2011 Assessment Report

For the

HIT Property

Volume I - Report

Mayo Mining Division, Yukon
Yellowknife Mining Recorder
Map sheet 105P05
Hit 1-20, 29-32 Claims, YK
HT 1-2 Claims, NWT
Centre of Work: 129º55'30" W, 63º26'25"N

Prepared for

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Summary

The Hit property is located in the eastern Yukon Territory, 27 kilometers N.N.E. of MacMillan Pass, just west of the Yukon/NWT border. The closest access is by helicopter from MacMillan Pass, a distance of 20 kilometers. Topography varies from moderate to extreme, with several areas impassable due to cliffs and frequent rock and/or snow avalanches.

The Hit Project is located within the Selwyn Basin, a large sedimentary deposit center active from the Precambrian to the Mississippian. The mid-late Cretaceous Tombstone Suite (90-92 Ma), consisting of stocks, sills and dykes of granitic composition has been emplaced within these sediments. Tombstone Suite intrusives are commonly associated with bulk-tonnage gold targets within an east-southeast trending belt which extends from east-central Alaska to the Yukon/NWT border, a total distance of almost 600 kilometres. Significant Yukon targets hosted by, or associated with, the Tombstone Suite include: Brewery Creek, Dublin Gulch, McQuesten/Wayne and Scheelite Dome, while Alaskan discoveries include Pogo, Fort Knox and True North.

The 2011 exploration program consisted of a 141.9 line km airborne magnetic and electromagnetic geophysical survey and a 10 day ground field program focussing on following up the preliminary geophysical data, assessing the property for further mineralization by conducting geological mapping of the areas surrounding the intrusion and mineralization controlling structures. Geochemical soil sampling was completed in areas surrounding the pluton and lower lying areas with poor rock exposure. The crew working on the Hit program consisted of six members, one cook and five field crew. Helicopter support was provided by the Fireweed contract helicopter out of the Colorado Resources Camp, ATAC Resources Camp and Aben Resources Justin project. Samples were sent to AGAT laboratories in Whitehorse for ICP and Au analysis. Select samples were also sent to Vancouver Petrographics for detailed petrographic analysis.

A total of 9 silt samples, 166 rock samples and 925 soil samples (including 46 no samples) were taken during the 2011 exploration program. A total of 21 rock samples were sent away for petrographic analysis. Aside from some follow up sampling on previous finds (Gully Zone; NW area); highlights from the 2011 Hit Program include three new mineralized zones investigated and described in this short report; they are: 1) the drainage coincident with a strong NE magnetic anomaly approximately 1 km southeast of the claim block, the 'Sleet Showing'; 2); the 'J-Rock Showing' : and 3) the 'Babe Ruth Showing'.

The Babe Ruth showing consists of a zone of andradite skarn hosted in altered sediments in an emabayment of the main intrusion. Rock sample results returned as high as 0.6 g/t Au over 0.5 m, 5040 ppm Cu over 0.5 m and 6350 ppb Au from a grab soil samples. The J-Rock showing consists of skarn pods concentrated along a structural corridor. Samples from this area returned as high as 3510 ppm Cu and 1940 ppm Mo from a grab sample. The area also hosts a number of highly anomalous gold in soil values, with 5 samples returning over 250 ppb Au. The Sleet zone consists of a newly discovered intrusive plug with coincident dykes resulting in a garnet rich skarn. Results from this area returned up to 1170 ppm Cu, 75 ppm Mo and 100 ppb Au.

In addition to these zones, there were three areas which returned linear anomalies in gold in soil, one of which returned 8 samples over a 175 interval with an average of 453 ppb. These anomalies tend to be near or at the intrusive contact and are likely the indication of further skarn mineralization.

The airborne geophysical program greatly aided the understanding of the intrusive system and structural setting and more work needs to be done to follow up EM anomalies that came out of the final interpretation.

The petrographical analysis revealed the presence of at least two phases of intrusive suites and the

mineralization present at the showings, which include: pyrrhotite, chalcopyrite, clinozoisite, galena, arsenopyrite and most interestingly, native bismuth and bismuthinite from the Sleet zone.

Although the rock sample results were not overly encouraging for gold, it is apparent that there is a large, widespread mineralization system with multiple controlling factors. This system is rich in metals, including gold, copper, silver and molybdenum as apparent from the soil and rock sample results to date.

The Hit property remains a property of interest and warrants further detailed exploration work to follow up the results of the 2011 program to narrow down drill targets for a phase 2 portion of the 2012 program.

Table of Contents

List of Figures

List of Tables

List of Appendices

INTRODUCTION

Property Description and Location

The property is located in the central Yukon Territory, 27 kilometers N.N.E. of MacMillan Pass, just west of the Yukon/NWT border. The Mactung tungsten Sukarno deposit is situated approximately 23 kilometers to the south. The closest access is by helicopter from MacMillan Pass Airstrip, a distance of 20 kilometers. Topography varies from moderate to extreme, with several areas impassable due to cliffs and frequent rock and/or snow avalanches.

There are, to the best knowledge of the writers, no liens or encumbrances on the claims. The title for the Yukon was researched using the Yukon Mining Recorder online database and the NWT using the NWT Mining Recorder online database.

Table 1a - Hit Property Tenure - Yukon

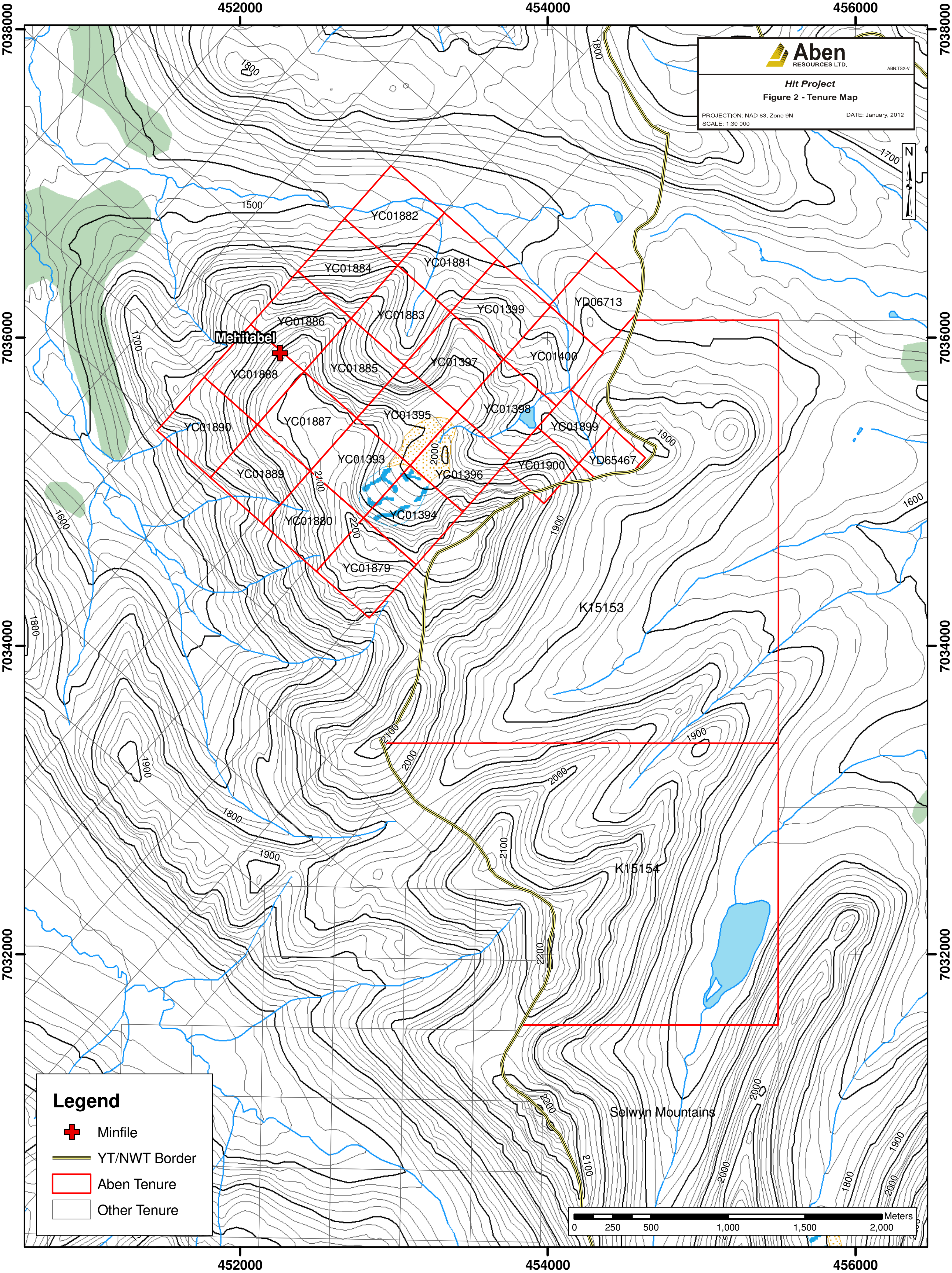
Grant #	Name	#	District	Owner	Record Date	Expiry Date	Area (acres)
YC01393	Hit	1	Mayo	Aben	02/09/1998	02/09/2014	52
YC01394	Hit	2	Mayo	Aben	02/09/1998	02/09/2014	52
YC01395	Hit	3	Mayo	Aben	02/09/1998	02/09/2014	52
YC01396	Hit	4	Mayo	Aben	02/09/1998	02/09/2014	52
YC01397	Hit	5	Mayo	Aben	02/09/1998	02/09/2014	52
YC01398	Hit	6	Mayo	Aben	02/09/1998	02/09/2014	52
YC01399	Hit	7	Mayo	Aben	02/09/1998	02/09/2014	52
YC01400	Hit	8	Mayo	Aben	02/09/1998	02/09/2014	52
YC01879	Hit	9	Mayo	Aben	11/08/1999	02/09/2014	52
YC01880	Hit	10	Mayo	Aben	11/08/1999	02/09/2014	52
YC01881	Hit	11	Mayo	Aben	11/08/1999	02/09/2014	52
YC01882	Hit	12	Mayo	Aben	11/08/1999	02/09/2014	52
YC01883	Hit	13	Mayo	Aben	11/08/1999	02/09/2014	52
YC01884	Hit	14	Mayo	Aben	11/08/1999	02/09/2014	52
YC01885	Hit	15	Mayo	Aben	11/08/1999	02/09/2014	52
YC01886	Hit	16	Mayo	Aben	11/08/1999	02/09/2014	52
YC01887	Hit	17	Mayo	Aben	11/08/1999	02/09/2014	52
YC01888	Hit	18	Mayo	Aben	11/08/1999	02/09/2014	52
YC01889	Hit	19	Mayo	Aben	11/08/1999	02/09/2014	52
YC01890	Hit	20	Mayo	Aben	11/08/1999	02/09/2014	52
YC01899	Hit	29	Mayo	Aben	11/08/1999	02/09/2014	30
YC01900	Hit	30	Mayo	Aben	11/08/1999	02/09/2014	30

Grant #	Name	#	District	Owner	Record Date	Expiry Date	Area (acres)
YD67457	HT	31	Mayo	Aben	10/14/2011	10/14/2012	15
YD06713	HT	32	Mayo	Aben	10/14/2011	10/14/2012	52

Table 1b – Hit Property Tenure - NWT

Grant #	Name	#	District	Owner	Record Date	Expiry Date	Area (acres)
K15153	HT	1	NWT	Aben	10/13/2011	10/13/2013	1185
K15154	HT	2	NWT	Aben	10/13/2011	10/13/2013	845

140°0'0"W
130°0'0"W
120°0'0"W
60°0'0"N
Legend
City
Road
Railway
Provincial / Territorial Border
River
Nunavut
Dawson
Norman Wells
Mayo
Northwest Territories
Hit Project
Yukon Territories
Ross River
Yellowknife
Whitehorse
Alberta
British Columbia
Terrace
Smithers
Prince Rupert
Prince George
N
0
125
250
375
500
Kilometers
Aben
RESOURCES LTD.
ABN:TSX-V
Hit Project
Figure 1 - Property Location Map
PROJECTION: NAD 83 Zone 11N
SCALE: 1:7 500 000
DATE: January 4, 2012


Aben
RESOURCES LTD.
ABN:TSX-V
Hit Project
Figure 2 - Tenure Map
PROJECTION: NAD 83, Zone 9N
SCALE: 1:30 000
DATE: January, 2012
452000
454000
456000
7038000
7036000
7034000
7032000
YC01882
YC01884
YC01881
YC01886
YC01883
YC01399
YD06713
Mehitabel
YC01888
YC01885
YC01397
YC01400
YC01890
YC01887
YC01395
YC01398
YC01899
YC01393
YC01900
YD65467
YC01889
YC01396
YC01880
YC01394
YC01879
K15153
K15154
Selwyn Mountains
Legend
Minfile
YT/NWT Border
Aben Tenure
Other Tenure
Meters
0
250
500
1,000
1,500
2,000

History

The majority of previous work in this area was directed towards assessing a copper-tungsten Sukarno located just inside the NWT border. This showing was initially worked by a subsidiary of Cyprus Mining Corp. during 1970-71. It was re-staked in 1982 by a joint venture between Max Mining and Canada Tungsten, who continued exploration until the end of 1984. The Max/Can tung work resulted in the staking of six claims in the Yukon, over what is now the Hit claims main zone area. Documentation of the historical work is not in the public domain.

In 1998, Bernie Kraft spent 8 days in the project area following up on an RGS Au stream sediment anomaly. Concurrent with this work, 8 Quartz claims were staked over the most promising area by Mr. Kraft on behalf of Eagle Plains Resources.

A two phase program was carried out on the property in 1999. Phase 1 consisted of prospecting in conjunction with rock, silt and soil sampling. This work was designed to cover the favorable calcareous siltstone horizon along the northeast edge of the pluton, where the sediments dip towards the contact. Time was also spent at the Gully Zone to try and further define the existing mineralization. Based on the results from Phase 1 and from historic work on the property a two hole diamond drilling program was completed in late August, 1999.

Drill testing of the Gully Zone consisted of a one set-up, two hole program designed to test the showing at depth, approximately 30 meters along strike to the northwest. Although the favorable calcareous horizon was intersected, results were disappointing, with a maximum value of 2566 ppb Au over a 0.9 meter interval of brecciated and pyrrhotite mineralized limestone (highly calcareous siltstone?) cut by carbonate veins.

The 2006 Eagle Plains Resources exploration program at the Hit Project property consisted of a one day soil sampling program. Samples were collected by Bootleg Exploration Inc. technicians. A total of 42 soil samples were collected along four lines in the area of the Discovery Zone. Crews were mobilized to the property from the MacMillan Pass area using Fireweed Helicopters Bell LongRanger aircraft. After the completion of the survey, crews returned to Whitehorse by vehicle.

The soil survey defined a moderate gold geochemical anomaly in the area south of the Discovery Zone. Anomalous values on the initial analytical run were in the 40 – 70 ppb Au range. Interestingly, the values on the repeats were consistently higher. The anomalous Au values are associated with elevated As, Sb, Pb and Zn and occur along the margins of the intrusive / sediment contact.

Total 2006 exploration expenditures by Eagle Plains Resources on the Hit Project were $9,779.58

The 2009 exploration program on the Hit property consisted of geologic mapping, prospecting and geochemical sampling between August 1-4, 2009.

During the 2009 exploration program, 10 soil samples and 11 rock samples were taken over the 2 days in the field. Of the rock samples taken, the best results was from sample AHHTR005. This sample was taken at a skarn zone close to the contact with a granodiorite dyke. This grab sample returned 3.85 g/t Au, 17.7 g/t Ag and 901 ppm Cu. Grab sample AHHTR003, taken at the Ridge Zone occurrence, returned 0.41 g/t Au, 0.7 g/t Ag amd 674 ppm Cu. One float sample of a small molybdenite bearing quartz vein (AHHTR002) did return 909 ppm Mo, within the intrusive granodiorite but the source was not located. A grab sample from the Gulley Zone occurence (LJHTR001), returned 0.35% Cu but only

2.4 g/t Ag and 0.08 g/t Au.

One soil line was run parallel to an historic line to test for continuity of the results. The only sample with an anomalous value for Au was NTHTD001, which returned 57.6 ppb Au, 1.4 ppm Ag and 197 ppm Cu. The few samples taken in very close proximity to a previous sample that returned 1455 ppb Au did not replicate this result. The sample quality however was quite poor due to little to no soil development and the samples consisted mostly of talus fines.

Total expenditures for the 2009 exploration program were $32,246.84

GEOLOGY

Regional Geology

The Hit Project is located within the Selwyn Basin, a large sedimentary depocenter active from the Precambrian to the Mississippian. The mid-late Cretaceous Tombstone Suite (90-92 Ma), consisting of stocks, sills and dykes of granitic composition has been emplaced within these sediments. Tombstone Suite intrusives are commonly associated with bulk-tonnage gold targets within an east-southeast trending belt which extends from east-central Alaska to the Yukon/NWT border, a total distance of almost 600 kilometres. Significant Yukon targets hosted by, or associated with, the Tombstone Suite include: Brewery Creek, Dublin Gulch, McQuesten/Wayne and Scheelite Dome, while emerging Alaskan discoveries include Pogo, Fort Knox and True North. The granitic intrusion located at the Hit property likely belongs to the Tombstone Suite.

Property Geology

Strata underlying the claims consist of Cambrian aged black shale, argillaceous limestone, calcareous siltstone, green silty slate and rare quartzite, belonging to the Road River Formation. The Hit pluton has extensively hornfelsed these sediments, resulting in the development of widespread skarn and calc-silicate minerals/effects as well as numerous gossans.

Faulting is common in the area of the Hit Claims. The main structural features are NW-trending normal faults and joint sets, the development of which likely occurred during the emplacement of the Hit pluton. Post-dating the NW-trending set are several NE-trending cross-faults. These faults usually exhibit weak epithermal characteristics, and often contain anomalous gold values. A third set of faults consists of small-scale, flat-lying structures. This type is best recognized in the area of the main showing and has caused several slight displacements of the auriferous beds.

The Hit pluton contains several phases, which vary from a fine-grained granodiorite border to a coarse porphyritic core. Weak porphyry-style molybdenum mineralization has been noted within the core area. Alteration is limited to bleaching and the development of trace sericite along vein margins and adjacent to fractures. Contacts with the surrounding sediments are steep where exposed.

Alteration, Mineralization and Structure

Highly anomalous gold values have been returned from several mineralized showings located within the pluton and its hornfels aureole. Highly anomalous gold values within silt and talus/soil samples suggest additional mineralized showings and strike extensions to the existing occurrences.

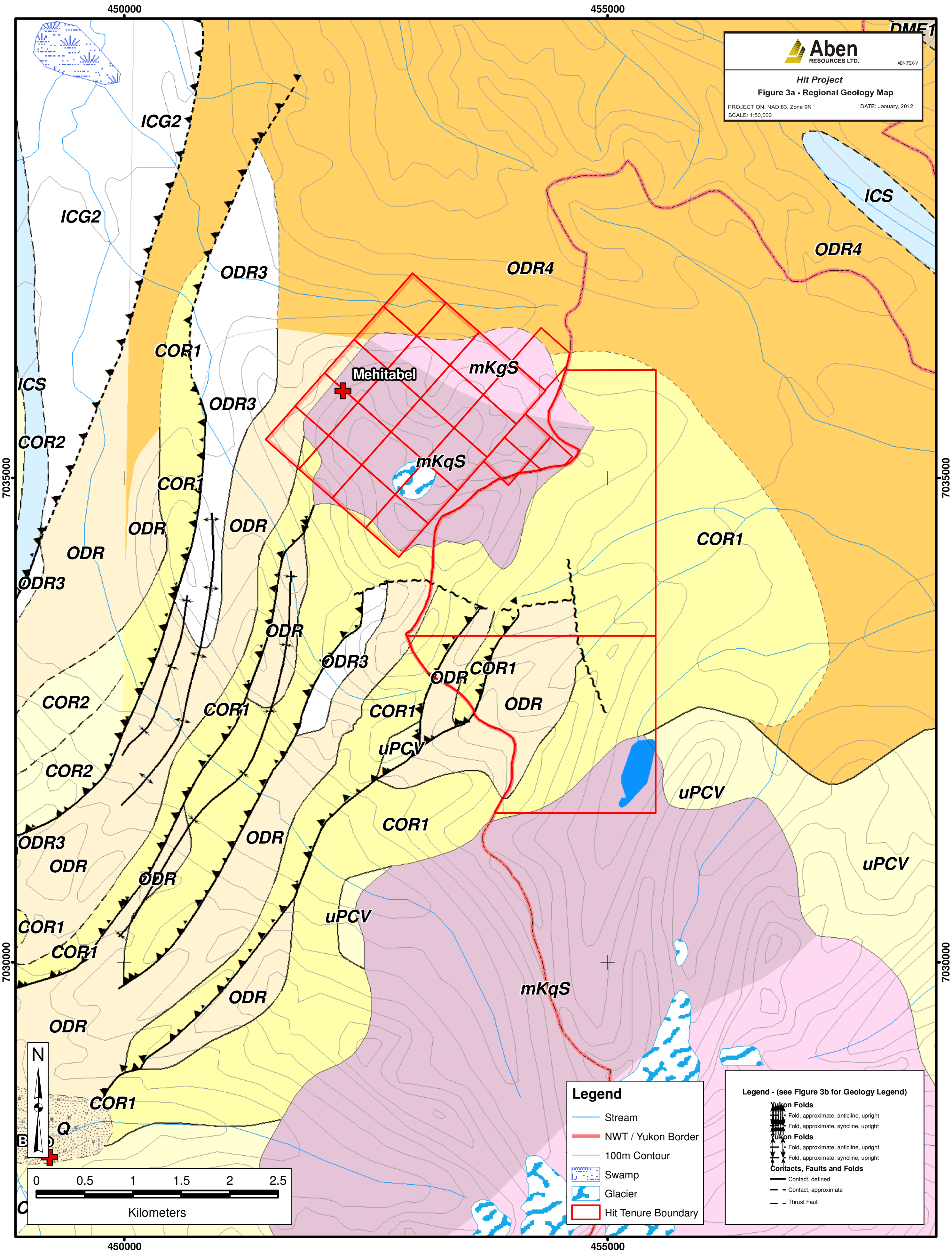
Best values to date have been returned from replacement type mineralization within interbedded, hornfelsed, calcareous siltstone and green silty slate. Five consecutive channel samples taken across the main showing (Gully Zone) by Miner River/Eagle Plains in 1998 returned a weighted average of 7.85 g/t Au over 7.0 metres, while subsequent sampling of the same interval by Placer Dome returned 6.93 g/t Au over 7.0 metres. Chip samples taken on either side of the zone returned only traces of gold. Potential for a parallel zone exists within the overburden covered footwall of the showing. Anomalous elements in relative order of abundance are: calcium, arsenic, antimony and tungsten. A stream sediment sample taken approximately 80 metres downstream from this zone returned 606 ppb Au; re-sampling of this site later in the season returned 511 ppb Au. A high value of 10834 ppb Au in silt was returned from a tributary stream approximately 150 metres east of the main showing. This high value is likely a result of strike extensions of the main showing.

Numerous NE-trending, steeply dipping faults occur across the property. They often exhibit epithermal characteristics such as weakly developed, banded chalcedonic quartz and minor vuggy veining, and are best developed within granite. A chip sample from the Ridge Zone returned 1298 ppb Au over 6.0m, while selected grab samples of what was thought to be the best mineralized samples returned only traces of gold. A single soil sample line across the zone 100 metres along strike to the SW of the showing returned values up to 383 ppb Au. Soil data as well as an increasing abundance of fault zone material suggests a widening of the structure in this direction.

Skarn type mineralization is widespread throughout the claim area. Most occurrences are restricted in size except for the zones which occur just inside the NWT, and within an area along the NW edge of the pluton. The NWT showings consist of at least four pyrrhotite mineralized horizons 1.0 to 8.0 metres wide and traceable for at least 100 metres, occurring within a 100 metre stratagraphic interval. High copper and tungsten values are likely attainable, unfortunately, gold values are only slightly anomalous with a peak of 168 ppb Au over 3.0 metres. Along the NW edge of the pluton are several heavily mineralized skarn pods/horizons within a large area of pyrrhotite mineralized (2%) hornfelsed sediments (Discovery Zone). Samples of skarn returned up to 3482 ppb Au from a representative grab sample, and up to 854 ppb Au over a 2.0 metre width. A line of talus fine samples taken at 50 metre spacings along the base of the slope below the showings returned 12 consecutive samples with values from 129 ppb to 1097 ppb Au. Further anomalies to 904 ppb Au occur along the line, and suggest additional mineralized occurrences.

The intrusion is host to several styles of mineralization, all of which would be expected within a Fort Knox type system. Grades of up to 22.8 g/t Au have been returned from several 2.0 to 6.0 centimetre wide quartz-sulphide (arsenopyrite dominant) veins. The distribution and extent of the known veins suggests they are currently of mineralogical interest only. Sheeted veining and highly fractured areas with associated anomalous gold values were found in two main locations within the pluton. Mineralization is weak and consists of pyrite-pyrrhotite and occasionally molybdenum within veins and fractures, and as wallrock disseminations. Alteration is also weak, and consists of trace sericite with some minor bleaching of wallrock adjacent to veins and fractures. Values up to 719 ppb Au were returned from a 2.0 metre chip of fractured granite, while a representative grab sample of a 1.0cm qtz-py-mo vein returned 793 ppb Au. Other anomalous elements include bismuth and occasional copper. Some clustering of anomalous intrusive hosted gold values is noted along the NW edge of the stock in the vicinity of the Discovery Zone skarn horizons.

Although drill testing of the Gully Zone in 1999 intersected the favorable calcareous horizon, results were disappointing, with a maximum value of 2566 ppb Au over a 0.9 meter interval of brecciated and pyrrhotite mineralized limestone (highly calcareous siltstone?) cut by carbonate veins.


Aben RESOURCES LTD.
ABN:TSX-V
Hit Project
Figure 3a - Regional Geology Map
PROJECTION: NAD 83, Zone 9N
SCALE: 1:50,000
DATE: January, 2012
450000
455000
7035000
7030000
ICG2
ICS
COR2
ODR3
ODR4
COR1
ODR
mKgS
mKqS
uPCV
Mehitabel
Q
DME1
N
0
0.5
1
1.5
2
2.5
Kilometers
Legend
Stream
NWT / Yukon Border
100m Contour
Swamp
Glacier
Hit Tenure Boundary
Legend - (see Figure 3b for Geology Legend)
Yukon Folds
Fold, approximate, anticline, upright
Fold, approximate, syncline, upright
Yukon Folds
Fold, approximate, anticline, upright
Fold, approximate, syncline, upright
Contacts, Faults and Folds
Contact, defined
Contact, approximate
Thrust Fault

CENOZOIC

Quaternary

Q	*QUATERNARY: unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluviatile silt, sand and gravel, and local volcanic ash, in part with cover of soil and organic deposits*

MESOZOIC

Cretaceous

mKqS	*SELWYN SUITE: equigranular to porphyritic (K-feldspar) biotite hornblende muscovite granite, quartz monzonite and granodiorite; porphyritic biotite hornblende granite with large smokey grey quartz phenocrysts and locally K-feldspar phenocrysts*
mKgS	*SELWYN SUITE: Resistant, blocky, fine to coarse grain, equigranular to porphyritic biotite quartz monzonite and granodiorite and minor quartz diorite; minor luco-quartz monzonite and syenite.*

PALEOZOIC

Carboniferous / Permian

CPT	*TSICHU: thin to medium bedded, siliceous calcarenite, dolostone, sandy dolostone and minor grey quartzite; buff and grey weathering, thick bedded, dark grey bioclastic limestone; black to silvery shale; minor chert, and chert pebble conglomerate*
CPMC	*MOUNT CHRISTIE: burrowed, interbedded, greenish-grey cherty shale and green shale; thin to medium bedded, light grey-green to black chert; black siliceous slate and siltstone; minor quartzite, limestone and dolostone; locally abundant, large, grey barite nodules*

Mississippian

MK	*KENO HILL: massive to thick bedded quartz arenite; thin to medium bedded quartz arenite interstratified with black shale or carbonaceous phyllite; local scour surfaces and shale intraclasts; locally foliated and lineated*

Devonian / Mississippian

DME3	*SAPPER: massive flesic to intermediate volcanic flows, tuffs and subvolcanic plug(s); locally highly altered; greenish chert and minor black slate; quartz eye quartz-sericite chlorite phyllite; local vesicular or amygdaloidal basalt, locally pillowed*
DME1	*EARN: thin bedded, laminated slate with thin to thickly interbedded, fine to medium grained, chert-quartz arenite and wacke; thick members of chert pebble conglomerate; black siliceous siltstone; nodular and bedded barite; rare limestone. Includes Imperial Formation turbidites.*
DME2	*EARN: silvery-blue weathering, black shale, argillite, cherty argillite and thin bedded chert; nodular and bedded barite; rare limestone (Earn Gp., Portrait Lake and Prevost ; may locally include beds as old as Early Devonian). Includes Besa River and Canol Formations.*
DME	*EARN: complex assemblage of submarine fan and channel deposits (1), (5) within black siliceous shale and chert (2), (4) and including separated small occurrences of felsic volcanic rocks (3); barite common, and many occurrences of stratiform Pb-Zn*
DME2fl	*Fetid Limestone - thin bands (>2m thick) of black, fine crystalline limestone of abiotic origin, generally found in close proximity to DME2b. Contains ~10 cm concretions of coarse crystalline limestone*
DME2b	*Barite - >10m thick barite horizons that occur throughout the unit and are laterally continuous along strike for a minimum of 3 km. These horizons contain barite in two forms: 1) Light colored barite nodules that are approximately 3 – 4 mm thick and up to 3 cm long within a dark colored siltstone matrix and 2) Barite laminations in a light gray siltstone matrix*
DME2s	*Siltstone - dark brown weathering siltstone. Some horizons contain coarse – very coarse matrix supported clastic fragments of. The member is dark colored when fresh and commonly breaks into small pencil like fragments in areas with pervasive cleavage.*
DME2es	*Eggshell - silver – blue – grey weathering siltstone and mudstone with interbedded horizons of black weathering carbonaceous shale. Fresh surfaces range from dark grey to black with increasing carbon content. Siltstones are typically platy while mudstones are massive or fissile. Occasional light gray weathering carbonate beds up to 5 m thick occur intermittently throughout the unit.*

Devonian

DH4	*Funeral: buff-orange weathering thin to medium bedded silty limestone*
DH3	*HUME: dark grey, finely crystalline fossiliferous, limestone and minor shale (Hume Formation)*
DH2	*HUME: massive, thick bedded, fine to medium grained, light grey weathering limestone (Nahanni Formation)*
DH1	*HUME: buff-brown weathering, argillaceous to silty, dark grey, fine grained limestone, platy to thin bedded; minor intercalated, irregularly banded, orange weathering dolostone and thin beds of resistant, orange-brown weathering limestone; richly fossiliferous (Headless Formation)*
DL	*LANDRY: thin to very thick bedded, resistant, light grey weathering, medium to light grey and brownish crypto-grained limestone; massive and thick bedded bioclastic, locally reefoid limestone; black, platy limestone*
DA	*ARNICA: thin and thick bedded, dark grey to black, commonly laminated dolostone; minor light grey dolostone and light grey to medium grey weathering, dark grey to black limestone; striped dolostone; local massive vuggy breccia*
Db	*BEAR ROCK: Dolomite, breccia, anhydrite, gypsum*
DB	*GRIZZLY BEAR: limestone, white-grey weathering, cliff forming, blocky partings, massive, fine to medium crystalline; scattered corals, brachiopods, bryozoans and twin canal crinoids.*
DN	*NATLA: dark grey weathering, platy, thin bedded, recessive, sooty limestone, in part crinoidal; uncommon beds of massive crinoidal limestone*
uDI	*IMPERIAL: rusty weathering, dark grey shale and siltstone; generally in lower part of succession overlain by dark grey fine grained lithic sandstone and siltstone; siltstone and sandstone commonly as sharp-based graded beds from turbidites.*
D	*Undifferentiated Devonian Rocks*

Lower Devonian

IDS	*SOMBRE: light and medium grey, even bedded, fine grained dolostone; silver-grey dolostone; locally three members of light grey dolostone (lower); dark grey dolostone, in part crinoidal (middle); alternating light and dark grey dolostone (upper)*
IDC	*CAMSELL: grey, black and white weathering dolostone; light grey and buff weathering, massive, porous limestone breccia*

Silurian / Devonian

SDD	*DELORME: buff to orange weathering, well bedded, buff, light grey, brownish grey and dark grey, very fine grained dolostone; platy to flaggy, wavy banded, blue-grey, silty limestone with rare thin beds of buff weathering dolostone*
OSK4	*KINDLE: thick bedded to massive, light grey dolostone and limestone; dark grey, fetid limestone; includes undifferentiated beds as young as Lower Devonian*
OSK2	*KINDLE: thick bedded, black, coarse grained dolostone and interbedded grey weathering, laminated dolostone with nodules and bands of black chert; medium grey weathering, platy, grey argillaceous limestone with minor chert shale; massive and reefoid dolostone (Whittaker and Nonda Formations)*
OSK1	*KINDLE: thick bedded, dark grey to black and minor light grey weathering dolostone; locally massive, vuggy and reefoid; minor chert (Mt. Kindle Formation)*

Ordovician / Silurian

ODR4	*CLOUDY: Thin to medium bedded, sooty grey weathering, dark grey lime mudstone with up to 50% black chert in thin beds, lenses, and cross-cutting amorphous bodies.*
ODR2	*ROAD RIVER - STEELE: rusty dark green to orange buff weathering, pyritic, burrowed, thin to thick bedded, argillite and dolomitic siltstone with members of black shale and chert; minor bright orange dolostone*
ODR1u	*DUO LAKE: Predominantly grey weathering, black calcareous shale, thin bedded to massive limestone and up to 50% chert. A horizon of skeletal limestone conglomerate consists of clasts of coral boundstone and skeletal wackestone in a limestone matrix, and is locally dolomitized, thickly bedded and fines upward to a laminated top.*
ODR1m	*DUO LAKE: similar to ODR1l but includes up to 60% ash grey weathering limestone in medium to thick beds, interstratified with black calcareous shale and black siliciclastic siltstone and shale.*
ODR1l	*DUO LAKE: black, recessive, siliciclastic mudstone, shale, siltstone, and rare very fine sandstone. Commonly finely laminated. Abundant graptolites and trace pyrite. Very rare thin black chert beds.*
ODR1	*ROAD RIVER - SELWYN: black, gun-blue, or silvery white weathering, black graptolitic shale and black chert; resistant, grey weathering, thin to medium bedded, light grey to black, greenish grey or turquoise chert; minor argillaceous limestone (Road River Gp., Duo Lake and Elmer Creek)*
ODR	*ROAD RIVER - SELWYN: black shale and chert (1) overlain by orange siltstone (2) or buff platy limestone (3); locally contains beds as old as Middle Cambrian (4); correlations with basinal strata in Richardson Mountains include: ODR1 with CDR2 (upper part) and ODR2 with CDR4 (Road River Gp.)*

Ordovician

OS	*SUNBLOOD: mainly buff, rouge and light grey weathering platy dolostone and limestone; local interbedded light and dark grey, fine crystalline and white coarse crystalline dolostone at base; rare thick beds of light blue-grey limestone*

Cambrian to Devonian

CSM6	*MARMOT: grey to dark grey weathering, dark volcanic rocks, many partly serpentinized, brown weathering grey-green limy tuff and argillite, and thin bedded brown limestone*
CSM5	*MARMOT: massive brown to green, basic lapilli tuff, breccias, flows, sills, and dykes; intraclast breccia and conglomerate; brown weathering, green to grey, medium to very thick bedded volcaniclastic sandstone*
CSM4	*MARMOT: dark green to brown or orange weathering mafic, vesicular and amygdaloidal volcanic flows, carbonate cemented hyaloclastic breccias and volcanic derived sandstone, grit, and pebble and cobble conglomerate*
CSM2	*MARMOT: amygdaloidal basaltic flows and breccias; mostly subaqueous; thick, flow banded rhyolite and felsite, includes breccia and tuff*
CDR	*ROAD RIVER - RICHARDSON: black graptolitic shale, limestone and minor chert with mappable subdivisions (1) through (5) in Richardson Mtns.; correlations with Selwyn Mtns. include: lower (2) with COR, upper (2) with OSR1, (4) with OSR2 and (5) with lower DME2 (Road River)*
CDR3	*ROAD RIVER - RICHARDSON: lower - pale yellow to grey weathering, thin to medium bedded, shaly limestone with minor shale interbeds; minor chert and intraclast conglomerate; upper - black chert, graptolitic shale, silicified limestone and minor intraclast conglomerate*
CDR2	*ROAD RIVER - RICHARSON: lower - pale yellow to grey weathering, thin to medium bedded, shaly limestone with minor shale interbeds; minor chert and intraclast conglomerate; upper - black chert, graptolitic shale, silicified limestone and minor intraclast conglomerate*
CDB1	*BOUVETTE: grey and buff weathering dolomite and limestone, medium to thick bedded; white to light grey weathering, massive dolomite; minor platy black argillaceous limestone, limestone conglomerate, and black shale; massive bluish-grey weathering dolostone*

Cambrian / Ordovician

COR2	*RABBITKETTLE: as in COR1, but may include Middle Cambrian and Middle Ordovician beds undivided*
COR1	*RABBITKETTLE: thin bedded, wavy banded, silty limestone and grey lustrous calcareous phyllite; limestone intraclast breccia and conglomerate; massive to laminated grey quartzose siltstone and chert and rare black slate; local mafic flows, breccia and tuff*
COF2	*FRANKLIN MOUNTAIN - BROKEN SKULL: Grey to black dolostone (lower Broken Skull); dark grey to black limestone (upper Broken Skull); local basal member of maroon dolostone and sandstone*
COF1sk	*Skeletal: finely crystalline, light grey, heavily silicified dolostone. Silicification commonly consists of highly irregular, bedding-parallel layers wich are interpreted to derive from primary quartz-sandy/silty beds and laminations*
COF1o	*Ooid: silicified ooid dolograinstone. Finely crystalline, light grey to brownish grey weathering, light to medium grey, massive to medium bedded, trough and planar-tabular cross-bedded.*
COF1ss	*Sandstone: well-bedded, cross-bedded to parallel laminated to non-laminated, microcrystalline to finely crystalline, medium- bedded dolostone to dolomitic quartz arenite. Brownish to yellowish grey weathering, medium grey on fresh surfaces. Common meters-wide channels.*
COF1	*FRANKLIN MOUNTAIN: Upper Cambrian and Ordovician grey, argillaceous, sandy and silty dolostone; basal red beds member consists of sandstone, red shale, conglomerate, dolostone and chert*

Cambrian

mCH	*HESS RIVER: shale, black, pyritic, unfossiliferous; occurs as interstratified thick units of black calcareous shale and rusty black shale*
mCR	*ROCKSLIDE: recessive, dark grey weathering, laminated, platy calcareous shale and silty, dark grey fine to crypto grained limestone; minor thin beds of light brown to grey weathering, platy, dark, crypto grained limestone and rare bands of buff dolostone*
lCSss	*Sandstone: dolomitic quartz arenite to quartz-sandy dolostone with skeletal components. Lamination, current ripples and cross-bedding are common in quartz-rich beds. Beds range from very thin to medium, rapid facies changes are evident from horizontal variations in lithology.*
lCSr	*Recrystallized: finely crystalline, cliff formting dolostone alternating with dark mottled dolostone. The cliffs are buff weathering, light grey dolostone with stylolitic partings. Sparse millimeter-scale vugs contain dolomite and less commonly barite and pyrite. Pyrite is disseminated in trace amounts. Between cliffs are intervals of cover or recessive mottled dolostone exposed as rubble.*
lCSo	*Ooid: ooid grainstone sandwiched between two skeletal wackestone intervals. The lower wackestone interval consists of dark, argillaceous, mottled limestone to dolostone. The ooid interval consists of a 50-70 m, grey weathering, light grey variably dolomitized limestone. The upper interval is a orangy-brown weathering, grey, fine crystalline skeletal wackestone.*
lCSsk	*Skeletal: buff weathering, medium grey, finely crystalline, vuggy dolostone with destruction of primary fabric. Dolomite-filled vugs commonly have fenestral fabric. Ghost laminations are common.*
lCS	*SEKWI: limestone, locally wavy bedded and nodular; limestone conglomerate slope breccia; massive grey dolostone; medium to thick bedded quartz sandstone; purple siltstone; bright orange weathering, fine crystalline dolostone*
lCG2	*GULL LAKE: dark green massive to fragmantal mafic metavolcanic and vocaniclastic rocks; siltstone and argillite*

PRECAMBRIAN

Upper Proterozoic to Lower Cambrian

uPCV	*VAMPIRE: dark brown weathering. thin bedded, argillaceous, fine grained sandstone and siltstone, minor interbedded medium to coarse grained, white to light grey orthoquartzite; phyllite, slate, and argillite*
PCB1u	*BACKBONE RANGES: light grey weathering, pale, medium bedded quartz arenite, very fine grained and speckled with fine pale brown spots. Minor very thin bedded, light brown siltstone, rusty weathering very fine glauconitic sandstone and orangey brown, recessive, laminated dolomitic sandstone.*
PCB1m	*BACKBONE RANGES: thinly bedded dolomitic quartz arenite to dolomitic siltstone and intraclast and quartzite-pebble dolostone conglomerate. Brownish to greyish weathering, pale grey to pinkish fresh. Fine grained and finely to microcrystalline. Commonly laminated and cross laminated. Semi-recessive and flaggy.*
PCB1l	*BACKBONE RANGES: Grey to brown weathering quartzite, white to purplish on fresh surfaces. Medium to thick bedded, common cross beds or parallel laminations. Locally speckled with spots of very fine iron oxide.*
PCB1	*BACKBONE RANGES: light grey, red-brown, white, and pink, thick bedded, medium to coarse grained orthoquartzite; minor brown or maroon phyllite, platy siltstone, silty shale, thin bedded, fine grained quartzite, grey limestone and sandy to pebbly limestone.*

Upper Proterozoic

uPRl	*RISKY: buff grey to buff yellow weathering poorly bedded, in part pisolitic dolostone, in part porous fine grained dolostone; varicoloured quartzite, siltstone and shale, minor silty and sandy dolostone*
uPS	*SHEEPBED: recessive, black weathering shale and siltstone; minor quartzite and limestone*
uPK	*KEELE: orange and brown weathering, commonly silty and sandy dolostone, in part well laminated and flaggy; limestone, cross bedded pebbly quartzite and conglomerate; local minor brown weathering diamictite at base; distinct white dolostone member at top*
uPR3	*RAPITAN: thin bedded, brown weathering siltstone interbedded with sandstone, granule to pebble conglomerate, and light grey weathering dolostone (Rapitan Gp., Twitya , Knorr Range (P1) succession)*
uPL	*LITTLE DAL: thin bedded, light grey to buff and orange weathering, fine grained dolostone; rare shale and argillite; upper part dominated by orange weathering stromatolitic dolostone and massive vuggy and craggy dolostone and includes gypsum (Little Dal Gp.)*
H5	*UNNAMED MAP UNIT: Shale, partly red nodular limestone dolomite, marine*
H5c	*UNNAMED MAP UNIT: Cliff forming limestone and dolomite*
H5g	*UNNAMED MAP UNIT: Shale, partly red nodular limestone dolomite, marine, partly gypsum*

Middle to Upper Proterozoic

uPG	*Basal intrusions; dykes and sills of gabbro, greenish-black, medium-grained*
mPH5r	*Unnamed map unit H5 H5r: reefs of stromatolitic limestone and dolomite in lower division*
mPH1	*Unnamed map unit H1: dolomite, minor chert; marine*
mPT	*Shale, sandstone, dolomite; marine and (?) nonmarine; gabbro sills*
muPK	*KATHERINE: mature, very fine grained, thin to very thick bedded, brown, greenish grey and white orthoquartzitic sandstone with recessive intervals of dark grey to black shale; rare stromatolitic dolostone*

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Hit Project

Figure 3b - Regional Geology Legend*

*Geology after Gordey and Makepeace, 1999, GSC

2011 Exploration Program

Prior to the fall field program, a 141.9 line km airborne magnetic geophysical survey was completed over the property and prospective ground across the border into the NWT by contracting geophysical company Fugro Airborne Services. Preliminary data of total magnetics and two levels of resistivity were received before the field program and aided with targeting on the ground.

The crew working on the Hit program consisted of six members, one cook and five field crew. The crew mobilized to Whitehorse on the 10th of September. All supplies were gathered and packed up on the 11th and the trip to staging area at MacMillan Pass started miday on the 12th. The crew arrived at MacPass on the evening of the 13th and mobed into camp and set up on the 14th. Helicopter support was provided by the Fireweed contract helicopter out of the Colorado Resources Camp.

A fly camp was set up on the property, where ground operations worked out of from the 15th to the 22nd of September. The crew mobilized out of camp and drove to Ross River on the 23rd. Helicopter support was provided by Fireweed, with a 500 from the ATAC Nadaleen camp and a 206 L3 from the Justin project camp. The crew drove the rest of the way to Whitehorse and organized gear on the 24th. Samples were sent to AGAT laboratories in Whitehorse for ICP and Au analysis.

The goals of the project were to assess the property for further mineralization as described in previous programs as well as explore the area surrounding the intrusion for more mineralization styles. Follow up work was greatly aided by the data acquired from the airborne geophysical survey. Delineation of follow up targets for further detailed exploration and diamond drill targets for a 2012 program was the main goal of the project.

Total expenditures for the 2011 project were $206,856.88.

2011 Exploration Program Results

Geology

Geology on the Hit Property comprises a mid-Cretaceous ‘Selwyn Suite’ intrusive plug covering 80% of the claim block – generally circular in plan-view and centrally located with respect to the present Hit Claim Block. Detailed notes include a small satellite plug with a roof pendant(s) immediately to the east; and projections/embayments of the main plug in the south. The ‘top’ of the intrusive plug in the central claim area is eroded away – ‘un-capped’. The main plug is approximately 2 km in diameter and intrudes Upper Cambrian ‘Rabbitkettle’ basinal interbedded thin/laminated layers of off white-grey limestone and grey to grey-brown siltstone; and Ordovician and Lower Devonian ‘Road River’ basinal black shale and chert. Spacially; the Rabbitkettle Fm. is observed along the outside edge of the intrusive plug – along it’s southern half; the Road River Fm. is mapped outside along the north edge of the intrusive plug. Skarn and calc-silicate derivatives of these two formations as contact rocks are observed along it’s roughly circular surface outline. Another large pluton some 7.5 km in diameter 2.5 km to the SSE adds to a favorable geological environment - that is: the area occupied by Rabbitkettle/Road River formations between the two plugs.

Field descriptions of the property intrusive plug include a fresh non-magnetic hypidiomorphic-granular, biotite (+/-hornblende) granodiorite to quartz monzonite, quartz-rich variants and local granite (?) near the east satellite plug. Local allotriomorphic, weak porphyritic, and finer grained variants were also described near contacts with the sedimentary rocks. The plug is locally altered in the east and south in small zones along roof pendents and projections as described below.

Airborne resistivity (7200 Hz) resolves a NNWerly feature bisecting the property intrusive plug. Deeper penetrating resistivity (900 Hz) confirms embayments and projections off the south end of the claim block; and the irregular smaller satellite plug immediately to the east of the intrusive plug. Total field airborne magnetics reveals that much of main body of the intrusive plug is transparent, however, several moderate scattered ‘magnetic blemishes’ appear within and about the property intrusive plug. A strong NE trending anomaly is observed ~1 km SE off the claim block suggesting hornfelsed sediments (see Geophysical Results section below).

Mineralization-Alteration-Structure

Aside from some follow up sampling on previous finds (Gully Zone; NW area), highlights from the 2011 Hit Program include three new mineralized zones investigated and described in this short report: 1) the drainage coincident with a strong NE magnetic anomaly approximately 1 km southeast of the original claim block, the 'Sleet Showing'; 2); the ‘J-Rock Showing’ : and 3) the ‘Babe Ruth Showing’.

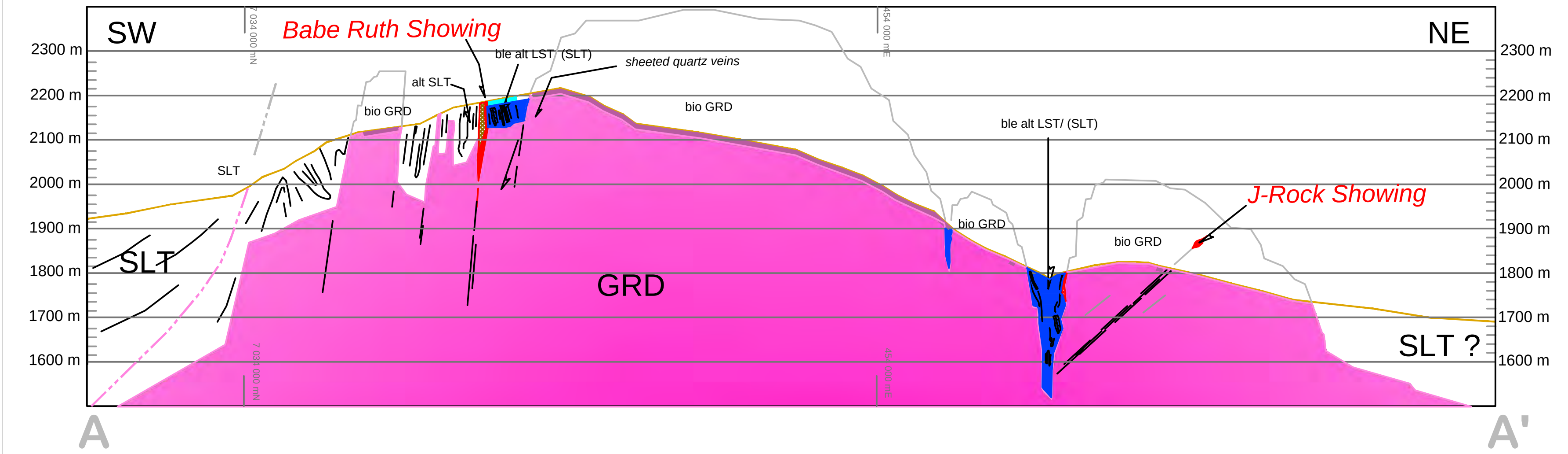
A relatively strong elongated magnetic anomaly 250 x 3000 metres lies near-coincident with a NE trending drainage approximately 1 km southeast of the claim block. Hornfelsed sediments with 3% pyrrhotite-pyrite trend NE and dip moderately to the NW. Several dykes were described cutting the sediments including a 10 metre wide, N-trending, quartz-rich dyke with 3% sulphides (pyrrhotite-pyrite). The contact with the sediments were highly altered and include quartz-carbonate breccia and pyrite-pyrrhotite-arsenopyrite mineralization. Fault zones contribute to a sheared area of 30-40 metres. Two other NE trending sub-parrallel smaller dykes were described: one similar to the mineralogy of the granodiorite plug on the property; the other appears rhyolitic. Another N-trending dyke 10-12 metres wide in the area appears to be associated with garnet-skarn, silicification and chalcopyrite-molybdenum mineralized, named the 'Sleet showing' – the extent is yet to be determined. This showing is also associated with a newly discovered small intrusive satellite plug of unknown size. More work is required in the area to further define the intrusive plug and extent of mineralization.

The J-Rock Showing, located 300 metres east of the present claim block, comprises a structural ‘corrridor’ of rusty weathering, high density parallel planar fractures (10/m) approximately 3 metres wide – the corridor trends SE, moderately dipping SW, and is hosted in the biotite granodiorite satellite plug. It was followed in outcrop for 200 m where it intersects a NE trending, rusty weathering roof pendant of banded altered, locally skarnified interbedded siltstone/limestone. Intense, 1-2 m wide, limonite-manganese coated massive pyrrhotite (skarn) pods with trace to 2% blebby chalcopyrite was described within the granodiorite; also 200 m away, within and along the margins of the roof pendent. The granodiorite shows a weak to moderate potassic & local argillic alteration along fractures and near the contact with the roof pendant, respectively.

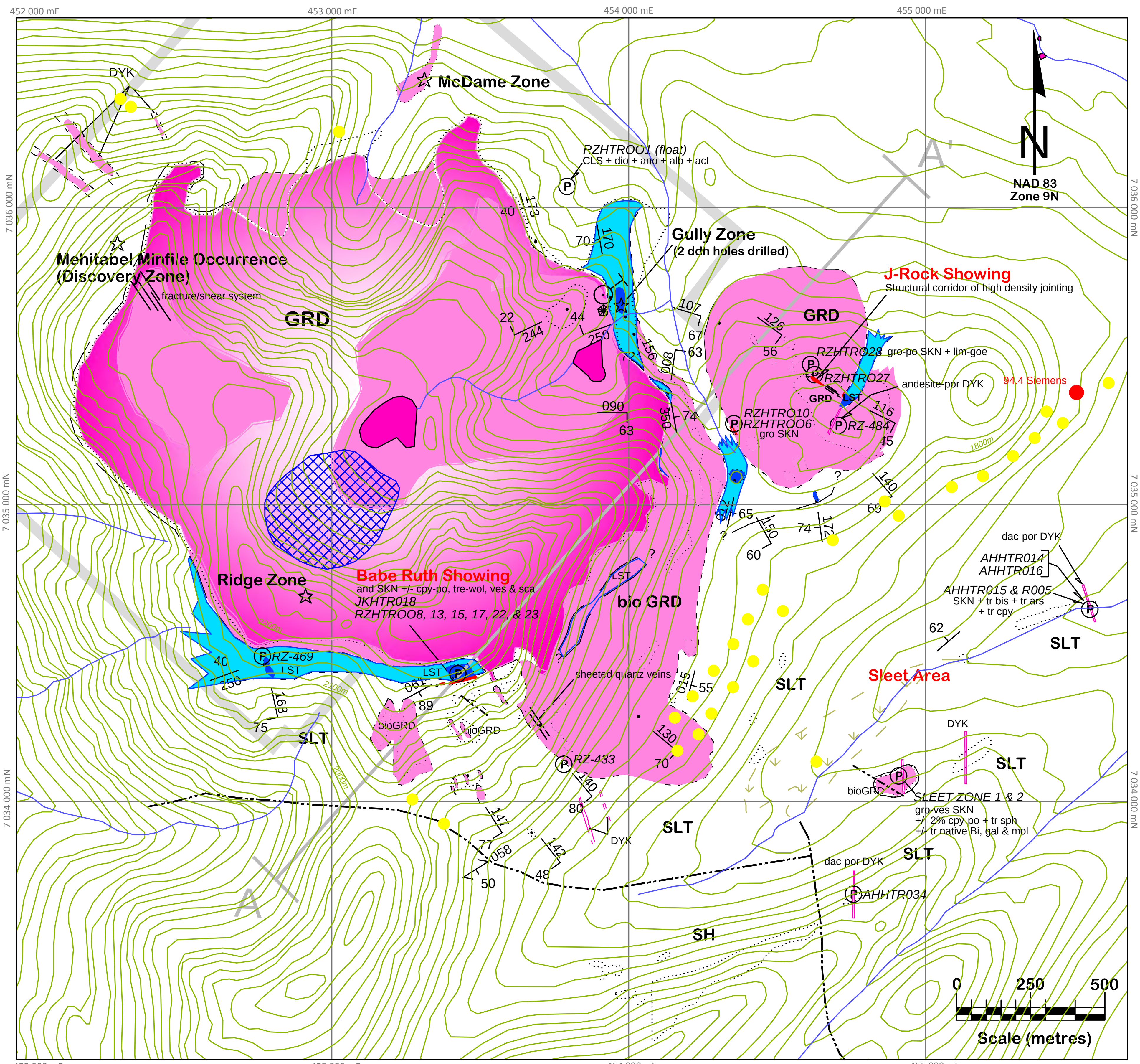
The Babe Ruth Showing, located approximately 300 metres SE of the present claim block, is a gossanous area approximately 40 x 60 metres of layered and zoned andradite-calc-silicate-pyrrhotite-chalcopyrite skarn hosted in the Rabbitkettle Formation - at this location the formation of interlaminated limestone/siltstone has been skarnified to 1-10 cm bands of brittle white and brown conchoidally fracturing very fine grained calc-silicate rock – the bands comprise variable amounts of white silica-tremolite-calcite +/- minor amounts of diopside –garnet, pyrrhotite and trace chalcopyrite in the darker bands. It is situated within a southern embayment of the biotite granodiorite intrusive plug. The zone is near vertical, trends ENE across the slope, in exposed cliffy outcrop for approximately 40 metres along strike. The east end of the zone projects into a gully bounded by granodiorite on the far side; the west projection is covered in talus and appears open. A very coarse-grain spectacular 2.5 m wide layer of dark brown vitreous euhedral andradite garnet crystals with minor tremolite-actinolite, ferro-actinolite, calcite, quartz and diopside appears to be a good marker central to the showing. Along it's upslope contact is a 1.10 m wide layer of compact fine grained semi-massive to banded pyrrhotite and minor chalcopyrite (trace to 5%). A clay altered, displaced and sheared, 1.5m wide granodiorite dyke trending NE and steeply dipping SW contains 3% pyrrhotite-pyrite with trace amounts of arsenopyrite along its margins The dyke was described cutting the banded skarn approximately 60 m downslope from the andradite-rich layer. It is probable that the units hosting the Babe Ruth Showing are repeated approximately 100 m downslope where a similar gossan was described.

Table 2 – Summary of Showings

	UTM Nad 83 Zone 9		
SHOWING	**EASTING**	**NORTHING**	**SHORT NOTES**
Mehitabel (Discovery Zone)	452280	7035878	small skarn pod with massive sulphide mineralization with talus fines up to 1 097 ppb Au
Gully Zone	453984	7035645	fine grain ars in cal SLT returned a weighted average of 7.85 g/t over 7m; Two DDH holes subsequently drilled with a best result of 2 566 ppb Au over 0.9m in pyrrhotitic brecciated cal SLT cut by carbonate veins; grey fault gouge with very fine sulphides not previously sampled from the old core was sampled in 2011 returned 2.96 ppb Au & 7470 ppm As over 0.55m.
Ridge Zone	452911	7034692	talus sampling returned 1.3 g/t over 6m
McDame Zone	453310	7036430	150m long Au-As soil anomaly with peak values of 1 455 ppb Au and 1 570 ppm As
Babe Ruth Showing	453430	7034430	3.6m wide tabular zoned skarn includes a rock chip interval of 0.598 ppb Au over 0.50m
J-Rock Showing	454630	7035420	150x3m wide stuctural corridor of rusty high density joints in GRD trending 120 deg with local massive skarn pods anomalous with up to 1940 ppm Mo
Sleet Area	454900	7034080	numerous dykes and small plug with associated shear structure and skarn warrant more work
Bold = New Discoveries			



A-A' Geological Cross-Section (looking NW) Scale: 1:15,000



Plan View Geology Scale: 1:15,000

LEGEND

SKN Skarn
dark red brown to dark grey, massive to blocky, locally coarse grained with garnet+/-tremolite -actinolite-ferro actinolite+/-diopside, quartz. and calcite; locally fine grained compact hornfels with gossanous-limonite weathered surface and varying amounts of pyrrhotite and chalcopyrite

Mid-Cretaceous *Selwyn Suite (mKgS)*

GRD Granodiorite
grey, blocky weathering, hypidiomorphic-allotrimorphic granular texture - locally porphyritic in dykes (DYK). Biotite is the predominant accessory mineral - chill zones are finer grained and compositionally more quartz rich.

Cambrian-Ordovician *Rabbitkettle Formation (COR)*

LST Limestone
grey to snow white, platey to tabular blocky weathering; locally bleached and silicified; interlaminated with up to 40% darker rusty brownish-grey laminae of siltstone.

SLT Siltstone
grey to light brown/rusty brown, shaly to tabular weathering; laminated siltstone with locally up to 20% calcareous laminae.

Cambrian-Ordovician *Road River Formation (ODR)*

SH Shale

Bedding; inclined, vertical
Cleavage; inclined, vertical
Joint; inclined, vertical
Ice Field
Limit of outcrop

GEOLOGIC CONTACTS
Defined
Approximate
Interpreted
Fault

GEOPHYSICAL CONDUCTORS
vertical-dyke interpretated (yellow)
bedrock (red)

P Petrographic Specimen-see report (sample # in italic large caps)
Historic Showing
Core
Diamond Drill Hole

and	andradite	lim	limonite
bis	bismuthinite	mol	molybdenite
cpy	chalcopyrite	por	porphyritic
dac	dacite	po	pyrrhotite
dio	diopside	sca	scapolite
gal	galena	tre	tremolite
goe	goethite	tr	trace
gro	grossular	wol	wollastonite
		ves	vesuvianite

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Hit Property
PROPERTY GEOLOGY
with Geophysical EM Conductors

SCALE: 1: 15,000
NTS: 105 P/5
DATE: November, 2011

GEOLOGY: A. Higgs & R. Zuran
DRAWN BY: R. Zuran
FIGURE: 4

Geochemistry

A total of 9 silt samples, 166 rock samples and 925 soil samples (including 46 no samples) were taken during the 2011 exploration program.The rock samples included samples taken as channel/chip samples at showing locations as well as grab samples taken during prospecting traverses. Soil samples were taking at point locations as well as countour lines and directional lines.

Unfortunately, a number of samples were lost by the shipping company during the journey between the prep lab and analytical lab. This included 5 silt samples and 62 soil samples. They could not be recovered and therefore don't have any geochemical results from these samples. All samples that made it to the AGAT analytical lab in Missasaga, Ontario, were analyzed for ICP-MS (201074) multi element package and ICP-MS Au (202054) for silt and soil samples and ICP-OES (201073) multi element package and Fire Assay-Trace Au (202053) for rock samples.

Rock Samples

The overall gold results of the rock samples were somewhat discouraging, given the abundance of alteration and skarned units located during the 2011 exploration program. That being said, gold in skarn mineralization can be tricky to pinpoint, especially when structure is a controlling factor. More sampling is needed to better define the mineralization sequences.

The highest gold value in a rock sample returned 2.96 g/t Au from a grab sample of drill core from the 1999 drilling representing 0.5 m in length. This consisted of previously unsampled material: altered and sheared intrusive. This sample shows that there are multiple mineralization host units and anomalous gold values can be found over 3 different units: calcareous siltstone, altered intrusive, and mineralized skarn.

The second highest gold value came from a chip sample following up results from 2009. The sample AHHTR013 returned 2 g/t Au and 12 g/t Ag over 1 m chip sample of mineralized po-cpy rich skarn related to a diorite dyke. The skarn is thin but indicates a good gold system.

The next two highest gold values were returned form the Babe Ruth area. Sample RZHTR018 consisted of a 0.5 m chip sample at the facies change contact between the quartz rich banded unit and the siltstone. This samples returned 0.6 g/t and 600 ppm Cu. Sample RZHTR014 consisted of a 0.25 m chip sample from altered limestone and returned 198 ppb Au. The Babe Ruth showing area also hosts highly anomalous Cu values, with up to 6540 ppm in a grab sample (RZHTR008), 5040 ppm over a 0.5 m chip sample (RZHTR024) and 2620 ppm over a 1.3 m chip sample (RZHTR025).

The J-Rock showing area, although not anomalous in gold, contains a number of anomalous copper values: up to 3790 ppm in a float sample (RZHTR029) and 3510 ppm Cu and 49 ppm Mo in a grab sample (JKHTR010). In addition to this, one grab sample returned a highly anomalous Mo value of 1940 ppm (JKHTR008).

The Sleet zone contains anomalous copper, molybdenum and minor gold values. Samples returned up to 1170 ppm Cu (AHHTR029) and 75 ppm Mo, 950 ppm Cu and 100 ppb Au (AHHTR032). Although not highly encouraging results, this is a newly discovered mineralization zone and was located at the end of the last day of the program. More work needs to be done to assess the mineralization potential around the intrusive plug and associated dykes.

Silt Samples

Geochemical results were only received for 4 of the samples taken. The only results of note are two silt samples take from the creek draining the large bowl in the north of the property. This drains from the granodiorite intrusive along with a wedge of contact sediments. They returned anomalous values for Au, As, and Cu. There are fracture sets within the intrusive that could host metal bearing fluids. This bowl is also draining the major N-S lineament that is located in the airborne resistivity results that appears to cut the intrusive plug.

Soil Samples

Soil geochemical lines were completed as countour lines, directional lines and spot samples to test the metal content in the soil within fault zones and near mineralization occurennces. Reconnaissance soil lines focused on identifying mineralization on the edge of the granodiorite intrusive. In terms of gold results, there are 3 locations that returned significant continuous anomalous sequences. Line HTL010 from sample 01+25S to 02+00S averages 350 ppb Au over 75 m. Associated with these anomalous gold values are highly anomalous Sb and anomalous As values. This line is located right over the projected intrusive contact.on the SE part of the pluton. The second anomalous Au line is HTL005 between 00+00 and 01+75S. This 175 m line anomaly is open to the east with an average Au value over the 8 samples of 453 ppb. This Au anomaly is coincident with highly elevated values of As, Ag, Cu, Bi, Sb and Te. The highest sample, HTL005 01+00S returned 1270 ppb Au, 3 ppm Ag, 3160 ppm As, 166 ppm Bi, 533 ppm Cu, 493 ppm Sb and 3.3 ppm Te. This zone could be representative of another dyke system with associated Au-skarns similar to what is seen 550 m to the NE at AHHTR013. More investigation is warranted to determine the source of the anomaly. Lastly, there is a very strong 75 m linear anomaly open to the south on line HTL014 00+00 to 00+75N with gold values avergaging 1583 ppb over 4 samples. This anomaly is coincident with anomalous As and is likely the downslope expression of the Gulley Zone showing. There is a possiblity that it could also represent skarn mineralization that lies stratigraphically below the Gulley zone mineralization.

In addition to the coincident anomalies, there are a number of highly anomalous spot samples from the 2011 program, including a handful around the smaller pluton stradeling the Yukon/NWT border directly to the east of the main pluton. 5 samples returned above 250 ppb Au, with the highest being HTL009 03+50E (591 ppb Au). Sample AHHTD002 returned 360 ppb Au, with coincident anomalous As (1710 ppm) and Sb (377 ppm). This sample was taken from a minor shear zone within the main pluton in an area of resistivity low cutting into the pluton. This could represent gold bearing fluid systems that are cutting the intusion. Lastly, one sample taken in the broad valley between the main pluton and the newly discovered pluton in the NWT (HTL013 02+00W) returned 320 ppb Au. The source of this anomaly remains undiscovered.

The highest gold value in a soil sample came from RZHTD016, taken on the facies change at the Babe Ruth showing at the contact with the andradite skarn. It returned 6350 ppb Au (6.35 g/t), with coincident highly anomalous Bi (1810 ppm), Cu (1770 ppm), Ag (4.5 ppm) and W (719 ppm). This anomalous suite is indicative of an intruision related gold system and demonstrates that the fluid system at the Babe Ruth, although not returning highly anomalous values for gold in rock samples, does contain an abundance of metals. The key is to find a prospective host unit where these metals have been dropped out

Airborne Geophysical Program

A DIGHEM electromagnetic and magnetic survey was flown over the Hit Property by Fugro Airborne Surveys on August 2nd, 2011. A total of 141.9 km line kilometres was flown utilizing an 'A-Star' AS350 B2 helicopter contracted to Questral Helicopter Ltd. A line spacing of 100 m and an optimum survey elevation of 60 metres for the helicopter and 35 metres for the magnetometer and DIGHEM sensor were achieved. The following paragraphs summarize the results of this survey. Refer to Appendix VII for the completed report by Fugro Airborne Surveys.

The magnetic survey results can generally be described as a relatively low signature regarding the mid-Cretaceous granodiorite plug with a relative contrasting and defined magnetic high aureole at and beyond its contacts coincident with silty carbonate rocks and black shales of the Rabbitkettle and Road River formations that have been hornfelsed and/or skarnified locally. This is noted particularly along its north, east and west contacts. A more detailed description includes a local magnetic high within the center of the plug coincident with topographic highs. Also, the magnetic signatures outside and along the granodiorite's eastern and western contacts are elongated along north-northwest trending axes suggesting a structural control. The northern contact of the granodiorite scribes a broad relatively magnetic arc defining an area of hornfelsed fine grained clastic rocks of the Road River Formation. The magnetic signature to the south of the granodiorite plug is somewhat low but mottled and amoebic - suggesting the intrusive is now deeper and locally interfingering and covered with the fabric of the bedded Rabbittkettle and Road River formations. Once again north-northwest structures do break the regional fabric locally. Along the south east edge of the survey is a relatively strong magnetic high trending northeast and is consistent with the structural fabric of the Road River black shales suggesting an increased hornfelsing with perhaps increased pyrrhotite content.

The electromagnetic survey was reported using three channels: 1) 900 Hz – deep penetrating ; 2) 7200Hz-moderate penetrating and 3) 56000Hz-shallow penetrating waves generating 383 EM anomalies based on a conductance range grouped into 7 categories. General results of the survey reveal the relatively high resistivity of the granodiorite plug which is disrupted into four quarters perhaps by north-northwesterly and northeasterly structures. This resistivity anomaly extends to the east off the claim boundary where it is coincident with a small satellite granodiorite plug. The granodiorite resistivity low is surrounded by the higher conductive shales and fine clastic rocks of the Rabbitkettle and Road River formations. A more detailed description includes two groupings of steep dipping north-east trending conductors. The first group is approximately ½ km outside and paralleling the present claim block boundary to the southeast. These conductors pass over a covered area but appear coincident with the bedding or structural fabric of the fine grain clastic rocks of the Rabbitkettle and Road River formations. This may suggest hornfelsing or graphitic horizons. The second group, immediately to the northwest of the claim block, are fewer in number and are coincident with both the northeast trending structural fabric of the fine clastic sedimentary rocks and north-northwest trending dykes mapped previously in the area.

In summary: the airborne geophysics survey has resolved a structurally bound 2-phase (?) intrusive plug of relatively high resistivity with a magnetic aureole in the surrounding fine clastic and calcareous sediments that appear to be distrupted by the same structures observed outbound of the intrusive.

Petrographic Analysis

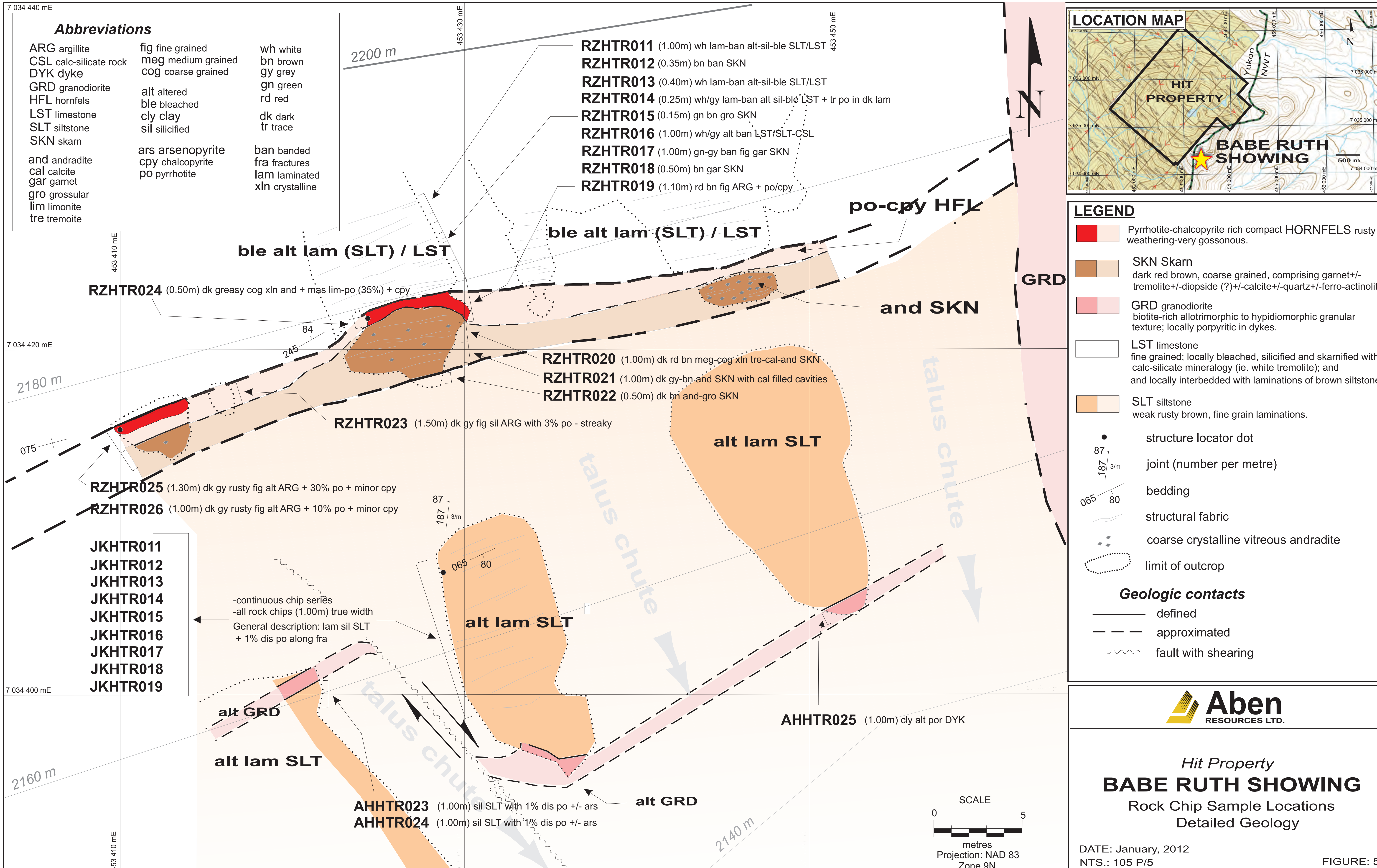
A total of 21 petrographic samples were taken for analysis and sent to Vancouver Petrographics Ltd.: 14 thin sections and 7 polished thin sections were reported on. Intrusive, fine grained meta-sediment (silt-mudstones) and skarn assemblages were described. The following paragraphs are taken from the report in Appendix VII by Ingrid Kjarsgaard of Vancouver Petrographics Ltd.

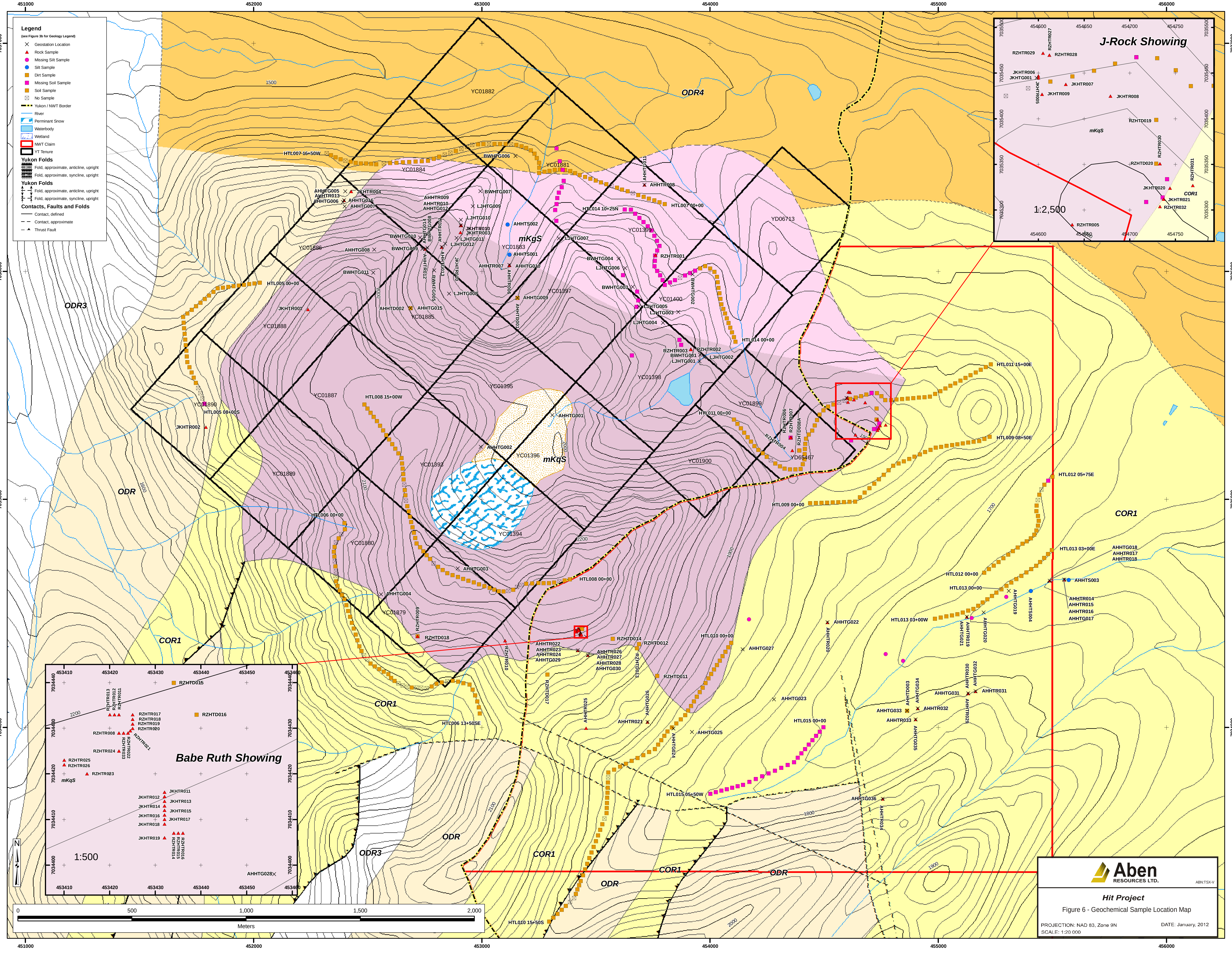
Analysis from the intrusive suite of rock specimens suggest more than one phase is present. A xenocrystic or rounded textured quartz grain texture is found with olivine which is not in equilibrium and suggests magma mixing (sample RZ 469). Also described are hypabyssal textures grading into more plutonic granodiorite (sample RZHT027); and porphyritc textures in the porphyritic andesite dyke that cuts the satellite intrusive plug (RZ-484). Alteration in the intrusive specimens is low grade – biotite replaced by Mg-chlorite; titanite and prehnite/pumpelleyite; and primary amphibole replaced by actinolite. Sulphides noted in the intrusive phases generally occur in trace amounts; predominantly pyrrhotite-pyrite invade MgFe-silicates and occur disseminated in the matrix. The Intrusive sample suite includes: AHHTR014, AHHTR034 from the Sleet Area; RZ-433 and RZ-469 from the southern contact area of the main intrusive plug; RZ-484 from the eastern intrusive satellite plug; and RZHTR027 from the J-Rock Showing Area.

Analysis from the meta-sediment suite of rock specimens describe them as extremely fine grained siltstone-mudstones from a shallow water environment, exhibiting horizontal banding disturbed by subvertical micro-faults, along which sulphide-bearing fluids migrated. These rocks are altered by calc-silicate metasomatism with new minerals such as fine grained clinopyroxenes, actinolite and carbonate being introduced. Mineralization includes chalcopyrite+/-pyrrhotite surrounded with minor clinozoisite. The meta-sedimentary rock sample suite includes: JKHTR018, RZHTR008, RZHTR010, RZHTR013 and RZHTR023 – all samples from the mineralized Babe Ruth Showing.

Analysis from the skarn rock suite are characterized by a dark red brown andradite-grossular garnet and very fine grained hedenbergite pyroxene. Associated mineralogy included variable amounts of calcite, scapolite, vesuvianite, actinolite, wollastonite and K-feldspar. Particular to the Sleet zone skarn rock are chalcopyrite, pyrrhotite, native bismuth, bismuthinite, arsenopyrite and galena. SEM analysis on sample 'Sleet Zone 1' revealed bright barium-zoned potassium feldspar and molybdenite. The skarn rock sample suite includes: RZHTR006, RZHTR015, and RZHTR022 from the Babe Ruth Showing; RZHTR028 from the J-Rock Showing; AHHTR015, SLEETZONE 1 and 2 from the SLEET Area.

Refer to Appendix VIII for the full petrographic report from Vancouver Petrographics.


Abbreviations
ARG argillite
CSL calc-silicate rock
DYK dyke
GRD granodiorite
HFL hornfels
LST limestone
SLT siltstone
SKN skarn
and andradite
cal calcite
gar garnet
gro grossular
lim limonite
tre tremoite
fig fine grained
meg medium grained
cog coarse grained
alt altered
ble bleached
cly clay
sil silicified
ars arsenopyrite
cpy chalcopyrite
po pyrrhotite
wh white
bn brown
gy grey
gn green
rd red
dk dark
tr trace
ban banded
fra fractures
lam laminated
xln crystalline
7 034 440 mE
7 034 420 mE
7 034 400 mE
453 410 mE
453 430 mE
453 450 mE
2200 m
2180 m
2160 m
2140 m
RZHTR011 (1.00m) wh lam-ban alt-sil-ble SLT/LST
RZHTR012 (0.35m) bn ban SKN
RZHTR013 (0.40m) wh lam-ban alt-sil-ble SLT/LST
RZHTR014 (0.25m) wh/gy lam-ban alt sil-ble LST + tr po in dk lam
RZHTR015 (0.15m) gn bn gro SKN
RZHTR016 (1.00m) wh/gy alt ban LST/SLT-CSL
RZHTR017 (1.00m) gn-gy ban fig gar SKN
RZHTR018 (0.50m) bn gar SKN
RZHTR019 (1.10m) rd bn fig ARG + po/cpy
po-cpy HFL
ble alt lam (SLT) / LST
ble alt lam (SLT) / LST
RZHTR024 (0.50m) dk greasy cog xln and + mas lim-po (35%) + cpy
84
245
and SKN
GRD
RZHTR020 (1.00m) dk rd bn meg-cog xln tre-cal-and SKN
RZHTR021 (1.00m) dk gy-bn and SKN with cal filled cavities
RZHTR022 (0.50m) dk bn and-gro SKN
RZHTR023 (1.50m) dk gy fig sil ARG with 3% po - streaky
075
alt lam SLT
talus chute
talus chute
talus chute
RZHTR025 (1.30m) dk gy rusty fig alt ARG + 30% po + minor cpy
RZHTR026 (1.00m) dk gy rusty fig alt ARG + 10% po + minor cpy
87
187
3/m
065
80
JKHTR011
JKHTR012
JKHTR013
JKHTR014
JKHTR015
JKHTR016
JKHTR017
JKHTR018
JKHTR019
-continuous chip series
-all rock chips (1.00m) true width
General description: lam sil SLT
+ 1% dis po along fra
alt lam SLT
alt GRD
alt lam SLT
AHHTR025 (1.00m) cly alt por DYK
alt GRD
AHHTR023 (1.00m) sil SLT with 1% dis po +/- ars
AHHTR024 (1.00m) sil SLT with 1% dis po +/- ars
SCALE
0
5
metres
Projection: NAD 83
Zone 9N
N
LOCATION MAP
HIT PROPERTY
BABE RUTH SHOWING
Yukon
NWT
500 m
LEGEND
Pyrrhotite-chalcopyrite rich compact HORNFELS rusty weathering-very gossonous.
SKN Skarn
dark red brown, coarse grained, comprising garnet+/-tremolite+/-diopside (?)+/-calcite+/-quartz+/-ferro-actinolite.
GRD granodiorite
biotite-rich allotrimorphic to hypidiomorphic granular texture; locally porpyritic in dykes.
LST limestone
fine grained; locally bleached, silicified and skarnified with calc-silicate mineralogy (ie. white tremolite); and and locally interbedded with laminations of brown siltstone.
SLT siltstone
weak rusty brown, fine grain laminations.
structure locator dot
joint (number per metre)
bedding
structural fabric
coarse crystalline vitreous andradite
limit of outcrop
Geologic contacts
defined
approximated
fault with shearing
Aben
RESOURCES LTD.
Hit Property
BABE RUTH SHOWING
Rock Chip Sample Locations
Detailed Geology
DATE: January, 2012
NTS.: 105 P/5
FIGURE: 5



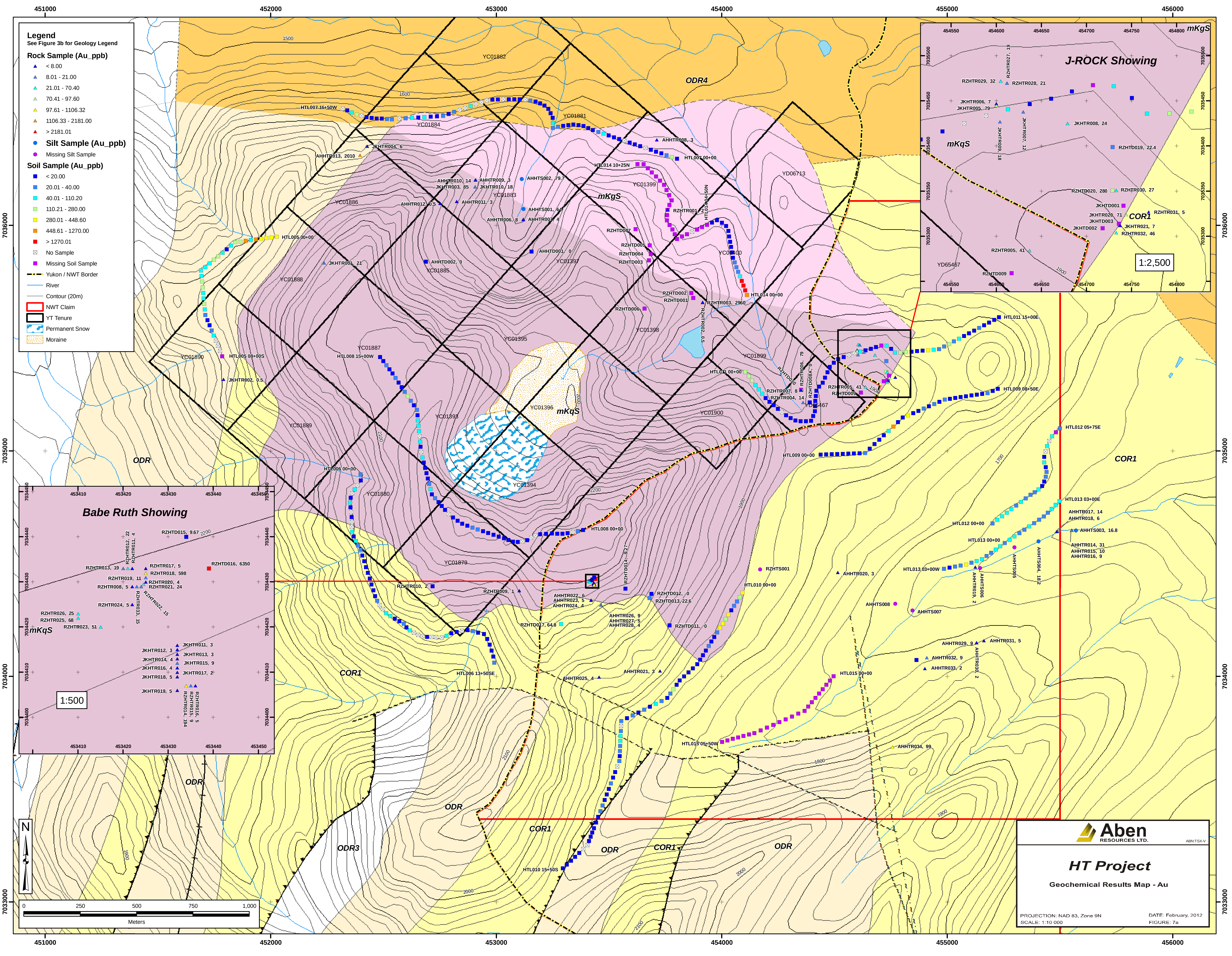
Hit Project

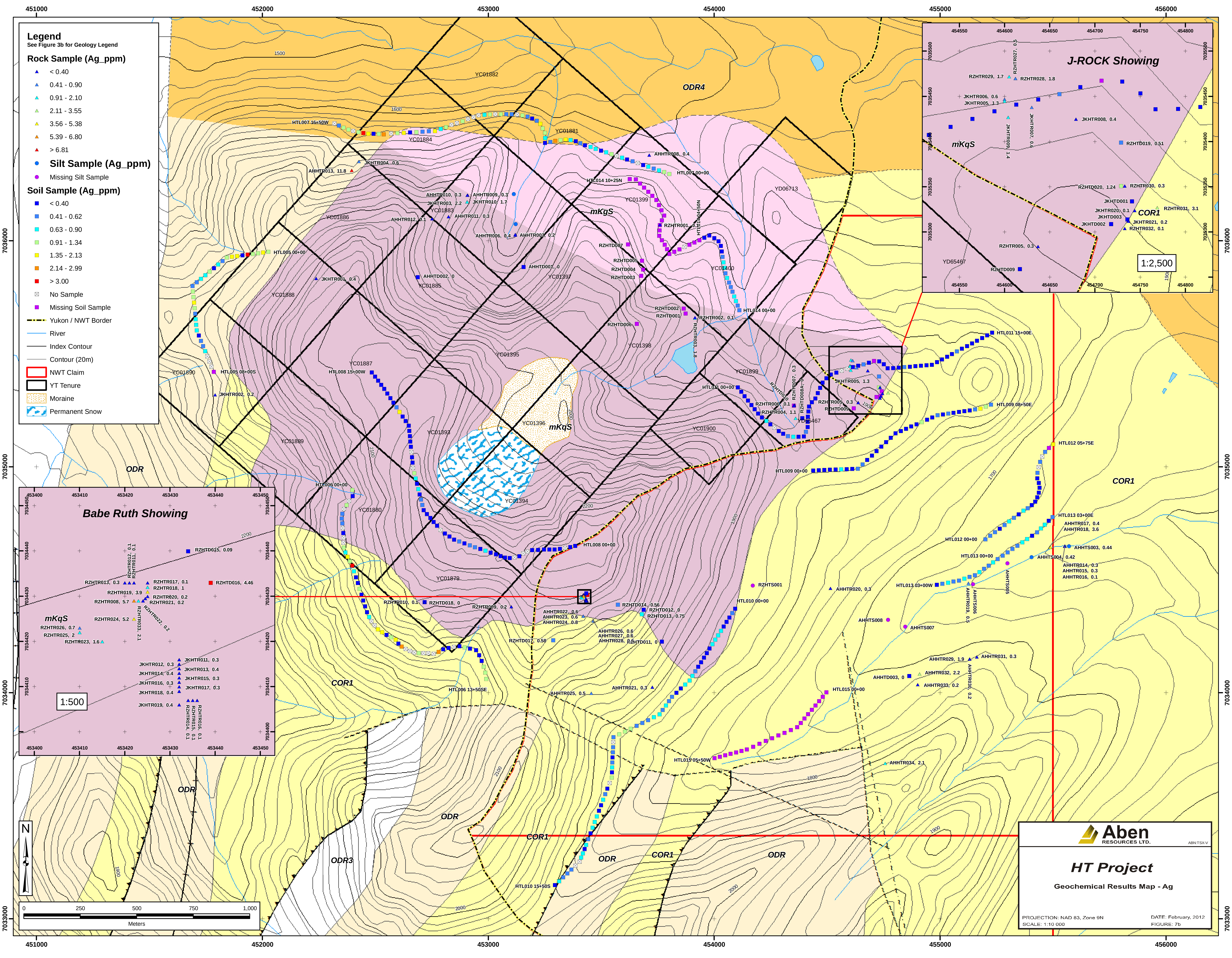
Figure 6 - Geochemical Sample Location Map

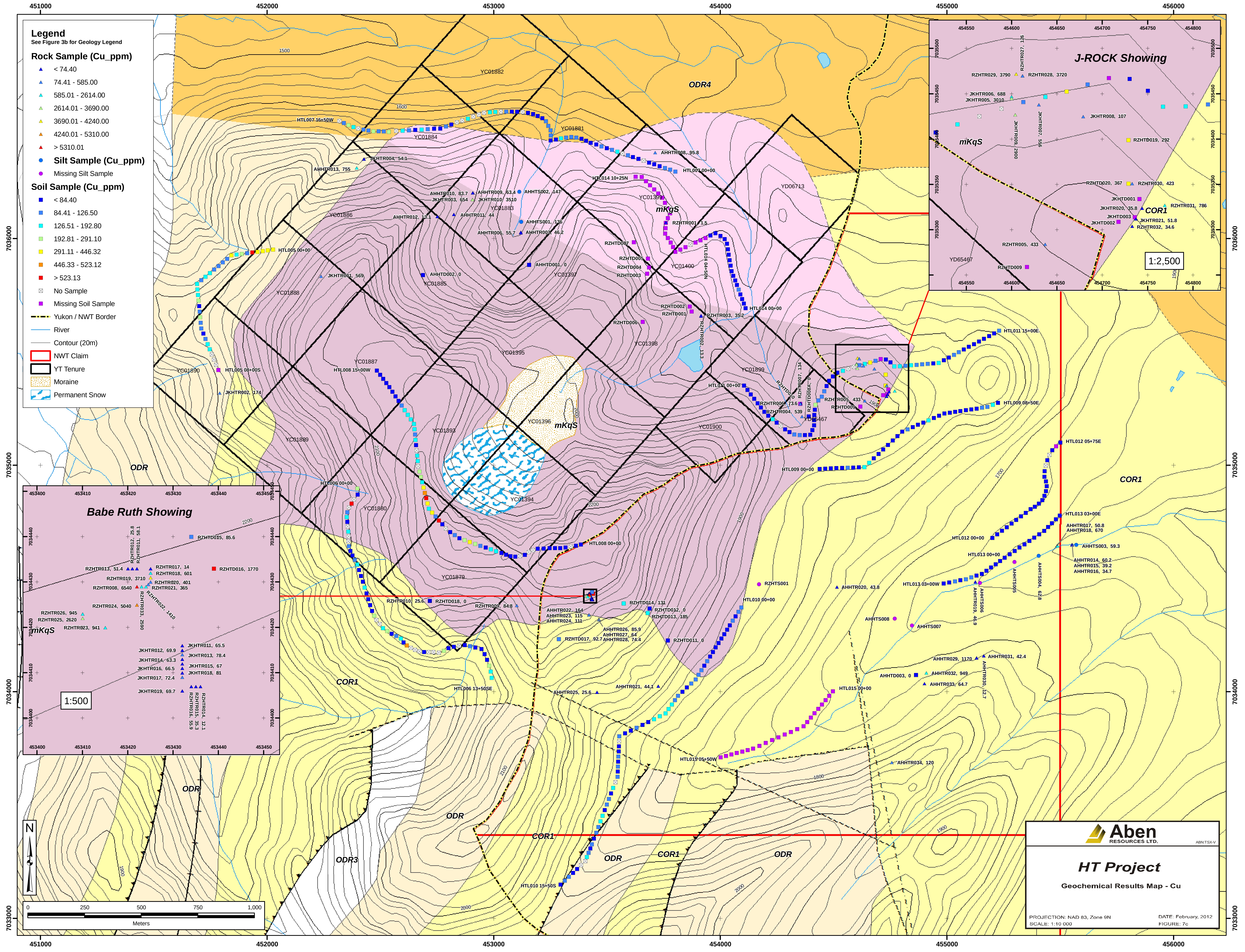
PROJECTION: NAD 83, Zone 9N

SCALE: 1:20 000

DATE: January, 2012


Legend
See Figure 3b for Geology Legend
Rock Sample (Au_ppb)
< 8.00
8.01 - 21.00
21.01 - 70.40
70.41 - 97.60
97.61 - 1106.32
1106.33 - 2181.00
> 2181.01
Silt Sample (Au_ppb)
Missing Silt Sample
Soil Sample (Au_ppb)
< 20.00
20.01 - 40.00
40.01 - 110.20
110.21 - 280.00
280.01 - 448.60
448.61 - 1270.00
> 1270.01
No Sample
Missing Soil Sample
Yukon / NWT Border
River
Contour (20m)
NWT Claim
YT Tenure
Permanent Snow
Moraine
Babe Ruth Showing
1:500
J-ROCK Showing
1:2,500
mKgS
mKqS
ODR
ODR3
ODR4
COR1
Meters
0 250 500 750 1,000
Aben RESOURCES LTD.
HT Project
Geochemical Results Map - Au
PROJECTION: NAD 83, Zone 9N
SCALE: 1:10 000
DATE: February, 2012
FIGURE: 7a


Legend
See Figure 3b for Geology Legend
Rock Sample (Ag_ppm)
< 0.40
0.41 - 0.90
0.91 - 2.10
2.11 - 3.55
3.56 - 5.38
5.39 - 6.80
> 6.81
Silt Sample (Ag_ppm)
Missing Silt Sample
Soil Sample (Ag_ppm)
< 0.40
0.41 - 0.62
0.63 - 0.90
0.91 - 1.34
1.35 - 2.13
2.14 - 2.99
> 3.00
No Sample
Missing Soil Sample
Yukon / NWT Border
River
Index Contour
Contour (20m)
NWT Claim
YT Tenure
Moraine
Permanent Snow
J-ROCK Showing
1:2,500
Babe Ruth Showing
1:500
ODR4
mKgS
mKqS
ODR
ODR3
COR1
Aben
RESOURCES LTD.
ABN:TSX-V
HT Project
Geochemical Results Map - Ag
PROJECTION: NAD 83, Zone 9N
SCALE: 1:10 000
DATE: February, 2012
FIGURE: 7b
Meters



Legend
See Figure 3b for Geology Legend
Rock Sample (Cu_ppm)
< 74.40
74.41 - 585.00
585.01 - 2614.00
2614.01 - 3690.00
3690.01 - 4240.00
4240.01 - 5310.00
> 5310.01
Silt Sample (Cu_ppm)
Missing Silt Sample
Soil Sample (Cu_ppm)
< 84.40
84.41 - 126.50
126.51 - 192.80
192.81 - 291.10
291.11 - 446.32
446.33 - 523.12
> 523.13
No Sample
Missing Soil Sample
Yukon / NWT Border
River
Contour (20m)
NWT Claim
YT Tenure
Moraine
Permanent Snow
J-ROCK Showing
1:2,500
Babe Ruth Showing
1:500
ODR4
mKqS
ODR
COR1
ODR3
0 250 500 750 1,000
Meters
Aben
RESOURCES LTD.
HT Project
Geochemical Results Map - Cu
PROJECTION: NAD 83, Zone 9N
SCALE: 1:10 000
DATE: February, 2012
FIGURE: 7c

Conclusions

The Hit property remains an intriguing and prospective Au-Cu target. There are 3 main mineralization styles on the property: replacement style within calcareous siltstone, skarned units in close proximity to the intrusive plugs and dykes and altered mineralized intrusive.

Geological mapping and airborne geophysical results from the 2011 program have revealed new gold potential in terms of ramped grades in embayment skarns, mineralized dykes, select units of preferred mineralization and mineralized structural corridors. The 2011 program resulted in the discovery of 3 new mineral showings and identification of further outlying intrusive activity, namely potential dykes that could be controlling gold mineralization. Although the rock sample results were not overly encouraging for gold, it is apparent that there is a large, widespread mineralization system with multiple controlling factors. This system is rich in metals, including gold, copper, silver and molybdedum as apparent from the soil and rock sample results to date. Gold values from the 2011 program returned as high as 2 g/t Au and 12 g/t Ag over 1 m (AHHTR013) and 600 ppb over 0.5 m (RZHTR018) in rock samples; 6.4 g/t Au in a grab soil and 453 ppb Au over 175 m (HTL005). Pathfinder elements assocated with intrusive gold mineralization were commonly found in the soils on the property, including As, Bi, Sb and Te.

During the 2011 program, a total of ~1922 of acres were added to Hit property from staking on the NWT side of the border.

The Hit property remains a property of interest and warrants further detailed exploration work to follow up the results of the 2011 program to narrow down drill targets for a phase 2 portion of the 2012 program.

Recommendations

For the 2012 season, the following recommendations are made and would consist of:

- extend soil geochemical coverage to cover all low relief areas, especially in the valley hosting the EM conductors.
- some effort should be made to better understand the controlling structures on the property and their relationship with mineralization; this should include further detailed geological mapping and geophysical interpretation to better define targets
- further work is needed to better understand and properly sample the new J-Rock, Sleet and Babe Ruth showings
- based on the results from the above work, a short airborne diamond drill program should be completed to test the best target areas

References

Downie, C (2007) 2006 Assessment Report on the Hit Property

Higgs, A (2009) Geological and Geochemical Report on the Hit Property; prepared for Eagle Plains Resources Ltd.

Kreft, B. (1998) Summary Report on the Hit 1 – 8Quartz Claims; prepared for Eagle Plains Resources Ltd. / Miner River Resources Ltd. Joint Venture; November 20 1998.

Kreft, B. (1999) Assessment Report on the Hit 1 – 8 Quartz Claims; prepared for Eagle Plains Resources Ltd.; November 4 1999.

Kreft, B. (1999) Assessment Report on the Hit 1 – 30 Quartz Claims; prepared for Eagle Plains Resources Ltd.; November 24 1999.

2011 Assessment Report

For the

HIT Property

Volume II - Appendices

Mayo Mining Division, Yukon
Yellowknife Mining Recorder
Map sheet 105P05
Hit 1-20, 29-32 Claims, YK
HT 1-2 Claims, NWT
Centre of Work: 129º55'30" W, 63º26'25"N

Prepared for

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by

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and

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Cranbrook B.C., V1C 2R7

February 6, 2012

Appendix I – Statement of Qualifications

Aaron A. Higgs, B. Sc.

I, Aaron Ashwell Higgs, B.Sc. do hereby certify that:

I am currently employed as a Geologist by TerraLogic Exploration Inc., with business location of Suite 200, 44-12th Ave S., Cranbrook, BC, V1C 2R7 (Telephone: 778-520-2000, email: aah@terralogicexploration.com

I graduated with a Bachelor of Science in Geology from the University of British Columbia in the year 2005.

I have worked as a Geologist in Western Canada for 7 years.

I am responsible for the preparation of this Technical Report entitled "2011 Assessment Report for the Hit Property", prepared for Aben Resources Ltd..

Dated at Cranbrook, British Columbia, Canada this 6th day of February, 2012.

Respectfully submitted

Aaron A. Higgs, B.Sc. (Geol)

STATEMENT OF QUALIFICATIONS

I, Rick J. Zuran, B.Sc., with an address of Box 10159, Whitehorse, Yukon, Y1A 7A1, Canada, do certify that:

1. I am a graduate of the University of British Columbia with a Bachelor Degree in Geological Sciences (1988).

2. I have been associated as an employee, contractor or consultant with the following companies or government departments:

Denison Mines Ltd.
Anaconda Canada Expl. Ltd.
Selco Ltd.
BP Minerals Ltd.
OBI Resources Ltd.
Anglo American
Archer, Cathro & Associates (1981) Ltd.
Kinross Gold
Mt. Skukum Gold Mining Corp.
Total Energold Corp.
North American Metals Corp.
Kennecott Canada Inc.
Aurum Geological Consultants Inc.
Yukon Territorial Government
Indian and Northern Affairs Canada
Brett Resources Inc.

3. I am a member of the Yukon Chamber of Mines.

4. I am an employee of TerraLogic Exploration Services Inc.

5. The work described in this report is based on field work conducted during the period August 23 to September 12, 2011.

6. I co-supervised the field work and am the co-author of this report.

Dated at Cranbrook, British Columbia this 6th day of February, 2012.

Respectfully submitted,

Rick J. Zuran, B.Sc.

Appendix II – Statement of Expenditures

2011 Hit Expenditures					
Exploration Work type	**Comment**	**Days**			**Totals**
Personnel (Name) / Position	**Field Days (list actual days)**	**Days**	**Rate**	**Subtotal**	
Aaron Higgs, Project Manager	Sept 10-25, 2011	15.0	625.0	9375	
Rick Zuran, Project Geologist	Sept 10-25, 2011	15.0	800.0	12000	
Andreas Unterberger, Geotechnician	Sept 10-26, 2011	15.0	375.0	5625	
Jason Kolcun, Data Manager and Geotechnician	Sept 10-26, 2011	16.5	425.0	7012.5	
Deanna Andresen, Camp Cook and First Aid	Sept 10-26, 2011	15.5	550.0	8525	
				$42,537.50	**$42,537.50**
Office Studies	**List Personnel**				
Project Planning, Management and Report Writi	Aaron Higgs, Project Manager	12.09	625.0	$7,556.25	
Project Planning, data interpretation and Report	Rick Zuran, Project Geologist	16.35	650.0	$10,627.50	
Database compilation and Report Preparation	Jason Kolcun, Data Manager and GIS	13.91	$360.00	$5,007.60	
Report Preparation	Nathan Taylor, GIS	2.05	$360.00	$738.00	
Database Compilation	Brad Robison	0.50	$525.00	$262.50	
				$24,191.85	**$24,191.85**
Contractors and Subcontractors					
Geochemical	Gumption Holdings Inc.			$4,370.00	
				$4,370.00	**$4,370.00**
Airborne Exploration Surveys	**Line Kilometres / Enter total invoiced amount**				
Aeromagnetics and Electromagnetics				$40,000.00	
				$40,000.00	**$40,000.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Soil and Silt	888			$12,996.88	
Rock	166			$1,784.50	
Petrology	21 samples			$11,641.00	
				$26,422.38	**$26,422.38**
Transportation		**No.**	**Rate**	**Subtotal**	
Airfare				$3,291.76	
Taxi				$19.05	
truck rental				$3,609.00	
kilometers		3606.70	$0.30	$1,082.00	
fuel				$1,745.99	
Helicopter (hours)				$19,700.00	
Fuel (litres/hour)				$4,100.00	
Other (Parking, baggage charges)				$291.60	
				$33,839.40	**$33,839.40**
Accommodation & Food	**Rates per day**				
Hotel				$2,206.47	
Camp				$4,623.58	
Meals	day rate or actual costs-specify			$1,417.03	
				$8,247.08	**$8,247.08**
Geological and Geochemical					
Map Plotting				$304.20	
Sampling Consumables	sample bags, tags, flagging, etc…			$726.24	
				$1,030.44	**$1,030.44**

Equipment Rentals					
Barrell Pump (hand) - per week				20.00	
Channel Saw - per week (blades not included)				200.00	
Computer wi printer - per month				393.80	
Diesel Stove - per week				200.00	
Digital Camera - per week				60.00	
Field kits - per week				1,750.00	
Fieldhouse Accommodations - per day				270.00	
Fire suppression tank (backpack) - per week				60.00	
Firearm (12 ga defender) - per week				50.00	
fly camp kit - per week				2,000.00	
Generator 0-2kw - per week				1,160.00	
Level III First Aid Kit - per week				60.00	
Radio wi charger - per week				640.00	
Satellite phone wi charger - per week				450.00	
Satellite Phone Airtime				587.23	
Trailer 5 Ton - per week - Unit #01				1,206.00	
Trailer Enclosed - per week - Unit #03				6.00	
UV Lamp - per week				80.00	
Wall tent - per week				600.00	
				$9,793.03	**$9,793.03**
TerraLogic Exploration Handling and Adminstration Fees on 3rd Party Purchases					
				$16,425.20	**$16,425.20**
TOTAL Expenditures					**$206,856.88**
From sample and time calculations, it can be estimated that half of the time was spent in the NWT and half in the Yukon					
Total NWT Expenditures					**$103,428.44**
Total Yukon Expenditures					**$103,428.44**

Appendix III – Geochemical Protocol

3.1 – Field Sample Techniques
3.2 - Analytical Techniques
3.3 - Software Used

3.1 Geochemistry - Field sampling techniques

All 2011 samples were collected by TerraLogic Exploration Inc employees and sub-contractors. The sampling process is standardized and continually monitored for quality assurance and quality control. 3 types of samples were collected in the field, these include: rock, silt and soil samples. All samples are described in a digital form on a Palm Pilot in the field at the time of collection and also have a GPS location recorded at the site. Sample data was also recorded in field books and locations plotted on field maps as a backup to the digital forms. Upon return to camp each day the digital forms are uploaded to a relational database where quality control is conducted to assure all pertinent attribute information has been recorded and the spatial coordinates of each sample is correct.

Rock Samples

Rock samples were collected where mineralization was noted. Transported rock materials were sampled as Float, Talus or Subcrop rock sample types, depending on the perceived distance the rock had traveled from its source. Rocks were collected from outcrops as fist sized Grab samples, or as Chip or Channel samples. A Chip sample is a series of continuous and representative samples taken over a set direction and length using a hammer and chisel. Channel samples is a continuous and representative sample using the channel saw. In each case rock samples are recorded on the digital forms with a spatial location and a variety of attributes which include: map unit, major rock type, minor rock type, colour fresh, colour weathered, texture, grain size, mineralization major and mineralization minor. All samples were shipped in plastic rice bags with locking plastic straps with unique identification numbers to prevent tampering during the chain of custody.

Soil Samples

Samplers conducted soil sampling traverses over both grids and contour lines. Soil grids were laid out using compass bearings and hip chains. Sample spacing on grids was 25 meter with line spacing that was kept at one hundred metres. Contour soil sample lines were continued on terrain where the grid was not as effective. Soil samples were collected from pits dug with geo-tools to an average depth of 10-20 cm. Where possible the soil sample was collected from the B-Horizon of the soil profile. Attribute data collected for each soil sample included: sample size, quality, depth, slope of sample site, soil horizon, colour and other notes. Sample size is rated from 1-5 with one being much too small sample size and 5 being the perfect sample size, filling roughly ¾ of the sample bag. Quality of the sample rated from 1-5 with 1 being very poor quality and 5 being excellent quality. Factors that include: sample size, soil development and quality (the lack of organics), and depth of sample all contribute to the overall quality attribute.

Silt Samples

Samplers and geologists collected silt samples at any stream they crossed while on a soil line. Attribute data collected for each silt sample included: sample size, quality, depth, water velocity and tributary order. Samples size is rated on a scale of 1-5 with 1 being a very small sample and 5 being the perfect sample amount, filling roughly ¾ of the sample bag. Factors that include: sample size and silt quality (lack or pebbles or mud) contribute to the overall quality attribute.

Sample Handling and Shipping Procedure

At the end of each field day all samples were brought back to the field camp; here soil and silt samples were arranged in order and laid to dry. Rock samples were also lined up in order of sampler and number. Samples with damaged bags or unclear labels were re-bagged and placed back into order. At the end of the program, a shipment was prepared. This would require one person going through each sample ensuring that all samples were in order and that any missing samples were accounted for with an empty bag marked with the sample number and “LS” for lost sample. The other person would record each sample number to be shipped. Once recorded, the samples were placed in rice bags labeled with the shipment number and addresses. Each shipping bag was kept under 25 kg. The list of samples was compared to the database and any discrepancies investigated. Once the list of samples to be shipped matched the database’s records, the bags were sealed with a zip tie security seal. The bags were shipped by Greyhound Courier from Whitehorse to the Eco-Tech Labs in Kamloops.

Sample Preparation, Analysis and Security

All samples were collected by TerraLogic Exploration Inc. employees or sub contractors. Soil and silt samples were collected using standard kraft sample bags and were dried prior to shipping. Samples were placed in double rice bags and sealed with cable ties and were dropped off at the AGAT prep laboratory in Whitehorse. The prep samples were then sent to AGAT Analytical Laboratories at 5623 McAdam Road, Mississauga, Ontario, L4Z 1N9.

The samples from the 2011 program were analyzed using ICP-MS (Mass Spectrometer) and ICP-OES (Emission Spectrometer) methods. The following methods were used during the program and are further described in section 3.2:

Rocks: - 201073 Aqua Regia Digest – Metals Package, ICP-OES Finish

- 202052 Fire Assay – Trace Au, ICP-OES finish

Silts and Soils: - 201074 Aqua Regia Digest – Metals Package, ICP/ICP-MS finish

- 202054 Aqua Regia Digest – Au, ICP-MS finish

3.2 Analytical Procedures

Mining Division

SPECIFICATIONS

AGAT Laboratories

Service Beyond Analysis ■ www.agatlabs.com

MINING DIVISION SPECIFICATIONS

AGAT Method Code: 201 074 **AGAT SOP:** MIN-200-12018

Method Description: This uses the Aqua Regia Digestion technique and the ICP-OES/ICP-MS.

Solubility of elements can be dependent on the mineral species present and as such, data reported from the aqua regia leach should be considered as representing only the leachable portion of a particular analyte.

Sample split size: 1 g

Steps

1. Aqua Regia Digestion
2. Prepared samples are digested with Aqua Regia for one hour using temperature controlled hot blocks.
3. Resulting digests are diluted to 50 mL with de-ionized water.
4. To finish, ICP-OES/ICP-MS instrumentation are used for analysis

Blanks, sample replicates, duplicates and internal reference materials, both aqueous and geochemical standards are routinely used as part of AGAT Laboratories' quality assurance program.

Instrumentation and Techniques

- PerkinElmer 7300DV and 8300DV ICP-OES instruments and PerkinElmer 9000 and PerkinElmer NexION ICP-MS instruments are used in the analysis.
- Inter-Element Correction (IEC) techniques are used to correct for any spectral interferences.

AGAT Method Code: 201 073	**AGAT SOP:** MIN-200-12018
Method Description: This uses the Aqua Regis Digestion technique and the ICP-OES.	

Solubility of elements can be dependent on the mineral species present and as such, data reported from the aqua regia leach should be considered as representing only the leachable portion of a particular analyte.

Sample split size: 1 g

Steps

1. Aqua Regia Digestion
2. Prepared samples are digested with Aqua Regia for one hour using temperature controlled hot blocks.
3. Resulting digests are diluted to 50 mL with de-ionized water.
4. To finish, ICP-OES/ICP-MS instrumentation are used for analysis

Blanks, sample replicates, duplicates and internal reference materials, both aqueous and geochemical standards are routinely used as part of AGAT Laboratories' quality assurance program.

Instrumentation and Techniques

- PerkinElmer 7300DV and 8300DV ICP-OES instruments and PerkinElmer 9000 and PerkinElmer NexION ICP-MS instruments are used in the analysis.
- Inter-Element Correction (IEC) techniques are used to correct for any spectral interferences.

AGAT Method Code: 202 052, 202 054 **AGAT SOP:** MIN-200-120006

Method Description: Lead Fusion Fire Assay with Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) are conducted to determine the content of gold, platinum and palladium in geological samples

Sample split size: 30 g

Steps

- Prepared samples are fused using accepted fire assay techniques
- After the samples are cupelled and parted in nitric acid and hydrochloric acid

Blanks, sample replicates, duplicates and internal reference materials, both aqueous and geochemical standards are routinely used as part of AGAT Laboratories' quality assurance program.

Instrumentation Used

- PerkinElmer 7300DV and 8300DV ICP-OES instruments are used in the analysis.

AGAT Method Code: 202 064 **AGAT SOP:** MIN-200-120004

Method Description: Lead Fusion Fire Assay with Gravimentric finish are performed to find the determination of gold and silver in mineralogical samples.

Sample split size: 30 g

Steps

- Prepared samples are fused using accepted fire assay techniques
- After the samples are cupelled and parted in nitric acid.

Blanks, sample replicates, duplicates, and internal reference materials (both aqueous and geochemical standards) are routinely used as part of AGAT Laboratories' quality assurance program.

Instrumentation Used

- Mettler Toledo XP6 microbalances are used in the analysis.

Mining Division ▪ Whitehorse

AGAT Method Code: 226 022, 226 001, 226 006, 226 012

AGAT SOP: MIN-12008, MIN-12009, MIN-12010, MIN-12011, MIN-200-12012, MIN-12013, MIN-200- 12013

Steps

1. Sample Reception – Laboratory Information Management System (LIMS)
2. Mining, drying of geological samples
3. Mining branches, crushing mineralogical samples
4. Mining branches, sample size reduction of mineralogical samples
5. Mining branches, milling of minerological samples
6. Standard operating procedure for compressed air usage
7. Compressed air usage – mining branches.

Sample Reception

- Samples will arrive via courier, client drop-off or picked up by AGAT Laboratories or an AGAT Laboratories representative.
- Samples are inspected and compared to the Chain of Custody (COC) and logged into the AGAT LIMS program.
- Deviations from the COC are noted in AGAT's Sample Integrity Report (SIR) and sent immediately to the client via email and posted on the clients AGAT webMINING account.

Drying: Specified samples are dried to 60°C.

Crushing and Splitting: Unless instructed by the client, specified samples are crushed to 75 per cent passing 10 mesh (2mm) and split to 250 g using a Jones riffler splitter or rotary split.

Pulverizing: Unless instructed by the client, specified samples are pulverized to 85 per cent passing 200 mesh (75μm).

Screening: After drying specific sample are shaken on an 80 mesh sieve with the plus fraction stored and the minus fraction sent to the laboratory for analysis.

All equipment are cleaned using quartz and air from a compressed air source. Blanks, sample replicates, duplicates, and internal reference materials (both aqueous and geochemical standards) are routinely used as part of AGAT Laboratories' quality assurance program.

Instrumentation Used

- Rocklabs Boyd Crusher with RSD Combo, TM Terminator Crushers, TM TM-2 Pulverizers are routinely used in sample preparation procedures.

