

# Surficial Geochemical and Ground Geophysical Report

Soil Sampling, Mag+VLF, Drone

Keystone Property

Mayo, Yukon

GRANT_NUM	Claims
YC11702-721	Key 1-20
YD135841-898	Key 141-198
YE75703-763	KEY 73-133
YC50788-803	Keywest 21-36
YC56613-624	Keyeast 37-48
YC57335-350	Keyeast 49-64
YC70669-676	Keyeast 65-72

**NTS: 1:50,000 Mapsheet 105M/14**

**UTM: 491965 E 7077927 N**

**NAD83 Zone 8N**

## **Mayo Mining District**

Work Performed Between:  
Soil Sampling: August 28, 2019  
VLF+Mag: August 28, 2019  
Drone: August 28, 2019

Prepared for Shawn A. Ryan  
By GroundTruth Exploration Inc.

Written By: Kaitlyn Crawford  
Compilation Date: March 3, 2020

## Summary

This report summarizes the findings of the soil, VLF and drone programs run on the Keystone property during the summer of 2019. A 4-man soil crew and 1 MAG+VLF technician were set out by helicopter from Mayo, YT. The soil sampling was conducted over 4-man days with 141 samples collected and sent for assay. One-man day of walking the Very Low Frequency Electromagnetics (VLF+MAG) was conducted over 3.3 km on the property. The collected data was then processed by the GroundTruth Exploration Inc. geophysicist, Amir Radjaee.

Shawn Ryan has had ownership of the Keystone property since 2004 and 4131 soil samples have been collected to date. The central portion of the property was prospected in 2009 and 10 rock samples were collected. In the 2019 field season a drone survey was flown over the property and VLF lines were set to follow up on 2018 soil anomalies, as well as reconnaissance soil lines on the claims staked in 2018.

The property is located on the Robert Service Thrust Fault and a finger of the Keno Hill Quartzites runs through the center of the property. These quartzites are host to many polymetallic vein occurrences in the area, including the Keno Hill camp mine, which has produced silver since 1913.

During the 2019 soil program gold values were found to be encouraging for future exploration with a maximum value of 1548.9 ppb. Gold has correlated well with many key elements of the polymetallic veins in the area.

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## **Introduction**

Shawn Ryan commissioned GroundTruth Exploration Inc. to conduct a small-scale soil sampling survey, perform a Very Low Frequency Electromagnetic (VLF+MAG) survey, covering 3 select areas, and perform a drone survey on the Keystone property. The property is located 41 km northeast of the town of Mayo and 7 km southeast of Keno City. Helicopter staging took place from Mayo, but Keno City is the nearest settlement with road access.

All work was completed on August 28, 2019, a 2-man drone crew, 4-man soil crew and 1 VLF+MAG technician were set out by helicopter from Mayo. Two drones, over 2-man days, were used to complete the 15 km<sup>2</sup> survey. The soil sampling was conducted over 4-man days, with 141 samples collected and sent for assay. One-man day of walking VLF+MAG was conducted over 3.3f line km on the Keystone property. The collected data was processed by the GroundTruth Exploration Inc. geophysicist, Amir Radjaee.

## **Location and Access**

The property is located 41 km northeast of the town of Mayo and 7 km southeast of Keno City. The property is in the Mayo mining district and is located on National Topographic System (NTS) map sheet 105M/14. The approximate center of the property is at 491965 E 7077927 N. Helicopter staging took place from Mayo, but Keno City is the nearest small community with road access to the property.

The Keystone property has sub alpine vegetation often with no tree cover, but with occasional dwarf birch, subalpine fir and willow. The majority of ground cover is thin reindeer moss or bare soil. Elevation on the property ranges from 944 m to 1889 m with prominent to steep slopes. Average temperatures in the winter are around -18 degrees Celsius, while in the summer it can reach an average high of 22 degrees Celsius.

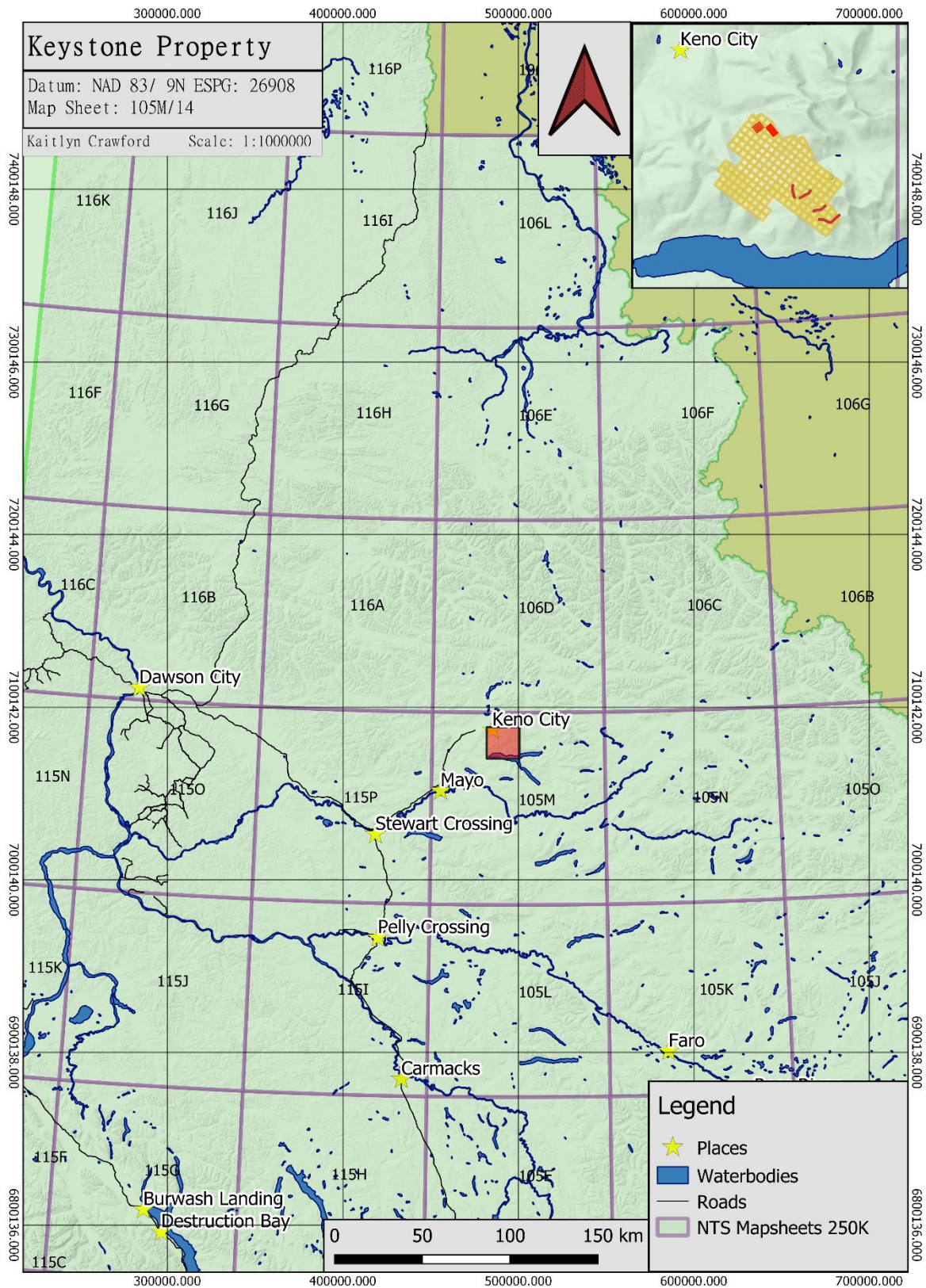


Figure 1: Location of the Keystone property on the NTS map sheet grid

## Claims

The Keystone property comprises 192 active claims, 100% owned by Shawn Ryan. A full summary of the claims is seen in the table below (Table 1) as well as a map of the claim locations (Figure 2). Most of the soil and VLF+MAG surveys were performed on the KEY claims. Drone imagery covered the claims staked in 2018.

GRANT_NUM	STATUS	LABEL	CLAIM_NAME	OWNER	STAKE_DATE	EXPIRY_DATE
YC11702-721	Active	Key 1-20	Key	Shawn	2/24/2004	3/5/2021
YD135841-898	Active	Key 141-198	Key	Shawn	11/28/2018	3/4/2021
YE75703-763	Active	KEY 73-133	KEY	Shawn	4/23/2016	3/5/2021
YC50788-803	Active	Keywest 21-36	Keywest	Shawn	8/15/2006	3/5/2022
YC56613-624	Active	Keyeast 37-48	Keyeast	Shawn	6/29/2007	3/5/2021
YC57335-350	Active	Keyeast 49-64	Keyeast	Shawn	8/31/2007	3/5/2021
YC70669-676	Active	Keyeast 65-72	Keyeast	Shawn	1/17/2009	3/5/2021

Table 1: Summary of the Keystone property claims

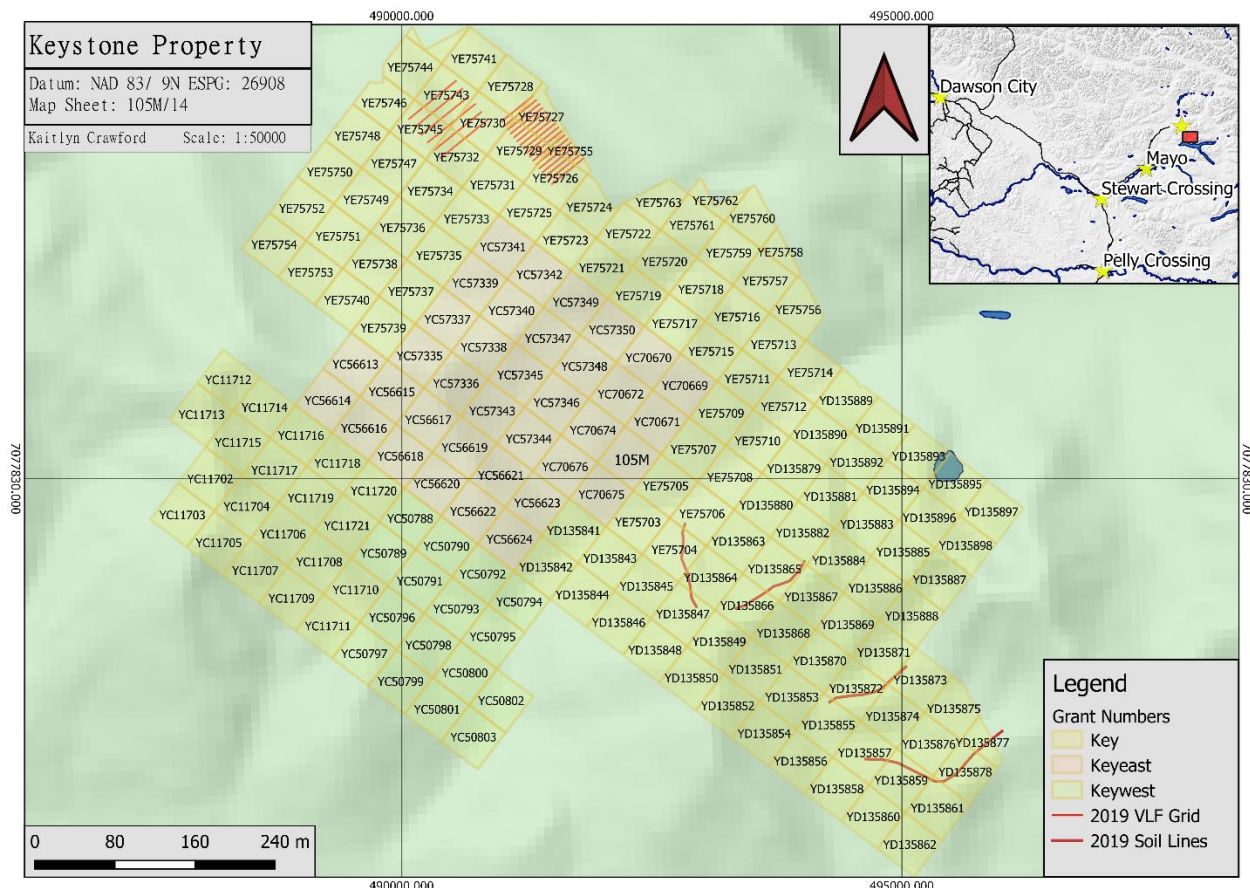


Figure 2: Keystone property claims with grant numbers

## History and Previous Work

The original 20 claims, staked by Shawn Ryan in 2004, have had numerous years of work done on them by Shawn Ryan and GroundTruth Exploration Inc. During the summer of 2004, 77 soil samples were taken along the side of a tributary creek that had high anomalous silts in Cu, Ni, Sb, Mo, and As. Since then, more soil samples have been taken and the claim block has been expanded. From 2004 to 2010, 4,131 soil samples were collected on the main portion of the property. In 2017, 77.6035 km<sup>2</sup> was droned covering a good portion of the Keystone property. In 2018, 163 soil samples were collected.

There are several mineral occurrences in the area that have been explored heavily, which include the Keno Hill mine camp.

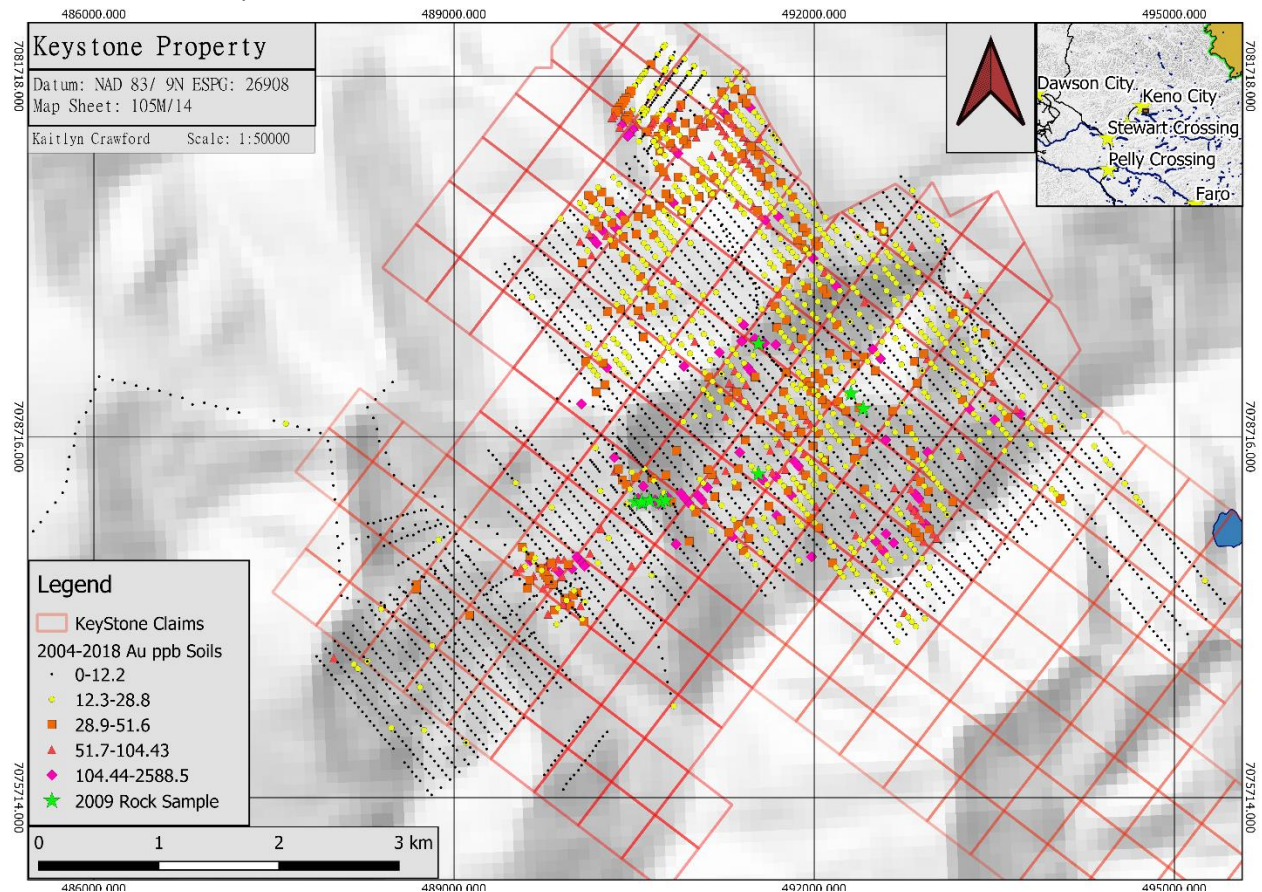


Figure 3: 2004 to 2018 soil samples and 2009 rock samples collected on the keystone property. Small black dots 0-75<sup>th</sup> percentile, yellow circles 75-90<sup>th</sup> percentile, orange squares 90-95<sup>th</sup> percentile, red triangles 95-98<sup>th</sup> percentile, pink diamond 98-100 percentile based on the 2004-2018 population.

## Geology

### Regional Geology

Laurentia coalesced around 1.84 billion years ago and its stability has allowed preservation of one of the world's lengthiest sedimentary records, now observed in uplifted strata along the eastern side of the

Cordilleran mountain belt from California to east-central Alaska. Layered rocks of the Ancestral North American strata terrane that underlie eastern Yukon and British Columbia and western Northwest Territories were deposited on the flank of western Laurentia. There are five belts of the Canadian Cordillera that underlie the Yukon.

The three most western terranes are displaced ancient volcanic arcs, former oceanic crust, foredeep, shelf and slope deposits. Next is the Omineca Belt originating on the stable north American Crystalline basement. The Furthest east belt is the Foreland, which is folded and thrust Phanerozoic strata (Roots et. al., 1997). The portion of the Mayo mining district that covers the property lies within the Omineca Belt.

This belt encompasses the Nisutlin Sub-Terrane and the Yukon-Tanana Terrane. Most of the rocks are uplifted sedimentary rocks intruded by mid-Cretaceous granites. The sedimentary rocks are Proterozoic to mid-Devonian in age and were deposited in the Selwyn Basin (Figure 4). The basin was a deep water, off-shelf environment. Deposition stopped and uplift and erosion occurred. The Keno Hill Quartzites were then deposited in a stable shelf, shallow water environment.

Contraction occurred in a northward direction during the middle Jurassic and Cretaceous due to the collision of the arc and oceanic terranes with the Ancestral North American terranes. Both the Tombstone Thrust Fault and the Robert Service Thrust Fault are within the Omineca Terranes. The Robert Service Thrust Fault moved in a northward direction. While the Tombstone moved in a northwestern direction and again in a northeastern direction.

