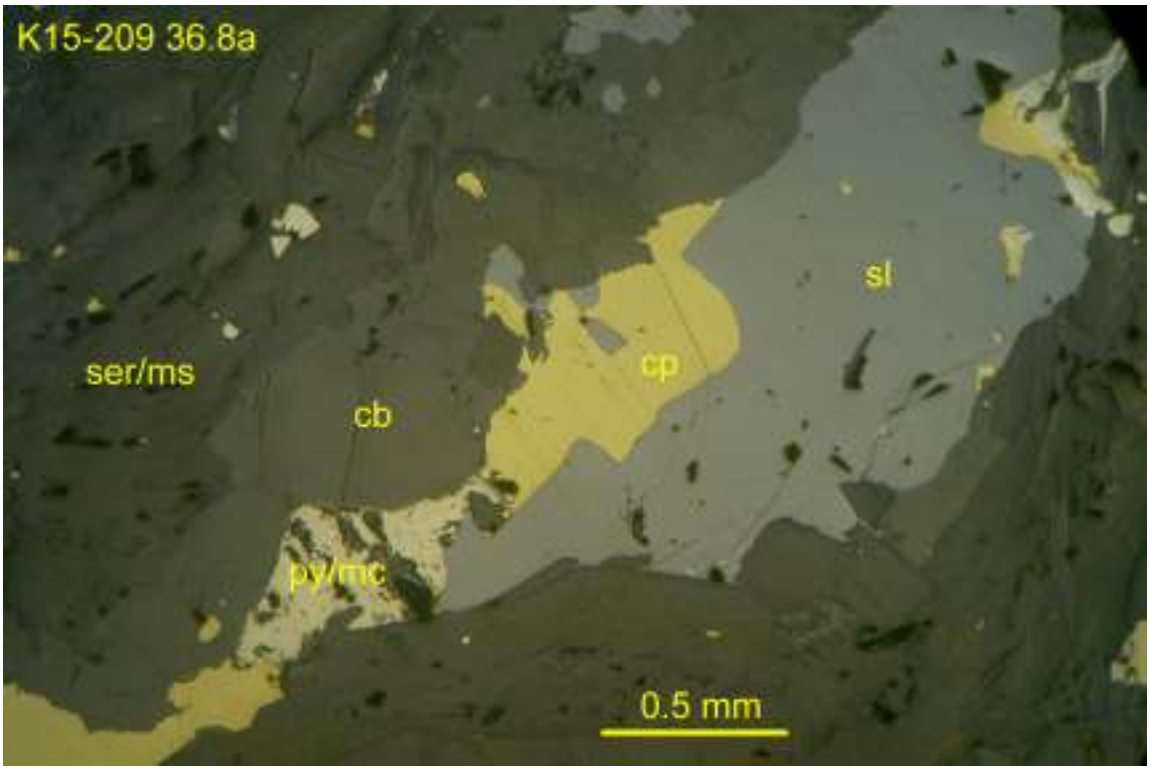
K15-209 22.37-22.5b: coarse-grained, abundant grey sulfosalt (tetrahedrite?) intergrown with chalcopyrite, sphalerite, lesser galena (gangues mostly barite, minor carbonate) in base-metal rich band between pyrite-rich bands. Reflected light, uncrossed polars, field of view ~3 mm wide.



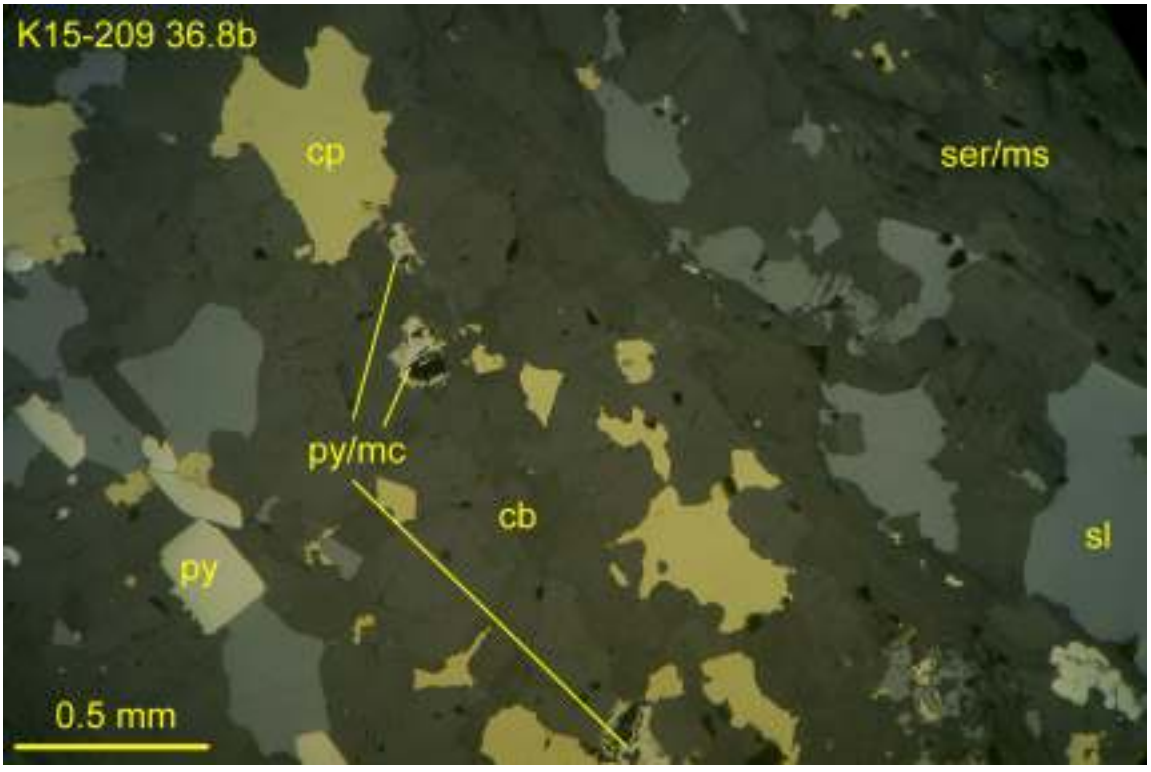
K15-209 25.5-25.63a: coarse sphalerite-chalcopyrite-minor pyrrhotite (partly replaced by lamellar-textured marcasite, mc) and carbonate gangue matrix to subhedral pyrite, local minor magnetite (mt) and rare sulfosalt 1 (sfsx). Reflected light, uncrossed polars, field of view ~3 mm wide.



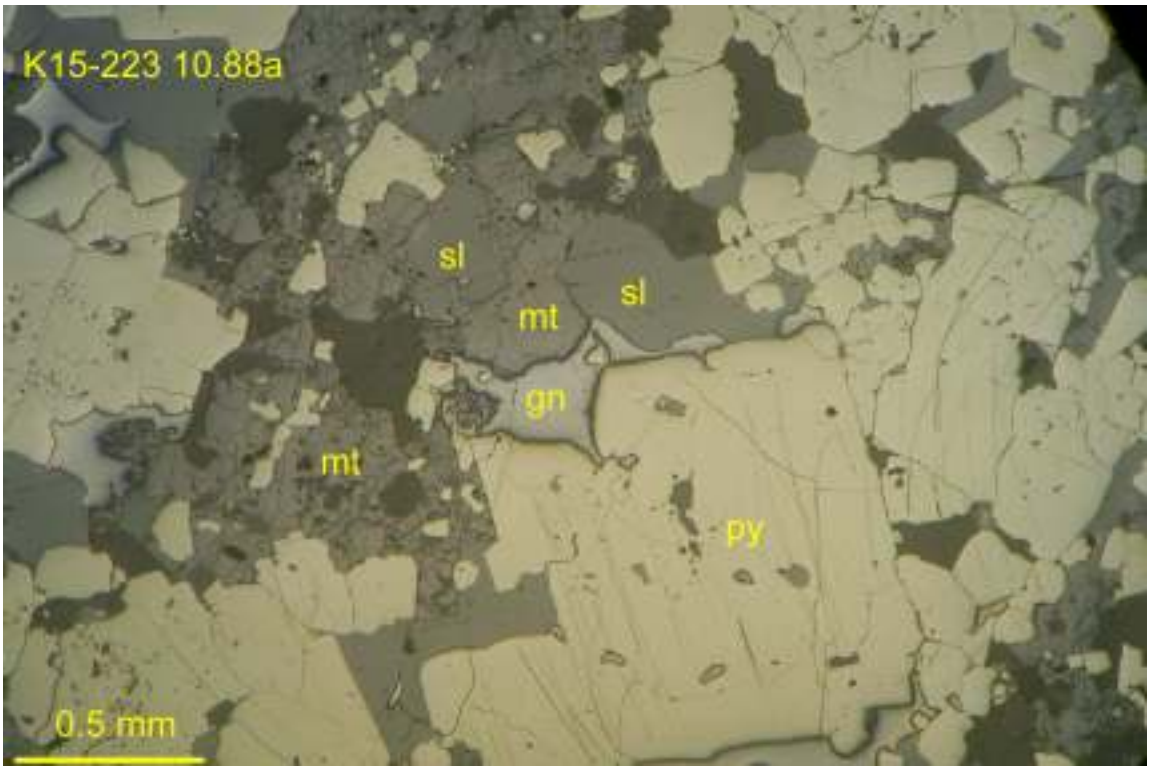
K15-209 25.5-25.63b: coarse sulfosalt 1 (possibly boulangerite, mixed with minor galena, and at margins with sulfosalt 2, likely tetrahedrite?), forming matrix with sphalerite, chalcopyrite and marcasite after pyrrhotite, to subhedral pyrite and local magnetite, euhedral arsenopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



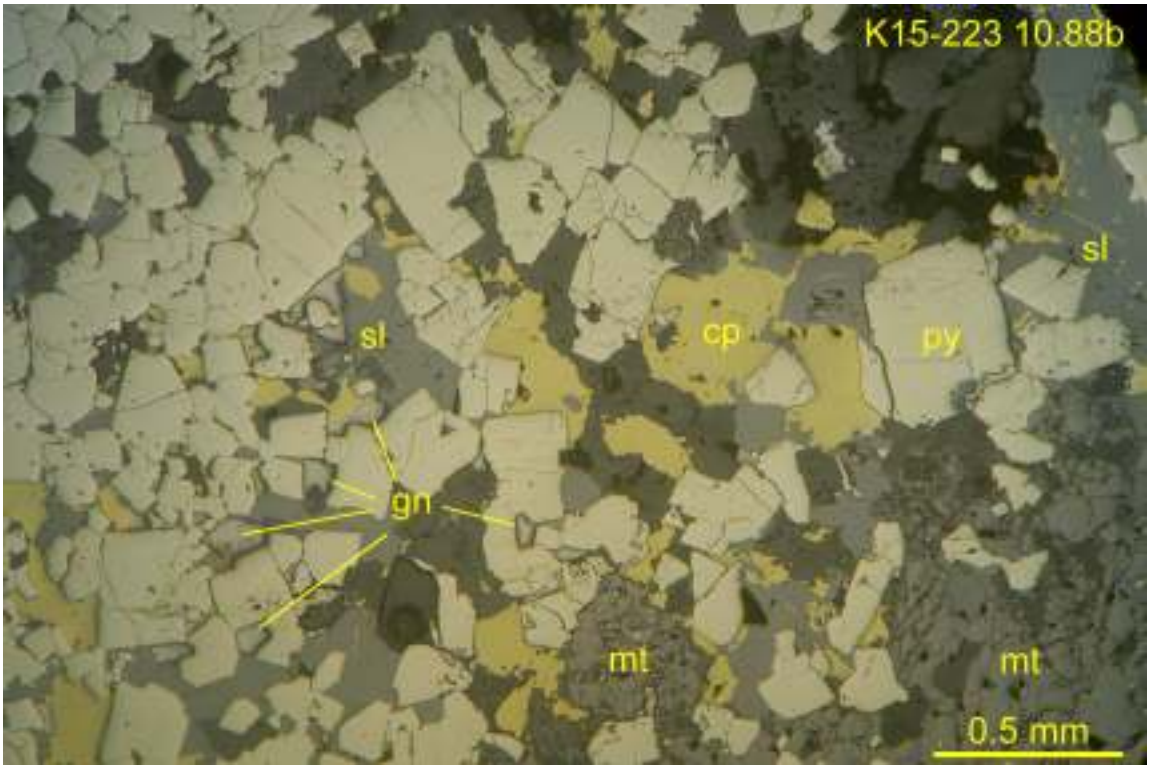
K15-209 36.8-36.9a: alternating bands/laminae of either sphalerite-chalcopyrite-relict pyrrhotite (altered to pyrite ±marcasite, py/mc) rich, or gangue (carbonate-sericite/muscovite) rich rock. Reflected light, uncrossed polars, field of view ~3 mm wide.



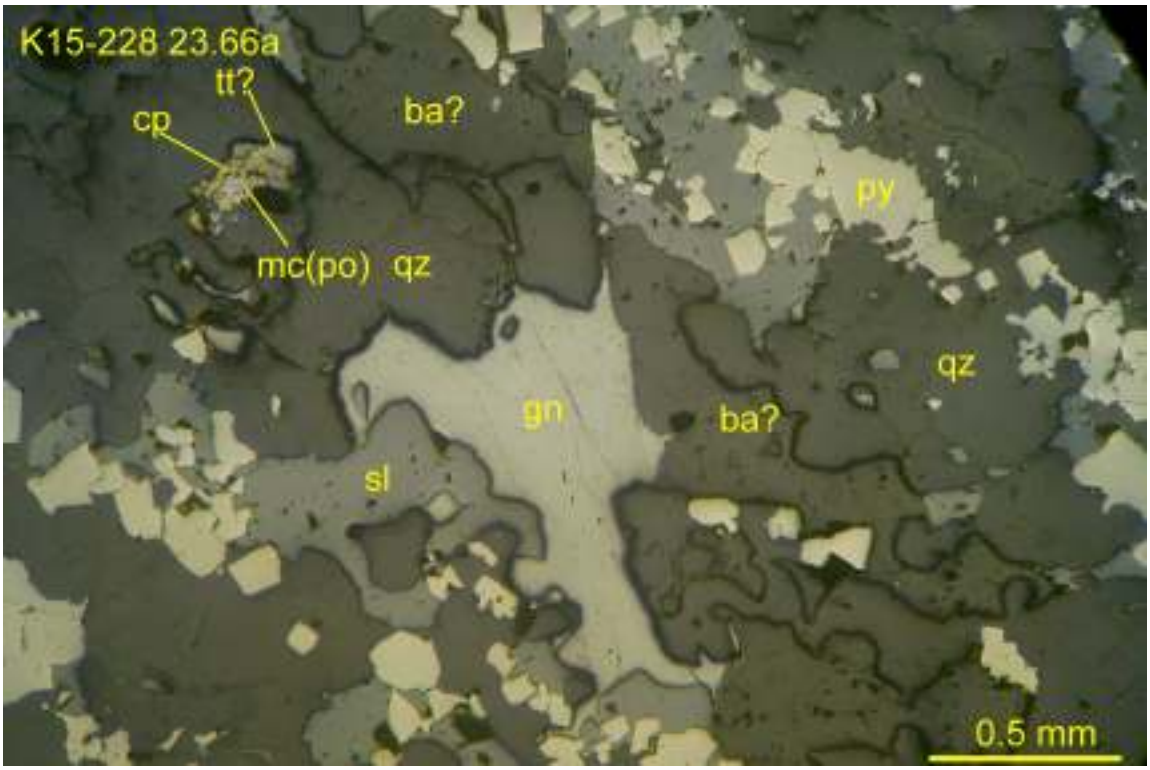
K15-209 36.8-36.9b: alternating bands/laminae of sphalerite-chalcopyrite-primary cubic pyrite or relict pyrrhotite (altered to pyrite ±marcasite)-minor magnetite, or gangue (carbonate-sericite/muscovite) rich rock. Reflected light, uncrossed polars, field of view ~3 mm wide.



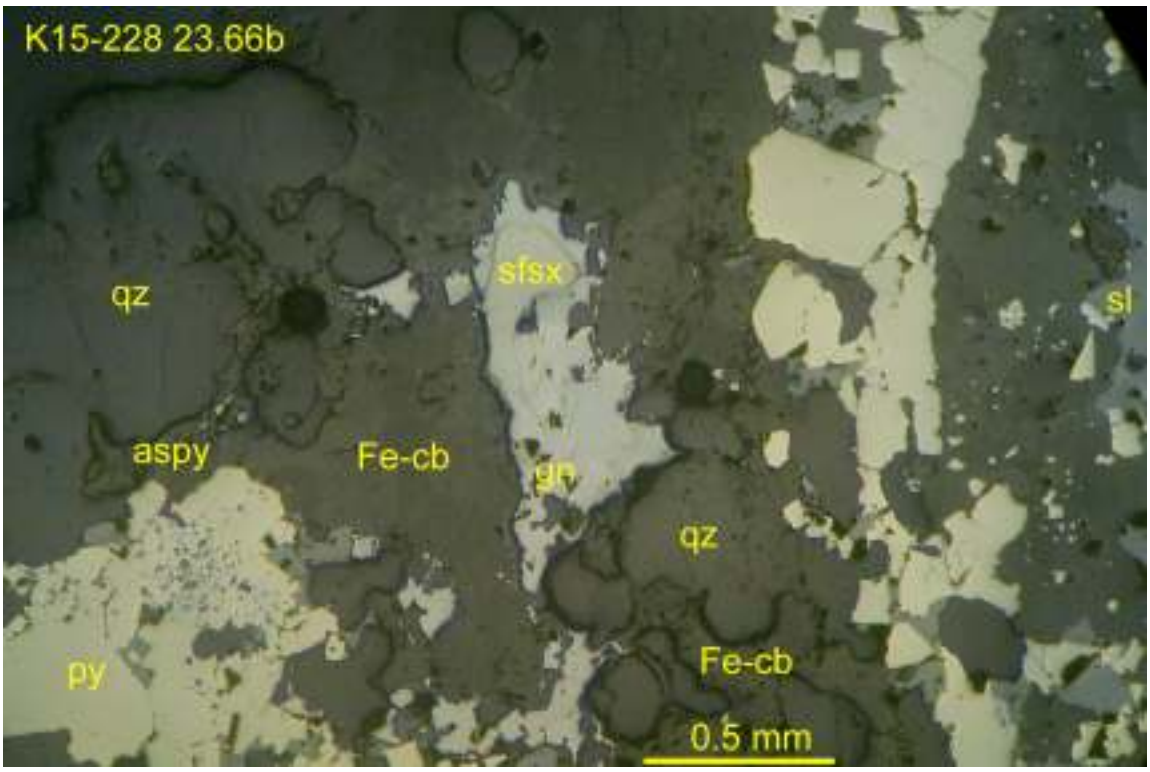
K15-223 10.88-11.01a: crudely alternating euhedral pyrite-rich and sphalerite-magnetite-minor galena rich bands; magnetite is difficult to distinguish from matrix sphalerite except by its fractured nature. Gangues are mostly carbonate in this view. Reflected light, uncrossed polars, field of view ~3 mm wide.



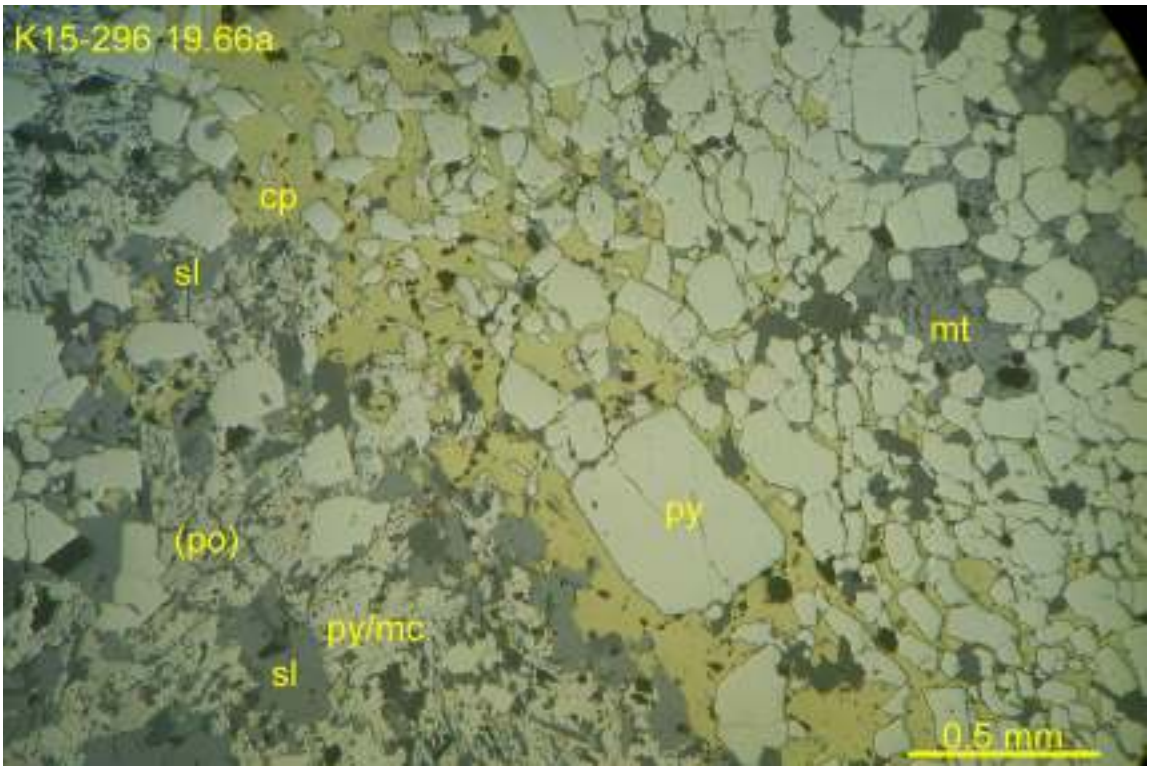
K15-223 10.88-11.01b: unusual band in which chalcopyrite is much more common, intermixed with sphalerite and minor galena as matrix to cubic pyrite crystals. Reflected light, uncrossed polars, field of view ~3 mm wide.



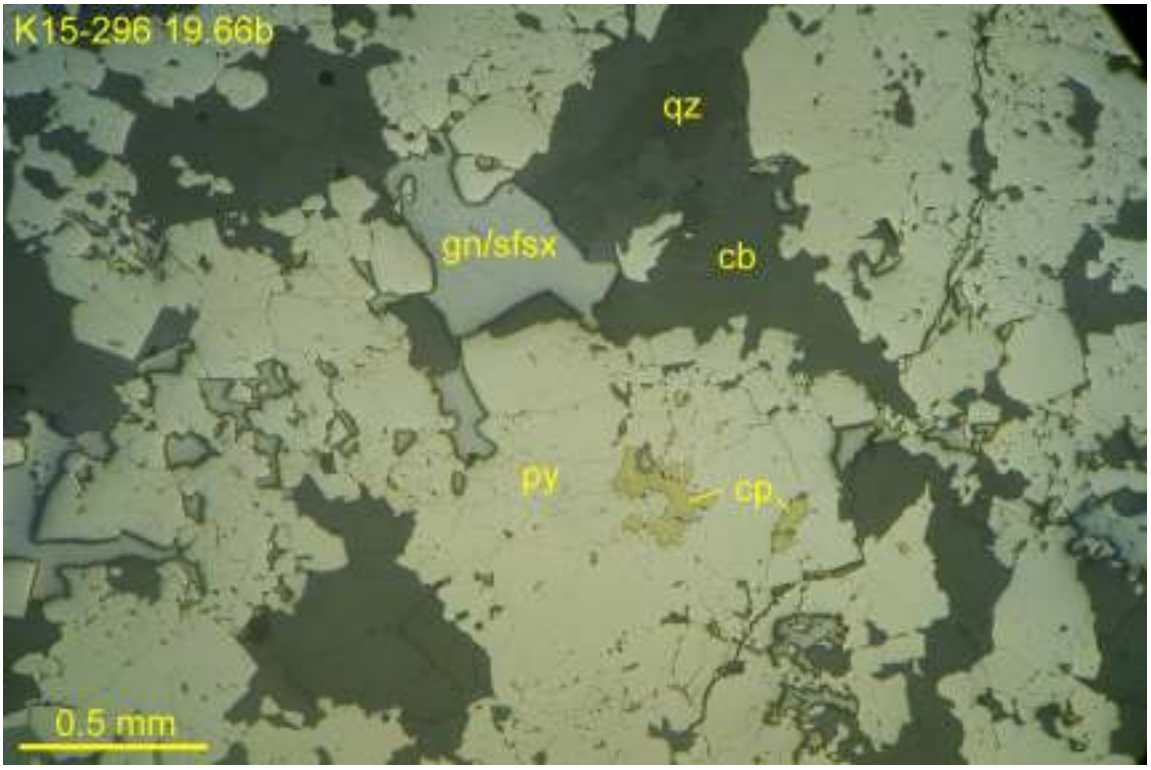
K15-228 23.66-23.77a: gangue-rich band composed mainly of quartz and barite (?), where sphalerite is associated with sulfosalt aggregate (sfsx1, faintly anisotropic under crossed polars) plus traces of chalcopyrite intergrown with trace relict pyrrhotite (altered to marcasite, mc) and minute tennantite. Reflected light, uncrossed polars, field of view ~3 mm wide.



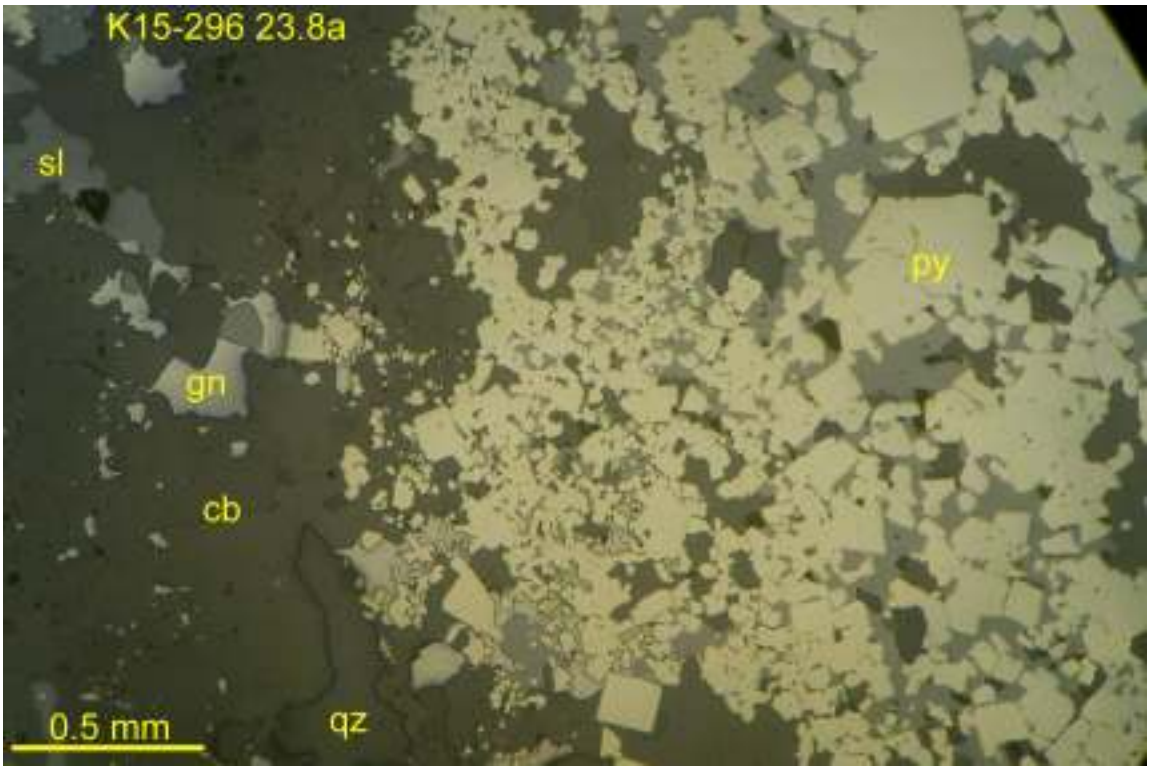
K15-228 23.66-23.77b: gangue-rich band, here mostly Fe-calcite but with quartz and barite, associated with sulfosalt showing distinct bireflectance (strongly anisotropic under crossed polars), galena and sphalerite; note minor arsenopyrite replacing pyrite at margin of adjacent sulfide-rich band. Reflected light, uncrossed polars, field of view ~3 mm wide.



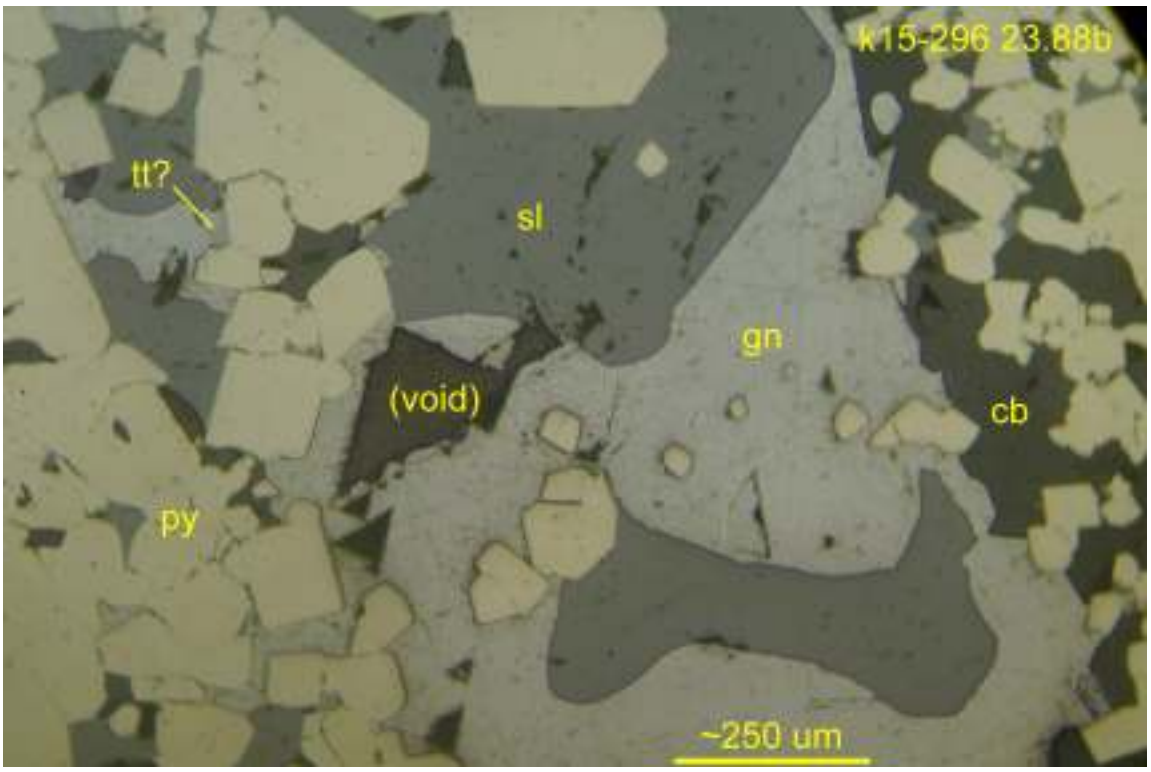
K15-296 19.66-19.79a: view across chalcopyrite-rich band (forming matrix to cubic pyrite with local magnetite, mt), adjacent to more sphalerite-rich band , containing abundant relict pyrrhotite largely altered to very fine grained marcasite (mc). Reflected light, uncrossed polars, field of view ~3 mm wide.



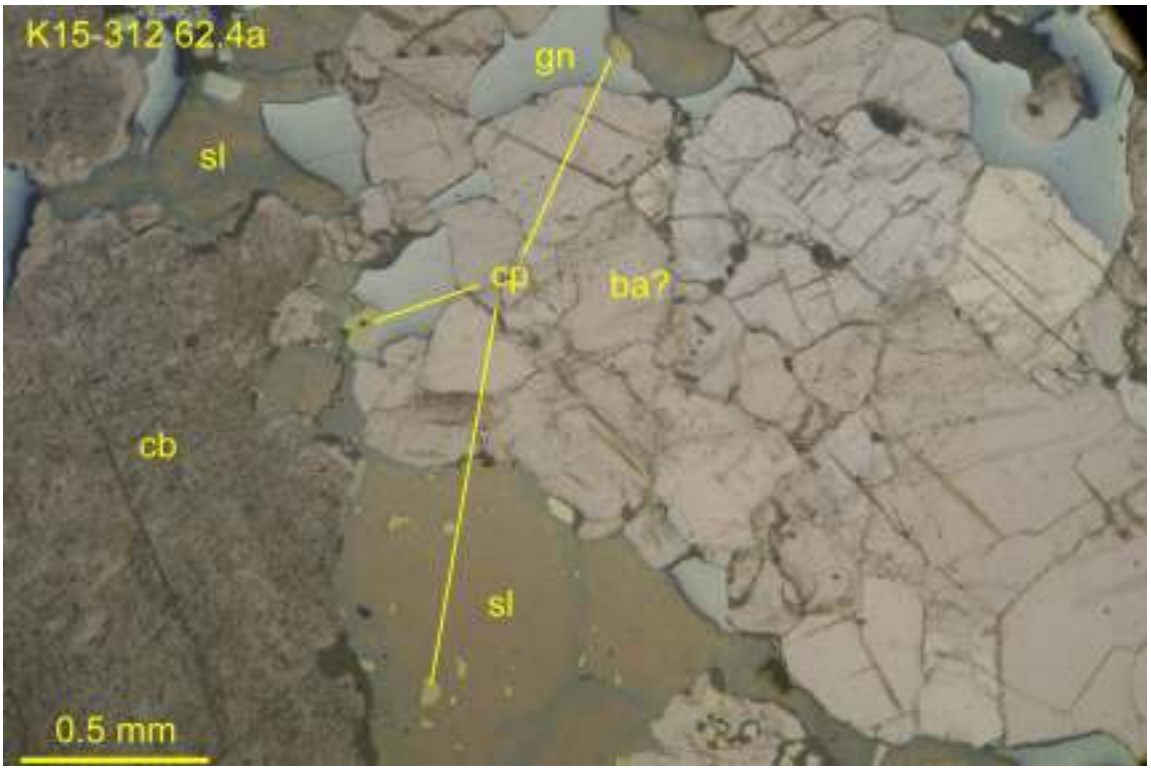
K15-296 19.66-19.79b: galena and sulfosalt 1 (virtually indistinguishable), intergrown with or included within pyrite (minor chalcopyrite also included in pyrite); gangues are mostly carbonate, local quartz. Reflected light, uncrossed polars, field of view ~3 mm wide.



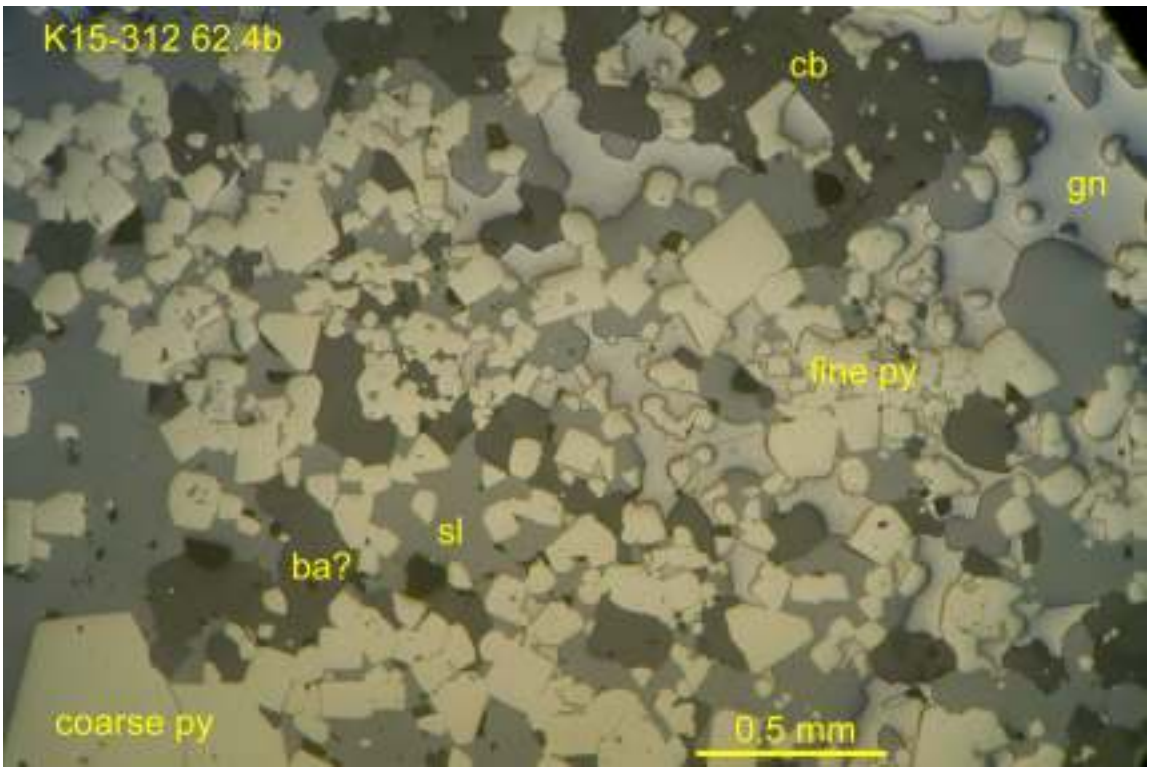
K15-296 23.8-23.93a: inter-banded pyrite-, sphalerite-, or gangue-rich bands; note the association of blebby sphalerite and galena inclusions in the carbonate-rich (minor quartz) gangue band, variably sphalerite-or galena matrix to fine-grained pyrite band. Reflected light, uncrossed polars, field of view ~3 mm wide.



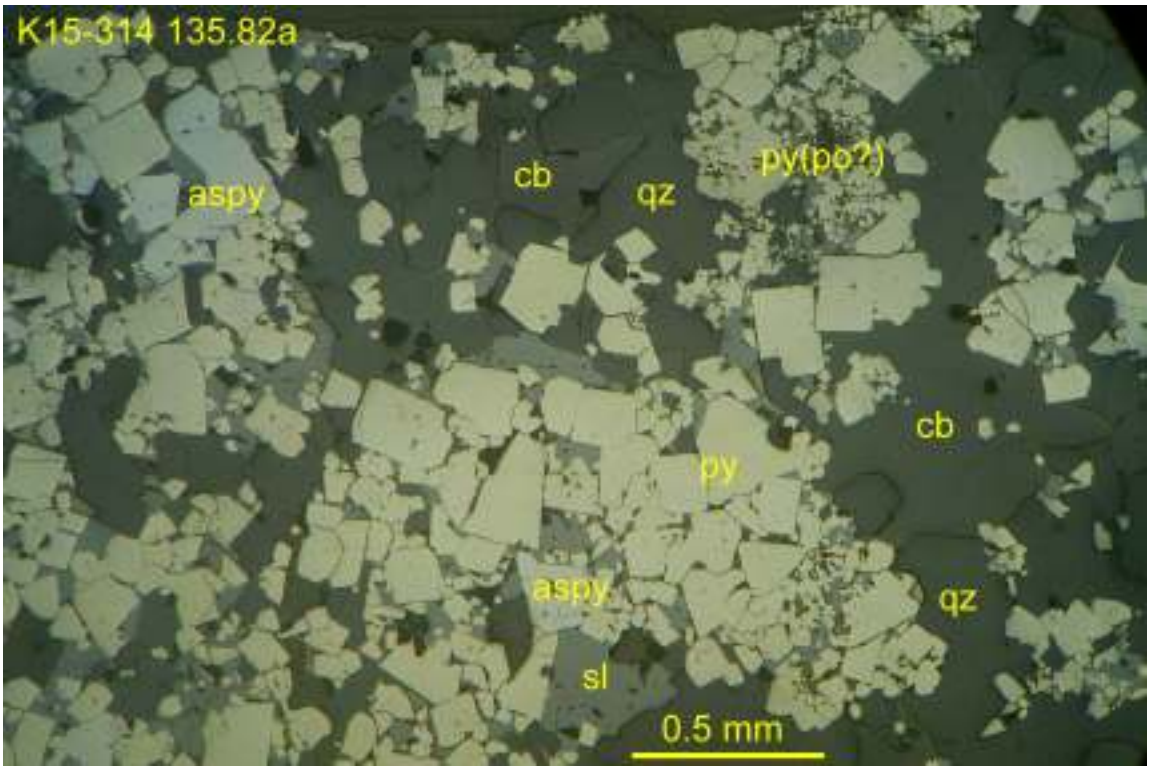
K15-296 23.8-23.93b: detailed view to show trace of grey, isotropic sulfosalt (tt?) intergrown with margin of galena mixed with sphalerite as matrix to pyrite in base-metal rich lamina. Reflected light, uncrossed polars, field of view ~1.5 mm wide.



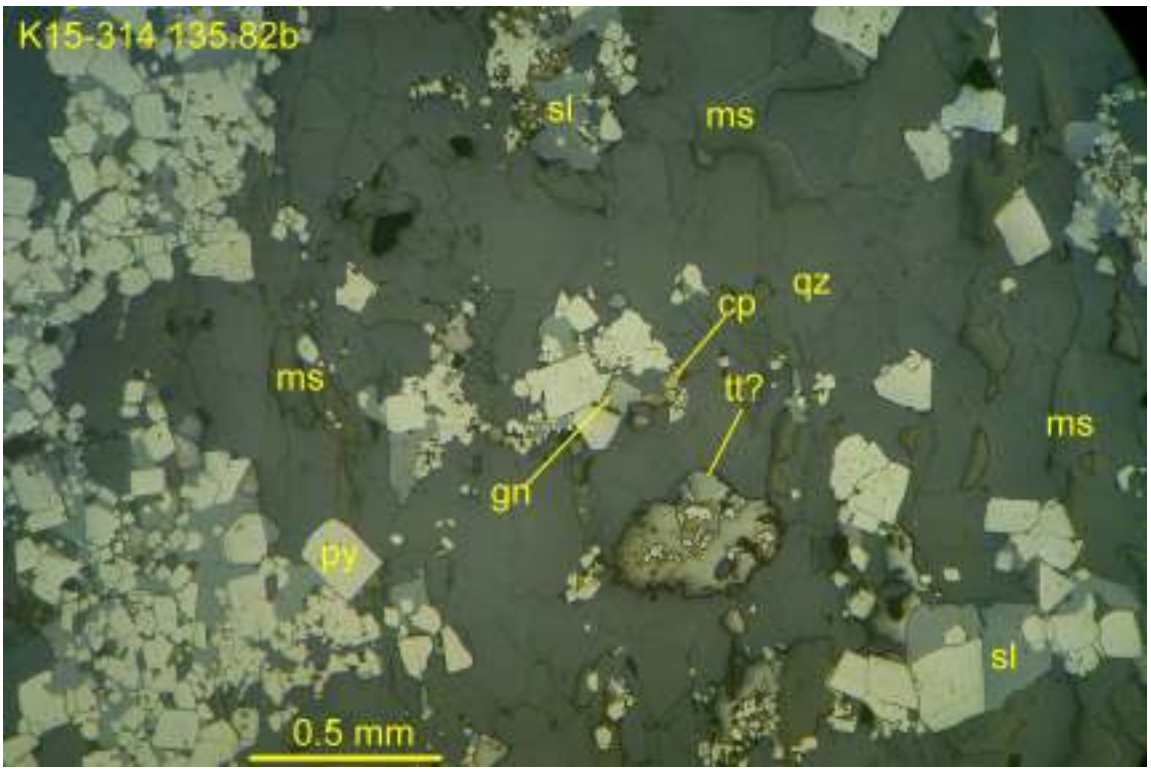
K15-312 62.4-62.5a: gangue-rich band composed of coarse carbonate (dolomite?) or probable barite (with cleavage, ba?) separated by sphalerite with medium orange-brown colour, containing minor chalcopyrite, and associated with irregular galena. Transmitted plane and reflected light, field of view ~3 mm wide.



K15-312 62.4-62.5b: cross-section over fine- and coarser-grained pyrite bands, in matrix that varies from sphalerite-rich to galena-rich; interstitial gangue inclusions are mostly carbonate, minor possible barite (?). Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-314 135.82-135.93a: variably coarse, cubic pyrite (locally intergrown with/replaced by arsenopyrite, aspy) or fine-grained pyrite (the latter possibly after former pyrrhotite?), locally with matrix of sphalerite, in gangues of quartz (qz)-carbonate (cb)-minor muscovite (ms). Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-314 135.82-135.93b: poorly defined, discontinuous bands of pyrite (with variable sphalerite, local galena) alternating with quartz-carbonate-variable muscovite bands. The galena-rich bleb in the center contains minor grey isotropic sulfosalt (tt?) that is difficult to distinguish. Reflected light, uncrossed polars, field of view ~3 mm wide.

Overviews of thin sections and offcuts (blue semi-circles mark photomicrograph locations).





PETROGRAPHIC REPORT ON 31 SAMPLES OF MASSIVE SULFIDES AND HOST ROCKS

Report for: Murray Jones/Trevor Rabb
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Vancouver, B.C. V6C 3R8 (604) 688-9806

Invoice 150890

Jan. 16, 2016.

SUMMARY:

This suite of 31 samples may be roughly divided into massive sulfides (5 samples, 50-90% sulfides), vein or massive sulfides (2 samples, 35-60% sulfides), semi-massive sulfides (15-50% sulfides), especially porphyroblastic cordierite (?), relict (chloritized) cordierite (?) and/or garnet bearing, commonly with possible Zn-spinel (9 samples) and host rocks (mafic meta-volcanic, 6 samples), mafic/intermediate meta-volcanic (2 samples), felsic/intermediate meta-volcanic (5 samples), and meta-rhyolite (2 samples). They may be roughly summarized as follows:

Massive sulfides (K15-282 308, 314; K15-302 154.79; K15-306 169.58; K15-319 196.22), composed mainly of pyrite in a matrix of sphalerite-minor galena-variable pyrrhotite (generally subordinate, but locally dominant as in 302-154.79)-variable arsenopyrite and magnetite-very minor chalcopyrite-local trace sulfosalt (likely mainly tennantite-tetrahedrite?). Gangue minerals are mainly carbonate (ranging from calcite and dolomite to local ankerite or even siderite?), local quartz, mica (mainly muscovite, minor chlorite), local schorlitic tourmaline.

Semi-massive sulfides (K15-302 146.99, 147.07, 147.75, 148.66, 153.35; K15-306 164.29, 219.14, 219.75, 221.60) characterized by porphyroblasts tentatively identified as cordierite (?), chlorite after cordierite (?), local garnet, common possible Zn-spinel (?) and magnetite in foliated matrix of chlorite, biotite or phlogopite (?), muscovite, carbonate, local quartz, epidote, accessory sphene, apatite, possible allanite. Sulfides are much as in the massive samples with sphalerite the dominant base-metal sulfide followed by lesser galena and minor chalcopyrite, except that pyrrhotite (commonly relict, altered to pyrite/marcasite) tends to dominate over pyrite. Schorlitic tourmaline also occurs in these samples, as in the massive sulfides, but sulfosalt is not noted.

Mafic meta-volcanics (K15-282 309, 315.4; K15-312 57.4; K15-314 76.4; K15-317 75.61; K15-319 197.32) consist mainly of variably recognizable relict plagioclase (locally strongly recrystallized and/or transposed into the foliation, oligoclase?) and possible mafic (either porphyroblastic biotite, or lesser relict actinolitic amphibole partly/largely pseudomorphed by Fe-carbonate, chlorite and epidote) phenocryst sites in foliated matrix of chlorite, muscovite, plagioclase, epidote, carbonate, accessory sphene or rutile, only trace sulfides (pyrite, chalcopyrite, rare sphalerite).

Mafic/intermediate meta-volcanics (K15-302 155.4; K15-319 199.03) are similar but with more muscovite, carbonate, sericitized plagioclase, blastic or lensy carbonate-quartz ±Kspar, accessory rutile, only traces of pyrite, chalcopyrite.

Felsic/intermediate meta-volcanics (K15-302 192.26, 198; K15-314 158.09; K15-319 161.3, 161.75) consist of foliated quartz-muscovite-±biotite/chlorite, local blastic garnet/possible chloritized cordierite (?), Fe-carbonate, accessory sphene, rutile, possible apatite, monazite (?); minor sulfides (as in semi-massive samples) are pyrrhotite, sphalerite, lesser galena, trace chalcopyrite.

Meta-rhyolite (K15-312 72.4, K15-317 96.45) consists of distinct euhedral Kspar and less well-defined (partly flattened/deformed?) quartz phenocrysts in weakly foliated groundmass of very fine-grained Kspar, quartz, sericite, accessory rutile, cut by stringers of quartz-muscovite/sericite-carbonate and sulfides (mainly pyrite, trace chalcopyrite, sphalerite, pyrrhotite).