3.3 Software

The following is a list of software used in the field and writing of this report:

- Arc GIS 9.3
- Microsoft Office
- Pendragon Forms
- Open Office
- Adobe Acrobat 9

Appendix IV – Sample Location and Descriptions

4.1 – Rock Samples
4.2 - Silt Samples
4.3 - Soil Samples

Appendix 4.1 - Rock Samples

Sample Number	Date	Type	Location Mehtod	Elevation	UTM X	UTM Y	UTM Zone	Sample Length (m)	Sample Azimuth	Major Rock Type	Minor Rock Type	Colour Fresh	Colour Weathred	Grainsize	Texture	Metamorphic Indicator	Major Mineralization	Minor Mineralization	Mineralization Style	Mineralization Percent	Alteration	Alteration Degree	Sample Description
AHHTR006	15-Sep-11	GRAB	GPS		453120	7036026	9			granodiorite		white											
AHHTR007	15-Sep-11	GRAB	GPS		453120	7036028	9			granodiorite		white											
AHHTR008	15-Sep-11	GRAB	GPS		453712	7036380	9			silicified													Float piece of silicified altered seds, with py + po blebs.
AHHTR009	16-Sep-11	CHIP	GPS		452907	7036202	9	1	346	calcite													1 meter chip Across zone
AHHTR010	16-Sep-11	CHIP	GPS		452909	7036202	9	1	346	calcite													1 meter chip across zone
AHHTR011	16-Sep-11	GRAB	GPS		452824	7036107	9			Intrusive		white	light grey										material.
AHHTR012	16-Sep-11	GRAB	GPS		452751	7036098	9			intrusive													sample of seds at contact.
AHHTR013	16-Sep-11	CHIP	GPS		452396	7036312	9	1	218	limestone													1 meter chip across zone
AHHTR014	18-Sep-11	GRAB	GPS		455552	7034650	9			siltstone		rusty	beige										grab sample across dyke.
AHHTR015	18-Sep-11	GRAB	GPS		455552	7034649	9			siltstone		rusty	beige										Grab of qtz carb.
AHHTR016	18-Sep-11	GRAB	GPS		455552	7034648	9			siltstone		rusty	beige										Grab of qtz carb vein material.
AHHTR017	18-Sep-11	CHIP	GPS		455487	7034644	9	1	108	calcite													1 meter chip across fault.
AHHTR018	18-Sep-11	GRAB	GPS		455488	7034644	9			calcite													material.
AHHTR019	19-Sep-11	GRAB	GPS		455125	7034485	9			silicified													Grab of silicified outcrop with 3 % po-py.
AHHTR020	19-Sep-11	GRAB	GPS		454514	7034462	9			silicified		white			bedded								Grab of silicified COR1.
AHHTR021	19-Sep-11	GRAB	GPS		453726	7034025	9			siltstone													Gab of unit.
AHHTR022	20-Sep-11	CHIP	GPS		453420	7034339	9	1	0	siltstone													1 Meter chip.
AHHTR023	20-Sep-11	CHIP	GPS		453420	7034339	9	1	0	siltstone													1 meter chip.
AHHTR024	20-Sep-11	GRAB	GPS		453420	7034339	9			siltstone													aspy.
AHHTR025	20-Sep-11	CHIP	GPS		453456	7033998	9	1	155	Clay													dyke.
AHHTR026	20-Sep-11	CHIP	GPS		453464	7034318	9	1	160	silicified													1 meter chip sample, starting from Mo side of unit.
AHHTR027	20-Sep-11	CHIP	GPS		453464	7034318	9	1	160	silicified													1 meter chip samplw, starting from Mo side of unit.
AHHTR028	20-Sep-11	GRAB	GPS		453464	7034318	9			silicified													Grab of banded sulphides.
AHHTR029	21-Sep-11	GRAB	GPS		455130	7034150	9			rhyolite/diorite													Grab of altered siltsone at western contact.
AHHTR030	21-Sep-11	GRAB	GPS		455131	7034150	9			rhyolite/diorite													Grab of dyke mineralization.
AHHTR031	21-Sep-11	GRAB	GPS		455163	7034159	9			silicified													8 meter wide zone. Eastern margin of dyke.
AHHTR032	21-Sep-11	GRAB	GPS		454909	7034084	9			granodiorite													Grab of calc silicate skarn with blebs of cpy + mo.
AHHTR033	21-Sep-11	CHIP	GPS		454900	7034036	9	1	150	skarn													boulder. Mixture of garnet-diopside, skarn and highly silicified unit with blebs of cpy.
AHHTR034	21-Sep-11	GRAB	GPS		454756	7033687	9			granodiorite													Grab of dyke.
JKHTR001	16-Sep-11	FLOAT	GPS	243	452237	7035833	09N			Quartzite		grey green	rusty	fine	massive		arsenopyrite	pyrite	DISSEMINATED	10	Silicic	2	
JKHTR002	16-Sep-11	GRAB	GPS	1821	451790	7035318	09N					green	rusty	fine	massive		pyrite		DISSEMINATED	2			
JKHTR003	17-Sep-11	FLOAT	GPS	181	452906	7036172	09N			Siltstone		dark grey	rusty	fine	massive		pyrrhotite	pyrite	SEMIMASSIVE	25	Silicic	3	
JKHTR004	17-Sep-11	CHIP	GPS	1751	452428	7036351	09N	0.64	90	Siltstone		grey	rusty	fine	fractured								
JKHTR005	19-Sep-11	GRAB	GPS	1866	454600	7035445	09N			Diorite		dark grey	purplish	fine	massive		pyrite		BLEBBY	5	Fe-Staining	5	
JKHTR006	19-Sep-11	SUBCROP	GPS	1865	454600	7035447	09N			Diorite		grey	purplish	medium	massive		pyrite	pyrrhotite	MASSIVE	95	Fe-Staining	5	
JKHTR007	19-Sep-11	GRAB	GPS	1871	454630	7035438	09N			Diorite	FeOx	rusty	rusty	fine	fractured		pyrite		BLEBBY	15	Fe-Staining	4	
JKHTR008	19-Sep-11	GRAB	GPS	1882	454679	7035425	09N			FeOx	Siltstone	rusty	rusty	fine	rotten		pyrite		BLEBBY		Fe-Staining	4	
JKHTR009	19-Sep-11	FLOAT	GPS	1873	454604	7035427	09N			Siltstone		grey	rusty	medium	massive		pyrite	pyrrhotite	MASSIVE	80			
JKHTR010	16-Sep-11		GPS		452906	7036172	09N															0	

Sample Number	Date	Type	Location Mehtod	Elevation	UTM X	UTM Y	UTM Zone	Sample Length (m)	Sample Azimuth	Major Rock Type	Minor Rock Type	Colour Fresh	Colour Weathred	Grainsize	Texture	Metamorphic Indicator	Major Mineralization	Minor Mineralization	Mineralization Style	Mineralization Percent	Alteration	Alteration Degree	Sample Description
JKHTR011	20-Sep-11	CHIP	GPS	2164	453432	7034416	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR012	21-Sep-11	CHIP	GPS	2164	453432	7034415	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR013	21-Sep-11	CHIP	GPS	2164	453432	7034414	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR014	21-Sep-11	CHIP	GPS	2164	453432	7034413	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR015	21-Sep-11	CHIP	GPS	2164	453432	7034412	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR016	21-Sep-11	CHIP	GPS	2164	453432	7034411	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR017	21-Sep-11	CHIP	GPS	2164	453432	7034410	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR018	21-Sep-11	CHIP	GPS	2164	453432	7034409	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR019	21-Sep-11	CHIP	GPS	2153	453432	7034406	09N	1	90	Siltstone		grey	rusty	fine	bedded						Fe-Staining	3	
JKHTR020	21-Sep-11	FLOAT	GPS	1883	454744	7035324	09N			Siltstone		green	rusty	very fine	bedded		pyrite		BLEBBY		Fe-Staining	3	
JKHTR021	21-Sep-11	GRAB	GPS	19	454737	7035312	09N			Siltstone		green	rusty	very fine	massive		pyrrhotite		FRACTURES	5	Silicic	3	
RZHTR001	17-Sep-11	GRAB	GPS	175	453760	7036072	09N			Fragmental		light grey	light grey	fine-medium	brecciated								
RZHTR002	17-Sep-11	GRAB	GPS	1795	453915	7035660	09N			Diorite		grey	grey	medium	altered						Clay	3	
RZHTR003	17-Sep-11	GRAB	GPS	1795	453915	7035658	09N			Diorite		grey	grey	fine	altered						Clay	4	
RZHTR004	17-Sep-11	GRAB	GPS	1854	454360	7035215	09N			Diorite		brown	rusty	fine-medium	altered		none		NONE		Silica	2	
RZHTR005	17-Sep-11	GRAB	GPS	198	454637	7035284	09N			Diorite		dark grey	dark grey	fine-medium	altered		none				Skarn	4	
RZHTR006	17-Sep-11	GRAB	GPS	1836	454354	7035273	09N			Diorite		dark	dark	fine-medium	massive	garnet	pyrrhotite		BLEBBY	3	Skarn	5	
RZHTR007	22-Sep-11	FLOAT	GPS	1836	454352	7035271	09N			Limestone		dark	brown	coarse	crystalline	garnet	pyrrhotite		BLEBBY	1	Skarn	5	
RZHTR008	22-Sep-11	GRAB	GPS	2165	453422	7034429	09N			Limestone							pyrrhotite	chalcopyrite	BLEBBY	3	Skarn	4	
RZHTR009	22-Sep-11	FLOAT	GPS	2144	453102	7034381	09N			Siltstone			grey	fine	banded	quartz	pyrrhotite	chalcopyrite	BLEBBY	2	Silica	4	
RZHTR010	22-Sep-11	CHIP	GPS	214	452718	7034401	09N	1	90														
RZHTR011	22-Sep-11	CHIP	GPS	2179	453422	7034433	09N	1		Limestone		white	white	fine	banded	quartz	pyrrhotite		DISSEMINATED	1	Silica	4	
RZHTR012	22-Sep-11	CHIP	GPS	2149	453421	7034433	09N	0.35	180			brown			altered	diopside							
RZHTR013	22-Sep-11	CHIP	GPS	2179	453420	7034433	09N	0.4	180	Limestone		white		fine	banded	quartz							
RZHTR014	22-Sep-11	CHIP	GPS	2179	453434	7034407	09N	0.25	180	Limestone	Siltstone	white	white	fine	banded	quartz	pyrrhotite		DISSEMINATED	1	Skarn	4	
RZHTR015	22-Sep-11	CHIP	GPS	2152	453435	7034407	09N	0.15	180			brown	brown	fine	bedded	diopside					Skarn	5	
RZHTR016	22-Sep-11	CHIP	GPS	2152	453436	7034407	09N	1	180	Limestone	Siltstone	white	white	fine	banded	quartz					Skarn	4	
RZHTR017	22-Sep-11	CHIP	GPS	2165	453425	7034433	09N	18	1	Siltstone		white	white	fine	banded	quartz					Skarn	3	
RZHTR018	22-Sep-11	CHIP	GPS	2165	453425	7034432	09N	0.5	180			brownish	brown	fine-medium	banded	diopside					Diopside	5	
RZHTR019	22-Sep-11	CHANNEL	GPS	2165	453425	7034431	09N	1.1	180	Argillite		dark grey	rusty	fine	massive		pyrrhotite	chalcopyrite	BLEBBY	7	Fe-Staining	5	
RZHTR020	22-Sep-11	CHIP	GPS	2165	453425	7034430	09N	1	180			dark	dark	coarse	crystalline	garnet			BLEBBY		Skarn	5	
RZHTR021	22-Sep-11	CHIP	GPS	2165	453424.5	7034429.5	09N	1	180			brown	dark	coarse		garnet					Skarn	5	
RZHTR022	22-Sep-11	CHIP	GPS	2165	453424	7034429	09N	0.5	180			dark	brown	medium-coarse	massive	garnet					Skarn	5	
RZHTR023	22-Sep-11	CHIP	GPS	2165	453415	7034420	09N	1.5	180	Argillite		dark grey	rusty	fine	laminated		pyrrhotite			3	Silica	4	
RZHTR024	22-Sep-11	CHIP	GPS	2224	453422	7034425	09N	0.5	180	Argillite		dark grey	reddish	fine-medium	massive		pyrrhotite	chalcopyrite	BLEBBY	35	Fe-Staining	4	

Sample Number	Date	Type	Location Mehtod	Elevation	UTM X	UTM Y	UTM Zone	Sample Length (m)	Sample Azimuth	Major Rock Type	Minor Rock Type	Colour Fresh	Colour Weatehred	Grainsize	Texture	Metamorphic Indicator	Major Mineralization	Minor Mineralization	Mineralization Style	Mineralization Percent	Alteration	Alteration Degree	Sample Description
RZHTR025	22-Sep-11	CHIP	GPS	2173	453410	7034422	09N	1.3	180	Argillite		dark grey	rusty	fine-medium	banded		pyrrhotite	chalcopyrite	MASSIVE	50	Fe-Staining	4	
RZHTR026	22-Sep-11	CHIP	GPS	2173	453410	7034423	09N	1	180			dark	brown	fine-medium	bedded	garnet	pyrrhotite	chalcopyrite	DISSEMINATED	20	Fe-Staining	4	
RZHTR027	22-Sep-11	CHIP	GPS	1865	454612	7035470	09N	1	35			grey	rusty	medium-coarse	none		pyrrhotite	chalcopyrite	DISSEMINATED	2	Fe-Staining	2	
RZHTR028	22-Sep-11	FLOAT	GPS	1853	454612	7035470	09N					dark	rusty	medium-coarse	massive		pyrrhotite	chalcopyrite	MASSIVE	50	Fe-Staining	3	
RZHTR029	22-Sep-11	FLOAT	GPS	185	454605	7035472	09N					dark	rusty	medium-coarse	massive		pyrrhotite	chalcopyrite	BLEBBY	70	Fe-Staining	4	
RZHTR030	22-Sep-11	CHIP	GPS	1878	454733	7035351	09N	1.7	180	Argillite		rusty	rusty	fine-medium	massive		pyrrhotite	chalcopyrite	BLEBBY	3	Fe-Staining	5	
RZHTR031	22-Sep-11	GRAB	GPS	1874	454769	7035327	09N			Siltstone		dark	dark grey	fine-medium	bedded	quartz	chalcopyrite	pyrrhotite	DISSEMINATED	2	Silica	3	
RZHTR032	22-Sep-11	GRAB	GPS	1894	454733	7035304	09N					grey	grey	fine-medium	massive		pyrrhotite	chalcopyrite	DISSEMINATED	1	Silica	4	
RZHTR033	22-Sep-11	GRAB	GPS	2165	453423	7034429	09N															0	BABE RUTH petrographics sample that got assayed

Appendix 4.2 - Silt Samples

Sample Number	Date	Location Method	UTM X	UTM Y	UTM Zone	Tributary	Turbulence	Depth	Size	Quality	Status
AHHTS001	15-Sep-11	GPS	453121	7036074	9N	3	LOW	5	5	4	COMPLETE
AHHTS002	15-Sep-11	GPS	453113	7036207	9N	2	LOW	5	5	4	COMPLETE
AHHTS003	18-Sep-11	GPS	455571	7034648	9N	1	HIGH	10	4	4	COMPLETE
AHHTS004	18-Sep-11	GPS	455405	7034600	9N	1	HIGH	10	5	4	COMPLETE
AHHTS005	18-Sep-11	GPS	455298	7034573	9N	2	HIGH	10	4	3	MISSING_SHIP
AHHTS006	18-Sep-11	GPS	455146	7034481	9N	1	MEDIUM	10	3	4	MISSING_SHIP
AHHTS007	19-Sep-11	GPS	454845	7034293	9N					0	MISSING_SHIP
AHHTS008	19-Sep-11	GPS	454769	7034323	9N	2	LOW	5	4	4	MISSING_SHIP
RZHTS001	17-Sep-11	GPS	454170	7034475	9N	1	VERY LOW	5	5	5	MISSING_SHIP

Appendix 4.3 - Soil Samples

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
AHHTD001	9/15/2011	GPS			453156	7035884	9N	6								COMPLETE
AHHTD002	9/15/2011	GPS			452688	7035839	9N	9								COMPLETE
AHHTD003	9/15/2011	GPS			454863	7034074	9N	6								COMPLETE
HTL005 00+00	9/16/2011	GPS		1875	452026	7035951	9N	6	rusty	0 - 20	5	B	4	LINE_START		COMPLETE
HTL005 00+25S	9/16/2011	MAP			452003	7035948	9N		rusty	0 - 20	5	B	4			COMPLETE
HTL005 00+50S	9/16/2011	MAP			451980	7035945	9N		rusty	0 - 20	5	B	4	ROCKY		COMPLETE
HTL005 00+75S	9/16/2011	MAP			451957	7035942	9N		rusty	0 - 20	5	B	4	ROCKY		COMPLETE
HTL005 01+00S	9/16/2011	MAP			451934	7035939	9N		rusty	0 - 20	5	B	4	ROCKY		COMPLETE
HTL005 01+25S	9/16/2011	MAP			451911	7035935	9N		tan	0 - 20	15	B	4			COMPLETE
HTL005 01+50S	9/16/2011	MAP			451888	7035932	9N		tan	0 - 20	5	B	4	ROCKY		COMPLETE
HTL005 01+75S	9/16/2011	MAP			451865	7035929	9N		tan	0 - 20	5	B	3	ROCKY		COMPLETE
HTL005 02+00S	9/16/2011	GPS		1816	451842	7035926	9N	6	tan	0 - 20	5	B	3	ROCKY		COMPLETE
HTL005 02+25S	9/16/2011	MAP			451823	7035910	9N		tan	0 - 20	5	B	3	ROCKY	5M BEFORE	COMPLETE
HTL005 02+50S	9/16/2011	MAP			451804	7035895	9N		tan	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE
HTL005 02+75S	9/16/2011	MAP			451785	7035879	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL005 03+00S	9/16/2011	MAP			451766	7035863	9N		brown	0 - 20	15	B	4			COMPLETE
HTL005 03+25S	9/16/2011	MAP			451747	7035847	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL005 03+50S	9/16/2011	MAP			451728	7035832	9N		brown	0 - 20	5	B	4			COMPLETE
HTL005 03+75S	9/16/2011	MAP			451709	7035816	9N		brown	0 - 20	5	B	4			COMPLETE
HTL005 04+00S	9/16/2011	GPS		187	451690	7035800	9N	6	brown	0 - 20	5	B	5			COMPLETE
HTL005 04+25S	9/16/2011	MAP			451692	7035775	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL005 04+50S	9/16/2011	MAP			451695	7035751	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL005 04+75S	9/16/2011	MAP			451697	7035726	9N		brown	0 - 20	15	B	5			COMPLETE
HTL005 05+00S	9/16/2011	MAP			451700	7035702	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL005 05+25S	9/16/2011	MAP			451702	7035677	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL005 05+50S	9/16/2011	MAP			451704	7035652	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL005 05+75S	9/16/2011	MAP			451707	7035628	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL005 06+00S	9/16/2011	GPS		1845	451709	7035603	9N	6	brown	0 - 20	15	B	4			COMPLETE
HTL005 06+25S	9/16/2011	MAP			451718	7035580	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL005 06+50S	9/16/2011	MAP			451728	7035557	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL005 06+75S	9/16/2011	MAP			451737	7035534	9N		brown	0 - 20	15	B	4	ROCKY	5M BEFORE	COMPLETE
HTL005 07+00S	9/16/2011	MAP			451747	7035512	9N		brown	0 - 20	15	B	1	ROCKY		COMPLETE
HTL005 07+25S	9/16/2011	NO SAMPLE			451756	7035489	9N						0	TALUS		COMPLETE
HTL005 07+50S	9/16/2011	NO SAMPLE			451765	7035466	9N		brown	0 - 20	15	B	1	TALUS		COMPLETE
HTL005 07+75S	9/16/2011	NO SAMPLE			451775	7035443	9N						0	TALUS		COMPLETE
HTL005 08+00S	9/16/2011	GPS		1829	451784	7035420	9N		brown	0 - 20	15	B	1	LINE_END	TALUS	MISSING_SHIP
HTL006 00+00	9/15/2011	GPS			452398	7034897	9N	0					0	LINE_START		COMPLETE
HTL006 00+25SE	9/15/2011	MAP			452400	7034870	9N	0								COMPLETE
HTL006 00+50SE	9/15/2011	NO SAMPLE	5	215	452384	7034848	9N	21		40 - 60		Select				COMPLETE
HTL006 00+75SE	9/16/2011	MAP	75		452372	7034830	9N		brown	40 - 60	5	TILL	2	ROCKY	TALUS	COMPLETE
HTL006 01+00SE	9/16/2011	NO SAMPLE	1		452361	7034812	9N									COMPLETE
HTL006 01+25SE	9/16/2011	MAP	125		452354	7034792	9N		brown	20 - 40	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 01+50SE	9/16/2011	MAP	156		452352	7034771	9N		brown	20 - 40	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 01+75SE	9/16/2011	MAP	179		452354	7034750	9N		brown	20 - 40	5	TILL	3	ROCKY	TALUS	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL006 02+00SE	9/16/2011	NO SAMPLE	2	211	452356	7034729	9N	20		20 - 40	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 02+25SE	9/16/2011	MAP	225		452358	7034707	9N		brown	20 - 40	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 02+50SE	9/16/2011	NO SAMPLE	25		452360	7034685	9N									COMPLETE
HTL006 02+75SE	9/16/2011	NO SAMPLE	275		452358	7034664	9N		brown	20 - 40	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 03+00SE	9/16/2011	MAP	3		452361	7034642	9N		brown	20 - 40	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 03+25SE	9/16/2011	MAP	325		452368	7034622	9N		brown	20 - 40	5	TILL	5	ROCKY	TALUS	COMPLETE
HTL006 03+50SE	9/16/2011	MAP	35		452377	7034602	9N		brown	40 - 60	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 03+75SE	9/16/2011	MAP	375		452387	7034582	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 04+00SE	9/16/2011	GPS	4	1987	452398	7034563	9N	7	brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 04+25SE	9/16/2011	MAP	425		452406	7034537	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 04+50SE	9/16/2011	MAP	45		452414	7034512	9N									COMPLETE
HTL006 04+75SE	9/16/2011	MAP	475		452422	7034486	9N									COMPLETE
HTL006 05+00SE	9/16/2011	MAP	5		452431	7034460	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 05+25SE	9/16/2011	MAP	525		452439	7034434	9N									COMPLETE
HTL006 05+50SE	9/16/2011	MAP	55		452447	7034409	9N									COMPLETE
HTL006 05+75SE	9/16/2011	MAP	578		452455	7034383	9N									COMPLETE
HTL006 06+00SE	9/16/2011	GPS	63	235	452463	7034357	9N	7								COMPLETE
HTL006 06+25SE	9/16/2011	MAP	63		452472	7034336	9N		brown	40 - 60	5	TILL	2	ROCKY	TALUS	COMPLETE
HTL006 06+50SE	9/16/2011	NO SAMPLE	651		452483	7034316	9N									COMPLETE
HTL006 06+75SE	9/16/2011	NO SAMPLE	675		452498	7034299	9N									COMPLETE
HTL006 07+00SE	9/16/2011	MAP	74		452512	7034281	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 07+25SE	9/16/2011	MAP	726		452531	7034268	9N		brown	40 - 60	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 07+50SE	9/16/2011	MAP	755		452550	7034257	9N									COMPLETE
HTL006 07+75SE	9/16/2011	MAP	776		452570	7034246	9N		brown	40 - 60	5	TILL	2	ROCKY	TALUS	COMPLETE
HTL006 08+00SE	9/16/2011	GPS	82	1995	452590	7034235	9N	9	brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 08+25SE	9/16/2011	MAP	824		452602	7034218	9N									COMPLETE
HTL006 08+50SE	9/16/2011	MAP	848		452617	7034205	9N		brown	40 - 60	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 08+75SE	9/16/2011	NO SAMPLE	877		452634	7034194	9N									COMPLETE
HTL006 09+00SE	9/16/2011	NO SAMPLE	91		452653	7034185	9N									COMPLETE
HTL006 09+25SE	9/16/2011	NO SAMPLE	924		452672	7034179	9N									COMPLETE
HTL006 09+50SE	9/16/2011	MAP	952		452693	7034176	9N		brown	40 - 60	5	TILL	4	ROCKY	TALUS	COMPLETE
HTL006 09+75SE	9/16/2011	NO SAMPLE	975		452713	7034175	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 10+00SE	9/16/2011	NO SAMPLE	1	1995	452734	7034175	9N	7	brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 10+25SE	9/16/2011	NO SAMPLE	125		452758	7034173	9N									COMPLETE
HTL006 10+50SE	9/16/2011	MAP	151		452780	7034181	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 10+75SE	9/16/2011	MAP	175		452801	7034193	9N									COMPLETE
HTL006 11+00SE	9/16/2011	MAP	112		452824	7034198	9N									COMPLETE
HTL006 11+25SE	9/16/2011	NO SAMPLE	1124		452848	7034203	9N									COMPLETE
HTL006 11+50SE	9/16/2011	MAP			452872	7034206	9N									COMPLETE
HTL006 11+75SE	9/16/2011	MAP	1183		452896	7034202	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 12+00SE	9/16/2011	GPS	12	2	452919	7034195	9N	15								COMPLETE
HTL006 12+25SE	9/16/2011	MAP	1225		452946	7034189	9N									COMPLETE
HTL006 12+50SE	9/16/2011	MAP	125		452960	7034167	9N									COMPLETE
HTL006 12+75SE	9/16/2011	MAP	1275		452970	7034142	9N									COMPLETE
HTL006 13+00SE	9/16/2011	MAP	1296		452980	7034116	9N		brown	40 - 60	5	TILL	2	ROCKY	TALUS	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL006 13+25SE	9/16/2011	MAP	1325		452987	7034089	9N		brown	40 - 60	5	TILL	3	ROCKY	TALUS	COMPLETE
HTL006 13+50SE	9/16/2011	GPS	1349	1994	452991	7034062	9N	10	brown	40 - 60	5	TILL	3	LINE_END	ROCKY	COMPLETE
HTL007 00+00	9/16/2011	GPS		166	453801	7036296	9N	6	Brown	0 - 20	15	B	3	LINE_START		COMPLETE
HTL007 00+25W	9/16/2011	MAP	25		453778	7036304	9N		Brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL007 00+50W	9/16/2011	MAP	51		453755	7036312	9N		Brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL007 00+75W	9/16/2011	MAP	75		453732	7036320	9N		Brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 01+00W	9/16/2011	MAP	12		453708	7036328	9N		Brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 01+25W	9/16/2011	MAP	124		453685	7036336	9N		Brown	0 - 20	15	B	1	ROCKY	ORGANIC	COMPLETE
HTL007 01+50W	9/16/2011	NO SAMPLE	151		453662	7036344	9N		Brown	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 01+75W	9/16/2011	MAP	175		453638	7036352	9N		Brown	0 - 20	15	B	2	ROCKY	ORGANIC	COMPLETE
HTL007 02+00W	9/16/2011	GPS	2	1643	453614	7036360	9N	7	Brown	0 - 20	15	B	2		ORGANIC	COMPLETE
HTL007 02+25W	9/16/2011	MAP	225		453592	7036368	9N		Brown	0 - 20	15	B	3		ORGANIC	COMPLETE
HTL007 02+50W	9/16/2011	NO SAMPLE	25		453568	7036376	9N		Brown	0 - 20	15	B	1	TALUS	ROCKY	COMPLETE
HTL007 02+75W	9/16/2011	MAP	275		453545	7036384	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL007 03+00W	9/16/2011	MAP	3		453522	7036392	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL007 03+25W	9/16/2011	MAP	326		453499	7036399	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL007 03+50W	9/16/2011	MAP	351		453475	7036407	9N		brown	0 - 20	15	B	3			COMPLETE
HTL007 03+75W	9/16/2011	MAP	375		453452	7036415	9N		brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL007 04+00W	9/16/2011	GPS	41	165	453428	7036423	9N	7	brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL007 04+25W	9/16/2011	MAP	425		453408	7036432	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL007 04+50W	9/16/2011	MAP	449		453387	7036441	9N		brown	0 - 20	15	B	4			COMPLETE
HTL007 04+75W	9/16/2011	MAP	477		453364	7036446	9N		brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL007 05+00W	9/16/2011	MAP	5		453342	7036448	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 05+25W	9/16/2011	MAP	525		453319	7036446	9N		brown	0 - 20	15	B	3	ROCKY	ORGANIC	COMPLETE
HTL007 05+50W	9/16/2011	MAP	55		453297	7036442	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 05+75W	9/16/2011	MAP	575		453274	7036438	9N		brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL007 06+00W	9/16/2011	GPS	61	1653	453251	7036433	9N	10	brown	0 - 20	15	B	3	ROCKY	ORGANIC	COMPLETE
HTL007 06+25W	9/16/2011	MAP	628		453251	7036455	9N		brown	0 - 20	15	B	3	ROCKY	CROSSED_CREEK	COMPLETE
HTL007 06+50W	9/16/2011	MAP	65		453250	7036478	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 06+75W	9/16/2011	MAP	675		453240	7036498	9N		brown	0 - 20	15	B	1	ROCKY	ORGANIC	COMPLETE
HTL007 07+00W	9/16/2011	MAP	7		453230	7036518	9N		brown	0 - 20	15	B	1	ROCKY		COMPLETE
HTL007 07+25W	9/16/2011	MAP	725		453214	7036531	9N		brown	0 - 20	15	B	2	ROCKY	ORGANIC	COMPLETE
HTL007 07+50W	9/16/2011	MAP	756		453194	7036542	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 07+75W	9/17/2011	MAP	775		453174	7036550	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 08+00W	9/17/2011	GPS	8	1653	453151	7036555	9N	11	brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL007 08+25W	9/17/2011	NO SAMPLE	825		453128	7036558	9N		brown	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 08+50W	9/17/2011	MAP	85		453104	7036560	9N		brown	0 - 20	15	B	1	ROCKY	ORGANIC	COMPLETE
HTL007 08+75W	9/17/2011	MAP	875		453080	7036560	9N		brown	0 - 20	15	B	3	ROCKY	ORGANIC	COMPLETE
HTL007 09+00W	9/17/2011	MAP	9		453055	7036560	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL007 09+25W	9/17/2011	NO SAMPLE	926		453031	7036560	9N		brown	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 09+50W	9/17/2011	MAP	95		453007	7036559	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 09+75W	9/17/2011	MAP	975		452983	7036558	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 10+00W	9/17/2011	NO SAMPLE	1	1661	452958	7036555	9N	8	brown	20 - 40	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 10+25W	9/17/2011	NO SAMPLE			452935	7036546	9N									COMPLETE
HTL007 10+50W	9/17/2011	NO SAMPLE			452910	7036538	9N									COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL007 10+75W	9/17/2011	MAP			452886	7036529	9N		brown	20 - 40	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 11+00W	9/17/2011	NO SAMPLE			452862	7036521	9N									COMPLETE
HTL007 11+25W	9/17/2011	NO SAMPLE			452837	7036512	9N									COMPLETE
HTL007 11+50W	9/17/2011	MAP			452813	7036504	9N		brown	20 - 40	15	B	3	ROCKY	TALUS	COMPLETE
HTL007 11+75W	9/17/2011	MAP			452789	7036495	9N		brown	20 - 40	15	B	4		TALUS	COMPLETE
HTL007 12+00W	9/17/2011	GPS			452764	7036486	9N	14	brown	20 - 40	15	B	5		TALUS	COMPLETE
HTL007 12+25W	9/17/2011	MAP			452737	7036484	9N		brown	20 - 40	15	B	5	ORGANIC	TALUS	COMPLETE
HTL007 12+50W	9/17/2011	MAP			452709	7036483	9N		brown	20 - 40	15	B	3	ORGANIC	TALUS	COMPLETE
HTL007 12+75W	9/17/2011	MAP			452682	7036481	9N		brown	20 - 40	15	B	3	ROCKY	TALUS	COMPLETE
HTL007 13+00W	9/17/2011	MAP			452654	7036479	9N		brown	20 - 40	15	B	3	ORGANIC	TALUS	COMPLETE
HTL007 13+25W	9/17/2011	MAP			452626	7036478	9N		brown	20 - 40	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 13+50W	9/17/2011	MAP			452598	7036476	9N		brown	20 - 40	15	B	2	ROCKY	ORGANIC	COMPLETE
HTL007 13+75W	9/17/2011	NO SAMPLE			452570	7036474	9N									COMPLETE
HTL007 14+00W	9/17/2011	GPS			452537	7036471	9N	15	brown	20 - 40	15	B	3	ROCKY	TALUS	COMPLETE
HTL007 14+25W	9/17/2011	MAP			452515	7036473	9N		brown	20 - 40	15	B	2	ORGANIC	TALUS	COMPLETE
HTL007 14+50W	9/17/2011	MAP			452492	7036474	9N		brown	20 - 40	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 14+75W	9/17/2011	MAP			452470	7036474	9N		brown	20 - 40	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 15+00W	9/17/2011	MAP			452447	7036477	9N		black	20 - 40	15	B	3	ROCKY	TALUS	COMPLETE
HTL007 15+25W	9/17/2011	MAP			452425	7036481	9N		black	20 - 40	15	B	4			COMPLETE
HTL007 15+50W	9/17/2011	NO SAMPLE			452403	7036486	9N		black	20 - 40	15	B	1	ROCKY		COMPLETE
HTL007 15+75W	9/17/2011	MAP			452381	7036493	9N		brown	20 - 40	15	B	1	ROCKY	TALUS	COMPLETE
HTL007 16+00W	9/17/2011	GPS			452359	7036501	9N	8	brown	20 - 40	15	B	3	ROCKY	TALUS	COMPLETE
HTL007 16+25W	9/17/2011	MAP			452339	7036510	9N		brown	20 - 40	15	B	2	ROCKY	TALUS	COMPLETE
HTL007 16+50W	9/17/2011	NO SAMPLE			452320	7036518	9N		brown	20 - 40	15	B	2	LINE_END		COMPLETE
HTL008 00+00	9/18/2011	GPS		2258	453385	7034650	9N	7	brown	0 - 20	5	B	2	LINE_START	TALUS	COMPLETE
HTL008 00+25W	9/18/2011	MAP			453362	7034645	9N		brown	0 - 20	5	B	2	TALUS		COMPLETE
HTL008 00+50W	9/18/2011	NO SAMPLE			453339	7034640	9N		brown	0 - 20	5	B	2	TALUS		COMPLETE
HTL008 00+75W	9/18/2011	MAP	75		453317	7034636	9N		brown	0 - 20	5	B	2	TALUS	ORGANIC	COMPLETE
HTL008 01+00W	9/18/2011	MAP	1		453293	7034634	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 01+25W	9/18/2011	MAP	125		453270	7034634	9N		brown	0 - 20	5	B	4	TALUS		COMPLETE
HTL008 01+50W	9/18/2011	GPS	15	2268	453247	7034634	9N	4	brown	0 - 20	5	B	4	TALUS		COMPLETE
HTL008 01+75W	9/18/2011	MAP	175		453221	7034633	9N		brown	0 - 20	5	B	3	TALUS	ROCKY	COMPLETE
HTL008 02+00W	9/19/2011	GPS	2	2264	453194	7034631	9N	4	brown	0 - 20	5	B	4	TALUS	ROCKY	COMPLETE
HTL008 02+25W	9/19/2011	NO SAMPLE	225		453174	7034625	9N		brown	0 - 20	5	B	1	TALUS	ROCKY	COMPLETE
HTL008 02+50W	9/19/2011	NO SAMPLE	25		453155	7034616	9N		brown	0 - 20	5	B	1	TALUS	ROCKY	COMPLETE
HTL008 02+75W	9/19/2011	MAP	275		453137	7034604	9N		brown	0 - 20	5	B	4	TALUS		COMPLETE
HTL008 03+00W	9/19/2011	NO SAMPLE	3		453116	7034599	9N		brown	0 - 20	5	B	1	TALUS	ROCKY	COMPLETE
HTL008 03+25W	9/19/2011	MAP	327		453095	7034597	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 03+50W	9/19/2011	GPS	35	2221	453074	7034598	9N	3	brown	0 - 20	5	B	3	TALUS		COMPLETE
HTL008 03+75W	9/19/2011	MAP	375		453054	7034606	9N		brown	0 - 20	5	B	3	TALUS	ORGANIC	COMPLETE
HTL008 04+00W	9/19/2011	GPS	4	2225	453034	7034613	9N	2	brown	0 - 20	5	B	4	TALUS		COMPLETE
HTL008 04+25W	9/19/2011	MAP	425		453011	7034621	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL008 04+50W	9/19/2011	MAP	45		452987	7034629	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL008 04+75W	9/19/2011	MAP	475		452964	7034637	9N		brown	0 - 20	5	B	3	5M BEFORE	ROCKY	COMPLETE
HTL008 05+00W	9/19/2011	MAP	5		452941	7034645	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL008 05+25W	9/19/2011	MAP			452918	7034653	9N		brown	0 - 20	5	B	4	TALUS	ROCKY	COMPLETE
HTL008 05+50W	9/19/2011	MAP			452895	7034661	9N		brown	0 - 20	5	B	3	TALUS	ROCKY	COMPLETE
HTL008 05+75W	9/19/2011	MAP			452872	7034669	9N		brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL008 06+00W	9/19/2011	MAP			452849	7034678	9N		brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL008 06+25W	9/19/2011	MAP			452828	7034691	9N		brown	0 - 20	15	B	3	TALUS		COMPLETE
HTL008 06+50W	9/19/2011	MAP			452808	7034705	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 06+75W	9/19/2011	NO SAMPLE			452789	7034720	9N									COMPLETE
HTL008 07+00W	9/19/2011	GPS		2234	452773	7034739	9N	6	brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL008 07+25W	9/19/2011	MAP			452758	7034756	9N		brown	0 - 20	15	B	3	TALUS	ROCKY	COMPLETE
HTL008 07+50W	9/19/2011	MAP			452744	7034774	9N		brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL008 07+75W	9/19/2011	MAP			452729	7034791	9N		brown	0 - 20	15	B	2	TALUS	5M BEFORE	COMPLETE
HTL008 08+00W	9/19/2011	GPS		2224	452714	7034808	9N	1	brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 08+25W	9/19/2011	MAP			452708	7034831	9N		brown	0 - 20	15	B	2	TALUS	10M PAST	COMPLETE
HTL008 08+50W	9/19/2011	MAP			452702	7034855	9N		brown	0 - 20	15	B	3	TALUS		COMPLETE
HTL008 08+75W	9/19/2011	MAP			452696	7034878	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 09+00W	9/19/2011	MAP			452691	7034902	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 09+25W	9/19/2011	MAP			452685	7034925	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 09+50W	9/19/2011	MAP			452679	7034948	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 09+75W	9/19/2011	MAP			452673	7034972	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 10+00W	9/19/2011	NO SAMPLE		221	452667	7034995	9N	6								COMPLETE
HTL008 10+25W	9/19/2011	MAP			452665	7035018	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 10+50W	9/19/2011	MAP			452662	7035042	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 10+75W	9/19/2011	NO SAMPLE			452660	7035065	9N									COMPLETE
HTL008 11+00W	9/19/2011	MAP			452658	7035089	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 11+25W	9/19/2011	MAP			452655	7035112	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 11+50W	9/19/2011	MAP			452653	7035135	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 11+75W	9/19/2011	MAP			452650	7035159	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 12+00W	9/19/2011	GPS		2173	452648	7035182	9N	6	brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 12+25W	9/19/2011	MAP			452635	7035202	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 12+50W	9/19/2011	MAP			452621	7035223	9N		brown	0 - 20	15	B	2	TALUS	ROCKY	COMPLETE
HTL008 12+75W	9/19/2011	MAP			452608	7035243	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL008 13+00W	9/19/2011	MAP			452594	7035263	9N		brown	0 - 20	15	B	3	TALUS	ROCKY	COMPLETE
HTL008 13+25W	9/19/2011	MAP			452581	7035283	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 13+50W	9/19/2011	MAP			452567	7035304	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 13+75W	9/19/2011	MAP			452554	7035324	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 14+00W	9/19/2011	GPS		2147	452540	7035344	9N	5	brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 14+25W	9/19/2011	MAP			452526	7035362	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 14+50W	9/19/2011	MAP			452513	7035381	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 14+75W	9/19/2011	MAP			452499	7035399	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL008 15+00W	9/19/2011	MAP		2142	452485	7035417	9N	5	brown	0 - 20	15	B	4	LINE_END	TALUS	COMPLETE
HTL009 00+00	9/18/2011	GPS			454438	7034984	9N	2	Brown	0 - 20	15	B	4	LINE_START	ROCKY	COMPLETE
HTL009 00+25E	9/18/2011	MAP			454463	7034985	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL009 00+50E	9/18/2011	MAP			454487	7034986	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 00+75E	9/18/2011	MAP			454512	7034987	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 01+00E	9/18/2011	MAP			454537	7034988	9N		Brown	0 - 20	15	B	5			COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL009 01+25E	9/18/2011	MAP			454561	7034988	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL009 01+50E	9/18/2011	MAP			454586	7034989	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 01+75E	9/18/2011	MAP			454610	7034990	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL009 02+00E	9/18/2011	GPS			454635	7034991	9N	3	Brown	0 - 20	15	B	4			COMPLETE
HTL009 02+25E	9/18/2011	MAP			454656	7035011	9N		Brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL009 02+50E	9/18/2011	MAP			454677	7035030	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL009 02+75E	9/18/2011	MAP			454698	7035050	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL009 03+00E	9/18/2011	MAP			454719	7035070	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL009 03+25E	9/18/2011	MAP			454739	7035089	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 03+50E	9/18/2011	MAP			454760	7035109	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 03+75E	9/18/2011	MAP			454781	7035128	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 04+00E	9/18/2011	GPS			454802	7035148	9N	17	Brown	0 - 20	15	B	4			COMPLETE
HTL009 04+25E	9/18/2011	MAP			454825	7035158	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 04+50E	9/19/2011	MAP			454849	7035168	9N		Brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL009 04+75E	9/19/2011	MAP			454872	7035178	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 05+00E	9/19/2011	MAP			454895	7035188	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL009 05+25E	9/19/2011	MAP			454918	7035198	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL009 05+50E	9/19/2011	MAP			454942	7035208	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL009 05+75E	9/19/2011	MAP			454965	7035218	9N		Brown	0 - 20	15	B	1	ROCKY		COMPLETE
HTL009 06+00E	9/19/2011	GPS			454988	7035228	9N	9	Brown	0 - 20	15	B	4			COMPLETE
HTL009 06+25E	9/19/2011	MAP			455012	7035232	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 06+50E	9/19/2011	MAP			455036	7035235	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 06+75E	9/19/2011	MAP			455060	7035239	9N		Brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL009 07+00E	9/19/2011	MAP			455084	7035243	9N		Brown	0 - 20	15	B	2	ROCKY		COMPLETE
HTL009 07+25E	9/19/2011	MAP			455107	7035246	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL009 07+50E	9/19/2011	MAP			455131	7035250	9N		Brown	0 - 20	15	B	3	ORGANIC	ROCKY	COMPLETE
HTL009 07+75E	9/19/2011	MAP			455155	7035253	9N		Brown	0 - 20	15	B	2	ROCKY	ORGANIC	COMPLETE
HTL009 08+00E	9/19/2011	GPS			455179	7035257	9N	6	Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL009 08+25E	9/19/2011	MAP			455202	7035266	9N		Brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL009 08+50E	9/19/2011	GPS			455225	7035275	9N	4	Brown	0 - 20	15	B	3	LINE_END	ROCKY	COMPLETE
HTL010 00+00	9/19/2011	GPS		1837	454092	7034372	9N	6	brown	0 - 20	15	B	3	LINE_START	ROCKY	COMPLETE
HTL010 00+25S	9/19/2011	MAP	25		454080	7034353	9N		brown	0 - 20	15	B	4			COMPLETE
HTL010 00+50S	9/19/2011	MAP	5		454067	7034333	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 00+75S	9/19/2011	MAP	75		454055	7034314	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 01+00S	9/19/2011	MAP	1		454042	7034294	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 01+25S	9/19/2011	MAP	125		454030	7034275	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 01+50S	9/19/2011	MAP	15		454017	7034255	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 01+75S	9/19/2011	MAP	155		454005	7034236	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 02+00S	9/19/2011	GPS	2	1845	453992	7034216	9N	5	brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 02+25S	9/19/2011	MAP	225		453979	7034196	9N		brown	0 - 20	15	B	3	ORGANIC	TALUS	COMPLETE
HTL010 02+50S	9/19/2011	MAP	25		453967	7034176	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 02+75S	9/19/2011	MAP	275		453954	7034156	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL010 03+00S	9/19/2011	MAP	3		453942	7034136	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL010 03+25S	9/19/2011	MAP	325		453929	7034115	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL010 03+50S	9/19/2011	MAP	35		453916	7034095	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL010 03+75S	9/19/2011	MAP	375		453904	7034075	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL010 04+00S	9/19/2011	GPS	4	1845	453891	7034055	9N	4	brown	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 04+25S	9/19/2011	MAP	425		453872	7034037	9N		brown	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 04+50S	9/20/2011	MAP	45		453852	7034019	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 04+75S	9/20/2011	MAP	475		453833	7034001	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 05+00S	9/20/2011	GPS	5	1851	453813	7033983	9N	4	brown	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 05+25S	9/20/2011	MAP	525		453799	7033964	9N		brown	0 - 20	5	B	3	ROCKY	TALUS	COMPLETE
HTL010 05+50S	9/20/2011	MAP	55		453786	7033944	9N		brown	0 - 20	5	B	4	ROCKY	TALUS	COMPLETE
HTL010 05+75S	9/20/2011	MAP	575		453772	7033925	9N		brown	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 06+00S	9/20/2011	GPS	6	1845	453758	7033905	9N	9	brown	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 06+25S	9/20/2011	MAP	625		453733	7033892	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	COMPLETE
HTL010 06+50S	9/20/2011	MAP	65		453707	7033880	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL010 06+75S	9/20/2011	MAP	675		453682	7033867	9N		brown	0 - 20	15	B	3	ORGANIC	TALUS	COMPLETE
HTL010 07+00S	9/20/2011	MAP	7		453656	7033854	9N		brown	0 - 20	25	B	3	ORGANIC	TALUS	COMPLETE
HTL010 07+25S	9/20/2011	MAP	725		453631	7033841	9N		brown	0 - 20	5	B	3	ORGANIC	TALUS	COMPLETE
HTL010 07+50S	9/20/2011	MAP	75		453605	7033829	9N		brown	0 - 20	5	B	4	ORGANIC	TALUS	COMPLETE
HTL010 07+75S	9/20/2011	MAP	775		453580	7033816	9N		brown	0 - 20	5	B	3	ORGANIC	TALUS	COMPLETE
HTL010 08+00S	9/20/2011	GPS	8	1855	453554	7033803	9N	12	brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL010 08+25S	9/20/2011	NO SAMPLE	825		453553	7033781	9N		brown	0 - 20	15	B	1	ORGANIC	TALUS	COMPLETE
HTL010 08+50S	9/20/2011	MAP	85		453552	7033759	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 08+75S	9/20/2011	MAP	875		453551	7033736	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 09+00S	9/20/2011	MAP	9		453550	7033714	9N		brown	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 09+25S	9/20/2011	MAP	925		453549	7033692	9N		brown	0 - 20	15	B	3	ORGANIC	TALUS	COMPLETE
HTL010 09+50S	9/20/2011	MAP	95		453548	7033670	9N		grey	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 09+75S	9/20/2011	MAP	975		453547	7033647	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 10+00S	9/20/2011	GPS	1	1877	453546	7033625	9N	5	dark	0 - 20	15	B	4	ROCKY	TALUS	COMPLETE
HTL010 10+25S	9/20/2011	NO SAMPLE	125		453537	7033600	9N		dark	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE
HTL010 10+50S	9/20/2011	MAP	15		453527	7033576	9N		dark	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 10+75S	9/20/2011	MAP	175		453518	7033551	9N		dark	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 11+00S	9/20/2011	MAP	11		453509	7033527	9N		dark	0 - 20	15	B	3	ORGANIC	TALUS	COMPLETE
HTL010 11+25S	9/20/2011	MAP	1125		453499	7033502	9N		dark	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 11+50S	9/20/2011	MAP	115		453490	7033477	9N		brown	0 - 20	15	B	3	ORGANIC	TALUS	COMPLETE
HTL010 11+75S	9/20/2011	MAP	1175		453480	7033453	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 12+00S	9/20/2011	GPS	12	188	453471	7033428	9N	15	brown	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 12+25S	9/20/2011	MAP	1225		453462	7033403	9N		brown	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 12+50S	9/20/2011	MAP	125		453452	7033378	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 12+75S	9/20/2011	MAP	1275		453443	7033352	9N		grey	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL010 13+00S	9/20/2011	GPS	13	1889	453433	7033327	9N	8	grey	0 - 20	15	B	2	ROCKY	TALUS	COMPLETE
HTL010 13+25S	9/20/2011	MAP	1325		453426	7033308	9N		brown	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE
HTL010 13+50S	9/20/2011	MAP	135		453419	7033290	9N		brown	0 - 20	5	B	3	ORGANIC	TALUS	COMPLETE
HTL010 13+75S	9/20/2011	MAP	1375		453411	7033271	9N		brown	0 - 20	5	B	3	ROCKY	TALUS	COMPLETE
HTL010 14+00S	9/20/2011	NO SAMPLE	141	188	453404	7033252	9N	3	brown	0 - 20	5	B	1	ROCKY	TALUS	COMPLETE
HTL010 14+25S	9/20/2011	NO SAMPLE	1425		453386	7033235	9N		brown	0 - 20	5	B	1	ROCKY	TALUS	COMPLETE
HTL010 14+50S	9/20/2011	MAP	1452		453368	7033218	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	COMPLETE
HTL010 14+75S	9/20/2011	MAP	1476		453350	7033201	9N		brown	0 - 20	15	B	2	ORGANIC	TALUS	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL010 15+00S	9/20/2011	MAP	15		453331	7033183	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL010 15+25S	9/20/2011	MAP	1525		453313	7033166	9N		brown	0 - 20	5	B	2	ORGANIC	TALUS	COMPLETE
HTL010 15+50S	9/20/2011	GPS	1553	19	453295	7033149	9N	2	brown	0 - 20	5	B	4	LINE_END	TALUS	COMPLETE
HTL011 00+00	9/19/2011	GPS			454104	7035351	9N	6	brown	0 - 20	15	B	5	LINE_START	TALUS	COMPLETE
HTL011 00+25E	9/19/2011	MAP			454119	7035332	9N		brown	0 - 20	25	B	5	TALUS		COMPLETE
HTL011 00+50E	9/19/2011	MAP			454134	7035312	9N		brown	0 - 20	25	B	5	TALUS		COMPLETE
HTL011 00+75E	9/19/2011	MAP			454149	7035293	9N		brown	0 - 20	25	B	5	TALUS		COMPLETE
HTL011 01+00E	9/19/2011	MAP			454164	7035274	9N		brown	0 - 20	25	B	4	TALUS	ROCKY	COMPLETE
HTL011 01+25E	9/19/2011	MAP			454179	7035254	9N		brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL011 01+50E	9/19/2011	MAP			454194	7035235	9N		grey	0 - 20	15	B	5	TALUS		COMPLETE
HTL011 01+75E	9/19/2011	MAP			454211	7035218	9N		brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL011 02+00E	9/19/2011	GPS		1851	454230	7035203	9N	5	brown	0 - 20	15	B	5	TALUS		COMPLETE
HTL011 02+25E	9/19/2011	MAP			454248	7035188	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 02+50E	9/19/2011	NO SAMPLE			454266	7035172	9N									COMPLETE
HTL011 02+75E	9/19/2011	MAP			454285	7035158	9N		grey	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 03+00E	9/19/2011	MAP			454305	7035146	9N		tan	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 03+25E	9/19/2011	MAP			454326	7035135	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL011 03+50E	9/19/2011	MAP			454349	7035132	9N		brown	0 - 20	15	B	3	TALUS	ROCKY	COMPLETE
HTL011 03+75E	9/19/2011	MAP			454373	7035132	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL011 04+00E	9/19/2011	MAP		1866	454396	7035134	9N	5	brown	0 - 20	25	B	4			COMPLETE
HTL011 04+25E	9/19/2011	MAP			454405	7035155	9N		brown	0 - 20	25	B	3	ROCKY		COMPLETE
HTL011 04+50E	9/19/2011	MAP			454413	7035176	9N		brown	0 - 20	25	B	4	ROCKY		COMPLETE
HTL011 04+75E	9/19/2011	MAP			454414	7035199	9N		brown	0 - 20	25	B	4			COMPLETE
HTL011 05+00E	9/19/2011	MAP			454414	7035222	9N		brown	0 - 20	25	B	4	ROCKY		COMPLETE
HTL011 05+25E	9/19/2011	MAP			454417	7035244	9N		brown	0 - 20	25	B	4	ROCKY		COMPLETE
HTL011 05+50E	9/19/2011	MAP			454420	7035267	9N		brown	0 - 20	25	B	3	ORGANIC		COMPLETE
HTL011 05+75E	9/19/2011	MAP			454432	7035286	9N		brown	0 - 20	25	B	3	ORGANIC		COMPLETE
HTL011 06+00E	9/19/2011	GPS		1884	454447	7035302	9N	5	brown	0 - 20	25	B	4	ROCKY		COMPLETE
HTL011 06+25E	9/19/2011	MAP			454458	7035326	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 06+50E	9/19/2011	MAP			454468	7035349	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 06+75E	9/19/2011	MAP			454479	7035373	9N	0								COMPLETE
HTL011 07+00E	9/19/2011	MAP			454496	7035391	9N	0								COMPLETE
HTL011 07+25E	9/19/2011	MAP			454516	7035407	9N	0								COMPLETE
HTL011 07+50E	9/19/2011	MAP			454540	7035416	9N		brown	0 - 20	15	B	4	TALUS	ORGANIC	COMPLETE
HTL011 07+75E	9/19/2011	NO SAMPLE			454564	7035425	9N									COMPLETE
HTL011 08+00E	9/19/2011	NO SAMPLE		1879	454589	7035434	9N		brown	0 - 20	15	B	4	TALUS	ORGANIC	COMPLETE
HTL011 08+25E	9/19/2011	MAP		1866	454613	7035441	9N	5	brown	0 - 20	15	B	3	TALUS	ROCKY	COMPLETE
HTL011 08+50E	9/21/2011	MAP			454637	7035447	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL011 08+75E	9/21/2011	MAP			454661	7035453	9N		brown	0 - 20	25	B	4	TALUS	ROCKY	COMPLETE
HTL011 09+00E	9/21/2011	MAP			454684	7035461	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL011 09+25E	9/21/2011	LS			454707	7035468	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	MISSING_FIELD
HTL011 09+50E	9/21/2011	MAP			454730	7035467	9N		brown	0 - 20	15	B	4	TALUS	5M BEFORE	COMPLETE
HTL011 09+75E	9/21/2011	MAP			454750	7035453	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 10+00E	9/21/2011	GPS		1849	454767	7035436	9N	6	brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 10+25E	9/21/2011	MAP			454792	7035436	9N		brown	0 - 20	15	B	2	TALUS	ORGANIC	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL011 10+50E	9/21/2011	MAP			454816	7035438	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 10+75E	9/21/2011	MAP			454841	7035440	9N		brown	0 - 20	15	B	4			COMPLETE
HTL011 11+00E	9/21/2011	MAP			454865	7035443	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL011 11+25E	9/21/2011	MAP			454890	7035445	9N		brown	0 - 20	15	B	4			COMPLETE
HTL011 11+50E	9/21/2011	MAP			454914	7035447	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL011 11+75E	9/21/2011	MAP			454939	7035449	9N		brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL011 12+00E	9/21/2011	MAP		1838	454963	7035451	9N	6	brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL011 12+25E	9/21/2011	MAP			454986	7035463	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL011 12+50E	9/21/2011	MAP			455008	7035475	9N		brown	0 - 20	15	B	3	ROCKY		COMPLETE
HTL011 12+75E	9/21/2011	MAP			455030	7035487	9N		brown	0 - 20	5	B	2	ROCKY		COMPLETE
HTL011 13+00E	9/21/2011	MAP			455052	7035498	9N		brown	0 - 20	5	B	1	ROCKY		COMPLETE
HTL011 13+25E	9/21/2011	MAP			455075	7035510	9N		brown	0 - 20	15	B	1	ORGANIC		COMPLETE
HTL011 13+50E	9/21/2011	MAP			455097	7035522	9N		brown	0 - 20	15	B	1	ORGANIC		COMPLETE
HTL011 13+75E	9/21/2011	MAP			455119	7035534	9N		brown	0 - 20	15	B	4	TALUS		COMPLETE
HTL011 14+00E	9/21/2011	MAP			455141	7035546	9N		brown	0 - 20	15	B	4	TALUS	ROCKY	COMPLETE
HTL011 14+25E	9/21/2011	MAP			455164	7035558	9N		brown	0 - 20	5	B	3	TALUS	ROCKY	COMPLETE
HTL011 14+50E	9/21/2011	MAP			455186	7035569	9N		brown	0 - 20	5	B	3	TALUS	ROCKY	COMPLETE
HTL011 14+75E	9/21/2011	MAP			455208	7035581	9N		grey	0 - 20	5	B	4	TALUS		COMPLETE
HTL011 15+00E	9/21/2011	GPS		1798	455230	7035593	9N	5	grey	0 - 20	5	B	4	LINE_END	TALUS	COMPLETE
HTL012 00+00	9/19/2011	GPS			455201	7034679	9N	3	Brown	0 - 20	15	B	2	LINE_START	ORGANIC	COMPLETE
HTL012 00+25E	9/19/2011	MAP			455222	7034695	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL012 00+50E	9/19/2011	MAP			455243	7034711	9N		Brown	0 - 20	15	B	2	ROCKY	ORGANIC	COMPLETE
HTL012 00+75E	9/19/2011	MAP			455264	7034727	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL012 01+00E	9/19/2011	MAP			455285	7034743	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL012 01+25E	9/19/2011	MAP			455306	7034758	9N		Brown	0 - 20	15	B	3	ORGANIC	ROCKY	COMPLETE
HTL012 01+50E	9/19/2011	MAP			455327	7034774	9N		Brown	0 - 20	15	B	4	ORGANIC		COMPLETE
HTL012 01+75E	9/19/2011	MAP			455348	7034790	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL012 02+00E	9/19/2011	GPS			455369	7034806	9N	16	Brown	0 - 20	15	B	4			COMPLETE
HTL012 02+25E	9/19/2011	MAP			455388	7034817	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL012 02+50E	9/19/2011	MAP			455405	7034830	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL012 02+75E	9/19/2011	MAP			455421	7034846	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL012 03+00E	9/19/2011	MAP			455430	7034865	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL012 03+25E	9/19/2011	MAP			455437	7034886	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL012 03+50E	9/19/2011	MAP			455440	7034907	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL012 03+75E	9/19/2011	MAP			455437	7034928	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL012 04+00E	9/19/2011	GPS			455430	7034949	9N	14	Brown	0 - 20	15	B	4			COMPLETE
HTL012 04+25E	9/19/2011	NO SAMPLE			455436	7034998	9N									COMPLETE
HTL012 04+50E	9/19/2011	MAP			455443	7035021	9N		Brown	0 - 20	15	B	1	ORGANIC		COMPLETE
HTL012 04+75E	9/20/2011	NO SAMPLE			455452	7035044	9N									COMPLETE
HTL012 05+00E	9/20/2011	MAP			455465	7035066	9N		Brown	0 - 20	15	B	3	ORGANIC		COMPLETE
HTL012 05+25E	9/20/2011	MAP			455482	7035083	9N		Brown	0 - 20	15	B	2	ORGANIC		MISSING_SHIP
HTL012 05+50E	9/20/2011	MAP			455431	7034974	9N		Brown	0 - 20	15	B	2	ORGANIC		COMPLETE
HTL012 05+75E	9/20/2011	GPS			455500	7035100	9N	6	Brown	0 - 20	15	B	3	LINE_END	ORGANIC	COMPLETE
HTL013 00+00	9/20/2011	GPS			455255	7034592	9N	5	Brown	0 - 20	15	B	5	LINE_START		COMPLETE
HTL013 00+25E	9/20/2011	MAP			455277	7034607	9N		Brown	0 - 20	15	B	5			COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL013 00+25W	9/20/2011	MAP			455235	7034578	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 00+50E	9/20/2011	MAP			455299	7034622	9N		Brown	0 - 20	15	B	4	ORGANIC		COMPLETE
HTL013 00+50W	9/20/2011	MAP			455215	7034563	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 00+75E	9/20/2011	MAP			455320	7034636	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL013 00+75W	9/20/2011	MAP			455195	7034549	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 01+00E	9/20/2011	MAP			455342	7034651	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 01+00W	9/20/2011	MAP			455175	7034534	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 01+25E	9/20/2011	MAP			455364	7034666	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL013 01+25W	9/20/2011	MAP			455154	7034521	9N		Brown	0 - 20	15	B	4	ORGANIC		COMPLETE
HTL013 01+50E	9/20/2011	MAP			455386	7034681	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL013 01+50W	9/20/2011	MAP			455131	7034513	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 01+75E	9/20/2011	MAP			455407	7034695	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL013 01+75W	9/20/2011	MAP			455107	7034505	9N		Brown	0 - 20	15	B	4			COMPLETE
HTL013 02+00E	9/20/2011	GPS			455429	7034710	9N	5	Brown	0 - 20	15	B	4			COMPLETE
HTL013 02+00W	9/20/2011	GPS			455084	7034497	9N	6	Brown	0 - 20	15	B	4			COMPLETE
HTL013 02+25E	9/20/2011	MAP			455446	7034727	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 02+25W	9/20/2011	MAP			455059	7034492	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 02+50E	9/20/2011	MAP			455464	7034744	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 02+50W	9/20/2011	MAP			455035	7034488	9N		Brown	0 - 20	15	B	4	ROCKY		COMPLETE
HTL013 02+75E	9/20/2011	MAP			455481	7034761	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 02+75W	9/20/2011	MAP			455010	7034483	9N		Brown	0 - 20	15	B	5			COMPLETE
HTL013 03+00E	9/20/2011	GPS			455498	7034778	9N	2	Brown	0 - 20	15	B	5	LINE_END		COMPLETE
HTL013 03+00W	9/20/2011	GPS			454985	7034478	9N	7	Brown	0 - 20	15	B	4	LINE_END	ROCKY	COMPLETE
HTL014 00+00	9/21/2011	GPS		1725	454111	7035692	9N	2	brown	0 - 20	15	B	5	LINE_START	TALUS	COMPLETE
HTL014 00+25N	9/21/2011	MAP	25		454104	7035713	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 00+50N	9/21/2011	MAP	53		454096	7035733	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 00+75N	9/21/2011	MAP	75		454088	7035754	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 01+00N	9/21/2011	MAP	1		454080	7035774	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 01+25N	9/21/2011	MAP	125		454073	7035795	9N		brown	0 - 20	15	B	4	ORGANIC	TALUS	COMPLETE
HTL014 01+50N	9/21/2011	MAP	15		454065	7035815	9N		brown	0 - 20	15	B	3		TALUS	COMPLETE
HTL014 01+75N	9/21/2011	MAP	175		454057	7035836	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	COMPLETE
HTL014 02+00N	9/21/2011	GPS	2	1729	454049	7035856	9N	5	brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 02+25N	9/21/2011	MAP	225		454045	7035880	9N		brown	0 - 20	5	B	5		TALUS	COMPLETE
HTL014 02+50N	9/21/2011	MAP	252		454041	7035904	9N		brown	0 - 20	5	B	5		TALUS	COMPLETE
HTL014 02+75N	9/21/2011	MAP	178		454037	7035928	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 03+00N	9/21/2011	MAP	3		454033	7035952	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL014 03+25N	9/21/2011	MAP	326		454029	7035976	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL014 03+50N	9/21/2011	MAP	35		454019	7035998	9N		brown	0 - 20	15	B	4		TALUS	COMPLETE
HTL014 03+75N	9/21/2011	MAP	375		454000	7036013	9N		brown	0 - 20	15	B	5		TALUS	COMPLETE
HTL014 04+00N	9/21/2011	GPS	4	1718	453978	7036024	9N	4	grey	0 - 20	15	B	5		TALUS	COMPLETE
HTL014 04+25N	9/21/2011	MAP	425		453956	7036014	9N		grey	0 - 20	15	B	5		TALUS	COMPLETE
HTL014 04+50N	9/21/2011	MAP	45		453934	7036003	9N		grey	0 - 20	15	B	5		TALUS	MISSING_SHIP
HTL014 04+75N	9/21/2011	MAP	475		453912	7035993	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 05+00N	9/21/2011	MAP	5		453890	7035983	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 05+25N	9/21/2011	NO SAMPLE	525		453868	7035972	9N		brown	0 - 20	15	B	1	ROCKY	TALUS	COMPLETE

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
HTL014 05+50N	9/21/2011	MAP	543		453846	7035962	9N		brown	0 - 20	15	B	3	5M BEFORE	TALUS	MISSING_SHIP
HTL014 05+75N	9/21/2011	MAP	576		453824	7035951	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 06+00N	9/21/2011	GPS	62	167	453801	7035941	9N	21	brown	0 - 20	15	B	3	ORGANIC	TALUS	MISSING_SHIP
HTL014 06+25N	9/21/2011	MAP	625		453791	7035962	9N		grey	0 - 20	15	B	4	ORGANIC	TALUS	MISSING_SHIP
HTL014 06+50N	9/21/2011	MAP	65		453781	7035983	9N		grey	0 - 20	15	B	4	ROCKY	TALUS	MISSING_SHIP
HTL014 06+75N	9/21/2011	MAP	676		453768	7036003	9N		grey	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 07+00N	9/22/2011	MAP	7		453756	7036023	9N		grey	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 07+25N	9/22/2011	MAP	726		453758	7036046	9N		brown	0 - 20	15	B	4	ROCKY	TALUS	MISSING_SHIP
HTL014 07+50N	9/22/2011	MAP	75		453759	7036070	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 07+75N	9/22/2011	MAP	775		453768	7036091	9N		brown	0 - 20	15	B	4	ROCKY	TALUS	MISSING_SHIP
HTL014 08+00N	9/22/2011	GPS	8	1715	453778	7036112	9N	13	brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 08+25N	9/22/2011	MAP	825		453767	7036135	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	MISSING_SHIP
HTL014 08+50N	9/22/2011	MAP	85		453755	7036158	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	MISSING_SHIP
HTL014 08+75N	9/22/2011	MAP	875		453743	7036181	9N		brown	0 - 20	15	B	4	ROCKY	TALUS	MISSING_SHIP
HTL014 09+00N	9/22/2011	MAP	9		453726	7036199	9N		brown	0 - 20	15	B	2	ROCKY	TALUS	MISSING_SHIP
HTL014 09+25N	9/22/2011	MAP	925		453708	7036218	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 09+50N	9/22/2011	MAP	95		453690	7036236	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 09+75N	9/22/2011	MAP	975		453672	7036254	9N		brown	0 - 20	15	B	3	ROCKY	TALUS	MISSING_SHIP
HTL014 10+00N	9/22/2011	GPS	1	171	453653	7036272	9N	6	brown	0 - 20	15	B	1	ORGANIC	TALUS	MISSING_SHIP
HTL014 10+25N	9/22/2011	GPS	125	1715	453626	7036273	9N	10	brown	0 - 20	15	B	1	LINE_END	TALUS	MISSING_SHIP
HTL015 00+00	9/21/2011	GPS			454496	7034002	9N	10	Brown	0 - 20	15	B	5	LINE_START		MISSING_SHIP
HTL015 00+25W	9/21/2011	MAP			454480	7033983	9N		Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 00+50W	9/21/2011	MAP			454464	7033964	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 00+75W	9/21/2011	MAP			454448	7033944	9N		Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 01+00W	9/21/2011	MAP			454431	7033925	9N		Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 01+25W	9/21/2011	MAP			454415	7033906	9N		Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 01+50W	9/21/2011	MAP			454399	7033887	9N		Brown	0 - 20	15	B	5			MISSING_SHIP
HTL015 01+75W	9/21/2011	MAP			454383	7033867	9N		Brown	0 - 20	15	B	5			MISSING_SHIP
HTL015 02+00W	9/21/2011	GPS			454367	7033848	9N	15	Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 02+25W	9/21/2011	MAP			454339	7033836	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 02+50W	9/21/2011	MAP			454311	7033823	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 02+75W	9/21/2011	MAP			454283	7033811	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 03+00W	9/21/2011	MAP			454255	7033799	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 03+25W	9/21/2011	MAP			454228	7033786	9N		Brown	0 - 20	15	B	4	ROCKY		MISSING_SHIP
HTL015 03+50W	9/21/2011	MAP			454200	7033774	9N		Brown	0 - 20	15	B	5			MISSING_SHIP
HTL015 03+75W	9/21/2011	MAP			454172	7033761	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 04+00W	9/21/2011	GPS			454144	7033749	9N	8	Brown	0 - 20	15	B	4	ORGANIC		MISSING_SHIP
HTL015 04+25W	9/21/2011	MAP			454120	7033743	9N		Brown	0 - 20	15	B	4	ORGANIC		MISSING_SHIP
HTL015 04+50W	9/22/2011	MAP			454096	7033736	9N		Brown	0 - 20	15	B	3	ORGANIC		MISSING_SHIP
HTL015 04+75W	9/22/2011	MAP			454072	7033730	9N		Brown	0 - 20	15	B	5			MISSING_SHIP
HTL015 05+00W	9/22/2011	MAP			454049	7033723	9N		Brown	0 - 20	15	B	4			MISSING_SHIP
HTL015 05+25W	9/22/2011	MAP			454025	7033717	9N		Brown	0 - 20	15	B	3	ROCKY		MISSING_SHIP
HTL015 05+50W	9/22/2011	GPS			454001	7033710	9N	11	Brown	0 - 20	15	B	4	LINE_END	ROCKY	MISSING_SHIP
JKHTD001	9/21/2011	GPS		189	454741	7035334	9N	4	brown	0 - 20	5	B	4	TALUS		MISSING_SHIP
JKHTD002	9/21/2011	GPS		1922	454718	7035309	9N	6	brown	0 - 20	15	B	4	TALUS		MISSING_SHIP

Sample Number	Date	Location Method	Chain M	Elevation	UTM X	UTM Y	UTM Zone	GPS Accuracy	Colour	Slope	Depth	Horizon	Quality	Note 1	Note 2	Status
JKHTD003	9/21/2011	GPS		19	454736	7035314	9N	7	brown	0 - 20	5	B	4	TALUS		MISSING_SHIP
RZHTD001	9/15/2011	GPS		1812	453873	7035678	9N	4	Brown	> 60	15	B	4			MISSING_SHIP
RZHTD002	9/15/2011	GPS		1818	453865	7035700	9N	3								MISSING_SHIP
RZHTD003	9/15/2011	GPS		1792	453677	7035845	9N	9								MISSING_SHIP
RZHTD004	9/15/2011	GPS		177	453685	7035873	9N	12								MISSING_SHIP
RZHTD005	9/15/2011	GPS		1763	453680	7035912	9N	7								MISSING_SHIP
RZHTD006	9/15/2011	GPS		1769	453657	7035632	9N	6								MISSING_SHIP
RZHTD007	9/15/2011	GPS		1772	453618	7035984	9N	8								MISSING_SHIP
RZHTD008	9/17/2011	GPS		1854	454390	7035215	9N	3								MISSING_SHIP
RZHTD008A	9/17/2011	GPS		1854	454390	7035215	9N	3								COMPLETE
RZHTD009	9/17/2011	GPS		1894	454617	7035259	9N	3								MISSING_SHIP
RZHTD010	9/17/2011	GPS		1834	454352	7035271	9N	6								MISSING_SHIP
RZHTD011	9/18/2011	GPS		1931	453768	7034227	9N	7								COMPLETE
RZHTD012	9/18/2011	GPS		229	453688	7034367	9N	6								COMPLETE
RZHTD013	9/22/2011	GPS		232	453679	7034348	9N	5	rusty	0 - 20	5	B	3			COMPLETE
RZHTD014	9/22/2011	GPS		219	453573	7034390	9N	11	brown	0 - 20	5	B	4			COMPLETE
RZHTD015	9/22/2011	GPS		2171	453434	7034440	9N	7	brown	0 - 20	5	B	4	BASE OF CLIFF		COMPLETE
RZHTD016	9/22/2011	GPS		2169	453439	7034433	9N	3	brown	0 - 20	5	B	4	BASE OF CLIFF		COMPLETE
RZHTD017	9/22/2011	GPS		294	453287	7034233	9N	9	brown	0 - 20	5	B	3			COMPLETE
RZHTD018	9/22/2011	GPS		214	452718	7034401	9N	7								COMPLETE
RZHTD019	9/22/2011	GPS		1871	454729	7035399	9N	13	rusty	0 - 20	5	B	4			COMPLETE
RZHTD020	9/22/2011	GPS		1881	454729	7035351	9N	9	rusty	0 - 20	5	B	4			COMPLETE
RZHTD021	9/22/2011	GPS														MISSING_SHIP

Appendix V – Analytical Certificates

5.1 – Rock Samples
5.2 - Soil and Silt Samples

5.1 – Rock Samples

5623 McADAM ROAD
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http://www.agatlabs.com

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
SUITE 200 44-12 AVE SOUTH
CRANBROOK, BC V1C2R7

ATTENTION TO: CHRIS GALLAGHER

PROJECT NO:

AGAT WORK ORDER: 11Y532862

SOLID ANALYSIS REVIEWED BY: Ron Cardinall, Certified Assayer - Director - Technical Services (Mining)

DATE REPORTED: Oct 18, 2011

PAGES (INCLUDING COVER): 22

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998, or at 1-800-856-6261

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
AHHTR-006	0.4	3.20	6	12	142	1.6	<1	2.32	<0.5	31	6.3	142	55.7	1.94
AHHTR-007	0.2	2.44	20	8	84	2.4	<1	1.73	0.5	35	6.1	104	46.2	1.19
AHHTR-008	0.4	1.62	3	5	118	1.8	<1	1.46	<0.5	37	13.1	65.7	95.8	2.15
AHHTR-009	0.3	2.08	24	<5	61	1.6	<1	1.57	<0.5	27	7.9	56.2	63.4	2.05
AHHTR-010	0.3	3.31	40	6	52	3.5	<1	2.70	1.4	29	15.8	73.0	83.7	2.10
AHHTR-011	0.3	1.77	21	21	71	1.1	<1	6.73	1.1	29	2.7	76.1	44.0	0.32
AHHTR-012	<0.2	1.18	2	16	76	0.7	<1	8.83	0.6	24	0.9	64.1	13.1	0.20
AHHTR-013	11.8	0.56	92	68	8	0.7	7300	6.95	<0.5	7	34.9	34.1	755	8.52
AHHTR-014	0.3	2.46	18	6	164	2.1	47	1.52	<0.5	63	10.5	98.3	60.2	3.47
AHHTR-015	0.3	1.42	22	<5	214	1.5	6	3.42	<0.5	10	3.9	152	39.2	0.99
AHHTR-016	<0.2	0.93	174	<5	45	1.0	7	19.8	<0.5	21	4.5	25.8	34.7	2.23
AHHTR-017	0.4	1.16	50	<5	504	1.5	4	0.67	<0.5	15	5.2	120	50.8	1.86
AHHTR-018	3.6	0.87	138	<5	16	0.6	9	1.40	0.8	24	36.6	60.6	670	12.5
AHHTR-019	0.5	2.86	4	9	180	1.8	<1	2.58	<0.5	25	7.3	90.3	46.9	2.35
AHHTR-020	0.3	2.45	10	10	74	1.9	2	4.30	<0.5	41	7.0	89.0	43.8	0.86
AHHTR-021	0.3	2.65	1	<5	545	1.6	<1	0.35	<0.5	32	12.2	120	44.1	2.99
AHHTR-022	0.6	2.74	21	8	222	2.2	1	2.73	<0.5	39	8.3	115	164	2.78
AHHTR-023	0.6	3.91	11	11	178	2.3	<1	2.91	<0.5	35	9.8	103	115	2.50
AHHTR-024	0.8	4.70	6	10	130	2.0	<1	3.59	<0.5	29	5.6	76.2	111	1.94
AHHTR-025	0.5	1.70	6	5	89	1.2	<1	0.97	<0.5	63	7.2	111	25.6	2.17
AHHTR-026	0.6	3.03	9	10	246	3.0	<1	2.49	0.7	46	18.8	118	85.9	3.00
AHHTR-027	0.6	2.69	5	15	217	2.2	<1	2.55	5.0	36	12.5	103	64.0	2.24
AHHTR-028	0.6	2.83	1	27	170	1.4	<1	2.90	2.6	29	10.9	65.7	74.4	1.76
AHHTR-029	1.9	1.26	5	<5	27	<0.5	<1	2.23	1.0	3	26.0	24.8	1170	3.59
AHHTR-030	0.2	2.36	20	6	71	2.2	<1	1.34	<0.5	61	12.2	109	12.7	2.68
AHHTR-031	0.3	2.54	7	7	274	1.7	<1	2.68	<0.5	39	8.0	86.2	42.4	1.80
AHHTR-032	2.2	3.37	27	165	97	3.3	26	8.41	0.7	67	7.8	81.1	949	1.04
AHHTR-033	0.2	5.51	65	251	110	3.0	18	8.11	<0.5	66	9.0	81.9	64.7	1.08
AHHTR-034	2.1	1.76	272	11	152	1.7	<1	0.96	0.5	69	14.4	95.5	120	2.32
JKHRT-001	0.4	7.55	5	16	13	1.2	4	5.67	<0.5	14	7.9	41.1	569	3.00
JKHRT-002	0.2	0.67	2	<5	8	<0.5	<1	2.06	<0.5	<1	6.7	68.9	174	2.63
JKHRT-003	2.2	0.39	6	5	14	<0.5	3	1.11	14.0	3	23.7	16.1	654	10.1

Certified By: Ron Cardinall

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
JKHRT-004	0.6	2.52	4	13	85	3.0	<1	2.42	0.9	41	4.7	99.2	54.1	2.08
JKHRT-005	1.3	0.11	2	<5	<1	<0.5	5	0.30	<0.5	7	261	8.5	3010	34.4
JKHRT-006	0.6	1.43	11	42	29	0.5	3	3.21	<0.5	34	68.7	93.2	688	10.1
JKHRT-007	0.6	2.18	22	27	37	1.8	11	0.95	<0.5	26	31.7	48.0	556	12.4
JKHRT-008	0.4	1.61	5	<5	15	<0.5	5	5.41	1.6	38	2.6	98.0	107	6.42
JKHRT-009	1.4	0.31	6	<5	<1	<0.5	5	1.64	<0.5	11	246	38.1	2900	31.2
JKHRT-010	1.7	0.47	3	18	6	1.1	7	0.53	0.7	3	220	17.6	3510	30.3
JKHRT-011	0.3	3.11	3	20	82	2.5	1	2.63	<0.5	30	13.9	85.3	65.5	2.08
JKHRT-012	0.3	2.80	6	24	68	2.6	<1	2.44	<0.5	32	11.1	85.3	69.9	2.21
JKHRT-013	0.4	2.33	15	18	69	1.7	<1	2.01	<0.5	32	10.8	73.5	78.4	2.06
JKHRT-014	0.4	2.91	9	20	74	2.4	<1	2.91	<0.5	35	9.6	91.8	63.3	2.15
JKHRT-015	0.3	3.19	8	10	86	1.0	<1	3.13	<0.5	51	10.5	94.5	67.0	2.26
JKHRT-016	0.3	3.17	9	10	90	1.0	<1	2.88	<0.5	39	9.2	104	66.5	2.26
JKHRT-017	0.3	3.56	12	9	49	0.8	<1	3.31	<0.5	43	9.7	64.0	72.4	1.81
JKHRT-018	0.4	3.15	29	9	60	0.9	<1	3.25	<0.5	44	10.3	76.1	81.0	2.12
JKHRT-019	0.4	3.28	32	8	80	1.1	<1	2.07	<0.5	29	9.2	77.5	69.7	1.97
JKHRT-020	<0.2	0.22	3	<5	56	<0.5	52	12.4	0.5	10	5.4	28.5	35.8	1.37
JKHRT-021	0.2	1.50	33	<5	240	0.7	1	9.12	0.7	6	8.4	40.3	51.8	2.97
RZHTR-001	<0.2	5.36	6	11	59	1.0	1	6.11	0.5	34	1.4	20.5	1.5	0.36
RZHTR-002	<0.2	1.20	3	<5	81	1.0	<1	0.79	<0.5	72	5.1	113	13.3	1.23
RZHTR-003	1.8	0.94	7470	9	16	1.0	2	5.38	<0.5	58	13.2	91.5	35.2	2.80
RZHTR-004	1.1	1.19	124	<5	27	<0.5	4	8.08	<0.5	102	32.7	70.9	539	9.62
RZHTR-005	0.3	0.89	27	94	6	0.5	5	0.98	<0.5	88	53.2	99.7	433	8.17
RZHTR-006	<0.2	1.40	9	<5	22	<0.5	<1	7.35	<0.5	11	13.2	70.5	73.6	6.07
RZHTR-007	0.3	0.94	25	<5	19	<0.5	<1	6.90	<0.5	59	18.4	48.2	134	7.50
RZHTR-008	5.7	1.36	2	<5	<1	<0.5	7	2.60	1.5	51	147	14.6	6540	19.7
RZHTR-009	0.2	0.63	5	<5	182	<0.5	<1	0.90	<0.5	34	7.2	80.0	84.8	1.29
RZHTR-010	<0.2	2.76	7	12	234	0.6	<1	3.59	<0.5	28	5.6	77.2	25.6	1.22
RZHTR-011	<0.2	2.11	6	10	116	0.8	2	2.14	0.7	36	6.2	114	58.1	1.24
RZHTR-012	<0.2	0.65	3	<5	31	<0.5	40	3.81	<0.5	11	3.4	48.8	25.8	1.84
RZHTR-013	0.3	1.27	6	10	81	<0.5	4	5.49	0.6	30	5.1	78.6	51.4	1.10
RZHTR-014	<0.2	2.08	3	11	30	0.5	2	11.6	<0.5	37	1.2	40.7	12.1	0.33

Certified By: Ron Cardinall

Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

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Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
RZHTR-015	<0.2	1.32	3	<5	52	<0.5	2	4.67	<0.5	17	2.3	76.2	35.3	1.74
RZHTR-016	<0.2	1.81	5	24	66	0.8	6	6.39	1.0	38	4.4	51.0	55.9	0.68
RZHTR-017	<0.2	1.29	6	18	43	0.6	2	5.17	0.5	32	0.9	62.0	14.0	0.37
RZHTR-018	1.0	1.74	5	<5	14	<0.5	55	3.69	<0.5	22	4.9	32.4	601	2.49
RZHTR-019	3.9	1.53	5	<5	3	<0.5	11	2.70	1.0	38	120	19.2	3710	14.3
RZHTR-020	0.2	1.23	4	<5	11	<0.5	3	5.75	<0.5	26	23.8	33.9	401	3.25
RZHTR-021	0.2	1.30	7	<5	8	<0.5	4	6.78	<0.5	22	15.7	39.2	365	2.78
RZHTR-022	0.2	1.63	144	<5	21	0.6	13	7.81	<0.5	68	93.0	44.5	1410	4.73
RZHTR-023	1.6	1.35	60	<5	44	<0.5	270	4.00	<0.5	26	31.6	47.5	941	6.10
RZHTR-024	5.2	1.86	4	<5	<1	<0.5	11	2.61	1.3	11	148	14.3	5040	19.4
RZHTR-025	2.0	0.74	4	<5	4	<0.5	197	5.28	0.6	128	88.1	19.5	2620	11.5
RZHTR-026	0.7	1.17	8	<5	20	<0.5	189	7.49	<0.5	113	29.0	33.1	945	5.61
RZHTR-027	0.5	1.57	7	28	137	0.6	119	1.79	<0.5	69	9.3	50.0	126	5.25
RZHTR-028	1.8	0.50	2	<5	<1	<0.5	6	2.36	<0.5	8	212	16.1	3720	28.4
RZHTR-029	1.7	1.23	8	44	17	1.1	7	1.35	<0.5	12	172	19.7	3790	21.8
RZHTR-030	0.3	0.20	11	<5	11	<0.5	5	2.48	<0.5	3	17.0	25.5	423	6.17
RZHTR-031	3.1	1.27	12	272	36	0.7	6	4.80	33.0	73	24.7	45.6	786	4.34
RZHTR-032	<0.2	1.49	6	11	112	1.8	4	3.60	<0.5	124	6.7	37.3	34.6	1.44
BABE RUTH	2.1	0.58	76	14	6	<0.5	47	7.15	0.7	37	78.9	42.5	2590	9.67

Certified By: Ron Cardinall

5623 McADAM ROAD
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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
AHHTR-006	11	<1	<1	0.74	15	96	1.35	71	2.2	0.22	24.5	1080	4.7	60
AHHTR-007	11	<1	<1	0.28	17	80	0.75	88	1.7	0.30	22.5	1210	29.5	38
AHHTR-008	6	<1	<1	0.15	23	18	0.18	28	11.5	0.36	43.5	696	4.3	<10
AHHTR-009	10	<1	<1	0.11	14	60	0.48	61	14.1	0.09	41.7	1600	8.3	13
AHHTR-010	17	<1	<1	0.13	15	182	1.49	177	7.6	0.16	80.4	2450	9.1	14
AHHTR-011	6	<1	<1	0.13	16	14	0.17	92	6.1	0.29	20.4	819	17.3	<10
AHHTR-012	<5	<1	<1	0.09	11	16	0.34	79	1.4	0.27	4.6	709	9.7	<10
AHHTR-013	<5	<1	<1	0.02	5	16	0.16	576	1.8	0.10	24.3	919	5.0	<10
AHHTR-014	11	<1	<1	0.35	31	74	1.23	168	1.3	0.24	10.8	934	17.8	27
AHHTR-015	9	<1	<1	0.21	4	31	0.39	68	15.6	0.02	24.7	460	3.9	21
AHHTR-016	6	<1	<1	0.17	11	25	0.43	263	11.3	<0.01	11.6	208	5.8	13
AHHTR-017	14	<1	<1	0.23	7	76	0.75	65	19.8	0.01	24.1	392	7.6	23
AHHTR-018	24	<1	<1	0.10	12	45	0.76	112	3.6	<0.01	26.3	1790	26.7	<10
AHHTR-019	12	<1	<1	0.14	10	59	0.39	112	3.8	0.17	17.5	792	33.3	12
AHHTR-020	9	<1	<1	0.24	21	47	0.42	91	4.2	0.26	33.6	1590	4.9	24
AHHTR-021	13	<1	<1	1.04	15	121	1.46	250	0.8	0.11	25.2	227	3.7	90
AHHTR-022	13	<1	<1	0.41	26	69	0.91	125	6.8	0.16	43.7	8820	10.0	46
AHHTR-023	15	<1	<1	0.14	20	22	0.27	56	18.6	0.25	36.7	2050	15.2	13
AHHTR-024	17	<1	<1	0.04	13	8	0.12	48	18.9	0.20	19.1	930	22.3	<10
AHHTR-025	8	<1	<1	0.31	32	87	0.69	146	1.5	0.17	14.9	1060	17.6	38
AHHTR-026	14	<1	<1	0.35	27	73	0.71	97	6.3	0.11	37.8	2030	10.0	31
AHHTR-027	12	<1	<1	0.28	22	67	0.57	152	2.7	0.08	24.4	1390	6.1	27
AHHTR-028	10	<1	<1	0.04	17	6	0.12	95	1.3	0.04	26.3	898	10.8	<10
AHHTR-029	5	<1	<1	0.03	<1	34	0.44	65	3.5	0.03	43.5	288	52.8	<10
AHHTR-030	11	<1	<1	0.29	33	119	0.94	109	1.5	0.29	15.7	775	15.8	36
AHHTR-031	10	<1	<1	0.08	21	15	0.13	45	6.7	0.19	32.7	2840	14.8	<10
AHHTR-032	11	<1	<1	0.04	37	35	0.41	300	75.1	0.05	25.0	300	34.2	<10
AHHTR-033	15	<1	<1	0.21	35	39	0.49	249	2.9	0.09	24.6	278	18.5	20
AHHTR-034	8	<1	<1	0.43	37	97	1.04	164	1.8	0.11	40.4	746	13.6	39
JKHRT-001	20	<1	<1	0.03	5	30	0.12	143	<0.5	0.23	12.1	89	41.2	<10
JKHRT-002	<5	<1	<1	0.01	<1	5	0.17	565	<0.5	<0.01	3.6	16	10.9	<10
JKHRT-003	<5	<1	<1	<0.01	2	27	0.39	188	1.1	<0.01	39.1	461	6.1	<10

Certified By: Ron Cardinall

Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
JKHRT-004	12	<1	<1	0.31	26	147	0.66	86	3.5	0.18	19.7	847	25.8	31
JKHRT-005	<5	<1	<1	<0.01	4	2	<0.01	102	7.2	0.02	321	479	18.7	<10
JKHRT-006	7	<1	<1	0.03	25	47	0.20	659	0.8	0.02	45.1	1710	13.0	<10
JKHRT-007	11	<1	<1	0.07	18	82	0.27	170	<0.5	0.39	19.9	735	6.7	<10
JKHRT-008	12	<1	<1	0.03	24	6	0.09	871	1940	<0.01	3.4	3220	11.4	<10
JKHRT-009	<5	<1	<1	<0.01	4	2	0.02	238	20.7	<0.01	209	1960	43.2	<10
JKHRT-010	<5	<1	<1	0.02	1	6	0.05	181	48.9	0.09	237	356	48.9	<10
JKHRT-011	14	<1	<1	0.34	17	121	0.62	62	4.0	0.19	30.6	2380	3.6	34
JKHRT-012	13	<1	<1	0.23	17	86	0.44	48	8.7	0.27	32.7	3630	4.8	26
JKHRT-013	11	<1	<1	0.19	18	86	0.38	41	11.1	0.24	35.9	3300	6.0	19
JKHRT-014	13	<1	<1	0.28	20	118	0.57	56	13.9	0.28	26.4	5180	5.8	31
JKHRT-015	12	<1	<1	0.39	28	52	0.74	62	3.0	0.21	27.8	5270	5.7	42
JKHRT-016	13	<1	<1	0.30	22	38	0.54	62	4.2	0.25	24.7	4030	6.6	29
JKHRT-017	12	<1	<1	0.12	26	13	0.24	41	2.3	0.16	22.7	3680	6.1	11
JKHRT-018	12	<1	<1	0.19	25	23	0.37	50	9.9	0.18	34.4	6590	7.4	20
JKHRT-019	13	<1	<1	0.35	16	34	0.62	61	1.5	0.14	26.0	405	9.1	36
JKHRT-020	<5	<1	<1	0.01	5	4	0.35	448	9.0	0.04	4.6	3710	27.9	<10
JKHRT-021	<5	<1	<1	0.05	3	31	1.08	678	<0.5	0.18	8.5	2850	49.1	<10
RZHTR-001	18	<1	<1	0.04	18	7	0.09	254	<0.5	0.23	3.0	1140	22.2	<10
RZHTR-002	6	<1	<1	0.32	40	29	0.72	208	1.4	0.07	7.8	363	14.9	35
RZHTR-003	<5	<1	<1	0.27	30	8	0.19	578	2.4	<0.01	16.2	763	172	24
RZHTR-004	11	<1	<1	0.06	72	6	0.23	1180	4.6	0.02	92.9	1070	14.4	<10
RZHTR-005	<5	<1	<1	0.02	52	15	0.24	413	17.1	0.10	36.3	830	8.5	<10
RZHTR-006	13	<1	<1	<0.01	5	9	0.36	1160	0.8	<0.01	21.9	457	12.7	<10
RZHTR-007	11	<1	<1	<0.01	27	6	0.35	897	<0.5	<0.01	32.6	3580	3.9	<10
RZHTR-008	<5	<1	<1	0.02	30	10	0.15	754	0.6	0.03	25.5	360	7.6	<10
RZHTR-009	<5	<1	<1	0.09	17	9	0.20	48	2.9	0.09	19.3	1080	3.7	<10
RZHTR-010	9	<1	<1	0.91	14	124	1.54	49	1.8	0.14	17.8	526	6.7	70
RZHTR-011	8	<1	<1	0.36	18	43	0.71	159	3.8	0.19	27.1	1380	9.0	38
RZHTR-012	<5	<1	<1	0.07	6	16	0.51	810	1.3	0.02	5.7	1710	7.5	<10
RZHTR-013	<5	<1	<1	0.34	15	41	1.14	333	3.6	0.09	16.4	592	18.4	34
RZHTR-014	5	<1	<1	0.06	20	3	0.10	358	1.2	0.10	6.0	794	9.9	<10

Certified By: Ron Cardinall

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
RZHTR-015	<5	<1	<1	0.22	8	43	0.39	549	1.3	0.03	7.8	1000	17.1	24
RZHTR-016	6	<1	<1	0.28	21	32	0.47	177	3.3	0.16	15.6	623	8.2	28
RZHTR-017	<5	<1	<1	0.06	17	5	0.68	265	2.0	0.13	3.3	931	11.0	<10
RZHTR-018	<5	<1	<1	0.01	12	14	0.33	749	1.6	0.05	3.1	676	12.6	<10
RZHTR-019	<5	<1	<1	0.01	22	16	0.28	1160	1.3	0.02	17.9	393	12.1	<10
RZHTR-020	<5	<1	<1	0.04	16	12	0.34	1770	<0.5	0.03	6.3	584	13.2	<10
RZHTR-021	<5	<1	<1	0.03	13	17	0.33	1780	<0.5	0.02	5.1	695	8.5	<10
RZHTR-022	6	<1	<1	0.16	50	19	0.51	3460	0.9	0.13	9.8	>10000	9.7	<10
RZHTR-023	5	<1	<1	0.13	15	16	0.45	1050	5.9	0.06	37.8	1580	21.4	<10
RZHTR-024	<5	<1	<1	0.01	6	13	0.19	687	1.4	0.04	22.5	438	4.4	<10
RZHTR-025	<5	<1	<1	0.05	78	9	0.25	1180	<0.5	0.04	36.4	463	5.4	<10
RZHTR-026	<5	<1	<1	0.15	68	10	0.30	1630	<0.5	0.06	12.6	924	8.3	11
RZHTR-027	8	<1	<1	0.15	48	29	0.43	368	1.3	0.11	9.5	1770	26.1	13
RZHTR-028	5	<1	<1	<0.01	4	<1	0.01	361	2.2	<0.01	261	772	44.0	<10
RZHTR-029	<5	<1	<1	0.05	6	13	0.14	345	6.1	0.29	217	2490	19.2	<10
RZHTR-030	<5	<1	<1	<0.01	2	6	0.42	272	4.7	<0.01	6.1	186	20.9	<10
RZHTR-031	5	<1	<1	0.03	62	17	0.14	589	1.7	0.05	61.1	657	860	<10
RZHTR-032	<5	<1	<1	0.07	82	21	0.25	190	1.1	0.27	8.6	749	21.0	<10
BABE RUTH	<5	<1	<1	0.05	22	8	0.17	2160	3.5	0.04	19.8	2990	8.0	<10

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
AHHTR-006	0.819	1	4.7	<10	<5	188	<10	<10	7	0.16	<5	<5	66.6	<1
AHHTR-007	0.443	3	2.5	<10	<5	141	<10	<10	8	0.16	<5	<5	59.7	<1
AHHTR-008	1.25	<1	2.5	<10	<5	122	<10	<10	7	0.16	<5	6	31.2	<1
AHHTR-009	0.404	5	2.9	<10	<5	106	<10	<10	<5	0.26	<5	5	92.1	<1
AHHTR-010	0.373	6	5.4	<10	<5	114	<10	<10	5	0.25	<5	<5	208	<1
AHHTR-011	0.164	<1	1.6	<10	<5	219	<10	<10	6	0.13	<5	<5	40.0	<1
AHHTR-012	0.121	<1	1.2	<10	<5	246	<10	<10	<5	0.09	<5	<5	23.8	<1
AHHTR-013	2.77	13	0.6	10	5	53.6	<10	<10	<5	0.03	<5	<5	26.6	<1
AHHTR-014	1.56	1	8.3	<10	<5	92.2	<10	<10	21	0.26	<5	<5	81.5	1
AHHTR-015	0.555	6	3.4	<10	<5	40.3	<10	<10	<5	0.11	<5	<5	288	<1
AHHTR-016	2.22	129	2.5	<10	<5	87.7	<10	<10	<5	0.04	<5	<5	29.0	<1
AHHTR-017	0.569	8	4.7	<10	<5	35.8	<10	<10	<5	0.11	<5	<5	161	<1
AHHTR-018	>10	40	2.8	29	<5	23.0	<10	<10	<5	<0.01	<5	<5	30.3	<1
AHHTR-019	1.34	2	3.3	<10	<5	112	<10	<10	7	0.25	<5	<5	34.5	<1
AHHTR-020	0.400	<1	2.0	<10	<5	241	<10	<10	9	0.15	<5	<5	39.5	<1
AHHTR-021	0.446	<1	13.0	<10	<5	47.7	<10	<10	7	0.29	<5	<5	81.6	<1
AHHTR-022	0.965	2	7.2	<10	<5	75.6	<10	<10	7	0.17	<5	5	196	<1
AHHTR-023	1.59	<1	2.8	<10	<5	156	<10	<10	11	0.22	<5	7	70.2	<1
AHHTR-024	1.07	<1	1.7	<10	<5	202	<10	<10	12	0.19	<5	<5	40.2	<1
AHHTR-025	0.835	1	3.3	<10	<5	77.4	<10	<10	21	0.30	<5	<5	59.9	<1
AHHTR-026	1.79	2	4.8	<10	<5	91.1	<10	<10	8	0.41	<5	<5	123	<1
AHHTR-027	1.19	2	3.5	<10	<5	87.3	<10	<10	6	0.34	<5	<5	64.5	<1
AHHTR-028	1.05	1	0.9	<10	<5	143	<10	<10	6	0.24	<5	<5	19.9	<1
AHHTR-029	2.18	<1	1.0	19	<5	68.6	<10	<10	<5	0.05	<5	<5	26.7	<1
AHHTR-030	1.17	<1	4.5	<10	<5	100	<10	<10	22	0.22	<5	<5	67.5	1
AHHTR-031	0.988	<1	2.2	<10	<5	123	<10	<10	6	0.26	<5	<5	38.1	<1
AHHTR-032	0.256	22	2.9	<10	9	287	<10	<10	10	0.16	<5	<5	29.6	<1
AHHTR-033	0.255	30	3.0	<10	7	542	<10	<10	10	0.22	<5	<5	31.8	70
AHHTR-034	0.295	9	6.5	<10	<5	67.3	<10	<10	25	0.19	<5	6	63.2	1
JKHRT-001	1.70	<1	1.5	<10	8	303	<10	<10	<5	0.16	<5	<5	16.8	<1
JKHRT-002	1.01	<1	1.4	<10	<5	2.5	<10	<10	<5	0.03	<5	<5	33.8	<1
JKHRT-003	7.04	<1	0.6	32	<5	12.8	<10	<10	<5	0.02	<5	<5	19.8	<1

Certified By:

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AGAT WORK ORDER: 11Y532862

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
JKHRT-004	0.663	1	2.6	<10	<5	99.2	<10	<10	7	0.26	<5	<5	114	<1
JKHRT-005	>10	<1	<0.5	34	<5	7.6	<10	<10	<5	<0.01	<5	<5	25.9	<1
JKHRT-006	5.19	1	2.2	<10	29	33.6	<10	<10	<5	0.04	<5	<5	36.9	<1
JKHRT-007	6.17	<1	1.4	<10	7	44.1	<10	<10	<5	0.05	<5	<5	31.0	<1
JKHRT-008	0.484	4	0.7	<10	57	10.0	<10	<10	6	0.04	<5	105	40.9	1
JKHRT-009	>10	<1	0.9	38	25	4.7	<10	<10	<5	<0.01	<5	<5	34.3	<1
JKHRT-010	>10	<1	<0.5	37	6	10.5	<10	<10	<5	<0.01	<5	<5	29.4	<1
JKHRT-011	1.09	1	2.7	<10	<5	96.5	<10	<10	5	0.28	<5	<5	56.5	<1
JKHRT-012	1.11	1	2.1	<10	<5	95.4	<10	<10	6	0.22	<5	<5	63.2	<1
JKHRT-013	1.30	1	2.2	<10	<5	79.0	<10	<10	7	0.18	<5	<5	71.0	<1
JKHRT-014	1.20	1	2.6	<10	<5	104	<10	<10	6	0.18	<5	<5	64.9	<1
JKHRT-015	1.19	1	3.2	<10	<5	87.3	<10	<10	7	0.20	<5	<5	55.3	<1
JKHRT-016	1.18	1	2.9	<10	<5	102	<10	<10	7	0.21	<5	<5	47.4	<1
JKHRT-017	1.13	1	1.5	<10	<5	101	<10	<10	7	0.15	<5	<5	23.9	<1
JKHRT-018	1.23	1	2.5	<10	<5	96.8	<10	<10	6	0.14	<5	<5	67.1	<1
JKHRT-019	0.883	1	5.0	<10	<5	72.8	<10	<10	7	0.23	<5	<5	48.9	<1
JKHRT-020	0.552	<1	0.7	<10	<5	93.8	<10	<10	<5	<0.01	<5	<5	15.6	<1
JKHRT-021	0.987	<1	1.1	<10	<5	81.0	<10	<10	<5	0.04	<5	<5	24.5	<1
RZHTR-001	0.086	<1	0.6	<10	7	238	<10	<10	<5	0.10	<5	<5	14.0	<1
RZHTR-002	0.119	4	3.8	<10	<5	76.2	<10	<10	38	0.14	<5	16	38.3	1
RZHTR-003	2.49	171	11.5	<10	<5	61.0	<10	<10	19	<0.01	<5	9	24.6	<1
RZHTR-004	0.250	18	2.9	<10	46	30.0	<10	<10	15	0.05	<5	12	78.5	2
RZHTR-005	2.32	1	2.0	<10	8	28.4	<10	<10	15	0.13	<5	<5	36.9	11
RZHTR-006	0.408	2	1.2	<10	119	14.6	<10	<10	5	0.07	<5	<5	66.6	<1
RZHTR-007	0.725	6	0.7	<10	137	16.2	<10	<10	32	0.03	<5	5	70.2	<1
RZHTR-008	>10	<1	0.9	<10	13	45.9	<10	<10	8	0.05	<5	5	28.6	<1
RZHTR-009	0.589	<1	1.2	<10	<5	32.1	<10	<10	6	0.11	<5	<5	28.6	<1
RZHTR-010	0.476	<1	4.0	<10	<5	142	<10	<10	7	0.18	<5	<5	47.2	<1
RZHTR-011	0.398	<1	1.7	<10	<5	116	<10	<10	8	0.14	<5	<5	80.4	4
RZHTR-012	0.108	<1	0.9	<10	7	47.2	<10	<10	<5	0.05	<5	<5	30.1	1
RZHTR-013	0.444	<1	2.4	<10	<5	103	<10	<10	7	0.16	<5	<5	56.4	9
RZHTR-014	0.193	<1	0.9	<10	<5	229	<10	<10	6	0.09	<5	<5	11.5	2

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
RZHTR-015	0.255	<1	1.9	<10	8	67.8	<10	<10	6	0.11	<5	<5	47.9	1
RZHTR-016	0.346	2	1.3	<10	<5	143	<10	<10	7	0.15	<5	<5	76.5	2
RZHTR-017	0.070	1	1.0	<10	<5	122	<10	<10	5	0.11	<5	<5	23.8	2
RZHTR-018	0.209	<1	1.4	<10	12	41.1	<10	<10	<5	0.11	<5	<5	24.0	8
RZHTR-019	8.42	<1	1.2	<10	18	33.7	<10	<10	6	0.06	<5	<5	28.8	170
RZHTR-020	0.177	<1	1.5	<10	28	23.5	<10	<10	<5	0.07	<5	<5	28.3	3
RZHTR-021	0.168	<1	1.2	<10	21	33.0	<10	<10	<5	0.07	<5	<5	23.9	2
RZHTR-022	0.234	2	2.3	<10	27	65.3	<10	<10	<5	0.06	<5	11	54.8	3
RZHTR-023	2.40	9	2.1	<10	11	53.2	<10	<10	<5	0.10	<5	<5	45.7	7
RZHTR-024	>10	<1	0.9	11	10	38.6	<10	<10	<5	0.08	<5	<5	28.6	114
RZHTR-025	6.75	<1	1.1	<10	25	30.9	<10	<10	6	0.04	<5	25	25.3	2
RZHTR-026	1.58	<1	1.6	<10	32	36.0	<10	<10	<5	0.06	<5	20	31.3	7
RZHTR-027	0.476	<1	2.0	<10	11	59.8	<10	<10	15	0.11	<5	6	42.6	1
RZHTR-028	>10	<1	0.6	36	76	2.5	<10	<10	<5	<0.01	<5	<5	41.7	<1
RZHTR-029	>10	1	0.9	25	<5	51.9	<10	<10	<5	0.01	<5	28	25.2	<1
RZHTR-030	1.15	1	1.0	<10	<5	9.6	<10	<10	<5	0.03	<5	<5	19.5	1
RZHTR-031	2.95	23	1.1	10	6	39.9	<10	<10	<5	0.08	<5	<5	26.2	1
RZHTR-032	0.597	2	1.5	<10	<5	80.3	<10	<10	14	0.11	<5	<5	15.4	<1
BABE RUTH	6.18	1	0.9	<10	14	41.5	<10	<10	<5	0.03	<5	9	19.5	558

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Y	Zn	Zr
Unit:	ppm	ppm	ppm
Sample Description RDL:	1	0.5	5
AHHTR-006	10	28.8	12
AHHTR-007	11	37.9	14
AHHTR-008	11	11.2	29
AHHTR-009	14	37.0	23
AHHTR-010	16	86.1	18
AHHTR-011	11	52.3	15
AHHTR-012	9	18.4	9
AHHTR-013	6	23.3	7
AHHTR-014	14	22.7	28
AHHTR-015	7	11.9	16
AHHTR-016	9	14.2	13
AHHTR-017	7	34.8	22
AHHTR-018	14	68.7	10
AHHTR-019	13	15.5	13
AHHTR-020	13	14.7	14
AHHTR-021	9	66.9	<5
AHHTR-022	21	65.6	9
AHHTR-023	16	39.4	10
AHHTR-024	13	29.8	7
AHHTR-025	12	26.7	21
AHHTR-026	26	79.0	18
AHHTR-027	20	309	11
AHHTR-028	19	160	10
AHHTR-029	6	62.9	<5
AHHTR-030	13	28.1	27
AHHTR-031	19	15.0	20
AHHTR-032	9	69.1	17
AHHTR-033	11	32.3	18
AHHTR-034	12	101	14
JKHRT-001	9	19.5	20
JKHRT-002	3	24.0	12
JKHRT-003	2	1610	<5

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ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Y	Zn	Zr
Unit:	ppm	ppm	ppm
Sample Description RDL:	1	0.5	5
JKHRT-004	13	78.4	29
JKHRT-005	1	36.2	<5
JKHRT-006	10	23.8	5
JKHRT-007	3	13.6	5
JKHRT-008	20	10.1	6
JKHRT-009	7	30.4	<5
JKHRT-010	2	56.7	<5
JKHRT-011	13	17.1	6
JKHRT-012	13	15.7	7
JKHRT-013	14	16.3	11
JKHRT-014	15	20.1	9
JKHRT-015	15	24.6	7
JKHRT-016	13	18.8	6
JKHRT-017	11	16.7	<5
JKHRT-018	15	24.4	<5
JKHRT-019	9	27.8	<5
JKHRT-020	7	37.2	<5
JKHRT-021	4	81.2	6
RZHTR-001	9	44.3	16
RZHTR-002	10	20.9	<5
RZHTR-003	17	66.7	<5
RZHTR-004	22	48.4	8
RZHTR-005	9	32.2	<5
RZHTR-006	30	33.9	13
RZHTR-007	19	35.9	6
RZHTR-008	4	161	<5
RZHTR-009	10	13.3	7
RZHTR-010	6	24.0	9
RZHTR-011	10	58.8	10
RZHTR-012	6	31.8	10
RZHTR-013	8	44.4	16
RZHTR-014	10	15.4	10

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ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Y	Zn	Zr
Unit:	ppm	ppm	ppm
Sample Description RDL:	1	0.5	5
RZHTR-015	8	25.3	20
RZHTR-016	9	65.0	11
RZHTR-017	9	16.1	10
RZHTR-018	5	44.1	14
RZHTR-019	4	115	6
RZHTR-020	9	28.7	13
RZHTR-021	10	30.9	8
RZHTR-022	20	51.1	<5
RZHTR-023	10	59.4	9
RZHTR-024	3	143	5
RZHTR-025	6	56.3	<5
RZHTR-026	10	36.4	8
RZHTR-027	8	38.9	<5
RZHTR-028	10	43.9	<5
RZHTR-029	6	40.3	<5
RZHTR-030	2	21.9	7
RZHTR-031	11	2280	8
RZHTR-032	6	29.2	7
BABE RUTH	10	62.2	6

Comments: RDL - Reported Detection Limit

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Au
Unit:	kg	ppm
Sample Description RDL:	0.01	0.001
AHHTR-006	1.95	0.008
AHHTR-007	1.95	0.004
AHHTR-008	1.25	0.003
AHHTR-009	0.96	0.003
AHHTR-010	0.94	0.014
AHHTR-011	1.26	0.003
AHHTR-012	1.13	<0.001
AHHTR-013	1.38	2.01
AHHTR-014	1.10	0.031
AHHTR-015	1.21	0.010
AHHTR-016	1.44	0.009
AHHTR-017	1.63	0.014
AHHTR-018	1.30	0.006
AHHTR-019	1.34	0.002
AHHTR-020	1.19	0.003
AHHTR-021	1.69	0.003
AHHTR-022	1.80	0.006
AHHTR-023	2.20	0.005
AHHTR-024	1.45	0.004
AHHTR-025	1.93	0.004
AHHTR-026	1.16	0.009
AHHTR-027	1.20	0.005
AHHTR-028	1.37	0.004
AHHTR-029	1.67	0.009
AHHTR-030	1.21	0.002
AHHTR-031	1.28	0.005
AHHTR-032	1.99	0.009
AHHTR-033	1.99	0.002
AHHTR-034	1.48	0.099
JKHRT-001	2.71	0.021
JKHRT-002	1.39	<0.001
JKHRT-003	1.62	0.085

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AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Au
Unit:	kg	ppm
Sample Description RDL:	0.01	0.001
JKHRT-004	0.40	0.006
JKHRT-005	1.51	0.079
JKHRT-006	1.53	0.007
JKHRT-007	0.94	0.012
JKHRT-008	0.99	0.024
JKHRT-009	1.20	0.018
JKHRT-010	2.12	0.018
JKHRT-011	3.62	0.003
JKHRT-012	2.79	0.003
JKHRT-013	2.60	0.003
JKHRT-014	2.25	0.004
JKHRT-015	2.99	0.009
JKHRT-016	1.81	0.004
JKHRT-017	2.49	0.002
JKHRT-018	3.89	0.005
JKHRT-019	2.46	0.005
JKHRT-020	0.80	0.071
JKHRT-021	0.94	0.007
RZHTR-001	1.89	0.002
RZHTR-002	1.25	<0.001
RZHTR-003	1.39	2.96
RZHTR-004	1.45	0.014
RZHTR-005	1.45	0.041
RZHTR-006	1.67	0.079
RZHTR-007	1.28	0.008
RZHTR-008	1.77	0.005
RZHTR-009	1.73	0.001
RZHTR-010	1.68	0.002
RZHTR-011	1.13	0.004
RZHTR-012	0.94	0.022
RZHTR-013	1.56	0.019
RZHTR-014	0.74	0.194

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Results relate only to the items tested

Certificate of Analysis

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AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 18, 2011 SAMPLE TYPE: Rock

	Analyte:	Sample Login Weight	Au
	Unit:	kg	ppm
Sample Description	RDL:	0.01	0.001
RZHTR-015		0.40	0.009
RZHTR-016		1.74	0.005
RZHTR-017		1.76	0.005
RZHTR-018		1.22	0.598
RZHTR-019		1.31	0.011
RZHTR-020		1.30	0.004
RZHTR-021		1.59	0.024
RZHTR-022		1.42	0.015
RZHTR-023		2.80	0.051
RZHTR-024		2.12	0.005
RZHTR-025		2.56	0.068
RZHTR-026		4.21	0.025
RZHTR-027		1.27	0.019
RZHTR-028		1.63	0.021
RZHTR-029		1.88	0.032
RZHTR-030		2.34	0.027
RZHTR-031		1.03	0.005
RZHTR-032		1.60	0.046
BABE RUTH		3.32	0.015

Comments: RDL - Reported Detection Limit

Certified By: Ron Cardinall

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740284	0.4	0.4	0.0%	< 0.2				80%	120%
Al	1	2740284	3.20	3.15	1.6%	< 0.01				80%	120%
As	1	2740284	6	6	0.0%	< 1				80%	120%
B	1	2740284	12	12	0.0%	< 5				80%	120%
Ba	1	2740284	142	141	0.7%	< 1				80%	120%
Be	1	2740284	1.58	1.66	4.9%	< 0.5				80%	120%
Bi	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
Ca	1	2740284	2.32	2.31	0.4%	< 0.01				80%	120%
Cd	1	2740284	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740284	31	29	6.7%	< 1				80%	120%
Co	1	2740284	6.3	6.5	3.1%	< 0.5				80%	120%
Cr	1	2740284	142	138	2.9%	< 0.5				80%	120%
Cu	1	2740284	55.7	56.1	0.7%	< 0.5	3816	3800	100%	80%	120%
Fe	1	2740284	1.94	1.89	2.6%	< 0.01				80%	120%
Ga	1	2740284	11	11	0.0%	< 5				80%	120%
Hg	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740284	0.74	0.72	2.7%	< 0.01				80%	120%
La	1	2740284	15	15	0.0%	< 1				80%	120%
Li	1	2740284	96	97	1.0%	< 1				80%	120%
Mg	1	2740284	1.35	1.32	2.2%	< 0.01				80%	120%
Mn	1	2740284	71	71	0.0%	< 1				80%	120%
Mo	1	2740284	2.2	2.1	4.7%	< 0.5	359	380	94%	80%	120%
Na	1	2740284	0.22	0.22	0.0%	< 0.01				80%	120%
Ni	1	2740284	24.5	24.8	1.2%	< 0.5				80%	120%
P	1	2740284	1080	1080	0.0%	< 10				80%	120%
Pb	1	2740284	4.7	4.7	0.0%	< 0.5				80%	120%
Rb	1	2740284	60	61	1.7%	< 10	12	13	94%	80%	120%
S	1	2740284	0.819	0.805	1.7%	< 0.005				80%	120%
Sb	1	2740284	1	1	0.0%	< 1				80%	120%
Sc	1	2740284	4.7	4.8	2.1%	< 0.5				80%	120%
Se	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
Sr	1	2740284	188	180	4.3%	< 0.5	309	290	106%	80%	120%
Ta	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740284	7	7	0.0%	< 5				80%	120%
Ti	1	2740284	0.16	0.16	0.0%	< 0.01				80%	120%
Tl	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740284	66.6	65.9	1.1%	< 0.5				80%	120%
W	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
Y	1	2740284	10	11	9.5%	< 1				80%	120%
Zn	1	2740284	28.8	29.7	3.1%	< 0.5				80%	120%

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Quality Assurance

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AGAT WORK ORDER: 11Y532862

PROJECT NO:

ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Zr	1	2740284	12	13	8.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740310	2.24	2.36	5.2%	< 0.2				80%	120%
Al	1	2740310	3.37	3.57	5.8%	< 0.01				80%	120%
As	1	2740310	27	29	7.1%	< 1				80%	120%
B	1	2740310	165	167	1.2%	< 5				80%	120%
Ba	1	2740310	97	100	3.0%	< 1				80%	120%
Be	1	2740310	3.3	3.3	0.0%	< 0.5				80%	120%
Bi	1	2740310	26	30	14.3%	< 1				80%	120%
Ca	1	2740310	8.41	8.93	6.0%	< 0.01				80%	120%
Cd	1	2740310	0.7	0.7	0.0%	< 0.5				80%	120%
Ce	1	2740310	67	69	2.9%	< 1				80%	120%
Co	1	2740310	7.8	8.0	2.5%	< 0.5				80%	120%
Cr	1	2740310	81.1	85.4	5.2%	< 0.5				80%	120%
Cu	1	2740310	949	983	3.5%	< 0.5	3797	3800	99%	80%	120%
Fe	1	2740310	1.04	1.10	5.6%	< 0.01				80%	120%
Ga	1	2740310	11	11	0.0%	< 5				80%	120%
Hg	1	2740310	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740310	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740310	0.04	0.04	0.0%	< 0.01				80%	120%
La	1	2740310	37	38	2.7%	< 1				80%	120%
Li	1	2740310	35	35	0.0%	< 1				80%	120%
Mg	1	2740310	0.411	0.429	4.3%	< 0.01				80%	120%
Mn	1	2740310	300	320	6.5%	< 1				80%	120%
Mo	1	2740310	75.1	75.8	0.9%	< 0.5	356	380	93%	80%	120%
Na	1	2740310	0.05	0.05	0.0%	< 0.01				80%	120%
Ni	1	2740310	25.0	25.8	3.1%	< 0.5				80%	120%
P	1	2740310	300	306	2.0%	< 10				80%	120%
Pb	1	2740310	34.2	35.5	3.7%	< 0.5				80%	120%
Rb	1	2740310	< 10	< 10	0.0%	< 10	12	13	93%	80%	120%
S	1	2740310	0.256	0.258	0.8%	< 0.005				80%	120%
Sb	1	2740310	22	23	4.4%	< 1				80%	120%
Sc	1	2740310	2.9	2.9	0.0%	< 0.5				80%	120%
Se	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740310	9	9	0.0%	< 5				80%	120%
Sr	1	2740310	287	296	3.1%	< 0.5	304	290	104%	80%	120%
Ta	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740310	10	10	0.0%	< 5				80%	120%
Ti	1	2740310	0.160	0.169	5.5%	< 0.01				80%	120%
Tl	1	2740310	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740310	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740310	29.6	31.2	5.3%	< 0.5				80%	120%
W	1	2740310	< 1	< 1	0.0%	< 1				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Y	1	2740310	9	9	0.0%	< 1				80%	120%
Zn	1	2740310	69.1	70.7	2.3%	< 0.5				80%	120%
Zr	1	2740310	17	18	5.7%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740335	< 0.2	< 0.2	0.0%	< 0.2				80%	120%
Al	1	2740335	1.20	1.22	1.7%	< 0.01				80%	120%
As	1	2740335	6	5	18.2%	< 1				80%	120%
B	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2740335	81	82	1.2%	< 1				80%	120%
Be	1	2740335	1.0	1.0	0.0%	< 0.5				80%	120%
Bi	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
Ca	1	2740335	0.790	0.806	2.0%	< 0.01				80%	120%
Cd	1	2740335	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740335	72	72	0.0%	< 1				80%	120%
Co	1	2740335	5.1	5.1	0.0%	< 0.5				80%	120%
Cr	1	2740335	113	109	3.6%	< 0.5				80%	120%
Cu	1	2740335	13.3	13.3	0.0%	< 0.5	3715	380		80%	120%
Fe	1	2740335	1.23	1.23	0.0%	< 0.01				80%	120%
Ga	1	2740335	6	6	0.0%	< 5				80%	120%
Hg	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740335	0.324	0.325	0.3%	< 0.01				80%	120%
La	1	2740335	40	41	2.5%	< 1				80%	120%
Li	1	2740335	29	29	0.0%	< 1				80%	120%
Mg	1	2740335	0.72	0.72	0.0%	< 0.01				80%	120%
Mn	1	2740335	208	206	1.0%	< 1				80%	120%
Mo	1	2740335	1.43	1.50	4.8%	< 0.5	355	380	93%	80%	120%
Na	1	2740335	0.07	0.07	0.0%	< 0.01				80%	120%
Ni	1	2740335	7.83	7.98	1.9%	< 0.5				80%	120%
P	1	2740335	363	338	7.1%	< 10				80%	120%
Pb	1	2740335	14.9	14.9	0.0%	< 0.5				80%	120%
Rb	1	2740335	35	36	2.8%	< 10	12	13	89%	80%	120%
S	1	2740335	0.119	0.128	7.3%	< 0.005				80%	120%
Sb	1	2740335	4	4	0.0%	< 1				80%	120%
Sc	1	2740335	3.78	3.75	0.8%	< 0.5				80%	120%
Se	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Sr	1	2740335	76.2	72.8	4.6%	< 0.5	290	290	100%	80%	120%
Ta	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740335	38	38	0.0%	< 5				80%	120%
Ti	1	2740335	0.14	0.14	0.0%	< 0.01				80%	120%
Tl	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740335	16	16	0.0%	< 5				80%	120%

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
V	1	2740335	38.3	37.8	1.3%	< 0.5				80%	120%
W	1	2740335	1	1	0.0%	< 1				80%	120%
Y	1	2740335	10	9	10.5%	< 1				80%	120%
Zn	1	2740335	20.9	20.3	2.9%	< 0.5				80%	120%
Zr	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740361	1.85	1.93	4.2%	< 0.2				80%	120%
Al	1	2740361	0.502	0.493	1.8%	< 0.01				80%	120%
As	1	2740361	2	2	0.0%	< 1				80%	120%
B	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Be	1	2740361	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Bi	1	2740361	6	5	18.2%	< 1				80%	120%
Ca	1	2740361	2.36	2.31	2.1%	< 0.01				80%	120%
Cd	1	2740361	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740361	8	8	0.0%	< 1				80%	120%
Co	1	2740361	212	220	3.7%	< 0.5				80%	120%
Cr	1	2740361	16.1	16.5	2.5%	< 0.5				80%	120%
Cu	1	2740361	3720	3820	2.7%	< 0.5	3863	3800	101%	80%	120%
Fe	1	2740361	28.4	27.8	2.1%	< 0.01				80%	120%
Ga	1	2740361	5	6	18.2%	< 5				80%	120%
Hg	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
La	1	2740361	4	4	0.0%	< 1				80%	120%
Li	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Mg	1	2740361	0.01	0.01	0.0%	< 0.01				80%	120%
Mn	1	2740361	361	376	4.1%	< 1				80%	120%
Mo	1	2740361	2.23	2.39	6.9%	< 0.5	363	380	95%	80%	120%
Na	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Ni	1	2740361	261	270	3.4%	< 0.5				80%	120%
P	1	2740361	772	846	9.1%	< 10				80%	120%
Pb	1	2740361	44.0	44.1	0.2%	< 0.5				80%	120%
Rb	1	2740361	< 10	< 10	0.0%	< 10	12	13	93%	80%	120%
S	1	2740361	16.6	16.4	1.2%	< 0.005				80%	120%
Sb	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Sc	1	2740361	0.6	0.6	0.0%	< 0.5				80%	120%
Se	1	2740361	36	37	2.7%	< 10				80%	120%
Sn	1	2740361	76	78	2.6%	< 5				80%	120%
Sr	1	2740361	2.5	2.9	14.8%	< 0.5	301	290	103%	80%	120%
Ta	1	2740361	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740361	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Ti	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Tl	1	2740361	< 5	< 5	0.0%	< 5				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11Y532862

PROJECT NO:

ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
U	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740361	41.7	39.7	4.9%	< 0.5				80%	120%
W	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Y	1	2740361	10	10	0.0%	< 1				80%	120%
Zn	1	2740361	43.9	48.8	10.6%	< 0.5				80%	120%
Zr	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Cu	1					< 0.5	3701	3800	97%	80%	120%
Mo	1					< 0.5	362	380	95%	80%	120%
Rb	1					< 10	11	13	84%	80%	120%
Sr	1					< 0.5	296	290	102%	80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740284	0.008	0.006	28.6%	< 0.001	0.0808	0.0849	95%	80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740309	0.0046	0.0038	19.0%	< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740310	0.009	0.006		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740335	< 0.001	0.002		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740350	0.005	0.003		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740361	0.021	0.018	15.4%	< 0.001				80%	120%

Certified By: Ron Cardinall

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES — AGAT WORK ORDER: 11Y532862

PROJECT NO: — ATTENTION TO: CHRIS GALLAGHER

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Ag	MIN-200-12020		ICP/OES
Al	MIN-200-12020		ICP/OES
As	MIN-200-12020		ICP/OES
B	MIN-200-12020		ICP/OES
Ba	MIN-200-12020		ICP/OES
Be	MIN-200-12020		ICP/OES
Bi	MIN-200-12020		ICP/OES
Ca	MIN-200-12020		ICP/OES
Cd	MIN-200-12020		ICP/OES
Ce	MIN-200-12020		ICP/OES
Co	MIN-200-12020		ICP/OES
Cr	MIN-200-12020		ICP/OES
Cu	MIN-200-12020		ICP/OES
Fe	MIN-200-12020		ICP/OES
Ga	MIN-200-12020		ICP/OES
Hg	MIN-200-12020		ICP/OES
In	MIN-200-12020		ICP/OES
K	MIN-200-12020		ICP/OES
La	MIN-200-12020		ICP/OES
Li	MIN-200-12020		ICP/OES
Mg	MIN-200-12020		ICP/OES
Mn	MIN-200-12020		ICP/OES
Mo	MIN-200-12020		ICP/OES
Na	MIN-200-12020		ICP/OES
Ni	MIN-200-12020		ICP/OES
P	MIN-200-12020		ICP/OES
Pb	MIN-200-12020		ICP/OES
Rb	MIN-200-12020		ICP/OES
S	MIN-200-12020		ICP/OES
Sb	MIN-200-12020		ICP/OES
Sc	MIN-200-12020		ICP/OES
Se	MIN-200-12020		ICP/OES
Sn	MIN-200-12020		ICP/OES
Sr	MIN-200-12020		ICP/OES
Ta	MIN-200-12020		ICP/OES
Te	MIN-200-12020		ICP/OES
Th	MIN-200-12020		ICP/OES
Ti	MIN-200-12020		ICP/OES
Tl	MIN-200-12020		ICP/OES
U	MIN-200-12020		ICP/OES
V	MIN-200-12020		ICP/OES
W	MIN-200-12020		ICP/OES
Y	MIN-200-12020		ICP/OES
Zn	MIN-200-12020		ICP/OES
Zr	MIN-200-12020		ICP/OES
Sample Login Weight	MIN-12009		BALANCE
Au	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP-OES

5.2 – Soil and Silt Samples

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CRANBROOK, BC V1C2R7

ATTENTION TO: CHRIS GALLAGHER

PROJECT NO:

AGAT WORK ORDER: 11Y532862

SOLID ANALYSIS REVIEWED BY: Ron Cardinall, Certified Assayer - Director - Technical Services (Mining)

DATE REPORTED: Oct 18, 2011

PAGES (INCLUDING COVER): 22

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998, or at 1-800-856-6261

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
AHHTR-006	0.4	3.20	6	12	142	1.6	<1	2.32	<0.5	31	6.3	142	55.7	1.94
AHHTR-007	0.2	2.44	20	8	84	2.4	<1	1.73	0.5	35	6.1	104	46.2	1.19
AHHTR-008	0.4	1.62	3	5	118	1.8	<1	1.46	<0.5	37	13.1	65.7	95.8	2.15
AHHTR-009	0.3	2.08	24	<5	61	1.6	<1	1.57	<0.5	27	7.9	56.2	63.4	2.05
AHHTR-010	0.3	3.31	40	6	52	3.5	<1	2.70	1.4	29	15.8	73.0	83.7	2.10
AHHTR-011	0.3	1.77	21	21	71	1.1	<1	6.73	1.1	29	2.7	76.1	44.0	0.32
AHHTR-012	<0.2	1.18	2	16	76	0.7	<1	8.83	0.6	24	0.9	64.1	13.1	0.20
AHHTR-013	11.8	0.56	92	68	8	0.7	7300	6.95	<0.5	7	34.9	34.1	755	8.52
AHHTR-014	0.3	2.46	18	6	164	2.1	47	1.52	<0.5	63	10.5	98.3	60.2	3.47
AHHTR-015	0.3	1.42	22	<5	214	1.5	6	3.42	<0.5	10	3.9	152	39.2	0.99
AHHTR-016	<0.2	0.93	174	<5	45	1.0	7	19.8	<0.5	21	4.5	25.8	34.7	2.23
AHHTR-017	0.4	1.16	50	<5	504	1.5	4	0.67	<0.5	15	5.2	120	50.8	1.86
AHHTR-018	3.6	0.87	138	<5	16	0.6	9	1.40	0.8	24	36.6	60.6	670	12.5
AHHTR-019	0.5	2.86	4	9	180	1.8	<1	2.58	<0.5	25	7.3	90.3	46.9	2.35
AHHTR-020	0.3	2.45	10	10	74	1.9	2	4.30	<0.5	41	7.0	89.0	43.8	0.86
AHHTR-021	0.3	2.65	1	<5	545	1.6	<1	0.35	<0.5	32	12.2	120	44.1	2.99
AHHTR-022	0.6	2.74	21	8	222	2.2	1	2.73	<0.5	39	8.3	115	164	2.78
AHHTR-023	0.6	3.91	11	11	178	2.3	<1	2.91	<0.5	35	9.8	103	115	2.50
AHHTR-024	0.8	4.70	6	10	130	2.0	<1	3.59	<0.5	29	5.6	76.2	111	1.94
AHHTR-025	0.5	1.70	6	5	89	1.2	<1	0.97	<0.5	63	7.2	111	25.6	2.17
AHHTR-026	0.6	3.03	9	10	246	3.0	<1	2.49	0.7	46	18.8	118	85.9	3.00
AHHTR-027	0.6	2.69	5	15	217	2.2	<1	2.55	5.0	36	12.5	103	64.0	2.24
AHHTR-028	0.6	2.83	1	27	170	1.4	<1	2.90	2.6	29	10.9	65.7	74.4	1.76
AHHTR-029	1.9	1.26	5	<5	27	<0.5	<1	2.23	1.0	3	26.0	24.8	1170	3.59
AHHTR-030	0.2	2.36	20	6	71	2.2	<1	1.34	<0.5	61	12.2	109	12.7	2.68
AHHTR-031	0.3	2.54	7	7	274	1.7	<1	2.68	<0.5	39	8.0	86.2	42.4	1.80
AHHTR-032	2.2	3.37	27	165	97	3.3	26	8.41	0.7	67	7.8	81.1	949	1.04
AHHTR-033	0.2	5.51	65	251	110	3.0	18	8.11	<0.5	66	9.0	81.9	64.7	1.08
AHHTR-034	2.1	1.76	272	11	152	1.7	<1	0.96	0.5	69	14.4	95.5	120	2.32
JKHRT-001	0.4	7.55	5	16	13	1.2	4	5.67	<0.5	14	7.9	41.1	569	3.00
JKHRT-002	0.2	0.67	2	<5	8	<0.5	<1	2.06	<0.5	<1	6.7	68.9	174	2.63
JKHRT-003	2.2	0.39	6	5	14	<0.5	3	1.11	14.0	3	23.7	16.1	654	10.1

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AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 11Y532862

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
JKHRT-004	0.6	2.52	4	13	85	3.0	<1	2.42	0.9	41	4.7	99.2	54.1	2.08
JKHRT-005	1.3	0.11	2	<5	<1	<0.5	5	0.30	<0.5	7	261	8.5	3010	34.4
JKHRT-006	0.6	1.43	11	42	29	0.5	3	3.21	<0.5	34	68.7	93.2	688	10.1
JKHRT-007	0.6	2.18	22	27	37	1.8	11	0.95	<0.5	26	31.7	48.0	556	12.4
JKHRT-008	0.4	1.61	5	<5	15	<0.5	5	5.41	1.6	38	2.6	98.0	107	6.42
JKHRT-009	1.4	0.31	6	<5	<1	<0.5	5	1.64	<0.5	11	246	38.1	2900	31.2
JKHRT-010	1.7	0.47	3	18	6	1.1	7	0.53	0.7	3	220	17.6	3510	30.3
JKHRT-011	0.3	3.11	3	20	82	2.5	1	2.63	<0.5	30	13.9	85.3	65.5	2.08
JKHRT-012	0.3	2.80	6	24	68	2.6	<1	2.44	<0.5	32	11.1	85.3	69.9	2.21
JKHRT-013	0.4	2.33	15	18	69	1.7	<1	2.01	<0.5	32	10.8	73.5	78.4	2.06
JKHRT-014	0.4	2.91	9	20	74	2.4	<1	2.91	<0.5	35	9.6	91.8	63.3	2.15
JKHRT-015	0.3	3.19	8	10	86	1.0	<1	3.13	<0.5	51	10.5	94.5	67.0	2.26
JKHRT-016	0.3	3.17	9	10	90	1.0	<1	2.88	<0.5	39	9.2	104	66.5	2.26
JKHRT-017	0.3	3.56	12	9	49	0.8	<1	3.31	<0.5	43	9.7	64.0	72.4	1.81
JKHRT-018	0.4	3.15	29	9	60	0.9	<1	3.25	<0.5	44	10.3	76.1	81.0	2.12
JKHRT-019	0.4	3.28	32	8	80	1.1	<1	2.07	<0.5	29	9.2	77.5	69.7	1.97
JKHRT-020	<0.2	0.22	3	<5	56	<0.5	52	12.4	0.5	10	5.4	28.5	35.8	1.37
JKHRT-021	0.2	1.50	33	<5	240	0.7	1	9.12	0.7	6	8.4	40.3	51.8	2.97
RZHTR-001	<0.2	5.36	6	11	59	1.0	1	6.11	0.5	34	1.4	20.5	1.5	0.36
RZHTR-002	<0.2	1.20	3	<5	81	1.0	<1	0.79	<0.5	72	5.1	113	13.3	1.23
RZHTR-003	1.8	0.94	7470	9	16	1.0	2	5.38	<0.5	58	13.2	91.5	35.2	2.80
RZHTR-004	1.1	1.19	124	<5	27	<0.5	4	8.08	<0.5	102	32.7	70.9	539	9.62
RZHTR-005	0.3	0.89	27	94	6	0.5	5	0.98	<0.5	88	53.2	99.7	433	8.17
RZHTR-006	<0.2	1.40	9	<5	22	<0.5	<1	7.35	<0.5	11	13.2	70.5	73.6	6.07
RZHTR-007	0.3	0.94	25	<5	19	<0.5	<1	6.90	<0.5	59	18.4	48.2	134	7.50
RZHTR-008	5.7	1.36	2	<5	<1	<0.5	7	2.60	1.5	51	147	14.6	6540	19.7
RZHTR-009	0.2	0.63	5	<5	182	<0.5	<1	0.90	<0.5	34	7.2	80.0	84.8	1.29
RZHTR-010	<0.2	2.76	7	12	234	0.6	<1	3.59	<0.5	28	5.6	77.2	25.6	1.22
RZHTR-011	<0.2	2.11	6	10	116	0.8	2	2.14	0.7	36	6.2	114	58.1	1.24
RZHTR-012	<0.2	0.65	3	<5	31	<0.5	40	3.81	<0.5	11	3.4	48.8	25.8	1.84
RZHTR-013	0.3	1.27	6	10	81	<0.5	4	5.49	0.6	30	5.1	78.6	51.4	1.10
RZHTR-014	<0.2	2.08	3	11	30	0.5	2	11.6	<0.5	37	1.2	40.7	12.1	0.33

Certified By: Ron Cardinall

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ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
Sample Description RDL:	0.2	0.01	1	5	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01
RZHTR-015	<0.2	1.32	3	<5	52	<0.5	2	4.67	<0.5	17	2.3	76.2	35.3	1.74
RZHTR-016	<0.2	1.81	5	24	66	0.8	6	6.39	1.0	38	4.4	51.0	55.9	0.68
RZHTR-017	<0.2	1.29	6	18	43	0.6	2	5.17	0.5	32	0.9	62.0	14.0	0.37
RZHTR-018	1.0	1.74	5	<5	14	<0.5	55	3.69	<0.5	22	4.9	32.4	601	2.49
RZHTR-019	3.9	1.53	5	<5	3	<0.5	11	2.70	1.0	38	120	19.2	3710	14.3
RZHTR-020	0.2	1.23	4	<5	11	<0.5	3	5.75	<0.5	26	23.8	33.9	401	3.25
RZHTR-021	0.2	1.30	7	<5	8	<0.5	4	6.78	<0.5	22	15.7	39.2	365	2.78
RZHTR-022	0.2	1.63	144	<5	21	0.6	13	7.81	<0.5	68	93.0	44.5	1410	4.73
RZHTR-023	1.6	1.35	60	<5	44	<0.5	270	4.00	<0.5	26	31.6	47.5	941	6.10
RZHTR-024	5.2	1.86	4	<5	<1	<0.5	11	2.61	1.3	11	148	14.3	5040	19.4
RZHTR-025	2.0	0.74	4	<5	4	<0.5	197	5.28	0.6	128	88.1	19.5	2620	11.5
RZHTR-026	0.7	1.17	8	<5	20	<0.5	189	7.49	<0.5	113	29.0	33.1	945	5.61
RZHTR-027	0.5	1.57	7	28	137	0.6	119	1.79	<0.5	69	9.3	50.0	126	5.25
RZHTR-028	1.8	0.50	2	<5	<1	<0.5	6	2.36	<0.5	8	212	16.1	3720	28.4
RZHTR-029	1.7	1.23	8	44	17	1.1	7	1.35	<0.5	12	172	19.7	3790	21.8
RZHTR-030	0.3	0.20	11	<5	11	<0.5	5	2.48	<0.5	3	17.0	25.5	423	6.17
RZHTR-031	3.1	1.27	12	272	36	0.7	6	4.80	33.0	73	24.7	45.6	786	4.34
RZHTR-032	<0.2	1.49	6	11	112	1.8	4	3.60	<0.5	124	6.7	37.3	34.6	1.44
BABE RUTH	2.1	0.58	76	14	6	<0.5	47	7.15	0.7	37	78.9	42.5	2590	9.67

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
AHHTR-006	11	<1	<1	0.74	15	96	1.35	71	2.2	0.22	24.5	1080	4.7	60
AHHTR-007	11	<1	<1	0.28	17	80	0.75	88	1.7	0.30	22.5	1210	29.5	38
AHHTR-008	6	<1	<1	0.15	23	18	0.18	28	11.5	0.36	43.5	696	4.3	<10
AHHTR-009	10	<1	<1	0.11	14	60	0.48	61	14.1	0.09	41.7	1600	8.3	13
AHHTR-010	17	<1	<1	0.13	15	182	1.49	177	7.6	0.16	80.4	2450	9.1	14
AHHTR-011	6	<1	<1	0.13	16	14	0.17	92	6.1	0.29	20.4	819	17.3	<10
AHHTR-012	<5	<1	<1	0.09	11	16	0.34	79	1.4	0.27	4.6	709	9.7	<10
AHHTR-013	<5	<1	<1	0.02	5	16	0.16	576	1.8	0.10	24.3	919	5.0	<10
AHHTR-014	11	<1	<1	0.35	31	74	1.23	168	1.3	0.24	10.8	934	17.8	27
AHHTR-015	9	<1	<1	0.21	4	31	0.39	68	15.6	0.02	24.7	460	3.9	21
AHHTR-016	6	<1	<1	0.17	11	25	0.43	263	11.3	<0.01	11.6	208	5.8	13
AHHTR-017	14	<1	<1	0.23	7	76	0.75	65	19.8	0.01	24.1	392	7.6	23
AHHTR-018	24	<1	<1	0.10	12	45	0.76	112	3.6	<0.01	26.3	1790	26.7	<10
AHHTR-019	12	<1	<1	0.14	10	59	0.39	112	3.8	0.17	17.5	792	33.3	12
AHHTR-020	9	<1	<1	0.24	21	47	0.42	91	4.2	0.26	33.6	1590	4.9	24
AHHTR-021	13	<1	<1	1.04	15	121	1.46	250	0.8	0.11	25.2	227	3.7	90
AHHTR-022	13	<1	<1	0.41	26	69	0.91	125	6.8	0.16	43.7	8820	10.0	46
AHHTR-023	15	<1	<1	0.14	20	22	0.27	56	18.6	0.25	36.7	2050	15.2	13
AHHTR-024	17	<1	<1	0.04	13	8	0.12	48	18.9	0.20	19.1	930	22.3	<10
AHHTR-025	8	<1	<1	0.31	32	87	0.69	146	1.5	0.17	14.9	1060	17.6	38
AHHTR-026	14	<1	<1	0.35	27	73	0.71	97	6.3	0.11	37.8	2030	10.0	31
AHHTR-027	12	<1	<1	0.28	22	67	0.57	152	2.7	0.08	24.4	1390	6.1	27
AHHTR-028	10	<1	<1	0.04	17	6	0.12	95	1.3	0.04	26.3	898	10.8	<10
AHHTR-029	5	<1	<1	0.03	<1	34	0.44	65	3.5	0.03	43.5	288	52.8	<10
AHHTR-030	11	<1	<1	0.29	33	119	0.94	109	1.5	0.29	15.7	775	15.8	36
AHHTR-031	10	<1	<1	0.08	21	15	0.13	45	6.7	0.19	32.7	2840	14.8	<10
AHHTR-032	11	<1	<1	0.04	37	35	0.41	300	75.1	0.05	25.0	300	34.2	<10
AHHTR-033	15	<1	<1	0.21	35	39	0.49	249	2.9	0.09	24.6	278	18.5	20
AHHTR-034	8	<1	<1	0.43	37	97	1.04	164	1.8	0.11	40.4	746	13.6	39
JKHRT-001	20	<1	<1	0.03	5	30	0.12	143	<0.5	0.23	12.1	89	41.2	<10
JKHRT-002	<5	<1	<1	0.01	<1	5	0.17	565	<0.5	<0.01	3.6	16	10.9	<10
JKHRT-003	<5	<1	<1	<0.01	2	27	0.39	188	1.1	<0.01	39.1	461	6.1	<10

Certified By: Ron Cardinall

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
JKHRT-004	12	<1	<1	0.31	26	147	0.66	86	3.5	0.18	19.7	847	25.8	31
JKHRT-005	<5	<1	<1	<0.01	4	2	<0.01	102	7.2	0.02	321	479	18.7	<10
JKHRT-006	7	<1	<1	0.03	25	47	0.20	659	0.8	0.02	45.1	1710	13.0	<10
JKHRT-007	11	<1	<1	0.07	18	82	0.27	170	<0.5	0.39	19.9	735	6.7	<10
JKHRT-008	12	<1	<1	0.03	24	6	0.09	871	1940	<0.01	3.4	3220	11.4	<10
JKHRT-009	<5	<1	<1	<0.01	4	2	0.02	238	20.7	<0.01	209	1960	43.2	<10
JKHRT-010	<5	<1	<1	0.02	1	6	0.05	181	48.9	0.09	237	356	48.9	<10
JKHRT-011	14	<1	<1	0.34	17	121	0.62	62	4.0	0.19	30.6	2380	3.6	34
JKHRT-012	13	<1	<1	0.23	17	86	0.44	48	8.7	0.27	32.7	3630	4.8	26
JKHRT-013	11	<1	<1	0.19	18	86	0.38	41	11.1	0.24	35.9	3300	6.0	19
JKHRT-014	13	<1	<1	0.28	20	118	0.57	56	13.9	0.28	26.4	5180	5.8	31
JKHRT-015	12	<1	<1	0.39	28	52	0.74	62	3.0	0.21	27.8	5270	5.7	42
JKHRT-016	13	<1	<1	0.30	22	38	0.54	62	4.2	0.25	24.7	4030	6.6	29
JKHRT-017	12	<1	<1	0.12	26	13	0.24	41	2.3	0.16	22.7	3680	6.1	11
JKHRT-018	12	<1	<1	0.19	25	23	0.37	50	9.9	0.18	34.4	6590	7.4	20
JKHRT-019	13	<1	<1	0.35	16	34	0.62	61	1.5	0.14	26.0	405	9.1	36
JKHRT-020	<5	<1	<1	0.01	5	4	0.35	448	9.0	0.04	4.6	3710	27.9	<10
JKHRT-021	<5	<1	<1	0.05	3	31	1.08	678	<0.5	0.18	8.5	2850	49.1	<10
RZHTR-001	18	<1	<1	0.04	18	7	0.09	254	<0.5	0.23	3.0	1140	22.2	<10
RZHTR-002	6	<1	<1	0.32	40	29	0.72	208	1.4	0.07	7.8	363	14.9	35
RZHTR-003	<5	<1	<1	0.27	30	8	0.19	578	2.4	<0.01	16.2	763	172	24
RZHTR-004	11	<1	<1	0.06	72	6	0.23	1180	4.6	0.02	92.9	1070	14.4	<10
RZHTR-005	<5	<1	<1	0.02	52	15	0.24	413	17.1	0.10	36.3	830	8.5	<10
RZHTR-006	13	<1	<1	<0.01	5	9	0.36	1160	0.8	<0.01	21.9	457	12.7	<10
RZHTR-007	11	<1	<1	<0.01	27	6	0.35	897	<0.5	<0.01	32.6	3580	3.9	<10
RZHTR-008	<5	<1	<1	0.02	30	10	0.15	754	0.6	0.03	25.5	360	7.6	<10
RZHTR-009	<5	<1	<1	0.09	17	9	0.20	48	2.9	0.09	19.3	1080	3.7	<10
RZHTR-010	9	<1	<1	0.91	14	124	1.54	49	1.8	0.14	17.8	526	6.7	70
RZHTR-011	8	<1	<1	0.36	18	43	0.71	159	3.8	0.19	27.1	1380	9.0	38
RZHTR-012	<5	<1	<1	0.07	6	16	0.51	810	1.3	0.02	5.7	1710	7.5	<10
RZHTR-013	<5	<1	<1	0.34	15	41	1.14	333	3.6	0.09	16.4	592	18.4	34
RZHTR-014	5	<1	<1	0.06	20	3	0.10	358	1.2	0.10	6.0	794	9.9	<10

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Ga	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb
Unit:	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	5	1	1	0.01	1	1	0.01	1	0.5	0.01	0.5	10	0.5	10
RZHTR-015	<5	<1	<1	0.22	8	43	0.39	549	1.3	0.03	7.8	1000	17.1	24
RZHTR-016	6	<1	<1	0.28	21	32	0.47	177	3.3	0.16	15.6	623	8.2	28
RZHTR-017	<5	<1	<1	0.06	17	5	0.68	265	2.0	0.13	3.3	931	11.0	<10
RZHTR-018	<5	<1	<1	0.01	12	14	0.33	749	1.6	0.05	3.1	676	12.6	<10
RZHTR-019	<5	<1	<1	0.01	22	16	0.28	1160	1.3	0.02	17.9	393	12.1	<10
RZHTR-020	<5	<1	<1	0.04	16	12	0.34	1770	<0.5	0.03	6.3	584	13.2	<10
RZHTR-021	<5	<1	<1	0.03	13	17	0.33	1780	<0.5	0.02	5.1	695	8.5	<10
RZHTR-022	6	<1	<1	0.16	50	19	0.51	3460	0.9	0.13	9.8	>10000	9.7	<10
RZHTR-023	5	<1	<1	0.13	15	16	0.45	1050	5.9	0.06	37.8	1580	21.4	<10
RZHTR-024	<5	<1	<1	0.01	6	13	0.19	687	1.4	0.04	22.5	438	4.4	<10
RZHTR-025	<5	<1	<1	0.05	78	9	0.25	1180	<0.5	0.04	36.4	463	5.4	<10
RZHTR-026	<5	<1	<1	0.15	68	10	0.30	1630	<0.5	0.06	12.6	924	8.3	11
RZHTR-027	8	<1	<1	0.15	48	29	0.43	368	1.3	0.11	9.5	1770	26.1	13
RZHTR-028	5	<1	<1	<0.01	4	<1	0.01	361	2.2	<0.01	261	772	44.0	<10
RZHTR-029	<5	<1	<1	0.05	6	13	0.14	345	6.1	0.29	217	2490	19.2	<10
RZHTR-030	<5	<1	<1	<0.01	2	6	0.42	272	4.7	<0.01	6.1	186	20.9	<10
RZHTR-031	5	<1	<1	0.03	62	17	0.14	589	1.7	0.05	61.1	657	860	<10
RZHTR-032	<5	<1	<1	0.07	82	21	0.25	190	1.1	0.27	8.6	749	21.0	<10
BABE RUTH	<5	<1	<1	0.05	22	8	0.17	2160	3.5	0.04	19.8	2990	8.0	<10