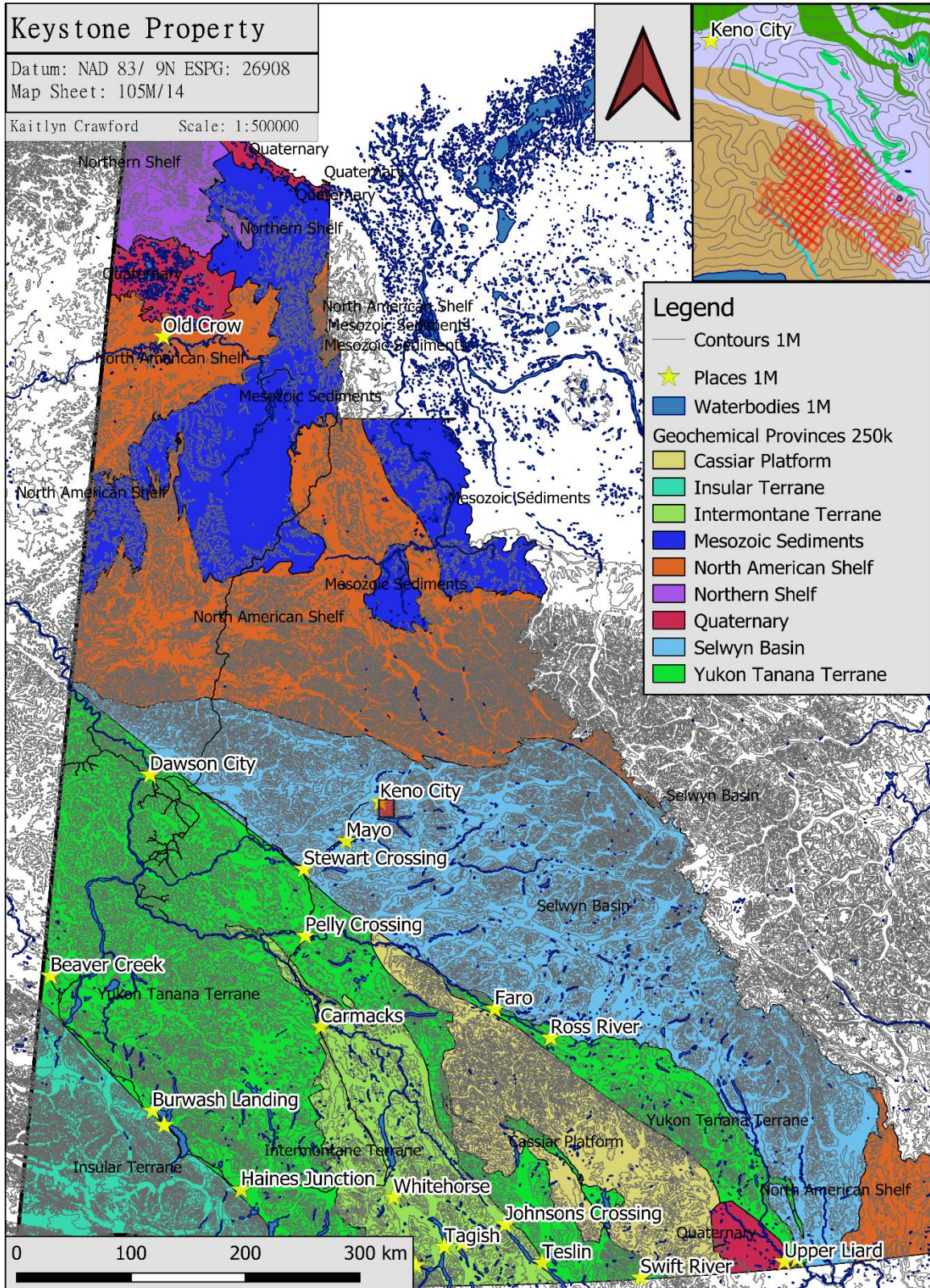


Figure 4: Geochemical Terranes of the Yukon

## **Property Geology**

The property covers two main units and two smaller intrusive units. The main body of the Keystone property is the Yusezyu Formation phyllite, shale, sandstone, conglomerate and limestone. The second unit is the Keno Hills Quartzites that hosts most of the Ag-Pb-Zn+/- Au polymetallic veins in the area. The two smaller units are the Algae Formation of the Hyland Group and the Galena Group of the Triassic age.

The Yusezyu Formation is the oldest unit in the area, Neoproterozoic in age. This unit is large with very little recognizable stratigraphy. Most of the unit is a meta-sandstone, with the property containing a carbonaceous phyllite member running to the southeast, with shale and minor amounts of conglomerate and limestone as lenses (Roots et. al., 1997). The unit unconformably lies on the Robert Services Thrust Fault. The Mo and Fisher polymetallic vein occurrences are both in this unit.

A finger of the Keno Hill Quartzites runs through the center of the property, as well on the northeastern edge of the property. This unit is massive to well foliated and lineated with Carboniferous age, competent quartzite and shale (Roots et al., 1997). Fractures within this unit are important as they host mineralization at the Keno Hill mining camp. This unit is variable in thickness and has isoclinal folds and low angle thrust faults, which are not always seen on the property.

In the southwest portion of the property, there is a small distinct unit of limestone that is also Neoproterozoic in age and part of the Hyland Group. A very small portion of the property to the northeast is underlain by a part of the Galena Group. This unit is Triassic in age and comprises diorite and gabbro sills. These sills may have some relationship to the polymetallic veins in the Keno Hill Quartzites (Moertle et. al., 2017).

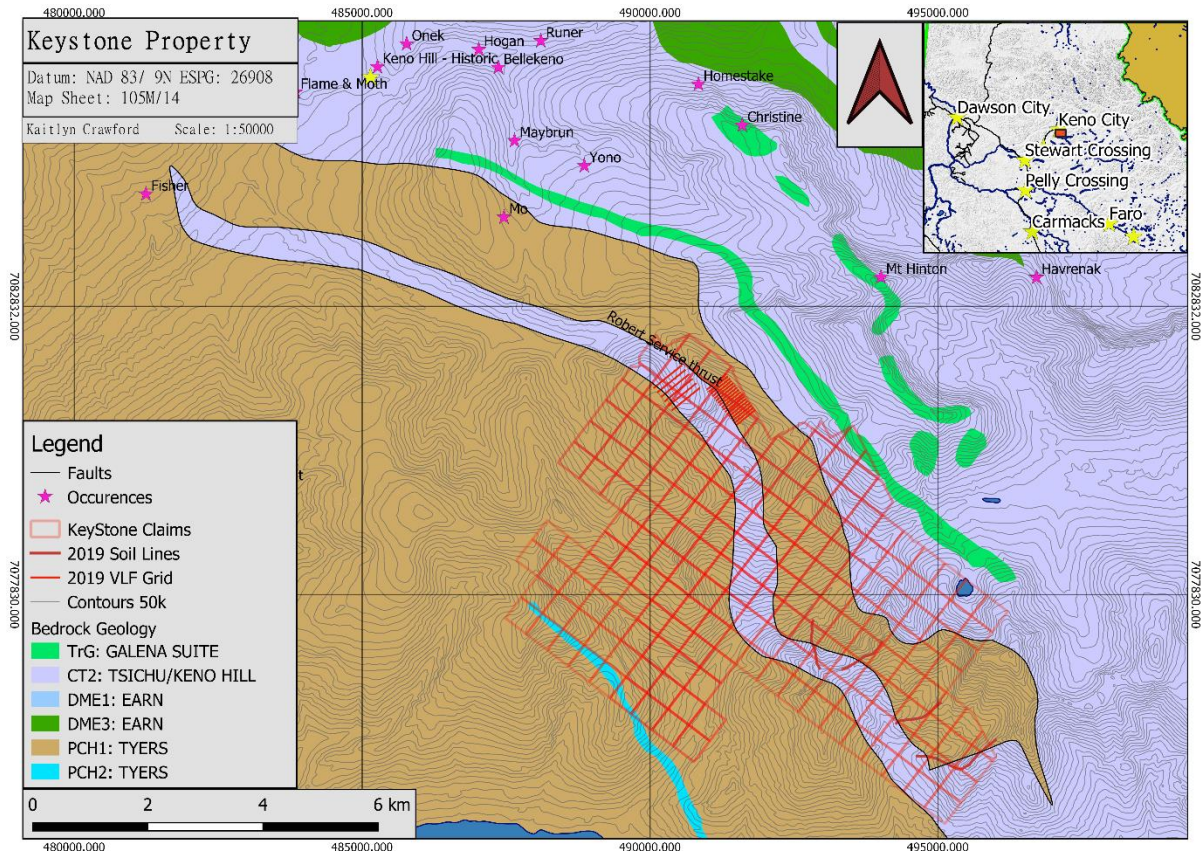


Figure 5: Bedrock Geology of the Keystone property with mineral occurrences in the area based on Roots (1997).

## Mineralization

Most of the occurrence types in the Keystone area are polymetallic veins Ag-Zn-Pb+/- Au and occur in the Keno Hill Quartzites. (Figure 5). Quartz, calcite and siderite are our main gangue minerals along with galena, sphalerite, pyrite, arsenopyrite, chalcocopyrite and tetrahedrite. There is often a silver association in one or all of three forms: Freibergite, pyargarite, or crypto silver within the structure of galena (Roots C., 1997).

Veins typically follow faults with an offset. Typically, the gangue and ore forming minerals prefer a competent host such as the Keno Hill Quartzites, while veins in the less competent phyllites do not host gangue or ore minerals. (Roots C., 1997). Four types of faults are seen in the area, including bedding faults, longitudinal faults, transverse faults and cross faults (Boyle, 1965). Longitudinal and transverse faults can form “Ore-shoots” and are typically where most ore minerals are found. The other two varieties of faults pre and post-date mineralization, respectively.

Longitudinal faults have generally sinistral movement but show multiple phases of movement. They tend to dip steeply to the southeast and trend north northeast to east northeast. These are the main producing faults of the Keno Hills mine. The transverse faults dip steeply to the southeast and strike southwest. Moth and Keno No. 9 are hosted in these types of faults.

The stages of mineral zonation occurred, early, main and late. The first stage is a quartz veinlet stockwork with small amounts of pyrite and occasional feldspar and arsenopyrite. The second stage is carbonate-sulphide veins that crosscut the original quartz stockwork and contain ore minerals. The final stage is the vug encrustation, with jarosite, curresite and angleite and native silver (Lynch, 1986).

## **2019 Exploration Program and Results**

### **Soil Sampling**

4-man days were spent on the Keystone property on the 28<sup>th</sup> of August 2019. 141 soils were taken along the ridgetops of the southeastern portion of the claim block. The 4-man crew plus one VLF+MAG technician were helicoptered in from the Mayo staging area. Full sample descriptions and assay results can be found in Appendix 1, "Soil Sample Analytical Certificates and Sample Descriptions."

### **Methods and Procedures**

Field technicians navigated to sample sites using handheld GPS units. A C-Horizon sample is collected using an Eijklcamp brand hand auger at a depth of between 20cm and 110cm. Where necessary, in rocky or frozen ground, a mattock is used to obtain the sample. Photos are taken of the sample collected and sample site 5 m from sample hole with auger inserted. Typically, 400 to 500 g of soil is placed in a kraft bag. A three-part barcode sample ID tag is attached to a rock or branch in a visible area at the sample site along with a length of pink flagging tape. A barcode sample ID tag is tied to the kraft sample bag as well as a backup tag placed inside the kraft bag. The GPS location of the sample site is recorded with a Garmin 60cx or 76cx GPS device in UTM NAD 83 format, and the waypoint is labeled with the project name and the sample ID number. A weather-proof handheld device equipped with a barcode scanner is used in the field to record the descriptive attributes of the sample collected, including sample identification number, soil color, soil horizon, slope, sample depth, ground and tree vegetation and sample quality and any other relevant information.

### **Analysis**

Once received in the lab, soil samples are prepared using the SS80 method. Samples are dried at 60 degrees Celsius and sieved such that up to 100 grams of material passes 180 microns (80 mesh). The samples are then analyzed by the AQ201+U method which involves dissolving 15 grams of material in a hot Aqua Regia solution and determining the concentration of 37 elements of the resulting analyte by the ICP-MS technique.

### **Results**

141 soils samples were collected and sent for assay during the 2019 soil survey conducted on the Keystone property (Figure 6). Gold and heavy metal results are encouraging for future exploration. Golds maximum value was 1,548.9 ppb, arsenic is 10,000 ppm, leads is 4,809.1 ppm, antimony is 2,000 ppm and zincs maximum value is 5,241ppm (Table 2). Lead and zinc correlate well and could indicate promising polymetallic veins in the area.

Element	Count_n	Maximum	Minimum	Mean	Median	Range	Variance	Standard deviation	percentile50	percentile75	percentile 90	percentile95	Percentile98
au_ppb	141	1548.9	0.25	20.27518	2.9	1548.65	17209.1653	131.1837084	2.9	6.9	17.1	48.1	108.34
ag_ppm	141	57.4	0.05	0.700355	0.2	57.35	23.0773935	4.803893576	0.2	0.4	0.7	0.9	1.28
as_ppm	141	10000	1.8	135.8085	16.1	9998.2	752870.568	867.6811443	16.1	24.9	50.5	231.9	1016.44
bi_ppm	141	0.9	0.05	0.295745	0.2	0.85	0.02714501	0.164757436	0.2	0.4	0.5	0.6	0.8
cu_ppm	141	311.8	6	39.02979	27.4	305.8	1403.6411	37.4651985	27.4	51.8	79.2	87.3	111.82
hg_ppm	141	2.91	0.005	0.078617	0.05	2.905	0.05872167	0.242325543	0.05	0.08	0.11	0.14	0.19
mo_ppm	141	20.7	0.2	1.602128	1.3	20.5	3.58077561	1.892293744	1.3	1.8	2.6	2.9	4.16
pb_ppm	141	4809.1	3.3	55.64468	17.3	4805.8	161791.297	402.2328893	17.3	25.8	34.6	43	87.08
se_ppm	141	6.3	0.25	0.75922	0.25	6.05	0.81725542	0.904021803	0.25	0.8	1.5	2.6	3.48
sb_ppm	141	2000	0.2	20.1766	1.5	1999.8	28410.5138	168.5541867	1.5	2.6	11	21	63.22
te_ppm	141	0.4	0.1	0.112766	0.1	0.3	0.00224838	0.047417063	0.1	0.1	0.1	0.2	0.3
tl_ppm	141	0.2	0.05	0.06773	0.05	0.15	0.00131684	0.036288224	0.05	0.1	0.1	0.1	0.2
zn_ppm	141	5241	14	109.0142	57	5227	190198.142	436.1171192	57	89	121	140	248.2
w_ppm	141	0.4	0.05	0.120213	0.1	0.35	0.00687868	0.082937797	0.1	0.2	0.2	0.3	0.3

Table 2: Statistical summary of the 2019 soil assays on the Keystone property

Gold correlated well with multiple elements that have been found in other occurrences in the area. These elements include silver, arsenic, mercury, lead, antimony and zinc. These elements also correlate well with each other (Table 3).

	au_ppb	ag_ppm	as_ppm	bi_ppm	cu_ppm	hg_ppm	mo_ppm	pb_ppm	se_ppm	sb_ppm	te_ppm	tl_ppm	zn_ppm	w_ppm
au_ppb	1	0.989553	0.987017	0.24429	0.659566	0.975304	-0.02984	0.989675	-0.00269	0.99375	0.002058	-0.06347	0.989244	-0.10355
ag_ppm	0.989553	1	0.970556	0.247161	0.638894	0.991677	-0.00787	0.998625	0.033531	0.995498	0.00683	-0.05252	0.99652	-0.09053
as_ppm	0.987017	0.970556	1	0.2357	0.631942	0.949826	-0.02243	0.971113	-0.02114	0.983321	-0.03348	-0.06259	0.972958	-0.11026
bi_ppm	0.24429	0.247161	0.2357	1	0.596576	0.267021	0.223871	0.226632	0.535591	0.227555	0.597039	-0.20683	0.24787	-0.47769
cu_ppm	0.659566	0.638894	0.631942	0.596576	1	0.650055	0.170913	0.629127	0.315403	0.632253	0.431788	-0.2709	0.668791	-0.43393
hg_ppm	0.975304	0.991677	0.949826	0.267021	0.650055	1	0.049476	0.987104	0.111912	0.981037	0.041656	-0.05125	0.986177	-0.07827
mo_ppm	-0.02984	-0.00787	-0.02243	0.223871	0.170913	0.049476	1	-0.03036	0.762804	-0.0286	0.141973	0.040764	0.009085	-0.12025
pb_ppm	0.989675	0.998625	0.971113	0.226632	0.629127	0.987104	-0.03036	1	-0.0006	0.996764	-0.0155	-0.04991	0.996886	-0.08959
se_ppm	-0.00269	0.033531	-0.02114	0.535591	0.315403	0.111912	0.762804	-0.0006	1	-0.00712	0.462169	-0.12767	0.034336	-0.22596
sb_ppm	0.99375	0.995498	0.983321	0.227555	0.632253	0.981037	-0.0286	0.996764	-0.00712	1	-0.02376	-0.05491	0.994105	-0.09493
te_ppm	0.002058	0.00683	-0.03348	0.597039	0.431788	0.041656	0.141973	-0.0155	0.462169	-0.02376	1	-0.13154	0.002495	-0.22792
tl_ppm	-0.06347	-0.05252	-0.06259	-0.20683	-0.2709	-0.05125	0.040764	-0.04991	-0.12767	-0.05491	-0.13154	1	-0.06549	0.381674
zn_ppm	0.989244	0.99652	0.972958	0.24787	0.668791	0.986177	0.009085	0.996886	0.034336	0.994105	0.002495	-0.06549	1	-0.11245
w_ppm	-0.10355	-0.09053	-0.11026	-0.47769	-0.43393	-0.07827	-0.12025	-0.08959	-0.22596	-0.09493	-0.22792	0.381674	-0.11245	1

Table 3: Correlation Matrix for the 2019 soil assay results of the Keystone soil survey

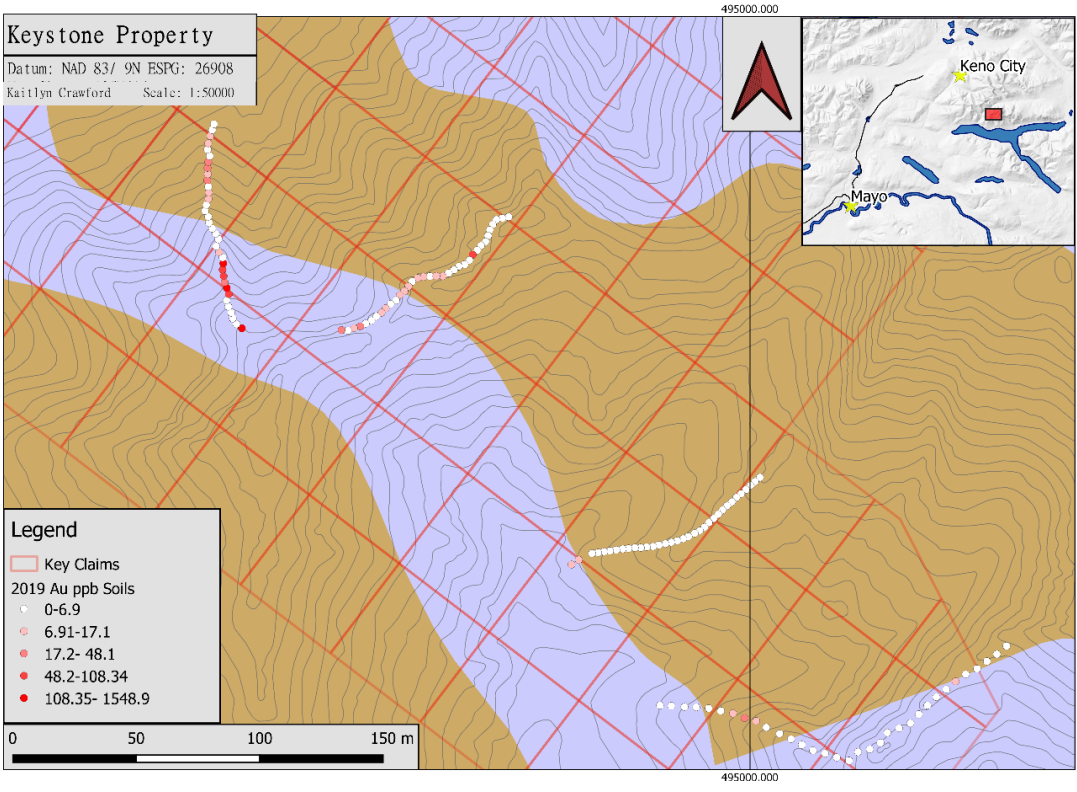


Figure 6: 2019 soil sample locations plotted with Au ppb. White 0-75th percentile, light pink 75-90th percentile, pink 90-95th percentile, red 95-98th percentile and dark red 98-100 percentile

### Magnetics+ VLF Surveys

A VLF+MAG technician walked a total of 3.3 km during the 2019 field season on the Keystone property to follow up on soils taken in 2018. The 3.3 km were walked in a southwest to northeast trend across the contact between an intrusion of Mississippian quartzite and the Neoproterozoic phyllite that make up the majority of the property (Figure 7). This provided some follow up for the soil samples taken during the summer of 2018.