In a brief summary of the drill holes, K15-282 cuts massive sulfide at 308 and 314 m, hosted by mafic meta-volcanics at 309 and 315.4m. K15-302 cuts semi-massive sulfides (± blastic garnet, cordierite?) from 146.99 to 148.66, 153.35, massive sulfide at 154.79, passing into intermediate-mafic meta-volcanics at 155.4, sericitized felsic meta-volcanics at 192.26 and garnet-bearing felsic-intermediated meta-volcanics at 198. K15-306 cuts possibly former cordierite (?)-bearing semi-massive sulfides at 164.29, 219.14-221.60, with vein-like sulfides at 170.87. K15-312 cuts mafic meta-volcanics at 57.4 and meta-rhyolite at 72.4. K15-314 cuts mafic meta-volcanics at 76.48 and felsic/intermediate meta-volcanics (with blastic chloritized cordierite?) at 158.09. K15-317 cuts meta-rhyolite at 96.45 and mafic meta-volcanics at 75.61. K15-319 cuts felsic/intermediate meta-volcanics at 161.3-161.75, vein/massive sulfides at 182.46 and 196.22, mafic or intermediate meta-volcanics at 197.32 and 199.03m. Capsule descriptions are as follows:

K15-302 147.07-147.19: consists of bands of quartz-mica (biotite, chlorite) or locally porphyroblastic cordierite (?) partly altered to sericite with a matrix of sulfides (pyrrhotite, lesser sphalerite, minor galena, chalcopyrite), local blastic magnetite or pyrite, accessory spinel, garnet, rare apatite?

K15-302 148.66-148.78: foliated chlorite-biotite/phlogopite?-carbonate-minor epidote-sphene-apatite schist/gneiss with disseminated/lensy pyrite-sphalerite-galena-pyrrhotite-magnetite.

K15-302 153.35-153.48: blastic garnet and lesser magnetite, variable sulfides (pyrrhotite, minor galena, chalcopyrite), and possible Zn-spinel (?) in crudely banded matrix of mica (biotite, chlorite, sericite), local plagioclase ±Kspar (?).

K15-302 155.4-155.55: foliated, locally laminated, intermediate/mafic gneiss (biotite-muscovite-carbonate ±chlorite in matrix of fine-grained, relict (sericitized) plagioclase, accessory sphene/rutile, epidote) containing relict porphyroblasts of carbonate-quartz-Kspar-plagioclase-minor biotite/chlorite, partly flattened into the foliation.

K15-302 192.26-192.41: quartz-muscovite-minor biotite/chlorite-Kspar-Fe carbonate-trace sphene-monazite (?) gneiss with distinct bands of quartz and concentrations of sulfides (pyrrhotite, partly altered to pyrite/marcasite, lesser sphalerite, galena, minor chalcopyrite).

K15-302 198.0-201.0: strongly foliated muscovite-minor quartz-pyrrhotite-biotite-accessory rutile-apatite-monazite?-trace chalcopyrite, with sparse garnet porphyroblasts.

K15-306 164.29-164.40: relict porphyroblasts of quartz-chlorite in a matrix of mica (biotite, chlorite), sulfides (sphalerite locally intergrown with Zn-spinel?, lesser pyrrhotite, minor galena, chalcopyrite), local blastic magnetite, trace ilmenite, Kspar, possible apatite, allanite.

K15-306 169.58-169.68: medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite and significant galena with local concentrations of pyrrhotite but only trace chalcopyrite-sulfosalt (possibly argentian tetrahedrite?), with gangue inclusions of phlogopite/green biotite?-lesser carbonate.

K15-306 170.87-171.00: coarse-grained, possible vein of carbonate-muscovite (±biotite, tremolite?)-minor quartz, with massive sulfides of pyrrhotite-chalcopyrite-sphalerite-galena (the latter containing trace sulfosalt, likely tetrahedrite?).

K15-302 146.99-147.06: gneiss composed of porphyroblastic cordierite (?, partly altered to chlorite) and garnet in foliated matrix of mica (biotite, chlorite)-quartz-sulfides (pyrrhotite, lesser sphalerite, minor galena, chalcopyrite), local blastic magnetite or pyrite, accessory spinel, apatite.

K15-302 147.75-147.86: schist composed of chlorite-biotite-sphalerite-pyrite-pyrrhotite-galena-magnetite ±chalcopyrite, local possibly zincian spinel –accessory epidote-apatite-allanite? matrix to relict amphibole or chlorite-altered porphyroblasts.

K15-302 154.79-154.88: massive/semi-massive pyrrhotite-sphalerite-pyrite-galena-magnetite-trace chalcopyrite, in variable matrix of quartz (could include some barite?)-mica (biotite-phlogopite-muscovite)-carbonate-local epidote-tourmaline.

K15-306 219.75-219.83: crudely banded/foliated, cordierite (?) porphyroblastic gneiss composed of actinolitic amphibole-biotite-schorlitic tourmaline-minor (partly sericitized) plagioclase-accessory spinel (zincian?)-epidote/allanite-apatite, pyrrhotite-pyrite/marcasite (mostly after pyrrhotite?)-sphalerite (Fe-rich)-chalcopyrite-magnetite-trace galena.

K15-306 221.60-221.71: massive sphalerite ±pyrrhotite/pyrite-magnetite-trace chalcopyrite-galena, blastic cordierite (?) with inclusions of plagioclase, altered to micas, in foliated matrix of micas (biotite-phlogopite-muscovite), carbonate, plagioclase, minor tourmaline, ±spinel, epidote/allanite?

K15-306 219.14-219.21: banded/laminated, weakly foliated, alternately quartz, mica-carbonate-plagioclase-relict cordierite (?), or minor amphibole or sulfide (sphalerite-pyrrhotite-pyrite/marcasite-magnetite ±chalcopyrite-galena rich metamorphic rock, local accessory tourmaline, spinel, allanite (?)

K15-314 158.09-158.2: foliated, banded/laminated quartz-muscovite-carbonate-minor relict (chloritized) cordierite (?)-pyrite-rutile-trace allanite or monazite gneiss.

K15-317 75.61-75.75: well foliated, muscovite-chlorite-quartz-biotite-carbonate-accessory sphene/rutile-trace pyrite-chalcopyrite ±sphalerite schist/gneiss with porphyroblastic aggregates of biotite ±carbonate-chlorite-sphene/rutile ±sulfides suggestive of former mafic sites in a meta-mafic volcanic.

K15-317 96.45-96.59: quartz-Kspar phyric, meta-rhyolite cut by deformed stringers of quartz-muscovite-carbonate-pyrrhotite-pyrite/marcasite ±chalcopyrite, sphalerite, rutile.

K15-319 161.3-161.46: well foliated, muscovite-carbonate-quartz-pyrite-minor chlorite-accessory Kspar-rutile schist/gneiss may represent felsic/intermediate volcanic rock (?) originally cut by stringers of carbonate-pyrite-quartz-trace chalcopyrite-galena-sphalerite-marcasite (after pyrrhotite?).

K15-319 161.75-161.84: well foliated, muscovite-carbonate-quartz-pyrite-minor chlorite-cordierite-accessory Kspar-rutile schist/gneiss may represent felsic/intermediate volcanic rock (?) originally cut by stringers of carbonate-pyrite-quartz-chalcopyrite ±sphalerite-galena-marcasite (after pyrrhotite?).

K15-319 182.46-182.64: coarse-grained, possible vein or semi-massive sulfides (pyrite-sphalerite-galena-arsenopyrite-chalcopyrite-trace pyrrhotite, ±magnetite) with carbonate gangue, cut by a central vein/re-opening of massive sphalerite-galena-minor pyrite.

K15-319 199.03-199.14: well foliated, banded plagioclase-chlorite-carbonate-quartz?-accessory rutile/sphene-trace pyrite-chalcopyrite schist/gneiss with lensy segregations of carbonate-quartz and rare Fe carbonate-sericite altered mafic pseudomorphs in a meta-intermediate/mafic volcanic rock.

K15-282 315.4-315.5: foliated, plagioclase-chlorite-carbonate-biotite-amphibole-epidote-muscovite-accessory sphene/rutile-trace pyrite-chalcopyrite ±Kspar schist/gneiss (relict plagioclase, mafic sites, porphyroblastic biotite suggestive of a meta-mafic volcanic rock?).

K15-282 314-314.05: fine-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of lesser, Fe-rich sphalerite and minor galena (locally concentrated into crudely defined bands; only trace -sulfosalt (Pb-As-Sb?), with gangue inclusions of carbonate.

K15-282 308-308.1: massive pyrite-pyrrhotite (partly altered to pyrite ±marcasite)-sphalerite-magnetite-minor chalcopyrite-trace galena, inter-banded with gangues of carbonate (dolomite, lesser ankerite and siderite?), lesser quartz, local chlorite.

K15-282 309-309.06: foliated, muscovite-chlorite-carbonate-quartz-accessory rutile-trace pyrite schist/gneiss with porphyroblastic biotite (relict mafic sites?) and lensy to vein-like calcite-quartz aggregates, suggestive of a meta-mafic volcanic rock?).

K15-319 197.32-197.42: foliated, plagioclase-chlorite-carbonate-biotite-sericite-accessory rutile-trace pyrite ±galena-chalcopyrite schist/gneiss (with minor relict plagioclase and possible mafic sites indicated by relict porphyroblastic biotite, suggestive of a meta-mafic volcanic rock?).

K15-319 196.22-196.27: fine-grained, crudely banded massive sulfide in which euhedral pyrite is set in a matrix of lesser, Fe-rich sphalerite-minor galena-arsenopyrite-trace chalcopyrite-sulfosalt (tetrahedrite?), with gangues of carbonate, quartz, muscovite and rare chlorite.

K15-312 57.4-57.52: foliated, plagioclase-chlorite-biotite-carbonate-epidote-accessory sphene-trace pyrite-chalcopyrite ±hematite schist/gneiss (relict plagioclase, porphyroblastic biotite-rich mafic sites suggestive of a meta-mafic volcanic rock?).

K15-312 72.4-72.55: quartz-Kspar phyric, meta-rhyolite partly altered to sericite-rutile, cut by deformed stringers (?) of quartz-muscovite-carbonate-pyrite ± marcasite, rutile.

K15-314 76.48-76.6: foliated, plagioclase-chlorite-biotite-carbonate-epidote-accessory sphene-trace pyrite-chalcopyrite ±hematite schist/gneiss (relict plagioclase, porphyroblastic biotite-rich mafic sites suggestive of a meta-mafic volcanic rock?).

Detailed petrographic descriptions and photomicrographs are appended (by email attachment). If you have any questions regarding the petrography, please do not hesitate to contact me.

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K15-302 147.07-147.19: BANDS OF QUARTZ-MICA (BIOTITE, CHLORITE) OR LOCALLY PORPHYROBLASTIC CORDIERITE? PARTLY ALTERED TO SERICITE WITH A MATRIX OF SULFIDES (PYRRHOTITE, LESSER SPHALERITE, MINOR GALENA, CHALCOPYRITE), LOCAL BLASTIC MAGNETITE, PYRITE, ACCESSORY SPINEL, GARNET, RARE APATITE

Hand specimen not supplied; offcut shows dark blackish green, medium-grained metamorphic rock with prominent black glassy porphyroblasts in a weakly foliated matrix of mica and semi-massive sulfides (likely mainly pyrrhotite to judge by the strongly magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and no stain for K-feldspar (but rare white etch for plagioclase?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangues (65%)

Quartz	25%
Cordierite (?) porphyroblasts, partly altered to sericite/chlorite	20%
Chlorite (largely after biotite?)	20%
Biotite (partly altered to chlorite)	15%
Spinel (pleonaste or possibly gahnite??)	10%
Garnet	5%
Sericite (mainly after cordierite or plagioclase inclusions?)	5%
Apatite (?)	trace

Ore minerals (35%)

Pyrrhotite (rarely altered to lamellar pyrite/marcasite)	50%
Sphalerite	30%
Galena	8%
Chalcopyrite	7%
Magnetite, local pyrite	5%

At one end of the section, quartz forming the bulk of the sample occurs in lensy aggregates up to almost 1 cm long (crudely elongated in the plane of foliation defined by the surrounding mica-and/or sulfide-rich matrix), composed of interlocking sub/anhedra mostly <1 mm but rarely up to ~2 mm across. The quartz shows generally mild/moderate strain (undulose extinction, local sub-grain development, rare suturing of grain boundaries). At the other end of the section, porphyroblasts of cordierite (?) have rounded to subhedral outlines up to ~0.5 cm diameter, commonly simple twins, characterized by weakly developed cleavage and alteration to sericite or chlorite (subhedral flakes <20 μm) at margins, along cleavage or twin planes, or in inclusions that may be relict plagioclase (?) as subhedra <0.5 mm, now partly sericitized. Mica in the matrix forms sub/euhedral flakes to ~2 mm diameter, typically aligned in the plane of foliation, ranging from pale brown biotite to pale green chlorite (with length-fast, first-order grey birefringence, suggestive of Fe:Fe+Mg, or F:M, ratio in the 0.4-0.5 range?). The chlorite partially replaces the biotite, as well as interstitial garnet forming ragged (relict) to locally subhedral crystals mostly <0.5 mm with very pale pinkish-brown colour, but does not appear to affect spinel (?) forming similar-sized sub/euhedral crystals with distinct green colour suggestive of either pleonaste (or possibly Zn spinel, gahnite?). Both garnet and spinel are partly intergrown with or contain inclusions of very fine-grained quartz (anhedra mainly <0.2 mm), suggestive of replacement of former porphyroblastic crystals with rounded outlines to ~2 mm. Rare possible apatite forms euhedra <0.25 mm.

The sulfide matrix consists mainly of pyrrhotite (irregular masses to 0.5 cm of subhedra mostly <1 mm (locally deformed, twinned), lesser sphalerite (subhedra <1 mm, deep red-brown, high Fe), galena (ragged sub/anhedra <1 mm), chalcopyrite (skeletal anhedra to 1.5 mm), locally containing magnetite as sub/euhedra <1 mm but aggregating to 3 mm, with inclusions <0.2 mm of the sulfides, or pyrite as elongate subhedra to 2 mm. Sphalerite contains traces of chalcopyrite and pyrrhotite as inclusions <20 μm. Sulfosalts were searched for (mainly in galena) but not found.

In summary, this sample consists of bands of quartz-mica (biotite, chlorite) or locally porphyroblastic cordierite (?) partly altered to sericite with a matrix of sulfides (pyrrhotite, lesser sphalerite, minor galena, chalcopyrite), local blastic magnetite or pyrite, accessory spinel, garnet.

K15-302 148.66-148.78: FOLIATED CHLORITE-BIOTITE/PHLOGOPITE?-CARBONATE-MINOR EPIDOTE-SPHENE-APATITE SCHIST/GNEISS WITH DISSEMINATED/LENSY PYRITE-SPHALERITE-GALENA-PYRRHOTITE-MAGNETITE

Offcut shows green to dark blackish green, fine-grained metamorphic rock with foliated matrix of mica and heavily disseminated sulfides (mainly pyrite?). The rock is strongly magnetic, and shows local rapid reaction to cold dilute HCl, but no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangues (85%)

Chlorite (largely after biotite?)	48%
Biotite or phlogopite (partly altered to chlorite)	25%
Carbonate (mainly calcite, lesser ankerite?)	25%
Epidote-group (zoisite?)	1%.
Sphene	1%.
Apatite (?)	<1%

Ore minerals (15%)

Pyrite	45%
Sphalerite	25%
Galena	20%
Pyrrhotite	5%
Magnetite	5%

This sample consists mainly of foliated chlorite (partly after biotite) or, at one end of the section, mainly carbonate with lesser mica, both containing heavily disseminated pyrite-lesser sphalerite-galena-pyrrhotite-magnetite locally associated with accessory epidote, sphene and trace apatite.

In the bulk of the section, pale green chlorite and intimately intermixed very pale brown biotite (or phlogopite?) form sub- to commonly euhedral flakes up to about 1.5 mm in diameter, typically strongly aligned in and defining the foliation. Chlorite may be partly after biotite, and shows length-fast, first-order grey birefringence suggestive of F:M around 0.4 (?). Minor carbonate forms rounded/ragged subhedral crystals mostly 0.5 mm in diameter, commonly in lenses up to 3 mm long (length:width up to 3:1) sub-parallel to foliation. The carbonate appears to consist of coarser, relatively clear calcite (?) with lesser, finer-grained, higher-relief, limonite-stained Fe-carbonate that may include ankerite (?). In the carbonate-rich portion or band, which is up to about 1.5 cm thick, the proportions of carbonate to mica are reversed, but otherwise the descriptions are much the same. In places, there is minor epidote-group mineral (slender laths to 0.5 mm with low, anomalous blue-grey birefringence, possibly zoisite?) associated with sphene (very pale brown subhedra to 0.2 mm) or rare apatite (euhedra also to 0.2 mm).

In the bulk of the section, opaque minerals are mainly pyrite, typically forming flattened or elongated sub/euhedra up to 4 mm long (sub-parallel to foliation) with inclusions of carbonate, sphalerite or galena (especially near the ends, possibly due to remobilization into pressure shadows localized there). Lensy, discontinuous ribbons of sphalerite are mainly <1 mm thick by up to 5 mm long, composed of subhedra <0.5 mm with red-brown colour indicative of moderate to high Fe content, commonly intergrown with lesser galena as subhedra to ~1 mm (aggregates to 3 mm), pyrite as described above, or in places magnetite or pyrrhotite. Magnetite typically occurs as flattened, fractured subhedra or aggregates up to 2.5 mm long (also elongated along the foliation) with common inclusions mostly <0.1 mm of pyrite, pyrrhotite, galena, or sphalerite giving them a sieve-like (blastic) appearance. Pyrrhotite tends to occur with magnetite or separately as lensy aggregates to 1.5 mm composed of interlocking subhedra mainly <0.25 mm. Chalcopyrite and sulfosalts were not seen.

Ore minerals are less abundant in the carbonate-rich section but tend to be more commonly sphalerite and galena, pyrrhotite (not pyrite, except where included in pyrrhotite) either concentrated in laminae at the edge, or interstitial to carbonate. Chalcopyrite is very rare, forming anhedra <50 μm.

In summary, this is foliated chlorite-biotite/phlogopite?-carbonate-minor epidote-sphene-apatite schist/gneiss with disseminated/lensy pyrite-sphalerite-galena-pyrrhotite-magnetite.

K15-302 153.35-153.48: BLASTIC GARNET AND LESSER MAGNETITE, VARIABLE SULFIDES (PYRRHOTITE, MINOR GALENA, CHALCOPYRITE), AND POSSIBLE ZN-SPINEL (?) IN CRUDELY BANDED MATRIX OF MICA (BIOTITE, CHLORITE, SERICITE), LOCAL PLAGIOCLASE ±KSPAR (?)

Offcut shows dark to blackish green, fine/medium-grained metamorphic rock with local porphyroblastic garnet in a weakly foliated matrix of mica and locally semi-massive sulfides (likely mainly pyrrhotite, minor pyrite to judge by the strongly magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and only trace stain for K-feldspar (but local white etch for plagioclase?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangues (85%)

Biotite (brown/local green, slightly altered to chlorite)	40%
Sericite/muscovite	15%
Chlorite (largely after biotite?)	15%
Garnet (porphyroblasts)	15%
Spinel (pleonaste or possibly gahnite??)	10%
Plagioclase (?), rare Kspar	5%

Ore minerals (15%)

Pyrrhotite	80%
Magnetite	15%
Galena	2%
Pyrite	2%
Chalcopyrite	1%

This sample consists mainly of coarse, blastic garnet in a foliated matrix of micas (biotite-chlorite-sericite/muscovite) and significant green, possibly zinc spinel (?), local feldspar, with variable lensy/wispy concentrations of sulfides (manly pyrrhotite; minor pyrite, galena, chalcopyrite) and magnetite. Feldspars (plagioclase, Kspar?) <0.1 mm are in sieve-like aggregates with micas.

Micas include mostly medium brown biotite (locally however grading to greenish-brown or even greenish, possibly ferriferous varieties) as mostly euhedral, mainly aligned flakes up to about 1.5 mm in diameter, and variably intermixed, colourless sericite or muscovite of similar or smaller size (also euhedral, aligned to define the foliation, locally segregated into muscovite-rich bands <2 mm thick). Chlorite is variably, more sparingly present, locally possibly partly replacing biotite but generally intergrown with it as aligned, euhedral flakes mostly <0.7 mm (with very pale green colour, length-fast, first-order grey to white birefringence suggestive of F:M 0.4?).

Garnet forms medium to coarse, rounded sub- to euhedral porphyroblasts up to 0.5 cm in diameter, with very pale yellowish brown colour, no anomalous anisotropism, and local zoning highlighted by cores with minute inclusions (sericite, magnetite, pyrrhotite all mainly <0.15 mm).

Magnetite porphyroblasts are mostly <3 mm in diameter, somewhat flattened in the plane of foliation, with inclusions of pyrrhotite, pyrite, less common galena or rare chalcopyrite mostly <0.25 mm in size. Significant spinel (?) forming somewhat ragged, highly fractured or parted, irregular to rounded subhedra to ~1.5 mm (locally cored by magnetite or pyrrhotite with inclusions of galena, rare chalcopyrite) has distinct bright colour suggestive of gahnite, and the absence of sphalerite in the sample supports this possible identification. Pyrrhotite, concentrated in certain bands up to 1.5 cm thick (semi-massive sulfide) in aggregates to 0.5 cm, occurs as subhedra mainly <1 mm (locally intergrown with or including pyrite as subhedra to 2 mm long, magnetite as described above, galena as elongate, skeletal subhedra to 1.5 mm, and chalcopyrite as subhedra to 1 mm.

In summary, this sample consists of blastic garnet and lesser magnetite, variable sulfides (pyrrhotite, minor galena, chalcopyrite), and possible Zn-spinel (?) in crudely banded matrix of mica (biotite, chlorite, sericite), local plagioclase ±Kspar (?).

K15-302 155.4-155.55: FOLIATED, LOCALLY LAMINATED, INTERMEDIATE/MAFIC GNEISS (BIOTITE-MUSCOVITE-CARBONATE ±CHLORITE IN MATRIX OF FINE-GRAINED, RELICT (SERICITIZED) PLAGIOCLASE, WITH ACCESSORY SPHENE/RUTILE, EPIDOTE) CONTAINING RELICT PORPHYROBLASTS OF CARBONATE-QUARTZ-KSPAR-PLAGIOCLASE-MINOR BIOTITE/CHLORITE, PARTLY FLATTENED INTO THE FOLIATION

Offcut shows fine-grained, greenish-grey, locally foliated/laminated intermediate-looking gneiss with scattered, commonly flattened relict porphyroblasts of uncertain identity. The rock is locally slightly magnetic, shows minor reaction to cold dilute HCl (only where scratched), and minor stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (~100%)

Biotite (locally partly chloritized)	40%
Sericite (mainly after feldspar), muscovite	25%
Plagioclase (relict, sericitized)	15%
Carbonate (mainly dolomite?)	7%
Quartz (only in relict porphyroblasts)	5%
K-feldspar (mainly in relict porphyroblasts)	3%
Chlorite (2 varieties, mainly after biotite?)	3%
Sphene, lesser included rutile	2%
Epidote	<1%

Ore (<1%)

Pyrite	trace

This sample consists mainly of moderately well foliated, locally somewhat laminated, mica (biotite, lesser muscovite)-relict (sericitized) plagioclase-carbonate-accessory sphene/rutile-epidote gneiss with local (commonly flattened) relict porphyroblast (?) sites of carbonate-quartz-plagioclase-Kspar.

The possible porphyroblast sites vary from somewhat rounded/ellipsoid, up to 0.5 cm in diameter, to strongly flattened/elongated in the plane of foliation (~2 mm thick by 2 cm long). They contain variable proportions of carbonate (subhedra to 1.5 mm, likely dolomite?), quartz (locally shattered subhedra to 1.5 mm) and Kspar (mainly interstitial, ragged/skeletal subhedra to 1 mm) or in places plagioclase (rounded subhedra to 1.5 mm, possibly oligoclase to judge by lack of relief against quartz?), mainly with relatively little biotite (in places brown, normal; in others, green, possibly Fe-rich?) or locally chlorite (euhedral flakes <0.2 mm with deep green pleochroism but length-fast, anomalous purple-gold birefringence suggestive of F:M near 0.5?). Sphene/rutile are uncommon, but most of the trace pyrite (subhedra <0.1 mm) occurs in them.

In the (relatively well foliated) matrix, biotite typically forms subhedral, well aligned flakes to ~1.2 mm, locally alternating in laminae <1 mm thick with similar-sized, also well-aligned euhedral flakes of muscovite. Biotite is only locally interleaved/replaced by chlorite (either with similar properties to that described above in the relict sites, or with almost no colour, length-fast first-order grey/white birefringence, suggestive of F:M around 0.4?). The background is mainly very fine-grained sericite (more or less randomly oriented, subhedral flakes mostly <50 μm), apparently after former plagioclase as rounded subhedra rarely over 0.4 mm in size, mixed with variable carbonate as rounded sub/anhedra mostly <0.6 mm long (local elongation in the plane of foliation to ~2:1) and accessory sphene/rutile (associated with biotite and carbonate in aggregates up to almost 2 mm long, stretched out into the foliation, composed of skeletal sub/euhedra mainly <0.2 mm, suggestive of former ilmeno-magnetite crystals associated with relict mafic crystals in a mafic/intermediate rock?). Epidote (colourless, with either normal or low, anomalous grey birefringence, possibly clinozoisite or zoisite?) forms euhedral crystals to 0.35 mm loosely associated with the possible relict mafic sites (?).

In summary, this appears to represent foliated, locally laminated, intermediate/mafic gneiss (biotite-muscovite-carbonate ±chlorite in matrix of fine-grained, relict (sericitized) plagioclase, with accessory sphene/rutile, epidote) containing relict porphyroblasts of carbonate-quartz-Kspar-plagioclase-minor biotite/chlorite, partly flattened into the foliation.

K15-302 192.26-192.41 QUARTZ-MUSCOVITE-MINOR BIOTITE/CHLORITE-KSPAR-FE CARBONATE-TRACE SPHENE GNEISS; CONCENTRATIONS OF PYRRHOTITE, PARTLY ALTERED TO PYRITE/MARCASITE, LESSER SPHALERITE, GALENA±CHALCOPYRITE

Offcut shows grey, weakly foliated/disrupted-looking, fine/medium-grained, siliceous-looking gneiss with local foliation-parallel bands/veins of quartz in places associated with concentrations of sulfides (mainly pyrrhotite, sphalerite/galena?). The rock is locally strongly magnetic, shows no reaction to cold dilute HCl (even where scratched, with difficulty, by steel), and only trace stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (80%)

Quartz (largely secondary, in bands/veins)	55%
Muscovite/sericite	40%
Biotite (brown, green), local chlorite in quartz bands	1-2%
Carbonate (ankerite/siderite?)	1-2%
K-feldspar	1-2%
Monazite (?), sphene/rutile	<1% each

Ore (20%)

Pyrrhotite	70%
Pyrite/marcasite (likely after former pyrrhotite)	10%
Sphalerite (Fe-rich)	10%
Galena	7-8%
Chalcopyrite (mainly only in late cross-cutting veinlet)	1-2%

This sample consists of alternating bands or in places laminae of either quartz-rich or sericite-rich rock, locally with irregular concentrations of significant sulfides (pyrrhotite, partly replaced by pyrite/marcasite; lesser sphalerite-galena-minor chalcopyrite).

Quartz-rich bands up to almost 1 cm thick, or somewhat lensy, discontinuous laminae mostly <1.5 mm thick, are composed, respectively, of interlocking subhedra up to 2 mm or anhedra mainly <0.5 mm in size. Most crystals show only mild undulose extinction, minor sub-grain development, and rare suturing of grain boundaries, but appear to be annealed post-deformation to judge by moderately developed triple junctions. Minor muscovite or sericite in these bands forms euhedral flakes mostly <0.5 mm, aligned with the foliation. Local minor pale brown or green biotite forming similar-sized, euhedral flakes is mostly concentrated at margins of the quartz-rich bands or laminae, where it may be locally accompanied by minor Kspar (subhedra mainly <0.25 mm, estimated only from the etched offcut). In places chlorite forms subhedral flakes <0.25 mm (very pale green colour, length-fast, first-order grey birefringence suggestive of F:M ~0.4?).

Muscovite-rich laminae are also lensy and discontinuous, mainly <3 mm thick, composed of matted, strongly aligned sub/euhedral flakes up to almost 1 mm, lesser quartz as subhedra mainly <0.25 mm, local sulfides (see below) rarely including minor Fe-carbonate (subhedra <0.15 mm with strong Fe staining; could be ankerite or even siderite?), accessory sphene or rutile (subhedra <0.1 mm or <50 μm) and possible monazite (fractured euhedra <0.15 mm with lower reflectance than sphene).

Sulfides are mainly concentrated in mixed quartz-muscovite rich bands up to almost 2 cm thick between quartz-rich bands (possibly suggestive of deformed stringers?). The sulfides consist mainly of pyrrhotite (ragged, irregular aggregates to ~1 cm across composed of interlocking subhedra up to bout 1.25 mm diameter, locally apparently replaced by similar-sized aggregates of pyrite with fine-grained texture suggestive of former marcasite?). Variable sphalerite occurs as adjacent, elongated aggregates to 5 mm long composed of subhedra <1 mm with intense, deep red colour (Fe0-rich), associated with lesser galena as parallel elongated, also irregular to skeletal masses up to 2 mm long. Chalcopyrite is relatively rare (irregular masses <0.6 mm), mainly associated with late, irregular cross-cutting fractures <0.5 mm thick.

In summary, this is quartz-muscovite-minor biotite/chlorite-Kspar-Fe carbonate-trace sphene-monazite (?) gneiss with distinct bands of quartz and concentrations of sulfides (pyrrhotite, partly altered to pyrite/marcasite, lesser sphalerite, galena, minor chalcopyrite).

K15-302 198.0-201.0: STRONGLY FOLIATED MUSCOVITE-MINOR QUARTZ-PYRRHOTITE-BIOTITE-ACCESSORY RUTILE-APATITE-MONAZITE?-TRACE CHALCOPYRITE, WITH SPARSE GARNET PORPHYROBLASTS

Offcut shows fine-grained, foliated/laminated, pale grey felsic-looking gneiss with wispy streaks of sulfide (mainly pyrrhotite?) along the foliation. The rock is weakly but distinctly magnetic, shows no reaction to cold dilute HCl (even where scratched, relatively readily, by steel), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (90%)

Muscovite/sericite	75%
Quartz (largely secondary, in bands/veins)	15%
Biotite (brown, green), local chlorite in quartz bands	5-7%
Garnet (porphyroblasts, widely scattered)	2-3%
Rutile	1%
Apatite, monazite (?)	<1%

Ore (10%)

Pyrrhotite	99%
Chalcopyrite	1%

This sample consists almost entirely of well-foliated muscovite with much lesser quartz, minor biotite and scattered small porphyroblasts of garnet, with wispy concentrations of pyrrhotite and accessory rutile, possible apatite.

In the bulk of the slide, muscovite or sericite forming matted, strongly aligned sub- to euhedral flakes mostly <1 mm in diameter are mixed with variable, but much lesser quartz forming sub- to anhedral, locally rounded or irregular crystals mainly <0.5 mm in size. Locally, the quartz occurs in aggregates or crystals up to almost 1 mm long (length:width ratio up to 5:1), oriented in the plane of foliation). The quartz crystals typically show only mild undulose extinction, rare sub-grain development, and lack suturing of grain boundaries (they may be mainly annealed). Minor biotite occurs as pale/medium brown sub/euhedral flakes mostly <0.25, but rarely to ~1 mm in diameter, not as obviously aligned in the foliation as muscovite/sericite.

Garnet porphyroblasts have euhedral outlines up to 1.5 mm in diameter. They are almost colourless to faintly brownish, lack anomalous anisotropism or zoning, and contain minor inclusions of pyrrhotite (aligned with the foliation, on trend of wispy pyrrhotite in the matrix, suggestive of late blastic growth) and also show minor pyrrhotite along microfractures oriented oblique (60º) to foliation.

Sulfides are almost entirely pyrrhotite, occurring as subhedra mainly <1 mm long (length:width up to 5:1) in wispy, lensy foliae or discontinuous laminae mainly <1 mm thick, parallel to foliation. Traces of chalcopyrite (subhedra <0.1 mm) are rarely intergrown with the pyrrhotite. Rutile is loosely associated with the sulfides, occurring as somewhat lensy, crude concentrations up to 1.5 mm long along the foliation, composed of pale brown sub/euhedra mainly <65 μm long. Minor possible apatite (?) forms subhedra mainly <50 μm, and there could be monazite (?) of similar size.

In summary, this is strongly foliated muscovite-minor quartz-pyrrhotite-biotite-accessory rutile-apatite-monazite?-trace chalcopyrite, with sparse garnet porphyroblasts.

K15-306 164.29-164.40: RELICT PORPHYROBLASTS OF QUARTZ-CHLORITE, MATRIX OF BIOTITE-CHLORITE±KSPAR-SULFIDES (SPHALERITE±ZN-SPINEL?-PYRRHOTITE-GALENA-CHALCOPYRITE), LOCAL BLASTIC MAGNETITE, TRACE ILMENITE-APATITE-ALLANITE?

Offcut shows dark blackish green, medium-grained metamorphic rock with local dark relict porphyroblasts in a moderately foliated matrix of mica and semi-massive sulfides (likely mainly pyrrhotite to judge by the magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and only very minor stain for K-feldspar. Modal mineralogy in polished thin section is roughly:

Gangues (70%)

Biotite (brown, partly altered to green biotite)	45%
Chlorite (not obviously after biotite)	35%
Quartz (mainly in relict porphyroblasts)	10%
Spinel (pleonaste or more likely gahnite?)	7-8%
K-feldspar	~1%
'Hydrobiotite'/limonite	<1%
Apatite (?)	<1%
Allanite (?), zircon/monazite?	<1%

Ore minerals (30%)

Sphalerite (partly very fine, included in gahnite/)	45%
Pyrrhotite (partly altered to lamellar pyrite/marcasite)	30%
Pyrite (partly after pyrrhotite)	15%
Galena	5%
Chalcopyrite	3%
Magnetite (pyrrhotite inclusions)	1-2%
Ilmenite (?)	<1%

Relict porphyroblasts with lensy outlines up to almost 1 cm long (crudely elongated in the plane of foliation defined by the surrounding mica-and/or sulfide-rich matrix) are of two types. One consists of mainly quartz (interlocking sub/anhedra mostly <1 mm) and lesser chlorite (euhedral flakes <0.75 mm), rare biotite and sulfides (both <1 mm). The other consists mainly of chlorite (euhedral flakes mainly <0.6 mm, aligned in the foliation or randomly oriented) with local sulfides and euhedral flakes of biotite up to 1.5 mm projecting in from the margins. Quartz shows generally mild/moderate strain (undulose extinction, local sub-grain development, rare suturing of grain boundaries). Chlorite shows pale green pleochroism and length-fast, first-order grey birefringence suggestive of F:M ~0.4? Kspar occurs as skeletal subhedra to 0.2 mm coating quartz along narrow fracture veinlets <0.5 mm.

Mica in the matrix forms sub/euhedral flakes to ~2 mm diameter, more or less aligned in the plane of foliation, mostly medium brown locally interleaved by pale green biotite or intergrown with chlorite similar to that of the porphyroblasts. Chlorite does not appear to replace the biotite; both biotite and chlorite contain inclusions of high-relief, locally radioactive minerals (surrounded by dark pleochroic haloes) that appear to include red-brown allanite (?) as subhedra to 0.4 mm and zircon or monazite <0.1 mm; apatite forms euhedra <1 mm. Significant spinel (?) forms ragged, sub/euhedral crystals mostly <0.25 mm but in aggregates with subhedral outlines to 1 mm, with distinct green colour suggestive of either pleonaste (or possibly gahnite?), especially since the spinel contains inclusions of very fine-grained sphalerite (subhedra mainly 20 μm), locally around magnetite or intergrown with sphalerite/pyrrhotite, suggestive of replacement of former porphyroblasts.

The sulfide matrix consists mainly of sphalerite (aggregates to 3 mm long of subhedra <1 mm, deep red-brown, high Fe), pyrrhotite (irregular masses to 2 mm of subhedra <0.8 mm, commonly replaced by lamellar pyrite/marcasite), lesser galena (ragged sub/anhedra <1 mm) and chalcopyrite (skeletal anhedra <1 mm). The sulfides locally surround sub/euhedral magnetite to 2 mm, with inclusions <0.2 mm mainly of pyrrhotite; traces of ilmenite (slender euhedra <0.2 mm) are locally associated, as are traces of "hydrobiotite" <40 μm. Sphalerite contains traces of chalcopyrite and pyrrhotite as inclusions <20 μm. Sulfosalts were searched for (mainly in galena) but not found.

In summary, this sample consists of relict porphyroblasts of quartz-chlorite in a matrix of mica (biotite, chlorite), sulfides (sphalerite locally intergrown with Zn-spinel?, lesser pyrrhotite, minor galena, chalcopyrite), local blastic magnetite, trace ilmenite, Kspar, possible apatite, allanite.

K15-306 169.58-169.68: MEDIUM-GRAINED MASSIVE SULFIDE (EUHEDRAL PYRITE ENCLOSED IN MATRIX OF ABUNDANT, FE-RICH SPHALERITE AND SIGNIFICANT GALENA WITH LOCAL CONCENTRATIONS OF PYRRHOTITE BUT ONLY TRACE CHALCOPYRITE-SULFOSALT (POSSIBLY ARGENTIAN TETRAHEDRITE?), GANGUE INCLUSIONS OF PHLOGOPITE/GREEN BIOTITE?-LESSER CARBONATE

Etched offcut shows medium-grained, grey, massive sulfide composed mainly of pyrite and sphalerite, with only minor, likely mostly carbonate gangue. The rock is weakly magnetic, shows spotty reaction to cold dilute HCl (even where not scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (10%)

Phlogopite (?) partly altered to chlorite	70%
Carbonate (mainly calcite?), partly in late veinlets	30%

Ore (90%)

Pyrite	55%
Sphalerite	30%
Galena	13%
Pyrrhotite	~1%
Chalcopyrite	~1%
Sulfosalt (argentian tetrahedrite/freibergite?)	<1%

This thin section is over-thinned, making precise identifications of gangue minerals difficult. It is medium-grained massive sulfide composed mainly of abundant pyrite in a matrix of almost as abundant sphalerite, lesser galena, minor pyrrhotite and trace chalcopyrite-sulfosalt; poikilitically included gangues are mostly pale mica (phlogopite?) ±chlorite, and lesser carbonate. Banding is essentially absent, with little or no tendency to galena-rich and pyrrhotite-rich zones.

Pyrite forms mainly rounded, subhedral cubic crystals up to about 2 mm in diameter. They contain minor inclusions of rounded subhedral sphalerite <0.45 mm, or rarely bleb-like galena <0.1 mm. Sphalerite forming the bulk of the matrix occurs as interlocking, sub- to euhedral crystals mainly <1 mm diameter; medium orange-brown colour in such a thin section may be indicative of high Fe content, supported by common minute (<20 μm) inclusions of chalcopyrite along crystallographic planes, or of galena up to 0.1 mm. Galena making up most of the rest of the matrix occurs as irregular to skeletal, interstitial sub/anhedral crystals mostly <1 mm across, rarely with sulfosalt inclusions. Pyrrhotite shows a much more limited distribution, occurring only in certain zones in aggregates <0.5 mm across composed of interlocking subhedra mainly <0.25 mm, particularly around the margins of pyrite crystals. Chalcopyrite is very minor, occurring as subhedra <0.35 mm interstitial to the other sulfides, intergrown with galena and associated with pyrrhotite, also around the margins of pyrite crystals. Sulfosalt is relatively rare, forming subhedra mainly <50 μm with distinctly darker, greenish-grey colour compared to galena it is included within, but no apparent anisotropy under crossed polars, suggestive of Ag-bearing tetrahedrite (freibergite?).

Gangue inclusions in the massive sulfides are mostly irregular in outline, up to about 3 mm across, and commonly heavily plucked out by section preparation. They consist mainly of euhedral, randomly oriented flakes to 1 mm of a very pale brownish, faintly pleochroic mica suggestive of phlogopite (?), slightly altered at margins or interleaved by bright green chlorite or green biotite (generally length-slow, low to moderate birefringence) and lesser carbonate (interlocking sub- to anhedral crystals mostly <0.5 mm, possibly mostly calcite?). Late carbonate veinlets are entirely plucked out of the section, but are also likely calcite to judge by reaction in the offcut.

In summary, this is medium-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of abundant, Fe-rich sphalerite and significant galena with local concentrations of pyrrhotite but only trace chalcopyrite-sulfosalt (possibly argentian tetrahedrite?), with gangue inclusions of phlogopite/green biotite?-lesser carbonate.

K15-306 170.87-171.00: COARSE-GRAINED, POSSIBLE VEIN OF CARBONATE-MUSCOVITE (±BIOTITE, TREMOLITE?)-MINOR QUARTZ, WITH MASSIVE SULFIDES OF PYRRHOTITE-CHALCOPYRITE-SPHALERITE-GALENA (THE LATTER CONTAINING TRACE SULFOSALT, LIKELY TETRAHEDRITE?)

Hand specimen not available for macroscopic information, but offcut shows what appears to be relatively coarse-grained, partly pinkish carbonate-abundant sulfide (pyrrhotite-sphalerite-galena-chalcopyrite) vein (?). The rock is distinctly magnetic, shows major reaction to cold dilute HCl (even where not scratched, fairly readily, by steel), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (40%)

Carbonate (could be dolomite and calcite?)	70%
Mica (mainly muscovite, possibly after tremolite?)	25%
Quartz (secondary)	3-5%
Biotite	1-2%

Ore (60%)

Pyrrhotite	55%
Chalcopyrite	15%
Sphalerite	15%
Galena	15%
Sulfosalt (tetrahedrite?)	<<1%

This sample consists of sulfide-rich and carbonate-rich portions of what may be a coarse-grained, somewhat remobilized vein (?); there are local rounded inclusions of carbonate within the massive sulfide portion of the sample.

Gangue-rich portions of the vein (?) up to ~1.5 cm thick are mostly composed of carbonate, forming sub/anhedra that are optically continuous for up to 3 mm, but in detail are seen to be recrystallized to sub-domains with interlocking jigsaw-like habit, mainly <1 mm (commonly <0.2 mm) in diameter. The carbonate typically contains myriads of minute inclusions (both pyrrhotite, mostly <65 μm long, or possibly fluid, mostly <20 μm) and appears to show relatively high relief, suggestive of dolomite, but reaction in offcut suggests much is likely calcite; there may be both dolomite and calcite. Mica occurs in scattered separate flakes or in semi-radiating rosettes up to ~3 mm across, composed of almost colourless, sub/euhedral flakes up to ~2 mm in diameter. In places it appears to be mixed with, and/or replacing, possible pale-coloured amphibole (pale yellowish-brown tints, length-slow, oblique extinction suggestive of Fe-poor tremolite). Some of these aggregates are intergrown with minor quartz (secondary, skeletal crystals up to ~1 mm in diameter). Within the massive sulfides, carbonate inclusions contain minor biotite (sub/euhedral, medium brown flakes to 0.25 mm, mainly around the margins of the carbonate, near sulfides0. In these areas, there is minor quartz as skeletal inclusions <0.25 mm, and minor pyrrhotite occurs as filigree-like concentrations of slender, <75 μm euhedral needles (mainly near the margins, adjacent to sulfides).

Massive sulfide portions up to 2.5 cm across consist mostly of pyrrhotite as somewhat rounded subhedral crystals mostly <1.5 mm, but commonly with recrystallized internal texture (sub-domains visible under crossed polars, mostly <0.5 mm, locally with coarse, lamellar twins suggestive of deformation). Chalcopyrite is abundant, forming lensy or lenticular zones up to almost 1 cm thick of subhedra mainly <1 mm, locally including pyrrhotite or sphalerite. Sphalerite typically occurs as deep, intense red coloured (Fe-rich) subhedra <1 mm, but aggregating to 3 mm, with chalcopyrite (and galena) as matrix to the pyrrhotite. Galena occurs as ragged, irregular to skeletal crystals or masses up to 3 m across, commonly with trace inclusions of symplectic-textured, very fine (<0.1 mm) grey, apparently isotropic sulfosalt (tetrahedrite?), closely associated with chalcopyrite/pyrrhotite.

In summary, this appears to represent coarse-grained, possible vein of carbonate-muscovite (±biotite, tremolite?)-minor quartz, with massive sulfides of pyrrhotite-chalcopyrite-sphalerite-galena (the latter containing trace sulfosalt, likely tetrahedrite?).

K15-302 146.99-147.06: CORDIERITE?-GARNET PORPHYROBLASTS IN FOLIATE MATRIX OF QUARTZ-MICA (BIOTITE, CHLORITE-PYRRHOTITE-SPHALERITE-CHALCOPYRITE-GALENA-LOCAL BLASTIC MAGNETITE, PYRITE, ACCESSORY SPINEL-APATITE

Offcut shows dark blackish green, medium-grained metamorphic rock with local black glassy or lesser pinkish-brown porphyroblasts in a weakly foliated matrix of mica and semi-massive sulfides (likely mainly pyrrhotite to judge by the strongly magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (50%)

Chlorite (partly after biotite?)	40%
Biotite (partly altered to chlorite)	20%
Quartz (mainly in matrix)	15%
Cordierite (?) porphyroblasts, partly altered to sericite/chlorite	15%
Garnet (large porphyroblasts)	5%
Spinel (pleonaste or possibly gahnite??)	3-5%
Apatite, trace allanite or monazite (?)	<1% each

Ore (50%)

Pyrrhotite (rarely altered to lamellar pyrite/marcasite)	60%
Sphalerite	20%
Galena	10%
Pyrite	5%
Magnetite	3%
Chalcopyrite	2%

Porphyroblasts of cordierite (?) have rounded to subhedral outlines up to ~4mm diameter, commonly simple twins, characterized by weakly developed cleavage and alteration to chlorite (euhedral flakes up to 0.5 mm) at margins, or traces of clay?/sericite along cleavage or twin planes. Garnet porphyroblasts are ragged, irregular subhedra to locally euhedra, up to 6 mm, with pale brownish colour and lacking zoning; they locally appear to have overgrown spinel near the margins. Garnets are partly intergrown at the margins with or contain inclusions of sulfides, magnetite, quartz or mica (subhedra mainly <0.5 mm), suggestive of porphyroblastic crystals with rounded outlines to ~3 mm. Quartz occurs in lensy aggregates up to ~0.5 cm long (crudely elongated in the plane of foliation defined by the surrounding mica-and/or sulfide-rich matrix), composed of interlocking sub/anhedra mostly <0.5 mm but up to ~1 mm, with generally mild/moderate strain (undulose extinction, local sub-grain development, rare suturing of grain boundaries). Mica in the matrix forms sub/euhedral flakes to ~2 mm diameter, typically more or less aligned in the plane of foliation, ranging from brown biotite to pale green chlorite (with length-fast, first-order grey birefringence, suggestive of Fe:Fe+Mg, or F:M, ratio in the 0.4-0.5 range?). The chlorite partially replaces the biotite at margins, but does not appear to affect spinel (?) forming sieve-textured sub/euhedral crystals/aggregates up to ~1 mm with distinct green colour suggestive of either pleonaste or possibly Zn spinel (gahnite?). Rare apatite (?) forms rounded sub/euhedra <0.3 mm, locally within cordierite porphyroblasts, or in the intervening matrix. Traces of radioactive allanite (?) or monazite (?) as euhedra respectively <0.2 mm and <0.1 mm are marked by pleochroic haloes in biotite.

The sulfide matrix consists mainly of pyrrhotite (irregular masses to 0.5 cm of subhedra mostly <1 mm (locally deformed, twinned), lesser sphalerite (subhedra <1 mm, deep red-brown, high Fe), galena (ragged sub/anhedra <1 mm), chalcopyrite (skeletal anhedra to 0.5 mm), locally with pyrite as elongated subhedra to 2.5 mm long, or containing magnetite as sub/euhedra <1 mm but aggregating to 3 mm (with inclusions <0.2 mm of the sulfides). Sphalerite contains traces of chalcopyrite and pyrrhotite as inclusions <20 μm. Sulfosalts were searched for (in galena) but not found.

In summary, this gneiss consists of porphyroblastic cordierite (?, partly altered to chlorite) and garnet, in foliated matrix of mica (biotite, chlorite)-quartz-sulfides (pyrrhotite, lesser sphalerite, minor galena, chalcopyrite), local blastic magnetite or pyrite, accessory spinel, apatite.

K15-302 147.75-147.86: SCHIST: CHLORITE-BIOTITE-SPHALERITE-PYRITE-PYRRHOTITE-GALENA-MAGNETITE ±CHALCOPYRITE-ACCESSORY EPIDOTE-APATITE-ALLANITE? MATRIX TO RELICT AMPHIBOLE OR CHLORITE-ALTERED PORPHYROBLASTS

Offcut shows dark blackish green, fine/medium-grained metamorphic rock with large dark green, ellipsoidal/flattened relict porphyroblasts (?) in a weakly foliated matrix of mica and semi-massive sulfides (pyrite, pyrrhotite, magnetite to judge by the strongly magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and no stain for K-feldspar (but rare white etch for plagioclase?) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (65%)

Chlorite (partly after biotite?)	60%
Biotite (partly altered to chlorite)	25%
Amphibole (porphyroblasts, actinolitic hornblende?)	10%
Epidote (small cores of amphibole?)	3%
Apatite, local green spinel (possibly gahnite?)	<1% each
Allanite or monazite (?)	<1% each

Ore (35%)

Sphalerite	35%
Pyrite	30%
Pyrrhotite (rarely altered to lamellar pyrite/marcasite)	20%
Galena	10%
Magnetite	3-5%
Chalcopyrite	<1%

In this sample, possible relict porphyroblasts (could have been formerly cordierite??) now composed mainly of amphibole or chlorite, are set in a foliated matrix of chlorite-lesser biotite-sulfides-magnetite (rare spinel, possibly Zn-bearing>?)-accessory epidote-apatite-possible allanite.