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
AHHTR-006	0.819	1	4.7	<10	<5	188	<10	<10	7	0.16	<5	<5	66.6	<1
AHHTR-007	0.443	3	2.5	<10	<5	141	<10	<10	8	0.16	<5	<5	59.7	<1
AHHTR-008	1.25	<1	2.5	<10	<5	122	<10	<10	7	0.16	<5	6	31.2	<1
AHHTR-009	0.404	5	2.9	<10	<5	106	<10	<10	<5	0.26	<5	5	92.1	<1
AHHTR-010	0.373	6	5.4	<10	<5	114	<10	<10	5	0.25	<5	<5	208	<1
AHHTR-011	0.164	<1	1.6	<10	<5	219	<10	<10	6	0.13	<5	<5	40.0	<1
AHHTR-012	0.121	<1	1.2	<10	<5	246	<10	<10	<5	0.09	<5	<5	23.8	<1
AHHTR-013	2.77	13	0.6	10	5	53.6	<10	<10	<5	0.03	<5	<5	26.6	<1
AHHTR-014	1.56	1	8.3	<10	<5	92.2	<10	<10	21	0.26	<5	<5	81.5	1
AHHTR-015	0.555	6	3.4	<10	<5	40.3	<10	<10	<5	0.11	<5	<5	288	<1
AHHTR-016	2.22	129	2.5	<10	<5	87.7	<10	<10	<5	0.04	<5	<5	29.0	<1
AHHTR-017	0.569	8	4.7	<10	<5	35.8	<10	<10	<5	0.11	<5	<5	161	<1
AHHTR-018	>10	40	2.8	29	<5	23.0	<10	<10	<5	<0.01	<5	<5	30.3	<1
AHHTR-019	1.34	2	3.3	<10	<5	112	<10	<10	7	0.25	<5	<5	34.5	<1
AHHTR-020	0.400	<1	2.0	<10	<5	241	<10	<10	9	0.15	<5	<5	39.5	<1
AHHTR-021	0.446	<1	13.0	<10	<5	47.7	<10	<10	7	0.29	<5	<5	81.6	<1
AHHTR-022	0.965	2	7.2	<10	<5	75.6	<10	<10	7	0.17	<5	5	196	<1
AHHTR-023	1.59	<1	2.8	<10	<5	156	<10	<10	11	0.22	<5	7	70.2	<1
AHHTR-024	1.07	<1	1.7	<10	<5	202	<10	<10	12	0.19	<5	<5	40.2	<1
AHHTR-025	0.835	1	3.3	<10	<5	77.4	<10	<10	21	0.30	<5	<5	59.9	<1
AHHTR-026	1.79	2	4.8	<10	<5	91.1	<10	<10	8	0.41	<5	<5	123	<1
AHHTR-027	1.19	2	3.5	<10	<5	87.3	<10	<10	6	0.34	<5	<5	64.5	<1
AHHTR-028	1.05	1	0.9	<10	<5	143	<10	<10	6	0.24	<5	<5	19.9	<1
AHHTR-029	2.18	<1	1.0	19	<5	68.6	<10	<10	<5	0.05	<5	<5	26.7	<1
AHHTR-030	1.17	<1	4.5	<10	<5	100	<10	<10	22	0.22	<5	<5	67.5	1
AHHTR-031	0.988	<1	2.2	<10	<5	123	<10	<10	6	0.26	<5	<5	38.1	<1
AHHTR-032	0.256	22	2.9	<10	9	287	<10	<10	10	0.16	<5	<5	29.6	<1
AHHTR-033	0.255	30	3.0	<10	7	542	<10	<10	10	0.22	<5	<5	31.8	70
AHHTR-034	0.295	9	6.5	<10	<5	67.3	<10	<10	25	0.19	<5	6	63.2	1
JKHRT-001	1.70	<1	1.5	<10	8	303	<10	<10	<5	0.16	<5	<5	16.8	<1
JKHRT-002	1.01	<1	1.4	<10	<5	2.5	<10	<10	<5	0.03	<5	<5	33.8	<1
JKHRT-003	7.04	<1	0.6	32	<5	12.8	<10	<10	<5	0.02	<5	<5	19.8	<1

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 18, 2011 SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
JKHRT-004	0.663	1	2.6	<10	<5	99.2	<10	<10	7	0.26	<5	<5	114	<1
JKHRT-005	>10	<1	<0.5	34	<5	7.6	<10	<10	<5	<0.01	<5	<5	25.9	<1
JKHRT-006	5.19	1	2.2	<10	29	33.6	<10	<10	<5	0.04	<5	<5	36.9	<1
JKHRT-007	6.17	<1	1.4	<10	7	44.1	<10	<10	<5	0.05	<5	<5	31.0	<1
JKHRT-008	0.484	4	0.7	<10	57	10.0	<10	<10	6	0.04	<5	105	40.9	1
JKHRT-009	>10	<1	0.9	38	25	4.7	<10	<10	<5	<0.01	<5	<5	34.3	<1
JKHRT-010	>10	<1	<0.5	37	6	10.5	<10	<10	<5	<0.01	<5	<5	29.4	<1
JKHRT-011	1.09	1	2.7	<10	<5	96.5	<10	<10	5	0.28	<5	<5	56.5	<1
JKHRT-012	1.11	1	2.1	<10	<5	95.4	<10	<10	6	0.22	<5	<5	63.2	<1
JKHRT-013	1.30	1	2.2	<10	<5	79.0	<10	<10	7	0.18	<5	<5	71.0	<1
JKHRT-014	1.20	1	2.6	<10	<5	104	<10	<10	6	0.18	<5	<5	64.9	<1
JKHRT-015	1.19	1	3.2	<10	<5	87.3	<10	<10	7	0.20	<5	<5	55.3	<1
JKHRT-016	1.18	1	2.9	<10	<5	102	<10	<10	7	0.21	<5	<5	47.4	<1
JKHRT-017	1.13	1	1.5	<10	<5	101	<10	<10	7	0.15	<5	<5	23.9	<1
JKHRT-018	1.23	1	2.5	<10	<5	96.8	<10	<10	6	0.14	<5	<5	67.1	<1
JKHRT-019	0.883	1	5.0	<10	<5	72.8	<10	<10	7	0.23	<5	<5	48.9	<1
JKHRT-020	0.552	<1	0.7	<10	<5	93.8	<10	<10	<5	<0.01	<5	<5	15.6	<1
JKHRT-021	0.987	<1	1.1	<10	<5	81.0	<10	<10	<5	0.04	<5	<5	24.5	<1
RZHTR-001	0.086	<1	0.6	<10	7	238	<10	<10	<5	0.10	<5	<5	14.0	<1
RZHTR-002	0.119	4	3.8	<10	<5	76.2	<10	<10	38	0.14	<5	16	38.3	1
RZHTR-003	2.49	171	11.5	<10	<5	61.0	<10	<10	19	<0.01	<5	9	24.6	<1
RZHTR-004	0.250	18	2.9	<10	46	30.0	<10	<10	15	0.05	<5	12	78.5	2
RZHTR-005	2.32	1	2.0	<10	8	28.4	<10	<10	15	0.13	<5	<5	36.9	11
RZHTR-006	0.408	2	1.2	<10	119	14.6	<10	<10	5	0.07	<5	<5	66.6	<1
RZHTR-007	0.725	6	0.7	<10	137	16.2	<10	<10	32	0.03	<5	5	70.2	<1
RZHTR-008	>10	<1	0.9	<10	13	45.9	<10	<10	8	0.05	<5	5	28.6	<1
RZHTR-009	0.589	<1	1.2	<10	<5	32.1	<10	<10	6	0.11	<5	<5	28.6	<1
RZHTR-010	0.476	<1	4.0	<10	<5	142	<10	<10	7	0.18	<5	<5	47.2	<1
RZHTR-011	0.398	<1	1.7	<10	<5	116	<10	<10	8	0.14	<5	<5	80.4	4
RZHTR-012	0.108	<1	0.9	<10	7	47.2	<10	<10	<5	0.05	<5	<5	30.1	1
RZHTR-013	0.444	<1	2.4	<10	<5	103	<10	<10	7	0.16	<5	<5	56.4	9
RZHTR-014	0.193	<1	0.9	<10	<5	229	<10	<10	6	0.09	<5	<5	11.5	2

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Certificate of Analysis

AGAT WORK ORDER: 11Y532862

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.005	1	0.5	10	5	0.5	10	10	5	0.01	5	5	0.5	1
RZHTR-015	0.255	<1	1.9	<10	8	67.8	<10	<10	6	0.11	<5	<5	47.9	1
RZHTR-016	0.346	2	1.3	<10	<5	143	<10	<10	7	0.15	<5	<5	76.5	2
RZHTR-017	0.070	1	1.0	<10	<5	122	<10	<10	5	0.11	<5	<5	23.8	2
RZHTR-018	0.209	<1	1.4	<10	12	41.1	<10	<10	<5	0.11	<5	<5	24.0	8
RZHTR-019	8.42	<1	1.2	<10	18	33.7	<10	<10	6	0.06	<5	<5	28.8	170
RZHTR-020	0.177	<1	1.5	<10	28	23.5	<10	<10	<5	0.07	<5	<5	28.3	3
RZHTR-021	0.168	<1	1.2	<10	21	33.0	<10	<10	<5	0.07	<5	<5	23.9	2
RZHTR-022	0.234	2	2.3	<10	27	65.3	<10	<10	<5	0.06	<5	11	54.8	3
RZHTR-023	2.40	9	2.1	<10	11	53.2	<10	<10	<5	0.10	<5	<5	45.7	7
RZHTR-024	>10	<1	0.9	11	10	38.6	<10	<10	<5	0.08	<5	<5	28.6	114
RZHTR-025	6.75	<1	1.1	<10	25	30.9	<10	<10	6	0.04	<5	25	25.3	2
RZHTR-026	1.58	<1	1.6	<10	32	36.0	<10	<10	<5	0.06	<5	20	31.3	7
RZHTR-027	0.476	<1	2.0	<10	11	59.8	<10	<10	15	0.11	<5	6	42.6	1
RZHTR-028	>10	<1	0.6	36	76	2.5	<10	<10	<5	<0.01	<5	<5	41.7	<1
RZHTR-029	>10	1	0.9	25	<5	51.9	<10	<10	<5	0.01	<5	28	25.2	<1
RZHTR-030	1.15	1	1.0	<10	<5	9.6	<10	<10	<5	0.03	<5	<5	19.5	1
RZHTR-031	2.95	23	1.1	10	6	39.9	<10	<10	<5	0.08	<5	<5	26.2	1
RZHTR-032	0.597	2	1.5	<10	<5	80.3	<10	<10	14	0.11	<5	<5	15.4	<1
BABE RUTH	6.18	1	0.9	<10	14	41.5	<10	<10	<5	0.03	<5	9	19.5	558

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Results relate only to the items tested

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ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP-OES finish (201073)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 18, 2011 SAMPLE TYPE: Rock

Analyte:	Y	Zn	Zr
Unit:	ppm	ppm	ppm
Sample Description RDL:	1	0.5	5
AHHTR-006	10	28.8	12
AHHTR-007	11	37.9	14
AHHTR-008	11	11.2	29
AHHTR-009	14	37.0	23
AHHTR-010	16	86.1	18
AHHTR-011	11	52.3	15
AHHTR-012	9	18.4	9
AHHTR-013	6	23.3	7
AHHTR-014	14	22.7	28
AHHTR-015	7	11.9	16
AHHTR-016	9	14.2	13
AHHTR-017	7	34.8	22
AHHTR-018	14	68.7	10
AHHTR-019	13	15.5	13
AHHTR-020	13	14.7	14
AHHTR-021	9	66.9	<5
AHHTR-022	21	65.6	9
AHHTR-023	16	39.4	10
AHHTR-024	13	29.8	7
AHHTR-025	12	26.7	21
AHHTR-026	26	79.0	18
AHHTR-027	20	309	11
AHHTR-028	19	160	10
AHHTR-029	6	62.9	<5
AHHTR-030	13	28.1	27
AHHTR-031	19	15.0	20
AHHTR-032	9	69.1	17
AHHTR-033	11	32.3	18
AHHTR-034	12	101	14
JKHRT-001	9	19.5	20
JKHRT-002	3	24.0	12
JKHRT-003	2	1610	<5

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

	Analyte:	Y	Zn	Zr
	Unit:	ppm	ppm	ppm
Sample Description	RDL:	1	0.5	5
JKHRT-004		13	78.4	29
JKHRT-005		1	36.2	<5
JKHRT-006		10	23.8	5
JKHRT-007		3	13.6	5
JKHRT-008		20	10.1	6
JKHRT-009		7	30.4	<5
JKHRT-010		2	56.7	<5
JKHRT-011		13	17.1	6
JKHRT-012		13	15.7	7
JKHRT-013		14	16.3	11
JKHRT-014		15	20.1	9
JKHRT-015		15	24.6	7
JKHRT-016		13	18.8	6
JKHRT-017		11	16.7	<5
JKHRT-018		15	24.4	<5
JKHRT-019		9	27.8	<5
JKHRT-020		7	37.2	<5
JKHRT-021		4	81.2	6
RZHTR-001		9	44.3	16
RZHTR-002		10	20.9	<5
RZHTR-003		17	66.7	<5
RZHTR-004		22	48.4	8
RZHTR-005		9	32.2	<5
RZHTR-006		30	33.9	13
RZHTR-007		19	35.9	6
RZHTR-008		4	161	<5
RZHTR-009		10	13.3	7
RZHTR-010		6	24.0	9
RZHTR-011		10	58.8	10
RZHTR-012		6	31.8	10
RZHTR-013		8	44.4	16
RZHTR-014		10	15.4	10

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Analyte:	Y	Zn	Zr
Unit:	ppm	ppm	ppm
Sample Description RDL:	1	0.5	5
RZHTR-015	8	25.3	20
RZHTR-016	9	65.0	11
RZHTR-017	9	16.1	10
RZHTR-018	5	44.1	14
RZHTR-019	4	115	6
RZHTR-020	9	28.7	13
RZHTR-021	10	30.9	8
RZHTR-022	20	51.1	<5
RZHTR-023	10	59.4	9
RZHTR-024	3	143	5
RZHTR-025	6	56.3	<5
RZHTR-026	10	36.4	8
RZHTR-027	8	38.9	<5
RZHTR-028	10	43.9	<5
RZHTR-029	6	40.3	<5
RZHTR-030	2	21.9	7
RZHTR-031	11	2280	8
RZHTR-032	6	29.2	7
BABE RUTH	10	62.2	6

Comments: RDL - Reported Detection Limit

Certified By: Ron Cardinall

Results relate only to the items tested

Certificate of Analysis

AGAT Laboratories

AGAT WORK ORDER: 11Y532862

PROJECT NO:

5623 McADAM ROAD
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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Au
Unit:	kg	ppm
Sample Description RDL:	0.01	0.001
AHHTR-006	1.95	0.008
AHHTR-007	1.95	0.004
AHHTR-008	1.25	0.003
AHHTR-009	0.96	0.003
AHHTR-010	0.94	0.014
AHHTR-011	1.26	0.003
AHHTR-012	1.13	<0.001
AHHTR-013	1.38	2.01
AHHTR-014	1.10	0.031
AHHTR-015	1.21	0.010
AHHTR-016	1.44	0.009
AHHTR-017	1.63	0.014
AHHTR-018	1.30	0.006
AHHTR-019	1.34	0.002
AHHTR-020	1.19	0.003
AHHTR-021	1.69	0.003
AHHTR-022	1.80	0.006
AHHTR-023	2.20	0.005
AHHTR-024	1.45	0.004
AHHTR-025	1.93	0.004
AHHTR-026	1.16	0.009
AHHTR-027	1.20	0.005
AHHTR-028	1.37	0.004
AHHTR-029	1.67	0.009
AHHTR-030	1.21	0.002
AHHTR-031	1.28	0.005
AHHTR-032	1.99	0.009
AHHTR-033	1.99	0.002
AHHTR-034	1.48	0.099
JKHRT-001	2.71	0.021
JKHRT-002	1.39	<0.001
JKHRT-003	1.62	0.085

Certified By: Ron Cardinall

Certificate of Analysis

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Au
Unit:	kg	ppm
Sample Description RDL:	0.01	0.001
JKHRT-004	0.40	0.006
JKHRT-005	1.51	0.079
JKHRT-006	1.53	0.007
JKHRT-007	0.94	0.012
JKHRT-008	0.99	0.024
JKHRT-009	1.20	0.018
JKHRT-010	2.12	0.018
JKHRT-011	3.62	0.003
JKHRT-012	2.79	0.003
JKHRT-013	2.60	0.003
JKHRT-014	2.25	0.004
JKHRT-015	2.99	0.009
JKHRT-016	1.81	0.004
JKHRT-017	2.49	0.002
JKHRT-018	3.89	0.005
JKHRT-019	2.46	0.005
JKHRT-020	0.80	0.071
JKHRT-021	0.94	0.007
RZHTR-001	1.89	0.002
RZHTR-002	1.25	<0.001
RZHTR-003	1.39	2.96
RZHTR-004	1.45	0.014
RZHTR-005	1.45	0.041
RZHTR-006	1.67	0.079
RZHTR-007	1.28	0.008
RZHTR-008	1.77	0.005
RZHTR-009	1.73	0.001
RZHTR-010	1.68	0.002
RZHTR-011	1.13	0.004
RZHTR-012	0.94	0.022
RZHTR-013	1.56	0.019
RZHTR-014	0.74	0.194

Certified By: Ron Cardinall

Certificate of Analysis

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 18, 2011 | SAMPLE TYPE: Rock

Analyte:	Sample Login Weight	Au
Unit:	kg	ppm
Sample Description RDL:	0.01	0.001
RZHTR-015	0.40	0.009
RZHTR-016	1.74	0.005
RZHTR-017	1.76	0.005
RZHTR-018	1.22	0.598
RZHTR-019	1.31	0.011
RZHTR-020	1.30	0.004
RZHTR-021	1.59	0.024
RZHTR-022	1.42	0.015
RZHTR-023	2.80	0.051
RZHTR-024	2.12	0.005
RZHTR-025	2.56	0.068
RZHTR-026	4.21	0.025
RZHTR-027	1.27	0.019
RZHTR-028	1.63	0.021
RZHTR-029	1.88	0.032
RZHTR-030	2.34	0.027
RZHTR-031	1.03	0.005
RZHTR-032	1.60	0.046
BABE RUTH	3.32	0.015

Comments: RDL - Reported Detection Limit

Certified By: Ron Cardinall

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862
PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740284	0.4	0.4	0.0%	< 0.2				80%	120%
Al	1	2740284	3.20	3.15	1.6%	< 0.01				80%	120%
As	1	2740284	6	6	0.0%	< 1				80%	120%
B	1	2740284	12	12	0.0%	< 5				80%	120%
Ba	1	2740284	142	141	0.7%	< 1				80%	120%
Be	1	2740284	1.58	1.66	4.9%	< 0.5				80%	120%
Bi	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
Ca	1	2740284	2.32	2.31	0.4%	< 0.01				80%	120%
Cd	1	2740284	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740284	31	29	6.7%	< 1				80%	120%
Co	1	2740284	6.3	6.5	3.1%	< 0.5				80%	120%
Cr	1	2740284	142	138	2.9%	< 0.5				80%	120%
Cu	1	2740284	55.7	56.1	0.7%	< 0.5	3816	3800	100%	80%	120%
Fe	1	2740284	1.94	1.89	2.6%	< 0.01				80%	120%
Ga	1	2740284	11	11	0.0%	< 5				80%	120%
Hg	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740284	0.74	0.72	2.7%	< 0.01				80%	120%
La	1	2740284	15	15	0.0%	< 1				80%	120%
Li	1	2740284	96	97	1.0%	< 1				80%	120%
Mg	1	2740284	1.35	1.32	2.2%	< 0.01				80%	120%
Mn	1	2740284	71	71	0.0%	< 1				80%	120%
Mo	1	2740284	2.2	2.1	4.7%	< 0.5	359	380	94%	80%	120%
Na	1	2740284	0.22	0.22	0.0%	< 0.01				80%	120%
Ni	1	2740284	24.5	24.8	1.2%	< 0.5				80%	120%
P	1	2740284	1080	1080	0.0%	< 10				80%	120%
Pb	1	2740284	4.7	4.7	0.0%	< 0.5				80%	120%
Rb	1	2740284	60	61	1.7%	< 10	12	13	94%	80%	120%
S	1	2740284	0.819	0.805	1.7%	< 0.005				80%	120%
Sb	1	2740284	1	1	0.0%	< 1				80%	120%
Sc	1	2740284	4.7	4.8	2.1%	< 0.5				80%	120%
Se	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
Sr	1	2740284	188	180	4.3%	< 0.5	309	290	106%	80%	120%
Ta	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740284	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740284	7	7	0.0%	< 5				80%	120%
Ti	1	2740284	0.16	0.16	0.0%	< 0.01				80%	120%
Tl	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740284	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740284	66.6	65.9	1.1%	< 0.5				80%	120%
W	1	2740284	< 1	< 1	0.0%	< 1				80%	120%
Y	1	2740284	10	11	9.5%	< 1				80%	120%
Zn	1	2740284	28.8	29.7	3.1%	< 0.5				80%	120%

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Zr	1	2740284	12	13	8.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740310	2.24	2.36	5.2%	< 0.2				80%	120%
Al	1	2740310	3.37	3.57	5.8%	< 0.01				80%	120%
As	1	2740310	27	29	7.1%	< 1				80%	120%
B	1	2740310	165	167	1.2%	< 5				80%	120%
Ba	1	2740310	97	100	3.0%	< 1				80%	120%
Be	1	2740310	3.3	3.3	0.0%	< 0.5				80%	120%
Bi	1	2740310	26	30	14.3%	< 1				80%	120%
Ca	1	2740310	8.41	8.93	6.0%	< 0.01				80%	120%
Cd	1	2740310	0.7	0.7	0.0%	< 0.5				80%	120%
Ce	1	2740310	67	69	2.9%	< 1				80%	120%
Co	1	2740310	7.8	8.0	2.5%	< 0.5				80%	120%
Cr	1	2740310	81.1	85.4	5.2%	< 0.5				80%	120%
Cu	1	2740310	949	983	3.5%	< 0.5	3797	3800	99%	80%	120%
Fe	1	2740310	1.04	1.10	5.6%	< 0.01				80%	120%
Ga	1	2740310	11	11	0.0%	< 5				80%	120%
Hg	1	2740310	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740310	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740310	0.04	0.04	0.0%	< 0.01				80%	120%
La	1	2740310	37	38	2.7%	< 1				80%	120%
Li	1	2740310	35	35	0.0%	< 1				80%	120%
Mg	1	2740310	0.411	0.429	4.3%	< 0.01				80%	120%
Mn	1	2740310	300	320	6.5%	< 1				80%	120%
Mo	1	2740310	75.1	75.8	0.9%	< 0.5	356	380	93%	80%	120%
Na	1	2740310	0.05	0.05	0.0%	< 0.01				80%	120%
Ni	1	2740310	25.0	25.8	3.1%	< 0.5				80%	120%
P	1	2740310	300	306	2.0%	< 10				80%	120%
Pb	1	2740310	34.2	35.5	3.7%	< 0.5				80%	120%
Rb	1	2740310	< 10	< 10	0.0%	< 10	12	13	93%	80%	120%
S	1	2740310	0.256	0.258	0.8%	< 0.005				80%	120%
Sb	1	2740310	22	23	4.4%	< 1				80%	120%
Sc	1	2740310	2.9	2.9	0.0%	< 0.5				80%	120%
Se	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740310	9	9	0.0%	< 5				80%	120%
Sr	1	2740310	287	296	3.1%	< 0.5	304	290	104%	80%	120%
Ta	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740310	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740310	10	10	0.0%	< 5				80%	120%
Ti	1	2740310	0.160	0.169	5.5%	< 0.01				80%	120%
Tl	1	2740310	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740310	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740310	29.6	31.2	5.3%	< 0.5				80%	120%
W	1	2740310	< 1	< 1	0.0%	< 1				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES — AGAT WORK ORDER: 11Y532862

PROJECT NO: — ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits	
										Lower	Upper
Y	1	2740310	9	9	0.0%	< 1				80%	120%
Zn	1	2740310	69.1	70.7	2.3%	< 0.5				80%	120%
Zr	1	2740310	17	18	5.7%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740335	< 0.2	< 0.2	0.0%	< 0.2				80%	120%
Al	1	2740335	1.20	1.22	1.7%	< 0.01				80%	120%
As	1	2740335	6	5	18.2%	< 1				80%	120%
B	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2740335	81	82	1.2%	< 1				80%	120%
Be	1	2740335	1.0	1.0	0.0%	< 0.5				80%	120%
Bi	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
Ca	1	2740335	0.790	0.806	2.0%	< 0.01				80%	120%
Cd	1	2740335	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740335	72	72	0.0%	< 1				80%	120%
Co	1	2740335	5.1	5.1	0.0%	< 0.5				80%	120%
Cr	1	2740335	113	109	3.6%	< 0.5				80%	120%
Cu	1	2740335	13.3	13.3	0.0%	< 0.5	3715	380		80%	120%
Fe	1	2740335	1.23	1.23	0.0%	< 0.01				80%	120%
Ga	1	2740335	6	6	0.0%	< 5				80%	120%
Hg	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740335	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740335	0.324	0.325	0.3%	< 0.01				80%	120%
La	1	2740335	40	41	2.5%	< 1				80%	120%
Li	1	2740335	29	29	0.0%	< 1				80%	120%
Mg	1	2740335	0.72	0.72	0.0%	< 0.01				80%	120%
Mn	1	2740335	208	206	1.0%	< 1				80%	120%
Mo	1	2740335	1.43	1.50	4.8%	< 0.5	355	380	93%	80%	120%
Na	1	2740335	0.07	0.07	0.0%	< 0.01				80%	120%
Ni	1	2740335	7.83	7.98	1.9%	< 0.5				80%	120%
P	1	2740335	363	338	7.1%	< 10				80%	120%
Pb	1	2740335	14.9	14.9	0.0%	< 0.5				80%	120%
Rb	1	2740335	35	36	2.8%	< 10	12	13	89%	80%	120%
S	1	2740335	0.119	0.128	7.3%	< 0.005				80%	120%
Sb	1	2740335	4	4	0.0%	< 1				80%	120%
Sc	1	2740335	3.78	3.75	0.8%	< 0.5				80%	120%
Se	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Sn	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Sr	1	2740335	76.2	72.8	4.6%	< 0.5	290	290	100%	80%	120%
Ta	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740335	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740335	38	38	0.0%	< 5				80%	120%
Ti	1	2740335	0.14	0.14	0.0%	< 0.01				80%	120%
Tl	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
U	1	2740335	16	16	0.0%	< 5				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
V	1	2740335	38.3	37.8	1.3%	< 0.5				80%	120%
W	1	2740335	1	1	0.0%	< 1				80%	120%
Y	1	2740335	10	9	10.5%	< 1				80%	120%
Zn	1	2740335	20.9	20.3	2.9%	< 0.5				80%	120%
Zr	1	2740335	< 5	< 5	0.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Ag	1	2740361	1.85	1.93	4.2%	< 0.2				80%	120%
Al	1	2740361	0.502	0.493	1.8%	< 0.01				80%	120%
As	1	2740361	2	2	0.0%	< 1				80%	120%
B	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Be	1	2740361	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Bi	1	2740361	6	5	18.2%	< 1				80%	120%
Ca	1	2740361	2.36	2.31	2.1%	< 0.01				80%	120%
Cd	1	2740361	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Ce	1	2740361	8	8	0.0%	< 1				80%	120%
Co	1	2740361	212	220	3.7%	< 0.5				80%	120%
Cr	1	2740361	16.1	16.5	2.5%	< 0.5				80%	120%
Cu	1	2740361	3720	3820	2.7%	< 0.5	3863	3800	101%	80%	120%
Fe	1	2740361	28.4	27.8	2.1%	< 0.01				80%	120%
Ga	1	2740361	5	6	18.2%	< 5				80%	120%
Hg	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
In	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
K	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
La	1	2740361	4	4	0.0%	< 1				80%	120%
Li	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Mg	1	2740361	0.01	0.01	0.0%	< 0.01				80%	120%
Mn	1	2740361	361	376	4.1%	< 1				80%	120%
Mo	1	2740361	2.23	2.39	6.9%	< 0.5	363	380	95%	80%	120%
Na	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Ni	1	2740361	261	270	3.4%	< 0.5				80%	120%
P	1	2740361	772	846	9.1%	< 10				80%	120%
Pb	1	2740361	44.0	44.1	0.2%	< 0.5				80%	120%
Rb	1	2740361	< 10	< 10	0.0%	< 10	12	13	93%	80%	120%
S	1	2740361	16.6	16.4	1.2%	< 0.005				80%	120%
Sb	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Sc	1	2740361	0.6	0.6	0.0%	< 0.5				80%	120%
Se	1	2740361	36	37	2.7%	< 10				80%	120%
Sn	1	2740361	76	78	2.6%	< 5				80%	120%
Sr	1	2740361	2.5	2.9	14.8%	< 0.5	301	290	103%	80%	120%
Ta	1	2740361	< 10	< 10	0.0%	< 10				80%	120%
Te	1	2740361	< 10	< 10	0.0%	< 10				80%	120%
Th	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Ti	1	2740361	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Tl	1	2740361	< 5	< 5	0.0%	< 5				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532862

PROJECT NO: | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Oct 18, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
U	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
V	1	2740361	41.7	39.7	4.9%	< 0.5				80%	120%
W	1	2740361	< 1	< 1	0.0%	< 1				80%	120%
Y	1	2740361	10	10	0.0%	< 1				80%	120%
Zn	1	2740361	43.9	48.8	10.6%	< 0.5				80%	120%
Zr	1	2740361	< 5	< 5	0.0%	< 5				80%	120%
Aqua Regia Digest - Metals Package, ICP-OES finish (201073)											
Cu	1					< 0.5	3701	3800	97%	80%	120%
Mo	1					< 0.5	362	380	95%	80%	120%
Rb	1					< 10	11	13	84%	80%	120%
Sr	1					< 0.5	296	290	102%	80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740284	0.008	0.006	28.6%	< 0.001	0.0808	0.0849	95%	80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740309	0.0046	0.0038	19.0%	< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740310	0.009	0.006		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740335	< 0.001	0.002		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740350	0.005	0.003		< 0.001				80%	120%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2740361	0.021	0.018	15.4%	< 0.001				80%	120%

Certified By: Ron Cardinall

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11Y532862

PROJECT NO:

ATTENTION TO: CHRIS GALLAGHER

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Ag	MIN-200-12020		ICP/OES
Al	MIN-200-12020		ICP/OES
As	MIN-200-12020		ICP/OES
B	MIN-200-12020		ICP/OES
Ba	MIN-200-12020		ICP/OES
Be	MIN-200-12020		ICP/OES
Bi	MIN-200-12020		ICP/OES
Ca	MIN-200-12020		ICP/OES
Cd	MIN-200-12020		ICP/OES
Ce	MIN-200-12020		ICP/OES
Co	MIN-200-12020		ICP/OES
Cr	MIN-200-12020		ICP/OES
Cu	MIN-200-12020		ICP/OES
Fe	MIN-200-12020		ICP/OES
Ga	MIN-200-12020		ICP/OES
Hg	MIN-200-12020		ICP/OES
In	MIN-200-12020		ICP/OES
K	MIN-200-12020		ICP/OES
La	MIN-200-12020		ICP/OES
Li	MIN-200-12020		ICP/OES
Mg	MIN-200-12020		ICP/OES
Mn	MIN-200-12020		ICP/OES
Mo	MIN-200-12020		ICP/OES
Na	MIN-200-12020		ICP/OES
Ni	MIN-200-12020		ICP/OES
P	MIN-200-12020		ICP/OES
Pb	MIN-200-12020		ICP/OES
Rb	MIN-200-12020		ICP/OES
S	MIN-200-12020		ICP/OES
Sb	MIN-200-12020		ICP/OES
Sc	MIN-200-12020		ICP/OES
Se	MIN-200-12020		ICP/OES
Sn	MIN-200-12020		ICP/OES
Sr	MIN-200-12020		ICP/OES
Ta	MIN-200-12020		ICP/OES
Te	MIN-200-12020		ICP/OES
Th	MIN-200-12020		ICP/OES
Ti	MIN-200-12020		ICP/OES
Tl	MIN-200-12020		ICP/OES
U	MIN-200-12020		ICP/OES
V	MIN-200-12020		ICP/OES
W	MIN-200-12020		ICP/OES
Y	MIN-200-12020		ICP/OES
Zn	MIN-200-12020		ICP/OES
Zr	MIN-200-12020		ICP/OES
Sample Login Weight	MIN-12009		BALANCE
Au	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP-OES

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
SUITE 200 44-12 AVE SOUTH
CRANBROOK, BC V1C2R7

ATTENTION TO: SHARON BEDDOME

PROJECT NO:

AGAT WORK ORDER: 11Y532919

SOLID ANALYSIS REVIEWED BY: Kevin Motomura, ICP Supervisor

DATE REPORTED: Oct 24, 2011

PAGES (INCLUDING COVER): 47

Should you require any information regarding this analysis please contact your client services representative at (905) 501-9998

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

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AGAT WORK ORDER: 11Y532919

PROJECT NO:

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Sample Description	Analyte:	Au	Sample Login Weight
	Unit:	ppm	kg
	RDL:	0.00005	0.01
HTL010 00+00S (-)		0.441	0.31
HTL010 00+25S (-)		0.236	0.37
HTL010 00+50S (-)		0.0388	0.43
HTL010 00+75S (-)		0.0387	0.46
HTL010 01+00S (-)		0.0154	0.44
HTL010 01+25S (-)		0.339	0.44
HTL010 01+50S (-)		0.280	0.43
HTL010 01+75S (-)		0.331	0.49
HTL010 02+00S (-)		0.445	0.41
HTL010 02+25S (-)		0.0219	0.35
HTL010 02+50S (-)		0.0162	0.41
HTL010 02+75S (-)		0.0131	0.43
HTL010 03+00S (-)		0.0242	0.35
HTL010 03+25S (-)		0.0176	0.45
HTL010 03+50S (-)		0.0107	0.43
HTL010 03+75S (-)		0.0151	0.36
HTL010 04+00S (-)		0.00724	0.41
HTL010 04+25S (-)		0.00624	0.27
HTL010 04+50S (-)		0.00671	0.43
HTL010 04+75S (-)		0.0111	0.41
HTL010 05+00S (-)		0.00807	0.43
HTL010 05+25S (-)		0.0139	0.38
HTL010 05+50S (-)		0.191	0.44
HTL010 05+75S (-)		0.0270	0.42
HTL010 06+00S (-)		0.0173	0.48
HTL010 06+25S (-)		0.0315	0.34
HTL010 06+50S (-)		0.0449	0.39
HTL010 06+75S (-)		0.0131	0.32
HTL010 07+00S (-)		0.0253	0.38
HTL010 07+25S (-)		0.0188	0.46
HTL010 07+50S (-)		0.0236	0.37
HTL010 07+75S (-)		0.0187	0.34

Certified By:

Laboratories

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

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ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Au	Sample Login Weight
Unit:	ppm	kg
Sample Description RDL:	0.00005	0.01
HTL010 08+00S (-)	0.0303	0.35
HTL010 08+25S (-)	NRC	NRC
HTL010 08+50S (-)	0.0326	0.37
HTL010 08+75S (-)	0.0585	0.32
HTL010 09+00S (-)	0.0434	0.42
HTL010 09+25S (-)	0.0387	0.33
HTL010 09+50S (-)	0.0346	0.38
HTL010 09+75S (-)	0.00439	0.38
HTL010 10+00S (-)	0.0270	0.35
HTL010 10+25S (-)	NRC	NRC
HTL010 10+50S (-)	0.0176	0.40
HTL010 10+75S (-)	0.0141	0.23
HTL010 11+00S (-)	0.0270	0.32
HTL010 11+25S (-)	0.00955	0.30
HTL010 11+50S (-)	0.00951	0.28
HTL010 11+75S (-)	0.0109	0.41
HTL010 12+00S (-)	0.0238	0.28
HTL010 12+25S (-)	0.0212	0.31
HTL010 12+50S (-)	0.00517	0.38
HTL010 12+75S (-)	0.00715	0.29
HTL010 13+00S (-)	0.0110	0.32
HTL010 13+25S (-)	0.00358	0.31
HTL010 13+50S (-)	0.00714	0.30
HTL010 13+75S (-)	0.00399	0.33
HTL010 14+00S (-)	NRC	NRC
HTL010 14+25S (-)	NRC	NRC
HTL010 14+50S (-)	0.00421	0.28
HTL010 14+75S (-)	0.00247	0.13
HTL010 15+00S (-)	0.00609	0.38
HTL010 15+25S (-)	0.00543	0.29
HTL010 15+50S (-)	0.00230	0.39
HTL011 00+00E (-)	0.125	0.48

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Results relate only to the items tested

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Au	Sample Login Weight
Unit:	ppm	kg
Sample Description RDL:	0.00005	0.01
HTL011 00+25E (-)	0.191	0.62
HTL011 00+50E (-)	0.220	0.50
HTL011 00+75E (-)	0.0878	0.58
HTL011 01+00E (-)	0.0974	0.55
HTL011 01+25E (-)	0.0683	0.59
HTL011 01+50E (-)	0.0149	0.67
HTL011 01+75E (-)	0.0186	0.61
HTL011 02+00E (-)	0.0173	0.70
HTL011 02+25E (-)	0.0184	0.59
HTL011 02+50E (-)	NRC	NRC
HTL011 02+75E (-)	0.00818	0.64
HTL011 03+00E (-)	0.00322	0.54
HTL011 03+25E (-)	0.0154	0.72
HTL011 03+50E (-)	0.0160	0.72
HTL011 03+75E (-)	0.0139	0.66
HTL011 04+00E (-)	0.00766	0.68
HTL011 04+25E (-)	0.0111	0.75
HTL011 04+50E (-)	0.00239	0.63
HTL011 04+75E (-)	0.00341	0.61
HTL011 05+00E (-)	0.00188	0.69
HTL011 05+25E (-)	0.00203	0.70
HTL011 05+50E (-)	0.00315	0.46
HTL011 05+75E (-)	0.00699	0.47
HTL011 06+00E (-)	0.00713	0.61
HTL011 06+25E (-)	0.00904	0.64
HTL011 06+50E (-)	0.00741	0.59
HTL011 06+75E (-)	0.00888	0.67
HTL011 07+00E (-)	0.00552	0.62
HTL011 07+25E (-)	0.0157	0.60
HTL011 07+50E (-)	0.00892	0.61
HTL011 07+75E (-)	NRC	NRC
HTL011 08+00E (-)	NRC	NRC

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AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Sample Description	Analyte:	Au	Sample Login Weight
	Unit:	ppm	kg
	RDL:	0.00005	0.01
HTL011 08+25E (-)		0.0455	0.58
HTL011 08+50E (-)		0.0131	0.67
HTL011 08+75E (-)		0.00998	0.66
HTL011 09+00E (-)		0.0162	0.67
HTL011 09+25E (-)		NRC	NRC
HTL011 09+50E (-)		0.0484	0.58
HTL011 09+75E (-)		0.0105	0.71
HTL011 10+00E (-)		0.0610	0.60
HTL011 10+25E (-)		0.117	0.44
HTL011 10+50E (-)		0.251	0.65
HTL011 10+75E (-)		0.0140	0.72
HTL011 11+00E (-)		0.0181	0.64
HTL011 11+25E (-)		0.00992	0.66
HTL011 11+50E (-)		0.403	0.54
HTL011 11+75E (-)		0.0877	0.65
HTL011 12+00E (-)		0.0394	0.66
HTL011 12+25E (-)		0.0398	0.60
HTL011 12+50E (-)		0.125	0.74
HTL011 12+75E (-)		0.0241	0.70
HTL011 13+00E (-)		0.0510	0.72
HTL011 13+25E (-)		0.00940	0.36
HTL011 13+50E (-)		0.00574	0.48
HTL011 13+75E (-)		0.0118	0.57
HTL011 14+00E (-)		0.0267	0.61
HTL011 14+25E (-)		0.0105	0.59
HTL011 14+50E (-)		0.00442	0.46
HTL011 14+75E (-)		0.00504	0.63
HTL011 15+00E (-)		0.00715	0.69
HTL012 00+00E (-)		0.0375	0.43
HTL012 00+25E (-)		0.0478	0.70
HTL012 00+50E (-)		0.0504	0.43
HTL012 00+75E (-)		0.0500	0.93

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

	Analyte:	Au	Sample Login Weight
	Unit:	ppm	kg
Sample Description	RDL:	0.00005	0.01
HTL012 01+00E (-)		0.0403	0.77
HTL012 01+25E (-)		0.0360	0.70
HTL012 01+50E (-)		0.0437	0.97
HTL012 01+75E (-)		0.0345	0.70
HTL012 02+00E (-)		0.0225	0.57
HTL012 02+25E (-)		0.0299	0.67
HTL012 02+50E (-)		0.0429	0.73
HTL012 02+75E (-)		0.0109	0.56
HTL012 03+00E (-)		0.0131	0.53
HTL012 03+25E (-)		0.0255	0.62
HTL012 03+50E (-)		0.0221	0.62
HTL012 03+75E (-)		0.0178	0.60
HTL012 04+00E (-)		0.0493	0.64
HTL012 04+25E (-)		NRC	NRC
HTL012 04+50E (-)		0.0764	0.38
HTL012 04+75E (-)		NRC	NRC
HTL012 05+00E (-)		0.0602	0.59
HTL012 05+50E (-)		0.00893	0.38
HTL012 05+75E (-)		0.0294	0.38
HTL013 00+00W (-)		0.0393	0.61
HTL013 00+25W (-)		0.0439	0.79
HTL013 00+50W (-)		0.0422	0.78
HTL013 00+75W (-)		0.0347	0.66
HTL013 01+00W (-)		0.0313	0.66
HTL013 01+25W (-)		0.0420	0.53
HTL013 01+50W (-)		0.0428	0.83
HTL013 01+75W (-)		0.0293	0.69
HTL013 02+00W (-)		0.318	0.61
HTL013 02+25W (-)		0.0235	0.67
HTL013 02+50W (-)		0.0290	0.61
HTL013 02+75W (-)		0.0176	0.60
HTL013 03+00W (-)		0.0256	0.68

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AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Au	Sample Login Weight
Unit:	ppm	kg
Sample Description RDL:	0.00005	0.01
HTL013 00+25E (-)	0.0629	0.63
HTL013 00+50E (-)	0.0673	0.51
HTL013 00+75E (-)	0.0317	0.62
HTL013 01+00E (-)	0.0332	0.64
HTL013 01+25E (-)	0.0413	0.63
HTL013 01+50E (-)	0.0396	0.73
HTL013 01+75E (-)	0.0387	0.73
HTL013 02+00E (-)	0.0381	0.71
HTL013 02+25E (-)	0.0395	0.65
HTL013 02+50E (-)	0.0432	0.79
HTL013 02+75E (-)	0.0405	0.76
HTL013 03+00E (-)	0.0412	0.80
HTL014 00+00N (-)	0.701	0.45
HTL014 00+25N (-)	1.54	0.40
HTL014 00+50N (-)	2.22	0.37
HTL014 00+75N (-)	1.87	0.48
HTL014 01+00N (-)	0.0859	0.49
HTL014 01+25N (-)	0.0371	0.31
HTL014 01+50N (-)	0.0260	0.39
HTL014 01+75N (-)	0.0249	0.35
HTL014 02+00N (-)	0.0151	0.48
HTL014 02+25N (-)	0.00918	0.46
HTL014 02+50N (-)	0.0119	0.51
HTL014 02+75N (-)	0.0104	0.48
HTL014 03+00N (-)	0.00439	0.50
HTL014 03+25N (-)	0.00461	0.41
HTL014 03+50N (-)	0.00506	0.51
HTL014 03+75N (-)	0.00866	0.49
HTL014 04+00N (-)	0.00508	0.55
HTL014 04+25N (-)	0.00482	0.56
RZHTD011 (-)	0.0147	0.65
RZHTD012 (-)	0.0357	0.63

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AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

	Analyte:	Au	Sample Login Weight
	Unit:	ppm	kg
Sample Description	RDL:	0.00005	0.01
RZHTD013 (-)		0.0226	0.66
RZHTD014 (-)		0.00927	0.72
RZHTD015 (-)		0.00967	0.61
RZHTD016 (-)		6.35	0.75
RZHTD017 (-)		0.0648	0.64
RZHTD018 (-)		0.0278	0.69
RZHTD019 (-)		0.0224	0.56
RZHTD020 (-)		0.280	0.62
RZHTD008A (-)		0.00774	0.58
AHHTD001 (-)		0.0129	0.67
AHHTD002 (-)		0.365	0.58
AHHTS001 (-)		0.0640	0.67
AHHTS002 (-)		0.0797	0.74
AHHTS003 (-)		0.0168	0.74
AHHTS004 (-)		0.0182	0.61

Comments: RDL - Reported Detection Limit

Certified By:

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AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL010 00+00S (-)	0.29	3.28	582	0.44	<5	188	1.51	13.9	0.34	0.26	87.4	14.1	61.0	10.8
HTL010 00+25S (-)	0.50	3.42	440	0.24	<5	206	1.45	8.40	0.33	0.44	94.1	14.2	63.3	12.5
HTL010 00+50S (-)	0.25	2.94	136	0.04	<5	279	1.34	1.46	0.49	0.28	91.3	13.4	65.1	12.2
HTL010 00+75S (-)	0.23	2.86	166	0.04	<5	292	1.25	2.76	0.61	0.36	92.9	14.7	64.9	13.7
HTL010 01+00S (-)	0.25	2.70	70.6	0.02	<5	260	1.36	0.77	0.94	0.32	87.2	13.4	60.9	11.6
HTL010 01+25S (-)	0.66	2.55	517	0.34	<5	238	1.27	1.31	0.69	0.48	86.1	12.5	54.2	11.1
HTL010 01+50S (-)	0.63	3.10	452	0.28	<5	301	1.48	0.97	0.69	0.33	81.3	12.6	64.5	11.1
HTL010 01+75S (-)	0.63	2.74	541	0.33	<5	260	1.30	0.83	0.67	0.31	82.6	11.5	57.2	10.3
HTL010 02+00S (-)	0.74	2.83	568	0.45	<5	232	1.25	1.33	0.56	0.29	85.6	11.7	52.8	9.33
HTL010 02+25S (-)	0.27	2.90	93.2	0.02	<5	212	1.38	0.93	1.09	0.42	75.5	12.7	52.8	8.98
HTL010 02+50S (-)	0.28	3.09	91.1	0.02	<5	240	1.47	0.67	0.69	0.38	69.3	12.1	60.9	9.99
HTL010 02+75S (-)	0.22	3.14	50.9	0.01	<5	756	1.48	0.48	0.68	0.16	78.9	14.3	60.6	11.6
HTL010 03+00S (-)	0.18	3.40	61.5	0.02	<5	256	1.84	0.47	0.89	0.42	89.8	15.5	61.7	12.6
HTL010 03+25S (-)	0.25	3.03	67.2	0.02	<5	204	1.57	0.62	0.85	0.34	83.7	12.7	55.7	9.51
HTL010 03+50S (-)	0.41	2.68	56.0	0.01	<5	262	1.83	0.63	1.12	0.54	68.7	12.0	65.0	9.76
HTL010 03+75S (-)	0.81	3.33	81.8	0.02	<5	306	1.83	0.68	1.05	0.22	41.3	9.1	73.4	7.07
HTL010 04+00S (-)	0.67	3.09	79.5	<0.01	<5	267	2.62	0.32	0.64	0.82	34.6	14.1	42.6	7.11
HTL010 04+25S (-)	0.82	2.25	65.0	<0.01	<5	273	1.32	0.41	0.22	0.63	31.5	11.4	34.4	7.31
HTL010 04+50S (-)	0.25	3.67	43.4	<0.01	<5	302	1.86	0.33	0.47	0.32	57.4	17.2	64.2	8.03
HTL010 04+75S (-)	0.34	3.67	79.6	0.01	<5	1140	1.59	0.37	0.50	0.13	41.2	14.3	50.3	7.52
HTL010 05+00S (-)	0.60	3.95	45.9	<0.01	<5	907	1.51	0.39	0.46	0.10	39.0	16.6	50.2	7.02
HTL010 05+25S (-)	0.48	4.94	37.2	0.01	<5	1050	1.34	4.01	0.18	0.18	48.5	11.7	64.6	10.2
HTL010 05+50S (-)	0.74	3.78	423	0.19	<5	558	2.04	1.78	0.45	0.85	39.9	17.2	48.5	6.33
HTL010 05+75S (-)	0.55	2.90	53.5	0.03	<5	736	1.27	43.7	0.82	0.79	65.5	16.9	42.5	8.12
HTL010 06+00S (-)	0.63	2.61	42.1	0.02	<5	669	1.25	53.8	1.08	1.18	49.9	15.8	41.3	7.98
HTL010 06+25S (-)	0.75	2.67	50.8	0.03	<5	842	1.24	57.3	1.02	0.97	55.5	15.5	44.6	8.37
HTL010 06+50S (-)	0.45	3.06	77.5	0.04	<5	438	1.53	29.1	0.60	0.69	48.4	20.5	55.7	4.93
HTL010 06+75S (-)	0.44	0.62	38.1	0.01	<5	45	0.33	0.20	0.05	0.25	6.28	2.2	7.4	0.57
HTL010 07+00S (-)	0.53	2.78	139	0.03	<5	632	1.83	0.52	0.32	0.84	42.3	16.3	44.2	5.42
HTL010 07+25S (-)	0.96	2.19	107	0.02	<5	551	1.62	0.48	0.39	1.50	37.8	14.0	38.9	3.36
HTL010 07+50S (-)	0.97	2.55	73.9	0.02	<5	381	1.38	0.38	5.99	2.20	39.5	10.9	32.2	4.11
HTL010 07+75S (-)	0.96	2.31	100	0.02	<5	333	1.51	0.56	1.27	2.30	38.1	9.6	39.9	5.26

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL010 08+00S (-)	0.60	2.78	78.9	0.03	<5	557	1.64	0.92	0.42	0.57	42.3	14.1	49.7	5.21
HTL010 08+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 08+50S (-)	0.45	2.89	146	0.03	<5	222	1.35	1.41	0.59	0.65	41.9	10.8	45.5	4.84
HTL010 08+75S (-)	0.62	2.68	154	0.06	<5	148	1.20	1.01	1.06	0.70	37.6	11.2	31.7	3.55
HTL010 09+00S (-)	0.29	2.71	462	0.04	<5	247	1.29	0.61	0.75	0.63	37.0	14.2	37.2	4.57
HTL010 09+25S (-)	0.58	2.87	168	0.04	<5	194	1.39	0.91	0.95	0.63	33.8	10.6	41.9	4.55
HTL010 09+50S (-)	0.65	3.53	199	0.03	<5	407	2.37	1.17	1.02	1.26	64.3	15.7	75.7	4.10
HTL010 09+75S (-)	0.20	1.85	76.3	<0.01	<5	156	0.93	0.43	0.19	0.23	26.6	8.4	58.2	1.98
HTL010 10+00S (-)	0.92	3.12	132	0.03	<5	331	2.34	1.11	1.22	2.91	61.5	15.3	78.9	4.81
HTL010 10+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 10+50S (-)	0.31	3.42	27.8	0.02	<5	400	1.87	0.40	0.32	1.11	26.8	11.5	62.5	4.58
HTL010 10+75S (-)	0.55	2.50	83.9	0.01	<5	210	1.22	0.94	0.87	0.25	26.5	7.5	68.2	2.88
HTL010 11+00S (-)	0.80	2.96	118	0.03	<5	243	1.92	1.13	1.19	1.57	50.4	14.6	64.9	5.12
HTL010 11+25S (-)	0.38	2.82	83.3	0.01	<5	203	1.50	1.07	0.97	0.58	29.5	13.1	57.8	5.51
HTL010 11+50S (-)	0.39	2.99	53.4	0.01	<5	194	1.09	0.88	0.46	0.82	26.9	7.6	40.4	4.99
HTL010 11+75S (-)	0.64	2.69	126	0.01	<5	178	1.78	0.83	0.88	1.25	29.3	19.7	30.2	4.55
HTL010 12+00S (-)	0.82	2.01	51.0	0.02	<5	105	1.30	0.94	1.81	1.84	23.1	10.4	27.5	3.88
HTL010 12+25S (-)	0.69	2.72	97.3	0.02	<5	190	1.44	0.82	1.10	1.43	34.0	15.0	30.3	4.38
HTL010 12+50S (-)	0.18	3.14	56.0	<0.01	<5	370	1.55	0.83	0.34	0.84	29.6	13.2	41.0	4.15
HTL010 12+75S (-)	0.41	2.60	58.4	<0.01	<5	221	1.39	0.64	0.65	0.44	27.1	12.1	33.2	3.36
HTL010 13+00S (-)	0.88	2.99	61.7	0.01	<5	193	1.64	0.76	1.54	2.62	33.3	18.8	34.4	4.82
HTL010 13+25S (-)	0.38	1.81	15.8	<0.01	<5	113	1.35	2.29	1.44	0.79	37.7	8.3	36	3.98
HTL010 13+50S (-)	0.81	2.59	33.9	<0.01	<5	248	1.49	0.62	1.39	2.52	32.2	15.8	30.5	4.85
HTL010 13+75S (-)	0.73	2.66	48.6	<0.01	<5	281	1.96	5.22	1.05	3.00	46.7	18.8	47.1	5.78
HTL010 14+00S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+50S (-)	0.41	2.37	57.4	<0.01	<5	370	1.85	1.49	0.98	0.77	47.2	13.8	56.0	4.54
HTL010 14+75S (-)	0.56	0.91	15.4	<0.01	18	98	0.79	0.53	2.35	0.67	22.7	7.2	15.9	1.65
HTL010 15+00S (-)	0.48	3.33	63.1	<0.01	<5	383	2.37	1.89	0.82	0.39	55.2	18.8	64.1	6.24
HTL010 15+25S (-)	0.71	2.75	38.3	<0.01	<5	236	1.78	1.32	1.24	2.00	40.9	14.2	38.7	5.39
HTL010 15+50S (-)	0.18	1.51	14.4	<0.01	<5	283	0.74	1.85	0.36	0.24	20.0	4.7	40.0	4.29
HTL011 00+00E (-)	0.21	3.65	97.0	0.13	<5	197	2.26	2.84	1.13	0.23	90.5	15.3	58.5	21.6

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL011 00+25E (-)	0.16	4.35	137	0.19	<5	179	2.41	1.21	1.12	0.10	102	12.5	62.5	14.8
HTL011 00+50E (-)	0.12	3.78	276	0.22	<5	190	2.27	2.04	0.88	0.16	111	14.1	56.6	17.9
HTL011 00+75E (-)	0.10	3.38	180	0.09	<5	167	2.40	2.42	0.67	0.18	105	12.6	50.9	12.7
HTL011 01+00E (-)	0.20	3.25	152	0.10	<5	196	2.27	2.71	0.83	0.19	112	12.8	55.4	14.2
HTL011 01+25E (-)	0.18	3.54	91.7	0.07	<5	217	2.20	1.55	1.04	0.17	98.2	12.5	48.7	14.3
HTL011 01+50E (-)	0.07	3.28	13.6	0.01	<5	153	2.44	3.95	1.10	0.06	102	10.0	46.8	9.21
HTL011 01+75E (-)	0.12	3.10	119	0.02	<5	245	1.51	2.28	0.33	0.37	56.0	11.9	50.0	8.30
HTL011 02+00E (-)	0.78	3.87	65.4	0.02	<5	310	1.73	6.54	0.79	0.27	94.4	20.6	65.9	12.4
HTL011 02+25E (-)	0.11	2.95	34.5	0.02	<5	169	1.88	4.72	0.82	0.15	89.3	11.7	46.0	9.49
HTL011 02+50E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 02+75E (-)	0.21	2.88	11.7	<0.01	<5	156	1.73	0.43	4.24	0.45	60.8	9.3	38.2	6.00
HTL011 03+00E (-)	0.22	1.11	2.4	<0.01	8	61	0.61	0.15	13.6	0.66	33.3	4.3	16.9	2.07
HTL011 03+25E (-)	0.56	3.07	97.3	0.02	<5	208	1.38	0.60	1.42	0.71	33.9	13.0	39.5	7.21
HTL011 03+50E (-)	0.80	2.73	44.2	0.02	<5	1110	1.26	0.59	0.97	1.27	40.2	8.7	43.0	7.37
HTL011 03+75E (-)	0.40	2.73	64.9	0.01	<5	543	1.39	0.71	1.11	0.87	42.7	10.1	46.9	5.42
HTL011 04+00E (-)	0.23	3.31	24.1	<0.01	<5	441	1.90	0.39	1.10	0.40	59.9	10.3	55.3	6.02
HTL011 04+25E (-)	0.41	3.02	66.5	0.01	<5	724	1.36	0.71	0.35	0.36	42.5	11.2	58.9	5.31
HTL011 04+50E (-)	0.24	3.22	16.2	<0.01	<5	402	1.77	0.91	1.03	0.25	65.2	11.8	50.4	6.37
HTL011 04+75E (-)	0.23	2.84	30.5	<0.01	<5	329	1.63	0.87	0.87	0.28	58.9	13.0	42.2	4.86
HTL011 05+00E (-)	0.30	3.24	15.3	<0.01	<5	241	2.70	0.84	1.08	0.63	84.3	3.9	24.7	3.45
HTL011 05+25E (-)	0.26	3.16	29.7	<0.01	<5	305	1.57	0.83	0.96	0.91	70.4	20.1	40.8	7.56
HTL011 05+50E (-)	0.37	2.60	47.1	<0.01	<5	174	1.44	2.07	1.07	0.31	66.3	24.2	54.4	4.73
HTL011 05+75E (-)	0.28	1.98	23.1	<0.01	<5	196	0.96	2.09	0.64	0.17	29.9	10.0	34.9	5.80
HTL011 06+00E (-)	0.18	2.97	40.9	<0.01	<5	266	1.31	2.17	0.65	0.20	51.1	14.4	53.8	8.28
HTL011 06+25E (-)	0.15	3.46	58.6	<0.01	<5	325	1.75	2.59	0.72	0.41	108	20.9	57.0	11.0
HTL011 06+50E (-)	0.37	3.38	32.2	<0.01	<5	287	1.79	3.23	1.18	0.57	77.0	12.5	52.5	20.7
HTL011 06+75E (-)	0.25	3.60	52.1	<0.01	<5	311	1.77	2.27	0.71	0.34	80.2	16.8	55.0	9.07
HTL011 07+00E (-)	0.18	3.23	32.5	<0.01	<5	325	1.30	6.50	0.57	0.34	74.0	21.4	53.6	8.87
HTL011 07+25E (-)	0.15	3.02	32.2	0.02	<5	317	1.53	3.32	0.73	0.38	82.9	17.3	65.6	11.4
HTL011 07+50E (-)	0.17	2.82	26.8	<0.01	<5	258	1.71	2.88	0.94	0.29	76.3	22.2	85.4	10.4
HTL011 07+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 08+00E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL011 08+25E (-)	0.25	2.68	29.6	0.05	<5	275	1.55	13.8	1.05	0.74	102	20.2	55.4	10.2
HTL011 08+50E (-)	0.27	2.79	25.8	0.01	<5	335	1.62	12.8	1.09	0.70	132	22.0	58.4	12.8
HTL011 08+75E (-)	0.46	2.64	44.2	0.01	<5	317	1.44	3.60	0.89	0.52	126	26.6	43.1	10.1
HTL011 09+00E (-)	0.33	2.42	96.5	0.02	<5	436	1.75	2.62	1.05	0.68	92.2	20.0	48.0	9.63
HTL011 09+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 09+50E (-)	0.17	2.79	50.7	0.05	<5	251	1.75	3.48	0.64	0.44	79.2	18.5	47.2	8.56
HTL011 09+75E (-)	0.16	2.89	35.4	0.01	<5	343	1.84	3.52	0.93	0.42	95.9	15.7	45.1	8.70
HTL011 10+00E (-)	0.31	2.95	47.1	0.06	<5	439	2.23	4.63	1.37	0.48	186	30.6	42.3	9.06
HTL011 10+25E (-)	0.32	2.93	61.3	0.12	<5	256	2.25	27.2	1.28	0.69	116	30.8	51.3	6.82
HTL011 10+50E (-)	0.32	2.37	44.3	0.25	<5	274	1.58	20.8	1.27	0.64	81.2	21.5	54.5	5.56
HTL011 10+75E (-)	0.41	1.81	65.7	0.01	<5	326	1.71	1.64	0.89	0.92	245	25.7	45.1	8.59
HTL011 11+00E (-)	0.40	1.04	60.9	0.02	<5	143	1.07	2.99	0.85	0.41	24.6	19.2	18.0	4.05
HTL011 11+25E (-)	0.26	1.87	27.0	0.01	<5	202	1.11	2.66	1.27	0.53	38.3	17.0	22.5	4.88
HTL011 11+50E (-)	0.35	2.54	35.1	0.40	<5	305	1.35	8.19	1.11	1.39	40.8	13.3	26.2	7.23
HTL011 11+75E (-)	0.18	2.70	26.5	0.09	<5	321	1.09	38.0	0.75	0.76	42.2	12.9	26.2	4.47
HTL011 12+00E (-)	0.27	1.94	25.5	0.04	<5	195	1.31	8.64	1.01	0.66	36.4	15.3	26.6	6.27
HTL011 12+25E (-)	0.12	2.09	28.5	0.04	<5	296	0.96	11.0	0.79	0.47	27.9	9.5	29.4	4.72
HTL011 12+50E (-)	0.38	2.57	32.2	0.12	<5	411	1.64	34.2	1.20	1.43	42.4	11.1	31.8	6.30
HTL011 12+75E (-)	0.40	2.80	91.0	0.02	<5	712	1.72	5.38	1.75	4.32	37.5	17.9	24.9	9.07
HTL011 13+00E (-)	0.20	2.43	29.6	0.05	<5	796	1.36	4.60	1.57	2.33	33.7	24.7	26.2	9.51
HTL011 13+25E (-)	0.42	1.18	17.0	<0.01	8	181	0.92	1.05	2.67	2.19	24.7	6.1	15.6	4.19
HTL011 13+50E (-)	0.31	0.58	27.3	<0.01	14	70	0.36	2.79	2.98	3.06	9.45	6.3	7.7	2.40
HTL011 13+75E (-)	0.36	2.28	44.7	0.01	7	259	1.29	6.02	0.88	0.69	43.5	13.0	22.6	5.45
HTL011 14+00E (-)	0.15	2.58	28.6	0.03	<5	280	1.01	4.26	0.46	0.90	33.5	12.0	23.2	6.62
HTL011 14+25E (-)	0.38	2.64	29.5	0.01	<5	306	1.36	1.62	0.91	1.76	40.9	10.3	23.8	10.6
HTL011 14+50E (-)	0.26	2.27	35.6	<0.01	<5	326	1.21	1.39	0.69	1.00	32.8	10.7	23.9	7.80
HTL011 14+75E (-)	0.33	2.24	31.0	<0.01	8	464	1.16	0.93	1.58	2.20	42.9	10.7	17.6	9.38
HTL011 15+00E (-)	0.37	2.31	60.3	<0.01	6	376	1.28	1.74	1.30	2.84	42.5	12.8	24.3	9.80
HTL012 00+00E (-)	0.53	1.73	97.4	0.04	5	346	1.06	0.70	1.68	1.94	31.7	7.1	26.0	5.15
HTL012 00+25E (-)	0.46	1.82	89.1	0.05	<5	312	1.00	0.60	0.89	0.95	47.7	10.0	35.9	4.64
HTL012 00+50E (-)	0.59	1.83	106	0.05	5	321	1.09	0.57	1.86	1.75	31.9	8.0	26.7	3.96
HTL012 00+75E (-)	0.39	1.79	103	0.05	<5	253	1.15	0.64	0.92	0.95	40.4	8.9	25.2	4.27

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL012 01+00E (-)	0.52	1.89	115	0.04	<5	270	1.18	0.67	0.86	1.03	41.8	8.8	24.8	4.26
HTL012 01+25E (-)	0.65	1.89	37.0	0.04	<5	258	1.10	0.65	1.11	1.01	39.6	7.1	28.2	4.27
HTL012 01+50E (-)	0.57	1.93	59.2	0.04	<5	254	1.06	0.70	1.04	1.27	37.8	9.0	24.1	3.77
HTL012 01+75E (-)	0.37	1.85	93.0	0.03	<5	356	1.17	0.69	0.86	0.90	45.6	8.4	25.5	3.72
HTL012 02+00E (-)	0.80	1.86	62.5	0.02	<5	204	1.75	0.56	0.50	0.56	36.7	5.8	22.1	2.80
HTL012 02+25E (-)	0.43	1.95	91.4	0.03	<5	224	1.33	0.98	0.44	0.45	35.3	6.8	25.5	3.80
HTL012 02+50E (-)	0.36	1.50	141	0.04	<5	288	1.08	0.90	0.84	1.29	41.7	7.8	24.4	3.54
HTL012 02+75E (-)	0.16	1.21	85.4	0.01	<5	187	0.79	0.85	0.25	0.32	26.6	4.2	26.0	3.25
HTL012 03+00E (-)	0.23	1.25	41.0	0.01	<5	159	0.74	0.47	0.21	0.37	21.6	3.5	14.7	2.55
HTL012 03+25E (-)	0.32	3.28	86.1	0.03	<5	325	1.60	0.70	0.37	0.92	43.2	8.6	30.8	4.33
HTL012 03+50E (-)	0.25	1.70	87.7	0.02	<5	261	0.90	0.63	0.27	0.50	33.1	5.9	24.0	3.61
HTL012 03+75E (-)	0.23	1.64	63.2	0.02	<5	169	0.79	0.56	0.24	0.38	25.3	5.2	19.3	2.72
HTL012 04+00E (-)	0.29	1.76	120	0.05	<5	311	1.15	0.58	0.51	0.80	35.4	7.4	23.6	3.52
HTL012 04+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 04+50E (-)	0.54	1.39	48.6	0.08	<5	410	0.59	0.28	1.86	1.32	15.5	2.6	19.7	3.72
HTL012 04+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 05+00E (-)	0.55	2.28	85.5	0.06	<5	529	1.93	0.58	1.07	0.75	33.4	13.3	29.5	4.34
HTL012 05+50E (-)	0.54	0.93	8.5	<0.01	<5	379	0.75	0.12	0.82	0.76	10.9	6.1	10.8	1.23
HTL012 05+75E (-)	1.67	1.55	25.6	0.03	<5	498	1.44	0.30	1.16	0.66	19.9	5.4	18.1	2.45
HTL013 00+00W (-)	0.43	1.91	96.4	0.04	<5	207	1.07	0.59	1.10	0.94	32.4	8.4	18.6	3.15
HTL013 00+25W (-)	0.66	2.02	109	0.04	<5	212	1.16	0.71	1.19	0.98	36.0	9.4	21.0	3.47
HTL013 00+50W (-)	0.57	2.23	121	0.04	<5	270	1.26	0.61	1.20	1.03	33.7	10.2	19.8	3.41
HTL013 00+75W (-)	0.57	2.20	103	0.03	<5	259	1.18	0.65	1.08	0.72	33.2	8.6	23.5	3.45
HTL013 01+00W (-)	0.71	2.22	104	0.03	<5	306	1.09	0.67	2.43	1.26	39.8	10.0	19.7	3.93
HTL013 01+25W (-)	0.43	2.09	115	0.04	<5	322	1.18	0.73	1.35	0.79	33.3	9.6	22.1	3.64
HTL013 01+50W (-)	0.49	1.98	112	0.04	<5	325	1.00	0.72	3.02	1.28	37.7	9.7	18.3	3.49
HTL013 01+75W (-)	0.75	2.28	116	0.03	<5	397	1.18	0.94	2.42	2.26	37.6	11.4	22.7	4.18
HTL013 02+00W (-)	0.60	2.21	118	0.32	<5	299	1.22	0.74	1.51	1.42	35.1	11.6	19.5	3.79
HTL013 02+25W (-)	0.59	2.11	108	0.02	<5	337	1.09	0.66	1.60	1.06	28.7	10.8	17.5	3.61
HTL013 02+50W (-)	0.65	2.16	130	0.03	<5	353	1.32	0.70	1.42	1.76	31.9	12.3	21.0	3.96
HTL013 02+75W (-)	0.53	2.15	75.7	0.02	<5	393	1.38	0.68	0.71	1.38	32.4	8.0	23.6	4.06
HTL013 03+00W (-)	0.36	2.55	91.6	0.03	<5	462	1.40	0.75	1.12	1.29	37.7	10.5	24.9	4.65

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
HTL013 00+25E (-)	0.50	2.33	94.0	0.06	<5	395	1.23	0.66	1.11	0.99	35.6	10.0	19.7	3.73
HTL013 00+50E (-)	0.50	1.88	85.6	0.07	<5	331	1.04	0.67	1.25	0.95	31.3	8.5	21.1	3.41
HTL013 00+75E (-)	0.54	2.14	86.0	0.03	<5	340	1.18	0.70	1.22	0.76	39.9	9.8	23.4	3.78
HTL013 01+00E (-)	0.46	2.02	118	0.03	<5	240	1.25	0.69	1.24	1.05	39.5	9.9	20.8	3.77
HTL013 01+25E (-)	0.65	2.12	61.5	0.04	<5	287	1.29	0.77	1.14	1.33	40.4	8.0	26.4	3.74
HTL013 01+50E (-)	0.64	2.10	96.6	0.04	<5	294	1.25	0.66	1.21	0.99	36.3	8.9	23.3	3.45
HTL013 01+75E (-)	0.37	2.01	122	0.04	<5	244	1.22	0.72	1.18	1.44	37.0	9.4	23.8	3.71
HTL013 02+00E (-)	0.55	1.99	111	0.04	<5	264	1.14	0.78	1.11	0.96	40.3	9.6	23.7	3.52
HTL013 02+25E (-)	0.63	2.09	105	0.04	<5	292	1.37	0.73	0.94	0.91	42.1	8.8	31.1	3.93
HTL013 02+50E (-)	0.83	1.79	76.1	0.04	<5	241	1.13	0.65	1.09	1.36	37.1	8.4	24.5	3.81
HTL013 02+75E (-)	0.38	1.90	145	0.04	<5	293	1.22	0.73	1.12	1.31	40.0	9.2	24.4	3.65
HTL013 03+00E (-)	0.43	1.97	105	0.04	<5	313	1.23	1.35	0.91	1.11	40.9	8.2	27.9	3.83
HTL014 00+00N (-)	0.52	2.56	682	0.70	<5	192	1.74	16.9	1.33	0.75	52.4	11.6	38.1	7.86
HTL014 00+25N (-)	0.52	2.25	695	1.54	7	84	1.51	22.6	1.28	0.65	53.3	7.9	23.9	10.6
HTL014 00+50N (-)	0.70	2.80	1040	2.22	9	142	1.82	24.9	1.50	0.66	66.7	10.1	31.1	13.2
HTL014 00+75N (-)	0.67	2.80	771	1.87	13	129	1.89	21.9	1.72	0.87	66.2	10.0	37.1	13.4
HTL014 01+00N (-)	0.62	2.99	141	0.09	<5	200	2.19	34.2	1.81	2.11	75.7	16.3	41.8	11.4
HTL014 01+25N (-)	0.59	2.46	41.8	0.04	6	158	1.19	7.70	2.29	1.40	47.8	8.3	28.1	9.01
HTL014 01+50N (-)	0.47	2.90	55.8	0.03	6	189	1.50	8.19	1.45	0.73	67.6	10.4	38.6	9.69
HTL014 01+75N (-)	0.66	2.50	53.8	0.02	7	129	1.68	6.75	2.03	1.37	49.9	8.5	27.8	8.08
HTL014 02+00N (-)	0.57	2.98	42.5	0.02	<5	105	2.52	4.02	1.65	0.99	44.5	9.3	25.8	7.65
HTL014 02+25N (-)	0.70	3.46	33.3	<0.01	14	304	2.86	0.56	4.03	2.32	41.6	11.7	24.5	4.02
HTL014 02+50N (-)	0.76	3.05	40.1	0.01	<5	60	1.80	0.82	2.08	1.99	28.9	9.5	24.3	6.75
HTL014 02+75N (-)	0.56	2.89	33.3	0.01	<5	129	1.85	1.56	1.96	1.58	51.1	7.5	27.0	8.08
HTL014 03+00N (-)	0.12	3.32	16.9	<0.01	<5	112	4.63	2.97	2.01	0.19	79.9	7.7	22.6	8.47
HTL014 03+25N (-)	0.12	3.21	10.2	<0.01	<5	97	4.14	3.38	2.08	0.25	88.0	7.1	25.4	13.0
HTL014 03+50N (-)	0.12	3.09	27.5	<0.01	<5	115	3.60	3.82	2.17	0.27	99.3	9.3	26.0	10.3
HTL014 03+75N (-)	0.10	2.92	23.1	<0.01	<5	144	4.28	0.72	2.54	0.33	95.9	8.3	25.2	18.0
HTL014 04+00N (-)	0.09	2.91	11.1	<0.01	<5	152	4.13	1.26	2.32	0.24	86.4	8.2	27.8	13.6
HTL014 04+25N (-)	0.13	3.21	22.6	<0.01	<5	134	5.50	2.65	2.32	0.37	95.0	10.7	31.8	12.0
RZHTD011 (-)	0.83	2.34	79.6	0.01	<5	292	2.32	0.86	1.51	0.95	50.1	13.5	50.7	5.88
RZHTD012 (-)	0.16	1.96	110	0.04	<5	153	1.04	2.16	1.00	0.34	81.5	9.8	31.9	9.10

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES   ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011   DATE RECEIVED: Sep 26, 2011   DATE REPORTED: Oct 24, 2011   SAMPLE TYPE: Soil

Analyte:	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
RZHTD013 (-)	0.75	2.50	111	0.02	<5	268	1.62	4.36	1.27	1.77	52.7	21.2	28.0	7.07
RZHTD014 (-)	0.56	3.10	23.4	<0.01	<5	90	1.16	2.21	1.08	0.35	42.2	11.8	14.1	5.42
RZHTD015 (-)	0.09	3.58	8.6	0.01	<5	260	1.82	4.13	2.53	0.65	24.8	13.1	42.0	20.4
RZHTD016 (-)	4.46	0.68	419	6.35	<5	19	0.45	1810	1.35	0.77	67.2	50.6	8.0	2.20
RZHTD017 (-)	0.58	2.57	46.5	0.06	5	574	1.22	14.9	0.69	0.74	47.5	8.0	26.5	5.29
RZHTD018 (-)	0.46	1.78	86.7	0.03	16	135	0.67	11.7	6.99	1.72	59.6	10.9	14.3	4.74
RZHTD019 (-)	0.51	2.58	31.9	0.02	<5	278	1.19	11.4	0.44	0.32	146	17.2	29.7	8.60
RZHTD020 (-)	1.24	1.32	26.2	0.28	<5	81	0.70	40.8	0.40	0.17	72.2	13.1	17.1	5.71
RZHTD008A (-)	0.30	2.66	5.9	<0.01	<5	226	2.07	3.11	7.81	0.53	60.0	13.2	29.6	9.09
AHHTD001 (-)	0.67	2.11	220	0.01	<5	172	1.33	35.7	0.39	0.79	107	23.0	50.2	23.5
AHHTD002 (-)	1.62	1.89	1710	0.36	<5	140	2.58	6.31	0.70	3.37	139	22.4	51.2	18.7
AHHTS001 (-)	0.35	1.76	369	0.06	<5	97	2.18	8.22	1.01	1.00	75.9	12.2	32.6	8.22
AHHTS002 (-)	0.44	1.98	409	0.08	<5	118	2.20	9.59	0.94	1.30	71.2	14.0	40.8	9.52
AHHTS003 (-)	0.44	1.70	67.3	0.02	<5	320	0.97	0.95	3.91	1.08	31.9	8.7	14.3	3.27
AHHTS004 (-)	0.42	1.77	69.3	0.02	<5	301	1.02	0.85	4.13	1.17	31.2	8.9	13.7	2.96

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Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL010 00+00S (-)	103	3.75	10.4	<0.05	0.03	0.03	0.061	0.15	40.0	35.1	1.12	664	2.35	<0.01
HTL010 00+25S (-)	122	3.88	10.6	0.05	0.05	0.04	0.056	0.24	47.9	33.9	1.19	551	3.16	<0.01
HTL010 00+50S (-)	82.1	3.03	9.29	0.06	0.03	0.02	0.032	0.48	47.8	31.5	1.30	447	0.99	<0.01
HTL010 00+75S (-)	90.6	3.25	8.70	0.06	0.03	0.01	0.036	0.42	48.4	32.6	1.22	555	1.37	0.01
HTL010 01+00S (-)	81.4	3.17	8.47	0.06	0.07	<0.01	0.038	0.49	45.9	28.2	1.25	457	1.76	0.01
HTL010 01+25S (-)	81.3	3.06	8.17	0.05	0.02	0.01	0.032	0.36	47.2	32.0	1.10	438	1.31	<0.01
HTL010 01+50S (-)	75.4	3.36	9.23	0.06	0.02	0.01	0.039	0.41	44.6	30.7	1.27	438	1.24	<0.01
HTL010 01+75S (-)	61.9	2.94	8.44	<0.05	0.02	<0.01	0.032	0.37	44.7	30.9	1.15	394	1.03	<0.01
HTL010 02+00S (-)	58.2	2.93	8.61	<0.05	0.02	0.01	0.030	0.28	44.5	29.8	1.11	403	0.89	<0.01
HTL010 02+25S (-)	65.4	3.01	8.54	<0.05	0.03	0.02	0.033	0.36	40.2	32.3	1.33	456	2.03	0.01
HTL010 02+50S (-)	73.8	3.58	9.23	0.06	0.03	0.01	0.043	0.36	37.5	30.5	1.30	371	2.91	<0.01
HTL010 02+75S (-)	73.9	3.55	9.24	0.06	0.05	<0.01	0.039	0.47	41.1	32.7	1.46	462	1.26	<0.01
HTL010 03+00S (-)	90.3	3.20	9.72	<0.05	0.03	0.01	0.036	0.42	46.7	34.4	1.36	537	1.71	<0.01
HTL010 03+25S (-)	64.7	3.08	8.89	<0.05	0.02	0.02	0.039	0.28	44.3	35.2	1.15	446	2.03	<0.01
HTL010 03+50S (-)	103	3.21	8.18	0.07	0.02	<0.01	0.048	0.31	37.7	27.4	1.27	352	1.79	<0.01
HTL010 03+75S (-)	99.1	3.13	9.44	<0.05	<0.02	0.02	0.059	0.17	24.9	28.6	1.19	263	2.92	<0.01
HTL010 04+00S (-)	126	4.77	8.26	0.06	<0.02	0.01	0.069	0.24	22.1	20.7	0.87	250	7.09	<0.01
HTL010 04+25S (-)	107	4.40	7.35	0.08	0.02	0.06	0.058	0.19	19.2	12.1	0.61	259	6.16	<0.01
HTL010 04+50S (-)	72.6	4.54	10.6	<0.05	0.03	0.03	0.054	0.30	25.3	30.1	1.31	457	2.49	<0.01
HTL010 04+75S (-)	56.4	4.12	9.51	<0.05	0.02	0.01	0.051	0.29	21.7	27.4	1.25	363	1.32	<0.01
HTL010 05+00S (-)	87.3	5.07	10.1	<0.05	0.03	0.01	0.064	0.36	21.4	29.9	1.45	361	1.75	<0.01
HTL010 05+25S (-)	105	5.21	12.0	0.09	0.07	0.03	0.082	0.56	24.7	33.4	1.69	354	2.24	<0.01
HTL010 05+50S (-)	128	6.41	9.41	0.08	0.03	0.02	0.108	0.30	23.7	24.7	1.13	546	8.41	<0.01
HTL010 05+75S (-)	183	5.12	7.56	0.08	0.07	0.01	0.072	0.28	34.2	29.1	1.30	428	3.27	0.02
HTL010 06+00S (-)	175	4.73	7.13	0.07	0.07	0.01	0.070	0.32	28.5	30.0	1.40	438	3.80	0.02
HTL010 06+25S (-)	192	5.07	7.48	0.08	0.08	0.01	0.076	0.33	30.5	29.6	1.19	444	3.99	0.02
HTL010 06+50S (-)	161	3.68	8.71	0.05	0.03	0.02	0.064	0.08	29.5	29.2	1.17	569	5.49	<0.01
HTL010 06+75S (-)	23.4	0.87	2.39	0.08	<0.02	0.02	0.011	0.02	3.6	2.8	0.07	78	0.98	0.02
HTL010 07+00S (-)	73.2	4.37	8.28	0.14	0.02	0.03	0.057	0.24	23.1	30.0	0.81	457	3.34	0.02
HTL010 07+25S (-)	88.5	3.17	6.46	0.15	<0.02	0.04	0.043	0.13	22.3	23.2	0.59	228	3.21	0.01
HTL010 07+50S (-)	75.2	2.67	5.95	<0.05	0.04	0.04	0.034	0.12	22.7	22.7	1.61	623	2.02	0.01
HTL010 07+75S (-)	79.4	2.63	7.68	0.10	<0.02	0.04	0.043	0.08	23.7	20.4	0.65	480	3.28	0.01

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL010 08+00S (-)	87.6	3.14	9.08	0.13	<0.02	0.02	0.056	0.08	23.7	31.0	0.93	377	3.77	0.02
HTL010 08+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 08+50S (-)	82.4	3.07	9.40	0.14	0.04	0.03	0.043	0.06	22.6	44.8	1.02	498	2.24	0.02
HTL010 08+75S (-)	73.5	2.88	7.74	0.13	0.05	0.02	0.037	0.05	20.1	34.6	0.96	462	1.43	0.03
HTL010 09+00S (-)	93.2	4.51	8.21	0.14	0.06	0.02	0.050	0.06	17.7	39.8	0.82	561	4.01	0.01
HTL010 09+25S (-)	83.8	3.31	9.02	0.10	0.12	0.02	0.044	0.05	19.3	37.5	0.96	565	2.41	0.02
HTL010 09+50S (-)	119	4.86	10.9	0.16	0.10	0.02	0.066	0.05	36.3	40.3	1.00	652	4.61	<0.01
HTL010 09+75S (-)	60.5	2.58	7.89	0.11	<0.02	0.02	0.017	0.03	13.8	17.2	0.50	121	1.98	<0.01
HTL010 10+00S (-)	120	3.65	9.77	0.18	0.24	0.02	0.064	0.06	35.8	36.9	0.87	566	3.63	0.01
HTL010 10+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 10+50S (-)	173	4.30	10.3	0.15	0.06	0.03	0.059	0.17	12.8	39.8	1.30	391	5.29	<0.01
HTL010 10+75S (-)	83.2	2.58	10.1	0.10	0.10	0.03	0.047	0.03	14.1	30.3	0.73	216	3.89	<0.01
HTL010 11+00S (-)	114	3.52	9.68	0.14	0.12	0.02	0.060	0.05	28.2	38.0	0.87	452	4.43	0.02
HTL010 11+25S (-)	124	3.20	9.83	0.13	0.11	0.03	0.052	0.06	14.8	41.9	0.95	400	4.90	<0.01
HTL010 11+50S (-)	56.6	3.45	11.1	0.12	0.06	0.04	0.052	0.04	14.1	35.3	0.79	314	3.89	<0.01
HTL010 11+75S (-)	129	5.75	8.79	0.13	0.07	0.03	0.081	0.04	14.2	29.2	0.58	417	15.7	<0.01
HTL010 12+00S (-)	130	2.36	6.86	0.05	0.12	0.05	0.037	0.04	12.6	31.1	0.59	344	4.10	<0.01
HTL010 12+25S (-)	89.8	3.74	8.35	0.11	0.10	0.02	0.048	0.05	18.4	39.1	0.81	471	3.18	0.04
HTL010 12+50S (-)	89.6	4.99	10.3	0.15	0.08	0.02	0.072	0.06	13.2	43.1	0.68	318	10.6	<0.01
HTL010 12+75S (-)	74.3	3.79	8.51	0.13	0.07	0.03	0.048	0.04	14.4	37.5	0.63	325	5.65	0.01
HTL010 13+00S (-)	108	4.34	9.12	0.13	0.09	0.02	0.055	0.07	18.2	45.7	1.09	571	5.43	0.04
HTL010 13+25S (-)	65.8	2.38	7.01	0.07	0.09	0.04	0.034	0.04	17.1	27.5	0.45	275	4.82	<0.01
HTL010 13+50S (-)	97.1	3.62	7.69	0.12	0.08	0.02	0.048	0.06	18.7	44.6	1.02	479	4.25	0.03
HTL010 13+75S (-)	137	4.85	8.77	0.15	0.07	0.01	0.069	0.11	26.7	32.1	0.65	523	6.77	0.02
HTL010 14+00S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+50S (-)	80.3	3.73	7.99	0.14	0.10	0.02	0.055	0.05	27.1	32.6	0.59	420	5.35	0.03
HTL010 14+75S (-)	43.6	1.21	2.77	0.14	0.09	0.06	0.020	0.03	13.0	10.5	0.18	467	3.06	0.03
HTL010 15+00S (-)	109	4.78	11.1	0.16	0.12	0.03	0.081	0.06	31.9	39.6	0.82	577	5.28	<0.01
HTL010 15+25S (-)	90.7	3.54	8.44	0.15	0.08	0.03	0.052	0.07	23.9	29.2	0.68	698	3.72	0.03
HTL010 15+50S (-)	42.5	1.73	8.09	0.11	0.05	0.03	0.025	0.08	10.3	26.2	0.38	116	6.05	0.01
HTL011 00+00E (-)	53.7	2.87	13.6	0.16	0.05	0.02	0.034	0.38	50.7	45.5	1.50	604	1.14	0.02

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL011 00+25E (-)	50.0	2.75	14.5	0.14	0.03	0.01	0.039	0.37	48.9	40.3	1.46	556	0.57	0.01
HTL011 00+50E (-)	41.0	3.18	11.8	0.14	0.02	0.02	0.035	0.32	51.8	53.9	1.46	580	0.90	0.02
HTL011 00+75E (-)	43.6	2.63	11.4	0.14	0.03	0.01	0.035	0.24	52.5	42.3	1.15	513	0.88	0.02
HTL011 01+00E (-)	59.5	2.70	11.4	0.17	0.03	0.02	0.034	0.33	53.9	42.0	1.18	488	0.90	0.02
HTL011 01+25E (-)	54.9	2.59	10.9	0.15	0.04	0.01	0.034	0.36	46.8	39.0	1.26	499	0.78	0.01
HTL011 01+50E (-)	26.4	1.98	9.75	0.12	0.12	<0.01	0.026	0.29	51.2	39.4	1.32	528	0.31	<0.01
HTL011 01+75E (-)	45.6	3.27	10.6	0.13	0.02	0.03	0.032	0.17	27.3	39.4	0.85	352	2.35	0.01
HTL011 02+00E (-)	189	4.13	11.9	0.17	0.02	0.01	0.060	0.29	43.4	44.3	1.36	636	2.19	0.03
HTL011 02+25E (-)	31.0	2.27	8.94	0.13	0.03	0.01	0.022	0.29	45.3	39.5	1.15	442	0.63	0.02
HTL011 02+50E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 02+75E (-)	33.7	2.28	7.64	<0.05	0.07	0.02	0.029	0.17	29.8	31.4	2.21	456	1.24	<0.01
HTL011 03+00E (-)	31.2	1.23	3.39	<0.05	0.20	<0.01	0.016	0.04	18.9	10.2	2.79	155	1.30	<0.01
HTL011 03+25E (-)	89.7	5.29	9.12	<0.05	0.02	0.01	0.051	0.18	19.8	44.5	1.34	290	6.59	<0.01
HTL011 03+50E (-)	109	3.96	8.09	0.05	0.02	0.01	0.051	0.24	23.5	37.8	1.58	331	5.16	<0.01
HTL011 03+75E (-)	81.5	3.93	8.58	<0.05	0.03	<0.01	0.054	0.10	24.7	29.1	1.25	253	2.59	<0.01
HTL011 04+00E (-)	46.4	3.12	9.19	<0.05	<0.02	<0.01	0.048	0.23	32.7	33.3	1.31	503	0.94	<0.01
HTL011 04+25E (-)	61.1	4.64	8.75	<0.05	0.02	0.02	0.060	0.12	24.0	27.8	1.07	326	3.07	<0.01
HTL011 04+50E (-)	72.3	4.17	8.54	<0.05	<0.02	0.02	0.065	0.13	34.8	29.7	1.01	673	1.02	<0.01
HTL011 04+75E (-)	74.9	3.35	7.83	<0.05	<0.02	0.02	0.042	0.09	29.8	22.9	0.65	454	1.39	<0.01
HTL011 05+00E (-)	12.8	1.97	8.27	<0.05	0.07	0.02	0.020	0.03	34.7	27.2	0.70	1160	0.55	<0.01
HTL011 05+25E (-)	71.1	3.83	9.36	<0.05	<0.02	0.02	0.048	0.14	28.8	32.4	0.73	596	1.20	<0.01
HTL011 05+50E (-)	254	5.26	7.71	<0.05	0.03	0.02	0.080	0.07	45.3	24.7	0.79	404	1.79	<0.01
HTL011 05+75E (-)	89.0	2.76	7.04	<0.05	0.04	0.03	0.041	0.06	20.2	20.5	0.57	264	1.99	<0.01
HTL011 06+00E (-)	102	4.55	8.77	<0.05	0.02	0.01	0.068	0.11	27.5	34.3	0.99	460	2.82	<0.01
HTL011 06+25E (-)	112	4.44	9.28	<0.05	0.02	0.02	0.074	0.16	46.8	36.0	1.20	559	1.44	<0.01
HTL011 06+50E (-)	76.9	4.15	11.0	<0.05	0.04	0.02	0.088	0.15	50.6	46.3	1.13	616	1.11	<0.01
HTL011 06+75E (-)	82.7	4.44	11.0	<0.05	<0.02	0.02	0.084	0.14	41.0	33.5	1.18	566	1.57	<0.01
HTL011 07+00E (-)	103	4.97	9.57	<0.05	<0.02	0.03	0.096	0.14	30.4	33.3	1.17	799	2.38	<0.01
HTL011 07+25E (-)	109	4.03	9.48	<0.05	0.02	0.02	0.076	0.17	44.0	31.0	1.12	621	1.52	<0.01
HTL011 07+50E (-)	138	3.39	8.81	<0.05	0.02	0.02	0.056	0.15	42.1	33.9	1.08	510	1.31	<0.01
HTL011 07+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 08+00E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL011 08+25E (-)	108	4.50	8.10	<0.05	0.03	0.02	0.087	0.16	56.3	32.5	1.04	777	1.77	0.01
HTL011 08+50E (-)	128	4.72	8.50	0.07	0.06	0.02	0.088	0.22	74.7	37.0	1.10	746	1.11	<0.01
HTL011 08+75E (-)	387	7.55	7.84	0.06	0.03	<0.01	0.098	0.20	81.9	31.1	0.85	604	7.79	0.02
HTL011 09+00E (-)	102	4.22	8.80	0.15	0.04	0.02	0.063	0.14	47.6	37.3	1.05	724	1.82	0.02
HTL011 09+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 09+50E (-)	81.6	4.10	9.63	0.15	0.03	0.03	0.054	0.15	38.8	43.4	1.03	578	2.94	0.02
HTL011 09+75E (-)	56.6	3.58	9.70	0.14	0.02	0.01	0.050	0.12	48.4	42.2	1.08	461	2.38	0.02
HTL011 10+00E (-)	156	4.42	11.4	0.16	0.05	0.01	0.075	0.17	110	46.9	1.18	721	3.96	0.01
HTL011 10+25E (-)	163	5.05	9.42	0.15	0.03	0.07	0.089	0.06	73.8	38.7	0.94	705	4.54	0.02
HTL011 10+50E (-)	110	5.73	9.20	0.15	0.02	0.02	0.133	0.06	45.6	45.2	1.49	802	2.91	0.02
HTL011 10+75E (-)	158	6.80	12.0	0.22	0.06	0.01	0.332	0.10	158	31.5	1.18	1860	3.37	<0.01
HTL011 11+00E (-)	99.3	5.71	8.08	0.14	0.05	0.03	0.255	0.03	14.8	20.3	0.77	1950	1.99	0.01
HTL011 11+25E (-)	93.1	6.14	10.3	0.12	0.05	0.02	0.189	0.05	23.2	35.5	2.15	1970	2.23	0.02
HTL011 11+50E (-)	86.4	4.28	9.86	0.12	0.02	0.02	0.102	0.07	23.3	43.3	1.17	599	2.78	0.02
HTL011 11+75E (-)	56.8	4.56	8.91	0.12	0.03	0.04	0.109	0.08	23.4	52.4	1.25	635	4.38	0.01
HTL011 12+00E (-)	132	4.20	7.79	0.12	0.06	0.03	0.139	0.05	21.4	41.1	1.22	917	2.09	<0.01
HTL011 12+25E (-)	39.6	3.51	10.5	0.10	0.03	0.02	0.079	0.06	13.4	43.3	1.07	675	3.15	<0.01
HTL011 12+50E (-)	46.9	4.38	13.3	0.12	0.03	0.04	0.131	0.10	21.4	56.5	1.55	1430	1.68	0.01
HTL011 12+75E (-)	104	6.45	11.4	0.14	0.07	0.03	0.081	0.16	24.9	46.5	1.35	1390	3.10	0.02
HTL011 13+00E (-)	124	5.85	11.2	0.17	0.09	0.02	0.156	0.16	20.6	42.5	1.42	1170	0.96	<0.01
HTL011 13+25E (-)	61.3	1.56	5.33	0.14	0.07	0.07	0.022	0.04	16.4	28.7	0.60	343	1.12	0.02
HTL011 13+50E (-)	80.2	1.05	2.03	0.05	0.05	0.08	0.017	0.04	5.4	11.8	0.24	395	1.49	0.02
HTL011 13+75E (-)	80.0	3.74	8.09	0.13	0.04	0.04	0.056	0.06	24.0	40.3	0.89	492	2.85	0.04
HTL011 14+00E (-)	49.6	3.20	9.81	0.12	0.05	0.05	0.045	0.06	14.8	52.4	0.94	314	2.47	0.01
HTL011 14+25E (-)	72.9	3.31	9.93	0.12	0.02	0.04	0.041	0.08	22.2	58.0	1.02	303	2.18	0.03
HTL011 14+50E (-)	58.7	3.14	9.72	0.11	0.04	0.07	0.040	0.05	18.9	51.5	0.86	444	2.73	0.01
HTL011 14+75E (-)	76.1	2.81	8.43	0.11	0.05	0.02	0.032	0.09	23.5	48.4	0.97	290	2.68	0.07
HTL011 15+00E (-)	85.2	3.35	9.57	0.13	0.07	0.03	0.050	0.08	24.2	56.9	1.06	342	3.39	0.05
HTL012 00+00E (-)	54.0	2.04	6.43	0.09	0.04	0.03	0.031	0.10	19.4	36.4	0.67	250	2.97	0.02
HTL012 00+25E (-)	52.8	2.32	7.30	0.11	0.04	0.01	0.032	0.17	25.9	36.8	0.82	250	2.64	0.03
HTL012 00+50E (-)	53.8	2.22	6.28	0.10	0.05	0.03	0.034	0.11	19.3	33.5	0.67	241	2.71	0.02
HTL012 00+75E (-)	62.2	2.05	6.73	0.11	0.07	0.01	0.031	0.14	23.3	36.4	0.63	177	3.16	0.03

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL012 01+00E (-)	56.1	2.33	7.21	0.11	0.05	0.01	0.033	0.13	25.0	34.8	0.65	119	4.60	0.02
HTL012 01+25E (-)	51.6	1.63	7.16	0.11	0.07	0.02	0.031	0.09	23.1	37.8	0.69	117	2.94	0.02
HTL012 01+50E (-)	54.5	1.78	6.86	0.10	0.06	0.02	0.031	0.11	21.7	40.9	0.62	116	1.67	0.03
HTL012 01+75E (-)	56.8	2.27	6.65	0.11	0.08	0.02	0.030	0.15	26.8	31.7	0.69	235	2.48	0.02
HTL012 02+00E (-)	28.3	1.92	6.50	0.11	0.05	0.04	0.028	0.06	26.0	33.2	0.49	166	3.83	0.01
HTL012 02+25E (-)	38.5	2.19	7.20	0.11	<0.02	0.02	0.031	0.09	19.7	30.3	0.56	210	2.73	<0.01
HTL012 02+50E (-)	63.5	2.07	5.73	0.12	0.04	0.01	0.032	0.17	24.1	26.6	0.60	182	2.96	0.03
HTL012 02+75E (-)	24.2	1.93	9.10	0.11	<0.02	0.03	0.027	0.06	13.6	28.3	0.43	134	3.11	<0.01
HTL012 03+00E (-)	21.8	1.54	5.11	0.08	<0.02	0.04	0.019	0.05	10.5	17.0	0.26	70	2.31	0.01
HTL012 03+25E (-)	43.4	2.86	8.16	0.13	0.03	0.05	0.042	0.11	21.5	45.4	0.68	243	3.01	<0.01
HTL012 03+50E (-)	30.3	2.47	7.77	0.11	<0.02	0.03	0.031	0.09	17.6	26.6	0.49	132	4.01	<0.01
HTL012 03+75E (-)	25.6	2.03	6.02	0.10	<0.02	0.04	0.024	0.06	12.3	22.3	0.37	105	3.12	0.01
HTL012 04+00E (-)	39.8	2.38	6.43	0.11	<0.02	0.02	0.030	0.10	18.7	32.4	0.58	209	3.71	0.01
HTL012 04+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 04+50E (-)	25.8	1.67	4.69	0.07	0.05	0.05	0.025	0.06	9.0	23.3	0.41	74	2.29	0.01
HTL012 04+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 05+00E (-)	61.0	2.90	8.33	0.11	0.07	0.03	0.042	0.11	17.9	40.4	0.80	299	6.55	0.01
HTL012 05+50E (-)	19.1	0.93	3.67	0.06	0.05	0.03	0.011	0.03	6.1	12.0	0.25	221	3.23	0.02
HTL012 05+75E (-)	36.1	1.59	4.98	0.07	0.06	0.10	0.023	0.04	12.9	20.8	0.36	151	6.59	0.01
HTL013 00+00W (-)	57.8	2.17	6.97	0.11	0.06	0.02	0.028	0.10	18.8	33.1	0.65	189	1.80	0.04
HTL013 00+25W (-)	59.6	2.35	7.29	0.11	0.07	0.02	0.030	0.11	20.9	36.4	0.69	190	1.92	0.04
HTL013 00+50W (-)	68.5	2.52	8.41	0.12	0.09	0.02	0.034	0.09	19.1	41.5	0.68	236	2.04	0.04
HTL013 00+75W (-)	56.1	2.40	8.08	0.11	0.09	0.02	0.034	0.10	19.3	45.6	0.70	182	2.74	0.03
HTL013 01+00W (-)	84.4	3.01	8.04	0.11	0.17	0.01	0.038	0.18	21.8	38.2	0.71	235	2.71	0.06
HTL013 01+25W (-)	65.9	2.57	7.46	0.11	0.07	0.02	0.035	0.11	19.5	37.8	0.75	220	2.40	0.04
HTL013 01+50W (-)	76.7	2.68	7.30	0.11	0.08	0.01	0.034	0.16	20.9	33.0	0.60	256	3.40	0.05
HTL013 01+75W (-)	102	3.29	8.46	0.11	0.15	0.01	0.041	0.23	20.4	37.4	0.71	254	4.18	0.05
HTL013 02+00W (-)	94.2	3.23	8.27	0.13	0.12	0.01	0.038	0.19	19.4	40.2	0.66	247	3.44	0.05
HTL013 02+25W (-)	68.4	3.10	7.97	0.11	0.11	0.02	0.040	0.15	14.5	37.6	0.62	224	3.25	0.05
HTL013 02+50W (-)	102	3.18	8.74	0.11	0.14	0.02	0.043	0.15	18.3	40.7	0.63	258	3.89	0.04
HTL013 02+75W (-)	50.2	2.55	8.07	0.11	0.05	0.02	0.037	0.09	18.0	38.4	0.56	285	5.09	0.01
HTL013 03+00W (-)	72.2	2.96	9.21	0.12	0.07	0.01	0.039	0.15	20.4	44.1	0.83	269	4.85	0.03

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
HTL013 00+25E (-)	64.8	2.46	8.09	0.11	0.09	0.01	0.032	0.14	19.3	41.2	0.62	230	3.06	0.03
HTL013 00+50E (-)	42.8	2.24	7.14	0.11	0.12	0.03	0.032	0.10	17.6	37.0	0.59	221	3.47	0.02
HTL013 00+75E (-)	47.7	2.58	8.00	0.11	0.13	0.01	0.035	0.12	21.4	43.5	0.69	135	4.00	0.04
HTL013 01+00E (-)	74.6	2.48	7.87	0.12	0.21	0.01	0.033	0.13	22.1	41.8	0.68	213	3.00	0.05
HTL013 01+25E (-)	59.8	2.04	8.10	0.11	0.19	0.02	0.037	0.09	22.1	45.5	0.70	102	3.08	0.03
HTL013 01+50E (-)	66.8	2.39	7.62	0.12	0.14	0.01	0.033	0.10	21.0	39.9	0.69	275	2.49	0.04
HTL013 01+75E (-)	75.4	2.42	7.55	0.12	0.12	0.02	0.034	0.12	21.2	40.5	0.70	217	2.28	0.04
HTL013 02+00E (-)	49.4	2.28	7.51	0.11	0.11	0.03	0.033	0.11	22.5	44.2	0.67	197	2.06	0.04
HTL013 02+25E (-)	56.7	2.51	8.19	0.11	0.08	0.03	0.036	0.10	24.2	48.9	0.71	201	3.80	0.03
HTL013 02+50E (-)	51.6	1.91	7.44	0.11	0.12	0.02	0.033	0.10	20.9	42.4	0.59	172	2.14	0.04
HTL013 02+75E (-)	65.6	2.59	7.04	0.11	0.14	0.01	0.032	0.14	22.8	34.9	0.67	201	3.60	0.04
HTL013 03+00E (-)	67.1	2.42	7.40	0.11	0.10	0.02	0.034	0.12	23.1	37.4	0.68	209	6.06	0.02
HTL014 00+00N (-)	73.7	2.78	9.98	0.10	0.03	0.02	0.049	0.12	23.3	45.7	0.99	573	3.44	0.02
HTL014 00+25N (-)	80.0	1.86	9.22	0.10	0.03	0.06	0.042	0.10	24.2	36.3	0.67	437	1.17	0.02
HTL014 00+50N (-)	78.1	2.63	11.4	0.10	0.02	0.05	0.051	0.12	31.0	48.3	1.00	519	2.35	0.02
HTL014 00+75N (-)	63.1	2.37	10.9	0.12	0.03	0.04	0.052	0.12	32.9	46.3	0.98	551	1.52	0.02
HTL014 01+00N (-)	85.1	3.56	10.8	0.12	0.07	0.01	0.061	0.28	41.7	55.1	1.21	425	1.84	0.04
HTL014 01+25N (-)	61.9	2.42	9.13	0.10	0.06	0.04	0.032	0.12	27.9	73.8	1.34	299	1.14	0.04
HTL014 01+50N (-)	75.6	2.95	11.4	0.11	0.04	0.03	0.042	0.16	32.4	74.4	1.35	374	0.99	0.05
HTL014 01+75N (-)	81.0	2.75	10.1	0.10	0.06	0.03	0.039	0.13	27.3	63.8	1.42	297	1.19	0.05
HTL014 02+00N (-)	73.6	2.92	12.4	0.10	0.05	0.02	0.035	0.13	24.8	72.0	1.92	235	1.51	0.04
HTL014 02+25N (-)	84.1	3.64	15.1	0.08	0.17	0.01	0.038	0.13	27.7	49.9	1.93	234	2.05	0.02
HTL014 02+50N (-)	65.9	2.67	11.2	0.08	0.10	0.02	0.027	0.17	15.3	58.7	1.18	121	3.60	0.04
HTL014 02+75N (-)	63.9	2.50	10.4	0.09	0.08	0.01	0.029	0.21	25.4	63.5	1.52	175	2.86	0.03
HTL014 03+00N (-)	34.9	1.64	11.1	0.08	0.05	0.01	0.026	0.17	34.2	60.5	0.80	200	0.76	0.04
HTL014 03+25N (-)	33.5	1.41	10.8	0.08	0.05	0.02	0.030	0.21	36.7	57.9	0.72	252	7.00	0.04
HTL014 03+50N (-)	42.2	1.97	12.1	0.09	0.06	0.01	0.031	0.23	50.1	71.2	1.01	292	1.11	0.02
HTL014 03+75N (-)	27.1	1.62	12.4	0.09	0.06	0.02	0.024	0.24	54.4	63.8	0.87	332	0.30	0.02
HTL014 04+00N (-)	27.9	1.82	11.7	0.10	0.06	0.01	0.028	0.27	45.9	83.0	1.03	235	0.46	0.02
HTL014 04+25N (-)	49.5	2.15	17.5	0.10	0.09	0.01	0.031	0.28	48.9	81.8	1.14	361	0.26	0.03
RZHTD011 (-)	135	3.64	8.50	0.13	0.02	0.03	0.060	0.21	29.0	40.1	1.11	306	4.48	0.03
RZHTD012 (-)	36.3	2.40	7.34	0.12	0.03	0.01	0.021	0.30	42.4	47.9	0.82	304	0.76	0.04

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
RZHTD013 (-)	185	7.22	9.00	0.17	0.03	0.02	0.068	0.28	29.3	31.5	0.94	463	15.0	0.04
RZHTD014 (-)	131	8.28	11.2	0.18	0.03	0.03	0.038	0.16	26.3	34.8	0.51	137	12.8	0.05
RZHTD015 (-)	85.6	2.21	15.7	0.15	0.08	<0.01	0.016	1.09	10.3	182	3.99	159	0.62	<0.01
RZHTD016 (-)	1770	13.3	3.24	0.18	1.72	0.41	0.279	0.03	37.2	8.9	0.48	1870	6.14	0.02
RZHTD017 (-)	92.7	4.16	9.84	0.17	0.12	0.03	0.070	0.25	26.2	41.3	1.00	256	7.15	0.06
RZHTD018 (-)	112	2.22	5.32	0.06	0.05	0.02	0.046	0.11	33.2	34.3	0.59	343	1.47	0.12
RZHTD019 (-)	292	6.70	8.98	0.15	0.02	0.03	0.074	0.10	82.1	35.0	0.72	374	18.4	0.02
RZHTD020 (-)	367	11.7	5.08	0.18	0.05	0.04	0.061	0.06	39.7	18.7	0.34	185	16.1	0.01
RZHTD008A (-)	116	2.67	9.68	0.07	<0.02	0.02	0.026	0.31	30.8	53.0	1.27	414	0.67	0.02
AHHTD001 (-)	448	4.72	9.52	0.15	0.10	0.03	0.138	0.32	53.2	51.4	1.14	544	5.54	0.02
AHHTD002 (-)	189	5.62	8.50	0.16	0.04	0.05	0.215	0.27	68.0	34.7	0.84	2660	3.60	0.01
AHHTS001 (-)	136	2.40	7.36	0.10	0.05	0.01	0.056	0.25	37.1	43.8	0.95	795	1.50	0.01
AHHTS002 (-)	147	2.79	8.39	0.10	0.03	0.02	0.058	0.28	34.0	48.8	1.04	881	1.85	0.01
AHHTS003 (-)	59.3	2.24	6.87	0.11	0.12	<0.01	0.029	0.15	16.4	32.7	0.48	197	3.17	0.06
AHHTS004 (-)	62.8	2.32	6.91	0.11	0.11	<0.01	0.031	0.15	16.2	31.7	0.47	206	3.26	0.06

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AGAT WORK ORDER: 11Y532919
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ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL010 00+00S (-)	2.34	27.5	921	72.9	27.1	<0.001	0.086	24.0	5.5	1.0	2.0	35.8	<0.01	0.14
HTL010 00+25S (-)	2.77	47.0	1050	61.2	40.2	<0.001	0.106	50.9	5.8	1.4	2.0	36.4	0.01	0.12
HTL010 00+50S (-)	2.81	27.1	994	24.8	75.1	<0.001	0.027	19.3	5.3	0.7	2.0	52.2	<0.01	0.04
HTL010 00+75S (-)	1.92	29.8	1090	32.2	66.4	<0.001	0.031	17.3	6.1	0.7	2.2	70.5	<0.01	0.07
HTL010 01+00S (-)	1.82	32.2	1790	17.5	75.0	<0.001	0.048	5.93	5.9	1.0	2.2	66.1	<0.01	0.08
HTL010 01+25S (-)	1.58	25.9	1160	29.0	62.6	<0.001	0.045	423	5.0	0.7	2.8	69.5	<0.01	0.06
HTL010 01+50S (-)	1.83	31.5	1180	23.7	69.7	<0.001	0.041	297	5.7	0.7	2.5	67.0	<0.01	0.06
HTL010 01+75S (-)	1.89	25.3	1170	23.4	61.4	<0.001	0.038	352	4.8	0.7	2.1	63.5	<0.01	0.05
HTL010 02+00S (-)	2.44	20.7	878	25.4	51.7	<0.001	0.054	414	4.6	0.6	2.0	57.6	<0.01	0.05
HTL010 02+25S (-)	2.30	26.2	1440	20.1	62.2	<0.001	0.062	8.76	5.2	0.9	1.6	62.4	<0.01	0.09
HTL010 02+50S (-)	2.36	36.8	1430	16.3	66.1	<0.001	0.057	6.95	5.8	1.0	2.1	59.9	<0.01	0.13
HTL010 02+75S (-)	2.12	30.0	882	16.8	76.3	<0.001	0.026	7.86	6.5	0.8	1.9	55.7	<0.01	0.06
HTL010 03+00S (-)	3.21	29.3	1200	20.9	78.2	<0.001	0.046	4.29	6.1	0.8	2.8	63.5	<0.01	0.05
HTL010 03+25S (-)	1.98	35.1	1510	18.7	54.1	<0.001	0.050	4.88	5.2	1.1	1.8	64.7	<0.01	0.08
HTL010 03+50S (-)	1.56	73.2	3710	18.7	54.9	<0.001	0.054	7.24	5.8	1.6	2.0	65.8	<0.01	0.12
HTL010 03+75S (-)	1.51	92.1	3200	19.5	31.6	0.002	0.088	5.31	4.3	2.0	2.3	73.0	<0.01	0.13
HTL010 04+00S (-)	0.87	62.2	1370	15.9	29.2	<0.001	0.104	19.8	3.6	2.1	2.8	183	<0.01	0.14
HTL010 04+25S (-)	0.96	43.5	795	13.4	29.2	<0.001	0.122	4.48	2.4	1.9	4.3	57.5	<0.01	0.13
HTL010 04+50S (-)	2.95	51.4	611	18.3	44.1	<0.001	0.084	3.59	5.3	1.2	2.4	73.4	<0.01	0.11
HTL010 04+75S (-)	2.09	40.0	313	15.3	42.3	<0.001	0.047	7.64	5.8	1.0	1.9	253	<0.01	0.08
HTL010 05+00S (-)	2.13	43.6	317	16.9	47.2	<0.001	0.070	9.88	6.6	1.6	3.2	115	<0.01	0.08
HTL010 05+25S (-)	3.14	58.0	663	19.3	60.6	<0.001	0.103	4.54	9.2	1.6	3.3	37.7	0.01	0.09
HTL010 05+50S (-)	1.26	72.5	1900	34.3	31.1	0.001	0.076	91.3	5.6	3.3	2.1	56.5	<0.01	0.19
HTL010 05+75S (-)	1.65	45.3	2060	25.8	31.1	<0.001	0.164	4.08	4.2	2.3	2.4	81.3	<0.01	0.14
HTL010 06+00S (-)	0.95	45.6	2220	24.0	31.6	0.001	0.135	3.62	4.0	2.6	3.1	83.1	<0.01	0.14
HTL010 06+25S (-)	1.64	45.6	2170	24.6	35.7	0.001	0.153	3.74	4.3	2.8	2.7	82.8	<0.01	0.15
HTL010 06+50S (-)	1.49	78.0	1740	31.5	13.1	<0.001	0.110	7.18	4.2	2.6	1.6	54.1	<0.01	0.13
HTL010 06+75S (-)	0.15	13.2	483	15.9	2.3	<0.001	0.040	3.58	0.1	0.5	0.8	10.1	0.01	0.03
HTL010 07+00S (-)	2.06	56.7	1260	43.8	43.0	<0.001	0.114	15.9	3.6	2.1	1.6	61.8	0.01	0.09
HTL010 07+25S (-)	1.07	71.8	1550	28.8	20.7	<0.001	0.101	11.5	2.3	2.2	1.6	50.4	<0.01	0.08
HTL010 07+50S (-)	1.89	88.3	1300	18.8	16.3	<0.001	0.150	13.0	2.6	1.0	1.5	269	0.02	0.05
HTL010 07+75S (-)	1.03	65.8	1640	24.9	19.3	<0.001	0.121	11.8	0.6	1.2	1.9	77.0	0.02	0.08

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL010 08+00S (-)	1.85	65.1	1330	36.7	15.0	0.001	0.109	6.00	3.8	2.1	1.4	59.6	<0.01	0.10
HTL010 08+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 08+50S (-)	1.21	49.5	1580	39.4	11.9	<0.001	0.085	14.0	3.3	1.0	1.8	61.8	<0.01	0.08
HTL010 08+75S (-)	1.36	34.9	1220	43.6	8.7	<0.001	0.070	20.8	3.6	1.0	1.5	69.8	<0.01	0.07
HTL010 09+00S (-)	1.54	53.8	1390	32.3	11.7	<0.001	0.074	35.7	3.2	1.4	1.5	41.6	<0.01	0.08
HTL010 09+25S (-)	1.63	39.7	1820	38.1	10.6	<0.001	0.103	21.4	3.8	1.3	1.9	49.0	<0.01	0.07
HTL010 09+50S (-)	1.62	105	2420	50.9	8.6	0.002	0.089	29.3	6.4	2.4	3.1	98.2	<0.01	0.08
HTL010 09+75S (-)	1.19	30.6	839	21.9	5.5	<0.001	0.072	11.3	1.0	0.8	2.8	30.7	<0.01	0.05
HTL010 10+00S (-)	1.90	109	3450	46.9	10.2	0.002	0.152	19.3	5.2	2.9	4.0	108	0.01	0.07
HTL010 10+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 10+50S (-)	1.93	50.4	1300	20.5	19.4	<0.001	0.079	5.84	4.6	2.6	2.0	24.6	<0.01	0.06
HTL010 10+75S (-)	1.89	50.9	1800	34.2	6.5	0.002	0.147	7.52	3.7	2.0	2.8	54.5	0.01	0.05
HTL010 11+00S (-)	2.07	86.8	2380	48.3	10.7	0.002	0.110	13.6	5.4	3.0	2.7	91.2	<0.01	0.08
HTL010 11+25S (-)	1.93	57.5	1410	32.0	12.5	<0.001	0.111	6.15	4.3	1.6	3.6	43.9	<0.01	0.06
HTL010 11+50S (-)	1.62	25.0	1350	38.5	10.2	<0.001	0.102	3.90	3.9	0.8	1.4	38.7	<0.01	0.04
HTL010 11+75S (-)	1.24	54.3	1150	35.2	9.7	0.001	0.105	20.6	3.6	3.1	2.4	32.5	<0.01	0.06
HTL010 12+00S (-)	1.41	26.9	1430	29.4	7.9	0.002	0.221	5.61	2.8	3.2	3.3	56.6	0.01	0.05
HTL010 12+25S (-)	1.99	40.5	1880	44.3	8.8	0.001	0.115	8.94	3.2	1.9	1.7	100	<0.01	0.08
HTL010 12+50S (-)	1.96	57.4	830	26.9	9.4	0.001	0.066	8.76	3.7	1.9	0.7	34.0	<0.01	0.06
HTL010 12+75S (-)	1.83	37.5	1590	28.5	6.8	<0.001	0.131	4.45	2.7	1.8	0.5	45.0	<0.01	0.06
HTL010 13+00S (-)	2.18	51.6	2030	37.3	11.3	0.001	0.112	5.11	3.9	2.1	0.6	97.6	<0.01	0.07
HTL010 13+25S (-)	1.39	27.7	1680	18.5	8.6	<0.001	0.159	1.82	2.3	1.4	0.6	44.2	<0.01	0.08
HTL010 13+50S (-)	1.86	49.0	2200	35.8	11.7	0.002	0.104	4.29	3.9	2.1	0.5	94.0	<0.01	0.07
HTL010 13+75S (-)	1.51	58.1	2290	42.2	17.0	0.001	0.085	5.29	5.3	1.9	0.9	74.4	<0.01	0.10
HTL010 14+00S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+50S (-)	2.02	54.2	2160	48.6	8.6	<0.001	0.103	4.73	4.6	2.0	0.9	95.6	<0.01	0.10
HTL010 14+75S (-)	0.80	21.2	2030	20.7	4.3	0.001	0.267	1.40	1.1	1.7	<0.2	57.6	0.02	0.03
HTL010 15+00S (-)	1.52	59.4	2510	64.5	11.4	0.001	0.082	4.73	5.7	2.0	1.1	81.9	<0.01	0.10
HTL010 15+25S (-)	2.03	43.9	2220	39.9	15.3	<0.001	0.096	2.93	4.5	1.9	0.8	75.4	<0.01	0.06
HTL010 15+50S (-)	2.06	26.7	1080	12.8	10.8	<0.001	0.112	1.69	2.0	1.4	0.8	30.7	<0.01	0.05
HTL011 00+00E (-)	2.36	22.9	1120	28.5	50.9	<0.001	0.029	5.03	7.6	0.6	1.5	142	<0.01	0.03

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL011 00+25E (-)	2.46	17.0	922	20.2	45.2	<0.001	0.027	5.17	10.1	0.4	1.9	105	0.01	0.01
HTL011 00+50E (-)	3.35	19.9	1050	24.8	45.5	<0.001	0.034	8.96	7.6	0.6	1.6	88.3	<0.01	0.02
HTL011 00+75E (-)	3.32	19.7	1070	20.7	34.8	<0.001	0.031	6.13	6.8	0.6	1.7	54.6	<0.01	0.02
HTL011 01+00E (-)	3.59	20.1	1110	22.3	64.0	<0.001	0.029	6.38	8.0	0.5	1.9	58.4	0.01	0.03
HTL011 01+25E (-)	2.46	19.8	1200	20.5	59.7	<0.001	0.026	5.64	7.7	0.6	1.6	65.2	0.01	0.03
HTL011 01+50E (-)	0.48	12.2	894	18.6	38.6	<0.001	0.017	3.02	7.6	0.3	1.5	59.7	<0.01	0.03
HTL011 01+75E (-)	3.63	32.9	1000	27.1	26.6	<0.001	0.059	4.69	3.5	0.9	1.2	46.5	<0.01	0.06
HTL011 02+00E (-)	2.36	32.1	1120	26.8	52.2	<0.001	0.043	3.60	8.2	1.0	1.5	92.0	<0.01	0.08
HTL011 02+25E (-)	1.86	16.9	889	20.9	49.5	<0.001	0.023	2.35	5.4	0.5	1.1	58.8	<0.01	0.03
HTL011 02+50E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 02+75E (-)	1.36	19.4	1520	17.6	22.3	<0.001	0.074	2.97	5.2	0.5	1.0	131	0.02	0.05
HTL011 03+00E (-)	0.32	15.1	954	14.3	2.6	0.001	0.200	0.91	1.9	0.4	0.4	417	0.02	0.08
HTL011 03+25E (-)	1.31	43.8	1920	17.9	20.7	0.001	0.094	6.37	4.8	2.3	0.6	95.0	0.01	0.08
HTL011 03+50E (-)	0.95	39.1	2290	26.7	25.1	0.001	0.143	5.60	5.0	2.0	1.5	92.4	<0.01	0.09
HTL011 03+75E (-)	1.25	50.3	1690	28.4	16.3	<0.001	0.072	7.47	4.7	1.2	1.7	81.0	0.01	0.09
HTL011 04+00E (-)	0.97	26.8	927	31.0	26.6	<0.001	0.043	2.82	6.1	0.7	1.8	90.1	<0.01	0.04
HTL011 04+25E (-)	2.00	49.9	1110	29.6	17.9	<0.001	0.098	7.34	3.7	1.7	1.1	61.1	<0.01	0.10
HTL011 04+50E (-)	1.55	18.6	822	41.2	17.4	<0.001	0.094	2.27	4.3	1.1	2.5	172	<0.01	0.10
HTL011 04+75E (-)	1.32	22.1	825	56.3	17.1	<0.001	0.062	3.94	2.7	1.0	2.0	97.4	<0.01	0.15
HTL011 05+00E (-)	0.50	11.5	861	77.1	3.8	<0.001	0.052	1.20	3.0	0.4	0.9	215	<0.01	0.02
HTL011 05+25E (-)	1.94	23.2	891	97.1	26.8	<0.001	0.064	3.09	2.6	0.7	1.9	116	<0.01	0.12
HTL011 05+50E (-)	1.83	42.0	934	36.8	11.9	0.003	0.111	3.26	4.2	4.2	4.2	60.7	<0.01	0.38
HTL011 05+75E (-)	1.89	21.7	806	27.4	12.0	<0.001	0.142	2.25	2.5	2.1	2.5	51.2	<0.01	0.11
HTL011 06+00E (-)	1.93	31.7	912	35.9	18.0	0.001	0.073	3.99	4.1	1.6	2.2	69.0	<0.01	0.19
HTL011 06+25E (-)	1.59	37.2	904	58.9	20.5	<0.001	0.061	3.99	4.5	1.0	2.7	118	<0.01	0.46
HTL011 06+50E (-)	0.92	40.3	807	60.3	23.7	<0.001	0.037	4.63	6.7	0.6	4.2	139	<0.01	0.14
HTL011 06+75E (-)	2.00	37.6	1020	59.9	19.3	<0.001	0.048	4.43	3.9	0.9	3.1	136	<0.01	0.17
HTL011 07+00E (-)	2.13	40.5	835	37.7	21.3	<0.001	0.050	4.22	3.5	0.8	2.2	114	<0.01	0.15
HTL011 07+25E (-)	1.90	37.2	963	48.6	29.4	<0.001	0.037	3.83	4.9	0.6	2.8	109	<0.01	0.15
HTL011 07+50E (-)	1.65	45.9	1160	45.7	24.1	<0.001	0.049	2.67	5.9	0.9	2.7	117	<0.01	0.14
HTL011 07+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 08+00E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL011 08+25E (-)	0.98	28.3	1270	49.5	23.6	<0.001	0.047	4.57	6.9	1.0	3.4	103	<0.01	0.23
HTL011 08+50E (-)	0.81	26.2	1150	50.5	30.2	<0.001	0.050	3.77	8.6	1.2	4.9	92.7	<0.01	0.24
HTL011 08+75E (-)	1.09	29.8	1060	60.6	25.2	0.002	0.139	4.07	4.7	2.0	7.8	113	<0.01	0.43
HTL011 09+00E (-)	0.89	27.9	1070	64.2	27.0	<0.001	0.036	3.24	7.2	0.7	2.5	117	<0.01	0.11
HTL011 09+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 09+50E (-)	2.29	33.2	1290	49.8	28.4	<0.001	0.041	2.89	5.2	0.7	1.7	76.8	<0.01	0.13
HTL011 09+75E (-)	1.71	28.1	838	52.3	24.6	<0.001	0.041	2.53	5.4	0.5	1.6	144	<0.01	0.10
HTL011 10+00E (-)	0.90	27.7	1080	61.8	27.9	<0.001	0.040	5.30	6.3	0.8	2.4	152	<0.01	0.27
HTL011 10+25E (-)	1.34	33.1	1190	81.6	10.5	<0.001	0.088	2.92	6.6	1.1	2.0	100	<0.01	0.59
HTL011 10+50E (-)	1.27	39.9	1700	60.6	12.2	<0.001	0.065	4.96	4.9	0.8	2.0	60.6	<0.01	0.22
HTL011 10+75E (-)	0.62	22.7	623	71.8	29.5	0.001	0.057	7.99	7.4	1.1	5.3	61.4	<0.01	0.06
HTL011 11+00E (-)	0.91	22.7	1000	41.6	8.0	<0.001	0.049	9.54	3.5	1.0	3.0	35.6	<0.01	0.08
HTL011 11+25E (-)	0.60	34.8	1250	33.9	8.4	<0.001	0.033	4.33	4.4	0.6	2.2	55.0	<0.01	0.07
HTL011 11+50E (-)	1.65	32.7	1470	33.5	15.6	<0.001	0.042	4.90	4.0	0.8	1.2	88.7	<0.01	0.11
HTL011 11+75E (-)	3.06	24.4	1100	56.5	10.9	<0.001	0.078	3.33	2.7	0.9	1.7	85.6	<0.01	0.26
HTL011 12+00E (-)	2.45	32.0	839	29.8	14.9	<0.001	0.041	3.72	4.6	0.9	1.5	82.6	<0.01	0.10
HTL011 12+25E (-)	2.32	19.3	1190	33.3	9.6	<0.001	0.113	4.60	2.7	0.7	1.1	53.4	<0.01	0.10
HTL011 12+50E (-)	1.51	22.7	1520	32.7	13.9	<0.001	0.063	6.97	4.9	0.6	1.3	66.4	<0.01	0.29
HTL011 12+75E (-)	1.24	40.5	1570	41.8	20.6	<0.001	0.050	10.7	4.6	1.4	0.8	144	<0.01	0.07
HTL011 13+00E (-)	1.66	40.3	1300	21.2	24.3	<0.001	0.035	5.40	5.2	0.6	1.7	53.7	<0.01	0.11
HTL011 13+25E (-)	1.66	18.1	1070	24.4	6.3	0.001	0.241	2.18	1.5	1.8	1.1	58.4	0.01	0.03
HTL011 13+50E (-)	0.74	13.3	1110	19.3	5.1	<0.001	0.305	1.21	0.9	2.3	2.3	57.8	0.01	0.04
HTL011 13+75E (-)	1.93	33.3	1090	31.9	9.7	<0.001	0.081	3.10	2.9	1.4	0.9	116	<0.01	0.08
HTL011 14+00E (-)	2.28	35.2	813	28.6	10.9	<0.001	0.080	3.28	2.8	0.9	0.8	61.4	<0.01	0.08
HTL011 14+25E (-)	1.96	35.6	1420	37.5	13.3	<0.001	0.054	2.77	3.7	1.1	0.6	73.5	<0.01	0.06
HTL011 14+50E (-)	1.76	34.0	1240	33.2	8.9	<0.001	0.116	2.71	2.6	0.9	0.5	50.6	<0.01	0.05
HTL011 14+75E (-)	1.54	40.5	1620	26.3	12.9	<0.001	0.043	4.14	2.6	0.9	0.6	129	<0.01	0.05
HTL011 15+00E (-)	1.79	48.1	1290	36.8	12.5	<0.001	0.040	4.29	4.2	1.1	0.7	116	<0.01	0.07
HTL012 00+00E (-)	2.42	82.5	1440	14.8	25.7	0.007	0.158	20.0	3.0	2.8	0.7	56.0	<0.01	0.04
HTL012 00+25E (-)	2.07	52.7	1590	18.0	34.3	<0.001	0.023	17.9	4.0	0.4	1.4	49.8	<0.01	0.05
HTL012 00+50E (-)	2.28	55.1	1620	17.5	21.6	0.016	0.193	19.4	2.9	4.2	0.6	73.2	<0.01	0.05
HTL012 00+75E (-)	1.99	48.9	1950	19.2	23.5	<0.001	0.025	19.6	3.4	1.4	0.6	61.3	<0.01	0.06

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

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ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 DATE RECEIVED: Sep 26, 2011 DATE REPORTED: Oct 24, 2011 SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL012 01+00E (-)	2.77	45.1	1450	18.9	22.4	0.002	0.049	16.5	3.2	2.5	0.6	52.0	<0.01	0.05
HTL012 01+25E (-)	3.04	42.4	1470	17.9	17.9	0.003	0.098	14.2	3.5	3.4	0.6	54.0	<0.01	0.04
HTL012 01+50E (-)	2.71	43.0	1500	17.2	19.2	0.002	0.051	13.3	3.0	1.8	0.6	58.3	<0.01	0.05
HTL012 01+75E (-)	1.66	44.0	1770	18.0	24.5	<0.001	0.018	14.7	3.8	0.6	0.7	46.7	<0.01	0.05
HTL012 02+00E (-)	1.66	27.9	1120	13.0	11.7	0.001	0.116	8.45	2.0	1.9	0.5	29.8	0.02	0.04
HTL012 02+25E (-)	1.53	36.0	1330	18.4	18.7	<0.001	0.057	13.9	1.5	0.9	0.6	20.6	<0.01	0.05
HTL012 02+50E (-)	1.84	51.9	1870	19.4	25.8	<0.001	0.017	31.6	3.3	0.6	0.6	51.2	<0.01	0.06
HTL012 02+75E (-)	1.49	27.8	836	17.0	13.2	<0.001	0.050	14.5	1.1	0.7	0.8	16.5	<0.01	0.06
HTL012 03+00E (-)	0.68	18.7	944	11.8	10.6	<0.001	0.072	8.05	0.5	0.7	0.5	15.5	<0.01	0.04
HTL012 03+25E (-)	3.22	49.3	1500	22.4	19.1	<0.001	0.065	15.1	3.2	1.7	0.6	19.2	<0.01	0.06
HTL012 03+50E (-)	1.19	34.8	1090	19.2	16.7	<0.001	0.055	12.0	1.5	1.2	0.8	19.6	<0.01	0.05
HTL012 03+75E (-)	1.02	29.5	973	13.9	11.2	<0.001	0.051	10.3	1.1	1.0	0.6	14.6	<0.01	0.04
HTL012 04+00E (-)	0.71	46.4	1660	18.0	16.9	<0.001	0.045	14.8	1.5	0.8	0.5	24.9	<0.01	0.06
HTL012 04+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 04+50E (-)	1.34	35.5	1290	10.4	15.1	0.012	0.315	5.84	2.0	7.0	0.4	76.9	<0.01	0.02
HTL012 04+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 05+00E (-)	1.38	56.9	1280	18.5	23.9	0.006	0.133	11.1	3.1	4.2	0.6	70.8	<0.01	0.07
HTL012 05+50E (-)	0.55	15.1	1170	4.7	4.6	0.008	0.187	3.54	0.9	3.4	0.2	44.7	<0.01	0.01
HTL012 05+75E (-)	0.80	28.4	2210	9.6	9.2	0.011	0.340	11.2	1.4	7.5	0.4	58.8	<0.01	0.02
HTL013 00+00W (-)	2.09	36.9	1690	20.3	15.6	<0.001	0.032	12.8	2.6	0.6	0.5	72.2	<0.01	0.05
HTL013 00+25W (-)	2.18	41.6	1600	22.2	17.5	<0.001	0.030	15.2	3.0	0.7	0.6	82.9	<0.01	0.06
HTL013 00+50W (-)	2.52	38.2	1680	23.0	13.8	<0.001	0.039	11.1	2.7	0.7	0.6	88.5	<0.01	0.05
HTL013 00+75W (-)	2.57	42.0	1900	20.2	17.2	<0.001	0.038	10.8	3.2	0.8	0.6	67.0	<0.01	0.05
HTL013 01+00W (-)	1.69	32.7	2330	20.6	25.0	0.001	0.046	12.7	3.1	0.8	0.9	125	<0.01	0.06
HTL013 01+25W (-)	2.50	43.7	1600	23.3	19.2	0.001	0.052	16.2	3.1	1.1	0.6	77.0	<0.01	0.06
HTL013 01+50W (-)	1.94	31.1	2150	19.7	21.0	0.002	0.073	13.6	2.8	1.4	0.7	117	<0.01	0.06
HTL013 01+75W (-)	1.62	37.6	1950	21.6	28.3	0.002	0.113	13.9	3.5	1.4	0.9	100	<0.01	0.07
HTL013 02+00W (-)	2.71	34.8	2240	20.1	25.3	<0.001	0.041	13.7	3.1	0.9	0.7	110	<0.01	0.06
HTL013 02+25W (-)	2.46	28.5	1950	18.1	22.6	0.001	0.078	12.1	2.4	1.5	0.7	96.6	<0.01	0.06
HTL013 02+50W (-)	3.01	39.3	1910	19.8	23.2	0.001	0.069	13.9	3.2	2.2	0.7	93.1	<0.01	0.07
HTL013 02+75W (-)	1.56	37.8	1500	18.3	19.4	0.002	0.083	10.5	2.4	1.9	0.7	49.0	<0.01	0.04
HTL013 03+00W (-)	2.38	46.4	1710	21.1	19.8	<0.001	0.035	11.6	3.3	0.8	0.9	75.8	<0.01	0.06

