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Ministry of Energy, Mines & Petroleum Resources
Mining & Minerals Division
BC Geological Survey

BC Geological Survey Assessment Report 37458

Assessment Report Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geological & Prospecting

TOTAL COST: $13,187.47

AUTHOR(S): Lesley Hunt, Donald Bunce **SIGNATURE(S):**

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): MX-1-817 Nov 2013 to March 2019 **YEAR OF WORK:** 2017

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5685457, February 10, 2018

PROPERTY NAME: Black Creek

CLAIM NAME(S) (on which the work was done): Black Creek 1, Tenure No. 1047108

COMMODITIES SOUGHT: Nephrite

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Liard Mining Division **NTS/BCGS:** 104J/080

LATITUDE: 58 ° 45 ' 20 " **LONGITUDE:** 130 ° 04 ' 0 " **(at centre of work)**

OWNER(S):
1) Donald Bunce 2)

MAILING ADDRESS:
21670 Chief Lake Rd., Prince George BC, V2K 5K5

OPERATOR(S) [who paid for the work]:
1) Donald Bunce 2)

MAILING ADDRESS:
21670 Chief Lake Rd., Prince George BC, V2K 5K5

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Serpentinite, Nephrite, Cache Creek Complex, Cache Creek Terrane, Quesnellia Terrane, Dease Lake, Sawmill Point, Theibert Fault, Black Creek, Jade

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 32861, 33513, 34509, 35170 AR 30807, AR 29457

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	Geological Mapping	Tenure No. 1047108	13,649.30
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock	77 lithogeochemical samples		
Other	77 Rock Grab Samples Geological Descriptions	Tenure No. 1047108	
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			2,503.04
Petrographic	3 Samples, sent for Thin Section analysis	Tenure No. 1047108	954.45
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)	18.2 meters		
Underground dev. (metres)			
Other	Report Writing, Room & Board, Transportation	Tenure No. 1047108	
		TOTAL COST:	$17,106.79

2017 GEOLOGICAL & PROSPECTING PROGRAM ASSESSMENT REPORT

on the

BLACK CREEK PROPERTY

Comprising Mineral Tenures:
(Black Creek 1 & Black Creek #2)

Liard Mining District
British Columbia, Canada

Latitude 58°45'17'' North, Longitude 130°04'14'' West
UTM Zone 09 NAD 83
438065 m East, 6513235 m North

NTS 104 J/080

Report Prepared For

Owner / Operator:
Donald William Bunce

May 09, 2018

By:
Donald W. Bunce
&
Lesley Hunt, BSc., Geol.
Jade City, BC

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SUMMARY

This report describes the results obtained during the 2017 Exploration Program conducted by Donald W. Bunce on the Black Creek property consisting of 2 contiguous mineral claims covering 235 Ha in northwestern British Columbia (Figure 1). The property is accessed via the Stewart-Cassiar Highway 42 km north of the town site of Dease Lake.

The work program consisted of a lithogeochemical survey and a thin section study of samples collected from the outcrop exposure just below the western side of Hwy 37N

Total applicable exploration expenses on the Black Creek Property during the 2017 exploration program for the purpose of this report amounted to **$17,107**.

The property is registered in the name of Black Creek and is 100% owned by Donald William Bunce. The property's two claims were acquired by online staking by Donald Bunce in October 2016 & April 2017.

The Black Creek property straddles the Cache Creek and Quesnellia geological terranes of British Columbia.

The 2017 prospecting and lithogeochemical survey was conducted by a Donald Bunce from July 6th through August 28, 2017.

1.0 INTRODUCTION

This report presents the results of the 2017 Exploration program on the Black Creek Property located in the Cache Creek and Quesnel Terrane of northwestern British Columbia, just north of Dease Lake.
The program was conducted by Donald Bunce and work was conducted from July 6th through August 28th 2017.

The work program consisted of a prospecting and a lithogeochemical survey. Two samples were selected from the property for thin section analysis.

The work conducted and reported on for this report was financed by Donald W. Bunce of 21670 Chief Lake Road, Prince George, BC.

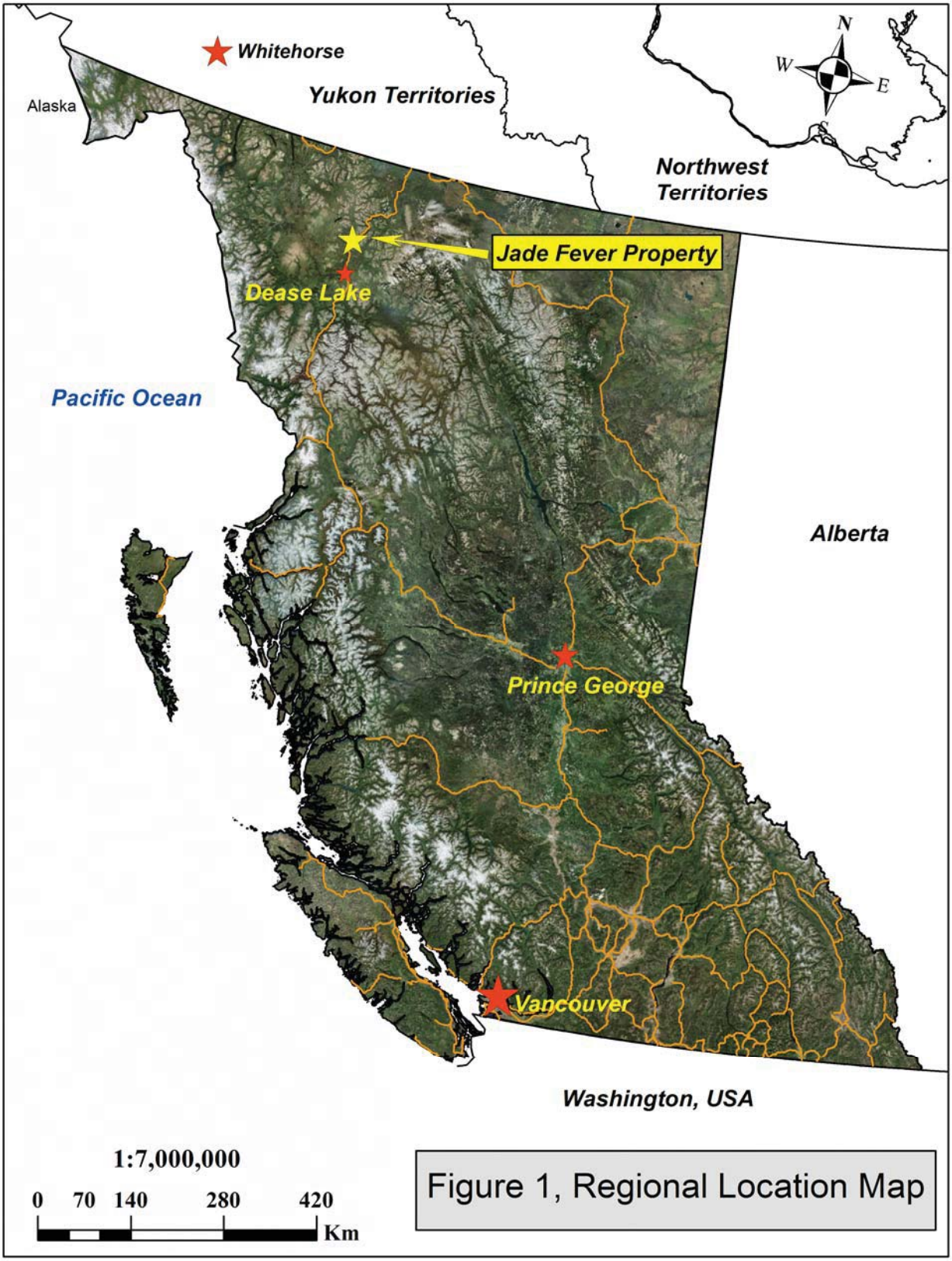
The exploration work program was completed under Mineral Reclamation Permit number MX-1-817.

Total applicable exploration expenses on the Black Creek Property during the 2017 exploration program for the purpose of this report amounted to **$17,107**.
A Cost Statement is located in Appendix E.

The objective of the work program was to establish the proximity of potential nephrite bearing serpentinite bodies of rock. These nephrite bodies have most likely resulted from the metasomatic alteration of serpentinite during the process of serpentinization.

Claim data are indicated in Table 1 below and verified by MTOnline. Claim location is shown in Figures 2 and 3.

Figure 1; Property Location



2.0 LOCATION, ACCESS AND INFRASTRUCTURE

The Black Creek Property is located in northwest British Columbia, approximately 40 km north of town of Dease Lake, British Columbia (Figure 2).

The property is located on NTS map sheet 104J and BCGS map sheet 104J080. The northwest corner of the Black Creek1 claim boundary intersects Hwy 37N at 436997E, 6513630N, UTM Zone 09, NAD 83.

There is good access to the property from the Stewart-Cassiar highway (Hwy 37N) at Km 528.5, one kilometer south of Sawmill Point Camp Ground. At this location, subsidiary access roads followed by foot trails lead to parts of the Black Creek Property, (Figure 3, Local Claim Location). Locally steep wooded terrain is seen on the property which makes ground access moderately difficult. All-terrain vehicles and walking are the current means of access for exploration. The property appears to have limited outcrop.

There are no private land lots within the Black Creek Property tenure boundaries.

Limited supplies are available in Dease Lake, British Columbia, 40 kilometers south of the property. Most general supplies and services are available in Watson Lake, Yukon Territories approximately 230 kilometers north.
Commercial air service from Dease Lake by Northern Thunderbird Air (NTAir) has been cancelled. The nearest airport is in Watson Lake, YT. Three flights a week fly to Whitehorse, YT.

The nearest major centers are; 1) Whitehorse, Yukon with a population of 27,000, located approximately 610 kilometers via Hwy 37N and the Alaska Highway and 2) Smithers, BC which services a population of 15,000, located 640 kilometers south via Hwy 37N and Hwy 16 east.

Only a few residents (20) remain in the nearby town site of Jade City, 70 kms to the north which provides a small but highly skilled population base in the area. Most personnel needed for larger exploration programs would have to be hired from elsewhere.

3.0 CLIMATE VEGETATION & TOPOGRAPHY

The climate is characterized by short, warm summers and long, cold winters. Underground mining can be conducted year round. Smaller bulk tonnage tests and open pit mining is most successfully conducted in the summer. Daily mean temperatures recorded at Dease Lake range from –18°C in January to +13°C in July. Annual snowfall has an average total accumulation of 218 cm.

The Black Creek property covers ground mostly on the east side and immediately adjacent to Hwy 37 N. The property topography is moderately severe, rising from the highway on the west side steeply to 1200m. The eastern extremity of the property is the base of Stake Mountain whose southern peak rises to 1552 meters above sea level (masl).

Vegetation consists of forests of jack pine, lodge pole pine, black spruce, and poplar thinning to buck brush and alpine meadows above tree line at 1,450 to 1,500 meters. Valley bottoms comprise shallow lakes and swamps with thick, stunted growths of pine and spruce.
The valley floor directly to the west of the property is comprised of Dease Lake whose shores are 750 masl and is up to one and a half kilometers wide. Seywerd Creek headwaters are located in the south east corner of the property. Seywerd Creek flows in a northwesterly direction and empties into Dease Lake at Sawmill Point, 2.5km north of the property.

4.0 CLAIM STATUS

The Black Creek Property consists of two contiguous mining claims in the Liard Mining District, NTS 104J totaling 235.1 Ha. (Figure 3).

The property's two claims Black Creek 1 and Black Creek #2 were acquired through online staking by Donald W. Bunce.

The 2017 exploration program was conducted on Black Creek 1 claim, Tenure No. 1047108.

The Black Creek claims border a property known to host in-situ nephrite lenses, now known as the Jade Empress 2 Property.

The claim tenure numbers, names, issue and expiry dates, and areas that comprise the property are all currently in good standing and are listed in Table 1 below.

Table 1, Mineral Tenures, Black Creek Property, May 03, 2018

Table 1, Black Creek Property, Mineral Tenures May 01, 2018				
Tenure Number	**Claim Name**	**Issue Date**	**Good To Date**	**Area (Ha)**
1047108	BLACK CREEK 1	October 6, 2016	April 2, 2024	151.1
1051228	BLACK CREEK #2	April 6, 2017	April 2, 2025	84.0
			Total Ha	**235.1**

Figures 2 and 3 illustrate the Black Creek Property and its regional and local relationships to natural boundaries, adjacent mineral tenures, mining properties and infrastructure.