Relict porphyroblast sites have typically ellipsoidal to strongly flattened, elongated outlines up to ~1 cm long, oriented sub-parallel to the enclosing foliation. Examples now composed mainly of amphibole (randomly oriented to radiating, subhedral lath-shaped crystals mostly <1.5 mm long with pale green pleochroism and small extinction angle mostly <12º, suggestive of actinolite or actinolitic hornblende?) contain inclusions of sulfides (ragged/skeletal anhedra < 0.6 mm, pyrrhotite, galena, minor sphalerite) and magnetite (subhedra <1 mm). They are better defined than those composed mainly of chlorite (strongly aligned, euhedral flakes <0.5 mm almost colourless/length-fast first-order greenish-grey birefringence suggestive of F:M around 0.4?), are difficult to distinguish from matrix except from by the elliptical outlines, and by the general absence of sulfides or magnetite.

The matrix consists largely of chlorite (much as described above) with lesser biotite (pale brown pleochroic euhedral flakes to ~2mm in diameter, somewhat aligned with the foliated chlorite hosting it), sulfides, magnetite, and accessory epidote. The epidote forms typically small, euhedral crystals up to 0.5 mm long, somewhat aligned with the foliation; they show very pale pleochroism and normal birefringence suggestive of low Fe content (clinozoisite?) and contain cores of pale green pleochroic amphibole (?) mostly <0.1 mm. The epidote is locally associated with euhedral crystals <0.1 mm of radioactive mineral (distinguished by dark pleochroic haloes in biotite, allanite or monazite?). Apatite (rounded subhedra <0.2 mm) occurs both in the matrix and porphyroblast sites.

Sulfides mostly occur in elongated, flattened aggregates <2.5 m thick oriented parallel to the foliation, composed of sphalerite as flattened sub/euhedra up to 2 mm long with deep red-brown colour indicative of high Fe content, pyrite as cubic sub/euhedra to 2 mm with inclusions of galena or sphalerite to 0.2 mm, pyrrhotite as subhedra mostly <1 mm, galena as ribbon-like aggregates <1 mm thick (deformed?) intergrown with sphalerite, pyrrhotite and trace chalcopyrite (subhedra <0.2 mm). All sulfides are locally intergrown with magnetite as blastic sub/euhedra to ~2 mm that contain inclusions of sulfides, are partly altered to hydrobiotite <0.1 mm, and are wrapped by biotite.

In summary this is chlorite-biotite-sphalerite-pyrite-pyrrhotite-galena-magnetite ±chalcopyrite –accessory epidote-apatite-allanite? matrix to relict amphibole or chlorite-altered porphyroblasts.

K15-302 154.79-154.88: MASSIVE/SEMI-MASSIVE PYRRHOTITE-SPHALERITE-PYRITE-GALENA-MAGNETITE±CHALCOPYRITE, VARIABLE MATRIX OF QUARTZ (±BARITE?)-MICA (BIOTITE-PHLOGOPITE-MUSCOVITE)-CARBONATE-EPIDOTE-TOURMALINE

Etched offcut shows fine-grained, grey/dark grey, semi-massive/massive sulfides (abundant pyrrhotite to judge by strong magnetic character of the sample) in what appears to be siliceous matrix. The rock shows local minor reaction to cold dilute HCl, and very minor stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (50%)

Quartz (may include some barite?)	65%
Biotite, phlogopite (?) partly altered to chlorite	15%
Carbonate (mainly calcite, rare cores of ankerite?)	10%
Muscovite	5%
Epidote (Fe-poor, clinozoisite?)	3%
Tourmaline (Fe-rich, schorl)	2%

Ore (50%)

Pyrrhotite	50%
Sphalerite	30%
Pyrite	15%
Galena	3%
Magnetite	1%
Chalcopyrite	~1%

Semi-massive sulfides (about half the slide) consist of crudely laminated, fine-grained pyrrhotite-sphalerite-minor pyrite-galena-trace chalcopyrite in gangue matrix of mostly quartz (difficult to be sure there is not some barite?)-minor mica (mainly either colourless muscovite or very pale brown phlogopite, grading to dark brown or green (Fe-rich) biotite as the massive sulfide portion is approached)-carbonate. Pyrrhotite forms interlocking subhedra <0.25 mm, with a strongly deformed appearance, sphalerite occurs in subhedral crystals or aggregates to ~1 mm with deep red-brown colour suggestive of high Fe content, locally intermixed with minor galena as anhedral, irregular to skeletal crystals <0.35 mm and locally containing very minor pyrite as sub/anhedra <1 mm (rarely with traces of chalcopyrite as interstitial subhedra <0.25 mm). Quartz (could include some barite?) forms rounded, granular sub/anhedra either mostly <0.5 mm or (in a few lenses up to 3 mm long, aligned with foliation) up to 1.5 mm. Rarely, the quartz shows mild/moderate undulose extinction, sub-grain development, and suturing of grain boundaries indicative of strain, but in the main the crystals appear t be annealed. Mica forming mainly euhedral flakes to 0.75 mm varies as above, with the palest colour (phlogopite) associated with most abundant sulfides, and the darkest with thin laminae <0.5 mm thick associated with minor epidote (very pale pleochroism, Fe-poor?) or in places tourmaline (very dark blue-green, Fe-rich schorl) both as euhedral laths up to ~1 mm long. The carbonate forms sub/anhedra mostly <0.65 mm, likely mostly calcite except for very minor cores <0.15 mm with high relief (ankerite?), Chalcopyrite occurs mainly in a thin cross-cutting veinlet <0.5 mm thick, with sphalerite and pyrrhotite, suggestive of remobilization from massive sulfides.

Massive sulfide portions consist mainly of pyrite (sub/euhedra to ~2 mm, with local inclusions of sphalerite, galena or pyrrhotite <0.3 mm) and minor magnetite (blastic sub/euhedra to ~1 mm) in a matrix of pyrrhotite (subhedra to~1 mm), sphalerite (subhedra <0.5 mm with medium red/orange brown colour implying moderate Fe content), minor galena (skeletal, interstitial ragged anhedra rarely over 0.5 mm) and rare chalcopyrite (sub/anhedra <0.2 mm, typically interstitial, with pyrrhotite). Gangue inclusions are much as described above for semi-massive sulfides, with a granular texture, separated by very fine-grained interstitial films of sulfides. Relict banding is locally visible (e.g. sphalerite laminae <1mm thick in massive pyrrhotite).

In summary, this is massive/semi-massive pyrrhotite-sphalerite-pyrite-galena-magnetite-trace chalcopyrite, in variable matrix of quartz (could include some barite?)-mica (biotite-phlogopite-muscovite)-carbonate-local epidote-tourmaline.

K15-306 219.75-219.83: CRUDELY BANDED/FOLIATED, CORDIERITE (?) BLASTIC GNEISS COMPOSED OF ACTINOLITIC AMPHIBOLE-BIOTITE-SCHORLITIC TOURMALINE-MINOR (PARTLY SERICITIZED) PLAGIOCLASE-ACCESSORY SPINEL (ZINCIAN?)-EPIDOTE/ALLANITE-APATITE, PYRRHOTITE-PYRITE/MARCASITE (MOSTLY AFTER PYRRHOTITE?)-SPHALERITE (FE-RICH)-CHALCOPYRITE-MAGNETITE-TRACE GALENA

Etched offcut shows dark blackish green, medium-grained metamorphic rock with scattered, green or white, relict porphyroblasts (?) in a weakly foliated matrix of mica and semi-massive sulfides (pyrrhotite, magnetite to judge by the strongly magnetic character of the rock). The rock shows no reaction to cold dilute HCl, and only trace stain for K-feldspar (but common white etch for plagioclase?). Modal mineralogy in polished thin section is approximately:

Gangue (65%)

Amphibole (matrix, actinolitic hornblende?)	50%
Cordierite (?) porphyroblasts	15%
Biotite (rarely altered to chlorite)	15%
Tourmaline (zoned, schorlitic)	10%
Plagioclase (partly sericitized/biotitized), trace Kspar	3%
Sericite (after plagioclase)	2%
Green spinel (possibly gahnite?), with sphalerite inclusions	2%
Chlorite (after biotite/amphibole?)	2%
Epidote (local rims of allanite?)	<1%
Apatite	<1%
Carbonate (dolomite?), inclusions of pyrrhotite	<1%

Ore (35%)

Pyrrhotite (partly altered to lamellar pyrite/marcasite)	35%
Pyrite (mainly after pyrrhotite?)	35%
Sphalerite	25%
Chalcopyrite	3-5%
Magnetite	~1%
Galena	<1%

Composition of this sample is unusual. Crudely defined bands of amphibole, biotite, tourmaline, sulfide- or relict plagioclase-rich rock (accessory green spinel, epidote, apatite, allanite?) contain variable relict porphyroblasts of cordierite (?) locally with inclusions of plagioclase.

Porphyroblasts of possible cordierite (tentative identification on basis of similar appearance to quartz, but biaxial character, distinct cleavage, local sector twinning, and alteration have rounded to ellipsoid, subhedral outlines up to at least 0.5 cm, with inclusions of plagioclase, amphibole, magnetite or sulfides; they range from relatively unaltered to slightly altered to sericite. Plagioclase included within them is commonly partly altered to sericite, as is plagioclase intermixed with biotite or tourmaline, which is up to 50% replaced by sericite/lesser biotite as subhedral flakes <30 μm.

Amphibole bands up to 1.5 cm thick consist of more or less randomly oriented, locally radiating or in places somewhat aligned, sub/euhedral laths up to 1.5 mm long, with pale to medium sea-green pleochroism and extinction angle mostly <12º, suggestive of actinolitic hornblende (?). Locally the amphibole is in somewhat blastic aggregates to ~3 mm, with inclusions of sphalerite. In other places, possible relict porphyroblast sites are marked by concentrations of green spinel (subhedra to 0.4 with inclusions of sphalerite <35 μm, suggestive of Zn content, i.e. gahnite?).

Biotite bands mostly <j1 cm thick consist of subhedral flakes up to 3 mm in diameter, commonly aligned in/defining the foliation, with very pale to medium brown pleochroism, typically intergrown with but not obviously replacing amphibole. Chlorite is relatively rare, generally in patches <1 mm across of minute scaly flakes <15 μm with relic of amphibole/rare biotite contained.

Tourmaline bands are discontinuous, containing stubby barrel-shaped euhedra up to 4 mm long with random orientations, generally strongly zoned with either pale khaki cores/blue-green rims, or blue cores with brownish green rims; both likely Fe-rich, schorl. Accessory epidote or allanite

(local epidote rimmed by allanite?) in places showing dark pleochroic haloes in both amphibole and biotite, forming euhedra to 0.35 mm is locally associated with apatite (subhedra to 0.25 mm) is associated with tourmaline-rich bands.

Sulfides occur in weakly aligned aggregates up to ~1 cm long composed of pyrrhotite (subhedra <1 mm that are typically incipiently altered to very fine-grained pyrite/marcasite (in places with lamellar or bird's-eye textures, or with cores of relict pyrrhotite, barely anisotropic under crossed polars)). Where this alteration is stronger, the mineral is classified as pyrite (but likely mainly after former pyrrhotite). Sphalerite (deep red colour, high Fe) occurs as skeletal subhedra locally continuous for up to several mm, interstitial to/intergrown with amphibole or tourmaline, or at the margins of porphyroblasts. Sphalerite typically contains minute inclusions of chalcopyrite along crystal boundaries or crystallographic orientations. Chalcopyrite also occurs in aggregates up to 0.5 cm long, intergrown with sphalerite and pyrrhotite, biotite and local carbonate (possibly dolomite, with minute inclusions of pyrrhotite; carbonate locally remobilized into thin veinlets). Magnetite is difficult to distinguish from the very Fe-rich sphalerite, but locally occurs as sub/anhedra <0.5 mm, intergrown with sphalerite. Galena is rare, forming trace inclusions <0.15 mm long in sphalerite

In summary, this is crudely banded/foliated, cordierite (?) porphyroblastic gneiss composed of actinolitic amphibole-biotite-schorlitic tourmaline-minor (partly sericitized) plagioclase-accessory spinel (zincian?)-epidote/allanite-apatite, pyrrhotite-pyrite/marcasite (mostly after pyrrhotite?)-sphalerite (Fe-rich)-chalcopyrite-magnetite-trace galena.

K15-306 221.60-221.71: MASSIVE SPHALERITE±PYRRHOTITE/PYRITE-MAGNETITE-MICA-CORDIERITE-CARBONATE-PLAGIOCLASE-TOURMALINE ±SPINEL, EPIDOTE/ALLANITE?

Etched offcut shows dark grey, fine/medium-grained metamorphic rock with scattered, green or white, relict porphyroblasts (?) in a weakly foliated matrix of mica and semi-massive to locally massive sulfides (mainly sphalerite ±pyrrhotite/magnetite to judge by the magnetic character of the sample). The rock shows trace reaction to cold dilute HCl, and only trace stain for K-feldspar (but common white etch for plagioclase?). Modal mineralogy in polished thin section is approximately:

Gangue (50%)

Mica (brown biotite, pale brown/very pale green phlogopite?)	40%
Cordierite (?) porphyroblasts	25%
Carbonate (dolomite, local cores of ankerite?)	15%
Plagioclase (partly sericitized/biotitized), trace Kspar	10%
Muscovite, trace sericite (after plagioclase)	5%
Tourmaline (zoned, schorlitic)	2%
Pale green spinel (possibly zincian?), with sphalerite inclusions	2%
Epidote/allanite (?)	1%

Ore (50%)

Sphalerite	90%
Pyrrhotite (partly altered to lamellar pyrite/marcasite)	5%
Pyrite (mainly after pyrrhotite?)	3%
Magnetite	~1%
Galena	~1%
Chalcopyrite	<1%

A large portion of this sample consists of semi-massive to almost massive sphalerite-local minor pyrrhotite (partly altered to pyrite or pyrite/marcasite), with a crudely banded character, interlayered with more mica-carbonate bands with irregular porphyroblasts of cordierite (?), some with significant inclusions of relict plagioclase, minor local tourmaline, accessory spinel and epidote/allanite (?).

Ore minerals are strongly dominated by sphalerite, forming crude laminations mostly <1 mm thick but commonly aggregating to bands up to ~1 cm in thickness. Sphalerite forms subhedra to 2 mm long, somewhat elongated in the plane of foliation, with intense red colour suggestive of high Fe content, typically with minor inclusions of chalcopyrite arranged along crystallographic planes or grain boundaries, as well as somewhat more common inclusions of pyrrhotite up to 0.35 mm long. Pyrrhotite occurs more abundantly in local bands mainly <0.7 mm thick, in whish it forms subhedra up to 0.5 mm long, aligned with foliation, locally associated with minor galena (ragged, irregular anhedra <0.2 mm) or lesser chalcopyrite (mainly anhedra <0.1 mm, locally aggregating to 0.2 mm), all in a host matrix of sphalerite. Magnetite is only locally present, sparingly with the sphalerite or more commonly within adjacent gangue-rich bands, where it forms sub/euhedra up to 0.5 mm.

In the gangue-rich portions, porphyroblasts have rounded to ellipsoidal outlines up to almost 1.5 cm in maximum dimension (somewhat aligned with foliation) although these areas are actually only composed of about half cordierite (?) and half plagioclase, as inclusions up to 1 mm across, or in places micas, which may in part replace former cordierite (?). The mineral tentatively identified as cordierite forms subhedra to ~3 mm, with crude sector twinning, and minor replacement along microveinlets of carbonate; inclusions of mica increase toward the margins, grading to aggregates of mica flakes in a matrix of cordierite (?). Mica (euhedral flakes <0.5 mm except to 1.5 mm in adjacent areas) ranges from medium brown biotite to very pale brownish or greenish phlogopite (?) to colourless muscovite, mixed in the adjacent bands with significant carbonate as rounded subhedra mainly <1 mm that may include both dolomite and minor cores of ankerite (?). Local patches of tourmaline up to 2 m across consist of somewhat radiating subhedra up to 1 mm in size, with blue to khaki pleochroism implying schorlitic composition. Accessory spinel forming subhedral to ragged

rounded anhedra up to 1.25 mm is very pale green, with small inclusions of sphalerite or biotite at margins; allanite (?) forms pale brown euhedra <0.3 mm surrounded by dark pleochroic haloes.

K15-306 219.14-219.26: Banded/Foliated, Quartz, Mica-Carbonate-Plagioclase-Relict Cordierite?, Locally Amphibole Or Sulfide-Rich Gneiss, Local Accessory Tourmaline, Spinel, Trace Allanite?

Etched offcut shows banded white/dark grey, fine-grained weakly foliated metamorphic rock with minor thin sulfide laminae (mainly sphalerite ±pyrrhotite/magnetite to judge by weak magnetic character of the sample). The rock shows minor reaction to cold dilute HCl, and only trace stain for Kspar (common white etch for plagioclase?). Modal mineralogy in polished thin section is roughly:

Gangue (85%)

Quartz (concentrated in certain bands)	30%
Mica (brown biotite, pale greenish/brown phlogopite?)	30%
Plagioclase (partly sericitized/biotitized), trace Kspar	10%
Cordierite (?) porphyroblasts (inclusions of plagioclase)	10%
Carbonate (calcite, local dolomite?)	10%
Amphibole (fibrous, actinolitic?)	5%
Tourmaline (zoned, schorlitic)	2-3%
Pale green spinel (possibly zincian?), with sphalerite inclusions	1-2%
Allanite (?)	<1%

Ore (15%)

Sphalerite	40%
Pyrite, minor marcasite (mainly after pyrrhotite?)	30%
Pyrrhotite (partly altered to lamellar pyrite/marcasite)	27%
Magnetite	~1%
Chalcopyrite	~1%
Galena	<1%

This sample consists of crudely banded/laminated, weakly foliated, alternately quartz, mica-carbonate-plagioclase-relict cordierite (?), or minor amphibole or sulfide-rich metamorphic rock with local accessory tourmaline, spinel, trace allanite (?).

Quartz-rich bands up to 0.75 cm thick are composed mainly of somewhat rounded, sub- to anhedral, interlocking crystals mostly <1.5 mm in diameter, lacking preferred orientation or any obvious flattening/elongation. Most crystals show only mild to locally moderate undulose extinction, sub-grain development, and relatively rare suturing of grain boundaries, indicative of strain. Mica, carbonate and amphibole are either confined to thin wispy laminae or interstitial to quartz.

Alternating bands rich in micas (mostly subhedral, somewhat bent/deformed flakes <0.7 mm, aligned in/defining the foliation, with varying colour from bright medium brown through greenish brown to pale greenish) commonly contain most of the carbonate (interlocking subhedra mainly <1 mm long, somewhat flattened in the foliation; possibly both calcite and dolomite?) and the relict cordierite?/relict plagioclase, forming ragged to flattened, elongated porphyroblasts up to ~3 mm diameter, although commonly in semi-continuous bands up to 6 mm thick where they are intimately intergrown with what appears to be relict plagioclase (±minor Kspar?) in similar-sized aggregates or bands. In detail, inclusions of cordierite (?) can be distinguished from plagioclase (?) on the basis of relief difference (cordierite negative compared to plagioclase), but both are commonly more or less altered to sericite or biotite as subhedral flakes mostly <0.15 mm. The relief suggests an intermediate composition (oligoclase-andesine?) for the plagioclase. Thin bands enriched in amphibole (subhedral, locally aligned or radiating, fibrous laths <0.35 mm long with pale green pleochroism and small extinction angle, suggestive of actinolite?) are mostly <1 mm thick. Scattered, stubby euhedral prisms of tourmaline display strong zoning from paler, khaki/greenish cores to bluish, darker rims, indicative of schorlitic composition. Aggregates of very pale green spinel have rounded subhedral outlines <0.6 mm, altered to chlorite or carbonate, with minute sphalerite inclusions; local allanite (?) forms euhedra <0.15 mm marked by dark radiation-damage pleochroic haloes in surrounding micas.

Sulfides are predominantly sphalerite (deep red, high Fe subhedra<1 mm long), lesser pyrite/ minor marcasite (likely after pyrrhotite, which forms subhedra mostly <0.5 mm), associated with magnetite (subhedra <0.3 mm) chalcopyrite and rare galena as sub/anhedra <0.15 mm.

K15-314 158.09-158.2: FOLIATED, BANDED/LAMINATED QUARTZ-MUSCOVITE-CARBONATE-MINOR RELICT (CHLORITIZED) CORDIERITE (?)-PYRITE-RUTILE-TRACE ALLANITE OR MONAZITE GNEISS

Etched offcut shows banded white/pale grey, fine-grained, well foliated felsic-looking metamorphic rock with minor thin sulfide laminae (mainly pyrite?). The rock is locally slightly magnetic, shows no detectable reaction to cold dilute HCl (even where scratched, with difficulty, by steel), and no stain for Kspar. Modal mineralogy in polished thin section is approximately:

Gangue (95%)	
Quartz (in laminae alternating with mica)	60%
Mica (mainly muscovite)	30%
Carbonate (dolomite, ankerite?)	7%
Chlorite (pseudomorphs after cordierite?)	2%
Relict cordierite (?)	~1%
Allanite or monazite?)	trace
Ore (5%)	
Pyrite	98%
Rutile	2%

The mineralogy of this sample is relatively simple, composed mainly of discontinuous thin bands or laminations mostly <1 m thick of alternately quartz-, muscovite (±carbonate, chlorite altered cordierite?)-, or pyrite-rich rock. There are traces of accessory rutile, allanite or monazite (?).

Quartz forms somewhat rounded to slightly flattened crystals mainly <0.5 mm in maximum dimension (length:width <2:1, somewhat aligned with the banding/weak foliation defined by the aligned mica flakes). The crystals show almost no undulose extinction, sub-grain development, or suturing of grain boundaries, suggestive of annealing post-deformation; development of local triple junctions supports this.

Muscovite occurs as mainly euhedral, strongly aligned flakes up to about 1 mm in diameter, locally mixed with carbonate. The carbonate forms sub/locally euhedral crystals up to about 0.7 mm long, locally somewhat elongated in the plane of foliation (length:width up to ~3:1), possibly dolomite or even ankerite to judge by the lack of, or very slow, reaction to HCl in the offcut.

Small (mainly <0.5 mm) discrete pseudomorphs with rounded to irregular, rarely subhedral outlines appear to be mostly chlorite (matted, randomly oriented subhedral flakes mainly <15-20 μm) that rarely appears to be after former cordierite (?), which also occurs rarely as subhedra to 0.5 mm with incipient chlorite alteration at the rims. Traces of possible allanite or monazite (?) form scattered euhedra <0.1 mm.

The sulfide, occurring in certain bands or laminae, appears to be entirely pyrite, forming cubic euhedra to locally subhedra mainly 0.6 mm long (also elongated in the plane of foliation), locally in aggregates up to 2.5 mm long. Very minor accessory rutile (aggregates <0.15 mm of slender acicular brown euhedra mainly <45 μm long) is associated with the pyrite.

In summary, this is foliated, banded/laminated quartz-muscovite-carbonate-minor relict (chloritized) cordierite (?)-pyrite-rutile-trace allanite or monazite gneiss.

K15-317 75.61-75.75: WELL FOLIATED, MUSCOVITE-CHLORITE-QUARTZ-BIOTITE-CARBONATE-ACCESSORY SPHENE/RUTILE-TRACE PYRITE-CHALCOPYRITE ±SPHALERITE SCHIST/GNEISS WITH PORPHYROBLASTIC AGGREGATES OF BIOTITE ±CARBONATE-CHLORITE-SPHENE/RUTILE ±SULFIDES SUGGESTIVE OF FORMER MAFIC SITES IN A META-MAFIC VOLCANIC ROCK

Etched offcut shows grey-green, fine-grained, well foliated metamorphic rock apparently lacking sulfide. The rock is not magnetic, shows rapid reaction to cold dilute HCl (even where not scratched, readily, by steel), and no stain for Kspar. Modal mineralogy in polished thin section is approximately:

Gangue (99+%)

Mica (mainly muscovite)	30%
Chlorite (intimately intergrown with muscovite)	25%
Quartz (in laminae alternating with mica)	15%
Biotite (porphyroblasts)	15%
Carbonate (mainly calcite?)	13%
Sphene, rutile	2%
Allanite or monazite?)	<1%

Ore (<1%)

Pyrite	50%
Chalcopyrite	45%
Sphalerite	5%

This sample consists essentially of scattered porphyroblasts of biotite and smaller sphene/rutile aggregates in a foliated matrix of mica (mainly muscovite intimately mixed with chlorite, alternating with discontinuous laminae of quartz-carbonate. Only traces of sulfides occur.

The bulk of the matrix consists of intimately intermixed, strongly aligned muscovite (sub- to euhedral flakes mostly <0.5 mm, intergrown with similar-sized, mainly euhedral flakes of chlorite) both strongly aligned, to define the foliation. The chlorite shows pale green colour/.faint pleochroism and length-fast, weakly anomalous greenish, first-order grey birefringence, suggestive of F:M around 0.4 (?), and is typically closely associated with most of the very fine-grained sphene/rutile.

Quartz (interlocking sub/anhedra mainly <0.5 mm long, typically somewhat elongated in the plane of foliation, with length:width up to 3:1) is mixed with carbonate (ragged subhedra up to about 1 mm, somewhat elongated in the foliation with length:width mostly <2:1, likely mainly calcite?) and variable muscovite/chlorite, or somewhat segregated into discontinuous, lensy bands <1 mm thick.

Porphyroblasts or aggregates with irregular to lensy outlines up to 2.5 mm (possibly after former mafic phenocrysts?) consist of biotite (sub/euhedral flakes mainly <1.5 mm with medium brown pleochroism) mixed with variable carbonate (subhedra to ~1.5 mm, also likely calcite), local chlorite (as described above, but up to ~1 mm) and sphene/rutile. Aggregates of sphene/rutile have irregular to lensy outlines rarely over about 0.4 mm long (aligned in the foliation) composed of mainly euhedral crystals of sphene to 0.15 mm and lesser, included rutile as brownish euhedra <50 µm long; the aggregates likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals. Rare allanite or monazite (?) crystals <25 µm in size are surrounded by dark, radiation-damaged pleochroic haloes in biotite or chlorite.

Only traces of sulfide are present, in widely scattered crystals of pyrite <0.15 mm, or irregular aggregates <0.35 mm of chalcopyrite (subhedra <0.2 mm), lesser pyrite (as above) and sphalerite (?) as subhedra <0.1 mm with almost no colour indicating very low Fe content. The sulfides are mainly hosted in carbonate, associated with sphene/rutile, likely representing former mafic sites.

In summary, this is well foliated, muscovite-chlorite-quartz-biotite-carbonate-accessory sphene/rutile-trace pyrite-chalcopyrite ±sphalerite schist/gneiss with porphyroblastic aggregates of biotite ±carbonate-chlorite-sphene/rutile ±sulfides suggestive of former mafic sites in a meta-mafic volcanic rock.

K15-317 96.45-96.59: Quartz-Kspar Phyric, Meta-Rhyolite Cut By Deformed Stringers Of Quartz-Muscovite-Carbonate-Pyrrhotite-Pyrite/Marcasite ±Chalcopyrite, Sphalerite, Rutile

Etched offcut shows creamy white, fine-grained, weakly foliated felsic metamorphic rock with irregular to highly stretched/deformed relict quartz phenocrysts (?) and thin quartz ±sulfide stringers in a matrix of alkali feldspar (mainly Kspar to judge by the yellow stain). The rock is weakly magnetic, but shows no reaction to cold dilute HCl (even where scratched, with difficulty, by steel). Modal mineralogy in polished thin section is approximately:

Gangue (95+%)

Alkali feldspar (mainly Kspar, minor plagioclase?)	60%
Quartz (relict primary "eyes", secondary stringers)	25%
Sericite, muscovite	10%
Carbonate (dolomite, ankerite?)	3-5%
Rutile	<1%

Ore (<5%)

Pyrrhotite (locally altered to pyrite, marcasite)	70%
Pyrite, minor marcasite (after pyrrhotite?)	30%
Chalcopyrite	<1%
Sphalerite	trace

This sample consists of recognizable small Kspar and larger, possibly deformed relict quartz phenocrysts, small, possible deformed/altered relict mafic sites (?) set in a very fine-grained, felted groundmass of alkali feldspar (mainly Kspar, local sericitized plagioclase?), cut by what appear to be deformed/rotated quartz-muscovite-sulfide-carbonate stringers.

The matrix or relict groundmass, making up 50-60% of the section, consists of more or less randomly oriented, feathery subhedral laths of Kspar (distinct negative relief compared to quartz) mainly <0.1 mm long, or in places partly sericitized plagioclase (?) as indicated by white etched areas in the offcut. There is probably minor quartz as interstitial anhedra <20 μm, but it is difficult to be sure. The sericite forms ragged subhedral flakes <35 μm, somewhat aligned in the foliation.

Kspar phenocrysts have sharply euhedral outlines up to almost 2 mm long, with moderate negative 2V and local "grid" twinning suggestive of orthoclase and/or minor microcline. They are only rarely slightly altered to carbonate as minute subhedra <0.1 mm in size.

Quartz phenocryst sites are less well defined, with typically rounded to ellipsoid, or locally strongly flattened/elongated outlines ranging from <1 mm to slightly over 2 mm, or in the case of flattening, up to ~0.5 cm (although these are difficult to distinguish from possibly ptygmatic folded and deformed former quartz stringers). Quartz crystals are mostly sub/anhedral, interlocking, rarely over 0.75 mm in maximum dimension, only slightly flattened in the plane of weak foliation, and with weak to rare moderate undulose extinction, sub-grain development, or suturing of grain boundaries.

Possible relict mafic sites (?) with irregular to lensy outlines mostly <1.5 mm consist of loose aggregates of muscovite, sulfides and carbonate plus accessory rutile (minute dark brown euhedra mainly <20 μm), but are commonly found along the presumed relict stringer veinlets, so are difficult to distinguish from concentrations along them.

Possible deformed/rotated stringer veinlets are sub-planar to irregular, up to 2.5 mm thick (where intersecting), composed of quartz very similar to that described for relict phenocrysts, variable muscovite (mainly sub/euhedral flakes <0.5 mm), carbonate (subhedra <0.5 mm, varying from almost clear, suggestive of dolomite, to brownish with higher relief, suggestive of ankerite?) and sulfides. Sulfides are mostly either pyrrhotite, forming ragged subhedra rarely over 0.35 mm, or pyrite as cubic sub/euhedra to 0.25 mm locally accompanied by marcasite as bladed euhedra <0.15 mm, all in aggregates up to ~2 mm long along the veinlets. Various stages of replacement of pyrrhotite by pyrite and marcasite are seen. Very minor chalcopyrite and traces of sphalerite (both subhedral, <0.15 mm) are locally present; sphalerite has dark red-brown colour indicative of high Fe content

In summary, this appears to be quartz-Kspar phyric, meta-rhyolite cut by deformed stringers of quartz-muscovite-carbonate-pyrrhotite-pyrite/marcasite ±chalcopyrite, sphalerite, rutile.

K15-319 161.3-161.46: WELL FOLIATED, MUSCOVITE-CARBONATE-QUARTZ-PYRITE-MINOR CHLORITE ±KSPAR-RUTILE SCHIST/GNEISS (FELSIC/INTERMEDIATE VOLCANIC?) ORIGINALLY CUT BY STRINGERS OF CARBONATE-PYRITE-QUARTZ-TRACE CHALCOPYRITE-GALENA-SPHALERITE-MARCASITE (AFTER PYRRHOTITE?)

Etched offcut shows greenish-grey/white, fine-grained, felsic metamorphic rock with irregular to highly stretched/deformed relict phenocryst sites (?) and/or quartz-carbonate ±sulfide stringers (rotated into the foliation?) in a foliated mica-rich matrix (trace Kspar to judge by the yellow stain). The rock is not magnetic, but shows local rapid reaction to cold dilute HCl (even where not scratched, fairly readily, by steel). Modal mineralogy in polished thin section is approximately:

Gangue (90%)

Muscovite, sericite (foliated matrix)	60%
Carbonate (calcite, dolomite?)	25%
Quartz (relict primary "eyes" and/or secondary stringers?)	10%
Chlorite (small patches suggestive of relict mafic sites?)	3-5%
Kspar (?)	1-2%

Ore (10%)

Pyrite	98%
Rutile	1-2%
Chalcopyrite	<1%
Galena, sphalerite, marcasite (after pyrrhotite?)	traces

This sample consists essentially of alternating, muscovite-rich or carbonate-quartz-pyrite rich bands (accessory rutile occurs in both). Deformation is so strong that relict phenocryst sites, if present initially, are now very difficult to recognize with confidence; small blastic or lensy aggregates of carbonate and/or very fine-grained chlorite may represent former mafic sites (?).

Muscovite-rich bands or laminae are mostly <0.5 cm, but locally to almost 1 cm thick, composed of strongly aligned, sub- to euhedral, matted flakes mainly <0.5 mm in diameter. Possible relict mafic sites (?) in these areas consist of either aggregates of extremely fine-grained chlorite (matted subhedral flakes mostly 10-15 μm with pale yellowish/greenish brown colour, low/moderate length-slow birefringence) occur in pseudomorphs with sub/euhedral rectangular outlines mostly <0.5 mm in diameter, or euhedral crystals of Mg/Fe-carbonate (dolomite?) of similar size, and local very minor possible Kspar (subhedra <0.2 mm, mainly suggested by yellow stain in the offcut). Both carbonate and quartz are locally incorporated into lensy aggregates up to several mm long, strongly aligned in or stretched out into the plane of foliation, that are in part gradational to and difficult to distinguish from the (possible) flattened, transposed veins. Accessory rutile forming very dark brown to almost opaque, mainly euhedral stubby prismatic crystals <50 μm are mainly concentrated in the muscovite, as ragged, irregular aggregates to 0.25 mm, suggestive of former ilmenite (?) crystals.

Lensy to discontinuous bands of coarser-grained carbonate (subhedral crystals to 1.5 mm, likely mostly calcite?) and lesser quartz (sub/anhedra rarely up to 1.5 mm long) contain variable pyrite (cubic euhedra up to 4 mm in maximum dimension, aligned with foliation) but only traces of local chalcopyrite (subhedra <0.15 mm), rare sphalerite, galena and marcasite (likely after former pyrrhotite) all <0.1 mm. Galena also occurs as irregular blebs to 0.4 mm long, with traces of chalcopyrite <0.2 mm in size, included within some of the coarse pyrite crystals. These discontinuous bands, sub-parallel to foliation, are suggestive of former stringer veins that may have been transposed into the foliation during deformation and metamorphism.

In summary, this well foliated, muscovite-carbonate-quartz-pyrite-minor chlorite-accessory Kspar-rutile schist/gneiss may represent felsic/intermediate volcanic rock (?) originally cut by stringers of carbonate-pyrite-quartz-trace chalcopyrite-galena-sphalerite-marcasite (after pyrrhotite?).

K15-319 161.75-161.84: Well Foliated, Muscovite-Carbonate-Quartz-Pyrite-Minor Chlorite-Cordierite-Accessory Kspar-Rutile Schist/Gneiss (Felsic/Intermediate Volcanic Rock?), Stringers of Carbonate-Pyrite-Quartz-Chalcopyrite ±Sphalerite-Galena-Marcasite (After Pyrrhotite?)

Etched offcut shows greenish-grey/white, fine-grained, felsic metamorphic rock with irregular to highly stretched/flattened relict phenocryst sites (?) and/or quartz-carbonate ±sulfide stringers (rotated into the foliation?) in a foliated mica-rich matrix (trace Kspar to judge by the yellow stain). The rock is not magnetic, but shows local rapid reaction to cold dilute HCl (even where not scratched, fairly readily, by steel). Modal mineralogy in polished thin section is approximately:

Gangue (90%)

Muscovite, sericite (foliated matrix)	55%
Carbonate (calcite, dolomite?)	25%
Quartz (relict primary "eyes" and/or secondary stringers?)	10%
Chlorite (small patches suggestive of relict mafic sites?)	5%
Cordierite (?), small porphyroblasts	3-5%
Kspar (?), rare biotite	<1%, trace

Ore (10%)

Pyrite	85%
Chalcopyrite	13%
Rutile	~2%
Sphalerite, galena	<1% each
Marcasite (after pyrrhotite?)	<1%
Pyrrhotite (rare, only where encapsulated in chalcopyrite)	trace

This sample consists essentially of alternating, muscovite-rich (accessory rutile) or carbonate-quartz-pyrite rich bands. Deformation is so strong that relict phenocryst sites, if present initially, are now very difficult to recognize, although small blastic or lensy aggregates of carbonate and/or very fine-grained chlorite may represent former mafic sites, and there may be local blastic cordierite (?).

Muscovite-rich bands are laminated, locally to almost 1.5 cm thick, composed of strongly aligned, sub- to euhedral, matted flakes mainly <0.5 mm in diameter. Possible relict mafic sites (?) in these bands as pseudomorphs with sub/euhedral rectangular outlines mostly <0.7 mm long consist of either aggregates of extremely fine-grained chlorite (matted subhedral flakes mostly 10-15 μm, pale yellowish/greenish brown colour, low/moderate length-slow birefringence, F:M ??), or chlorite mixed with variable euhedral Mg/Fe-carbonate (dolomite?) <0.5 mm, and local trace possible Kspar (subhedra <0.2 mm, mainly suggested by yellow stain in the offcut). Also, in places porphyroblasts (?) with subhedral/rounded/ragged outlines to 1.5 mm may be cordierite (?), partly altered to or including sericite. Both carbonate (two varieties, one relatively clear, likely calcite, the other higher relief/brownish, dolomite?) and quartz are locally incorporated into lensy aggregates <1 mm thick by up to several mm long, strongly aligned in or stretched out into the plane of foliation, that are in part gradational to and difficult to distinguish from the (possible) flattened, transposed veins. Accessory rutile forming dark brown, euhedral stubby prismatic crystals <0.1 mm are mainly concentrated in the muscovite, as ragged, irregular aggregates to 0.7 mm, suggestive of former ilmenite (?) crystals.

Lensy to discontinuous bands to 1 cm thick of coarser-grained carbonate (subhedral crystals to ~2 mm, likely mostly calcite?) and lesser quartz (sub/anhedra rarely up to 1.5 mm) contain variable pyrite (cubic sub/euhedra to 3.5 mm in maximum dimension) and significant chalcopyrite (subhedra to 2 mm), rare sphalerite (subhedra to 0.3 mm, dark red-brown, high Fe), galena (subhedra <1 mm) and marcasite (<0.1 mm, likely after former pyrrhotite, which only occurs as rounded blebs <0.1 mm where encapsulated in chalcopyrite itself included within some of the coarse pyrite crystals. These thick bands, parallel to foliation, are strongly suggestive of former stringer zone veins transposed into the foliation during deformation and metamorphism.

In summary, this well foliated, muscovite-carbonate-quartz-pyrite-minor chlorite-cordierite-accessory Kspar-rutile schist/gneiss may represent felsic/intermediate volcanic rock (?) originally cut by stringers of carbonate-pyrite-quartz-chalcopyrite ±sphalerite-galena-marcasite (after pyrrhotite?).

K15-319 182.46-182.64: COARSE-GRAINED, POSSIBLE VEIN OR SEMI-MASSIVE SULFIDES (PYRITE-SPHALERITE-GALENA-ARSENOPYRITE-CHALCOPYRITE-TRACE PYRRHOTITE, ±MAGNETITE) WITH CARBONATE GANGUE, CUT BY A CENTRAL VEIN/RE-OPENING OF MASSIVE SPHALERITE-GALENA-MINOR PYRITE

Hand specimen not available for macroscopic information, but offcut shows what appears to be medium-grained, dark grey carbonate-abundant sulfide (pyrite-sphalerite-galena-chalcopyrite) vein (?) with a central sphalerite-rich re-opening (?). The rock is locally slightly magnetic, shows widespread slow reaction to cold dilute HCl (mostly where scratched, fairly readily, by steel), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (65%)

Carbonate (mainly dolomite, minor ankerite?)	99+%

Ore (35%)

Pyrite	50%
Sphalerite	35%
Galena	10%
Arsenopyrite (largely after pyrite)	3-5%
Chalcopyrite	1%
Pyrrhotite (partly relict)	<1%
Magnetite (partly altered to carbonate)	<1%

This sample consists of sulfide-rich and carbonate-rich portions of what may be a coarse/medium-grained vein or semi-massive sulfides (?), cut by or re-opened along the center by a massive sulfide portion (mostly sphalerite-galena, with the latter "bleeding" off to partly replace the carbonate wallrock). Chalcopyrite and traces of pyrrhotite and magnetite are mostly found outside the central re-opened portion.

Gangue-rich portions of the vein (?) at least 1.5 cm thick appear to be composed almost entirely of carbonate, forming sub/anhedra that may be optically continuous for up to 1.5 mm, but in detail are seen to be recrystallized to sub-domains with interlocking jigsaw-like habit, mainly <0.7 mm (locally <0.2 mm). The carbonate typically contains myriads of minute inclusions (mostly fluid, <20 μm, or, near sulfides, pyrite, arsenopyrite, sphalerite or magnetite, mostly <65 μm); it appears to be mostly dolomite, but locally (especially near sulfides, where sulfide inclusions are most common) it show relatively high relief and distinctively brown colour, suggestive of ankerite. Within the more sulfide-rich portions, carbonate inclusions are mostly subhedral, <0.25 mm in size.

Sulfide-rich portions forming irregular aggregates up to ~1 cm long consist mostly of pyrite as cubic euhedral to subhedral crystals mostly <0.5 mm, but commonly with much finer-grained (<0.1 mm, especially where intergrown with other sulfides such as galena, sphalerite, or replaced by arsenopyrite that may almost completely pseudomorph the former coarse pyrite). Arsenopyrite in these aggregates typically forms minute euhedra mostly <50 μm, but rarely to 0.1 mm. Sphalerite forms subhedra <0.5 mm, locally mixed with lesser galena as subhedra <1 mm or chalcopyrite as subhedra <1 mm, forming a matrix to the cubic pyrite (in a fashion reminiscent of many massive sulfide samples in this suite; the faint crude banding of sulfides/carbonate supports this). Chalcopyrite locally includes or is associated with traces of pyrrhotite (subhedra <0.2 mm) or partly relict, pyrite/marcasite aggregates after pyrrhotite. Magnetite occurs as scattered, ragged subhedra <0.35 mm partly replaced at margins or along fractures by Fe-carbonate.

In the central vein or re-opening, sphalerite is almost massive, up to 0.6 cm by 2.5 cm long, with deep, intense red colour (Fe-rich) and minor zoning suggesting euhedra up to 1 cm, with abundant galena as rectangular masses up to 1 cm long projecting to the sides of the central vein; sulfosalt was searched for but not found in the abundant galena. Pyrite is found only along the margin of the central vein, and chalcopyrite is not seen.

In summary, this appears to represent coarse-grained, possible vein or semi-massive sulfides (pyrite-sphalerite-galena-arsenopyrite-chalcopyrite-trace pyrrhotite, ±magnetite) with carbonate gangue, cut by a central vein/re-opening of massive sphalerite-galena-minor pyrite.

K15-319 199.03-199.14: FOLIATED, BANDED PLAGIOCLASE-CHLORITE-CARBONATE-QUARTZ?-ACCESSORY RUTILE/SPHENE-TRACE PYRITE-CHALCOPYRITE SCHIST/ GNEISS, LENSY SEGREGATIONS OF CARBONATE-QUARTZ, RARE FE CARBONATE-SERICITE ALTERED MAFIC PSEUDOMORPHS (META-INTERMEDIATE/MAFIC VOLCANIC ROCK?)

Etched offcut shows grey-green, fine-grained, well foliated metamorphic rock apparently lacking significant sulfide. The rock is not magnetic, shows local slow reaction to cold dilute HCl (mainly where scratched, fairly readily, by steel), and no stain for Kspar (but extensive white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99%)

Plagioclase (virtually indistinguishable from quartz, oligoclase?)	35%
Chlorite (mainly in separate bands/laminae)	30%
Carbonate (mainly dolomite, minor ankerite?)	20%
Quartz (in bands with carbonate, or bands with plagioclase?)	10%
Rutile, minor sphene?	2%
Sericite (only in rare mafic relics, with Fe-carbonate)	<1%
Apatite	<1%

Ore (1%)

Pyrite	90%
Chalcopyrite	10%

This sample consists essentially of bands of fine-grained plagioclase (±quartz?), variable carbonate and accessory rutile, alternating with laminae of foliated chlorite, and local lensy, discontinuous bands (or metamorphic "sweats"?) of coarser carbonate-quartz. Only traces of sulfides occur.

The bulk of the felsic bands consists of plagioclase as rounded sub- to anhedra mostly <0.2 mm (only rarely twinned, with extinction on 010 mainly <10º, and relief indistinguishable from possible quartz, suggestive of composition near oligoclase), intimately intermixed with possible quartz of similar size, and variable carbonate in lensy aggregates up to 1.5 m thick by 6 mm long oriented parallel to foliation. The carbonate forms interlocking, rounded sub/anhedra mainly <1 mm long (slight elongation in places in the foliation, length:width up to 2:1) and is likely dolomite (?). Chlorite and rutile/sphene are less common in these bands than in the more mafic bands, but traces of sulfide are typically found along the margins (pyrite as euhedra to 0.25 mm, lesser chalcopyrite as irregular anhedra <0.3 mm). Apatite occurs along the margins of some of these bands, forming stubby prismatic euhedra a<0.2 mm long, oriented sub-parallel to foliation

Dark-coloured, mafic bands consist mainly of strongly aligned chlorite (sub- to euhedral flakes mostly <0.5 mm), defining the foliation, locally with minor brown, fine-grained Fe-carbonate in central septae, or rarely with minor sericite (subhedral flakes <50 μm) in slender lath-like mafic pseudomorphs up to 1.5 mm long, oriented sub-perpendicular to foliation. The chlorite shows pale green colour/.faint pleochroism and length-fast, weakly anomalous greenish, first-order grey birefringence, suggestive of F:M around 0.4 (?), and is commonly associated with much of the very fine-grained rutile ±sphene that occurs as aggregates with subhedral/skeletal, disrupted to locally tabular/lath-shaped outlines to ~1 mm long (likely after former ilmenite or ilmeno-magnetite?).

Quartz is only positively identified (interlocking sub/anhedra mainly <0.5 mm, typically lacking any flattening/elongation and showing only mild undulose extinction, sub-grain development, and suturing of grain boundaries) where mixed with carbonate (rounded subhedra up to about 1 mm, not elongated in the foliation, likely mainly dolomite?) and segregated into discontinuous, lensy bands up to at least 5 mm thick, parallel to foliation.

In summary, this is well foliated, banded plagioclase-chlorite-carbonate-quartz?-accessory rutile/sphene-trace pyrite-chalcopyrite schist/gneiss with lensy segregations of carbonate-quartz, and rare Fe carbonate-sericite altered mafic pseudomorphs in a meta-intermediate/mafic volcanic rock.

K15-282 315.4-315.5: FOLIATED, PLAGIOCLASE-CHLORITE-CARBONATE-BIOTITE-AMPHIBOLE-EPIDOTE-MUSCOVITE-ACCESSORY SPHENE/RUTILE-TRACE PYRITE-CHALCOPYRITE ±KSPAR SCHIST/GNEISS (RELICT PLAGIOCLASE, MAFIC SITES, PORPHYROBLASTIC BIOTITE SUGGESTIVE OF META-MAFIC VOLCANIC ROCK?)

Etched offcut shows grey-green, fine-grained, moderately foliated metamorphic rock with scattered dark mafic crystals imparting a mottled texture, and apparently lacking significant sulfide. The rock is not magnetic, shows local slow reaction to cold dilute HCl (only where scratched, fairly readily, by steel), and very minor stain for Kspar (but extensive white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99%)

Plagioclase (partly altered to epidote, carbonate; oligoclase?)	30%
Chlorite (mainly with Fe-carbonate, after mafics)	25%
Carbonate (mainly dolomite, minor ankerite?)	20%
Biotite (porphyroblasts)	12%
Amphibole (actinolitic hornblende?)	5%
Epidote-group (zoisite/clinozoisite?)	3-5%
Muscovite (with chlorite, Fe-carbonate)	2%
Sphene, minor rutile	2%
K-feldspar (after plagioclase?)	<1%

Ore (1%)

Pyrite	95%
Chalcopyrite	5%

This sample consists of crudely defined bands of fine-grained plagioclase, chlorite, variable carbonate and accessory sphene/rutile, containing porphyroblastic biotite, relict plagioclase and possible mafic sites or local lensy, discontinuous bands (or metamorphic "sweats"?) of coarser carbonate. Only traces of sulfides occur.

Relict plagioclase phenocrysts have ragged, irregular (corroded?) subhedral outlines up to 1.5 mm, with random orientations; they are partly attacked at margins by epidote, carbonate and chlorite, and show local twinning with extinction Y^010 up to 20º, suggestive of calcic oligoclase or sodic andesine (?). There may be minor alteration to traces of Kspar (indicated in etched offcut).