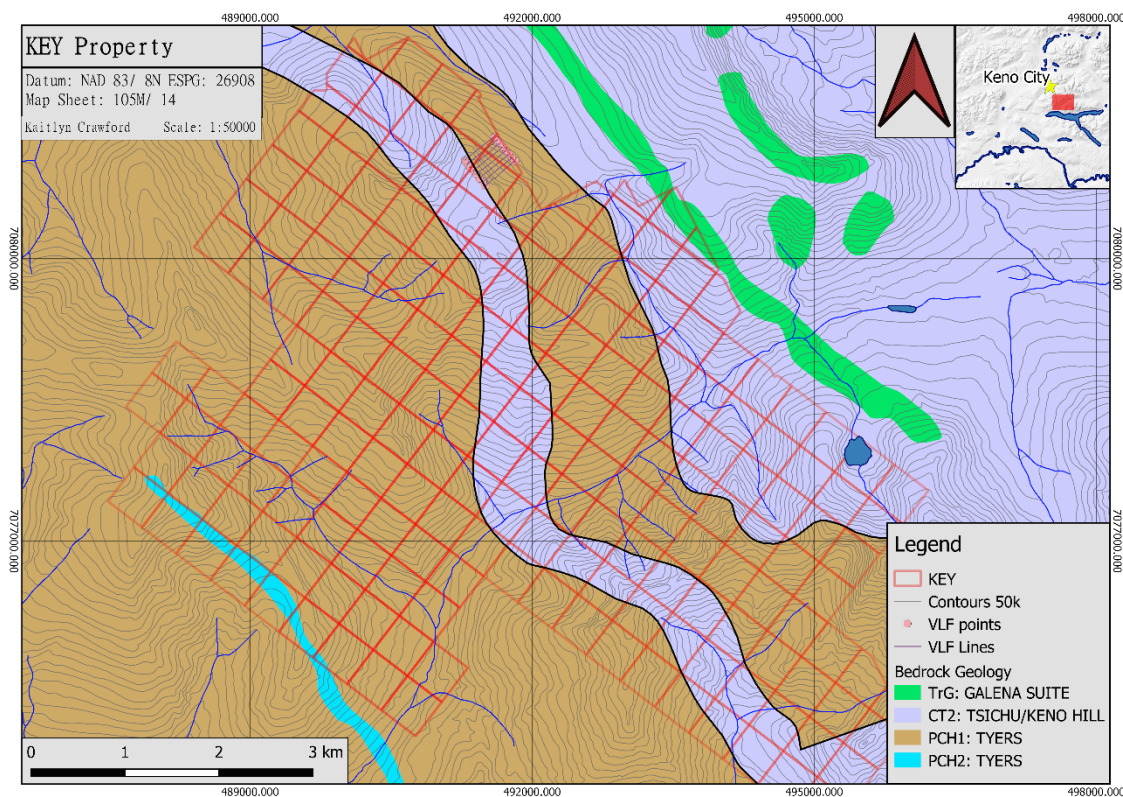


Figure 7: Location of 2019 VLF lines over bedrock geology, Roots (1997)

### Methods and Procedures

Data was acquired using a GEM-19 portable VLF system supplemented by a high-sensitivity proton magnetometer. The magnetometer has an absolute accuracy of +/- 0.2 nT. Along with basic GPS tracking, GEM provides a navigation feature with the real-time coordinate transformation to UTM and the local grid. Operators can define a complete survey on PC and download points to the magnetometer via RS-232 serial port.

During the survey, a GEM-19 magnetometer was set up as the base station to collect data for correction and removal of unwanted noise arising from solar and atmospheric activity. Total coverage of the survey block amounted to 3.3 line-km along 8 survey lines tracking 317 readings at about 10 m station spacing. The survey lines are in an azimuthal direction of SW-NE (NE 45°) with line spacing of 50 m. The in-phase and out-of-phase (quadrature) signals were measured as the percentage of total field for three frequencies.

The methods and procedure for MAG/VLF surveys are discussed fully in the report “Keystone GEOPHYSICAL REPORT GROUND VLF AND MAGNETIC SURVEY” by Geophysicist Amir H. Radjaee, *Ph.D.*, *P.Ge* in Appendix III.

### Analysis

Once each survey was completed in the field, the data measurements were downloaded and reviewed to ensure the quality of the data collected. This allowed field errors to be addressed before moving the

equipment. The VLF+MAG datasets were processed daily by the operator using EarthImager2D software provided by Advanced Geosciences Inc. Data collected in the field will then be processed by the Ground Truth Exploration Inc. geophysicist.

The data is processed for magnetic diurnal correction and the Fraser filter is applied on in-phase and quadrature components of VLF data. The data can be processed in advanced levels using inversion modelling techniques recently developed for the 2D inversion of VLF data. The EMTOMO-VLF2Dmf is a software program for the 2D inversion of VLF-EM data based on the finite element (FE) method. This will ensure that geological models respect a consistent structural, stratigraphic, and topological framework in addition to ensuring consistency between different geophysical models.

### **Results**

During the 2019 field season, 3.3-line km of VLF+MAG was collected across the contact between an intrusion of Mississippian quartzite and the Neoproterozoic phyllite. Polymetallic veins (Ag-Zn-Pb+/- Au) are known to be abundant in the quartzite unit. The In-phase data processed with Fraser lens 214 (Figure 8), Fraser lens 164 (Figure 9) and Fraser lens 246 (Figure 10) consistently have three magnetic highs. Potentially a fourth at the very north east edge of the grid. These magnetic highs are also recognizable in the TMI imagery (Figure 11). See the full report and in depth discussion in “Keystone GEOPHYSICAL REPORT GROUND VLF AND MAGNETIC SURVEY” by Geophysicist Amir H. Radjaee, *Ph.D., P.Geo* in Appendix III.

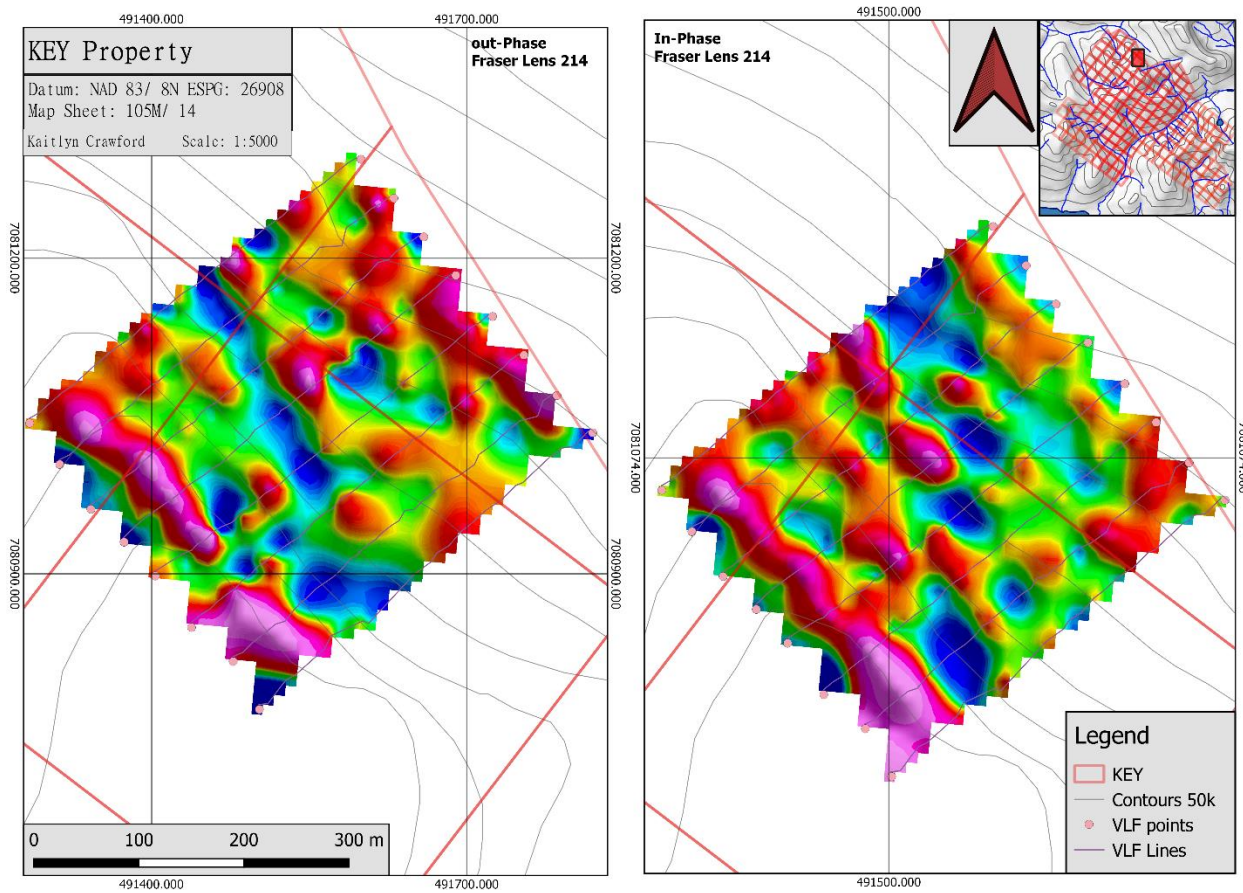


Figure 8: Walking VLF taken during the 2019 field season. A 214 Fraser filter was used to process the data

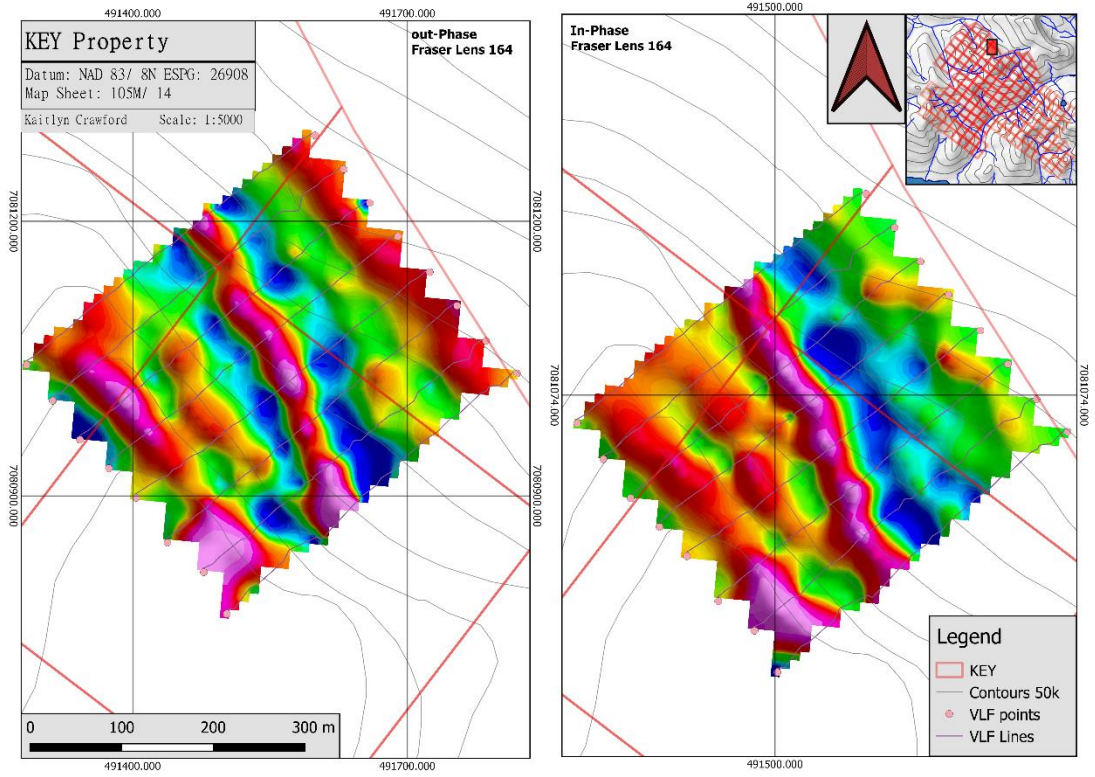


Figure 9: Walking VLF taken during the 2019 field season. A 164 Fraser filter was used to process the data

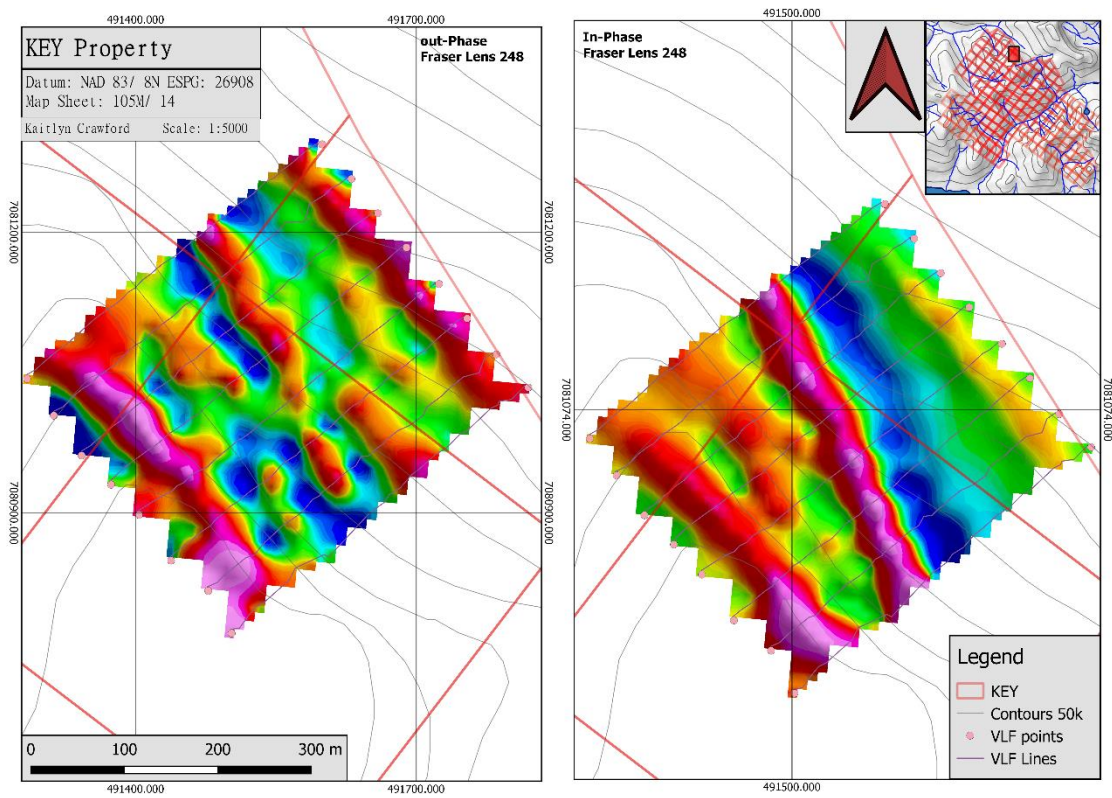


Figure 10: Walking VLF taken during the 2019 field season. A 248 Fraser filter was used to process the data

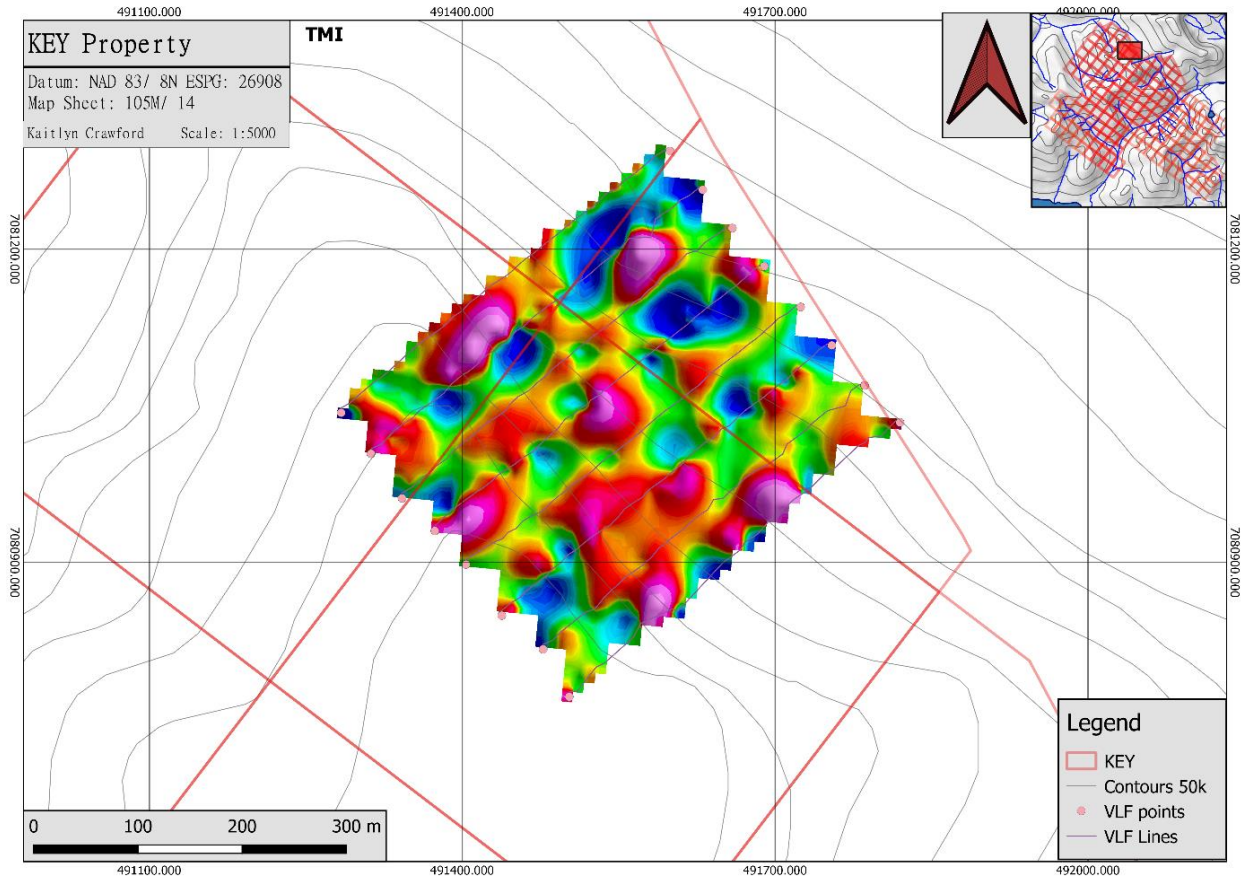


Figure 11: Walking VLF taken during the 2019 field season. TMI processed data

## Drone

A 2-person drone crew flew a drone and topographic survey over the Keystone property. This survey covered 15 km<sup>2</sup> on the southeastern portion of the property (Figure 12). See Appendix II for drone imagery.