Figure 2; Regional Claim Location, Black Creek Property

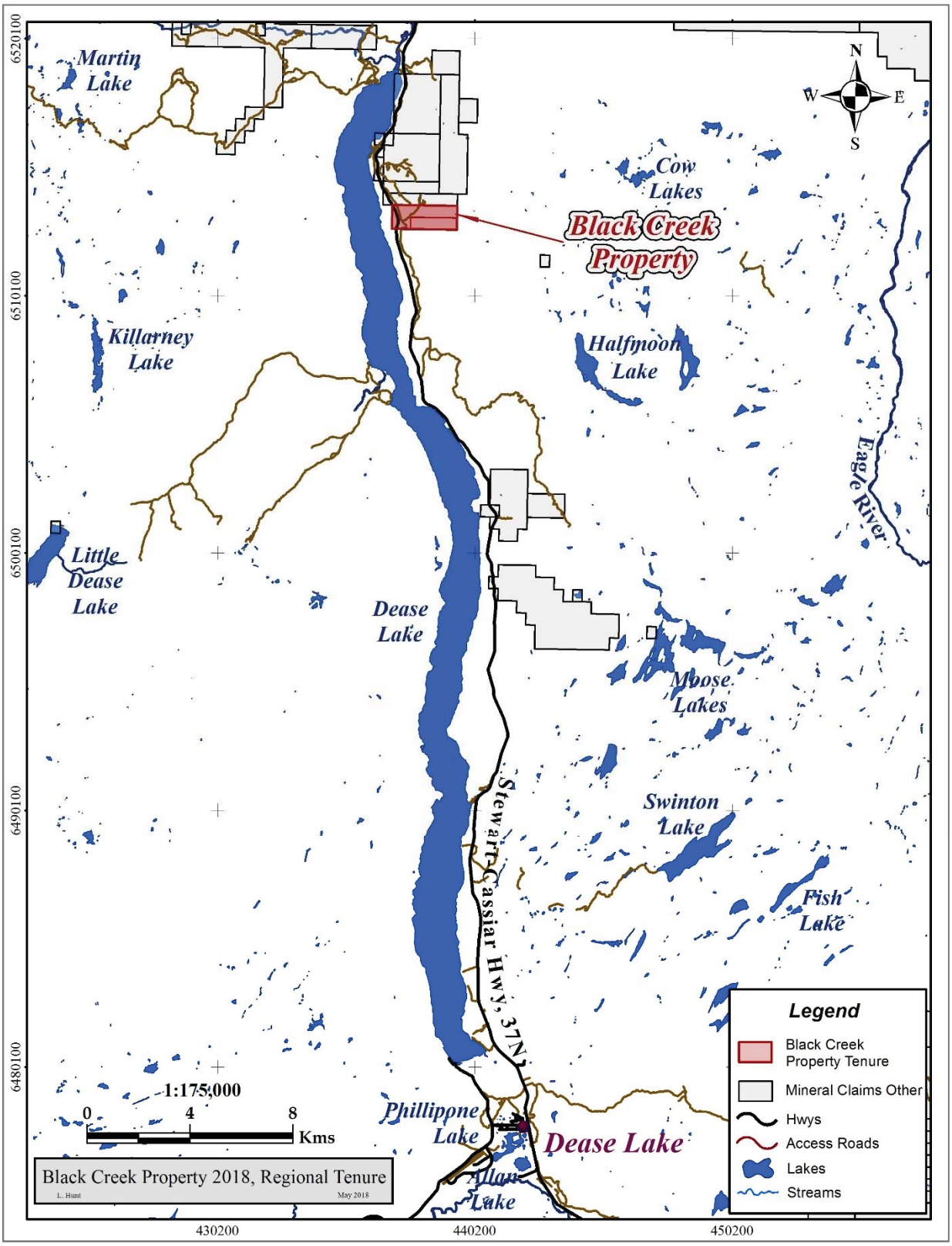
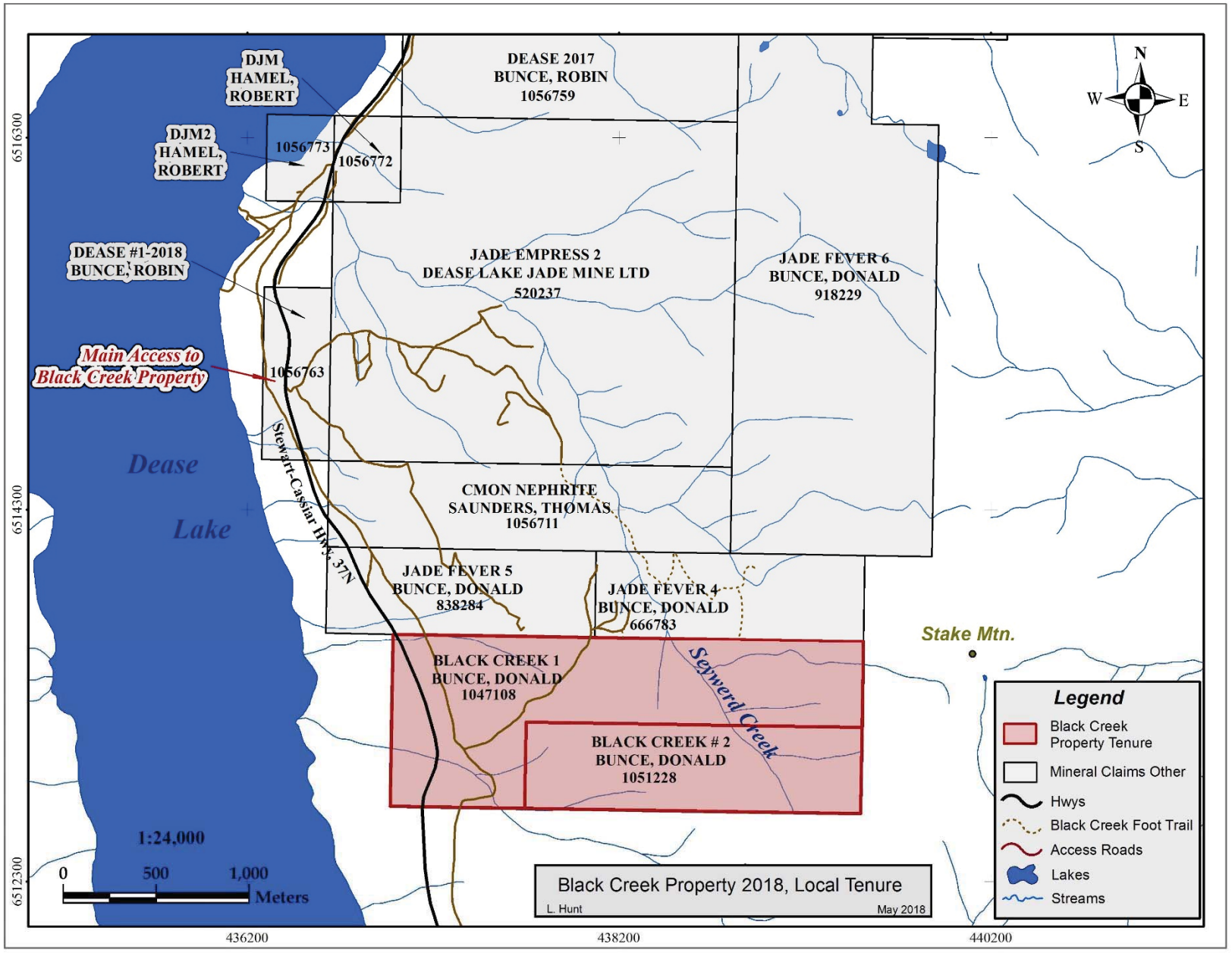


Figure 3; Black Creek Property, Local Tenure Location



5.0 BLACK CREEK & AREA PROPERTY HISTORY

Late in the summer of 1963, a large nephrite boulder was found on the roadside where a culvert had been built for Seywerd Creek beneath the Cassiar-Stewart highway (Highway 37N). The creek flows into Dease Lake at Sawmill Point, near the lakes north end. Nephrite (jade) boulders were found in considerable quantity along the creek for more than 1.6 kilometers east of the road.
In 1965, a number of boulders were cut into slabs and shipped; about 1.8 tonnes of jade were sold in West Germany and about 3.1 tonnes in Japan.

Numerous nephrite boulders, some up to 4.5 tonnes in weight, have been found in the creek. Quality of the material in most instances is difficult to judge from the exposed surfaces, so as a consequence each boulder is initially sampled by breaking a slab along a sawcut 15 to 25 centimeters deep made with a portable diamond saw. Although some nephrite is sheared, and some have inclusions of magnetite or is mottled, some material of very good colour has been found (Minister of Mines Annual Report 1965, page 250).

Dynasty Jade Ltd. completed limited prospecting in the close proximity of the Black Creek Property as reported in AR 29457. It is very unclear as to which year any work was done in as the only date reference in the entire assessment report is the new and old “Good to Dates” in a copy of a Claim Transaction Event. It appears as though they prospected on a few creeks that flowed from the heights above the Black Creek Property into Dease Lake to the west.

During the period of Aug. 12, 2011 to Sept. 23, 2011, Donald Bunce operated a program consisting of rock sampling and subsequent assaying of 10 (ten) rock samples taken from five trenches and the construction of the exploration trail on the Jade Fever 4 claim. Results were limited to one sample #01B2 in trench #TR01/11. It had high readings of Ni - 2476 ppm and Cr - 1174 ppm.

During the period of Jun/29/2012 to Aug/20/2012, rock sampling and subsequent assaying of 10 (ten) rocks in 4 trenches, and the construction of the exploration trail was under taken on the Jade Fever 4 claim. Assay results indicate localized anomalous Ni, Cu, Co, Mn values which would be expected in samples retrieved from serpentinite rock.

In 2015, a work program on the Jade Fever 5 tenure consisted of 324 meters of exploration trail construction, excavation of 5 trenches and a lithogeochemical survey in which 35 rock grab samples were taken of both bedrock and glacial till rock within the excavated trenches and subsequently sent to ACME Labs for analysis.

6.0 GEOLOGICAL SETTING

6.1 Regional Geology of the Black Creek Property

In British Columbia, nephrite deposits, both in place (in-situ) lenses and placer, are closely associated with a belt of alpine ultramafic rocks that extends for 1,000 miles from the Hope Area, east of Vancouver, northwestward to the Yukon border. There are over fifty known nephrite occurrences in British Columbia. Most of these are located in the Cassiar, Cry and Dease Lake, and Mount Ogden areas, as well as in Southern British Columbia. (Simandl et al, 2001).

The following brief description of these rocks is taken largely from McTaggart (1971).

The ultramafic bodies, most of which are peridotite or dunite, range in size from a few tens of feet across to batholiths with area greater than 70 square miles. In shape, they are sill-like and lenticular to equidimensional although elongate bodies are the most common. Many are cut by veins and dykes of dunite, pyroxenite and gabbro. Chromite, in pockets, lenses and vein-like masses, are almost always present. The bodies are commonly serpentinized, the degree of which ranges from incipient or partial in the larger masses to almost complete in the smaller, lenticular bodies. Talc rocks and mariposite bearing quartz-carbonate rocks are common but are usually restricted to shear zones and contacts.

These nephrite lenses can occur at or near the contacts of ultramafic/mafic rocks (mainly serpentinites) with cherts, and other metasedimentary or igneous felsic rocks of oceanic terranes such as the Cache Creek and Slide Mountain terranes. (Fig 5, Geological Terranes of the Black Creek Area). These terrane contacts are almost always shear / fault related. (Leaming, 1978; Simandl et al., 2000).

The Cache Creek Terrane, a group of geologically complex dominantly oceanic lithologies consists of extensively structurally deformed and dislocated volcanic, carbonate, coarse clastic rocks and small amounts of ultramafic rocks, chert and argillite. The vast majority of these rocks are of Carboniferous to Lower Jurassic age (approximately 200 to 350 million years old).

The Cache Creek Terrane is bounded by the Thibert, Kutcho and King Salmon faults and consists of three geological formations: the Sitlika Assemblage, the Tezzeron succession and the Cache Creek Complex.

The contacts between the various lithologies and the lithologies themselves are strongly diachronous meaning that the ages of them vary widely. This is usually a result of a slowly advancing depositional environment, like a delta formation.

The Quesnel Terrane, which stretches from south central British Columbia to the southern Yukon Territory and is host to several significant copper-gold porphyry deposits, including the Copper Mountain, Highland Valley, Mt Polley and Mt Milligan deposits.

General Information on Jadeitite & Nephrite

Jade is the gem name for mineral aggregates composed of either or both of two different minerals, *Jadeite* and *Nephrite*. Jadeite is a sodium-rich aluminous pyroxene; nephrite is a fine-grained, calcium-rich, magnesium, iron, aluminous amphibole. All jade is composed of fine-grained, highly intergrown, interlocking ("matted" or "felted" texture, like asbestos or felt) crystals of one or both of these minerals. Though neither mineral is very hard (6-7), jade is one of the toughest gem minerals known because of the intergrown nature of the individual crystals.

It is difficult to impossible to distinguish nephrite jade from jadeite jade by visual inspection Specific gravity determination is the most reliable of simple I.D. methods for distinguishing the two.

Most jade on the market is composed of nephrite. Jadeite jade is quite rare and in its emerald-green, translucent form is referred to as Imperial Jade or "gem jade". A small amount of Cr in jadeite accounts for the color of imperial jade. Other color-based names for jadeite jade are *Yunan Jade*, for a uniquely appearing dark green, semi translucent jade, *Apple Jade* for apple (yellowish green) green jade, and *Moss-in-Snow* for white jade with vivid green spots and streaks.
Nephrite and jadeite jade ranges in color from a somewhat greasy-appearing, white ("mutton fat jade") to dark and light shades of green, gray, blue-green, lavender, yellow, orange, brown, reddish-brown, and black. An important dark green variety of nephrite is sometimes known as "spinach jade". The chromophore in all nephrite jades is usually Fe. Nephrite jade is usually opaque to translucent in thinner pieces.

Jadeite and Nephrite were first distinguished as distinct varieties of jade based on chemical composition in the mid 1800’s by Alexis Damour, a French chemist.

6.2 Property Geology, Black Creek.

The Black Creek Property straddles the contact between the Cache Creek and the Quesnel Terranes. The property is underlain by rocks of the Cache Creek Terrane, Kedadha Formation comprising chert, siliceous argillite, siliciclastic rocks. The property also straddles a tectonic contact with the Omenica Belt to the northeast and the Intermontane Belt to the southwest.

The known exposed rocks on the property are exposed along the creeks and seen along highway. The rocks are Mississippian-Triassic age. They are dominantly Kedahda Formation chert, cherty argillite; minor argillite, siltstone, and volcanic sandstone; minor volcanic rocks and metamorphosed equivalents.

The adjacent property owned by Dease Lake Jade, the Empress Jade Property quarry outcrop exposure is composed mostly of tremolitic serpentinite with few asbestos veinlets to 3cm. Localized lensoid bodies of green nephrite and semi-nephrite were found in outcrop to 10 cm.

The proximity of these nephritic lenses is a positive indication that more could be found on the Black Creek Property.

Given its prospective geological characteristics, the Black Creek property is a viable early-stage in-situ nephrite target location. The lack of any previous documented property-specific exploration and detailed quantitative and qualitative data renders the property in it's early stage evaluation, a very feasible nephrite target area.