Relict possible mafic sites are suggested by aggregates with irregular to rounded outlines to ~1.5 mm composed of intimately intergrown carbonate (lamellar-textured, acicular crystals to 1 mm, likely ankerite?) and amphibole (ragged, corroded relics <1 mm with dark green pleochroism and small, <10º extinction angle suggestive of actinolitic composition), variable epidote (euhedra mainly <0.35 mm long with very little colour or pleochroism, Fe-poor, clinozoisite?), local chlorite (see below), accessory sphene ±rutile as lath-like aggregates to ~1 mm of subhedra <0.2 mm.

Porphyroblasts or aggregates with irregular to lensy outlines up to 3 mm (possibly also after former mafic phenocrysts?) consist of biotite (sub/euhedral flakes mainly <2.5 mm with medium brown pleochroism, locally attacked at margins by chlorite as described below) and sphene up to 0.4 mm long locally with trace included rutile as brownish euhedra <15 μm long; the aggregates likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals.

The matrix consists of relatively fine-grained, intimately intergrown plagioclase (sub/anhedra mainly <0.5 mm, but with seriate texture from <0.1 to relict phenocryst size), chlorite (subhedral flakes <0.5 mm with pale green pleochroism, first-order grey birefringence, F:M~0.4?), carbonate with either fine grain size <0.2 mm, high relief, brownish colour (ankerite?) or coarser, clearer, up to 1.5 mm (dolomite, locally in lensy aggregates parallel to foliation), local muscovite as euhedral flakes <0.25 mm, euhedral epidote and sphene as above. Only very minor sulfides are present, in widely scattered euhedra of pyrite <1.5 mm, or irregular aggregates <0.2 mm of chalcopyrite, in mafic sites.

In summary, this is foliated, plagioclase-chlorite-carbonate-biotite-amphibole-epidote-muscovite-accessory sphene/rutile-trace pyrite-chalcopyrite ±Kspar schist/gneiss (relict plagioclase, mafic sites, porphyroblastic biotite suggestive of a meta-mafic volcanic rock?).

K15-282 314-314.05: FINE-GRAINED MASSIVE SULFIDE IN WHICH EUHEDRAL PYRITE IS ENCLOSED IN A MATRIX OF LESSER, FE-RICH SPHALERITE AND MINOR GALENA (LOCALLY CONCENTRATED INTO CRUDELY DEFINED BANDS; ONLY TRACE - SULFOSALT (PB-AS-SB?), GANGUE INCLUSIONS OF CARBONATE

Etched offcut shows fine-grained, grey, massive sulfide composed mainly of pyrite and sphalerite, with only minor, likely mostly carbonate gangue in irregular poddy inclusions. The rock is not magnetic, shows slow reaction to cold dilute HCl (even where not scratched), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (20%)

Carbonate (dolomite, cores of ankerite??)	99%

Ore (80%)

Pyrite	75%
Sphalerite	20%
Galena	3-5%
Sulfosalt (Pb-As-Sb?)	<1%

This sample consists of fine-grained massive sulfide composed mainly of abundant pyrite in a matrix of lesser sphalerite, minor galena, possible trace sulfosalt; locally coarse, poikilitically included gangues appear to be entirely carbonate. Banding is very faint, but there is a tendency to galena-rich zones. Late fractures cut the rock oblique to the poorly defined banding.

Pyrite forms mainly cubic euhedral crystals mostly in the 0.1 to 1.0 mm size range, commonly fractured (locally shattered along the linear fracture zones). They contain minor inclusions of rounded subhedral sphalerite <0.15 mm, but not galena. Sphalerite forming the bulk of the intermittent, discontinuous matrix occurs as interlocking, sub- to euhedral crystals mainly <1 mm (local aggregates up to 3.5 mm long in sphalerite-rich bands), with dark red-brown colour indicative of high Fe content. In the larger aggregates, galena and pyrite may occur as small to minute (0.1 to <20 μm) inclusions especially along margins. Galena making up most of the rest of the matrix occurs as irregular to skeletal, interstitial sub/anhedral crystals mostly <1 mm across mainly confined to discrete but poorly defined bands, rarely with possible sulfosalt inclusions, also around the margins of pyrite crystals. Sulfosalt is hard to be sure of (only suspected by weak anisotropism under crossed polars), forming subhedra mainly <50 μm with indistinguishable colour compared to galena it is included within, suggestive of Pb-As-Sb sulfosalt (?).

Fracture zones occur as sharply defined planes mostly <0.1 mm thick, but locally multiple with widths up to ~1 mm in total. Pyrite is shattered or crushed, and there appears to be local remobilization of both sphalerite (and lesser galena) along and into them.

Gangue inclusions in the massive sulfides are mostly irregular in outline, either <0.5 mm or where more abundant, with irregular to rounded outlines up to about 0.7 cm across. They consist entirely of subhedral, randomly oriented crystals up to about 3 mm (but commonly deformed to sub-domains mostly <1 mm of either relatively clear (dolomite) or in places pale brownish, inclusion-rich (mainly pyrite <30 μm) variety suggestive of ankerite (?), to judge by reaction in the offcut. The latter locally occurs as well-defined cores to the former.

In summary, this is fine-grained massive sulfide in which euhedral pyrite is enclosed in a matrix of lesser, Fe-rich sphalerite and minor galena (locally concentrated into crudely defined bands; only trace -sulfosalt (Pb-As-Sb?), with gangue inclusions of carbonate.

K15-282 308-308.1: MASSIVE PYRITE-PYRRHOTITE (PARTLY ALTERED TO PYRITE ±MARCASITE)-SPHALERITE-MAGNETITE-MINOR CHALCOPYRITE-TRACE GALENA, INTER-BANDED WITH GANGUES OF CARBONATE (DOLOMITE, LESSER ANKERITE AND SIDERITE?), LESSER QUARTZ, LOCAL CHLORITE

Etched offcut shows mainly fine-grained, dark grey, crudely banded/laminated massive sulfide composed mainly of pyrite but with local sphalerite-rich bands, and only minor gangue. The rock is strongly magnetic, but shows only minor reaction to cold dilute HCl (only where scratched), and no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Gangue (30%)

Carbonate (dolomite?	65%
Fe-carbonate (ankerite, siderite?)	15%
Quartz	15%
Chlorite	5%

Ore (70%)

Pyrite (partly ±marcasite, after pyrrhotite?)	50%
Pyrrhotite (partly/largely altered to pyrite/marcasite)	20%
Sphalerite	15%
Magnetite	10%
Chalcopyrite	3-5%
Galena	<1%

This sample consists mainly of crudely banded massive sulfides, dominated by pyrite-pyrrhotite (partly replaced by pyrite-marcasite)-sphalerite-magnetite with only minor chalcopyrite, trace galena, with poorly defined, discontinuous bands of gangues (mainly carbonate, less quartz, chlorite).

Gangue minerals locally concentrated into discontinuous bands to ~3 mm thick are sub-parallel to the poorly defined banding in the sulfides. Carbonate forming the bulk of the gangues occurs as 1) sub- to anhedral, irregular crystals mostly <1 mm, but locally in aggregates up to ~0.5 cm long somewhat aligned in the plane of banding, intergrown with quartz, or 2) euhedral to subhedral, lath-like to acicular, dark brown crystals up to 2 mm long, locally in finer-grained, fibrous aggregates of similar size. The first type is more or less clear, or locally pale brownish (i.e. mainly dolomite, local ankerite?); the second type may be Fe-rich, i.e. siderite (?). The very slow reaction to cold dilute HCl, only where powdered, supports their identification as likely dolomite and ankerite or siderite (?). Quartz crystals typically complexly intergrown with the carbonate occur as irregular to rounded sub/anhedra mostly <1 mm that lack elongation in the plane of banding; in places they contain oriented fine inclusions that could indicate cordierite (?) of similar size, but this is speculative. Local patches or in places single crystals of chlorite with sub/euhedral outlines to ~1 mm are pale bright green, but with length-fast anomalous green birefringence suggestive of F:M ~0.4 (?).

Ore minerals are concentrated in poorly defined, thin bands or discontinuous laminae mostly <3 mm thick, but commonly coalescing to almost 2 cm. They vary from pyrite-pyrrhotite (±chalcopyrite, relict pyrrhotite replaced by fine-grained pyrite/marcasite) or magnetite, locally sphalerite (±rare galena) rich. Pyrite typically occurs as interlocking, euhedral cubic crystals ranging from 0.1 to 0.75 mm, locally with a matrix of pyrrhotite-local sphalerite, associated with magnetite. Pyrrhotite occurs as subhedra to almost 1 mm (in places largely pseudomorphed by aggregates of pyrite ±marcasite both mostly <0.1 mm). Magnetite occurs as fractured subhedra or irregular aggregates rarely over 1 mm across. Sphalerite forms subhedra mostly in the 0.2-0.5 mm range, with very dark red-brown colour suggestive of high Fe content, only rarely intergrown galena (anhedral, <0.2 mm). Chalcopyrite is sparsely scattered as ragged subhedra <0.5 mm intergrown with sphalerite.

In summary, this is massive pyrite-pyrrhotite (partly altered to pyrite ±marcasite)-sphalerite-magnetite-minor chalcopyrite-trace galena, inter-banded with gangues of carbonate (dolomite, lesser ankerite and siderite?), lesser quartz, local chlorite.

K15-282 309-309.06: FOLIATED, MUSCOVITE-CHLORITE-CARBONATE-QUARTZ-ACCESSORY RUTILE-TRACE PYRITE SCHIST/GNEISS WITH PORPHYROBLASTIC BIOTITE (RELICT MAFIC SITES?) AND LENSY TO VEIN-LIKE CALCITE-QUARTZ AGGREGATES, SUGGESTIVE OF A META-MAFIC VOLCANIC ROCK?)

Etched offcut shows grey-green, fine-grained, moderately foliated metamorphic rock with lensy/vein-like carbonate aggregates, scattered dark mafic crystals, and apparently lacking significant sulfide. The rock is locally slightly magnetic, shows rapid reaction to cold dilute HCl (even where not scratched, fairly readily, by steel), and no stain for Kspar (but extensive white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99+%)

Muscovite (with chlorite, Fe-carbonate)	30%
Carbonate (mainly calcite in sweats, wallrock dolomite?)	25%
Chlorite (mainly with Fe-carbonate, after mafics)	20%
Quartz (matrix, and in "sweat" veinlets)	15%
Biotite (porphyroblasts)	7-8%
Rutile, minor sphene	2-3%

Ore (<1%)

Pyrite	99%

This sample consists of well-foliated muscovite-chlorite and accessory rutile/sphene containing porphyroblastic biotite, with lensy discontinuous bands (or metamorphic "sweat veinlets"?) of coarser carbonate-variable quartz. Only traces of sulfides occur, typically intergrown with rutile.

Porphyroblasts with ragged, in places corroded-looking sub/euhedral outlines mostly <3 mm (possibly after former mafic phenocrysts?) consist mostly of biotite (sub/euhedral flakes mainly <2 mm with medium/dark brown pleochroism, locally attacked at margins by chlorite as described below, or intergrown with inclusions of quartz, carbonate, or locally accessory rutile all mainly < 0.4 mm (see below for description of rutile)

The matrix consists of strongly foliated, relatively fine-grained, intimately intergrown muscovite (aligned, sub/euhedral flakes mainly <0.5 mm) and lesser chlorite (subhedral flakes <0.5 mm with pale to distinct green pleochroism, near-zero to slightly length-fast anomalous purplish birefringence, F:M~0.4-0.5?), carbonate as sub/euhedra mainly <0.35 mm, (dolomite?) and lesser quartz as rounded sub/anhedra mainly <0.25 mm. Rutile occurs as common, very dark brown/almost opaque, skeletal euhedra <0.25 mm long; the aggregates up to 0.65 mm long likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals. Only trace sulfides are present, typically in the form of minute euhedra of pyrite <35 μm, intergrown with rutile.

Lensy or locally veinlet-like aggregates up to 3 mm thick, parallel or sub-parallel to foliation, typically consist of coarser, clear carbonate (rounded subhedra up to 2 mm, slightly flattened in the plane of foliation, likely calcite), and lesser quartz as sub/anhedra <0.45 mm. These may in part represent metamorphic "sweat" veins.

In summary, this is foliated, muscovite-chlorite-carbonate-quartz-accessory rutile-trace pyrite schist/gneiss with porphyroblastic biotite (relict mafic sites?) and lensy to vein-like calcite-quartz aggregates, suggestive of a meta-mafic volcanic rock?).

K15-319 197.32-197.42: FOLIATED, PLAGIOCLASE-CHLORITE-CARBONATE-BIOTITE-SERICITE-ACCESSORY RUTILE-TRACE PYRITE ±GALENA-CHALCOPYRITE SCHIST/ GNEISS (MINOR RELICT PLAGIOCLASE, POSSIBLE MAFIC SITES INDICATED BY RELICT PORPHYROBLASTIC BIOTITE, SUGGESTIVE OF A META-MAFIC VOLCANIC ROCK?)

Etched offcut shows grey-green, fine-grained, moderately foliated metamorphic rock with lensy dark green chlorite alternating with creamy-buff felsic bands, and apparently lacking significant sulfide. The rock is not magnetic, shows common rapid reaction to cold dilute HCl (even where not scratched, fairly readily, by steel), and no stain for Kspar (but common white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99%)

Plagioclase (partly relict phenocrysts; oligoclase?)	35%
Chlorite (mainly with Fe-carbonate, after mafics)	25%
Carbonate (mainly calcite, minor ankerite?)	25%
Biotite (porphyroblasts, altered to carbonate-chlorite)	10%
Muscovite, sericite (partly after plagioclase)	2-3%
Rutile, minor sphene	2-3%

Ore (1%)

Pyrite	99%
Chalcopyrite	<1%
Galena	<1%

This sample consists of crudely defined, lensy bands alternately rich in chlorite or fine-grained plagioclase, variable carbonate and accessory sphene/rutile, containing local relict plagioclase and possible mafic sites (porphyroblastic biotite altered to carbonate-chlorite), with lensy, discontinuous bands (metamorphic "sweats"?) of coarser carbonate. Only traces of sulfides occur.

Relict plagioclase phenocrysts have ragged, irregular (corroded?) subhedral outlines up to 1.5 mm, with random orientations; they are partly attacked at margins by sericite, carbonate and chlorite, and show local twinning with extinction Y^010 mostly <10º, suggestive of oligoclase (?).

Relict possible mafic sites are suggested by aggregates with irregular to rounded outlines to ~2.5 mm composed mainly of the porphyroblast biotite (sub/euhedral flakes mainly <2 mm with medium brown pleochroism, mostly partly to largely attacked by possible Fe-carbonate (fibrous to acicular crystals mostly <0.2 mm, perpendicular to biotite cleavage, likely ankerite?) and chlorite (as described below), locally associated with rutile in lath-like aggregates to ~1 mm of subhedra <0.2 mm (similar to those in the adjacent matrix; such aggregates likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals).

The matrix consists of either mainly chlorite or mainly plagioclase and carbonate. Chlorite-rich lenses up to 4 mm thick are discontinuous, pinching out along strike; they consist of subhedral flakes <0.5 mm with pale green pleochroism, length-fast, anomalous greenish grey birefringence (F:M~0.4?). Relatively fine-grained plagioclase (sub/anhedra mainly <0.2 mm, but locally with seriate texture from <0.1 to relict phenocryst size) is intimately intergrown with fine-grained sericite (<0.1 mm) and with carbonate (lensy subhedra mainly <2 mm long, somewhat elongated in the foliation, likely calcite) that grade to the lensy aggregates up to mm thick by cm long that may represent metamorphic sweat veins. Both minor chlorite (locally interleaved by very minor muscovite <0.15 mm) and local small relict porphyroblastic biotite are locally included within the plagioclase-rich bands. Only very minor sulfides are present, in widely scattered euhedra of pyrite <1.5 mm (rarely containing inclusions of bleb-like galena <0.15 mm, or associated with traces of chalcopyrite as anhedra <25 μm).

In summary, this is foliated, plagioclase-chlorite-carbonate-biotite-sericite-accessory rutile-trace pyrite ±galena-chalcopyrite schist/gneiss (with minor relict plagioclase and possible mafic sites indicated by relict porphyroblastic biotite, suggestive of a meta-mafic volcanic rock?).

K15-319 196.22-196.27: FINE-GRAINED, CRUDELY BANDED MASSIVE SULFIDE (EUHEDRAL PYRITE IS IN MATRIX OF LESSER, FE-RICH SPHALERITE-MINOR GALENA-ARSENOPYRITE-TRACE CHALCOPYRITE-SULFOSALT (TETRAHEDRITE?), GANGUES OF CARBONATE, QUARTZ, MUSCOVITE AND RARE CHLORITE

Etched offcut shows fine-grained, dark grey, massive sulfide composed mainly of pyrite and sphalerite, with only minor, likely mostly carbonate gangue in irregular lensy to banded inclusions. The rock is not magnetic, shows reaction to cold dilute HCl (mainly only where scratched by steel), and no stain for K-feldspar in the etched offcut. Modal mineralogy in polished thin section is approximately:

Gangue (15%)

Carbonate (mainly dolomite, minor ankerite?)	75%
Quartz	20%
Muscovite (sericite)	5%
Chlorite	<1%

Ore (85%)

Pyrite	65%
Sphalerite	25%
Galena	5%
Arsenopyrite	5%
Chalcopyrite	<<1%
Sulfosalt (tennantite-tetrahedrite?)	<<1%

This sample consists of fine-grained massive sulfide composed mainly of abundant pyrite in a matrix of lesser sphalerite, minor galena, very minor sulfosalt; locally coarse, poikilitically included gangues are mostly carbonate, locally with minor muscovite. Banding is crudely defined, with a tendency to sphalerite-galena-rich zones, and quartz is confined to certain poorly defined bands.

Pyrite forms mainly cubic euhedral crystals mostly in the 0.1 to 0.5 (rarely to 0.7) mm size range, commonly mixed with or replaced at cores by arsenopyrite forming minute, randomly oriented euhedral crystals rarely over about 25 μm in size, but locally in aggregates up to almost 2 mm long in the plane of banding). Such aggregates also occur intimately intergrown with or included within aggregates of sphalerite or galena. Sphalerite forming the bulk of the intermittent, discontinuous matrix to pyrite occurs as interlocking, sub- to euhedral crystals mainly <1 mm (local aggregates up to 3.5 mm long in sphalerite-rich bands), with dark red-brown colour indicative of high Fe content. In the larger aggregates, galena and pyrite, or locally arsenopyrite, may occur as small to minute (0.1 to <20 μm) inclusions especially around the margins of the sphalerite aggregates. Galena making up most of the rest of the matrix occurs as irregular to skeletal, interstitial sub/anhedral crystals mostly <1 mm across mainly confined to discrete but poorly defined bands, rarely with very minor sulfosalt inclusions, also around the margins of galena crystals. The sulfosalt is greenish-grey, apparently isotropic, forming subhedra mainly <50 μm, suggestive of tennantite-tetrahedrite (?); it may be Ag-bearing. Chalcopyrite is rare, forming subhedra <0.1 mm, mostly within sphalerite or quartz.

Gangue inclusions in the massive sulfides are mostly either irregular in outline, <1 mm or where more abundant, in poorly defined bands up to about 3 mm thick, parallel to vague banding in the sulfides. They consist mainly of carbonate as subhedral, randomly oriented crystals up to about 0.5 mm (relatively clear, dolomite?), to judge by reaction in the offcut, with local dark brown euhedra <0.5 mm (ankerite?). Quartz is mainly confined to one central 3 mm thick band, (interlocking ragged subhedra up to 1 mm long, partly aligned with the banding), mostly displaying only mild strain (weak undulose extinction, sub-grain development, rare suturing of grain boundaries). Muscovite forming mainly euhedral flakes <0.75 mm are most common in the quartz-rich band, but also occur with the carbonate; rare chlorite (subhedra <0.35 mm, pale green pleochroism) occur in the quartz.

In summary, this is fine-grained, crudely banded massive sulfide in which euhedral pyrite is set in a matrix of lesser, Fe-rich sphalerite-minor galena-arsenopyrite-trace chalcopyrite-sulfosalt (tetrahedrite?), with gangues of carbonate, quartz, muscovite and rare chlorite.

K15-312 57.4-57.52: FOLIATED, PLAGIOCLASE-CHLORITE-BIOTITE-CARBONATE-EPIDOTE-ACCESSORY SPHENE-TRACE PYRITE-CHALCOPYRITE ±HEMATITE SCHIST/GNEISS (RELICT PLAGIOCLASE, PORPHYROBLASTIC BIOTITE SITES?)

Etched offcut shows grey-green, fine-grained, moderately foliated metamorphic rock with scattered green mafic crystals in lensy green areas, imparting a mottled appearance, and apparently lacking significant sulfide. The rock is not magnetic, shows rapid reaction to cold dilute HCl (even where not scratched, fairly easily, by steel), and no significant stain for Kspar (but extensive white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99+%)

Plagioclase (partly altered to epidote, carbonate; oligoclase?)	30%
Chlorite (mainly matrix, rarely with Fe-carbonate, after mafics)	25%
Biotite (porphyroblasts)	20%
Carbonate (mainly calcite, minor dolomite/ankerite?)	15%
Epidote-group (zoisite/clinozoisite?)	7-8%
Sphene	2%
Amphibole (relict, altered to carbonate-chlorite)	<1%

Ore (<1%)

Pyrite	70%
Chalcopyrite	25%
Hematite	5%

This sample consists of crudely defined lenses or discontinuous bands of fine-grained plagioclase, chlorite, variable carbonate, epidote and accessory sphene, containing possible relict plagioclase (granulated/recrystallized) and mafic sites (porphyroblastic biotite) plus local lensy, discontinuous bands (or metamorphic "sweats"?) of coarser carbonate. Only traces of sulfides occur.

Relict plagioclase phenocryst sites have poorly defined, irregular/lensy outlines to ~2 mm, likely due to intense recrystallization and partial elongation/transposition into the foliation. The relics are composed of interlocking sub/anhedral crystals mostly 0.1-0.2 mm (rarely to 0.5 mm) with common inclusions of epidote, chlorite and minor carbonate, only rarely displaying twinning with extinction Y^010 <10º, suggestive of oligoclase (?).

Relict possible mafic sites are mostly suggested by aggregates with irregular lensy outlines to ~3 mm (typically aligned with foliation) composed mainly of porphyroblasts biotite (sub/euhedral flakes mainly <2 mm with medium brown or green pleochroism, locally attacked at margins by chlorite as described below). Inclusions of epidote (euhedra mainly <0.1 mm, oriented as in the surrounding matrix) suggest blastic growth, and accessory sphene is common as ragged, irregular aggregates up to 0.4 mm long mostly aligned in the foliation; the aggregates likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals associated with the mafic sites.. Rare relict amphibole (pale green, actinolitic, subhedra to 0.5 mm) are replaced by carbonate (subhedra <0.1 mm, likely dolomite?) and chlorite (especially at margins, euhedral flakes <0.15 mm).

The matrix consists of relatively fine-grained, intimately intergrown plagioclase (sub/anhedra mainly <0.1-0.2 mm, commonly difficult to distinguish from relict phenocryst sites), lensy aggregates of chlorite (euhedral flakes <0.5 mm with pale green pleochroism, first-order grey-green birefringence, F:M~0.4?), common euhedral epidote mostly 0.1-0.4 mm long (oriented in the foliation, with only faint colour/pleochroism indicative of low Fe content) and sphene as described above. Distribution of carbonate is irregular, mainly in lensy aggregates grading to "sweat" veinlets up to 3 mm thick composed of relatively coarse, clear, subhedra up to 1.5 mm (likely calcite). There are traces of hematite (subhedral flakes <0.1 mm) along the margins of the veinlets. Only very minor sulfides are present, in widely scattered skeletal/filigree-like euhedra of pyrite <0.2 mm, or rare subhedra <0.15 mm of chalcopyrite, most commonly within carbonate.

In summary, this is foliated, plagioclase-chlorite-biotite-carbonate-epidote-accessory sphene-trace pyrite-chalcopyrite ±hematite schist/gneiss (relict plagioclase, porphyroblastic biotite-rich mafic sites suggestive of a meta-mafic volcanic rock?)

K15-312 72.4-72.55: QUARTZ-KSPAR PHYRIC, META-RHYOLITE PARTLY ALTERED TO SERICITE-RUTILE, CUT BY DEFORMED STRINGERS (?) OF QUARTZ-MUSCOVITE-CARBONATE-PYRITE ± MARCASITE, RUTILE

Etched offcut shows creamy white/pale greenish grey, fine-grained, weakly foliated felsic metamorphic rock with irregular to highly stretched/deformed relict quartz phenocrysts (?) and thin quartz ±sulfide stringers in a matrix of alkali feldspar (mainly Kspar to judge by the yellow stain). The rock is not magnetic, and shows no reaction to cold dilute HCl (even where scratched, with difficulty, by steel). Modal mineralogy in polished thin section is approximately:

Gangue (95+%)

Alkali feldspar (mainly Kspar, minor plagioclase?)	60%
Quartz (relict primary "eyes", matrix, secondary stringers)	25%
Muscovite, sericite	12%
Carbonate (dolomite, ankerite?)	2-3%
Rutile	<1%

Ore (<5%)

Pyrite	99%
Marcasite (after pyrrhotite?)	1%

This sample consists of recognizable small Kspar, larger, possible deformed relict quartz phenocrysts, and small, highly deformed/altered relict mafic sites (?) set in a very fine-grained, felted groundmass of alkali feldspar (mainly Kspar, local sericitized plagioclase?) and significant quartz, cut by what appear to be deformed/transposed quartz-muscovite-sulfide-carbonate stringers.

The matrix or relict groundmass, making up 50-60% of the section, consists of more or less randomly oriented, feathery subhedral laths of Kspar (distinct negative relief compared to quartz) mainly <0.15 mm long, or rarely partly sericitized plagioclase (?) as indicated by white etched areas in the offcut. Lesser quartz forms interstitial anhedra ranging from <20 μm to 0.25 mm (grading to phenocrysts). Minor sericite forms subhedral flakes <50 μm, somewhat aligned in the foliation.

Kspar phenocrysts have mainly euhedral outlines up to ~2.5 mm long, with moderate negative 2V and local "grid" twinning suggestive of orthoclase and/or minor microcline, locally broken along the foliation and commonly replaced by quartz as subhedra <0.25 mm (associated with local pyrite, carbonate and sericite all mainly <0.1 mm).

Quartz phenocryst sites are less well defined, with typically rounded to ellipsoid, or locally strongly flattened/elongated outlines ranging from <1 mm to slightly over 2 mm, or in the case of flattening, up to ~0.5 cm (although these are difficult to distinguish from possibly ptygmatic folded and deformed former quartz stringers) replacing ~10-15% of the slide). Quartz crystals are mostly sub/anhedral, interlocking, rarely over 0.5 mm, typically only slightly flattened in the plane of weak foliation, with weak to rare moderate undulose extinction, sub-grain development, or suturing of grain boundaries, but common triple junctions.

Possible relict mafic sites (?) with irregular to lensy outlines mostly <1.5 mm consist of loose aggregates of muscovite (euhedral flakes to 0.25 mm, sulfides and carbonate plus accessory rutile (minute dark brown euhedra mainly <30 μm), but are commonly found along the presumed relict stringer veinlets, so are difficult to distinguish from concentrations along them.

Possible deformed/rotated stringer veinlets are sub-planar to irregular, up to 2.5 mm thick, composed of quartz very similar to that described for relict phenocrysts but up to 1.5 mm, variable muscovite (mainly sub/euhedral flakes <0.5 mm, aligned with foliation), carbonate (subhedra <0.4 mm, varying from almost clear, suggestive of dolomite, to distinctly brownish, mixed with sericite <25 μm, possibly ankerite?) and sulfides. Sulfides appear to be mainly pyrite as cubic sub/euhedra <0.25 mm, rarely accompanied by traces of marcasite as filigree-like aggregates <0.15 mm interstitial to quartz, all in aggregates up to ~0.5 mm long along the veinlets, rarely with intergrown rutile.

In summary, this appears to be quartz-Kspar phyric, meta-rhyolite partly altered to sericite-rutile, cut by deformed stringers (?) of quartz-muscovite-carbonate-pyrite ± marcasite, rutile.

K15-314 76.48-76.6: FOLIATED, PLAGIOCLASE-CHLORITE-BIOTITE-CARBONATE-EPIDOTE-ACCESSORY SPHENE-TRACE PYRITE-CHALCOPYRITE ±HEMATITE SCHIST/GNEISS (RELICT PLAGIOCLASE, PORPHYROBLASTIC BIOTITE-RICH MAFIC SITES SUGGESTIVE OF A META-MAFIC VOLCANIC ROCK?)

Etched offcut shows grey-green, fine-grained, moderately foliated metamorphic rock with scattered green mafic crystals in lensy green areas, imparting a mottled appearance, and apparently lacking significant sulfide. The rock is not magnetic, shows local reaction to cold dilute HCl (even where not scratched, fairly easily, by steel), and no significant stain for Kspar (but extensive white etch indicative of plagioclase). Modal mineralogy in polished thin section is approximately:

Gangue (99+%)

Plagioclase (partly altered to epidote-chlorite-amphibole)	35%
Chlorite (mainly with Fe-carbonate, after mafics)	20%
Biotite (porphyroblasts)	20%
Carbonate (calcite, lesser dolomite?)	10%
Amphibole (relict, altered to carbonate-chlorite)	10%
Epidote-group (zoisite/clinozoisite?)	7-8%
Sphene	2-3%

Ore (<1%)

Pyrite	75%
Chalcopyrite	15%
Hematite	10%

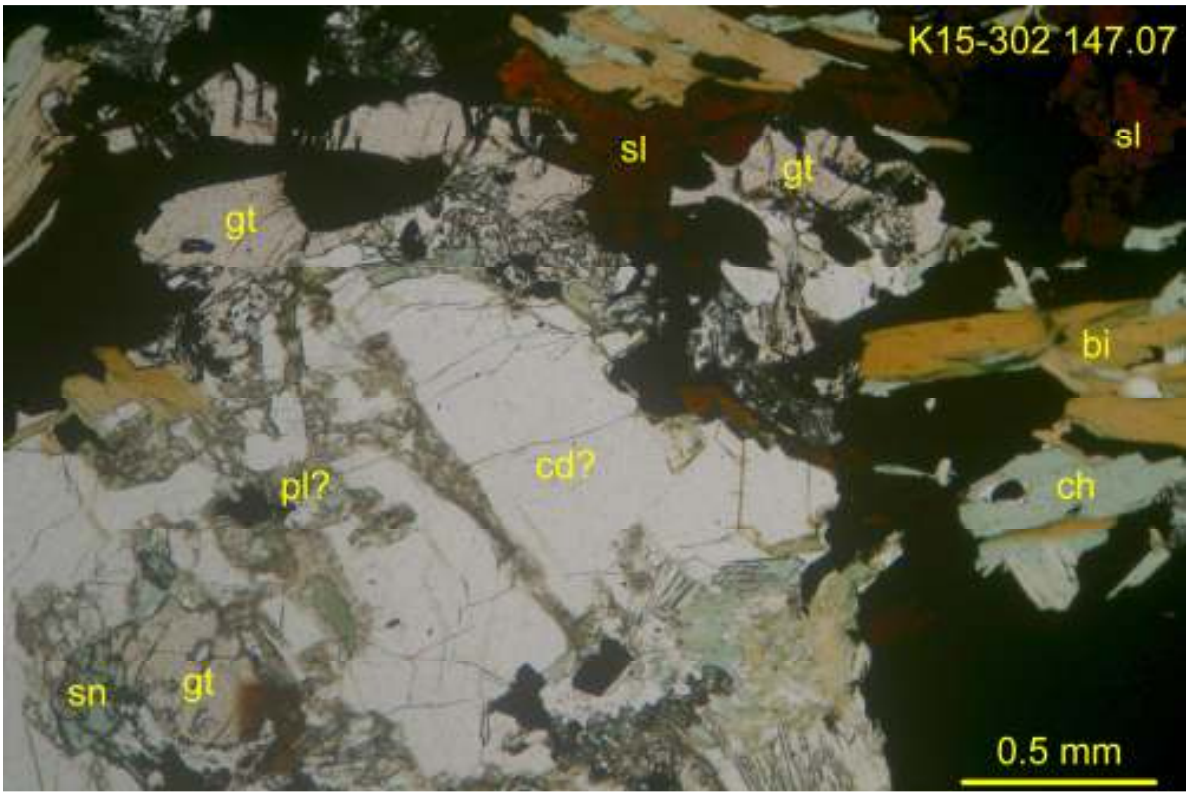
This sample consists of crudely defined lenses or discontinuous bands of fine-grained plagioclase, chlorite, variable carbonate, relict amphibole, epidote and accessory sphene, containing possible relict plagioclase (granulated/recrystallized) and mafic sites (porphyroblastic biotite, relict amphibole), cut by local veinlets of coarser carbonate, sub-perpendicular to foliation. Sulfides are very rare.

Possible relict plagioclase phenocryst sites have poorly defined, irregular/lensy outlines to ~4 mm, likely due to intense recrystallization and elongation/transposition into the foliation. The relics are composed of interlocking sub/anhedral crystals mostly <0.2 mm (rarely to 0.4 mm) with minor inclusions of epidote, chlorite, and amphibole similar to those in the matrix. Twinning is very rare.

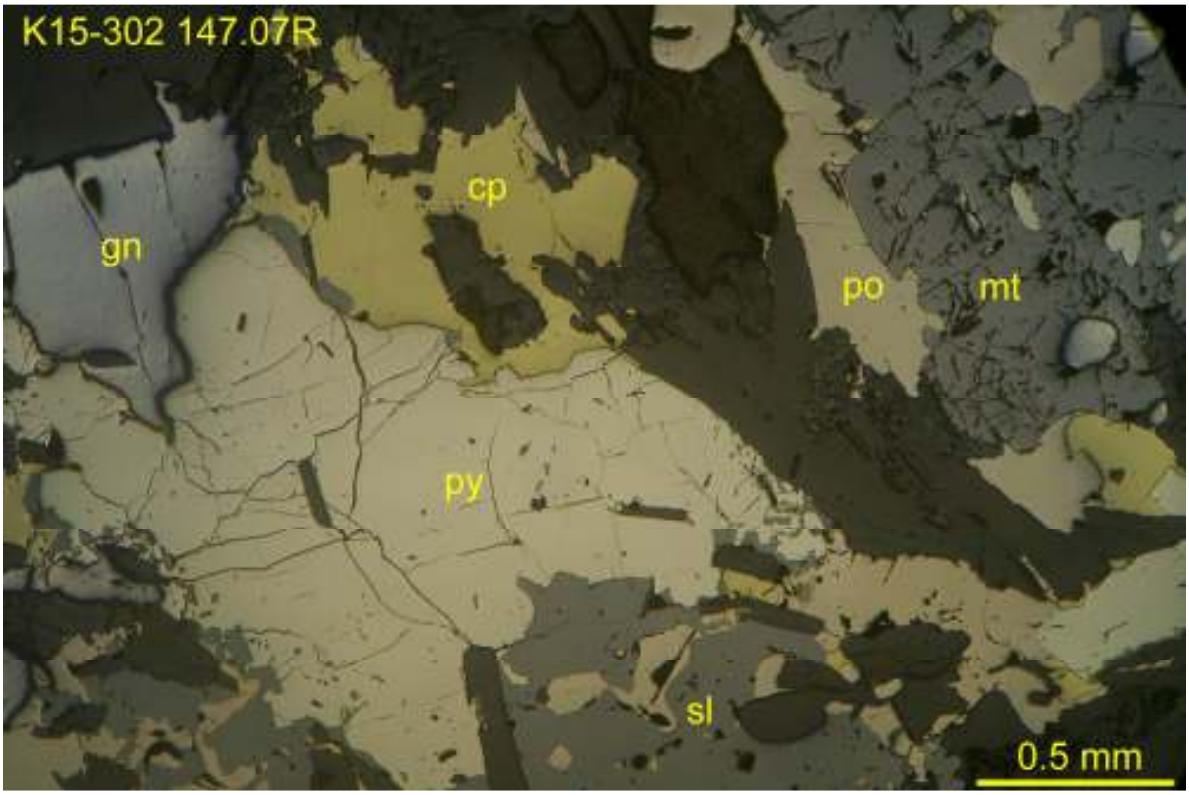
Relict possible mafic sites are mainly suggested by aggregates with irregular lensy outlines to ~3 mm (typically aligned with foliation) composed mainly of porphyroblasts biotite (sub/euhedral flakes mainly <2 mm with medium brown pleochroism, locally attacked at margins by chlorite as described below). Minor inclusions of epidote (euhedra mainly <0.1 mm, oriented as in the surrounding matrix) suggest blastic growth, and accessory sphene is common as ragged, irregular aggregates up to 1 mm long mostly aligned in the foliation; the aggregates likely represent the sites of pre-metamorphic ilmenite or ilmeno-magnetite crystals associated with the mafic sites. Lesser relict amphibole (relics to ~2 mm composed of pale green, actinolitic subhedra to 1 mm) are strongly replaced by carbonate (subhedra <0.5 mm, brown dolomite/ankerite?), epidote (euhedra to 0.25 mm) and chlorite (especially at margins, euhedral flakes <0.15 mm), associated with sphene aggregates. Only traces of sulfides are present, mostly in relict mafic sites where they form euhedra of pyrite <0.1 mm, or rare subhedra <0.15 mm of chalcopyrite, locally associated with traces of hematite (subhedral flakes <0.1 mm but in aggregates to 0.6 mm long, aligned with foliation).

The matrix consists of relatively fine-grained, intimately intergrown plagioclase (sub/anhedra mainly <0.1-0.2 mm, commonly difficult to distinguish from relict phenocryst sites), lensy aggregates of chlorite (euhedral flakes <0.5 mm with pale green pleochroism, first-order grey birefringence, F:M~0.4?), common euhedral epidote mostly 0.1-0.4 mm long (oriented in the foliation, with only faint colour/pleochroism indicative of low Fe content) and sphene as described above. Carbonate is mainly confined to veinlets <1 mm thick (relatively clear subhedra <1.5 mm, likely calcite).

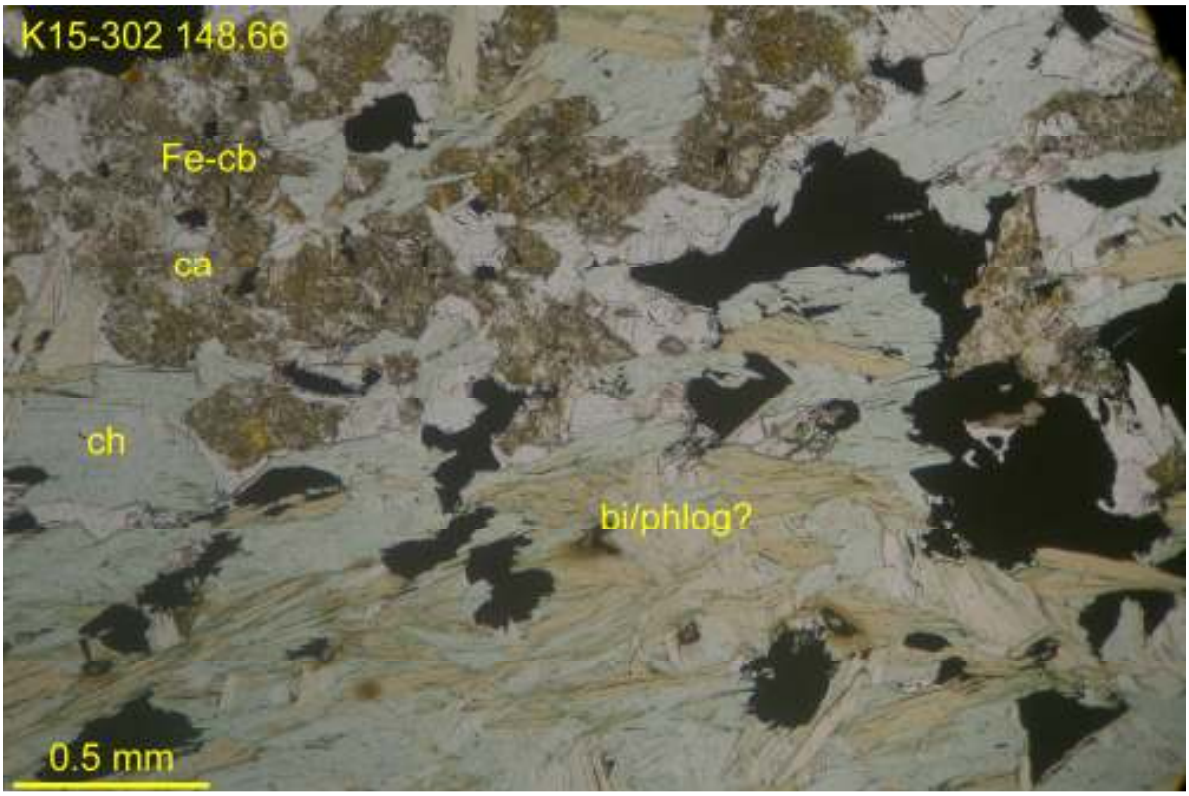
In summary, this is foliated, plagioclase-chlorite-biotite-carbonate-epidote-accessory sphene-trace pyrite-chalcopyrite ±hematite schist/gneiss (relict plagioclase, porphyroblastic biotite-rich mafic sites suggestive of a meta-mafic volcanic rock?).



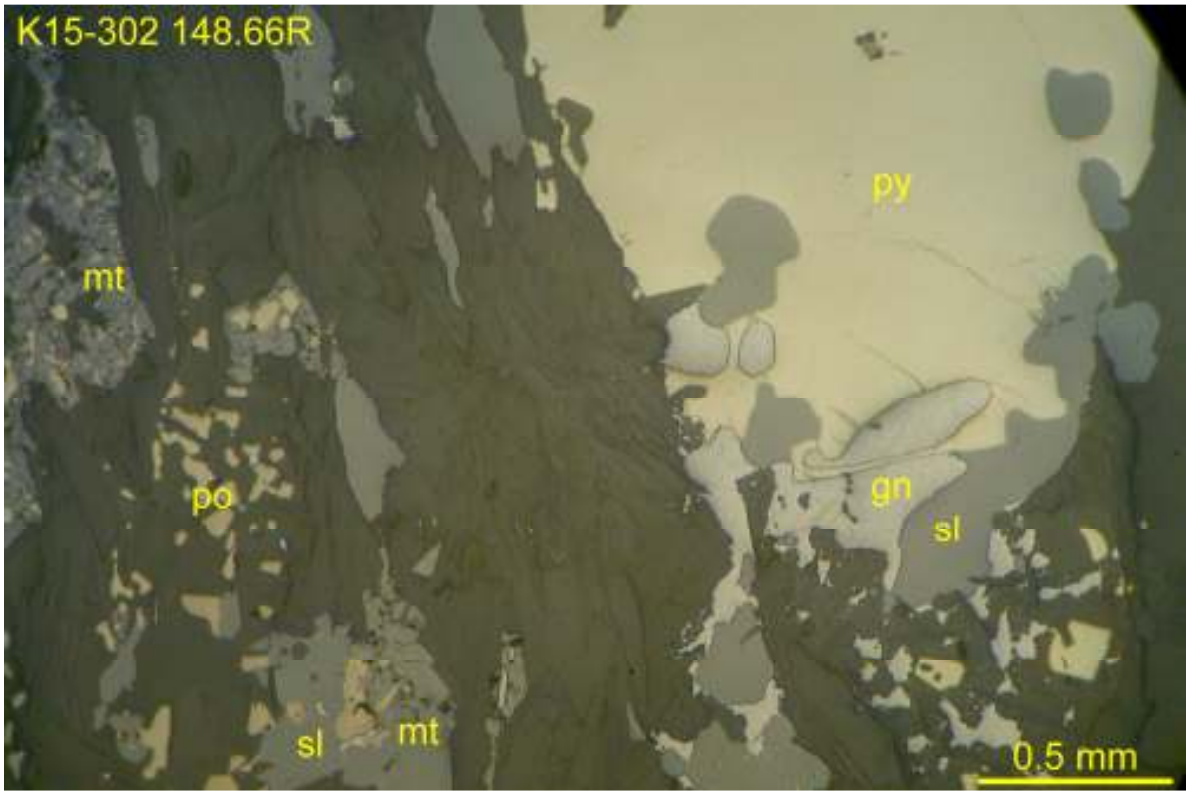
K15-302 147.07-147.19: porphyroblastic cordierite (cd?) with sericite alteration or sericite altered plagioclase? (pl?) inclusions, local garnet (gt) and green spinel (sn) in weakly foliated matrix of sulfides (opaque), pale brown biotite (bi) and pale green chlorite (ch). Note deep red-brown (Fe-rich) sphalerite. Transmitted plane light, field of view~3 mm.



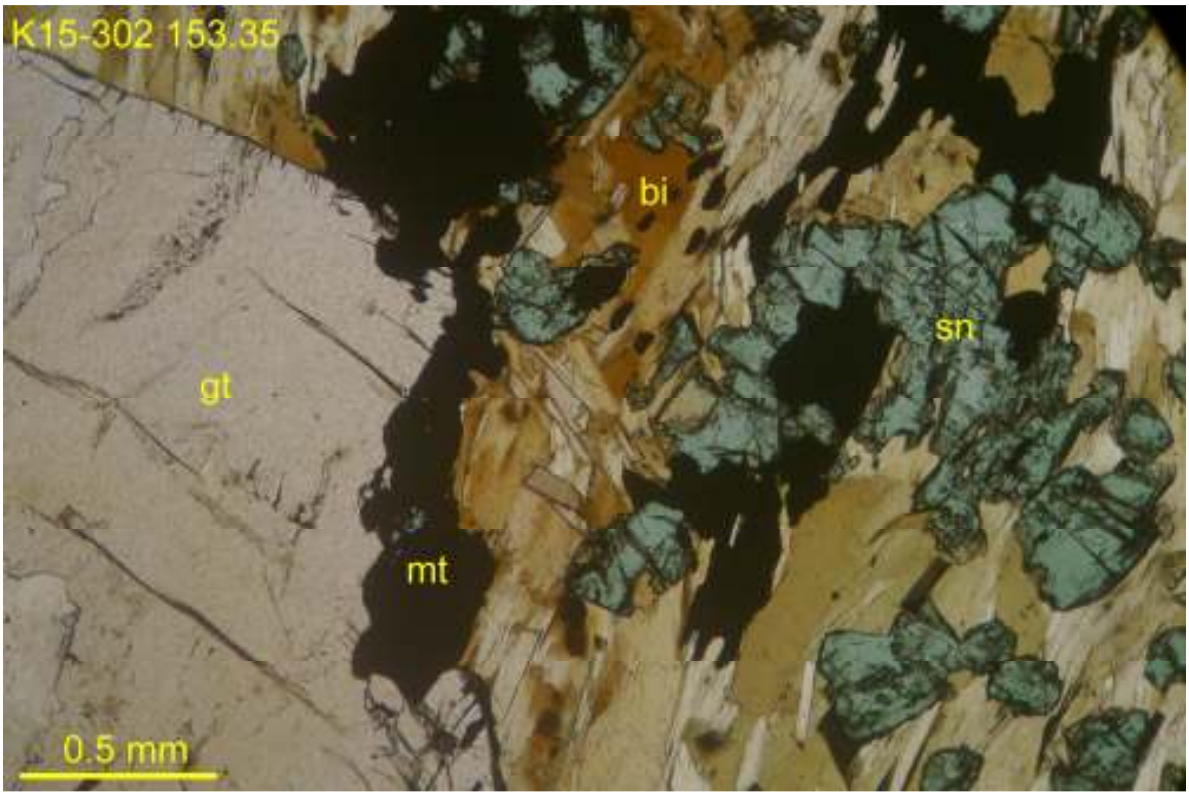
K15-302 147.07-147.19R local blastic magnetite (mt) or pyrite (py) in matrix of pyrrhotite (po), sphalerite (sl), galena (gn) and chalcopyrite (cp) intergrown with weakly foliated mica containing minor spinel). Reflected light, uncrossed polars, field of view ~3 mm wide.