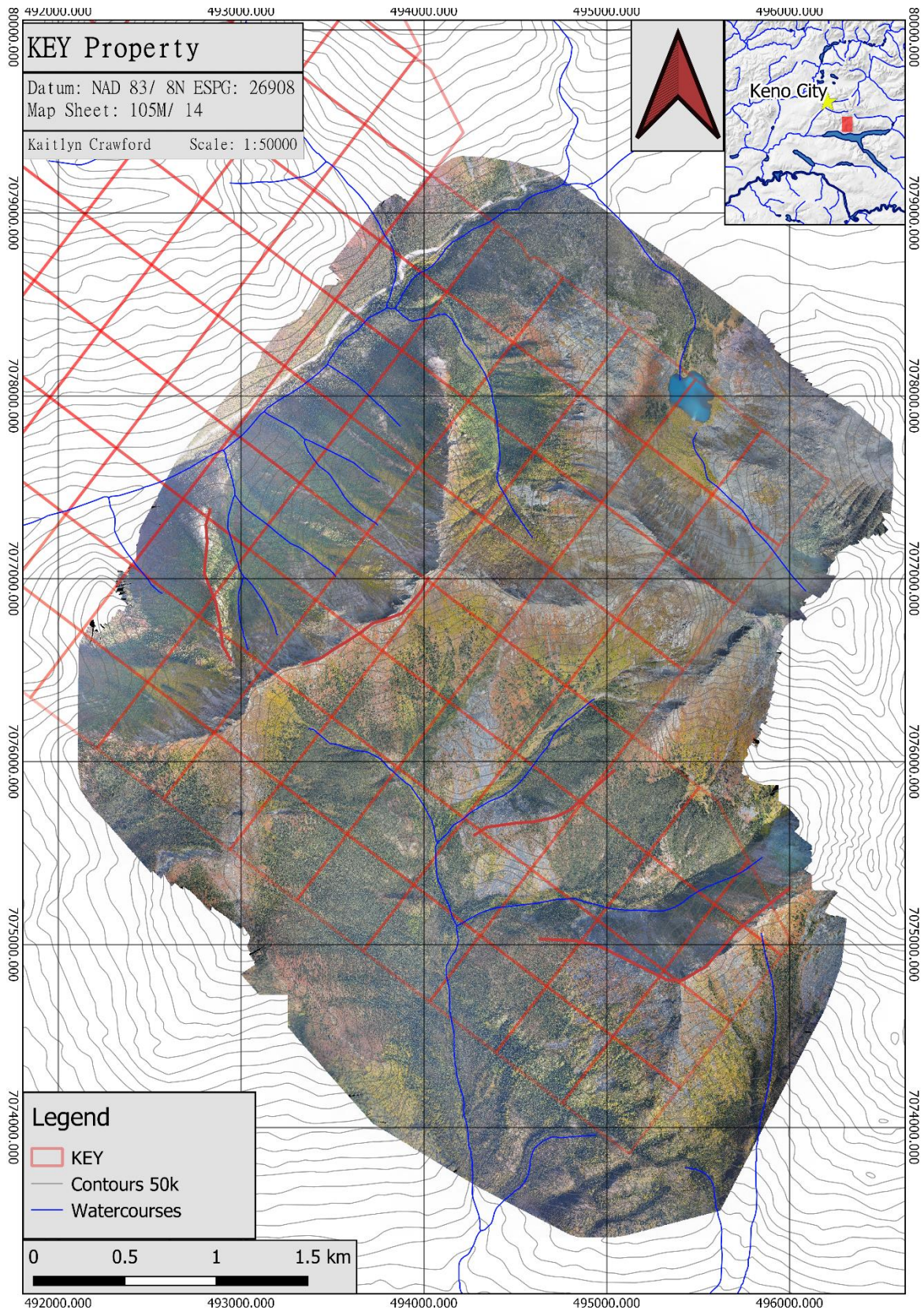


Figure 12: Drone Imagery 25 cm taken during the summer of 2019

## Interpretation and Conclusions

During the summer of 2019, 141 soils were taken along the ridgetops of the south-eastern portion of the Keystone claim block. The two farthest east reconnaissance lines did not have much in the way of heavy metals or gold (Figure 13). However, the two lines closer to the central portion of the block had a few significant heavy metal hits. These heavy metal hits are found further into the Mississippian quartzite. The eastern two lines are predominantly in the Neoproterozoic phyllite.

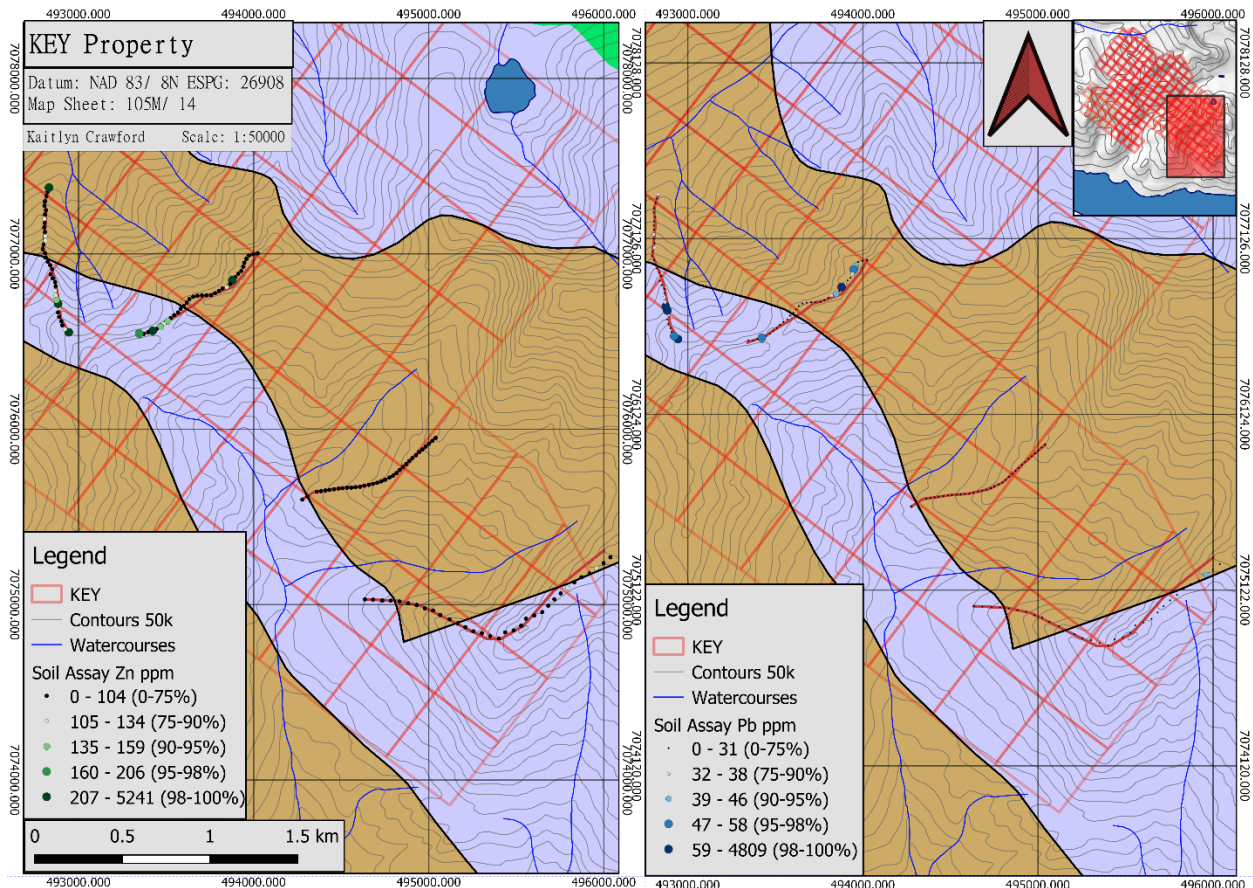


Figure 13: 2019 reconnaissance soil lines with assay results for lead and zinc. Underlying bedrock geology is based on Roots, C. (1997)

3.3 line km were walked in a southwest/northeast trend across the contact between an intrusion of Mississippian quartzite and the Neoproterozoic phyllite. The In-phase data processed with Fraser lens 214 (Figure 8), Fraser lens 164 (Figure 9) and Fraser lens 246 (Figure 10) consistently have three magnetic highs. Potentially a fourth at the very north east edge of the grid. These magnetic high areas are recognizable in the TMI imagery (Figure 11). There may be some correlation between these highs and zinc (Figure 14), but it is not obvious in the other heavy metals including lead (Figure 14).

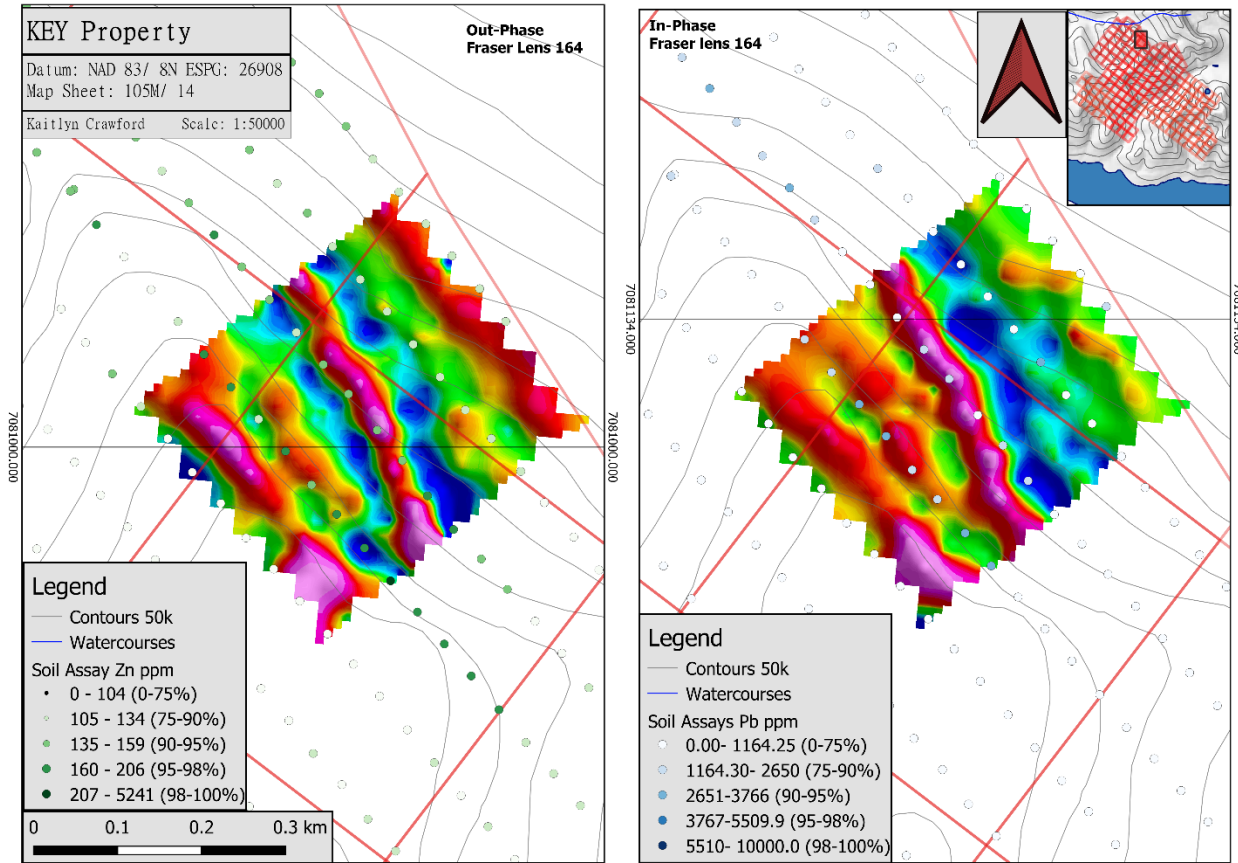


Figure 14: The VLF taken during the summer of 2019 processed with Fraser Lens 164 with soil samples done in previous years. Assay percentiles based on the assays taken since 2004 for the Keystone property.

## Recommendations

Thorough soil sampling has been completed on the main body of the Keystone property. The southeastern claims staked in 2018 will need some follow up work done on them as the results from the 2019 soil program were encouraging. As well, a more thorough prospecting and potentially a bedrock interface sampling program should be conducted to get a better idea of the underlying bedrock geology on the Keystone property. The area has many polymetallic vein occurrences and the structural geology of the area should be studied to determine the properties of the fluid flow in the area at the time of mineralization.

## References

- Boyle, R.W., (1965). Geology, Geochemistry and Origin of the Lead- Zinc-Silver Deposits of the Keno Hill-Galena Hill Area, Yukon Territory (With Short Descriptions of the Tin, Tungsten and Gold Deposites). *Geological Survey of Canada*, Bulletin 111, 302p.
- Lynch, G., (1986). Mineral Zoning of the Keno Hill Silver-Lead-Zinc Mining District, Yukon:*In: Yukon Geology, Vol.1, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada*, p. 89-97.
- Moertle, J.A, Paradis, S., Van Wagoner, N. and Leybourne, M., (2017). Preliminary Observations On the Volcanic Rocks of The Keno-Mayo District (105M/13, 14), The Anvil District (105K/3, 6), and The MacMillan Pass District (105O/1, 2), Central Yukon. *In: Yukon Exploration and Geology 2016*, K.E. MacFarlane and L.H. Weston (eds.), *Yukon Geological Survey*, p. 149-161.
- Roots, C., (1997). Geology of the Mayo Map Area, Yukon Territory (NTS 105M). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Bulletin 7, 82 p.
- Yukon MINFILE, 2019. Yukon MINFILE – A database of mineral occurrences. Yukon Geological Survey, <[http://www.geology.gov.yk.ca/databases\\_gis.html](http://www.geology.gov.yk.ca/databases_gis.html)>.

# Statement of Expenditures

## Keystone (KYS)

### Overview:

GroundTruth Exploration Conducted a 1 day exploration program on the Keystone property on Aug 28, 2019. A total of 141 soils, 2.8 line km of Mag+VLF traverses and 10km2 of drone were collected on the 1 day survey. The soil and mag/vlf crew of 5 drove to mayo on Aug 27, worked Keystone on Aug 28, Raven Aug 29 and demobed Aug 30. Mobe-Demobe day charges were split between the 2 projects. The drone crew drove to-from Dawson on the survey day of Aug 28.

Soils - 141 soils collected (including Mobe/Demob)		28-Aug	
Labour	141	\$ 25.00	\$ 3,525.00
<b>Equipment - Rental</b>			
Laptop, GPS, Data Logger, Radios, Inreach, Sat Phone Field Packs, Sampling tools @ \$25/field man day	4	\$ 12.50	
			\$ 50.00
<b>Sampling Supplies -Consumables</b>			
Kraft Bags, Barcode ID Tags, Ore Bags, Rice Bags Flagging, Zip Ties, AA Batteries @ \$1.00/sample	141	\$ 0.50	
			\$ 70.50
			<b>\$ 3,645.50</b>
<b>Mag/VLF - 2.8 line km, 1 man day + Mobe/Demobe</b>		<b>28-Aug</b>	
Labour			\$ 650.00
<b>Equipment - Rental</b>			
GEM Systems 19V MAG VLF with Mag Base station @ \$300/day for MAG/VLF and \$100/day for mag base	1	\$ 200.00	
			\$ 200.00
<b>Mag/VLF Data Processing</b>			
Amir - 8 hours estimate (labour at cost +10%)	8	\$ 65.00	
			\$ 520.00
			<b>\$ 1,370.00</b>
<b>Drone - 8 flights/15km2, 2 man days, 2 drones</b>		<b>28-Aug</b>	
Labour	2	\$ 250.00	\$ 500.00
<b>Equipment - Rental</b>			
Sensefly Ebee Plus UAV with base station and laptop @ \$500/day per drone system	2	\$ 250.00	
			\$ 500.00
<b>Drone Data Processing</b>			
Final Processing and Deliverables - Orthoimage, DEM, Point Cloud - 8 flights @ \$100/flight	8	\$ 50.00	
			\$ 400.00
			<b>\$ 1,400.00</b>
<b>Project Support</b>		<b>28-Aug</b>	
<b>Vehicle</b>			
1 Truck for Soil/Mag-VLF Crew 2d, 1 Truck for Drone Crew 1d @ \$150/day	3	\$ 75.00	
			\$ 225.00
* Soil/Mag Truck charge split w RAV project on mobe days Aug 27/30			
<b>Food/Accom</b>			
Food for Crew of 4 soil samplers, 1 Mag/VLF, 2 Drone @ \$60/md	12	\$ 50.00	
Camp for Crew of 4 soil samplers, 1 Mag/VLF @ \$50/md	10	\$ 40.00	
			\$ 1,000.00
** Soil/Mag camp+accom charges split w RAV project on mobe days Aug 27/30			
			<b>\$ 1,225.00</b>
<b>Assessment Report</b>			
Kaitlyn - plotting and assessment -12 hours estimate (labour at cost +10%)	12	\$ 35.00	
			\$ 420.00
			<b>\$ 420.00</b>
			<b>\$ 8,060.50</b>
			<b>\$ 8,060.50</b>

## Statement of Qualifications

I, Kaitlyn Crawford, do hereby declare that:

1. I am currently assisting with end of season report writing for GroundTruth Exploration Inc. of Dawson City, Yukon.
2. I graduated from Brandon University in 2018 with a B.Sc. degree in Geology.
3. I have worked as a geologist or geological assistant on and off since 2015.
4. I am not aware of any material, fact or material change with respect to the subject matter of this report, the omission to disclose which makes this report misleading.