Figure 4; Regional Geology Map, Black Creek Property

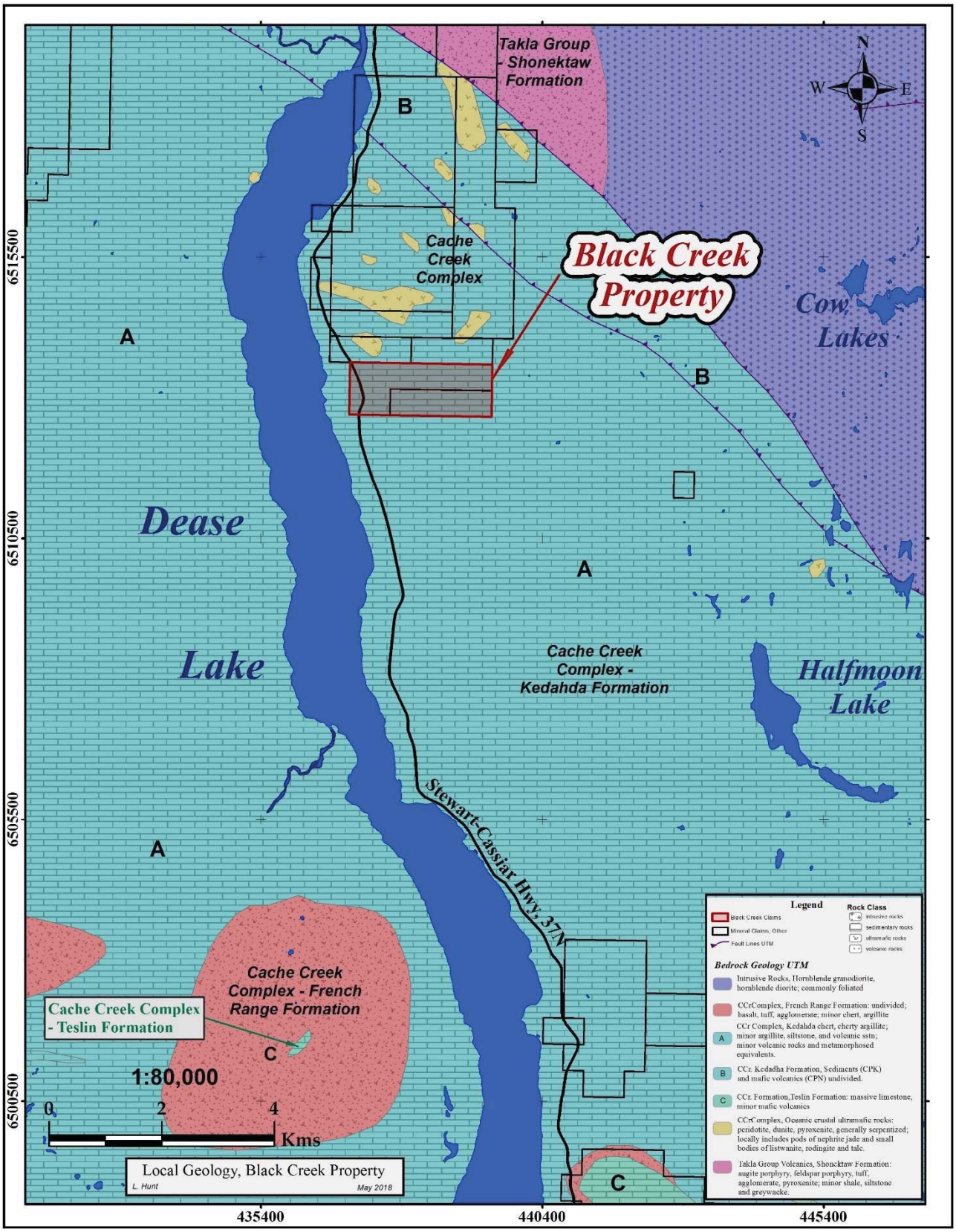
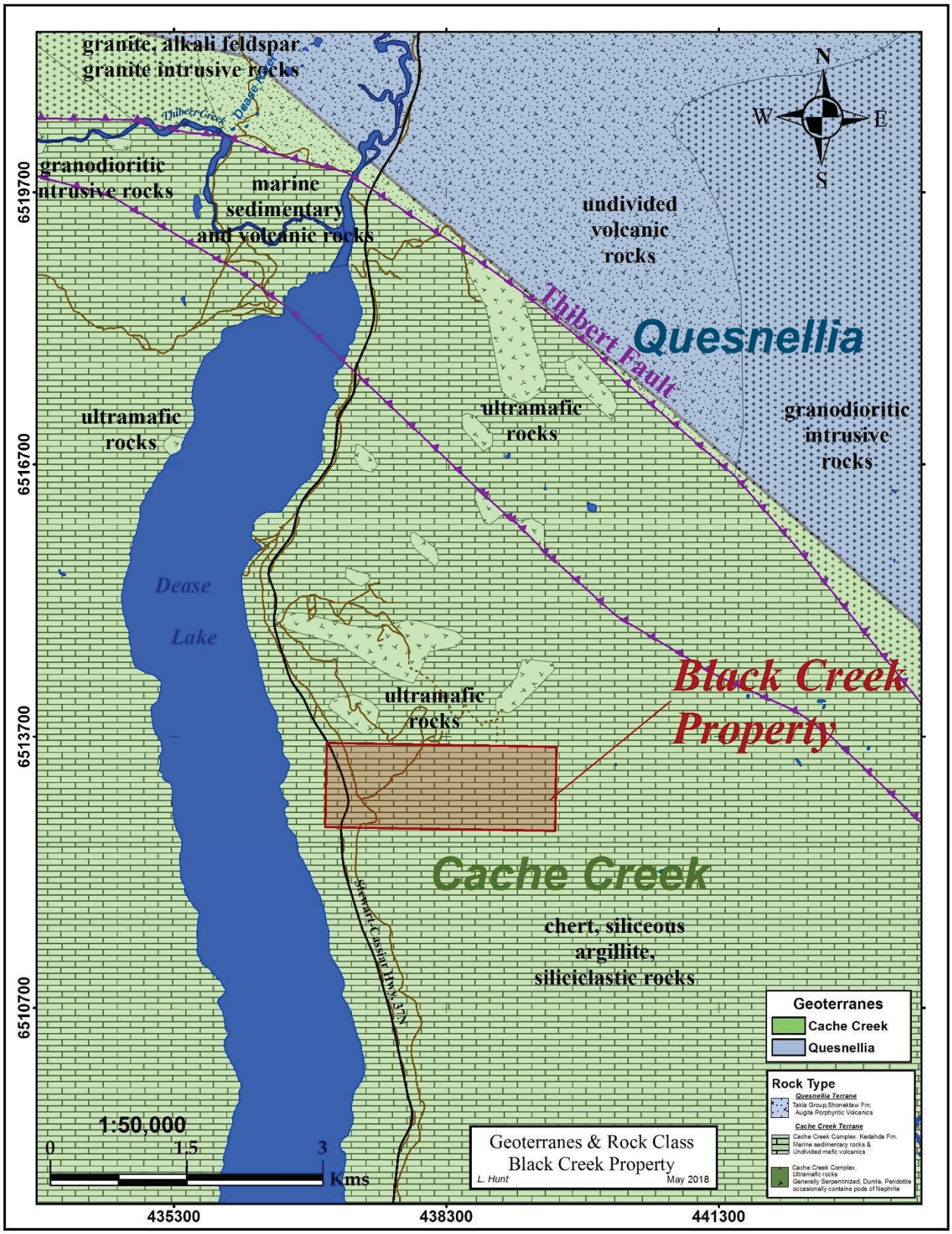


Figure 5; Geoterranes of the Black Creek Property Area



7.0 2017 EXPLORATION PROGRAM

This report documents the 2017 exploration program on the Black Creek Property consisting of a prospecting, rock grab sample identification, lithogeochemical sampling program and three rock samples sent for thin section analysis including a petrographic examination report. Work was conducted between July 6th through August 28th 2017 by Donald Bunce, on the Black Creek 1 mineral tenure number 1047108.

The objective of the prospecting and sampling program was to discover in-situ nephrite lenses most likely hosted within the serpentinite rock.
The 2017 assessment work orientation was accomplished using Garmin eTrex GPS hand held unit.

7.1 LithoGeochemical Sampling

A total of 77 rock grab samples were taken from outcrop for lithogeochemical analysis. Sample locations are illustrated in two figures. The property was divided into a western map Figure 6 and an eastern map, Figure 7.

The samples were submitted to Acme Labs in Smithers, BC for analysis of 37 elements using an Aqua Regia digest and mass spectrometry. The samples were analyzed using ICP-Mass Spectrometry method of a 15g sample split after modified aqua regia digestion.

Complete lithogeochemical analysis results are located in Appendix A.

Complete lithogeochemical analysis and sample prepatory procedure descriptions are located in Appendix B.

7.2 Petrographic Analysis

The report 'petrographic descriptions' section provides the following for each sample: (i) the petrographic rock classification; (ii) a brief microstructural description; (iii) a table with the modal percentage and average grain size for each mineral; and (iv) a detailed description of the minerals in decreasing order of abundance.

Three samples were cut and prepared as ~20 × 40 mm polished thin sections and were analyzed with a petrographic microscope under polarized transmitted, and polarized reflected light.
A petrographic classification was determined following the recommendations of Gillespie et al. (2011), Gillespie and Styles (1999), and Robertson (1999).

Appendix C contains the Petrographic Report in its entirety.

Figure 6; Black Creek Property 2017 Sample Location WEST

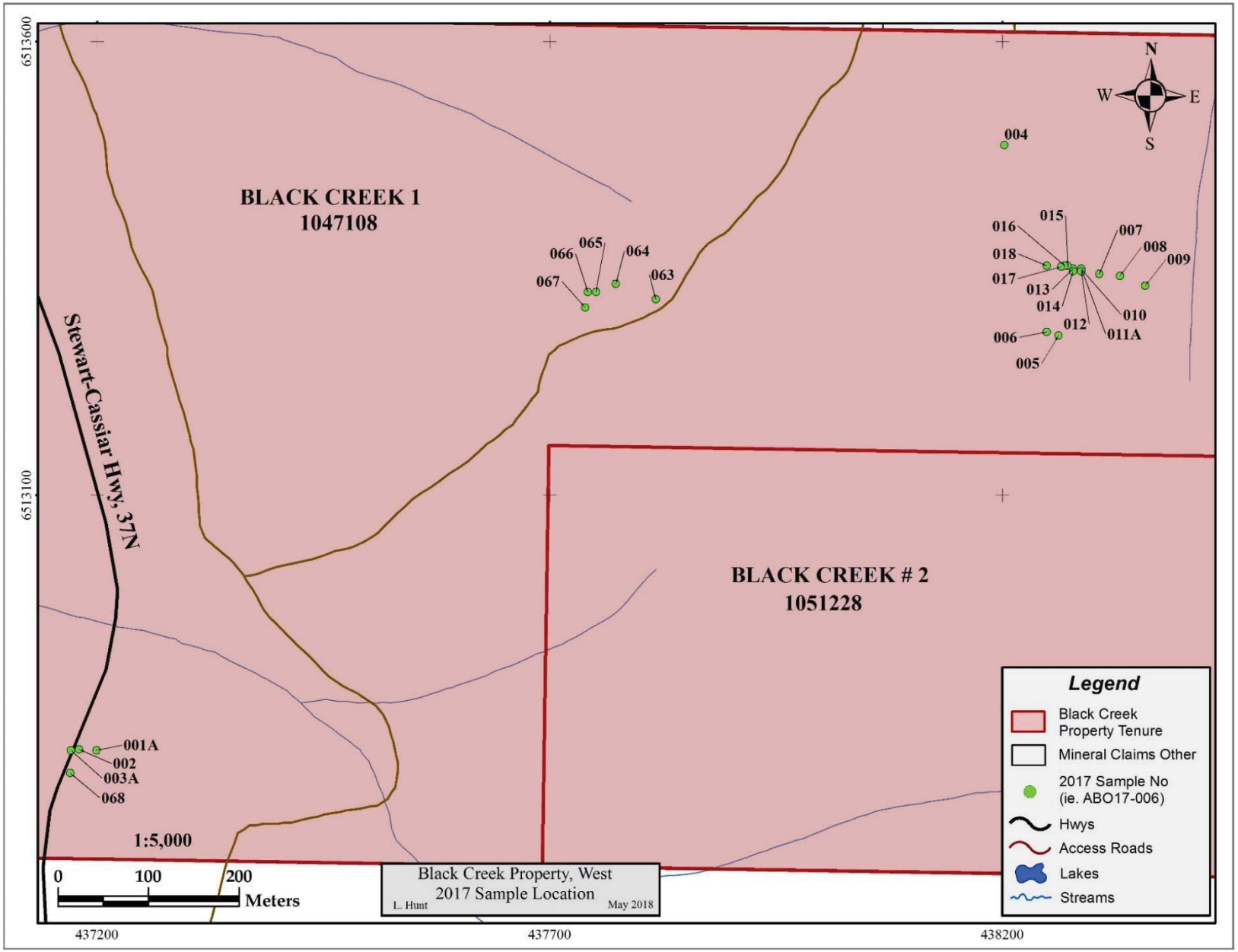
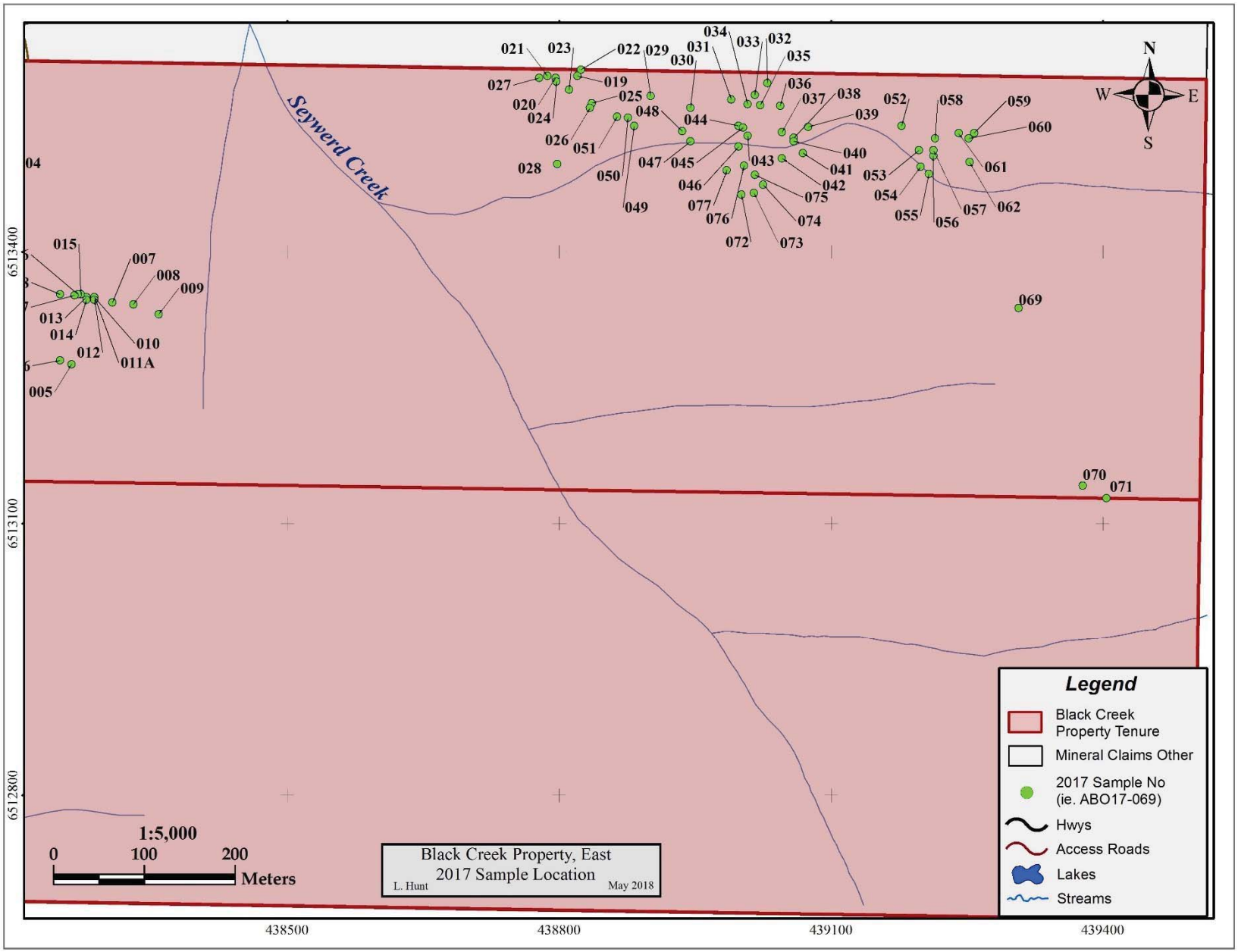


Figure 7; Black Creek Property 2017 Sample Location EAST



7.2.1 Rock Geochemistry Results

A total of 77 (seventy-seven) rock samples were collected on the Black Creek 1 claim during the 2017 work program.