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
HTL013 00+25E (-)	2.53	46.0	1780	20.3	20.6	0.001	0.044	10.9	2.6	1.1	0.7	65.2	<0.01	0.06
HTL013 00+50E (-)	2.81	35.6	1580	18.6	20.6	0.004	0.082	11.0	3.1	2.1	0.6	63.9	<0.01	0.05
HTL013 00+75E (-)	3.36	32.4	1630	22.4	22.4	0.001	0.045	10.7	3.6	1.3	0.9	72.3	<0.01	0.05
HTL013 01+00E (-)	2.03	33.4	1760	22.4	17.8	<0.001	0.023	17.6	3.5	0.7	1.1	104	<0.01	0.05
HTL013 01+25E (-)	4.04	38.5	1500	24.1	16.8	0.003	0.079	14.3	4.1	2.0	0.9	70.9	<0.01	0.05
HTL013 01+50E (-)	3.23	39.8	1630	19.2	15.8	0.001	0.041	12.5	3.7	0.7	0.9	69.3	<0.01	0.06
HTL013 01+75E (-)	1.95	42.7	1690	21.0	20.1	<0.001	0.026	14.5	3.5	0.5	1.0	79.8	<0.01	0.05
HTL013 02+00E (-)	3.04	38.8	1380	20.4	20.4	0.001	0.036	11.0	3.4	1.3	0.9	69.2	<0.01	0.04
HTL013 02+25E (-)	2.55	45.1	1430	20.7	19.1	<0.001	0.028	14.4	4.2	0.5	1.1	59.5	<0.01	0.05
HTL013 02+50E (-)	3.18	37.5	1630	16.3	19.3	0.001	0.046	16.2	3.4	1.7	1.0	78.5	<0.01	0.04
HTL013 02+75E (-)	2.08	45.6	1940	21.2	20.5	<0.001	0.023	19.5	3.7	0.6	0.9	74.6	<0.01	0.06
HTL013 03+00E (-)	2.06	47.2	1600	18.1	21.7	<0.001	0.020	17.7	4.0	0.6	1.3	58.6	<0.01	0.05
HTL014 00+00N (-)	1.85	40.0	1440	39.5	19.6	<0.001	0.086	16.6	3.1	0.9	1.4	123	<0.01	0.18
HTL014 00+25N (-)	2.32	17.0	1010	27.4	20.3	<0.001	0.068	17.3	2.7	0.6	2.1	103	<0.01	0.25
HTL014 00+50N (-)	2.36	28.0	1280	38.2	22.0	<0.001	0.062	20.2	3.9	0.9	2.1	142	<0.01	0.26
HTL014 00+75N (-)	2.67	24.3	1040	36.0	22.0	<0.001	0.062	14.7	3.5	0.5	1.7	150	<0.01	0.17
HTL014 01+00N (-)	1.69	47.8	1440	56.3	35.3	<0.001	0.037	18.5	5.2	0.8	1.5	244	<0.01	0.35
HTL014 01+25N (-)	3.90	23.7	934	29.8	26.7	<0.001	0.115	4.24	3.3	1.3	1.0	145	<0.01	0.08
HTL014 01+50N (-)	3.53	28.7	929	43.6	30.9	<0.001	0.054	7.61	4.6	0.8	1.3	141	<0.01	0.11
HTL014 01+75N (-)	3.27	27.7	1050	40.6	21.4	<0.001	0.081	7.05	3.7	1.0	1.1	167	<0.01	0.11
HTL014 02+00N (-)	3.09	28.5	1070	27.9	18.0	<0.001	0.047	5.68	4.2	1.0	0.9	163	<0.01	0.09
HTL014 02+25N (-)	1.04	36.6	1290	23.3	9.8	<0.001	0.069	5.71	4.7	1.1	1.0	108	<0.01	0.03
HTL014 02+50N (-)	2.78	35.6	745	15.9	16.8	<0.001	0.046	6.83	3.3	2.2	0.9	157	<0.01	0.03
HTL014 02+75N (-)	3.32	25.1	1010	22.8	23.9	<0.001	0.057	4.67	3.8	1.2	1.1	279	<0.01	0.04
HTL014 03+00N (-)	1.58	9.1	619	46.9	22.0	<0.001	0.057	5.52	3.8	0.3	1.4	375	<0.01	0.04
HTL014 03+25N (-)	1.55	8.9	705	40.7	27.0	<0.001	0.045	2.50	4.3	0.3	1.4	391	<0.01	0.04
HTL014 03+50N (-)	1.37	10.6	589	48.2	26.5	<0.001	0.059	2.72	4.8	<0.2	1.6	299	<0.01	0.04
HTL014 03+75N (-)	2.07	9.6	636	40.3	33.4	<0.001	0.067	1.68	4.4	<0.2	1.3	361	<0.01	0.02
HTL014 04+00N (-)	0.71	11.3	580	44.1	32.3	<0.001	0.042	1.95	4.4	<0.2	1.4	435	<0.01	0.02
HTL014 04+25N (-)	0.55	12.5	711	45.4	36.0	<0.001	0.043	2.26	5.4	0.4	1.5	281	<0.01	0.03
RZHTD011 (-)	1.39	84.4	4380	27.5	37.9	0.002	0.125	5.35	4.1	4.1	1.9	96.6	<0.01	0.19
RZHTD012 (-)	2.25	16.5	941	21.3	65.4	<0.001	0.037	16.4	3.5	0.5	1.4	97.0	<0.01	0.07

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
RZHTD013 (-)	1.34	57.6	3750	26.7	31.4	0.002	0.270	4.79	3.8	5.3	0.8	127	0.01	0.42
RZHTD014 (-)	2.39	31.5	5360	31.2	16.9	<0.001	0.410	1.46	2.1	4.1	1.0	163	0.02	1.80
RZHTD015 (-)	0.52	25.4	1180	43.8	94.7	<0.001	0.031	2.11	7.2	0.2	0.4	14.3	<0.01	0.05
RZHTD016 (-)	0.21	44.3	849	66.7	3.0	0.003	0.141	10.4	1.8	3.9	9.6	56.2	<0.01	6.70
RZHTD017 (-)	2.17	40.2	1820	47.4	33.9	<0.001	0.190	6.87	4.2	3.1	1.6	169	<0.01	0.21
RZHTD018 (-)	1.33	28.6	1220	55.5	17.5	<0.001	0.121	2.61	2.0	0.8	1.1	323	<0.01	0.09
RZHTD019 (-)	1.76	25.5	995	55.0	16.0	<0.001	0.108	2.93	4.1	2.6	2.0	112	<0.01	0.47
RZHTD020 (-)	1.51	14.2	738	73.2	7.1	0.002	0.362	3.05	2.2	8.9	2.8	84.1	<0.01	0.56
RZHTD008A (-)	1.95	15.3	757	31.7	41.2	<0.001	0.125	1.29	3.4	0.5	1.0	354	<0.01	0.04
AHHTD001 (-)	3.10	25.5	976	231	55.9	<0.001	0.026	22.1	5.1	1.7	1.9	35.9	<0.01	0.20
AHHTD002 (-)	0.93	23.2	1120	854	40.6	<0.001	0.022	377	15.5	0.9	3.0	78.6	<0.01	0.13
AHHTS001 (-)	0.89	12.7	823	207	30.9	<0.001	0.034	81.5	4.9	0.5	1.5	86.6	<0.01	0.04
AHHTS002 (-)	1.18	17.3	729	211	38.5	<0.001	0.032	76.2	5.4	0.6	1.8	109	<0.01	0.07
AHHTS003 (-)	0.94	23.1	3480	18.0	18.2	0.002	0.106	9.96	2.1	0.7	0.6	127	<0.01	0.05
AHHTS004 (-)	0.88	23.6	2580	16.1	18.4	0.002	0.092	10.1	2.1	0.8	0.5	131	<0.01	0.05

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL010 00+00S (-)	7.7	0.098	0.53	20.0	95.9	1.54	9.26	112	0.9
HTL010 00+25S (-)	9.4	0.136	0.63	20.8	111	1.58	12.0	180	1.4
HTL010 00+50S (-)	20.4	0.252	0.82	7.41	99.7	1.28	10.0	82.8	1.0
HTL010 00+75S (-)	22.6	0.223	0.74	13.0	101	2.06	11.1	101	1.0
HTL010 01+00S (-)	19.9	0.212	0.77	4.46	116	2.11	13.2	96.4	2.3
HTL010 01+25S (-)	19.9	0.204	0.69	10.6	95.0	1.05	11.0	94.1	0.7
HTL010 01+50S (-)	18.6	0.213	0.76	9.15	112	1.78	10.9	107	0.7
HTL010 01+75S (-)	19.3	0.205	0.67	10.8	96.5	0.94	10.5	88.5	0.6
HTL010 02+00S (-)	15.8	0.175	0.73	8.86	87.6	0.62	9.23	82.3	0.7
HTL010 02+25S (-)	17.9	0.171	0.60	10.5	101	0.69	11.6	102	0.8
HTL010 02+50S (-)	14.6	0.197	0.64	9.24	122	1.00	12.5	120	0.9
HTL010 02+75S (-)	19.4	0.202	0.69	11.9	91.5	1.18	10.9	76.3	2.3
HTL010 03+00S (-)	20.5	0.200	0.78	25.4	104	1.02	11.7	104	1.0
HTL010 03+25S (-)	14.9	0.148	0.54	22.1	108	0.92	12.3	123	0.6
HTL010 03+50S (-)	14.0	0.152	0.49	7.89	127	1.84	20.1	233	0.7
HTL010 03+75S (-)	3.2	0.087	0.41	6.58	156	0.46	16.1	283	<0.5
HTL010 04+00S (-)	3.0	0.091	0.32	10.8	130	0.65	15.6	282	<0.5
HTL010 04+25S (-)	1.0	0.067	0.28	4.82	127	0.46	9.49	131	0.6
HTL010 04+50S (-)	7.2	0.169	0.45	3.84	122	0.53	9.06	138	1.5
HTL010 04+75S (-)	7.2	0.143	0.37	2.73	85.0	0.40	10.1	101	1.0
HTL010 05+00S (-)	5.9	0.162	0.34	2.99	108	0.44	11.9	119	1.2
HTL010 05+25S (-)	8.4	0.239	0.49	3.10	119	1.72	14.7	140	3.0
HTL010 05+50S (-)	6.7	0.125	0.36	7.62	125	0.96	16.0	231	0.9
HTL010 05+75S (-)	10.8	0.133	0.34	5.48	104	16.5	13.6	159	1.2
HTL010 06+00S (-)	11.2	0.126	0.32	5.30	112	10.4	14.0	170	3.0
HTL010 06+25S (-)	10.5	0.127	0.34	5.40	115	16.1	14.2	171	2.2
HTL010 06+50S (-)	3.1	0.080	0.29	8.09	143	2.88	16.6	290	0.9
HTL010 06+75S (-)	<0.1	0.010	0.09	1.16	28.1	<0.05	1.62	45.1	<0.5
HTL010 07+00S (-)	4.4	0.115	0.34	4.89	93.3	0.51	9.20	228	0.7
HTL010 07+25S (-)	1.4	0.058	0.25	6.23	107	0.17	12.4	250	<0.5
HTL010 07+50S (-)	1.9	0.062	0.23	3.03	87.7	0.25	15.1	257	0.9
HTL010 07+75S (-)	0.2	0.034	0.25	4.22	127	0.20	13.2	219	<0.5

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DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL010 08+00S (-)	2.5	0.095	0.31	5.24	115	0.26	12.9	238	0.6
HTL010 08+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 08+50S (-)	2.5	0.047	0.21	4.00	112	0.20	13.9	196	1.3
HTL010 08+75S (-)	3.4	0.051	0.16	4.78	85.0	0.20	12.0	168	1.8
HTL010 09+00S (-)	2.7	0.057	0.19	4.55	113	1.85	10.6	214	2.1
HTL010 09+25S (-)	3.0	0.050	0.18	5.86	112	0.26	11.5	221	4.0
HTL010 09+50S (-)	5.0	0.058	0.27	9.96	214	0.27	22.4	391	3.2
HTL010 09+75S (-)	1.0	0.067	0.23	1.90	83.3	0.05	3.31	57.3	0.6
HTL010 10+00S (-)	3.7	0.061	0.31	9.78	206	<0.05	24.2	402	7.5
HTL010 10+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 10+50S (-)	2.6	0.083	0.39	3.69	158	0.26	10.0	337	2.7
HTL010 10+75S (-)	2.6	0.049	0.26	4.08	158	0.47	6.05	185	3.0
HTL010 11+00S (-)	3.9	0.067	0.25	9.83	189	0.20	19.3	380	4.1
HTL010 11+25S (-)	2.6	0.073	0.28	4.79	199	0.29	9.25	262	3.9
HTL010 11+50S (-)	1.7	0.044	0.25	3.70	130	0.23	6.50	240	1.6
HTL010 11+75S (-)	2.2	0.030	0.28	6.45	148	0.78	9.42	455	2.3
HTL010 12+00S (-)	1.7	0.031	0.22	6.25	93.1	0.10	9.60	218	4.2
HTL010 12+25S (-)	2.5	0.060	0.14	5.11	112	0.19	13.5	256	3.6
HTL010 12+50S (-)	4.1	0.075	0.27	5.95	192	0.52	7.96	366	3.2
HTL010 12+75S (-)	1.4	0.048	0.22	6.16	139	0.27	11.5	200	2.4
HTL010 13+00S (-)	3.1	0.072	0.20	8.22	142	0.26	15.6	315	3.4
HTL010 13+25S (-)	2.0	0.035	0.27	3.64	123	0.34	6.41	150	3.3
HTL010 13+50S (-)	2.7	0.062	0.17	6.97	118	0.21	17.3	235	3.0
HTL010 13+75S (-)	6.6	0.082	0.33	9.40	162	1.57	19.9	351	2.9
HTL010 14+00S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+25S (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL010 14+50S (-)	4.1	0.070	0.23	6.09	150	1.79	16.5	213	3.6
HTL010 14+75S (-)	0.8	0.018	0.17	2.83	46.0	<0.05	13.5	55.5	3.3
HTL010 15+00S (-)	3.6	0.057	0.25	8.45	187	0.59	22.3	288	4.0
HTL010 15+25S (-)	2.7	0.063	0.20	7.24	118	0.37	17.3	249	3.1
HTL010 15+50S (-)	0.7	0.077	0.54	2.26	180	0.26	5.66	92.7	2.4
HTL011 00+00E (-)	29.2	0.232	0.49	8.56	86.5	1.64	13.3	60.3	1.9

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

5623 McADAM ROAD
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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL011 00+25E (-)	24.0	0.152	0.48	3.62	76.4	0.66	10.3	42.4	0.7
HTL011 00+50E (-)	25.8	0.206	0.63	4.89	87.6	0.56	9.32	53.3	0.6
HTL011 00+75E (-)	23.4	0.167	0.48	4.41	78.0	1.49	9.85	55.0	0.7
HTL011 01+00E (-)	24.6	0.190	0.62	5.93	92.1	1.24	12.5	59.9	0.7
HTL011 01+25E (-)	24.7	0.176	0.59	4.14	86.1	0.97	12.0	56.8	1.0
HTL011 01+50E (-)	33.5	0.093	0.41	2.92	55.7	<0.05	11.2	30.8	2.4
HTL011 01+75E (-)	7.7	0.174	0.41	3.52	101	1.36	6.06	120	0.9
HTL011 02+00E (-)	20.4	0.216	0.59	15.1	106	1.91	11.5	85.4	0.8
HTL011 02+25E (-)	29.0	0.182	0.46	7.23	66.6	0.29	8.31	45.0	0.8
HTL011 02+50E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 02+75E (-)	16.8	0.063	0.29	2.87	67.8	0.39	10.9	63.4	1.9
HTL011 03+00E (-)	4.0	0.051	0.04	1.85	45.8	0.19	9.30	33.7	8.0
HTL011 03+25E (-)	5.8	0.121	0.19	4.71	136	0.53	10.6	176	1.0
HTL011 03+50E (-)	7.1	0.116	0.32	5.33	234	0.58	13.2	203	1.0
HTL011 03+75E (-)	6.6	0.096	0.21	4.84	129	0.67	12.7	198	0.8
HTL011 04+00E (-)	11.4	0.076	0.32	3.09	91.0	0.27	11.2	116	<0.5
HTL011 04+25E (-)	3.5	0.101	0.32	4.13	144	0.69	9.68	195	0.7
HTL011 04+50E (-)	8.8	0.049	0.41	4.07	89.1	0.29	6.46	95.3	<0.5
HTL011 04+75E (-)	4.6	0.033	0.39	3.87	84.4	0.46	5.79	123	<0.5
HTL011 05+00E (-)	15.4	<0.005	0.09	4.78	41.2	0.66	6.70	118	1.9
HTL011 05+25E (-)	6.8	0.061	0.44	2.94	85.9	0.37	4.61	139	<0.5
HTL011 05+50E (-)	9.3	0.047	0.30	5.99	79.8	0.55	6.55	91.2	1.1
HTL011 05+75E (-)	2.9	0.055	0.24	7.55	68.1	0.59	4.97	69.4	1.5
HTL011 06+00E (-)	8.2	0.091	0.36	6.35	107	0.77	6.32	111	0.8
HTL011 06+25E (-)	17.9	0.123	0.68	3.57	102	0.70	7.80	112	1.0
HTL011 06+50E (-)	15.7	0.061	0.41	6.00	83.7	0.69	10.6	117	1.4
HTL011 06+75E (-)	12.7	0.108	0.46	2.88	111	0.58	7.34	105	<0.5
HTL011 07+00E (-)	9.1	0.109	0.41	2.30	118	1.07	5.42	109	<0.5
HTL011 07+25E (-)	16.6	0.121	0.49	3.37	115	0.78	8.02	105	1.0
HTL011 07+50E (-)	15.5	0.083	0.41	4.52	88.0	1.03	8.15	87.3	0.9
HTL011 07+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 08+00E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919
PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL011 08+25E (-)	19.8	0.105	0.54	6.80	89.5	1.13	11.3	97.3	1.6
HTL011 08+50E (-)	24.3	0.121	0.64	8.00	92.8	0.99	13.8	89.6	2.5
HTL011 08+75E (-)	20.0	0.120	0.48	10.2	78.6	1.14	8.25	66.9	1.4
HTL011 09+00E (-)	20.8	0.095	0.40	3.37	87.2	1.44	10.5	105	2.6
HTL011 09+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL011 09+50E (-)	16.0	0.137	0.42	3.97	107	1.20	8.31	113	1.5
HTL011 09+75E (-)	15.6	0.104	0.38	3.51	100	0.98	8.48	77.9	0.8
HTL011 10+00E (-)	22.2	0.054	0.53	5.70	82.1	1.82	8.57	84.6	1.9
HTL011 10+25E (-)	10.5	0.034	0.39	10.0	71.9	3.03	9.00	104	0.8
HTL011 10+50E (-)	5.8	0.055	0.29	3.64	116	3.62	9.59	147	0.5
HTL011 10+75E (-)	27.8	0.053	0.43	6.22	103	1.79	14.1	108	4.0
HTL011 11+00E (-)	4.2	0.031	0.27	2.10	76.1	1.16	13.9	133	1.8
HTL011 11+25E (-)	6.3	0.047	0.21	2.16	97.0	0.89	10.7	192	2.1
HTL011 11+50E (-)	5.3	0.074	0.21	3.23	112	0.65	9.60	299	0.7
HTL011 11+75E (-)	3.9	0.077	0.20	1.97	113	0.65	5.08	139	1.1
HTL011 12+00E (-)	7.3	0.084	0.26	2.85	115	0.56	10.5	151	2.8
HTL011 12+25E (-)	1.5	0.062	0.29	2.09	126	0.94	5.89	142	1.0
HTL011 12+50E (-)	4.0	0.066	0.23	3.22	129	1.37	11.0	196	1.1
HTL011 12+75E (-)	6.3	0.057	0.28	3.50	143	2.05	11.5	273	3.6
HTL011 13+00E (-)	6.6	0.080	0.33	2.13	139	3.01	8.33	252	5.1
HTL011 13+25E (-)	1.3	0.039	0.23	3.17	57.4	0.36	14.9	94.4	1.9
HTL011 13+50E (-)	0.9	0.021	0.15	1.78	21.5	0.16	5.55	109	1.5
HTL011 13+75E (-)	5.3	0.064	0.23	3.37	83.1	1.62	13.2	184	1.6
HTL011 14+00E (-)	3.4	0.071	0.20	1.65	89.9	1.07	7.19	206	1.7
HTL011 14+25E (-)	5.3	0.079	0.21	3.25	88.3	0.55	12.7	299	0.8
HTL011 14+50E (-)	1.8	0.049	0.26	2.58	109	0.55	11.1	203	1.2
HTL011 14+75E (-)	6.0	0.076	0.21	2.87	90.7	0.51	13.2	242	2.5
HTL011 15+00E (-)	6.8	0.082	0.26	3.63	122	0.64	15.4	328	3.8
HTL012 00+00E (-)	3.4	0.084	0.29	15.8	87.3	0.55	11.1	298	1.5
HTL012 00+25E (-)	11.0	0.122	0.24	2.85	101	0.95	12.5	188	2.3
HTL012 00+50E (-)	3.5	0.068	0.31	5.17	86.6	0.44	12.8	184	1.9
HTL012 00+75E (-)	8.4	0.085	0.23	2.47	100	0.68	13.2	173	3.7

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES   ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011   DATE RECEIVED: Sep 26, 2011   DATE REPORTED: Oct 24, 2011   SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL012 01+00E (-)	8.3	0.085	0.26	3.57	95.2	0.75	12.9	159	2.4
HTL012 01+25E (-)	7.1	0.095	0.25	4.14	91.7	0.64	12.7	165	3.1
HTL012 01+50E (-)	8.0	0.093	0.21	2.82	85.6	0.69	11.5	162	2.9
HTL012 01+75E (-)	10.7	0.097	0.29	3.20	103	1.03	14.5	170	5.5
HTL012 02+00E (-)	1.9	0.057	0.26	12.2	76.1	0.63	12.4	87.5	0.8
HTL012 02+25E (-)	1.1	0.055	0.29	2.75	93.6	0.89	8.16	129	<0.5
HTL012 02+50E (-)	8.5	0.087	0.29	2.34	98.3	0.84	13.3	174	3.1
HTL012 02+75E (-)	0.6	0.050	0.27	1.92	117	1.70	6.59	102	0.5
HTL012 03+00E (-)	0.1	0.037	0.19	1.80	65.2	0.43	4.55	67.8	<0.5
HTL012 03+25E (-)	4.6	0.084	0.33	3.35	105	1.02	10.6	198	1.1
HTL012 03+50E (-)	0.8	0.052	0.33	2.21	107	0.82	7.31	120	<0.5
HTL012 03+75E (-)	0.6	0.048	0.23	1.80	79.3	0.62	5.70	95.4	<0.5
HTL012 04+00E (-)	0.9	0.043	0.35	2.82	105	0.92	9.02	164	<0.5
HTL012 04+25E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 04+50E (-)	1.5	0.041	0.34	12.7	54.2	0.29	6.15	105	1.6
HTL012 04+75E (-)	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC
HTL012 05+00E (-)	2.7	0.052	0.40	7.57	96.7	1.14	11.6	160	2.2
HTL012 05+50E (-)	0.4	0.033	0.20	3.03	26.1	0.14	4.78	34.2	1.6
HTL012 05+75E (-)	1.1	0.023	0.28	35.3	54.8	0.29	13.8	58.1	2.1
HTL013 00+00W (-)	5.3	0.081	0.17	2.89	88.2	0.44	11.8	141	2.9
HTL013 00+25W (-)	6.6	0.086	0.18	3.18	97.9	0.47	13.2	140	4.0
HTL013 00+50W (-)	5.3	0.080	0.20	4.07	91.0	0.45	11.9	144	4.1
HTL013 00+75W (-)	6.0	0.088	0.18	6.09	103	0.59	12.5	157	4.2
HTL013 01+00W (-)	7.8	0.113	0.16	2.35	102	0.54	14.5	159	11.9
HTL013 01+25W (-)	5.3	0.082	0.19	3.73	104	0.46	12.4	162	3.3
HTL013 01+50W (-)	6.7	0.093	0.15	3.13	94.2	0.54	13.3	161	6.0
HTL013 01+75W (-)	7.5	0.102	0.27	2.85	131	0.70	14.6	214	11.3
HTL013 02+00W (-)	6.3	0.093	0.18	3.32	108	0.69	13.6	185	6.7
HTL013 02+25W (-)	3.5	0.069	0.14	2.42	95.5	0.47	10.7	173	4.6
HTL013 02+50W (-)	4.8	0.076	0.17	5.00	106	0.64	13.9	219	6.3
HTL013 02+75W (-)	2.0	0.040	0.29	7.20	110	0.77	10.8	208	1.8
HTL013 03+00W (-)	6.3	0.104	0.29	4.06	134	1.86	12.8	229	3.3

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: SHARON BEDDOME

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
HTL013 00+25E (-)	6.0	0.082	0.24	3.59	97.0	0.79	11.5	187	4.1
HTL013 00+50E (-)	5.5	0.074	0.17	3.67	95.6	0.56	11.0	156	4.9
HTL013 00+75E (-)	8.1	0.108	0.19	3.86	110	0.67	12.9	157	8.1
HTL013 01+00E (-)	7.6	0.109	0.15	2.63	103	0.61	14.2	147	13.0
HTL013 01+25E (-)	8.9	0.109	0.25	6.14	124	0.66	13.8	157	9.8
HTL013 01+50E (-)	7.1	0.104	0.23	2.70	111	0.58	13.5	152	7.2
HTL013 01+75E (-)	7.9	0.099	0.21	2.64	104	0.73	14.0	161	7.1
HTL013 02+00E (-)	8.4	0.101	0.25	3.05	105	0.72	13.3	136	6.5
HTL013 02+25E (-)	8.8	0.109	0.25	4.89	123	1.18	15.2	156	4.4
HTL013 02+50E (-)	7.0	0.086	0.24	4.15	104	1.87	12.9	140	5.5
HTL013 02+75E (-)	8.4	0.106	0.20	3.26	111	0.67	14.6	160	8.5
HTL013 03+00E (-)	9.1	0.104	0.26	5.01	111	0.90	14.4	173	6.7
HTL014 00+00N (-)	3.6	0.055	0.33	6.67	130	0.97	9.95	136	1.0
HTL014 00+25N (-)	6.0	0.079	0.23	3.65	64.2	1.02	8.04	75.1	0.8
HTL014 00+50N (-)	8.4	0.091	0.31	5.89	98.5	0.96	11.1	121	0.7
HTL014 00+75N (-)	9.5	0.116	0.33	5.17	89.9	0.74	11.1	83.8	1.1
HTL014 01+00N (-)	18.5	0.116	0.36	4.03	127	1.91	13.9	165	3.7
HTL014 01+25N (-)	6.2	0.122	0.29	4.39	83.2	0.57	14.9	107	2.2
HTL014 01+50N (-)	14.2	0.166	0.37	4.67	99.3	0.81	14.4	113	1.9
HTL014 01+75N (-)	8.3	0.114	0.27	3.76	85.5	0.95	14.1	145	2.3
HTL014 02+00N (-)	8.9	0.112	0.24	3.53	97.9	0.54	12.7	132	2.3
HTL014 02+25N (-)	7.7	0.086	0.20	2.91	106	0.31	15.9	139	8.5
HTL014 02+50N (-)	6.2	0.094	0.28	3.34	180	0.72	9.06	147	5.2
HTL014 02+75N (-)	10.2	0.103	0.32	3.35	119	0.55	9.10	154	3.5
HTL014 03+00N (-)	24.4	0.015	0.40	3.25	45.7	0.14	8.56	34.5	1.2
HTL014 03+25N (-)	26.8	0.020	0.35	2.85	48.6	0.42	7.46	39.4	1.3
HTL014 03+50N (-)	26.7	0.028	0.38	4.13	49.6	0.69	8.96	40.0	1.6
HTL014 03+75N (-)	21.0	0.027	0.41	4.33	50.2	0.78	10.8	36.8	1.2
HTL014 04+00N (-)	26.8	0.034	0.39	3.28	52.3	0.26	9.05	37.1	1.8
HTL014 04+25N (-)	27.0	0.039	0.51	4.00	61.6	0.57	10.4	47.0	2.4
RZHTD011 (-)	5.4	0.094	0.33	8.58	132	0.50	25.7	327	0.7
RZHTD012 (-)	20.7	0.195	0.52	7.89	61.3	1.18	9.35	50.9	1.4

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 11Y532919

PROJECT NO:

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Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Sep 27, 2011 | DATE RECEIVED: Sep 26, 2011 | DATE REPORTED: Oct 24, 2011 | SAMPLE TYPE: Soil

Analyte:	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
RZHTD013 (-)	9.8	0.098	0.30	7.52	132	1.80	19.0	283	1.1
RZHTD014 (-)	7.3	0.109	0.18	4.50	54.5	1.74	9.76	61.6	1.0
RZHTD015 (-)	8.3	0.145	1.07	0.96	98.8	0.62	6.07	66.8	3.5
RZHTD016 (-)	8.0	0.025	0.16	5.56	22.0	719	6.28	158	2.4
RZHTD017 (-)	10.7	0.140	0.37	6.06	120	14.7	12.6	193	5.8
RZHTD018 (-)	8.1	0.077	0.21	3.07	33.9	4.43	15.7	176	1.5
RZHTD019 (-)	14.2	0.095	0.47	12.2	64.3	4.98	7.21	102	<0.5
RZHTD020 (-)	11.0	0.074	0.28	7.04	37.0	13.3	4.19	36.9	0.7
RZHTD008A (-)	14.5	0.106	0.38	3.22	45.6	0.89	6.57	55.3	<0.5
AHHTD001 (-)	32.7	0.216	0.70	13.5	86.0	4.64	10.9	172	3.8
AHHTD002 (-)	38.1	0.082	0.66	40.3	83.1	1.94	30.7	388	1.6
AHHTS001 (-)	24.8	0.071	0.38	14.6	53.1	2.70	9.27	159	1.9
AHHTS002 (-)	22.5	0.089	0.44	19.6	63.2	1.37	9.56	182	1.4
AHHTS003 (-)	6.2	0.074	0.17	2.56	79.3	0.65	12.3	125	7.8
AHHTS004 (-)	6.1	0.067	0.16	2.32	77.5	0.66	12.2	132	7.4

Comments: RDL - Reported Detection Limit

Certified By:

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11Y532919

PROJECT NO:

ATTENTION TO: SHARON BEDDOME

Solid Analysis

RPT Date: Oct 24, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741056	0.414	0.418	1.0%	0.03				80%	120%
Al	1	2741056	1.81	2.20	19.5%	< 0.01	0.46	0.359	128%	80%	120%
As	1	2741056	65.7	64.3	2.2%	< 0.1				80%	120%
Au	1	2741056	0.01	0.01	0.0%	< 0.01				80%	120%
B	1	2741056	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741056	326	361	10.2%	< 1				80%	120%
Be	1	2741056	1.71	1.65	3.6%	< 0.05				80%	120%
Bi	1	2741056	1.64	1.49	9.6%	< 0.01				80%	120%
Ca	1	2741056	0.893	1.08	19.0%	< 0.01				80%	120%
Cd	1	2741056	0.923	0.873	5.6%	< 0.01				80%	120%
Ce	1	2741056	245	243	0.8%	< 0.01				80%	120%
Co	1	2741056	25.7	25.2	2.0%	< 0.1				80%	120%
Cr	1	2741056	45.1	43.4	3.8%	< 0.5				80%	120%
Cs	1	2741056	8.59	8.46	1.5%	< 0.05				80%	120%
Cu	1	2741056	158	204	25.4%	< 0.1	3723	3700	100%	80%	120%
Fe	1	2741056	6.80	8.13	17.8%	< 0.01				80%	120%
Ga	1	2741056	12.0	12.2	1.7%	< 0.05				80%	120%
Ge	1	2741056	0.22	0.21	4.7%	0.05				80%	120%
Hf	1	2741056	0.06	0.06	0.0%	< 0.02				80%	120%
Hg	1	2741056	0.01	0.01	0.0%	< 0.01				80%	120%
In	1	2741056	0.332	0.331	0.3%	< 0.005				80%	120%
K	1	2741056	0.10	0.11	9.5%	< 0.01				80%	120%
La	1	2741056	158	158	0.0%	< 0.1				80%	120%
Li	1	2741056	31.5	30.9	1.9%	< 0.1				80%	120%
Mg	1	2741056	1.18	1.38	15.6%	< 0.01				80%	120%
Mn	1	2741056	1860	2430	26.6%	< 1				80%	120%
Mo	1	2741056	3.37	3.25	3.6%	< 0.05				80%	120%
Na	1	2741056	< 0.01	0.01		< 0.01				80%	120%
Nb	1	2741056	0.618	0.571	7.9%	< 0.05				80%	120%
Ni	1	2741056	22.7	21.8	4.0%	< 0.2				80%	120%
P	1	2741056	623	752	18.8%	< 10				80%	120%
Pb	1	2741056	71.8	71.4	0.6%	< 0.1				80%	120%
Rb	1	2741056	29.5	29.4	0.3%	< 0.1	11	13	84%	80%	120%
Re	1	2741056	0.001	0.001	0.0%	< 0.001				80%	120%
S	1	2741056	0.057	0.066	14.6%	< 0.005				80%	120%
Sb	1	2741056	7.99	7.83	2.0%	< 0.05				80%	120%
Sc	1	2741056	7.4	7.4	0.0%	< 0.1				80%	120%
Se	1	2741056	1.1	1.1	0.0%	< 0.2	0.6	0.8	81%	80%	120%
Sn	1	2741056	5.3	5.3	0.0%	< 0.2				80%	120%
Sr	1	2741056	61.4	60.9	0.8%	< 0.2	326	390	84%	80%	120%
Ta	1	2741056	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741056	0.055	0.046	17.8%	< 0.01				80%	120%
Th	1	2741056	27.8	28.0	0.7%	< 0.1	1.1	1.4	75%	80%	120%
Ti	1	2741056	0.0530	0.0645	19.6%	< 0.005				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532919

PROJECT NO: | ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Tl	1	2741056	0.426	0.413	3.1%	< 0.02				80%	120%
U	1	2741056	6.22	6.27	0.8%	< 0.05	0.7	0.8	90%	80%	120%
V	1	2741056	103	101	2.0%	< 0.5				80%	120%
W	1	2741056	1.79	1.79	0.0%	< 0.05				80%	120%
Y	1	2741056	14.1	14.1	0.0%	< 0.05		7		80%	120%
Zn	1	2741056	108	137	23.7%	< 0.5				80%	120%
Zr	1	2741056	4.0	3.9	2.5%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741082	0.37	0.36	2.7%	< 0.01				80%	120%
Al	1	2741082	1.85	1.68	9.6%	< 0.01				80%	120%
As	1	2741082	93.0	93.8	0.9%	0.2				80%	120%
Au	1	2741082	0.03	0.03	0.0%	< 0.01				80%	120%
B	1	2741082	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741082	356	325	9.1%	< 1				80%	120%
Be	1	2741082	1.17	1.19	1.7%	< 0.05				80%	120%
Bi	1	2741082	0.69	0.70	1.4%	0.01				80%	120%
Ca	1	2741082	0.86	0.79	8.5%	< 0.01				80%	120%
Cd	1	2741082	0.90	0.90	0.0%	< 0.01				80%	120%
Ce	1	2741082	45.6	44.4	2.7%	< 0.01				80%	120%
Co	1	2741082	8.4	8.6	2.4%	< 0.1				80%	120%
Cr	1	2741082	25.5	25.8	1.2%	< 0.5				80%	120%
Cs	1	2741082	3.72	3.82	2.7%	< 0.05				80%	120%
Cu	1	2741082	56.8	47.8	17.2%	< 0.1	3829	3700	103%	80%	120%
Fe	1	2741082	2.27	2.08	8.7%	< 0.01				80%	120%
Ga	1	2741082	6.65	6.65	0.0%	< 0.05				80%	120%
Ge	1	2741082	0.111	0.128	14.2%	0.07				80%	120%
Hf	1	2741082	0.08	0.09	11.8%	< 0.02				80%	120%
Hg	1	2741082	0.02	0.02	0.0%	< 0.01				80%	120%
In	1	2741082	0.0302	0.0308	2.0%	< 0.005				80%	120%
K	1	2741082	0.15	0.14	6.9%	< 0.01				80%	120%
La	1	2741082	26.8	26.5	1.1%	< 0.1				80%	120%
Li	1	2741082	31.7	32.9	3.7%	< 0.1				80%	120%
Mg	1	2741082	0.689	0.623	10.1%	< 0.01				80%	120%
Mn	1	2741082	235	200	16.1%	< 1				80%	120%
Mo	1	2741082	2.48	2.45	1.2%	< 0.05				80%	120%
Na	1	2741082	0.02	0.02	0.0%	< 0.01				80%	120%
Nb	1	2741082	1.66	1.88	12.4%	< 0.05				80%	120%
Ni	1	2741082	44.0	45.2	2.7%	< 0.2				80%	120%
P	1	2741082	1770	1580	11.3%	< 10				80%	120%
Pb	1	2741082	18.0	18.7	3.8%	< 0.1				80%	120%
Rb	1	2741082	24.5	24.6	0.4%	< 0.1	11	13	84%	80%	120%
Re	1	2741082	< 0.001	< 0.001	0.0%	< 0.001				80%	120%
S	1	2741082	0.018	0.017	5.7%	< 0.005				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES — AGAT WORK ORDER: 11Y532919

PROJECT NO: — ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Sb	1	2741082	14.7	15.0	2.0%	< 0.05				80%	120%
Sc	1	2741082	3.8	3.8	0.0%	< 0.1				80%	120%
Se	1	2741082	0.6	0.6	0.0%	< 0.2	0.7	0.8	83%	80%	120%
Sn	1	2741082	0.7	0.7	0.0%	< 0.2				80%	120%
Sr	1	2741082	46.7	46.5	0.4%	< 0.2	333	390	85%	80%	120%
Ta	1	2741082	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741082	0.05	0.05	0.0%	< 0.01				80%	120%
Th	1	2741082	10.7	10.1	5.8%	< 0.1				80%	120%
Ti	1	2741082	0.0966	0.0931	3.7%	< 0.005				80%	120%
Tl	1	2741082	0.293	0.302	3.0%	< 0.02				80%	120%
U	1	2741082	3.20	3.20	0.0%	< 0.05	0.8	0.8	105%	80%	120%
V	1	2741082	103	106	2.9%	< 0.5				80%	120%
W	1	2741082	1.03	0.94	9.1%	< 0.05				80%	120%
Y	1	2741082	14.5	14.9	2.7%	< 0.05		7		80%	120%
Zn	1	2741082	170	146	15.2%	< 0.5				80%	120%
Zr	1	2741082	5.5	6.0	8.7%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741109	0.526	0.520	1.1%	< 0.01				80%	120%
Al	1	2741109	2.15	2.35	8.9%	< 0.01				80%	120%
As	1	2741109	75.7	75.6	0.1%	0.3				80%	120%
Au	1	2741109	0.02	0.02	0.0%	< 0.01				80%	120%
B	1	2741109	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741109	393	414	5.2%	< 1				80%	120%
Be	1	2741109	1.38	1.37	0.7%	< 0.05				80%	120%
Bi	1	2741109	0.677	0.674	0.4%	0.41				80%	120%
Ca	1	2741109	0.71	0.78	9.4%	< 0.01				80%	120%
Cd	1	2741109	1.38	1.40	1.4%	< 0.01				80%	120%
Ce	1	2741109	32.4	32.4	0.0%	0.03				80%	120%
Co	1	2741109	8.0	8.2	2.5%	< 0.1				80%	120%
Cr	1	2741109	23.6	23.7	0.4%	< 0.5				80%	120%
Cs	1	2741109	4.06	4.01	1.2%	< 0.05				80%	120%
Cu	1	2741109	50.2	51.7	2.9%	0.6	3534	3700	95%	80%	120%
Fe	1	2741109	2.55	2.85	11.1%	< 0.01				80%	120%
Ga	1	2741109	8.07	8.10	0.4%	< 0.05				80%	120%
Ge	1	2741109	0.11	0.11	0.0%	0.07				80%	120%
Hf	1	2741109	0.05	0.05	0.0%	< 0.02				80%	120%
Hg	1	2741109	0.025	0.028	11.3%	< 0.01				80%	120%
In	1	2741109	0.037	0.037	0.0%	< 0.005				80%	120%
K	1	2741109	0.092	0.101	9.3%	< 0.01				80%	120%
La	1	2741109	18.0	18.0	0.0%	< 0.1				80%	120%
Li	1	2741109	38.4	37.7	1.8%	< 0.1				80%	120%
Mg	1	2741109	0.564	0.626	10.4%	< 0.01				80%	120%
Mn	1	2741109	285	297	4.1%	< 1				80%	120%
Mo	1	2741109	5.09	5.14	1.0%	< 0.05				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532919

PROJECT NO: | ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Na	1	2741109	0.015	0.016	6.5%	< 0.01				80%	120%
Nb	1	2741109	1.56	1.49	4.6%	< 0.05				80%	120%
Ni	1	2741109	37.8	39.2	3.6%	< 0.2				80%	120%
P	1	2741109	1500	1400	6.9%	< 10				80%	120%
Pb	1	2741109	18.3	18.3	0.0%	< 0.1				80%	120%
Rb	1	2741109	19.4	19.1	1.6%	< 0.1	10	13	76%	80%	120%
Re	1	2741109	0.002	0.002	0.0%	< 0.001				80%	120%
S	1	2741109	0.083	0.087	4.7%	< 0.005				80%	120%
Sb	1	2741109	10.5	10.6	0.9%	< 0.05				80%	120%
Sc	1	2741109	2.4	2.4	0.0%	< 0.1				80%	120%
Se	1	2741109	1.9	1.9	0.0%	< 0.2	0.6	0.8	76%	80%	120%
Sn	1	2741109	0.7	0.7	0.0%	< 0.2				80%	120%
Sr	1	2741109	49.0	48.3	1.4%	< 0.2	342	390	88%	80%	120%
Ta	1	2741109	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741109	0.044	0.047	6.6%	< 0.01				80%	120%
Th	1	2741109	2.02	2.07	2.4%	< 0.1				80%	120%
Ti	1	2741109	0.0402	0.0426	5.8%	< 0.005				80%	120%
Tl	1	2741109	0.286	0.281	1.8%	< 0.02				80%	120%
U	1	2741109	7.20	7.17	0.4%	< 0.05	0.8	0.8	97%	80%	120%
V	1	2741109	110	109	0.9%	< 0.5				80%	120%
W	1	2741109	0.77	0.68	12.4%	0.36				80%	120%
Y	1	2741109	10.8	10.8	0.0%	< 0.05		7		80%	120%
Zn	1	2741109	208	209	0.5%	< 0.5				80%	120%
Zr	1	2741109	1.8	1.8	0.0%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741134	0.56	0.56	0.0%	< 0.01				80%	120%
Al	1	2741134	2.89	2.88	0.3%	< 0.01				80%	120%
As	1	2741134	33.3	33.6	0.9%	< 0.1				80%	120%
Au	1	2741134	0.01	< 0.01		< 0.01				80%	120%
B	1	2741134	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741134	129	123	4.8%	< 1				80%	120%
Be	1	2741134	1.85	1.79	3.3%	< 0.05				80%	120%
Bi	1	2741134	1.56	1.57	0.6%	< 0.01				80%	120%
Ca	1	2741134	1.96	1.92	2.1%	< 0.01				80%	120%
Cd	1	2741134	1.58	1.55	1.9%	< 0.01				80%	120%
Ce	1	2741134	51.1	46.7	9.0%	< 0.01				80%	120%
Co	1	2741134	7.5	7.2	4.1%	< 0.1				80%	120%
Cr	1	2741134	27.0	26.2	3.0%	< 0.5				80%	120%
Cs	1	2741134	8.08	7.85	2.9%	< 0.05				80%	120%
Cu	1	2741134	63.9	55.7	13.7%	< 0.1	3658	3700	98%	80%	120%
Fe	1	2741134	2.50	2.41	3.7%	< 0.01				80%	120%
Ga	1	2741134	10.4	10.4	0.0%	< 0.05				80%	120%
Ge	1	2741134	0.09	0.09	0.0%	< 0.05				80%	120%
Hf	1	2741134	0.08	0.08	0.0%	< 0.02				80%	120%

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Quality Assurance

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AGAT WORK ORDER: 11Y532919

PROJECT NO:

ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Hg	1	2741134	0.01	0.02		< 0.01				80%	120%
In	1	2741134	0.0287	0.0285	0.7%	< 0.005				80%	120%
K	1	2741134	0.213	0.204	4.3%	< 0.01				80%	120%
La	1	2741134	25.4	23.2	9.1%	< 0.1				80%	120%
Li	1	2741134	63.5	61.9	2.6%	< 0.1				80%	120%
Mg	1	2741134	1.52	1.46	4.0%	< 0.01				80%	120%
Mn	1	2741134	175	155	12.1%	< 1				80%	120%
Mo	1	2741134	2.86	2.86	0.0%	< 0.05				80%	120%
Na	1	2741134	0.03	0.03	0.0%	< 0.01				80%	120%
Nb	1	2741134	3.32	3.34	0.6%	< 0.05				80%	120%
Ni	1	2741134	25.1	24.9	0.8%	< 0.2				80%	120%
P	1	2741134	1010	973	3.7%	< 10				80%	120%
Pb	1	2741134	22.8	22.6	0.9%	< 0.1				80%	120%
Rb	1	2741134	23.9	23.8	0.4%	< 0.1	11	13	83%	80%	120%
Re	1	2741134	< 0.001	< 0.001	0.0%	< 0.001				80%	120%
S	1	2741134	0.0568	0.0542	4.7%	< 0.005				80%	120%
Sb	1	2741134	4.67	4.65	0.4%	< 0.05				80%	120%
Sc	1	2741134	3.76	3.73	0.8%	< 0.1				80%	120%
Se	1	2741134	1.22	1.30	6.3%	< 0.2	0.7	0.8	82%	80%	120%
Sn	1	2741134	1.1	1.1	0.0%	< 0.2				80%	120%
Sr	1	2741134	279	280	0.4%	< 0.2	345	390	88%	80%	120%
Ta	1	2741134	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741134	0.04	0.04	0.0%	< 0.01				80%	120%
Th	1	2741134	10.2	9.9	3.0%	< 0.1				80%	120%
Ti	1	2741134	0.103	0.101	2.0%	< 0.005				80%	120%
Tl	1	2741134	0.32	0.32	0.0%	< 0.02				80%	120%
U	1	2741134	3.35	3.49	4.1%	< 0.05	0.8	0.8	98%	80%	120%
V	1	2741134	119	115	3.4%	< 0.5				80%	120%
W	1	2741134	0.546	0.449	19.5%	< 0.05				80%	120%
Y	1	2741134	9.10	9.12	0.2%	< 0.05		7		80%	120%
Zn	1	2741134	154	139	10.2%	< 0.5				80%	120%
Zr	1	2741134	3.5	3.5	0.0%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741025	0.22	0.22	0.0%	< 0.01				80%	120%
Al	1	2741101	2.46	2.43	1.2%	< 0.01				80%	120%
As	1	2741025	2.4	2.4	0.0%	< 0.1				80%	120%
Au	1	2741025	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
B	1	2741025	8	8	0.0%	< 5				80%	120%
Ba	1	2741101	294	289	1.7%	< 1				80%	120%
Be	1	2741025	0.605	0.587	3.0%	< 0.05				80%	120%
Bi	1	2741025	0.15	0.15	0.0%	< 0.01				80%	120%
Ca	1	2741101	1.23	1.20	2.5%	< 0.01				80%	120%
Cd	1	2741025	0.66	0.66	0.0%	< 0.01				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11Y532919

PROJECT NO:

ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Ce	1	2741025	33.3	33.5	0.6%	< 0.01				80%	120%
Co	1	2741025	4.3	4.2	2.4%	< 0.1	6.3	5.0	127%	80%	120%
Cr	1	2741101	38.6	36.8	4.8%	< 0.5				80%	120%
Cs	1	2741025	2.07	2.10	1.4%	< 0.05				80%	120%
Cu	1	2741101	60.1	58.6	2.5%	< 0.1	3650	3700	98%	80%	120%
Fe	1	2741101	2.59	2.58	0.4%	< 0.01				80%	120%
Ga	1	2741025	3.39	3.29	3.0%	< 0.05				80%	120%
Ge	1	2741025	< 0.05	< 0.05	0.0%	< 0.05				80%	120%
Hf	1	2741025	0.196	0.179	9.1%	< 0.02				80%	120%
Hg	1	2741025	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
In	1	2741025	0.016	0.014	13.3%	< 0.005				80%	120%
K	1	2741101	0.11	0.11	0.0%	< 0.01				80%	120%
La	1	2741025	18.9	19.0	0.5%	< 0.1				80%	120%
Li	1	2741025	10.2	10.3	1.0%	< 0.1				80%	120%
Mg	1	2741101	0.78	0.78	0.0%	< 0.01				80%	120%
Mn	1	2741101	201	199	1.0%	< 1				80%	120%
Mo	1	2741025	1.30	1.15	12.2%	< 0.05				80%	120%
Na	1	2741101	0.03	0.03	0.0%	< 0.01				80%	120%
Nb	1	2741025	0.32	0.27	16.9%	< 0.05				80%	120%
Ni	1	2741025	15.1	14.7	2.7%	< 0.2				80%	120%
P	1	2741101	1570	1540	1.9%	< 10				80%	120%
Pb	1	2741025	14.3	14.4	0.7%	< 0.1				80%	120%
Rb	1	2741025	2.6	2.5	3.9%	< 0.1	11	13	87%	80%	120%
Re	1	2741025	0.001	< 0.001		< 0.001				80%	120%
S	1	2741101	0.041	0.041	0.0%	< 0.005				80%	120%
Sb	1	2741025	0.91	0.87	4.5%	< 0.05				80%	120%
Sc	1	2741025	1.9	1.9	0.0%	< 0.1				80%	120%
Se	1	2741025	0.43	0.46	6.7%	< 0.2	0.6	0.8	79%	80%	120%
Sn	1	2741025	0.4	0.4	0.0%	< 0.2				80%	120%
Sr	1	2741101	61.5	59.0	4.1%	< 0.2	345	390	89%	80%	120%
Ta	1	2741101	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741025	0.08	0.08	0.0%	< 0.01				80%	120%
Th	1	2741025	4.0	3.9	2.5%	< 0.1	1	1.4	72%	80%	120%
Ti	1	2741101	0.114	0.102	11.1%	< 0.005				80%	120%
Tl	1	2741025	0.04	0.04	0.0%	< 0.02				80%	120%
U	1	2741025	1.85	1.85	0.0%	< 0.05	0.9	0.8	116%	80%	120%
V	1	2741101	115	110	4.4%	< 0.5				80%	120%
W	1	2741025	0.19	0.18	5.4%	< 0.05				80%	120%
Y	1	2741025	9.30	9.17	1.4%	< 0.05		7		80%	120%
Zn	1	2741101	170	168	1.2%	< 0.5				80%	120%
Zr	1	2741025	8.0	7.3	9.2%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741050	0.175	0.173	1.1%	< 0.01				80%	120%
Al	1	2741126	2.97	2.73	8.4%	< 0.01				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11Y532919

PROJECT NO: | ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
As	1	2741050	42.8	42.3	1.2%	< 0.1				80%	120%
Au	1	2741050	0.04	0.01		< 0.01				80%	120%
B	1	2741050	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741126	128	118	8.1%	< 1				80%	120%
Be	1	2741050	1.39	1.43	2.8%	< 0.05				80%	120%
Bi	1	2741050	3.97	2.99	28.2%	< 0.01				80%	120%
Ca	1	2741126	1.74	1.62	7.1%	< 0.01				80%	120%
Cd	1	2741050	0.47	0.46	2.2%	< 0.01				80%	120%
Ce	1	2741050	78.5	76.9	2.1%	< 0.01				80%	120%
Co	1	2741050	16.5	16.4	0.6%	< 0.1	6.3	5.0	126%	80%	120%
Cr	1	2741126	35.2	34.6	1.7%	< 0.5				80%	120%
Cs	1	2741050	9.14	9.24	1.1%	< 0.05				80%	120%
Cu	1	2741126	78.4	76.8	2.1%	< 0.1	3732	3700	100%	80%	120%
Fe	1	2741126	2.34	2.21	5.7%	< 0.01				80%	120%
Ga	1	2741050	7.96	7.93	0.4%	< 0.05				80%	120%
Ge	1	2741050	< 0.05	< 0.05	0.0%	< 0.05				80%	120%
Hf	1	2741050	0.03	0.03	0.0%	< 0.02				80%	120%
Hg	1	2741050	0.02	0.02	0.0%	< 0.01				80%	120%
In	1	2741050	0.058	0.058	0.0%	< 0.005				80%	120%
K	1	2741126	0.087	0.082	5.9%	< 0.01				80%	120%
La	1	2741050	39.4	38.9	1.3%	< 0.1				80%	120%
Li	1	2741050	33.3	33.8	1.5%	< 0.1				80%	120%
Mg	1	2741126	0.95	0.89	6.5%	< 0.01				80%	120%
Mn	1	2741126	623	608	2.4%	< 1				80%	120%
Mo	1	2741050	2.88	2.79	3.2%	< 0.05				80%	120%
Na	1	2741126	0.02	0.02	0.0%	< 0.01				80%	120%
Nb	1	2741050	2.07	2.18	5.2%	< 0.05				80%	120%
Ni	1	2741050	29.8	28.9	3.1%	< 0.2				80%	120%
P	1	2741126	1100	1120	1.8%	< 10				80%	120%
Pb	1	2741050	45.7	44.5	2.7%	< 0.1				80%	120%
Rb	1	2741050	23.4	23.3	0.4%	< 0.1	11	13	87%	80%	120%
Re	1	2741050	< 0.001	< 0.001	0.0%	< 0.001				80%	120%
S	1	2741126	0.072	0.068	5.7%	< 0.005				80%	120%
Sb	1	2741050	2.77	2.88	3.9%	< 0.05				80%	120%
Sc	1	2741050	4.5	4.5	0.0%	< 0.1				80%	120%
Se	1	2741050	0.7	0.7	0.0%	< 0.2	0.7	0.8	91%	80%	120%
Sn	1	2741050	2.4	2.5	4.1%	< 0.2				80%	120%
Sr	1	2741126	113	105	7.3%	< 0.2	338	390	87%	80%	120%
Ta	1	2741050	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741050	0.13	0.13	0.0%	< 0.01				80%	120%
Th	1	2741050	14.9	14.4	3.4%	< 0.1				80%	120%
Ti	1	2741126	0.080	0.074	7.8%	< 0.005				80%	120%
Tl	1	2741050	0.45	0.45	0.0%	< 0.02				80%	120%
U	1	2741050	4.27	4.19	1.9%	< 0.05	0.8	0.8	105%	80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES   AGAT WORK ORDER: 11Y532919
PROJECT NO: ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
V	1	2741126	81.9	80.6	1.6%	< 0.5				80%	120%
W	1	2741050	1.45	1.23	16.4%	< 0.05				80%	120%
Y	1	2741050	8.14	8.15	0.1%	< 0.05		7		80%	120%
Zn	1	2741126	90.0	89.2	0.9%	< 0.5				80%	120%
Zr	1	2741050	1.38	1.23	11.5%	< 0.5				80%	120%
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2741201	0.565	0.542	4.2%	< 0.01				80%	120%
Al	1	2741201	2.21	2.12	4.2%	< 0.01				80%	120%
As	1	2741201	78.5	76.0	3.2%	< 0.1				80%	120%
B	1	2741201	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2741201	290	287	1.0%	< 1				80%	120%
Be	1	2741201	2.05	2.06	0.5%	< 0.05				80%	120%
Bi	1	2741201	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Ca	1	2741201	1.70	1.63	4.2%	< 0.01				80%	120%
Cd	1	2741201	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Ce	1	2741201	48.0	48.6	1.2%	< 0.01				80%	120%
Co	1	2741201	10.8	14.4	28.6%	< 0.1	6.5	5.0	129%	80%	120%
Cr	1	2741201	48.6	48.6	0.0%	< 0.5				80%	120%
Cu	1	2741201	130	132	1.5%	< 0.1	3783	3700	102%	80%	120%
Fe	1	2741201	3.67	3.53	3.9%	< 0.01				80%	120%
Ga	1	2741201	3.20	4.21	27.3%	< 0.05				80%	120%
Hg	1	2741201	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
In	1	2741201	< 0.005	< 0.005	0.0%	< 0.005				80%	120%
K	1	2741201	0.179	0.174	2.8%	< 0.01				80%	120%
La	1	2741201	26.4	26.9	1.9%	< 0.1				80%	120%
Li	1	2741201	27.0	26.2	3.0%	< 0.1				80%	120%
Mg	1	2741201	1.04	1.02	1.9%	< 0.01				80%	120%
Mn	1	2741201	299	299	0.0%	< 1				80%	120%
Mo	1	2741201	4.04	3.28	20.8%	< 0.05				80%	120%
Na	1	2741201	0.03	0.03	0.0%	< 0.01				80%	120%
Ni	1	2741201	95.9	98.7	2.9%	< 0.2				80%	120%
P	1	2741201	5560	5620	1.1%	< 10				80%	120%
Pb	1	2741201	23.9	23.7	0.8%	< 0.1				80%	120%
Rb	1	2741201	68.6	67.8	1.2%	< 0.1	11	13	82%	80%	120%
S	1	2741201	0.114	0.112	1.8%	< 0.005				80%	120%
Sb	1	2741201	4.10	3.57	13.8%	< 0.05				80%	120%
Sc	1	2741201	4.1	4.1	0.0%	< 0.1				80%	120%
Se	1	2741201	< 0.2	< 0.2	0.0%	< 0.2	0.6	0.8	77%	80%	120%
Sn	1	2741201	< 0.2	< 0.2	0.0%	< 0.2				80%	120%
Sr	1	2741201	82.2	79.6	3.2%	< 0.2	348	390	89%	80%	120%
Ta	1	2741201	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2741201	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Th	1	2741201	5.76	5.19	10.4%	< 0.1	1	1.4	71%	80%	120%
Ti	1	2741201	0.0955	0.0906	5.3%	< 0.005				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11Y532919

PROJECT NO:

ATTENTION TO: SHARON BEDDOME

Solid Analysis (Continued)

RPT Date: Oct 24, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Tl	1	2741201	3.76	3.38	10.6%	< 0.02				80%	120%
U	1	2741201	4.58	4.71	2.8%	< 0.05				80%	120%
V	1	2741201	117	119	1.7%	< 0.5				80%	120%
W	1	2741201	< 0.05	< 0.05	0.0%	< 0.05				80%	120%
Y	1	2741201	26.6	26.8	0.7%	< 0.05		7		80%	120%
Zn	1	2741201	350	356	1.7%	< 0.5				80%	120%
Zr	1	2741201	< 0.5	< 0.5	0.0%	< 0.5				80%	120%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741056	0.0140	0.0108	25.8%	0.00035				70%	130%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741082	0.0345	0.0328	5.1%	0.00062				70%	130%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741109	0.0176	0.0189	7.1%	0.00056				70%	130%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741134	0.0104	0.00930	11.2%	< 0.00005				70%	130%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741025	0.00322	0.00264	19.8%	< 0.00005				70%	130%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2741050	0.0442	0.0131		< 0.00005				70%	130%

Certified By:

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES — AGAT WORK ORDER: 11Y532919

PROJECT NO: — ATTENTION TO: SHARON BEDDOME

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Au			ICP-MS
Sample Login Weight	MIN-12009		BALANCE
Ag	MIN-200-12017		ICP-MS
Al	MIN-200-12017		ICP/OES
As	MIN-200-12017		ICP-MS
Au	MIN-200-12017		ICP-MS
B	MIN-200-12017		ICP/OES
Ba	MIN-200-12017		ICP-MS
Be	MIN-200-12017		ICP-MS
Bi	MIN-200-12017		ICP-MS
Ca	MIN-200-12017		ICP/OES
Cd	MIN-200-12017		ICP-MS
Ce	MIN-200-12017		ICP-MS
Co	MIN-200-12017		ICP-MS
Cr	MIN-200-12017		ICP/OES
Cs	MIN-200-12017		ICP-MS
Cu	MIN-200-12017		ICP-MS
Fe	MIN-200-12017		ICP/OES
Ga	MIN-200-12017		ICP-MS
Ge	MIN-200-12017		ICP-MS
Hf	MIN-200-12017		ICP-MS
Hg	MIN-200-12017		ICP-MS
In	MIN-200-12017		ICP-MS
K	MIN-200-12017		ICP/OES
La	MIN-200-12017		ICP-MS
Li	MIN-200-12017		ICP-MS
Mg	MIN-200-12017		ICP/OES
Mn	MIN-200-12017		ICP/OES
Mo	MIN-200-12017		ICP-MS
Na	MIN-200-12017		ICP/OES
Nb	MIN-200-12017		ICP-MS
Ni	MIN-200-12017		ICP-MS
P	MIN-200-12017		ICP/OES
Pb	MIN-200-12017		ICP-MS
Rb	MIN-200-12017		ICP-MS
Re	MIN-200-12017		ICP-MS
S	MIN-200-12017		ICP/OES
Sb	MIN-200-12017		ICP-MS
Sc	MIN-200-12017		ICP-MS
Se	MIN-200-12017		ICP-MS
Sn	MIN-200-12017		ICP-MS
Sr	MIN-200-12017		ICP-MS
Ta	MIN-200-12017		ICP-MS
Te	MIN-200-12017		ICP-MS
Th	MIN-200-12017		ICP-MS
Ti	MIN-200-12017		ICP/OES
Tl	MIN-200-12017		ICP-MS
U	MIN-200-12017		ICP-MS
V	MIN-200-12017		ICP/OES

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES　　AGAT WORK ORDER: 11Y532919

PROJECT NO:　　ATTENTION TO: SHARON BEDDOME

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
W	MIN-200-12017		ICP-MS
Y	MIN-200-12017		ICP-MS
Zn	MIN-200-12017		ICP-MS
Zr	MIN-200-12017		ICP-MS

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES
SUITE 200 44-12 AVE SOUTH
CRANBROOK, BC V1C2R7

ATTENTION TO: CHRIS GALLAGHER

PROJECT NO: HT11-002

AGAT WORK ORDER: 11T545810

SOLID ANALYSIS REVIEWED BY: Kevin Motomura, ICP Supervisor

DATE REPORTED: Nov 08, 2011

PAGES (INCLUDING COVER): 7

Should you require any information regarding this analysis please contact your client services representative at (905) 501-9998

*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

AGAT WORK ORDER: 11T545810
PROJECT NO: HT11-002

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CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Au, ICP-MS finish (202054)

DATE SAMPLED: Nov 03, 2011 | DATE RECEIVED: Nov 03, 2011 | DATE REPORTED: Nov 08, 2011 | SAMPLE TYPE: Soil

	Analyte:	Au
	Unit:	ppm
Sample Description	RDL:	0.00005
AHHTDOO3		0.00582

Comments: RDL - Reported Detection Limit

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11T545810

PROJECT NO: HT11-002

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

ATTENTION TO: CHRIS GALLAGHER

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)

DATE SAMPLED: Nov 03, 2011 | DATE RECEIVED: Nov 03, 2011 | DATE REPORTED: Nov 08, 2011 | SAMPLE TYPE: Soil

Analyte:	Sample Login Weight	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr
Unit:	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5
AHHTDOO3	0.43	0.30	4.15	40.7	<0.01	<5	250	1.11	0.89	13.0	0.63	28.4	21.2	43.5

Analyte:	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
Sample Description RDL:	0.05	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05
AHHTDOO3	5.70	78.8	3.34	14.0	<0.05	0.08	0.04	0.025	0.25	14.9	31.2	0.83	469	2.39

Analyte:	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
Unit:	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01
AHHTDOO3	0.06	2.95	25.2	476	21.4	38.3	<0.001	0.263	3.88	4.9	1.1	0.8	383	<0.01

Analyte:	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Unit:	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5
AHHTDOO3	0.04	6.1	0.117	0.30	1.40	54.6	0.72	12.7	93.5	4.2

Comments: RDL - Reported Detection Limit

Certified By:

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AGAT Laboratories

Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11T545810

PROJECT NO: HT11-002

ATTENTION TO: CHRIS GALLAGHER

Solid Analysis

RPT Date: Nov 08, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)											
Ag	1	2868942	0.30	0.29	3.4%	0.02				80%	120%
Al	1	2868942	4.15	4.15	0.0%	< 0.01				80%	120%
As	1	2868942	40.7	40.1	1.5%	0.6				80%	120%
Au	1	2868942	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
B	1	2868942	< 5	< 5	0.0%	< 5				80%	120%
Ba	1	2868942	250	245	2.0%	< 1				80%	120%
Be	1	2868942	1.11	1.10	0.9%	< 0.05				80%	120%
Bi	1	2868942	0.89	0.89	0.0%	< 0.01				80%	120%
Ca	1	2868942	13.0	12.8	1.6%	< 0.01				80%	120%
Cd	1	2868942	0.63	0.63	0.0%	< 0.01				80%	120%
Ce	1	2868942	28.4	27.8	2.1%	< 0.01				80%	120%
Co	1	2868942	21.2	20.5	3.4%	< 0.1				80%	120%
Cr	1	2868942	43.5	42.4	2.6%	< 0.5				80%	120%
Cs	1	2868942	5.70	5.58	2.1%	< 0.05				80%	120%
Cu	1	2868942	78.8	80.2	1.8%	0.3	3751	3800	98%	80%	120%
Fe	1	2868942	3.34	3.29	1.5%	< 0.01				80%	120%
Ga	1	2868942	14.0	13.7	2.2%	< 0.05				80%	120%
Ge	1	2868942	< 0.05	< 0.05	0.0%	0.08				80%	120%
Hf	1	2868942	0.08	0.08	0.0%	< 0.02				80%	120%
Hg	1	2868942	0.04	0.04	0.0%	< 0.01				80%	120%
In	1	2868942	0.025	0.024	4.1%	< 0.005				80%	120%
K	1	2868942	0.247	0.239	3.3%	< 0.01				80%	120%
La	1	2868942	14.9	14.6	2.0%	< 0.1				80%	120%
Li	1	2868942	31.2	30.4	2.6%	< 0.1				80%	120%
Mg	1	2868942	0.83	0.82	1.2%	< 0.01				80%	120%
Mn	1	2868942	469	472	0.6%	< 1				80%	120%
Mo	1	2868942	2.39	2.27	5.2%	< 0.05				80%	120%
Na	1	2868942	0.06	0.06	0.0%	< 0.01				80%	120%
Nb	1	2868942	2.95	2.73	7.7%	< 0.05				80%	120%
Ni	1	2868942	25.2	25.3	0.4%	< 0.2				80%	120%
P	1	2868942	476	484	1.7%	< 10				80%	120%
Pb	1	2868942	21.4	21.3	0.5%	< 0.1				80%	120%
Rb	1	2868942	38.3	37.1	3.2%	< 0.1	13	13	100%	80%	120%
Re	1	2868942	< 0.001	< 0.001	0.0%	< 0.001				80%	120%
S	1	2868942	0.263	0.255	3.1%	< 0.005				80%	120%
Sb	1	2868942	3.88	3.84	1.0%	< 0.05				80%	120%
Sc	1	2868942	4.9	4.7	4.2%	< 0.1				80%	120%
Se	1	2868942	1.1	1.0	9.5%	0.4	0.7	0.8	90%	80%	120%
Sn	1	2868942	0.8	0.8	0.0%	< 0.2				80%	120%
Sr	1	2868942	383	368	4.0%	< 0.2	351	390	90%	80%	120%
Ta	1	2868942	< 0.01	< 0.01	0.0%	< 0.01				80%	120%
Te	1	2868942	0.04	0.04	0.0%	< 0.01				80%	120%
Th	1	2868942	6.1	6.1	0.0%	< 0.1				80%	120%
Ti	1	2868942	0.117	0.112	4.4%	< 0.005				80%	120%

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Quality Assurance

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11T545810
PROJECT NO: HT11-002 | ATTENTION TO: CHRIS GALLAGHER

Solid Analysis (Continued)

RPT Date: Nov 08, 2011		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Tl	1	2868942	0.295	0.292	1.0%	< 0.02				80%	120%
U	1	2868942	1.40	1.38	1.4%	< 0.05	0.7	0.8	89%	80%	120%
V	1	2868942	54.6	52.8	3.4%	< 0.5				80%	120%
W	1	2868942	< 0.05	< 0.05	0.0%	< 0.05				80%	120%
Y	1	2868942	12.7	12.3	3.2%	< 0.05		7		80%	120%
Zn	1	2868942	93.5	94.1	0.6%	< 0.5				80%	120%
Zr	1	2868942	4.24	5.12	18.8%	< 0.5				80%	120%
Aqua Regia Digest - Au, ICP-MS finish (202054)											
Au	1	2868942	0.00582	0.00515	12.2%	0.00208				70%	130%

Certified By:

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES | AGAT WORK ORDER: 11T545810
PROJECT NO: HT11-002 | ATTENTION TO: CHRIS GALLAGHER

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Au			ICP-MS
Sample Login Weight	MIN-12009		BALANCE
Ag	MIN-200-12017		ICP-MS
Al	MIN-200-12017		ICP/OES
As	MIN-200-12017		ICP-MS
Au	MIN-200-12017		ICP-MS
B	MIN-200-12017		ICP/OES
Ba	MIN-200-12017		ICP-MS
Be	MIN-200-12017		ICP-MS
Bi	MIN-200-12017		ICP-MS
Ca	MIN-200-12017		ICP/OES
Cd	MIN-200-12017		ICP-MS
Ce	MIN-200-12017		ICP-MS
Co	MIN-200-12017		ICP-MS
Cr	MIN-200-12017		ICP/OES
Cs	MIN-200-12017		ICP-MS
Cu	MIN-200-12017		ICP-MS
Fe	MIN-200-12017		ICP/OES
Ga	MIN-200-12017		ICP-MS
Ge	MIN-200-12017		ICP-MS
Hf	MIN-200-12017		ICP-MS
Hg	MIN-200-12017		ICP-MS
In	MIN-200-12017		ICP-MS
K	MIN-200-12017		ICP/OES
La	MIN-200-12017		ICP-MS
Li	MIN-200-12017		ICP-MS
Mg	MIN-200-12017		ICP/OES
Mn	MIN-200-12017		ICP/OES
Mo	MIN-200-12017		ICP-MS
Na	MIN-200-12017		ICP/OES
Nb	MIN-200-12017		ICP-MS
Ni	MIN-200-12017		ICP-MS
P	MIN-200-12017		ICP/OES
Pb	MIN-200-12017		ICP-MS
Rb	MIN-200-12017		ICP-MS
Re	MIN-200-12017		ICP-MS
S	MIN-200-12017		ICP/OES
Sb	MIN-200-12017		ICP-MS
Sc	MIN-200-12017		ICP-MS
Se	MIN-200-12017		ICP-MS
Sn	MIN-200-12017		ICP-MS
Sr	MIN-200-12017		ICP-MS
Ta	MIN-200-12017		ICP-MS
Te	MIN-200-12017		ICP-MS
Th	MIN-200-12017		ICP-MS
Ti	MIN-200-12017		ICP/OES
Tl	MIN-200-12017		ICP-MS
U	MIN-200-12017		ICP-MS
V	MIN-200-12017		ICP/OES

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Method Summary

CLIENT NAME: TERRALOGIC EXPLORATION SERVICES

AGAT WORK ORDER: 11T545810

PROJECT NO: HT11-002

ATTENTION TO: CHRIS GALLAGHER

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
W	MIN-200-12017		ICP-MS
Y	MIN-200-12017		ICP-MS
Zn	MIN-200-12017		ICP-MS
Zr	MIN-200-12017		ICP-MS

Appendix VI – Bedrock Geological Mapping

6.1 – Station Locations
6.2 - Lithology Description
6.3 - Structure

Appendix 6.1 - Stations

Station Number	Date	Type	Location Method	UTM X	UTM Y	GPS Accuracy	UTM Datum	UTM Zone	Comments
JKHTG001	9/19/2011	outcrop	GPS	454598	7035445	11	NAD83	9	Outcrop of intense feox. Blebby to massive sulphides. Varies from 2cm to 2m thick. Laterally approx. 80m long.
AHHTG009	9/15/2011	outcrop	GPS	453156	7035884	6	NAD83	9	NW trending zones of highly altered destroyed intrusion, sample AHHTD001
AHHTG010	9/15/2011	outcrop	GPS	453120	7036028	6	NAD83	9	in mag high blip within large N/S res low zone cross cutting intrusion, minor po blebs
AHHTG011	9/15/2011	outcrop	GPS	453712	7036380		NAD83	9	float piece of altered seds with trace blebs of po+py
AHHTG012	9/16/2011	outcrop	GPS	452908	7036202	25	NAD83	9	hornfels sed with 2m wide fault zone, calcite/prehnite veining-gauge material in fault
AHHTG013	9/16/2011	outcrop	GPS	452824	7036107	8	NAD83	9	contact btw rabbitkettle and intrusive
AHHTG014	9/16/2011	outcrop	GPS	452751	7036098	7	NAD83	9	contact zone, variable silicified bands, trace sulphides
AHHTG015	9/16/2011	outcrop	GPS	452688	7035839	9	NAD83	9	centre of res high in intrusion, no major structures found
AHHTG016	9/16/2011	outcrop	GPS	452396	7036312	6	NAD83	9	skarn pod highly variable, highest grade ore small, 05-1.2 m thick and length of 12 m, pod right at contact btw limestone and siltstone units
AHHTG017	9/18/2011	outcrop	GPS	455552	7034649		NAD83	9	outcrop with gd dyke intruding into hornfelsed seds and minor limestone interbeds
AHHTG018	9/18/2011	outcrop	GPS	455488	7034644	7	NAD83	9	8 m wide highly altered fault zone, fractured and rusty material, 15 m up creek to west, another 6 m wide fault zone trending 004 and veining
AHHTG019	9/18/2011	outcrop	GPS	455309	7034600	5	NAD83	9	end of siltstone o/c, hornfelsed siltstone with po=py
AHHTG020	9/18/2011	outcrop	GPS	455199	7034505	7	NAD83	9	o/c of hornfelsed siltstone with vfg 1% po-py sulphides, 60 m wide o/c, calcite-prehnite veining
AHHTG021	9/19/2011	outcrop	GPS	455125	7034485		NAD83	9	
AHHTG022	9/19/2011	outcrop	GPS	454514	7034462	11	NAD83	9	small 3 m dyke, could be two parallel, intruded into silicified white banded COR1
AHHTG023	9/19/2011	outcrop	GPS	454279	7034124	1	NAD83	9	contact btw pulton and banded quartz, trending 340, but irregular
AHHTG024	9/19/2011	outcrop	GPS	453839	7033996	7	NAD83	9	4 m wide dyke cross-cutting siltstone and phyllites
AHHTG025	9/19/2011	outcrop	GPS	453920	7033981	7	NAD83	9	another 2 m wide dyke, lack of hnbl, trending 334
AHHTG026	9/19/2011	outcrop	GPS	453726	7034025	8	NAD83	9	hornfelsed siltstone with 2 % vfg diss sulphides, py-po
AHHTG027	9/19/2011	outcrop	GPS	454142	7034343	6	NAD83	9	siltstone near contact with intrusive

Station Number	Date	Type	Location Method	UTM X	UTM Y	GPS Accuracy	UTM Datum	UTM Zone	Comments
AHHTG028	9/20/2011	outcrop	GPS	453456	7034398	4	NAD83	9	1.5 m porphyry dyke, highly altered to clay, cut by a number of 330 trending faults
AHHTG029	9/20/2011	outcrop	GPS	453420	7034339	6	NAD83	9	altered siltstone at margin of porphyry dyke, diss py-po+/-aspy in vlts
AHHTG030	9/20/2011	outcrop	GPS	453464	7034318	14	NAD83	9	10 m wide section of half skarned rocks sandwiched between banded qtz unit
AHHTG031	9/21/2011	outcrop	GPS	455131	7034150	7	NAD83	9	rhyolite dyke similar to one in G017, 10-12 m wide, intruding hornfelsed seds with diss po-py
AHHTG032	9/21/2011	outcrop	GPS	455163	7034159	6	NAD83	9	at eastern margin of dyke, units highly silicified
AHHTG033	9/21/2011	outcrop	GPS	454863	7034074	6	NAD83	9	1.5 m wide fault zone, samples AHHTD003
AHHTG034	9/21/2011	outcrop	GPS	454909	7034084	6	NAD83	9	garnet diopside skarn near small o/c of granodiorite pluton, up to 2% blebs of cpy and mo, dyke also cutting btw siltstone and turbidite limestone
AHHTG035	9/21/2011	outcrop	GPS	454900	7034036	4	NAD83	9	mix of garnet-diopside skarn and highly silicified unit with blebs of cpy
AHHTG036	9/21/2011	outcrop	GPS	454756	7033687	4	NAD83	9	10 m wide gd dyke, little to no alteration on margins

Appendix 6.2 - Lithology

Station Number	Major Rock Type	Minor Rock Type	Colour Fresh	Colour Weathered	Grainsize	Texture	Major Mineralization	Minor Mineralization	Mineralization Style	Mineralization %	Alteration	Alteration Degree
JKHTG001	Diorite	Siltstone	grey	white	medium-coarse	massive						
AHHTG009	Granodiorite	Granodiorite	grey	rusty	medium	altered		pyrrhotite				
AHHTG010	granodiorite	Siltstone	white					pyrrhotite				
AHHTG011	Hornfels		brown	rusty				pyrite				
AHHTG012	Hornfels		brown	rusty								
AHHTG013	Granodiorite	Calcisiltite	white	light grey				pyrite		0.1		
AHHTG014	Granodiorite	Calcisiltite	grey									
AHHTG015	Granodiorite		grey									
AHHTG016	Skarn	Siltstone	rusty	brown	fine		pyrite	pyrrhotite	MASSIVE	2		
AHHTG017	Granodiorite		grey	beige	medium	equigranular						
AHHTG017	siltstone		brown	rusty	fine			pyrite	DISSEMINATED	1		
AHHTG018	Siltstone		brown	rusty	fine	fractured					Hornfels	3
AHHTG019	siltstone		brown				pyrite	pyrrhotite	DISSEMINATED	2		
AHHTG020	siltstone		brown									
AHHTG021	Siltstone		brown									
AHHTG022	Granodiorite		grey									
AHHTG022	Banded Quartz-siltite		white			banded						

Station Number	Major Rock Type	Minor Rock Type	Colour Fresh	Colour Weathered	Grainsize	Texture	Major Mineralization	Minor Mineralization	Mineralization Style	Mineralization %	Alteration	Alteration Degree
AHHTG023	lithologic contact	banded qtz				bedded						
AHHTG024	Granodiorite		grey									
AHHTG024	siltstone		brown			bedded						
AHHTG025	Granodiorite		grey	rusty								
AHHTG026	siltstone		brown	rusty			pyrite	pyrrhotite	DISSEMINATED	2		
AHHTG027	Siltstone		brown									
AHHTG028	Porphyritic Dyke		brown								Clay	4
AHHTG029	siltstone		brown				pyrite	pyrhhotitepyrrhotite	DISSEMINATED		Hornfels	
AHHTG030	Skarn		brown	rusty			pyrite		DISSEMINATED		Hornfels	
AHHTG031	Siltstone	Skarn					pyrite	actinolite			Skarn	
AHHTG031	rhyolite dyke		grey									
AHHTG032	Siltstone		brown	rusty			pyrite	pyrrhotite	DISSEMINATED		Hornfels	
AHHTG033	Fault zone		grey									
AHHTG034	Skarn		grey	green								
AHHTG035	skarn											
AHHTG036	granodiorite											

Appendix 6.3 - Structure

Station Number	Strcuture	Quality	Azimuth	Dipe	Comments
AHHTG012	fault plane	GOOD	272	58	Main Shear plane
AHHTG015	joint	GOOD	150	80	dominant joint set
AHHTG015	joint	GOOD	25	84	secondary joint set
AHHTG012	shear plane	GOOD	353	38	shear plane with veining
AHHTG016	bedding	GOOD	42	72	bedding of siltstone unit
AHHTG017	dike	GOOD	338		10 m wide dyke
AHHTG017	joint	GOOD	132	71	jointing within dyke
AHHTG017	joint	GOOD	50	71	most common joint in seds, fault gauge associated with set
AHHTG017	joint	GOOD	155	69	2nd most common set in seds
AHHTG017	joint	GOOD	333	48	least common and most broad joint set in seds
AHHTG018	fault plane	GOOD	14	36	
AHHTG020	joint	GOOD	150	62	
AHHTG020	compositional layering	GOOD	235	75	could be bedding
AHHTG021	bedding	GOOD	228	62	
AHHTG022	bedding	GOOD	30	67	bedding of banded silicified calcsiltite
AHHTG023	bedding	GOOD	38	67	banded qtz
AHHTG024	dike	GOOD	335	65	
AHHTG028	dike	GOOD	55	76	
AHHTG028	fault plane	GOOD	330		
AHHTG031	dike	GOOD	5		10-12 m dike
AHHTG033	fault plane	GOOD	297	64	1.5 m wide fault zone
AHHTG036	dike	GOOD	0	84	10 m wide gd dyke, seems to come out of mtn at angle of 36 deg into the air
AHHTG036	joint	GOOD	335	80	
AHHTG036	joint	GOOD	90	67	

Appendix VII – Airborne Geophysical Report by Fugro Airborne Surveys

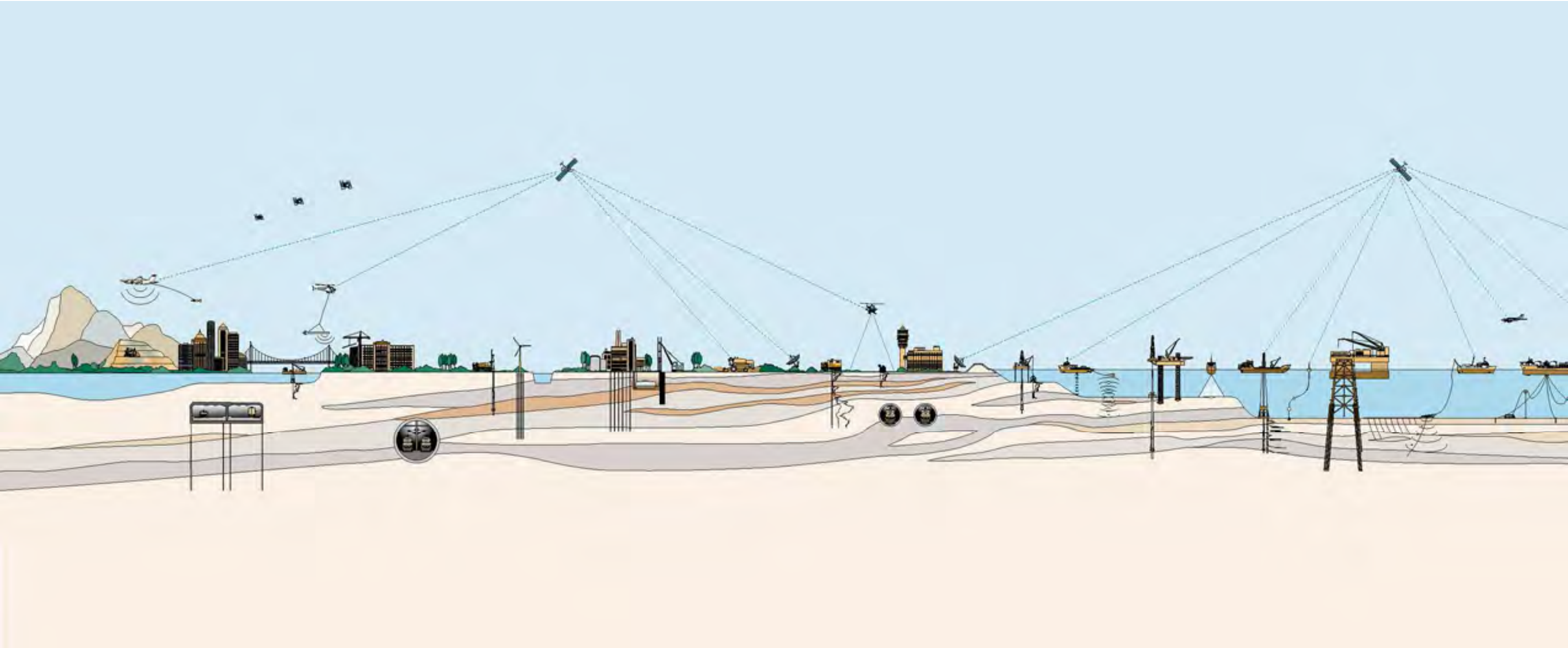
Fugro Airborne Surveys

LOGISTICS AND PROCESSING REPORT
Airborne Magnetic and DIGHEM Survey

EASTERN YUKON, HIT BLOCK
YUKON TERRITORY, CANADA

Project 11066

TerraLogic Exploration Inc.



LOGISTICS AND PROCESSING REPORT
AIRBORNE MAGNETIC AND DIGHEM SURVEY
EASTERN YUKON, HIT BLOCK
YUKON TERRITORY, CANADA

PROJECT 11066

Client: **TerraLogic Exploration Inc.**

Date of Report: November 15, 2011

FUGRO AIRBORNE SURVEYS

Fugro Airborne Surveys was formed in early 2000 through the global merger of leading airborne geophysical survey companies: Geoterrex-Dighem, High-Sense Geophysics, and Questor of Canada; World Geoscience of Australia; and Geodass and AOC of South Africa. Sial Geosciences of Canada joined the Fugro Airborne group in early 2001, and Spectra Exploration Geosciences followed thereafter. In mid 2001, Fugro acquired Tesla 10 and Kevron in Australia, and certain activities of Scintrex. Fugro also works with Lasa-Geomag located in Brazil for surveys in South America. With a staff of over 400, Fugro Airborne Surveys now operates from 12 offices worldwide.

Fugro Airborne Surveys is a professional services company specializing in low level remote sensing technologies that collects, processes, and interprets airborne geophysical data related to the subsurface of the earth and the sea bed. The data and map products produced have been an essential element of exploration programs for the mining and petroleum industries for over 50 years. Engineers, scientists and others with a need to map the earth's subsurface geology use Fugro Airborne Surveys for environmental and engineering solutions. From mapping kimberlite pipes and oil and gas deposits to detecting water tables and unexploded ordnance, Fugro Airborne Surveys designs systems dedicated to specific targets and survey needs. State of the art geophysical systems and techniques ensure that clients receive the highest quality survey data and images.

Fugro Airborne Surveys acquires both time domain and frequency domain electromagnetic data as well as magnetic, radiometric and gravity data from a wide range of fixed wing (airplane) and helicopter platforms. Depending on the geophysical mapping needs of the client, Fugro Airborne Surveys can field airborne systems capable of collecting one or more of these types of data concurrently. The company offers all data acquisition, processing, interpretation and final reporting services for each survey.

Fugro Airborne Surveys is a founding member of IAGSA, the International Airborne Geophysics Safety Association. Our health, safety and environment management system has successfully achieved certification to the international standard *OHSAS 18001* and our quality management system has also successfully achieved certification to the international standard *ISO 9001:2000 Quality Management Systems – Requirements*.

Summary

This report describes the logistics, data acquisition, processing and presentation of results of a DIGHEM electromagnetic and magnetic airborne geophysical survey carried out for TerraLogic Exploration Inc., over Hit Block, Yukon Territory, Canada. Total coverage of the survey block amounted to 141.9 km. The survey was flown August 2nd, 2011.

The purpose of the survey was to map the geology and structure of the area. Data were acquired using a DIGHEM electromagnetic system, supplemented by a high-sensitivity cesium magnetometer. The information from these sensors was processed to produce maps and images that display the magnetic and conductive properties of the survey areas. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base map coordinates.

The survey data were processed and compiled in the Fugro Airborne Surveys Toronto office. Maps and data in digital format are provided with this report.

TABLE OF CONTENTS

APPENDICES

TABLE OF TABLES

TABLE OF FIGURES

Survey Area Description

Location of the Survey Area

One block located in EASTERN YUKON, HIT BLOCK, Yukon Territory, Canada (Figure 1) was flown August 2nd, 2011, with Mac Pass as the base of operations. A total of 128.7 km of traverse lines were flown with a spacing of 100 m and 13.2 km of tie lines with a spacing of 1000 m for a total of 141.9 km for the complete survey.

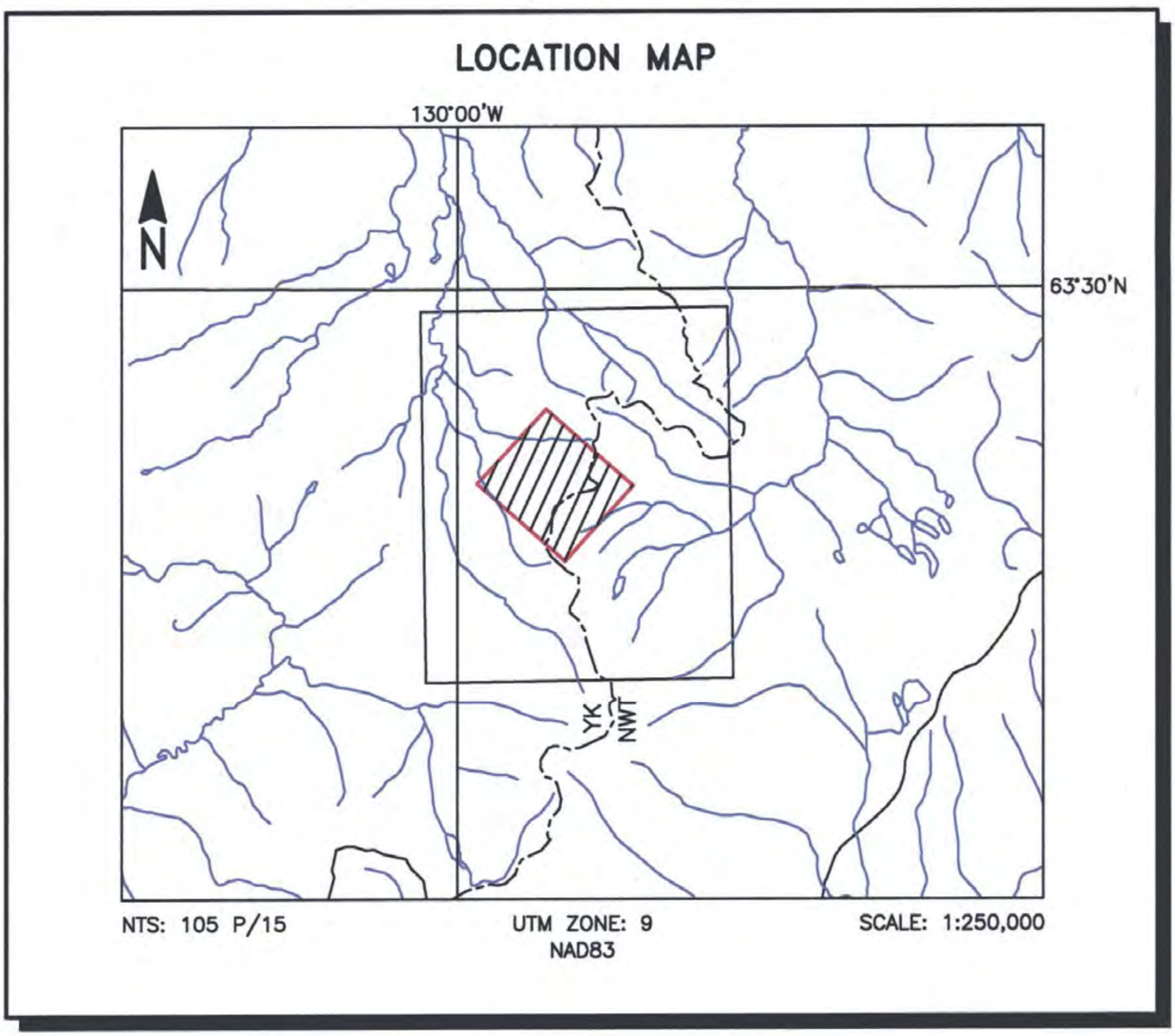


Figure 1 Location Map

Table 1 contains the coordinates of the corner points of the survey block.

Table 1 Area Corners NAD83 UTM Zone 9N

Block	Corners	X-UTM (E)	Y-UTM (N)
11066-1	1	450751.2	7035408.5
Hit Block	2	453043.5	7037782.0
	3	455842.4	7035262.5
	4	453575.1	7032865.5

During the survey a base station GPS was set up to collect data to allow the post processing of the positional data for increased accuracy. The location of the GPS base station is recorded in Table 2.

Table 2 GPS Base Station Location

Status	**Location Name**	**WGS84 Latitude (deg-min-sec)**	**WGS84 Longitude (deg-min-sec)**	**Orthometric Height (m)**
Primary	Mac Pass	63° 05' 59.22527" N	130°12' 46.44419"W	1138.51
Secondary	Mac Pass	63° 05' 58.99974" N	130°12' 46.51958"W	1134.655

The location of the Magnetic base station is recorded in
Table 3.

Table 3 Magnetic Base Station Location

Status	**Location Name**	**WGS84 Latitude (deg-min-sec)**	**WGS84 Longitude (deg-min-sec)**
Primary	Mac Pass	63° 05' 58.99974" N	130 °12' 46.5 1958" W
Secondary	Mac Pass	63° 05' 59.22527" N	130 °12' 46.44419" W

All the grids and maps have been produced with the following coordinate system:

Projection:	Universal Transverse Mercator (UTM Zone 9N)
Datum:	NAD83
Central meridian:	129° West
False Easting:	500000 metres
False Northing:	0 metres
Scale factor:	0.9996
Dx,Dy,Dz:	0, 0, 0

The field crew for the survey were as follows:

Pilot:	Mark Lapointe
Electronics Operator:	Terry Lacey
Processor:	Sara Lise Underhay

System Information

Figure 2 DIGHEM System

The DIGHEM system comprises a 30m cable which tows a 9m bird containing the EM transmitter and receiver coils,(three coplanar and two coaxial), a magnetometer, a laser altimeter and a GPS antenna for flight path recovery. The helicopter has a tail boom mounted GPS antenna for in-flight navigation, a radar altimeter, a barometric altimeter, a video camera and a data acquisition system.

Aircraft and Geophysical On-Board Equipment

Helicopter:	AS350 B2
Operator:	Questral Helicopter Ltd.
Registration:	C-GJIX
Average Survey Speed:	55 knots / 110 kph / 30m/s
Magnetometer:	Scintrex CS-3 single cell cesium vapour, slung below the helicopter, sensitivity = 0.01 nT, sampling rate = 0.1 s, ambient range 20,000 to 100,000 nT.
Digital Acquisition:	Fugro Airborne Surveys HELIDAS.
Barometric Altimeter:	Motorola MPX4115AP analog pressure sensor with a pressure sensitivity of 150mV/kPa and a 10 Hz recording interval mounted in the helicopter.
Radar Altimeter:	Honeywell or Sperry, AA 330 or RT220 short pulse modulation 4.3 GHz, sensitivity 1 ft, range 0 to 2500 ft, 10 Hz recording interval mounted in the helicopter.
Laser Altimeter:	Optech G-150 fixed pulse repetition rate of 1 kHz with a sensitivity of ±5 cm from 10℃ to 30℃ and ±10 cm f rom -20℃ to +50℃. The laser altimeter is housed in the EM bird and measures the distance from the EM bird to ground. The laser altimeter penetrates tree canopy better than the radar altimeter. This information is used in the processing algorithm that determines EM conductor depth.
Camera:	Panasonic WVCD/32 Camera with Axis 241S Video Server
Electronic Navigation:	NovAtel OEM4/V with a 1 sec recording interval, with an accuracy of ±0.6m using SBAS. Aero Antenna mounted on the tail of the helicopter.

Base Station Equipment

Magnetometer:	Scintrex CS-3 single cell cesium vapour, mounted in a magnetically quiet area, measuring the total intensity of the earth's magnetic field in units of 0.01 nT at 1 Hz, within a noise envelope of 0.20 nT.
GPS Receiver:	NovAtel OEM4/V, 1 sec recording interval, with an accuracy of

	±0.6m using SBAS.
Data Logger:	CF1, SBBS (single board base station).
Secondary Magnetometer:	GEM Systems GSM-19T with a sensitivity of 0.10 nT, sampled at 3 second intervals.

Contract Specifications

The Survey Area is comprised of one block located in Eastern Yukon, Canada. The Survey Area encompass approximately 141.9 line kilometres.

Table 4 Line kilometre summary

Block	Line Numbers From	Line Numbers To	Line direction	Line km (@ 100 metres)
1	30010	30330	132°	128.7
Claim 31	39010	39040	44°	13.2

Optimum Survey Elevations for the helicopter and instrumentation during normal survey flying are:

Helicopter	60 metres
Magnetometer	35 metres
DIGHEM EM sensor	35 metres

Survey Elevations will not deviate by more than 20% over a distance of 2 km from the contracted elevation.

Survey Elevations is defined as the measurement of the helicopter radar altimeter to the tallest obstacle in the helicopter path. An obstacle is any structure or object which will impede the path of the helicopter to the ground and is not limited to and includes tree canopy, towers and power lines.

Survey Elevations may vary based on the pilot's judgement of safe flying conditions around man-made structures or in rugged terrain.

Electromagnetics

Spheric pulses may occur having strong peaks but narrow widths. The EM data area considered acceptable when their occurrence is less than 10 spheric events exceeding the stated noise specification for a given frequency per 100 samples continuously over a distance of 2,000 metres.

Frequency	Coil Orientation	Peak to Peak Noise Envelope (ppm)
1000 Hz	vertical coaxial	5.0
900 Hz	horizontal coplanar	10.0
5500 Hz	vertical coaxial	10.0
7200 Hz	horizontal coplanar	20.0
56,000 Hz	horizontal coplanar	40.0

Airborne High Sensitivity Magnetometer

The non-normalized 4th difference will not exceed 1.6 nT over a continuous distance of 1 kilometre excluding areas where this specification is exceeded due to natural anomalies.

Ground Base Station Magnetometer

For acceptance of the magnetic data, non-linear variations in the magnetic diurnal should not exceed 10 nT per minute.

Data Processing

Appendix D depicts the data processing flow for the electromagnetic and magnetic datasets.

Field

All digital data were verified for validity and continuity. The data from the aircraft and base station were transferred to the field PC's hard disk. Field data were then sent to the FAST office to be checked by a geophysicist for adherence to the survey specifications as outlined in the SYSTEM INFORMATION section. Any failure to meet the survey specifications resulted in a reflight of the line or portion of the line unless aircraft safety was at risk or the client's on site representative approved the data.

Flight Path Recovery

The raw range data from at least four satellites are simultaneously recorded by both the base and mobile GPS units. The geographic positions of both units, relative to the model ellipsoid, are calculated from this information. Differential corrections, which are obtained from the base station, are applied to the mobile unit data to provide a post-flight track of the aircraft, accurate to within 1 metre. Speed checks of the flight path are also carried out to determine if there are any spikes or gaps in the data.

The corrected WGS84 latitude/longitude coordinates are transformed to the UTM coordinate system used on the final maps. Images or plots are then created to provide a visual check of the flight path.

Electromagnetic Data

EM data are processed at the recorded sample rate of 10 samples/second. Spheric rejection median and Hanning filters are then applied to reduce noise to acceptable levels.

The EM data are examined to allow the interpreter to select the most appropriate EM anomaly picking controls for a given survey area. The EM picking parameters depend on several factors but are primarily based on the dynamic range of the resistivities within the survey area, and the types and expected geophysical responses of the targets being sought.

Anomalous electromagnetic responses are selected and analysed by computer to provide preliminary electromagnetic anomaly picks. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. Using the preliminary picks in conjunction with the profile data, the interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data. The final interpreted EM anomalies include bedrock, surficial and cultural conductors and are defined based on typical HEM anomaly shapes, which are defined in Appendix B, figure B-1. The types of conductors interpreted from the EM data are given below in table 5.

Table 5 EM Anomaly Interpretation

Interpretation Symbol	Conductor Model
D	Narrow bedrock conductor ("vertical or dipping thin dyke")
B	Bedrock conductor
T	Bedrock conductor ("vertical or dipping thick dyke" >10 metres thickness) Note: this anomaly type is presented on the EM anomaly maps as a "B" interpretive symbol with "arcs", which surround the anomaly symbol to denote a thickness of greater than 10 metres.
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of a half space")
L	Culture, e.g. power line, metal building or fence
"?"	Indicates some degree of uncertainty as to which is the most appropriate EM source model, but does not question the validity of the EM anomaly

The anomalies shown on the electromagnetic anomaly map are based on a near-vertical, half plane model. This model best reflects "discrete" bedrock conductors. Wide bedrock conductors or flat-lying conductive units, whether from surficial or bedrock sources, may give rise to very broad anomalous responses on the EM profiles. These may not appear on the electromagnetic anomaly map if they have a regional character rather than a locally anomalous character.

These broad conductors, which more closely approximate a half-space model, will be maximum coupled to the horizontal (coplanar) coil-pair and should be more evident on the resistivity parameter. Resistivity maps, therefore, may be more valuable than the electromagnetic anomaly maps, in areas where broad or flat-lying conductors are considered to be of importance.

Excellent resolution and discrimination of conductors was accomplished by using a fast sampling rate of 0.1 sec and by employing a "common" frequency (5500/7200 Hz) on two orthogonal coil-pairs (coaxial and coplanar). The resulting difference channel parameters often permit differentiation of bedrock and surficial conductors, even though they may exhibit similar conductance values. For any Fugro multi-component helicopter frequency domain EM system (HFEM), the difference channel is a calculated product to assist interpretation of discrete conductor targets. There is one each for the in-phase and quadrature components of the EM channels, called DIFI and DIFQ.

The difference channel is a parameter used to quantify the difference between the coaxial and coplanar response, to help distinguish which conductivity changes are caused by flat-lying conductors (like swamps) or changes in the layered earth (with a 1:4 ratio between CX and CP), and which anomalies are caused by discrete conductive bodies (ideally with a 1:1 CX to CP ratio). The difference between the CP and CX for both in-phase and quadrature EM data is calculated everywhere, weighted to adjust the response for the geometric difference as well as differences in coil separation. For a flat-lying or halfspace (thick, flat-lying) conductor, the difference channel (DIFI or DIFQ) will be near zero, as it will over background areas (a layered earth). For a discrete conductor like a vertical thin dike, the difference channel will have a positive value. In practice the value will be somewhat variable, dependent on the shape and thickness of the conductor and the conductivity of the host rock. Because it is a difference, not a ratio, the amplitude of the difference channel over a discrete conductor will depend on the strength of the anomaly, but it will remain near zero for the flat-lying targets.

Anomalies that occur near the ends of the survey lines (i.e., outside the survey areas) should be viewed with caution. Some of the weaker anomalies could be due to aerodynamic noise, i.e., bird bending, which is created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines. Such aerodynamic noise is usually manifested by an anomaly on the coaxial in-phase channel only, although severe stresses can affect the coplanar in-phase channels as well.

The EM anomalies resulting from this survey appear to fall within one of three general categories. The first type consists of discrete, well-defined anomalies that yield marked inflections on the difference channels. These anomalies are usually attributed to conductive sulphides or graphite and are generally given a "B" (bedrock), "D" (vertical or dipping thin dyke) or "T" (vertical or dipping thick dyke) interpretive symbol, all denoting a bedrock source. EM anomalies that do not display the classic anomaly shape of the “thin dyke” model, but are considered to reflect sources at depth are generally given a “B” interpretation. The “T” anomaly is a very specific anomaly type, and is generally not used unless the specific criteria defined in figure B-1 of appendix B are met. No “T” anomalies were identified within this survey area.

The second class of anomalies comprises moderately broad responses that exhibit the characteristics of a half-space and do not yield well-defined inflections on the difference channels. Anomalies in this category are usually given an "S" or "H" interpretive symbol. The lack of a difference channel response usually implies a broad or flat-lying conductive source such as overburden. Some of these anomalies could reflect conductive rock units, zones of deep weathering, or the weathered tops of kimberlite pipes, all of which can yield “non-discrete” signatures.

The effects of conductive overburden are evident over portions of the survey area. Although the difference channels (DIFI and DIFQ) are extremely valuable in detecting bedrock conductors that are partially masked by conductive overburden, sharp undulations in the bedrock/overburden interface can yield anomalies in the difference channels which may be interpreted as possible bedrock conductors. Such anomalies usually fall into the "S?" or "B?" classification but may also be given an "E" interpretive symbol, denoting a resistivity contrast at the edge of a conductive unit.

The "?" symbol does not question the validity of an anomaly, but instead indicates some degree of uncertainty as to which is the most appropriate EM source model. This ambiguity results from the combination of effects from two or more conductive sources, such as overburden and bedrock, gradational changes, or moderately shallow dips. The presence of a conductive upper layer has a tendency to mask or alter the characteristics of bedrock conductors, making interpretation difficult. This problem is further exacerbated in the presence of magnetite.

In areas where EM responses are evident primarily on the quadrature components, zones of poor conductivity are indicated. Where these responses are coincident with magnetic anomalies, it is possible that the in-phase component amplitudes have been suppressed by the effects of magnetite. Poorly-conductive magnetic features can give rise to resistivity anomalies that are only slightly below or slightly above background. If it is expected that poorly-conductive economic mineralization could be associated with magnetite-rich units, most of these weakly anomalous features will be of interest.

In areas where magnetite causes the in-phase components to become negative, the apparent conductance and depth of EM anomalies will be unreliable. Magnetite effects usually give rise to overstated (higher) resistivity values and understated (shallow) depth calculations.

As potential targets within the areas may be associated with massive to weakly disseminated sulphides, which may or may not be hosted by magnetite-rich rocks, it is impractical to assess the relative merits of EM anomalies on the basis of conductance. It is recommended that an attempt be made to compile a suite of geophysical "signatures" over any known areas of interest. Anomaly characteristics are clearly defined in the profile data of the EM channels.

The third class of anomalies consists of cultural anomalies, which are usually given the symbol "L" or "L?". Anomalies in this category can include telephone or power lines, pipelines, railways, fences, metal bridges or culverts, buildings and other metallic structures.

Apparent Resistivity

The apparent resistivities in ohm-m are generated from the in-phase and quadrature EM components for all of the coplanar frequencies, using a pseudo-layer half-space model. The inputs to the resistivity algorithm are the in-phase and quadrature amplitudes of the secondary field. The algorithm calculates the apparent resistivity in ohm-m, and the apparent height of the bird above the conductive source. Any difference between the apparent height and the true height, as measured by the radar altimeter, is called the pseudo-layer and reflects the difference between the real geology and a homogeneous halfspace. This difference is often attributed to the presence of a highly resistive upper layer. Any errors in the altimeter reading, caused by heavy tree cover, are included in the pseudo-layer and do not affect the resistivity calculation. The apparent depth estimates, however, will reflect the altimeter errors. Apparent resistivities calculated in this manner may differ from those calculated using other models.

In areas where the effects of magnetic permeability or dielectric permittivity have suppressed the in-phase responses, the calculated resistivities will be erroneously high. Various algorithms and inversion techniques can be used to partially correct for the effects of permeability and permittivity. No corrections for permeability and permittivity were made to the data for this survey.

The apparent resistivity parameters portray all of the information for a given frequency over the entire survey area. This full coverage contrasts with the electromagnetic anomalies, which provide information only over interpreted conductors. The large dynamic range afforded by the multiple frequencies makes the apparent resistivity parameter an excellent mapping tool.

The preliminary apparent resistivity images are carefully inspected to identify any lines or line segments that might require base level adjustments. Subtle changes between in-flight calibrations of the system can result in line-to-line differences that are more recognizable in resistive (low signal amplitude) areas. If required, manual level adjustments are carried out to eliminate or minimize resistivity differences that can be attributed, in part, to changes in operating temperatures. These levelling adjustments are usually very subtle, and do not result in the degradation of discrete anomalies.

After the manual levelling process is complete, revised resistivity grids are created. The resulting grids can be subjected to a microlevelling technique in order to smooth the data for contouring. The coplanar resistivity parameter has a broad 'footprint' that requires very little filtering.

Apparent resistivity maps, which display the conductive properties of the survey area, were produced from the 900 Hz, 7200 Hz and 56 000 Hz coplanar data. Maximum resistivity values are calculated for each frequency. These cutoffs eliminate the erratic higher resistivities that would result from unstable ratios of very small EM amplitudes.

Residual Magnetic Field

A Fugro CF-1 cesium vapour magnetometer was operated at the survey base to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

A fourth difference editing routine was applied to the magnetic data to remove any spikes.

The aeromagnetic data were corrected for measured system lag, and then adjusted for regional variations (or IGRF gradient, 2010, updated to the date of data acquisition and adjusted for altimeter variations). The data were then corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data. The results were then levelled using tie and traverse line intercepts. Manual adjustments were applied to any lines that required levelling, as indicated by shadowed images of the gridded magnetic data. The manually levelled data were then subjected to a microlevelling filter. The gridded data show the magnetic properties of the rock units underlying the survey areas.

If a specific magnetic intensity can be assigned to the rock type that is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values that will permit differentiation of various lithological units. Structural complexities are evident on the images as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction.

The magnetic results, in conjunction with the other geophysical parameters, have provided valuable information that can be used to effectively map the geology and structure in the survey areas.

Calculated Vertical Magnetic Gradient (First Vertical Derivative)

The diurnally-corrected, IGRF-corrected magnetic data were subjected to a processing algorithm that enhances the response of magnetic bodies in the upper 500 metres and attenuates the response of deeper bodies. The resulting vertical gradient grid provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features that may not be quite as evident in the total field data. Regional magnetic variations and changes in lithology, however, may be better defined on the total magnetic field parameter.

Digital Elevation

The laser altimeter values (ALTLAS_BIRD – EM bird to ground clearance) are subtracted from the differentially corrected and de-spiked GPS-Z values to produce profiles of the height above the ellipsoid along the survey lines. These values are gridded to produce contour maps showing approximate elevations within the survey area. The calculated digital terrain data are then tie-line levelled and adjusted to mean sea level. Any remaining subtle line-to-line discrepancies are manually removed. After the manual corrections are applied, the digital terrain data are filtered with a microlevelling algorithm.

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, ALTLAS_BIRD and GPS-Z. The ALTLAS_BIRD value may be erroneous in areas of heavy tree cover, where the altimeter reflects the distance to the tree canopy rather than the ground. The GPS-Z value is primarily dependent on the number of available satellites. Although post-processing of GPS data will yield X and Y accuracies in the order of 1-2 metres, the accuracy of the Z value is usually much less, sometimes in the ±10 metre range. Further inaccuracies may be introduced during the interpolation and gridding process.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, <u>THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.</u>

Contour, Colour and Shadow Map Displays

The magnetic and resistivity data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for image processing and generation of contour maps. The grid cell size is 20% of the line interval.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps.

Final Products

Digital Archives

Line and grid data in the form of a Geosoft database (*.gdb) and XYZ file and Geosoft grids (*.grd) have been written to DVD. The formats and layouts of these archives are further described in Appendix E (Data Archive Description). Hardcopies of all maps have been created as outlined below.

Maps

Scale:	1:20,000
Parameters:	Residual Magnetic Intensity
	First Vertical Derivative of the Residual Magnetic Intensity
	Apparent Resistivity; 56,000 Hz
	Apparent Resistivity; 7,200 Hz
	DIGHEM EM anomaly / interpretation maps
Media/Copies:	2 Paper plus PDF and Geosoft MAP

Report

Media/Copies: 2 Paper plus PDF

Flight Path Videos

Media /Copies: BIN/BDX format

All maps, grids and sections have been produced with the following coordinate system:

Projection:	Universal Transverse Mercator (UTM Zone 9N)
Datum:	NAD83
Central meridian:	129° West
False Easting:	500000 metres
False Northing:	0 metres
Scale factor:	0.9996
Dx,Dy,Dz:	0, 0, 0

Survey Results

General Discussion

Geology Setting

The Hit Block is located within the Selwyn Basin, a large basin characterized by the deposition of thick sequences of sedimentary rock from the Precambrian to the Mississippian. The Road River Formation strata underlying the block consist of Cambrian aged black shale, argillaceous limestone, calcareous siltstone, green silty slate and rare quartzite. The Hit pluton, a granitic intrusion that likely belongs to the Tombstone Suite situated on the central part of the block, has extensively hornfelsed these sediments, resulting in the development of widespread skarn and calcsilicate minerals/effects as well as numerous gossans (Higgs, 2010).

The main structural features are NW-trending normal faults and joint sets, the development of which likely occurred during the emplacement of the Hit Pluton. Post-dating the NW-trending set are several NE-trending cross-faults. These faults usually exhibit weak epithermal characteristics, and often contain anomalous gold values. A third set of faults consists of small-scale, flat-lying structures. This type is best recognized in the area of the main showing and has caused several slight displacements of the auriferous beds (Higgs, 2010).

Magnetic Data

The magnetic images show that the survey areas have been subjected to deformation and/or alteration. These structural complexities are evident on the colour maps as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction.

Several breaks can also be inferred from the vertical gradient data. Many of the major breaks are probably already known, because of the extensive mapping and mining activities in the survey areas. However, due to the presence of moderately thick overburden, some of the features detected by the airborne survey could reflect previously unknown structural controls that could be of interest. There are several areas where the detailed airborne magnetic coverage defines contacts, folds, and faults that are quite different from those shown on the current geological maps. In some cases, the magnetic data may be reflecting the deeper underlying units, rather than the rock types exposed at surface.

The Hit pluton, in the central part of the block, shows a circular magnetic high. Near the center of the pluton, strong magnetic responses are in the areas of topographic highs. Over the Hit pluton, several areas of low magnetic susceptibility are located in depressions or gullies.

In the eastern parts of the block, the Road River Formation shows bands of magnetic highs that strike NE-SW. This formation also shows magnetic highs in areas west of the pluton. In the areas north and southwest of the pluton, the formation has moderate to low magnetic intensity.

Based on the CVG and RMI maps the intrusive contacts between the pluton and Road River Formation are well defined at the southwest and west edges of the pluton. The south and southeast contacts are not clear from the magnetic data due to the extensive talus cover. The magnetic data show broad magnetic highs in claims YC01884, YC01882, YC01881, YC01399, YC01400 and YC01899, which are outside the contacts delineated by Higgs. This might indicate the deeper parts of the pluton response. The claim numbers are shown in Higgs' 2010 report.

Several breaks can be defined from the CVG and/or RMI maps based on the magnetic trend offsets or changes in strike direction. Two major alignments of the breaks in this block are NW and NE trending. The inferred breaks are shown on the EM interpretation map. Recent trends indicated by the current dataset might indicate potential zones of structural deformation that might warrant further investigation.

If a specific magnetic intensity can be assigned to the rock type that is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values that will permit differentiation of the various lithological units.

The magnetic results have provided valuable information that can be used in conjunction with the other geophysical parameters, to help map the geology and structure in the survey area..

Apparent Resistivity

Apparent resistivity grids, which display the conductive properties of the survey area, were produced from the 900, 7200 Hz, and 56000 Hz coplanar data. The maximum resistivity values, which are calculated for each frequency, are 1060, 8,000 and 30,000 ohm-m respectively. These cut-offs eliminate the erratic higher resistivities that could result from unstable ratios of very small EM amplitudes. All coplanar resistivity data will be included on the final data archive.

Both resistive and weakly conductive trends are evident on the near-surface 56 kHz maps. Although there are several areas where the more magnetic units correlate with resistive units there is no consistent resistivity/magnetic correlation. This suggests that in some cases, the magnetic and resistivity parameters are responding to different causative sources; i.e., the EM-derived resistivity is responding to changes in the overburden and near-surface layers, while the magnetic data are reflecting changes in the underlying deeper basement units.

If the target shears are highly silicified and non-porous, these should show as narrow resistive units. These non-magnetic, non-conductive linear trends may prove to be the more attractive targets in the search for quartz-vein mineralization. Conversely, increased porosity, alteration, or an increase in sulphide content associated with some shears or faults, could show as more conductive trends. Any weak responses that are associated with the margins of inferred intrusive features will also be of exploration interest.

There are other resistivity lows and highs in the areas that might also be of interest. Some of these are quite extensive and might reflect "formational" conductors or layers that could be of minor interest as direct exploration targets. However, attention may be focused on areas where these zones appear to be faulted or folded or where anomaly characteristics differ along strike.

Some of the resistive zones could reflect intrusive plugs, flows or caps. These are more evident on the 56 kHz resistivity parameter. Although some of these are due to resistive rock units, others might be attributed to magnetite suppression. Some anomalous magnetite-associated responses exhibit positive quadrature responses, denoting weak conductivity, but still show as resistive units because of the magnetite suppression.

Other resistive zones are quite subtle, and could be due to changes in overburden thickness, rather than changes in rock type. However, those that are associated with linear magnetic breaks, contacts, or decreases in magnetite, are considered to be of slightly higher priority.

In the search for auriferous mineralization, the value of EM conductors may be of little importance, unless the gold is known to be associated with conductive material such as sulphides, conductive shears or faults, alteration products, or magnetite-rich zones. As mentioned previously, resistive zones can often be of greater exploration interest, particularly if the host rocks are siliceous.

The Hit pluton, consisting of granitic composition, is highly resistive. Conversely, the Road River Formation hosts highly conductive zones. The contact between the intrusive rocks and the Road River Formation in the east and northeast side of the Hit pluton is better defined by the resistivity maps than the magnetic data.

Some breaks can be defined from the resistivity maps based on the EM conductor trend offsets or changes in strike direction. Most of these breaks can also be delineated by the magnetic data.

Electromagnetic Anomalies

The picking and interpretation procedure relies on several parameters and calculated functions. For this survey, the Coaxial 5500 Hz responses and the mid-frequency difference channels were used as two of the main picking criteria. The 7200 Hz coplanar results were also weighted to provide picks over wider or flat-dipping sources. The quadrature channels provided picks in any areas where the in-phase responses might have been suppressed by magnetite.

Excellent resolution and discrimination of conductors was accomplished by using a fast sampling rate of 0.1 sec and by employing a “common” frequency (5500Hz / 7200Hz) on two orthogonal coil-pairs (coaxial and coplanar). The resulting difference channel parameters (DIFI and DIFQ) often permit differentiation of bedrock and surficial conductors, even though they may exhibit similar conductance values.

Anomalies that occur near the ends of the survey lines (i.e., outside the survey area), should be viewed with caution. Some of the weaker anomalies could be due to aerodynamic noise, i.e., bird bending, which is created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines. Such aerodynamic noise is usually manifested by an anomaly on the coaxial in-phase channel only, although severe stresses can affect the coplanar in-phase channels as well.

It is not expected that siliceous units hosting auriferous mineralization would give rise to discrete EM conductors, unless the gold was associated with conductive sulphides or graphite. EM anomalies have been picked for this survey area with the objective of detecting any possible sulphide-associated mineralization and to help locate any conductive faults or shears.

Table 6 summarizes the EM responses in the survey area, with respect to conductance grade and interpretation. The EM anomalies resulting from this survey appear to fall within one of four general categories. The first type consists of discrete, well-defined anomalies that yield marked inflections on the difference channels. Such anomalies are usually attributed to conductive sulphides or graphite and are generally given a "B" or "D" interpretive symbol, denoting thick or thin bedrock sources.

The second class of anomalies comprises moderately broad responses that exhibit the characteristics of a half-space and do not yield well-defined inflections on the difference channels. Anomalies in this category are usually given an "S" (surficial) or "H" (buried) interpretive symbol. The lack of a difference channel response usually implies a broad or flat-lying conductive source such as overburden. However, some of these broad anomalies could reflect broad or flat-lying conductive rock units, zones of deep weathering, or increased overburden thickness, all of which can yield “non-discrete” signatures.

The effects of conductive overburden are evident over more than half of the survey areas. Although the difference channels (DIFI and DIFQ) are extremely valuable in detecting bedrock conductors that are partially masked by conductive overburden, sharp undulations in the bedrock/overburden interface can yield anomalies in the difference channels which may be interpreted as possible bedrock conductors. Such anomalies usually fall into the "S?" or "B?" classification but may also be given an "E" interpretive symbol, denoting a resistivity contrast at the edge of a conductive unit.

The "?" symbol does not question the validity of an anomaly, but instead indicates some degree of uncertainty as to which is the most appropriate EM source model. This ambiguity results from the combination of effects from two or more conductive sources, such as overburden and bedrock, cultural (line) sources in overburden areas, gradational changes (metamorphism or weathering), magnetite association, or moderately shallow dips. The presence of a conductive upper layer has a tendency to mask or alter the characteristics of bedrock conductors, making interpretation difficult. This problem is further exacerbated in the presence of magnetite.

The third anomaly category includes responses that are associated with magnetite. Magnetite can cause suppression or polarity reversals of the in-phase components, particularly at the lower frequencies in resistive areas. Conductive overburden tends to mask many of these negative excursions, particularly at the higher frequencies, but the effects of magnetite-rich rock units are occasionally evident on the multi-parameter geophysical data profiles as suppressions or negative excursions of the lower frequency in-phase channels.

In areas where EM responses are evident primarily on the quadrature components, zones of poor conductivity are indicated. Where these responses are coincident with magnetic anomalies, it is possible that the in-phase component amplitudes have been suppressed by the effects of magnetite.

Poorly conductive magnetic features can give rise to resistivity anomalies that are only slightly below or slightly above background. If it is expected that poorly conductive economic mineralization could be associated with magnetite-rich units, most of these weakly anomalous features will also be of interest.

In areas where magnetite causes the in-phase components to become negative, the apparent conductance and depth of EM anomalies will be unreliable. Magnetite effects usually give rise to overstated (higher) resistivity values and understated (too shallow) depth calculations. The erroneous depth estimates make it extremely difficult to determine if the conductive source actually resides within, or overlies, the magnetic unit. Heavy tree cover can also yield erroneous depth estimates.

The fourth category, consists of cultural (man-made) responses which are usually given the symbol "L" or "L?", often denoting a "line" source. Anomalies in this category can include telephone or power lines, pipelines, railways, fences, metal bridges or culverts, but can also include vehicles, mining equipment, buildings, and other metallic structures. Mine waste and tailings generally yield S or H type responses, but water pipes or buried metallic scrap will usually carry an "L" or "L?" symbol. There are no "L" type anomalies defined in the Hit Block.

Although line-type responses usually have distinctive signatures, their characteristics can be altered in the presence of conductive cover, to the point where they resemble signatures from thin bedrock sources. In such cases, the anomalous responses are often given a B? or S? symbol, particularly where there is no visible culture on the flight path video. The S? responses are often modified to B?, where there is an apparent magnetic correlation. Powerlines are easily identified by the 60 Hz monitor, but the strong interference fields can often yield spurious anomalies, remote from the line itself, and can also mask valid bedrock conductors in moderately close proximity (± 200 m?) to the line.

Potential Bedrock Conductors

As potential targets within the survey areas may be associated with quartz-rich units that contain moderate to no sulphide content, and which may be hosted by non-magnetic units that could be covered by either conductive overburden or resistive sand cover, it is impractical to assess the relative merits of EM anomalies on the basis of conductance.

Electromagnetic anomalies have been picked for these survey areas in order to locate any conductive faults or shears that might have served as conduits or host units, and to locate any zones that could reflect concentrations of sulphide material. The Electromagnetic Anomalies maps show all anomaly locations with the interpreted conductor type, dip, and conductance being indicated by symbols. Direct magnetic correlation is also shown, if it exists.

The anomalous EM responses detected by the survey have been assigned a simple colour code, in order to facilitate source recognition. The thinner dyke-like sources (D) are red, while the thicker (B) bedrock sources are shown in dark blue. Surficial (S) overburden responses or buried thick layers (H) are shown in green, as are edge effects (E). Cultural objects are shown as black squares.

A few conductor axes between the (bedrock) EM anomalies have been drawn. Most of the anomalous responses are of moderate to weak signal amplitude and they generally yield low conductance values of less than 5 Siemens (mhos). It should be noted that the calculated conductance values are based on the mid-frequency (5500 Hz) coaxial responses.

The 900 Hz resistivity (deeper layer) is generally more resistive than the surface layer, with the upper layer (56 kHz) showing the larger variations, from conductive overburden and clay to resistive sand and gravel. Some of the resistive zones, however, are attributed to siliceous bedrock units near surface, or an absence of conductive cover.

It is beyond the scope of this report to attempt to describe all of the interpreted bedrock conductors on the properties. However, the following text very briefly describes some of the more attractive geophysical responses, based on favourable structure, magnetic association, conductance, length, width, or depth extent. Most are quite weak or poorly defined.

Table 6 shows that in the Hit block, nearly 6% of the 383 EM anomalies have been attributed to conductive overburden. About 94% have been attributed to possible or probable bedrock sources

Table 6: Hit Block EM Anomaly Statistics

Conductor Grade	Conductance Range / Siemens (MHOS)	Number of Responses
7	>100	3
6	50-100	5
5	20-50	18
4	10-20	29
3	5-10	43
2	1-5	172
1	<1	111
*	Indeterminate	2
Total		383

Conductor Model	Most Likely Source	Number of Responses
D	Thin Discrete Bedrock Conductor	34
B	Discrete Bedrock Conductor	293
S	Conductive Cover	14
H	Rock Unit or Thick Cover	8
E	Edge of Wide Conductor	34
L	Culture	0
Total		383

(SEE EM MAP LEGEND FOR EXPLANATIONS)

For purposes of discussion, a single anomaly may be used to describe a string or group of similar anomalies comprising a conductive trend or zone. Although the responses listed in the table below are more likely to represent sulphide-type occurrences, they do not necessarily include the more economically attractive auriferous zones, most of which are believed to be relatively resistive and non-magnetic. These “non-anomalous” features may be located by using the high frequency resistivity and the structural information derived from the magnetic data.

Hit Block			
Anomaly	Type	Mag	Comments
300270I	D	44	Group 1 These anomalies are moderately magnetic and conductive. Many D type anomalies attributed to conductive thin sources are in the northwest part of this group. Based on the CVG map, at last 2 NW-SE trending breaks intersect this group of anomalies. Most of the anomaly axes in this group are parallel to the topography contours. See interpretation map for the detailed EM axes locations.
300280K	D	18	
300290K	B	22	
300290L	D	22	
300300L	D	---	
300310K	D	---	
300310L	D	45	
300310M	D	92	
300320C	B	---	
300320D	B	52	
300320E	B?	119	
300330H	B	9	
300330I	D	89	
300330J	D	122	
39040G	B?	---	
300300M	B	---	Group 2 This group of EM anomalies is located southeast of the previous group. They are weakly magnetic. However, these anomalies have slightly stronger EM responses than the previous group. A NW-SW trending inferred break possibly cuts through this group.
300310N	B	---	
300310O	B	---	
300320F	B	---	
300320G	B	---	
300330K	B	---	
300330L	B	---	
300220H	B?	5	Group 3 These anomalies are located southwest of the group 1 anomalies. Their axes are also parallel to the topography contours. Some non-magnetic D type anomalies are near the contacts of the intrusive rocks. The magnetic bedrock responses are in the east and southeast parts of this group. Two E-W trending and one N-S inferred break possibly pass through this group.
300220I	B	34	
300220J	B	166	
300230H	D	---	
300230I	B?	100	
300230J	B	---	
300230K	B	133	
300240I	B?	---	
300240J	B?	95	
300240K	B	35	
300240L	B	229	
300250G	D	---	
300250H	D	---	
300250I	B	---	
300250J	B	65	
300260N	B	---	
300260O	D	---	
300260P	B	28	
300270J	B	---	
39040D	B	---	
39040E	B	12	
39040F	B	---	
300140E	B?	825	Group 4 These anomalies are highly magnetic but have weak EM responses.
300150F	B?	1219	
300150G	B	61	
300160F	B?	815	

Hit Block			
Anomaly	Type	Mag	Comments
300170H	D	555	
300170I	B	---	
300180H	B?	717	
300180I	B?	1049	
300180J	B	---	
300190F	B?	922	
300190G	B?	555	
300190H	B	149	
300200H	B	---	
300211G	B?	744	
300211H	B?	145	
300220F	D	---	
300220H	B?	5	
300220K	B?	352	
300220L	B	283	
300230L	B	308	
300240M	B	510	
300240N	B?	910	
39040C	B?	170	
300120D	B	147	Group 5 These anomalies are non-magnetic. Many D type anomalies are parallel to the topography contours and near the intrusive contact. Three inferred breaks, one E-W, one NW-SE, and one NE-SW intersect this group.
300130C	B	182	
300140C	B	---	
300140D	D	117	
300150D	D	---	
300150E	D	77	
300160C	D	---	
300160D	D	163	
300170F	D	---	
300170G	D	---	
300180F	D	---	
300180G	D	---	
300190D	D	---	
300190E	B	---	
300200D	D	104	
300200E	D	27	
30010L	B	36	Group 6 These weak EM anomalies are moderately magnetic. The EM axes are parallel to the topography contours and are located on the topographic high.
30010M	B	5	
30010N	B?	62	
30021J	B?	---	
30021K	B	8	
30021L	B	8	
30021M	B	121	
30030H	B?	65	
30030I	B?	---	
30030J	B	48	
30030K	B?	87	
30040H	B	46	
30040I	B	---	

Hit Block			
Anomaly	Type	Mag	Comments
30040J 30050J 30050K 30050L 30050M 30050N 30060E 30060F 30070E 30070F 30070G 30070H 30080C	B B B B? B B B B B D B D B?	150 68 --- --- 66 251 --- 252 26 13 --- 205 ---	
300280G 300280H 300290G 300290H 300300D 300300E 300300F 300310E 300320A 39020A 39020B 39020C 39020D 39020E 30920F	B B B B? B B B B B B B? B B B B	9 6 7 --- 2 --- --- --- --- 59 16 --- --- --- ---	Group 7 These weak EM anomalies are non-magnetic. They are located in the topographic low areas. Three N to NNE trending breaks and one NW break can be inferred from the CVG map.
300260G 300260H 300270D 300270E 300270F 300280E 300280F 300290E 300290F	B? B B B B B B B B	124 174 17 17 --- --- --- 7 9	Group 8 Some anomalies in this group anomalies yield moderate EM and magnetic correlation. Based on the CVG map, four inferred breaks pass through this area.
300211C 300220F 300230D 300230E 300240D 300240E	B D B B B? B	5 --- 10 10 34 34	Group 9 These anomalies are non-magnetic and located on a topographic high. An inferred WNW trending break cuts through this group.
300250C 300260E	D D	40 ---	Group 10 These are D type anomalies. 300250C is a weak EM response that yields low magnetic correlation. 300260E has a moderate EM response only. Both of the anomalies are

Hit Block			
Anomaly	Type	Mag	Comments
			isolated. Further studies are suggested.
300250B 300260C 300260D 300270B 300270C 300280B 300280C 300290C 300290D 300300A 39010M 39010N 39010O 39010P	B B? B? B? B B B B? B B B B B B	--- --- --- --- --- --- --- --- --- --- 7 --- --- ---	Group 11 These anomalies have moderate to weak EM responses. They are non-magnetic. Based on the CVG map, one E-W and 2 NW-SE trending breaks are inferred in this area. A conductor axis was defined between 30280C and 30290D. This axis is parallel to the axes in Groups 12 and 13.
300211A 300211B 300220B 300220C 300230C 39010J 39010K	B B B B B B D	6 88 --- 56 --- 82 2	Group 12 Some of these moderate EM anomalies are magnetic. Two NE-SW conductor axes were defined. Based on the CVG map, at last one inferred N-S trending break passes through this area.
300170D 300180C 300180D 300190A 300190B 300200A 300200B 39010F 39010G 39010H 39010I	B D B B B B B B D B B	--- --- 6 66 71 26 120 --- --- --- 20	Group 13 This group is located southwest of the anomalies in Group 12. They also have moderate EM responses and some magnetic correlation. The NE-SW conductor axis is a possible extension of the axis that is located in the southeast part of the group 12. An E-W inferred break has cut this axis and separates Group 13 from Group 12.
300112B 300112C 300120A 300120B 300130A 300130B 300140B 300150B 300150C 300160A 300170B 300170C 300180A	B B B B B B B B B B B? B? B?	--- --- --- --- --- 141 42 58 29 53 17 13 16	Group 14 Some of these weak EM anomalies are magnetic. Three NE-SW conductor axes were defined in this group. A WNW-ESE inferred break cuts this group and offsets the axes.