Dated: March 3, 2020

## **Appendices**

**Appendix I: Soil Sample Analytical Certificates and Sample Descriptions**



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

[www.bureauveritas.com/um](http://www.bureauveritas.com/um)

Bureau Veritas Commodities Canada Ltd.  
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada  
PHONE (604) 253-3158

**Client:** **Shawn Ryan Prospecting**  
Box 213  
Dawson City Yukon Y0B 1G0 Canada

Submitted By: Shawn Ryan  
Receiving Lab: Canada-Whitehorse  
Received: September 04, 2019  
Report Date: September 19, 2019  
Page: 1 of 6

# CERTIFICATE OF ANALYSIS

WHI19000508.1

## CLIENT JOB INFORMATION

Project: KYS  
Shipment ID: KYS190828-01-SOIL  
P.O. Number: 2983  
Number of Samples: 141

## SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT-SOIL Immediate Disposal of Soil Reject

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	141	Dry at 60C			WHI
SS80	141	Dry at 60C sieve 100g to -80 mesh			WHI
AQ201-U	141	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
DISPL	141	Disposal of pulps			VAN
SHP01	141	Per sample shipping charges for branch shipments			VAN

## ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Shawn Ryan Prospecting  
Box 213  
Dawson City Yukon Y0B 1G0  
Canada

CC: Isaac Fage  
Data Management

  
JEFFREY CANNON  
Geochemistry Department Supervisor

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

Client: **Shawn Ryan Prospecting**

Box 213

Dawson City Yukon Y0B 1G0 Canada

Project: KYS

Report Date: September 19, 2019

Page: 2 of 6

Part: 1 of 2

# CERTIFICATE OF ANALYSIS

# WHI19000508.1

Method Analyte Unit MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	
1814579	Soil	1.0	29.1	25.3	57	0.1	23.6	9.9	339	2.77	18.4	0.9	1.8	3.2	9	<0.1	1.2	0.4	29	0.08	0.026
1814581	Soil	1.2	20.6	22.3	52	0.4	20.6	9.6	583	2.82	231.9	0.9	7.8	4.2	8	0.1	2.6	0.3	44	0.06	0.023
1814583	Soil	1.8	14.7	23.8	27	0.5	13.4	2.0	89	1.88	25.0	0.9	1.0	4.9	16	<0.1	4.5	0.6	29	0.05	0.061
1814626	Soil	1.0	7.6	4.2	17	<0.1	4.5	1.5	40	0.90	9.6	0.3	11.8	1.2	4	<0.1	1.0	0.1	46	0.02	0.026
1814627	Soil	1.5	11.9	11.6	51	0.2	14.4	6.7	247	2.64	14.5	0.6	1.3	4.0	18	0.2	1.0	0.2	63	0.14	0.058
1814634	Soil	1.4	32.2	17.8	57	0.3	16.7	5.7	249	2.56	94.6	1.4	19.2	1.8	13	0.2	3.4	0.3	48	0.10	0.086
1814580	Soil	0.9	22.4	22.6	56	0.3	23.1	10.6	344	2.48	35.7	1.0	2.5	4.6	8	0.1	2.3	0.2	34	0.06	0.026
1814582	Soil	2.5	51.2	11.9	125	0.2	104.4	41.1	901	4.67	122.2	1.8	3.3	4.8	18	0.6	9.3	<0.1	29	0.45	0.130
1814630	Soil	1.6	13.0	10.6	44	0.2	13.8	4.7	189	2.80	25.0	0.6	2.6	3.9	11	<0.1	1.5	0.2	54	0.07	0.048
1814633	Soil	1.3	28.2	12.7	50	0.3	16.7	4.9	153	2.13	49.7	1.4	17.1	0.8	12	0.2	2.6	0.2	44	0.08	0.073
1814578	Soil	0.8	65.3	40.4	125	0.3	49.5	32.9	1895	6.04	77.2	2.2	3.3	6.3	6	0.1	3.2	0.4	15	0.04	0.040
1814576	Soil	0.8	15.9	16.4	46	<0.1	18.9	8.3	381	2.43	16.7	0.7	4.1	3.3	9	<0.1	1.4	0.1	35	0.11	0.033
1814629	Soil	1.3	9.2	13.3	47	0.2	11.6	4.8	198	3.06	12.3	0.6	1.0	3.7	9	0.2	0.8	0.2	56	0.06	0.042
1814631	Soil	1.3	10.2	10.4	33	0.1	9.5	3.3	119	1.89	20.6	0.7	3.1	1.1	10	0.1	1.2	0.3	49	0.07	0.040
1814632	Soil	1.3	26.4	13.0	41	0.4	15.1	4.1	143	2.08	36.0	1.1	2.4	0.4	15	0.3	2.4	0.3	46	0.09	0.069
1814577	Soil	1.8	27.4	28.3	65	0.1	23.1	10.0	724	3.37	43.3	1.0	1.0	5.9	18	0.1	2.1	0.3	40	0.22	0.045
1802580	Soil	2.7	29.3	15.1	72	0.2	26.4	11.9	261	2.48	13.1	1.8	2.3	6.2	12	0.3	1.9	0.2	45	0.07	0.042
1802582	Soil	1.5	11.8	16.3	55	<0.1	13.7	6.3	265	3.17	10.2	0.8	1.8	2.8	9	0.3	0.7	0.2	51	0.08	0.045
1802584	Soil	1.0	24.5	21.5	80	<0.1	30.7	11.7	404	2.47	9.0	1.2	2.2	7.3	7	0.2	0.6	0.2	30	0.06	0.031
1814628	Soil	1.3	8.4	8.5	30	0.2	5.7	2.2	94	1.41	10.4	0.4	2.9	1.1	7	0.3	1.0	0.2	59	0.04	0.042
1802579	Soil	1.6	26.6	15.9	57	<0.1	19.4	6.8	261	2.89	11.8	1.0	6.0	2.3	9	0.2	0.9	0.3	51	0.07	0.046
1802578	Soil	1.3	29.3	17.2	71	<0.1	26.8	10.9	498	2.86	13.3	1.2	2.1	2.4	10	0.2	0.7	0.2	42	0.09	0.063
1802583	Soil	1.3	14.0	16.2	43	0.2	12.8	6.7	307	2.12	7.9	0.8	0.8	1.8	6	0.3	0.6	0.2	38	0.03	0.041
1802586	Soil	0.8	21.5	22.3	64	<0.1	25.8	14.4	588	2.67	9.9	0.9	1.6	8.7	7	0.2	0.6	0.2	25	0.08	0.042
1802597	Soil	1.0	27.8	11.5	47	0.4	14.4	4.5	193	2.42	9.9	0.8	4.1	1.2	10	0.2	0.9	0.2	43	0.10	0.059
1802598	Soil	1.2	16.6	10.9	51	0.1	16.4	6.4	218	2.17	11.9	0.7	2.7	2.7	10	0.2	0.9	0.2	41	0.07	0.040
1802576	Soil	0.8	29.3	16.4	68	<0.1	37.3	13.5	836	2.69	11.4	0.9	4.8	5.9	13	0.3	0.5	0.2	32	0.19	0.092
1802587	Soil	0.5	18.1	19.4	55	<0.1	20.9	8.2	269	2.31	67.3	0.8	1.8	8.9	4	<0.1	1.5	0.2	19	0.03	0.026
1802596	Soil	1.4	13.4	11.3	48	0.2	13.6	6.5	247	2.35	12.1	0.7	<0.5	1.9	9	0.3	0.9	0.2	52	0.08	0.055
1802577	Soil	1.2	24.0	17.3	71	<0.1	26.0	10.0	503	3.02	14.8	1.0	<0.5	1.4	9	0.3	0.9	0.2	44	0.06	0.049



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**Project:** KYS  
**Report Date:** September 19, 2019

**Page:** 2 of 6

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method Analyte	Unit	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
MDL		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	0.2
1814579	Soil	15	17	0.34	67	0.015	1	1.03	0.004	0.05	0.1	0.03	1.8	<0.1	<0.05	4	<0.5	<0.2
1814581	Soil	18	21	0.32	83	0.024	<1	1.38	0.004	0.05	0.2	0.05	2.2	0.1	<0.05	4	<0.5	<0.2
1814583	Soil	11	24	0.15	58	0.002	<1	1.24	0.009	0.03	<0.1	0.08	1.9	<0.1	0.05	3	0.8	<0.2
1814626	Soil	12	9	0.02	29	0.025	2	0.34	0.002	0.02	0.2	0.05	0.8	<0.1	<0.05	4	<0.5	<0.2
1814627	Soil	12	30	0.32	177	0.030	<1	1.89	0.005	0.05	0.2	0.05	2.6	0.1	<0.05	6	<0.5	<0.2
1814634	Soil	15	27	0.27	76	0.028	2	1.17	0.006	0.04	0.3	0.08	2.1	0.1	<0.05	4	1.7	<0.2
1814580	Soil	19	18	0.26	65	0.021	<1	1.13	0.004	0.05	0.1	0.03	1.9	<0.1	<0.05	3	<0.5	<0.2
1814582	Soil	13	25	0.42	97	0.015	<1	1.07	0.007	0.03	<0.1	0.03	4.6	<0.1	<0.05	2	0.7	<0.2
1814630	Soil	13	28	0.33	69	0.034	1	1.21	0.005	0.04	0.3	0.04	2.0	<0.1	<0.05	5	0.7	<0.2
1814633	Soil	14	24	0.27	104	0.022	<1	1.19	0.008	0.04	0.3	0.10	2.2	0.1	<0.05	4	0.6	<0.2
1814578	Soil	19	15	0.45	67	0.006	<1	1.50	0.003	0.05	<0.1	0.04	3.1	<0.1	<0.05	3	<0.5	<0.2
1814576	Soil	13	18	0.26	61	0.024	<1	1.00	0.004	0.04	0.1	0.03	1.6	<0.1	<0.05	3	<0.5	<0.2
1814629	Soil	13	29	0.30	89	0.031	<1	1.74	0.004	0.04	0.2	0.06	2.4	0.1	<0.05	6	0.5	<0.2
1814631	Soil	14	20	0.25	86	0.025	<1	1.08	0.004	0.04	0.2	0.03	1.3	0.2	<0.05	5	0.6	<0.2
1814632	Soil	11	21	0.23	127	0.013	<1	0.98	0.006	0.04	0.2	0.07	1.0	0.1	<0.05	4	0.6	<0.2
1814577	Soil	22	18	0.29	91	0.015	<1	1.26	0.004	0.05	0.2	0.03	2.1	0.1	<0.05	4	<0.5	<0.2
1802580	Soil	17	24	0.34	655	0.028	<1	1.69	0.005	0.05	0.2	0.06	3.4	0.1	<0.05	4	0.6	<0.2
1802582	Soil	13	30	0.37	101	0.027	<1	2.00	0.004	0.05	0.2	0.05	2.3	0.1	<0.05	5	0.5	<0.2
1802584	Soil	22	22	0.41	84	0.017	<1	1.55	0.004	0.07	0.1	0.03	2.3	0.1	<0.05	4	<0.5	<0.2
1814628	Soil	13	11	0.05	50	0.035	<1	0.61	0.003	0.03	0.2	0.02	0.9	<0.1	<0.05	6	<0.5	<0.2
1802579	Soil	16	28	0.42	90	0.026	<1	1.68	0.004	0.05	0.1	0.03	2.3	0.2	<0.05	5	<0.5	<0.2
1802578	Soil	17	30	0.48	88	0.022	<1	1.64	0.004	0.05	0.1	0.03	2.3	0.1	<0.05	5	0.5	<0.2
1802583	Soil	17	16	0.23	63	0.012	<1	1.19	0.003	0.06	0.1	0.04	1.2	<0.1	<0.05	4	<0.5	<0.2
1802586	Soil	25	19	0.44	94	0.016	<1	1.45	0.004	0.07	0.1	0.02	2.1	<0.1	<0.05	4	<0.5	<0.2
1802597	Soil	13	25	0.33	60	0.021	<1	1.32	0.005	0.03	0.1	0.06	1.6	<0.1	<0.05	4	0.5	<0.2
1802598	Soil	12	25	0.35	92	0.025	<1	1.65	0.005	0.04	0.2	0.05	2.5	<0.1	<0.05	4	0.5	<0.2
1802576	Soil	20	33	0.55	68	0.026	<1	1.38	0.005	0.04	0.1	0.03	2.5	<0.1	<0.05	3	<0.5	<0.2
1802587	Soil	37	14	0.29	67	0.006	<1	1.15	0.003	0.05	<0.1	0.02	1.8	0.1	<0.05	3	<0.5	<0.2
1802596	Soil	13	25	0.35	87	0.028	<1	1.62	0.005	0.04	0.2	0.05	2.4	<0.1	<0.05	5	<0.5	<0.2
1802577	Soil	18	35	0.46	92	0.014	<1	1.60	0.003	0.05	0.1	0.03	1.6	0.1	<0.05	5	<0.5	<0.2

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



Bureau Veritas Commodities Canada Ltd.

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Client: **Shawn Ryan Prospecting**  
Box 213  
Dawson City Yukon Y0B 1G0 Canada

Project: KYS  
Report Date: September 19, 2019

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# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method Analyte	Unit	MDL	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	
			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	
			0.1	0.1	0.1	1	0.1	0.1	0.1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	2	0.01	0.001	0.001	
1802581	Soil		1.5	15.7	15.2	57	<0.1	21.7	9.7	379	2.52	9.3	0.9	1.4	5.4	8	0.2	0.7	0.2	42	0.07	0.036
1802585	Soil		1.3	12.8	14.3	48	<0.1	14.4	6.4	284	2.55	9.6	0.6	1.0	2.9	7	0.2	0.6	0.2	43	0.05	0.037
1814590	Soil		0.8	12.7	11.0	46	<0.1	18.6	6.8	219	2.02	10.3	0.7	4.2	5.2	11	0.2	0.8	0.1	39	0.11	0.040
1802590	Soil		1.0	12.2	11.6	40	0.1	12.0	4.3	182	2.09	16.1	0.6	0.9	0.8	7	<0.1	1.2	0.2	31	0.05	0.038
1802592	Soil		1.8	31.2	18.1	41	0.4	18.7	5.7	187	3.16	19.1	1.2	2.5	6.3	33	0.3	1.0	0.3	43	0.07	0.099
1802588	Soil		1.2	18.9	18.0	65	<0.1	22.0	16.6	865	3.18	27.3	0.8	2.1	8.8	8	0.2	1.2	0.2	43	0.07	0.034
1814591	Soil		1.4	20.3	17.3	36	0.3	10.9	2.7	97	2.23	16.4	1.1	3.5	0.9	13	0.2	1.0	0.4	46	0.04	0.072
1802591	Soil		6.0	12.8	19.4	34	0.5	6.7	1.9	131	2.27	20.2	0.7	1.8	2.0	28	0.2	1.1	0.3	47	0.03	0.093
1802593	Soil		1.2	14.5	11.5	59	0.2	18.1	5.9	175	2.63	17.3	0.6	1.6	4.6	11	0.3	1.3	0.2	49	0.10	0.096
1802589	Soil		1.2	8.0	13.5	45	<0.1	11.4	5.0	267	2.61	12.3	0.6	1.4	2.6	8	0.1	0.7	0.2	47	0.07	0.047
1814585	Soil		1.1	10.4	9.5	21	0.2	5.2	1.4	37	1.21	15.5	1.1	2.7	0.4	10	0.2	1.0	0.2	28	0.03	0.109
1814588	Soil		1.8	17.8	18.9	54	0.6	18.0	6.1	204	2.35	24.9	0.9	2.3	1.5	24	0.1	1.2	0.3	43	0.12	0.090
1814584	Soil		2.8	18.4	18.5	22	0.7	8.8	1.6	84	1.84	25.7	0.9	2.8	1.7	22	0.1	3.1	0.4	36	0.03	0.058
1802594	Soil		1.2	8.0	10.0	29	0.1	8.9	2.9	144	2.36	11.6	0.5	0.9	1.3	8	0.1	0.8	0.2	68	0.05	0.041
1814587	Soil		1.9	22.6	19.3	46	0.6	13.3	4.3	344	2.62	31.4	1.5	6.0	1.4	32	0.2	2.4	0.3	45	0.07	0.121
1814586	Soil		0.7	10.1	6.9	35	<0.1	12.1	3.8	164	1.97	12.0	0.7	0.8	0.7	8	0.2	0.9	0.1	28	0.06	0.056
1814589	Soil		1.0	28.0	9.1	50	0.2	28.3	9.7	314	2.49	14.0	1.2	3.2	5.7	20	0.3	1.1	0.1	42	0.19	0.092
1802595	Soil		1.3	16.8	10.4	77	<0.1	21.9	6.6	237	2.66	13.2	0.7	2.7	4.7	12	0.4	1.1	0.2	51	0.13	0.061
1813316	Soil		1.9	83.7	21.5	99	0.2	67.8	13.8	1044	3.59	4.7	0.6	9.0	6.1	10	0.2	0.9	0.3	26	0.03	0.045
1813315	Soil		2.6	195.1	53.1	227	1.0	135.4	48.6	5513	4.71	19.4	1.4	48.1	5.9	30	0.4	1.9	0.8	30	0.32	0.120
1813312	Soil		1.6	57.0	15.8	114	0.4	44.5	27.6	1472	4.40	6.0	1.2	1.3	17.3	14	0.2	2.8	0.4	16	0.88	0.057
1813307	Soil		1.0	26.0	11.3	50	0.4	20.9	6.5	268	3.10	16.6	1.2	9.5	6.0	17	0.2	1.1	0.2	47	0.15	0.100
1813318	Soil		1.7	84.3	22.5	166	0.5	52.3	13.9	664	4.52	10.4	1.2	17.3	7.0	12	0.2	1.4	0.4	36	0.04	0.075
1813317	Soil		1.5	34.1	19.9	57	0.3	21.1	6.1	194	4.02	16.9	0.7	5.5	6.2	12	0.1	1.2	0.3	51	0.10	0.053
1813308	Soil		1.3	25.2	12.2	54	0.3	19.3	6.6	271	2.82	20.6	1.0	6.4	4.6	14	0.2	1.8	0.2	47	0.09	0.064
1813309	Soil		1.0	30.3	11.0	55	0.2	25.0	7.9	329	2.45	19.4	1.0	6.9	5.3	20	0.2	1.7	0.2	42	0.12	0.080
1813998	Soil		1.6	42.6	14.7	59	0.3	21.3	5.0	200	2.74	31.1	1.1	8.9	5.0	25	0.1	6.7	0.3	33	0.09	0.051
1813303	Soil		1.8	34.2	24.7	62	0.6	20.0	5.3	199	2.32	18.8	1.3	11.7	7.8	35	<0.1	1.2	0.8	28	0.10	0.089
1813313	Soil		1.5	54.0	16.6	159	0.4	23.8	8.2	243	4.73	7.4	2.5	5.4	16.1	34	0.2	3.0	0.2	13	0.05	0.079
1813311	Soil		2.3	63.4	18.7	135	1.0	51.5	11.4	333	3.12	26.0	1.4	14.2	6.7	7	0.3	2.2	0.5	17	0.01	0.043



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**Project:** KYS  
**Report Date:** September 19, 2019