Complete results and the Quality Control Report for the lithogeochemical analyses for the 77 rock samples are located in Appendix A.

See Appendix E for contoured maps for 6 selected elements: Chromium, Nickel, Silver, Zinc, Manganese and Copper.

Table 2, LithoGeochemical Minimum Detection Limits

Table 2, ACME Labs Minimum Detection Limits					
Element	**Unit**	**Minimum Detection Limits**	**Element**	**Unit**	**Minimum Detection Limits**
Mo	ppm	0.01	**Na**	%	0.001
Cu	ppm	0.01	**K**	%	0.01
Pb	ppm	0.01	**W**	ppm	0.1
Zn	ppm	0.1	**Sc**	ppm	0.1
Ag	ppb	2	**Tl**	ppm	0.02
Ni	ppm	0.1	**S**	%	0,02
Co	ppm	0.1	**Hg**	ppb	5
Mn	ppm	1	**Se**	ppm	0.1
Fe	%	0.01	**Te**	ppm	0.02
As	ppm	0.1	**Ga**	ppm	0.1
U	ppm	0.1	**Cs**	ppm	0.02
Au	ppb	0.2	**Ge**	ppm	0.1
Th	ppm	0.1	**Hf**	ppm	0.02
Sr	ppm	0.5	**Nb**	ppm	0.02
Cd	ppm	0.01	**Rb**	ppm	0.1
Sb	ppm	0.02	**Sn**	ppm	0.1
Bi	ppm	0.02	**Ta**	ppm	0.05
V	ppm	2	**Zr**	ppm	0.1
Ca	%	0.01	**Y**	ppm	0.01
P	%	0.001	**Ce**	ppm	0.1
La	ppm	0.5	**In**	ppm	0.02
Cr	ppm	0.5	**Re**	ppb	1
Mg	%	0.01	**Be**	ppm	0.1
Ba	ppm	0.5	**LI**	ppm	0.1
Ti	%	0.001	**Pd**	ppb	10
B	ppm	1	**Pt**	ppb	2
Al	%	0.01			

7.2.2 Rock Sample Descriptions

The same 77 samples sent in for lithogeochemistry analysis were also identified in hand sample.

The majority of the rock samples sent in for analysis were metasediments. Cherty Argillites and Argillites were the clear majority of rock types sent in for analysis.
The rocks are moderately to intensely foliated, most are silicified and fracturing is variable. Very rare sulphides are noted. Numerous quartz carbonate veinlets and irregular structures are common. Some samples of silicified ultramafics (Nephrite?) were noted.

See Appendix D for a complete list of Rock Grab Sample Descriptions and an abbreviation Key for the description notes.

7.23 Petrographic Analysis Results Summary

Sample 1: AOB17-066B—Brecciated andesite—This polished thin section consists of inequigranular anhedral crystals of plagioclase, and subordinate quartz, chlorite, and iron oxides. The plagioclase-rich aggregate is fractured and filled in by quartz.

Sample 2: AOB17-066B-1—White mica schist—Elongate and angular fragments dominated by very fine-grained and iso-oriented flakes of white mica and/or clay are immersed within a very fine-grained matrix dominated by very fine-grained quartz and/or albite and subordinate white mica.

Sample 3: AOB17-066B-2—White-mica schist—This polished thin section is dominated by very fine-grained quartz and iso-oriented flakes of white mica, which define a continuous schistosity. Within the schistosity, sub-rounded, angular, irregularly shaped domains of polycrystalline fine-grained quartz are immersed. Veinlets of quartz crosscut at low angles the schistosity.

See Appendix C for a complete list of Rock Grab Sample Descriptions.

8.0 CONCLUSIONS

Given its prospective geological characteristics, the Black Creek property is a viable in-situ Nephrite target location. It must be recognized that the absence of any known previous, property-specific exploration and detailed quantitative data renders the proposed program a very early stage evaluation.

The known Empress Jade nephrite lenses, two kilometers to the north on the adjacent property also indicates the presence of the geological systems necessary to produce nephrite lenses associated with the serpentinite bodies seen in the area.

9.0 RECOMMENDATIONS

Soil geochemical sampling on a grid is recommended to establish the significance of any marker elements in-soil.

Following up on the geochemical research, a prospecting / geological mapping program is recommended.

In the summer of 2018, further exploration of the nephrite outcrops discovered in 2017 and exploration trail construction will be completed.

10.0 REFERENCES

Learning, S.F., 1978: Jade in Canada; Geological Survey of Canada, Paper 78-19. 59 p.

McTaggart, K. C., 1971, On the origin of ultramafic rocks; Geol. Soc. America Bull., v. 82, p. 23-42.

Mihalynuk, M.G. et al, Geological Fieldwork 1998, Paper 1999-1, Age Constraints For Emplacement Of The Northern Cache Creek Terrane And Implications Of Blueschist Metamorphism

Simandl, G.J., Riveros, C.P. and Schiarizza, P (2000): Nephrite (Jade), Mount Ogden Area, Central British Columbia, (NTS 093N 13W); In: Geological Fieldwork 1999, British Columbia Ministry of Energy and Mines, Paper 2001-1, pages 339-347.

Simandl, G.J., Paradis, S. and Nelson, J. (2001): Jade and Rhodonite Deposits, British Columbia Canada, In R.L. Bon editor, Proceedings of the 35th Forum on the Geology of Industrial Minerals – Intermountain West Forum, Salt Lake City 1999, pages 163-172.

11.0 STATEMENTS OF QUALIFICATIONS

I, Donald W. Bunce of 2156 Chief Lake Road, Prince George, BC, am the 100% owner and operator of the Black Creek Property for which this report is written.

Digitally signed by Donald Bunce
DN: cn=Donald Bunce, o, ou,
email=funkyjade.bc@gmail.com, c=US
Date: 2018.05.10 03:49:18 -07'00'

Donald Bunce, May 9, 2018.

I, **Lesley C. Hunt, of Km 602 Stewart Cassiar Hwy, Jade City, BC, do hereby certify that:**

1) I am a consulting geologist with an office at Km 602, Stewart Cassiar Hwy, Jade City, British Columbia, V0C 1E0.

2) This Statement of Qualifications applies to the 2017 Assessment Filing for Work qualifying for the Black Creek Property.

3) I am a graduate of Lakehead University, 1985, with a B.Sc. in Geology.

4) This report is based on exploration work on the Black Creek Property performed in 2017. I was not involved in the planning or executing of the exploration program, solely the transfer and editing of the data collected by Donald W. Bunce (operator).

Digitally signed by Lesley Hunt
DN: cn=Lesley Hunt, o=Cassiar
Gold Corp., ou=Mine Manager,
email=lesleyhunt@telus.net, c=CA
Date: 2018.05.10 03:36:43 -07'00'

Lesley Hunt, May 9, 2018

2017 Black Creek Property, Sample Locations							
Sample ID	**EASTING**	**NORTHING**	**ELEVATION**	**Sample ID**	**EASTING**	**NORTHING**	**ELEVATION**
001A	437199.0	6512819.0	918.0	040	439059.0	6513522.0	1310.0
002	437180.0	6512820.0	895.0	041	439069.0	6513509.0	1315.0
003A	437171.0	6512819.0	887.0	042	439046.0	6513503.0	1313.0
004	438202.0	6513486.0	1228.0	043	439008.0	6513528.0	1297.0
005	438262.0	6513276.0	1246.0	044	438998.0	6513539.0	1305.0
006	438249.0	6513280.0	1233.0	045	439003.0	6513537.0	1300.0
007	438307.0	6513344.0	1232.0	046	438998.0	6513516.0	1284.0
008	438330.0	6513342.0	1238.0	047	438945.0	6513522.0	1272.0
009	438358.0	6513331.0	1232.0	048	438936.0	6513533.0	1264.0
010	438287.0	6513350.0	1232.0	049	438883.0	6513539.0	1276.0
011A	438287.0	6513350.0	1232.0	050	438876.0	6513548.0	1280.0
012	438287.0	6513347.0	1237.0	051	438864.0	6513549.0	1283.0
013	438278.0	6513350.0	1241.0	052	439178.0	6513539.0	1334.0
014	438278.0	6513347.0	1242.0	053	439197.0	6513512.0	1330.0
015	438272.0	6513353.0	1241.0	054	439199.0	6513494.0	1332.0
016	438269.0	6513353.0	1240.0	055	439208.0	6513486.0	1328.0
017	438265.0	6513352.0	1239.0	056	439213.0	6513506.0	1335.0
018	438249.0	6513353.0	1230.0	057	439213.0	6513512.0	1328.0
019	438820.0	6513594.0	1293.0	058	439215.0	6513525.0	1328.0
020	438796.0	6513592.0	1283.0	059	439258.0	6513531.0	1348.0
021	438787.0	6513594.0	1275.0	060	439252.0	6513525.0	1347.0
022	438824.0	6513601.0	1294.0	061	439241.0	6513531.0	1348.0
023	438811.0	6513579.0	1281.0	062	439253.0	6513499.0	1346.0
024	438797.0	6513588.0	1271.0	063	437817.0	6513316.0	1128.0
025	438836.0	6513564.0	1283.0	064	437773.0	6513333.0	1146.0
026	438834.0	6513559.0	1276.0	065	437751.0	6513324.0	1140.0
027	438778.0	6513592.0	1278.0	066	437742.0	6513324.0	1128.0
028	438798.0	6513497.0	1257.0	067	437739.0	6513307.0	1124.0
029	438901.0	6513572.0	1291.0	068	437170.0	6512794.0	902.0
030	438945.0	6513559.0	1291.0	069	439307.0	6513338.0	1354.0
031	438990.0	6513568.0	1292.0	070	439378.0	6513142.0	1392.0
032	439030.0	6513586.0	1319.0	071	439404.0	6513128.0	1392.0
033	439016.0	6513573.0	1315.0	072	439001.0	6513463.0	1310.0
034	439008.0	6513563.0	1308.0	073	439015.0	6513465.0	1307.0
035	439022.0	6513562.0	1312.0	074	439025.0	6513474.0	1314.0
036	439044.0	6513561.0	1313.0	075	439016.0	6513485.0	1310.0
037	439046.0	6513532.0	1313.0	076	439004.0	6513495.0	1302.0
038	439059.0	6513526.0	1307.0	077	438985.0	6513490.0	1286.0
039	439075.0	6513538.0	1300.0				

APPENDIX A

2017 BLACK CREEK PROPERTY

ROCK GEOCHEMISTRY

ANALYSIS RESULTS

ANALYSES CERTIFICATE &

QUALITY CONTROL REPORT

LITHOGEOCHEMISTRY CONTOUR MAPS:

SILVER

CHROMIUM

COPPER

MANGANESE

NICKEL

ZINC

2017 Black Creek Property, Lithogeochemistry Sample Results Summary

	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	PPM	PPM	PPM	PPM	PPB	PPM	PPM	PPM	%	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM	PPM	%	PPB	PPM	PPM	PPM
	Min. Detect. Limit	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
Sample No.	Weight (Kg)																																					
AOB17-001	0.19	1.49	2.43	1.60	11.9	17	738.0	36.4	137	0.91	8.3	0.1	2.5	0.05	3.7	0.010	0.10	0.03	8	0.59	0.001	0.3	762.2	2.24	4.5	0.001	1.0	0.73	0.004	0.01	0.05	0.8	0.01	0.05	3	0.6	0.04	2.4
AOB17-002	0.32	0.36	108.41	0.44	82.5	67	51.6	37.0	1632	7.88	4.3	0.2	3.3	0.05	33.0	0.110	0.08	0.01	301	1.89	0.050	0.7	74.6	2.61	495.5	0.469	4.0	3.83	0.055	0.08	0.40	11.4	0.01	0.02	3	0.1	0.01	13.8
AOB17-003	0.20	0.26	30.61	1.36	30.5	17	40.8	12.6	581	1.62	0.5	0.5	2.0	2.70	24.9	0.030	0.04	0.03	21	1.16	0.011	5.3	17.4	0.75	130.6	0.120	3.0	0.91	0.011	0.15	0.10	3.6	0.06	0.01	3	0.1	0.01	3.7
AOB17-004	0.15	3.74	14.47	10.34	11.9	453	3.1	0.6	47	1.04	4.5	0.4	5.1	2.50	8.7	0.030	1.03	0.21	9	0.01	0.009	11.2	10.2	0.07	823.1	0.005	5.0	0.40	0.013	0.26	0.05	1.3	0.10	0.03	170	1.2	0.05	1.5
AOB17-005	0.14	0.72	85.46	2.25	107.8	71	38.4	7.9	626	1.27	2.4	0.5	1.8	1.60	27.8	0.700	0.24	0.21	17	0.22	0.020	7.8	17.6	0.66	903.1	0.005	5.0	0.79	0.008	0.15	0.05	4.0	0.06	0.01	40	0.2	0.01	2.6
AOB17-006	0.20	0.36	19.38	4.60	16.4	23	12.1	2.0	97	0.98	0.4	0.3	2.7	0.90	7.2	0.090	0.07	0.18	6	0.05	0.019	4.0	11.7	0.20	257.7	0.004	4.0	0.37	0.007	0.10	0.05	1.1	0.03	0.01	3	0.1	0.01	1.7
AOB17-007	0.21	0.51	46.36	6.83	26.4	105	10.6	1.3	56	1.47	3.0	0.8	2.4	4.90	14.9	0.070	0.33	0.26	11	0.01	0.013	15.9	15.3	0.39	2379.7	0.005	5.0	0.97	0.011	0.25	0.05	2.5	0.09	0.07	90	0.5	0.04	3.4
AOB17-008	0.31	0.36	11.86	3.51	11.9	55	2.9	0.5	35	0.69	0.8	0.1	3.0	1.50	14.2	0.020	0.16	0.14	4	0.01	0.004	6.0	7.9	0.11	1003.2	0.003	3.0	0.31	0.010	0.13	0.05	0.9	0.04	0.05	21	0.1	0.01	1.4
AOB17-009	0.18	0.86	4.79	2.64	4.5	73	2.0	0.5	25	0.35	0.6	0.1	3.1	0.70	8.7	0.005	0.36	0.07	3	0.01	0.002	4.0	7.0	0.02	758.4	0.002	2.0	0.14	0.005	0.10	0.05	0.7	0.03	0.01	65	0.2	0.01	0.6
AOB17-010	0.18	0.53	41.36	1.91	22.7	53	11.8	2.5	103	0.85	0.9	0.3	3.1	0.70	23.4	0.080	0.15	0.05	3	0.03	0.013	2.2	10.5	0.06	917.4	0.001	2.0	0.18	0.023	0.03	0.05	1.2	0.01	0.04	30	0.1	0.01	0.5
AOB17-011	0.18	0.28	27.34	2.84	31.9	6	25.6	16.2	1021	1.40	0.3	0.1	0.1	1.90	3.7	0.040	0.05	0.04	8	0.03	0.012	7.4	9.6	0.36	169.2	0.009	2.0	0.71	0.005	0.14	0.05	1.6	0.06	0.01	5	0.1	0.01	3.3
AOB17-012	0.25	0.39	15.23	4.40	12.0	235	2.8	0.4	46	0.80	1.6	0.2	4.6	1.60	10.3	0.020	0.30	0.15	6	0.01	0.008	6.2	8.0	0.11	1475.6	0.003	4.0	0.33	0.006	0.15	0.05	1.2	0.06	0.05	83	0.8	0.01	1.6
AOB17-013	0.20	0.80	39.83	6.41	53.4	131	28.9	5.7	137	1.83	0.6	0.5	3.8	4.70	16.1	0.060	0.18	0.31	15	0.01	0.012	15.7	18.7	0.63	1835.6	0.006	5.0	1.13	0.008	0.25	0.05	2.3	0.08	0.03	37	0.1	0.07	3.7
AOB17-014	0.20	0.63	8.92	6.27	6.8	136	2.0	0.4	33	0.89	1.6	0.1	4.6	2.00	21.1	0.020	0.43	0.22	7	0.01	0.009	9.0	9.7	0.06	862.2	0.004	5.0	0.31	0.009	0.25	0.05	1.1	0.17	0.14	37	0.3	0.03	1.3
AOB17-015	0.29	0.31	33.86	1.14	25.9	133	6.3	1.6	117	0.47	1.3	0.2	2.1	0.40	28.2	0.360	0.09	0.06	3	0.15	0.009	2.3	5.6	0.11	2848.0	0.002	0.5	0.21	0.002	0.05	0.05	1.0	0.04	0.04	13	0.2	0.03	0.5
AOB17-016	0.29	0.28	27.28	1.33	21.5	97	7.3	1.8	124	0.60	1.1	0.2	2.7	0.80	21.5	0.200	0.08	0.10	4	0.08	0.012	4.1	7.4	0.12	4458.4	0.003	2.0	0.36	0.005	0.08	0.05	1.6	0.07	0.03	14	0.1	0.03	0.9
AOB17-017	0.10	0.34	20.95	1.39	33.0	45	14.6	2.8	76	1.50	0.5	0.4	2.1	2.70	6.1	0.080	0.07	0.09	14	0.01	0.009	9.7	20.0	0.52	6484.2	0.010	4.0	1.52	0.010	0.20	0.05	2.6	0.11	0.04	16	0.2	0.01	3.9
AOB17-018	0.26	0.23	26.28	2.73	40.7	41	19.0	5.2	142	1.73	0.3	0.5	2.4	2.80	8.0	0.060	0.08	0.12	12	0.02	0.013	10.3	16.1	0.63	5782.2	0.005	3.0	1.27	0.005	0.17	0.05	2.0	0.06	0.05	6	0.1	0.03	3.5
AOB17-019	0.16	0.18	96.01	9.31	52.5	57	25.3	12.0	760	2.47	2.5	0.3	2.5	4.00	111.9	0.020	0.18	0.39	39	0.86	0.062	11.5	25.2	0.77	198.4	0.221	3.0	1.80	0.019	0.38	0.40	7.5	0.06	0.01	18	0.1	0.12	5.6
AOB17-020	0.22	0.21	55.15	8.45	53.7	43	18.6	6.7	634	1.65	1.6	0.2	2.4	2.60	39.5	0.040	0.10	0.23	18	0.42	0.024	7.4	14.0	0.45	114.2	0.117	30.0	1.07	0.013	0.23	0.20	4.1	0.05	0.01	20	0.1	0.05	3.4
AOB17-021	0.32	0.14	84.30	6.27	89.9	45	23.2	9.3	785	2.61	2.0	0.4	2.4	4.60	84.0	0.200	0.17	0.13	50	0.56	0.050	14.9	26.1	0.85	147.1	0.178	3.0	1.67	0.013	0.23	0.10	6.7	0.05	0.01	39	0.2	0.03	6.9
AOB17-022	0.16	0.12	138.80	0.69	85.0	33	66.4	36.3	983	6.18	0.3	0.2	1.6	0.10	28.5	0.270	0.06	0.01	205	2.36	0.053	1.9	119.7	2.44	195.0	0.577	3.0	3.58	0.038	0.13	0.20	10.2	0.03	0.01	9	0.1	0.01	12.2
AOB17-023	0.27	0.15	76.03	8.52	64.8	80	32.7	7.2	444	1.94	1.1	0.7	2.6	3.80	64.7	0.120	0.45	0.19	43	0.57	0.030	12.9	24.3	0.83	109.4	0.186	2.0	1.18	0.009	0.18	0.30	6.0	0.04	0.01	21	0.1	0.01	5.2
AOB17-024	0.28	0.13	37.93	3.16	30.6	44	14.3	6.4	511	1.96	1.9	0.3	1.9	2.70	36.7	0.100	0.16	0.08	23	0.54	0.039	8.0	14.9	0.58	108.6	0.091	3.0	1.32	0.012	0.23	0.05	4.5	0.04	0.01	3	0.2	0.01	4.5
AOB17-025	0.15	0.26	24.62	6.40	54.1	44	26.8	5.8	193	2.20	2.8	0.1	6.9	4.40	13.5	0.020	0.18	0.22	18	0.25	0.023	8.9	19.7	0.80	221.0	0.182	5.0	1.35	0.004	0.34	0.30	3.3	0.08	0.01	11	0.1	0.05	4.1
AOB17-026	0.21	0.20	23.43	5.04	52.8	44	28.1	6.7	215	2.10	2.7	0.1	4.0	4.00	12.7	0.030	0.19	0.19	17	0.14	0.023	10.2	15.6	0.81	165.8	0.015	5.0	1.28	0.003	0.28	0.05	2.1	0.07	0.01	14	0.1	0.03	3.7
AOB17-027	0.18	0.16	7.60	4.66	27.1	13	7.5	2.6	325	0.82	0.4	0.1	0.9	0.80	745.8	0.170	0.06	0.02	18	5.39	0.011	3.0	10.2	0.26	28.1	0.043	2.0	1.45	0.008	0.03	0.10	2.4	0.01	0.01	10	0.1	0.02	5.0
AOB17-028	0.24	0.21	17.62	5.79	49.8	36	8.2	8.0	519	1.95	4.0	0.3	1.7	1.10	181.2	0.050	0.13	0.04	57	3.45	0.086	8.0	18.1	0.71	157.2	0.155	6.0	2.25	0.050	0.21	0.20	8.9	0.04	0.01	16	0.2	0.03	8.0
AOB17-029	0.29	0.15	29.46	4.79	52.2	34	20.4	7.2	660	1.85	0.4	0.1	0.8	2.30	76.4	0.070	0.07	0.12	17	0.66	0.034	9.8	12.7	0.57	120.5	0.076	2.0	1.01	0.007	0.24	0.20	3.0	0.04	0.01	10	0.1	0.04	3.4
AOB17-030	0.20	0.20	17.78	7.20	53.9	28	35.2	13.0	726	2.93	2.3	0.3	0.8	1.00	161.2	0.110	0.08	0.05	77	4.57	0.083	7.1	27.5	1.00	173.7	0.192	7.0	4.07	0.028	0.21	0.30	8.2	0.04	0.01	10	0.1	0.02	12.3
AOB17-031	0.21	0.18	38.79	8.27	69.6	36	16.1	12.1	669	2.87	5.4	0.5	0.6	2.40	107.8	0.090	0.14	0.08	62	1.41	0.092	11.0	20.1	1.07	206.2	0.181	5.0	2.24	0.035	0.30	0.30	8.5	0.05	0.01	17	0.1	0.03	7.7
AOB17-032	0.21	0.36	24.65	7.04	61.3	23	13.3	8.8	729	2.59	3.3	0.4	0.7	1.70	297.1	0.090	0.30	0.06	67	5.23	0.064	7.8	22.8	0.99	84.0	0.197	4.0	3.49	0.027	0.12	0.40	8.3	0.03	0.01	16	0.1	0.04	11.5
AOB17-033	0.18	0.14	25.45	3.10	43.1	14	14.6	4.2	393	1.44	0.2	0.2	0.7	2.20	91.5	0.040	0.06	0.07	15	0.71	0.018	5.1	12.2	0.49	115.1	0.099	3.0	0.84	0.008	0.19	0.10	3.4	0.04	0.01	10	0.1	0.01	3.1
AOB17-034	0.26	0.25	19.65	5.01	81.2	35	11.6	12.1	898	2.93	0.8	0.3	0.4	1.00	132.5	0.140	0.15	0.04	96	3.06	0.081	8.4	31.0	1.05	227.0	0.216	6.0	3.15	0.041	0.25	0.30	10.4	0.05	0.01	22	0.2	0.01	10.3
AOB17-035	0.19	0.09	36.44	1.61	44.7	34	19.8	4.8	329	1.47	0.2	0.4	1.3	3.10	100.4	0.050	0.05	0.07	15	1.09	0.018	8.0	12.0	0.56	126.4	0.133	4.0	0.88	0.006	0.24	0.20	3.3	0.05	0.01	3	0.1	0.02	3.1
AOB17-036	0.18	0.22	54.60	7.02	49.5	15	19.5	6.3	496	1.71	1.1	0.1	0.9	1.70	14.4	0.050	0.14	0.14	14	0.10	0.023	9.7	13.1	0.46	119.1	0.004	4.0	0.89	0.006	0.24	0.05	1.9	0.04	0.01	12	0.1	0.02	3.3
AOB17-037	0.19	0.11	71.73	9.76	61.3	53	25.3	8.4	400	1.95	3.6	0.4	1.7	3.80	120.6	0.090	0.16	0.56	21	0.73	0.051	12.0	14.8	0.66	192.7	0.197	4.0	1.31	0.016	0.34	0.30	6.6	0.07	0.01	18	0.1	0.13	4.5
AOB17-038	0.19	0.36	22.96	6.01	71.3	49	45.3	11.7	886	3.06	1.1	0.4	1.6	1.30	131.3	0.180	0.23	0.05	96	2.72	0.086	9.0	34.8	1.11	395.4	0.226	6.0	2.58	0.057	0.20	0.30	10.9	0.04	0.01	18	0.1	0.01	10.2
AOB17-039	0.23	0.30	21.80	6.73	74.1	29	14.6	10.8	850	3.19	2.6	0.4	0.8	1.40	133.4	0.220	0.21	0.04	91	2.86	0.092	8.5	41.2	1.25	145.2	0.221	5.0	2.71	0.054	0.14	0.30	10.5	0.03	0.01	20	0.1	0.02	10.7
AOB17-040	0.35	0.22	18.41	5.96	64.4	29	15.2	9.8	768	2.71	2.7	0.3	1.5	1.10	102.3	0.230	0.12	0.04	87	2.91	0.092	7.3	35.4	1.00	124.0	0.193	7.0	2.91	0.055	0.17	0.30	8.9	0.03	0.01	12	0.1	0.01	10.3
AOB17-041	0.24	0.14	22.65	7.56	69.2	29	17.3	8.2	655	2.12	3.2	0.6	1.8	2.40	218.4	0.120	0.09	0.06	48	4.03	0.063	8.7	18.0	0.86	135.9	0.183	5.0	2.77	0.033	0.19	0.30	6.1	0.04	0.01	17	0.1	0.02	8.7