Hit Block			
Anomaly	Type	Mag	Comments
300100A 300112A	B B?	 --- 8	Group 15 These weak EM anomalies are non-magnetic. A NE-SW conductor axis was defined. This axis is parallel to the axes in the Group 14.
30010E 30021D 30030C 30040C 30040D 30050C 30050D 30060C 30070B 39010A 39010B 39010C 39010D	B B B B B B B D D B B B B	111 --- --- --- 53 --- 52 --- --- --- --- --- ---	Group 16 This group of anomalies has strong to moderate EM responses. Some are magnetic. Based on the CVG map, there are five inferred breaks that cut through this area. Two NE-SW conductor axes were defined in this group.
30010G 30021E 30030D	B B B	748 718 404	Group 17 This group is located southeast of Group 16. The anomalies are magnetic and comprise moderate to weak EM responses.
30050E 30050F 30060D	B B B	--- --- ---	Group 18 These weak EM anomalies are non-magnetic. One NE-SW conductor axes was defined.
30010H 30021F 30030E 30040E	B B B B	--- --- --- 56	Group 19 These non-magnetic anomalies have moderate to weak EM responses. Two NNE-SSW conductor axes were defined.

Summary

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Most of the anomalous responses and their conductor axes discussed above are NE-SW trending, which might correspond to the strikes of the Road River Formation strata and the contacts of the intrusive units. Many breaks cut through these conductor axes. These may be of interest for further studies.

There are numerous anomalous responses in the survey blocks that have not been discussed in the foregoing text. Some have been attributed to conductive overburden or buried conductive layers. These layers are of little interest unless they are related to structural breaks, alteration zones, or areas of favourable geology. However, some of the near-surface features exhibit trends that generally follow the magnetic patterns, which suggests that they could be due to bedrock units, rather than surficial causes only.

In the search for auriferous mineralization, the value of EM conductors may be of little importance, unless it can be demonstrated that the gold is associated with conductive material such as sulphides, graphite, conductive shears or faults, alteration products, or magnetite-rich units. In many cases, resistive zones can be of greater importance, particularly if the host rocks are siliceous. The EM method has detected numerous weak to moderate conductors, but the high frequency resistivity and the vertical magnetic gradient parameters have been more effective in delineating rock units and areas of structural deformation that may have influenced local auriferous mineral deposition.

Conclusions and Recommendations

This report provides a very brief description of the survey results and describes the equipment, data processing procedures and logistics of the airborne survey over the Hit Block, Mayo, Yukon.

The Hit Pluton shows as a circular magnetic high and a rounded resistivity high in the central part of the survey area. The Road River Formation strata contain conductive bands near the perimeter of the pluton.

Most of the conductor axes are parallel to the topographic contours and are NE-SW trending. These might indicate the locations of mineralization zones. Detailed studies of these locations may be warranted in order to determine their causative sources.

The various products accompanying this report display the magnetic and electromagnetic properties of the survey area. An attempt should be made to determine if any of the known mineralized zones on the properties yield distinctive geophysical signatures. It is recommended that a complete assessment and detailed evaluation of the survey results be carried out, in conjunction with all available geophysical, geological and geochemical information.

The magnetic results have provided valuable structural information that can be used to help locate the more favourable areas for mineral deposition on the block. In addition to locating numerous linear faults and shears, the magnetic data have outlined the contacts of both magnetic and non-magnetic units. The latter could reflect felsic intrusions or siliceous breccias that might host auriferous mineralization. The strong magnetic units are likely due to ultramafic units or iron formation. In addition, the combined magnetic and resistivity parameters have outlined a few very interesting magnetic lows and resistivity highs that could reflect alteration zones or siliceous caps.

Most anomalies in the area are of moderately low conductance, generally less than 5 Siemens. These broad, poorly defined responses have generally been attributed to conductive overburden or flat-lying conductive metasedimentary layers. There are several low resistivity zones where values of less than 500 ohm-m are evident.

There were more than 383 anomalous EM responses detected in the survey block, and 94% of these have been attributed to bedrock sources. Some of these are likely due to conductive clays or graphitic shales, while some of the more discrete responses might be attributed to increases in conductive sulphide content or clay-altered shears. Although the former “formational” zones may be of little economic interest, those in the latter category might warrant additional work.

Other anomalous responses coincide with magnetic lineaments that could reflect contacts, faults, or shears. These inferred contacts and structural breaks are also considered to be of particular interest as they may have influenced or controlled mineral deposition within the survey area.

The anomalous targets (both resistive and conductive) and some of the bedrock conductors defined by the survey should be subjected to further investigation, using appropriate surface exploration techniques. Anomalies that are currently considered to be of moderately low priority may require upgrading if follow-up results are favourable.

It is also suggested that additional processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques can often provide valuable information on structure and lithology, which may not be clearly evident on the images provided with this report. These techniques can yield images that define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.
R11066

Appendix A

Data Archive Description

Data Archive Description:

Survey Details

Survey Area Name:	EASTERN YUKON, HIT BLOCK
Job number:	11066
Client:	TerraLogic Exploration Inc.
Survey Company Name:	Fugro Airborne Surveys
Flown Dates:	August 2nd, 2011
Archive Creation Date:	November 15, 2011

Geodetic Information for map products

Projection:	Universal Transverse Mercator (Zone 9N)
Datum:	NAD83
Central meridian:	129° West
False Easting:	500000 metres
False Northing:	0 metres
Scale factor:	0.9996

Flight Logs:

A PDF file of all the survey flights:

11066 Flight logs.pdf

Grid Archive:

File	Description	Units
mag	Residual Magnetic Intensity	nT
cvg	Calculated Magnetic Vertical Gradient	nT/m
res56k	Apparent Resistivity 56,000 Hz	ohm·m
res7200	Apparent Resistivity 7,200 Hz	ohm·m

Linedata Archive:

Geosoft Database and Line Archive File Layout (11066_Client.xyz & 11066_Client.gdb):

Field	Variable	Description	Units
1	X	Easting NAD83	m
2	Y	Northing NAD83	m
3	fid	fiducial	-
4	Lat	Latitude WGS84	degrees
5	Long	Longitude WGS84	degrees
6	flt	Flight number	-

7	date	Flight date	ddmmyy
8	altrad_bird	Bird height above ground from radar altimeter	m
9	gpsz	Helicopter height above geoid	m
10	dem	Digital elevation model (above geoid)	m
11	diurnal	Measured ground magnetic intensity	nT
12	diurnal_cor	Diurnal correction – base removed	nT
13	mag_raw	Total magnetic field – spike rejected	nT
14	mag_lag	Total magnetic field - corrected for lag	nT
15	mag_diu	Total magnetic field – diurnal variation removed	nT
16	igrf	international geomagnetic reference field	nT
17	mag_rmi	Residual magnetic intensity	nT
18	cpi900_filt	Coplanar inphase 900 Hz – unlevelled	ppm
19	cpq900_filt	Coplanar quadrature 900 Hz – unlevelled	ppm
20	cxi1000_filt	Coaxial inphase 1000 Hz – unlevelled	ppm
21	cxq1000_filt	Coaxial quadrature 1000 Hz – unlevelled	ppm
22	cxi5500_filt	Coaxial inphase 5500 Hz – unlevelled	ppm
23	cxq5500_filt	Coaxial quadrature 5500 Hz – unlevelled	ppm
24	cpi7200_filt	Coplanar inphase 7200 Hz – unlevelled	ppm
25	cpq7200_filt	Coplanar quadrature 7200 Hz – unlevelled	ppm
26	cpi56k_filt	Coplanar inphase 56 kHz – unlevelled	ppm
27	cpq56k_filt	Coplanar quadrature 56 kHz – unlevelled	ppm
28	cpi900_llev	Coplanar inphase 900 Hz	ppm
29	cpq900_llev	Coplanar quadrature 900 Hz	ppm
30	cxi1000_llev	Coaxial 1000 Hz	ppm
31	cxq1000_llev	Coaxial quadrature 1000 Hz	ppm
32	cxi5500_llev	Coaxial inphase 5500 Hz	ppm
33	cxq5500_llev	Coaxial quadrature 5500 Hz	ppm
34	cpi7200_llev	Coplanar inphase 7200 Hz	ppm
35	cpq7200_llev	Coplanar quadrature 7200 Hz	ppm
36	cpi56k_ llev	Coplanar inphase 56 kHz	ppm
37	cpq56k_llev	Coplanar quadrature 56 kHz	ppm
38	res900	Apparent resistivity 900 Hz	ohm·m
39	res7200	Apparent resistivity 7200 Hz	ohm·m
40	res56k	Apparent resistivity 56 kHz	ohm·m
41	dep900	Apparent depth 900 Hz	m
42	dep7200	Apparent depth 7200 Hz	m
43	dep56k	Apparent depth 56 kHz	m
44	cppl	Coplanar powerline monitor	
45	cpsp	Coplanar spherics monitor	
46	cxsp	Coaxial spherics monitor	

Anomaly ASCII Layout (Anom_11066.xyz):

Field	Variable	Description	Units
1	easting	Easting NAD83	m
2	northing	Northing NAD83	m
3	fid	Fiducial	-
4	flt	Flight number	-
5	mhos	Conductance (see report for model used)	seimens
6	depth	Depth (see report for model used)	m
7	mag	Mag correlation, local amplitude	nT
8	cxi1	In-phase coaxial 5500 Hz, local amplitude	ppm
9	cxq1	Quadrature coaxial 5500 Hz, local amplitude	ppm
10	cpi1	In-phase coplanar 7200 Hz, local amplitude	ppm
11	cpq1	Quadrature coplanar 7200 Hz, local amplitude	ppm
12	cpi2	In-phase coplanar 900 Hz, local amplitude	ppm
13	cpq2	Quadrature coplanar 900 Hz, local amplitude	ppm
14	let	Anomaly Identifier	-
15	sym	Anomaly interpretation symbol	-
16	grd	Anomaly Grade	-

Note – The null values in the GDB and XYZ archive are displayed as *

Maps:

PDF files and Geosoft MAP files of delivered maps at a scale of 1:20,000. One map set consists of one sheet.

File	Description	Units
mag	Total Magnetic Intensity	nT
cvg	Calculated Magnetic Vertical Gradient	nT/m
res56k	Apparent Resistivity 56,000 Hz	ohm·m
res7200	Apparent Resistivity 7,200 Hz	ohm·m
aem	EM Anomalies with Interpretation	

Report:

A logistics and interpretation report for Project #11066 in PDF format:

R11066.pdf

Video:

Digital video in BIN/BDX format is archived on 1 DVD for all survey flights. To view the files, a video viewer is included.

FUGROVIDEOVIEWER.ZIP

Appendix B

Background Information

Electromagnetics

Fugro electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulphide lenses and steeply dipping sheets of graphite and sulphides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulphide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, kimberlite pipes and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the geophysical maps are analyzed according to this model. The following section entitled **Discrete Conductor Analysis** describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

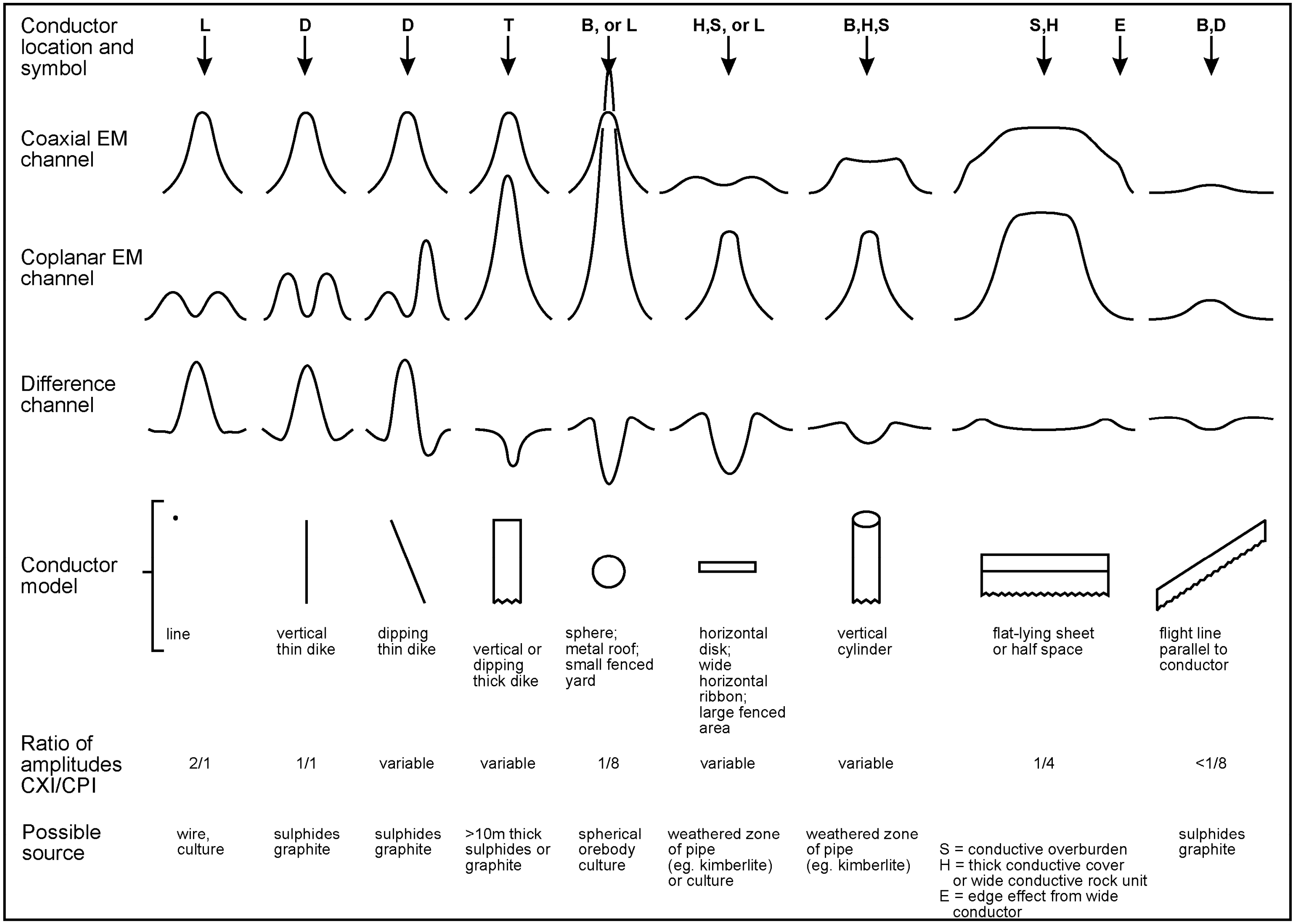
The conductive earth (half-space) model is suitable for broad conductors. Resistivity contour maps result from the use of this model. A later section entitled **Resistivity Mapping** describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulphide bodies.

Geometric Interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. Figure B-1 shows typical HEM anomaly shapes which are used to guide the geometric interpretation.

Discrete Conductor Analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in siemens (mhos) of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies are divided into seven grades of conductance, as shown in Table B-1. The conductance in siemens (mhos) is the reciprocal of resistance in ohms.



Typical HEM anomaly shapes

Figure B-1

The conductance value is a geological parameter because it is a characteristic of the conductor alone. It generally is independent of frequency, flying height or depth of burial, apart from the averaging over a greater portion of the conductor as height increases. Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Anomaly Grade	Siemens
7	**> 100**
6	**50 - 100**
5	**20 - 50**
4	**10 - 20**
3	**5 - 10**
2	**1 - 5**
1	**< 1**

Table 7 EM Anomaly Grades

Conductive overburden generally produces broad EM responses which may not be shown as anomalies on the geophysical maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete anomalies with a conductance grade (cf. Table B-1) of 1, 2 or even 3 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities are below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, and sometimes E on the geophysical maps (see EM legend on maps).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: the New Insco copper discovery (Noranda, Canada) yielded a grade 5 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 6; and the Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 7 anomaly. Graphite and sulphides can span all grades but, in any particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 6 and 7) are characteristic of massive sulphides or graphite. Moderate conductors (grades 4 and 5) typically reflect graphite or sulphides of a less massive character, while weak bedrock conductors (grades 1 to 3) can signify poorly connected graphite or heavily disseminated sulphides. Grades 1 and 2 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well-defined grade 2 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction. Faults, fractures and shear zones may produce anomalies that typically have low conductances (e.g., grades 1 to 3). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

For each interpreted electromagnetic anomaly on the geophysical maps, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The horizontal rows of dots, under the interpretive symbol, indicate the anomaly amplitude on the flight record. The vertical column of dots, under the anomaly letter, gives the estimated depth. In areas where anomalies are crowded, the letter identifiers, interpretive symbols and dots may be obliterated. The EM grade symbols, however, will always be discernible, and the obliterated information can be obtained from the anomaly listing appended to this report.

The purpose of indicating the anomaly amplitude by dots is to provide an estimate of the reliability of the conductance calculation. Thus, a conductance value obtained from a large ppm anomaly (3 or 4 dots) will tend to be accurate whereas one obtained from a small ppm anomaly (no dots) could be quite inaccurate. The absence of amplitude dots indicates that the anomaly from the coaxial coil-pair is 5 ppm or less on both the in-phase and quadrature channels. Such small anomalies could reflect a weak conductor at the surface or a stronger conductor at depth. The conductance grade and depth estimate illustrates which of these possibilities fits the recorded data best.

The conductance measurement is considered more reliable than the depth estimate. There are a number of factors that can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of bedrock anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes that may define the geological structure over portions of the survey area. The absence of conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

The electromagnetic anomalies are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual conductance values are printed in the attached anomaly list for those who wish quantitative data. The anomaly ppm and depth are indicated by inconspicuous dots which should not distract from the conductor patterns, while being helpful to those who wish this information. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The appended EM anomaly list provides a tabulation of anomalies in ppm, conductance, and depth for the vertical sheet model. No conductance or depth estimates are shown for weak anomalous responses that are not of sufficient amplitude to yield reliable calculations.

Since discrete bodies normally are the targets of EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels which are used to compute true EM amplitudes. Local anomaly amplitudes are shown in the EM anomaly list and these are used to compute the vertical sheet parameters of conductance and depth.

Questionable Anomalies

The EM maps may contain anomalous responses that are displayed as asterisks (*). These responses denote weak anomalies of indeterminate conductance, which may reflect one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM legend on maps). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

The Thickness Parameter

A comparison of coaxial and coplanar shapes can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar anomaly (e.g., CPI channel) increases relative to the coaxial anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as <u>thin</u> when the thickness is likely to be less than 3 m, and <u>thick</u> when in excess of 10 m. Thick conductors are indicated on the EM map by parentheses "( )". For base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulphide ore bodies are thick. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

Resistivity Mapping

Resistivity mapping is useful in areas where broad or flat lying conductive units are of interest. One example of this is the clay alteration which is associated with Carlin-type deposits in the south west United States. The resistivity parameter was able to identify the clay alteration zone over the Cove deposit. The alteration zone appeared as a strong resistivity low on the 900 Hz resistivity parameter. The 7,200 Hz and 56,000 Hz resistivities showed more detail in the covering sediments, and delineated a range front fault. This is typical in many areas of the south west United States, where conductive near surface sediments, which may sometimes be alkalic, attenuate the higher frequencies.

Resistivity mapping has proven successful for locating diatremes in diamond exploration. Weathering products from relatively soft kimberlite pipes produce a resistivity contrast with the unaltered host rock. In many cases weathered kimberlite pipes were associated with thick conductive layers that contrasted with overlying or adjacent relatively thin layers of lake bottom sediments or overburden.

Areas of widespread conductivity are commonly encountered during surveys. These conductive zones may reflect alteration zones, shallow-dipping sulphide or graphite-rich units, saline ground water, or conductive overburden. In such areas, EM amplitude changes can be generated by decreases of only 5 m in survey altitude, as well as by increases in conductivity. The typical flight record in conductive areas is characterized by in-phase and quadrature channels that are continuously active. Local EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne data. The advantage of the resistivity parameter is that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive bedrock and conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear as wide lows.

The apparent resistivity is calculated using the pseudo-layer (or buried) half-space model defined by Fraser (1978)[1]. This model consists of a resistive layer overlying a conductive half-space. The depth channels give the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half-space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors that might exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the in-phase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the conductive half-space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height when the conductivity of the measured material is sufficient to yield significant in-phase as well as quadrature responses. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. Depth information has been used for permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little quantitative use has been made of negative apparent depths because the absolute value of the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

Interpretation in Conductive Environments

Environments having low background resistivities (e.g., below 30 ohm-m for a 900 Hz system) yield very large responses from the conductive ground. This usually prohibits the recognition of discrete

1 Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p.144-172

bedrock conductors. However, Fugro data processing techniques produce three parameters that contribute significantly to the recognition of bedrock conductors in conductive environments. These are the in-phase and quadrature difference channels (DIFI and DIFQ, which are available only on systems with "common" frequencies on orthogonal coil pairs), and the resistivity and depth channels (RES and DEP) for each coplanar frequency.

The EM difference channels (DIFI and DIFQ) eliminate most of the responses from conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. Edge effects often occur near the perimeter of broad conductive zones. This can be a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the resistivity channels (RES). The most favourable situation is where anomalies coincide on all channels.

The DEP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the depth profiles (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If the DEP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DEP channel is below the zero level and the high frequency DEP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

Reduction of Geologic Noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned previously that the EM difference channels (i.e., channel DIFI for in-phase and DIFQ for quadrature) tend to eliminate the response of conductive overburden.

Magnetite produces a form of geological noise on the in-phase channels. Rocks containing less than 1% magnetite can yield negative in-phase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the in-phase EM channels may continuously rise and fall, reflecting variations in the magnetite percentage, flying height, and overburden thickness. This can lead to difficulties in recognizing deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the in-phase difference channel DIFI. This feature can be a significant aid in the recognition of conductors that occur in rocks containing accessory magnetite.

EM Magnetite Mapping

The information content of HEM data consists of a combination of conductive eddy current responses and magnetic permeability responses. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both in-phase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an in-phase component which is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive in-phase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative in-phase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique, based on the low frequency coplanar data, can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to DIGHEM closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half-space. It can individually DIGHEM steep dipping narrow magnetite-rich bands which are separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as negative in-phase responses on the data profiles.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

The Susceptibility Effect

When the host rock is conductive, the positive conductivity response will usually dominate the secondary field, and the susceptibility effect[2] will appear as a reduction in the in-phase, rather than as a negative value. The in-phase response will be lower than would be predicted by a model using zero susceptibility. At higher frequencies the in-phase conductivity response also gets larger, so a negative magnetite effect observed on the low frequency might not be observable on the higher frequencies, over the same body. The susceptibility effect is most obvious over discrete magnetite-rich zones, but also occurs over uniform geology such as a homogeneous half-space.

High magnetic susceptibility will affect the calculated apparent resistivity, if only conductivity is considered. Standard apparent resistivity algorithms use a homogeneous half-space model, with zero susceptibility. For these algorithms, the reduced in-phase response will, in most cases, make the apparent resistivity higher than it should be. It is important to note that there is nothing wrong with the data, nor is there anything wrong with the processing algorithms. The apparent difference results from the fact that the simple geological model used in processing does not match the complex geology.

[2] Magnetic susceptibility and permeability are two measures of the same physical property. Permeability is generally given as relative permeability, μ_r, which is the permeability of the substance divided by the permeability of free space ($4 \pi \times 10^{-7}$). Magnetic susceptibility k is related to permeability by $k=\mu^r-1$. Susceptibility is a unitless measurement, and is usually reported in units of 10^{-6}. The typical range of susceptibilities is –1 for quartz, 130 for pyrite, and up to 5×10^5 for magnetite, in 10^{-6} units (Telford et al, 1986).

Measuring and Correcting the Magnetite Effect

Theoretically, it is possible to calculate (forward model) the combined effect of electrical conductivity and magnetic susceptibility on an EM response in all environments. The difficulty lies, however, in separating out the susceptibility effect from other geological effects when deriving resistivity and susceptibility from EM data.

Over a homogeneous half-space, there is a precise relationship between in-phase, quadrature, and altitude. These are often DIGHEMd as phase angle, amplitude, and altitude. Within a reasonable range, any two of these three parameters can be used to calculate the half space resistivity. If the rock has a positive magnetic susceptibility, the in-phase component will be reduced and this departure can be recognized by comparison to the other parameters.

The algorithm used to calculate apparent susceptibility and apparent resistivity from HEM data, uses a homogeneous half-space geological model. Non half-space geology, such as horizontal layers or dipping sources, can also distort the perfect half-space relationship of the three data parameters. While it may be possible to use more complex models to calculate both rock parameters, this procedure becomes very complex and time-consuming. For basic HEM data processing, it is most practical to stick to the simplest geological model.

Magnetite reversals (reversed in-phase anomalies) have been used for many years to calculate an "FeO" or magnetite response from HEM data (Fraser, 1981). However, this technique could only be applied to data where the in-phase was observed to be negative, which happens when susceptibility is high and conductivity is low.

Applying Susceptibility Corrections

Resistivity calculations done with susceptibility correction may change the apparent resistivity. High-susceptibility conductors, that were previously masked by the susceptibility effect in standard resistivity algorithms, may become evident. In this case the susceptibility corrected apparent resistivity is a better measure of the actual resistivity of the earth. However, other geological variations, such as a deep resistive layer, can also reduce the in-phase by the same amount. In this case, susceptibility correction would not be the best method. Different geological models can apply in different areas of the same data set. The effects of susceptibility, and other effects that can create a similar response, must be considered when selecting the resistivity algorithm.

Susceptibility from EM vs Magnetic Field Data

The response of the EM system to magnetite may not match that from a magnetometer survey. First, HEM-derived susceptibility is a rock property measurement, like resistivity. Magnetic data show the total magnetic field, a measure of the potential field, not the rock property. Secondly, the shape of an anomaly depends on the shape and direction of the source magnetic field. The electromagnetic field of HEM is much different in shape from the earth's magnetic field. Total field magnetic anomalies are different at different magnetic latitudes; HEM susceptibility anomalies have the same shape regardless of their location on the earth.

In far northern latitudes, where the magnetic field is nearly vertical, the total magnetic field measurement over a thin vertical dike is very similar in shape to the anomaly from the HEM-derived susceptibility (a sharp peak over the body). The same vertical dike at the magnetic equator would yield a negative magnetic anomaly, but the HEM susceptibility anomaly would show a positive susceptibility peak.

Effects of Permeability and Dielectric Permittivity

Resistivity algorithms that assume free-space magnetic permeability and dielectric permittivity, do not yield reliable values in highly magnetic or highly resistive areas. Both magnetic polarization and displacement currents cause a decrease in the in-phase component, often resulting in negative values that yield erroneously high apparent resistivities. The effects of magnetite occur at all frequencies, but are most evident at the lowest frequency. Conversely, the negative effects of dielectric permittivity are most evident at the higher frequencies, in resistive areas.

The table below shows the effects of varying permittivity over a resistive (10,000 ohm-m) half space, at frequencies of 56,000 Hz (DIGHEM^{V}) and 102,000 Hz (DIGHEM).

Apparent Resistivity Calculations

Freq (Hz)	Coil	Sep (m)	Thres (ppm)	Alt (m)	In Phase	Quad Phase	App Res	App Depth (m)	Permittivity
56,000	CP	6.3	0.1	30	7.3	35.3	10118	-1.0	1 Air
56,000	CP	6.3	0.1	30	3.6	36.6	19838	-13.2	5 Quartz
56,000	CP	6.3	0.1	30	-1.1	38.3	81832	-25.7	10 Epidote
56,000	CP	6.3	0.1	30	-10.4	42.3	76620	-25.8	20 Granite
56,000	CP	6.3	0.1	30	-19.7	46.9	71550	-26.0	30 Diabase
56,000	CP	6.3	0.1	30	-28.7	52.0	66787	-26.1	40 Gabbro
102,000	CP	7.86	0.1	30	32.5	117.2	9409	-0.3	1 Air
102,000	CP	7.86	0.1	30	11.7	127.2	25956	-16.8	5 Quartz
102,000	CP	7.86	0.1	30	-14.0	141.6	97064	-26.5	10 Epidote
102,000	CP	7.86	0.1	30	-62.9	176.0	83995	-26.8	20 Granite
102,000	CP	7.86	0.1	30	-107.5	215.8	73320	-27.0	30 Diabase
102,000	CP	7.86	0.1	30	-147.1	259.2	64875	-27.2	40 Gabbro

Table 8 Effects of Permittivity on In-phase/Quadrature/Resistivity

Methods have been developed (Huang and Fraser, 2000, 2001) to correct apparent resistivities for the effects of permittivity and permeability. The corrected resistivities yield more credible values than if the effects of permittivity and permeability are disregarded.

Recognition of Culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

1. Channels CXPL and CPPL monitor 60 Hz radiation. An anomaly on these channels shows that the conductor is radiating power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body that strikes across a power line, carrying leakage currents.

2. A flight that crosses a "line" (e.g., fence, telephone line, etc.) yields a centre-peaked coaxial anomaly and an m-shaped coplanar anomaly.[3] When the flight crosses the cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar response is 2. Such an EM anomaly can only be caused by a line. The geologic body that yields anomalies most closely resembling a line is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 1 rather than 2. Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 2 is virtually a guarantee that the source is a cultural line.

3. A flight that crosses a sphere or horizontal disk yields centre-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of 1/8. In the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or small fenced yard.[4] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

4. A flight that crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a centre-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

5. EM anomalies that coincide with culture, as seen on the camera film or video display, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a centre-peaked coplanar anomaly occurred, there would be concern that a thick geologic conductor coincided with the cultural line.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channels and on the camera film or video records.

Magnetic Responses

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[3] See Figure B-1 presented earlier.

[4] It is a characteristic of EM that geometrically similar anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

The measured total magnetic field provides information on the magnetic properties of the earth materials in the survey area. The information can be used to locate magnetic bodies of direct interest for exploration, and for structural and lithological mapping.

The total magnetic field response reflects the abundance of magnetic material in the source. Magnetite is the most common magnetic mineral. Other minerals such as ilmenite, pyrrhotite, franklinite, chromite, hematite, arsenopyrite, limonite and pyrite are also magnetic, but to a lesser extent than magnetite on average.

In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulphides than one which is non-magnetic. However, sulphide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

Iron ore deposits will be anomalously magnetic in comparison to surrounding rock due to the concentration of iron minerals such as magnetite, ilmenite and hematite.

Changes in magnetic susceptibility often allow rock units to be differentiated based on the total field magnetic response. Geophysical classifications may differ from geological classifications if various magnetite levels exist within one general geological classification. Geometric considerations of the source such as shape, dip and depth, inclination of the earth's field and remanent magnetization will complicate such an analysis.

In general, mafic lithologies contain more magnetite and are therefore more magnetic than many sediments which tend to be weakly magnetic. Metamorphism and alteration can also increase or decrease the magnetization of a rock unit.
Textural differences on a total field magnetic contour, colour or shadow map due to the frequency of activity of the magnetic parameter resulting from inhomogeneities in the distribution of magnetite within the rock, may define certain lithologies. For example, near surface volcanics may display highly complex contour patterns with little line-to-line correlation.

Rock units may be differentiated based on the plan shapes of their total field magnetic responses. Mafic intrusive plugs can appear as isolated "bulls-eye" anomalies. Granitic intrusives appear as sub-circular zones, and may have contrasting rings due to contact metamorphism. Generally, granitic terrain will lack a pronounced strike direction, although granite gneiss may display strike.

Linear north-south units are theoretically not well-defined on total field magnetic maps in equatorial regions due to the low inclination of the earth's magnetic field. However, most stratigraphic units will have variations in composition along strike that will cause the units to appear as a series of alternating magnetic highs and lows.

Faults and shear zones may be characterized by alteration that causes destruction of magnetite (e.g., weathering) that produces a contrast with surrounding rock. Structural breaks may be filled by magnetite-rich, fracture filling material as is the case with diabase dikes, or by non-magnetic felsic material.

Faulting can also be identified by patterns in the magnetic total field contours or colours. Faults and dikes tend to appear as lineaments and often have strike lengths of several kilometres. Offsets in narrow, magnetic, stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may arise due to large displacements along strike-slip or dip-slip faults.

Appendix C

EM Anomaly Listing

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

CX=COAXIAL,CP=COPLANAR			Note: EM amplitudes are local for types B,D,T and are absolute for all others	Estimated depth may be unreliable because the strongest part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or magnetite/overburden effects								
Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
LINE 30010		**FLIGHT 37045**										
A	6545.8	B	450823.5,7035400.0	13.4	1.8	97.7	76.8	22.8	60.6	7.1	29.0	178.9
B	6548.5	B	450884.3,7035348.9	23.1	12.1	97.7	70.3	22.8	60.6	3.6	21.7	233.6
C	6552.4	B	450986.4,7035274.7	0.0	5.3	0.0	0.0	0.0	0.0	0.3	17.4	---
D	6555.4	E	451066.1,7035206.1	182.6	138.9	614.2	452.7	235.2	291.7	2.1	0.0	45.6
E	6557.5	B	451115.5,7035151.2	69.3	46.1	286.6	169.3	160.4	163.2	3.9	2.1	111.1
F	6561.4	B	451208.4,7035052.2	30.4	4.8	51.0	51.7	251.7	51.7	22.0	18.1	---
G	6566.3	B	451352.6,7034934.0	91.4	43.9	422.9	221.1	161.4	234.3	6.4	0.7	748.2
H	6572.6	B	451515.3,7034781.3	100.1	27.9	543.2	74.9	523.4	237.4	14.1	1.2	---
I	6623.8	E	452514.1,7033927.9	64.0	30.0	149.8	68.3	99.0	67.0	2.2	6.1	---
J	6629.1	B	452601.2,7033816.3	54.5	33.9	245.8	140.1	159.5	123.3	3.9	6.6	---
K	6637.6	B?	452676.2,7033731.3	0.0	10.6	0.0	9.4	188.5	0.1	0.2	0.0	---
L	6666.4	B	452849.0,7033603.8	213.4	226.3	936.2	625.0	422.7	471.2	3.2	0.0	35.9
M	6683.2	B	452911.0,7033548.5	475.5	493.5	531.8	763.5	208.9	267.5	4.3	0.0	5.3
N	6715.5	B?	453044.3,7033411.6	8.2	21.1	25.8	70.9	5.7	11.0	0.5	0.0	61.6
O	6733.1	B	453253.5,7033228.7	13.9	30.3	169.9	272.6	0.3	77.1	0.6	3.0	---
P	6735.2	E	453298.9,7033193.0	54.6	85.4	100.2	190.3	21.9	57.6	1.0	3.5	---
Q	6784.0	S	453650.0,7032861.0	-0.5	20.4	-0.8	114.4	7.9	18.8	1.0	0.0	60.9
LINE 30021		**FLIGHT 37045**										
A	1178.2	B?	450864.9,7035500.1	23.3	17.0	13.5	75.1	0.0	18.5	2.4	12.5	490.3
B	1185.3	E	451014.6,7035352.0	119.1	69.6	244.3	204.8	92.2	121.1	1.6	3.4	2.5
C	1187.5	B	451076.4,7035308.7	17.7	17.9	42.8	100.4	0.0	32.9	1.5	11.5	30.3
D	1192.0	B	451184.3,7035221.0	124.7	1.7	507.4	0.0	680.9	128.5	313.6	3.0	---

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

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Label Fid		Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
E	1200.2	B	451359.5,7035065.1	131.7	49.8	567.9	176.3	374.9	323.4	10.1	0.0	718.2
F	1209.7	B	451555.6,7034870.0	79.0	46.6	728.4	39.9	706.2	68.1	4.7	3.9	---
G	1213.4	E	451651.6,7034810.3	225.7	78.2	601.4	285.4	392.4	301.4	3.0	1.7	---
H	1273.5	E	452590.0,7033982.5	38.7	49.5	70.4	121.8	20.3	40.7	1.0	4.1	---
I	1277.6	B	452673.4,7033875.0	28.9	8.1	115.9	88.0	49.7	55.5	9.2	7.9	---
J	1319.7	B?	452956.4,7033634.3	174.3	315.3	1151.6	1252.3	70.4	441.6	1.7	0.0	---
K	1327.5	B	452985.5,7033598.7	11.5	351.8	880.7	1546.0	70.3	289.7	0.2	0.0	8.2
L	1334.0	B	452996.3,7033591.7	21.8	351.8	880.7	1546.0	0.0	289.7	0.2	0.0	8.2
M	1355.1	B	453109.9,7033494.1	27.5	27.9	30.3	26.6	19.1	28.8	1.7	3.8	121.3
N	1379.0	B?	453354.6,7033265.4	63.7	123.7	163.0	285.2	0.1	38.5	1.2	0.0	---
O	1480.4	S?	453712.6,7032949.1	3.7	32.5	10.2	110.2	8.6	21.7	1.0	0.0	24.2
LINE 30030		**FLIGHT 37045**										
A	1776.1	E	450955.0,7035567.4	200.2	123.3	501.5	454.4	148.9	244.8	1.8	0.0	695.7
B	1771.7	B	451078.8,7035457.5	0.0	15.2	55.6	44.8	0.0	45.4	0.2	0.0	158.1
C	1766.4	B	451227.5,7035328.9	196.3	39.4	752.3	112.7	675.9	328.2	28.4	0.0	---
D	1758.3	B	451412.1,7035152.4	138.4	87.1	653.1	295.5	348.0	359.4	5.2	0.0	404.4
E	1746.5	B	451658.2,7034929.7	34.9	21.2	654.1	129.0	568.3	249.0	3.4	18.4	---
F	1675.4	B?	452654.5,7034021.5	11.0	27.6	56.2	46.1	4.3	29.1	0.5	0.3	---
G	1670.8	B?	452759.3,7033942.4	17.3	3.0	52.2	31.4	5.7	24.0	7.7	5.1	---
H	1652.3	B?	452985.0,7033733.1	260.6	233.5	535.4	223.7	178.0	271.2	4.2	0.0	65.3
I	1642.1	B?	453058.0,7033659.9	10.0	250.1	539.5	64.5	188.9	271.2	0.2	0.0	---
J	1628.1	B	453124.2,7033613.1	2.4	51.0	64.7	94.0	12.5	29.3	0.1	0.0	47.8
K	1617.7	B?	453160.5,7033572.5	11.9	51.0	74.4	94.0	2.5	2.4	0.4	0.0	87.5
L	1580.2	B?	453432.2,7033325.7	11.2	17.9	53.3	137.2	1.6	30.1	0.8	9.2	---
M	1571.3	B?	453616.6,7033168.6	24.3	37.2	129.3	147.6	5.0	50.9	1.1	0.0	72.3

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
LINE 30040		**FLIGHT 37045**										
A	1822.6	E	450992.8,7035668.7	191.8	163.4	409.9	439.1	95.6	196.3	1.5	4.3	98.9
B	1830.5	E	451136.4,7035512.3	149.8	60.1	337.2	182.9	171.9	162.1	2.3	4.7	---
C	1836.2	B	451256.5,7035423.6	53.6	6.8	214.9	35.2	196.3	111.1	36.6	12.8	---
D	1841.8	B	451359.1,7035340.8	49.5	4.4	225.6	85.3	154.9	133.7	61.0	11.2	52.8
E	1858.9	B	451694.9,7035023.0	104.3	41.0	415.1	221.4	193.6	161.6	8.8	5.0	56.0
F	1929.0	B?	452625.8,7034210.6	6.3	31.7	0.9	75.6	0.8	15.9	0.3	0.0	336.9
G	1940.7	B?	452831.4,7034015.7	18.0	4.5	76.2	93.3	25.1	28.3	9.3	13.8	---
H	1986.6	B	453059.2,7033809.1	4.1	12.3	11.0	393.0	23.4	44.1	0.3	16.8	46.1
I	2008.5	B	453144.3,7033744.7	9.4	41.6	9.1	49.5	0.4	8.1	0.3	2.7	---
J	2020.1	B	453210.4,7033675.4	64.8	128.9	150.4	167.1	59.5	80.4	1.1	0.0	150.5
K	2044.0	B?	453436.1,7033478.6	10.2	1.1	48.2	98.5	0.8	26.5	6.1	34.0	24.3
L	2048.0	S?	453502.0,7033423.6	29.4	42.7	58.0	90.6	10.2	32.7	1.0	4.1	---
M	2054.9	B?	453619.9,7033293.7	14.1	27.0	85.2	87.7	11.4	30.0	0.7	2.8	6.5
N	2086.7	S?	453829.2,7033106.8	11.3	37.4	45.3	131.4	40.7	37.1	1.0	12.6	4.0
LINE 30050		**FLIGHT 37045**										
A	2402.6	B?	451030.9,7035759.3	23.2	0.2	7.9	0.0	0.0	22.9	29.9	19.9	254.0
B	2396.2	E	451190.6,7035614.4	146.5	77.7	337.8	207.9	180.4	175.8	2.1	5.9	30.9
C	2392.2	B	451284.3,7035541.5	196.7	108.2	558.3	342.7	356.9	285.2	7.0	0.0	---
D	2388.3	B	451356.1,7035470.1	24.0	9.6	88.0	62.5	356.9	84.8	5.3	20.2	51.8
E	2373.0	B	451603.4,7035256.0	47.6	20.5	77.5	284.4	74.4	46.5	6.0	10.5	---
F	2368.4	B	451671.8,7035200.9	30.7	47.6	89.7	284.4	162.2	108.6	1.1	5.8	---
G	2364.9	E	451723.5,7035139.0	65.9	65.8	205.5	216.9	67.1	96.3	1.3	4.6	23.7
H	2287.0	B	452686.7,7034277.0	18.2	15.4	4.2	29.1	3.9	17.6	1.8	24.8	264.9

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
I	2271.4	S?	452873.5,7034116.7	24.1	29.4	47.1	88.6	1.9	24.0	1.0	2.6	---
J	2259.3	B	453096.6,7033905.3	12.4	3.8	7.0	0.0	24.8	4.8	6.2	33.7	67.6
K	2252.9	B	453168.7,7033831.3	11.4	40.4	34.4	173.3	0.7	8.0	0.4	0.0	---
L	2249.9	B?	453196.8,7033812.1	4.3	39.6	45.7	173.3	1.6	0.0	0.1	0.0	---
M	2242.6	B	453240.4,7033770.4	10.8	6.8	39.5	4.8	0.0	0.6	2.2	35.1	66.5
N	2232.5	B	453254.6,7033756.3	103.7	130.9	128.4	439.5	34.3	104.3	2.1	1.3	250.9
O	2182.5	B?	453548.2,7033480.3	29.0	30.2	72.8	146.4	2.2	33.1	1.7	9.5	---
LINE 30060		**FLIGHT 37045**										
A	2457.8	E	451215.6,7035739.2	146.2	137.5	313.7	365.1	102.6	161.9	1.4	8.3	---
B	2463.1	B	451261.3,7035701.0	48.2	106.8	181.3	340.7	74.0	105.6	1.0	0.0	---
C	2474.7	D	451362.7,7035601.9	101.3	44.3	109.4	64.5	67.7	49.4	7.5	6.1	---
D	2497.1	B	451663.1,7035321.6	21.8	19.9	210.9	86.2	113.7	105.3	1.8	9.4	---
E	2642.7	B	453193.2,7033951.6	64.1	53.4	81.3	142.7	32.2	55.8	2.9	3.8	---
F	2651.3	B	453313.1,7033866.2	63.2	42.7	28.0	52.7	17.4	12.3	3.7	3.7	252.3
G	2676.2	B?	453606.6,7033557.7	42.6	95.9	78.4	354.7	4.9	63.2	0.9	0.0	---
H	2692.2	B	453902.2,7033327.5	12.7	1.1	50.1	17.7	50.5	22.8	8.4	35.8	10.2
I	2703.6	B	453967.2,7033265.5	3.8	1.7	37.4	23.8	31.1	21.2	1.7	47.8	---
J	2713.6	B	454008.2,7033224.0	0.6	18.8	44.4	103.2	2.6	32.5	0.2	0.3	---
LINE 30070		**FLIGHT 37045**										
A	3123.1	B	451228.6,7035847.6	22.6	14.3	58.0	58.3	41.7	39.7	2.8	19.6	---
B	3113.2	D	451363.6,7035726.1	40.8	48.4	262.9	82.8	92.0	136.3	1.6	8.0	---
C	3092.6	B	451594.3,7035508.6	16.8	18.7	30.6	52.2	1.0	4.4	1.3	19.9	---
D	2974.3	E	453077.3,7034178.1	29.1	55.2	50.9	120.0	4.5	31.5	1.0	7.6	---
E	2967.3	B	453162.5,7034102.6	17.1	5.9	59.0	41.4	42.5	38.1	5.8	32.1	26.1

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
F	2938.6	D	453271.1,7034008.2	42.9	38.3	19.3	81.7	0.0	9.4	2.3	7.8	13.0
G	2931.9	B	453323.6,7033969.1	61.2	40.3	137.8	102.6	32.4	64.4	3.7	3.8	---
H	2926.6	D	453377.2,7033926.0	56.7	36.3	21.5	5.8	16.7	12.7	3.8	5.1	205.1
I	2907.3	B?	453632.4,7033693.4	11.1	30.3	59.6	136.0	0.7	14.1	0.5	4.2	123.5
J	2903.5	B?	453701.6,7033620.5	36.1	51.9	56.8	135.6	2.2	25.5	1.3	0.6	15.7
K	2884.1	H	454057.2,7033305.6	39.7	25.8	108.5	64.8	67.0	60.0	6.0	27.1	---
LINE 30080		**FLIGHT 37045**										
A	3197.4	B?	451278.7,7035947.0	31.3	11.4	306.7	360.7	32.2	142.1	6.5	22.6	---
B	3201.2	B	451317.4,7035910.2	8.7	33.2	345.4	384.8	44.3	151.3	0.3	0.0	---
C	3358.4	B?	453362.5,7034080.2	8.7	26.7	67.6	79.8	11.8	33.7	0.4	0.0	---
D	3370.8	B?	453520.3,7033952.6	0.0	13.1	0.0	41.7	0.0	3.8	0.2	3.6	97.7
E	3377.6	B?	453599.5,7033874.4	21.6	43.5	80.8	91.9	4.4	32.8	0.8	0.2	32.8
F	3391.1	B?	453820.0,7033675.2	9.6	42.8	9.8	165.0	9.1	21.9	0.3	0.0	663.6
G	3415.5	H	454121.8,7033379.1	82.0	53.1	289.4	162.2	137.9	155.6	6.2	17.2	---
LINE 30090		**FLIGHT 37045**										
A	3761.9	B	451411.1,7035970.3	11.5	20.0	15.4	5.4	8.7	3.0	0.7	9.7	---
B	3614.8	S	453270.0,7034302.5	2.2	27.4	17.6	120.0	-1.5	21.1	1.0	0.0	---
C	3603.0	S	453354.9,7034208.1	3.2	29.3	29.8	131.9	-1.2	25.6	1.0	1.6	---
D	3560.2	B?	453700.6,7033912.7	20.4	27.0	19.2	34.7	0.4	9.1	1.2	3.3	---
E	3533.6	H	454175.9,7033464.7	66.7	35.4	112.2	62.0	76.3	60.0	6.9	30.5	---
LINE 300100		**FLIGHT 37045**										
A	3819.5	B	451447.5,7036050.5	43.5	45.3	179.2	231.3	31.8	85.2	1.9	5.1	---
B	3830.7	B	451678.6,7035856.9	64.7	54.9	252.3	178.7	43.1	122.0	2.8	0.0	---
C	4072.5	B?	454039.5,7033738.4	7.7	22.4	5.2	118.6	3.9	15.7	0.4	4.5	552.5

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
D	4088.8	H	454296.5,7033492.4	73.5	25.4	233.6	67.0	194.3	106.5	13.0	14.8	37.6
LINE 300112		**FLIGHT 37051**										
A	278.5	B?	451498.8,7036159.9	4.8	15.6	76.3	80.0	9.6	33.5	0.3	0.0	7.7
B	291.8	B	451702.1,7035991.8	7.5	10.4	264.2	168.8	53.7	133.7	0.8	16.2	---
C	295.7	B	451742.5,7035964.6	9.1	2.8	292.0	158.9	48.8	139.2	3.3	29.2	---
D	546.5	B?	454090.7,7033816.6	10.8	31.9	7.5	85.7	7.9	10.4	0.5	0.0	310.0
E	559.6	B	454341.3,7033584.7	64.2	18.2	216.0	66.3	212.6	93.7	11.8	12.4	---
LINE 300120		**FLIGHT 37045**										
A	4536.9	B	451756.8,7036067.9	15.4	114.2	451.9	374.7	119.1	244.0	0.2	0.0	---
B	4539.5	B	451792.2,7036036.2	34.3	120.6	473.0	393.5	116.0	253.7	0.6	0.0	---
C	4557.5	B?	451949.6,7035882.0	1.1	6.5	0.5	38.4	0.2	0.7	0.4	19.7	---
D	4802.7	B	453997.4,7034037.8	21.6	59.7	17.6	129.1	14.5	25.2	0.6	0.0	146.9
E	4813.0	B?	454232.9,7033821.3	4.3	4.9	4.2	47.5	0.0	4.8	0.8	35.0	337.4
LINE 300130		**FLIGHT 37045**										
A	5112.4	B	451810.6,7036140.0	73.7	134.5	211.7	356.5	108.3	134.6	1.3	0.0	---
B	5107.8	B	451859.3,7036075.1	8.9	144.2	178.3	51.7	107.3	121.6	0.2	0.0	141.3
C	4870.2	B	454079.3,7034089.8	26.5	38.9	56.3	43.3	1.5	18.5	1.1	4.0	182.1
D	4857.2	B	454364.3,7033843.7	3.3	14.0	0.0	19.6	0.0	2.2	0.2	2.8	---
LINE 300140		**FLIGHT 37043**										
A	7418.2	B?	451688.0,7036388.6	26.8	44.8	21.7	97.1	2.1	6.2	1.0	5.1	901.2
B	7432.8	B	451850.6,7036223.9	2.7	46.9	122.3	215.2	0.4	49.0	0.2	0.0	42.5
C	7740.4	B	454086.7,7034224.4	12.4	50.0	0.0	142.3	0.0	23.7	0.4	0.0	---
D	7743.9	D	454164.4,7034172.1	29.4	46.8	43.1	28.7	0.3	13.0	1.1	1.1	116.9

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
E	7752.7	B?	454363.2,7033982.3	5.2	10.8	10.2	101.8	9.9	12.9	0.5	15.8	824.9
LINE 300150		**FLIGHT 37043**										
A	7279.5	B	451721.6,7036489.2	21.4	44.6	176.8	211.9	11.7	73.7	0.8	0.0	1153.3
B	7264.1	B	451907.3,7036320.3	50.9	93.1	104.7	266.0	6.3	49.0	1.1	0.0	58.4
C	7257.8	B	451967.5,7036251.9	25.8	33.4	90.8	129.6	21.8	48.8	1.3	10.6	29.4
D	6960.7	D	454155.2,7034282.5	20.3	32.8	0.0	65.3	0.0	15.8	0.9	9.3	---
E	6954.5	D	454235.4,7034227.9	23.5	42.9	48.6	65.6	1.2	21.6	0.9	5.3	77.3
F	6939.4	B?	454433.0,7034029.1	13.7	31.0	46.4	145.1	0.0	23.7	0.6	4.0	1219.1
G	6933.9	B	454515.9,7033959.7	14.9	38.4	42.6	40.1	0.1	4.6	0.6	1.7	61.3
LINE 300160		**FLIGHT 37043**										
A	6580.6	B	452031.2,7036330.8	6.5	9.2	14.7	32.4	1.6	9.4	0.7	27.3	53.0
B	6869.6	E	454137.6,7034447.4	44.5	97.3	97.1	281.5	-3.4	57.4	1.0	0.0	15.7
C	6873.9	D	454215.5,7034354.6	26.6	19.3	0.0	47.5	0.0	28.3	2.5	15.1	---
D	6877.6	D	454278.2,7034296.9	21.3	15.2	118.1	47.5	13.6	50.0	2.4	14.4	163.5
E	6885.5	E	454433.0,7034169.6	16.1	52.5	31.7	149.1	3.7	35.0	1.0	0.0	360.3
F	6891.5	B?	454578.9,7034050.0	38.7	38.3	23.7	36.5	2.1	10.8	2.0	3.1	815.2
LINE 300170		**FLIGHT 37043**										
A	6494.3	B?	451896.8,7036588.6	0.9	28.4	0.0	5.4	0.0	0.0	0.1	0.0	9.8
B	6487.7	B?	451995.2,7036505.3	7.6	10.5	61.4	184.8	0.3	39.9	0.8	22.9	17.3
C	6481.2	B?	452072.8,7036428.7	13.9	37.4	62.2	175.8	0.0	39.3	0.5	0.0	13.0
D	6466.5	B	452218.4,7036305.1	22.3	17.3	103.8	63.5	42.2	56.2	2.2	7.2	---
E	6232.8	E	454173.0,7034545.7	12.8	32.8	15.6	59.4	1.2	14.1	1.0	12.1	18.3
F	6226.2	D	454286.3,7034440.5	31.3	42.3	88.2	97.8	4.2	27.8	1.3	8.7	---
G	6222.2	D	454351.0,7034385.5	37.6	36.9	107.2	67.0	3.8	26.0	2.0	9.4	---

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
H	6206.7	D	454632.7,7034134.9	55.6	53.3	57.4	136.3	17.3	33.6	2.3	6.8	555.3
I	6201.6	B	454736.9,7034040.1	88.2	77.1	323.4	287.0	0.0	89.6	3.0	0.0	---
LINE 300180		**FLIGHT 37043**										
A	5832.1	B?	452128.6,7036540.6	4.1	25.7	11.6	119.8	1.5	23.3	0.2	0.0	16.0
B	5859.8	E	452260.9,7036384.4	86.4	52.2	159.2	105.6	92.0	73.9	1.6	15.3	30.2
C	5863.1	D	452322.5,7036340.1	39.3	9.6	240.0	138.4	169.6	91.0	12.4	9.7	---
D	5866.4	B	452365.6,7036305.6	18.5	5.5	194.4	109.2	155.0	87.6	7.3	36.4	6.4
E	6144.7	E	454214.1,7034633.7	10.8	31.8	12.7	44.6	0.9	11.5	1.0	16.4	---
F	6150.6	D	454352.6,7034530.7	7.5	21.8	25.0	40.1	0.8	8.0	0.4	8.9	---
G	6153.2	D	454419.3,7034472.6	23.8	26.0	54.9	40.1	2.6	20.8	1.5	7.3	---
H	6160.6	B?	454602.8,7034294.1	5.2	14.0	55.2	198.8	0.0	21.9	0.4	8.9	716.6
I	6163.4	B?	454684.4,7034210.7	28.8	34.2	8.4	238.6	0.0	1.8	1.5	5.0	1049.2
J	6167.8	B	454801.3,7034120.7	110.0	47.8	437.3	161.1	37.2	190.7	7.8	0.0	---
LINE 300190		**FLIGHT 37043**										
A	5628.1	B	452360.4,7036462.5	51.7	36.9	193.2	71.0	116.7	100.9	3.2	0.0	66.0
B	5624.6	B	452400.6,7036402.1	13.2	37.7	186.6	71.0	112.3	98.2	0.5	0.0	70.6
C	5383.8	E	454274.0,7034709.2	14.7	35.7	26.5	100.9	0.8	23.6	1.0	5.0	66.0
D	5377.0	D	454400.6,7034613.5	12.4	25.3	2.0	14.5	0.6	3.0	0.7	11.9	---
E	5372.5	B	454466.2,7034542.6	16.4	16.7	22.5	71.1	0.7	8.1	1.4	21.0	---
F	5360.2	B?	454695.7,7034344.5	4.7	31.0	8.4	235.9	0.0	2.0	0.2	0.0	922.1
G	5356.8	B?	454786.4,7034290.8	1.9	9.5	8.4	200.8	0.0	3.7	0.4	12.3	555.7
H	5351.9	B	454887.1,7034205.5	212.5	38.7	693.1	110.7	635.5	436.2	33.9	0.0	149.3
LINE 300200		**FLIGHT 37043**										
A	5017.9	B	452425.6,7036515.4	118.3	69.3	721.1	222.6	525.3	314.8	5.4	0.0	25.6

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
B	5023.9	B	452493.5,7036478.5	39.9	72.0	733.3	89.3	525.3	326.2	1.1	0.0	120.5
C	5297.4	E	454276.6,7034851.2	18.7	48.2	21.2	88.3	-2.3	19.9	1.0	5.0	---
D	5305.1	D	454451.6,7034713.6	32.6	31.4	65.4	71.6	1.1	19.0	1.9	7.5	103.6
E	5308.3	D	454519.5,7034642.3	19.2	16.1	31.9	7.8	12.8	22.0	1.9	16.4	27.3
F	5317.8	B?	454762.8,7034420.1	37.4	32.8	60.5	175.5	0.1	0.0	2.2	5.3	452.6
G	5320.7	B?	454846.8,7034342.9	16.1	55.7	60.5	191.5	0.0	0.0	0.5	0.0	533.7
H	5324.5	B	454955.0,7034254.5	63.3	27.3	585.1	81.1	475.8	296.0	6.6	11.9	---
LINE 300211		**FLIGHT 37051**										
A	879.6	B	452425.0,7036659.5	60.9	29.3	258.9	95.2	205.8	111.5	5.6	11.3	6.1
B	876.9	B	452493.4,7036592.0	17.5	43.0	295.0	92.4	214.8	123.8	0.6	0.0	88.3
C	815.7	B	452991.8,7036159.7	4.2	5.5	38.8	7.5	13.0	18.8	0.7	42.4	4.7
D	694.6	E	454303.1,7034965.7	27.9	70.3	46.1	185.5	-0.5	37.5	1.0	0.6	---
E	683.7	B?	454523.0,7034790.5	31.1	25.9	60.7	65.3	0.0	16.6	2.2	10.0	---
F	676.0	B	454652.4,7034647.7	72.3	37.9	131.6	49.1	51.6	62.2	5.3	7.1	---
G	662.1	B?	454907.7,7034389.6	20.5	27.0	167.4	142.7	0.0	96.0	1.2	6.1	744.3
H	656.9	B?	455030.0,7034282.8	0.0	0.0	241.8	0.0	369.1	105.1	---	---	145.4
LINE 300220		**FLIGHT 37043**										
A	4459.5	B	452290.0,7036919.3	124.4	47.8	454.5	135.0	351.9	252.3	9.7	0.0	---
B	4467.1	B	452463.4,7036766.0	17.2	0.0	71.7	9.6	42.5	16.9	21.0	28.2	---
C	4470.3	B	452548.1,7036714.9	44.9	14.6	11.3	98.6	41.1	6.8	8.7	15.1	56.2
D	4481.7	B?	452734.2,7036540.2	15.1	13.3	3.1	15.3	1.6	0.0	1.7	16.8	20.4
E	4525.2	E	452979.7,7036301.7	45.7	42.7	63.5	98.1	15.7	39.9	1.0	20.4	135.7
F	4529.8	D	453024.4,7036255.6	72.9	73.0	132.1	90.8	35.2	61.1	2.4	0.0	---
G	4645.5	S	453866.0,7035491.4	0.7	33.7	15.5	154.2	-0.9	26.4	1.0	0.0	---

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
H	4694.7	B?	454621.7,7034824.8	30.5	29.7	0.9	102.8	0.0	0.0	1.9	7.8	5.5
I	4699.3	B	454735.8,7034699.3	155.4	47.3	394.0	112.5	216.0	246.3	14.4	3.1	34.4
J	4702.1	B	454815.7,7034634.0	69.3	20.7	121.7	112.5	91.3	63.5	11.3	4.2	166.4
K	4708.0	B?	454992.7,7034489.9	10.9	26.6	0.0	53.2	0.0	0.0	0.5	0.0	352.2
L	4711.9	B	455098.8,7034372.5	0.0	3.5	104.1	5.0	154.7	46.8	0.4	26.0	282.6
LINE 300230		**FLIGHT 37043**										
A	4423.5	B	452291.9,7037044.0	76.0	10.1	279.7	126.5	355.4	133.7	38.4	13.1	---
B	4420.9	B	452360.3,7036968.1	26.7	43.2	98.4	123.4	501.1	85.5	1.0	6.9	---
C	4415.2	B	452544.9,7036825.1	65.6	18.9	154.5	57.3	183.4	112.8	11.7	10.9	---
D	4371.7	B	453048.5,7036363.1	33.0	128.2	1012.6	439.5	432.9	534.6	0.5	0.0	9.9
E	4368.3	B	453074.1,7036335.6	77.0	129.4	896.3	444.5	434.1	491.8	1.4	0.0	9.9
F	4275.0	B?	454194.7,7035321.9	0.0	1.4	0.0	19.1	0.0	1.9	---	---	181.7
G	4264.9	S	454376.0,7035168.9	55.5	160.9	185.2	484.0	4.4	109.0	1.0	0.0	---
H	4243.2	D	454686.9,7034880.8	92.2	49.2	107.8	213.2	0.5	29.5	5.6	4.5	---
I	4240.9	B?	454731.8,7034845.5	6.7	37.1	100.9	252.8	0.0	43.2	0.2	0.0	100.4
J	4236.7	B	454823.1,7034775.6	96.8	20.5	236.1	119.1	124.5	144.5	20.7	6.2	---
K	4232.4	B	454903.8,7034689.6	106.5	29.2	306.0	49.7	209.5	160.5	14.8	4.5	133.4
L	4224.6	B	455067.7,7034546.1	24.6	61.2	20.9	185.9	0.0	0.0	0.7	1.0	308.2
LINE 300240		**FLIGHT 37043**										
A	3855.8	B?	452414.1,7037088.7	23.8	17.5	114.0	61.8	63.2	56.4	2.4	10.3	---
B	3863.3	B	452615.7,7036889.1	36.9	49.2	168.7	225.3	19.0	26.2	1.4	0.8	---
C	3867.3	B?	452738.1,7036796.1	4.4	54.5	99.0	261.4	0.0	89.4	0.1	0.0	11.3
D	3905.6	B?	453089.7,7036464.9	15.6	133.9	558.6	385.9	166.9	273.4	0.2	0.0	34.2
E	3908.5	B	453132.0,7036428.2	104.0	131.0	536.5	352.2	162.1	270.4	2.1	0.0	34.2

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
F	3918.0	B?	453276.5,7036306.2	77.4	46.0	275.9	224.3	121.3	137.9	4.6	6.5	161.4
G	3995.0	B?	454268.1,7035377.6	7.5	26.2	75.3	82.0	4.9	27.5	0.4	1.4	---
H	4013.7	B?	454523.4,7035194.0	8.3	15.7	14.2	33.8	0.2	6.1	0.6	14.6	8.7
I	4030.6	B?	454766.7,7034957.9	27.3	52.2	56.8	135.8	0.0	9.7	0.9	0.0	---
J	4033.3	B?	454818.2,7034913.0	8.1	37.5	57.9	126.8	0.0	17.5	0.3	0.0	95.2
K	4037.4	B	454903.3,7034832.2	75.9	57.4	212.3	186.1	129.3	147.3	3.4	0.0	35.2
L	4041.0	B	454981.1,7034752.9	158.3	39.6	554.5	175.3	427.1	282.8	19.2	0.0	228.6
M	4047.2	B	455151.5,7034611.3	15.1	4.8	0.0	30.7	0.0	0.0	6.3	35.6	510.1
N	4050.2	B?	455225.1,7034533.5	21.0	3.2	11.7	52.4	0.0	11.6	20.2	22.1	910.2
LINE 300250		**FLIGHT 37043**										
A	3813.6	B?	452641.6,7036998.3	5.1	0.0	233.0	0.0	31.1	81.0	4.1	49.7	---
B	3810.2	B	452749.2,7036925.2	48.7	62.1	219.1	140.0	27.4	76.3	1.6	2.5	---
C	3799.6	D	453038.9,7036643.9	32.9	25.0	52.0	34.7	11.6	22.8	2.6	8.6	39.7
D	3784.2	B	453303.1,7036408.4	43.1	17.1	209.7	54.7	173.4	88.5	6.5	7.6	153.2
E	3737.4	E	454025.9,7035746.3	5.7	21.2	15.5	54.9	0.4	12.9	1.0	15.9	82.2
F	3729.3	S	454194.3,7035606.4	35.8	80.4	99.0	240.9	1.5	56.8	1.0	0.0	---
G	3675.4	D	454862.0,7035011.4	18.9	25.3	10.1	78.5	0.0	6.7	1.1	9.4	---
H	3671.9	D	454909.0,7034962.8	3.4	25.7	35.8	104.2	0.0	12.7	0.1	0.0	---
I	3667.0	B	454995.2,7034886.4	33.6	45.0	341.9	35.6	253.4	209.8	1.4	2.1	---
J	3663.0	B	455059.5,7034824.2	262.6	45.0	997.1	206.1	750.5	508.1	39.9	0.0	64.8
K	3652.4	E	455242.8,7034673.8	174.6	160.3	233.4	372.7	62.5	121.3	1.1	0.6	358.5
L	3647.9	H	455310.5,7034597.4	414.6	199.1	1152.9	639.1	459.0	602.7	8.1	0.7	1190.7
LINE 300260		**FLIGHT 37043**										
A	3450.2	B	452606.2,7037189.5	8.2	51.1	128.8	203.7	22.9	65.5	0.2	0.0	---

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
B	3452.4	B	452654.5,7037136.5	12.8	21.0	127.3	140.3	18.9	64.4	0.8	11.1	---
C	3458.7	B?	452814.5,7036976.5	16.9	7.9	191.8	245.9	12.0	76.5	3.8	29.9	---
D	3461.6	B?	452919.5,7036918.3	14.2	36.4	203.1	260.3	12.0	76.5	0.6	3.5	---
E	3465.1	D	453020.1,7036827.5	73.9	18.2	91.7	60.2	67.9	86.8	15.2	10.1	---
F	3467.2	E	453067.6,7036771.9	135.4	102.5	390.2	267.2	161.1	213.5	2.0	3.2	---
G	3477.0	B?	453240.6,7036595.0	6.5	11.9	329.6	239.1	147.8	158.4	0.6	20.9	123.9
H	3480.1	B	453299.8,7036542.5	57.7	51.1	310.7	232.8	147.8	150.4	2.6	3.6	173.8
I	3487.0	B	453435.7,7036433.8	18.7	11.6	38.6	47.1	30.2	25.3	2.7	29.0	---
J	3519.8	S	453928.8,7035975.7	9.2	62.7	26.3	245.3	-0.5	44.7	1.0	0.0	40.6
K	3531.3	S	454140.8,7035775.1	28.4	85.0	114.1	266.3	2.7	63.4	1.0	0.0	---
L	3539.7	B?	454298.7,7035642.9	2.9	11.0	1.1	76.2	0.0	15.2	0.5	16.1	11.5
M	3548.0	B?	454408.4,7035545.7	3.4	13.3	14.4	35.7	0.9	8.5	0.2	3.1	---
N	3591.9	B	454925.1,7035079.5	5.9	5.9	50.5	0.0	0.0	14.1	1.0	29.2	---
O	3596.4	D	455002.1,7035010.4	71.5	73.8	30.5	101.4	0.0	1.3	2.3	0.4	---
P	3603.2	B	455153.2,7034874.9	79.7	20.2	619.9	113.7	482.9	220.3	15.0	3.9	28.1
Q	3609.2	E	455309.5,7034729.2	114.0	96.6	193.8	293.1	56.8	98.4	1.1	0.7	34.1
R	3612.1	H	455380.0,7034654.8	187.4	95.9	554.6	331.5	214.8	276.4	6.5	2.5	482.4
LINE 300270		**FLIGHT 37043**										
A	3410.6	B	452589.9,7037315.5	34.1	40.4	48.6	129.4	28.1	14.8	1.6	5.8	---
B	3396.6	B?	452834.7,7037089.1	0.0	8.7	569.2	22.0	3.2	372.7	0.2	8.6	---
C	3392.7	B	452939.0,7037004.9	144.4	36.9	480.0	165.6	296.3	306.6	18.1	0.9	---
D	3383.0	B	453227.0,7036743.8	54.4	13.8	186.5	37.7	82.9	129.8	13.1	12.0	17.4
E	3380.6	B	453305.0,7036681.4	39.8	9.8	186.5	69.9	82.9	129.8	12.5	16.6	17.7
F	3376.7	B	453428.1,7036589.4	11.4	8.8	0.0	0.0	0.0	0.0	1.8	29.5	---
G	3373.0	B	453535.3,7036490.0	210.8	72.9	794.1	273.4	847.7	435.8	13.3	0.0	---

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

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Label Fid		**Interp**	**XUTM (m), YUTM (m)**	**CXI5500_LLEVHz Real (ppm)**	**CXQ5500_LLEVHz Quad (ppm)**	**CPI7200_LLEVHz Real (ppm)**	**CPQ7200_LLEVHz Quad (ppm)**	**CPI900_LLEVHz Real (ppm)**	**CPQ900_LLEVHz Quad (ppm)**	**Conductance (siemens)**	**Depth (metres)**	**Magnetic Corr. (nT)**
H	3355.5	S?	453912.7,7036118.5	23.2	85.9	106.1	312.1	8.0	67.4	1.0	0.0	31.7
I	3285.4	D	455087.8,7035060.1	55.9	64.7	33.5	55.0	0.0	11.7	1.9	1.0	44.0
J	3279.0	B	455215.4,7034948.4	295.2	48.3	1131.5	210.8	799.5	573.3	44.4	0.0	---
K	3270.3	E	455404.6,7034796.5	151.2	126.9	249.9	339.6	70.3	125.2	1.2	3.7	---
L	3267.3	H	455452.2,7034736.9	177.4	99.2	495.6	379.2	156.8	248.8	5.1	2.3	261.4
LINE 300280		**FLIGHT 37043**										
A	3114.5	B	452762.2,7037291.2	43.4	17.3	126.3	31.3	39.4	70.1	6.4	7.8	3.6
B	3119.3	B	452908.8,7037154.6	4.2	7.2	18.5	46.6	0.0	6.1	0.5	29.3	---
C	3123.0	B	453037.4,7037051.5	58.3	2.4	146.6	32.1	32.6	75.6	65.6	4.2	---
D	3128.7	B	453240.8,7036883.7	86.8	27.5	276.0	82.4	103.9	143.0	11.2	8.1	8.9
E	3134.5	B	453392.7,7036731.7	22.1	4.0	37.2	0.0	23.1	32.5	16.2	30.6	---
F	3137.4	B	453474.2,7036659.6	25.9	23.8	102.8	107.4	38.4	44.3	1.9	11.6	---
G	3145.3	B	453686.4,7036465.6	4.7	19.2	3.8	43.1	40.0	9.8	0.3	0.0	8.8
H	3148.1	B	453763.5,7036400.3	39.8	20.9	47.7	30.9	40.9	9.8	4.3	16.5	6.0
I	3200.7	B?	454836.4,7035432.9	4.3	13.2	16.0	59.5	1.7	9.9	0.3	3.1	---
J	3218.7	E	455142.4,7035147.2	60.2	58.6	91.9	134.8	18.8	45.4	1.0	4.9	16.9
K	3222.2	D	455193.7,7035095.8	13.9	36.8	0.0	93.2	0.0	35.6	0.6	0.0	17.7
L	3228.4	B	455287.3,7035024.3	76.3	15.8	251.6	43.4	154.1	123.9	19.8	8.6	---
M	3232.1	B	455364.6,7034960.0	219.7	95.4	563.7	427.9	323.4	296.1	9.9	0.0	---
N	3237.1	H	455450.1,7034861.0	95.6	76.0	174.9	232.9	59.4	86.8	4.1	17.3	---
LINE 300290		**FLIGHT 37043**										
A	3069.7	B	452780.2,7037409.9	5.5	9.8	99.2	44.3	12.9	52.9	0.6	23.8	---
B	3063.4	B	452906.0,7037310.5	36.9	31.3	160.3	98.7	4.1	96.8	2.3	12.5	---
C	3056.5	B?	453034.6,7037184.3	6.8	7.6	279.5	15.6	333.6	0.0	1.0	30.9	---

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Label Fid		**Interp**	**XUTM (m), YUTM (m)**	**CXI5500_LLEVHz Real (ppm)**	**CXQ5500_LLEVHz Quad (ppm)**	**CPI7200_LLEVHz Real (ppm)**	**CPQ7200_LLEVHz Quad (ppm)**	**CPI900_LLEVHz Real (ppm)**	**CPQ900_LLEVHz Quad (ppm)**	**Conductance (siemens)**	**Depth (metres)**	**Magnetic Corr. (nT)**
D	3052.8	B	453113.8,7037112.5	71.7	5.9	254.5	31.6	318.6	179.7	77.6	6.2	---
E	3040.6	B	453449.0,7036809.6	6.0	16.6	99.8	50.3	167.7	92.8	0.4	4.2	7.5
F	3038.2	B	453527.0,7036748.7	35.0	16.6	90.6	50.3	154.6	93.8	4.8	16.9	9.4
G	3030.7	B	453747.9,7036549.0	37.4	12.5	111.4	28.8	182.0	35.5	7.8	14.0	7.2
H	3025.3	B?	453906.4,7036399.0	15.1	8.4	15.8	15.4	6.2	11.0	2.9	25.3	---
I	3014.4	B?	454197.7,7036144.5	5.3	57.0	184.2	232.9	17.5	72.8	0.1	0.0	80.8
J	3011.1	B?	454270.1,7036077.2	26.2	62.0	205.1	201.5	12.9	72.8	0.7	0.0	4.3
K	2951.6	B	455251.0,7035197.6	31.6	27.3	142.4	59.3	15.0	65.3	2.2	12.2	22.4
L	2947.5	D	455294.4,7035164.0	87.4	74.4	130.1	114.7	5.1	89.6	3.1	4.2	22.4
M	2941.9	E	455397.3,7035083.0	262.3	99.7	621.3	257.9	465.6	293.9	3.4	0.3	---
N	2938.5	B	455456.2,7035016.9	41.1	40.9	447.1	216.8	413.6	32.4	2.0	0.0	---
O	2933.5	B	455529.0,7034933.6	12.5	13.0	0.0	291.6	0.0	0.0	1.3	27.3	50.8
LINE 300300		**FLIGHT 37043**										
A	2785.1	B	453197.3,7037169.3	17.1	18.8	83.0	61.8	15.8	42.3	1.3	10.6	---
B	2800.6	B	453685.7,7036750.7	37.4	4.3	258.2	60.7	236.6	172.5	37.4	22.2	7.6
C	2802.7	B?	453744.5,7036692.3	12.6	3.2	258.2	3.9	238.1	177.5	8.2	42.6	7.7
D	2806.3	B	453835.7,7036601.9	10.3	2.4	134.4	47.1	47.3	67.0	4.3	37.2	2.5
E	2807.5	B	453865.3,7036574.2	9.9	9.8	134.4	47.1	47.3	67.0	1.3	27.6	---
F	2811.1	B	453959.2,7036494.4	0.0	9.3	0.0	15.3	11.4	0.0	0.2	4.7	---
G	2815.6	B	454065.6,7036397.2	55.5	49.3	296.9	232.5	288.8	200.9	2.5	4.5	---
H	2826.0	B	454282.2,7036197.8	6.1	12.4	81.5	6.3	0.0	20.3	0.5	14.8	---
I	2829.9	B?	454375.9,7036114.2	28.6	17.2	78.8	35.9	1.3	20.3	3.3	11.6	---
J	2858.2	B?	455029.1,7035525.2	5.8	3.7	17.2	82.3	1.5	15.8	1.8	44.4	---
K	2881.6	E	455307.3,7035283.3	100.1	75.9	236.5	236.9	53.3	112.6	1.4	2.5	---
L	2886.1	D	455367.7,7035225.3	117.8	73.5	26.7	225.8	66.3	101.4	5.0	0.0	---

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
M	2895.5	B	455546.5,7035052.3	96.5	108.3	433.1	527.2	401.2	152.2	2.3	0.0	---
LINE 300310		**FLIGHT 37043**										
A	2578.2	B?	453158.4,7037346.1	3.6	15.3	6.0	82.7	0.9	16.4	0.2	6.0	---
B	2565.0	B?	453430.9,7037082.5	5.2	13.2	29.2	44.0	0.4	13.3	0.4	10.1	---
C	2557.2	B?	453665.6,7036897.9	15.3	5.7	123.9	114.1	0.0	24.1	4.9	34.5	6.2
D	2552.1	B	453826.9,7036750.7	184.5	114.5	756.6	499.2	581.0	464.0	5.8	0.0	---
E	2546.9	B	453994.1,7036595.8	5.3	6.6	0.0	7.1	0.5	0.0	0.8	30.1	---
F	2541.6	B	454152.0,7036447.0	29.3	6.3	80.5	45.2	68.2	60.1	13.7	23.1	28.2
G	2528.1	B?	454540.7,7036100.3	6.8	14.2	89.0	110.7	1.2	27.8	0.5	14.8	5.8
H	2520.6	B?	454757.2,7035915.6	3.9	16.6	3.4	42.2	3.5	9.0	0.2	2.3	---
I	2511.1	B?	455000.3,7035688.8	4.7	6.5	23.4	75.6	1.0	7.0	0.7	26.1	---
J	2489.2	E	455364.2,7035359.1	142.2	96.6	320.8	346.8	75.5	153.3	1.4	0.0	---
K	2486.5	D	455407.3,7035313.9	6.9	4.9	217.8	188.0	56.4	91.6	1.6	38.1	---
L	2483.4	D	455462.2,7035275.6	22.8	22.3	137.0	128.0	0.6	54.4	1.7	9.9	44.7
M	2480.8	B?	455507.3,7035240.2	15.7	39.8	50.4	116.6	0.0	16.4	0.6	0.0	92.3
N	2477.4	B	455569.1,7035168.9	108.6	26.7	300.9	131.4	99.1	218.9	17.3	5.3	---
O	2474.1	B	455637.2,7035100.5	194.4	57.1	756.4	313.0	463.2	430.8	16.3	0.0	---
LINE 300320		**FLIGHT 37043**										
A	2372.1	B	454115.5,7036614.3	10.2	23.6	34.0	101.0	0.0	19.5	0.6	8.3	---
B	2406.0	B?	455012.2,7035815.0	20.7	31.5	93.6	153.9	0.6	28.0	1.0	6.0	---
C	2429.3	B	455474.3,7035364.7	36.2	33.2	534.5	38.0	172.7	302.0	2.1	4.0	---
D	2431.4	B	455522.2,7035332.5	15.4	33.2	534.5	237.2	168.0	298.6	0.7	1.7	51.8
E	2433.4	B?	455566.0,7035294.7	61.3	54.6	309.6	179.6	152.5	183.3	2.6	1.4	118.8
F	2436.9	B	455650.2,7035218.4	108.1	17.4	320.1	154.1	119.7	208.5	32.6	7.1	---

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Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
G	2440.8	B	455762.7,7035140.6	303.0	13.4	1016.3	211.7	702.5	569.7	314.9	0.4	---
LINE 300330		**FLIGHT 37043**										
A	2191.5	B	454554.6,7036363.6	62.9	37.1	108.8	57.0	14.5	37.0	4.3	0.4	4.8
B	2187.6	B?	454664.0,7036270.9	11.1	3.0	4.9	9.2	38.9	26.4	4.0	29.5	---
C	2184.1	B	454750.9,7036175.1	10.8	5.4	10.7	2.9	38.9	26.4	3.0	30.1	---
D	2180.6	B	454849.3,7036088.1	20.2	19.5	127.4	76.7	24.1	72.6	1.6	12.6	3.3
E	2177.5	B	454939.7,7036023.7	4.3	3.7	3.8	76.7	0.0	1.2	1.1	46.0	---
F	2170.5	S?	455137.5,7035865.8	24.3	59.4	57.7	197.4	3.5	42.4	1.0	0.0	11.9
G	2152.8	E	455520.1,7035483.4	238.7	140.2	660.1	513.9	186.8	331.2	2.1	0.0	---
H	2151.2	B	455557.4,7035455.7	141.0	87.2	411.7	346.5	119.9	362.3	5.4	0.0	8.9
I	2148.7	D	455616.3,7035410.3	11.6	0.0	195.3	69.9	97.1	148.1	11.6	34.8	89.2
J	2146.6	B?	455659.9,7035369.1	37.4	21.9	137.8	43.0	89.0	116.0	3.7	7.8	121.7
K	2142.0	B	455751.0,7035275.1	123.4	32.6	428.0	145.1	345.3	290.3	16.4	1.7	---
L	2137.1	B	455858.8,7035185.1	86.5	15.8	434.1	77.6	387.3	269.9	25.1	3.7	---
LINE 39010		**FLIGHT 37045**										
A	5312.6	B	451140.8,7035158.9	25.5	1.1	171.9	22.0	278.0	45.2	24.7	25.3	---
B	5314.4	B	451175.1,7035209.7	24.8	4.6	659.1	156.0	278.0	294.5	16.3	30.3	---
C	5316.8	B	451224.4,7035262.2	80.5	4.6	358.8	156.0	194.0	346.9	139.2	9.4	---
D	5326.3	B	451352.6,7035379.8	53.4	57.7	358.8	150.5	159.0	203.2	2.0	0.0	---
E	5333.7	E	451403.2,7035432.6	104.5	66.2	269.9	260.6	90.5	134.3	1.5	8.1	85.3
F	5411.9	B	452201.3,7036271.3	3.0	22.9	59.1	24.6	7.7	31.8	0.1	0.0	---
G	5420.3	D	452288.2,7036366.7	72.3	39.3	28.8	125.6	46.6	4.0	5.1	3.0	---
H	5424.4	B	452334.4,7036412.7	49.7	51.8	85.1	108.6	40.2	292.5	2.0	7.1	---
I	5430.0	B	452398.4,7036476.2	130.9	78.6	384.3	170.2	362.0	212.1	5.4	0.0	19.6

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J	5439.4	B	452519.3,7036627.3	25.4	6.5	23.5	87.4	80.8	28.8	10.2	21.9	81.9
K	5442.7	D	452599.8,7036696.6	40.9	26.0	61.7	0.0	35.2	34.3	3.4	9.9	2.4
L	5446.1	B	452681.0,7036785.7	10.0	1.8	0.0	1.7	40.8	0.0	4.8	30.8	9.5
M	5451.1	B	452816.1,7036902.5	0.7	24.2	12.3	116.2	0.0	4.3	0.2	0.0	6.9
N	5455.8	B	452932.7,7037002.4	101.4	20.4	344.5	67.9	177.1	251.0	22.7	3.3	---
O	5459.4	B	453014.2,7037080.4	34.4	4.4	103.4	2.6	105.2	70.4	31.1	19.2	---
P	5463.6	B	453077.5,7037162.0	60.9	26.7	280.7	160.9	181.8	180.8	6.4	9.6	---
Q	5479.3	B?	453297.2,7037421.4	5.2	5.8	22.5	81.8	0.3	9.1	0.9	42.6	---
R	5483.2	B?	453360.0,7037476.5	4.6	4.0	23.8	78.4	0.4	3.2	1.1	47.7	---
LINE 39020		**FLIGHT 37045**										
A	5636.6	B	453696.7,7036368.2	21.7	0.4	15.0	41.3	7.2	22.9	25.5	24.5	58.8
B	5632.7	B?	453781.4,7036454.6	26.6	29.5	309.3	119.1	239.7	117.1	1.5	7.6	16.1
C	5630.8	B	453821.9,7036506.2	58.2	33.2	309.3	136.8	239.7	117.1	4.4	2.6	---
D	5628.1	B	453873.0,7036576.4	25.4	16.7	309.3	15.3	317.3	117.1	2.8	19.9	---
E	5625.1	B	453943.3,7036648.5	105.3	28.9	378.0	118.7	317.3	163.6	14.7	7.2	---
F	5623.1	B	454000.9,7036696.7	6.1	15.6	313.9	116.1	305.5	123.5	0.4	9.3	---
LINE 39030		**FLIGHT 37045**										
A	6029.3	B	452586.8,7033801.7	8.4	7.4	167.9	48.8	89.3	70.9	1.4	32.0	---
B	6032.0	B?	452640.3,7033839.4	17.9	27.1	173.9	48.8	116.4	75.1	1.0	12.3	---
C	6040.1	E	452735.4,7033938.0	58.8	57.3	214.9	203.8	76.5	111.8	1.4	6.9	---
D	6046.2	B	452796.4,7034001.8	9.7	34.9	8.7	220.8	12.0	18.7	0.4	0.0	---
E	6051.9	B	452848.3,7034049.9	9.5	8.2	8.7	0.0	19.0	31.0	1.4	29.8	---
F	6086.5	B?	453035.2,7034247.1	1.8	11.5	0.8	37.1	0.7	2.1	0.3	14.6	111.2
G	6212.7	B?	454247.0,7035509.6	12.6	2.4	42.7	20.1	2.8	13.3	5.6	31.2	---

EM Anomaly List : 11066 Hit Block, Mayo, Yukon

CX=COAXIAL,CP=COPLANAR			Note: EM amplitudes are local for types B,D,T and are absolute for all others		Estimated depth may be unreliable because the strongest part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or magnetite/overburden effects							
Label	Fid	Interp	XUTM (m), YUTM (m)	CXI5500_LLEVHz Real (ppm)	CXQ5500_LLEVHz Quad (ppm)	CPI7200_LLEVHz Real (ppm)	CPQ7200_LLEVHz Quad (ppm)	CPI900_LLEVHz Real (ppm)	CPQ900_LLEVHz Quad (ppm)	Conductance (siemens)	Depth (metres)	Magnetic Corr. (nT)
H	6235.4	B?	454709.4,7035993.5	4.7	17.5	35.0	122.0	0.0	8.2	0.3	2.9	---
I	6237.3	B	454768.4,7036039.2	24.5	23.5	35.0	122.0	67.7	8.2	1.8	12.9	---
J	6240.8	B	454873.6,7036127.5	83.6	9.0	258.4	78.1	67.7	122.9	54.0	1.1	---
LINE 39040		**FLIGHT 37043**										
A	1895.7	B?	453799.1,7033599.1	11.3	20.4	8.1	11.4	0.0	4.8	0.7	4.3	55.7
B	1901.8	B?	453954.4,7033761.0	1.5	13.9	0.0	16.6	0.0	1.8	0.3	0.1	105.1
C	1925.9	B?	454569.8,7034400.2	1.9	11.8	4.8	58.4	0.2	4.2	0.3	4.8	170.0
D	1935.2	B	454813.9,7034649.5	157.7	50.5	521.9	275.0	311.8	257.3	13.5	2.3	---
E	1942.6	B	454987.9,7034841.4	7.2	7.1	52.3	10.9	106.7	17.0	1.1	29.1	11.8
F	1946.2	B	455084.6,7034940.4	64.5	16.0	187.1	84.9	198.7	97.2	14.3	6.6	---
G	1964.1	B	455508.2,7035377.6	68.9	4.9	259.5	115.6	117.9	136.9	94.4	7.8	---

Anomalies Summary

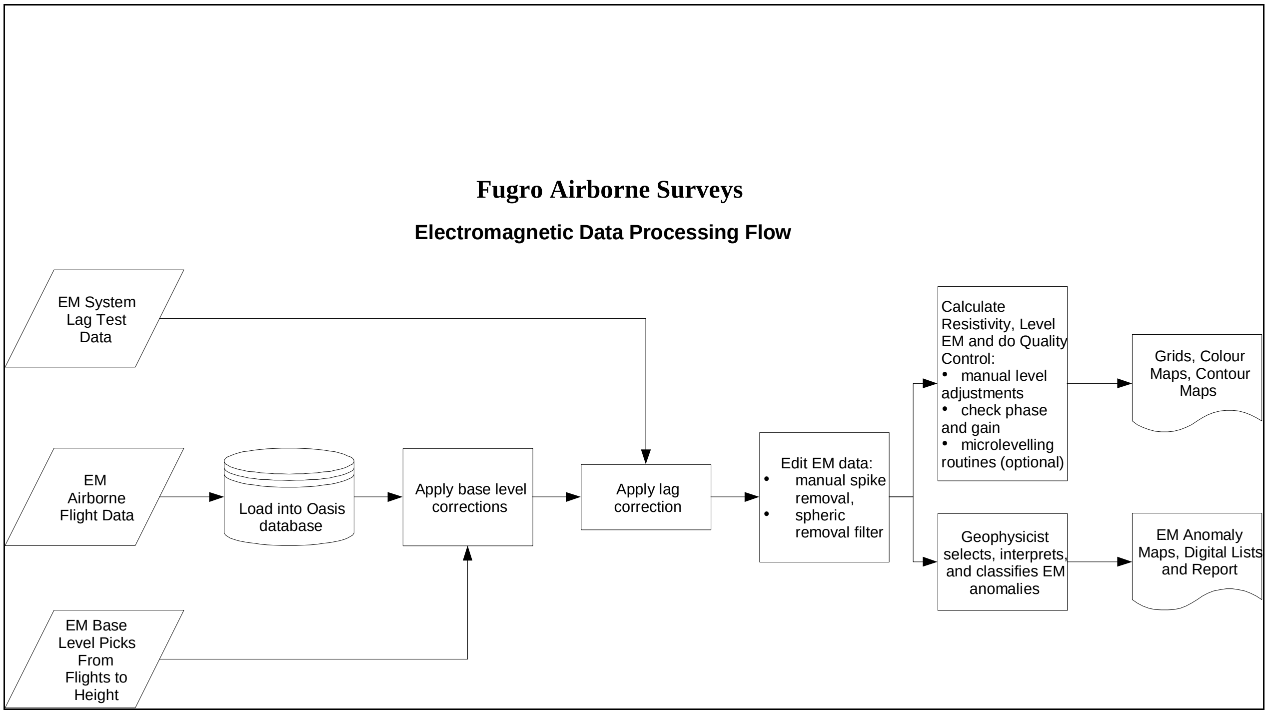
Conductor Grade	No. of Responses
7	3
6	5
5	18
4	29
3	43
2	172
1	111
0	2
Total	383

Conductor Model	No. of Responses
L	0
D	34
B	293
H	8
S	14
E	34
Total	383

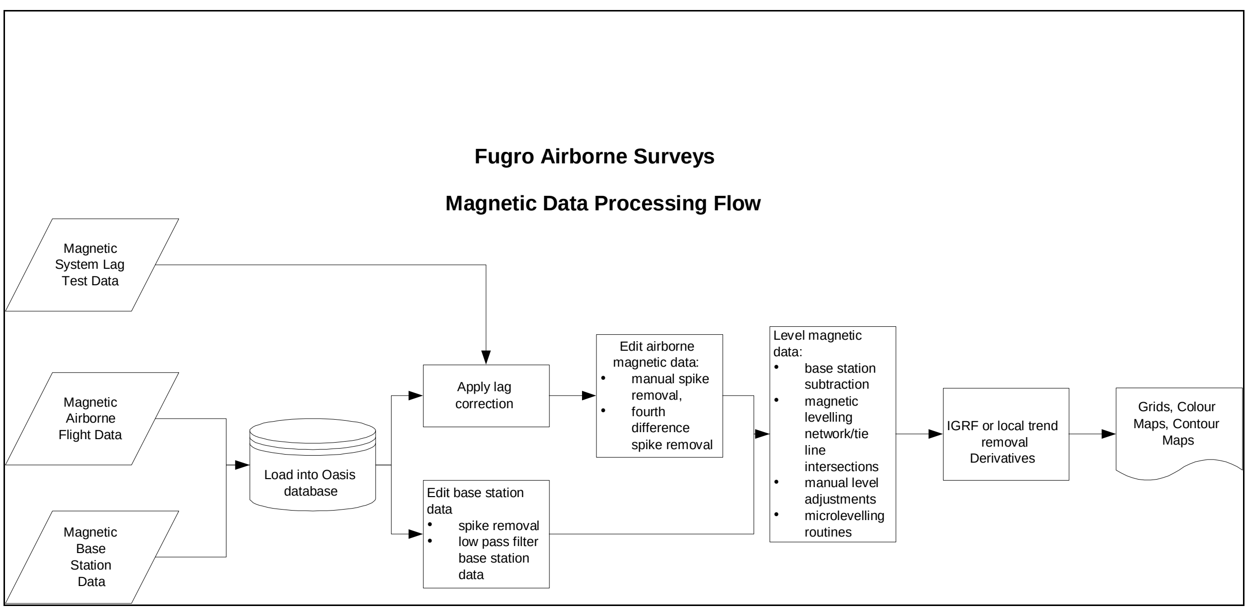
Appendix D

Data Processing

Processing Flow Chart - Electromagnetic Data



Processing Flow Chart - Magnetic Data



Appendix E

Glossary

GLOSSARY OF AIRBORNE GEOPHYSICAL TERMS

Note: The definitions given in this glossary refer to the common terminology as used in airborne geophysics.

altitude attenuation: the absorption of gamma rays by the atmosphere between the earth and the detector. The number of gamma rays detected by a system decreases as the altitude increases.

apparent- : the ***physical parameters*** of the earth measured by a geophysical system are normally expressed as apparent, as in "apparent ***resistivity*"**. This means that the measurement is limited by assumptions made about the geology in calculating the response measured by the geophysical system. Apparent resistivity calculated with ***HEM***, for example, generally assumes that the earth is a ***homogeneous half-space*** – not layered.

amplitude: The strength of the total electromagnetic field. In ***frequency domain*** it is most often the sum of the squares of ***in-phase*** and ***quadrature*** components. In multi-component electromagnetic surveys it is generally the sum of the squares of all three directional components.

analytic signal: The total amplitude of all the directions of magnetic ***gradient***. Calculated as the sum of the squares.

anisotropy: Having different ***physical parameters*** in different directions. This can be caused by layering or fabric in the geology. Note that a unit can be anisotropic, but still **homogeneous**.

anomaly: A localized change in the geophysical data characteristic of a discrete source, such as a conductive or magnetic body: something locally different from the **background**.

B-field: In time-domain **electromagnetic** surveys, the magnetic field component of the (electromagnetic) **field**. This can be measured directly, although more commonly it is calculated by integrating the time rate of change of the magnetic field **dB/dt**, as measured with a receiver coil.

background: The "normal" response in the geophysical data – that response observed over most of the survey area. **Anomalies** are usually measured relative to the background. In airborne gamma-ray spectrometric surveys the term defines the **cosmic**, radon, and aircraft responses in the absence of a signal from the ground.

base-level: The measured values in a geophysical system in the absence of any outside signal. All geophysical data are measured relative to the system base level.

base frequency: The frequency of the pulse repetition for a ***time-domain electromagnetic*** system. Measured between subsequent positive pulses.

bird: A common name for the pod towed beneath or behind an aircraft, carrying the geophysical sensor array.

bucking: The process of removing the strong ***signal*** from the ***primary field*** at the ***receiver*** from the data, to measure the ***secondary field***. It can be done electronically or mathematically. This is done in ***frequency-domain EM***, and to measure ***on-time*** in ***time-domain EM***.

calibration coil: A wire coil of known size and dipole moment, which is used to generate a field of known ***amplitude*** and ***phase*** in the receiver, for system calibration. Calibration coils can be external, or internal to the system. Internal coils may be called Q-coils.

coaxial coils: **[CX]** Coaxial coils in an HEM system are in the vertical plane, with their axes horizontal and collinear in the flight direction. These are most sensitive to vertical conductive objects in the ground, such as thin, steeply dipping conductors perpendicular to the flight direction. Coaxial coils generally give the sharpest anomalies over localized conductors. (See also ***coplanar coils***)

coil: A multi-turn wire loop used to transmit or detect electromagnetic fields. Time varying ***electromagnetic*** fields through a coil induce a voltage proportional to the strength of the field and the rate of change over time.

compensation: Correction of airborne geophysical data for the changing effect of the aircraft. This process is generally used to correct data in ***fixed-wing time-domain electromagnetic*** surveys (where the transmitter is on the aircraft and the receiver is moving), and magnetic surveys (where the sensor is on the aircraft, turning in the earth's magnetic field.

component: In ***frequency domain electromagnetic*** surveys this is one of the two **phase** measurements – ***in-phase or quadrature***. In "multi-component" electromagnetic surveys it is also used to define the measurement in one geometric direction (vertical, horizontal in-line and horizontal transverse – the Z, X and Y components).

Compton scattering: gamma ray photons will bounce off electrons as they pass through the earth and atmosphere, reducing their energy and then being detected by ***radiometric*** sensors at lower energy levels. See also ***stripping***.

conductance: See ***conductivity thickness***

conductivity: [**σ**] The facility with which the earth or a geological formation conducts electricity. Conductivity is usually measured in milli-Siemens per metre (mS/m). It is the reciprocal of ***resistivity***.

conductivity-depth imaging: see ***conductivity-depth transform***.

conductivity-depth transform: A process for converting electromagnetic measurements to an approximation of the conductivity distribution vertically in the earth, assuming a ***layered earth***. (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)

conductivity thickness: [**σt**] The product of the ***conductivity***, and thickness of a large, tabular body. (It is also called the "conductivity-thickness product") In electromagnetic geophysics, the response of a thin plate-like conductor is proportional to the conductivity multiplied by thickness. For example a 10 metre thickness of 20 Siemens/m mineralization will be equivalent to 5 metres of 40 S/m; both have 200 S conductivity thickness. Sometimes referred to as conductance.

conductor: Used to describe anything in the ground more conductive than the surrounding geology. Conductors are most often clays or graphite, or hopefully some type of mineralization, but may also be man-made objects, such as fences or pipelines.

coplanar coils: **[CP]** In HEM, the coplanar coils lie in the horizontal plane with their axes vertical, and parallel. These coils are most sensitive to massive conductive bodies, horizontal layers, and the ***halfspace***.

cosmic ray: High energy sub-atomic particles from outer space that collide with the earth's atmosphere to produce a shower of gamma rays (and other particles) at high energies.

counts (per second): The number of ***gamma-rays*** detected by a gamma-ray ***spectrometer*.** The rate depends on the geology, but also on the size and sensitivity of the detector.

culture: A term commonly used to denote any man-made object that creates a geophysical anomaly. Includes, but not limited to, power lines, pipelines, fences, and buildings.

current channelling: See current gathering.

current gathering: The tendency of electrical currents in the ground to channel into a conductive formation. This is particularly noticeable at higher frequencies or early time channels when the formation is long and parallel to the direction of current flow. This tends to enhance anomalies relative to inductive currents (see also ***induction***). Also known as current channelling.

daughter products: The radioactive natural sources of gamma-rays decay from the original "parent" element (commonly potassium, uranium, and thorium) to one or more lower-energy "daughter" elements. Some of these lower energy elements are also radioactive and decay further. ***Gamma-ray spectrometry*** surveys may measure the gamma rays given off by the original element or by the decay of the daughter products.

dB/dt: As the ***secondary electromagnetic field*** changes with time, the magnetic field [**B**] component induces a voltage in the receiving ***coil***, which is proportional to the rate of change of the magnetic field over time.

decay: In ***time-domain electromagnetic*** theory, the weakening over time of the ***eddy currents*** in the ground, and hence the ***secondary field*** after the ***primary field*** electromagnetic pulse is turned off. In ***gamma-ray spectrometry***, the radioactive breakdown of an element, generally potassium, uranium, thorium, or one of their ***daughter*** products.

decay constant: see time constant.

decay series: In ***gamma-ray spectrometry***, a series of progressively lower energy ***daughter products*** produced by the radioactive breakdown of uranium or thorium.

depth of exploration: The maximum depth at which the geophysical system can detect the target. The depth of exploration depends very strongly on the type and size of the target, the contrast of the target with the surrounding geology, the homogeneity of the surrounding geology, and the type of geophysical system. One measure of the maximum depth of exploration for an electromagnetic system is the depth at which it can detect the strongest conductive target – generally a highly conductive horizontal layer.

differential resistivity: A process of transforming ***apparent resistivity*** to an approximation of layer resistivity at each depth. The method uses multi-frequency HEM data and approximates the effect of shallow layer ***conductance*** determined from higher frequencies to estimate the deeper conductivities (Huang and Fraser, 1996)

dipole moment: [NIA] For a transmitter, the product of the area of a ***coil***, the number of turns of wire, and the current flowing in the coil. At a distance significantly larger than the size of the coil, the magnetic field from a coil will be the same if the dipole moment product is the same. For a receiver coil, this is the product of the area and the number of turns. The sensitivity to a magnetic field (assuming the source is far away) will be the same if the dipole moment is the same.

diurnal: The daily variation in a natural field, normally used to describe the natural fluctuations (over hours and days) of the earth's magnetic field.

dielectric permittivity: **[ε]** The capacity of a material to store electrical charge, this is most often measured as the relative permittivity [ε_r], or ratio of the material dielectric to that of free space. The effect of high permittivity may be seen in HEM data at high frequencies over highly resistive geology as a reduced or negative ***in-phase***, and higher ***quadrature*** data.

drape: To fly a survey following the terrain contours, maintaining a constant altitude above the local ground surface. Also applied to re-processing data collected at varying altitudes above ground to simulate a survey flown at constant altitude.

drift: Long-time variations in the base-level or calibration of an instrument.

eddy currents: The electrical currents induced in the ground, or other conductors, by a time-varying ***electromagnetic field*** (usually the ***primary field***). Eddy currents are also induced in the aircraft's metal frame and skin; a source of ***noise*** in EM surveys.

electromagnetic: **[EM]** Comprised of a time-varying electrical and magnetic field. Radio waves are common electromagnetic fields. In geophysics, an electromagnetic system is one which transmits a time-varying ***primary field*** to induce ***eddy currents*** in the ground, and then measures the ***secondary field*** emitted by those eddy currents.

energy window: A broad spectrum of ***gamma-ray*** energies measured by a spectrometric survey. The energy of each gamma-ray is measured and divided up into numerous discrete energy levels, called windows.

equivalent (thorium or uranium): The amount of radioelement calculated to be present, based on the gamma-rays measured from a **daughter** element. This assumes that the ***decay series*** is in equilibrium – progressing normally.

exposure rate: in radiometric surveys, a calculation of the total exposure rate due to gamma rays at the ground surface. It is used as a measurement of the concentration of all the **radioelements** at the surface. See also: **natural exposure rate**.

fiducial, or fid: Timing mark on a survey record. Originally these were timing marks on a profile or film; now the term is generally used to describe 1-second interval timing records in digital data, and on maps or profiles.

Figure of Merit: **(FOM)** A sum of the 12 distinct magnetic noise variations measured by each of four flight directions, and executing three aircraft attitude variations (yaw, pitch, and roll) for each direction. The flight directions are generally parallel and perpendicular to planned survey flight directions. The FOM is used as a measure of the **manoeuvre noise** before and after **compensation.**

fixed-wing: Aircraft with wings, as opposed to “rotary wing” helicopters.

footprint: This is a measure of the area of sensitivity under the aircraft of an airborne geophysical system. The footprint of an ***electromagnetic*** system is dependent on the altitude of the system, the orientation of the transmitter and receiver and the separation between the receiver and transmitter, and the conductivity of the ground. The footprint of a ***gamma-ray spectrometer*** depends mostly on the altitude. For all geophysical systems, the footprint also depends on the strength of the contrasting ***anomaly***.

frequency domain: An ***electromagnetic*** system which transmits a ***primary field*** that oscillates smoothly over time (sinusoidal), inducing a similarly varying electrical current in the ground. These systems generally measure the changes in the ***amplitude*** and ***phase*** of the ***secondary field*** from the ground at different frequencies by measuring the **in-phase** and **quadrature** phase components. See also ***time-domain***.

full-stream data: Data collected and recorded continuously at the highest possible sampling rate. Normal data are stacked (see ***stacking***) over some time interval before recording.

gamma-ray: A very high-energy photon, emitted from the nucleus of an atom as it undergoes a change in energy levels.

gamma-ray spectrometry: Measurement of the number and energy of natural (and sometimes man-made) gamma-rays across a range of photon energies.

gradient: In magnetic surveys, the gradient is the change of the magnetic field over a distance, either vertically or horizontally in either of two directions. Gradient data is often measured, or calculated from the total magnetic field data because it changes more quickly over distance than the ***total magnetic field***, and so may provide a more precise measure of the location of a source. See also ***analytic signal***.

ground effect: The response from the earth. A common calibration procedure in many geophysical surveys is to fly to altitude high enough to be beyond any measurable response from the ground, and there establish ***base levels*** or ***backgrounds***.

half-space: A mathematical model used to describe the earth – as infinite in width, length, and depth below the surface. The most common halfspace models are ***homogeneous*** and ***layered earth***.

heading error: A slight change in the magnetic field measured when flying in opposite directions.

HEM: Helicopter ElectroMagnetic, This designation is most commonly used for helicopter-borne,

frequency-domain electromagnetic systems. At present, the transmitter and receivers are normally mounted in a ***bird*** carried on a sling line beneath the helicopter.

herringbone pattern: A pattern created in geophysical data by an asymmetric system, where the **anomaly** may be extended to either side of the source, in the direction of flight. Appears like fish bones, or like the teeth of a comb, extending either side of centre, each tooth an alternate flight line.

homogeneous: This is a geological unit that has the same ***physical parameters*** throughout its volume. This unit will create the same response to an HEM system anywhere, and the HEM system will measure the same apparent ***resistivity*** anywhere. The response may change with system direction (see ***anisotropy***).

HTEM: Helicopter Time-domain ElectroMagnetic, This designation is used for the new generation of helicopter-borne, ***time-domain*** electromagnetic systems.

in-phase: the component of the measured ***secondary field*** that has the same phase as the transmitter and the ***primary field***. The in-phase component is stronger than the ***quadrature*** phase over relatively higher ***conductivity***.

induction: Any time-varying electromagnetic field will induce (cause) electrical currents to flow in any object with non-zero ***conductivity***. (see ***eddy currents***)

induction number: also called the "response parameter", this number combines many of the most significant parameters affecting the ***EM*** response into one parameter against which to compare responses. For a ***layered earth*** the response parameter is $\mu\omega\sigma h^2$ and for a large, flat, ***conductor*** it is $\mu\omega\sigma th$, where μ is the ***magnetic permeability***, ω is the angular ***frequency***, σ is the **conductivity**, t is the thickness (for the flat conductor) and h is the height of the system above the conductor.

inductive limit: When the frequency of an EM system is very high, or the **conductivity** of the target is very high, the response measured will be entirely **in-phase** with no **quadrature** (**phase** angle =0). The in-phase response will remain constant with further increase in conductivity or frequency. The system can no longer detect changes in conductivity of the target.

infinite: In geophysical terms, an "infinite' dimension is one much greater than the ***footprint*** of the system, so that the system does not detect changes at the edges of the object.

International Geomagnetic Reference Field: **[IGRF]** An approximation of the smooth magnetic field of the earth, in the absence of variations due to local geology. Once the IGRF is subtracted from the measured magnetic total field data, any remaining variations are assumed to be due to local geology. The IGRF also predicts the slow changes of the field up to five years in the future.

inversion, or **inverse modeling**: A process of converting geophysical data to an earth model, which compares theoretical models of the response of the earth to the data measured, and refines the model until the response closely fits the measured data (Huang and Palacky, 1991)

layered earth: A common geophysical model which assumes that the earth is horizontally layered – the ***physical parameters*** are constant to ***infinite*** distance horizontally, but change vertically.

magnetic permeability: **[μ]** This is defined as the ratio of magnetic induction to the inducing magnetic field. The relative magnetic permeability [μ_r] is often quoted, which is the ratio of the rock permeability to the permeability of free space. In geology and geophysics, the ***magnetic susceptibility*** is more commonly used to describe rocks.

magnetic susceptibility: **[k]** A measure of the degree to which a body is magnetized. In SI units this is related to relative ***magnetic permeability*** by $k=\mu_r-1$, and is a dimensionless unit. For most geological material, susceptibility is influenced primarily by the percentage of magnetite. It is most often quoted in units of 10^{-6}. In HEM data this is most often apparent as a negative ***in-phase*** component over high susceptibility, high ***resistivity*** geology such as diabase dikes.

manoeuvre noise: variations in the magnetic field measured caused by changes in the relative positions of the magnetic sensor and magnetic objects or electrical currents in the aircraft. This type of noise is generally corrected by magnetic **compensation**.

model: Geophysical theory and applications generally have to assume that the geology of the earth has a form that can be easily defined mathematically, called the model. For example steeply dipping **conductor**s are generally modeled as being **infinite** in horizontal and depth extent, and very thin. The earth is generally modeled as horizontally layered, each layer infinite in extent and uniform in characteristic. These models make the mathematics to describe the response of the (normally very complex) earth practical. As theory advances, and computers become more powerful, the useful models can become more complex.

natural exposure rate: in radiometric surveys, a calculation of the total exposure rate due to natural-source gamma rays at the ground surface. It is used as a measurement of the concentration of all the natural **radioelements** at the surface. See also: **exposure rate**.

noise: That part of a geophysical measurement that the user does not want. Typically this includes electronic interference from the system, the atmosphere (***sferics***), and man-made sources. This can be a subjective judgment, as it may include the response from geology other than the target of interest. Commonly the term is used to refer to high frequency (short period) interference. See also ***drift***.

Occam's inversion: an ***inversion*** process that matches the measured ***electromagnetic*** data to a theoretical model of many, thin layers with constant thickness and varying resistivity (Constable et al, 1987).

off-time: In a ***time-domain electromagnetic*** survey, the time after the end of the ***primary field pulse***, and before the start of the next pulse.

on-time: In a ***time-domain electromagnetic*** survey, the time during the ***primary field pulse***.

overburden: In engineering and mineral exploration terms, this most often means the soil on top of the unweathered bedrock. It may be sand, glacial till, or weathered rock.

Phase, phase angle: The angular difference in time between a measured sinusoidal electromagnetic field and a reference – normally the primary field. The phase is calculated from $\tan^{-1}$(***in-phase*** / ***quadrature***).

physical parameters: These are the characteristics of a geological unit. For electromagnetic surveys, the important parameters are ***conductivity***, ***magnetic permeability*** (or ***susceptibility***) and ***dielectric permittivity***; for magnetic surveys the parameter is magnetic susceptibility, and for gamma ray spectrometric surveys it is the concentration of the major radioactive elements: potassium, uranium, and thorium.

permittivity: see ***dielectric permittivity***.

permeability: see ***magnetic permeability***.

primary field: the EM field emitted by a transmitter. This field induces ***eddy currents*** in (energizes) the conductors in the ground, which then create their own ***secondary*** **fields**.

pulse: In time-domain EM surveys, the short period of intense ***primary*** field transmission. Most measurements (the ***off-time***) are measured after the pulse. **On-time** measurements may be made during the pulse.

quadrature: that component of the measured ***secondary field*** that is phase-shifted 90° from the ***primary field***. The quadrature component tends to be stronger than the ***in-phase*** over relatively weaker ***conductivity***.

Q-coils: see ***calibration coil***.

radioelements: This normally refers to the common, naturally-occurring radioactive elements: potassium (K), uranium (U), and thorium (Th). It can also refer to man-made radioelements, most often cobalt (Co) and cesium (Cs)

radiometric: Commonly used to refer to ***gamma ray*** spectrometry.

radon: A radioactive daughter product of uranium and thorium, radon is a gas which can leak into the atmosphere, adding to the non-geological background of a gamma-ray spectrometric survey.

receiver: the ***signal*** detector of a geophysical system. This term is most often used in active geophysical systems – systems that transmit some kind of signal. In airborne ***electromagnetic*** surveys it is most often a ***coil***. (see also, ***transmitter***)

resistivity: **[ρ]** The strength with which the earth or a geological formation resists the flow of electricity, typically the flow induced by the ***primary field*** of the electromagnetic transmitter. Normally expressed in ohm-metres, it is the reciprocal of ***conductivity***.

resistivity-depth transforms: similar to ***conductivity depth transforms***, but the calculated ***conductivity*** has been converted to ***resistivity***.

resistivity section: an approximate vertical section of the resistivity of the layers in the earth. The resistivities can be derived from the ***apparent resistivity***, the ***differential resistivities***, ***resistivity-depth transforms***, or ***inversions***.

Response parameter: another name for the **induction number**.

secondary field: The field created by conductors in the ground, as a result of electrical currents induced by the ***primary field*** from the ***electromagnetic*** transmitter. Airborne ***electromagnetic*** systems are designed to create and measure a secondary field.

Sengpiel section: a ***resistivity section*** derived using the ***apparent resistivity*** and an approximation of the depth of maximum sensitivity for each frequency.

sferic: Lightning, or the ***electromagnetic*** signal from lightning, it is an abbreviation of "atmospheric discharge". These appear to magnetic and electromagnetic sensors as sharp "spikes" in the data. Under some conditions lightning storms can be detected from hundreds of kilometres away. (see ***noise***)

signal: That component of a measurement that the user wants to see – the response from the targets, from the earth, etc. (See also ***noise***)

skin depth: A measure of the depth of penetration of an electromagnetic field into a material. It is defined as the depth at which the primary field decreases to 1/e of the field at the surface. It is calculated by approximately 503 x √(resistivity/frequency). Note that depth of penetration is greater at higher ***resistivity*** and/or lower ***frequency.***

spectrometry: Measurement across a range of energies, where ***amplitude*** and energy are defined for each measurement. In gamma-ray spectrometry, the number of gamma rays are measured for each energy ***window***, to define the ***spectrum***.

spectrum: In ***gamma ray spectrometry***, the continuous range of energy over which gamma rays are measured. In ***time-domain electromagnetic*** surveys, the spectrum is the energy of the **pulse** distributed across an equivalent, continuous range of frequencies.

spheric: see ***sferic***.

stacking: Summing repeat measurements over time to enhance the repeating ***signal***, and minimize the random ***noise***.
stripping: Estimation and correction for the gamma ray photons of higher and lower energy that are observed in a particular ***energy window***. See also ***Compton scattering***.

susceptibility: See ***magnetic susceptibility***.

tau: [τ] Often used as a name for the ***time constant***.

TDEM: ***time domain electromagnetic***.

thin sheet: A standard model for electromagnetic geophysical theory. It is usually defined as a thin, flat-lying conductive sheet, ***infinite*** in both horizontal directions. (see also ***vertical plate***)

tie-line: A survey line flown across most of the ***traverse lines***, generally perpendicular to them, to assist in measuring ***drift*** and ***diurnal*** variation. In the short time required to fly a tie-line it is assumed that the drift and/or diurnal will be minimal, or at least changing at a constant rate.

time constant: The time required for an ***electromagnetic*** field to decay to a value of 1/e of the original value. In ***time-domain*** electromagnetic data, the time constant is proportional to the size and ***conductance*** of a tabular conductive body. Also called the decay constant.

Time channel: In ***time-domain electromagnetic*** surveys the decaying ***secondary field*** is measured over a period of time, and the divided up into a series of consecutive discrete measurements over that time.

time-domain: ***Electromagnetic*** system which transmits a pulsed, or stepped ***electromagnetic*** field. These systems induce an electrical current (***eddy current***) in the ground that persists after the ***primary field*** is turned off, and measure the change over time of the ***secondary field*** created as the currents ***decay***. See also ***frequency-domain***.

total energy envelope: The sum of the squares of the three ***components*** of the ***time-domain electromagnetic secondary field***. Equivalent to the ***amplitude*** of the secondary field.

transient: Time-varying. Usually used to describe a very short period pulse of ***electromagnetic*** field.

transmitter: The source of the ***signa***l to be measured in a geophysical survey. In airborne ***EM*** it is most often a **coil** carrying a time-varying electrical current, transmitting the ***primary field***. (see also ***receiver***)

traverse line: A normal geophysical survey line. Normally parallel traverse lines are flown across the property in spacing of 50 m to 500 m, and generally perpendicular to the target geology.

vertical plate: A standard model for electromagnetic geophysical theory. It is usually defined as thin conductive sheet, ***infinite*** in horizontal dimension and depth extent. (see also ***thin shee***t)

waveform: The shape of the ***electromagnetic pulse*** from a ***time-domain*** electromagnetic transmitter.

window: A discrete portion of a ***gamma-ray spectrum*** or ***time-domain electromagnetic decay***. The continuous energy spectrum or ***full-stream*** data are grouped into windows to reduce the number of samples, and reduce ***noise***.

Version 1.5, November 29, 2005
Greg Hodges,
Chief Geophysicist
Fugro Airborne Surveys, Toronto

Common Symbols and Acronyms

k Magnetic susceptibility
ε Dielectric permittivity
μ, μ_r Magnetic permeability, relative permeability
ρ, ρ_a Resistivity, apparent resistivity
σ,σ_a Conductivity, apparent conductivity
σt Conductivity thickness
τ Tau, or time constant
Ωm ohm-metres, units of resistivity
AGS Airborne gamma ray spectrometry.
CDT Conductivity-depth transform, conductivity-depth imaging (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)
CPI, CPQ Coplanar in-phase, quadrature
CPS Counts per second
CTP Conductivity thickness product
CXI, CXQ Coaxial, in-phase, quadrature
FOM Figure of Merit
fT femtoteslas, normal unit for measurement of B-Field
EM Electromagnetic
keV kilo electron volts – a measure of gamma-ray energy
MeV mega electron volts – a measure of gamma-ray energy 1MeV = 1000keV
NIA dipole moment: turns x current x Area
nT nanotesla, a measure of the strength of a magnetic field
nG/h nanoGreys/hour – gamma ray dose rate at ground level
ppm parts per million – a measure of secondary field or noise relative to the primary or radioelement concentration.
pT/s picoteslas per second: Units of decay of secondary field, dB/dt
S siemens – a unit of conductance
x: the horizontal component of an EM field parallel to the direction of flight.
y: the horizontal component of an EM field perpendicular to the direction of flight.
z: the vertical component of an EM field.

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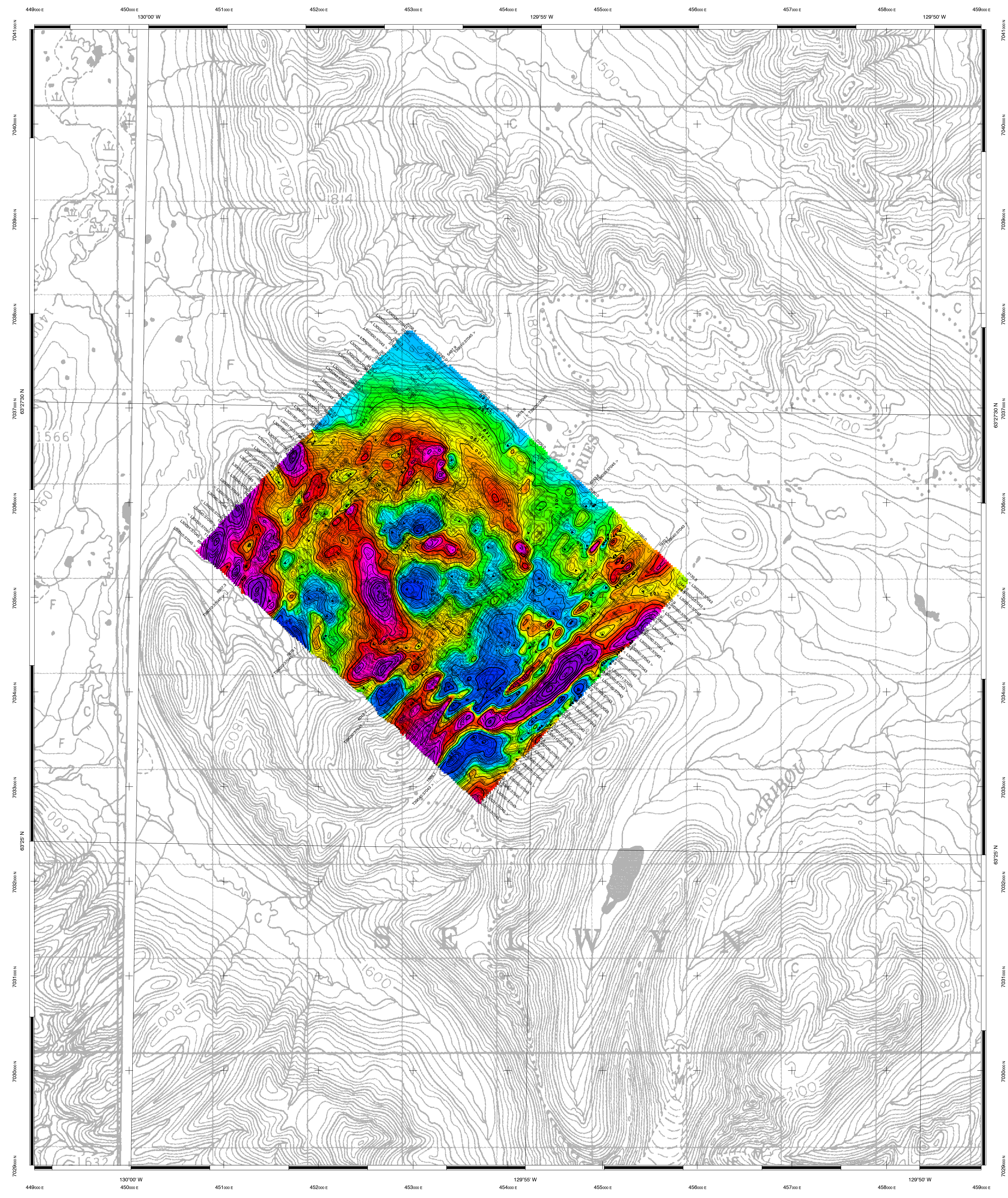


TECHNICAL SUMMARY

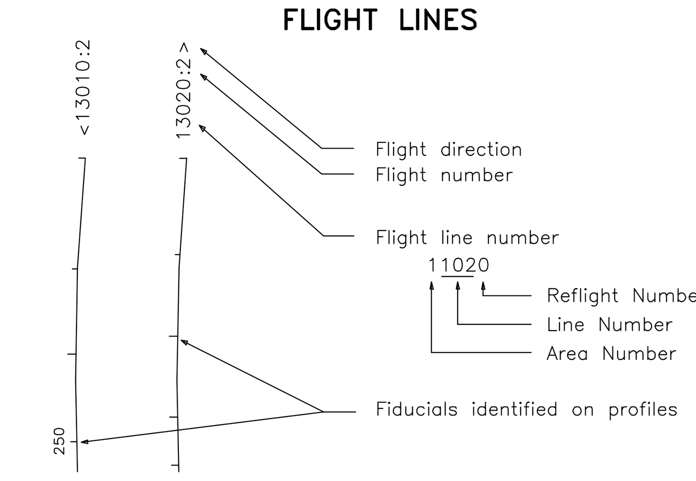
Navigation	Differentially-corrected GPS
Data reduction grid interval	20 metres
Terrain clearance	Helicopter 60 m Electromagnetic sensor 35 m Magnetometer 35 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^{V}

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

nT

289.4, 195.2, 141.2, 104.2, 81.8, 63.5, 47.5, 33.2, 20.8, 9.1, -0.7, -9.8, -18.8, -27.3, -35.4, -43.5, -51.0, -57.6, -63.5, -68.9, -73.5, -78.0, -82.5, -86.8, -90.8, -94.7, -98.5, -102.0, -105.1, -108.6, -112.0, -115.4, -118.9, -122.8, -126.5, -130.0, -133.4, -136.7, -139.9, -142.8, -145.6, -148.5, -151.2, -153.9, -156.2, -158.5, -160.8, -162.9, -165.1, -167.3, -169.5, -171.8, -173.9, -176.3, -179.1, -183.0, -187.3, -194.2, -202.3, -210.0, -219.8, -232.0, -250.0

FLIGHT LINES



RESIDUAL MAGNETIC FIELD CONTOURS

250 nT

50 nT

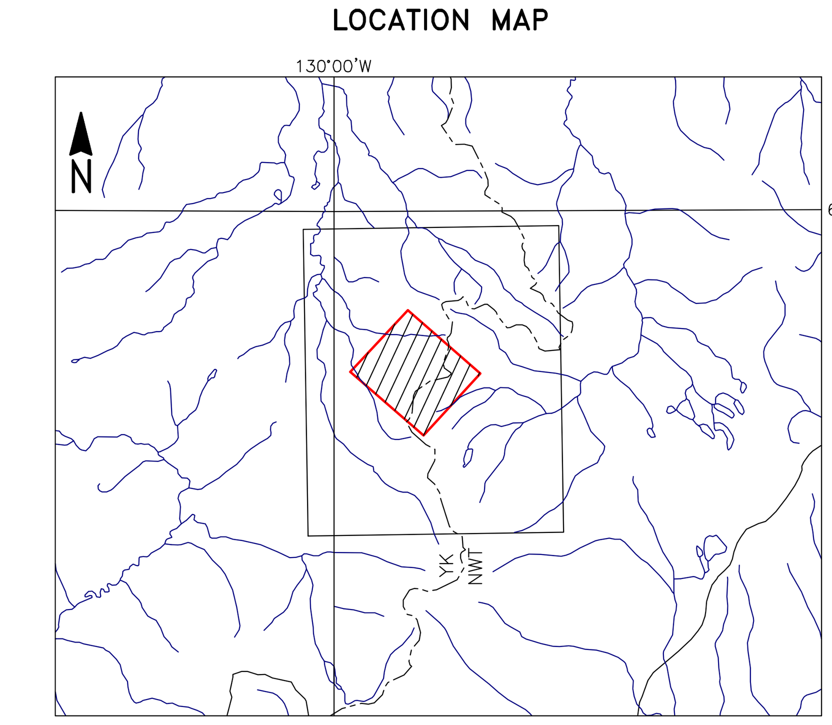
10 nT

5 nT

magnetic low

Magnetic inclination within the survey area: 79 degrees N
Magnetic declination within the survey area: 23 degrees E

LOCATION MAP



NTS: 105 P/15 UTM ZONE: 9 NAD83 SCALE: 1:250,000

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RESIDUAL MAGNETIC FIELD

IGRF Removed

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DATE: SEPTEMBER, 2011	JOB: 11066	SHEET: 1

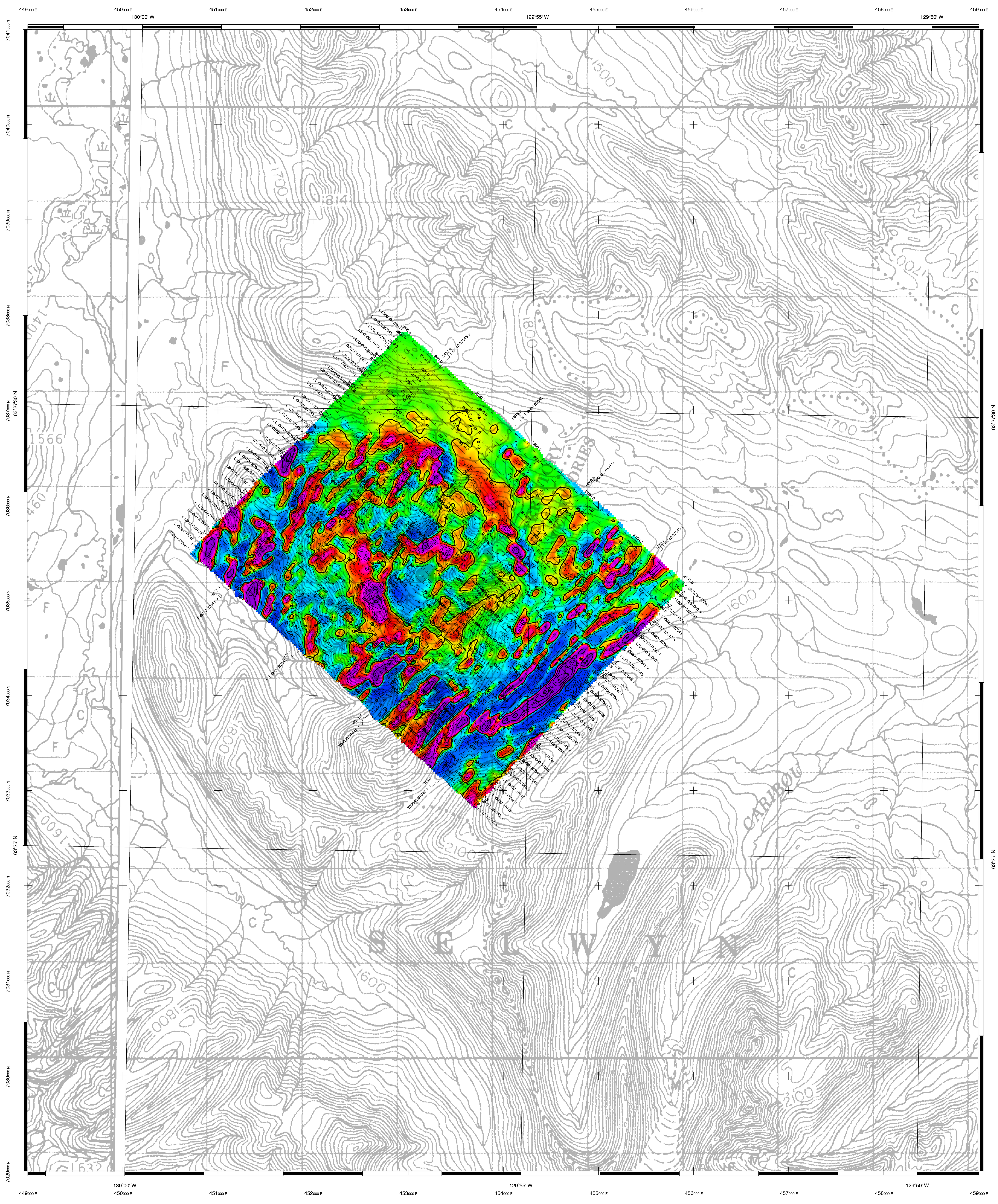
Fugro Airborne Surveys

0 1 2 Km

0 1 Mi

Scale 1:20 000

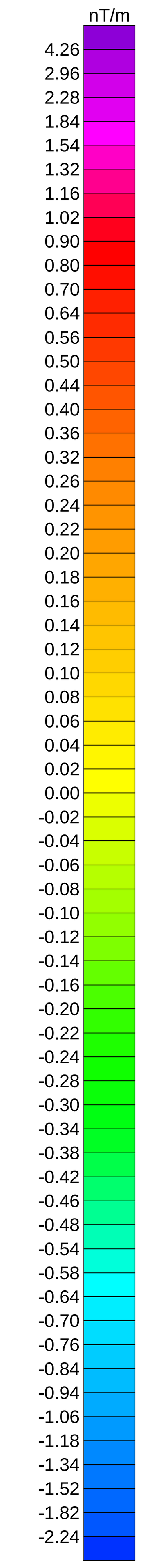
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation . . . . Differentially–corrected GPS
Data reduction grid interval . . . . 20 metres
Terrain clearance . . . . Helicopter 60 m
Electromagnetic sensor 35 m
Magnetometer 35 m
Data sampling interval . . . . 0.1 second
Magnetometer / sensitivity . . . . . Cesium / 0.01 nT
Electromagnetic system . . . . . . DIGHEM^{V}

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



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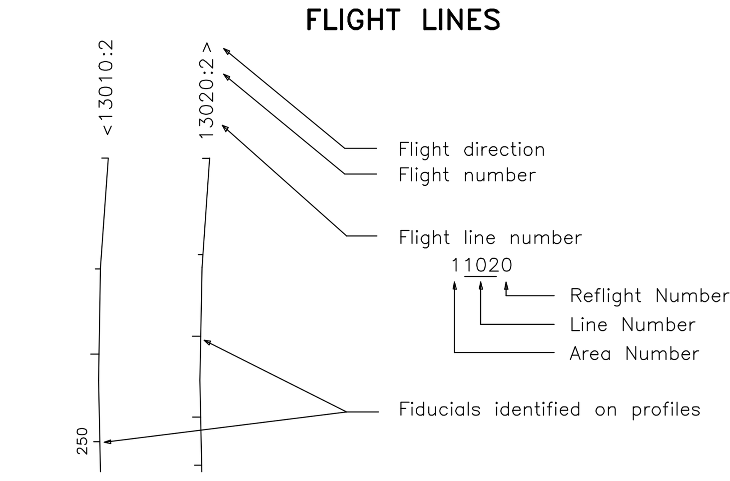
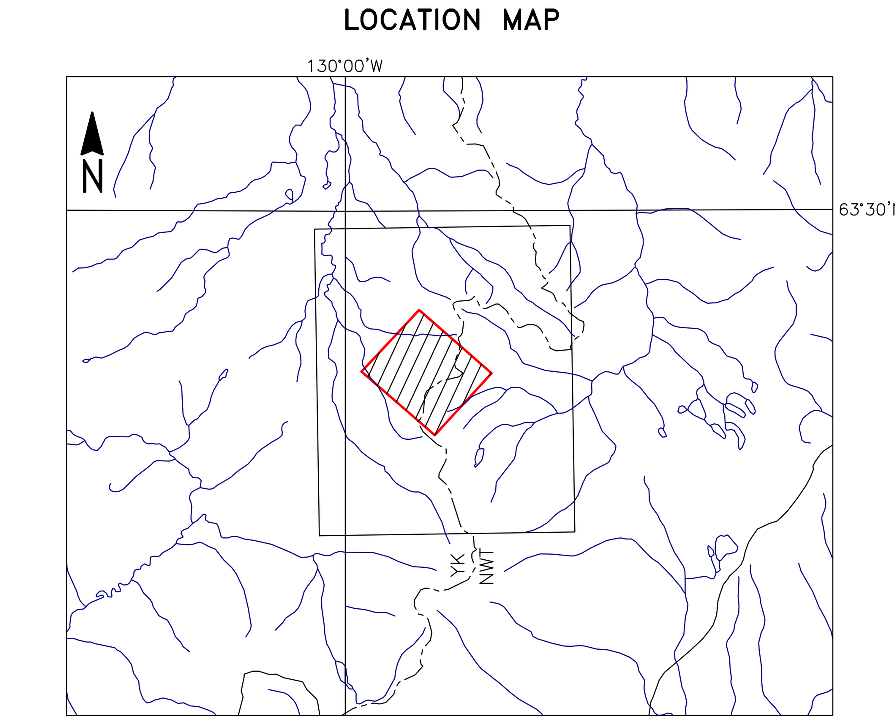


CALCULATED VERTICAL GRADIENT CONTOURS

. . . . 2.5 nT/metre
. . . . 0.5 nT/metre
. . . . 0.1 nT/metre
. . . . 0.05 nT/metre

LOCATION MAP



NTS: 105 P/15 UTM ZONE: 9 NAD83 SCALE: 1:250,000

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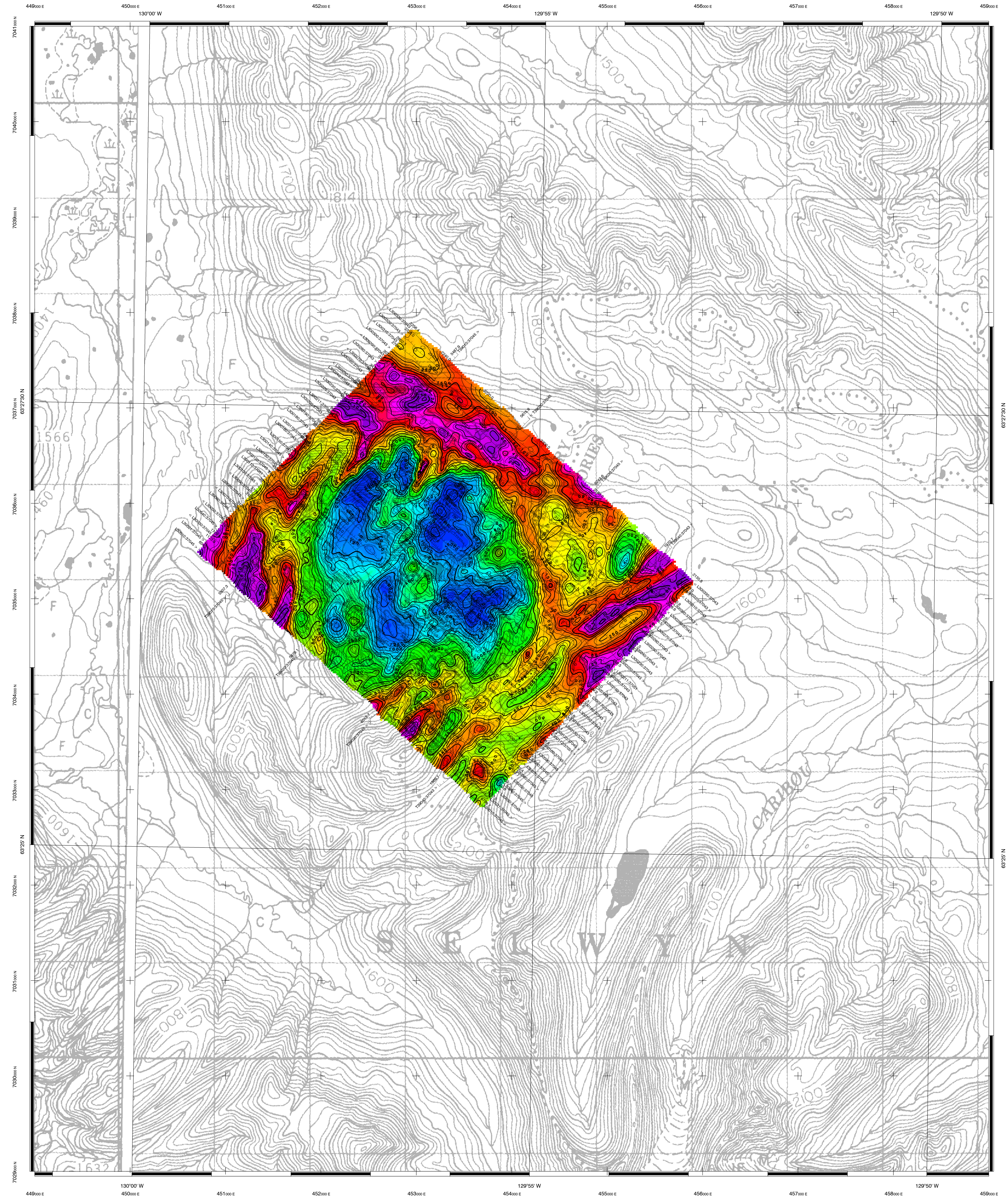
CALCULATED VERTICAL MAGNETIC GRADIENT

FUGRO DIGHEM^{V} SURVEY	NTS: 105 P/15	GEOPHYSICIST:
DATE: SEPTEMBER, 2011	JOB: 11066	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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Magnetometer 35 m
Data sampling interval . . . . 0.1 second
Magnetometer / sensitivity . . . . . Cesium / 0.01 nT
Electromagnetic system . . . . . . DIGHEM[V]

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
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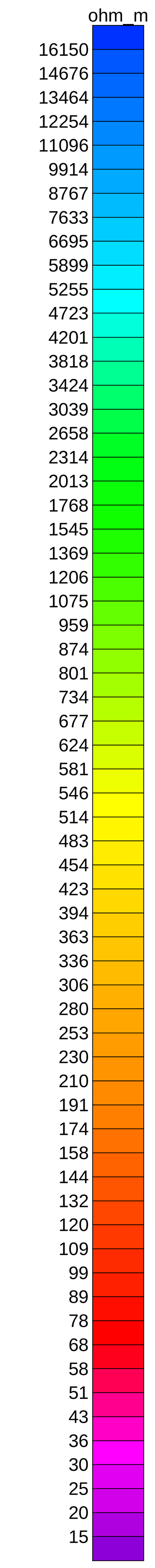
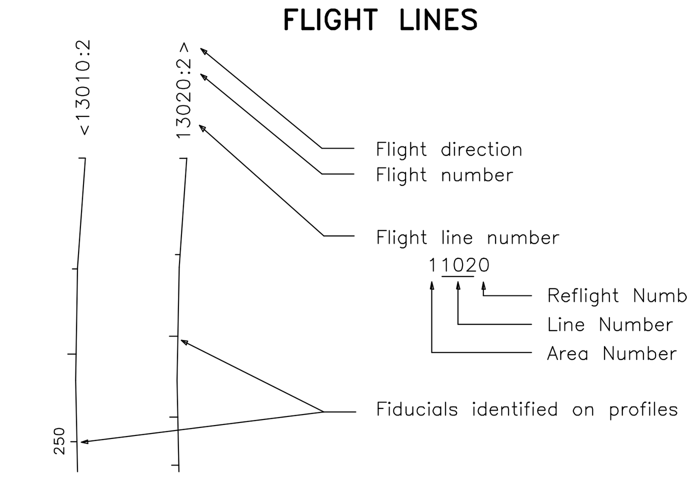
56000 Hz	.60 ppm	Horizontal coplanar



FLIGHT LINES

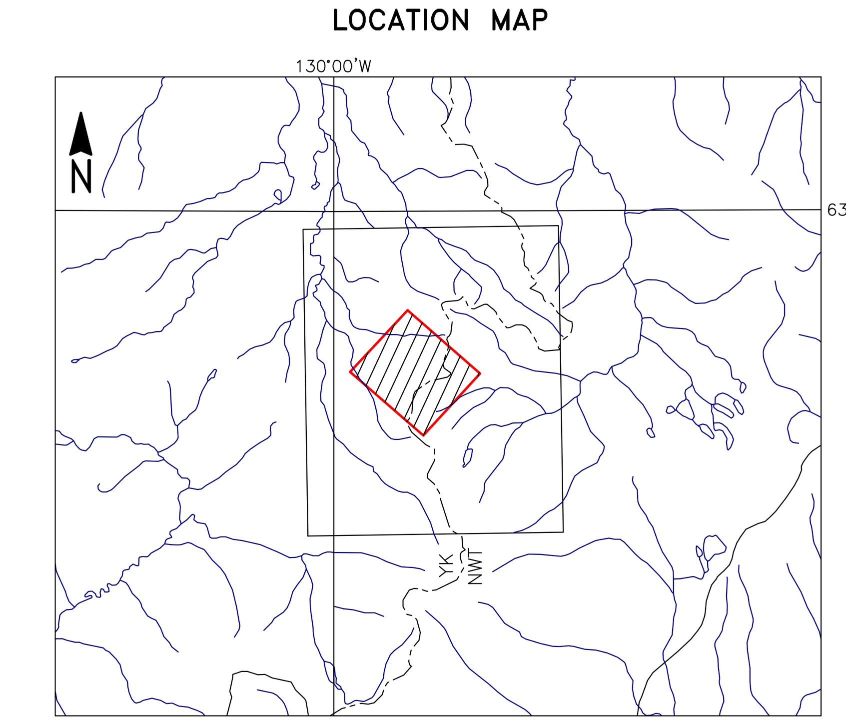


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm–m at 10 intervals per decade. Apparent resistivity calculated using a pseudo–layer half–space model (Fraser 1978).