**Page:** 3 of 6

**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.01	0.01	0.01	0.05	1	0.5	0.2	0.2
1802581	Soil	15	24	0.37	129	0.024	<1	1.75	0.004	0.04	0.2	0.03	2.5	0.1	<0.05	4	<0.5	<0.2
1802585	Soil	18	22	0.31	61	0.019	<1	1.15	0.003	0.06	0.1	0.03	1.4	0.1	<0.05	5	<0.5	<0.2
1814590	Soil	13	24	0.27	85	0.044	<1	1.51	0.005	0.03	0.2	0.05	2.8	<0.1	<0.05	4	<0.5	<0.2
1802590	Soil	17	20	0.25	56	0.010	<1	1.05	0.004	0.04	0.1	0.01	0.9	<0.1	<0.05	4	<0.5	<0.2
1802592	Soil	10	34	0.27	69	0.015	<1	1.79	0.008	0.03	0.1	0.09	3.0	<0.1	<0.05	5	1.2	<0.2
1802588	Soil	20	24	0.41	130	0.041	<1	1.51	0.004	0.06	0.2	0.05	3.2	<0.1	<0.05	5	<0.5	<0.2
1814591	Soil	9	21	0.12	61	0.010	2	0.88	0.004	0.03	0.2	0.07	1.0	<0.1	<0.05	5	0.7	<0.2
1802591	Soil	9	19	0.11	84	0.013	2	1.00	0.008	0.03	0.1	0.06	1.3	0.2	<0.05	6	1.5	<0.2
1802593	Soil	11	24	0.31	112	0.026	2	1.66	0.005	0.04	0.2	0.04	2.8	<0.1	<0.05	5	<0.5	<0.2
1802589	Soil	15	24	0.32	75	0.027	2	1.39	0.005	0.05	0.2	0.02	2.2	0.1	<0.05	6	<0.5	<0.2
1814585	Soil	5	13	0.05	39	0.003	2	0.45	0.004	0.03	<0.1	0.10	0.4	<0.1	<0.05	3	<0.5	<0.2
1814588	Soil	12	28	0.30	91	0.010	1	1.42	0.006	0.04	0.2	0.09	1.6	<0.1	<0.05	5	1.2	<0.2
1814584	Soil	5	26	0.11	38	0.004	2	1.09	0.006	0.02	<0.1	0.11	1.4	<0.1	<0.05	4	1.3	<0.2
1802594	Soil	11	19	0.18	70	0.038	1	1.05	0.004	0.03	0.2	0.04	1.7	0.1	<0.05	7	0.6	<0.2
1814587	Soil	10	33	0.22	86	0.014	2	1.20	0.009	0.06	0.1	0.14	1.7	0.1	<0.05	6	0.9	<0.2
1814586	Soil	7	15	0.17	42	0.012	1	0.69	0.004	0.02	<0.1	0.03	1.0	<0.1	<0.05	3	<0.5	<0.2
1814589	Soil	15	26	0.40	98	0.043	2	1.54	0.009	0.04	0.2	0.08	3.8	<0.1	<0.05	4	0.5	<0.2
1802595	Soil	13	27	0.37	95	0.040	2	1.50	0.006	0.05	0.4	0.03	2.9	<0.1	<0.05	4	0.5	<0.2
1813316	Soil	24	28	0.54	139	0.002	<1	1.41	0.002	0.02	<0.1	0.07	1.7	<0.1	<0.05	3	0.7	<0.2
1813315	Soil	21	26	0.53	182	0.004	1	1.45	0.005	0.05	<0.1	0.16	2.6	<0.1	<0.05	4	2.5	0.3
1813312	Soil	16	13	0.30	108	0.009	7	0.96	0.031	0.16	<0.1	0.02	5.1	<0.1	0.05	3	0.7	<0.2
1813307	Soil	16	30	0.33	70	0.035	2	1.63	0.006	0.04	0.2	0.07	3.2	<0.1	<0.05	4	1.1	<0.2
1813318	Soil	29	22	0.30	102	0.011	1	1.37	0.006	0.05	<0.1	0.12	2.2	<0.1	<0.05	4	2.4	<0.2
1813317	Soil	17	24	0.33	98	0.031	2	1.27	0.004	0.04	0.2	0.03	2.2	0.1	<0.05	6	0.6	<0.2
1813308	Soil	13	26	0.28	90	0.026	2	1.48	0.006	0.04	0.2	0.11	2.9	<0.1	<0.05	5	1.0	<0.2
1813309	Soil	15	26	0.36	117	0.028	1	1.66	0.007	0.05	0.1	0.09	3.1	<0.1	<0.05	4	0.9	<0.2
1813998	Soil	14	17	0.19	99	0.015	1	0.70	0.009	0.03	<0.1	0.07	2.4	<0.1	<0.05	3	1.1	<0.2
1813303	Soil	11	17	0.26	77	0.016	1	0.86	0.007	0.04	<0.1	0.11	2.7	<0.1	<0.05	3	1.5	0.2
1813313	Soil	30	16	0.70	68	0.002	<1	1.39	0.003	0.07	<0.1	0.05	1.4	<0.1	<0.05	4	1.7	<0.2
1813311	Soil	10	11	0.16	59	0.001	<1	0.48	0.003	0.02	<0.1	0.07	2.7	<0.1	<0.05	2	0.8	<0.2

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Report Date: September 19, 2019

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Part: 1 of 2

# CERTIFICATE OF ANALYSIS

# WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	2	0.01	0.001	
1814000	Soil	1.6	32.8	16.0	53	0.4	22.3	6.8	260	2.94	25.9	1.1	12.4	4.6	18	0.1	2.8	0.3	43	0.08	0.061
1813302	Soil	1.5	29.9	14.3	54	0.2	20.2	5.5	215	2.63	18.8	1.0	7.2	3.2	15	0.1	1.8	0.3	42	0.06	0.063
1813310	Soil	0.9	31.9	14.2	63	0.3	27.3	8.5	271	2.57	12.3	1.0	7.3	3.1	12	0.3	1.7	0.2	41	0.08	0.073
1813314	Soil	2.1	51.8	11.5	102	0.1	49.3	12.3	432	3.58	46.4	1.5	<0.5	9.7	47	0.2	2.3	0.1	13	0.05	0.027
1813993	Soil	0.9	26.9	19.6	61	0.1	22.8	11.0	360	3.14	16.6	0.8	3.8	13.7	6	<0.1	1.6	0.3	24	0.05	0.030
1813983	Soil	0.8	19.3	25.1	54	<0.1	20.9	11.5	586	2.63	13.2	1.1	1.1	6.0	17	0.1	2.0	0.3	19	0.22	0.052
1813301	Soil	1.4	27.3	13.8	63	0.2	20.9	7.8	264	2.65	23.1	1.0	6.4	2.8	15	0.3	2.2	0.3	45	0.07	0.062
1813305	Soil	1.5	38.9	16.7	65	0.7	27.4	8.9	310	2.89	20.2	1.2	11.4	3.5	16	0.2	1.6	0.4	44	0.08	0.069
1813994	Soil	0.5	39.1	43.0	116	0.1	43.7	21.9	972	4.09	23.1	1.7	1.3	12.2	19	0.2	2.1	0.2	15	0.58	0.058
1813992	Soil	3.1	74.8	112.2	345	1.6	75.5	26.3	1272	4.98	1728.2	1.5	90.2	11.5	18	2.5	70.1	0.4	11	0.07	0.049
1813999	Soil	1.6	33.5	16.9	60	0.3	21.3	6.5	235	2.83	27.3	1.1	6.8	4.4	19	0.2	2.7	0.4	43	0.06	0.066
1813306	Soil	1.8	32.1	18.1	56	0.3	24.0	7.0	278	2.67	21.1	1.2	13.0	3.8	18	0.1	1.6	0.4	35	0.08	0.088
1813990	Soil	0.7	81.6	3.3	59	<0.1	45.3	16.6	421	2.06	9.6	0.6	1.1	0.6	16	0.3	18.5	0.1	28	0.30	0.062
1813988	Soil	0.7	29.8	37.3	67	0.1	31.9	14.1	949	3.14	7.7	1.3	<0.5	6.1	29	0.3	1.7	0.4	12	0.68	0.052
1813995	Soil	0.5	22.6	31.3	95	<0.1	25.8	13.5	796	3.24	10.1	1.3	<0.5	16.4	9	0.1	1.6	0.3	9	0.12	0.044
1813997	Soil	1.0	28.7	11.3	51	0.3	24.3	7.7	240	2.32	15.8	1.4	4.0	4.3	15	0.3	1.3	0.2	39	0.15	0.068
1813991	Soil	3.6	17.1	33.1	51	1.2	11.8	2.7	58	3.25	72.1	1.1	0.6	17.0	133	<0.1	21.0	0.9	16	0.07	0.142
1813985	Soil	0.8	12.1	23.4	44	<0.1	14.5	6.8	200	2.26	13.1	0.7	<0.5	5.2	6	<0.1	1.1	0.2	29	0.05	0.027
1813996	Soil	1.6	29.0	14.1	57	0.3	20.8	5.8	175	2.79	13.2	1.0	5.3	3.4	13	0.2	1.4	0.2	38	0.08	0.052
1813304	Soil	2.7	48.3	13.3	45	0.7	17.7	3.5	123	2.72	19.7	1.3	5.5	1.1	16	0.2	2.5	0.3	35	0.03	0.081
1802503	Soil	0.6	48.6	23.8	92	<0.1	42.1	20.0	816	4.00	6.4	2.3	<0.5	18.8	14	<0.1	7.6	0.3	4	0.39	0.033
1802510	Soil	1.4	57.5	34.4	118	0.3	48.4	21.2	1379	3.86	472.4	2.1	67.7	21.2	19	0.2	40.8	0.3	6	0.11	0.057
1802512	Soil	1.4	72.0	29.8	100	0.2	49.0	19.7	1045	3.29	547.9	1.4	141.3	17.8	14	0.2	20.8	0.3	9	0.08	0.049
1802505	Soil	0.8	46.2	22.5	80	0.1	34.0	17.3	504	3.33	11.6	1.4	1.0	17.7	58	0.1	6.2	0.4	4	1.48	0.050
1802504	Soil	0.3	44.1	18.8	69	<0.1	41.2	21.4	470	2.98	13.5	1.0	1.7	13.6	47	<0.1	7.2	0.4	5	1.31	0.040
1802501	Soil	0.8	311.8	4809.1	5241	57.4	15.4	8.3	316	9.41	>10000	2.0	1548.9	21.4	40	55.0	>2000	0.7	4	0.27	0.054
1802507	Soil	1.2	63.2	34.9	111	0.7	51.9	28.1	800	4.34	838.5	1.8	100.1	16.2	26	0.3	40.8	0.4	7	0.39	0.048
1802511	Soil	2.6	173.1	35.1	119	0.5	61.8	27.4	3523	4.48	50.5	0.9	55.5	8.5	9	0.2	18.3	0.6	27	0.04	0.096
1802534	Soil	3.7	90.4	26.5	104	0.7	36.5	8.0	589	4.73	9.6	1.3	12.4	8.6	16	<0.1	2.5	0.6	33	0.02	0.083
1802535	Soil	8.6	66.6	23.8	82	0.8	24.4	4.8	282	3.94	14.2	1.9	3.4	9.1	16	0.1	3.8	0.5	35	<0.01	0.081



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**Client:** **Shawn Ryan Prospecting**  
Box 213  
Dawson City Yukon Y0B 1G0 Canada

**Project:** KYS  
**Report Date:** September 19, 2019

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**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method Analyte Unit MDL	AQ201																	
	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te	
	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
1814000	Soil	14	23	0.25	65	0.018	<1	1.31	0.005	0.03	0.1	0.09	2.2	<0.1	<0.05	4	0.7	<0.2
1813302	Soil	12	24	0.28	62	0.019	1	1.32	0.005	0.03	0.1	0.05	2.1	<0.1	<0.05	4	1.4	<0.2
1813310	Soil	13	27	0.35	80	0.023	2	1.77	0.005	0.04	0.1	0.08	2.5	<0.1	<0.05	4	1.0	<0.2
1813314	Soil	24	6	0.03	97	<0.001	1	0.29	0.003	0.05	<0.1	0.02	2.4	<0.1	<0.05	<1	0.6	<0.2
1813993	Soil	32	13	0.27	62	0.006	<1	0.98	0.004	0.05	<0.1	0.03	1.6	<0.1	<0.05	4	<0.5	<0.2
1813983	Soil	22	11	0.22	125	0.005	<1	0.73	0.004	0.10	<0.1	0.02	1.6	<0.1	<0.05	2	<0.5	<0.2
1813301	Soil	13	27	0.31	92	0.019	<1	1.55	0.005	0.04	0.1	0.07	2.5	<0.1	<0.05	4	0.8	<0.2
1813305	Soil	14	25	0.29	92	0.024	<1	1.30	0.006	0.04	0.1	0.12	2.7	<0.1	<0.05	4	1.4	<0.2
1813994	Soil	23	15	0.42	66	0.004	2	1.09	0.004	0.08	<0.1	0.04	2.9	<0.1	<0.05	3	<0.5	<0.2
1813992	Soil	17	5	0.04	57	0.001	<1	0.26	0.003	0.05	<0.1	0.06	3.9	<0.1	<0.05	<1	0.8	<0.2
1813999	Soil	14	24	0.25	65	0.017	<1	1.18	0.005	0.03	0.1	0.06	2.1	<0.1	<0.05	4	0.7	<0.2
1813306	Soil	12	23	0.22	67	0.015	1	1.14	0.005	0.03	<0.1	0.11	2.5	<0.1	<0.05	4	1.5	<0.2
1813990	Soil	4	89	0.74	95	0.051	3	1.33	0.002	0.03	<0.1	0.03	1.5	<0.1	<0.05	2	<0.5	<0.2
1813988	Soil	19	11	0.29	88	0.006	3	0.80	0.003	0.05	<0.1	0.03	2.6	<0.1	<0.05	2	0.5	<0.2
1813995	Soil	26	10	0.43	71	0.005	3	0.92	0.004	0.08	<0.1	0.02	2.1	<0.1	<0.05	2	<0.5	<0.2
1813997	Soil	14	24	0.34	83	0.028	2	1.39	0.007	0.04	0.2	0.06	2.5	<0.1	<0.05	3	<0.5	<0.2
1813991	Soil	12	17	0.06	41	<0.001	2	0.50	0.030	0.04	<0.1	0.05	3.7	<0.1	0.15	3	3.4	0.2
1813985	Soil	20	12	0.21	47	0.015	3	0.84	0.002	0.05	0.2	0.02	0.9	<0.1	<0.05	3	<0.5	<0.2
1813996	Soil	11	23	0.29	85	0.021	2	1.27	0.004	0.04	0.2	0.07	1.9	<0.1	0.05	4	<0.5	<0.2
1813304	Soil	10	22	0.09	58	0.006	2	1.02	0.009	0.03	<0.1	0.10	1.1	<0.1	<0.05	4	1.5	<0.2
1802503	Soil	23	6	0.29	42	<0.001	1	0.59	0.002	0.03	<0.1	0.02	1.9	<0.1	<0.05	1	<0.5	<0.2
1802510	Soil	35	7	0.18	56	<0.001	2	0.60	0.004	0.08	<0.1	0.02	1.7	<0.1	<0.05	2	<0.5	<0.2
1802512	Soil	31	13	0.47	45	0.001	1	1.00	0.002	0.05	<0.1	0.02	1.5	<0.1	<0.05	3	<0.5	<0.2
1802505	Soil	18	5	0.25	43	0.001	2	0.45	0.003	0.04	<0.1	0.01	1.6	<0.1	<0.05	1	<0.5	<0.2
1802504	Soil	18	7	0.37	21	0.001	2	0.73	0.002	0.04	<0.1	<0.01	1.5	<0.1	<0.05	2	<0.5	<0.2
1802501	Soil	14	3	0.02	40	<0.001	1	0.17	0.003	0.06	<0.1	2.91	2.2	<0.1	<0.05	<1	0.7	<0.2
1802507	Soil	24	8	0.32	36	0.001	1	0.69	0.003	0.06	<0.1	0.04	2.3	<0.1	0.07	2	<0.5	<0.2
1802511	Soil	37	26	0.60	89	0.003	1	1.38	0.004	0.03	<0.1	0.05	2.0	<0.1	<0.05	4	1.3	0.3
1802534	Soil	18	26	0.40	137	0.001	<1	1.28	0.005	0.03	<0.1	0.15	1.8	<0.1	<0.05	4	3.4	<0.2
1802535	Soil	16	20	0.28	594	0.001	2	1.02	0.004	0.03	<0.1	0.21	1.5	<0.1	<0.05	3	4.2	<0.2



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Project: KYS

Report Date: September 19, 2019

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# CERTIFICATE OF ANALYSIS

# WHI19000508.1

Method Analyte	AQ201																				
	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	
1802508	Soil	1.4	63.4	198.1	242	2.5	42.6	21.4	976	4.70	2007.4	1.5	172.1	12.4	27	1.9	212.8	0.4	8	0.80	0.055
1802509	Soil	1.6	58.1	80.8	140	0.4	41.1	21.4	990	3.53	603.2	1.8	43.6	24.0	25	0.7	61.5	0.6	8	0.23	0.077
1802531	Soil	3.1	74.6	30.9	102	0.7	33.1	5.9	483	4.23	9.8	1.2	4.7	11.3	24	0.1	2.5	0.6	30	0.04	0.074
1802536	Soil	20.7	71.5	37.6	273	0.9	52.9	8.0	262	3.79	67.7	8.0	2.1	18.4	35	1.5	14.9	0.3	39	0.04	0.116
1802506	Soil	1.0	70.8	20.3	91	0.1	32.4	21.6	465	4.55	24.4	2.6	1.0	7.4	9	0.1	13.6	0.4	12	0.11	0.052
1802502	Soil	0.8	72.7	48.3	126	<0.1	51.9	25.8	979	4.38	44.2	1.5	2.7	22.8	6	0.1	54.3	0.4	9	0.08	0.039
1802527	Soil	2.4	79.6	34.6	104	1.2	30.2	4.2	365	6.78	33.4	1.2	21.6	7.3	18	<0.1	4.2	0.8	40	0.03	0.125
1802528	Soil	2.9	93.2	29.6	102	0.7	42.7	10.8	490	3.80	44.9	1.2	13.9	6.3	13	<0.1	2.1	0.6	26	0.03	0.061
1802529	Soil	1.8	96.5	21.6	122	0.6	57.5	14.6	1173	3.80	18.9	1.2	17.5	8.6	11	0.2	1.7	0.4	28	0.03	0.058
1802516	Soil	0.4	7.1	14.0	17	<0.1	5.2	2.0	41	1.32	4.8	0.6	<0.5	5.1	5	<0.1	4.5	<0.1	6	0.04	0.032
1802518	Soil	0.4	26.7	28.2	36	<0.1	29.7	16.3	940	2.40	4.3	2.4	<0.5	15.7	18	<0.1	0.9	0.2	2	0.19	0.026
1802526	Soil	0.8	54.8	28.2	81	<0.1	42.7	19.8	947	4.01	13.2	1.0	1.2	20.1	32	<0.1	0.6	0.4	15	0.42	0.055
1802530	Soil	2.2	77.4	23.3	101	0.8	36.5	8.9	1122	4.21	13.1	1.1	25.0	9.2	15	0.1	1.5	0.4	30	0.03	0.067
1802521	Soil	0.8	38.8	28.1	78	<0.1	33.1	20.9	1325	3.47	6.8	1.4	<0.5	19.5	10	<0.1	1.1	0.3	9	0.11	0.043
1802517	Soil	0.3	17.3	27.7	53	<0.1	20.9	11.1	540	1.95	11.2	0.5	0.6	8.7	17	0.2	0.4	0.2	10	0.23	0.045
1802514	Soil	0.2	16.8	23.5	60	<0.1	20.6	9.7	438	2.01	22.0	1.2	12.2	12.1	10	<0.1	6.6	0.1	3	0.11	0.032
1802523	Soil	2.1	72.6	34.5	130	0.5	55.2	18.4	1257	4.53	49.7	1.4	8.4	13.2	22	<0.1	15.4	0.5	13	0.17	0.049
1802532	Soil	2.6	83.5	27.1	101	0.7	34.8	6.0	466	4.80	9.8	1.3	4.8	11.6	20	<0.1	2.6	0.6	34	0.03	0.077
1802515	Soil	0.4	42.5	23.5	63	0.1	38.5	20.6	762	3.08	11.1	1.7	1.9	13.9	15	0.1	1.0	0.2	3	0.19	0.024
1802513	Soil	0.3	66.6	26.9	93	<0.1	46.6	23.8	561	4.00	6.5	1.6	1.7	31.3	11	<0.1	2.4	0.4	7	0.18	0.065
1802520	Soil	1.1	79.2	14.5	84	<0.1	50.8	28.4	537	3.82	24.1	1.3	3.3	13.6	64	<0.1	2.5	0.4	<2	1.53	0.041
1802533	Soil	2.6	81.1	26.6	85	0.8	28.1	6.3	389	4.66	10.4	1.0	9.4	7.7	15	0.1	2.6	0.6	29	0.02	0.089
1802525	Soil	2.0	91.1	22.0	119	0.4	63.6	13.4	485	3.51	16.9	2.2	10.5	8.6	19	0.1	2.8	0.4	19	0.15	0.064
1802519	Soil	0.6	33.4	28.0	54	<0.1	31.2	17.8	618	2.45	6.7	2.0	1.0	10.9	12	<0.1	0.3	0.2	4	0.17	0.026
1802522	Soil	0.9	71.9	27.9	89	<0.1	73.3	36.4	1207	3.55	19.8	1.4	1.7	18.9	23	<0.1	1.4	0.3	6	0.33	0.048
1802524	Soil	2.1	87.3	26.3	121	0.6	60.9	12.1	452	3.57	14.9	2.6	3.6	8.6	21	0.2	2.6	0.5	22	0.14	0.072
1802603	Soil	1.5	10.3	12.8	53	<0.1	13.5	6.4	194	3.11	14.2	0.5	1.2	3.2	7	0.2	0.8	0.2	70	0.06	0.032
1802604	Soil	1.0	17.8	9.1	53	<0.1	18.2	5.8	156	2.43	16.7	0.6	3.8	1.9	10	0.2	1.0	0.1	43	0.09	0.054
1802608	Soil	1.2	17.8	10.0	47	0.1	17.8	7.2	236	2.52	14.5	0.7	3.1	3.8	11	0.3	0.9	0.2	51	0.12	0.059
1802609	Soil	1.1	16.6	11.0	43	0.3	14.8	5.7	231	3.13	15.7	0.4	15.4	2.0	10	0.3	0.9	0.2	60	0.08	0.045