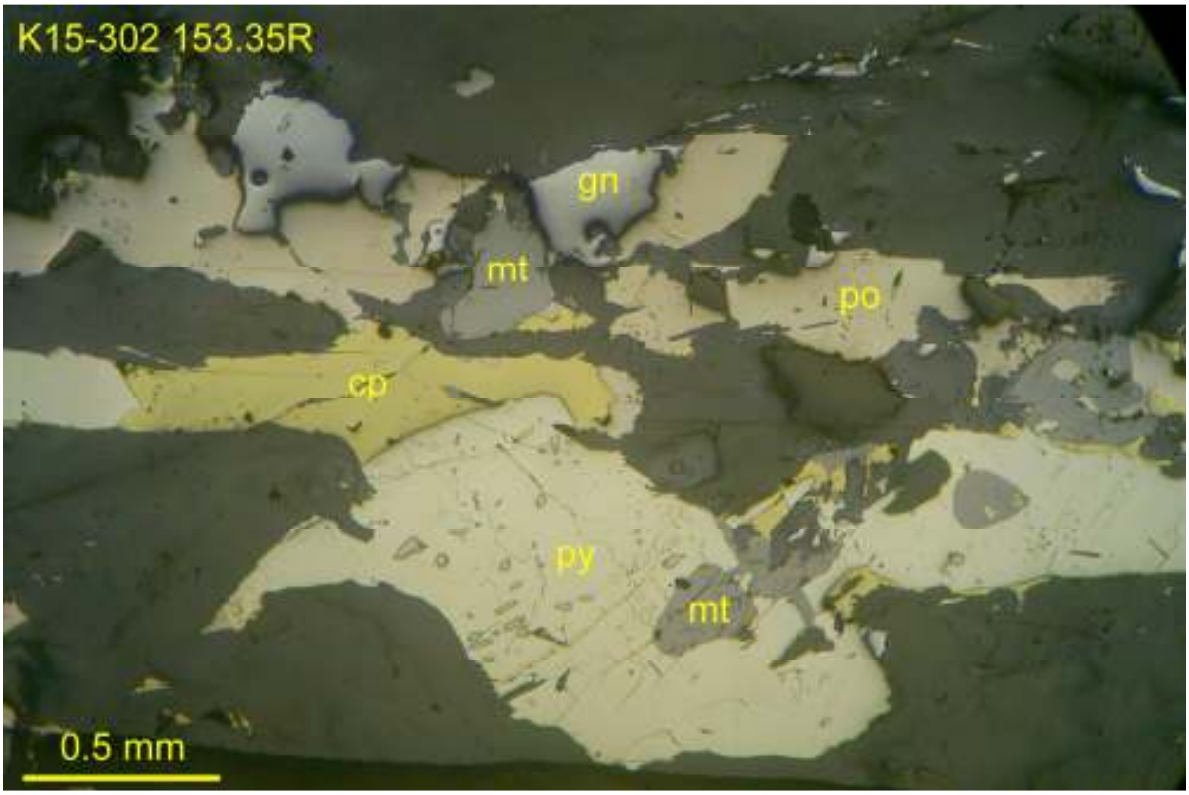
K15-302 148.66-148.78: foliated very pale green chlorite-very pale brown biotite (or phlogopite?) with lensy aggregates of carbonate (partly clear calcite, ca, and partly limonite-stained Fe-carbonate?) plus heavily disseminated sulfides and magnetite (opaque). Transmitted plane light, field of view~3 mm wide.



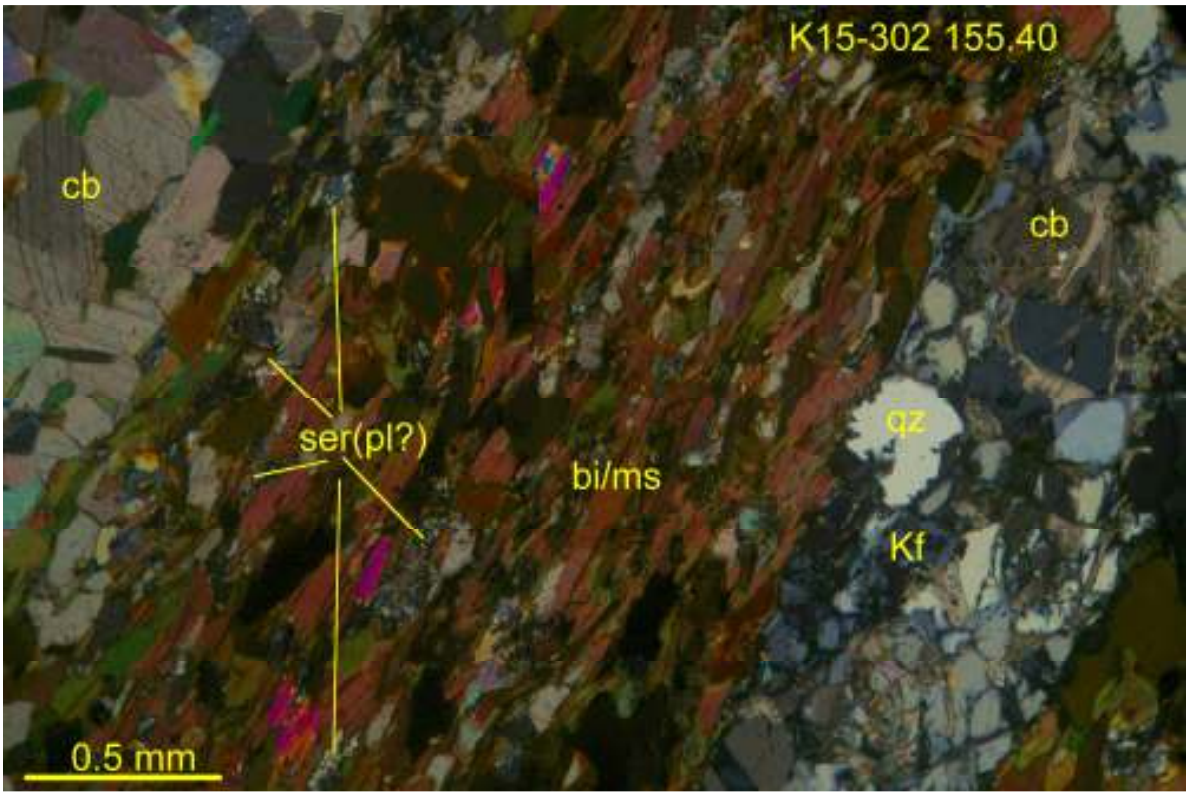
K15-302 148.66-148.78R: lensy aggregates (sub-parallel to foliated, chlorite/biotite-rich matrix) of pyrite with concentrations at the ends of sphalerite and galena, or of magnetite-lesser pyrrhotite-sphalerite. Reflected light, uncrossed polars, field of view ~3 mm wide.



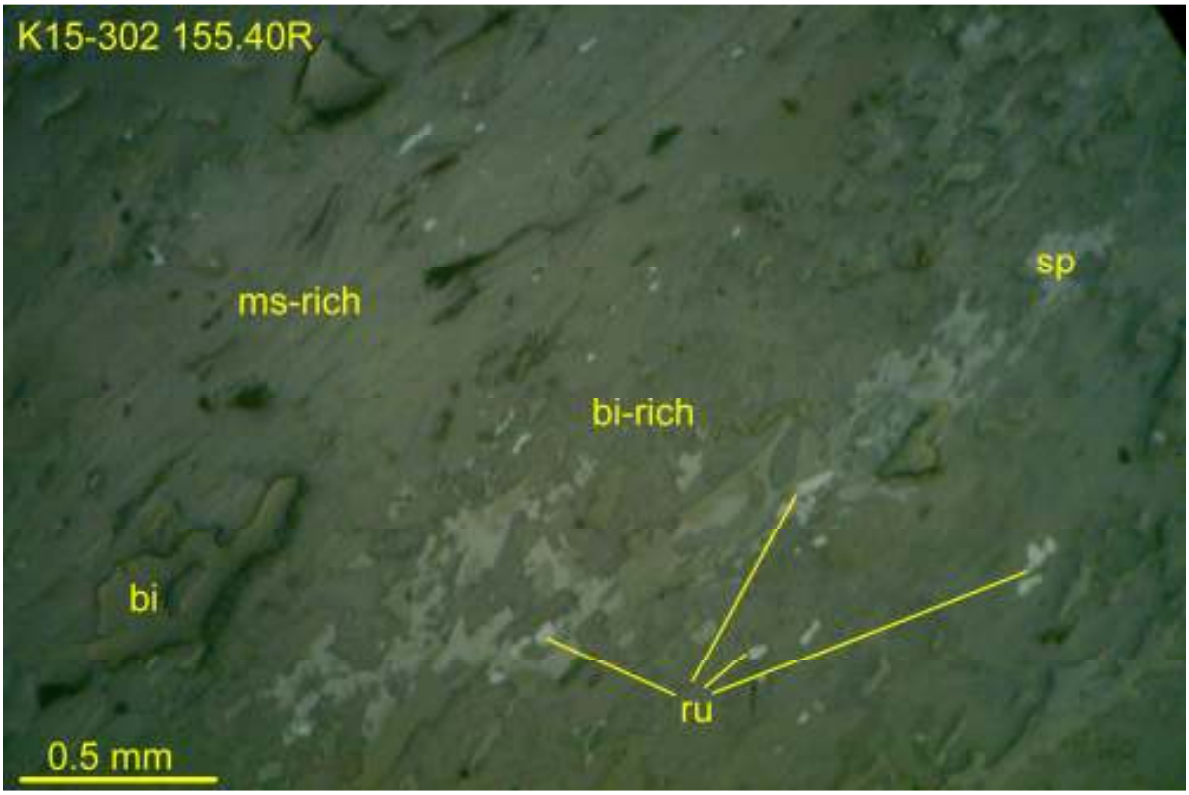
K15-302 153.35-153.48: margin of euhedral, blastic, possibly zoned garnet (gt) with finer, blastic magnetite (opaque) and bright green spinel (could be Zn-bearing, gahnite) in foliated matrix of biotite (varying from brown to greenish brown). Transmitted plane light, field of view ~3 mm wide.



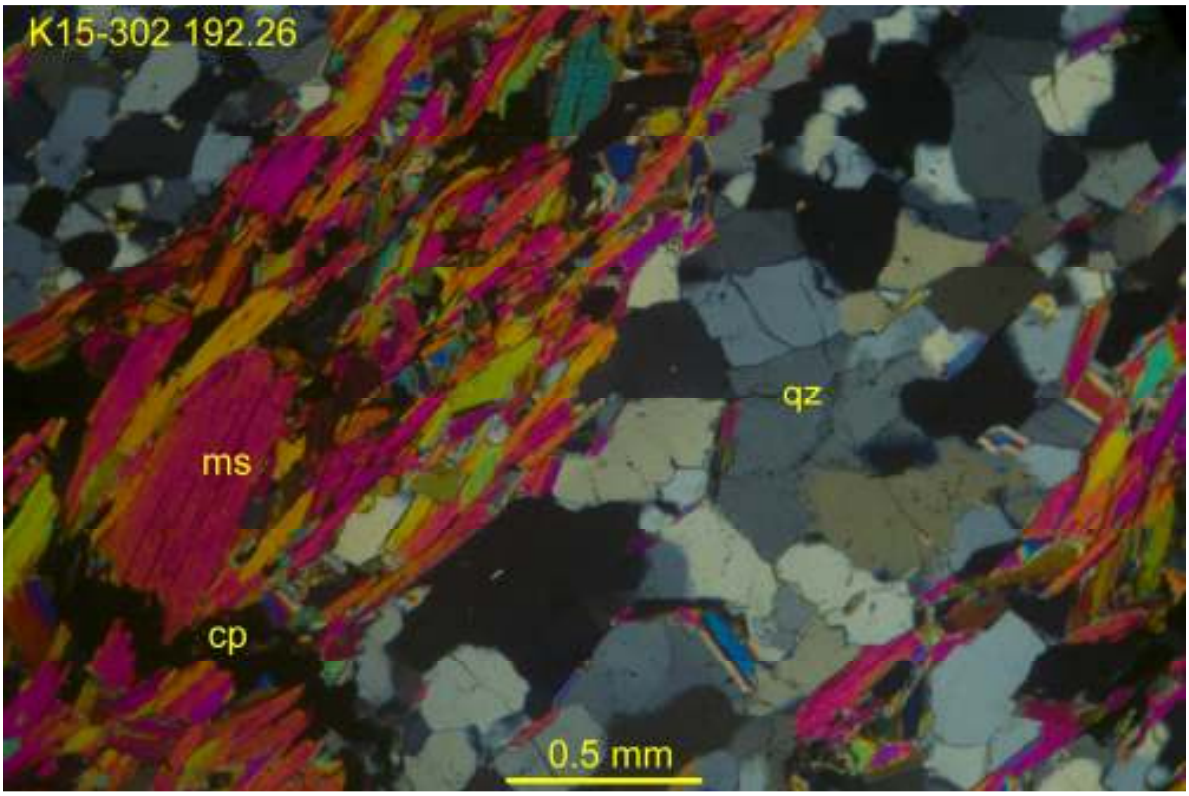
K15-302 153.35-153.48R: lensy, ribbon-like aggregates of pyrrhotite, local pyrite, galena, chalcopyrite and minor magnetite in foliated, micaceous matrix. Reflected light, uncrossed polars, field of view ~3 mm wide.



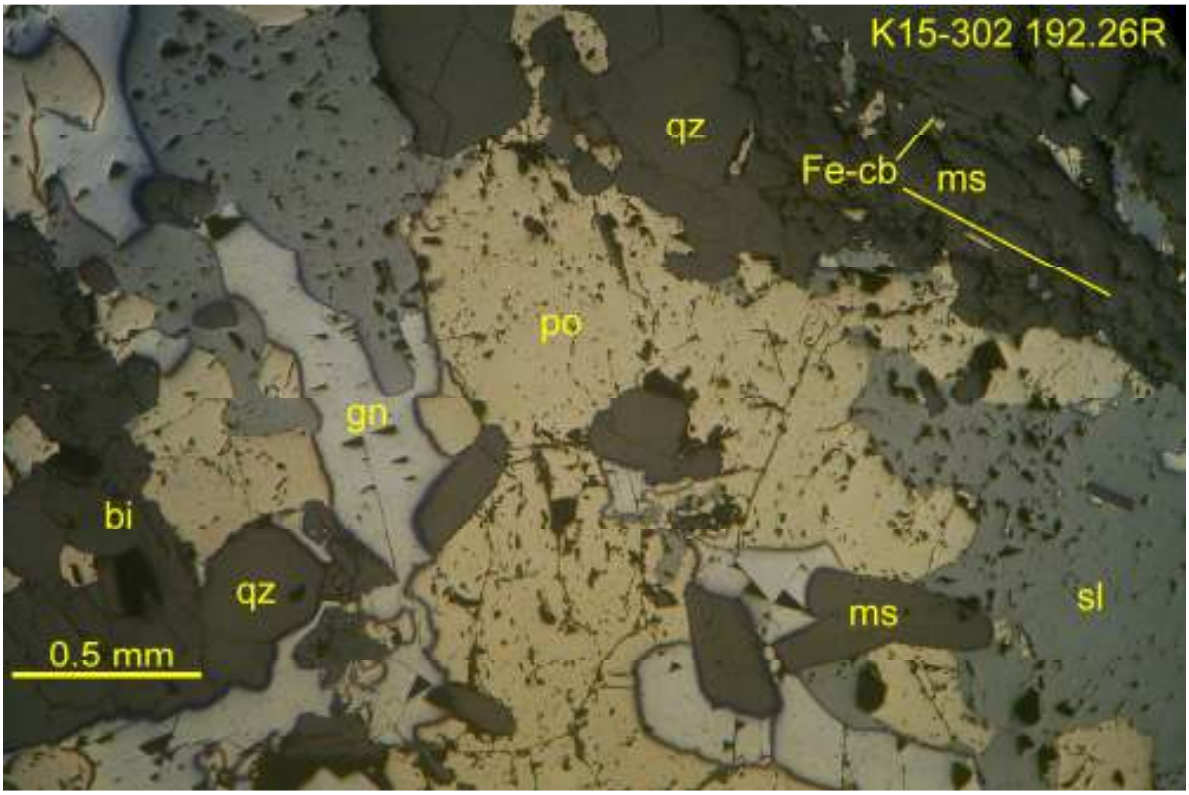
K15-302 155.40-155.55: lensy aggregates of either mainly carbonate, or mainly quartz and interstitial Kspar (flattened relict porphyroblast sites?) in matrix of mostly well foliated biotite, minor carbonate, and interstitial relict (sericitized) plagioclase. Transmitted light, crossed polars, field of view ~3 mm wide.



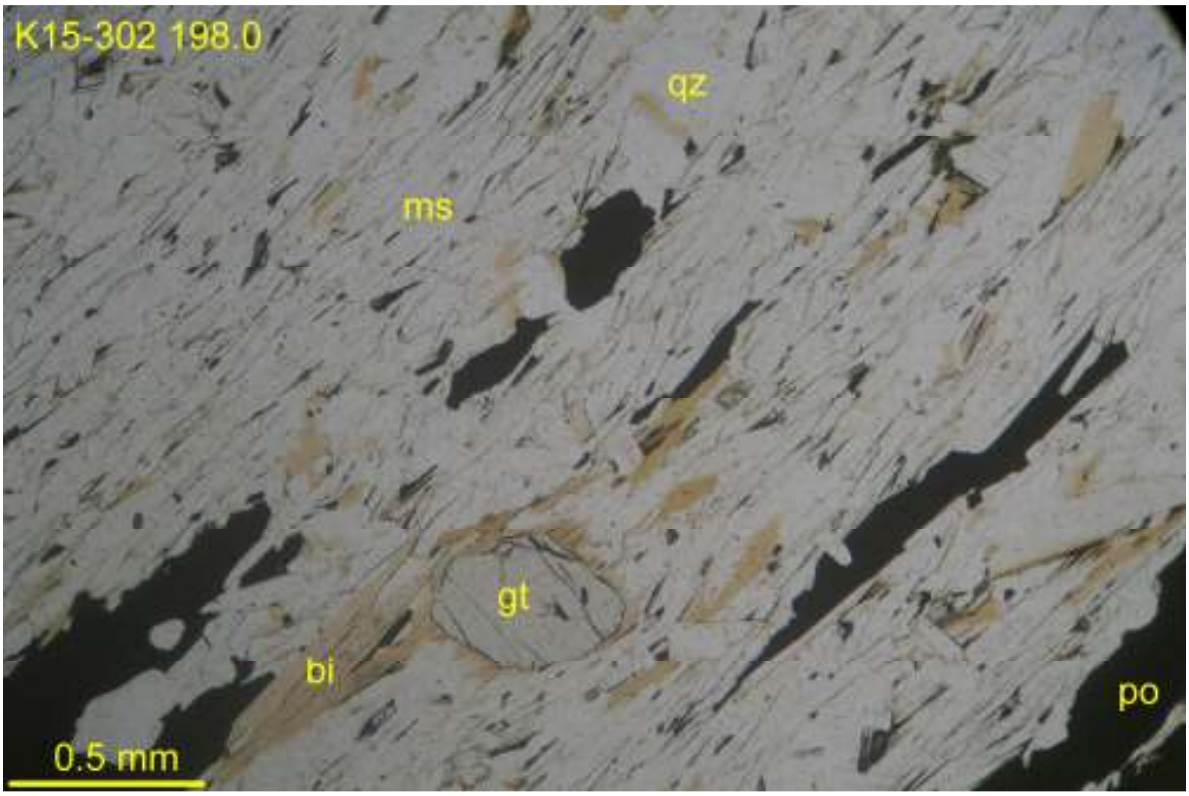
K15-302 155.40-155.55R: elongated relict mafic/ilmeno-magnetite (?) site now composed of sphene (sp) and lesser rutile (ru) associated with biotite and carbonate, stretched out into the foliation defined by the matrix of either mainly biotite (bi) or muscovite (ms) laminae (the latter with local biotite). Reflected light, uncrossed polars, field of view ~3 mm wide.



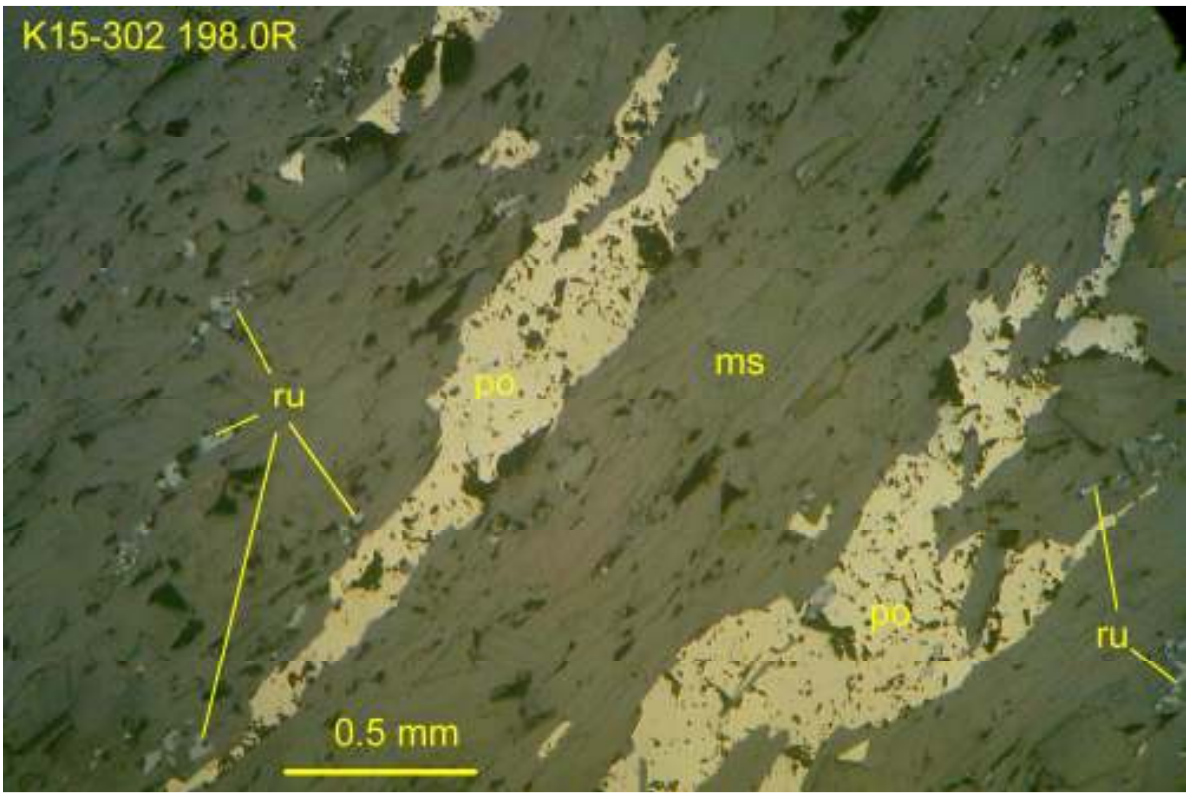
K15-302 192.26-192.41: alternating laminae of quartz-rich or muscovite-rich rock (possibly representing exhalative or stringer zone?), cut by local foliation-perpendicular fractures containing chalcopyrite (opaque; lower left). Transmitted light, crossed polars, field of view ~3 mm wide.



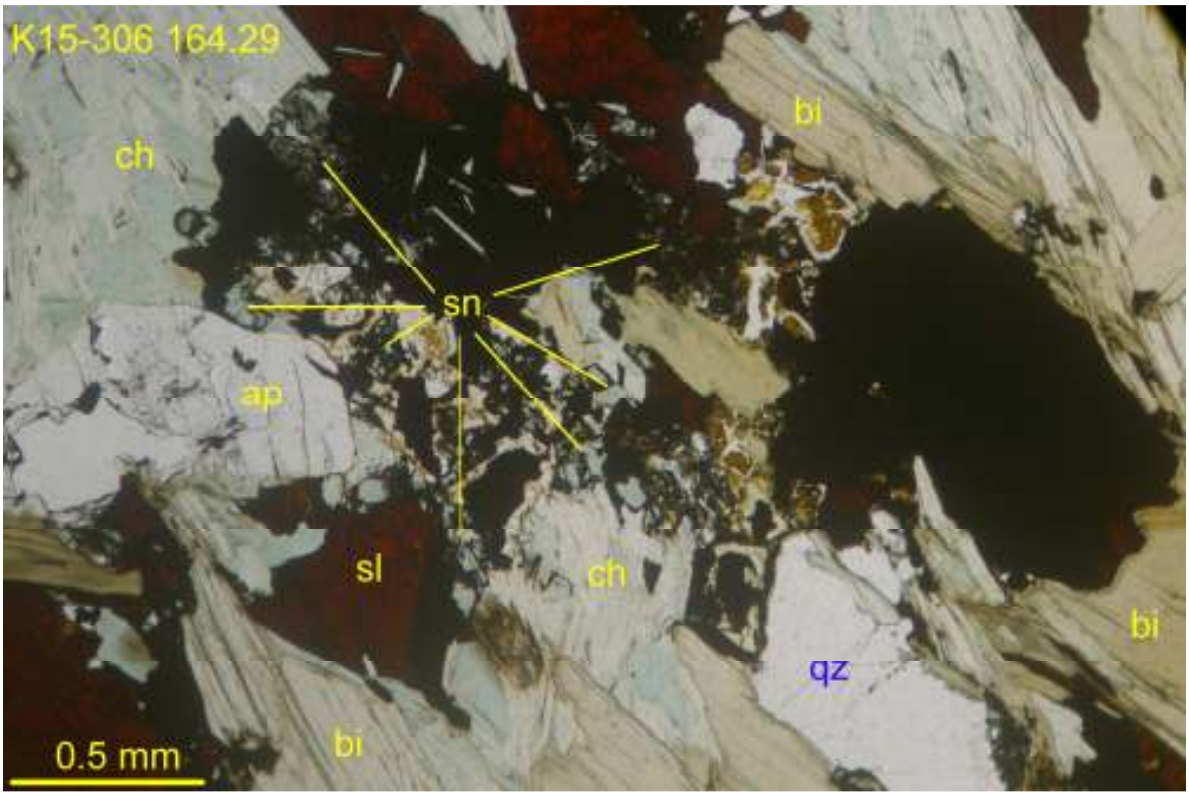
K15-302 192.26-192.41R: intergrown pyrrhotite, Fe-rich sphalerite and galena, in gangue matrix of quartz, muscovite, local minor biotite or Fe-carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



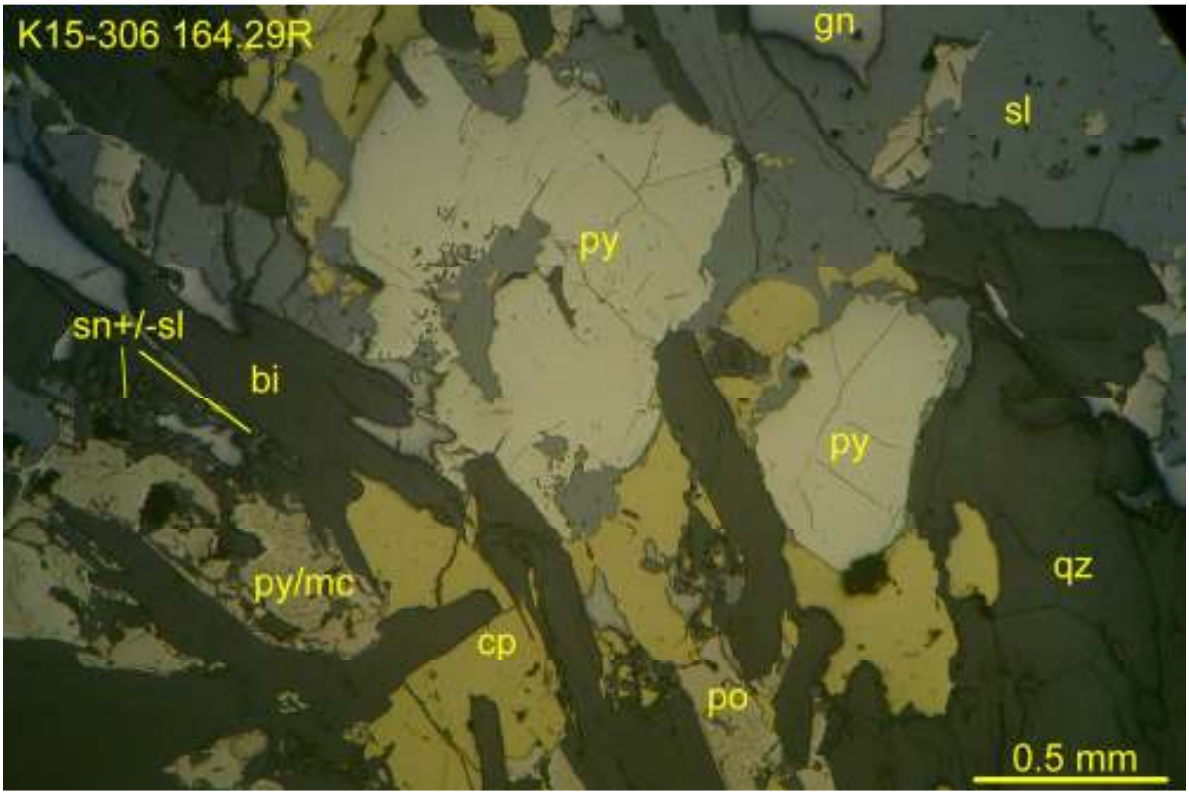
K15-302 198.0-201.0: strongly foliated, muscovite (ms)-minor quartz (qz)-biotite (bi)-local blastic garnet (gt)-wispy pyrrhotite (opaque) gneiss. Transmitted plane light, field of view ~3 mm wide.



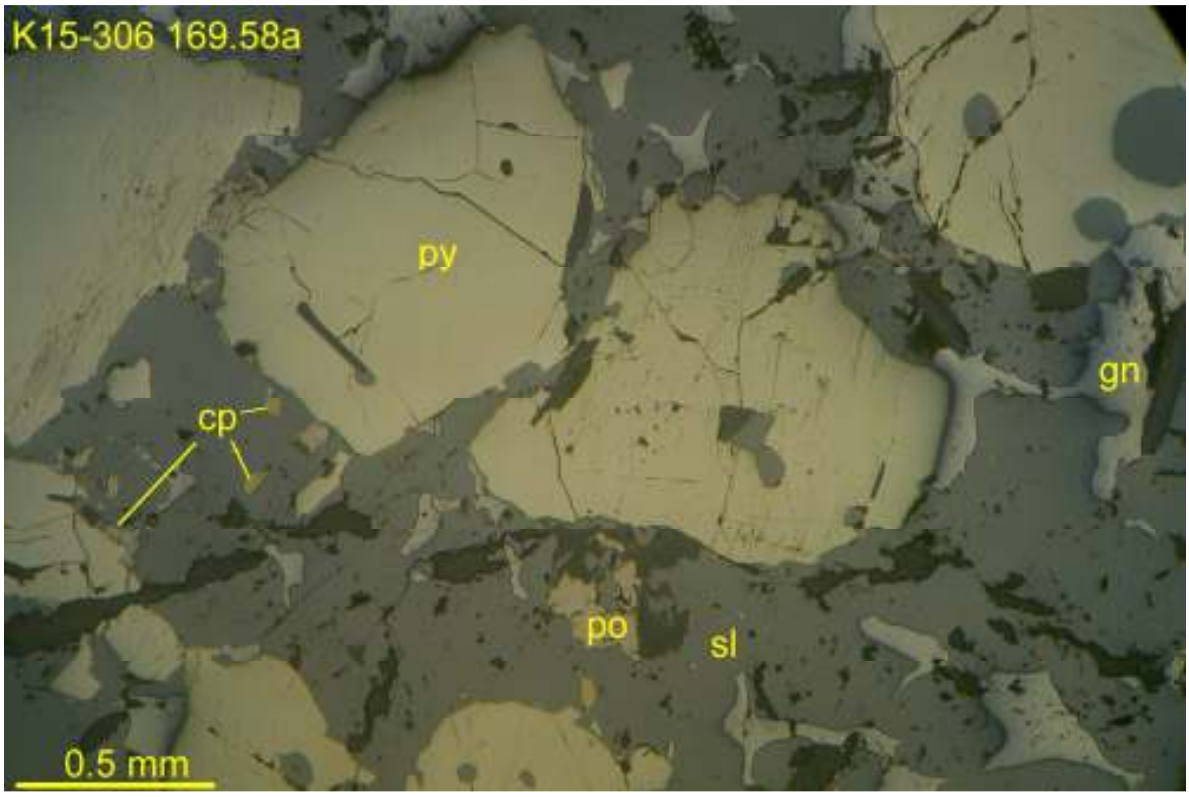
K15-302 198.0-201.0R: lensy, wispy concentrations of pyrrhotite (po) and minor rutile (ru) oriented along foliation in mainly muscovite matrix. Reflected light, uncrossed polars, field of view ~3 mm wide.



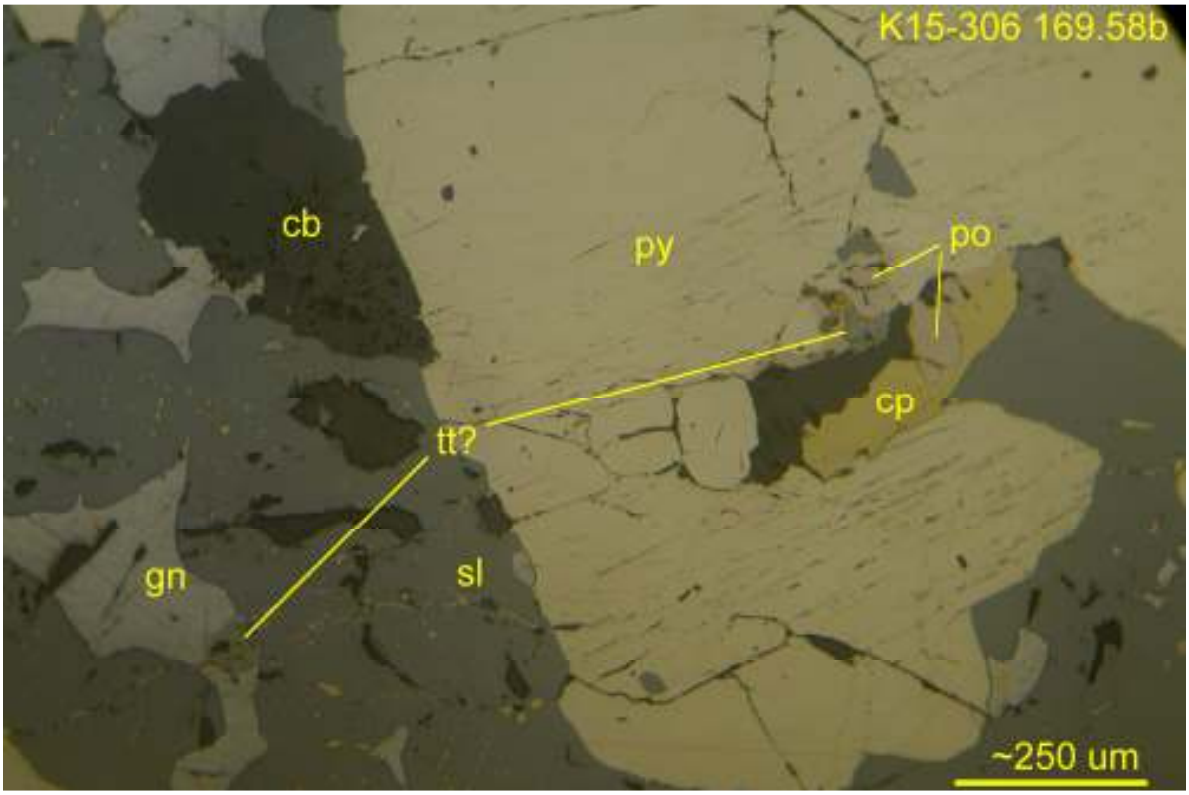
K15-306 164.29-164.40: blastic quartz, apatite (ap?) and Fe-rich sphalerite (also as minute inclusions in green, possibly zincian, spinel), associated with other sulfides (pyrrhotite, pyrite; both opaque) in matrix of weakly foliated biotite and chlorite. Transmitted plane light, field of view ~3 mm wide.



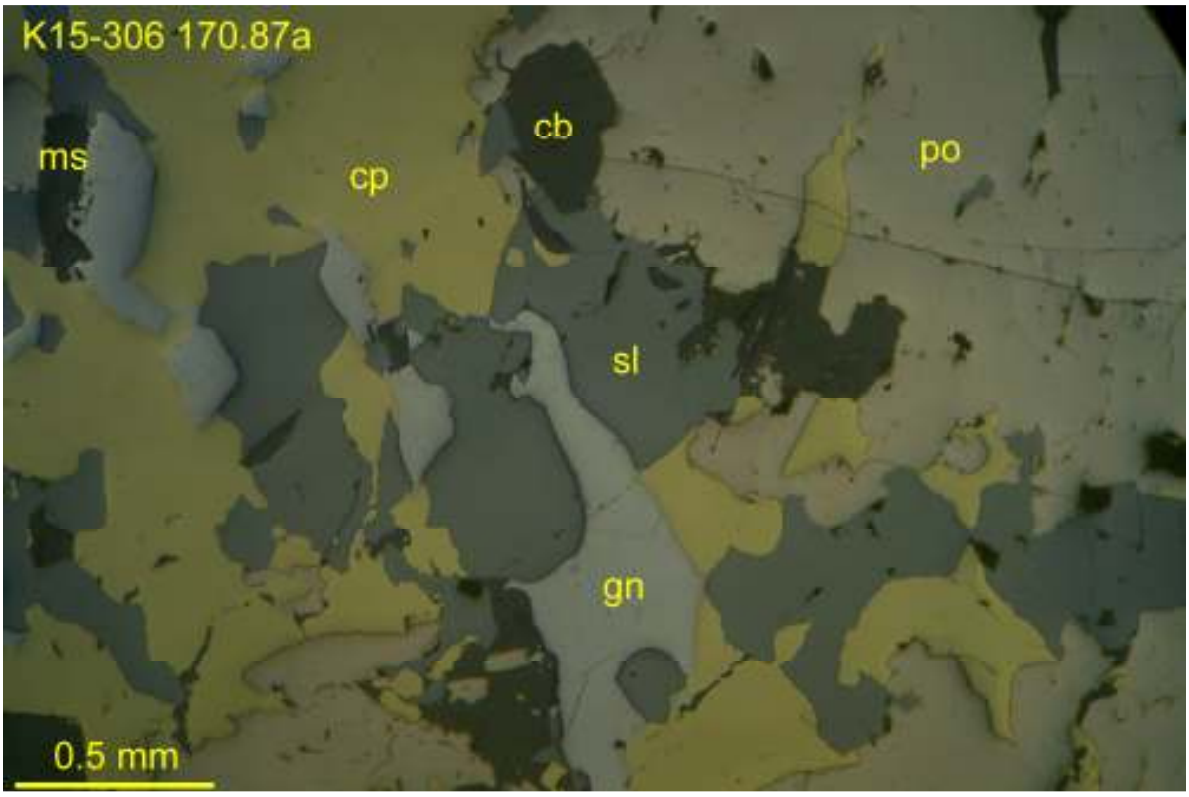
K15-306 164.29-164.40R: semi-massive sulfide matrix composed of sphalerite (note adjacent possible Zn-spinel with minute sphalerite inclusions), pyrrhotite (partly altered to lamellar pyrite/marcasite), sub/euhedral pyrite, lesser galena, and chalcopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



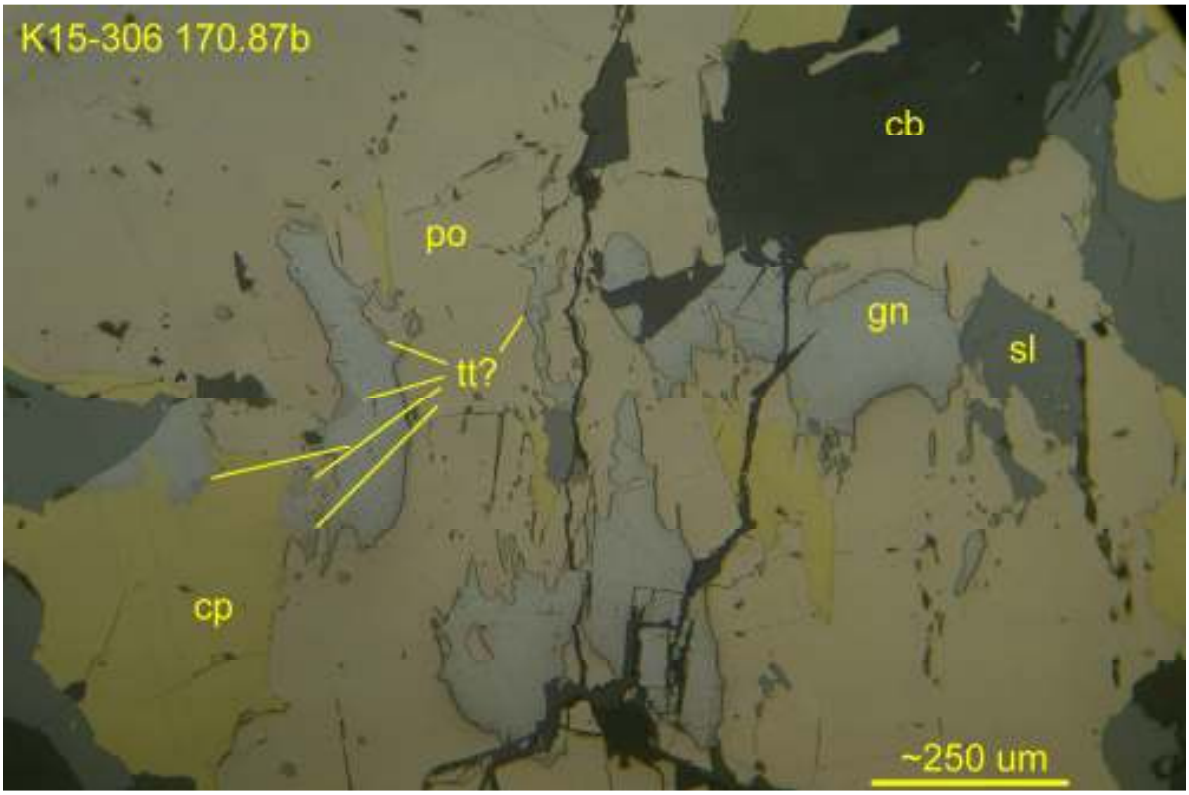
K15-306 169.58-169.68a: overview of massive sulfides composed of subhedral pyrite in near-continuous matrix of sphalerite, lesser galena, minor pyrrhotite (mainly near margins of pyrite), trace chalcopyrite; gangue inclusions are mostly either mica or carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



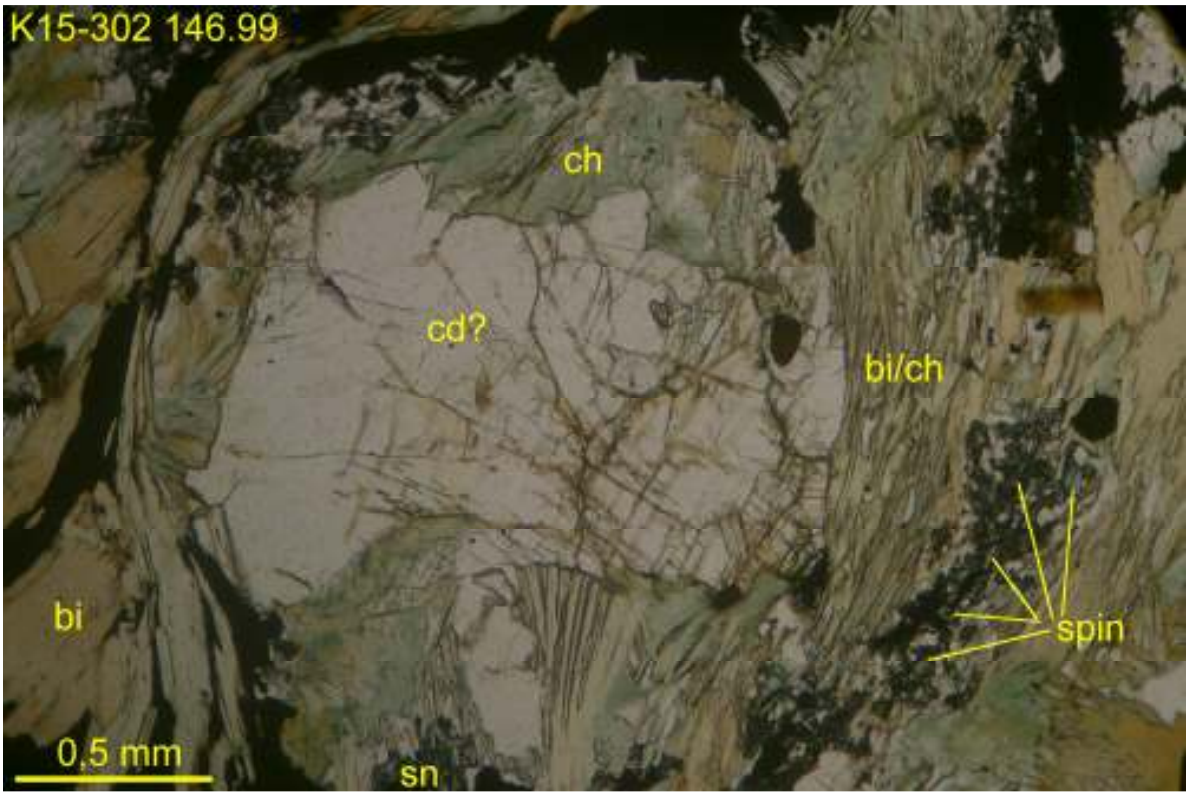
K15-306 169.58-169.68b detailed view to show inclusions of greenish sulfosalt (possibly argentian tetrahedrite, tt?) in galena or associated with chalcopyrite, in matrix of sphalerite containing pyrite crystals, carbonate gangues. Reflected light, uncrossed polars, field of view ~1.5 mm wide.



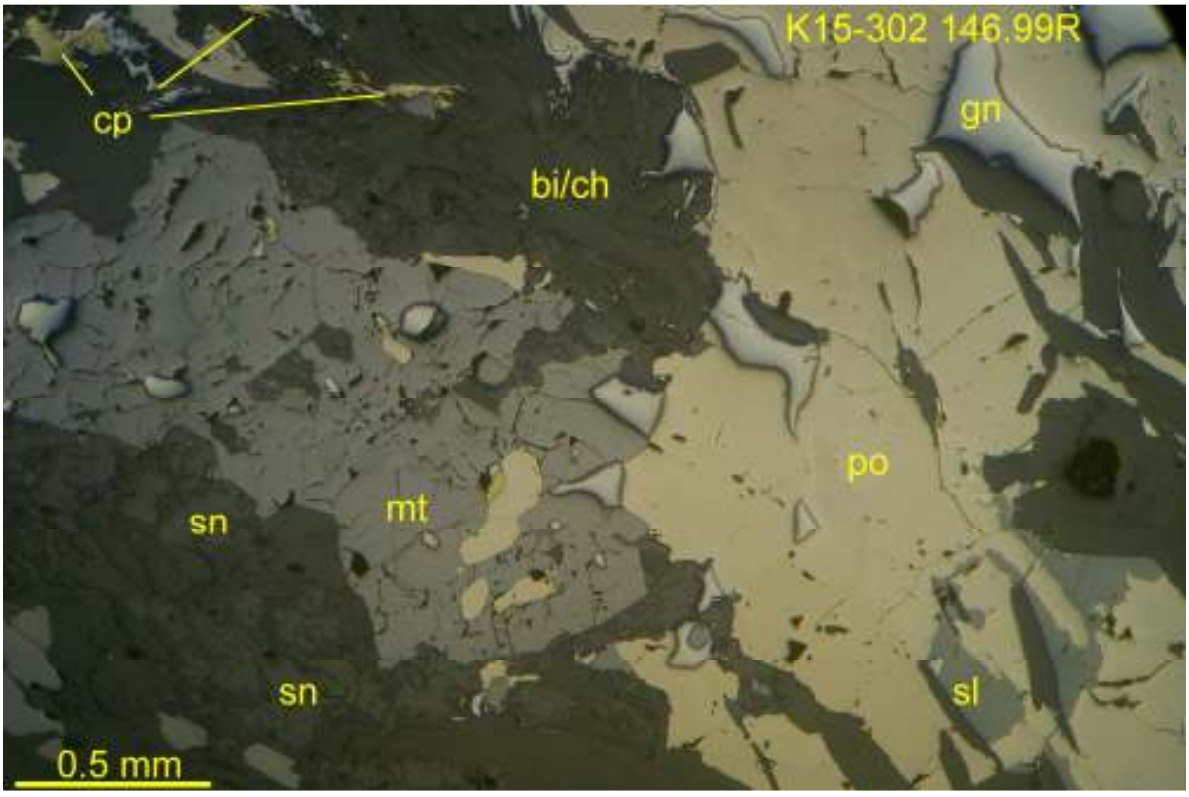
K15-306 170.87-171.00a: overview of typical assemblage of almost massive pyrrhotite, lesser chalcopyrite, sphalerite and galena; gangue inclusions are mostly carbonate, minor mica. Reflected light, uncrossed polars, field of view ~3 mm wide.