LOCATION MAP



NTS: 105 P/15 UTM ZONE: 9 NAD83 SCALE: 1:250,000

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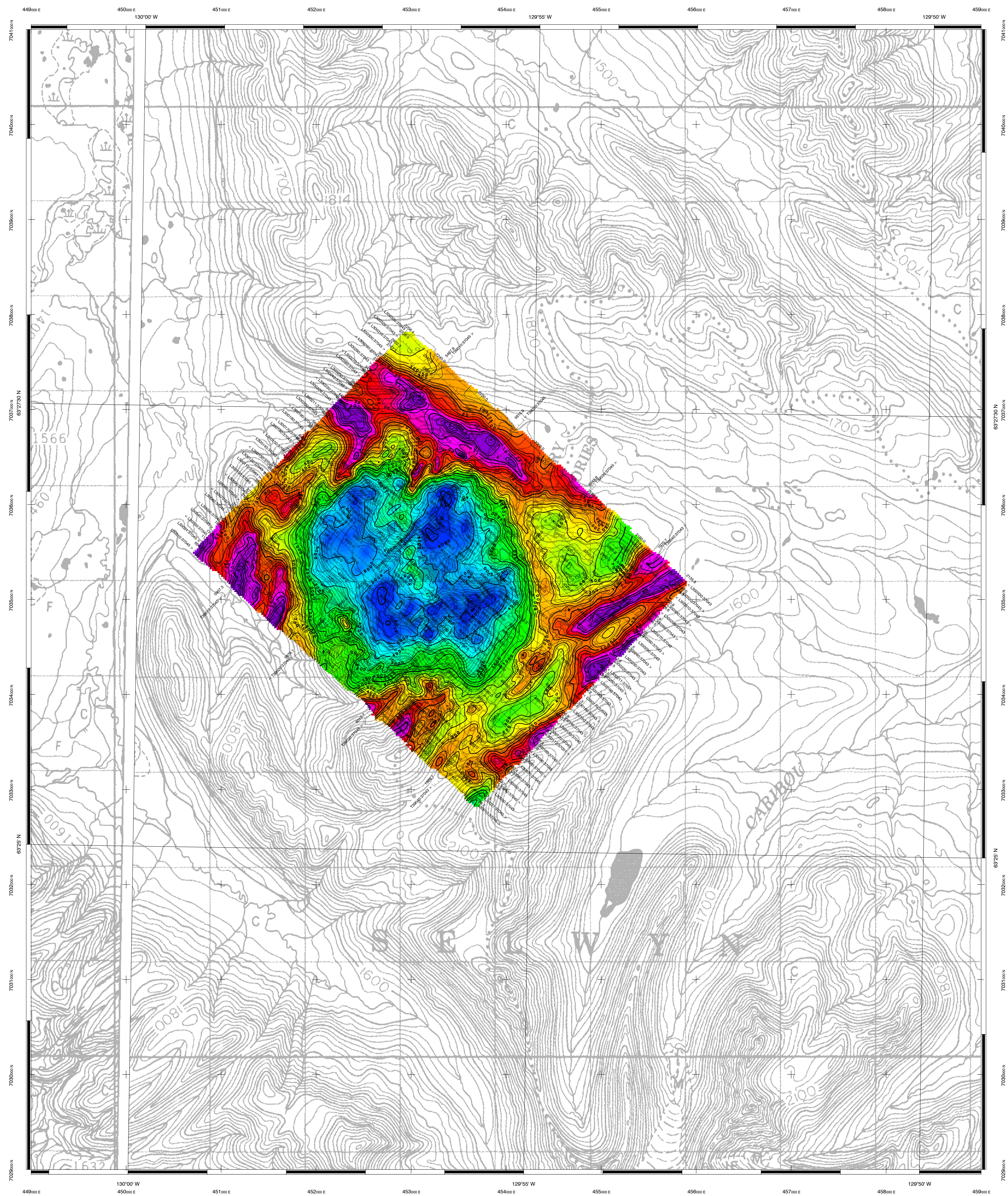
APPARENT RESISTIVITY 56,000 Hz COPLANAR

FUGRO DIGHEM[V] SURVEY	NTS: 105 P/15	GEOPHYSICIST:
DATE: SEPTEMBER, 2011	JOB: 11066	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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Magnetometer / sensitivity	Cesium / 0.01 nT
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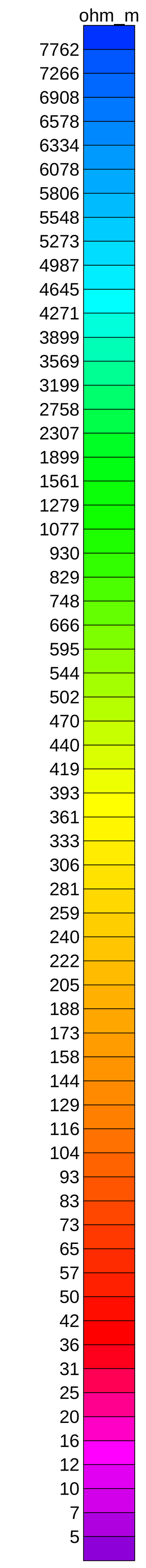
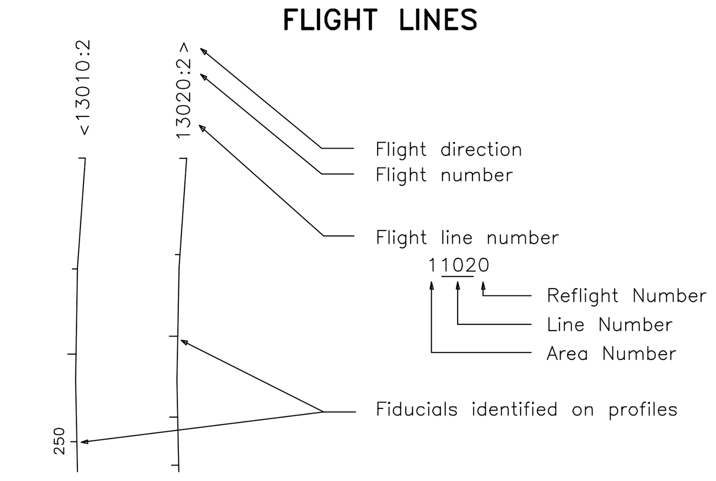


FLIGHT LINES

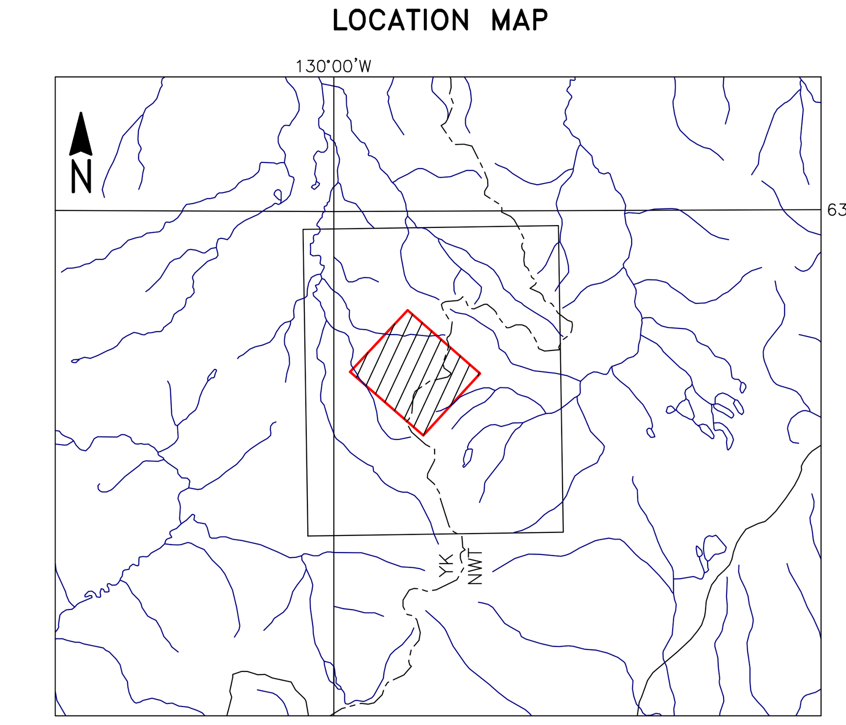


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm–m at 10 intervals per decade. Apparent resistivity calculated using a pseudo–layer half–space model (Fraser 1978).

LOCATION MAP



NTS: 105 P/15 UTM ZONE: 9 NAD83 SCALE: 1:250,000

TERRALOGIC EXPLORATION INC.
HIT BLOCK, YUKON TERRITORY AND NORTHWEST TERRITORIES

APPARENT RESISTIVITY 7200 Hz COPLANAR

FUGRO DIGHEM^{V} SURVEY	NTS: 105 P/15	GEOPHYSICIST:
DATE: SEPTEMBER, 2011	JOB: 11066	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS

Appendix VIII – Petrographical Report by Vancouver Petrographics

PETROGRAPHIC DESCRIPTIONS OF 21 THIN SECTIONS

for TerraLogic Explorations (Rick Zuran)

by Ingrid Kjarsgaard (Vancouver Petrographics)

The samples of this set can be divided into the following groups: 1) porphyries 2) fine grained meta-sediments (silt-/mudstones) 3) skarn.

1) The porphyries (AHHTR014, AHHTR034, RZ-433, RZ-469, RZ-484, RZHTR027) are characterized by abundant medium to coarse grained phenocrysts of zoned plagioclase, green hornblende, red brown biotite, remnants of cpx and xenocrysts of quartz in a matrix of predominantly K-fsp and finer grained versions of biotite and cpx. Some of the hornblende crystals overgrow cores of cpx. The presence of round, lobed (xenocrystic) quartz is in contrast to the abundance of MgFe-silicates (amphibole, biotite and cpx) which point to a more mafic (intermediate) host magma. The quartz grains could have been derived from a more evolved portion of the same magma or come from a felsic magma that mixed with an intermediate magma. In sample RZ-469 biotite is particularly abundant and the sample also contains abundant fresh cpx as phenocrysts and groundmass phase in addition to olivine xenocrysts, which are surrounded by a thick mantle of fine grained secondary biotite ± actinolite. In this sample both quartz and olivine are not in equilibrium with the matrix composition and suggest magma mixing. One of the parent magmas must have been K- and volatile rich (either andesitic or lamprophyric, producing biotite), while another component must have been basaltic (contributing olivine). Alteration in the porphyries is due to low grade metamorphic overprint and affects predominantly biotite, which is being replaced by Mg-chlorite, titanite, and prehnite/pumpelleyite; and primary amphibole (hornblende) and cpx (augite) which are replaced by actinolite. Trace sulphides (predominantly pyrrhotite ± cpy) invade the MgFe-silicates and occur disseminated in the matrix. The hypabyssal porphyries grad into a more plutonic granodiorite (RZHTR027).

2) The meta-sediments (JKHTR018, RZTR008, RZTR010, RZTR013, RZTR023) are lightly banded siltstones (grading into mudstones), which are so fine grained that their mineralogy can barely be determined. They show horizontal banding that is occasionally disturbed by subvertical micro-faults, along which sulphid-bearing fluids migrated. The hosts were probably extremely fine grained shallow water sediments that were variably affected by

calc-silicate metasomatism, which introduced fine granular cpx, actinolite and carbonate. Some are mineralized with chalcopyrite ± pyrrhotite surrounded by minor clinozoisite.

3) The skarn samples (AHHTR015, RZHTR006, RZHTR015, RZHTR022, RZHTR28, SLEETZONE 1 and 2) are characterized by redbrown grossular (zoned, twinned, anisotropic) and very fine granular cpx (hedenbergite) with variable proportions of carbonate (calcite), scapolite, vesuvianite, actinolite, wollastonite and K-feldspar. Three of them (AHHTR015, SLEETZONE 1 and 2) are mineralized with chalcopyrite, pyrrhotite, pyrite, native Bi, bismuthinite, arsenopyrite and galena. In one of the samples that were examined under SEM the K-feldspar showed strong zonation with high Ba in cores and Ba-poor outer rims. The sulphide mineralogy of samples RZHTR010 and RZHTR028 could not be further examined because the sections were glass covered. Sample RZHTR001 did not contain garnet but shows calcite+scapolite infiltrating what appears to be a metamorphosed anorthosite.

Abbreviations:

TS - thin section (glass covered, no reflected light work or other analytical work possible)
PTS - polished thin section
ifc. - interference colours
tr. - trace
Cpx - clinopyroxene, here generally hedenbergite
Grt - garnet - here generally grossular (± andradite component)
Fsp - feldspar
F.o.V. - field of view, the short x long dimensions of the image taken
PPL - plane polarized light
XPL - cross polarized light
RL - reflected light

Note: You were only billed for photos shown in the report, but more are supplied on a CD. The photos are labeled with the sample number, the running no. of photos for that sample in brackets, the length of the field of view for the long side of the photo and the illumination. Mineral identification in samples AHHTR015, SLEETZONE 1 and 2 was confirmed by EDS (energy-dispersive spectra) using the CAMECA Camebax electron microprobe of the Department of Earth Sciences at Carleton University, Ottawa.

1. **AHHTR014 Andesitic-Dacitic Porphyry** **PTS**

Description: porphyritic rock with fine to medium grained rounded (partially resorbed) lobed qtz grains and ca. 40% medium grained phenocrysts of strongly zoned plagioclase, intense red brown Ti-biotite and minor amphibole or cpx in very fine grained equigranular quartz-fsp matrix. Some zones of the plagioclase phenocrysts are preferentially altered by an olive green clay-mineral. Biotite is partly replaced by colourless Mg-chlorite and contains lenses of prehnite/pumpelleyite and pyrrhotite in between sheets, with fine grained titanite aggregates as inclusions and around the edges. Primary amphibole is completely replaced by colourless tremolite ± carbonate ± quartz ± Mg-chlorite and pyrrhotite. Elongate euhedral to subhedral zircon is the most conspicuous accessory mineral together with very fine grained euhedral apatite and dark anhedral granular aggregates of titanite. Anhedral cream coloured pyrrhotite has invaded biotite and amphibole pseudomorphs and occurs in fine grained anhedral patches disseminated in matrix, some intergrown with trace chalcopyrite.

Note re labeling the rock - this rock shows some signs of disequilibrium - the rounded quartz grains and the coarse plagioclase phenocrysts indicate a fairly evolved component (e.g. dacite to rhyolite) whereas the abundance of biotite and amphibole phenocrysts indicate a fairly hydrous intermediate component (e.g. andesite). The MgFe-silicates are replaced by Mg-rich chlorite and tremolite, whereas plagioclase is altered by a Fe-rich olive green clay-mineral.

AHHTR014	Type	Size range	modal	Comment
Quartz	xenocryst	0.7 to 1.5 mm	1-2%	rounded
Quartz	matrix	<50 µm	25%	equigranular
Plagioclase	phenocryst	0.3 - 3.0 mm	30%	slightly rounded, zoned
K-feldspar	matrix	<50 µm	25%	equigranular
Biotite	phenocryst	< 2.3 mm	6%	deep red brown - Ti-rich
Biotite	matrix	>0.1 mm	2%	same as phenocryst
Hbl/Tremolite	phenocryst	0.8 - 3.5 mm	2%	repl. by tremolite + calcite
Mg-chlorite	alteration	< 0.5 mm	tr.	altering biotite
Prehnite	alteration	< 0.8 mm	tr.	altering biotite
Chamosite ?	alteration	very fine gr.	3%	olive green in fsp
Carbonate	alteration	<0.5 mm	tr.	altering hbl
Titanite	alteration	<100µm	<1%	altering biotite
Zircon	accessory	<100µm	tr.	high relief grains
Apatite	accessory	<100µm	tr.	euh., in matrix
Pyrrhotite	mineralization	<0.5 mm	2-3%	in biotite, amph, matrix
Chalcopyrite	mineralization	<60 µm	tr.	intergrown w. po

Quartz occurs as clear, rounded, lobed xenocrysts up to 1.5 mm across and constitutes ca. 40% of the fine graiend matrix, the remainder of the light coloured matrix is **K-feldspar.**

Plagioclase forms abundant coarse zoned, slightly rounded phenocrysts which are partially altered by an olive green micaceous mienral (chamosite ?) which also affects part of the matrix

Biotite forms abundant medium gr. intense red brown phenocrysts which may contain bloated lenses of prehnite or pumpellyite in between sheets

Hornblende occurs as rare but coarse phenocrysts up to 3.5 m long which are completely replaced by secondary tremolite-actinolite ± carbonate

Mg-Chlorite is part of biotite alteration, intergrown with pyrrhotite

Titanite - very fine grained dark translucent aggregates in and around biotite

Apatite - very fine grained euhedral grains piercing matrix

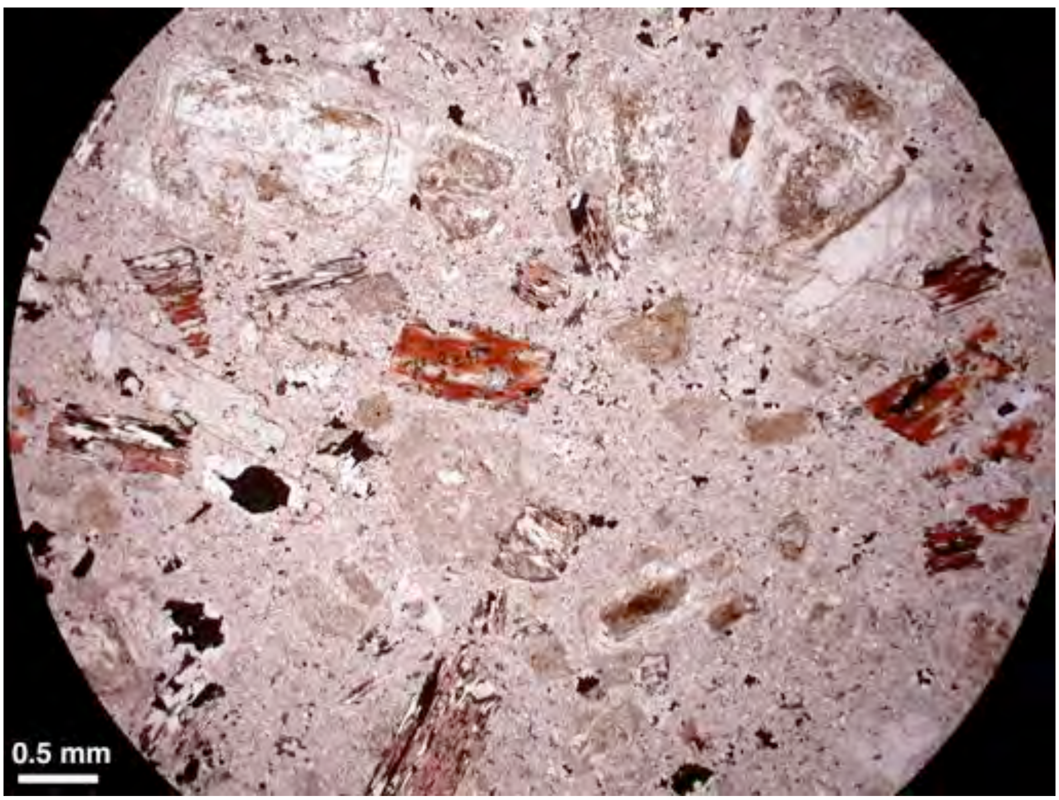
Zircon - fine grained euhedral to subhedral high relief pinkish brown tinged grains

Carbonate (tr.) medium gr. anhedral together with tremolite in amphibole pseudomorphs

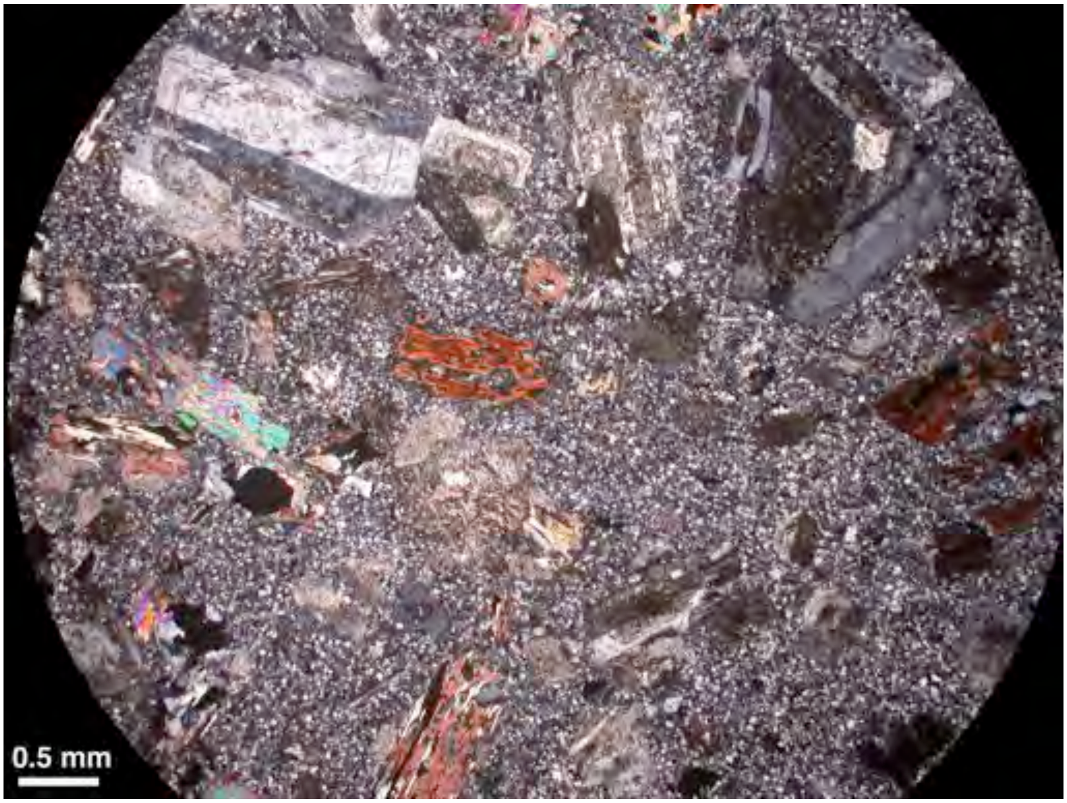
Pumpelleyite form bloated lenses in biotite, rarely as fine gr. rounded aggregates in matrix

Pyrrhotite forms fine gr. up to 0.5 mm long anhedral ragged grains, mostly in biotite and amphibole pseudomorphs and disseminated in matrix

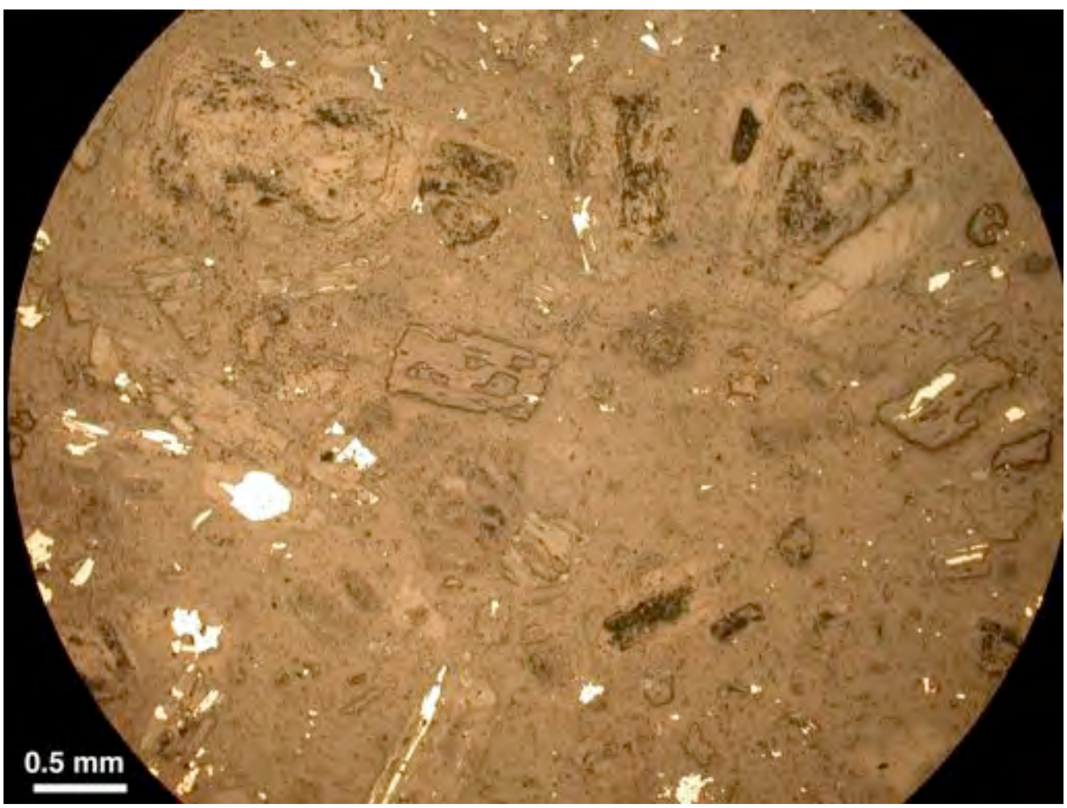
Chalcopyrite is rare, very fine gr. (ca. 50 μm) and intergrown with po

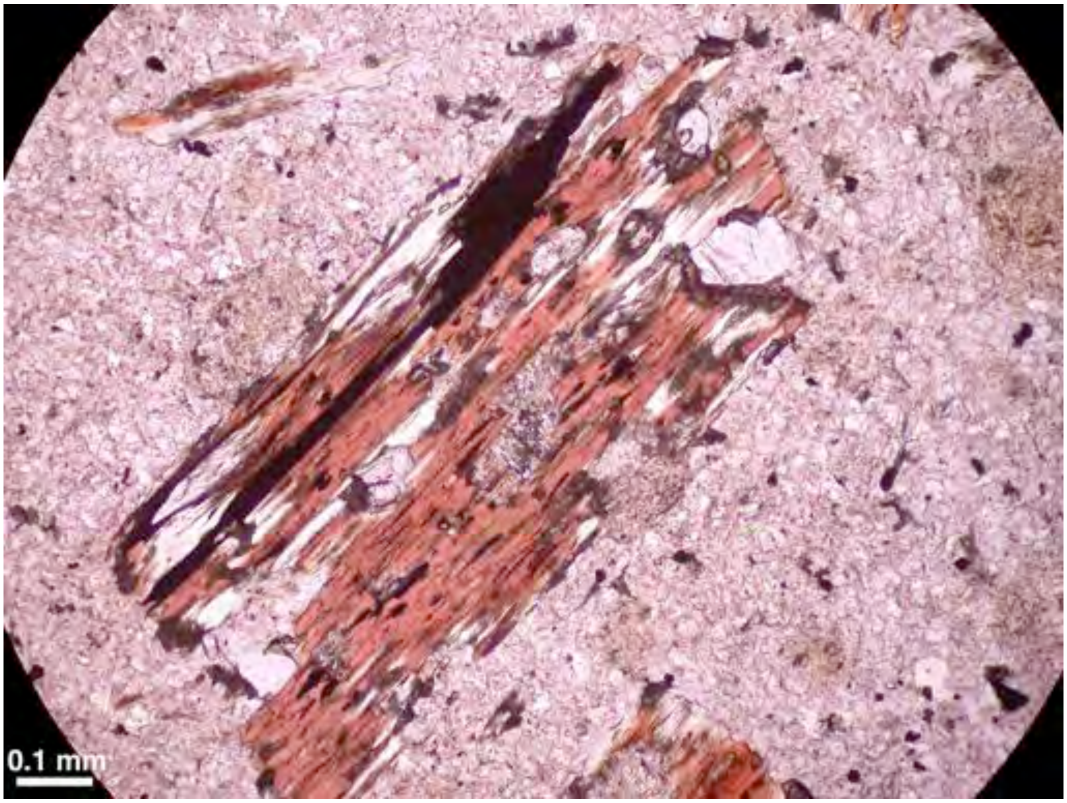


AHHTR014 (1) overview showing strongly zoned plagioclase and variably altered biotite phenocrysts (red brown) with sulphides (opaque) and hornblende replaced by actinolite (middle left) in fine grained qtz-Kfsp-matrix. F.o.V. 4.85 x 6.37 mm, PPL (above), XPL and RL views next page.

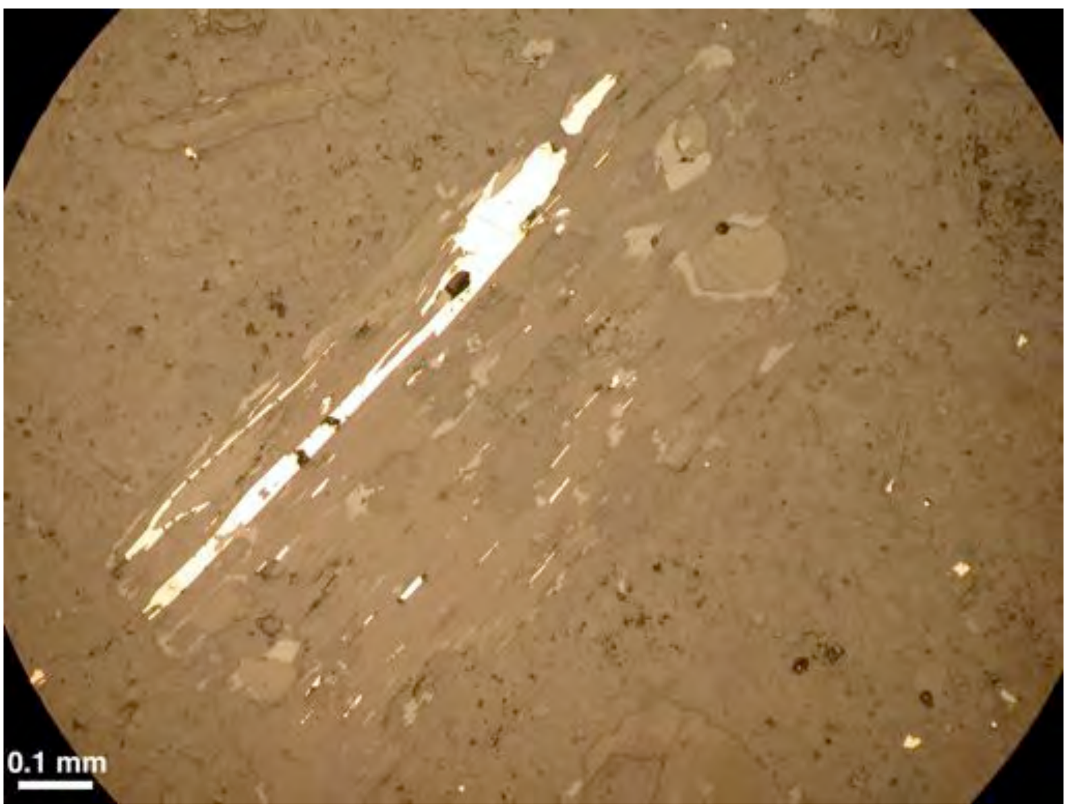


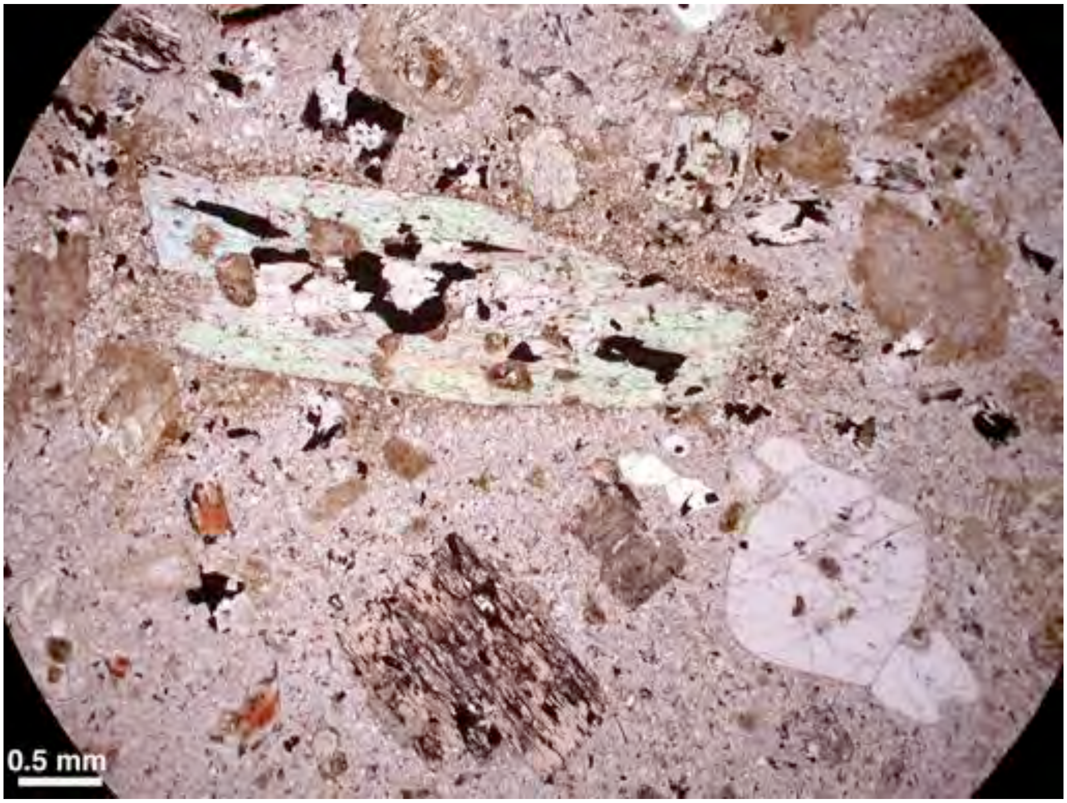
AHHTR014 (1) overview showing strongly zoned plagioclase and variably altered biotite phenocrysts (red brown) with sulphides (opaque) and hornblende replaced by actinolite (middle left) in fine grained qtz-Kfsp-matrix. F.o.V. 4.85 x 6.37 mm, XPL (above), RL (below)



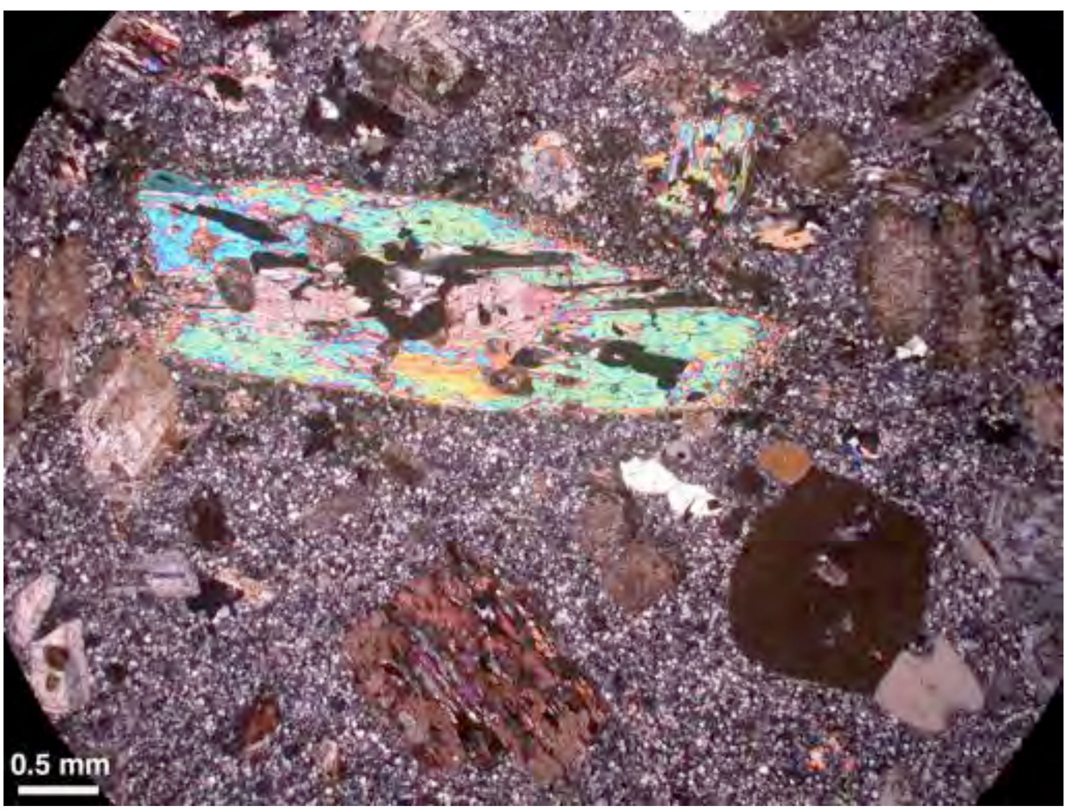


AHHTR014 (2) biotite phenocrysts partially replaced by pyrrhotite (opaque), titanite (dark translucent, high relief), Mg-chlorite (colourless w. orange tint) and pumpelleyite (lenticular medium relief inclusions). F.o.V. 1.02 x 1.35 mm, PPL (above), RL (below).





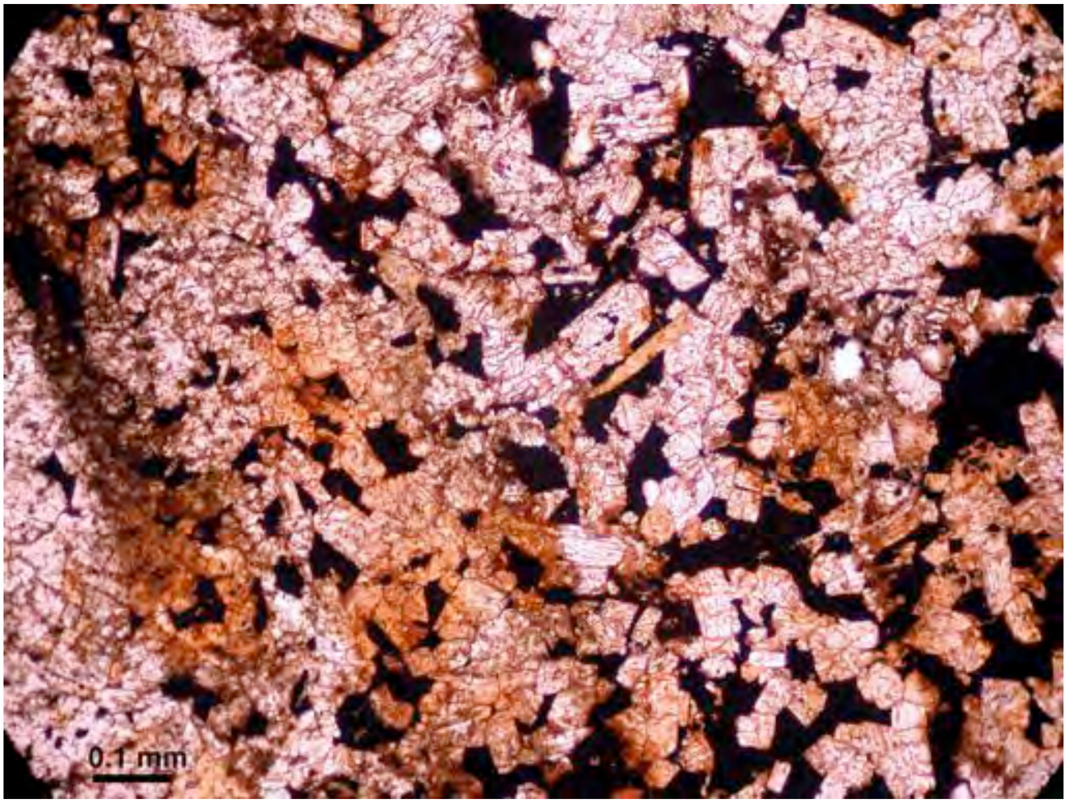
AHHTR014 (3) pseudomorph of actinolite + calcite + sulphides after hornblende or cpx in fine grained qtz-Kfsp-matrix with altere biotite phenocrysts and quartz (clear rounded grains, lower right). F.o.V. 4.85 x 6.37 mm, PPL (above), XPL (below).



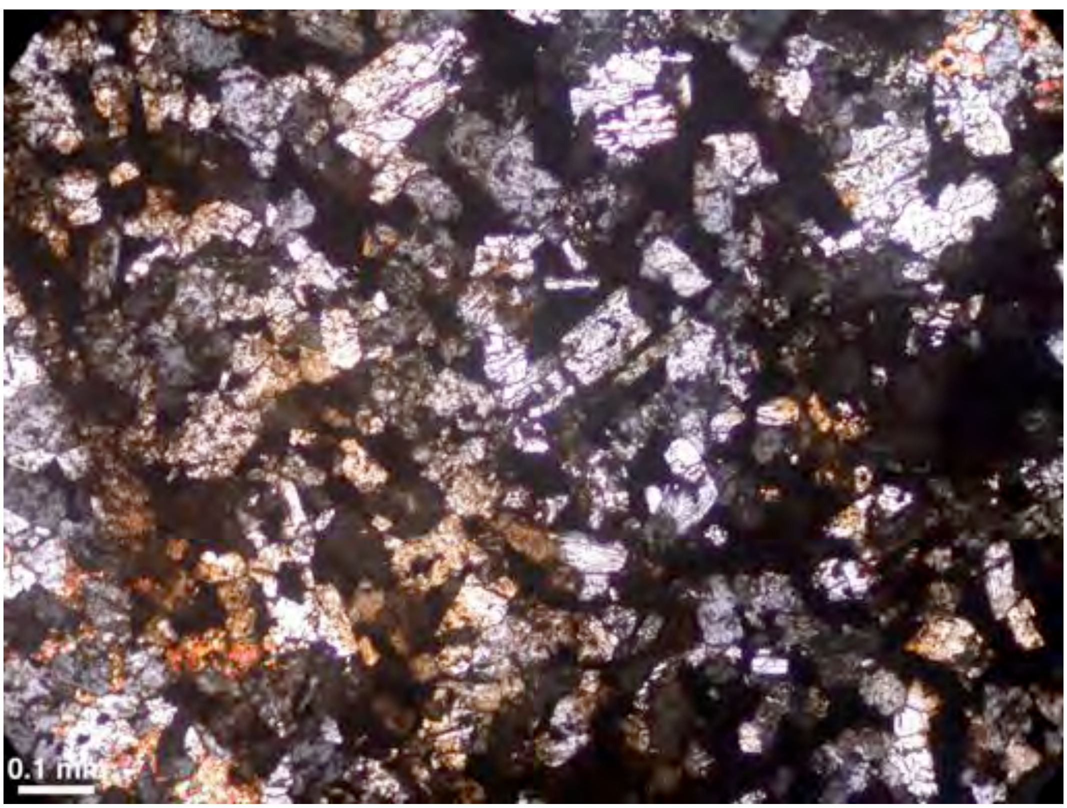
2) AHHTR015/R005 Mineralized Skarn **PTS**

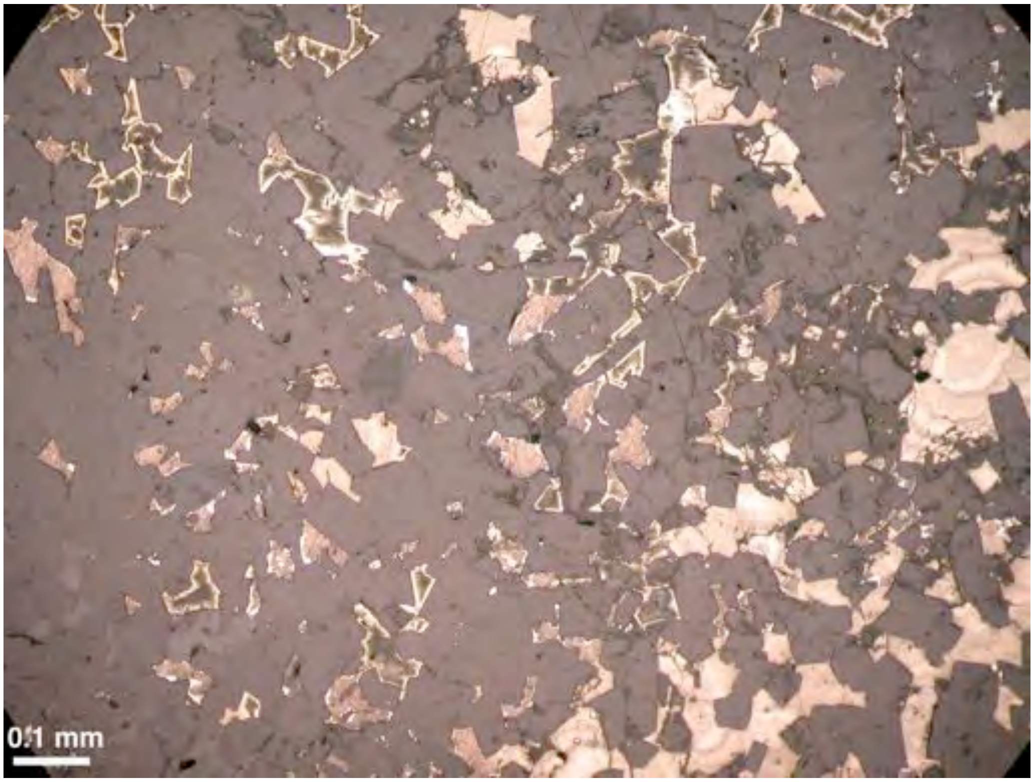
Description: this section consists mainly of fine grained euhedral to subhedral hedenbergite (cpx) enclosed by quartz, ca. 12 % net-textured sulphides and fine grained siderite. Intergrown with cpx there is minor amphibole and scapolite as elongate tapered, chlorite altered grains and trace anhedral apatite. The section and its main minerals (except qtz) are variably Fe-stained due to the alteration of pyrrhotite and fractures are filled with colloform orange red goethite. The sulphide assemblage consists predominantly of net-textured pyrrhotite that is altered from the inside out and extensive areas of colloform (secondary) pyrite (possibly reprecipitation of Fe-S from po alteration). In addition there is minor chalcopyrite (unaltered) and substantial amounts of native Bismuth which occurs as strongly tarnished anhedral grains interstitial to pyrite and are rimmed by grey white bismuthinite.

Mineral	Type	Size range	modal	Comment
Hedenbergite	major mineral	0.1-0.8 mm	70%	euhedral, semi-massive
Quartz	"matrix"	< 2mm	5%	forms matrix for cpx
Siderite	major	v. f. gr. anh.	9%	net-textured enclosing cpx
Amphibole	minor mineral	≤ 0.15 mm	1%	green, anh. intergr. w. cpx
Scapolite	minor mineral	≤ 0.4 mm	2%	Elongate, chlorite altered
Apatite	minor mineral	≤ 0.15 mm	tr.	rare, intergr. w. cpx, po
Pyrrhotite (alt.)	mineralization	interstitial	12%	net-textured enclosing cpx
Chalcopyrite	mineralization	≤0.5 mm	tr.	intergrown w. po
Pyrite (sec.)	mineralization	interstitial	2%	colloform, secondary
Arsenopyrite	mineralization	50-100µm	tr.	euh creamy white refl. grains
Bi-sulphide	mineralization	≤20µm	tr.	soft, light grey
Native Bismuth	mineralization	≤100 µm	1-2%	soft, tarnished, interstitial to cpx
Goethite	veins/alteration	colloform	tr.	orange red, filling veins



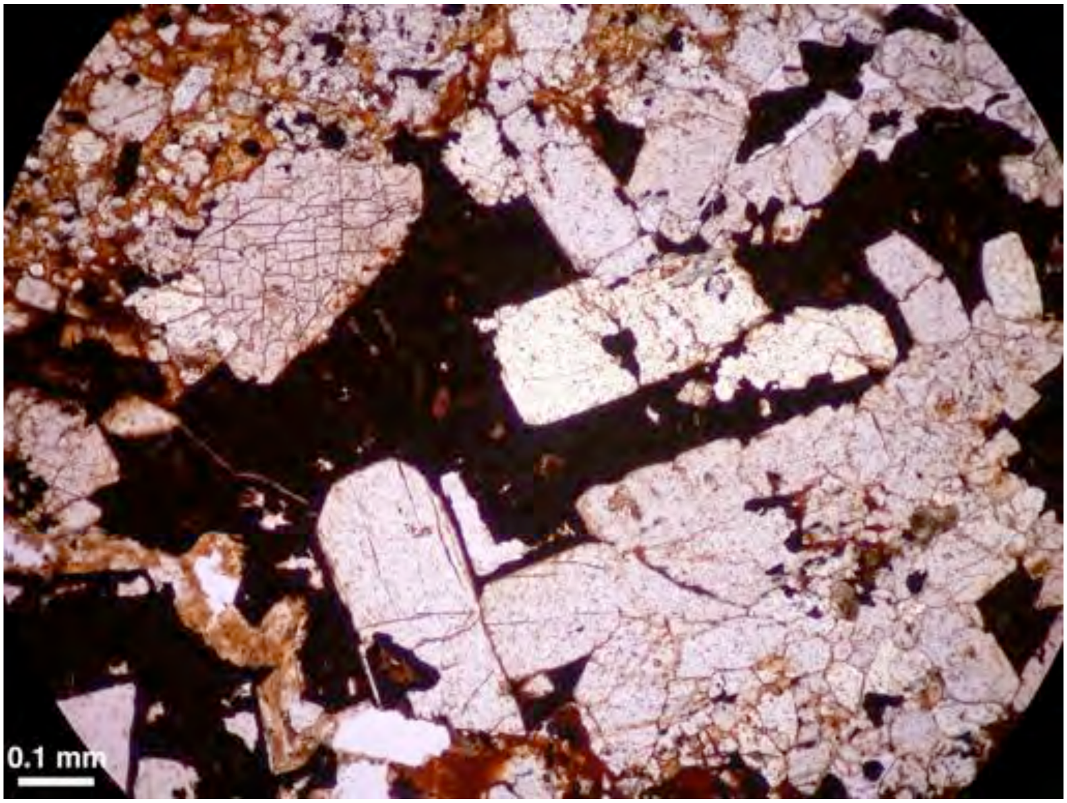
AHHTR015 (2) overview showing fine grained euhedral hedenbergite and tapered elongate scapolite (?) with interstitial sulphides and stained by Fe-alteration. F.o.V. 1.02 x 1.35 mm, PPL (above), XPL (below), RL (next page)



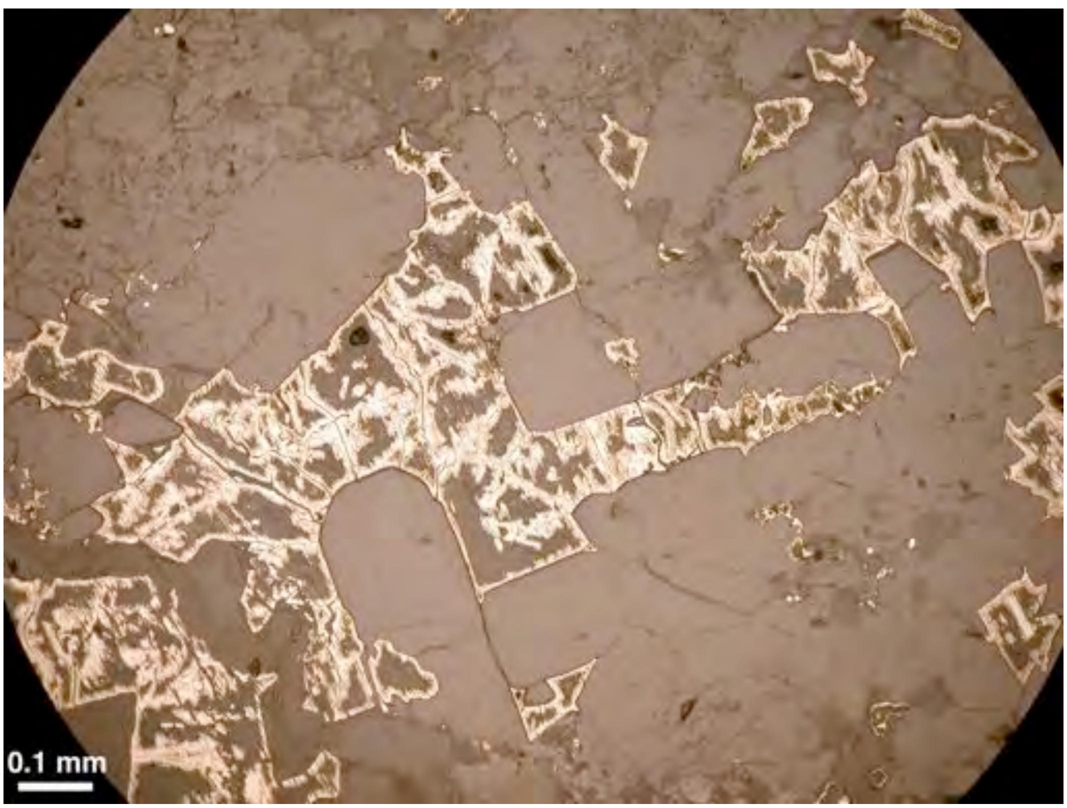


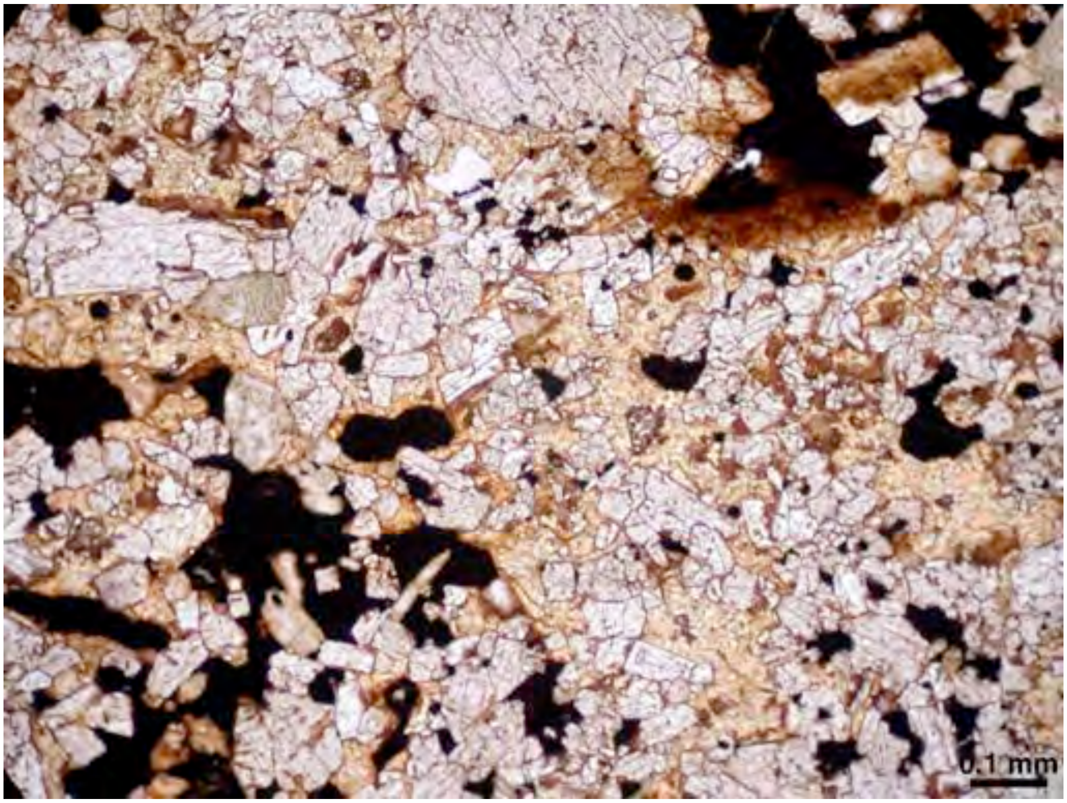
AHHTR015 (2) altered pyrrhotite (cream coloured rims with dark parallel textured alteration in cores), colloform pyrite (at right and bottom) and strongly tarnished native Bi with white bimuthinite rims interstitial to silicates (mainly cpx). F.o.V. 1.02 x 1.35 mm, RL (above)

AHHTR015 (5) close-up of tarnished native Bi with white bimuthinite rims interstitial to granular hedenbergite. F.o.V. 0.21 x 0.28 mm, RL (above)

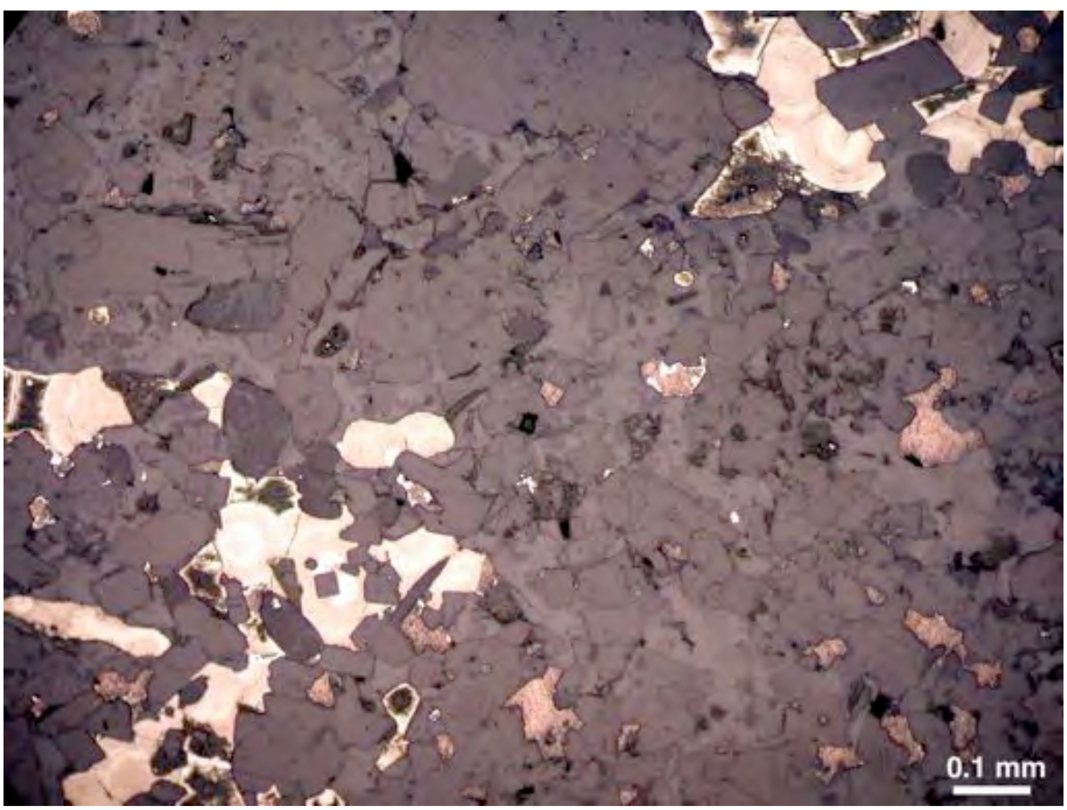


AHHTR015 (1) euhedral hedenbergite and trace green amphibole intergrown with altered pyrrhotite. F.o.V. 1.00 x 1.33 mm, PPL (above), RL (below)

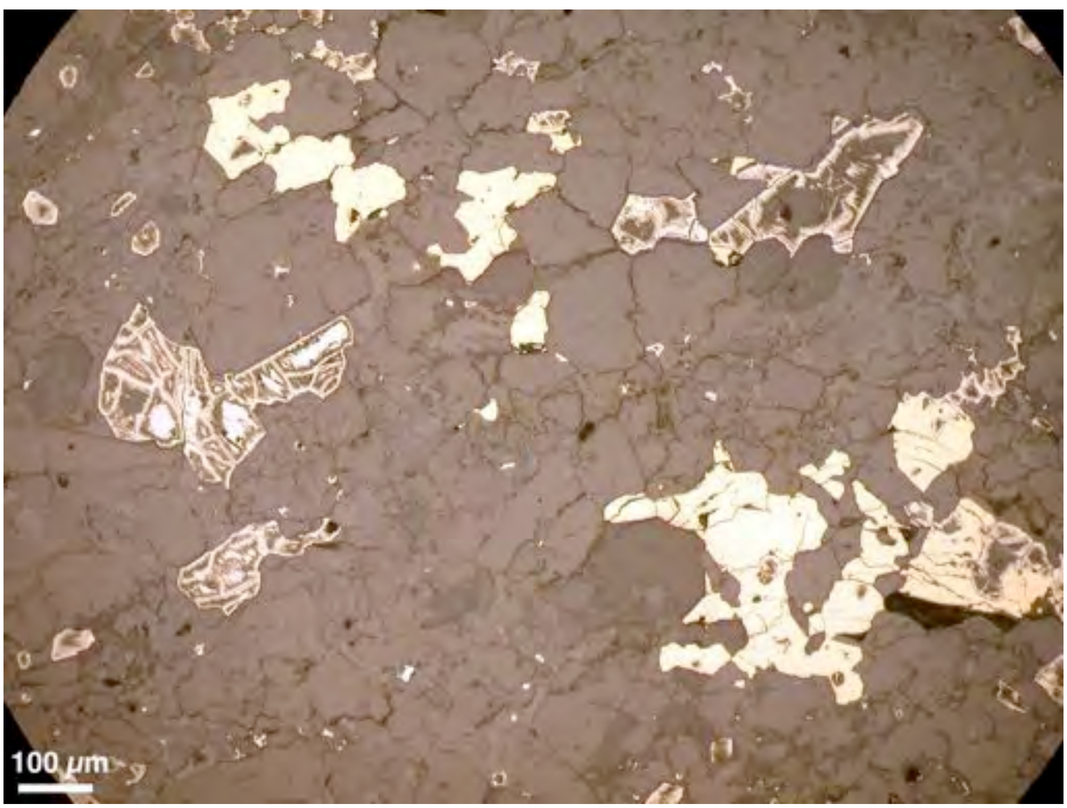




AHHTR015 (3) sulphides (colloform secondary pyrite, altered pyrrhotite and Bi, rimemd by white bismuthinite), colourless hedenbergite and chlorite altered scapolite (greenish) in a matrix of siderite. F.o.V. 0.97 x 1.30 mm, PPL (above) and RL (below)



AHHTR015 (4) close-up of white Co-bearing arsenopyrite intergrown with hedenbergite, native Bi and altered pyrrhotite. F.o.V. 0.18 x 0.26 mm, RL (above)



AHHTR015 (6) unaltered chalcopyrite (yellow) intergrown with altered pyrrhotite and silicate gangue. F.o.V. 0.97 x 1.30 mm, RL (above)

3) AHHTR0016 Carbonate w. Porphyry fragment TS

Description: massive coarse carbonate attached to and enclosing altered fragments of andesitic-dacitic porphyry (see AHHTR0014), veined by secondary carbonate-zeolite veinlet with euhedral zeolite (?) crystals. Opaque aggregates (could not be identified because section was glass covered but probably sulphide - pyrite ?) occur in a carbonate-silicate mixture occurring in the boundary zone between porphyr fragment and carbonate.

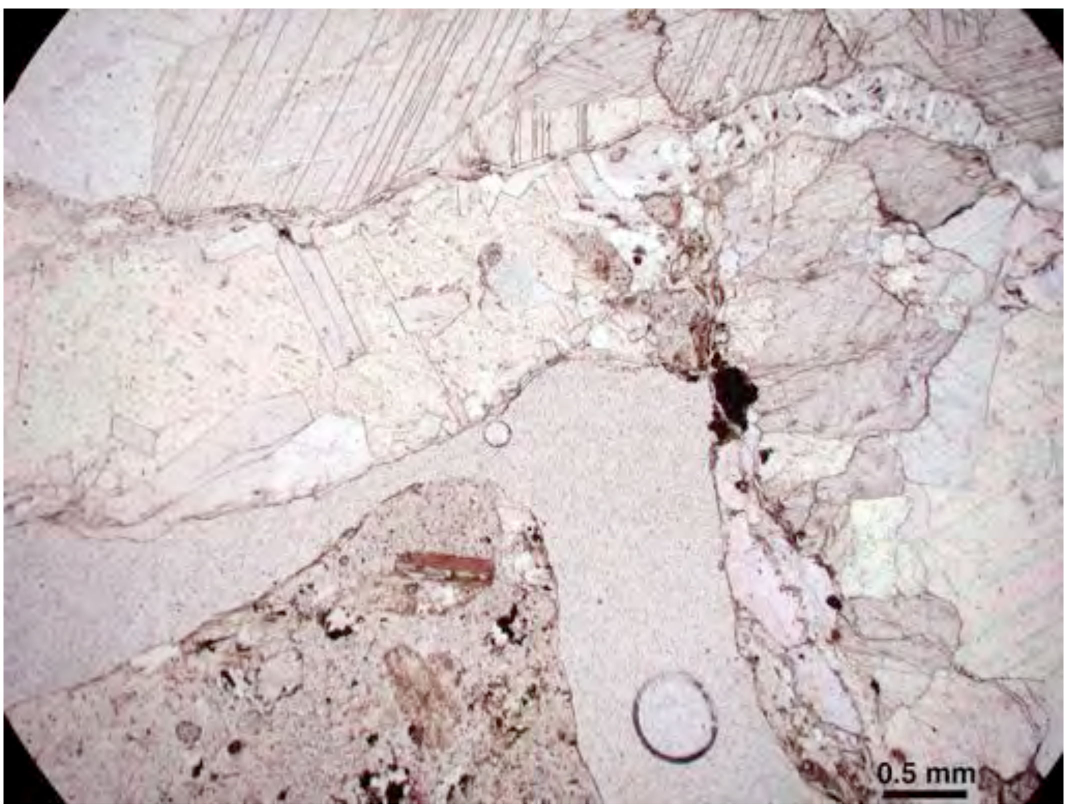
Mineral	Type	Size range	modal	Comment
Carbonate 1	major mineral	≤6 mm	85%	euhedral, semi-massive
Carbonate 2	in vein	< 5mm	tr.	filling veinlet, monocrystalline
Zeolite ??	in vein	≤ 1.5 mm	1%	euh. prismatic crystals, low ifc.
Porphyry	fragment/xenolith		10%	see AHHTR014 for composition
Opaques	mineralization		12%	aggregates in boundary zone

Carbonate 1 is probably dolomite or ankerite - anhedral grains up to 6mm across forming massive carbonate patch

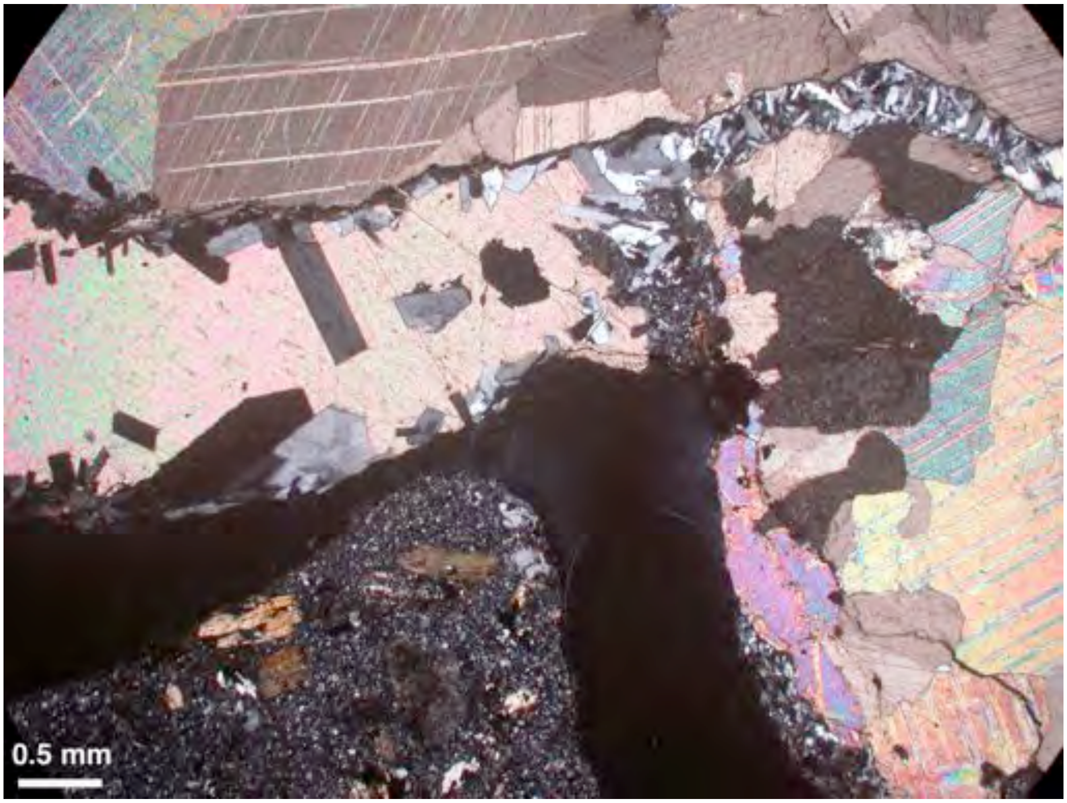
Carbonate 2 probably calcite filling small vein with zeolite growing along walls

Zeolite fine gr. colourless, low relief, low ifc., rectangular to prismatic euhedral terminated crystals projecting into calcite vein

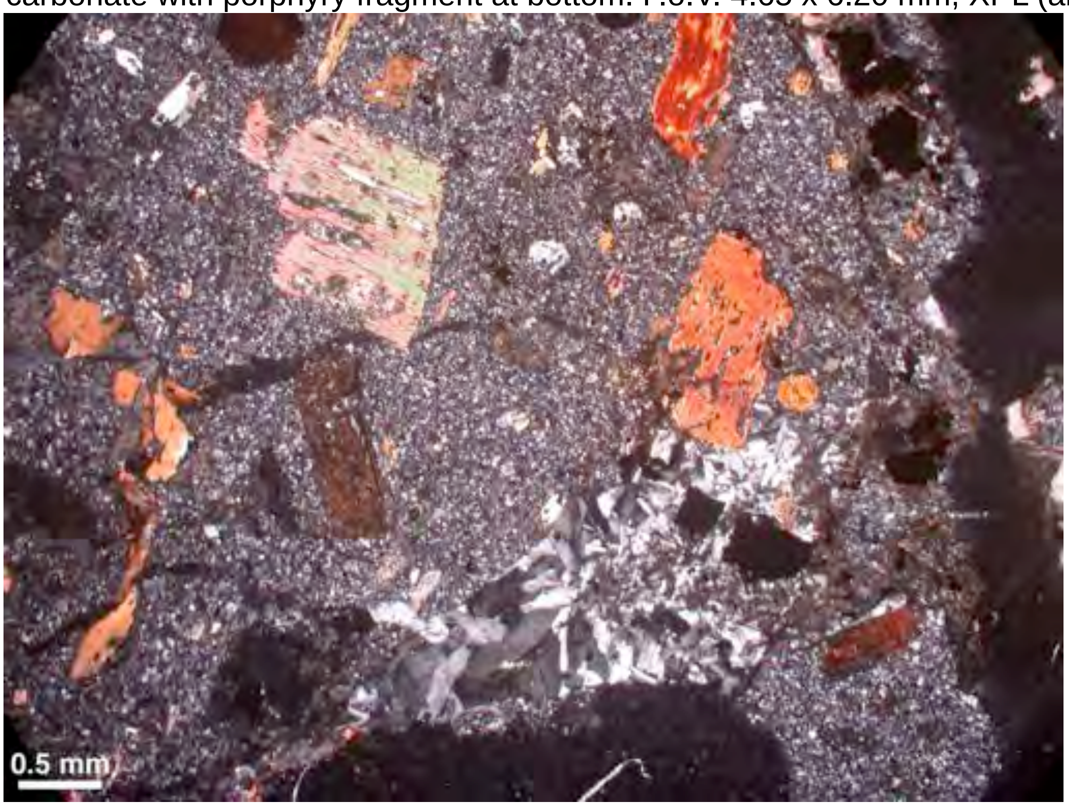
Porphyry fragments (for description see AHHTR0014)



AHHTR016 (1) irregular vein filled with euhedral zeolite or fsp and calcite in massive carbonate with porphyry fragment at bottom. F.o.V. 4.65 x 6.20 mm, PPL (above) and XPL (below)



AHHTR016 (1) irregular vein filled with euhedral zeolite or fsp and calcite in massive carbonate with porphyry fragment at bottom. F.o.V. 4.65 x 6.20 mm, XPL (above)

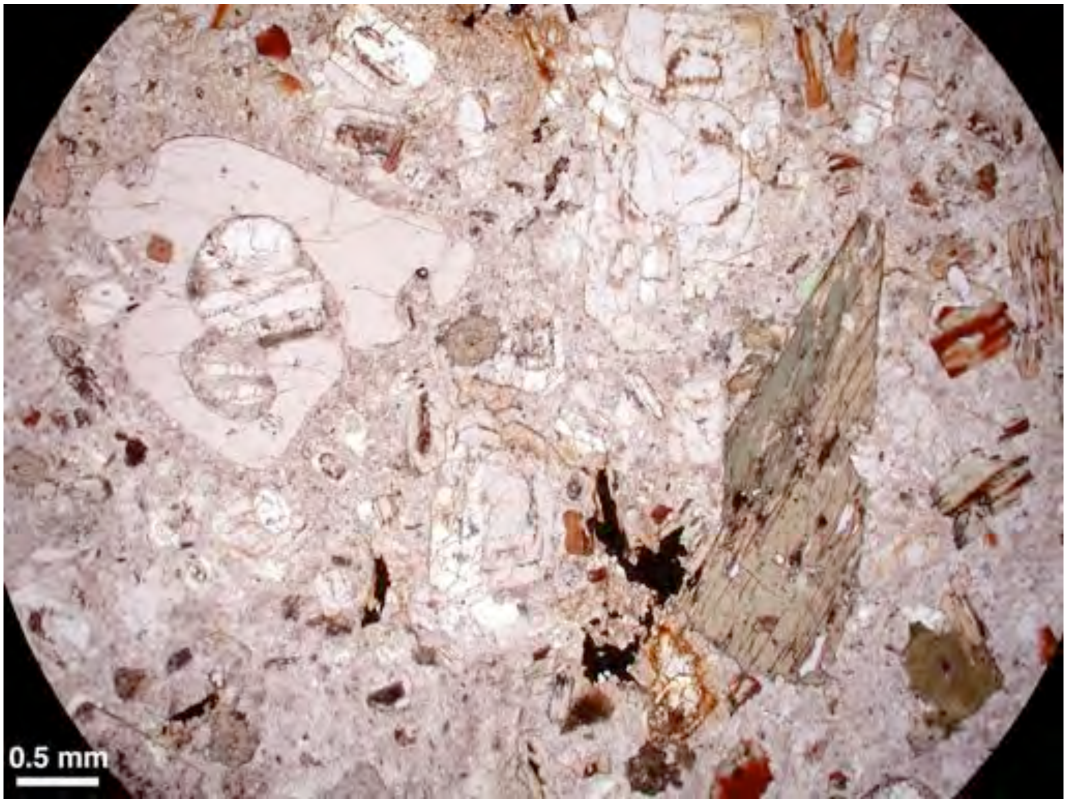


AHHTR016 (2) porphyry fragment with zeolite-filled pocket (at bottom) with pyrite cubes (opaques). F.o.V. 4.65 x 6.20 mm, XPL (above)

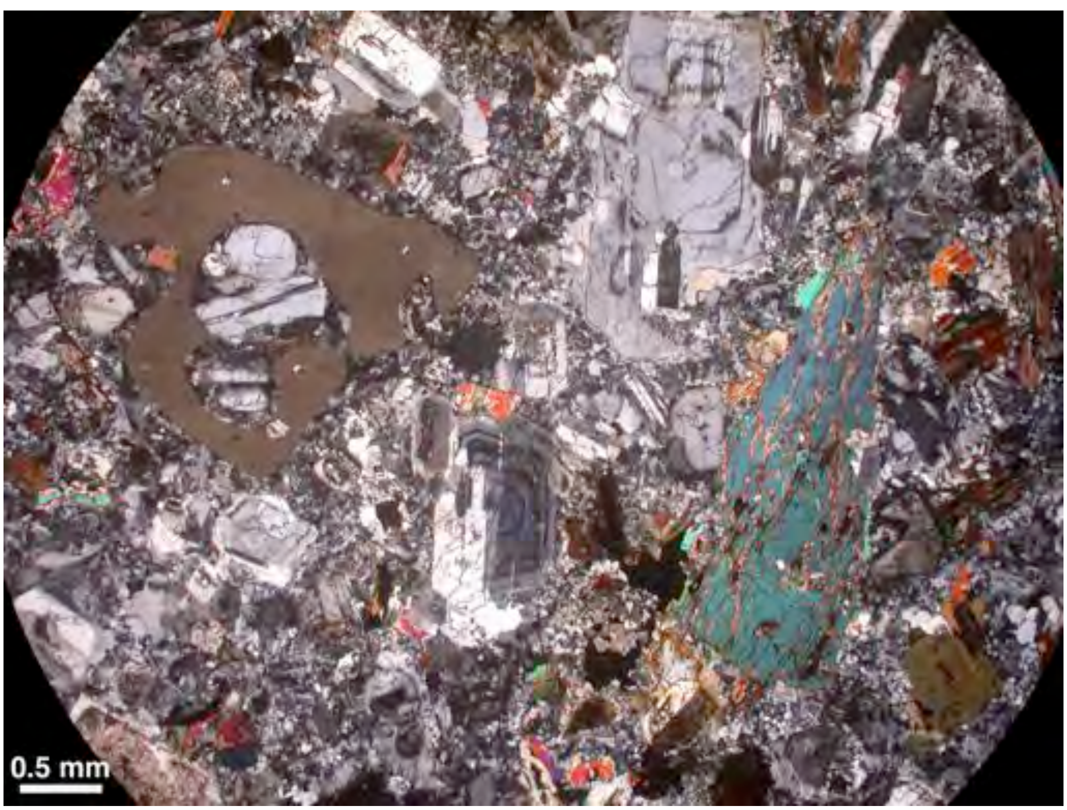
4) AHHTR034 Hybrid subvolcanic dacitic (?) porphyry **PTS**

Description: fresher and more coarse grained version of AHHTR014: subvolcanic porphyritic rock with a profusion of phenocryst minerals: very coarse euhedral K-feldspar, abundant coarse strongly zoned slightly rounded plagioclase, coarse olive green hornblende, medium grained red brown Ti-biotite and rounded embayed xenocrysts of quartz in a matrix of abundant K-fsp ± plagioclase and quartz, some in fine grained myrmekitic intergrowth. Biotite is partly replaced by chlorite and in a few cases intergrown with muscovite, a few plagioclase phenocrysts show extensive sericite replacement while most others are unaltered. There are aggregates of medium graine actinolite or actinolitic hbl, which could be pseudomorph after primary amphibole and abundant anhedral titanite which probably is derived from the break-down of biotite. Some biotite appears to be intergrown with colourless mica (muscovite). Zircon is a common accessory mineral and one grain of red brown zoned allanite was discovered as well. Apatite is extremely fine grained and barely visible. Sulphides are less abundantn than in AHHTR014 and more altered: pyrrhotite is partially replaced by marcasite which in turn may be replaced by goethite. Fine grained chalcopyrite is commonly intergrown with po and traces of very fine grained galena were also detected.

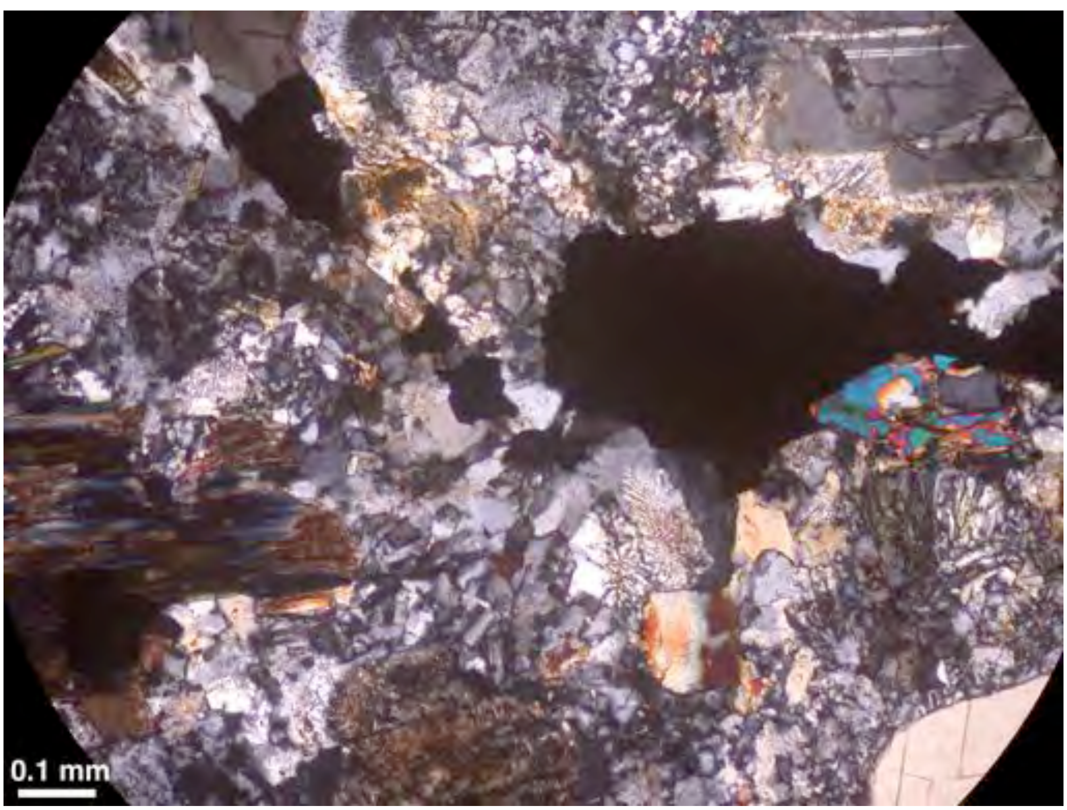
Mineral	Type	Size range	modal	Comment
Quartz	xenocryst	0.5 to 2 mm	4%	rounded, lobed, resorbed
Quartz	matrix	<50 μm	15%	in myrmekitic intergrowth w. K-fsp
K-feldspar	phenocrysts	≤8 mm	10%	
Plagioclase	phenocryst	≤ 3.0 mm	30%	slightly rounded, zoned
K-feldspar	matrix	<100 μm	30%	myrmekitic
Hornblende	phenocryst	≤5 mm	5%	olive green pleochroic
Biotite	phenocryst	< 1.2 mm	2%	deep red brown - Ti-rich
Muscovite	phenocryst	>0.1 mm	tr,	intergrown w. biotite
Chlorite	alteration	< 0.5 mm	tr.	altering biotite
Actinolite	alteration	< 1.7 mm	2%	pseudom. after Hbl ?
Sericite	alteration	v. f. gr.	tr.	altering plagioclase
Titanite	alteration	<0.5 mm	1%	subh. grains
Allanite	accessory	≤0.25 mm	tr.	red brown zoned
Zircon	accessory	<100μm	tr.	high relief grains
Apatite	accessory	<100μm	tr.	euh., in matrix
Pyrrhotite	mineralization	<0.25 mm	tr.	in biotite, amph, matrix
Chalcopyrite	mineralization	<60 μm	tr.	intergrown w. po
Marcasite	alteration	<0.25 mm	tr.	altering po
Galena	mineralization	10 μm	tr	rare, intergrown w. po
Goethite	alteration	0.2 mm	tr	red brown alteration of po/mc

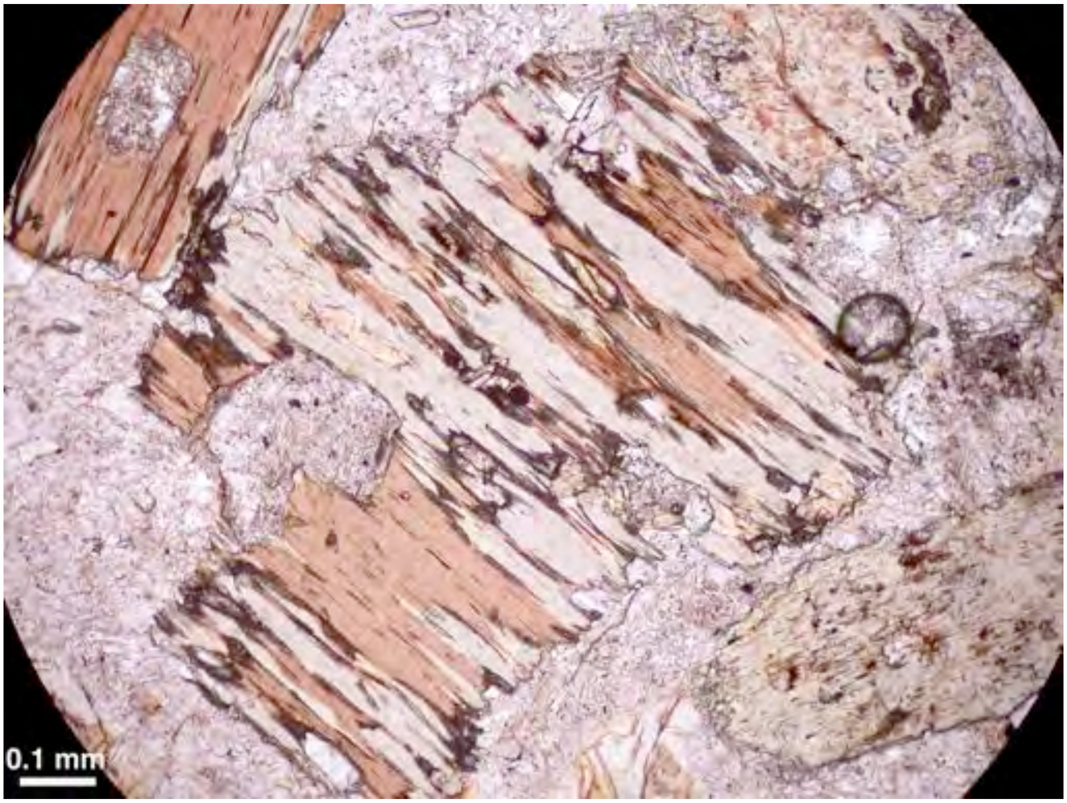


AHHTR034 (1) strongly lobed quartz, zoned plagioclase, euhedral amphibole (green) and variably altered biotite phenocrysts (red brown) with minor sulphides (opaque) in fine grained qtz-Kfsp-matrix. F.o.V. 4.85 x 6.37 mm, PPL (above), XPL (below).

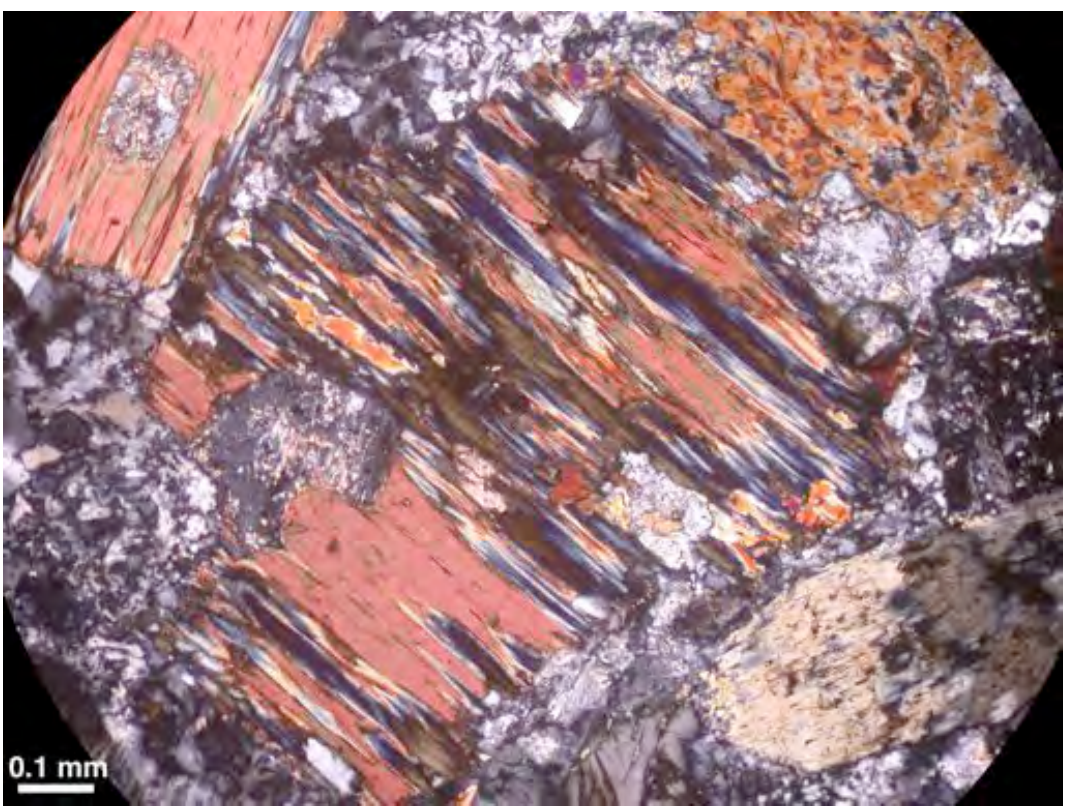


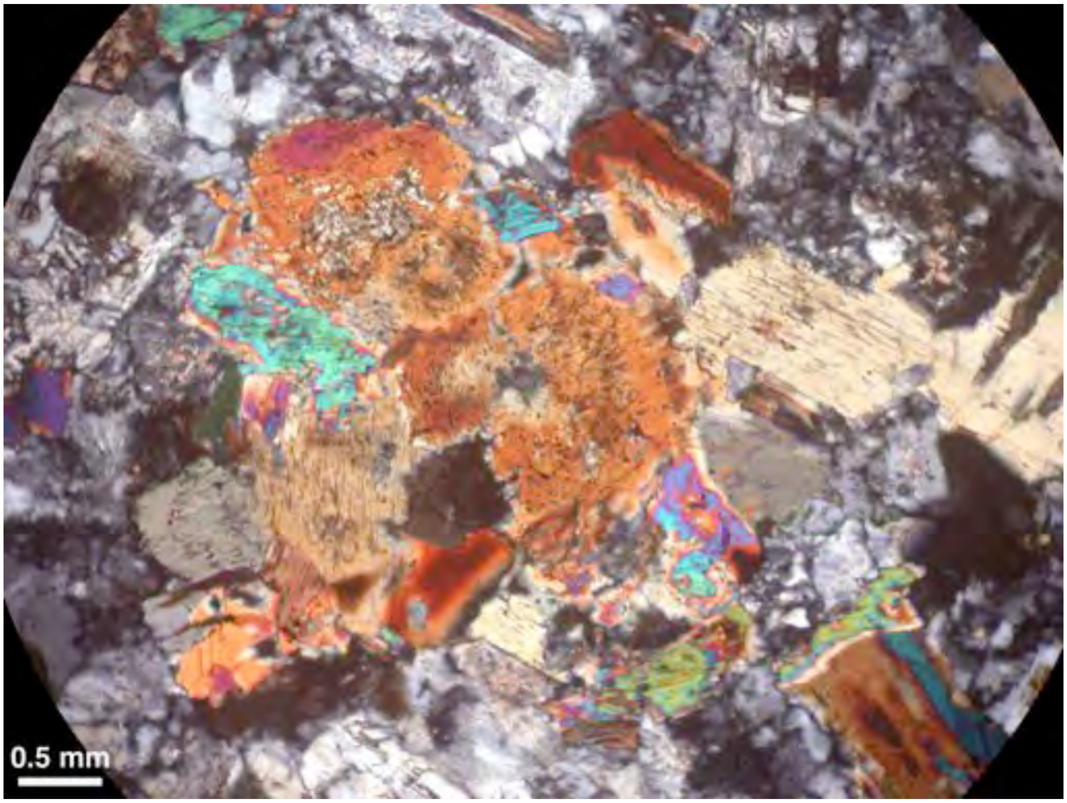
AHHTR034 (2) pyrrhotite (pinkish) with marcasite alteration (dirty white) and chalcopyrite (yellow) in quartz-K-fsp matrix with altered biotite. F.o.V. 0.97 x 1.30 mm, RL (above), XPL (below)





AHHTR015 (3) Mg-chlorite (almost colourless), titanite (dark brown translucent) and pumpelleyite lenses replacing biotite adjacent to actinolite pseudomorphs after cpx (lower right). F.o.V. 0.97 x 1.30 mm, PPL (above), XPL (below).



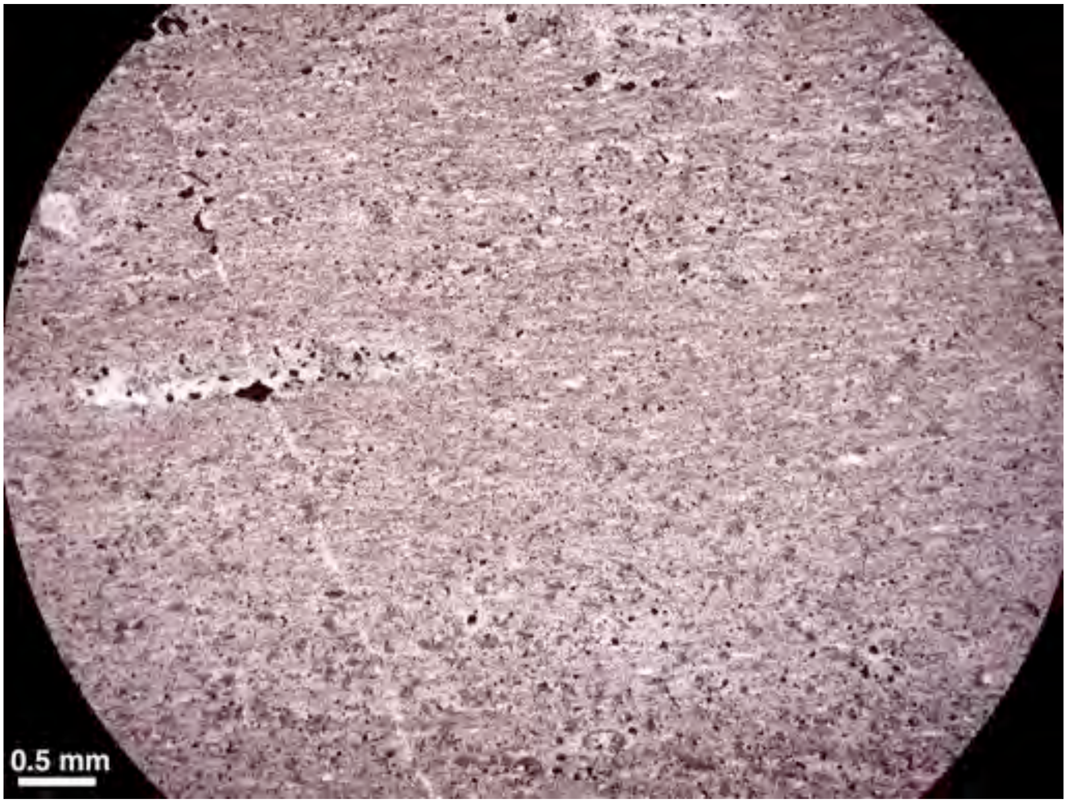


AHHTR034 (4) cluster of actinolitic hornblende (some with remnant cpx cores) in qtz-fsp matrix. F.o.V. 4.85 x 6.37 mm, XPL (above)

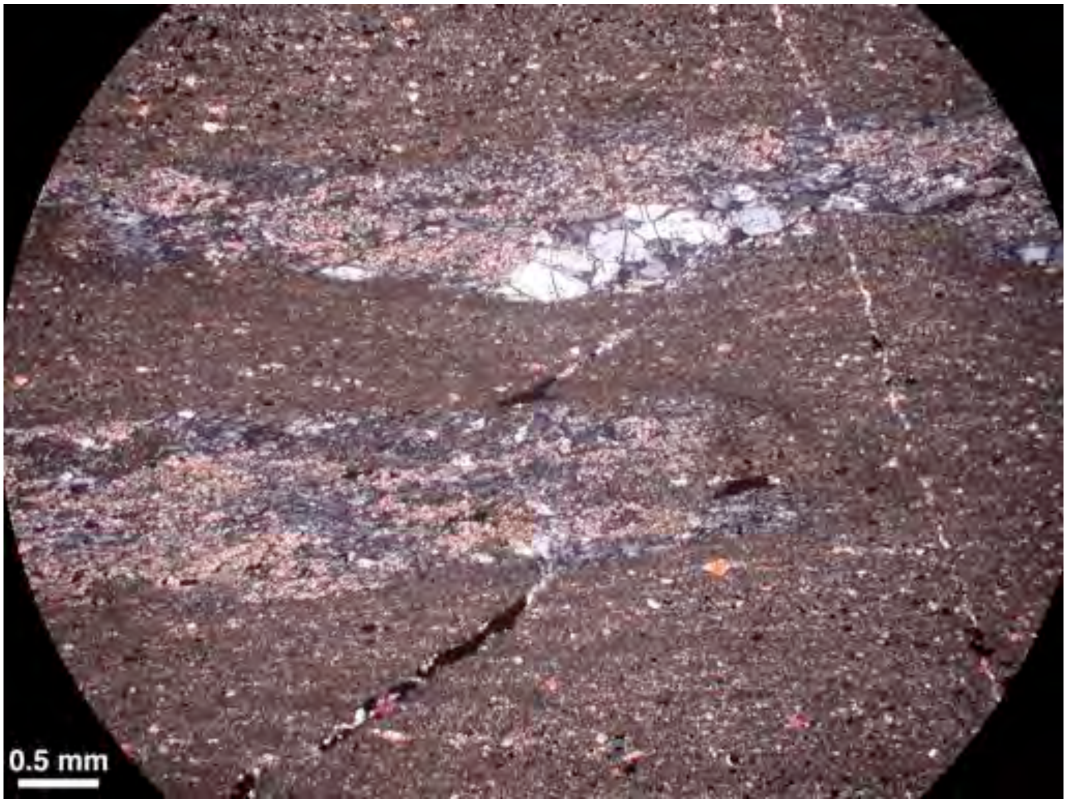
5) JKHTR018 Meta-sediment TS

Description: extremely fine grained foliated and horizontally banded siltstone with a darker top half containing several mm-thick lighter coloured lenses that are slightly sheared or truncated by thin veinlets, and a lower half consisting of undisturbed medium gray layers. Very thin veinlets filled with sulphides, actinolite, cpx and calcite cut the top portion diagonally following some of the offsets in the layers. The dark bands of the top half of the section consist of extremely fine grained almost massive granular cpx with minor interstitial fsp±qtz and abundant disseminated euhedral to subhedral opaque grains (magnetite and/or sulphides). The lighter coloured discontinuous bands are less fine grained and contain abundant apatite, aligned with foliation, in addition to anhedral epidote and anhedral opaques (probably sulphides). The lower half of the section is lighter coloured due to more K-fsp ± quartz in the matrix, cpx occurs here as disseminated elongate poikilitic grains and aggregates. A few layers towards the bottom of the section also contain pale orange biotite (or phlogopite) and trace olive green chlorite.

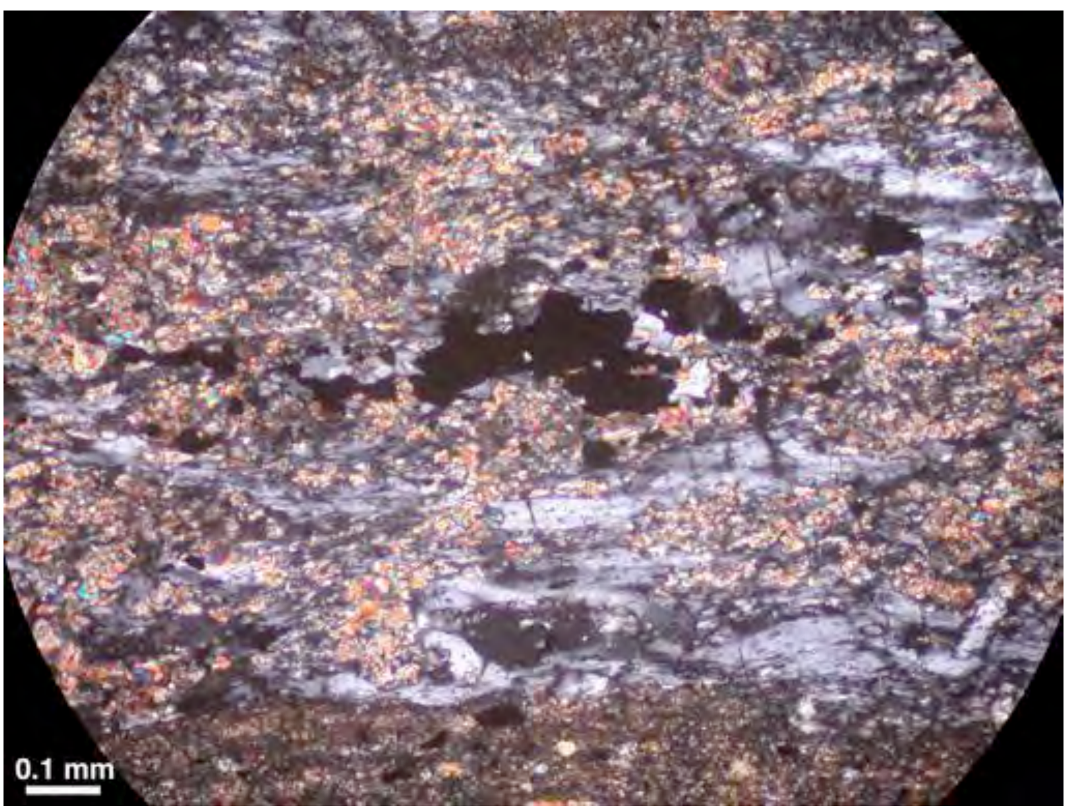
Mineral	Type	Size	modal	Comment
Cpx	major	≤70 μm	66%	fine granular semi-massive
Apatite	major	≤0.5 mm	9%	in light coloured lenses
K-feldspar	matrix	≤60 μm	15%	mostly in lower portion
Quartz	matrix	≤70 μm	3%	in small pockets and veinlets
Opaques	matrix	≤70 μm	5%	disseminated in matrix, veins
Actinolite	in veins	≤100 mm	tr	intergrown w. sulphides
Biotite	trace	≤75 μm	tr.	pale orange, in one layer only
Chlorite	alteration	≤75 μm	tr,	repl. biotite
Sphalerite	mineralization	60 μm	tr.	rare, deep red grain in matrix
Carbonate	trace	≤75 μm	tr.	in veinlets
Titanite	trace	≤50 μm	tr.	pale brown in matrix

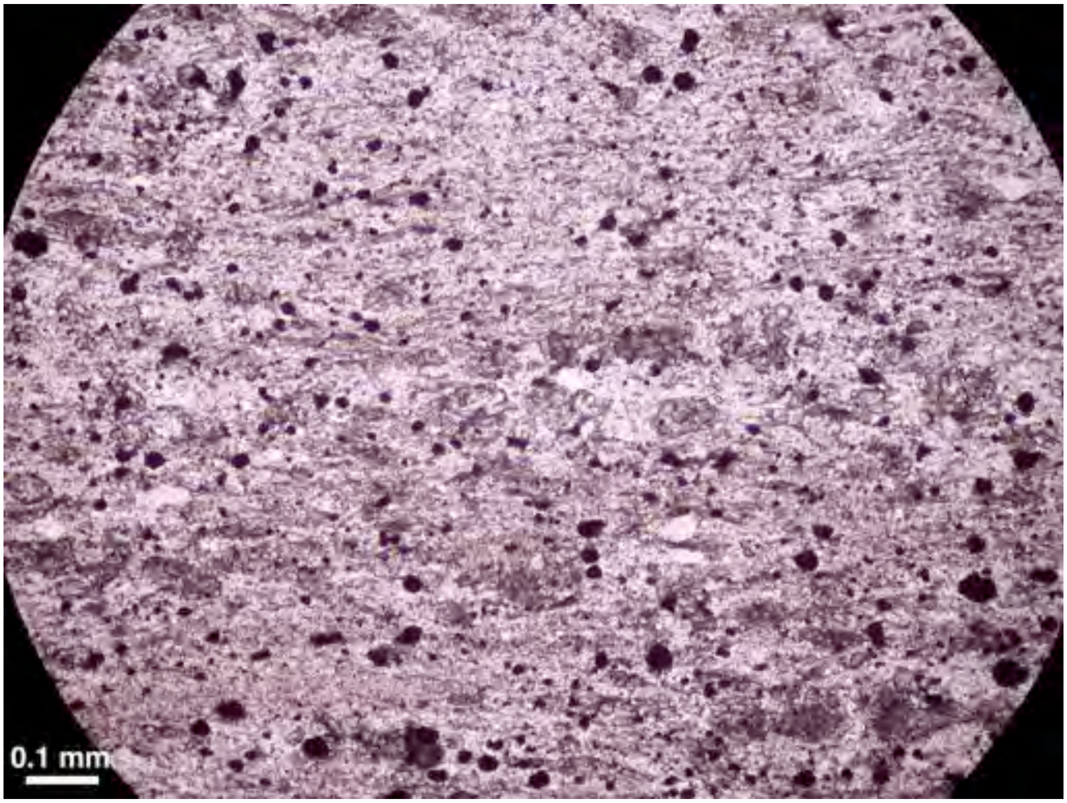


JKHTR018 (2) extremely fine grained equigranular meta-sediment. F.o.V. 5.06 x 6.75 mm, PPL (above) and XPL (below)

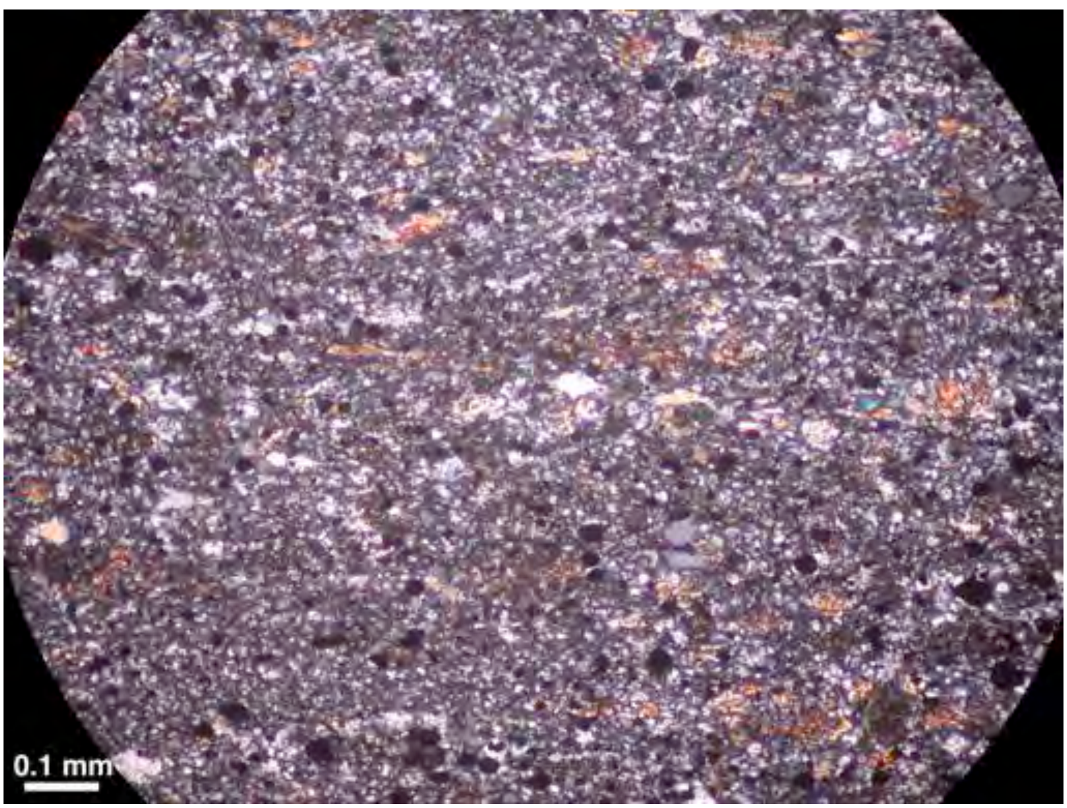


JKHTR018 (1) coarser apatite-cpx lenses displacing cross-cutting veinlets (filled with sulphides ± cpx) in fine grained matrix. F.o.V. 5.06 x 6.75 mm, XPL (above); close-up with anhedral opaques, F.o.V. 1.06 x1.41 mm, in PPL (below)





JKHTR018 (3) slightly “coarser” band showing fine grained disseminated opaques and cpx in qtz-fsp matrix. F.o.V. 1.05 x1.41 mm, in PPL (above) and XPL (below)



6) RZ-433 Biotite-rich Porphyry (hybrid) PTS

Description: very biotite-rich volcanic rock, almost looks like a lamprophyre but contains slightly resorbed rounded plagioclase phenocrysts and rounded lobed quartz xenocrysts together with remnants of partly serpentinized olivine, coarse sharply euhedral cpx phenocrysts, rare coarse elongate green amphibole, and abundant red brown Ti-biotite, in a flow textured matrix with abundant red brown biotite and very fine grained elongate feldspar (plagioclase and K-fsp) all flow aligned, and abundant very fine grained eight-sided cpx. Quartz is probably xenocrystic, olivine phenocrysts are fractured, partly serpentinized and also not in equilibrium with the matrix since they are surrounded by a thick rim of secondary pale brown biotite ± pale actinolite. Some amphibole phenocrysts are marginally or completely replaced by a poikilitic intergrowth of red brown biotite and cpx. Plagioclase phenocrysts are slightly rounded and "baked" around the edges. Trace sulphides (pyrrhotite and chalcopyrite) occur as fine grained droplets in biotite and cpx and as extremely fine grained disseminated grains in matrix. Very fine grained secondary pyrrhotite also occurs in the serpentine alteration of olivine.

The lower left portion of the section contains a xenolith of very fine grained equigranular dioritic material consisting predominantly of quartz+plagioclase with fine grained disseminated opaques and cpx or amph (too fine grained to identify properly) - this is xenolith is not included in the modal table below.

It is difficult to give this rock a proper name since it is obviously a mixture of several parent magmas, one lamprophyric (minette ? - biotite, cpx, K-fsp), one basaltic (olivine !) and one dacitic to rhyolitic (amphibole, quartz, plagioclase).

Mineral	Type	Size range	modal	Comment
Quartz	xenocryst	0.5 to 1.8 mm	2-3%	rounded, lobed, resorbed
Plagioclase	phenocryst, matrix	≤ 2.5 mm	4%	slightly rounded, zoned
Plagioclase	microliths	<20 µm	1%	in matrix
Olivine	xenocryst	0.5-1.0 mm	2-3%	partly serp., thick reaction rims
Clinopyroxene	phenocryst, matrix	0.05 - 2.3 mm	23%	also abundant in matrix
Hornblende	phenocryst	1-3.5 mm	1-2%	green, repl. by biotite
Biotite	phenocryst, matrix	< 1.0 mm	12%	deep red brown - Ti-rich
Biotite	alteration	<50 µm	5%	repl. amph, rimming olivine
Actinolite	alteration	< 35 mm	tr	in olivine rims
K-feldspar	matrix	≤0.25 mm	35%	major matrix component
Cr-spinel/Magnetite	trace	≤10 µm	tr.	only in olivine& its alteration
Zircon	accessory	<79µm	tr.	high relief grains in biotite. cpx
Pyrrhotite	mineralization	<0.25 mm	tr.	in biotite, cpx, alt. olivine, matrix
Chalcopyrite	mineralization	*<60 µm*	tr.	intergrown w. po

Quartz - rounded, lobed xenocrysts enclosing plag and matrix

Plagioclase coarse, slightly rounded strongly zoned phenocrysts

Biotite deep red brown euh phenocrysts and abundant fine grained matrix component, secondary biotite is paler in colour and surrounds olivine phenocrysts

Cpx coarse sharply euhedral phenocrysts, often twinned, some with biotite or sulphide inclusions

Amphibole coarse euhedral zoned phenocrysts, olive green to beige pleochroic, marginally or completely replaced by a fine grained mixture of biotite and granular cpx.

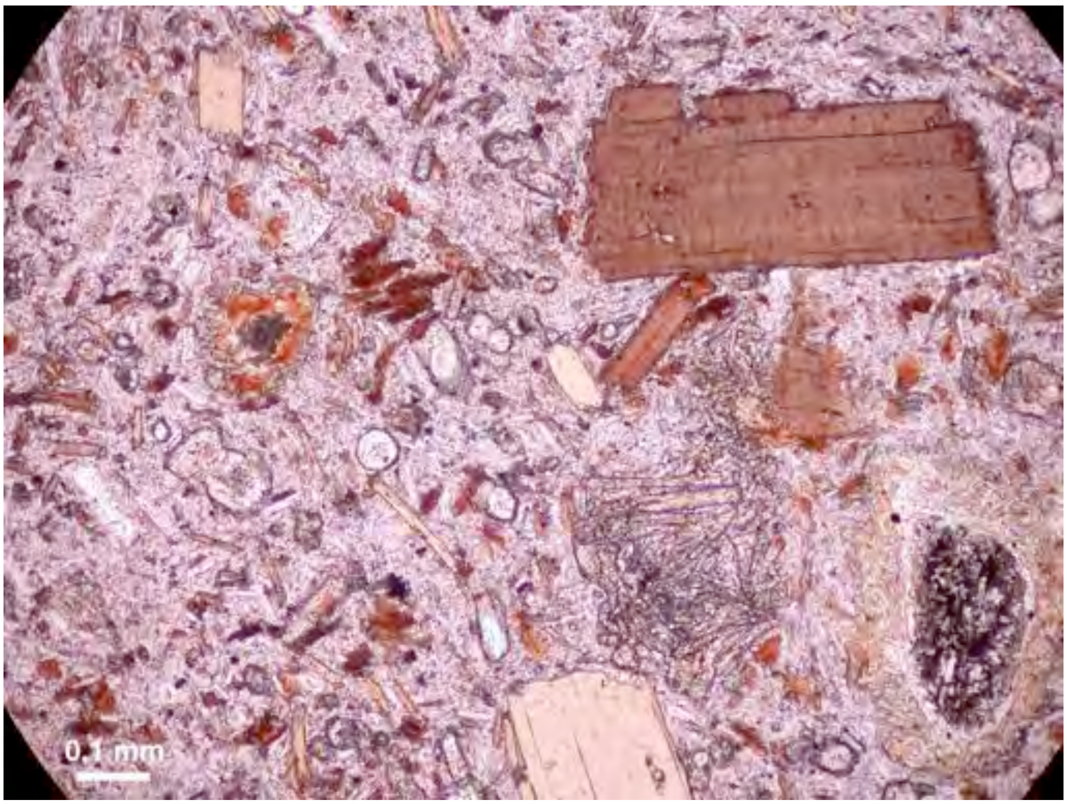
Olivine probably xenocrystic phenocrysts, partly serpentinized and rimmed by thick layer of fine grained secondary biotite ± actinolite; secondary pyrrhotite in serpentine

Matrix components:

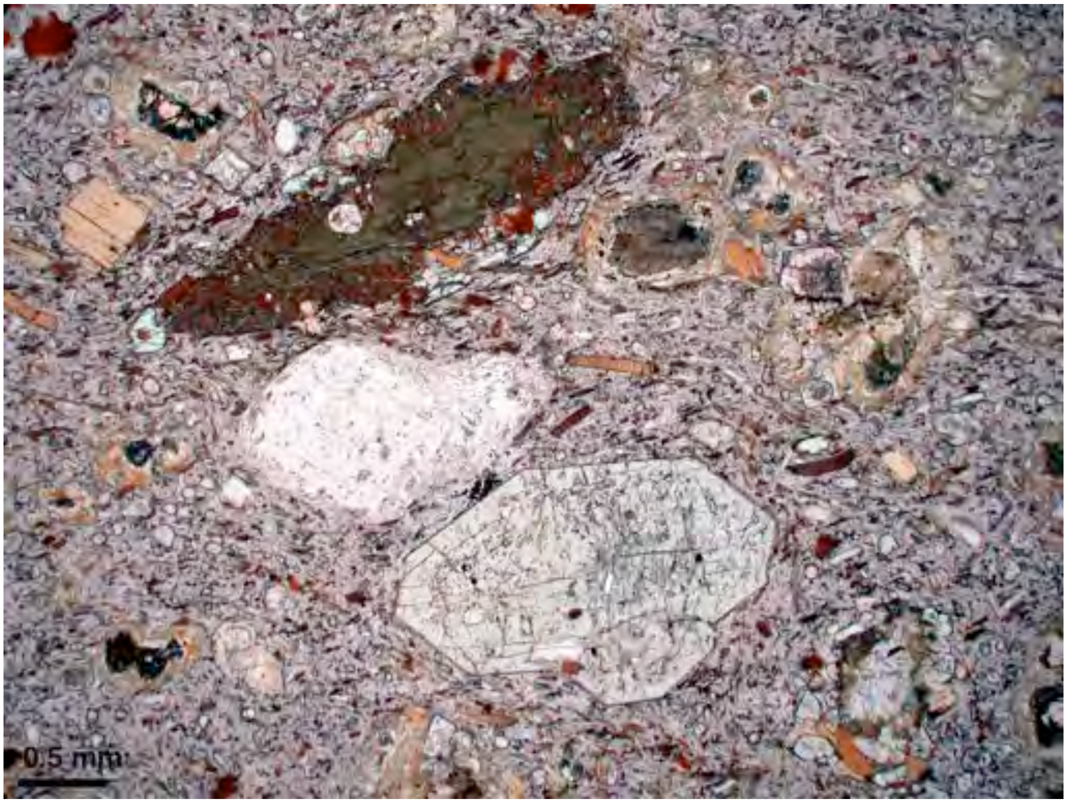
Feldspar (plagioclase) fine gr. elongate laths and K-fsp (semi-massive)

Biotite smaller versions of biotite phenocrysts

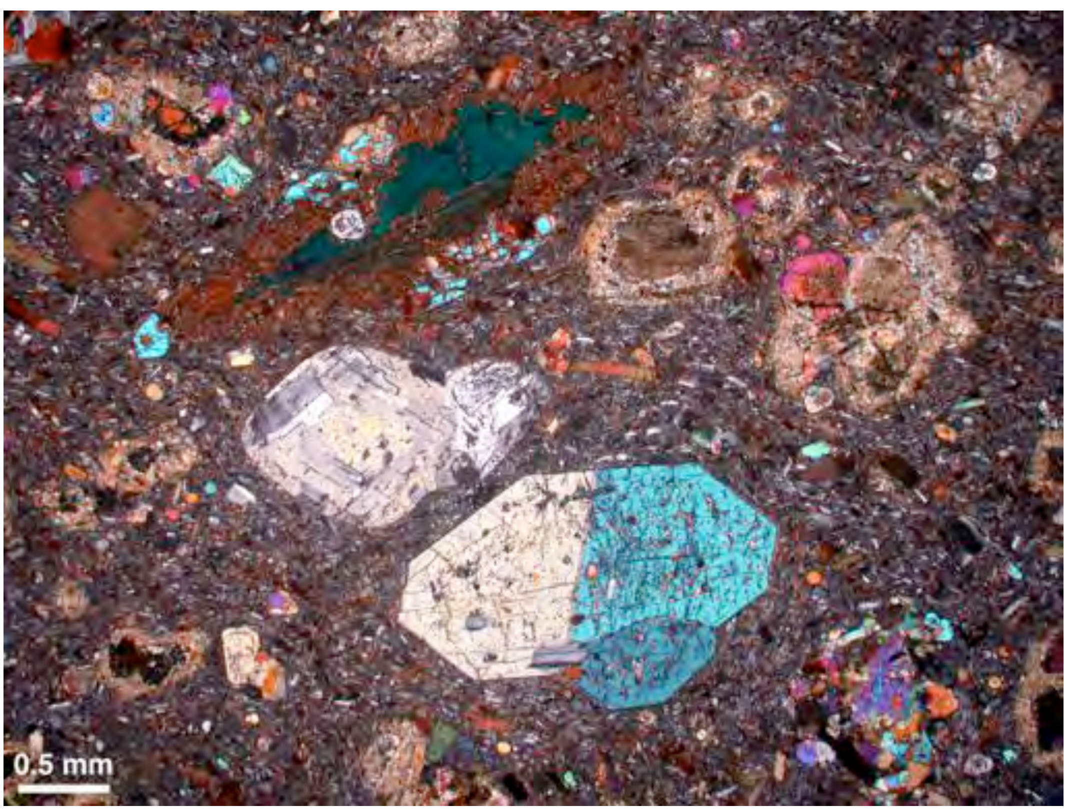
Cpx fine gr. euh. eightsided grains.

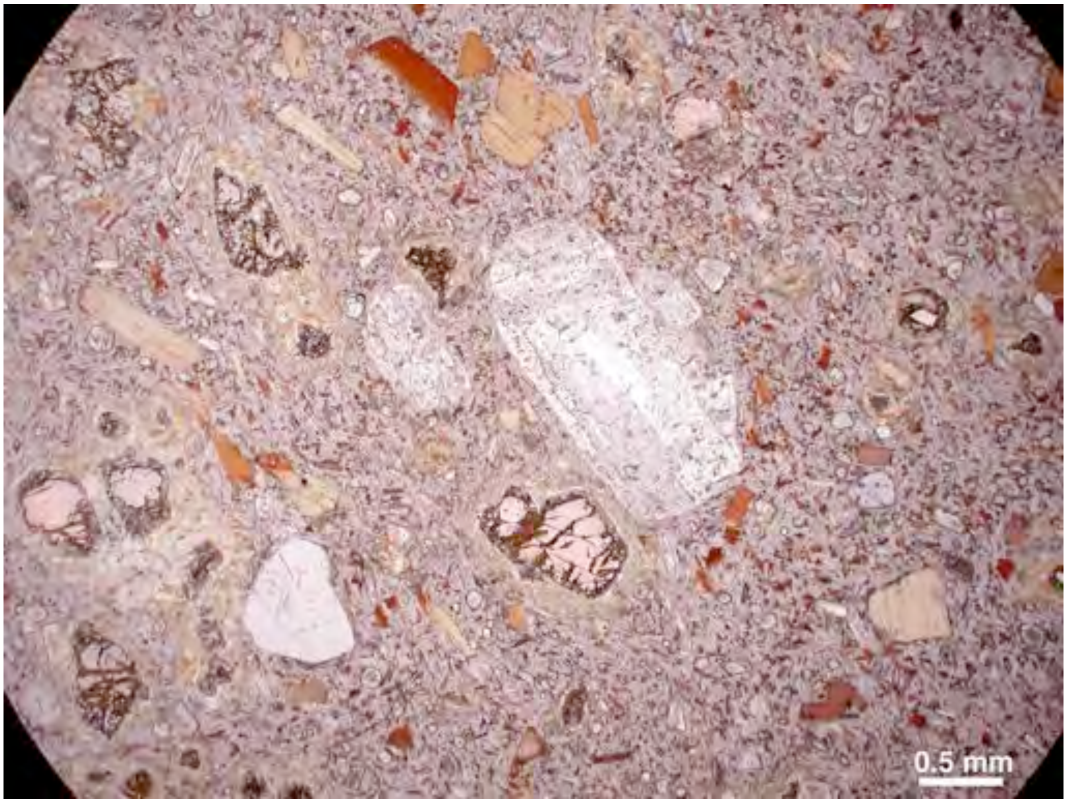


RZ-433 (3) matrix detail showing abundant redbrown biotite, fine garined almost round cpx and olivine pseudomorphs in K-fsp matrix. F.o.V. 1.05 x 1.38 mm PPL (above).