2017 Black Creek Property, Lithogeochemistry Sample Results Summary

	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	PPM	PPM	PPM	PPM	PPB	PPM	PPM	PPM	%	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM	PPM	%	PPB	PPM	PPM	PPM
	Min. Detect. Limit	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
Sample No.	Weight (Kg)																																					
AOB17-042	0.29	0.11	38.53	8.04	64.4	42	14.9	11.9	602	2.92	6.1	0.4	0.8	1.70	167.1	0.080	0.08	0.06	84	2.78	0.090	8.3	30.4	1.11	115.2	0.212	5.0	2.69	0.043	0.19	0.30	8.3	0.04	0.01	19	0.1	0.02	9.0
AOB17-043	0.18	0.10	26.58	5.12	54.0	40	13.1	11.1	663	2.48	4.7	0.4	0.5	1.20	237.7	0.100	0.09	0.03	72	3.39	0.085	7.4	30.6	0.89	166.5	0.229	4.0	2.64	0.059	0.24	0.20	7.3	0.05	0.01	19	0.1	0.03	8.9
AOB17-044	0.27	0.13	35.92	3.23	34.1	36	12.7	3.4	342	1.21	0.2	0.2	0.9	2.20	66.5	0.050	0.04	0.04	12	0.50	0.027	8.9	11.4	0.40	91.5	0.096	2.0	0.69	0.005	0.16	0.20	2.9	0.03	0.01	3	0.1	0.01	2.6
AOB17-045	0.24	0.14	22.04	5.90	56.2	35	10.9	9.0	556	2.29	5.0	0.4	0.1	1.40	135.0	0.060	0.13	0.05	56	2.44	0.095	9.3	19.5	0.87	141.6	0.179	4.0	2.43	0.034	0.26	0.20	9.0	0.05	0.01	24	0.1	0.01	7.5
AOB17-046	0.21	0.13	24.01	6.34	73.0	29	13.3	10.8	932	2.60	2.9	0.4	0.5	1.50	139.2	0.130	0.10	0.04	63	2.45	0.080	7.2	23.3	1.00	190.7	0.226	4.0	2.58	0.045	0.25	0.30	8.1	0.05	0.01	11	0.1	0.03	8.0
AOB17-047	0.16	0.14	20.74	6.21	57.6	27	19.3	9.1	643	2.72	5.1	0.4	0.3	1.60	157.7	0.080	0.11	0.08	53	2.55	0.084	8.4	17.2	1.05	209.3	0.194	6.0	2.86	0.047	0.33	0.20	7.5	0.05	0.01	17	0.1	0.01	8.6
AOB17-048	0.20	0.54	43.52	10.38	79.4	26	20.3	13.2	637	3.43	0.6	0.6	0.4	2.80	92.0	0.110	0.27	0.17	78	1.13	0.097	13.4	25.6	1.14	171.2	0.286	4.0	2.20	0.049	0.25	0.30	8.0	0.06	0.01	27	0.1	0.05	8.8
AOB17-049	0.17	0.08	23.62	6.63	49.3	43	9.4	8.7	579	2.21	1.3	0.3	1.2	1.30	126.7	0.080	0.07	0.04	60	2.66	0.071	8.0	20.0	0.95	199.1	0.176	5.0	2.57	0.082	0.27	0.20	7.8	0.05	0.01	14	0.1	0.01	9.6
AOB17-050	0.25	0.16	19.59	3.53	33.1	30	15.2	3.9	268	1.43	0.2	0.1	0.6	1.60	50.1	0.020	0.05	0.08	14	0.49	0.017	5.6	11.4	0.47	88.6	0.055	1.0	0.75	0.007	0.13	0.10	2.5	0.03	0.01	3	0.1	0.04	3.1
AOB17-051	0.20	0.11	35.83	3.25	40.9	39	19.3	5.3	336	1.72	0.1	0.2	0.1	2.40	41.6	0.060	0.05	0.08	16	0.45	0.026	7.8	12.1	0.61	98.0	0.097	4.0	1.04	0.010	0.22	0.20	3.1	0.04	0.01	12	0.1	0.01	3.6
AOB17-052	0.22	0.43	29.53	6.82	81.5	53	15.1	12.4	857	3.72	1.7	0.6	0.9	2.40	124.7	0.180	0.12	0.04	122	2.35	0.123	12.3	40.1	1.01	387.8	0.247	6.0	2.58	0.051	0.26	0.20	6.6	0.04	0.02	21	0.1	0.01	10.4
AOB17-053	0.17	0.14	29.20	8.23	64.3	61	14.4	10.3	590	2.86	1.4	0.6	0.6	2.80	103.2	0.120	0.09	0.05	80	2.10	0.115	14.0	23.0	0.86	287.3	0.222	6.0	2.49	0.058	0.42	0.20	5.9	0.07	0.01	14	0.1	0.03	8.3
AOB17-054	0.29	0.42	29.42	6.90	62.6	89	16.0	11.5	668	2.70	3.2	0.5	0.1	1.80	170.1	0.140	0.15	0.05	100	2.93	0.097	9.0	39.6	0.73	298.2	0.215	4.0	2.18	0.051	0.27	0.30	4.8	0.04	0.06	12	0.1	0.03	7.2
AOB17-055	0.20	0.28	25.87	8.94	87.1	64	17.2	13.8	850	4.47	3.0	0.5	0.3	2.40	150.3	0.120	0.13	0.06	116	2.58	0.115	11.2	34.8	1.16	412.3	0.240	7.0	3.00	0.044	0.33	0.20	7.1	0.07	0.01	16	0.1	0.01	11.0
AOB17-056	0.20	0.29	31.18	8.69	104.6	73	18.4	14.4	886	4.83	1.6	0.5	1.0	2.30	132.3	0.160	0.10	0.06	149	2.05	0.120	11.4	43.0	1.24	436.5	0.235	5.0	2.78	0.050	0.24	0.20	6.4	0.04	0.01	12	0.1	0.04	12.0
AOB17-057	0.29	0.33	26.55	8.62	75.2	67	16.6	11.2	746	3.17	2.9	0.6	0.1	2.40	154.0	0.140	0.11	0.06	101	2.74	0.108	11.3	28.5	0.83	629.4	0.251	6.0	2.59	0.059	0.30	0.20	5.8	0.05	0.01	9	0.1	0.02	9.5
AOB17-058	0.22	0.21	44.56	11.27	71.4	89	21.1	13.4	618	3.33	6.5	0.5	0.1	1.60	299.5	0.080	0.15	0.10	82	3.92	0.092	7.2	28.9	1.22	141.5	0.226	6.0	3.26	0.023	0.25	0.20	8.4	0.05	0.01	17	0.1	0.04	9.3
AOB17-059	0.24	0.13	28.61	12.47	68.9	44	13.6	11.2	643	2.78	2.5	0.4	0.8	1.30	454.1	0.150	0.11	0.06	98	4.49	0.082	7.0	38.0	0.93	99.6	0.255	5.0	3.36	0.038	0.20	0.20	6.5	0.03	0.01	9	0.1	0.04	10.6
AOB17-060	0.35	0.20	34.32	11.35	64.8	51	14.4	11.1	702	2.83	1.9	0.3	0.6	1.20	928.1	0.100	0.11	0.05	96	6.09	0.065	5.3	36.6	0.96	106.4	0.227	9.0	4.30	0.021	0.19	0.30	8.7	0.03	0.01	17	0.1	0.05	12.6
AOB17-061	0.16	0.16	25.81	6.29	40.5	49	11.4	8.5	603	1.91	2.3	0.2	0.5	0.70	727.6	0.070	0.09	0.03	70	7.79	0.047	4.0	40.2	0.70	131.9	0.168	7.0	3.86	0.019	0.18	0.30	9.2	0.03	0.01	14	0.1	0.03	10.9
AOB17-062	0.20	0.20	34.12	5.60	75.3	43	19.1	13.6	637	2.61	2.7	0.3	0.9	1.20	89.8	0.180	0.13	0.04	95	2.15	0.086	6.4	34.3	0.87	180.5	0.239	8.0	2.56	0.039	0.35	0.30	6.2	0.06	0.01	16	0.1	0.03	7.9
AOB17-063	0.21	0.15	1.46	0.26	21.2	3	7.0	8.5	472	3.04	0.1	0.1	0.1	0.20	97.9	0.130	0.02	0.01	53	1.08	0.025	2.7	3.1	0.92	36.9	0.165	0.5	1.51	0.079	0.02	0.05	4.9	0.01	0.01	3	0.1	0.01	8.0
AOB17-064	0.20	0.11	6.53	0.43	26.4	5	14.2	14.6	458	3.23	0.2	0.1	0.7	0.20	118.2	0.110	0.08	0.01	69	1.00	0.075	2.7	20.2	1.00	27.6	0.232	0.5	1.73	0.070	0.01	0.10	4.0	0.01	0.01	6	0.1	0.01	8.6
AOB17-065	0.26	0.08	1.14	0.23	19.2	7	12.6	7.5	571	1.92	0.1	0.1	0.1	0.05	30.8	0.200	0.03	0.01	73	5.60	0.021	0.6	34.3	0.72	25.3	0.111	4.0	4.20	0.027	0.01	0.10	3.0	0.01	0.01	3	0.1	0.01	21.3
AOB17-066	0.21	0.20	83.17	0.36	30.7	66	7.3	12.6	807	5.02	7.0	0.1	0.1	0.20	11.9	0.040	<0.02	0.01	42	0.43	0.123	3.7	8.5	2.16	34.1	0.123	1.0	2.72	0.060	0.02	0.10	9.8	0.01	0.01	3	0.1	0.01	12.4
AOB17-067	0.24	0.08	1.91	0.16	17.6	4	18.9	19.3	696	4.13	4.1	0.1	2.1	0.10	27.3	0.070	<0.02	0.01	135	0.89	0.065	1.8	42.3	1.72	40.9	0.183	0.5	2.15	0.079	0.02	0.05	8.1	0.01	0.01	3	0.1	0.01	9.3
AOB17-068	0.21	0.28	76.76	6.62	62.3	38	52.2	14.7	404	2.12	0.1	0.5	1.5	4.20	9.3	0.600	0.03	0.09	16	0.33	0.013	12.7	13.7	0.75	154.6	0.193	2.0	1.03	0.022	0.18	0.10	4.8	0.07	0.32	23	0.8	0.03	3.7
AOB17-069	0.21	0.17	33.15	6.09	57.2	54	15.4	12.1	696	2.93	3.2	0.3	0.6	1.10	95.8	0.110	0.08	0.04	115	2.29	0.085	6.8	56.0	0.96	202.2	0.240	6.0	2.59	0.059	0.22	0.20	7.5	0.04	0.01	9	0.1	0.01	8.6
AOB17-070	0.21	0.37	14.28	0.97	14.2	7	6.9	1.1	125	0.85	0.9	0.1	0.7	0.80	7.2	0.005	0.18	0.22	4	0.02	0.005	1.4	4.7	0.17	638.5	0.012	2.0	0.37	0.001	0.14	0.05	1.2	0.04	0.01	3	0.1	0.10	1.9
AOB17-071	0.27	0.50	18.28	3.86	7.2	36	2.5	0.4	114	0.77	1.3	0.1	2.5	2.00	10.8	0.005	0.54	0.22	4	0.02	0.006	2.2	6.3	0.16	429.4	0.076	3.0	0.37	0.001	0.17	0.05	1.1	0.04	0.03	18	0.2	0.10	1.2
AOB17-072	0.20	0.32	18.21	6.40	65.2	34	9.2	9.0	850	2.40	0.5	0.3	2.0	1.10	269.2	0.130	0.06	0.05	74	4.07	0.085	8.0	24.0	0.78	227.3	0.217	5.0	2.57	0.062	0.25	0.30	6.8	0.05	0.01	8	0.1	0.01	9.4
AOB17-073	0.18	0.12	30.81	7.42	74.6	17	16.5	10.6	620	2.77	3.6	0.4	1.0	1.80	63.6	0.110	0.08	0.08	84	1.66	0.086	9.0	30.2	1.16	121.2	0.182	5.0	2.43	0.050	0.13	0.30	9.6	0.03	0.01	28	0.1	0.01	9.3
AOB17-074	0.23	0.13	15.81	6.71	78.7	16	10.8	9.5	731	2.52	2.7	0.3	0.4	1.20	106.5	0.320	0.04	0.04	86	2.43	0.065	6.7	29.4	0.83	123.4	0.207	4.0	2.42	0.061	0.16	0.20	7.0	0.04	0.01	12	0.1	0.01	8.7
AOB17-075	0.16	0.22	17.34	5.59	63.1	23	11.0	8.4	655	2.24	2.1	0.3	0.8	1.10	257.8	0.180	0.09	0.05	67	4.09	0.062	6.9	26.4	0.74	206.9	0.212	4.0	2.04	0.066	0.21	0.20	7.1	0.05	0.01	8	0.2	0.04	7.7
AOB17-076	0.24	0.11	20.69	5.56	55.1	24	12.2	10.3	677	2.54	3.2	0.3	1.1	1.20	160.2	0.130	0.07	0.04	73	3.37	0.075	7.2	27.7	0.91	112.8	0.164	4.0	2.71	0.049	0.16	0.20	8.5	0.04	0.01	13	0.1	0.01	8.8
AOB17-077	0.30	0.71	53.92	5.78	81.8	50	36.6	16.9	652	3.80	10.7	0.6	0.7	2.40	92.5	0.090	0.16	0.08	78	1.28	0.090	10.7	25.1	1.43	227.7	0.220	4.0	2.51	0.016	0.28	0.30	9.1	0.05	0.01	50	0.1	0.03	8.0

BUREAU VERITAS MINERAL LABORATORIES Canada

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Client: **Donald Bunce**
21670 Chief Lake Rd.
Prince George British Columbia V2K 5K5 Canada

Submitted By: Donald Bunce
Receiving Lab: Canada-Vancouver
Received: December 28, 2017
Report Date: January 12, 2018
Page: 1 of 4

CERTIFICATE OF ANALYSIS VAN17003094.1

CLIENT JOB INFORMATION

Project: Black Creek
Shipment ID:
P.O. Number
Number of Samples: 77

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 60 days

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	77	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ251	77	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN
DRPLP	77	Warehouse handling / disposition of pulps			VAN
DRRJT	13	Warehouse handling / Disposition of reject			VAN

ADDITIONAL COMMENTS

Invoice To: Donald Bunce
21670 Chief Lake Rd.
Prince George British Columbia V2K 5K5
Canada

CC: Lesley Hunt

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

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 MINERAL LABORATORIES Canada

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Client: **Donald Bunce**
21670 Chief Lake Rd.
Prince George British Columbia V2K 5K5 Canada