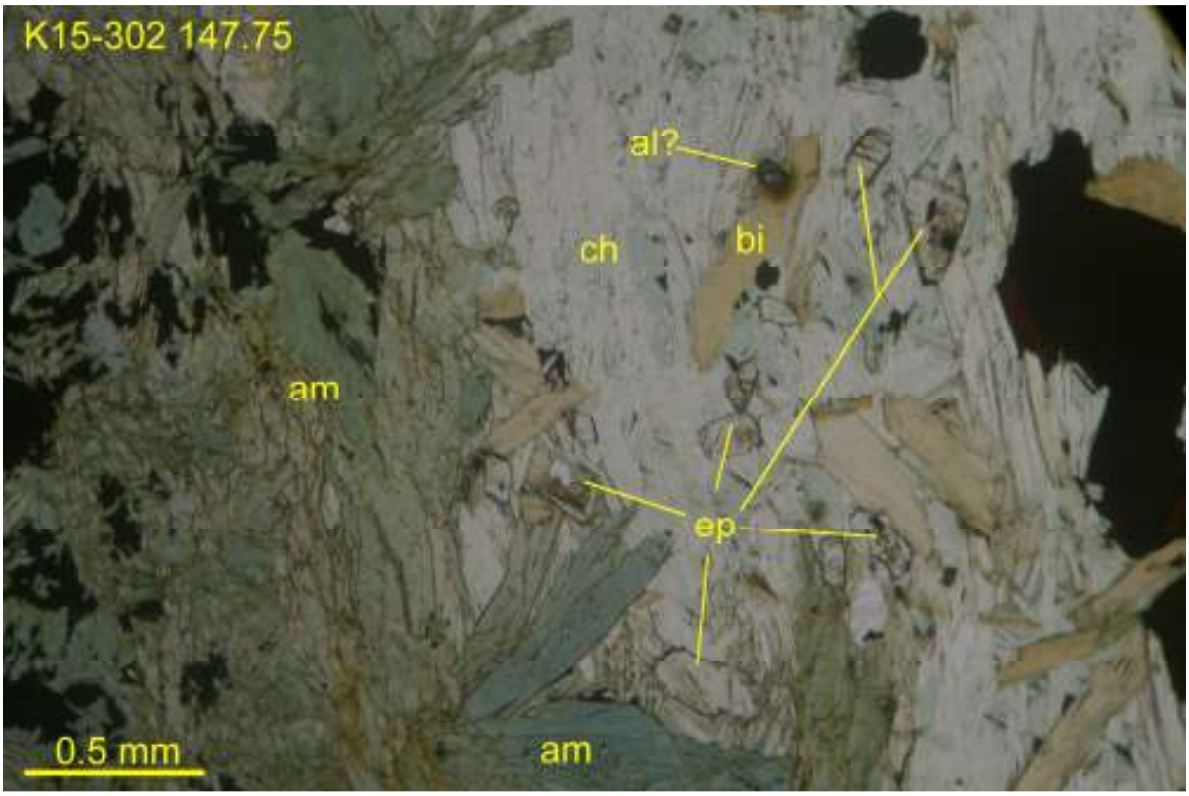
K15-306 170.87-171.00b: detailed view to show traces of grey, isotropic sulfosalt (possibly tetrahedrite, tt?) included within galena, mainly around the margins, where in contact with chalcopyrite and/or pyrrhotite. Gangue inclusions are mostly carbonate. Reflected light, uncrossed polars, field of view ~1.5 mm wide.



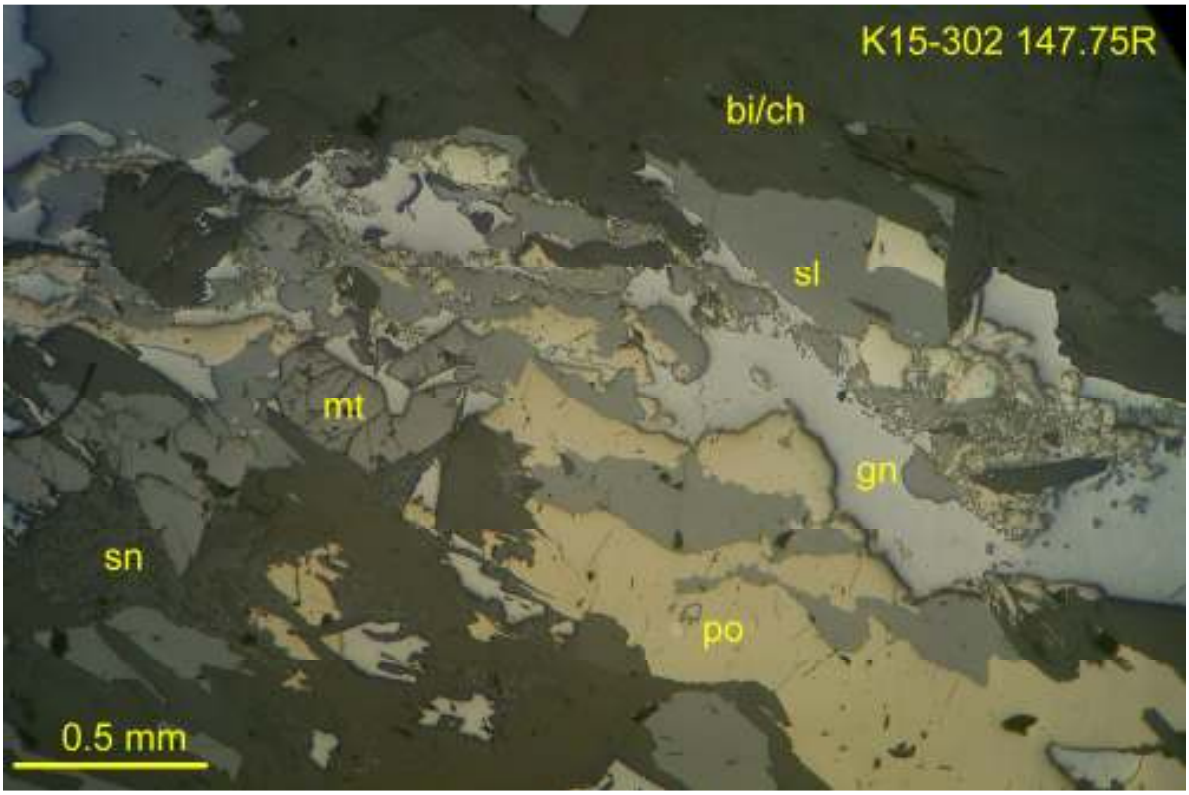
K15-302 146.99-147.06: porphyroblastic cordierite (cd?) with well-developed cleavage, and altered to chlorite at margins, in foliated matrix of biotite-chlorite-lesser quartz-green spinel that wraps around the cordierite. Transmitted plane light, field of view ~3 mm wide.



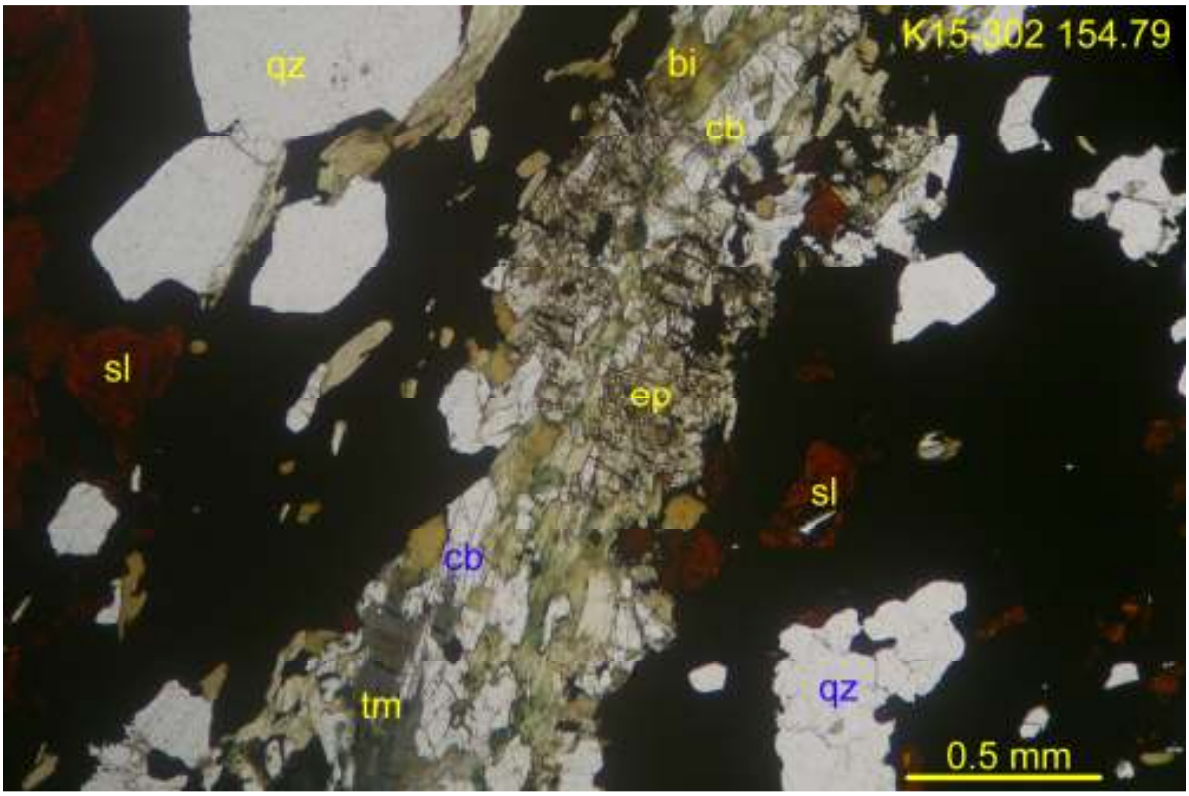
K15-302 146.99-147.06R: possible relict porphyroblast, now occupied by central magnetite, partly by sieve-textured spinel (sn, could be Zn-bearing?), wrapped around by micaceous matrix containing pyrrhotite, lesser sphalerite, galena, rare chalcopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



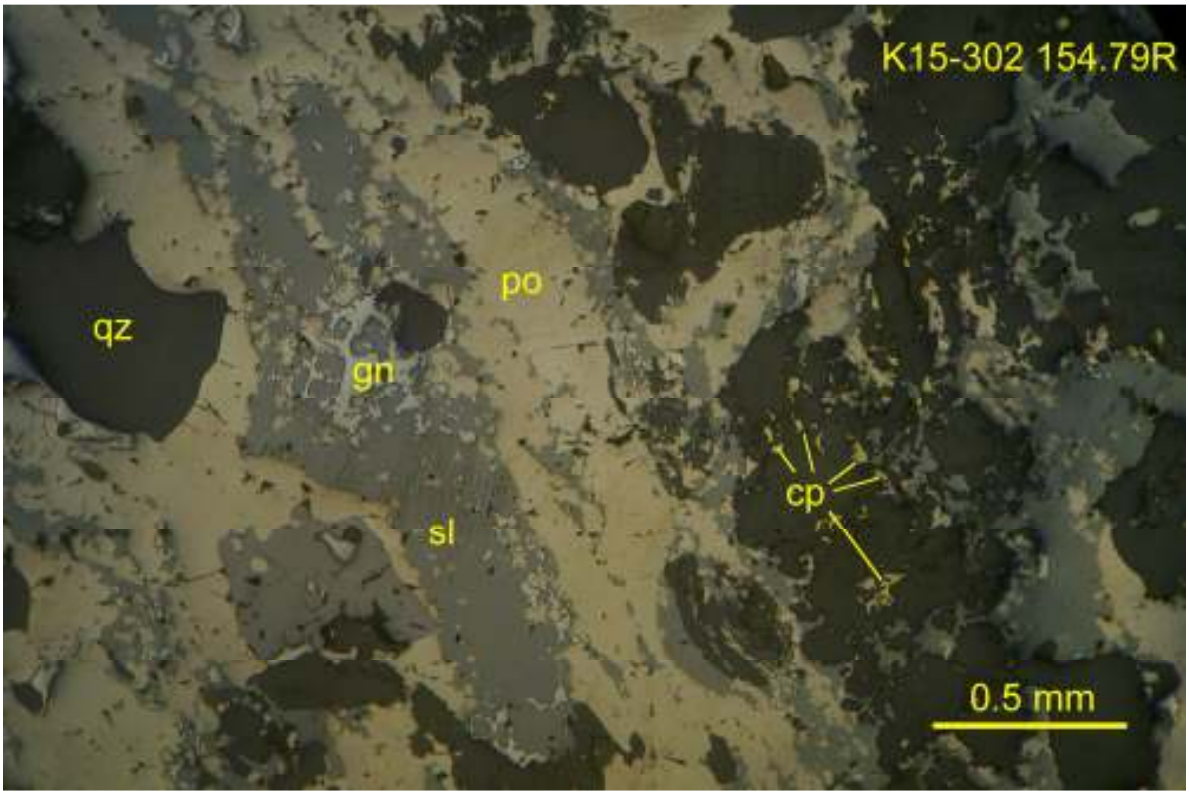
K15-302 147.75-147.86: margin of relict porphyroblast composed mainly of medium/pale green, likely actinolitic, amphibole (am) plus inclusions of sulfides (opaque), in matrix of very pale chlorite-local biotite-accessory epidote-trace allanite (dark pleochroic haloes), sulfides and magnetite. Transmitted plane light, field of view ~3 mm wide.



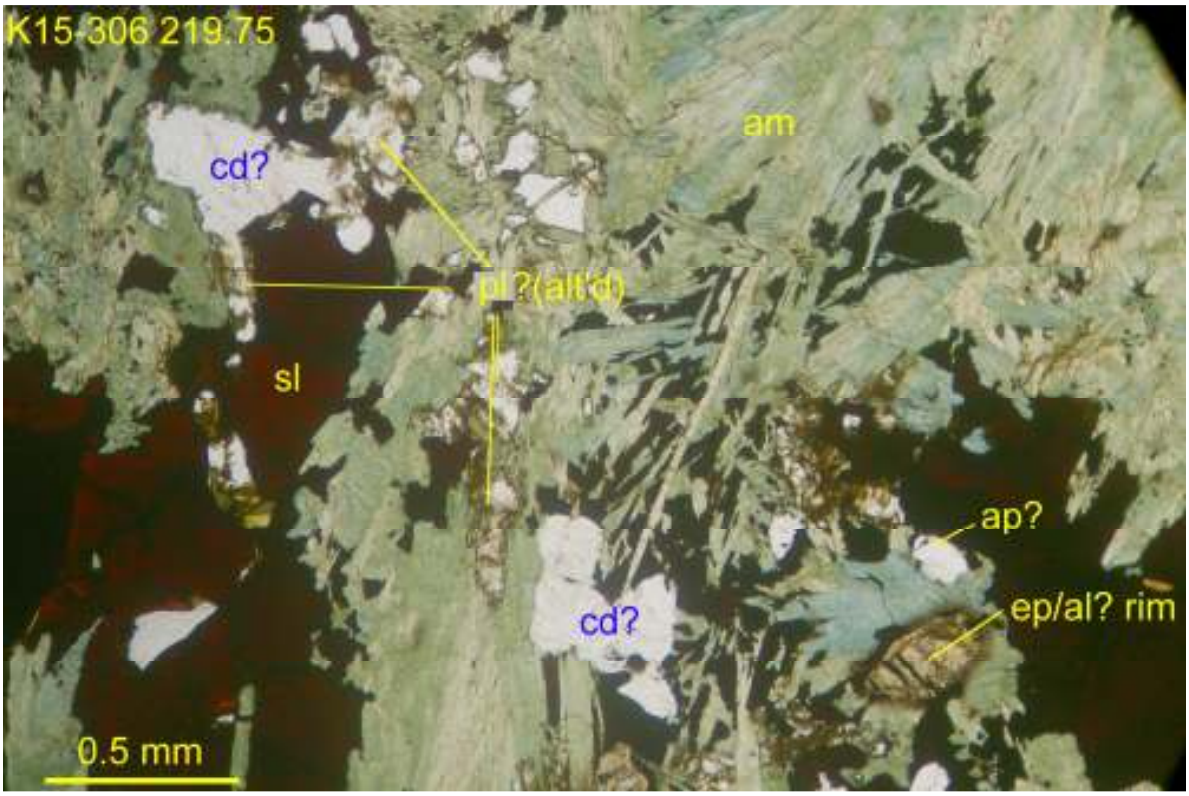
K15-302 147.75-147.86R: flattened/elongated aggregate of sphalerite-pyrrhotite-galena-minor pyrite-blastic (deformed, fractured) magnetite-minor spinel (Zn-bearing?), in foliated matrix of biotite (adjacent to and wrapping around sulfides) and chlorite. Reflected light, uncrossed polars, field of view ~3 mm wide.



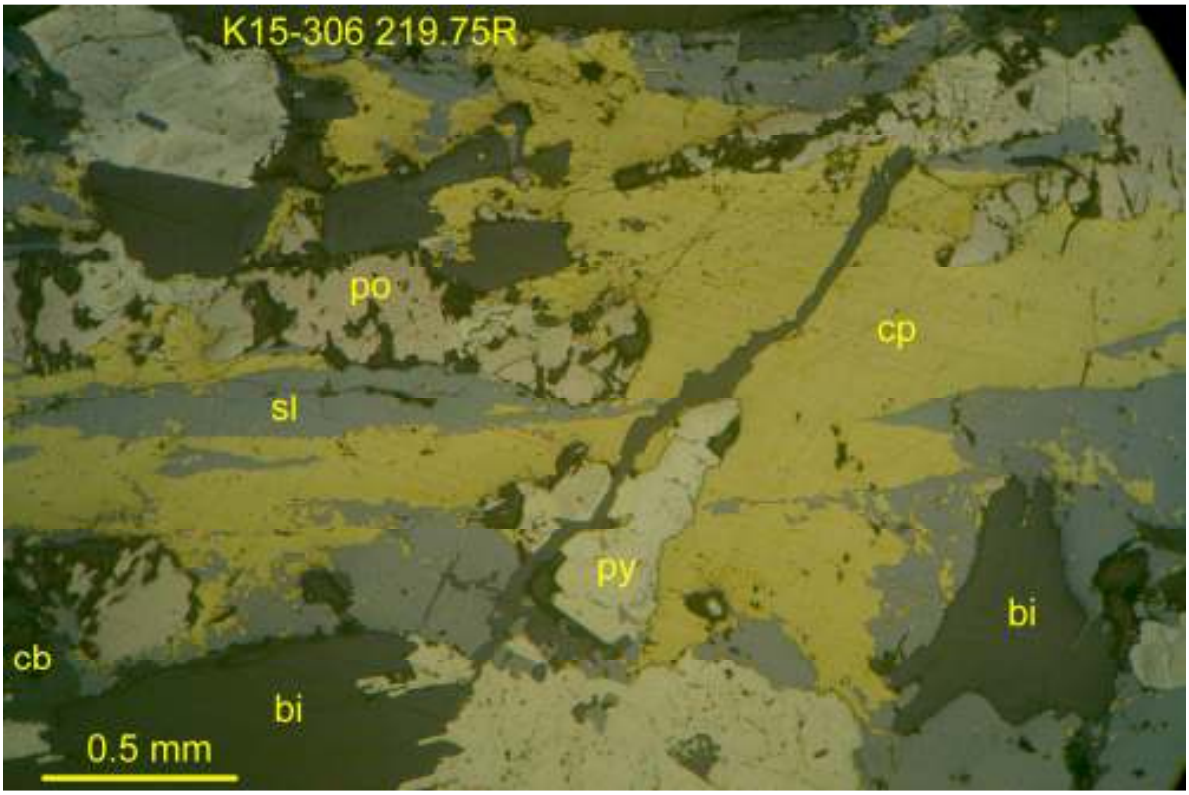
K15-302 154.79-154.88: lamina with significant epidote (ep) and dark, schorlitic tourmaline (tm) in addition to biotite and carbonate (cb), whereas adjacent gangue-rich bands are quartz-rich. Note deep red-brown (Fe-rich) sphalerite. Transmitted plane light, field of view~3 mm wide.



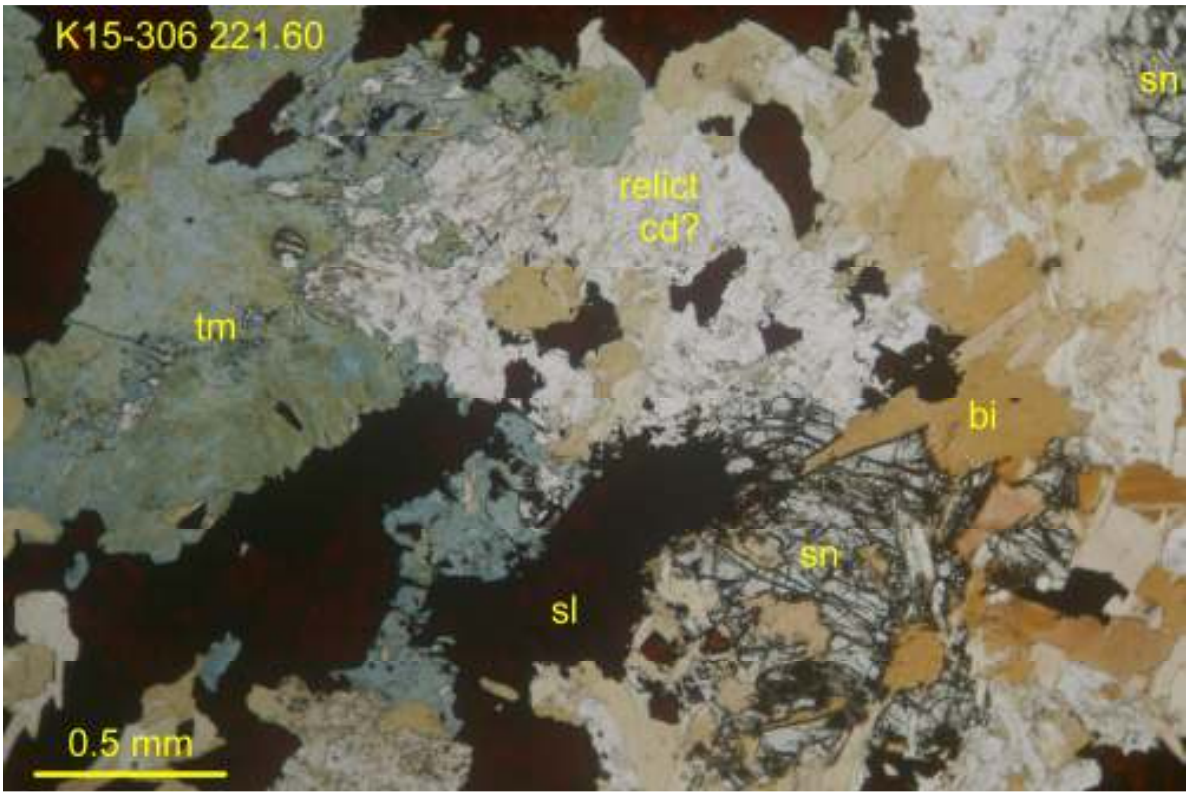
K15-302 154.79-154.88R distinct lamination (sphalerite ±galena-rich, pyrrhotite-rich) preserved in massive sulfides; note local blastic magnetite crystals included, traces of chalcopyrite in adjacent gangues of quartz-biotite-carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



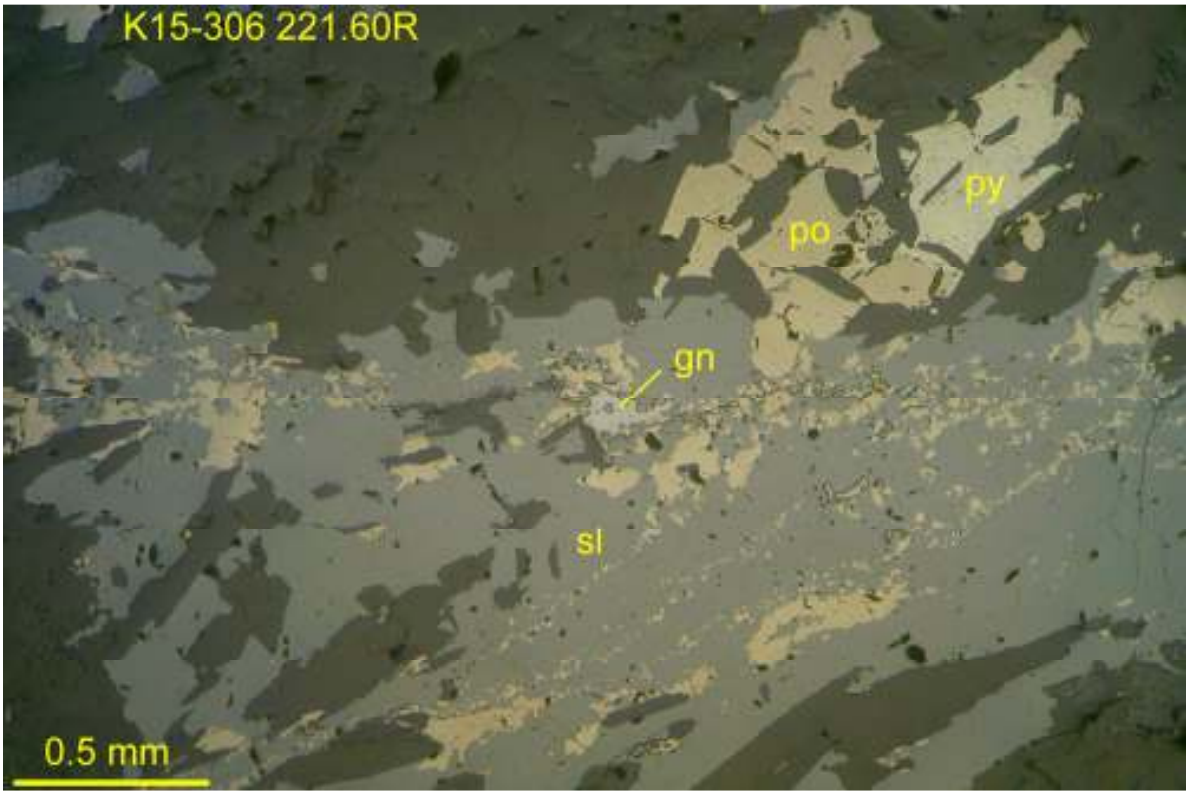
K15-306 219.75-219.83: small relict cordierite (?) porphyroblast, deep red Fe-rich sphalerite, local relict plagioclase (partly altered to clay?/sericite), accessory epidote rimmed by allanite (al?) and minor apatite (?) in matrix of randomly oriented/radiating medium green actinolitic amphibole. Transmitted plane light, field of view~3 mm wide.



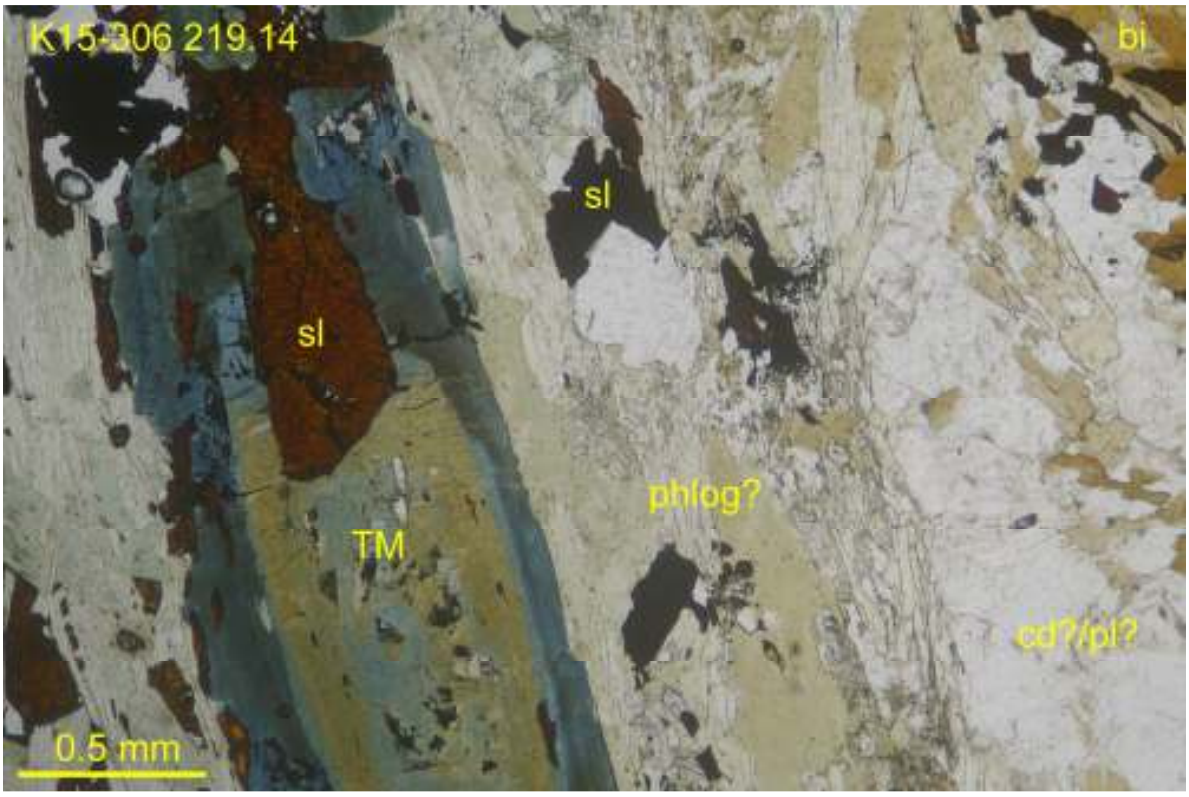
K15-306 219.75-219.83R: bands/laminae of chalcopyrite, sphalerite, pyrrhotite (partly altered to pyrite/marcasite; with local cores of partly altered pyrrhotite) with gangues of biotite, local carbonate (locally remobilized into thin veinlets). Reflected light, uncrossed polars, field of view ~3mm wide.



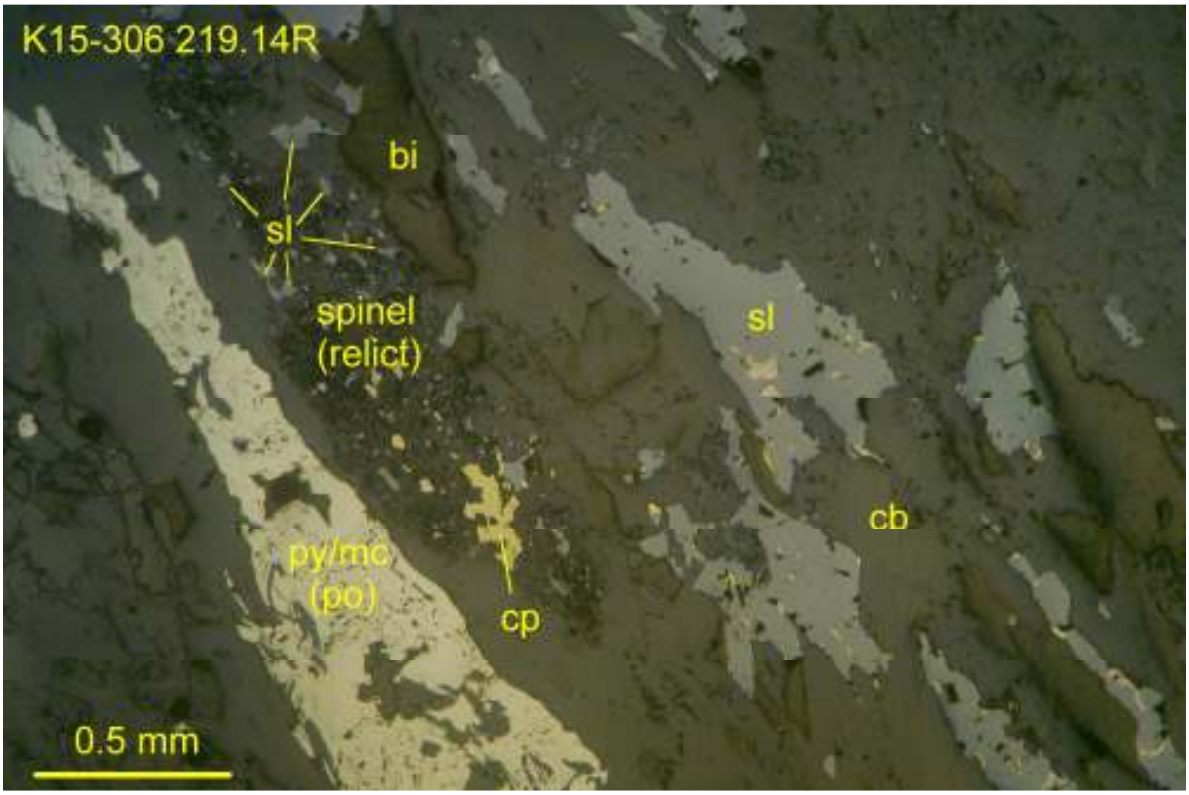
K15-306 221.60-221.71: complex assemblage of blastic cordierite (?) partly altered to/with inclusions at margins of micas or sphalerite; somewhat blastic schorlitic tourmaline(tm) or spinel (sn, also w/ sphalerite inclusions) in matrix of variably brown, pale greenish or colourless micas (biotite, phlogopite?, muscovite). Transmitted plane light, field of view 3 mm.



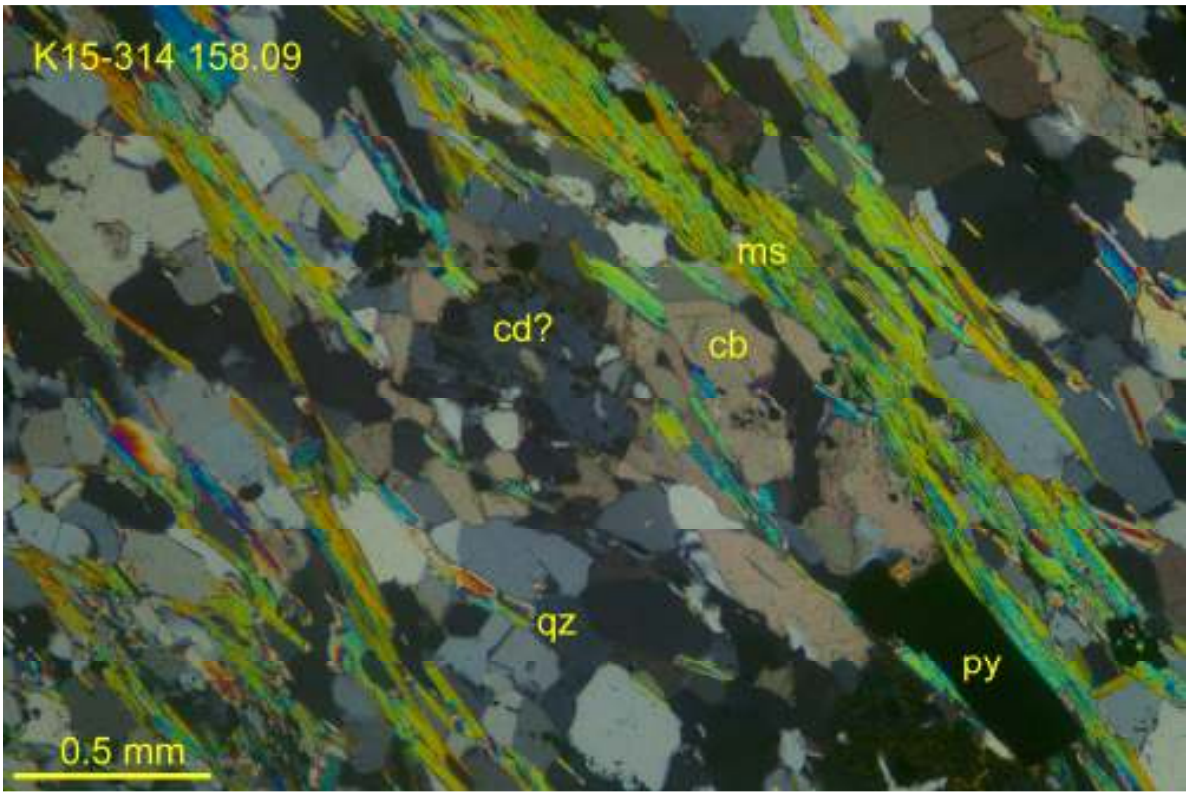
K15-306 221.60-221.71R: somewhat deformed, disrupted bands/laminae or sphalerite, minor pyrrhotite (locally partly replaced by pyrite), trace galena in matrix of intergrown micas and carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



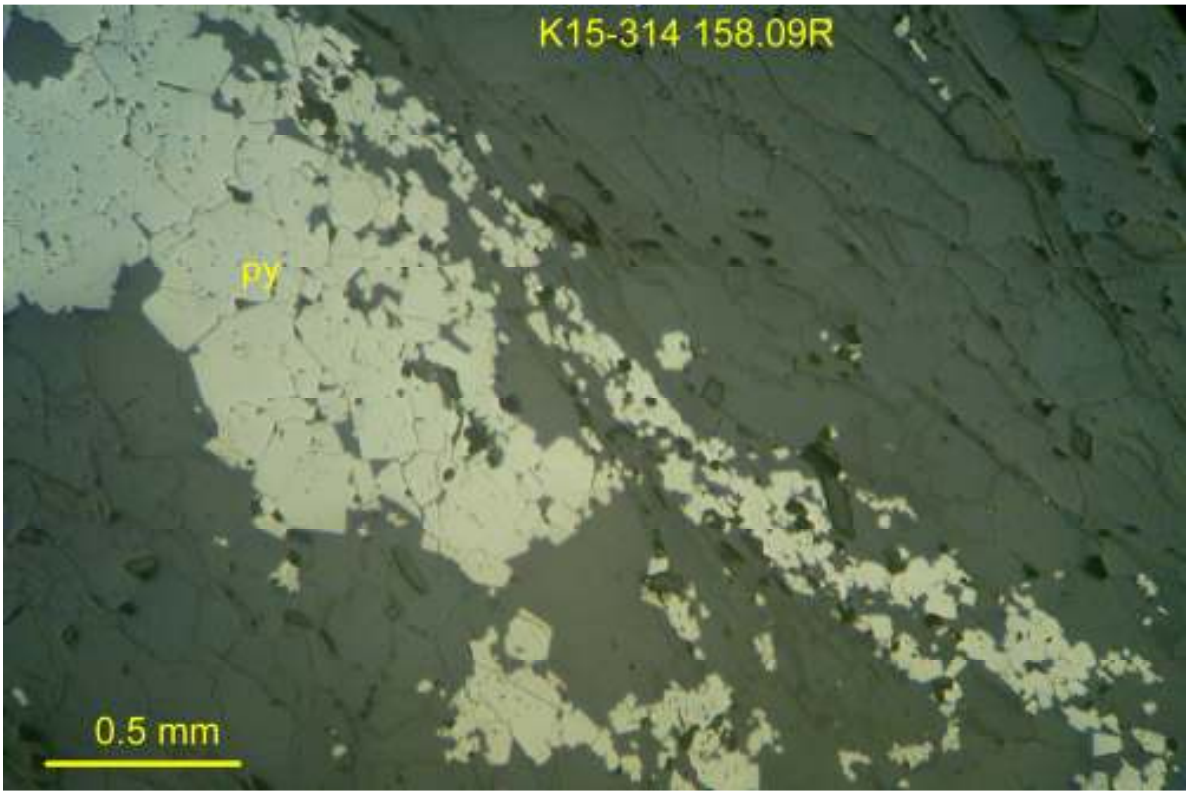
K15-306 219.14-219.26: strongly zoned, schorlitic tourmaline euhedra with included Fe-rich sphalerite, aligned with foliated matrix of pale greenish brown biotite/phlogopite, adjacent to band of quartz, possible cordierite and/or plagioclase. Transmitted plane light, field of view ~3 mm wide.



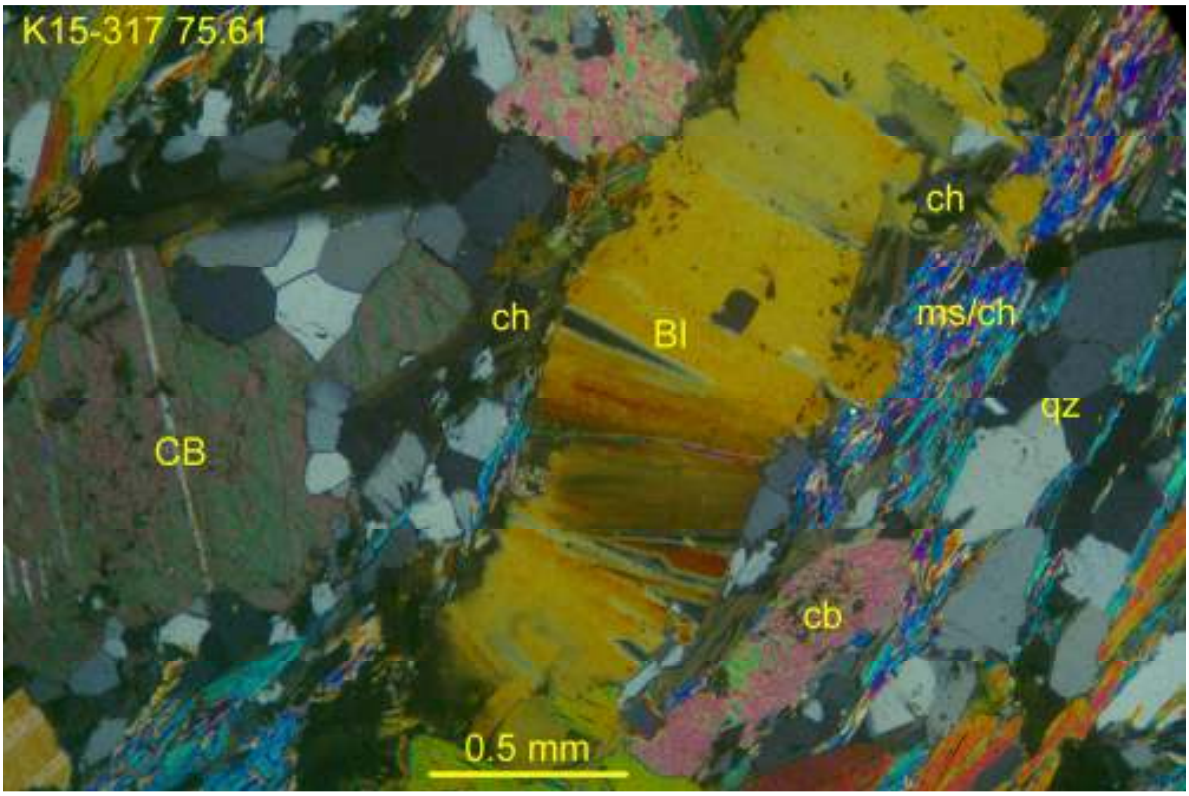
K15-306 219.14-219.26R: flattened/elongated, pyrite/marcasite (after pyrrhotite?) and sphalerite, local spinel (altered to chlorite, with inclusions of sphalerite, chalcopyrite, pyrrhotite) aggregates or discontinuous bands, alternating with gangues of mica or carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



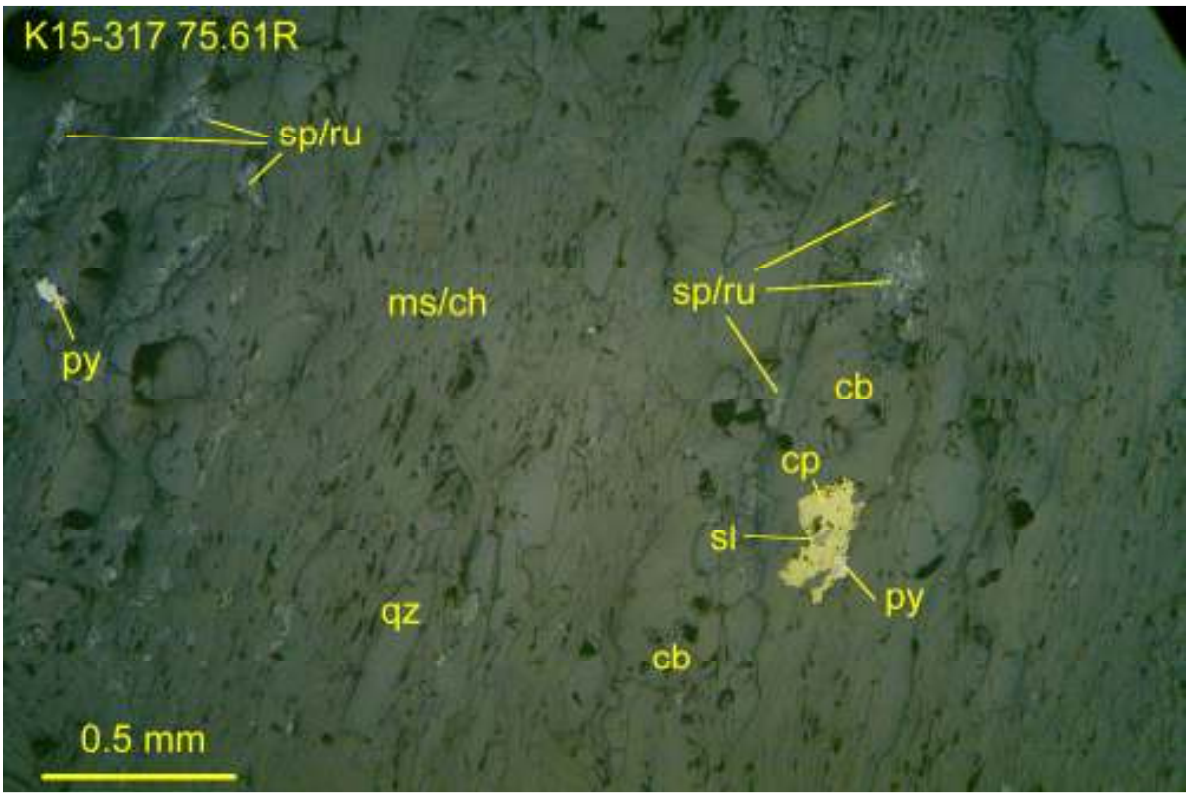
K15-314 158.09-158.2: foliated, banded/laminated gneiss composed of quartz-muscovite-lesser carbonate-local relict possible cordierite (cd?) typically altered elsewhere to chlorite; opaques are pyrite and trace rutile (see below). Transmitted light, crossed polars, field of view ~3 mm wide.



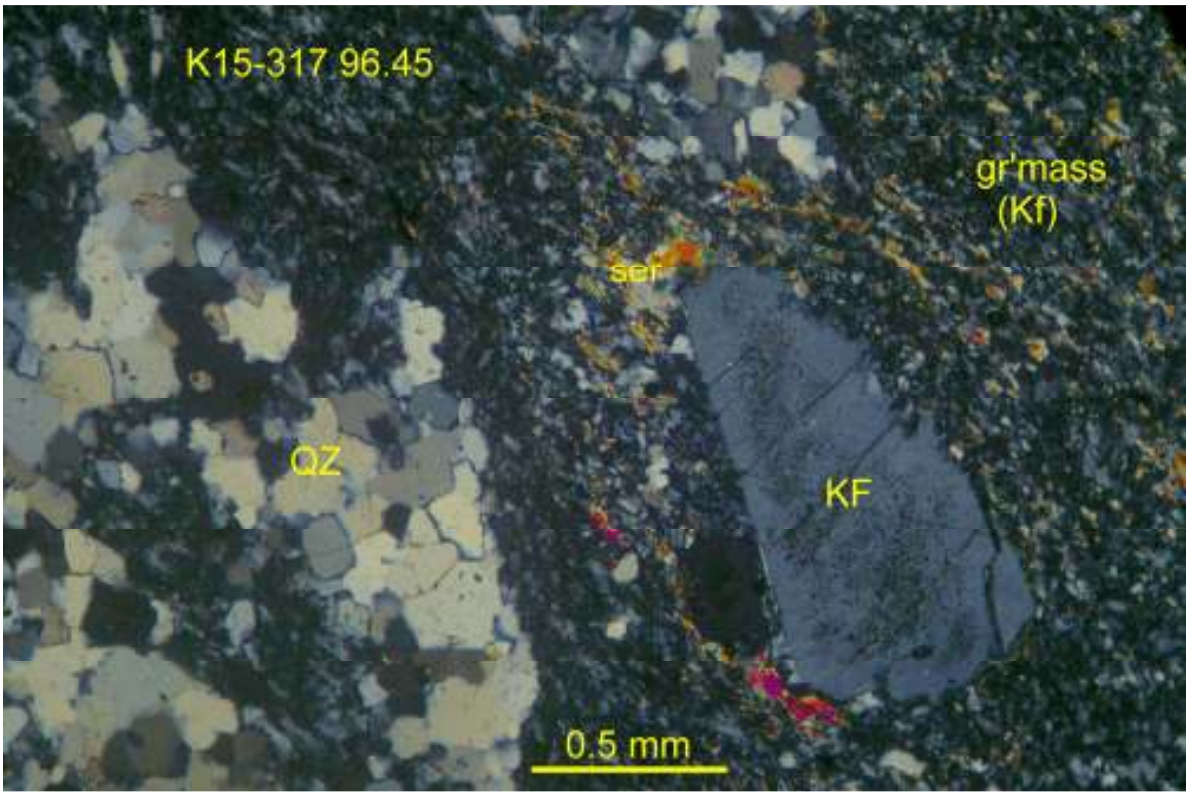
K15-314 158.09-158.2R: thin band/lamina rich in cubic pyrite, in gangues of quartz and muscovite (pyrite most closely associated/intergrown with muscovite flakes, strongly aligned in and defining the foliation). Reflected light, uncrossed polars, field of view ~3 mm wide.