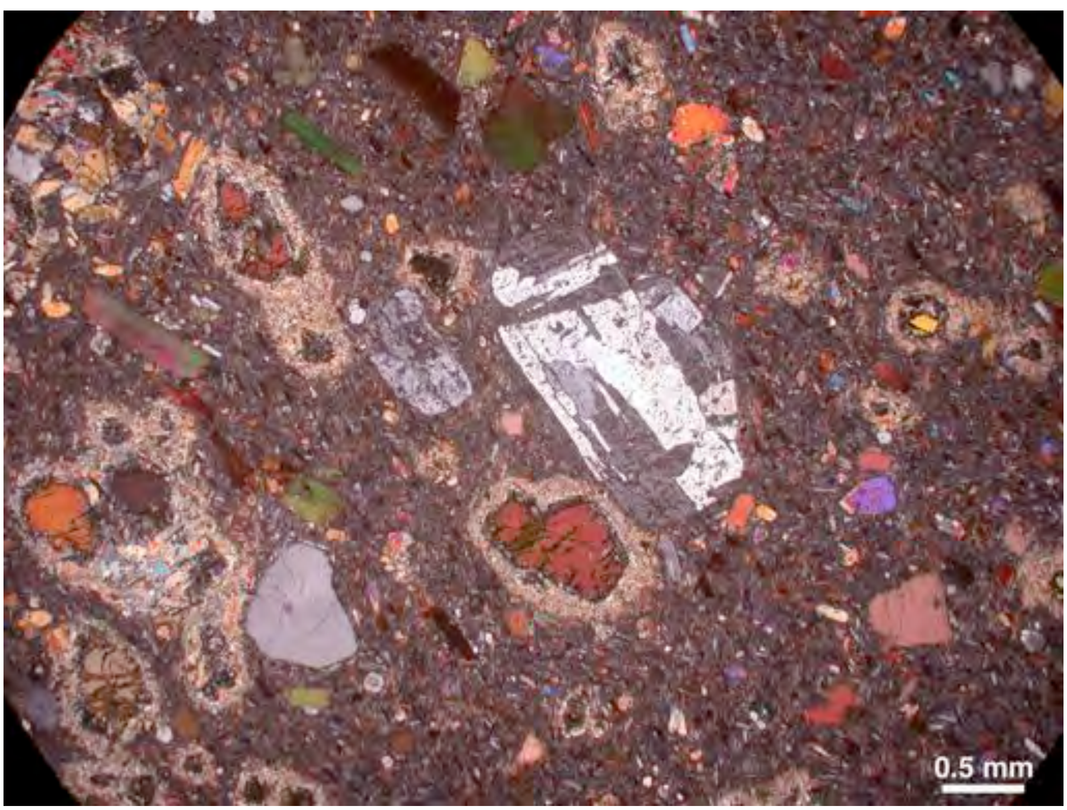


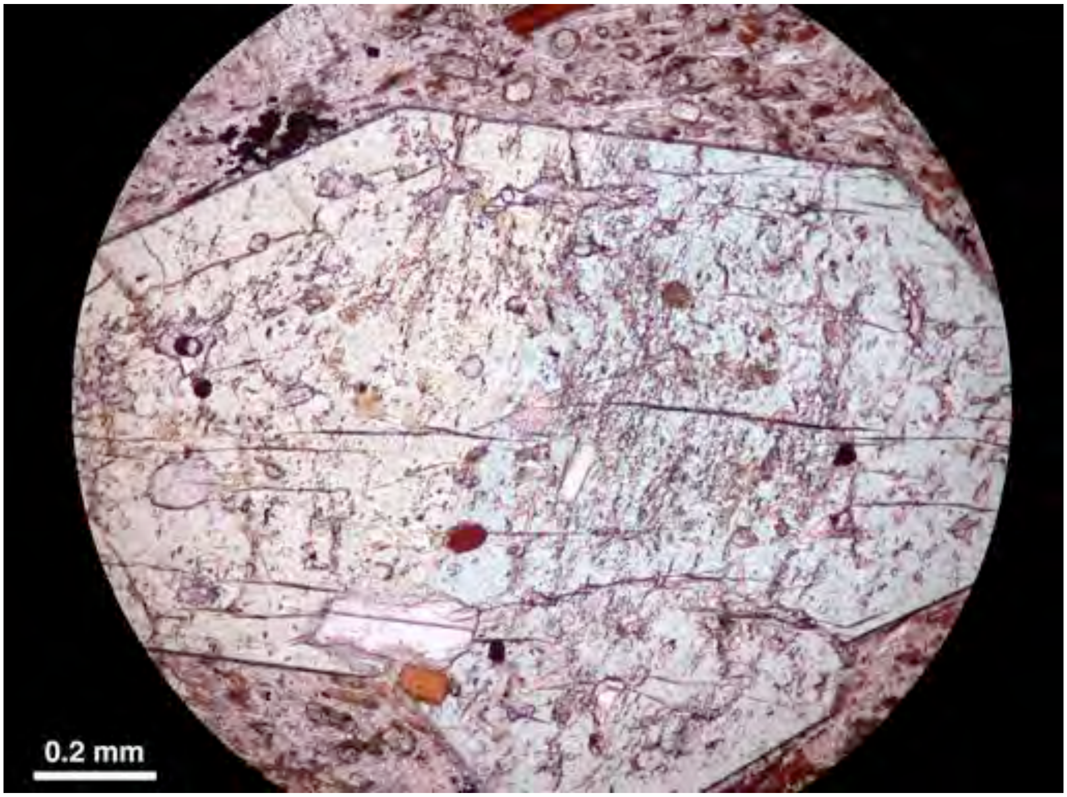
RZ-433 (1) green hornblende phenocryst marginally repalced by red biotite, subhedral plagioclase and sharply euhedral augite phenocryst in biotite-cpx-fsp matrix. F.o.V. 4.50 x 6.00 mm PPL (above), XPL (below).



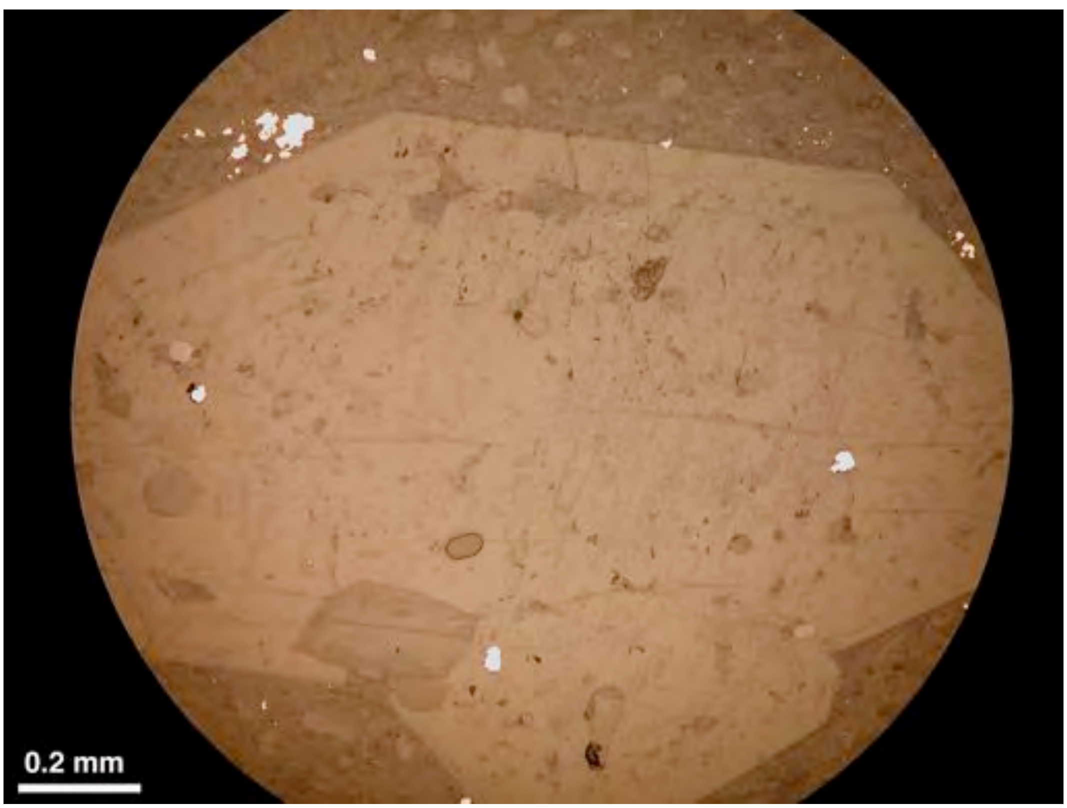


RZ-433 (2) subhedral plagioclase, rare quartz and fractured and slightly altered olivine grains surrounded by extensive fine grained secondary biotite ± actinolite in biotite-cpx-Kfsp matrix. F.o.V. 4.65 x 6.20 mm PPL (above), XPL (below).





RZ-433 (4) minute sulphide inclusions in and just outside of cpx. F.o.V. 1.31 x 1.75 mm PPL (above), RL (below).



7) RZ-469 Andesitic/granodioritic Porphyry **TS**

Description: phenocryst-rich hypabyssal porphyry similar to AHHTR034 grading into granodiorite and showing greenschist facies metamorphic overprint. Medium to coarse grained euhedral phenocrysts of strongly zoned plagioclase, green hornblende, coffee brown biotite and rare xenocrysts of rounded quartz are set in a fine grained K-fsp matrix with trace zircon, possibly monazite and almost invisible apatite. There are also remnants of cpx phenocrysts rimmed and replaced by green actinolitic hornblende. The assemblage is overprinted by abundant secondary amphibole (pale green actinolite) that forms aggregates and pseudomorphs and brown biotite that is overgrowing primary biotite and is intergrown with actinolite in clusters and pseudomorphs.

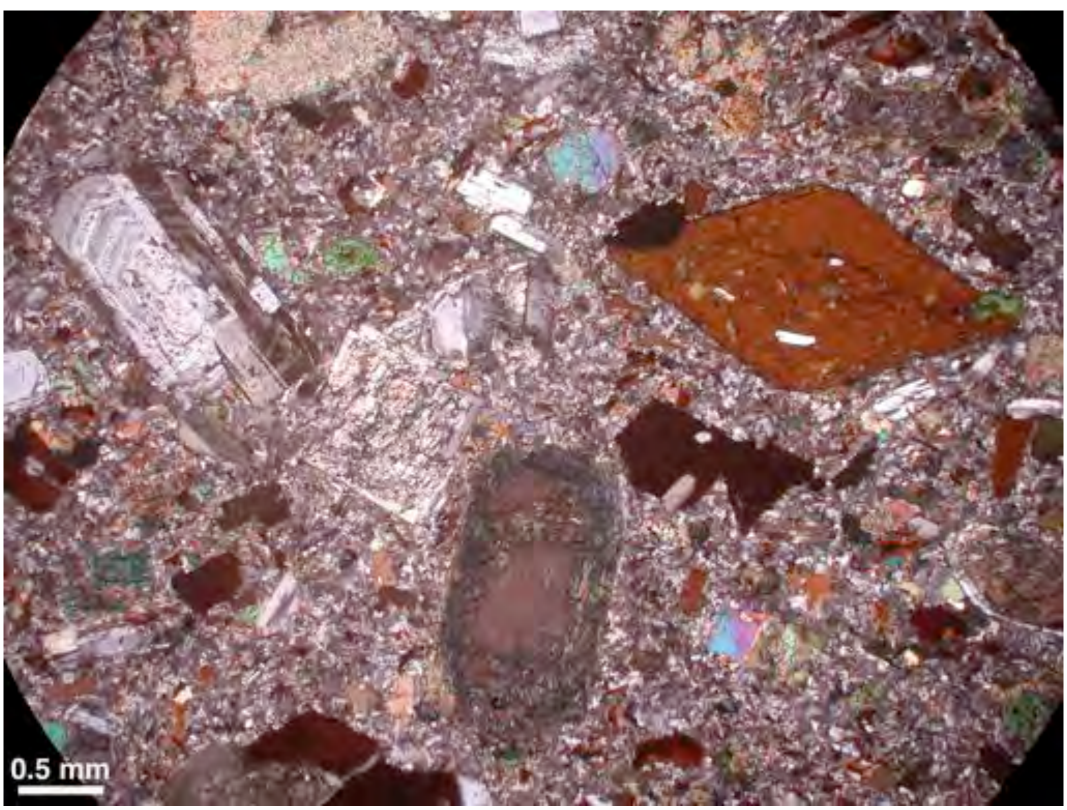
Mineral	Type	Size range	modal	Comment
Alkali-fsp ?	xenocryst ?	3x6 mm	2%	one coarse xenocrystic grain
Quartz	xenocryst	0.4-1.5 mm	tr.	round grains in matrix
Plagioclase	phenocryst	≤ 2.8 mm	20%	euhedral, strongly zoned
Hornblende	phenocryst	1.2-3.5 mm	8%	olive green,zoned
Biotite	phenocryst, matrix	< 1.0 mm	8-9%	deep coffee brown
Cpx/Amph1	remnant phenocr.	< 1.0 mm	1%	rimmed & replaced by green hbl
Biotite	secondary	<0.25 mm	5-7%	overgrowing primary biotite,matrix
Actinolite	secondary	< 1 mm	20%	in pseudomorphs and matrix
K-feldspar	matrix	≤0.25 mm	35%	major matrix component
Zircon	accessory	<50µm	tr.	high relief grains in matrix
Apatite	accessory	<10 µm	tr	elongate euh., in biotite, plag
Opaques	accessory	<75 µm	tr.	rounded isometric in matrix

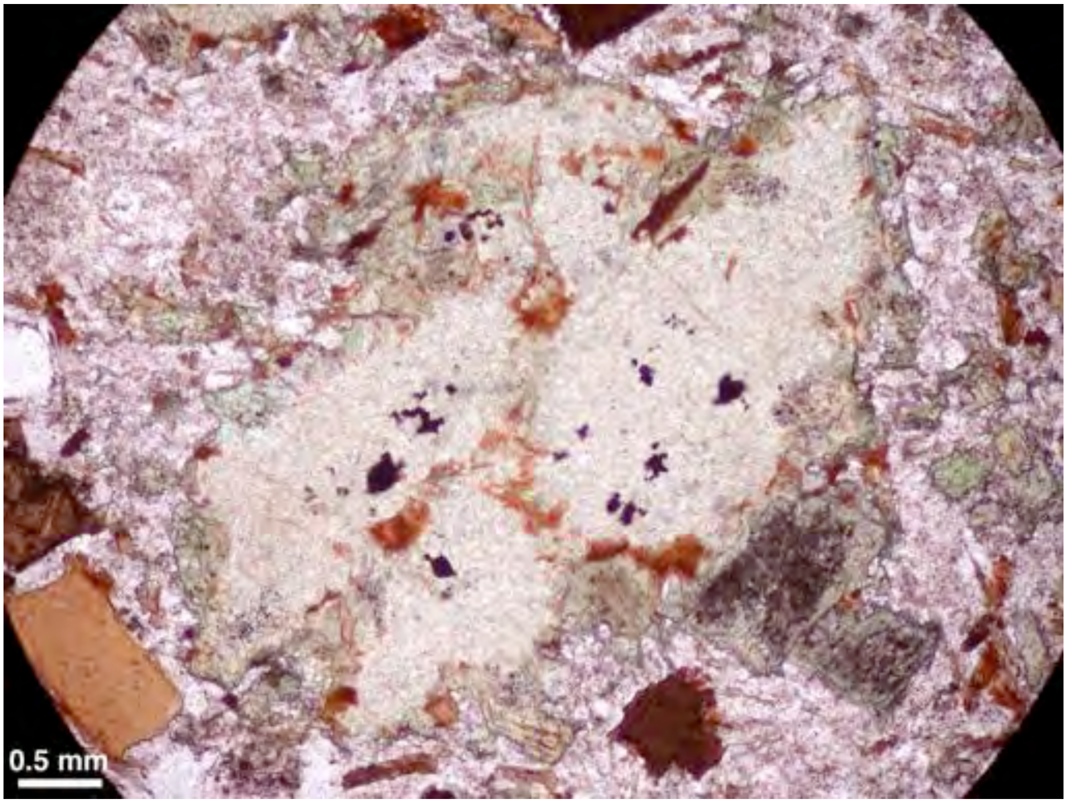
Plagioclase forms blocky phenocrysts, strongly zoned some intergrown with each other

Amphibole olive green to beige pleochroic euhedral zoned phenocrysts

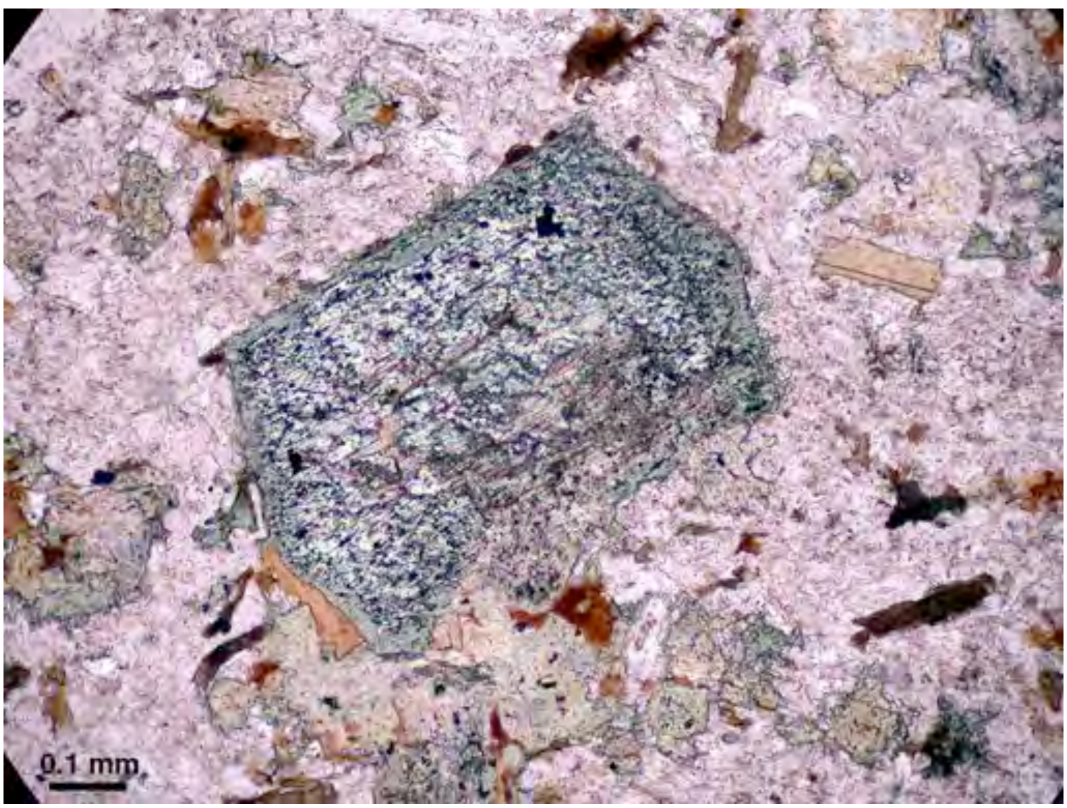
Biotite (dark coffee brown to tan pleochroic euhedral to subhedral phenocrysts to matrix component, slightly ragged appearance due to overgrowth of secondary slightly lighter coloured biotite

RZ-433 (1) euhedral hornblende, zoned plagioclase, remnant cpx (marginally replaced by actinolite), and abundantn red brown biotite and green actinolite in K-fsp rich matrix. F.o.V. 4.65 x 6.20 mm PPL (above), XPL (below).





RZ-433 (2) extensive patch of very fine grained actinolite and brown secondary biotite in matrix surrounded by primary biotite phenocrysts. F.o.V. 4.65 x 6.20 mm PPL (above).

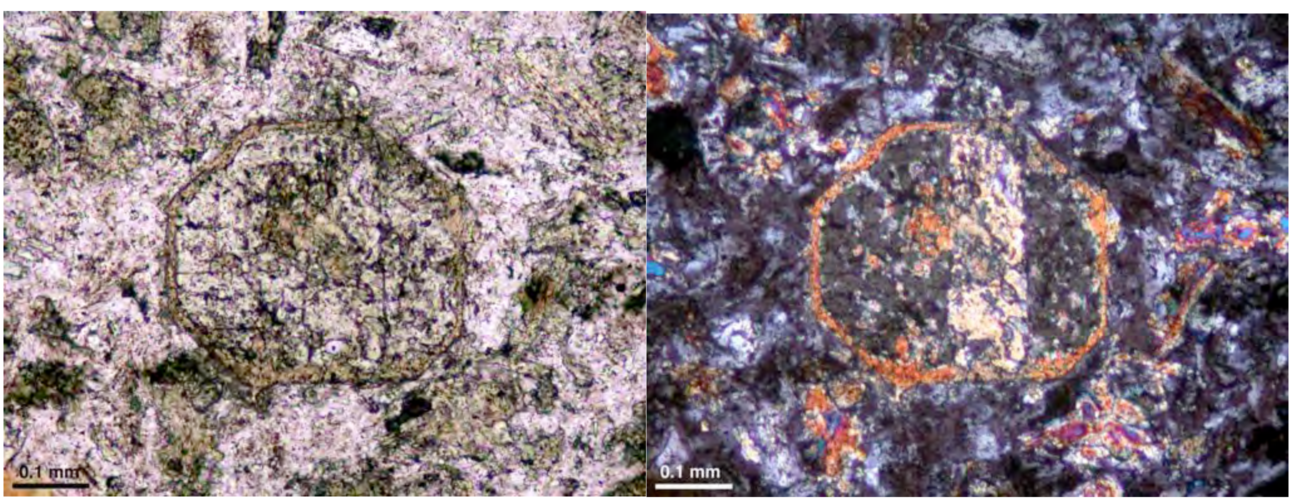


RZ-433 (3) cpx phenocryst overgrown and partly replaced by green actinolite in K-fsp-biotite matrix. F.o.V. 4.50 x 6.00 mm PPL (above).

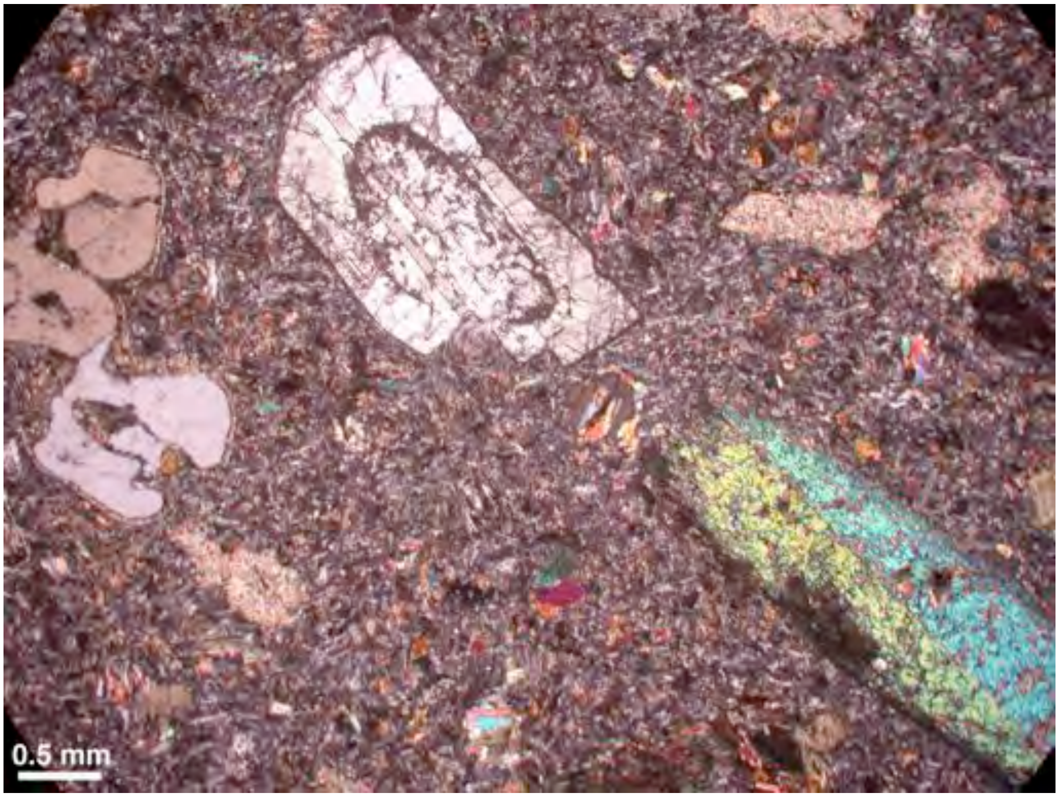
8) RZ484 Andesitic Porphyry **TS**

Description: altered porphyritic volcanic rock similar to AHHTR014 with lobed xenocrystic quartz grains, euhedral strongly zoned plagioclase phenocrysts, coarse euhedral green hornblende, rare cpx phenocrysts and variably altered red brown biotite in a K-fsp rich matrix with abundant actinolite pseudomorphs. Plagioclase is variably altered by brown kaolinite, some zones more than others, some plagioclase phenocrysts have very dark rims ginving them an apparent higher relief, biotite is almost completely altered by colourless Mg-rich chlorite, anhedral titanite, K-fsp and secondary amphibole (tremolite-actinolite). Lobed quartz xenocryst show a rim of fine grained green actinolite and rare cpx phenocrysts are also surrounded and partially replaced by secondary amphibole. Green hornblende phenocrysts are the least affected by alteration and secondary actinolitic hornblende or actinolite is abundant in pseudomorphs in matrix.

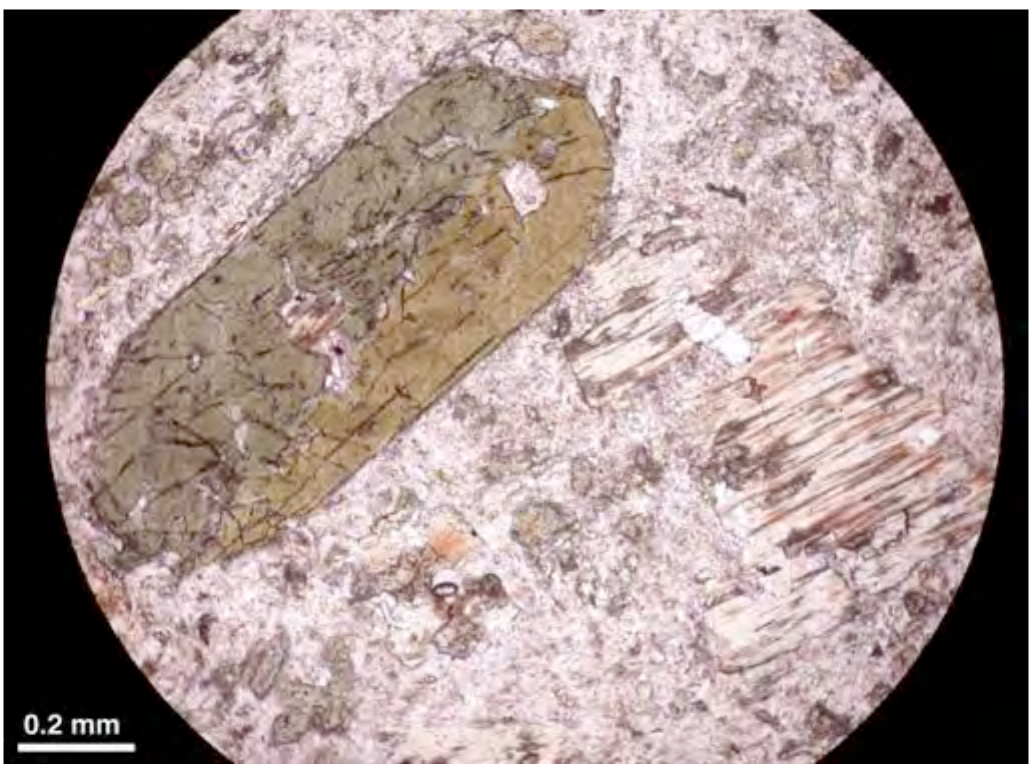
Mineral	Type	Size range	modal	Comment
Quartz	xenocryst	≤1 mm	0.5%	rounded lobed, rimmed by amph
Plagioclase	phenocryst	≤ 2.7 mm	10%	euhedral, strongly zoned
Hornblende	phenocryst	1.2-3.5 mm	3%	olive green,zoned
Biotite	phenocryst,	0.3 - 1.2 mm	2%	repl. by chl, titanite, act, K-fsp
Cpx	remnant phenocr.	<2.0 mm	6%	rimmed & replaced by sec. amph
Actinolite	secondary	< 1 mm	23%	in pseudomorphs and matrix
Mg-chlorite	secondary	< 1 mm	5%	in biotite pseudomorphs
Titanite	secondary	<0.2 mm	1%	anh. in biotite pseudom., matrix
K-feldspar	matrix	≤0.25 mm	50%	major matrix component
Zircon	accessory	<130μm	tr.	high relief grains in matrix
Apatite	accessory	<20 μm	tr	in matrix



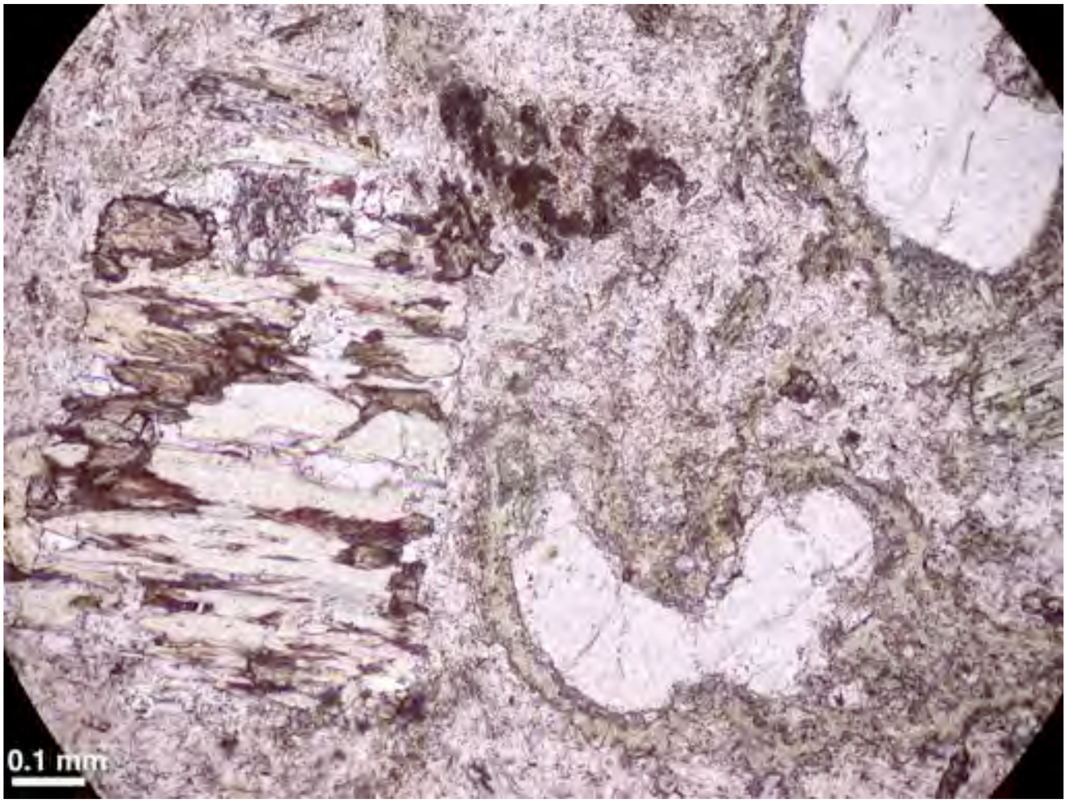
RZ-484 (1) augite microphenocryst rimmed by biotite-actinolite in K-fsp matrix. F.o.V. 0.64 x 0.85 mm PPL (left) and XPL (right).



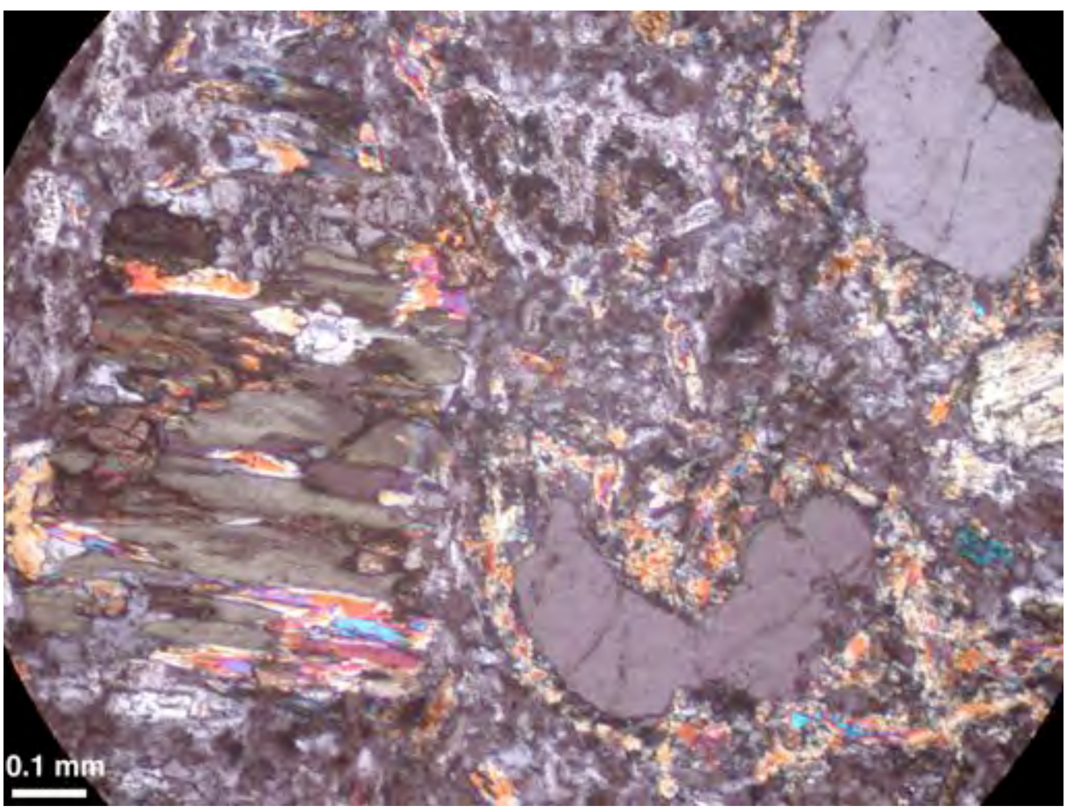
RZ-484 (2) lobed xenocrystic quartz (left), zoned plagioclase and cpx or hornblende phenocryst replaced by actinolite in fine grained in Kfsp-biotite matrix. F.o.V. 4.58 x 6.10 mm XPL (above).



RZ-484 (3) twinned euhedral hornblende phenocryst and altered biotite in matrix. F.o.V. 1.31 x 1.75 mm, PPL.



RZ-484 (4) heavily chlorite-titanite-altered biotite phenocryst (left) and lobed xenocrystic quartz surrounded by actinolite fringe in Kfsp-actinolite matrix. F.o.V. 1.00 x 1.33 mm PPL (above), XPL (below).

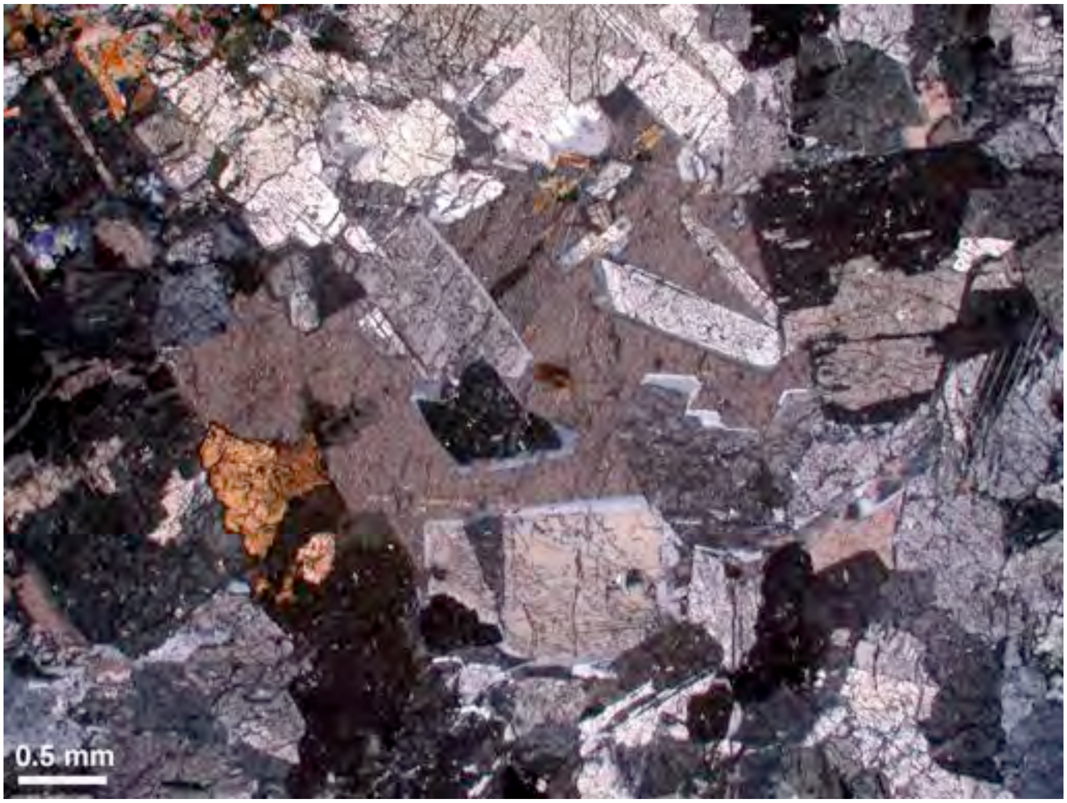


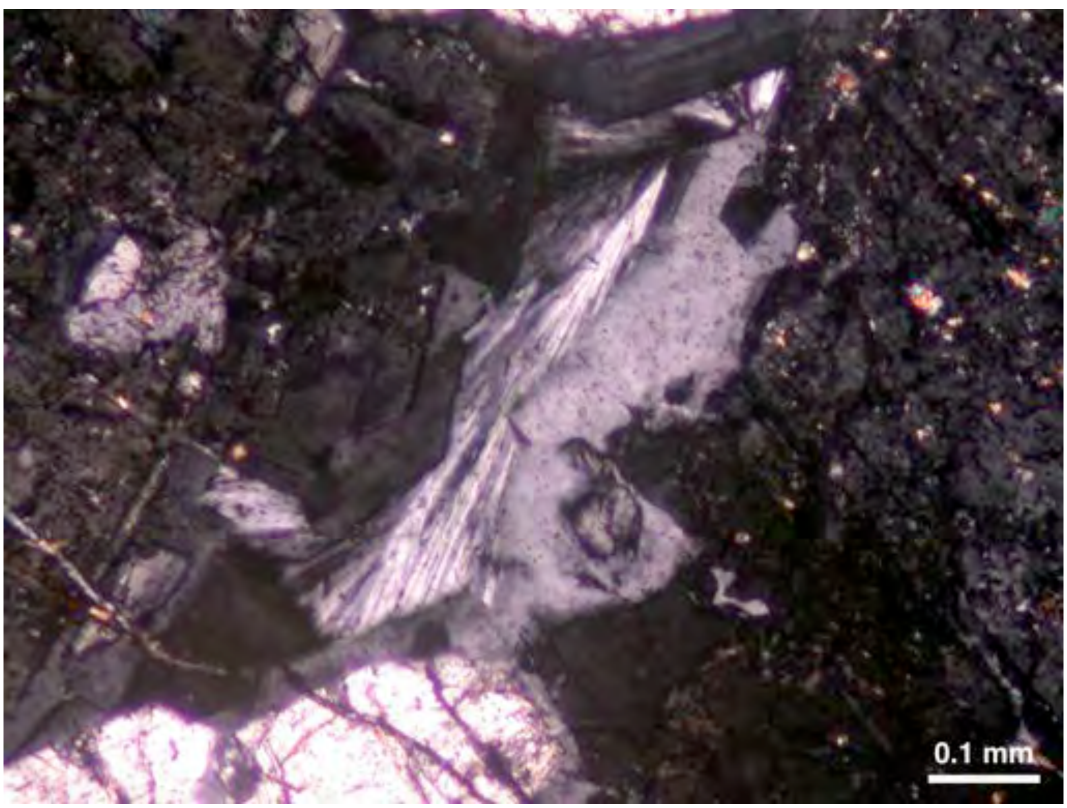
9) RZHTR001 Anorthosite invaded by calc-silicate assemblage TS

Description: massive coarse fractured calcic plagioclase is overgrown by secondary, lower relief (more sodic ?) plagioclase in contact with interstitial carbonate. Euhedral scapolite, minor clinozoisite, chlorite and zeolite can also been found in the interstices between coarse plagioclase grains. Aggregates of light brown euhedral titanite have formed in plagioclase. The massive feldspar encloses a greenish patch of extremely fine grained diopside mixed with green actinolite, trace titanite and carbonate. The primary plagioclase has a scarred surface texture probably due to metamorphic reheating. The “gemmy striated” mineral in this section is probably anorthosite overgrown by a clear second layer of plagioclase.

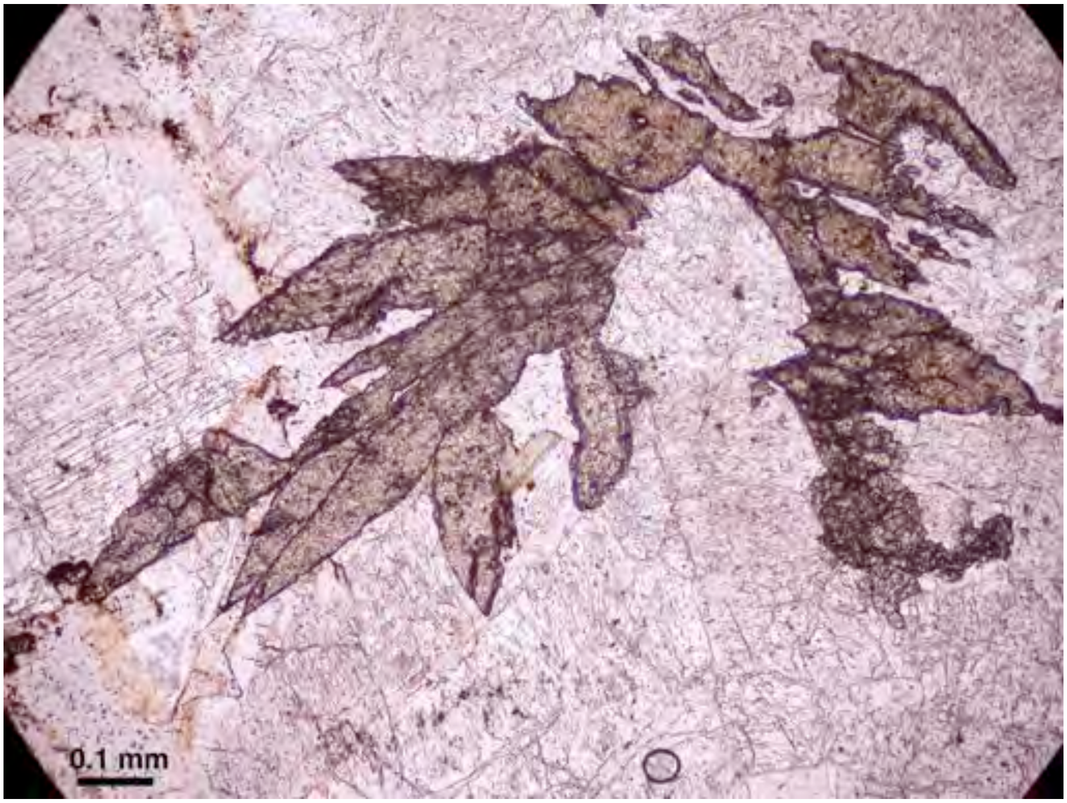
Mineral	Type	Size range	modal	Comment
Plagioclase	major	≤ 4 mm	75%	fractured, overgrown by albite
Scapolite	minor	< 1.6 mm	1%	euhedral crystals in carbonate
Carbonate	infill	< 2 mm	tr.	interstitial to plagioclase
Diopside	major	≤0.2 mm	15%	fine granular semi-massive
Actinolite	minor	≤0.35 mm	7-8%	fine gr. green aggregates ass. w. cpx
Titanite	minor	<1 mm	1%	brown, euh. high relief aggregates
Chlorite	infill	<150μm	tr.	sage green, ass. w. clinozoisite
Quartz	minor	<250μm	tr.	interstital to plagioclase
Zeolite	infill	<250μm	tr.	radiating aggregates in interstices
Clinozoisite	infill	<350μm	tr	w. carbonate interstitial to plag

RZHTR001 (1) euhedral plagioclase with secondary overgrowth and interstitial carbonate containing blue green actinolite needles. The dark mineral is titanite. F.o.V. 4.50 x 6.00 mm , PPL (above), XPL (below).

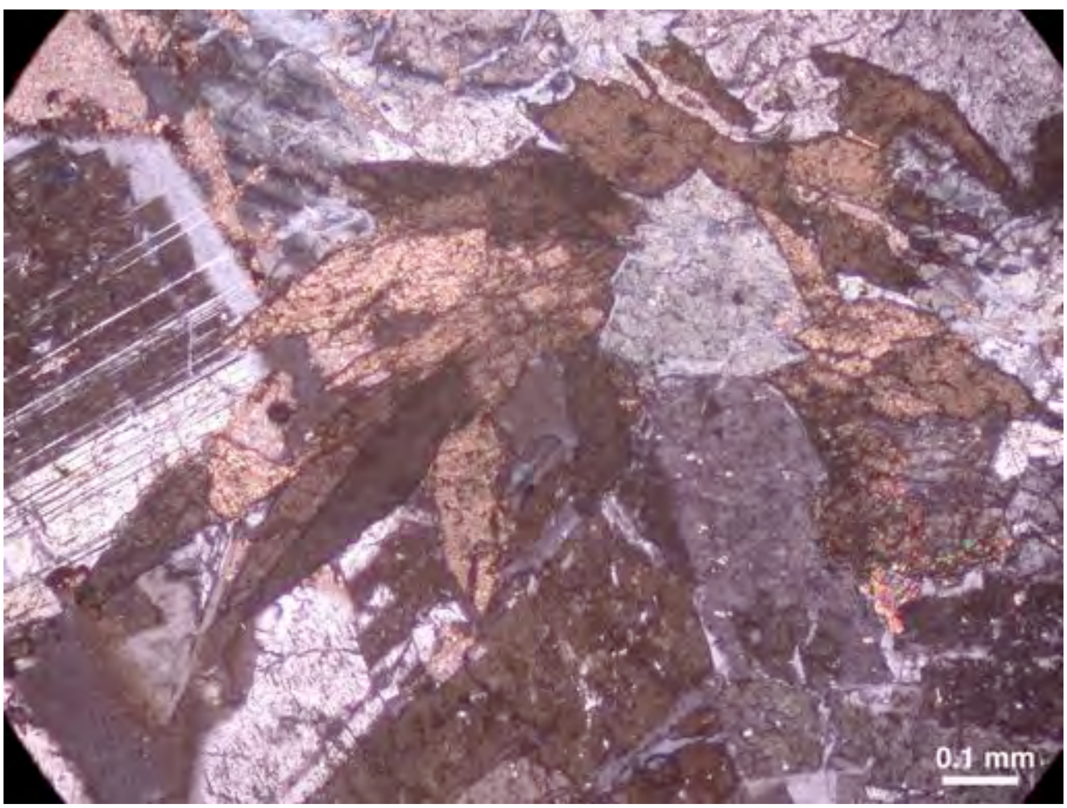


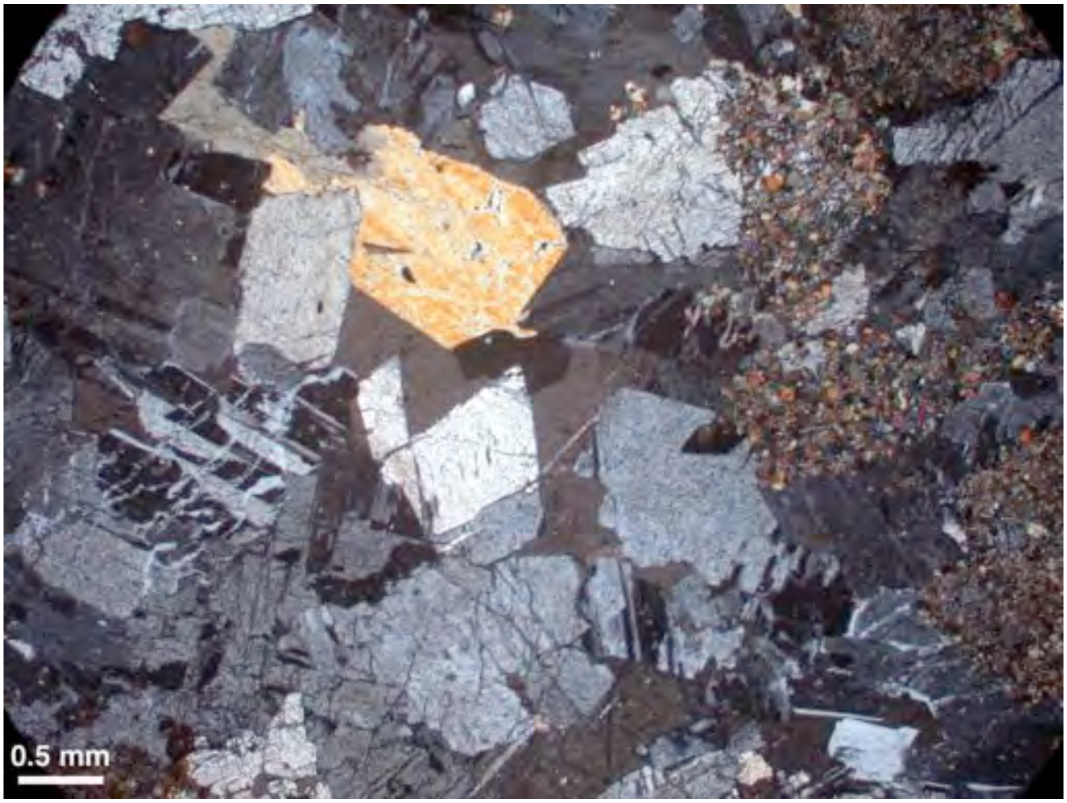


RZHTR001 (6) spray of acicular zeolite in albite interstitial to primary plagioclase. F.o.V. 0.71 x 0.95 mm, XPL (above).

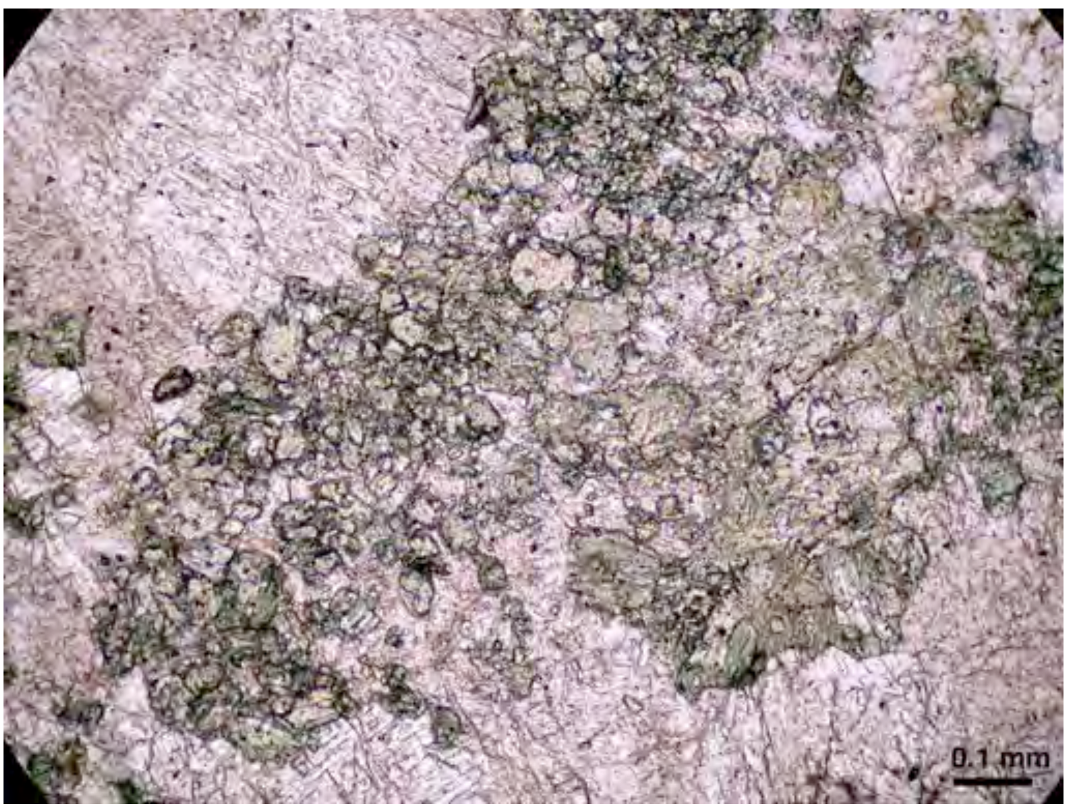


RZHTR001 (2) aggregates of bladed titanite (brown) in plagioclase. F.o.V. 1.00 x 1.33 mm , PPL (above), XPL (below).



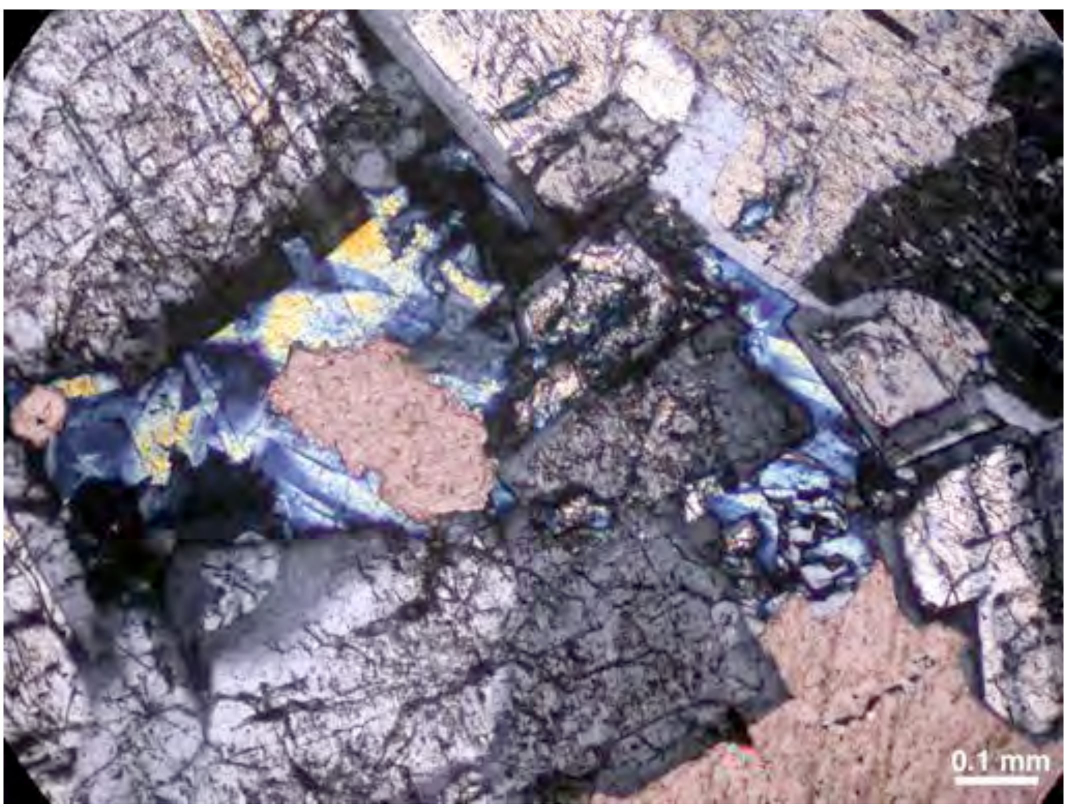


RZHTR001 (4) euhedral scapolite (orange) with carbonate interstitial to plagioclase. Fine granular cpx-actinolite patches at right. F.o.V. 4.58 x 6.10 mm , PPL (above), XPL (below).



RZHTR001 (3) close-up of granular cpx and pale green actinolite in plagioclase. F.o.V. 1.00 x 1.33 mm , PPL (above), XPL (below).

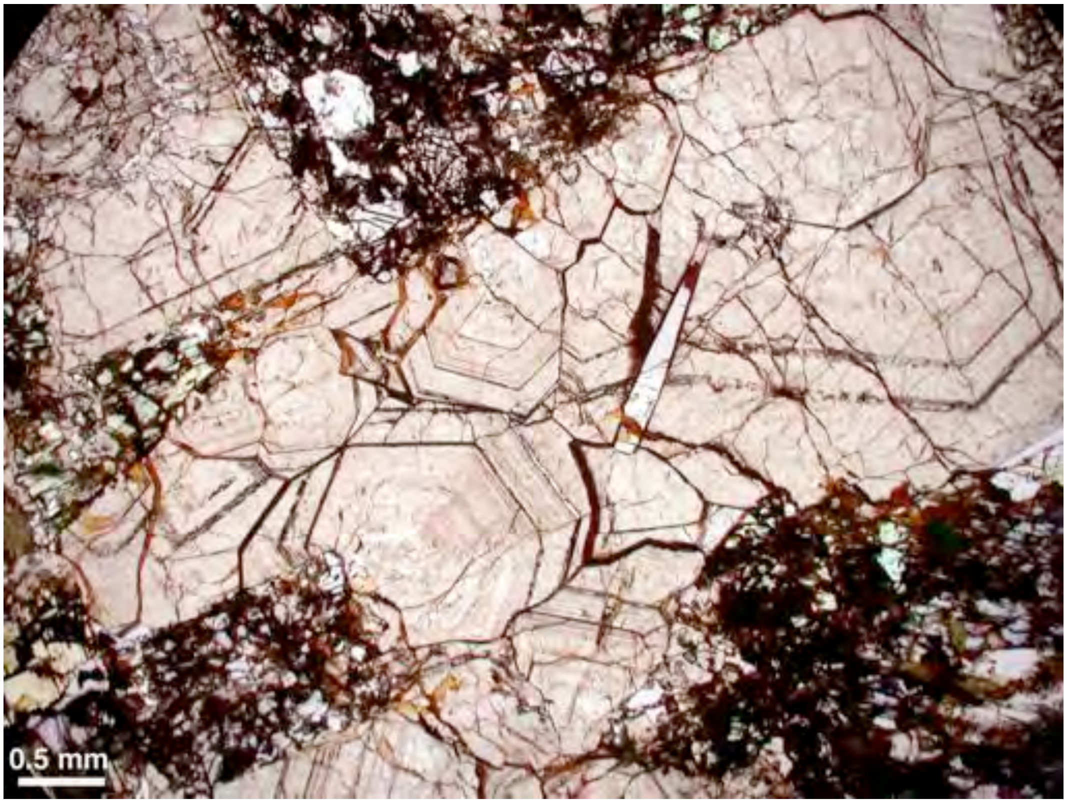
RZHTR001 (5) anhedral clinozoisite (blue-yellow ifc.) green chlorite and carbonate interstitial to plagioclase. F.o.V. 0.99 x 1.32 mm, PPL (above), XPL (below).



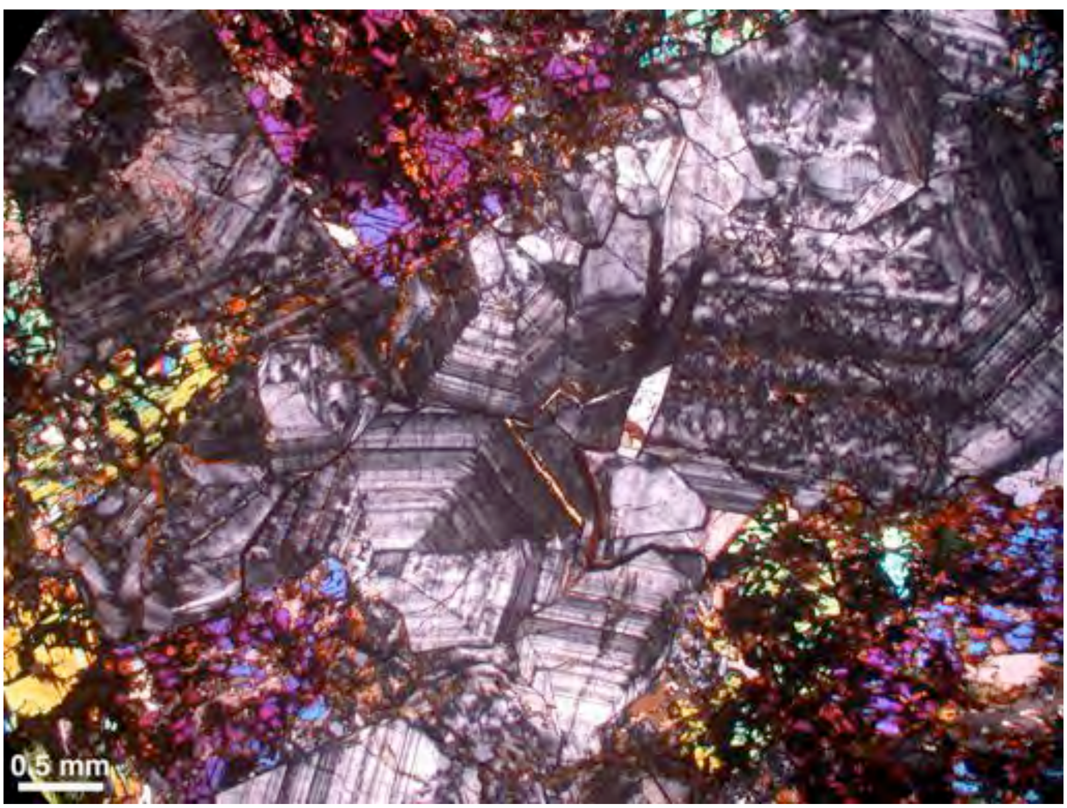
10) RZHTR006 Skarn **PTS**

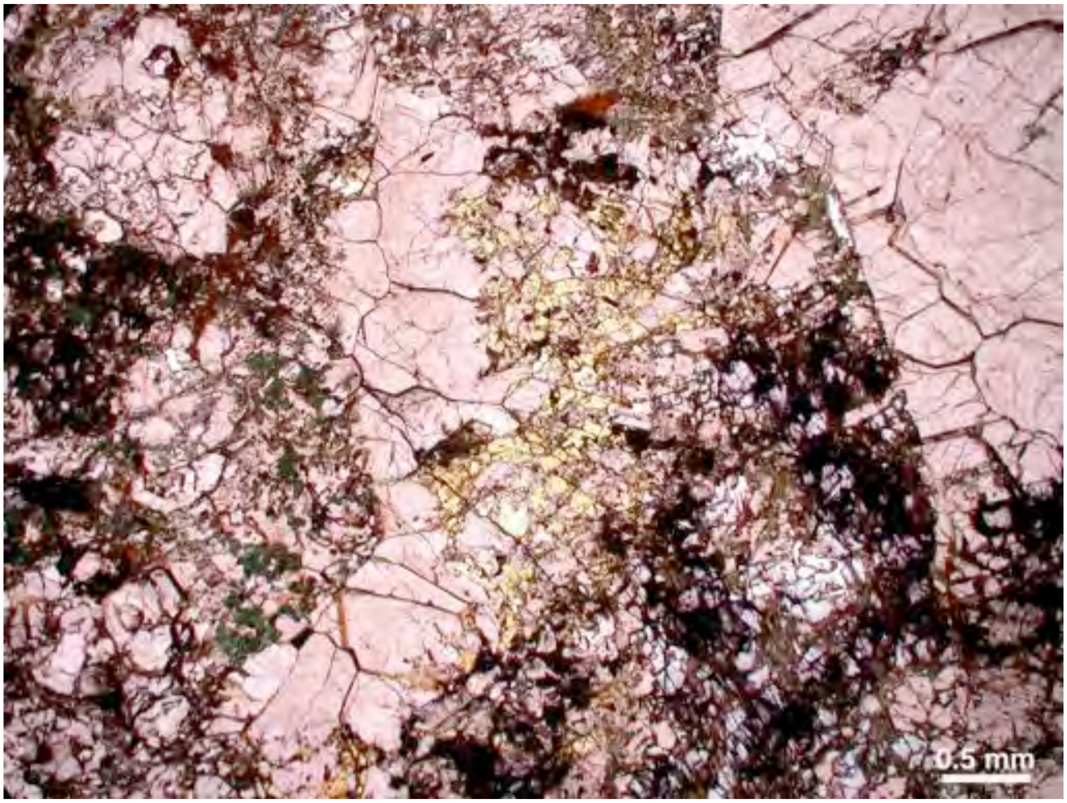
Description: coarse formerly euhedral now fractured, disaggregated and partially broken out clinopyroxene (hedenbergite) crystals are surrounded by abundant coarse, beige strongly zoned anisotropic grossular intergrown with carbonate. Deep bluish green amphibole and chlorite, as well as a red brown Fe-rich alteration minerals (goethite and others) are altering and veining the clinopyroxene. Minor but fairly coarse apatite and yellow vesuvianite are found intergrown with grossular. Quartz is lining an irregular veinlet at the top left of the section and also occurs (together with scapolite) interstitial to garnet or cpx. Sulphides are rare: po forms tiny anhedral cores in quartz, anhedral cpy is intergrown with altered cpx and pyrite is mostly altered and replaced by marcasite. However, in one case primary euhedral pyrite cubes occur in cpy. A tiny white reflecting grain was discovered in a hole of broken out cpx, but it it might have been accidentally introduced through the sample preparation process.

Mineral	Type	Size	Modal	Comment
Clinopyroxene	major	≤ 6 mm	30%	coarse euh., fractured, broken out
Grossular	major	≤ 6 mm	50%	semi-massive interstitial to cpx
Carbonate	minor	<1 mm	4%	intergrown with grossular and cpx
Vesuvianite ?	minor	interstitial	1-2%	yellow, low ifc., poikilitic intergr. w. grt
Apatite	minor	< 1.5 mm	tr.	euhedral integrown w. garnet, cpx
Amphibole	alteration	≤0.5 mm	2%	blue green repl. cpx
Chlorite	alteration	v. f. gr.	tr.	green, repl. amphibole
Quartz	vein filling	<200µm	1%	lining veinlet, intergrown w. cpx, grt
Scapolite ?	matrix	coarse	tr	intergrown w. cpx
Pyrrhotite	mineralization	≤150 µm	tr.	anh. in quartz
Chalcopyrite	mineralization	≤170 µm	tr.	anh. in cpx
Sphalerite	mineralization	≤25 µm	tr.	translucent red, anh. w. cpy in cpx
Pyrite	mineralization	≤0.4 mm	tr.	euh. cubes in cpy, secondary in alt. cpx
Marcasite	alteration	0.6 mm	tr.	streaky white alteration of po or py
Goethite + ?	alteration	v. f. gr.	2%	orange to red brown veining cpx, grt

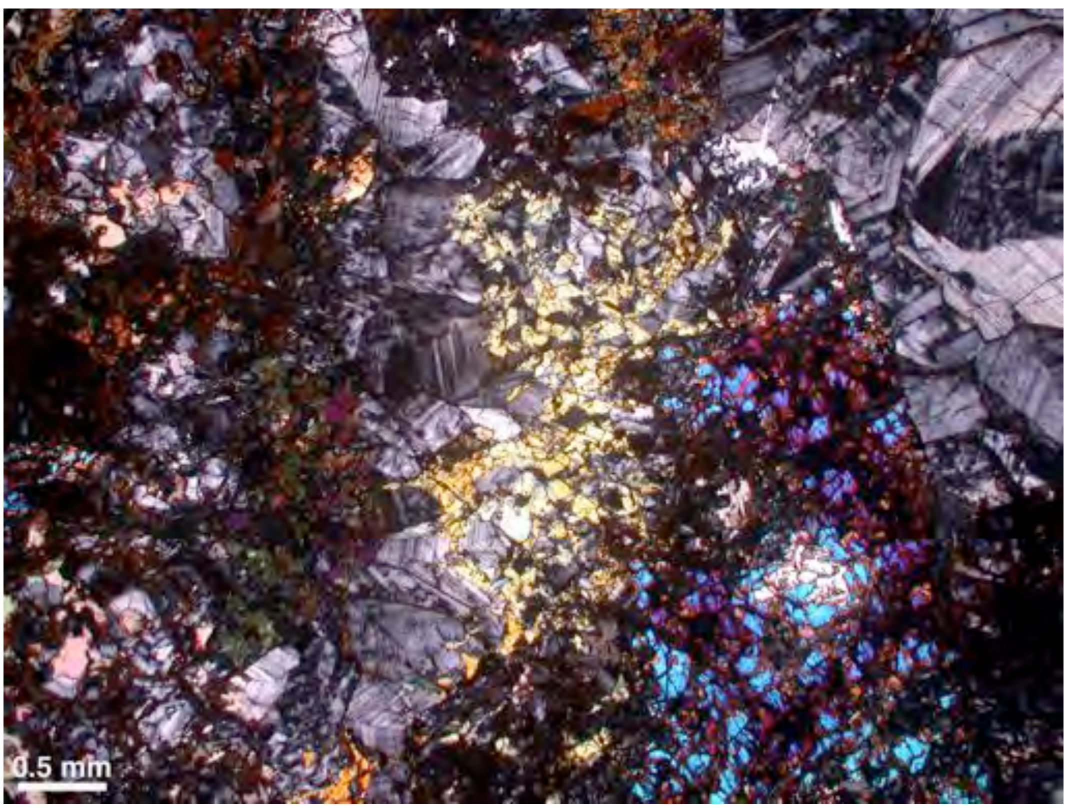


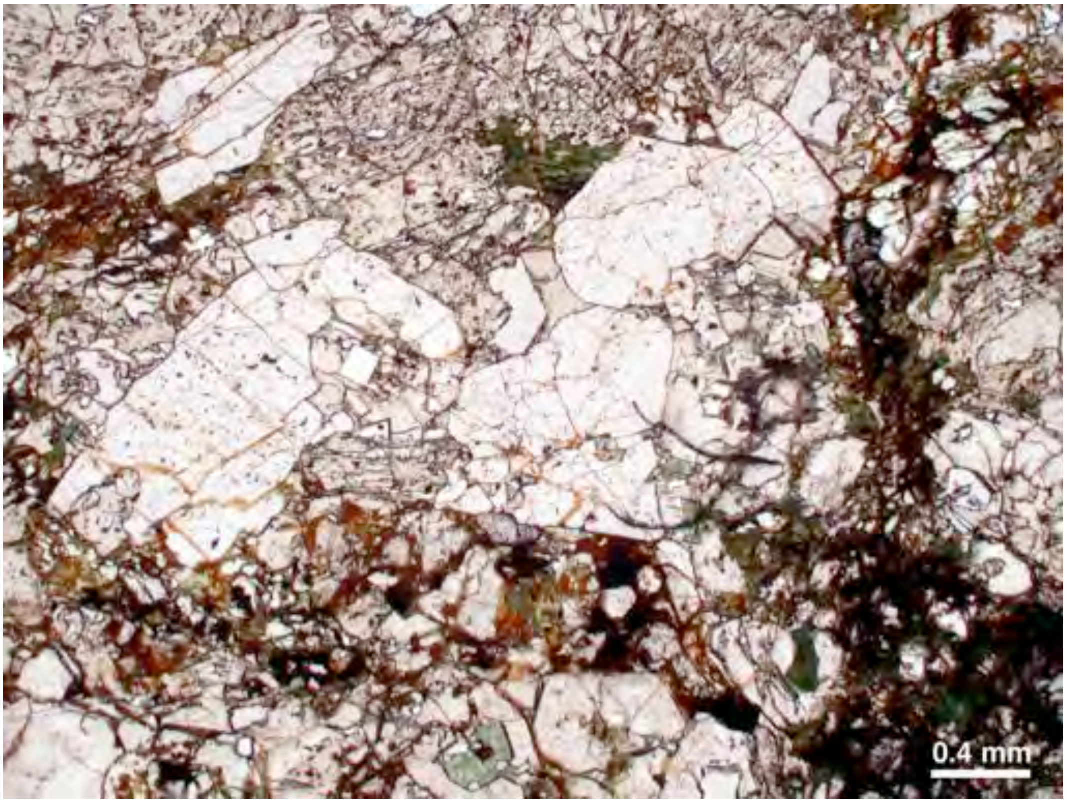
RZHTR006 (1) coarse, zoned grossular (w. apatite inclusion) surrounding altered cpx remnants. F.o.V. 4.50 x 6.00 mm PPL (above) and XPL (below).



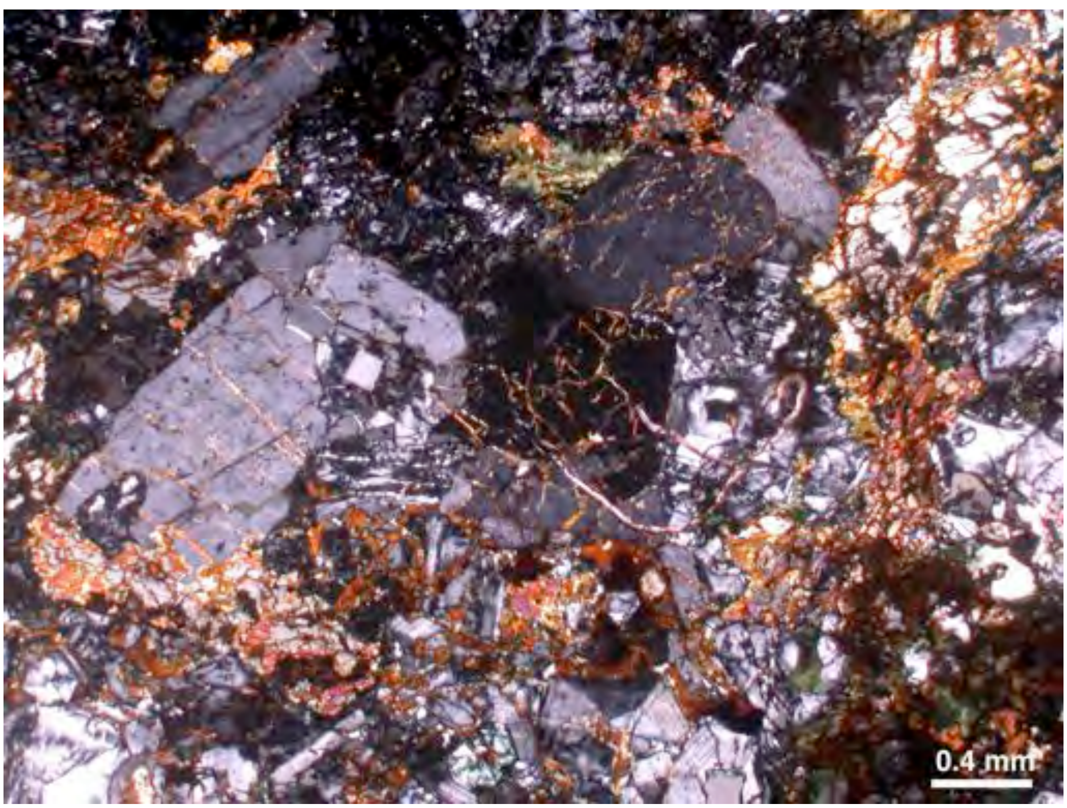


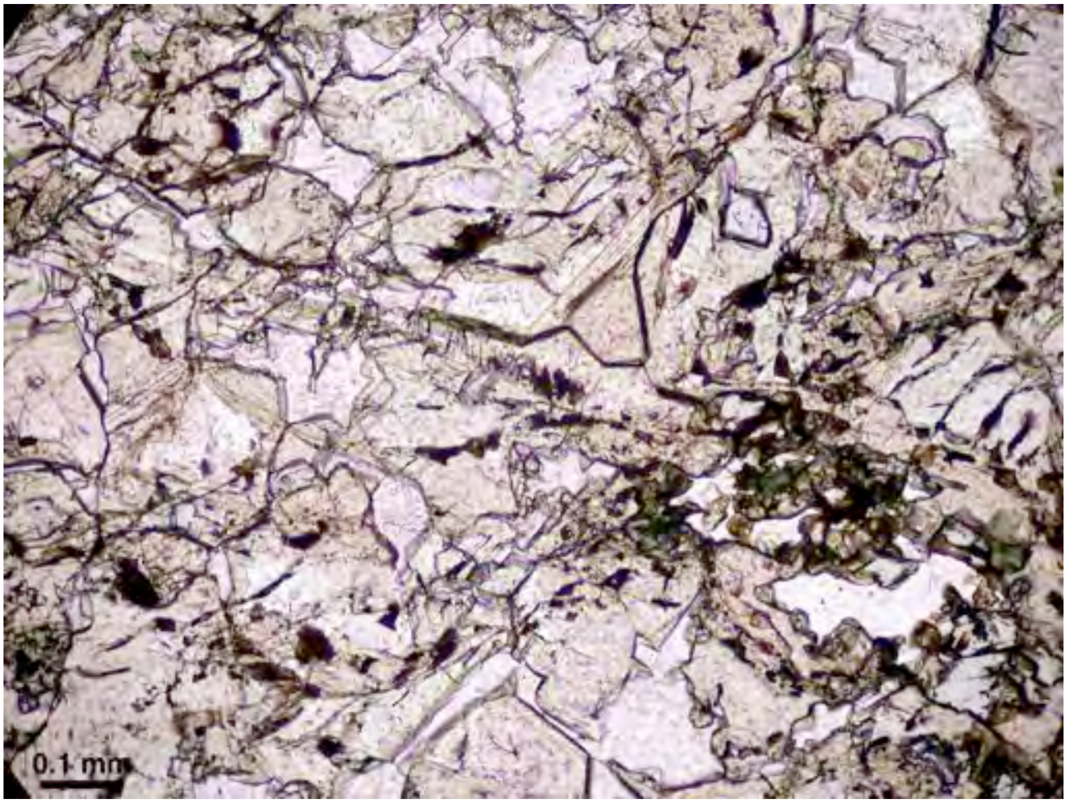
RZHTR006 (2) coarse, zoned grossular intergrown with yellow vesuvianite (??), dark green amphibole and altered cpx. F.o.V. 4.50 x 6.00 mm PPL (above) and XPL (below).



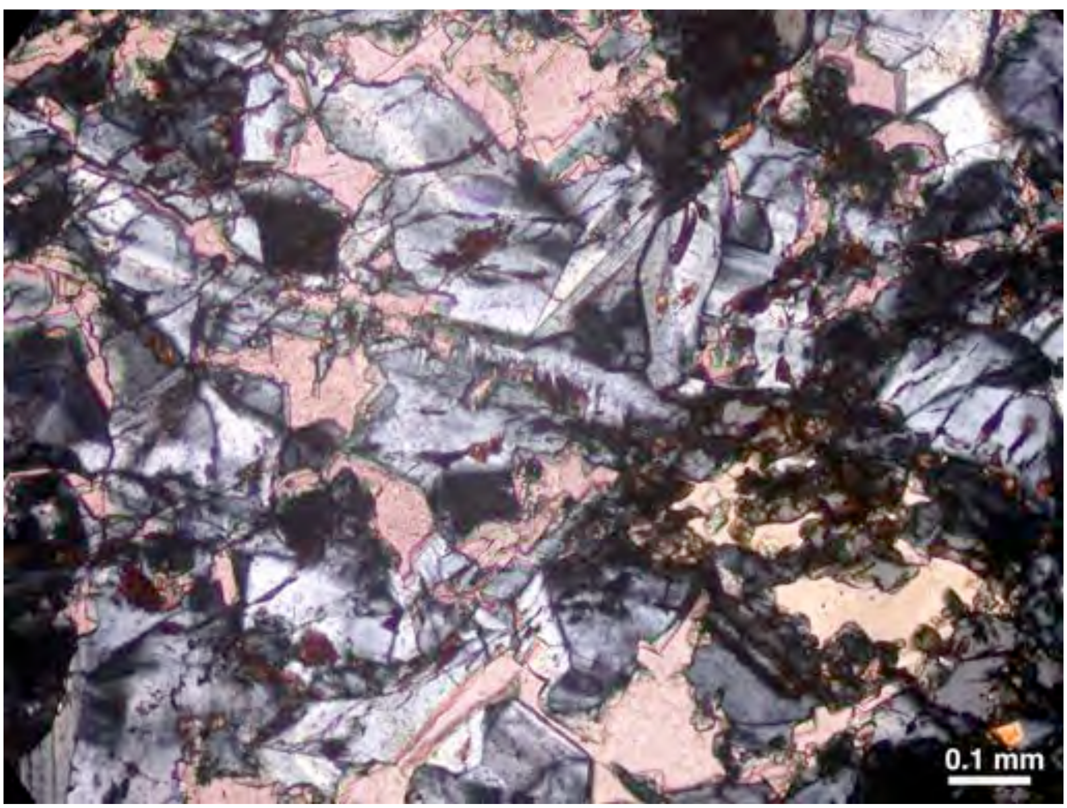


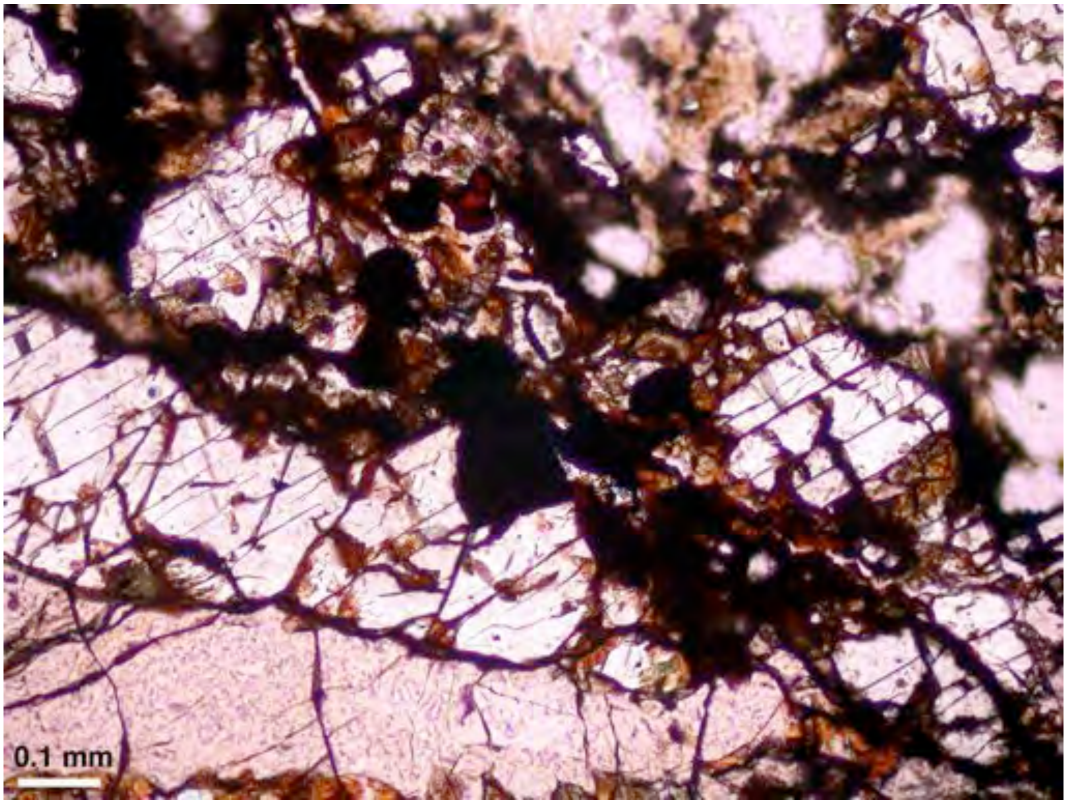
RZHTR006 (3) grossular intergrown with subhedral apatite (clear) green amphibole and Fe-stained cpx remnants. F.o.V. 3.18 x 4.25 mm PPL (above) and XPL (below).



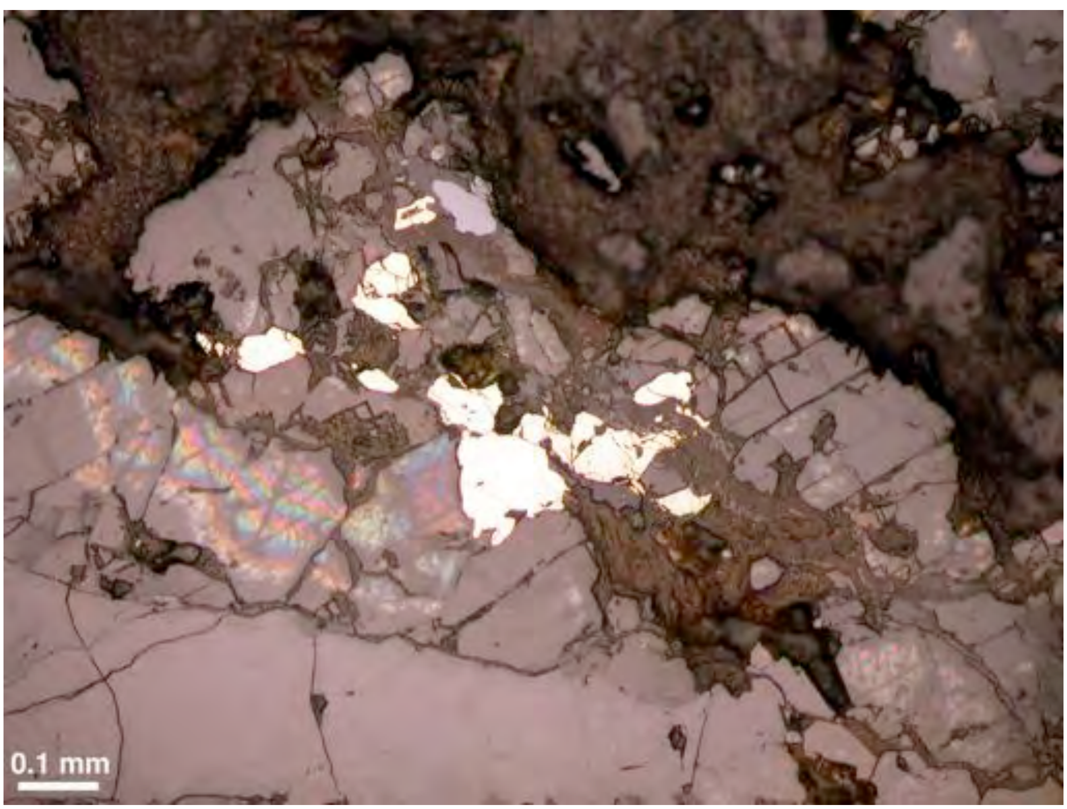


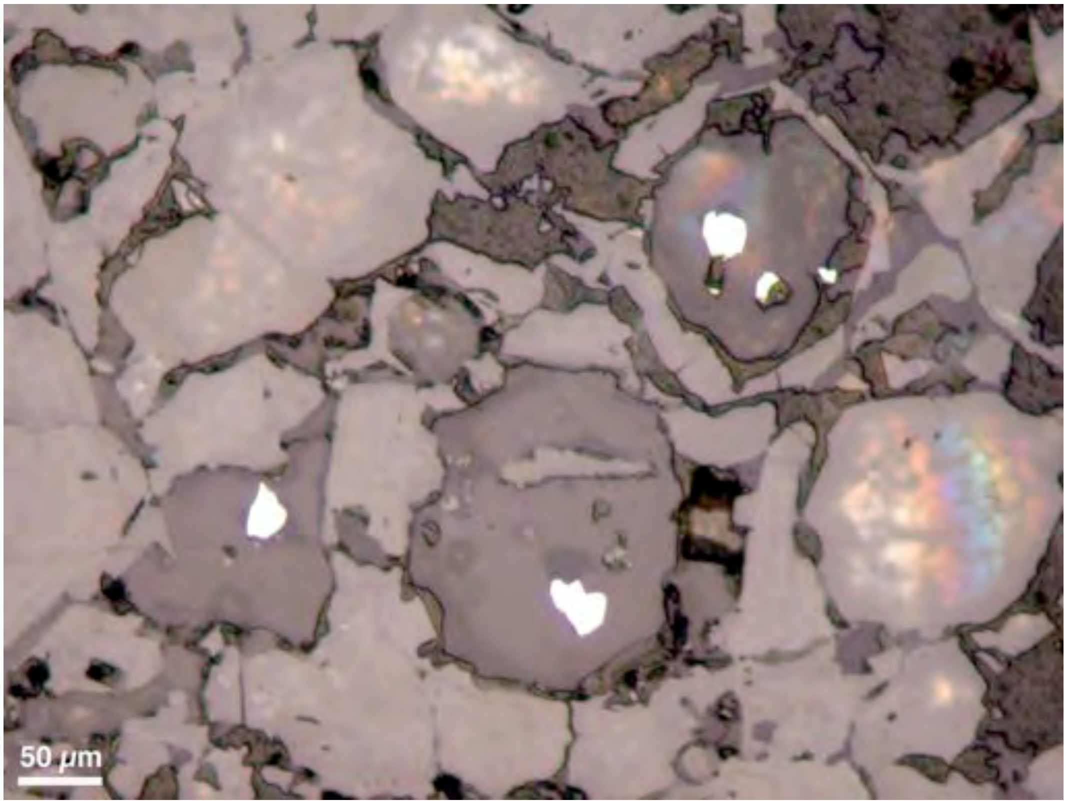
RZHTR006 (4) grossular intergrown with carbonate. F.o.V. 0.99 x 1.32 mm, PPL (above) and XPL (below).



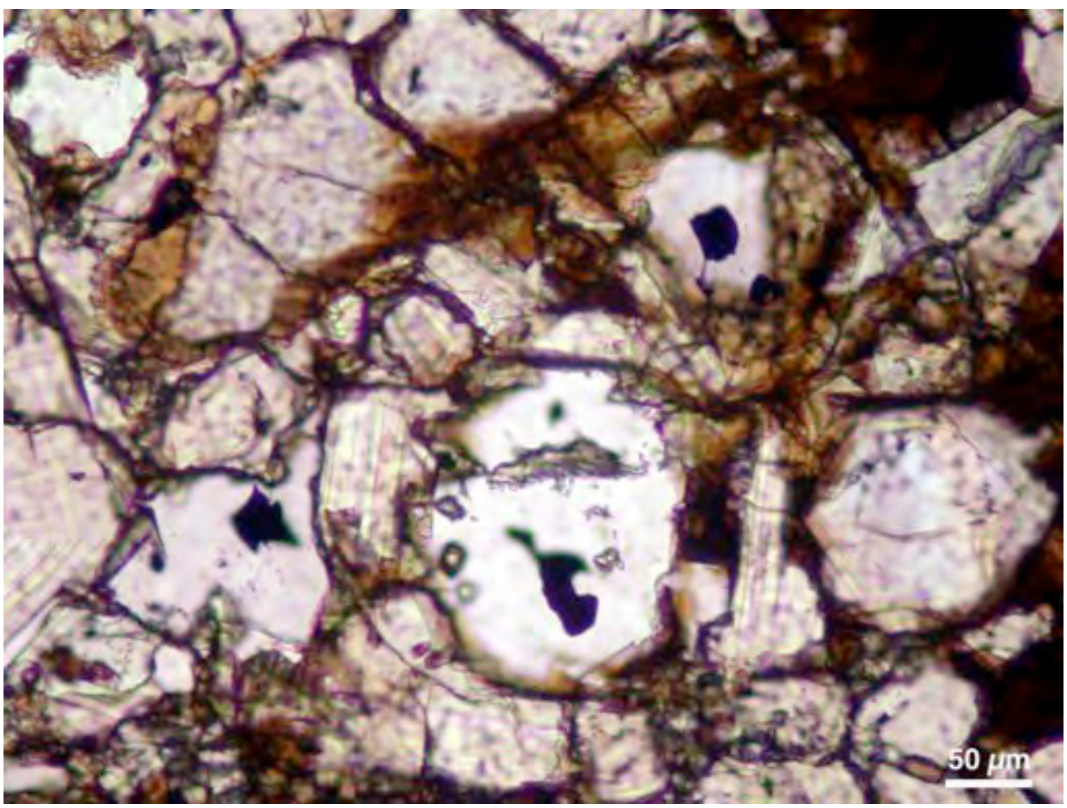


RZHTR006 (6) pyrrhotite in altered cpx intergrown with grossular (pink, bottom. F.o.V. 0.97 x 1.30 mm, PPL (above) and RL (below).





RZHTR006 (8) pyrrhotite blebs in quartz-filled pockets in zoned grossular. F.o.V. 0.47 x 0.63 mm, RL (above) and PPL (below).



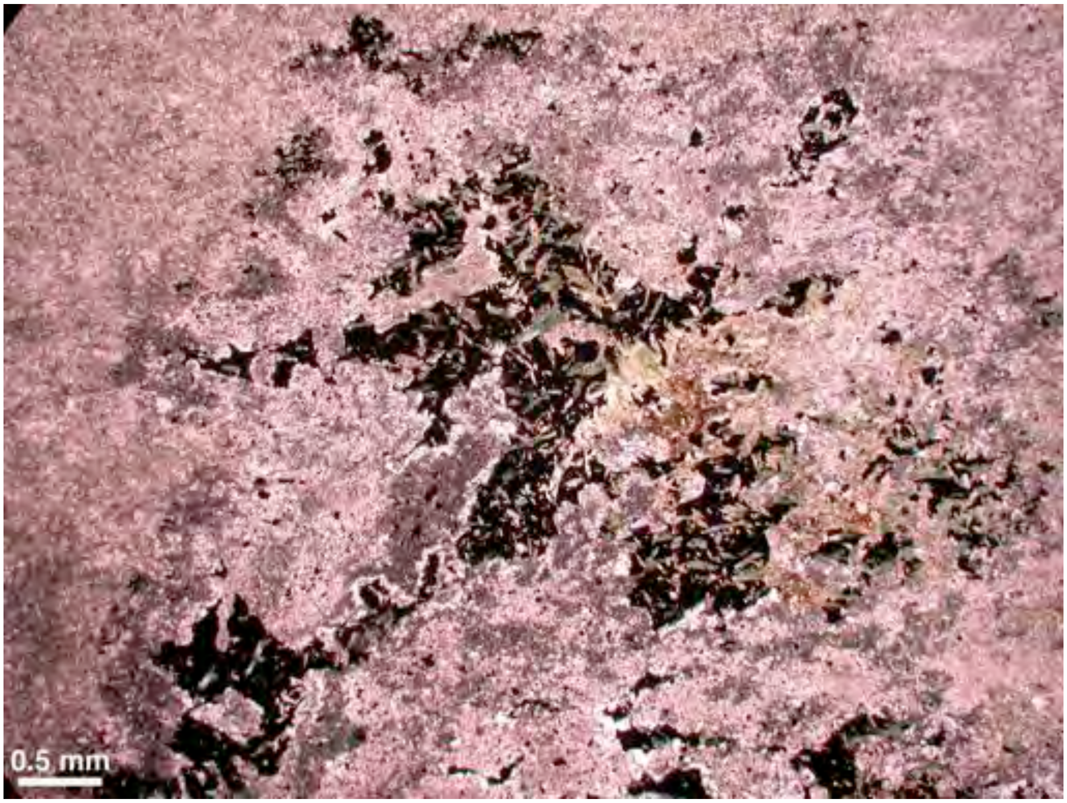
11) RZHTR008 Mineralized skarn PTS

Description: extremely fine grained granular cpx-amphibole-carbonate-qtz-fsp hornfels veined by irregular sulphide-actinolite-clinozoisite-carbonate veins. Large areas in this sections are so fine grained, that minerals cannot be identified optically. Where grain sizes increase slightly - towards the veins, which show diffuse contacts to the host rock - the constituent minerals are very fine granular cpx, green actinolite, and trace titanite in anhedral carbonate matrix. The sulphides are concentrated in the center of the veins, which are very irregular in thickness and shape. Sulphides consist of anhedral masses of pyrrhotite intergrown with cpy and trace sphalerite. They enclose fine grained euhedral cpx or actinolite crystals in the core of the veins and occur as emulsion-textured droplets in the adjacent host rock. Rimming the sulphides is clinozoisite together with quartz, K-fsp and colourless amphibole (tremolite ?). Rare anhedral pale brown allanite and rare phlogopite/sericite is intergrown with sulphides and MgFe-silicates in veins. Modal amounts are almost impossible to give for the major minerals due to the fine grained nature of the sample.

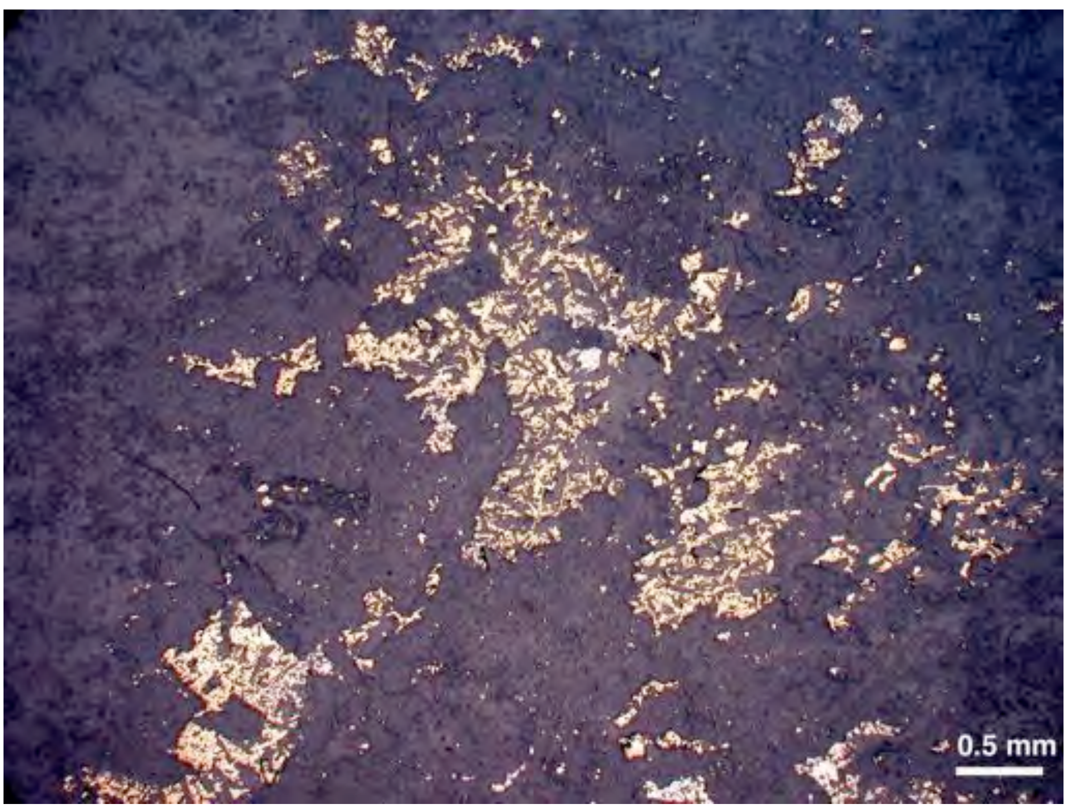
Mineral	Type	Size	Modal	Comment
Clinopyroxene	major	≤250 μm	50%	colourless, fine granular semi-massive
Amphibole	major	<0.4 mm	10%	blue green intergr. w. cpx
Carbonate	major	<1.5 mm	20%	poikilitic intergr.with MgFe-silicates
Clinozoisite	minor	≤0.3 mm	1%	anh., rimming sulphides in vein
Titanite	accessory	≤ 35 μm	1%	disseminated in cpx-act-carb hornfels
Quartz	matrix	≤ 0.4 mm	*2%*	interstital to MgFe-silicates in hornfels
Plagioclase	matrix	75 μm	tr.	euh. grains in quartz in matrix
K-feldspar	minor	≤ 0.4 mm	*1%*	anh, rimming sulphides
Pyrrhotite	mineralization	≤0.6 mm	*8%*	anh. intergrown w. cpy, MgFe-silicates
Chalcopyrite	mineralization	≤350 μm	*7%*	anh. intergrown w. po
Sphalerite	mineralization	≤60 μm	tr.	translucent red, anh. intergrown w. po
Allanite	trace	0.3 mm	tr.	yellow brown, intergrown w. sulphides

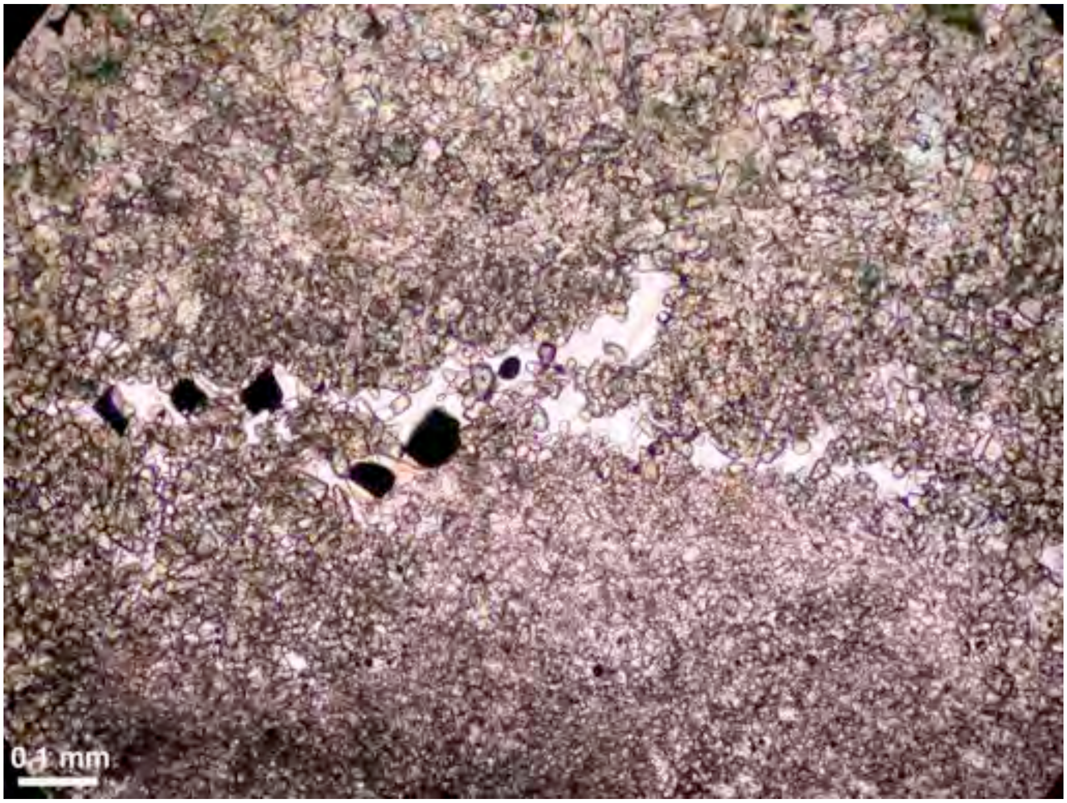
Clinopyroxene is colourless and very fine granular to stubby grains, **actinolite** is bluish green pleochroic and acicular to rhomb-shaped. **K-fsp** and **quartz** are anhedral surrounding sulphides, quartz also occurs as matrix of fine granular MgFe-silicates. **Carbonate** forms coarse poikilitic patches enclosing granular cpx and amphibole. **Titanite** occurs as very very fine grained euhedral rhombs intergrown w. cpx and amphibole. **Clinozoisite** is rimming sulphides.

Pyrrhotite is anhedral and poikilitic enclosing cpx or actinolite and slightly altered in some areas, **chalcopyrite** is also anhedral and intergrown with pyrrhotite.

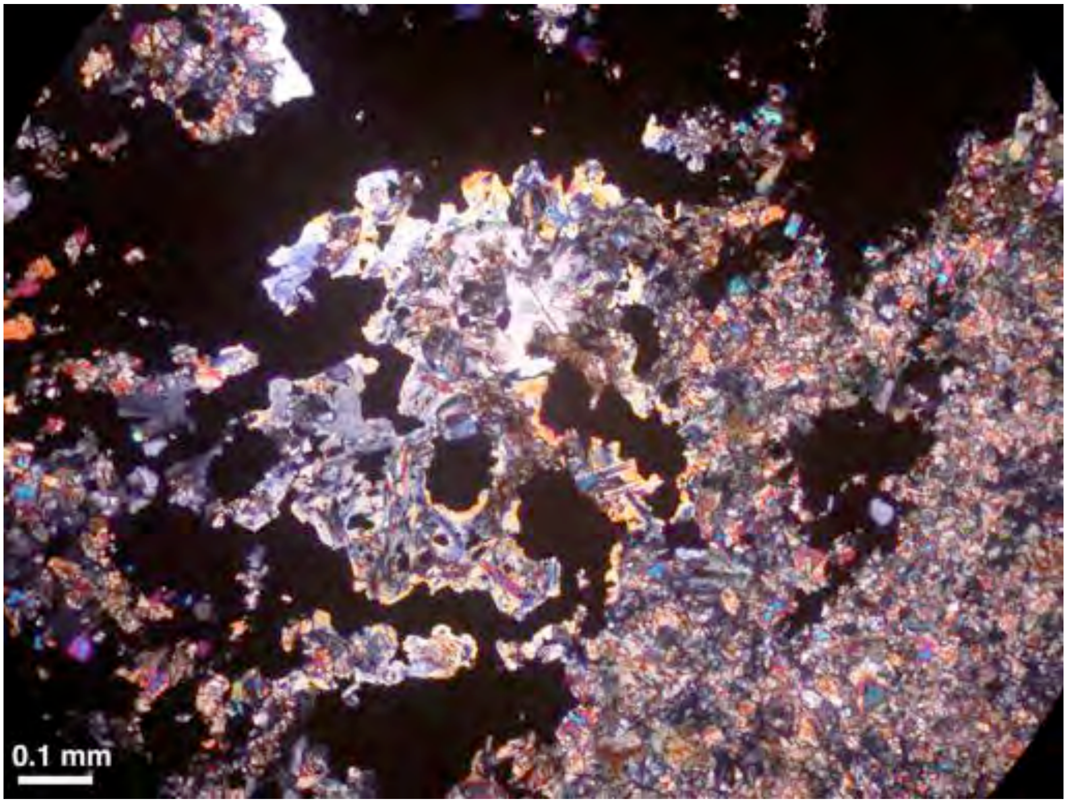


RZHTR008 (1) euhedral green actinolite crystals enclosed in cpy permeating fine grained cpx-rich host rock. F.o.V. 4.50 x 6.00 mm, PPL (above) and RL (below).

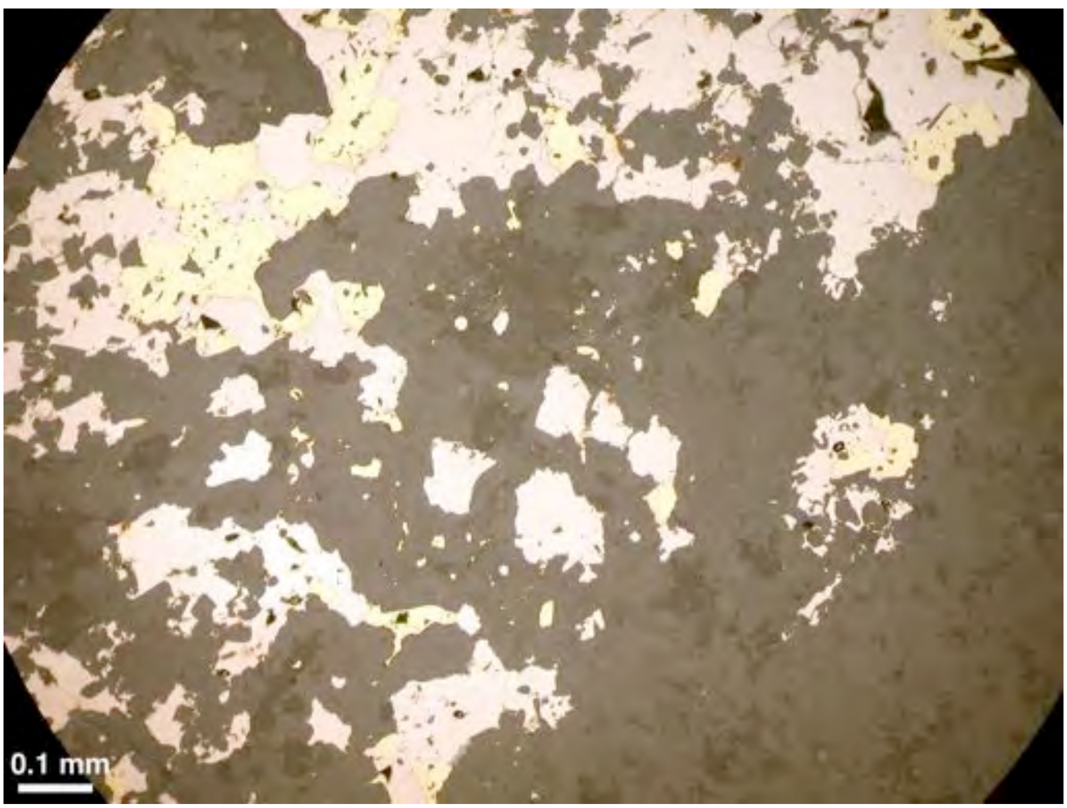


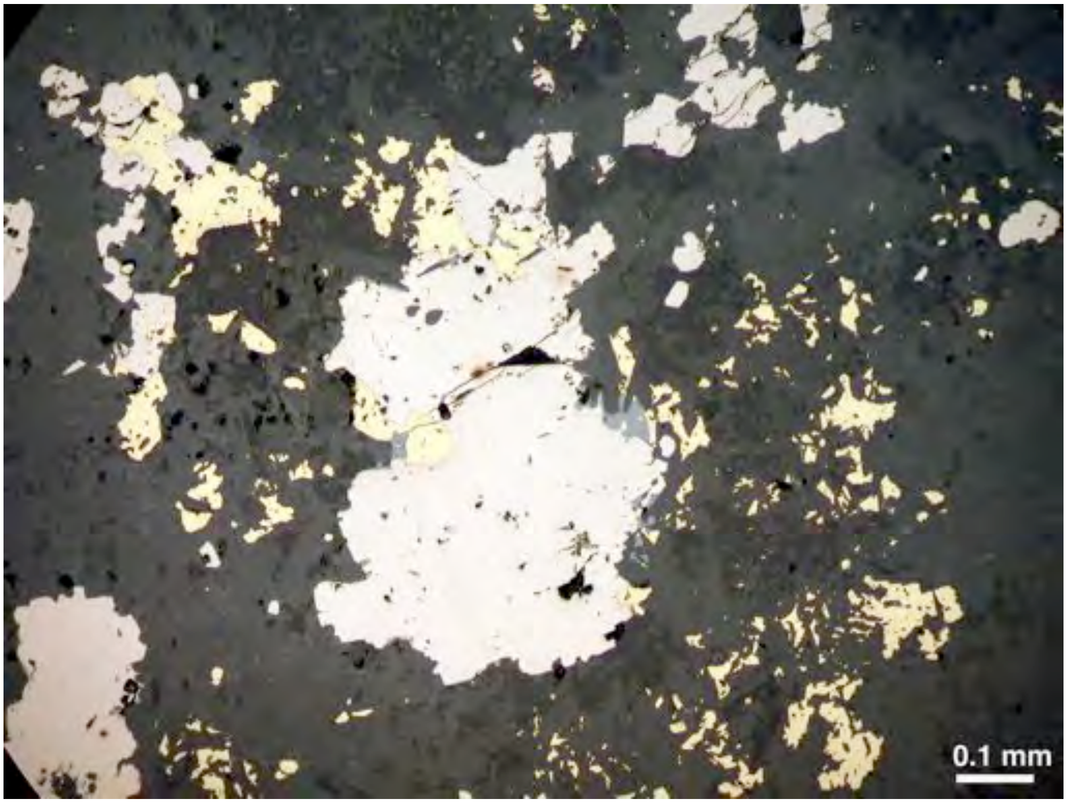


RZHTR008 (2) fine granular cpx intergrown with green actinolite and a few sulphide grains in carbonate pocket. F.o.V. 0.99 x 1.32 mm, PPL (above) and XPL (below).

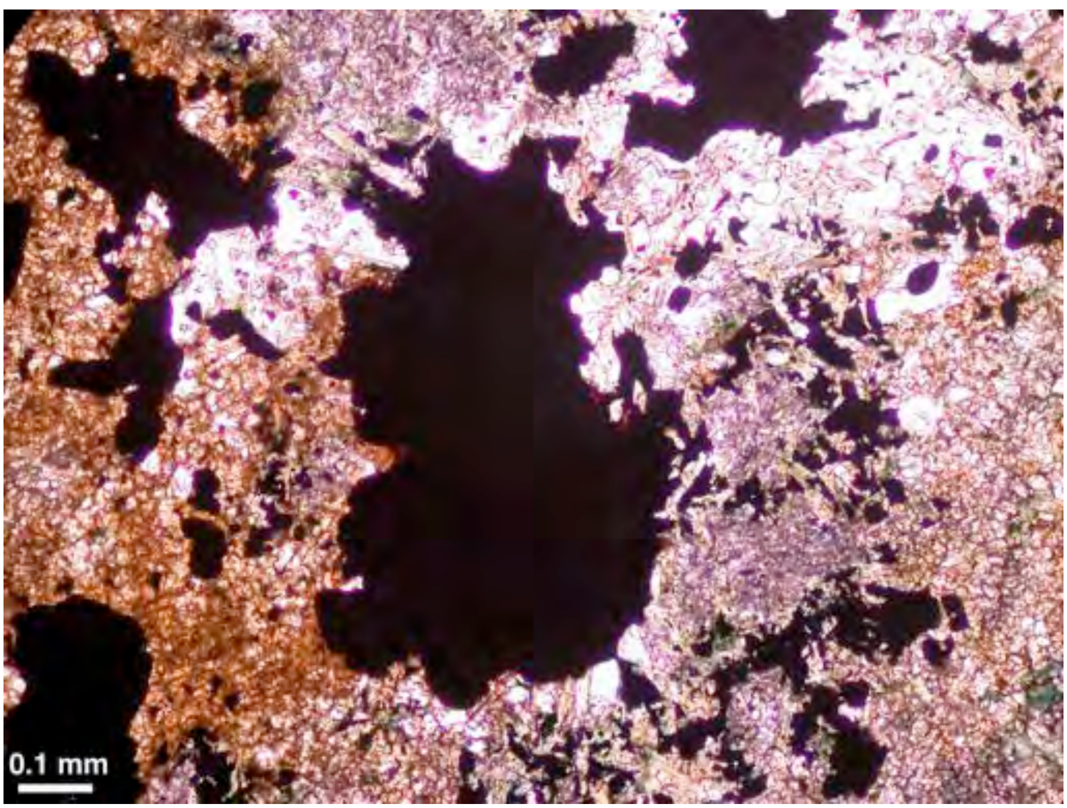


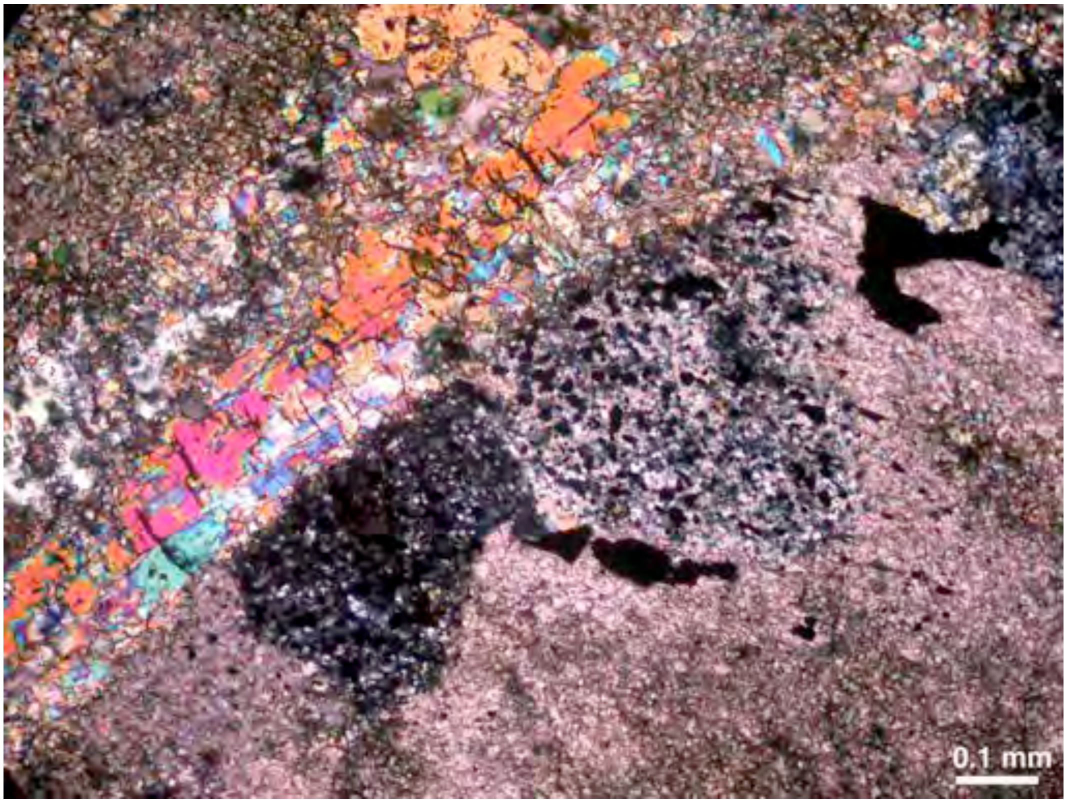
RZHTR008 (3) clinozoisite rimming sulphides (pinkish cream pyrrhotite and yellow chalcopyrite) and intergrown with bladed actinolite grading into fine granular cpx. F.o.V. 1.04 x 1.38 mm, XPL (above) and RL (below).



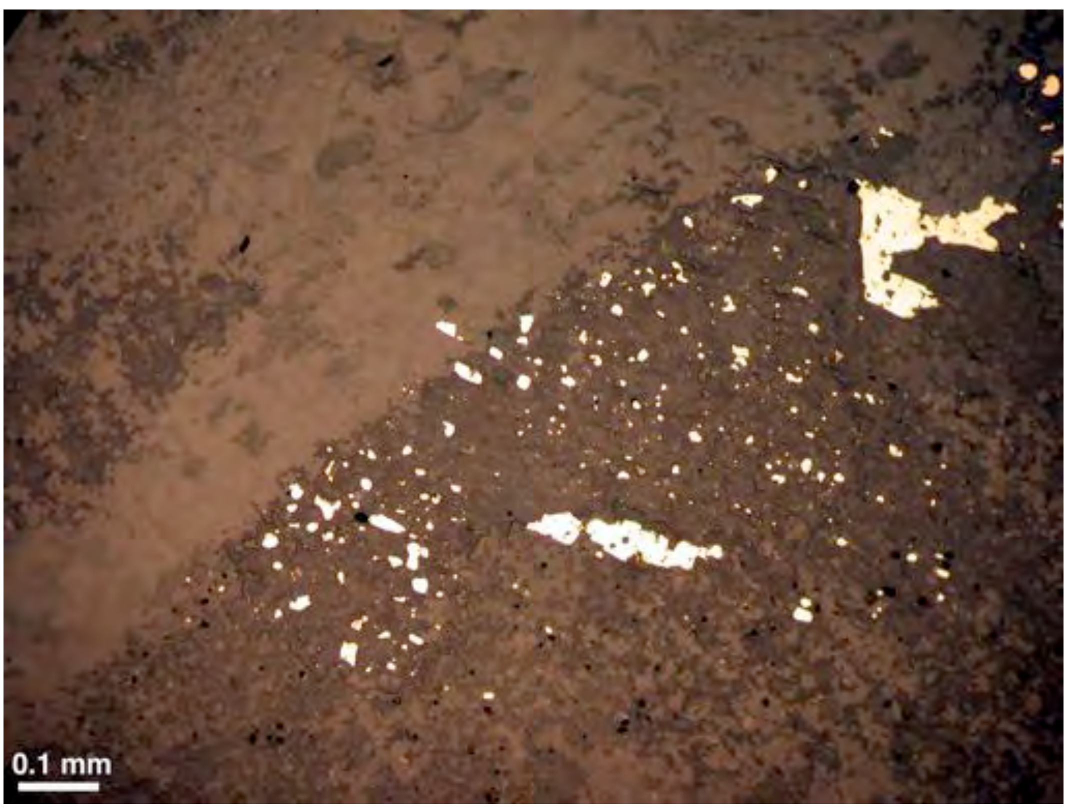


RZHTR008 (4) minor sphalerite (medium grey in RL, deep red transulcent in PPL)) intergrown with pinkish cream pyrrhotite and yellow chalcopyrite in a matrix of clinozoisite, bladed actinolite and fine granular (Fe-stained) cpx. F.o.V. 1.00 x 1.33 mm, RL (above) and PPL (below).





RZHTR008 (5) emulsion textured sulphides in fine granular cpx-rich matrix bordering on zone with coarser cpx. F.o.V. 0.99 x 1.32 mm, XPL (above) and RL (below).

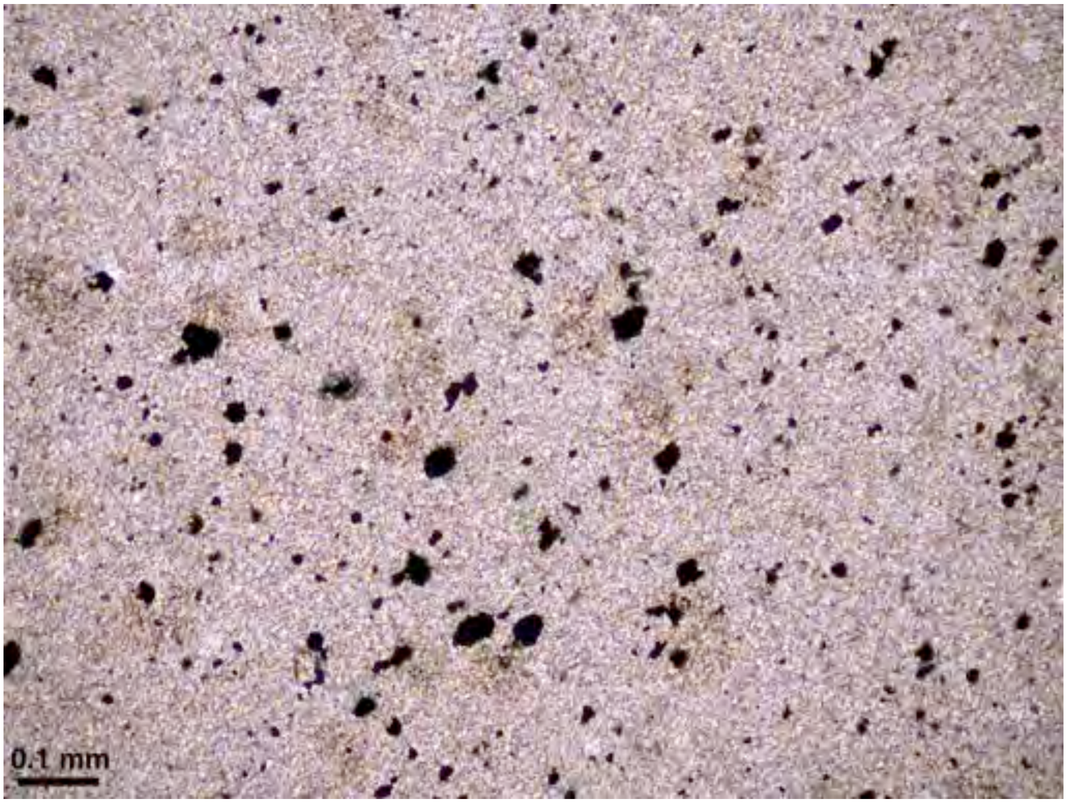


12) RZHTR010 Skarn veins in Hornfels TS

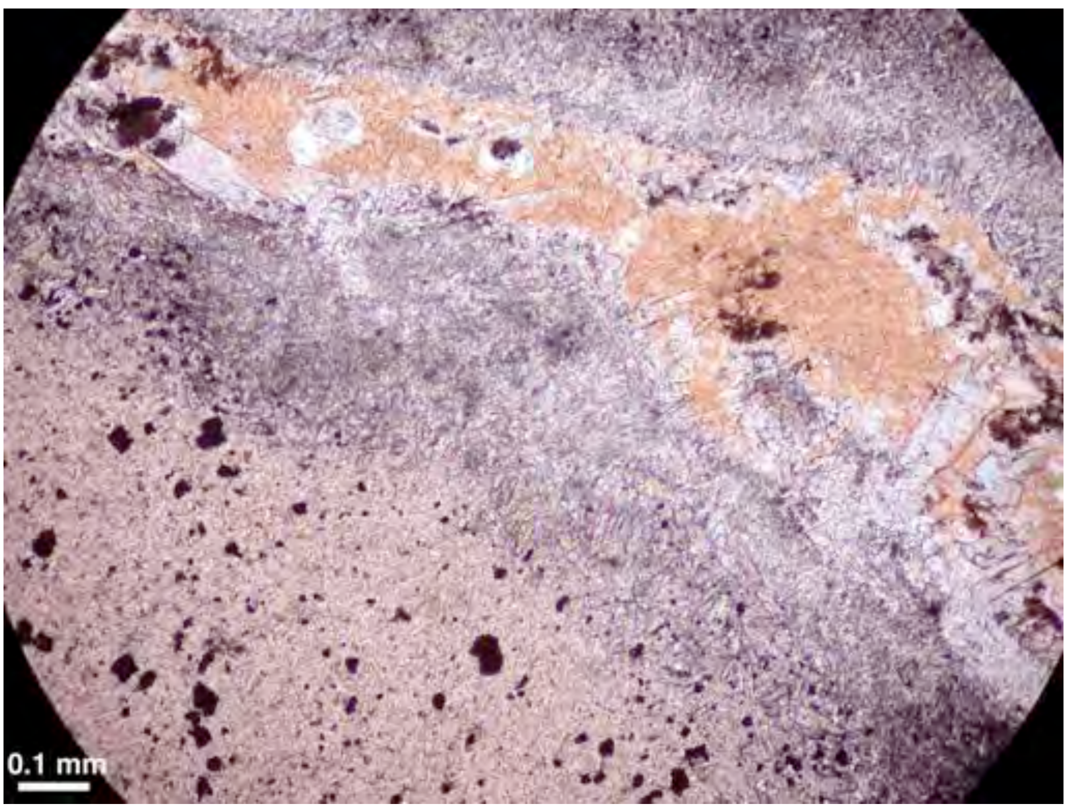
Description: extremely fine grained pale orange brown equigranular rock consisting of pale orange biotite, K-feldspar, tremolite-actinolite and abundant finely disseminated opaques. The rock is invaded by a branching cpx-qtz-sulphide-vein cutting diagonally through the section, with smaller phlogopite-actinolite-filled off-shoots. The main vein has thick but extremely fine grained reaction selvages which appear dark brownish grey due to the small grain size. Beyond these selvages very fine grained porphyroblastic tremolite-actinolite can be identified in the host rock (it probably forms a major component of the host rock but at smaller, less distinguishable grain sizes). "Coarser" actinolite can be found intergrown with fine grained orange biotite and aggregates of very fine grained brown translucent titanite (?) and opaques in the off-shoot veins, which do not show dark reaction selvages around them. Abundant very fine grained opaque knots are disseminated in the matrix of the host rock and anhedral opaques (probably sulphides, most likely cpy) occur in the cpx-qtz-vein where they have accumulated at the two narrowest portions of the vein. The sulphides in both the main vein and the actinolite-phlogopite offshoots enclose fine gr. euhedral actinolite crystals. K-fsp in the matrix could only be identified due to staining of the cut-off, it occurs in grain sizes too small to identify in the host rock matrix.

Because of the small grain sizes all modal estimates are guesses only.