Project: Black Creek
Report Date: January 12, 2018

CERTIFICATE OF ANALYSIS VAN17003094.1

	Method	WGHT	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
AOB17001	Rock	0.19	1.49	2.43	1.60	11.9	17	738.0	36.4	137	0.91	8.3	<0.1	2.5	<0.1	3.7	0.01	0.10	0.03	8	0.59
AOB17002	Rock	0.32	0.36	108.41	0.44	82.5	67	51.6	37.0	1632	7.88	4.3	0.2	3.3	<0.1	33.0	0.11	0.08	<0.02	301	1.89
AOB17003	Rock	0.20	0.26	30.61	1.36	30.5	17	40.8	12.6	581	1.62	0.5	0.5	2.0	2.7	24.9	0.03	0.04	0.03	21	1.16
AOB17004	Rock	0.15	3.74	14.47	10.34	11.9	453	3.1	0.6	47	1.04	4.5	0.4	5.1	2.5	8.7	0.03	1.03	0.21	9	<0.01
AOB17005	Rock	0.14	0.72	85.46	2.25	107.8	71	38.4	7.9	626	1.27	2.4	0.5	1.8	1.6	27.8	0.70	0.24	0.21	17	0.22
AOB17006	Rock	0.20	0.36	19.38	4.60	16.4	23	12.1	2.0	97	0.98	0.4	0.3	2.7	0.9	7.2	0.09	0.07	0.18	6	0.05
AOB17007	Rock	0.21	0.51	46.36	6.83	26.4	105	10.6	1.3	56	1.47	3.0	0.8	2.4	4.9	14.9	0.07	0.33	0.26	11	<0.01
AOB17008	Rock	0.31	0.36	11.86	3.51	11.9	55	2.9	0.5	35	0.69	0.8	0.1	3.0	1.5	14.2	0.02	0.16	0.14	4	<0.01
AOB17009	Rock	0.18	0.86	4.79	2.64	4.5	73	2.0	0.5	25	0.35	0.6	<0.1	3.1	0.7	8.7	<0.01	0.36	0.07	3	<0.01
AOB17010	Rock	0.18	0.53	41.36	1.91	22.7	53	11.8	2.5	103	0.85	0.9	0.3	3.1	0.7	23.4	0.08	0.15	0.05	3	0.03
AOB17011	Rock	0.18	0.28	27.34	2.84	31.9	6	25.6	16.2	1021	1.40	0.3	<0.1	<0.2	1.9	3.7	0.04	0.05	0.04	8	0.03
AOB17012	Rock	0.25	0.39	15.23	4.40	12.0	235	2.8	0.4	46	0.80	1.6	0.2	4.6	1.6	10.3	0.02	0.30	0.15	6	<0.01
AOB17013	Rock	0.20	0.80	39.83	6.41	53.4	131	28.9	5.7	137	1.83	0.6	0.5	3.8	4.7	16.1	0.06	0.18	0.31	15	<0.01
AOB17014	Rock	0.20	0.63	8.92	6.27	6.8	136	2.0	0.4	33	0.89	1.6	0.1	4.6	2.0	21.1	0.02	0.43	0.22	7	<0.01
AOB17015	Rock	0.29	0.31	33.86	1.14	25.9	133	6.3	1.6	117	0.47	1.3	0.2	2.1	0.4	28.2	0.36	0.09	0.06	3	0.15
AOB17016	Rock	0.29	0.28	27.28	1.33	21.5	97	7.3	1.8	124	0.60	1.1	0.2	2.7	0.8	21.5	0.20	0.08	0.10	4	0.08
AOB17017	Rock	0.10	0.34	20.95	1.39	33.0	45	14.6	2.8	76	1.50	0.5	0.4	2.1	2.7	6.1	0.08	0.07	0.09	14	0.01
AOB17018	Rock	0.26	0.23	26.28	2.73	40.7	41	19.0	5.2	142	1.73	0.3	0.5	2.4	2.8	8.0	0.06	0.08	0.12	12	0.02
AOB17019	Rock	0.16	0.18	96.01	9.31	52.5	57	25.3	12.0	760	2.47	2.5	0.3	2.5	4.0	111.9	0.02	0.18	0.39	39	0.86
AOB17020	Rock	0.22	0.21	55.15	8.45	53.7	43	18.6	6.7	634	1.65	1.6	0.2	2.4	2.6	39.5	0.04	0.10	0.23	18	0.42
AOB17021	Rock	0.32	0.14	84.30	6.27	89.9	45	23.2	9.3	785	2.61	2.0	0.4	2.4	4.6	84.0	0.20	0.17	0.13	50	0.56
AOB17022	Rock	0.16	0.12	138.80	0.69	85.0	33	66.4	36.3	983	6.18	0.3	0.2	1.6	0.1	28.5	0.27	0.06	<0.02	205	2.36
AOB17023	Rock	0.27	0.15	76.03	8.52	64.8	80	32.7	7.2	444	1.94	1.1	0.7	2.6	3.8	64.7	0.12	0.45	0.19	43	0.57
AOB17024	Rock	0.28	0.13	37.93	3.16	30.6	44	14.3	6.4	511	1.96	1.9	0.3	1.9	2.7	36.7	0.10	0.16	0.08	23	0.54
AOB17025	Rock	0.15	0.26	24.62	6.40	54.1	44	26.8	5.8	193	2.20	2.8	0.1	6.9	4.4	13.5	0.02	0.18	0.22	18	0.25
AOB17026	Rock	0.21	0.20	23.43	5.04	52.8	44	28.1	6.7	215	2.10	2.7	0.1	4.0	4.0	12.7	0.03	0.19	0.19	17	0.14
AOB17027	Rock	0.18	0.16	7.60	4.66	27.1	13	7.5	2.6	325	0.82	0.4	0.1	0.9	0.8	745.8	0.17	0.06	0.02	18	5.39
AOB17028	Rock	0.24	0.21	17.62	5.79	49.8	36	8.2	8.0	519	1.95	4.0	0.3	1.7	1.1	181.2	0.05	0.13	0.04	57	3.45
AOB17029	Rock	0.29	0.15	29.46	4.79	52.2	34	20.4	7.2	660	1.85	0.4	0.1	0.8	2.3	76.4	0.07	0.07	0.12	17	0.66
AOB17030	Rock	0.20	0.20	17.78	7.20	53.9	28	35.2	13.0	726	2.93	2.3	0.3	0.8	1.0	161.2	0.11	0.08	0.05	77	4.57

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Project: Black Creek
Report Date: January 12, 2018

CERTIFICATE OF ANALYSIS VAN17003094.1

	Method	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
	MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
AOB17001	Rock	<0.001	<0.5	762.2	2.24	4.5	<0.001	1	0.73	0.004	<0.01	<0.1	0.8	<0.02	0.05	<5	0.6	0.04	2.4
AOB17002	Rock	0.050	0.7	74.6	2.61	495.5	0.469	4	3.83	0.055	0.08	0.4	11.4	<0.02	0.02	<5	<0.1	<0.02	13.8
AOB17003	Rock	0.011	5.3	17.4	0.75	130.6	0.120	3	0.91	0.011	0.15	0.1	3.6	0.06	<0.02	<5	<0.1	<0.02	3.7
AOB17004	Rock	0.009	11.2	10.2	0.07	823.1	0.005	5	0.40	0.013	0.26	<0.1	1.3	0.10	0.03	170	1.2	0.05	1.5
AOB17005	Rock	0.020	7.8	17.6	0.66	903.1	0.005	5	0.79	0.008	0.15	<0.1	4.0	0.06	<0.02	40	0.2	<0.02	2.6
AOB17006	Rock	0.019	4.0	11.7	0.20	257.7	0.004	4	0.37	0.007	0.10	<0.1	1.1	0.03	<0.02	<5	<0.1	<0.02	1.7
AOB17007	Rock	0.013	15.9	15.3	0.39	2379.7	0.005	5	0.97	0.011	0.25	<0.1	2.5	0.09	0.07	90	0.5	0.04	3.4
AOB17008	Rock	0.004	6.0	7.9	0.11	1003.2	0.003	3	0.31	0.010	0.13	<0.1	0.9	0.04	0.05	21	0.1	<0.02	1.4
AOB17009	Rock	0.002	4.0	7.0	0.02	758.4	0.002	2	0.14	0.005	0.10	<0.1	0.7	0.03	<0.02	65	0.2	<0.02	0.6
AOB17010	Rock	0.013	2.2	10.5	0.06	917.4	0.001	2	0.18	0.023	0.03	<0.1	1.2	<0.02	0.04	30	0.1	<0.02	0.5
AOB17011	Rock	0.012	7.4	9.6	0.36	169.2	0.009	2	0.71	0.005	0.14	<0.1	1.6	0.06	<0.02	5	<0.1	<0.02	3.3
AOB17012	Rock	0.008	6.2	8.0	0.11	1475.6	0.003	4	0.33	0.006	0.15	<0.1	1.2	0.06	0.05	83	0.8	<0.02	1.6
AOB17013	Rock	0.012	15.7	18.7	0.63	1835.6	0.006	5	1.13	0.008	0.25	<0.1	2.3	0.08	0.03	37	<0.1	0.07	3.7
AOB17014	Rock	0.009	9.0	9.7	0.06	862.2	0.004	5	0.31	0.009	0.25	<0.1	1.1	0.17	0.14	37	0.3	0.03	1.3
AOB17015	Rock	0.009	2.3	5.6	0.11	2848.0	0.002	<1	0.21	0.002	0.05	<0.1	1.0	0.04	0.04	13	0.2	0.03	0.5
AOB17016	Rock	0.012	4.1	7.4	0.12	4458.4	0.003	2	0.36	0.005	0.08	<0.1	1.6	0.07	0.03	14	<0.1	0.03	0.9
AOB17017	Rock	0.009	9.7	20.0	0.52	6484.2	0.010	4	1.52	0.010	0.20	<0.1	2.6	0.11	0.04	16	0.2	<0.02	3.9
AOB17018	Rock	0.013	10.3	16.1	0.63	5782.2	0.005	3	1.27	0.005	0.17	<0.1	2.0	0.06	0.05	6	0.1	0.03	3.5
AOB17019	Rock	0.062	11.5	25.2	0.77	198.4	0.221	3	1.80	0.019	0.38	0.4	7.5	0.06	<0.02	18	<0.1	0.12	5.6
AOB17020	Rock	0.024	7.4	14.0	0.45	114.2	0.117	30	1.07	0.013	0.23	0.2	4.1	0.05	<0.02	20	<0.1	0.05	3.4
AOB17021	Rock	0.050	14.9	26.1	0.85	147.1	0.178	3	1.67	0.013	0.23	0.1	6.7	0.05	<0.02	39	0.2	0.03	6.9
AOB17022	Rock	0.053	1.9	119.7	2.44	195.0	0.577	3	3.58	0.038	0.13	0.2	10.2	0.03	<0.02	9	0.1	<0.02	12.2
AOB17023	Rock	0.030	12.9	24.3	0.83	109.4	0.186	2	1.18	0.009	0.18	0.3	6.0	0.04	<0.02	21	<0.1	<0.02	5.2
AOB17024	Rock	0.039	8.0	14.9	0.58	108.6	0.091	3	1.32	0.012	0.23	<0.1	4.5	0.04	<0.02	<5	0.2	<0.02	4.5
AOB17025	Rock	0.023	8.9	19.7	0.80	221.0	0.182	5	1.35	0.004	0.34	0.3	3.3	0.08	<0.02	11	<0.1	0.05	4.1
AOB17026	Rock	0.023	10.2	15.6	0.81	165.8	0.015	5	1.28	0.003	0.28	<0.1	2.1	0.07	<0.02	14	0.1	0.03	3.7
AOB17027	Rock	0.011	3.0	10.2	0.26	28.1	0.043	2	1.45	0.008	0.03	0.1	2.4	<0.02	<0.02	10	<0.1	0.02	5.0
AOB17028	Rock	0.086	8.0	18.1	0.71	157.2	0.155	6	2.25	0.050	0.21	0.2	8.9	0.04	<0.02	16	0.2	0.03	8.0
AOB17029	Rock	0.034	9.8	12.7	0.57	120.5	0.076	2	1.01	0.007	0.24	0.2	3.0	0.04	<0.02	10	<0.1	0.04	3.4
AOB17030	Rock	0.083	7.1	27.5	1.00	173.7	0.192	7	4.07	0.028	0.21	0.3	8.2	0.04	<0.02	10	<0.1	0.02	12.3

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Project: Black Creek
Report Date: January 12, 2018

CERTIFICATE OF ANALYSIS VAN17003094.1

	Method	WGHT	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
AOB17031	Rock	0.21	0.18	38.79	8.27	69.6	36	16.1	12.1	669	2.87	5.4	0.5	0.6	2.4	107.8	0.09	0.14	0.08	62	1.41
AOB17032	Rock	0.21	0.36	24.65	7.04	61.3	23	13.3	8.8	729	2.59	3.3	0.4	0.7	1.7	297.1	0.09	0.30	0.06	67	5.23
AOB17033	Rock	0.18	0.14	25.45	3.10	43.1	14	14.6	4.2	393	1.44	0.2	0.2	0.7	2.2	91.5	0.04	0.06	0.07	15	0.71
AOB17034	Rock	0.26	0.25	19.65	5.01	81.2	35	11.6	12.1	898	2.93	0.8	0.3	0.4	1.0	132.5	0.14	0.15	0.04	96	3.06
AOB17035	Rock	0.19	0.09	36.44	1.61	44.7	34	19.8	4.8	329	1.47	0.2	0.4	1.3	3.1	100.4	0.05	0.05	0.07	15	1.09
AOB17036	Rock	0.18	0.22	54.60	7.02	49.5	15	19.5	6.3	496	1.71	1.1	<0.1	0.9	1.7	14.4	0.05	0.14	0.14	14	0.10
AOB17037	Rock	0.19	0.11	71.73	9.76	61.3	53	25.3	8.4	400	1.95	3.6	0.4	1.7	3.8	120.6	0.09	0.16	0.56	21	0.73
AOB17038	Rock	0.19	0.36	22.96	6.01	71.3	49	45.3	11.7	886	3.06	1.1	0.4	1.6	1.3	131.3	0.18	0.23	0.05	96	2.72
AOB17039	Rock	0.23	0.30	21.80	6.73	74.1	29	14.6	10.8	850	3.19	2.6	0.4	0.8	1.4	133.4	0.22	0.21	0.04	91	2.86
AOB17040	Rock	0.35	0.22	18.41	5.96	64.4	29	15.2	9.8	768	2.71	2.7	0.3	1.5	1.1	102.3	0.23	0.12	0.04	87	2.91
AOB17041	Rock	0.24	0.14	22.65	7.56	69.2	29	17.3	8.2	655	2.12	3.2	0.6	1.8	2.4	218.4	0.12	0.09	0.06	48	4.03
AOB17042	Rock	0.29	0.11	38.53	8.04	64.4	42	14.9	11.9	602	2.92	6.1	0.4	0.8	1.7	167.1	0.08	0.08	0.06	84	2.78
AOB17043	Rock	0.18	0.10	26.58	5.12	54.0	40	13.1	11.1	663	2.48	4.7	0.4	0.5	1.2	237.7	0.10	0.09	0.03	72	3.39
AOB17044	Rock	0.27	0.13	35.92	3.23	34.1	36	12.7	3.4	342	1.21	0.2	0.2	0.9	2.2	66.5	0.05	0.04	0.04	12	0.50
AOB17045	Rock	0.24	0.14	22.04	5.90	56.2	35	10.9	9.0	556	2.29	5.0	0.4	<0.2	1.4	135.0	0.06	0.13	0.05	56	2.44
AOB17046	Rock	0.21	0.13	24.01	6.34	73.0	29	13.3	10.8	932	2.60	2.9	0.4	0.5	1.5	139.2	0.13	0.10	0.04	63	2.45
AOB17047	Rock	0.16	0.14	20.74	6.21	57.6	27	19.3	9.1	643	2.72	5.1	0.4	0.3	1.6	157.7	0.08	0.11	0.08	53	2.55
AOB17048	Rock	0.20	0.54	43.52	10.38	79.4	26	20.3	13.2	637	3.43	0.6	0.6	0.4	2.8	92.0	0.11	0.27	0.17	78	1.13
AOB17049	Rock	0.17	0.08	23.62	6.63	49.3	43	9.4	8.7	579	2.21	1.3	0.3	1.2	1.3	126.7	0.08	0.07	0.04	60	2.66
AOB17050	Rock	0.25	0.16	19.59	3.53	33.1	30	15.2	3.9	268	1.43	0.2	0.1	0.6	1.6	50.1	0.02	0.05	0.08	14	0.49
AOB17051	Rock	0.20	0.11	35.83	3.25	40.9	39	19.3	5.3	336	1.72	0.1	0.2	<0.2	2.4	41.6	0.06	0.05	0.08	16	0.45
AOB17052	Rock	0.22	0.43	29.53	6.82	81.5	53	15.1	12.4	857	3.72	1.7	0.6	0.9	2.4	124.7	0.18	0.12	0.04	122	2.35
AOB17053	Rock	0.17	0.14	29.20	8.23	64.3	61	14.4	10.3	590	2.86	1.4	0.6	0.6	2.8	103.2	0.12	0.09	0.05	80	2.10
AOB17054	Rock	0.29	0.42	29.42	6.90	62.6	89	16.0	11.5	668	2.70	3.2	0.5	<0.2	1.8	170.1	0.14	0.15	0.05	100	2.93
AOB17055	Rock	0.20	0.28	25.87	8.94	87.1	64	17.2	13.8	850	4.47	3.0	0.5	0.3	2.4	150.3	0.12	0.13	0.06	116	2.58
AOB17056	Rock	0.20	0.29	31.18	8.69	104.6	73	18.4	14.4	886	4.83	1.6	0.5	1.0	2.3	132.3	0.16	0.10	0.06	149	2.05
AOB17057	Rock	0.29	0.33	26.55	8.62	75.2	67	16.6	11.2	746	3.17	2.9	0.6	<0.2	2.4	154.0	0.14	0.11	0.06	101	2.74
AOB17058	Rock	0.22	0.21	44.56	11.27	71.4	89	21.1	13.4	618	3.33	6.5	0.5	<0.2	1.6	299.5	0.08	0.15	0.10	82	3.92
AOB17059	Rock	0.24	0.13	28.61	12.47	68.9	44	13.6	11.2	643	2.78	2.5	0.4	0.8	1.3	454.1	0.15	0.11	0.06	98	4.49
AOB17060	Rock	0.35	0.20	34.32	11.35	64.8	51	14.4	11.1	702	2.83	1.9	0.3	0.6	1.2	928.1	0.10	0.11	0.05	96	6.09