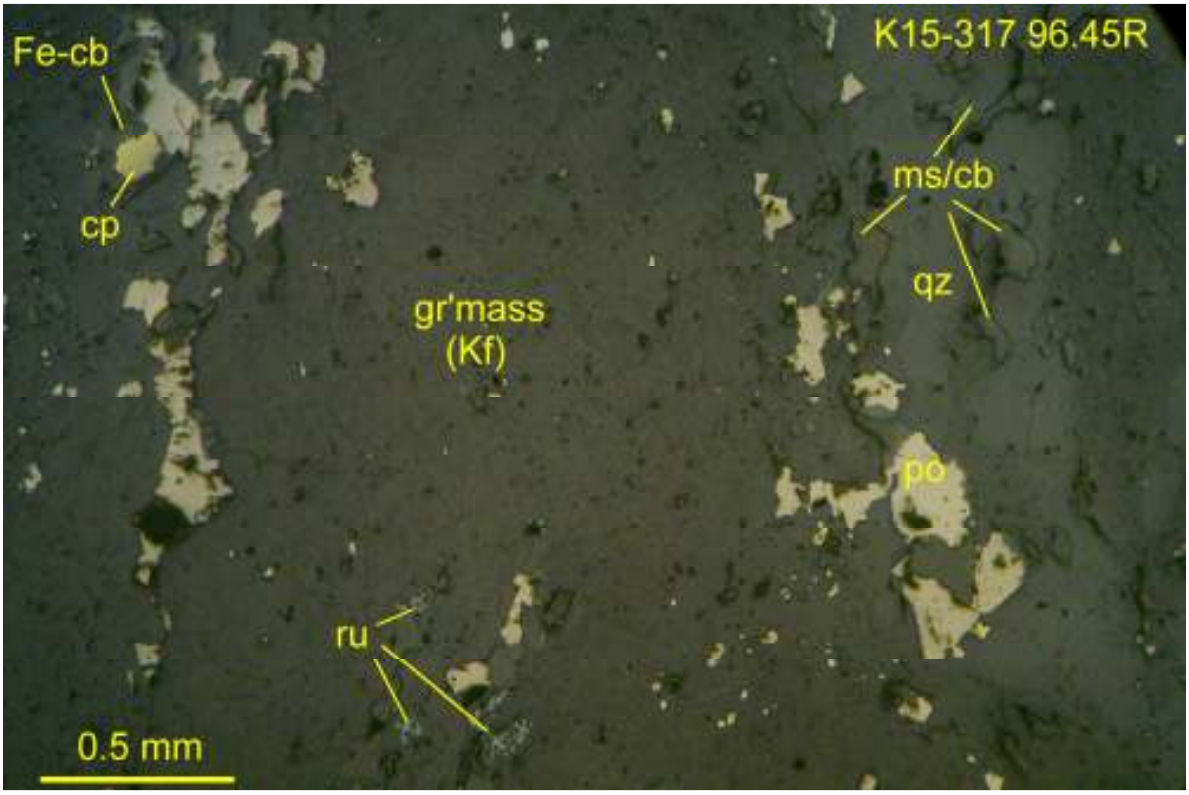
K15-317 75.61-75.75: porphyroblastic biotite (BI), locally with carbonate (CB) and chlorite (ch), in foliated matrix of muscovite-chlorite alternating with quartz. Transmitted light, crossed polars, field of view ~3 mm wide.



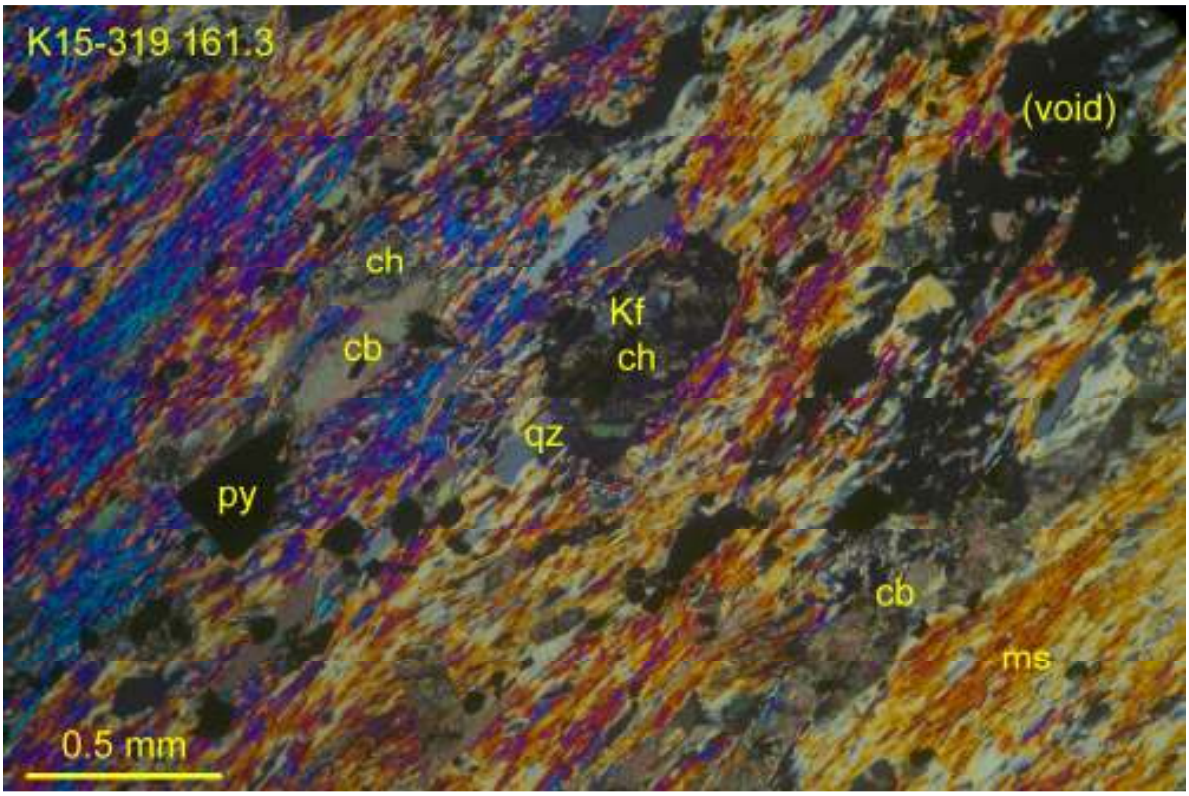
K15-317 75.61-75.75R: aggregates of chalcopyrite-minor pyrite-trace sphalerite (?) associated with aggregates of sphene/rutile (sp/ru) and carbonate, in foliated matrix of muscovite-chlorite and somewhat elongated quartz crystals. Reflected light, uncrossed polars, field of view ~3 mm wide.



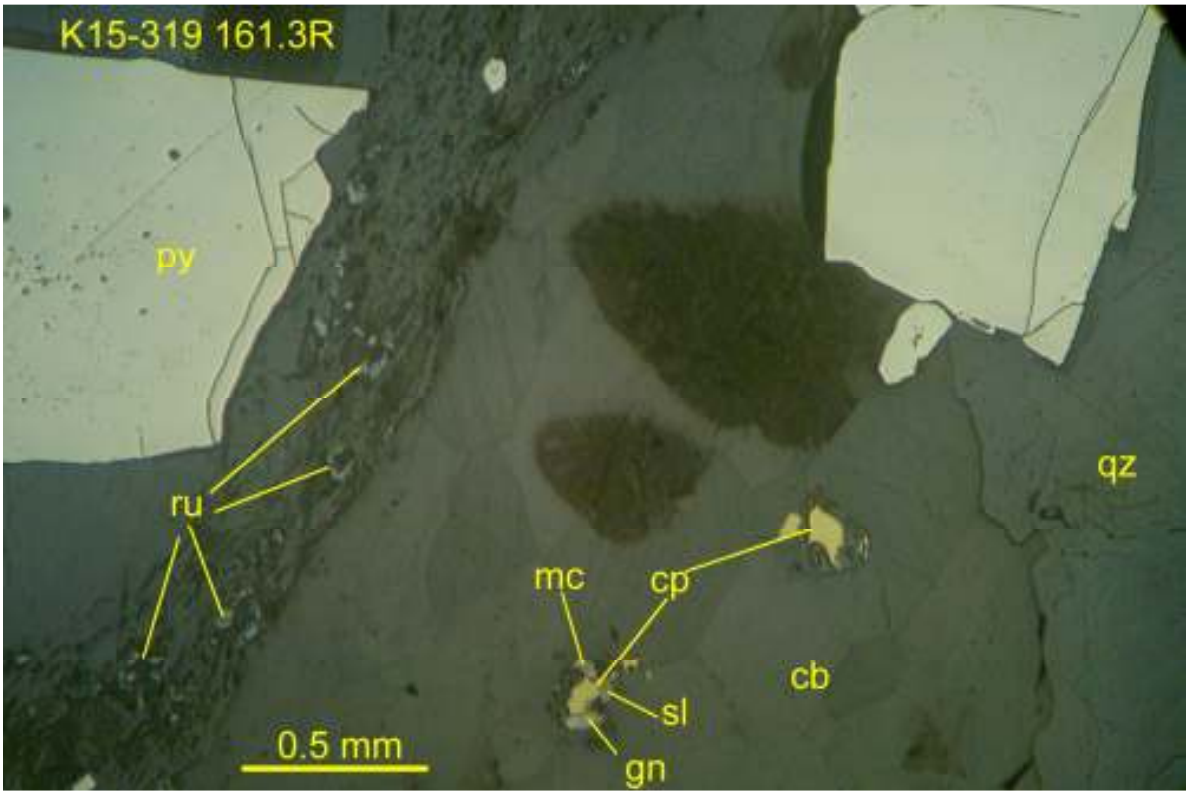
K15-317 96.45-96.59: euhedral Kspar (KF) and relict rounded quartz (QZ) phenocrysts or sites, in very fine-grained groundmass of alkali feldspar and local sericite. Transmitted light, crossed polars, field of view ~3 mm wide.



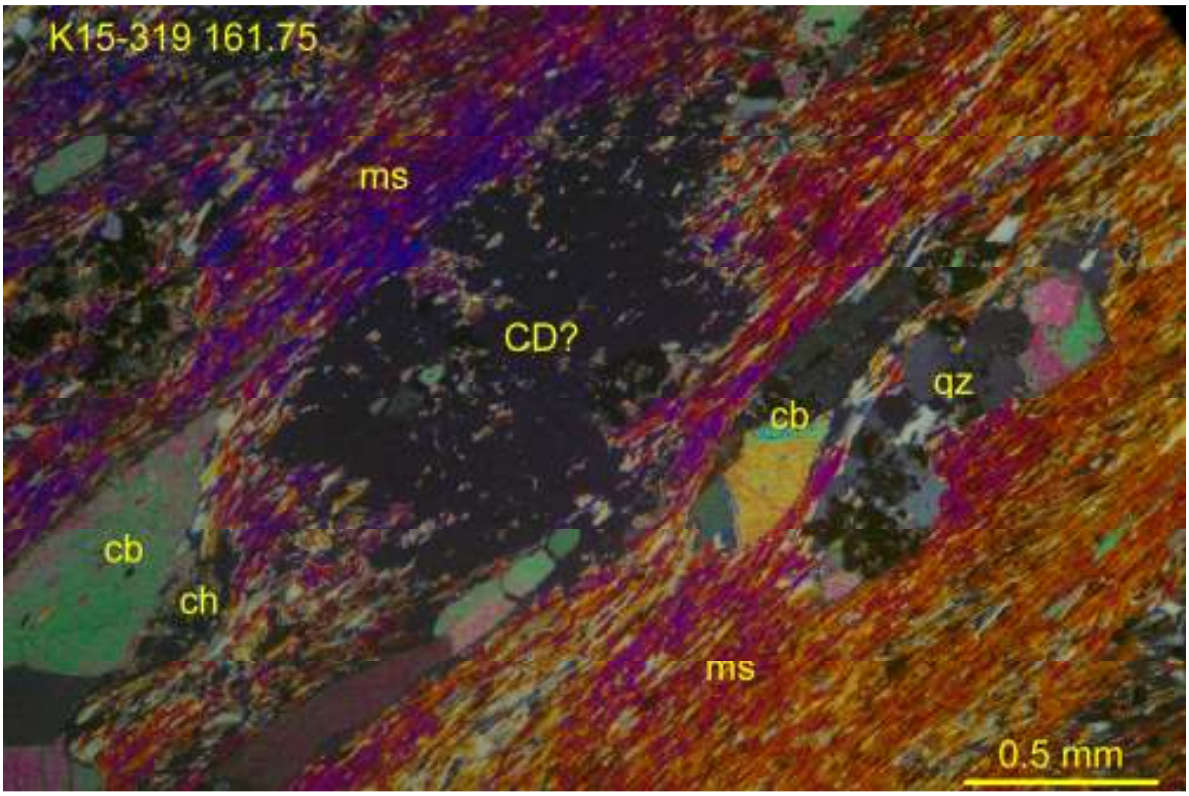
K15-317 96.45-96.59R: sub-parallel, somewhat deformed relict stringers of quartz (qz), pyrrhotite, local chalcopyrite associated with muscovite or locally surrounded by Fe-carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



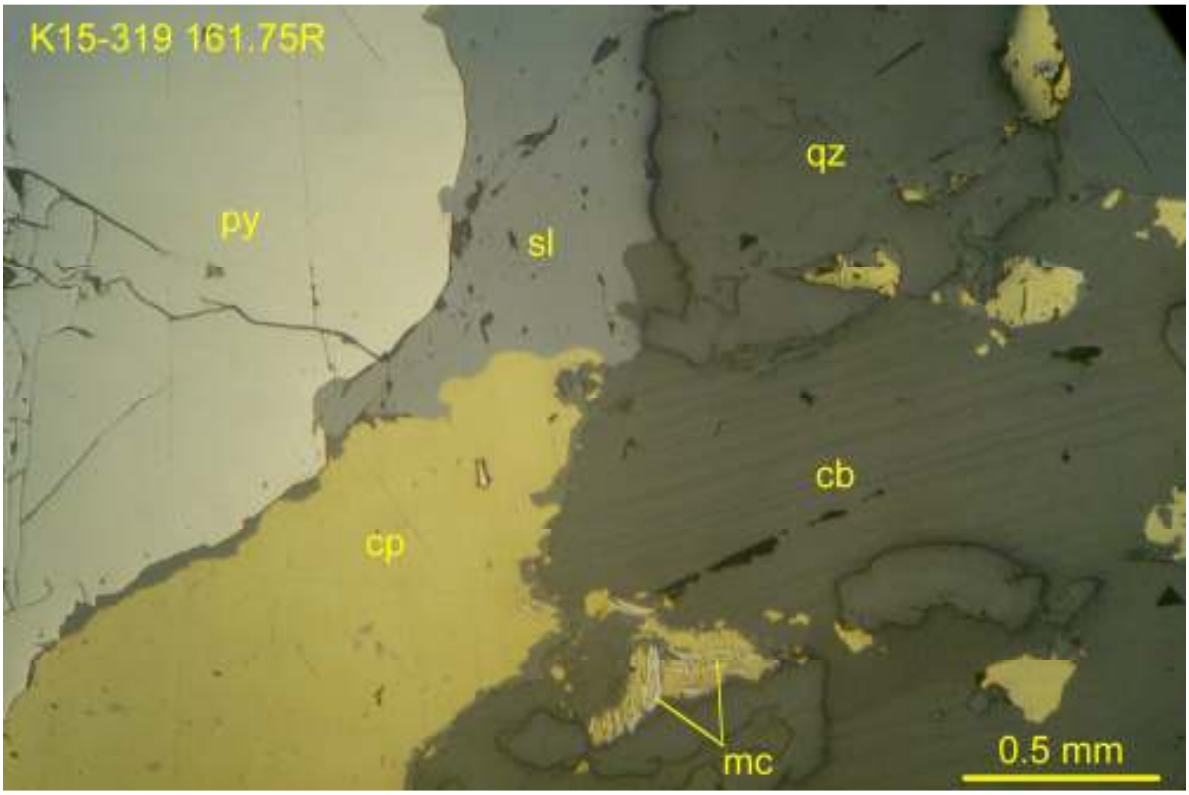
K15-319 161.3-161.46: small euhedral crystals to lensy aggregates of carbonate (dolomite?)-chlorite ±Kspar (?), pyrite and accessory rutile (both opaque), possibly representing former mafic sites, in foliated muscovite-rich matrix. Transmitted light, crossed polars, field of view ~3 mm wide.



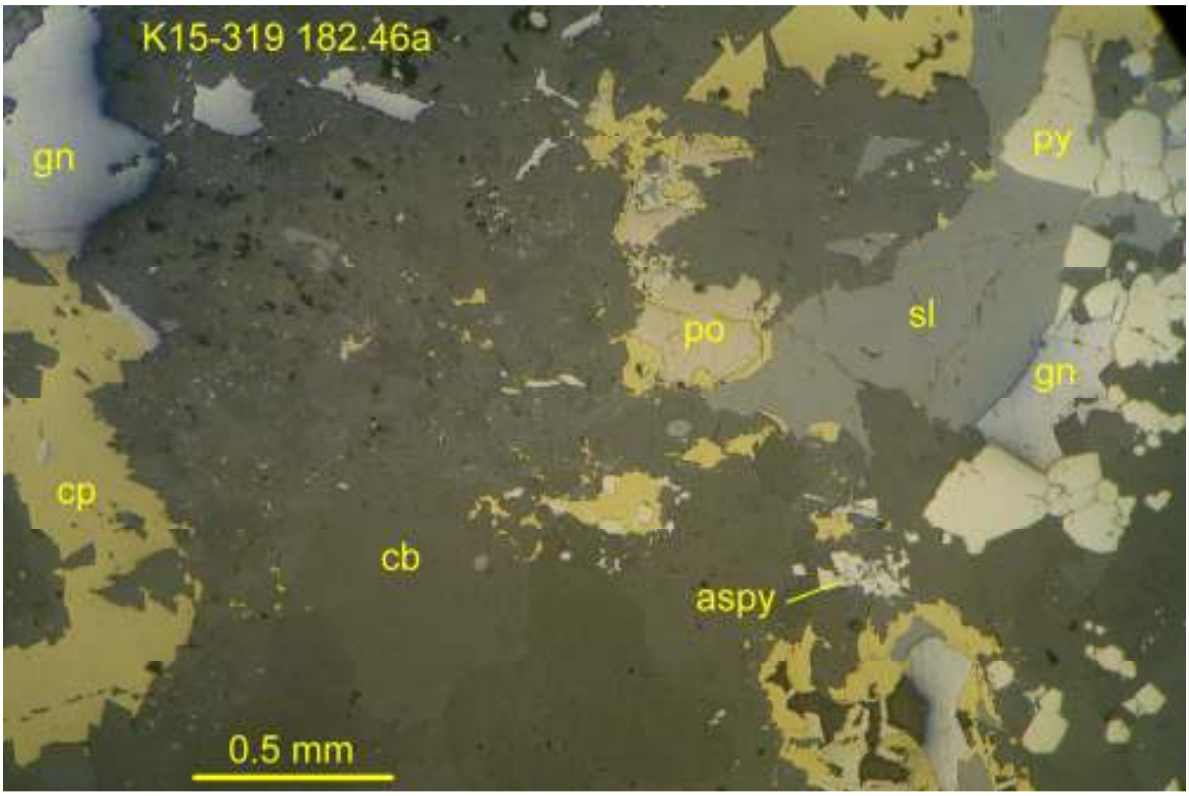
K15-319 161.3-161.46R: coarse-grained, cubic pyrite (and trace chalcopyrite, galena, sphalerite, marcasite) associated with lensy aggregates (or transposed veins) of carbonate-quartz sub-parallel to foliation in host muscovite-minor rutile schist host. Reflected light, uncrossed polars, field of view ~3 mm wide.



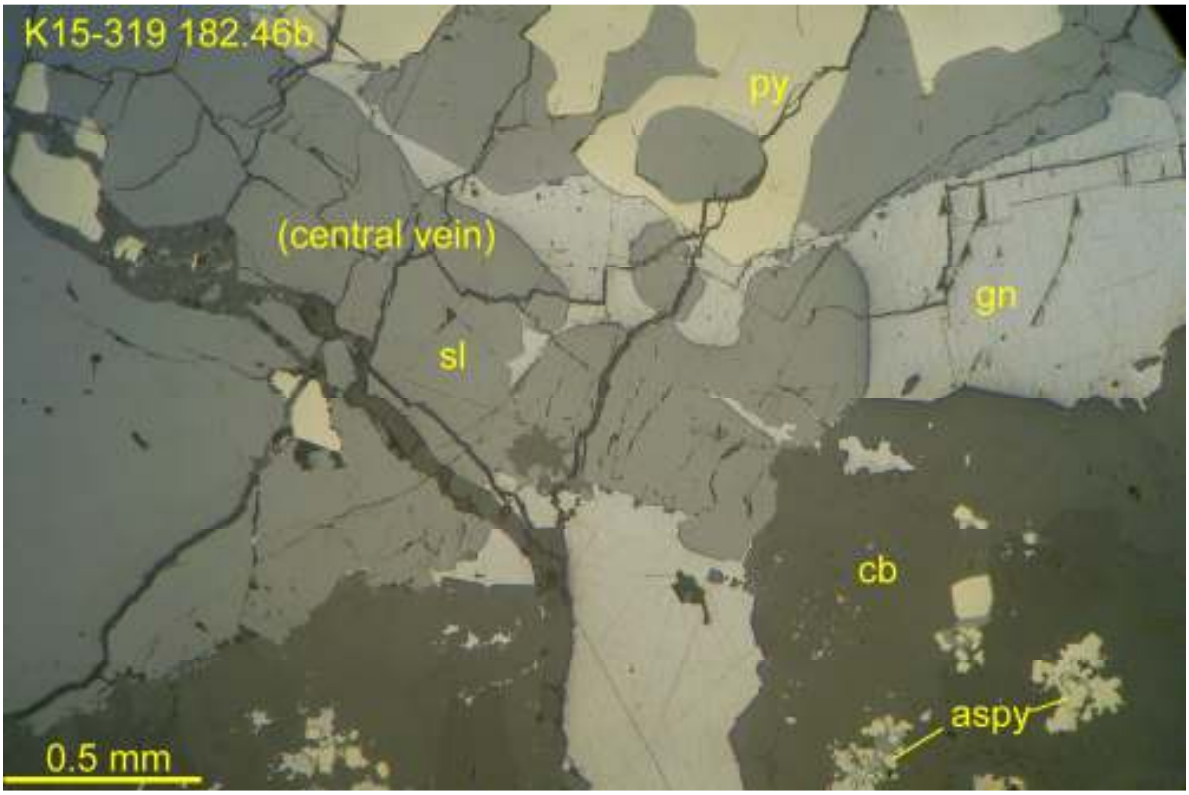
K15-319 161.75-161.84: possible porphyroblastic cordierite (?) partly altered to/with inclusions of sericite, small relict mafic sites (?) replaced by carbonate ±chlorite and rutile (opaque), and lensy aggregates of carbonate, lesser quartz and rutile, in foliated matrix of muscovite. Transmitted light, crossed polars, field of view ~3 mm wide.



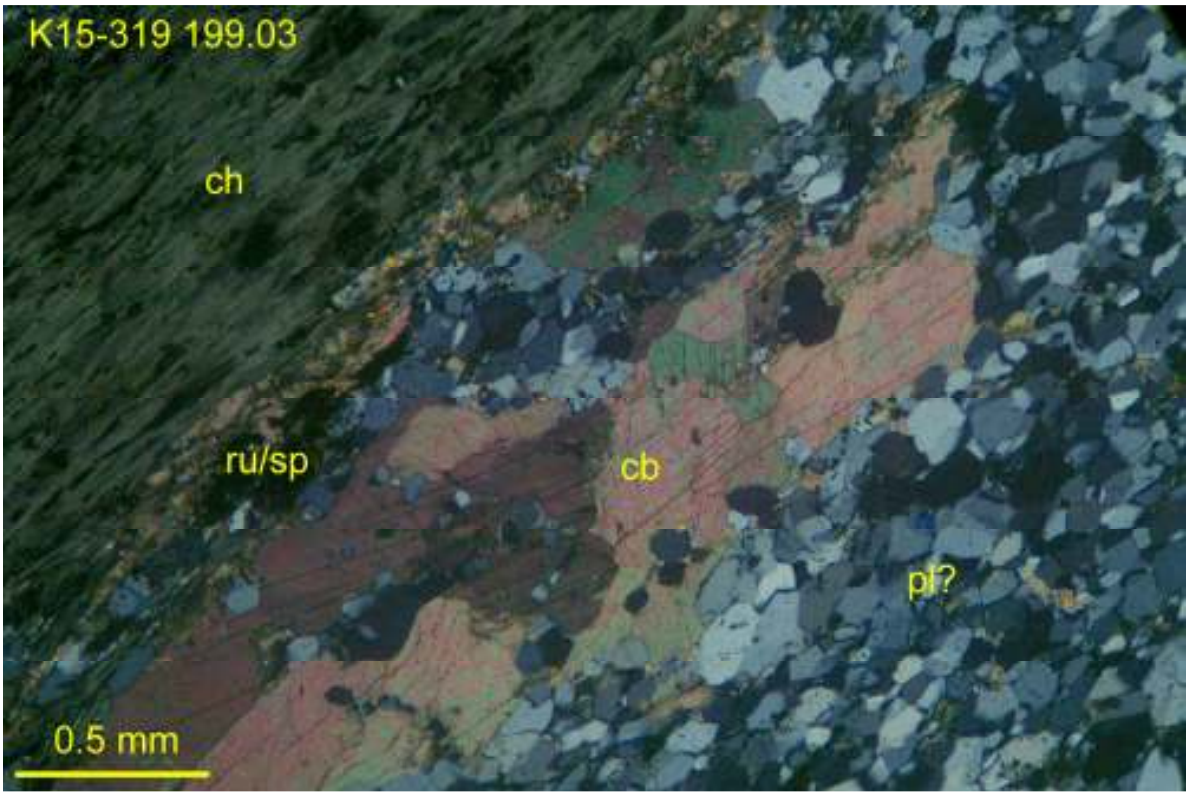
K15-319 161.75-161.84R: coarse band (transposed vein?) of carbonate-quartz-pyrite-chalcopyrite-sphalerite-local marcasite (likely after former pyrrhotite?). Reflected light, uncrossed polars, field of view ~3 mm wide.



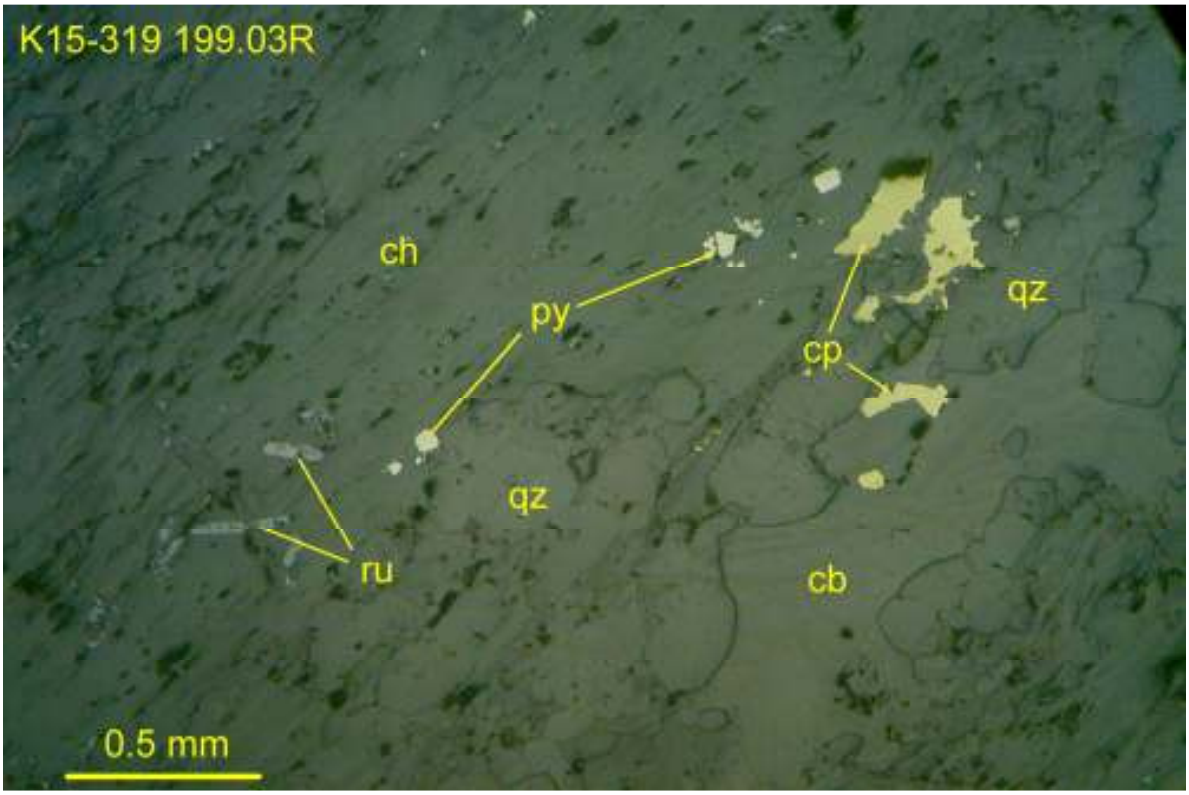
K15-319 182.46-182.64a: crudely banded (?) semi-massive sulfides, including pyrite, sphalerite, galena, chalcopyrite, local minor pyrrhotite (partly altered to pyrite/marcasite), trace arsenopyrite, in matrix of carbonate (note higher reflectance of Fe-carbonate that hosts minor magnetite). Reflected light, uncrossed polars, field of view ~3 mm wide.



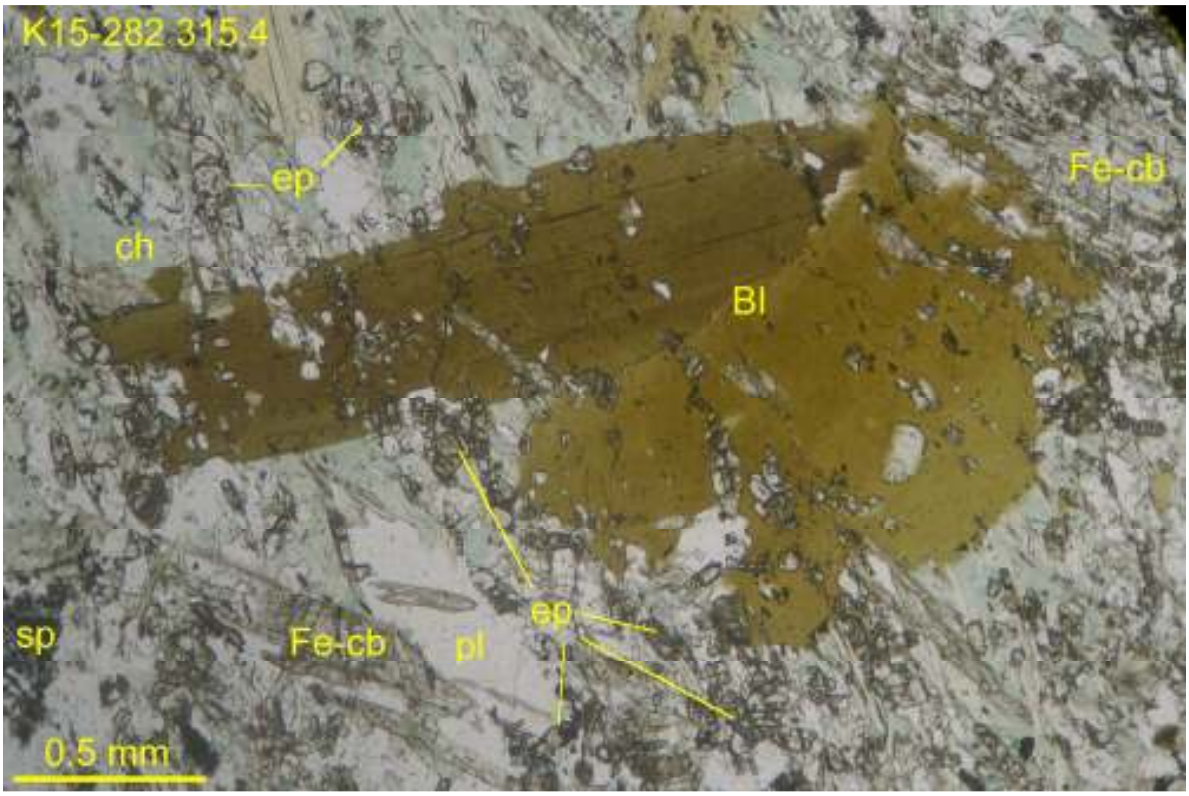
K15-319 182.46-182.64b: central vein or re-opening of massive, coarse Fe-rich sphalerite, galena (partly "bleeding" off in the presumed direction of banding in carbonate-rich wallrock), and minor pyrite; traces of arsenopyrite occur replacing pyrite in wallrock. Reflected light, uncrossed polars, field of view ~3 mm wide.



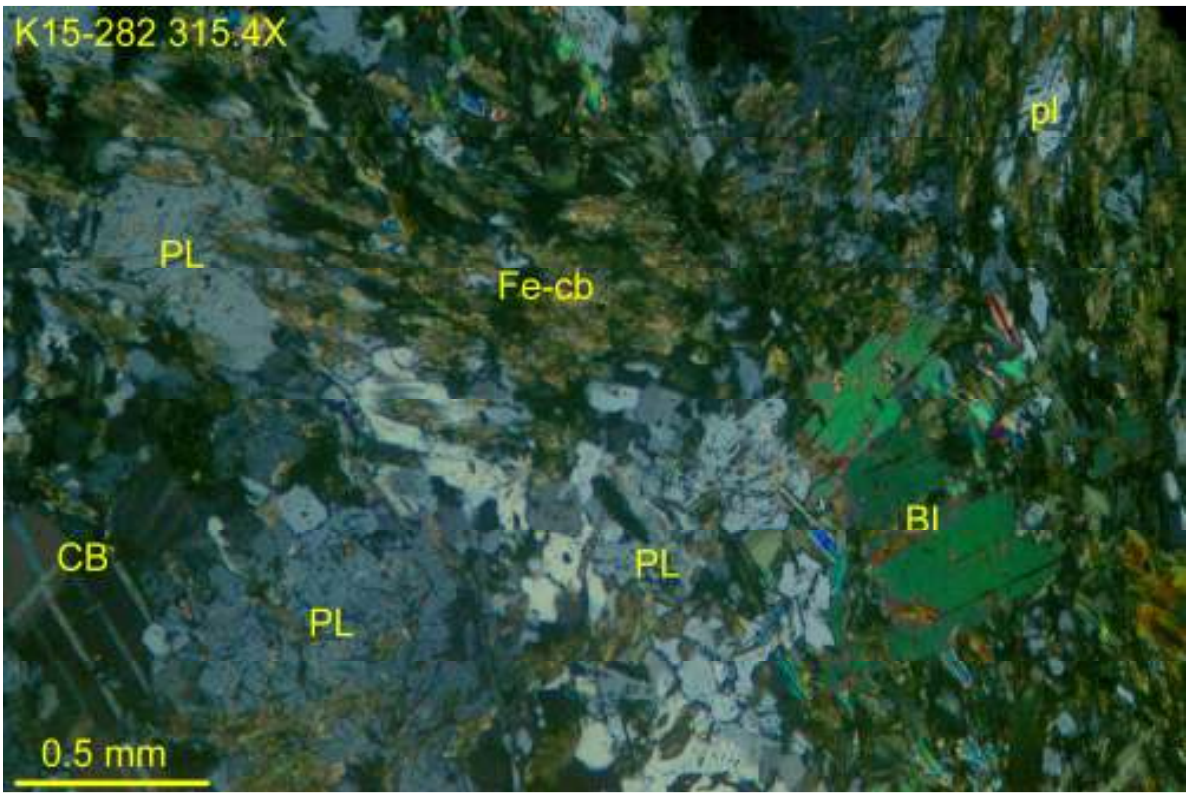
K15-319 199.03-199.14: view across 3 major components making up this sample: foliated chlorite, fine-grained plagioclase (pl, may contain some quartz?) and lensy aggregates of coarser carbonate. Aggregates of fine-grained rutile occur at margins of bands. Transmitted light, crossed polars, field of view ~3 mm wide.



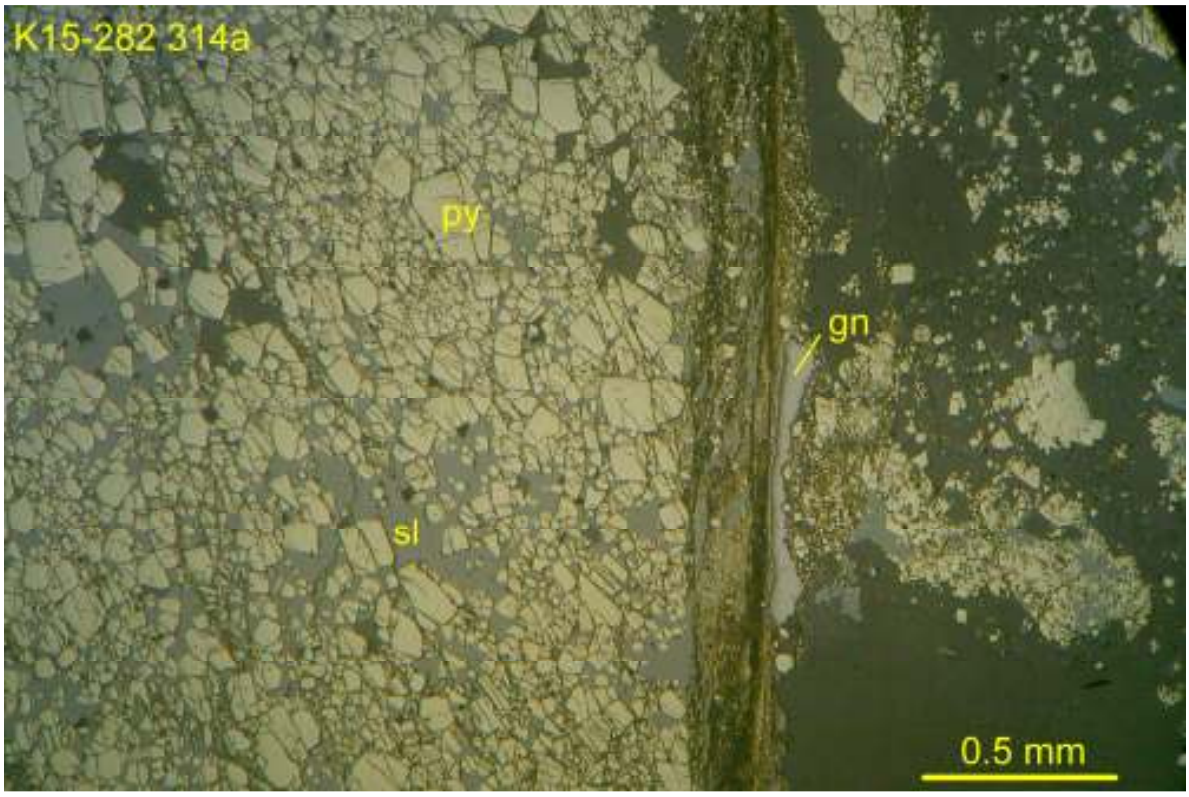
K15-319 199.03-199.14R: lath-like rutile pseudomorphs of ilmenite (?), minor pyrite and chalcopyrite associated with margin of coarser, carbonate-quartz lens in contact with chlorite-rich band. Reflected light, uncrossed polars, field of view ~3 mm wide.



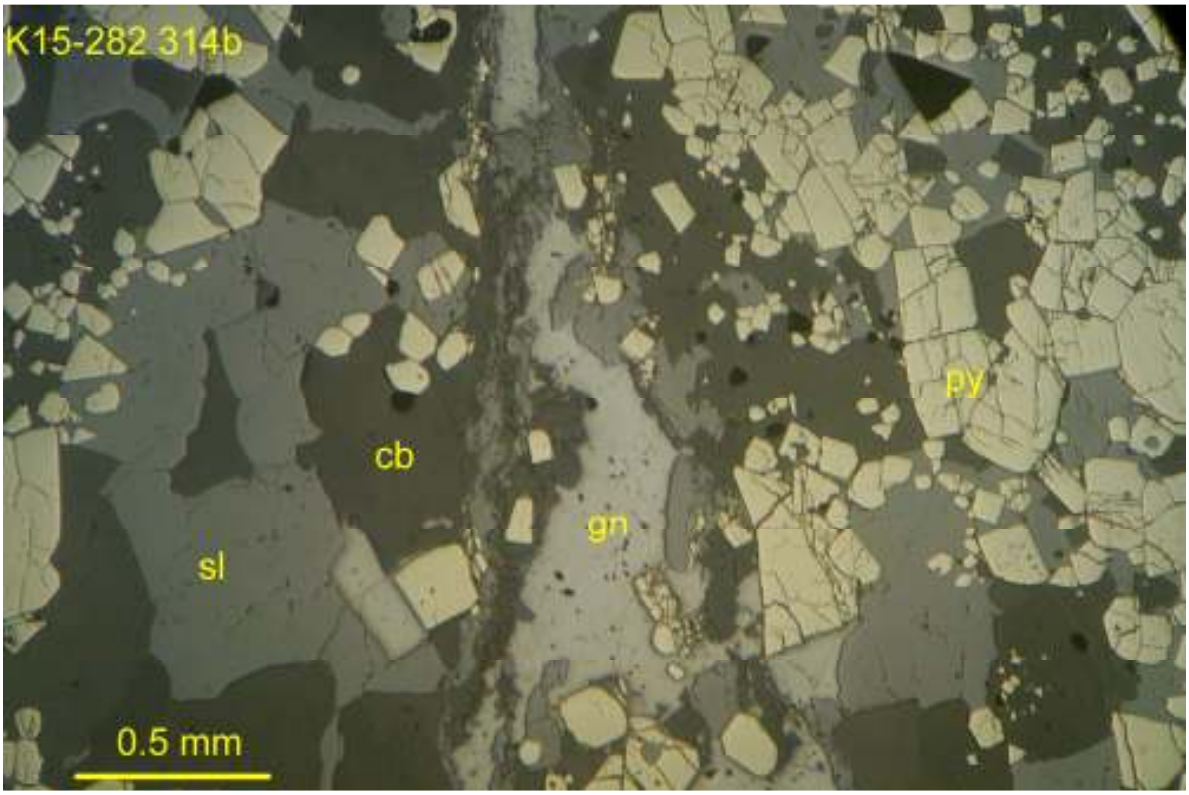
K15-282 315.4-315.5: biotite porphyroblast (relict mafic site?) in matrix of pale green chlorite, colourless plagioclase, acicular Fe-carbonate, epidote, accessory sphene. Transmitted plane light, field of view ~3 mm wide.



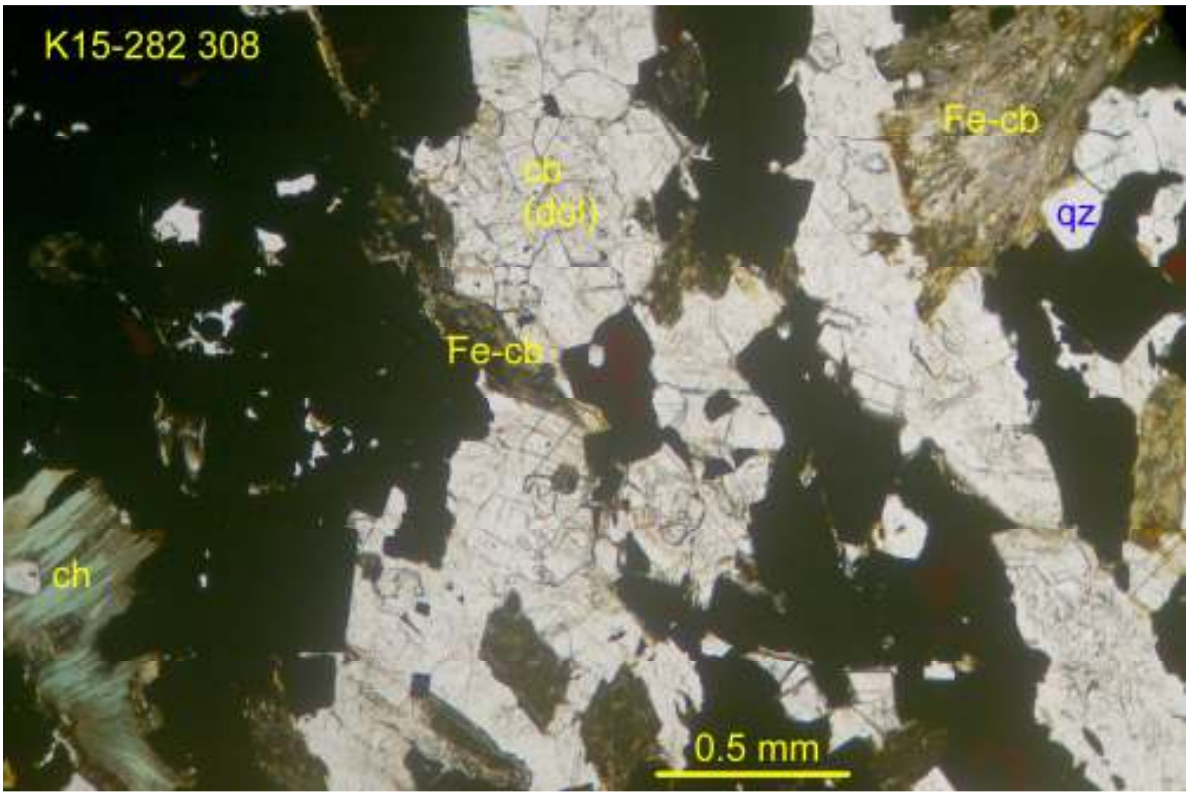
K15-282 315.4-315.5X: relict plagioclase (PL, partly altered to /intergrown with coarse, dolomitic carbonate) and mafic (M) sites, replaced by fibrous Fe-carbonate (likely after amphibole?), chlorite and accessory sphene, or biotite (BI), in matrix of plagioclase, chlorite, carbonate ±epidote, sphene. Transmitted light, crossed polars, field of view ~3 mm wide.



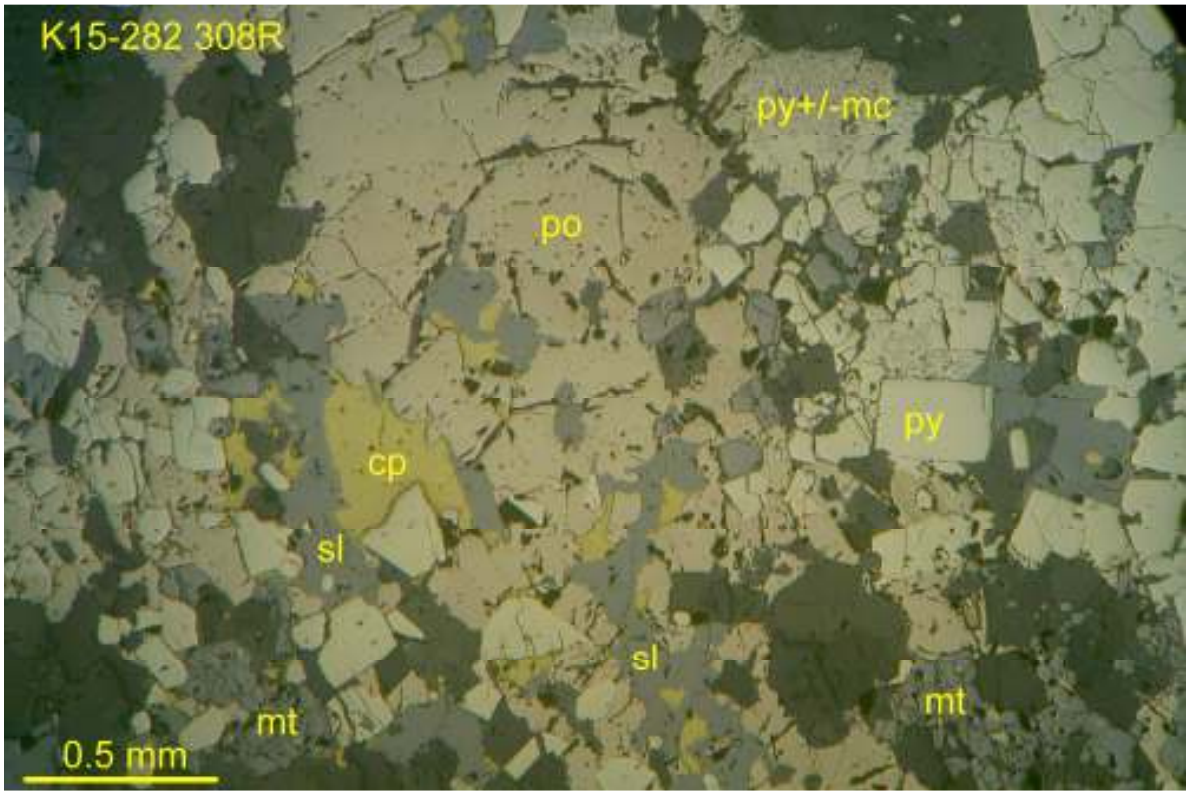
K15-282 314-314.05a: typical fine-grained massive sulfides composed of euhedral, fractured pyrite in matrix of sphalerite, cut by planar fracture zone along which sphalerite (and minor galena) appear to be remobilized; gangue inclusions are entirely carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



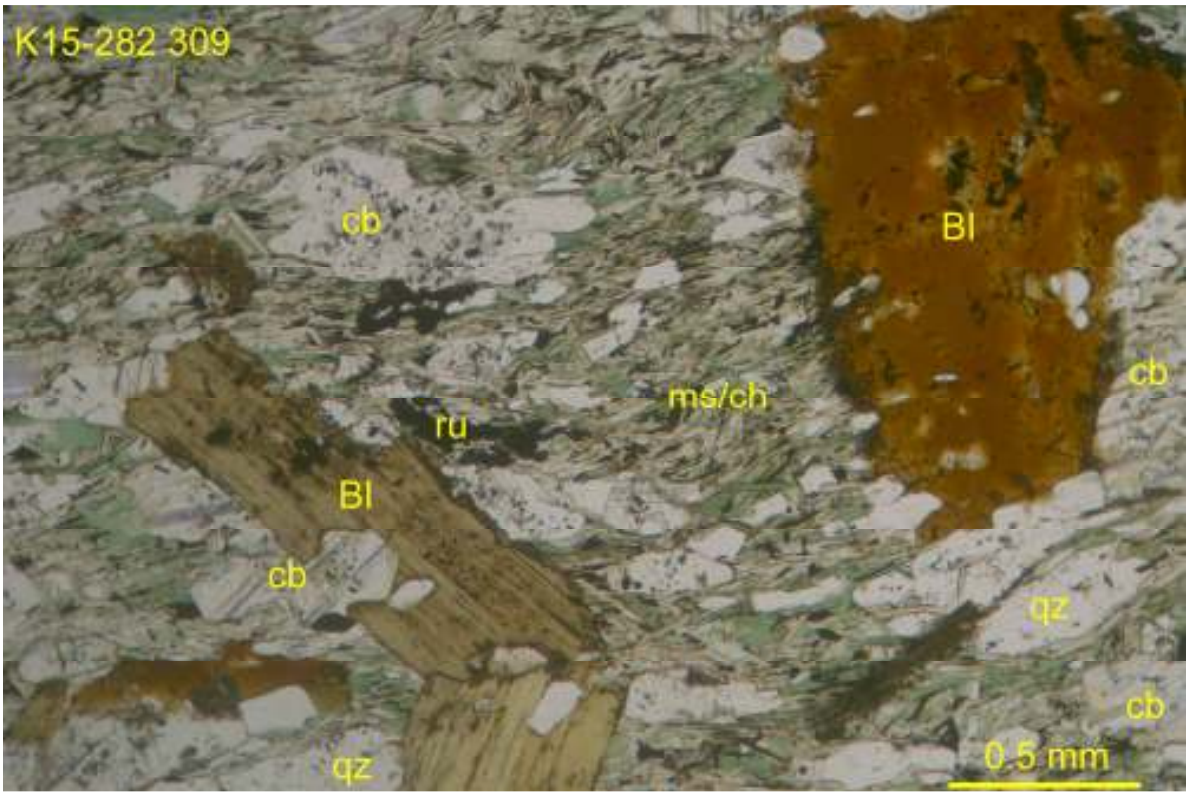
K15-282 314-314.05b: local coarser, sphalerite-galena rich band (?) with carbonate gangues, in pyritic massive sulfides, disrupted by narrow fracture zone sub-parallel /oblique to poorly defined banding. Reflected light, uncrossed polars, field of view ~3 mm wide.