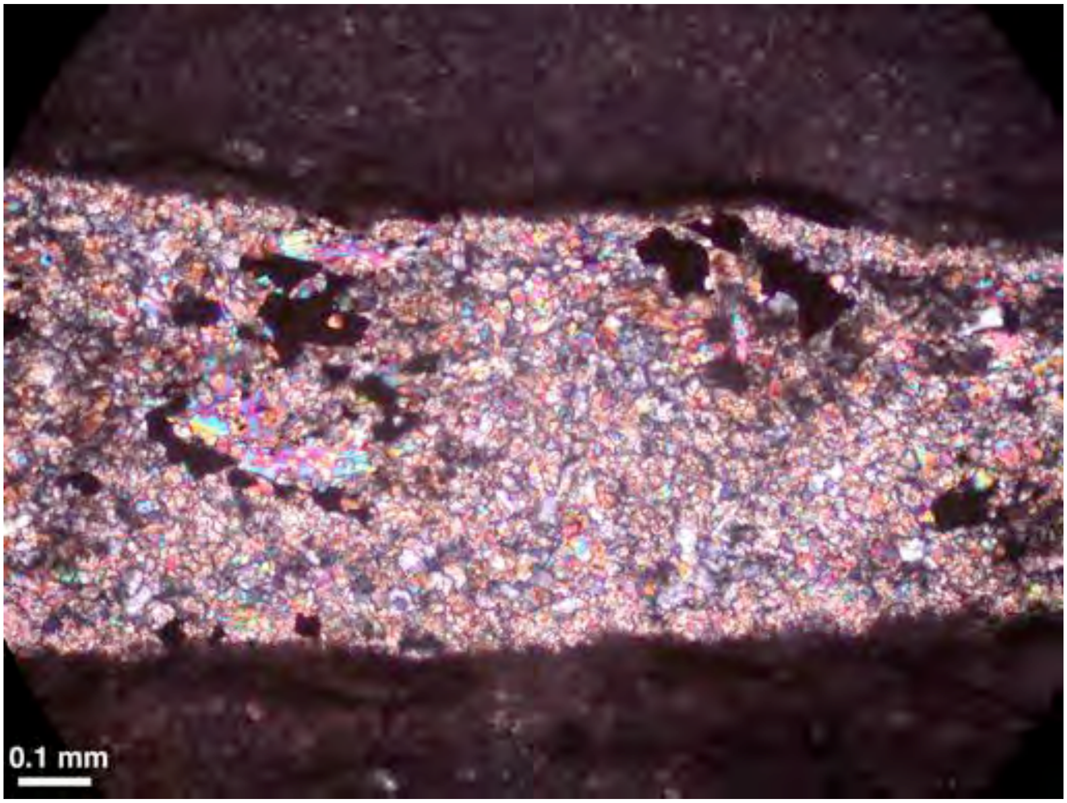
Mineral	Type	Size	Modal	Comment
Biotite/Phlog.	major	≤ 50 µm	30%	major component of host, off-shoot veins
K-feldspar	major	≤ 1 µm	20%	major component of host rock
Actinolite	major	<0.3 mm	20%	both in biotite veins and host matrix
Clinopyroxene	in major vein	≤0.2 mm	7-8%	fine granular, semi-massive, colourless
Quartz	in major vein	≤ 0.1 mm	1-2%	anh., interstitial to cpx in veins
Opaques	minor	≤ 50 µm	5%	disseminated in host rock
Sulphides	mineralization	≤ 1 mm	tr.	anh. in cpx-qtz-act vein
Titanite ?	minor	≤ 15 µm	tr.	fine gr. brown translucent aggregates
??	vein selvages	< 1µm	15%	brownish grey masses



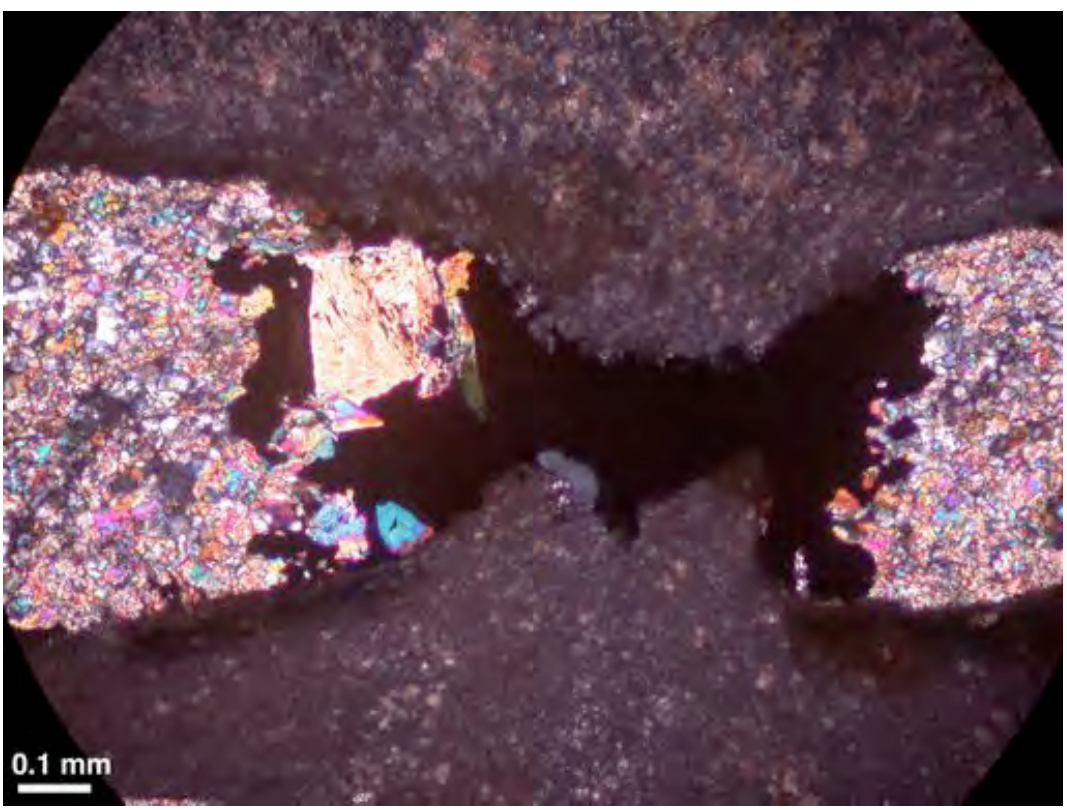
RZHTR010 (1) extremely fine grained biotite-Kfsp-qtz-actinolite-matrix with disseminated opaques. F.o.V. 0.97 x 1.30 mm, PPL (above)



RZHTR010 (3) phlogopite-tremolite-filled veinlets branch off from major cpx vein. Abundant tremolite marks transition to host matrix. F.o.V. 0.97 x 1.30 mm, PPL (above)



RZHTR010 (4) major vein filled with fine granular cpx and minor qtz and opaques. Vein is rimmed by extremely fine garined impenetrable brownish grey selvages(above); (5) sulphides accumulate at narrowest part of vein (below) and contain “coarser” tremolite-actinolite. Both F.o.V. 1.04 x 1.38 mm, XPL

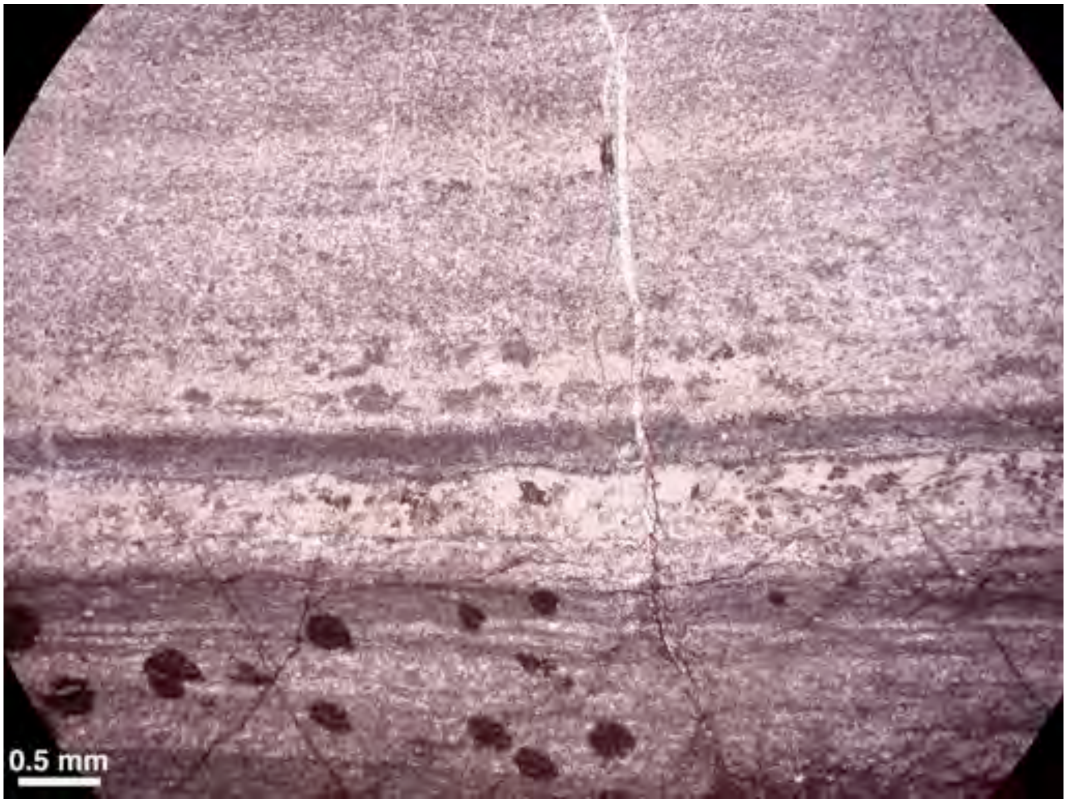


13) RZHTR013 Calc-silicate rock/Skarn TS

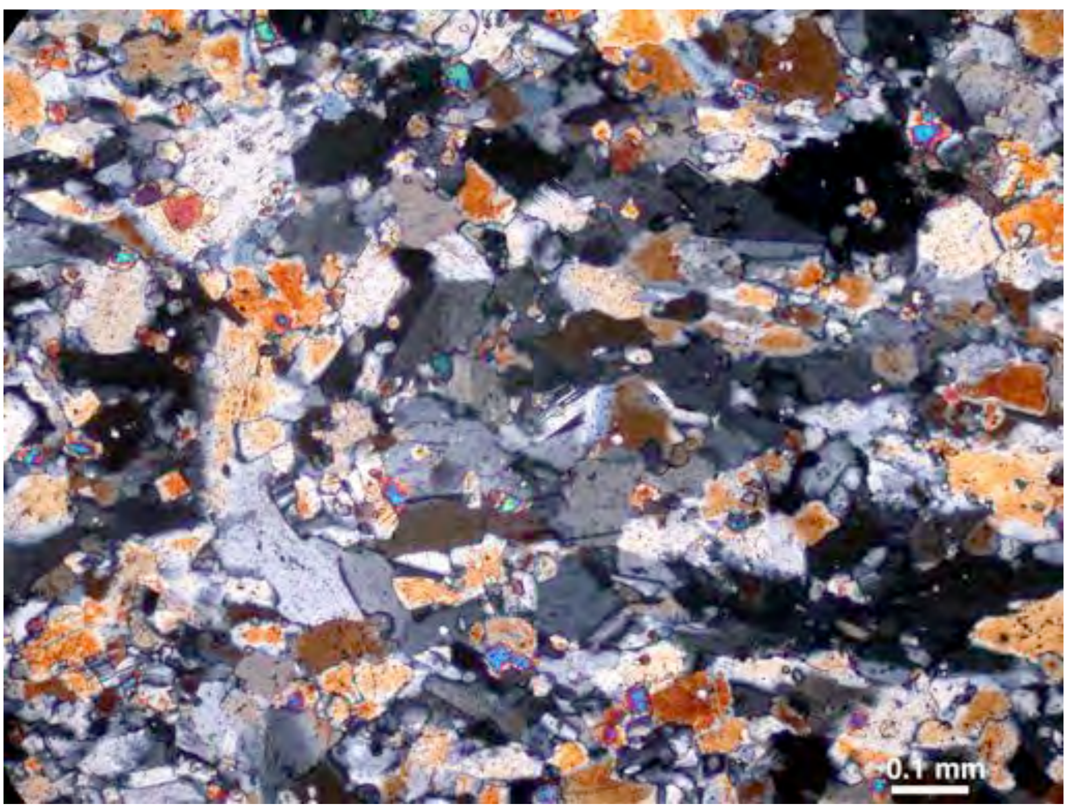
Description: very fine grained horizontally banded greyish white calc-silicate rock with a top portion consisting of coarser brown grossular. The banding in the light coloured portion of the rock is due to varying proportions and grain sizes of granular clinopyroxene, bladed wollastonite, tremolite (?), fine grained plagioclase and carbonate. The bands are not perfectly parallel but tapered and some are off-set by near vertical fractures filled with bladed wollastonite, cpx, fsp or garnet. Grey bands consist of extremely fine granular semi-massive clinopyroxene, whereas the white bands consist of coarser wollastonite, tremolite (?) and trace plagioclase dusted by fine granular cpx and trace titanite. One band shows diffuse brown spots, which could not be further identified because they consisted of very fine grained material. Tiny opaque inclusions were only found in a small wedge of tuffaceousa material at the bottom left of the section.

Grossular-andradite garnet forms euhedral grains that grade into massive layers of garnet which enclose coarser wollastonite replaced by calcite and abundant granular cpx. Clinopyroxene is coarsest in the garnet rich portion and extremely fine grained otherwise, particularly concentrated in the grey bands and merely dusting the whit bands. Wollastonite (?) forms the bulk of the white bands, where it is intergrown with tremolite and dusted by cpx. It is particularly coarse intergrown with garnet and filling vertical fractures. Tremolite occurs mainly in one central white band with fine grained plagioclase. It may be part of some of the very fine grained bands. Minor vesuvianite is intergrown with garnet.

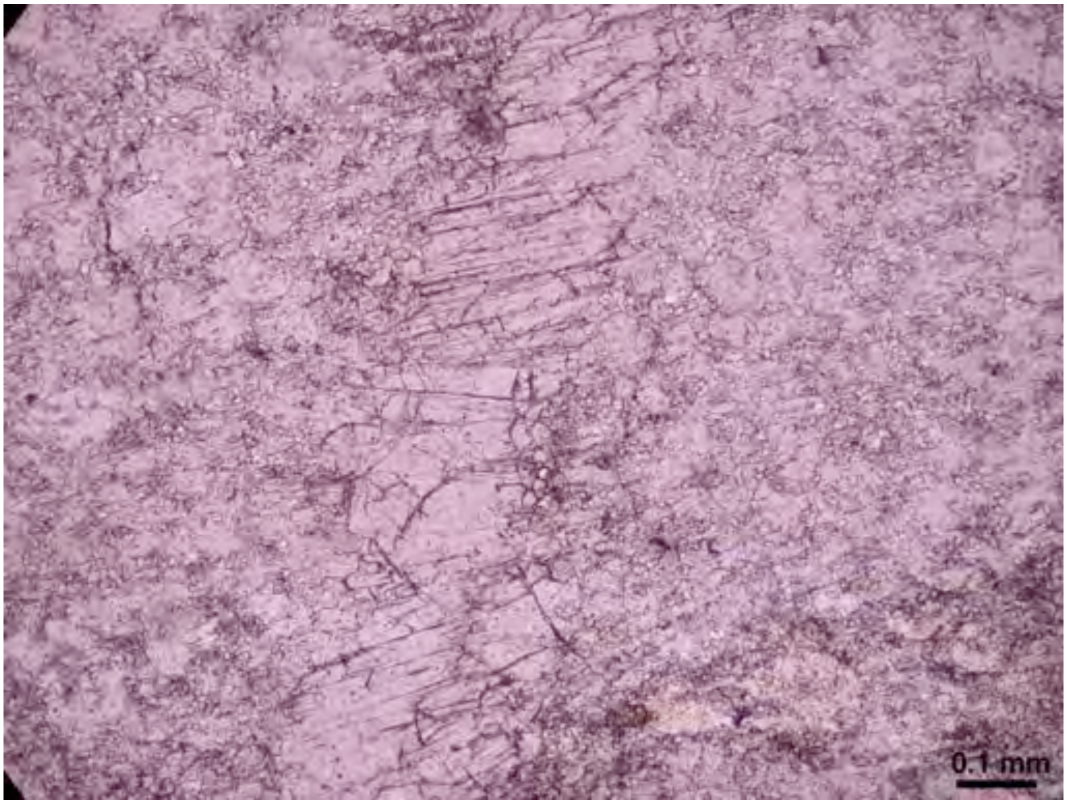
Mineral	Type	Size	Modal	Comment
Grossular-Andradite	major	≤ 2 mm	20%	euhedral to almost massive at top of TS
Cpx	major	≤ 75 µm	25%	very fine granular
Wollastonite	major	≤ 2 mm	30%	in white bands and fractures
Tremolite	major	< 0.4 mm	20%	in white bands w. plagioclase
Plagioclase	minor	≤ 0.1 mm	1%	fine gr., in white bands with tremolite
Calcite	minor	≤ 2 mm	3%	anh. replacing wollastonite in grt band
Titanite	trace	≤ 100 µm	tr.	anh. disseminated in trem-plag-cpx
Vesuvianite	trace	≤ 200 µm	tr.	pale yellow in garnet
Quartz	trace	≤ 60 µm	tr.	in small tuffaceous wedge



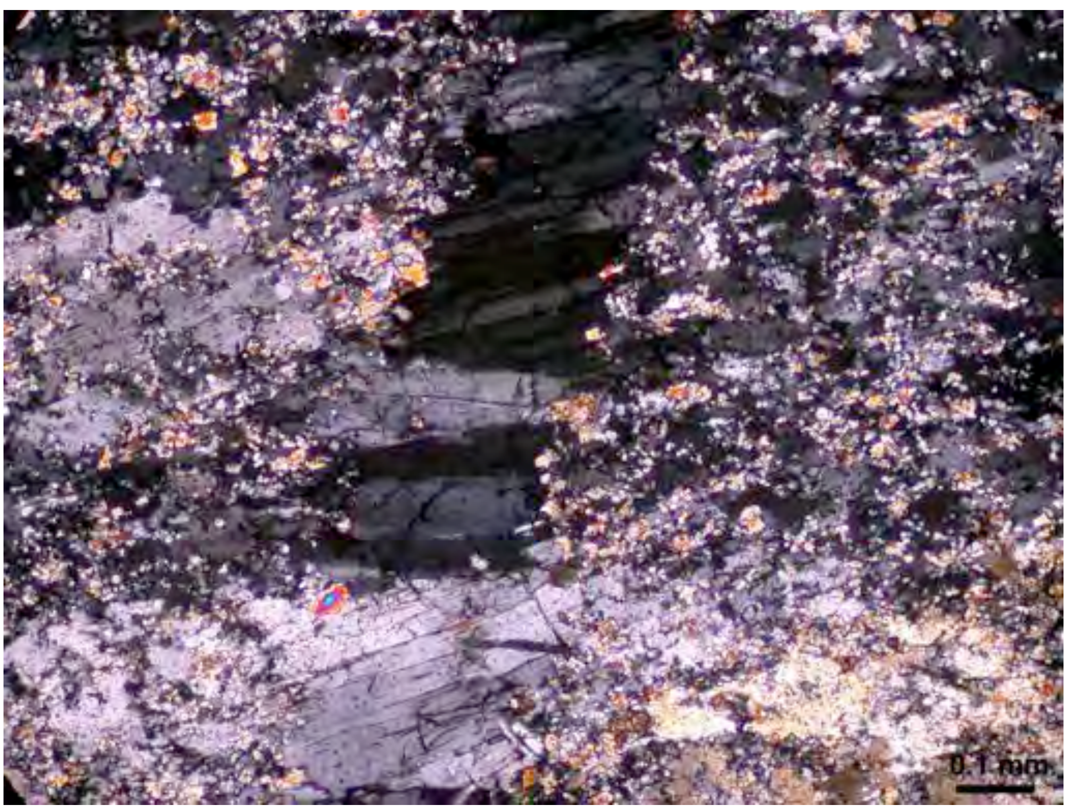
RZHTR013 (4) strongly banded lower portion of section with conspicuous brown spots and subvertical fissures/veinlets. F.o.V. 4.65 x 6.37mm PPL (above)



RZHTR013 (2) colourlss amphibole(?) and minor plagioclase in light coloured band. F.o.V. 0.97 x 1.30 mm PPL (above)



RZHTR013 (2) wollastonite filling fissure and forming major mineral of a pale coloured band dusted with fine granular cpx. F.o.V. 0.97 x 1.30 mm, PPL (above), XPL (below)

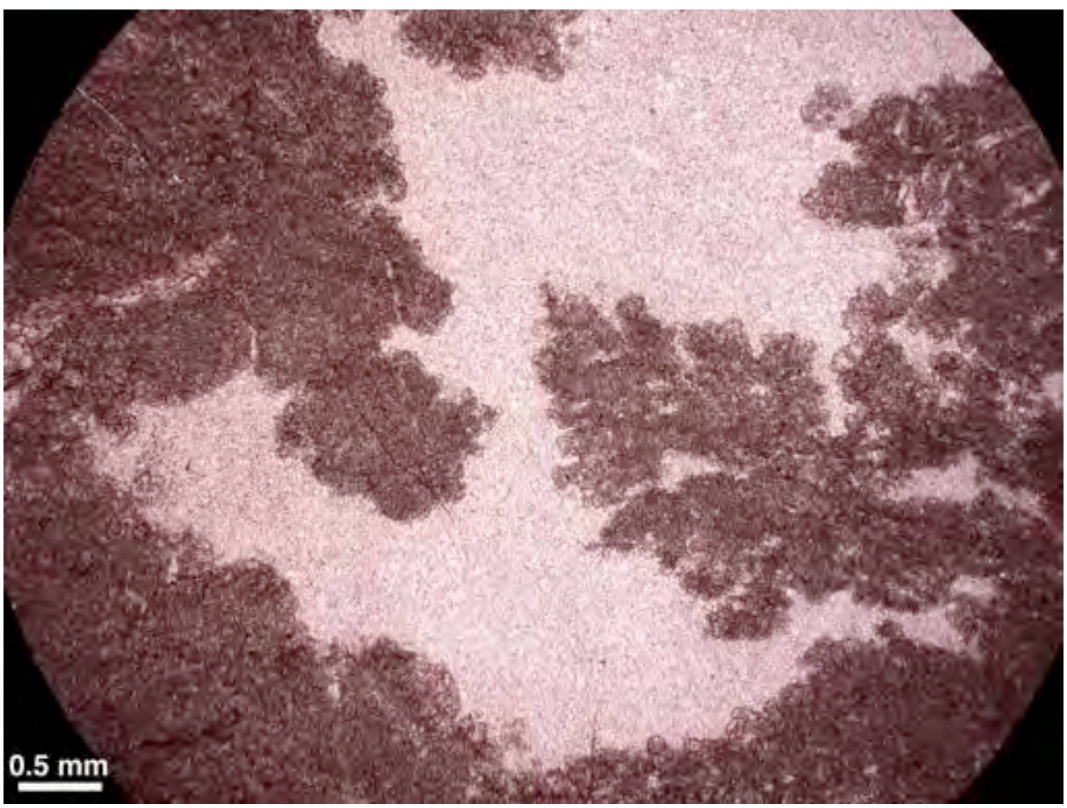


RZHTR013 (3) garnet-rich bands with reddish euhedral grossular-andradite enclosing carbonate replacing UM all dusted fine granular cpx. F.o.V. 4.55 x 6.07 mm PPL (above), XPL (below)

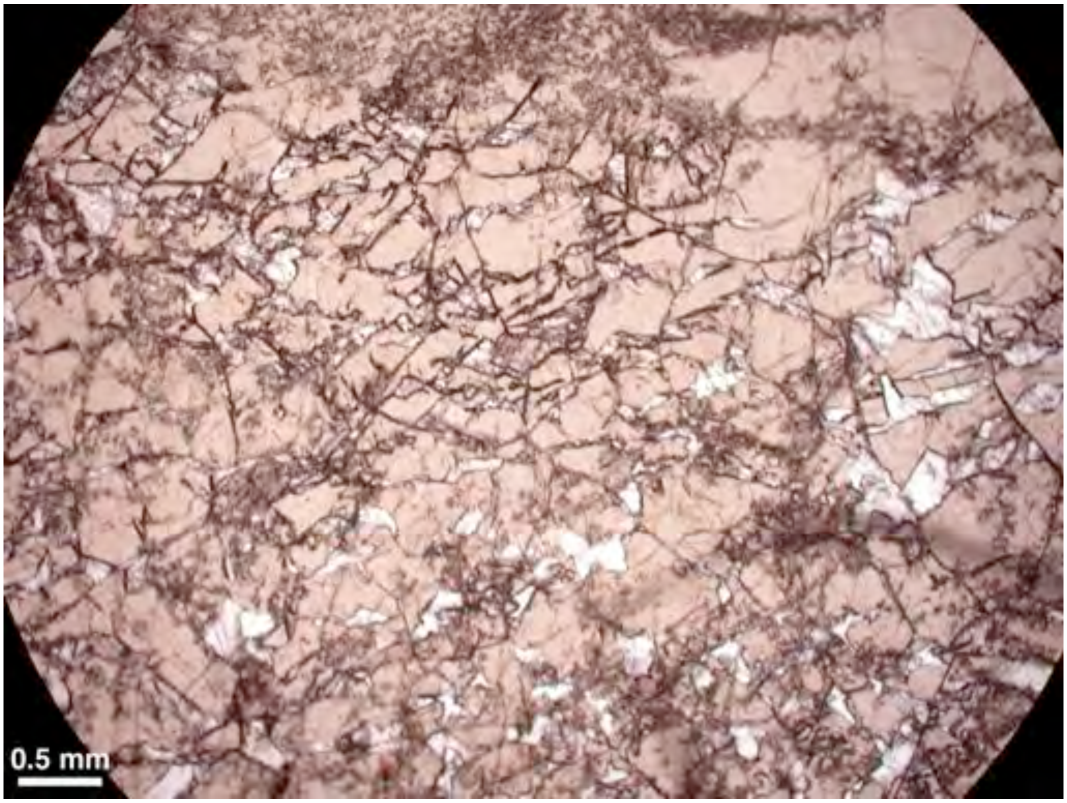
14) RZHTR015 Skarn TS

Description: this rock consists predominantly of brown andradite-grossular garnet which occurs as pale reddish brown euhedral poikilitic grains coalescing into coarse masses alternating with very fine grained areas that are intergrown with fine granular cpx. The coarser garnet grains and masses are intergrown with minor calcite and feldspar in an almost graphic array and dusted with fine grained cpx. A green translucent mineral (possibly clear green cpx) forms euhedral prismatic crystals in some of the coarser calcite pockets. Titanite occurs as thin lenticular crystals intergrown w. grt and carbonate. Trace green chlorite was found in traces included in garnet.

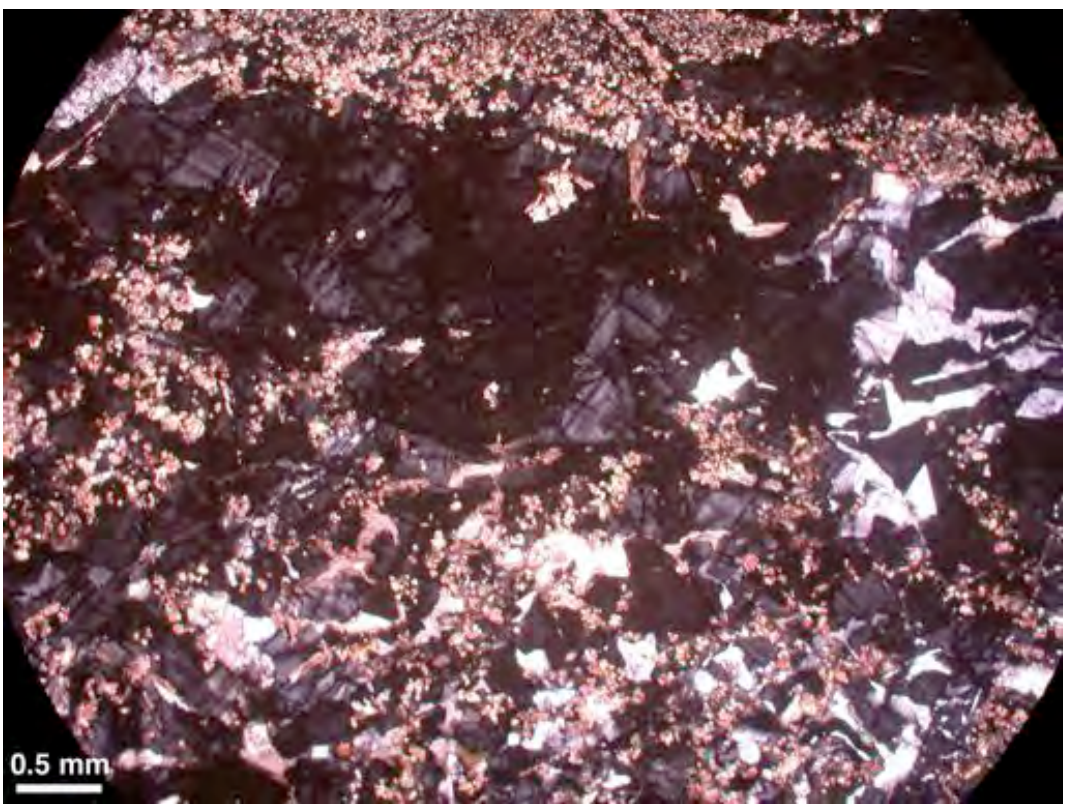
Mineral	Type	Size	Modal	Comment
Grossular	major	≤ 2 mm	80%	slightly zoned, isotropic to anisotropic
Cpx	major	≤ 0.2 mm	15%	very fine granular
K-feldspar	minor	≤ 2 mm	1-2%	in white bands and fractures
Calcite	minor	≤ 2 mm	5%	anh. replacing wollastonite in grt band
UM (also cpx ?)	trace	≤ 0.5 mm	tr.	clear pale green prismatic crystals
Titanite	trace	≤ 175 μm	tr.	lenticular grains in garnet-fsp
Chlorite	trace	≤ 60 μm	tr.	green aggregates in garnet

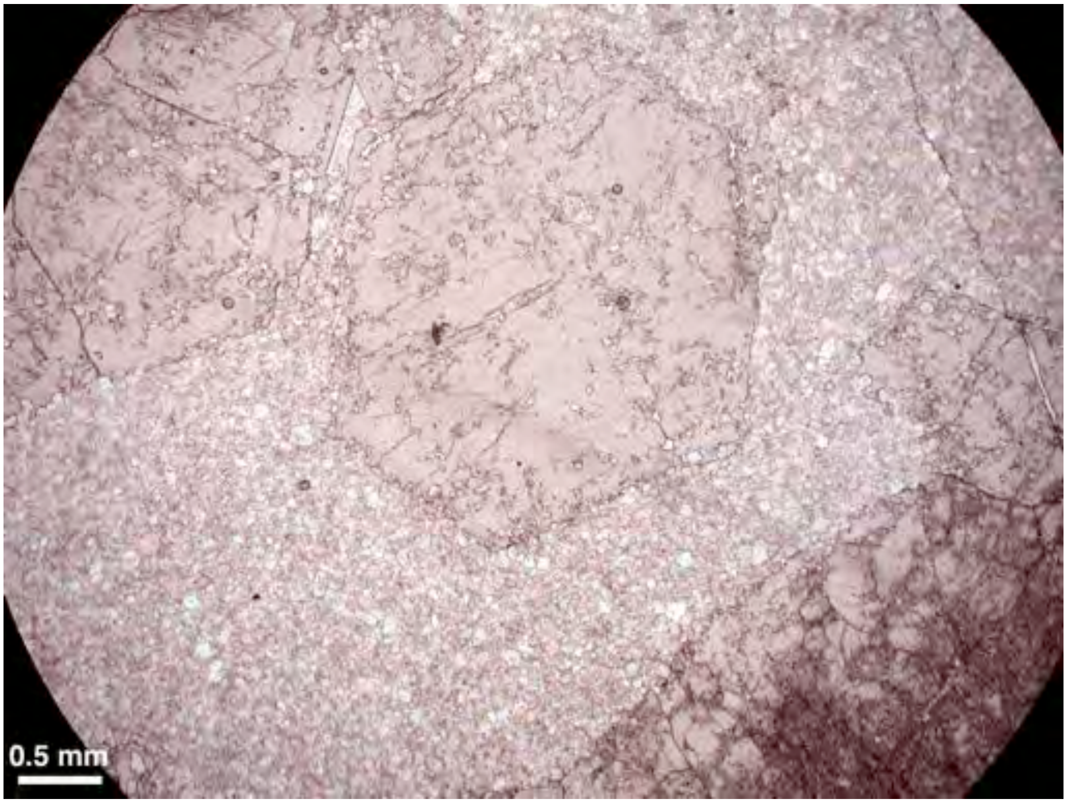


RZHTR015 (5) extremely fine grained garnet (dark) intergrown with equally fine grained cpx (light coloured). F.o.V. 4.65 x 6.37 mm, PPL.

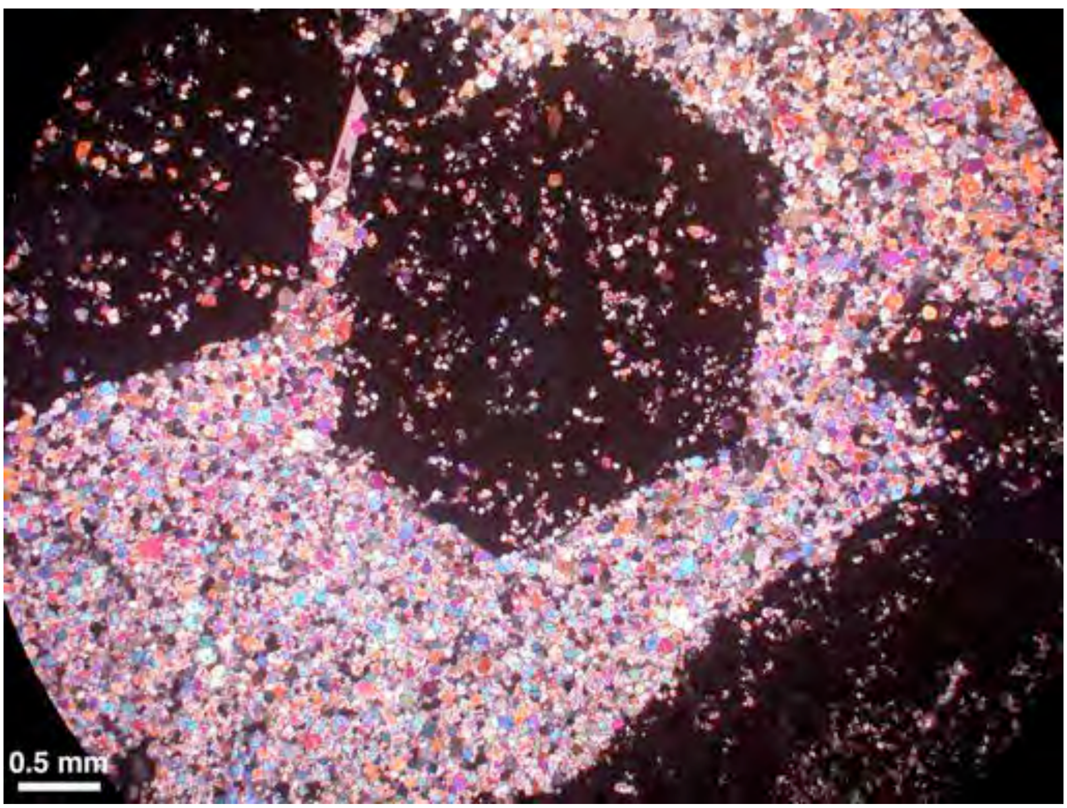


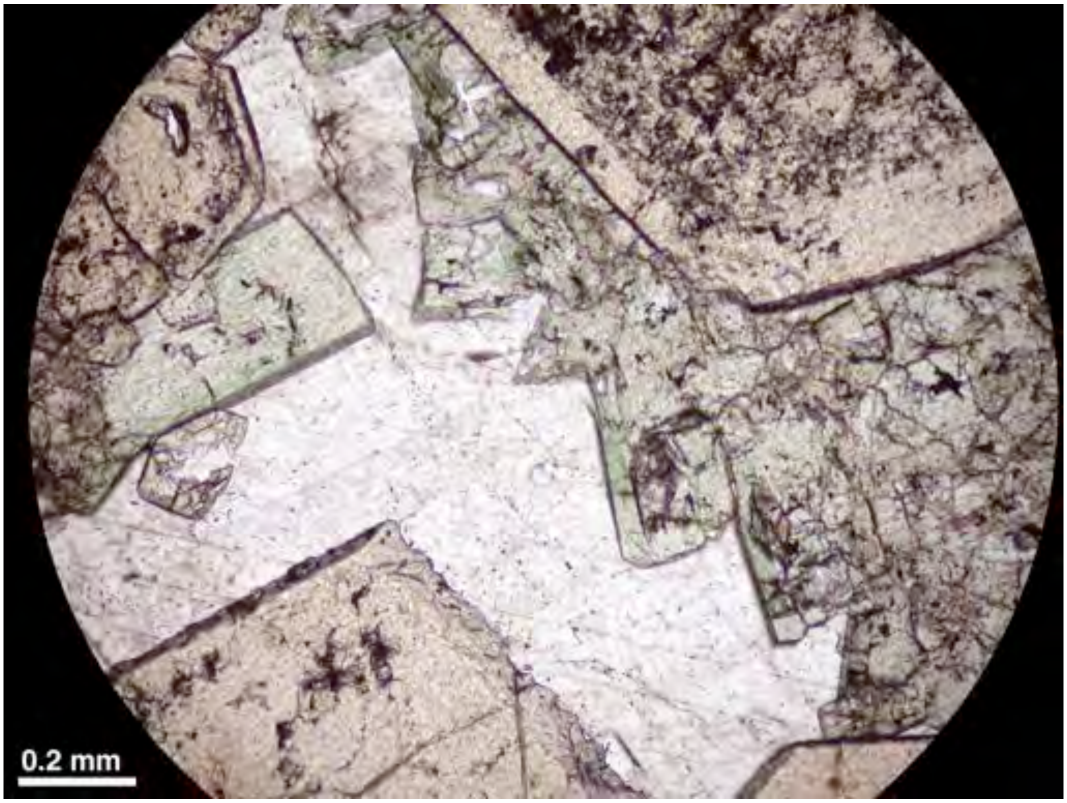
RZHTR015 (1) coarser grossular (reddish brown) intergrown with K-fsp and carbonate and dusted by very fine granular cpx. F.o.V. 4.65 x 6.37 mm, PPL (above) and XPL (below).



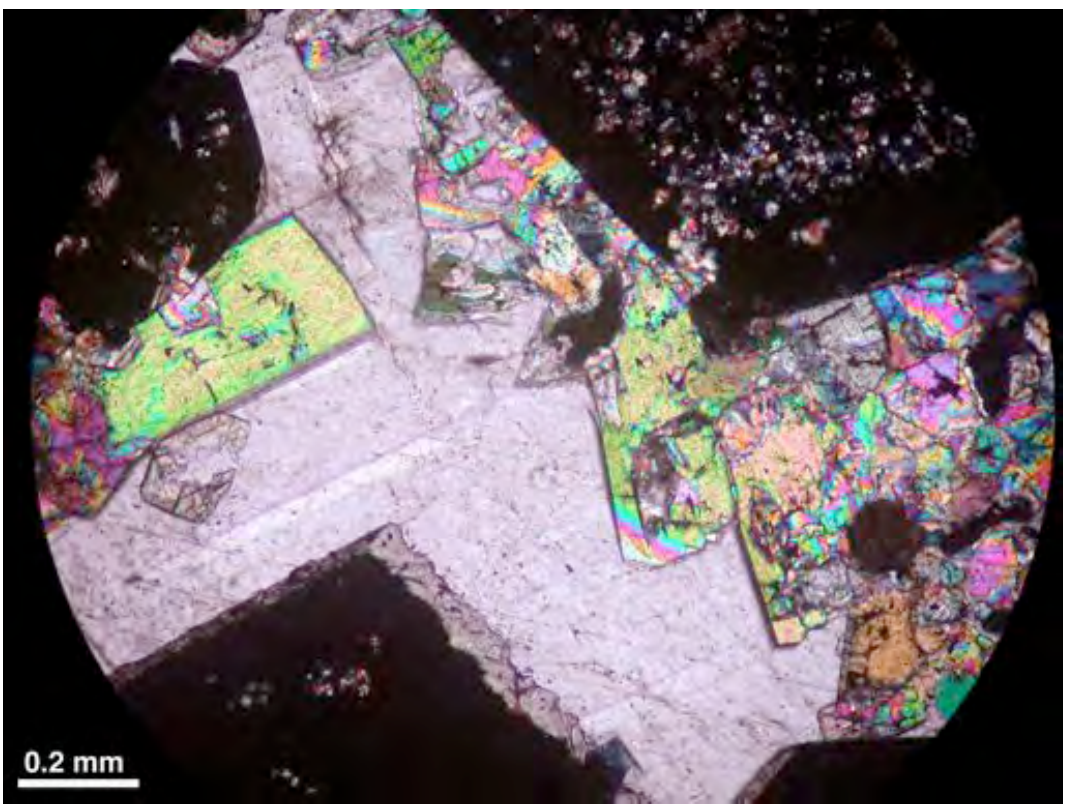


RZHTR015 (2) euhedral poikilitic garnet in extremely fine grained cpx. F.o.V. 4.65 x 6.37 mm, PPL (above), XPl (below).





RZHTR015 (1) clear green cpx (?) crystals in carbonate interstitial to garnet. F.o.V. 1.31 x 1.75 mm, PPL (above), XPL (below)

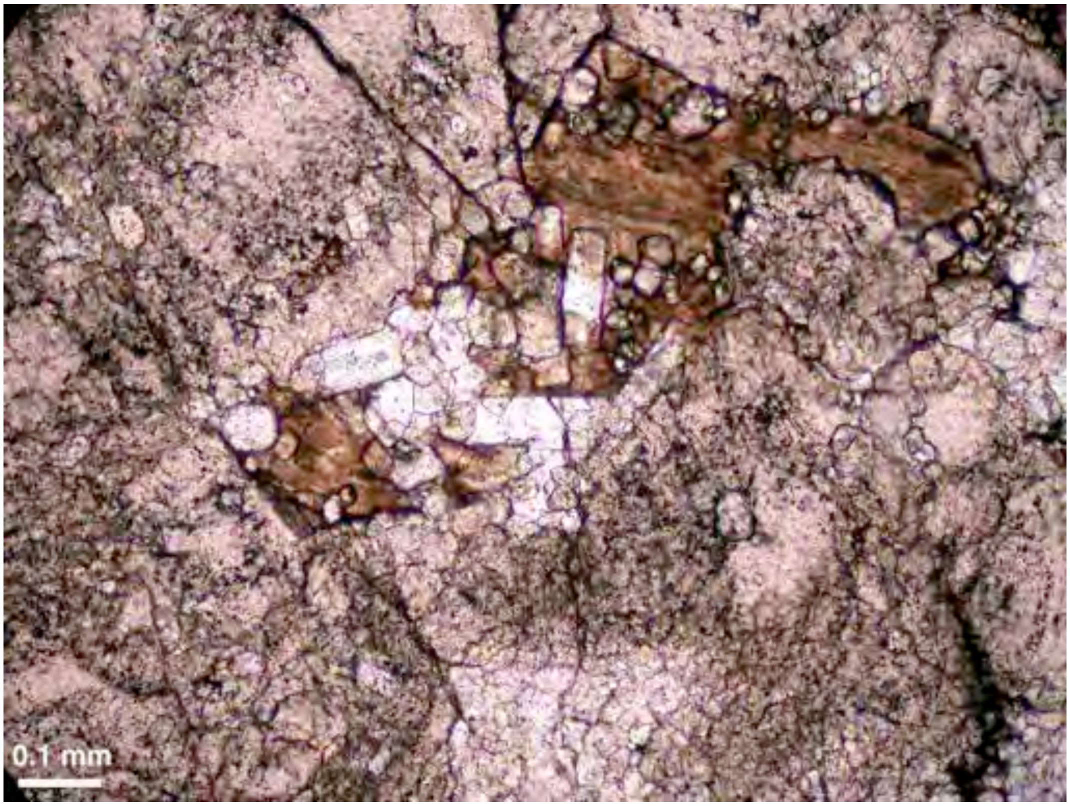


15) RZHTR017 Skarn TS

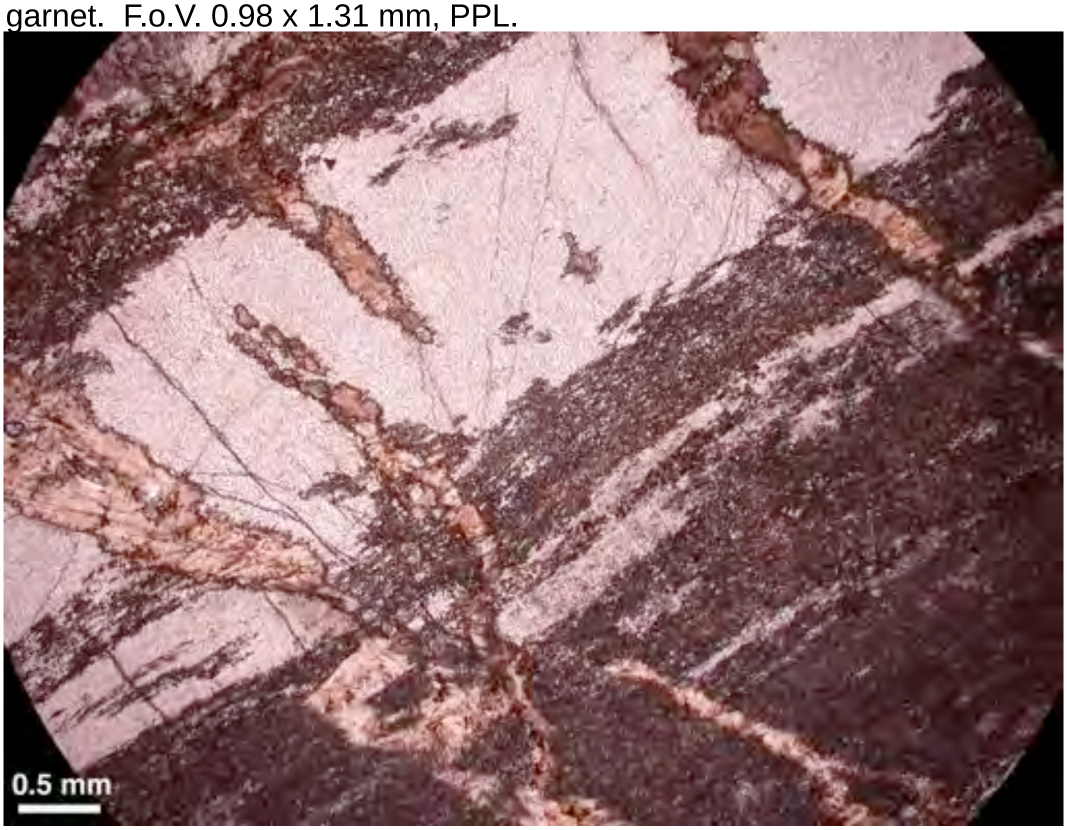
Description: fine grained banded skarn consisting of varying proportions and grain sizes of cpx, grossular and a medium grained unidentified mineral intergrown with coarser grossular that has medium high relief, very good cleavage paralel extinction and 2nd order ifc. The assemblage is cut by irregular veinlets perpendicular to bedding that are filled with a pale brown micaceous alteration, that replaces UM1, which originally appears to have filled the veins. The bottom portion of the section consists predominantly of semi-massive red brown grossular mixed with very fine granular cpx. The garnet is generally very fine grained and massive but it becomes coarser and more euhedral towards the center of the section where it is intergrown with UM1 and cpx. The top half of the section is dominated by very fine granular cpx intergrown with a darker fine grained mineral (probably grossular) in varying proportions. The grain size in this area is < 18 µm and mineral identification is very difficult due to grain boundary effects that make the minerals appear darker than they are. The brownish micaceous mineral seems to have infiltrated the matrix of this portion. The top left corner of the section contains a wedge shaped area that contains very fine grained K-feldspar.

Mineral	Type	Size	Modal	Comment
Grossular	major	≤1.5 mm	45%	slightly zoned, isotropic to anisotropic
Cpx	major	≤ 1 mm	45%	very fine granular usually ≤
K-feldspar	minor	≤ mm	5%	in matrix of top left corner
UM1	minor	≤ 2 mm	1%	clear good cleavage, medium high ifc.
UM2 (phlogopite ?)	minor	≤ 175 µm	3%	brownish repl. UM1 in veins and matrix
Apatite	trace	≤ 200 µm	tr.	rounded grains intergr. w. cpx, grt

RZHTR017 (1) zoned with coarse garnet intergrown with an unidentified mienral (bright ifc.) and dusted by very fine granular cpx. F.o.V. 4.65 x 6.37 mm, XPL.



RZHTR017 (2) granular apatite and cpx (both colourless) in brown alteration interstitial to garnet. F.o.V. 0.98 x 1.31 mm, PPL.

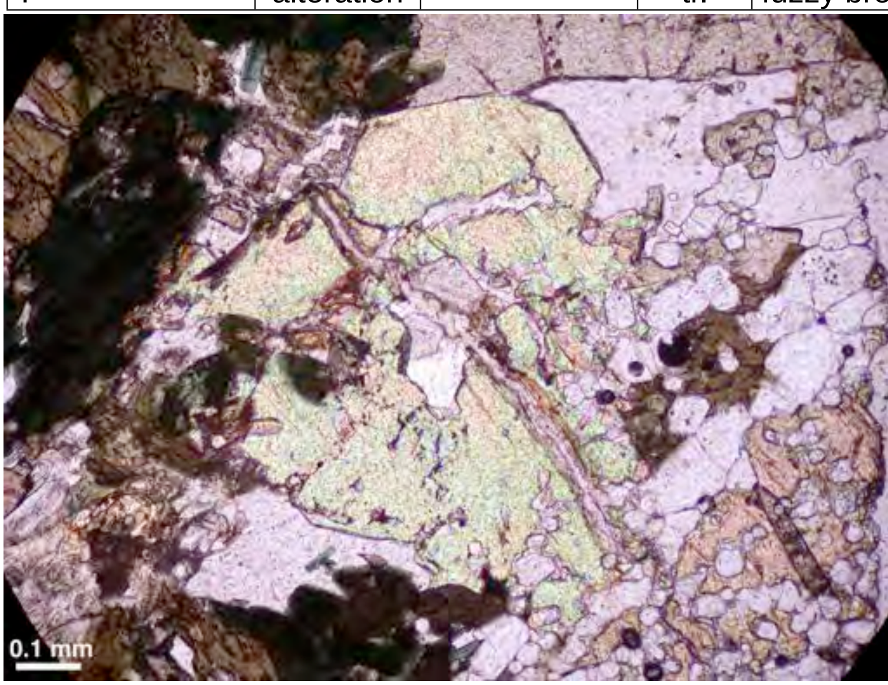


RZHTR017 (3) veins filled with brown micaceous alteration mineral cut through pure cpx (light) and grt-cpx bands (dark). F.o.V. 4.65 x 6.37 mm, XPL.

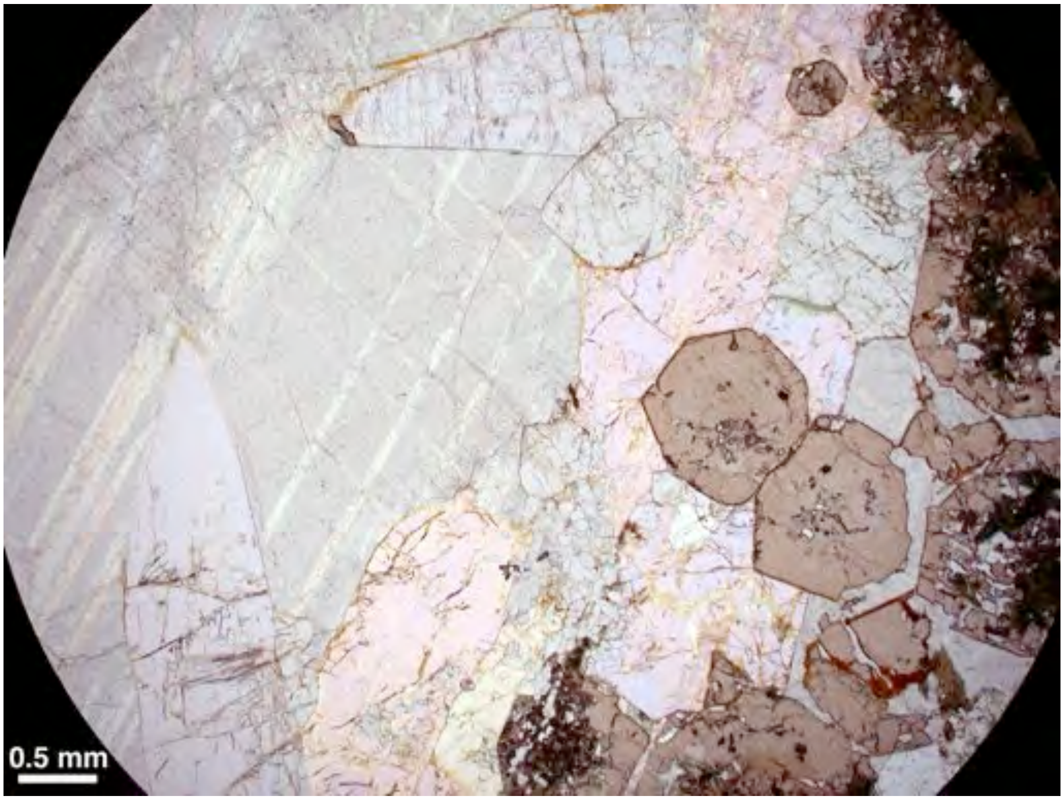
16) RZHTR022 Skarn **TS**

Description: coarse grained skarn with coarse red brown grossular intergrown with deep green amphibole, minor chlorite, anhedral quartz and K-fsp in coarse carbonate with coarse euhedral scapolite crystals and fine granular apatite in more or less dense aggregates. Garnet forms coarse poikilitic, slightly zoned, pale reddish brown grains enclosing inclusions of apatite, amphibole and carbonate. Carbonate is mostly one coarse anhedral crystal stretching diagonally across the section hosting euhedral scapolite, and trains of fine granular apatite, which must have been the first mineral to crystallize since it is also included in garnet and amphibole. Deep green anhedral amphibole and radiating chlorite aggregates are intergrown with garnet. They host minor euhedral titanite crystals. Rare epidote and clinozoisite are intergrown with garnet.

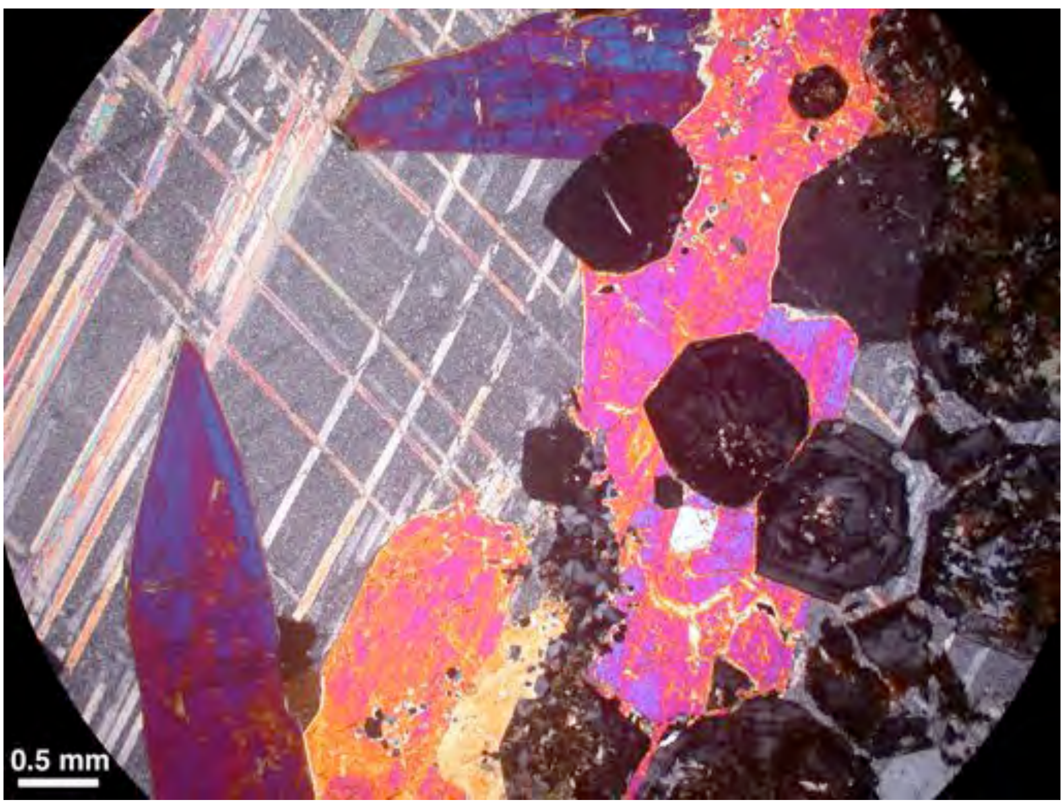
Mineral	Type	Size range	modal	Comment
Grossular-Andr.	major	≤ 6.5 mm	19%	red brown, zoned euh., anisotropic
Carbonate	major	2 cm	50%	intergrown with grossular and cpx
Amphibole	minor	≤1.8 mm	10%	green, subhedral intergr. w. grt
Chlorite	minor	≤ 0.4 mm	1-2%	pale green, intergr., w. grt & amphibole
Apatite	minor	≤150 µm	3%	euhedral in aggregates in carbonate
K-feldspar	minor	≤1.5 mm	5%	anh., intergrown with grt
Quartz	minor	≤1.5 mm	5%	anh., intergrown with grt
Epidote-Clinoz.	accessory	≤ 1 mm	tr.	euh. to subh. intergr. w. grt
Titanite	accessory	≤ 0.4 mm	tr.	euh. crystals intergr. w. grt, amph
Scapolite	minor	≤ 6mm	2-3%	perfect, euhedral grains in carbonate
?	alteration		tr.	fuzzy brown micaceous alt. of grt/amph

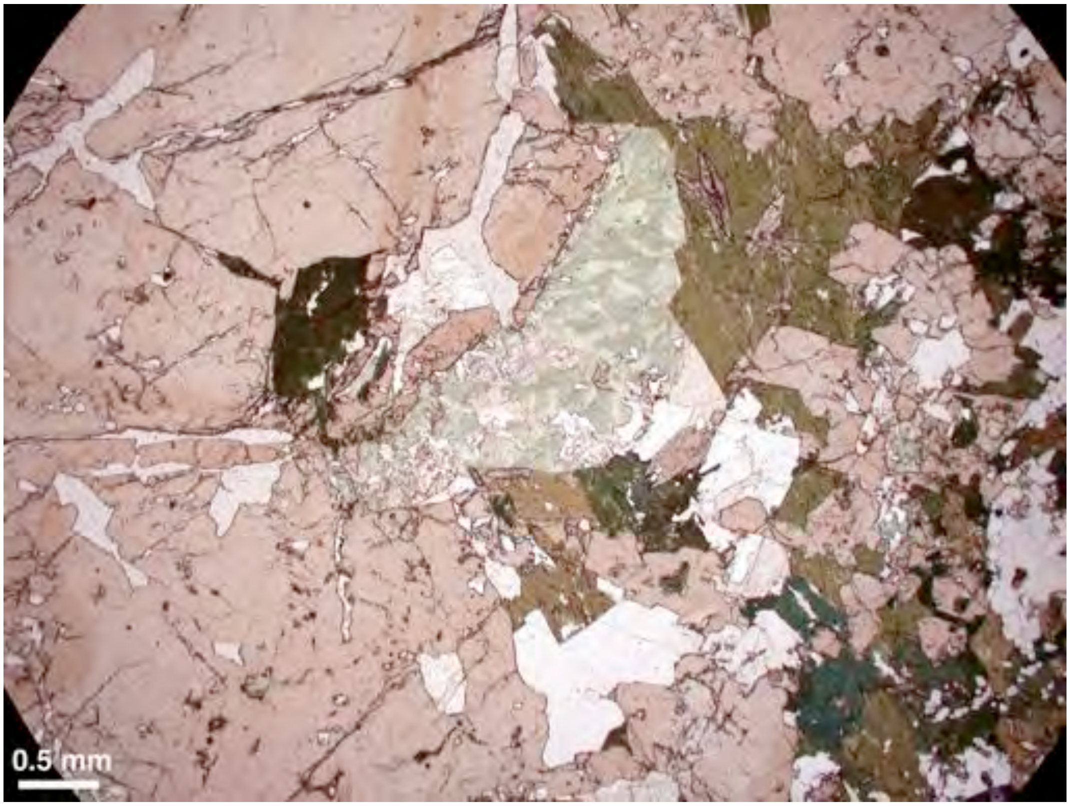


RZHTR022 (4) rare, subhedral epidote intergrown with apatite, green amphibole, minor cpx and garnet. Fo.V. 1.00 x 1.33 mm, PPL .

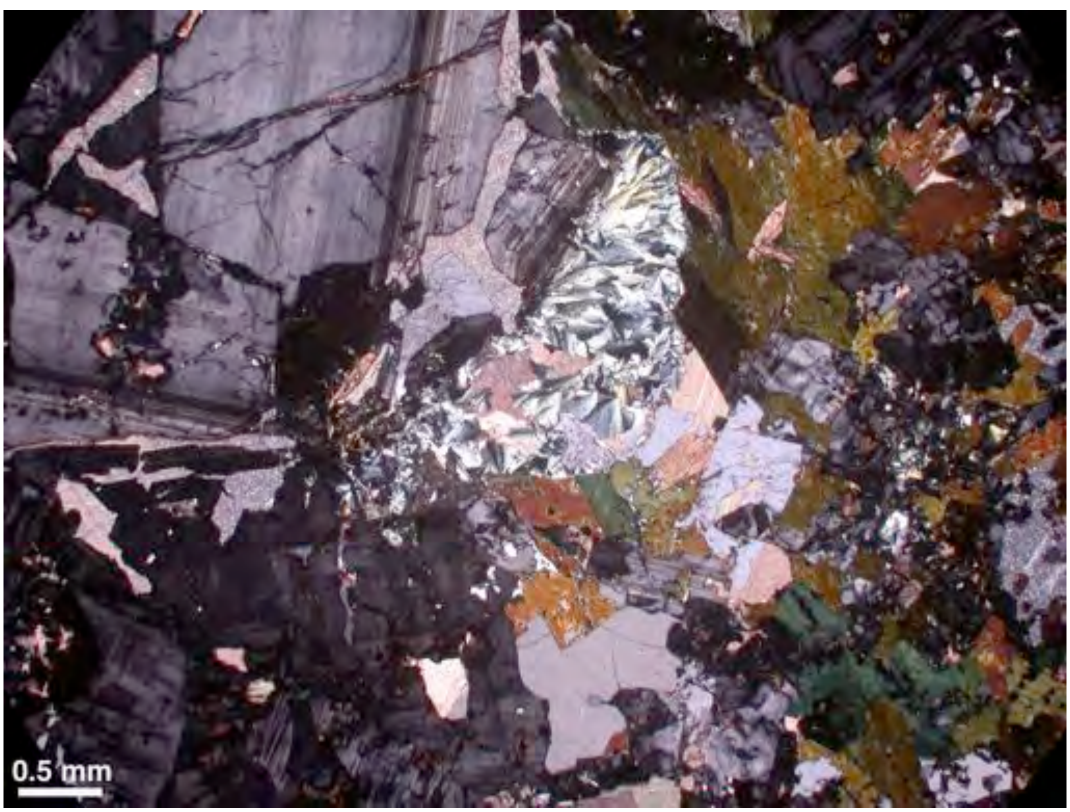


RZHTR022 (1) euhedral scapolite and reddish brown grossular in calcite. Fo.V. 4.65 x 6.37mm, PPL (above) and XPL (below).

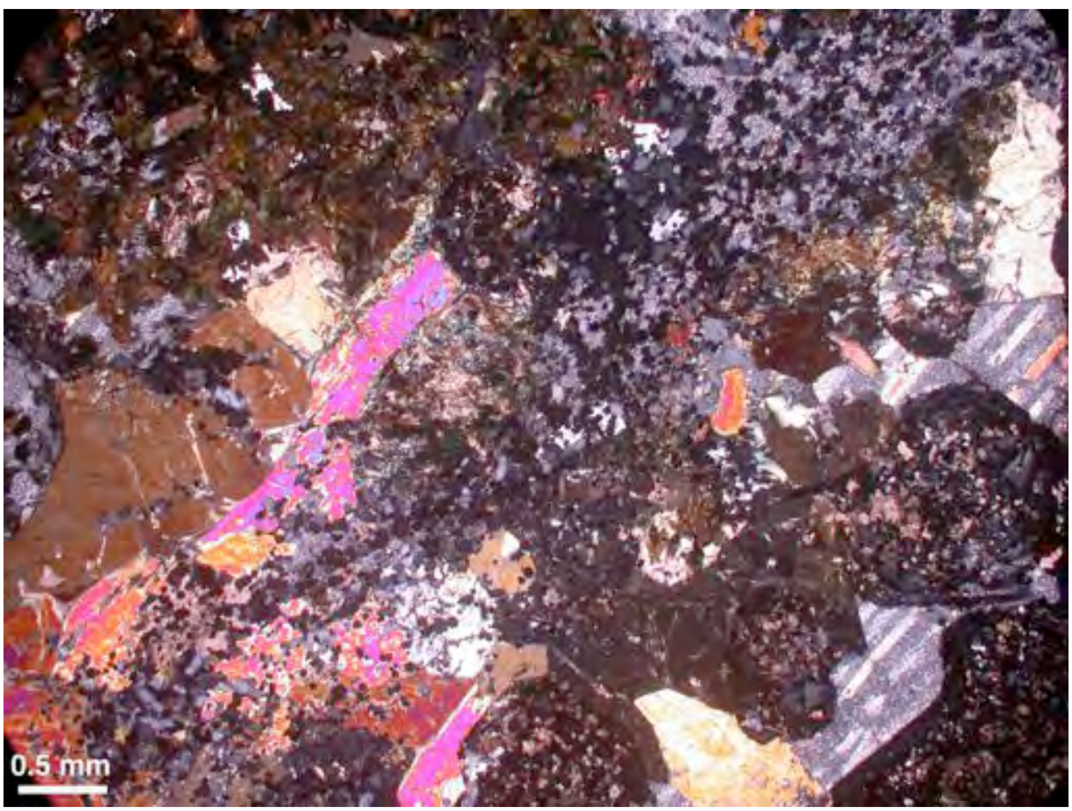




RZHTR022 (2) green hornblende and pale green chlorite intergrown with coarse, zoned garnet and minor interstitial calcite. Fo.V. 4.65 x 6.37mm, PPL (above) and XPL (below).



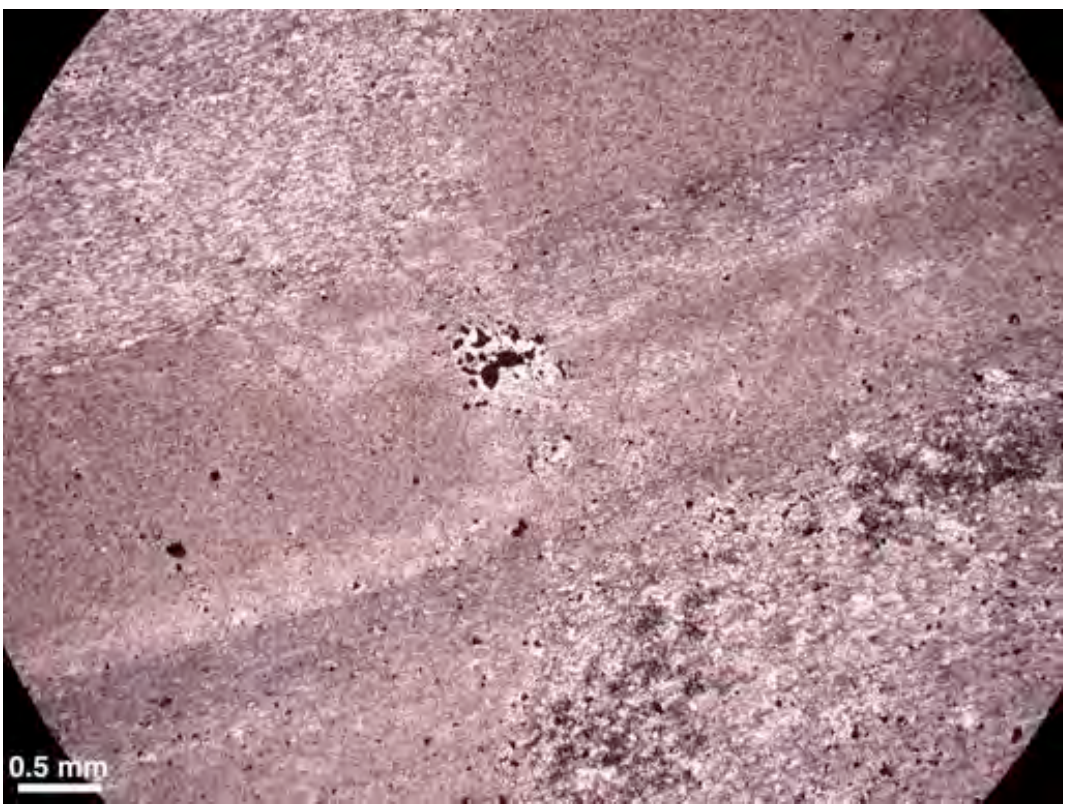
RZHTR022 (3) trail of fine granular apatite in calcite intergrown with scapolite, chlorite, amphibole and reddish brown grossular. Fo.V. 4.65 x 6.37mm, PPL (above) and XPL (below).



17) RZHTR023 Metasediment TS

Description: extremely fine grained banded metasediment (siltstone) consisting of quartz and K-fsp intergrown with very fine granular cpx (or epidote) and disseminated opaques in varying proportions and grain sizes. The opaques are fine grained and equant to rounded in shape suggesting either magnetite or pyrite. Some layers are offset by sub vertical micro-faults hosting small pockets with coarser minerals. Some layers are equigranular (and usually extremely fine grained), other are more uneven in grains size and show diffuse pockets and lenses with coarser grain sizes. In the pockets opaques are anhedral and sometimes rimmed by clinozoisite-epidote or scapolite. Scapolite also occurs randomly disseminated in matrix possibly filling open pore space. In the upper portion grain size is slightly coarser and it looks like some of the quartz grains are xenocrystic shards.

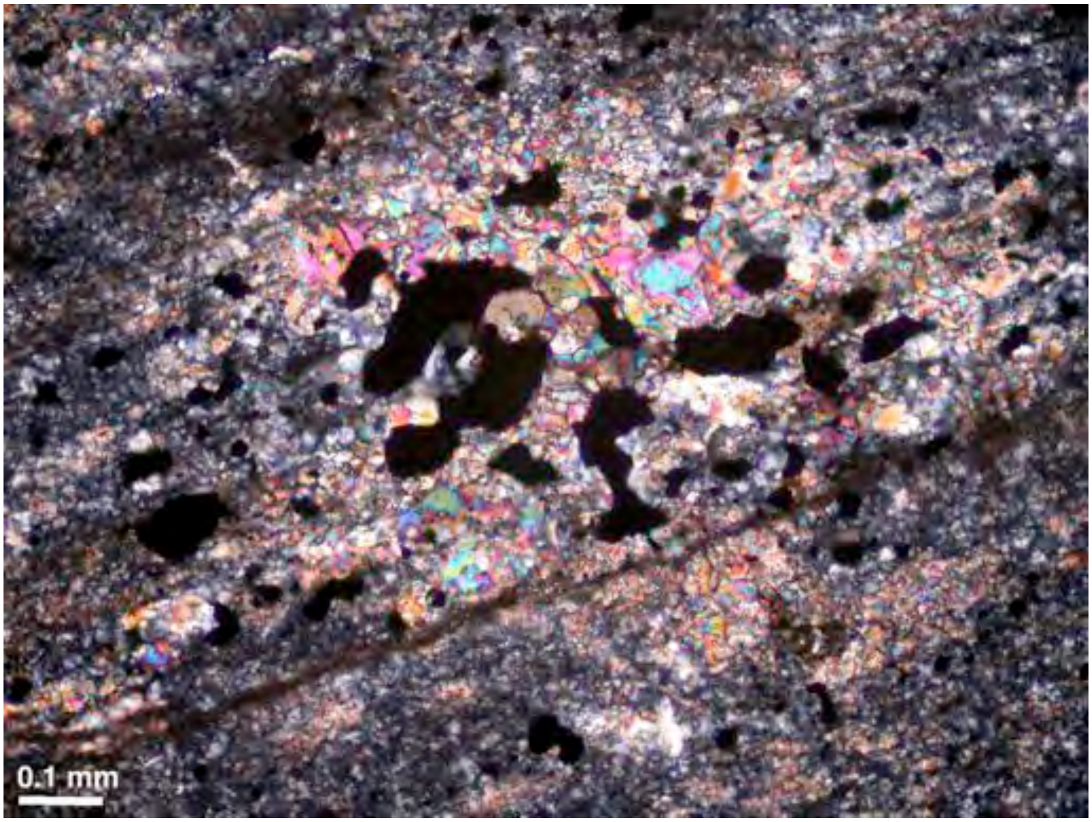
Mineral	Type	Size range	modal	Comment
Quartz	major	≤ 70 μm	30%	f. gr. in matrix, some xenocrystic
K-feldspar	major	≤ 60 μm	30%	f. gr. in matrix
Cpx	major	≤100 mm	30%	fine granular in matrix
Opaques, diss.	minor	≤ 120 μm	8%	isometric, disseminated in matrix
Opaques in v.	minor	≤ 250 μm	1%	anhedral flattened intergr. w. scap, epi
Scapolite	minor	≤0.4 mm	1%	anh., intergr. with opaques in pockets
Epidote-Clinoz.	accessory	≤100 μm	tr.	anh. rimming anh. opaques
Titanite	accessory	≤ 60 μm	tr.	fine gr. brown high relief aggregates
Carbonate	trace	≤ 60 μm	tr.	rare anh. in matrix



RZHTR023 (1) off-set bands in meta-sediment with sulphide emulsion in fault zone.
F.o.V. 4.65 x6.37mm PPL.

RZHTR023 (2) fissure filled with scapolite and opaques. F.o.V. 4.65 x6.37mm PPL.

RZHTR023 (3) fine grained disseminated opaques in qtz-K-fsp-matrix. F.o.V. 0.97 x 1.30 mm PPL.

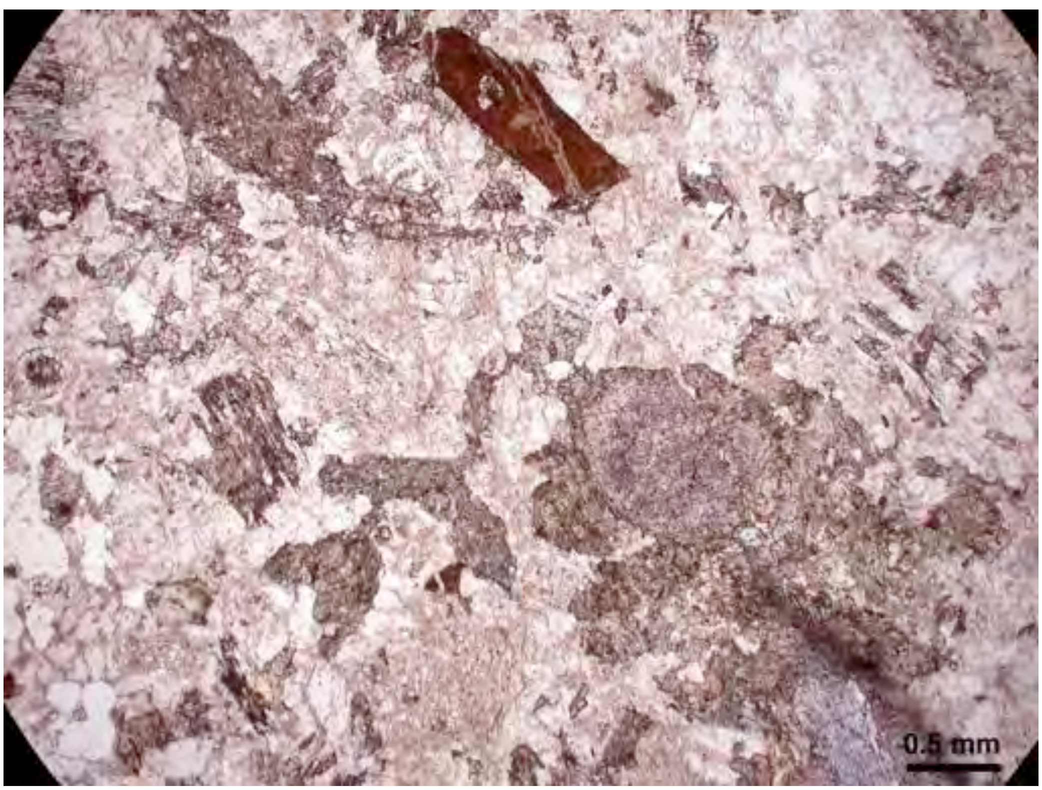


RZHTR023 (4) fine grained cpx in emulsion textured intergrowth with opaques (probably sulphides) in qtz-K-fsp-matrix. F.o.V. 0.97 x 1.30 mm PPL.

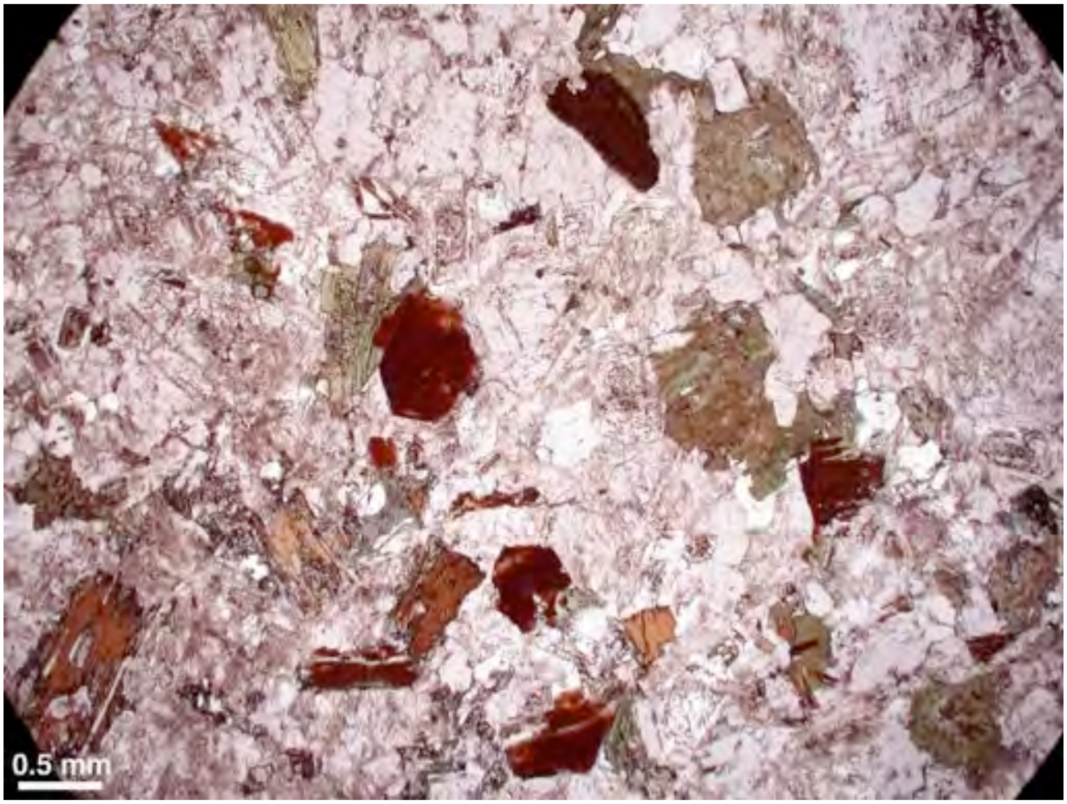
18) RZHTR027 Hypabyssal Granodiorite TS

Description: more plutonic variation of the porphyries described earlier: coarse strongly zoned plagioclase phenocrysts and coarse green hornblende (overgrowing and replacing remnant cpx) and variably altered red brown biotite phenocrysts are set in a matrix of coarse K-fsp intergrown with minor quartz. Medium sized brown pleochroic grains of allanite, fine grained clear apatite and zircon as well as anhedral titanite (from the breakdown of biotite) are accessory minerals. Feldspars are slightly kaolinite altered (certain zones in plagioclase more than others), biotite is being replaced by amphibole and titanite and cpx is overgrown by amphibole.

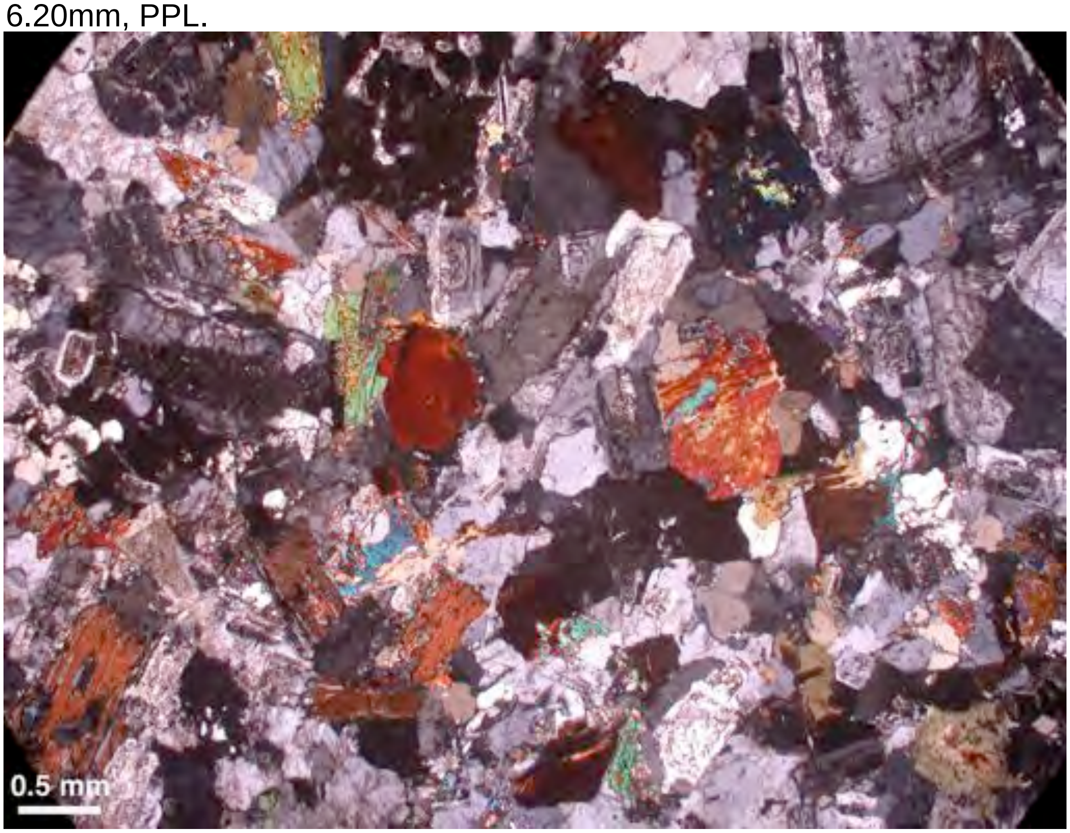
Mineral	Type	Size range	modal	Comment
Quartz	matrix	≤1.5 mm	4%	rounded anh intergr. w. K-fsp
K-feldspar	matrix	≤2.0 mm	50%	major matrix component
Plagioclase	phenocryst	≤ 3.0 mm	25%	euhedral, strongly zoned
Hornblende	phenocryst	1.2-3.5 mm	12%	olive green, overgrowing cpx
Biotite	phenocryst	0.3 - 1.2 mm	3%	repl. by chl, titanite, act, K-fsp
Diopside	remnants	<1.0 mm	4%	remnants in hbl and matrix
Allanite	accessory	< 1 mm	0.5%	dark brown euh. grains
Titanite	secondary	<0.2 mm	tr.	anh. in biotite and matrix
Zircon	accessory	<50 μm	tr.	high relief grains in matrix
Apatite	accessory	<70 μm	tr.	fine gr. euh. in matrix



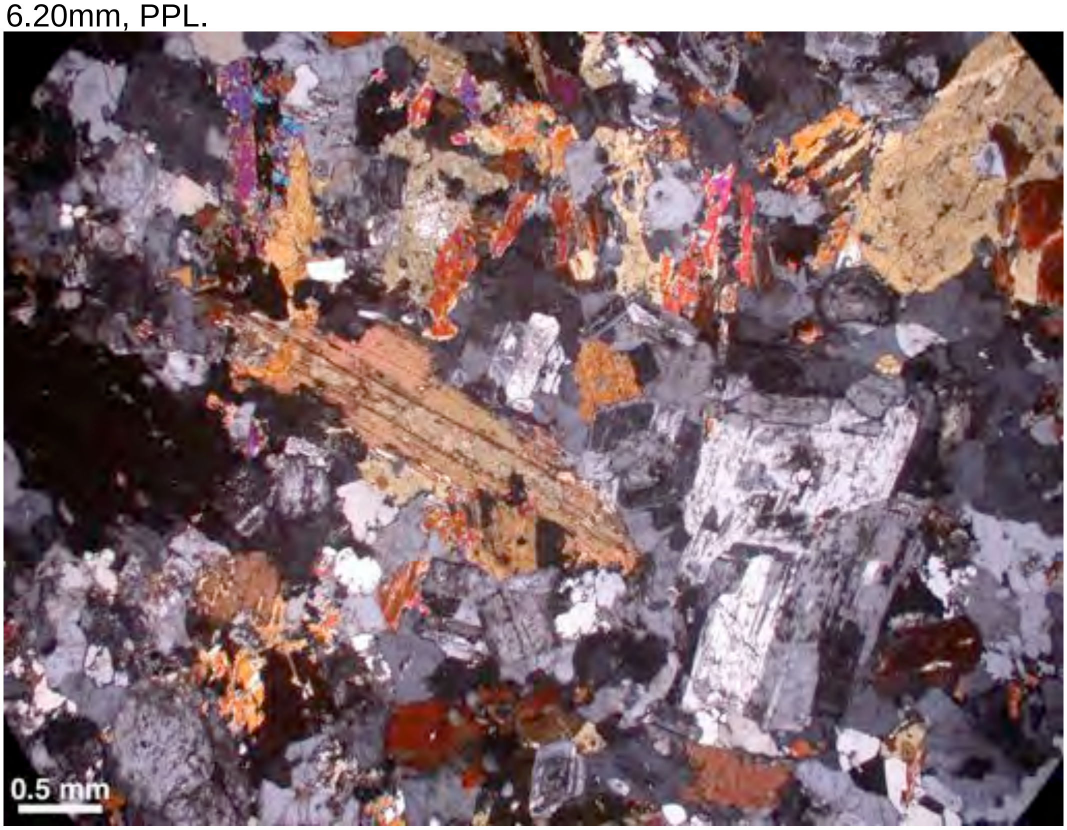
RZHTR027 (3) amphibole rimmed cpx, heavily altered biotite and red brown allanite in qtz-Kfsp matrix. F.o.V. 4.60 x 6.10 mm, PPL.



RZHTR027 (3) green amphibole and red brown biotite in qtz-plag-Kfsp matrix. F.o.V. 4.56 x 6.20mm, PPL.



RZHTR027 (4) biotite intergrown with green amphibole in qtz-plag-Kfsp matrix. F.o.V. 4.56 x 6.20mm, PPL.

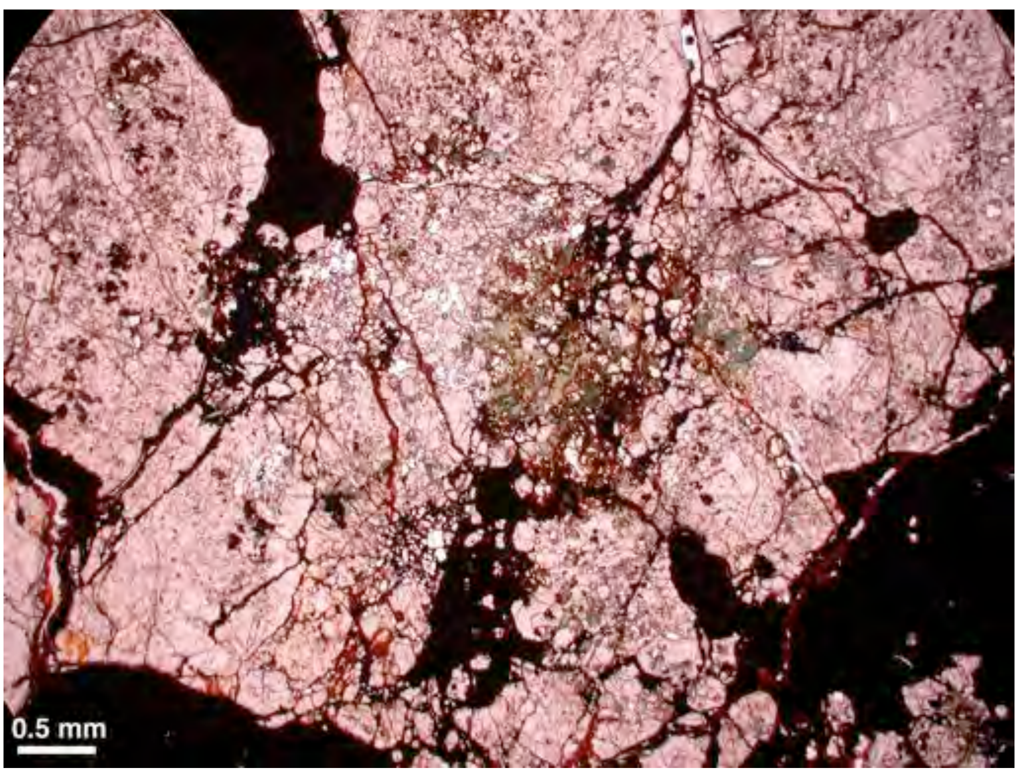


19) RZHTR028 Mineralized Skarn TS

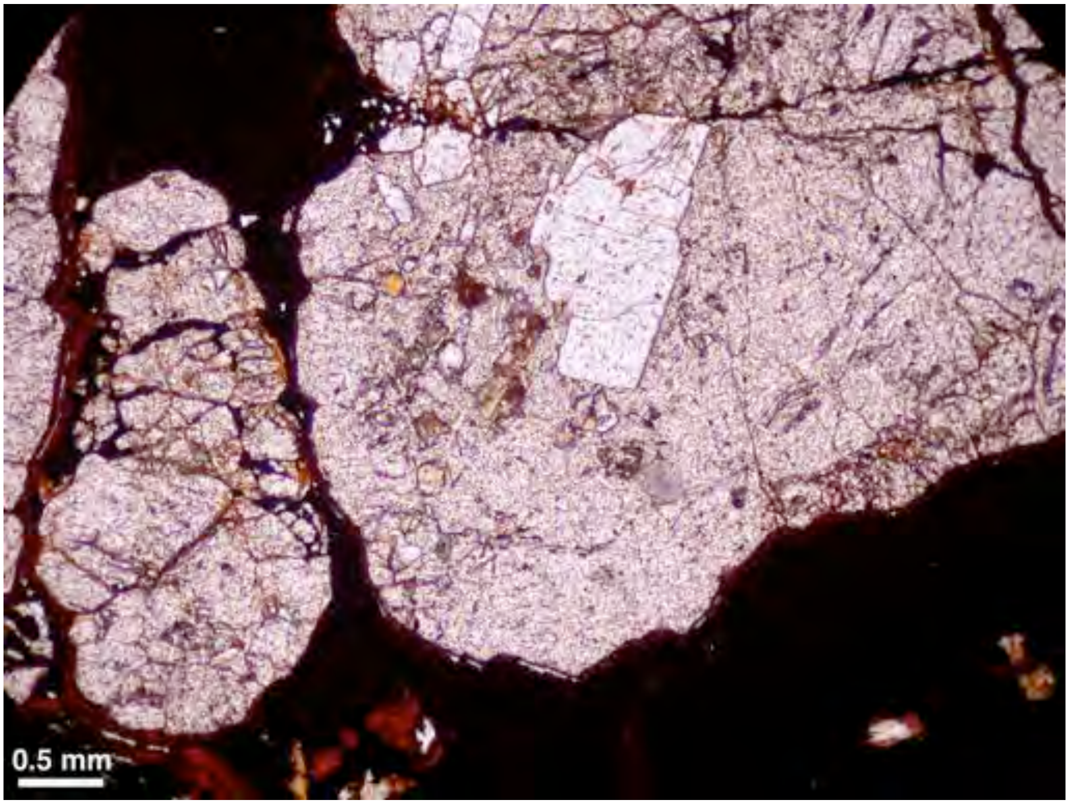
Description: massive coarse poikilitic grossular is invaded by sulphides and veined and rimmed by orange goethite and brown limonitic Fe-alteration (a product of sulphide breakdown). The sulphides could not be further identified because the section was glass covered. Minor euhedral apatite, green amphibole (act. hbl), and Fe-altered cpx (hedenbergite) are intergrown with garnet.

Mineral	Type	Size range	modal	Comment
Grossular	major	≤ 4 mm	66%	pale red brown, zoned, anisotropic
Actinolite	minor	≤ 0.3 mm	1%	green, subhedral intergr. w. grt
Apatite	minor	≤ 0.35 mm	1%	euhedral in aggregates in grt
Cpx	minor	≤ 0.2 mm	tr.	granular, intergrown with grt
Qtz or K-Fsp	minor	≤ 1.5 mm	tr.	anh., interstitial to grt
Sulphides	major	≤ 1 mm	25%	anhedral masses enclosing grt
"Limonite"	alteration	f. gr.	1-2%	euh. crystals intergr. w. grt, amph
Goethite	alteration	colloform	3-4%	orange red in fractures and veinlets

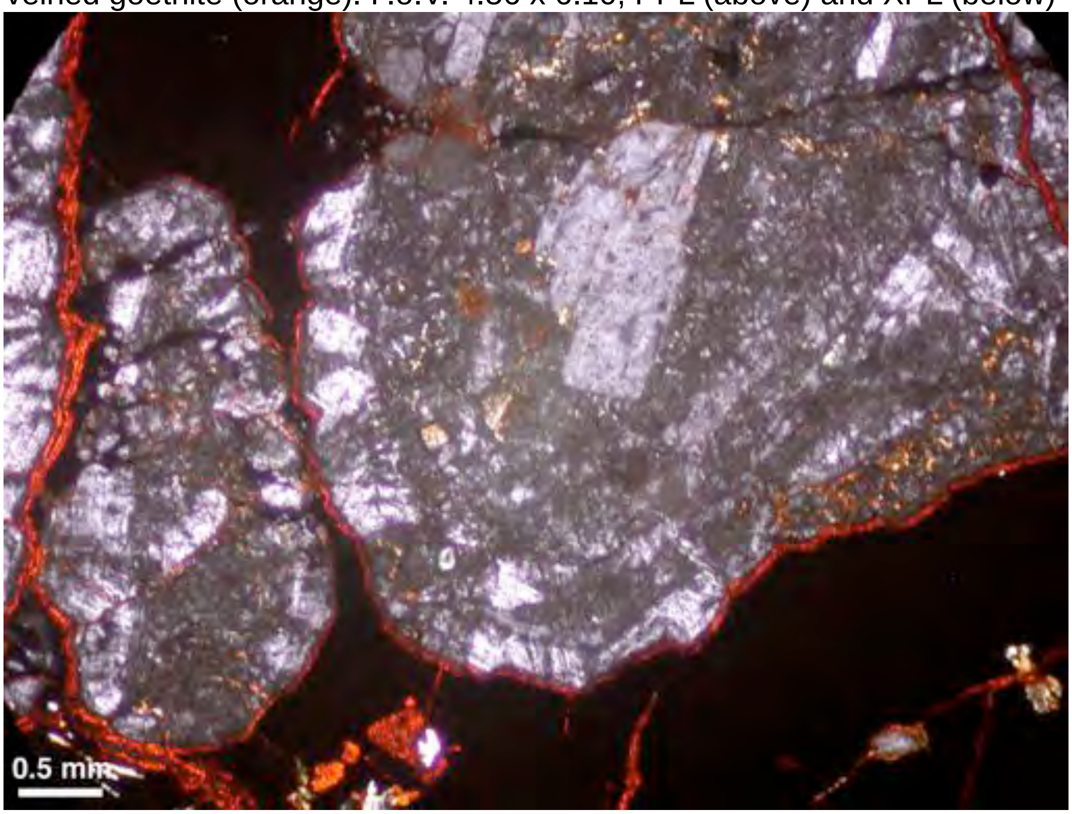
Grossular occurs as coarse slightly rounded euhedral zoned anisotropic reddish grains with poikilitic cores containing inclusions green amphibole, colourless cpx and apatite ± opaques**. Cpx** (hedenbergite) is surrounded by rusty brown alteration. **Actinolite** is green pleochroic, acicular to bladed and unaltered**. Apatite** forms stubby fine grained colourless low ifc. inclusions in garnet. **Goethite** forms brilliant orange red colloform rims and veins permeating the assemblage**. "Limonite"** stands for the rusty brown alteration affecting mainly cpx and less commonly amphibole in garnet.



RZHTR0028 (1) coarse subhedral grossular intergrown with green amphibole and minor cpx, veined by sulphides (opaque) and goethite (orange). F.o.V. 4.56 x 6.10, PPL.



RZHTR0028 (2) clear apatite garins in grossular surrounded by sulphides (opaque) and veined goethite (orange). F.o.V. 4.56 x 6.10, PPL (above) and XPL (below)



20) SLEET ZONE 1 Mineralized Skarn PTS

Description: semi-massive fine grained euhedral grossular is embedded in calcite and K-fsp and dusted with extremely fine granular cpx. Coarse, zoned euhedral pale orange or reddish vesuvianite is intergrown with garnet. K-fsp is zoned and enriched in Ba, except for the outermost rims. Interstitial to garnet occur minor amounts of sulphides consisting of cpy, marcasite-altered pyrrhotite, sphalerite, molybdenite, trace Bi, and galena. Sulphides are rimmed by epidote-clinozoisite and intergrown with rare chlorite. Fractured and sericite altered remnants of scapolite are also intergrown with sulphides.

Mineral	Type	Size	modal	Comment
Grossular	major	≤ 4 mm	40%	euh. intergr. w. carb, qtz, K-fsp, anisotropic
Vesuvianite	major	≤ 6 mm	10%	pale orange elongate x, grey brown ifc.
Cpx	minor	≤ 200 μm	10%	very fine granular dusting garnet
Calcite	major	≤ 8 mm	15%	interstitial to grossular
K-Ba-feldspar	minor	≤ 4 mm	3%	anhedral intergrown w. grossular and carb
Titanite	accessory	≤ 150 μm	tr.	euhedral elongate grains disseminated
Clinozoisite	minor	≤0.5 mm	1%	anh. rimming sulphides
Mg-chlorite	trace	≤ 100 μm	tr.	colourless, intergrown with sulphides
Scapolite	trace	≤ 1 mm	tr.	anh. fractured intergr. w. sulphides
Sericite	alteration	v. f. gr.	tr.	altering scapolite
Chalcopyrite	mineralization	< 1.5 mm	2%	anhedral interstitial to grt
Pyrrhotite	mineralization	≤0.45 mm	2%	anhedral intergrown w. cpy, BiTe
Sphalerite	mineralization	≤ 300 μm	tr.	intergr. w. po,cpy; deep red brown, Fe-rich
native Bi	mineralization	25 μm	tr.	tarnished soft creamy golden intergr. w. gn
Galena	mineralization	≤17 μm	tr.	soft grey white, in sph and po
Arsenopyrite	mineralization	≤30 μm	tr.	white euh. grains in grt
Molybdenite	mineralization	≤0.35 mm	tr.	silvery grey kinked fibres, interst. to grt
Zeolite	accessory	≤0.3 mm	tr.	radiating aggr. in core of hollow vesuvian.

Grossular forms small euhedral twinned anisotropic concentrically zoned crystals that grade into coarse anhedral masses dusted by very fine grained cpx and intergrown with vesuvianite.

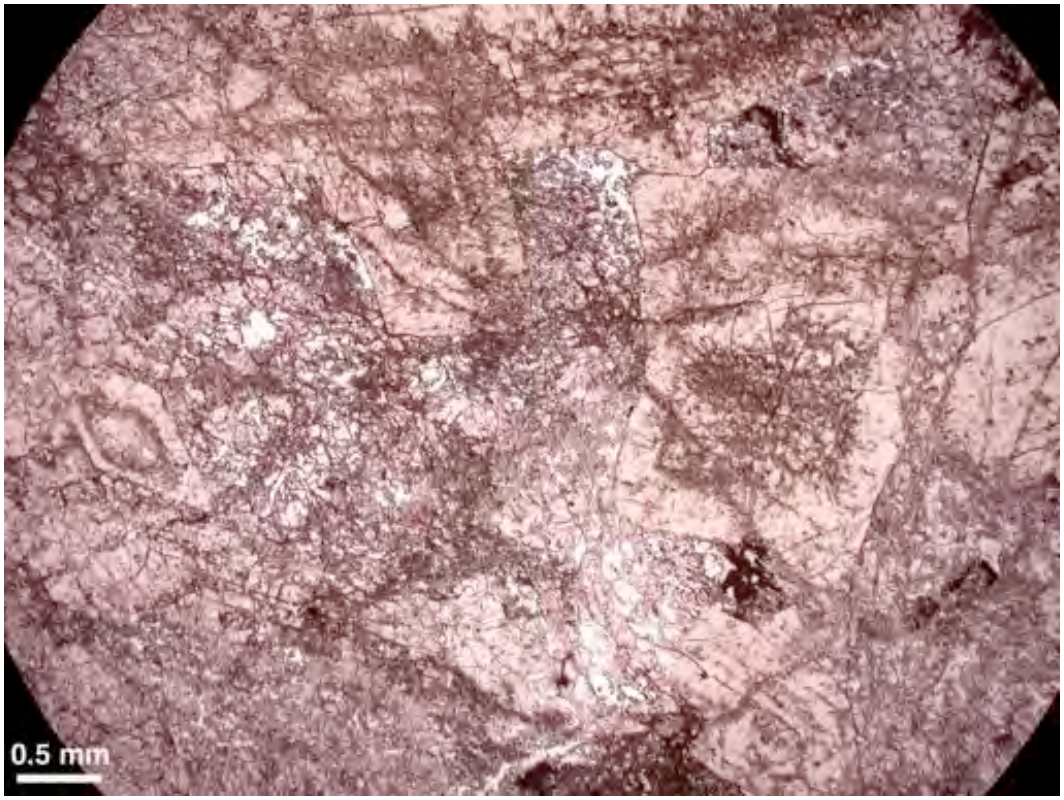
Calcite, K-feldspar and **quartz** occur as medium sized anh. grains interstitial to grossular.

Vesuvianite forms coarse elongate pale orange to pale red, medium relief, zoned, euhedral prismatic crystals with rhomb shaped to square cross sections, poikilitic cores, and low, slightly anomalous grey-beige interference colours. The core of one grain was filled with a radiating acicular zeolite (?).

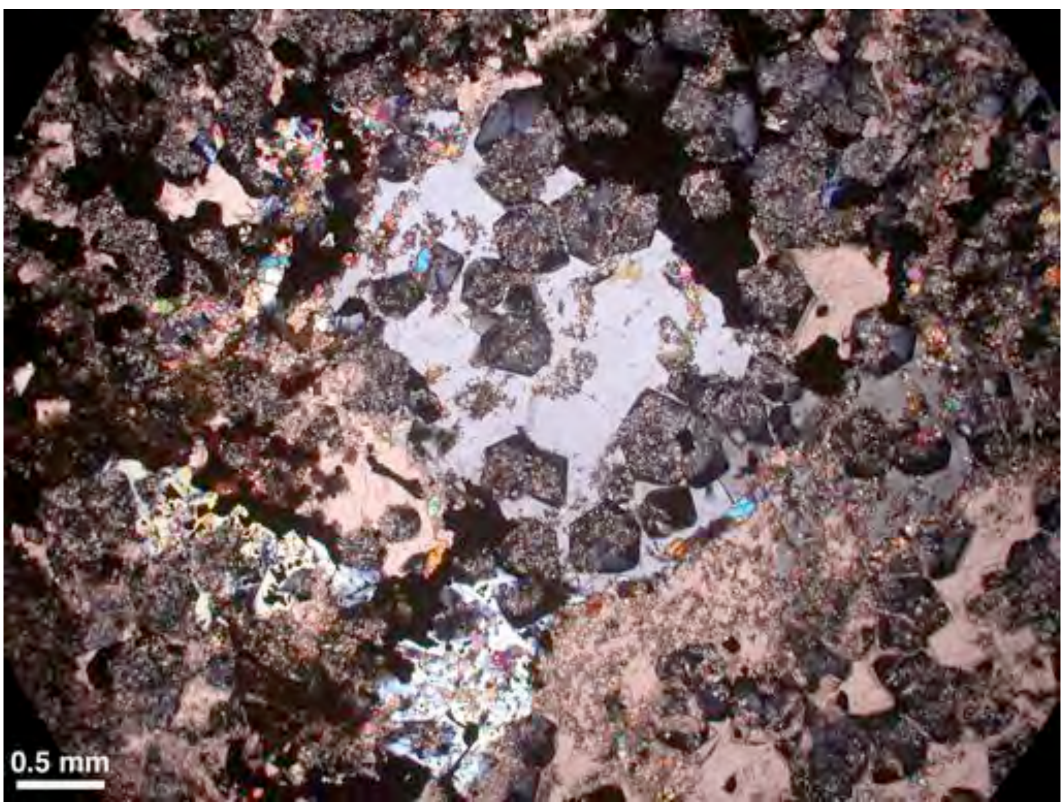
Scapolite is colourless, has medium relief, good cleavage and occurs as fractured remnants intergrown with sulphides; low 1st order white to red ifc., altered by sericite

Hedenbergite (Cpx) is extremely fine granular and colourless, dusting garnet.

Mg-chlorite forms rare colourless radiating aggregates (w. olive brown ifc.) intergrown with sphalerite and po.

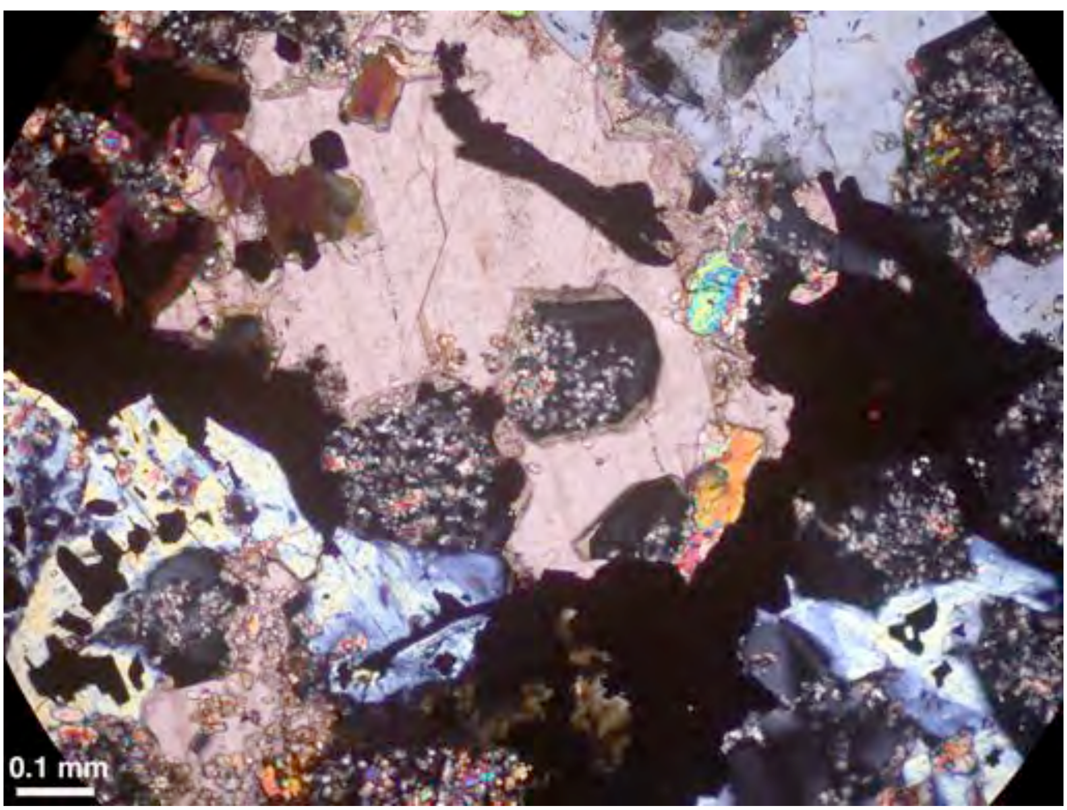


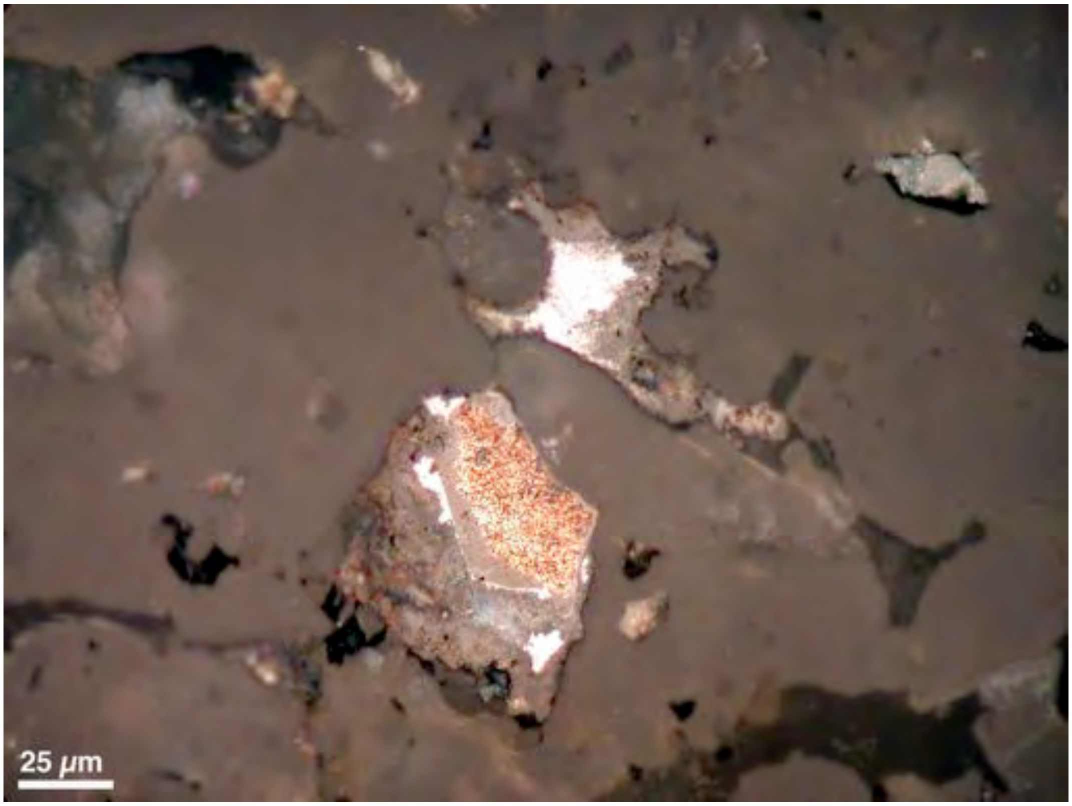
SZ1 (1) coarse vesuvianite (pale red, euhedral, with poikilitic cores) intergrown with grossular garnet (same colour, anhedral) and interstitial quarzt and/or K-fsp. Fo.V. 4.85 x 6.37mm, PPL.



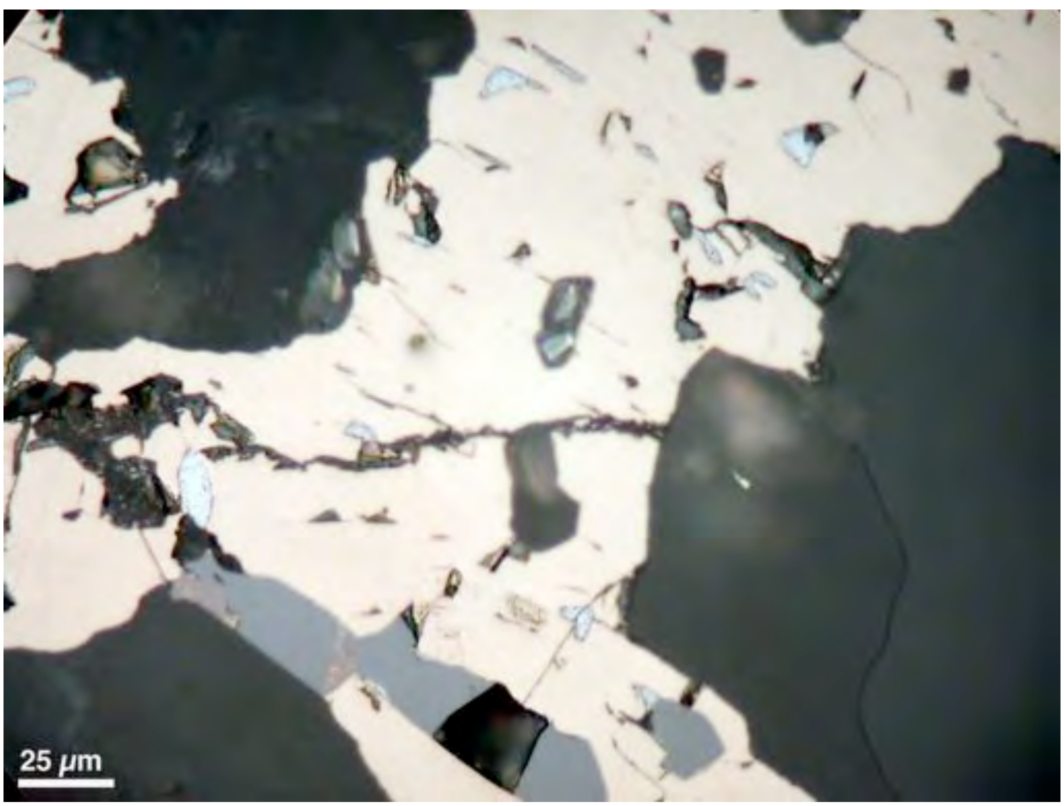
SZ1 (2) granular anisotropic grossular (grey) in K-fsp, calcite (pink) and clinozoisite (pale blue-yellow) with interstitial sulphides (opaque). Fo.V. 4.85 x 6.37mm, XPL.

SZ1 (3) grey fibres of molybdenite and anhedral sphalerite (grey) intergrown with pyrrhotite, cpy and pyrite, rimmed by clinozoisite (yellow-blue) in calcite with grossular dusted by cpx. Fo.V. 1.03 x 1.38 mm, RL (above) and XPL (below).

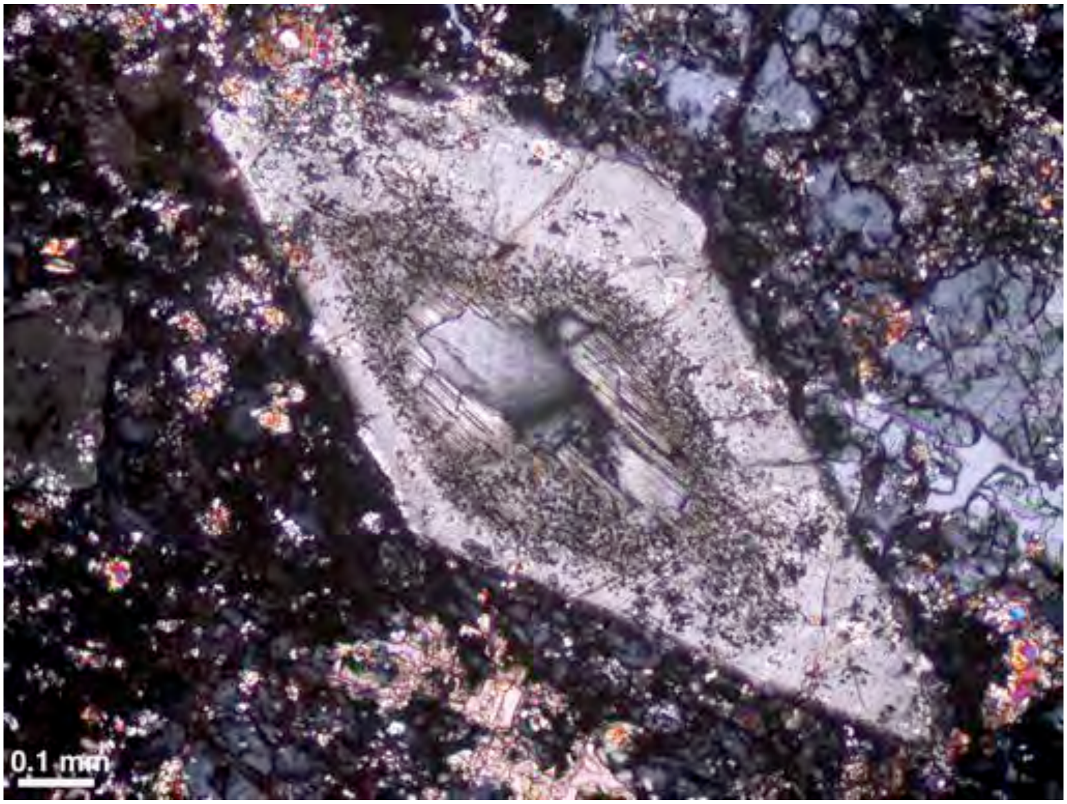




SZ1 (4) strongly tarnished native Bi intergrown with galena (white) in gangue. F.o.V. 0.21 x 0.28 mm RL.

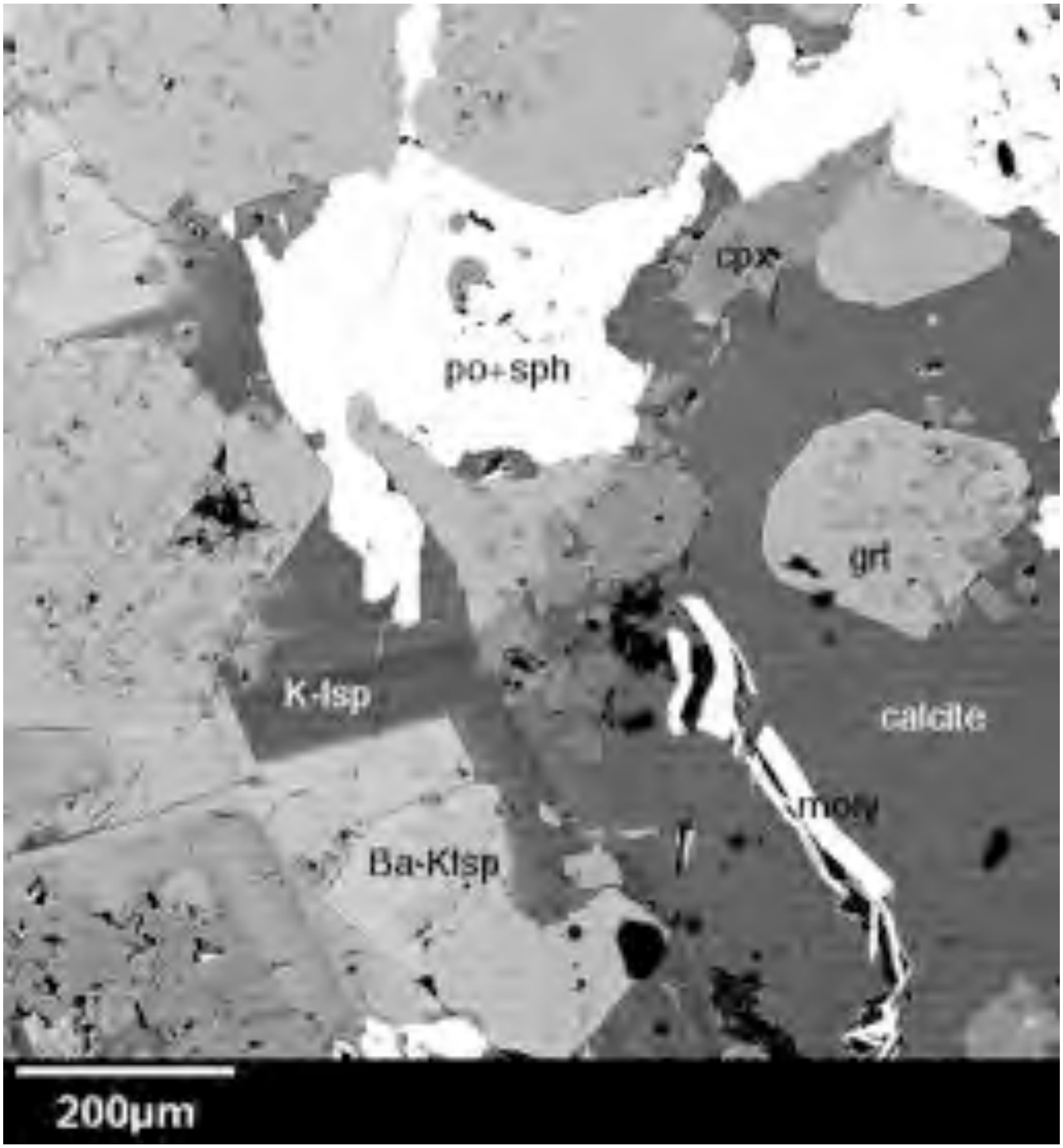


SZ1 (6) fine grained galena (light grey) and sphalerite (dark grey) inclusions in pyrrhotite. F.o.V. 0.21 x 0.28 mm RL.



SZ1 (7) euhedral, zoned vesuvianite with filling of scolecite intergrown with grossular, K-feldspar and minor calcite. F.o.V. 0.97 x 1.30 mm, XPL.

SZ1 (9) pale orange vesuvianite crystals intergrown with K-fsp and grossular dusted by cpx. F.o.V. 3.22 x 4.30 mm, XPL.



SZ1 (SEM photo) granular grossular (grt) dusted with very fine grained hedenbergite (cpx) and intergrown with calcite, Ba-zoned K-fsp, and sulphides. The brighter zones of K-fsp are Ba-rich, the darker zoned are “normal” K-feldspar.

21) SLEET ZONE 2 **PTS**

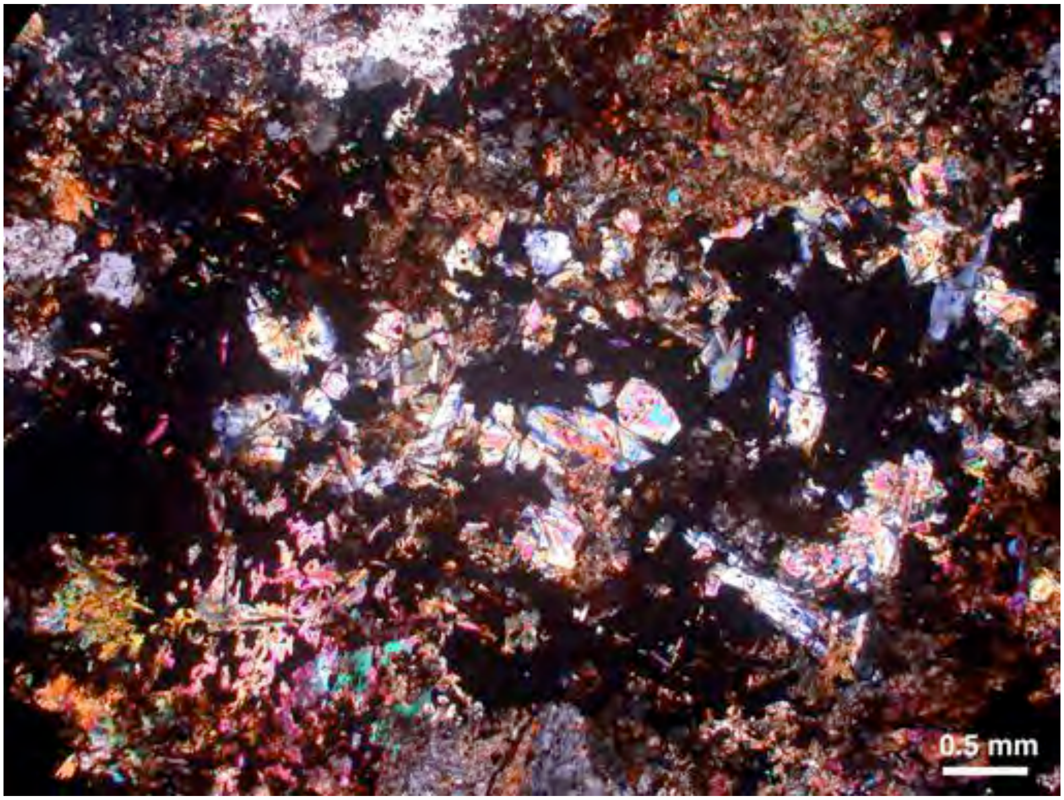
Description: this section consists predominantly of coarse euhedral to anhedral K-fsp (with rhomb shaped cross sections = adularia) intergrown with minor calcite, minor quartz and abundant fine to medium grained acicular to bladed actinolite in extensive aggregates which in turn are intergrown with sulphides (mainly cpy with minor deep red brown, barely translucent sphalerite and more or less altered pyrite). A few white euhedral arsenopyrite (Co-bearing !) grains are fractured and slightly altered by covellite. The sulphides are rimmed by and intergrown with clinozoisite, which contains acicular actinolite inclusions. Brown allanite is common, sometimes intergrown with clinozoisite but mostly with olive brown hornblende, in which it causes dark brown haloes. There are remnants of a coarse anorthite embedded in qtz-K-fsp (higher relief than both). Also present are euhedral crystals and aggregates of titanite, which are disseminated throughout. The sulphides are variably altered producing extensive areas of orange translucent goethite that also stains the actinolite aggregates yellow brown. Remnant pyrite is strongly marcasite/goethite altered and trace covellite has formed from cpy breakdown. Minute granular cpx grains can be found included in K-fsp.

Mineral	Type	Size	modal	Comment
K-feldspar	major	≤ 1.4 mm	38%	coarse euh. intergr. w., carb, qtz, act
Actinolite	major	≤ 1.8 mm	19%	pale green acicular aggregates
Hornblende	minor	≤ 0.9 mm	3%	olive brown, euh. intergr. w. allanite
Allanite	minor	≤ 0.9 mm	6%	brown pleochr. causing haloes in amph
Quartz	minor	≤ 1.2 mm	2%	interstitial to K-fsp
Epidote	minor	≤ 1mm	5-6%	euhedral to anhedral intergr. w. sulphides
Anorthite	minor	≤ 2 mm	3-4%	med. relief fractured remnants in K-fsp
Calcite	minor	7 mm	2-3%	poikilitic intergrown with act.
Titanite	accessory	≤ 1 mm	1%	euhedral elongate grains
Sericite	trace	≤ 150 µm	tr.	fine gr. alteration in UM
Apatite	trace	≤ 60 µm	tr.	fine gr. rounded grains in fsp
Chalcopyrite	mineralization	< 6 mm	10%	poikilitic intergrown w. actinolite, epidote
Sphalerite	mineralization	≤ 250 µm	1%	intergrown w. cpy, deep red brown
Pyrite	mineralization	≤ 7 mm	2%	parallel textured altered grains
Arsenopyrite	mineralization	≤ 1 mm	tr.	trapezoidal white euh fractured grains
Covellite	alteration	v. f. gr.	tr.	greenish blue reflectance, in arsenopyrite
Goethite	alteration	v. f. gr.	5%	orange red brown rimming sulphides

Allanite brown coloured strongly pleochroic mineral with medium high ifc. causes pleochroic haloes in amphibole

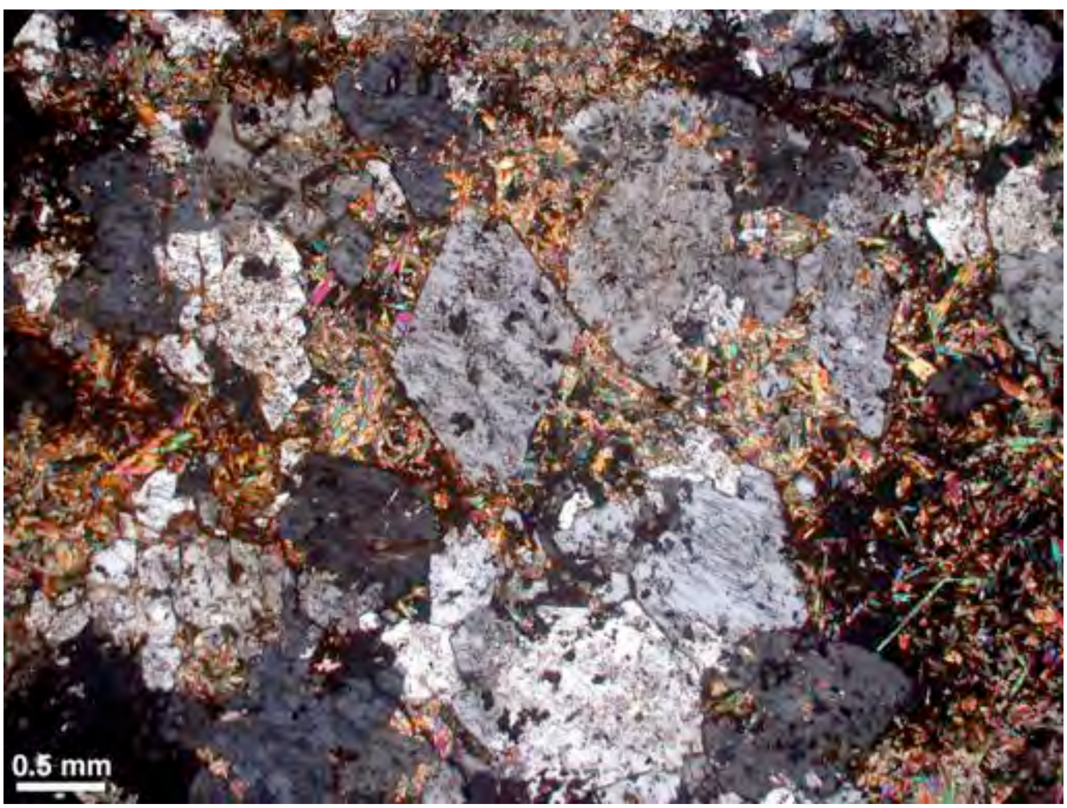
Titanite - abundant elongate euhedral high relief high ic crystals

Cpx very fine grained stubby granular grains in qtz-fsp

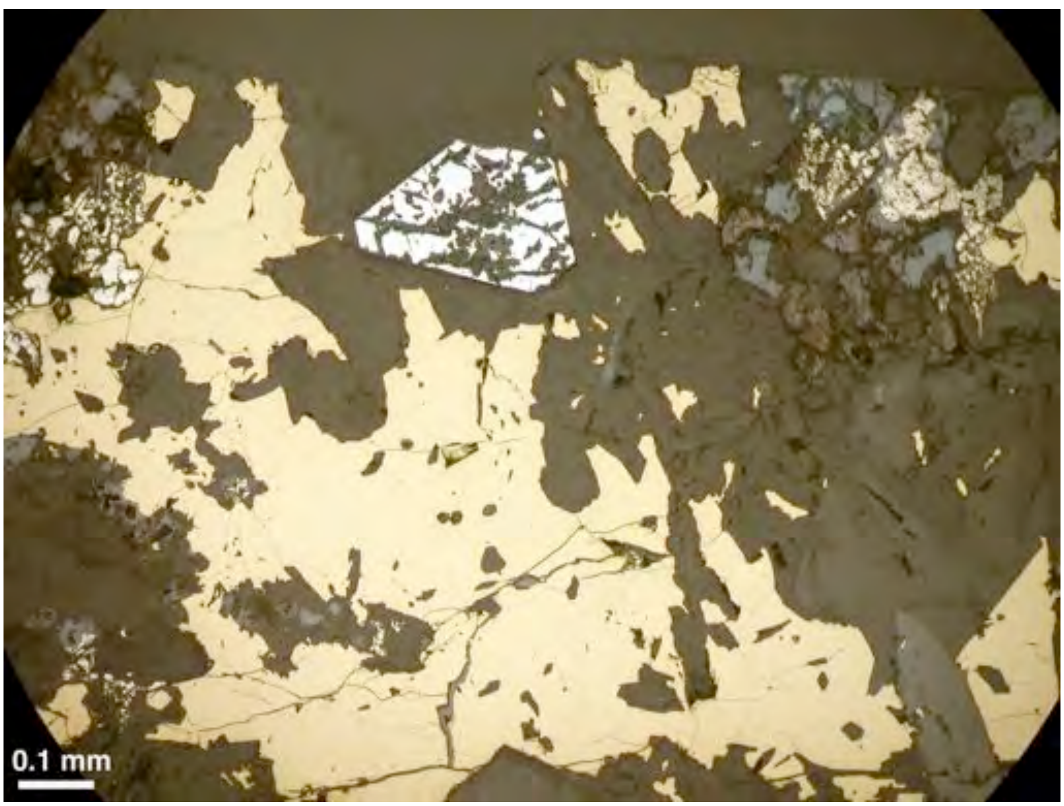


SZ2 (1) euhedral epidote (center) and actinolite (lower left) intergrown with cpy and pyrrhotite. F.o.V. 4.50 x 6.37mm XPL (above) and RL (below).

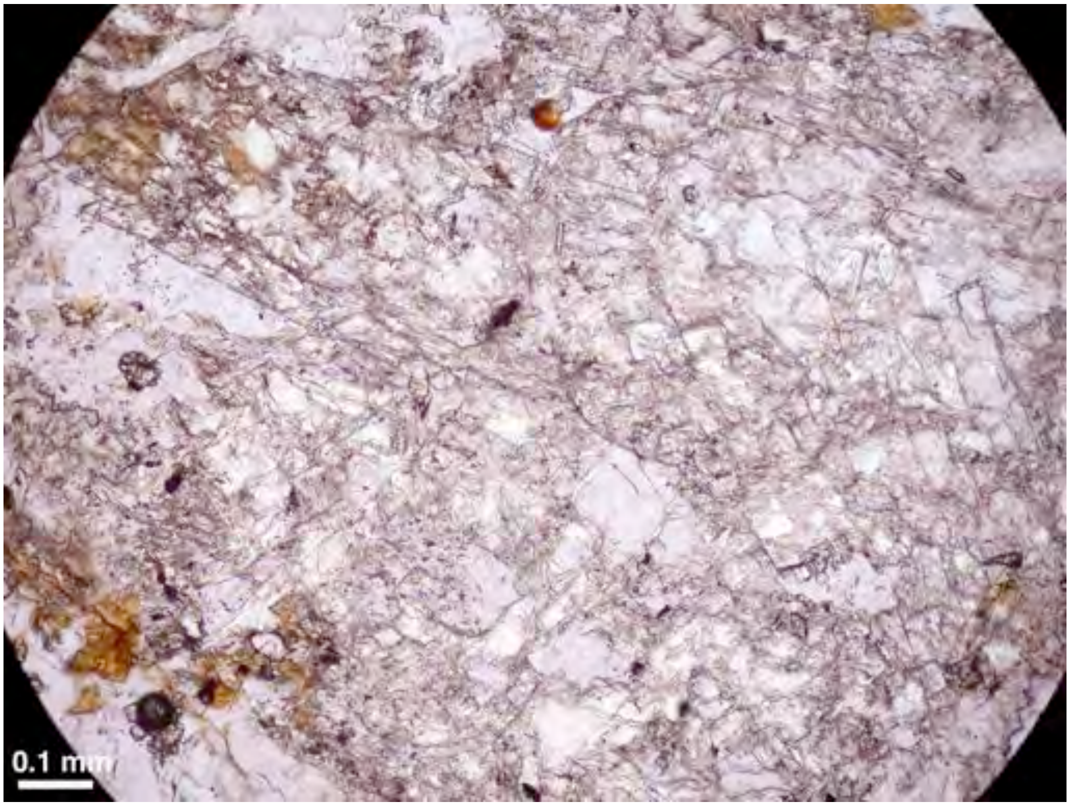
SZ2 (2) euhedral K-feldspar intergrown with greenish actinolite and dark alteration. F.o.V. 4.50 x 6.00 mm PPL (above) and XPL (below).



SZ2 (3) cpy intergrown with fractured and strongly altered pyrite (cream) surrounded by extensive goethite alteration (grey). F.o.V. 0.97 x 1.30 mm RL, (above).



SZ2 (6) anhedral cpy (yellow) with remnants of altered pyrite (cream) and euhedral arsenopyrite (white) fractured and veined by covellite. F.o.V. 0.97 x 1.30 mm RL (above).



SZ2 (7) remnants of sericite altered scapolite intergrown with feldspar. F.o.V. 1.04 x 1.38 mm PPL (above) and XPL (below).