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**Part:** 2 of 2

# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.01	0.01	0.1	0.05	1	0.5	0.2	
1802508	Soil	18	8	0.47	52	<0.001	1	0.61	0.003	0.06	<0.1	0.10	2.8	<0.1	<0.05	1	<0.5	<0.2
1802509	Soil	34	9	0.43	60	0.001	1	0.90	0.002	0.07	<0.1	0.04	1.1	<0.1	<0.05	2	<0.5	<0.2
1802531	Soil	18	24	0.46	108	<0.001	<1	1.20	0.006	0.03	<0.1	0.09	1.8	<0.1	<0.05	4	2.5	0.3
1802536	Soil	21	9	0.24	855	0.002	2	0.72	0.004	0.08	<0.1	0.19	1.8	<0.1	0.11	2	6.3	<0.2
1802506	Soil	12	15	0.63	20	0.002	2	1.42	0.003	0.04	<0.1	0.02	1.8	<0.1	<0.05	4	<0.5	<0.2
1802502	Soil	33	14	0.56	29	0.002	<1	1.35	0.003	0.04	<0.1	0.02	1.8	<0.1	<0.05	4	<0.5	<0.2
1802527	Soil	7	25	0.36	65	0.001	1	1.35	0.004	0.02	<0.1	0.19	2.4	<0.1	<0.05	4	3.8	0.4
1802528	Soil	16	27	0.43	72	0.001	<1	1.34	0.005	0.03	<0.1	0.08	1.5	<0.1	<0.05	3	1.3	0.3
1802529	Soil	20	24	0.48	78	0.002	<1	1.27	0.003	0.02	<0.1	0.09	2.0	<0.1	<0.05	3	0.8	0.2
1802516	Soil	16	3	0.07	50	0.001	<1	0.57	0.002	0.08	<0.1	0.02	0.4	<0.1	<0.05	1	<0.5	<0.2
1802518	Soil	22	5	0.16	38	0.002	<1	0.35	0.002	0.12	<0.1	0.03	0.6	<0.1	<0.05	<1	<0.5	<0.2
1802526	Soil	31	20	0.77	61	0.003	<1	1.54	0.003	0.09	<0.1	0.02	2.5	<0.1	<0.05	5	<0.5	<0.2
1802530	Soil	21	27	0.52	85	0.001	<1	1.35	0.004	0.02	<0.1	0.09	1.7	<0.1	<0.05	3	1.1	0.2
1802521	Soil	36	14	0.57	47	0.003	<1	1.41	0.002	0.08	<0.1	0.03	1.2	<0.1	<0.05	4	<0.5	<0.2
1802517	Soil	16	13	0.35	91	0.005	2	0.84	0.003	0.21	<0.1	0.03	0.9	<0.1	0.06	3	<0.5	<0.2
1802514	Soil	22	5	0.24	92	<0.001	<1	0.84	0.002	0.11	<0.1	0.01	0.6	<0.1	<0.05	1	<0.5	<0.2
1802523	Soil	15	10	0.20	66	<0.001	<1	0.49	0.006	0.06	<0.1	0.09	2.2	<0.1	0.08	1	1.0	<0.2
1802532	Soil	19	27	0.49	116	0.001	1	1.33	0.005	0.03	<0.1	0.14	1.9	<0.1	<0.05	4	2.8	0.3
1802515	Soil	26	10	0.41	38	0.002	2	0.77	0.002	0.12	<0.1	0.02	1.1	<0.1	<0.05	2	<0.5	<0.2
1802513	Soil	35	22	0.75	34	0.003	2	1.67	0.002	0.05	<0.1	0.03	1.6	<0.1	<0.05	4	<0.5	<0.2
1802520	Soil	14	4	0.22	39	<0.001	1	0.14	0.003	0.05	<0.1	0.03	2.3	<0.1	0.10	<1	<0.5	<0.2
1802533	Soil	13	25	0.39	108	0.001	1	1.27	0.004	0.03	<0.1	0.14	2.0	<0.1	<0.05	4	2.6	0.2
1802525	Soil	9	20	0.39	66	<0.001	2	1.17	0.004	0.05	<0.1	0.06	2.4	<0.1	<0.05	3	0.6	<0.2
1802519	Soil	18	9	0.32	47	0.002	2	0.67	0.002	0.12	<0.1	0.02	0.7	<0.1	<0.05	2	<0.5	<0.2
1802522	Soil	24	13	0.62	53	0.002	1	1.12	0.002	0.08	<0.1	0.03	1.2	<0.1	0.07	3	<0.5	<0.2
1802524	Soil	7	21	0.35	66	<0.001	<1	1.20	0.004	0.04	<0.1	0.08	2.5	<0.1	<0.05	3	1.2	<0.2
1802603	Soil	11	28	0.32	119	0.030	2	1.82	0.003	0.04	0.2	0.03	2.3	0.1	<0.05	6	<0.5	<0.2
1802604	Soil	10	25	0.26	78	0.029	2	1.45	0.004	0.03	0.3	0.03	1.7	<0.1	<0.05	4	<0.5	<0.2
1802608	Soil	13	27	0.34	97	0.036	2	1.58	0.005	0.04	0.3	0.06	2.7	<0.1	<0.05	4	0.5	<0.2
1802609	Soil	10	26	0.24	82	0.042	2	1.31	0.003	0.04	0.2	0.04	1.8	<0.1	<0.05	5	<0.5	<0.2



Bureau Veritas Commodities Canada Ltd.

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**Client:** **Shawn Ryan Prospecting**  
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**Project:** KYS  
**Report Date:** September 19, 2019

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# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL	MDL
1802599	Soil	0.8	21.3	9.3	49	0.1	20.5	8.9	246	2.28	14.9	0.8	1.3	5.1	11	0.2	0.9	0.1	41	0.11	0.044
1802602	Soil	1.2	13.9	13.5	54	0.2	17.2	7.8	255	3.04	13.8	0.6	0.8	3.1	9	0.3	0.8	0.2	58	0.08	0.043
1802606	Soil	1.2	18.6	8.6	45	0.1	18.2	7.1	210	2.27	12.7	0.7	3.6	4.0	9	0.2	0.9	0.1	47	0.09	0.041
1802610	Soil	1.3	13.5	10.1	45	0.1	13.6	5.3	202	2.60	13.0	0.5	8.0	1.0	10	0.3	0.7	0.2	60	0.08	0.053
1802600	Soil	0.8	21.0	9.3	49	0.1	20.2	8.5	245	2.25	14.1	0.8	1.2	5.1	11	0.3	0.9	0.1	43	0.11	0.041
1802601	Soil	1.4	15.1	10.4	41	0.2	14.2	5.2	180	2.41	16.6	0.6	1.6	2.6	8	<0.1	0.9	0.2	55	0.08	0.053
1802605	Soil	1.8	14.8	13.1	52	0.2	17.3	7.8	274	2.94	16.1	0.6	0.5	3.7	9	0.2	0.9	0.2	69	0.08	0.045
1802607	Soil	1.2	20.1	13.3	50	0.2	18.8	7.5	245	2.80	17.7	0.7	1.9	4.0	10	0.2	1.1	0.2	43	0.09	0.050
1814594	Soil	0.7	6.0	4.3	14	<0.1	4.1	1.1	16	0.46	1.8	0.3	<0.5	0.2	5	<0.1	0.2	<0.1	15	0.02	0.056
1814598	Soil	1.4	19.0	10.9	52	0.1	15.8	5.7	214	2.48	15.7	0.7	6.1	1.7	10	0.2	1.0	0.2	51	0.09	0.060
1814600	Soil	1.9	14.2	13.8	47	0.1	12.0	4.8	147	2.99	17.5	0.6	1.4	2.0	6	0.1	1.3	0.2	83	0.04	0.032
1813987	Soil	0.4	23.5	46.5	54	<0.1	23.0	11.4	1626	2.89	6.6	1.1	<0.5	3.5	21	0.1	0.9	0.3	5	0.78	0.066
1814592	Soil	1.2	16.5	11.1	44	0.6	15.5	5.1	189	2.42	17.5	0.7	6.4	1.9	10	0.2	1.1	0.2	48	0.10	0.051
1814595	Soil	1.7	24.2	14.1	46	0.3	14.9	4.8	171	2.42	30.5	1.4	1.4	0.7	11	0.2	2.3	0.2	47	0.08	0.083
1814593	Soil	0.8	20.7	6.9	45	<0.1	16.8	5.3	141	1.84	11.6	0.7	1.7	3.1	9	0.2	0.8	<0.1	34	0.09	0.041
1813989	Soil	2.9	32.8	29.5	93	0.6	22.7	4.7	104	3.38	11.7	1.2	5.1	4.2	74	0.1	11.0	0.5	42	0.08	0.080
1813984	Soil	0.9	23.1	25.8	62	<0.1	25.6	13.7	1122	2.73	21.4	0.7	3.0	4.9	19	0.2	2.7	0.2	19	0.26	0.038
1814596	Soil	1.3	22.3	9.0	49	0.1	15.7	5.1	186	1.93	15.5	0.8	0.9	0.6	9	0.3	1.1	0.1	42	0.08	0.075
1814599	Soil	2.2	13.7	13.3	50	0.1	12.0	4.5	149	2.88	18.7	0.5	2.6	1.9	6	0.1	1.3	0.2	86	0.04	0.032
1813986	Soil	0.5	35.3	40.6	70	<0.1	35.3	17.3	821	3.63	27.3	1.0	2.9	8.2	12	0.1	2.2	0.6	12	0.24	0.043
1814597	Soil	1.2	40.6	11.4	73	0.2	25.1	8.8	362	2.41	22.7	1.8	5.6	2.9	12	0.3	1.7	0.2	45	0.13	0.081



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**Project:** KYS  
**Report Date:** September 19, 2019

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# CERTIFICATE OF ANALYSIS

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	TI	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
1802599	Soil	13	26	0.40	107	0.040	1	1.67	0.005	0.04	0.2	0.05	2.9	<0.1	<0.05	4	<0.5	<0.2
1802602	Soil	12	31	0.38	154	0.030	1	2.30	0.003	0.04	0.2	0.06	2.6	0.2	<0.05	6	0.6	<0.2
1802606	Soil	12	25	0.32	107	0.032	1	1.55	0.004	0.04	0.3	0.06	2.7	0.1	<0.05	4	<0.5	<0.2
1802610	Soil	12	25	0.26	106	0.029	2	1.65	0.004	0.04	0.2	0.06	1.7	0.1	<0.05	5	<0.5	<0.2
1802600	Soil	13	27	0.41	108	0.040	1	1.70	0.005	0.04	0.2	0.04	2.9	<0.1	<0.05	4	<0.5	<0.2
1802601	Soil	12	25	0.24	88	0.029	1	1.49	0.003	0.04	0.2	0.05	2.3	0.1	<0.05	5	0.6	<0.2
1802605	Soil	13	32	0.38	152	0.035	2	2.24	0.004	0.05	0.2	0.04	3.1	0.2	<0.05	6	<0.5	<0.2
1802607	Soil	11	30	0.32	95	0.030	2	1.95	0.004	0.04	0.2	0.07	2.8	0.1	<0.05	4	1.0	<0.2
1814594	Soil	3	7	0.02	46	0.007	1	0.36	0.009	0.03	<0.1	0.08	0.3	<0.1	0.06	2	<0.5	<0.2
1814598	Soil	12	26	0.30	76	0.032	2	1.53	0.004	0.04	0.3	0.07	2.2	0.1	<0.05	5	0.8	<0.2
1814600	Soil	11	26	0.15	57	0.033	2	1.38	0.002	0.03	0.2	0.05	2.0	0.2	<0.05	8	<0.5	<0.2
1813987	Soil	18	7	0.15	88	0.002	1	0.57	0.002	0.05	<0.1	0.04	2.6	<0.1	0.06	1	<0.5	<0.2
1814592	Soil	11	23	0.24	64	0.035	2	1.10	0.003	0.05	0.2	0.06	1.9	0.1	<0.05	5	0.6	<0.2
1814595	Soil	11	27	0.22	71	0.022	2	1.17	0.005	0.05	0.2	0.11	1.6	0.1	0.06	5	0.8	<0.2
1814593	Soil	10	19	0.23	56	0.034	2	1.08	0.004	0.03	0.3	0.06	1.8	<0.1	<0.05	3	<0.5	<0.2
1813989	Soil	4	31	0.39	121	0.003	<1	1.07	0.005	0.06	<0.1	0.06	1.5	<0.1	0.17	4	3.4	<0.2
1813984	Soil	17	13	0.17	147	0.009	2	0.75	0.004	0.07	<0.1	0.05	2.6	<0.1	<0.05	2	<0.5	<0.2
1814596	Soil	9	22	0.23	70	0.022	2	1.03	0.004	0.04	0.2	0.12	1.4	0.1	0.07	4	<0.5	<0.2
1814599	Soil	11	26	0.14	57	0.032	<1	1.41	0.002	0.03	0.2	0.06	1.8	0.2	<0.05	8	<0.5	<0.2
1813986	Soil	27	15	0.37	74	0.006	1	0.99	0.002	0.05	<0.1	0.03	1.7	<0.1	<0.05	2	<0.5	<0.2
1814597	Soil	14	28	0.36	74	0.035	2	1.37	0.004	0.05	0.3	0.09	3.2	0.1	<0.05	4	0.9	<0.2



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**Project:** KYS  
**Report Date:** September 19, 2019

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# QUALITY CONTROL REPORT

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	
MDL		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	0.1	0.1	0.1	2	0.01	0.001	
Pulp Duplicates																					
1814629	Soil	1.3	9.2	13.3	47	0.2	11.6	4.8	198	3.06	12.3	0.6	1.0	3.7	9	0.2	0.8	0.2	56	0.06	0.042
REP 1814629	QC	1.1	8.9	12.9	45	0.2	11.3	4.5	195	3.09	12.5	0.6	1.4	3.6	9	0.2	0.8	0.2	59	0.06	0.044
1813316	Soil	1.9	83.7	21.5	99	0.2	67.8	13.8	1044	3.59	4.7	0.6	9.0	6.1	10	0.2	0.9	0.3	26	0.03	0.045
REP 1813316	QC	1.9	80.8	21.2	100	0.2	66.8	14.2	993	3.58	5.1	0.6	7.6	6.5	10	0.2	0.9	0.3	25	0.03	0.042
1802504	Soil	0.3	44.1	18.8	69	<0.1	41.2	21.4	470	2.98	13.5	1.0	1.7	13.6	47	<0.1	7.2	0.4	5	1.31	0.040
REP 1802504	QC	0.4	47.2	19.1	75	<0.1	41.6	22.3	503	2.90	14.1	1.0	0.6	12.9	46	<0.1	7.3	0.4	5	1.30	0.043
1802599	Soil	0.8	21.3	9.3	49	0.1	20.5	8.9	246	2.28	14.9	0.8	1.3	5.1	11	0.2	0.9	0.1	41	0.11	0.044
REP 1802599	QC	0.9	21.3	9.3	48	0.1	20.8	9.2	242	2.31	15.2	0.8	8.3	5.3	11	0.2	0.9	0.1	42	0.11	0.043
Reference Materials																					
STD BVGEO01	Standard	12.3	4611.0	196.2	1826	2.6	149.3	28.6	693	3.73	134.7	4.1	224.9	16.4	55	6.7	4.0	26.8	74	1.30	0.074
STD BVGEO01	Standard	10.5	4703.1	189.2	1616	2.7	166.0	24.9	735	3.75	118.7	3.4	226.0	13.8	51	6.4	3.7	22.0	73	1.33	0.075
STD DS11	Standard	14.0	151.2	134.5	333	1.6	77.7	12.9	1016	3.03	41.5	2.5	64.0	8.2	66	2.3	9.0	11.2	48	1.02	0.068
STD DS11	Standard	14.1	139.4	133.9	319	1.7	70.8	11.8	922	2.89	39.9	2.6	103.4	8.5	64	2.2	9.1	11.0	47	1.00	0.066
STD OREAS262	Standard	0.7	110.9	56.1	144	0.5	60.2	25.9	520	3.24	33.5	1.2	71.1	9.3	35	0.7	6.0	1.0	22	3.00	0.037
STD OREAS262	Standard	0.7	114.0	54.6	138	0.4	59.2	25.3	488	3.05	34.0	1.3	70.8	9.6	34	0.6	6.1	1.0	21	2.94	0.039
STD OREAS262	Standard	0.6	115.1	60.0	148	0.4	64.8	27.8	568	3.44	35.4	1.3	61.6	8.6	37	0.6	5.3	1.0	24	3.02	0.042
STD OREAS262	Standard	0.7	121.2	56.3	153	0.5	66.1	28.3	560	3.27	35.8	1.2	72.3	8.9	34	0.7	5.5	1.0	23	2.86	0.041
STD DS11 Expected		14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	2.59	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701
STD BVGEO01 Expected		11.2	4415	187	1741	2.53	163	25	733	3.7	121	3.77	219	14.4	55	6.5	3.39	25.6	73	1.3219	0.0727
STD OREAS262 Expected		0.68	118	56	154	0.45	62	26.9	530	3.284	35.8	1.22	65	9.33	36	0.61	5.06	1.03	22.5	2.98	0.04
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	0.2	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	0.2	<1	<0.1	<0.1	<0.1	3	<0.01	<0.001
BLK	Blank	<0.1	0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001



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Project: KYS  
Report Date: September 19, 2019