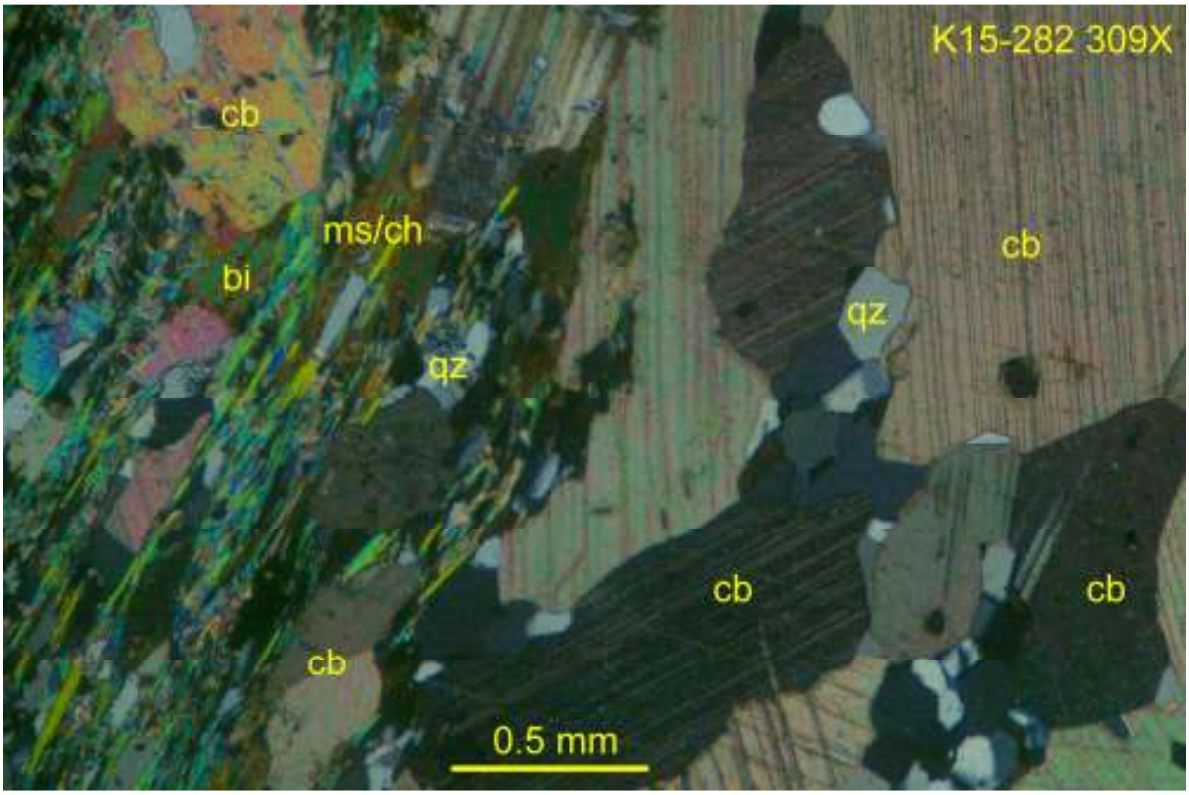
K15-282 308-308.1: massive sulfides with gangue assemblage of carbonate (relatively clear, subhedral, likely dolomite?), Fe-carbonate (brown, euhedral or fibrous, could be ankerite or siderite?), minor quartz (qz) and local bright green chlorite. Transmitted plane light, field of view ~3 mm wide.



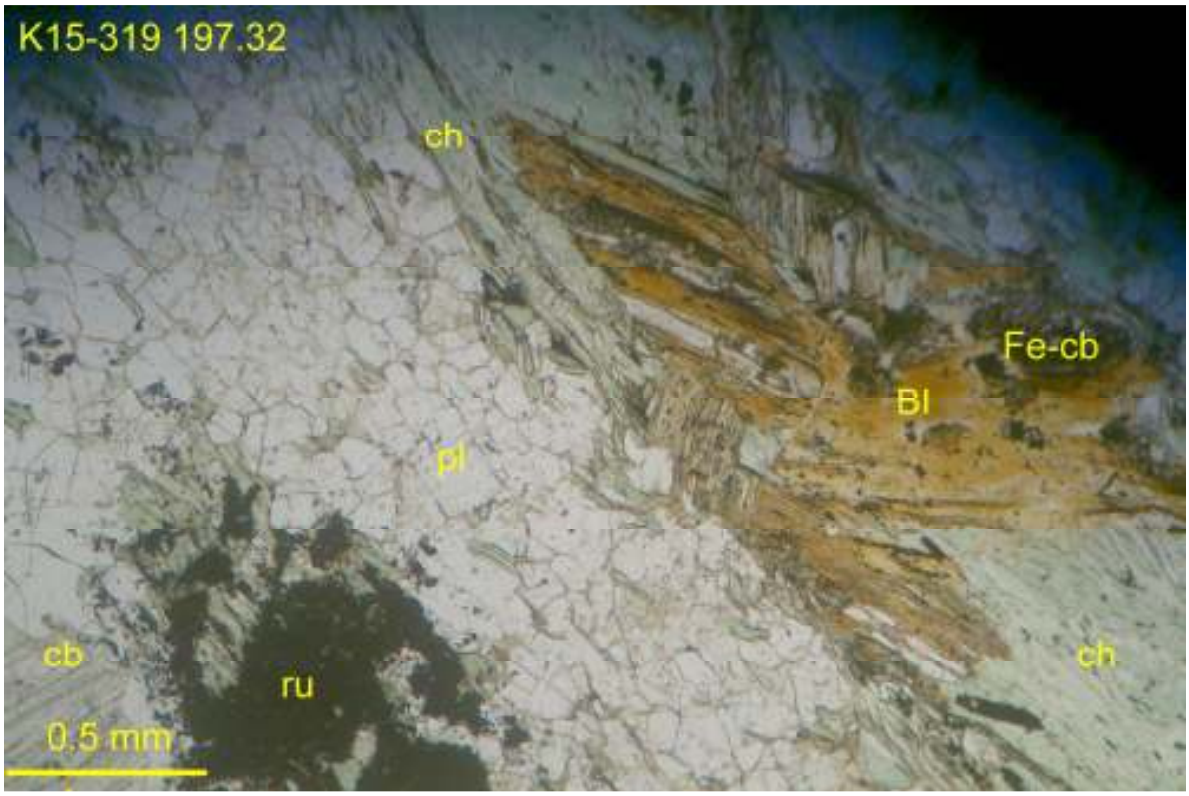
K15-282 308-308.1R: typical assemblage of cubic pyrite in matrix of pyrrhotite (locally altered to pyrite ±marcasite), sphalerite, fractured subhedral magnetite, and local chalcopyrite. Reflected light, uncrossed polars, field of view ~3 mm wide.



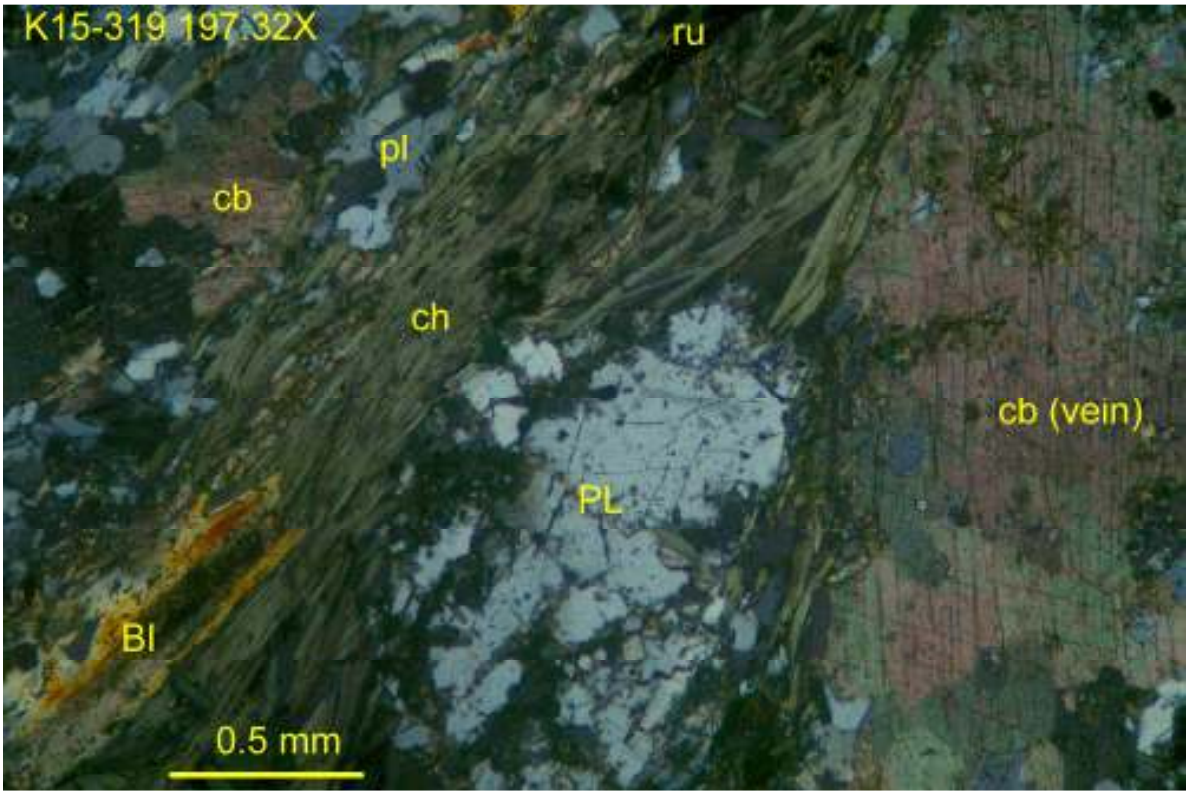
K15-282 309-309.06: porphyroblastic biotite (BI, possibly representing former mafic sites?) in well-foliated matrix of muscovite intimately mixed with lesser chlorite, scattered carbonate (dolomite?) and lesser quartz, accessory rutile (likely after former ilmeno-magnetite?). Transmitted plane light, field of view ~3 mm wide.



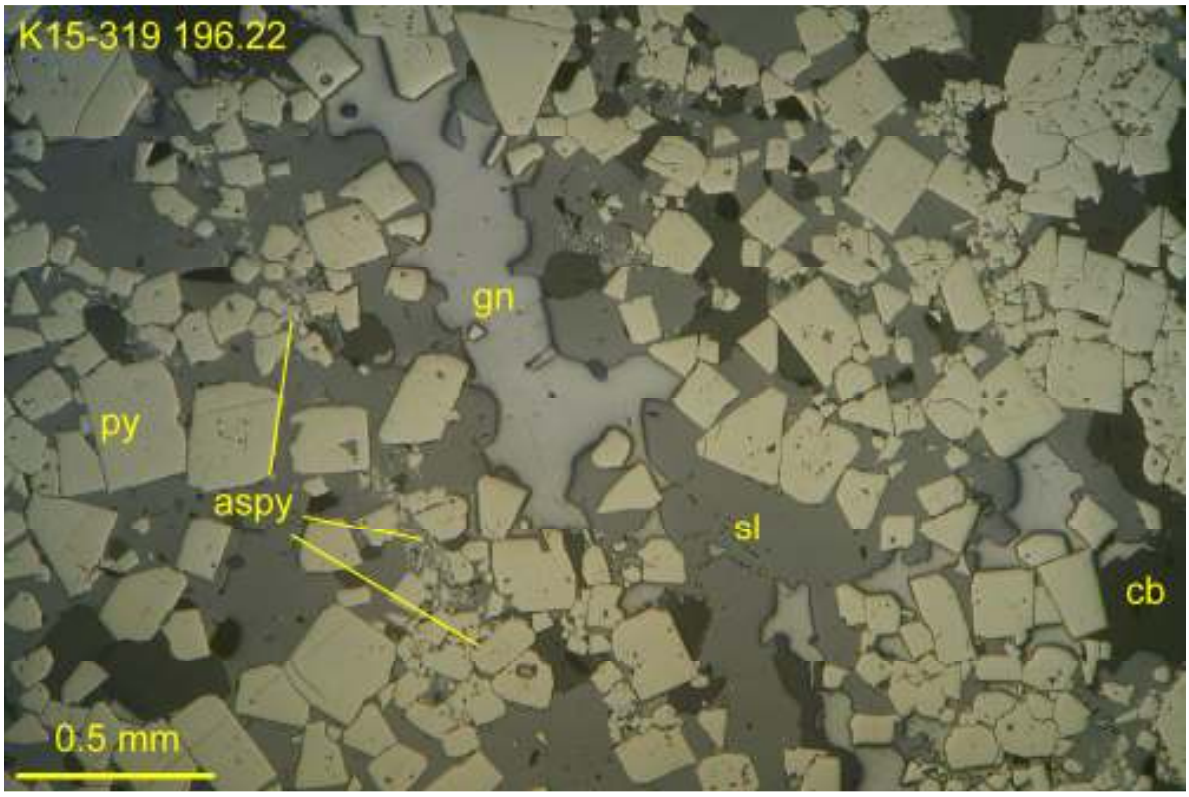
K15-282 309-309.06X: coarse carbonate (calcite), minor quartz in lensy metamorphic “sweat” vein; wallrock of muscovite-chlorite also contains small blastic carbonate crystals (possibly partly dolomite?). Transmitted light, crossed polars, field of view ~3 mm wide.



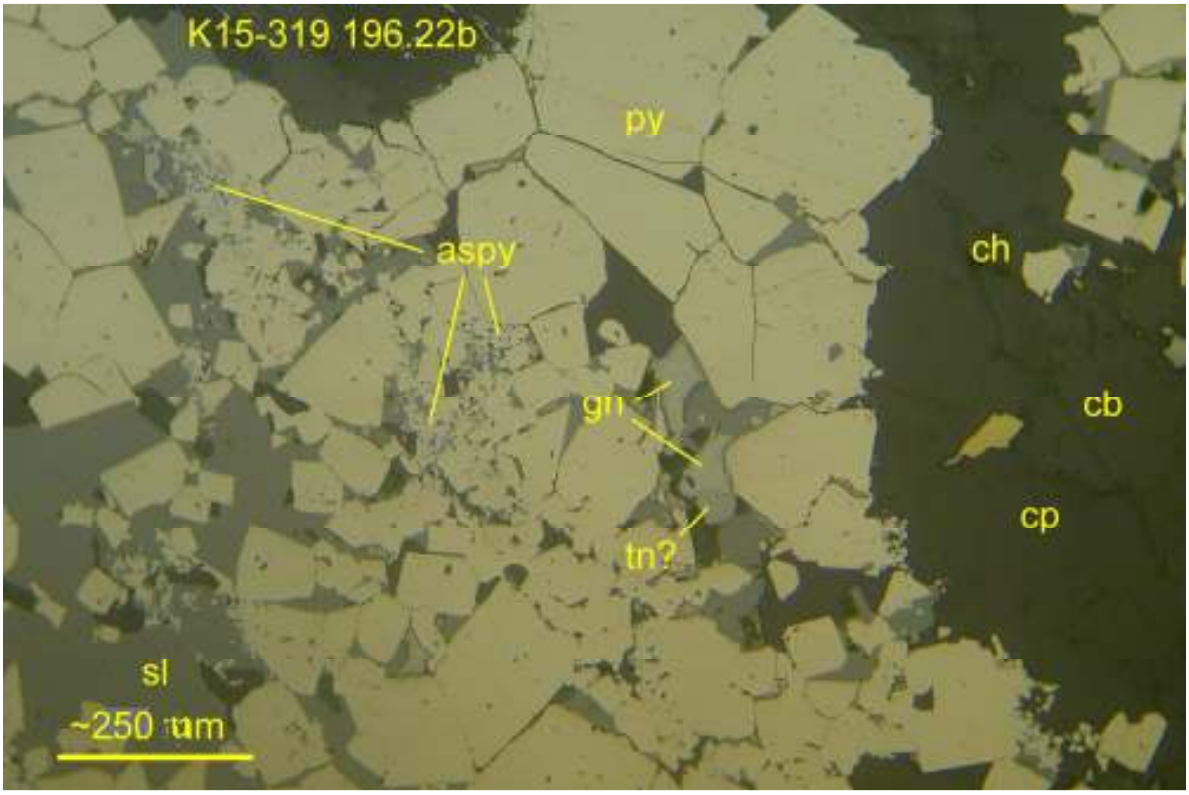
K15-319 197.32-197.42: possible relict mafic sites, mostly represented by porphyroblastic rutile (opaque), chlorite, and carbonate, or biotite somewhat altered to Fe-carbonate and chlorite, in a lens of chlorite hosted by fine-grained plagioclase. Transmitted plane light, field of view ~3 mm wide.



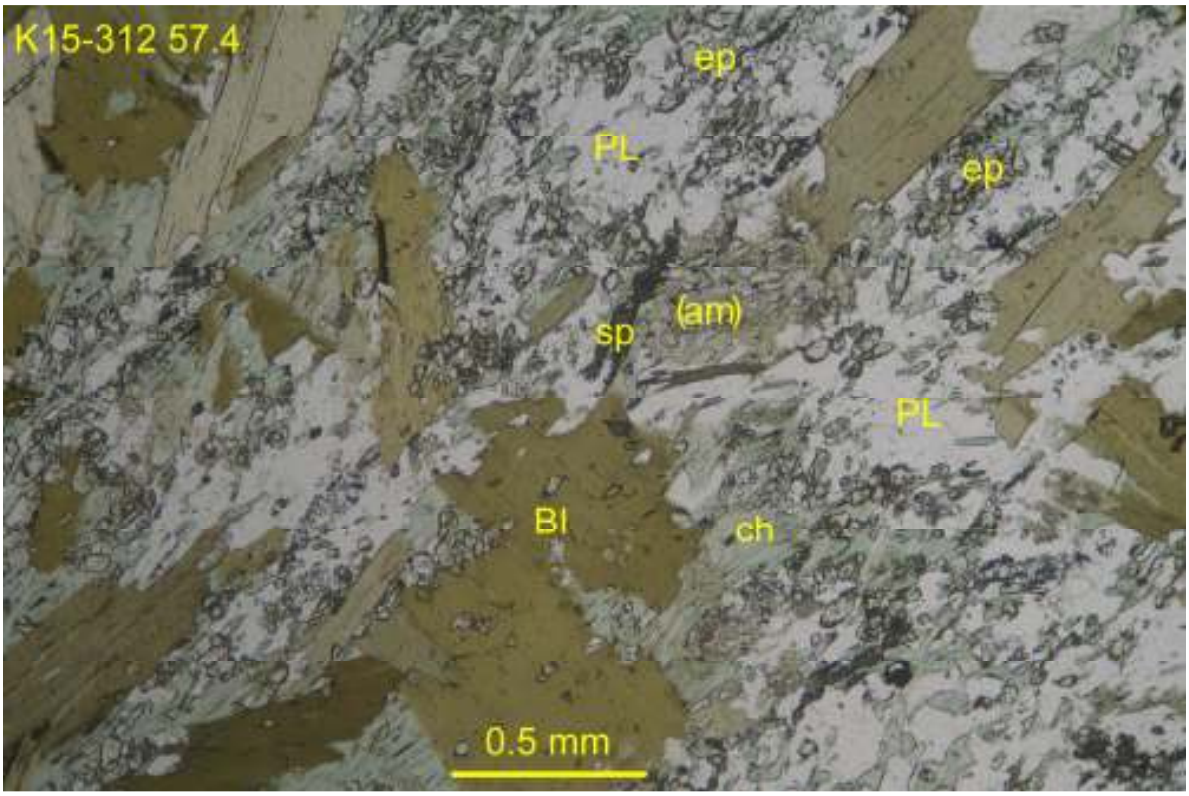
K15-319 197.32-197.42X: relict plagioclase (PL) phenocryst in matrix of strongly foliated chlorite, fine-grained plagioclase, and lensy aggregates of coarse-grained carbonate, likely mainly calcite; note lath-like aggregates of rutile, likely after former ilmenite. Transmitted light, crossed polars, field of view ~3 mm wide.



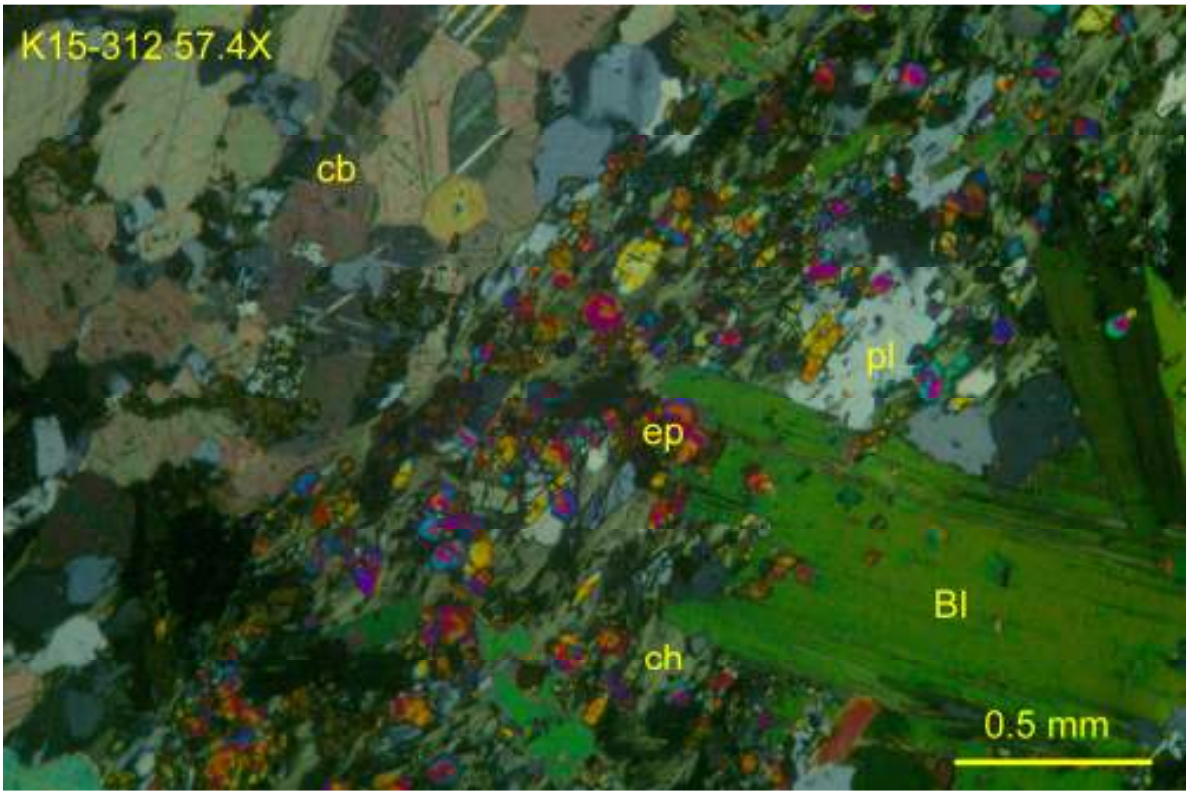
K15-319 196.22-196.27a: crudely banded, sphalerite-galena rich zones in otherwise mainly pyritic massive sulfides; gangues are mainly carbonate, local muscovite (ms). Reflected light, uncrossed polars, field of view ~3 mm wide.



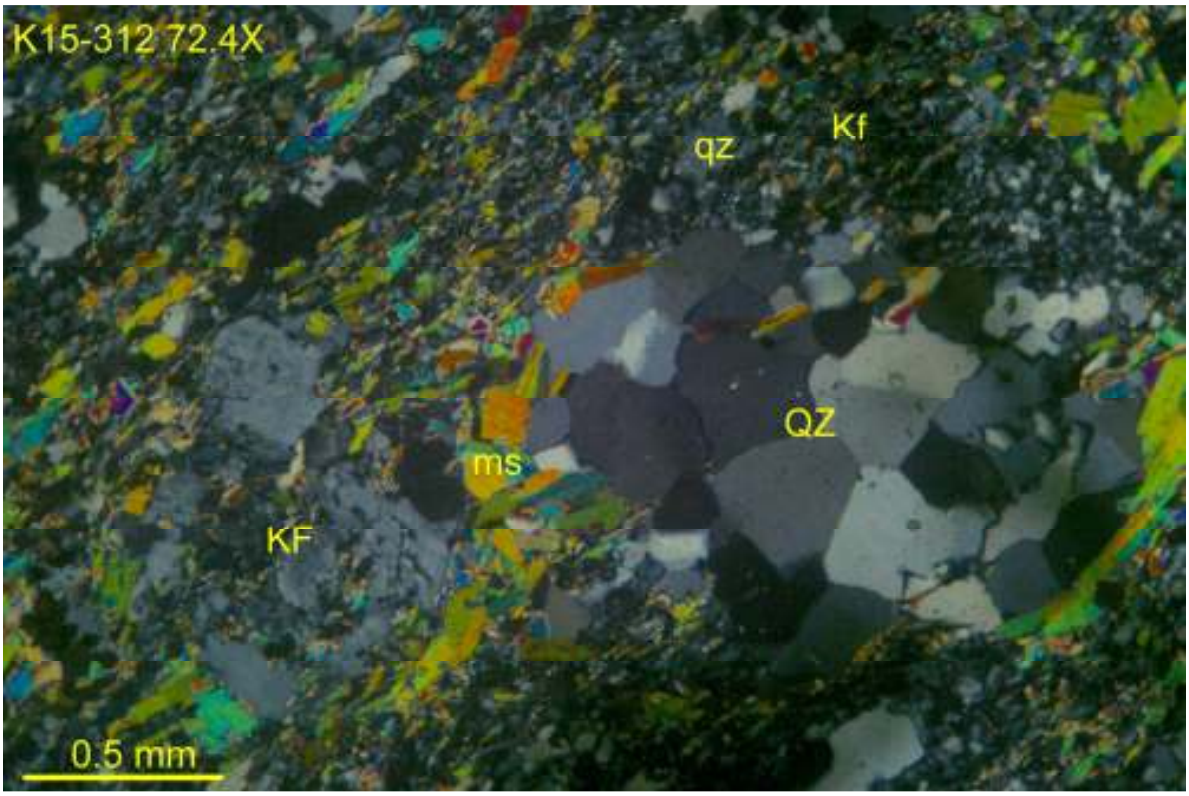
K15-319 196.22-196.27b: detailed view to show traces of grey, apparently isotropic sulfosalt (tennantite-tetrahedrite, tn?) included in galena associated with arsenopyrite replacing cores of pyrite aggregates, in matrix of sphalerite adjacent to quartz-rich band that contains trace chalcopyrite. Reflected light, uncrossed polars, field of view ~1.5 mm wide.



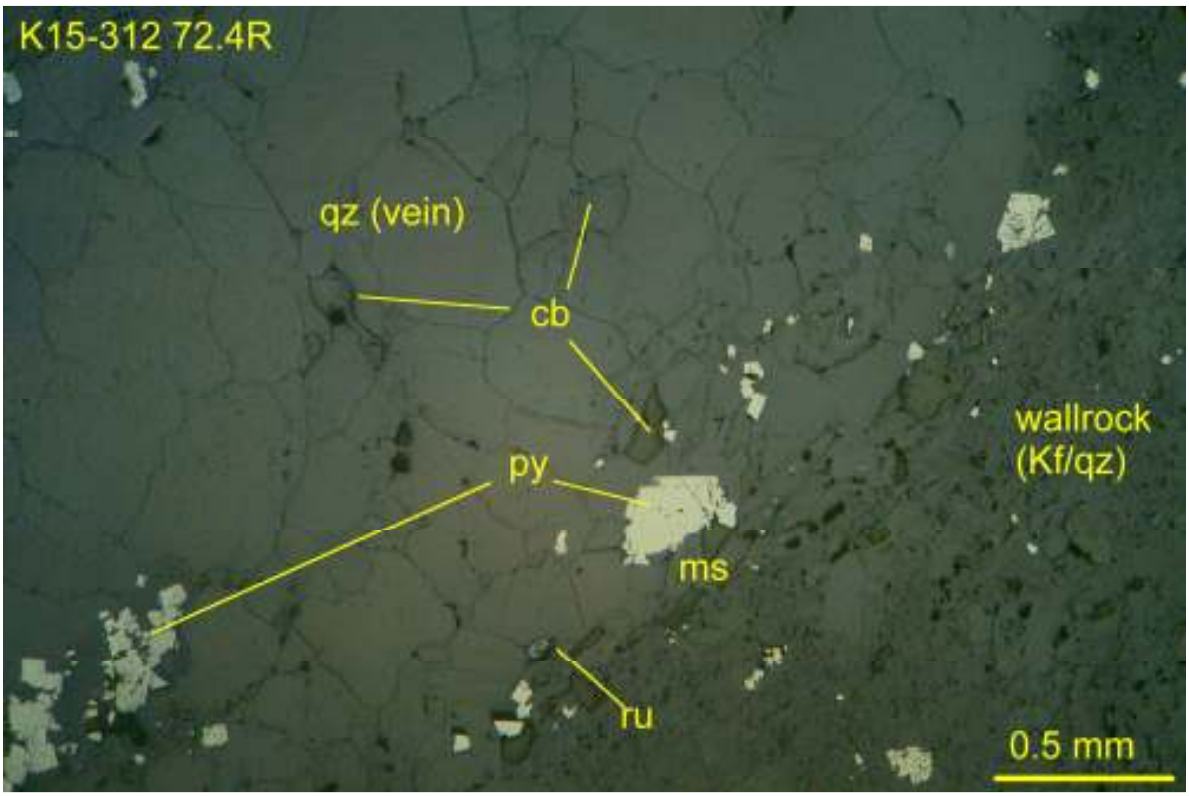
K15-312 57.4-57.52: ragged, possible relict mafic (?) phenocryst sites (porphyroblastic biotite, BI, or rare amphibole mostly pseudomorphed by Fe-carbonate) and possible relict plagioclase sites (severely recrystallized; PL) in foliated matrix of fine-grained chlorite, plagioclase, epidote and accessory sphene. Transmitted plane light, field of view ~3 mm.



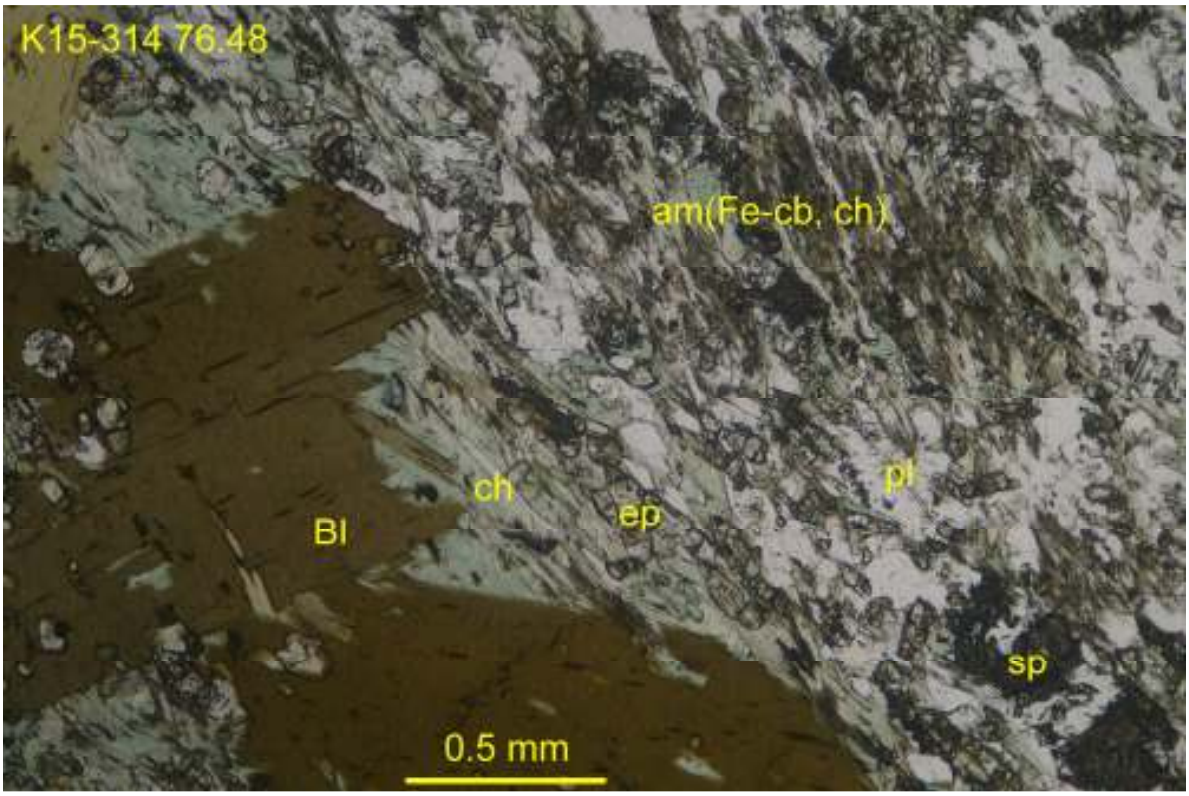
K15-312 57.4-57.52X: margin of coarse, carbonate-rich lens or veinlet in contact with fine-grained, plagioclase-chlorite-epidote rich wallrock containing porphyroblastic biotite; small aggregates of sphene occur in both. Transmitted light, crossed polars, field of view ~3 mm wide.



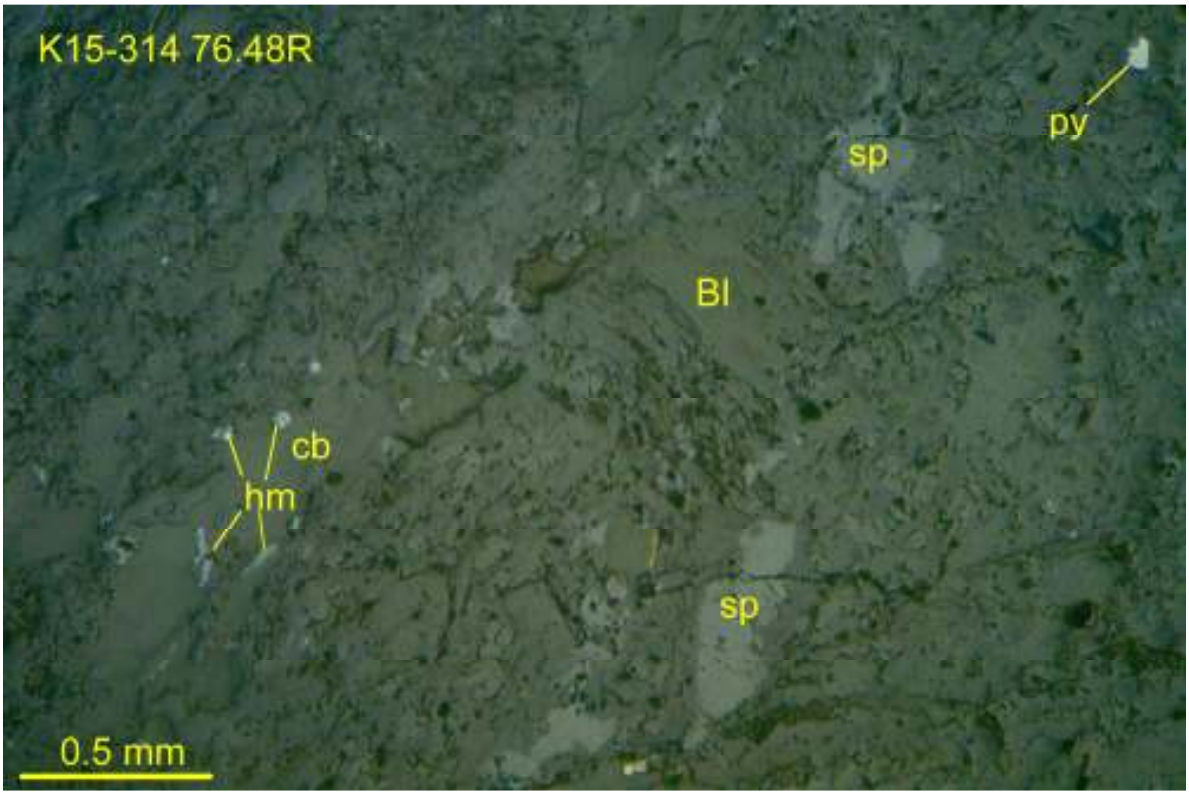
K15-312 72.4-72.55: relict quartz (QZ) and broken Kspar (KF, partly replaced by sericite) in weakly foliated matrix of fine-grained Kspar, quartz and sericite. Transmitted light, crossed polars, field of view ~3 mm wide.



K15-312 72.4-72.55R: margin of foliation-parallel quartz vein with marginal pyrite (associated with muscovite, ms) and minor central carbonate. Reflected light, uncrossed polars, field of view ~3 mm wide.



K15-314 76.48-76.6: relict mafic phenocryst sites (?) composed of either blastic biotite (BI) or relict amphibole (am, largely altered to brownish Fe-carbonate), chlorite and epidote; both are associated with accessory sphene as subhedral aggregates suggestive of former ilmeno-magnetite (?). Transmitted plane light, field of view ~3 mm wide.



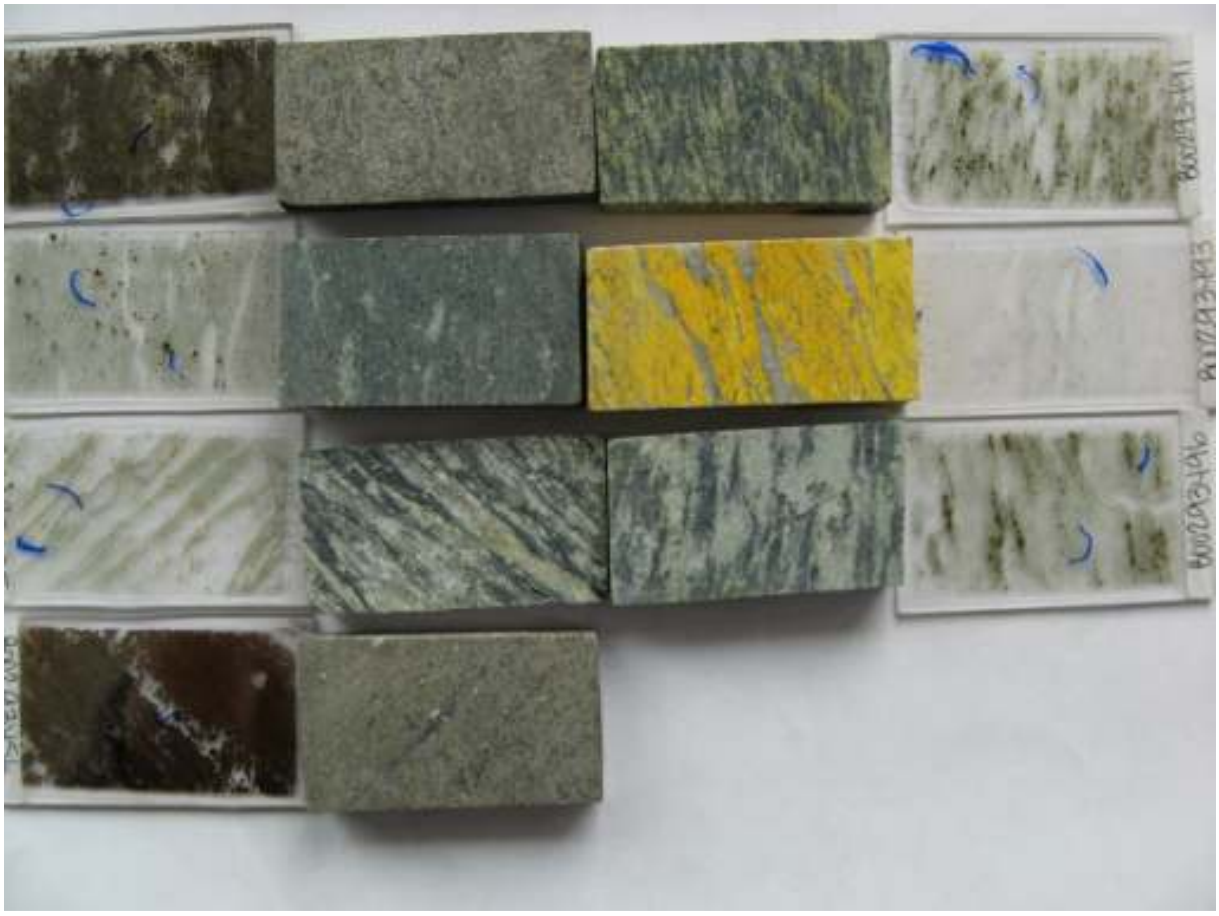
K15-314 76.48-76.6R: traces of pyrite and hematite (hm) associated with sphene (sp) relics and former mafic sites (biotite, relic amphibole, chlorite, local carbonate). Reflected light, uncrossed polars, field of view ~3 mm wide.

Overviews of thin sections and offcuts (blue semi-circles mark photomicrograph locations).









Appendix R: Data disk

Appendix S: Qualified Persons Certificates

GEOLOGIST'S CERTIFICATE

Christopher Hughes
704-900 Jervis Street
Vancouver, B.C., Canada

I, **CHRISTOPHER HUGHES**, M.Sc., do hereby certify that:

1. I am a Consulting Geologist at Equity Exploration Consultants Ltd., a geological consulting and contracting firm with offices at Suite 1510–250 Howe Street, Vancouver, British Columbia.
2. I am a graduate of the University of Auckland, New Zealand with Bachelor of Science (2003) and Masters of Science (2005) degrees in Geology, and I have practiced my profession continuously since 2005.
3. Since 2005 I have been involved in mineral exploration for gold, silver, copper, lead, zinc, iron ore and coal in New Zealand, Australia, Republic of Guinea, Cameroon, Republic of Congo and Canada.
4. I am co-author of the Assessment Report entitled “2015 Geological, Geophysical, Diamond Drilling and Environmental Report on the Kudz Ze Kayah Property” prepared for BMC Minerals (No. 1) Ltd.
5. I was directly involved with the planning, managing and execution of the 2015 exploration and development program at Kudz Ze Kayah and have examined the property which is subject of the Assessment Report.

Dated March 7, 2016 in Vancouver, British Columbia.



_____
Christopher Hughes, M.Sc.

GEOLOGIST'S CERTIFICATE

Ronald J. Voordouw
2327 Mary Hill Road
Port Coquitlam, BC, Canada

I, **RONALD VOORDOUW**, Ph.D., P.Geo., do hereby certify that:

1. I am presently a Project Geologist with Equity Exploration Consultants Ltd, with offices at Suite 1510, 250 Howe Street, Vancouver, B.C.
2. I graduated from the University of Calgary, Calgary, AB, Canada with a Bachelor of Science degree in geology in 1999 and with a Doctorate in geology in 2006 from the Memorial University of Newfoundland, Canada
3. I am a professional geoscientist in good standing (#06962) in the province of Newfoundland and Labrador.
4. Since 2006 I have been involved in natural resource exploration for base metals and gold (2006, 2011 to present); research on PGE deposits (2007, 2008); and regional geological mapping (2009, 2010) in Canada and South Africa.
5. I am a co-author of the assessment report "*2015 Geological, Geophysical, Diamond Drilling and Environmental Report on the Kudz Ze Kayah Property*" prepared for BMC Minerals (No 1) Ltd.
6. I have not examined the property which is the subject of the Assessment Report

Dated March 7, 2016, at Vancouver, British Columbia.



#06962

Signed and sealed: "*Ronald J. Voordouw*"

Ronald J. Voordouw, Ph.D., P.Geo

EQUITY

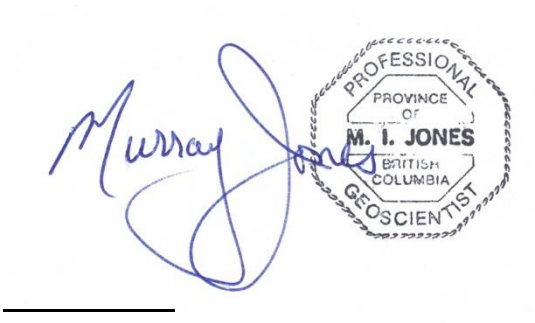
GEOLOGIST'S CERTIFICATE

Murray I. Jones
8606 144A Street
Surrey, B.C., Canada

I, **MURRAY I. JONES**, M.Sc., P.Geo., do hereby certify that:

1. I am a Consulting Geologist with offices at Suite 1510, 250 Howe Street, Vancouver, British Columbia V6C 3R8.
2. I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology in 1982, and a graduate of the University of Ottawa with a Master of Science degree in Geology in 1992.
3. I am a Professional Geoscientist registered in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (#20063).
4. Since 1982, I have been involved in mineral exploration for gold, silver, copper, lead, zinc, cobalt, and tin primarily in Canada, but also in the Solomon Islands and Argentina.
5. I am a Project Geologist with Equity Exploration Consultants Ltd., a geological consulting and contracting firm, and have been with Equity in various capacities since April 1997.
6. I am a co-author of the report entitled “2015 Geological, Geophysical, Diamond Drilling and Environmental Report on the Kudz Ze Kayah Property” prepared for BMC Minerals (No. 1) Ltd. I am responsible for Sections 8.4 and 7.3.
7. The portions of the report I authored are based on field work carried out under my supervision in the period between August 16 and October 25, 2016 and on publicly available and company reports.

Dated March 7, 2016 in Vancouver, British Columbia



Murray I. Jones, M.Sc., P.Geo.

GEOLOGIST'S CERTIFICATE

Henry J. Awmack
1843 Crescent Road
Victoria, B.C., Canada

I, **HENRY J. AWMACK**, P.Eng., do hereby certify that:

1. I am a Professional Engineer with offices at Suite 1510, 250 Howe Street, Vancouver and residing at 1843 Crescent Road, Victoria, British Columbia, Canada.
2. I graduated from the University of British Columbia with a Bachelor of Applied Science (Honours) degree in geological engineering (Mineral Exploration Option) in 1982, and I have practiced my profession continuously since 1982.
3. I am a member in good standing (#15,709) of the Association of Professional Engineers and Geoscientists of British Columbia and a Fellow of the Society of Economic Geologists.
4. Since 1982, I have been involved in mineral exploration for gold, silver, copper, lead, zinc, cobalt, nickel and tin in Canada, Costa Rica, Panamá, Chile, Argentina, Brazil, Peru, Ecuador, Venezuela, Nicaragua, Bolivia, Mexico, Indonesia, China, Sénégal, Colombia, Namibia and Egypt.
5. I am a Senior Geological Consultant with Equity Exploration Consultants Ltd., a geological consulting and contracting firm, and have been with Equity in various capacities since February 1987.
6. I am a co-author of the report entitled "2015 Geological, Geophysical, Diamond Drilling and Environmental Report on the Kudz Ze Kayah Property" prepared for BMC Minerals (No. 1) Ltd. I am responsible for Sections 3.0, 4.0, 5.0, 7.1 and 7.2.
7. I have not examined the property which is the subject of the Assessment Report.

Dated March 7, 2016 in Vancouver, British Columbia

Signed and sealed: *"Henry J. Awmack"*

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Henry J. Awmack, P. Eng.