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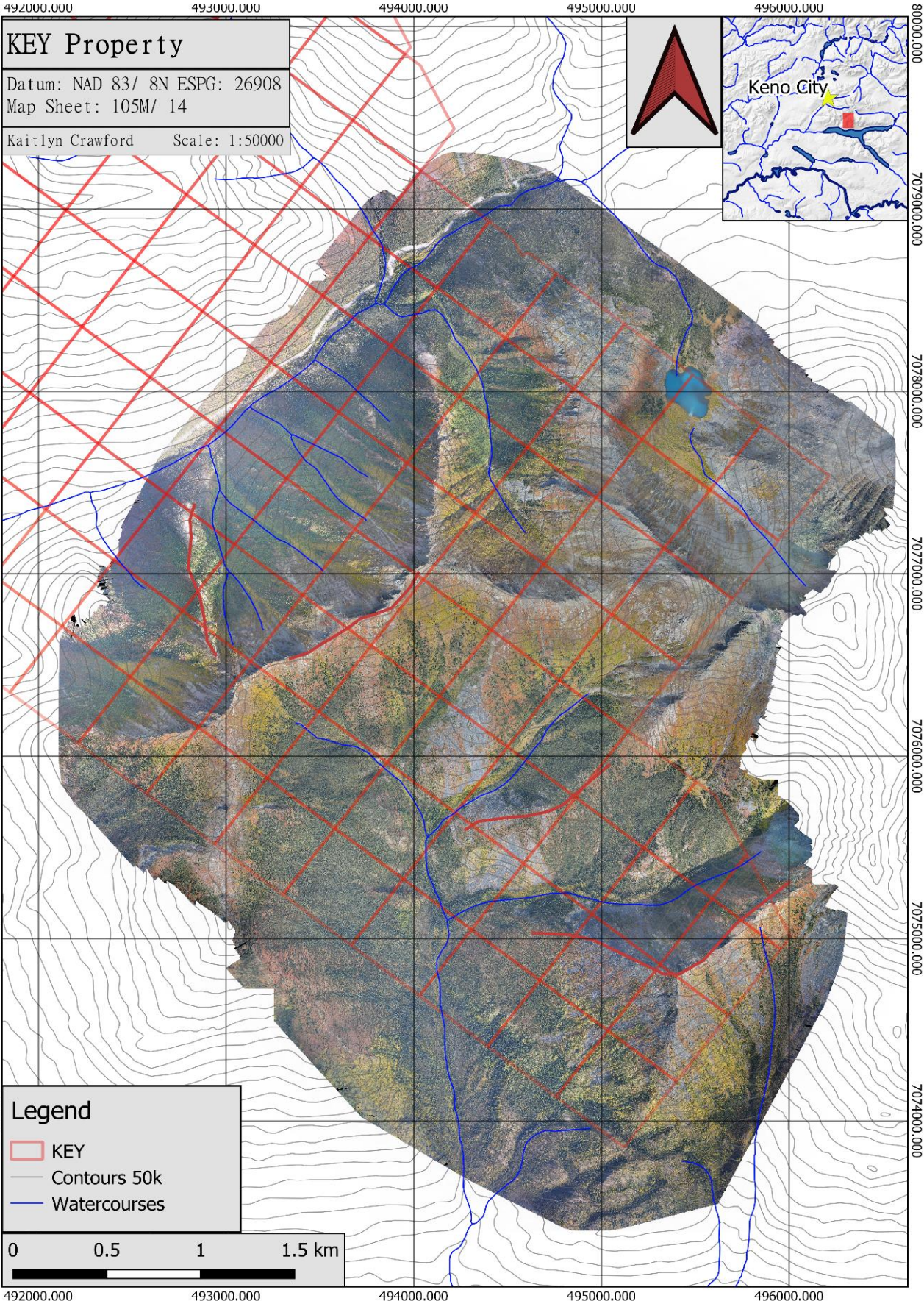
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# QUALITY CONTROL REPORT

WHI19000508.1

Method	Analyte	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	
MDL		1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	
Pulp Duplicates																		
1814629	Soil	13	29	0.30	89	0.031	<1	1.74	0.004	0.04	0.2	0.06	2.4	0.1	<0.05	6	0.5	<0.2
REP 1814629	QC	13	28	0.32	87	0.032	1	1.82	0.004	0.04	0.2	0.06	2.5	0.1	<0.05	6	<0.5	<0.2
1813316	Soil	24	28	0.54	139	0.002	<1	1.41	0.002	0.02	<0.1	0.07	1.7	<0.1	<0.05	3	0.7	<0.2
REP 1813316	QC	23	27	0.54	142	0.001	1	1.36	0.003	0.02	<0.1	0.07	1.5	<0.1	<0.05	3	1.0	<0.2
1802504	Soil	18	7	0.37	21	0.001	2	0.73	0.002	0.04	<0.1	<0.01	1.5	<0.1	<0.05	2	<0.5	<0.2
REP 1802504	QC	17	7	0.37	22	0.001	1	0.73	0.002	0.04	<0.1	0.02	1.4	<0.1	<0.05	2	<0.5	<0.2
1802599	Soil	13	26	0.40	107	0.040	1	1.67	0.005	0.04	0.2	0.05	2.9	<0.1	<0.05	4	<0.5	<0.2
REP 1802599	QC	13	26	0.40	104	0.041	1	1.63	0.005	0.04	0.2	0.05	2.8	<0.1	<0.05	4	<0.5	<0.2
Reference Materials																		
STD BVGE001	Standard	30	208	1.32	290	0.267	5	2.25	0.197	0.94	6.2	0.09	6.3	0.7	0.66	7	5.3	1.1
STD BVGE001	Standard	24	193	1.24	291	0.215	5	2.26	0.188	0.86	5.5	0.09	5.8	0.6	0.69	7	4.1	1.3
STD DS11	Standard	18	58	0.81	346	0.089	7	1.08	0.072	0.38	2.8	0.23	3.1	4.7	0.25	5	2.1	4.7
STD DS11	Standard	17	56	0.79	340	0.085	7	1.07	0.066	0.37	2.8	0.24	3.0	4.7	0.27	4	2.0	4.5
STD OREAS262	Standard	17	42	1.09	234	0.003	3	1.24	0.061	0.29	0.2	0.15	3.3	0.4	0.23	4	<0.5	<0.2
STD OREAS262	Standard	17	42	1.09	244	0.003	5	1.21	0.062	0.28	0.2	0.13	3.2	0.4	0.23	4	<0.5	0.3
STD OREAS262	Standard	17	45	1.17	255	0.003	4	1.32	0.068	0.31	0.2	0.15	3.7	0.5	0.28	4	0.6	0.2
STD OREAS262	Standard	16	44	1.16	264	0.003	5	1.35	0.069	0.32	0.2	0.17	3.3	0.5	0.28	4	<0.5	0.2
STD DS11 Expected		18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56
STD BVGE001 Expected		25.9	187	1.2963	260	0.233	3.8	2.347	0.1924	0.89	5.3	0.1	5.97	0.62	0.6655	7.37	4.84	1.02
STD OREAS262 Expected		15.9	41.7	1.17	248	0.0027	4	1.3	0.071	0.312	0.2	0.17	3.24	0.47	0.253	3.73	0.4	0.23
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

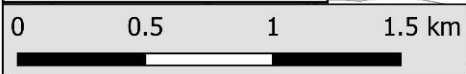
## **Appendix II: Drone Imagery**



**KEY Property**  
Datum: NAD 83/ 8N ESPG: 26908  
Map Sheet: 105M/ 14  
Kaitlyn Crawford    Scale: 1:50000



**Legend**  
KEY  
Contours 50k  
Watercourses



**Appendix III: VLF+MAG 2019 Report**

GEOPHYSICAL REPORT  
GROUND VLF AND MAGNETIC SURVEY

**Keystone (KSY) Project**

YT, Canada

Work Performed On: August 28, 2019

FOR:

**Shawn Ryan**  
Dawson City, YT

Report# SRP-GVLF19-KSY / Rev. 01

Prepared By:  
**GroundTruth Exploration Inc.**  
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Author: Amir H. Radjaee, *Ph.D., P.Geo*

**March 2020**

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## 1.0 Introduction

This report describes data acquisition and preliminary data processing results of the 2019 ground VLF and magnetic survey. The GroundTruth Exploration was commissioned by Shawn Ryan, Dawson City, YT to run the survey and process the data.

On August 28, 2019, ground VLF (GVLF) and ground magnetic (GMAG) surveys were completed over the Keystone claims (KSY) located in the Yukon Territory. This survey is a part of a comprehensive survey completed in order to target future exploration on the property. All data, grids and maps are delivered in NAD83 UTM Zone 7N.

## 2.0 Purpose and Scope

The primary purpose of completing ground VLF and magnetic geophysical surveys is to determine the spatial distribution of subsurface electrical and magnetic properties of rocks. This, in turn, will allow the characterization of geophysical signatures for zones of mineralization and support geological models and structural mapping.

## 3.0 Survey Description

Data were acquired using GEM-19 portable VLF systems supplemented by a high-sensitivity proton magnetometer. The magnetometer has an absolute accuracy of  $\pm 0.2\text{nT}$ . Along with basic GPS tracking, GEM provides a navigation feature with the real-time coordinate transformation to UTM and the local grid. Operators can define a complete survey on PC and download points to the magnetometer via RS-232 serial port.

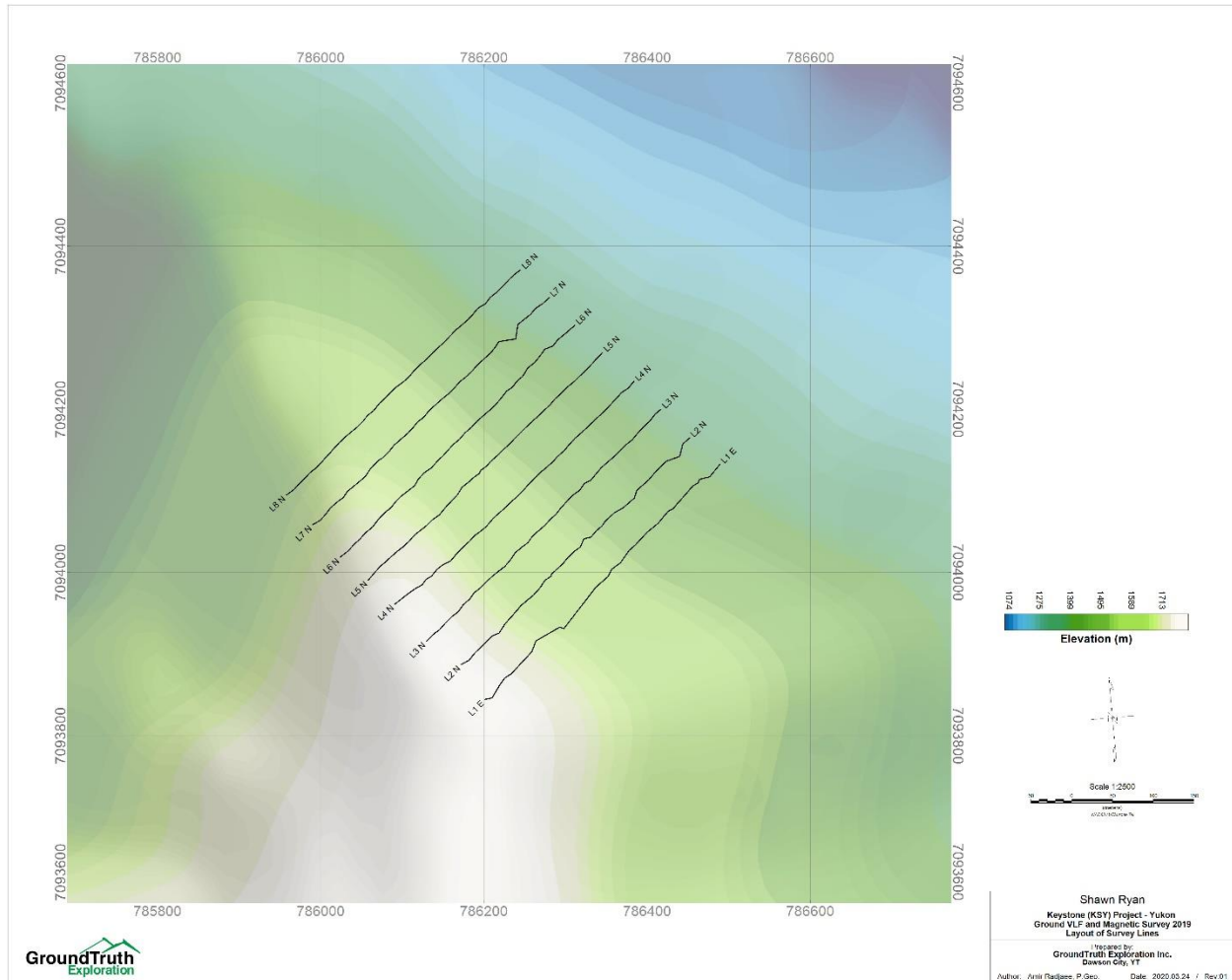
During the survey, a GEM-19 magnetometer was set up as the base station to collect data for correction and removing of unwanted noise arising from solar and atmospheric activity.

Total coverage of the survey block amounted to 3.3 line-km along 8 survey lines tacking 317 readings at about 10m station spacing. The survey lines are in an azimuthal direction of SW-NE (NE  $45^\circ$ ) with line spacing of 50m. The in-phase and out-of-phase (quadrature) signals were measured as percentage of total field for three frequencies. The VLF transmitter frequencies used for this survey are

presented in Table 1. The outline of survey areas and layout of flight lines are shown in Figure-1.

**Table 1:** The parameters of VLF Tx stations.

VLF Tx Station	Frequency (kHz)	Latitude	Longitude
NLK, WA	24.8	48.203633°N	121.916828°W
NSS, MD	21.4	38.977778°N	76.453333°W
JXN, NWY	16.4	66.982337°N	13.872471°E



**Figure 1:** Location map of ground VLF/Mag survey 2019 on Keystone (KSY) property, YT.

## 4.0 Survey Theory

### 4.1 Very Low Frequency (VLF) survey

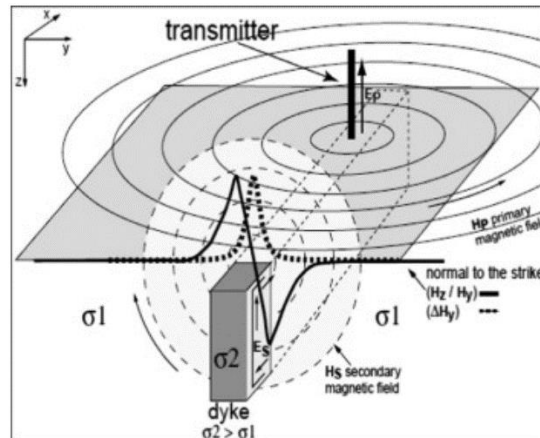
Very Low Frequency Electromagnetics (VLF) is a geophysical ground probing technology that uses powerful remote radio transmitters set up in different parts of the world for the military submarine communication. In radio communications terminology, VLF means very low frequency, about 15 to 25 kHz, while relative to frequencies generally used in geophysical exploration, these are very high frequencies. The radiated field from a remote VLF transmitter, propagating over a uniform or horizontally layered earth and measured on the earth's surface, consists of a vertical electric field component and a horizontal magnetic field component each perpendicular to the direction of propagation.

These radio transmitters are very powerful and induce electric currents in conductive bodies thousands of kilometres away. Under normal conditions, the fields produced are relatively uniform in the far-field at a significant distance (hundreds of kilometres) from the transmitters. The induced currents produce secondary magnetic fields that can be detected at the surface through the deviation of the normal radiated field (Figure 2).

VLF is used in many applications, including mineral exploration, water exploration and more. In mineral exploration, VLF data are used to map geologic structure, including the apparent dip of the fault and shear zones. The data can be interpreted to identify the dip of these structures for reliable drilling. Data are also used to identify conductive ground which might correspond to sulphide or clay rich concentrations. A third application is to map overburden in preparation for drilling and further sampling. All of these features have electrical contrasts with surrounding rocks, tending to be more electrically conductive or resistive and are reasonable targets.

The depth of investigation is controlled by the electrical "Skin-Depth" of the local geology. It varies from shallow to in some cases >100m depending upon the overall background resistivity of the subsurface. Typically, 20-75 meters can be expected. Conductive overburden suppresses signals, and depth penetration may be severely limited at times. VLF works best where rocks are resistive and overburden is minimal or is highly resistive.

The data include in-phase and out-of-phase signals as a percentage of the total field, horizontal component (x), horizontal component (y), and field strength in pT. The electrical conductivity of rocks can be modelled by the inversion of VLF data.



**Figure 2:** EM field distribution for the VLF method in E-polarization with theoretical signals over a vertical conductive dike (after Bosch and Müller, 2001).

## 4.2 Magnetic surveys

Magnetic is the most commonly used geophysical method for gold, diamond, platinum group metals and base metal exploration. Measurements of the magnetic field contain information about subsurface variations in magnetic susceptibility. Data can be acquired in the air (planes, satellites), on the ground (stationary, moving platforms, marine) and underground (boreholes, tunnels). The measurements record the sum of Earth's field and fields induced in magnetic materials. More magnetic (i.e. susceptible) materials have stronger induced fields. Removing Earth's field from the observations yields anomalous fields that can be interpreted in terms of where magnetic material lies and also its susceptibility and shape. Processed data are presented as maps or profiles, and advanced processing, involving inversion, yields parametric structures or 3D models of the subsurface susceptibility distribution.

Magnetic surveying is extremely versatile and can be applied in many areas in the geosciences including geologic mapping and mineral exploration. In gold exploration, magnetics helps in direct detection of associated mineralization and for mapping large- and local-scale structure (faults, dikes, and shear zones).

To a first approximation, Earth's magnetic field resembles a large dipolar source with a negative pole in the northern hemisphere and a positive pole in the southern hemisphere. The dipole is offset from the center of the earth and also tilted. The north magnetic pole at the surface of the earth is approximately at Melville Island. The field at any location on the Earth is generally described in terms described of magnitude  $|B|$ , declination  $D$  and inclination  $I$  as illustrated in Figure 3.

When the magnetic source field is applied to earth materials it causes the material to become magnetized. Magnetization is dipole moment per unit volume. This is a vector quantity because a dipole has a strength and a direction. Because Earth's field is different at different locations on the earth, then the same object gets magnetized differently depending on where it is situated. As a consequence, magnetic data from a steel drum buried at the north pole will be very different from that from a drum buried at the equator.

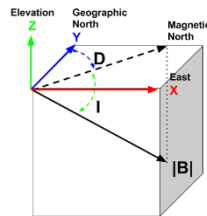


Figure 3: Earth's magnetic field, declination ( $D$ ) and inclination angles (2018, GeoSci Developers).

## 5.0 Results and recommendations

The data are processed for magnetic diurnal correction and the Fraser filter are applied on in-phase and quadrature components of VLF data. The data can be processed in advanced levels using inversion modelling techniques recently developed for the 2D inversion of VLF data. The EMTOMO-VLF2Dmf which is a software program for the 2D inversion of VLF-EM data based on the finite element (FE) method. This will ensure that geological models respect a consistent structural, stratigraphic, and topological framework in addition to ensuring consistency between different geophysical models.

The combination of geophysical models and geological and drilling information allows some general correlations to be made. The interpretations of VLF results can better identify lithological and structures features, as well as, the fracture zones.

## **6.0 Deliverables**

**Summary report in .pdf format**

**Database in Geosoft .dbf and .xyz formats**

**Fraser filter Grids in Geosoft and Tiff format**

**Magnetic Grids in Geosoft and Tiff format**

**Location Maps in .pdf and .jpg formats**

**Survey lines in Arcview shapefile format**