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	Method	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
	MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
AOB17031	Rock	0.092	11.0	20.1	1.07	206.2	0.181	5	2.24	0.035	0.30	0.3	8.5	0.05	<0.02	17	<0.1	0.03	7.7
AOB17032	Rock	0.064	7.8	22.8	0.99	84.0	0.197	4	3.49	0.027	0.12	0.4	8.3	0.03	<0.02	16	0.1	0.04	11.5
AOB17033	Rock	0.018	5.1	12.2	0.49	115.1	0.099	3	0.84	0.008	0.19	0.1	3.4	0.04	<0.02	10	<0.1	<0.02	3.1
AOB17034	Rock	0.081	8.4	31.0	1.05	227.0	0.216	6	3.15	0.041	0.25	0.3	10.4	0.05	<0.02	22	0.2	<0.02	10.3
AOB17035	Rock	0.018	8.0	12.0	0.56	126.4	0.133	4	0.88	0.006	0.24	0.2	3.3	0.05	<0.02	<5	<0.1	0.02	3.1
AOB17036	Rock	0.023	9.7	13.1	0.46	119.1	0.004	4	0.89	0.006	0.24	<0.1	1.9	0.04	<0.02	12	<0.1	0.02	3.3
AOB17037	Rock	0.051	12.0	14.8	0.66	192.7	0.197	4	1.31	0.016	0.34	0.3	6.6	0.07	<0.02	18	<0.1	0.13	4.5
AOB17038	Rock	0.086	9.0	34.8	1.11	395.4	0.226	6	2.58	0.057	0.20	0.3	10.9	0.04	<0.02	18	0.1	<0.02	10.2
AOB17039	Rock	0.092	8.5	41.2	1.25	145.2	0.221	5	2.71	0.054	0.14	0.3	10.5	0.03	<0.02	20	0.1	0.02	10.7
AOB17040	Rock	0.092	7.3	35.4	1.00	124.0	0.193	7	2.91	0.055	0.17	0.3	8.9	0.03	<0.02	12	<0.1	<0.02	10.3
AOB17041	Rock	0.063	8.7	18.0	0.86	135.9	0.183	5	2.77	0.033	0.19	0.3	6.1	0.04	<0.02	17	<0.1	0.02	8.7
AOB17042	Rock	0.090	8.3	30.4	1.11	115.2	0.212	5	2.69	0.043	0.19	0.3	8.3	0.04	<0.02	19	<0.1	0.02	9.0
AOB17043	Rock	0.085	7.4	30.6	0.89	166.5	0.229	4	2.64	0.059	0.24	0.2	7.3	0.05	<0.02	19	<0.1	0.03	8.9
AOB17044	Rock	0.027	8.9	11.4	0.40	91.5	0.096	2	0.69	0.005	0.16	0.2	2.9	0.03	<0.02	<5	<0.1	<0.02	2.6
AOB17045	Rock	0.095	9.3	19.5	0.87	141.6	0.179	4	2.43	0.034	0.26	0.2	9.0	0.05	<0.02	24	<0.1	<0.02	7.5
AOB17046	Rock	0.080	7.2	23.3	1.00	190.7	0.226	4	2.58	0.045	0.25	0.3	8.1	0.05	<0.02	11	<0.1	0.03	8.0
AOB17047	Rock	0.084	8.4	17.2	1.05	209.3	0.194	6	2.86	0.047	0.33	0.2	7.5	0.05	<0.02	17	<0.1	<0.02	8.6
AOB17048	Rock	0.097	13.4	25.6	1.14	171.2	0.286	4	2.20	0.049	0.25	0.3	8.0	0.06	<0.02	27	<0.1	0.05	8.8
AOB17049	Rock	0.071	8.0	20.0	0.95	199.1	0.176	5	2.57	0.082	0.27	0.2	7.8	0.05	<0.02	14	<0.1	<0.02	9.6
AOB17050	Rock	0.017	5.6	11.4	0.47	88.6	0.055	1	0.75	0.007	0.13	0.1	2.5	0.03	<0.02	<5	<0.1	0.04	3.1
AOB17051	Rock	0.026	7.8	12.1	0.61	98.0	0.097	4	1.04	0.010	0.22	0.2	3.1	0.04	<0.02	12	<0.1	<0.02	3.6
AOB17052	Rock	0.123	12.3	40.1	1.01	387.8	0.247	6	2.58	0.051	0.26	0.2	6.6	0.04	0.02	21	<0.1	<0.02	10.4
AOB17053	Rock	0.115	14.0	23.0	0.86	287.3	0.222	6	2.49	0.058	0.42	0.2	5.9	0.07	<0.02	14	<0.1	0.03	8.3
AOB17054	Rock	0.097	9.0	39.6	0.73	298.2	0.215	4	2.18	0.051	0.27	0.3	4.8	0.04	0.06	12	<0.1	0.03	7.2
AOB17055	Rock	0.115	11.2	34.8	1.16	412.3	0.240	7	3.00	0.044	0.33	0.2	7.1	0.07	<0.02	16	<0.1	<0.02	11.0
AOB17056	Rock	0.120	11.4	43.0	1.24	436.5	0.235	5	2.78	0.050	0.24	0.2	6.4	0.04	<0.02	12	<0.1	0.04	12.0
AOB17057	Rock	0.108	11.3	28.5	0.83	629.4	0.251	6	2.59	0.059	0.30	0.2	5.8	0.05	<0.02	9	<0.1	0.02	9.5
AOB17058	Rock	0.092	7.2	28.9	1.22	141.5	0.226	6	3.26	0.023	0.25	0.2	8.4	0.05	<0.02	17	<0.1	0.04	9.3
AOB17059	Rock	0.082	7.0	38.0	0.93	99.6	0.255	5	3.36	0.038	0.20	0.2	6.5	0.03	<0.02	9	<0.1	0.04	10.6
AOB17060	Rock	0.065	5.3	36.6	0.96	106.4	0.227	9	4.30	0.021	0.19	0.3	8.7	0.03	<0.02	17	<0.1	0.05	12.6

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Project: Black Creek
Report Date: January 12, 2018

CERTIFICATE OF ANALYSIS VAN17003094.1

	Method	WGHT	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
	Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
	MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
AOB17061	Rock	0.16	0.16	25.81	6.29	40.5	49	11.4	8.5	603	1.91	2.3	0.2	0.5	0.7	727.6	0.07	0.09	0.03	70	7.79
AOB17062	Rock	0.20	0.20	34.12	5.60	75.3	43	19.1	13.6	637	2.61	2.7	0.3	0.9	1.2	89.8	0.18	0.13	0.04	95	2.15
AOB17063	Rock	0.21	0.15	1.46	0.26	21.2	3	7.0	8.5	472	3.04	<0.1	<0.1	<0.2	0.2	97.9	0.13	0.02	<0.02	53	1.08
AOB17064	Rock	0.20	0.11	6.53	0.43	26.4	5	14.2	14.6	458	3.23	0.2	<0.1	0.7	0.2	118.2	0.11	0.08	<0.02	69	1.00
AOB17065	Rock	0.26	0.08	1.14	0.23	19.2	7	12.6	7.5	571	1.92	<0.1	<0.1	<0.2	<0.1	30.8	0.20	0.03	<0.02	73	5.60
AOB17066	Rock	0.21	0.20	83.17	0.36	30.7	66	7.3	12.6	807	5.02	7.0	<0.1	<0.2	0.2	11.9	0.04	<0.02	<0.02	42	0.43
AOB17067	Rock	0.24	0.08	1.91	0.16	17.6	4	18.9	19.3	696	4.13	4.1	<0.1	2.1	0.1	27.3	0.07	<0.02	<0.02	135	0.89
AOB17068	Rock	0.21	0.28	76.76	6.62	62.3	38	52.2	14.7	404	2.12	<0.1	0.5	1.5	4.2	9.3	0.60	0.03	0.09	16	0.33
AOB17069	Rock	0.21	0.17	33.15	6.09	57.2	54	15.4	12.1	696	2.93	3.2	0.3	0.6	1.1	95.8	0.11	0.08	0.04	115	2.29
AOB17070	Rock	0.21	0.37	14.28	0.97	14.2	7	6.9	1.1	125	0.85	0.9	<0.1	0.7	0.8	7.2	<0.01	0.18	0.22	4	0.02
AOB17071	Rock	0.27	0.50	18.28	3.86	7.2	36	2.5	0.4	114	0.77	1.3	0.1	2.5	2.0	10.8	<0.01	0.54	0.22	4	0.02
AOB17072	Rock	0.20	0.32	18.21	6.40	65.2	34	9.2	9.0	850	2.40	0.5	0.3	2.0	1.1	269.2	0.13	0.06	0.05	74	4.07
AOB17073	Rock	0.18	0.12	30.81	7.42	74.6	17	16.5	10.6	620	2.77	3.6	0.4	1.0	1.8	63.6	0.11	0.08	0.08	84	1.66
AOB17074	Rock	0.23	0.13	15.81	6.71	78.7	16	10.8	9.5	731	2.52	2.7	0.3	0.4	1.2	106.5	0.32	0.04	0.04	86	2.43
AOB17075	Rock	0.16	0.22	17.34	5.59	63.1	23	11.0	8.4	655	2.24	2.1	0.3	0.8	1.1	257.8	0.18	0.09	0.05	67	4.09
AOB17076	Rock	0.24	0.11	20.69	5.56	55.1	24	12.2	10.3	677	2.54	3.2	0.3	1.1	1.2	160.2	0.13	0.07	0.04	73	3.37
AOB17077	Rock	0.30	0.71	53.92	5.78	81.8	50	36.6	16.9	652	3.80	10.7	0.6	0.7	2.4	92.5	0.09	0.16	0.08	78	1.28

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Project: Black Creek
Report Date: January 12, 2018

CERTIFICATE OF ANALYSIS VAN17003094.1

	Method	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
	MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
AOB17061	Rock	0.047	4.0	40.2	0.70	131.9	0.168	7	3.86	0.019	0.18	0.3	9.2	0.03	<0.02	14	<0.1	0.03	10.9
AOB17062	Rock	0.086	6.4	34.3	0.87	180.5	0.239	8	2.56	0.039	0.35	0.3	6.2	0.06	<0.02	16	<0.1	0.03	7.9
AOB17063	Rock	0.025	2.7	3.1	0.92	36.9	0.165	<1	1.51	0.079	0.02	<0.1	4.9	<0.02	<0.02	<5	<0.1	<0.02	8.0
AOB17064	Rock	0.075	2.7	20.2	1.00	27.6	0.232	<1	1.73	0.070	0.01	0.1	4.0	<0.02	<0.02	6	<0.1	<0.02	8.6
AOB17065	Rock	0.021	0.6	34.3	0.72	25.3	0.111	4	4.20	0.027	<0.01	0.1	3.0	<0.02	<0.02	<5	<0.1	<0.02	21.3
AOB17066	Rock	0.123	3.7	8.5	2.16	34.1	0.123	1	2.72	0.060	0.02	0.1	9.8	<0.02	<0.02	<5	<0.1	<0.02	12.4
AOB17067	Rock	0.065	1.8	42.3	1.72	40.9	0.183	<1	2.15	0.079	0.02	<0.1	8.1	<0.02	<0.02	<5	<0.1	<0.02	9.3
AOB17068	Rock	0.013	12.7	13.7	0.75	154.6	0.193	2	1.03	0.022	0.18	0.1	4.8	0.07	0.32	23	0.8	0.03	3.7
AOB17069	Rock	0.085	6.8	56.0	0.96	202.2	0.240	6	2.59	0.059	0.22	0.2	7.5	0.04	<0.02	9	<0.1	<0.02	8.6
AOB17070	Rock	0.005	1.4	4.7	0.17	638.5	0.012	2	0.37	0.001	0.14	<0.1	1.2	0.04	<0.02	<5	<0.1	0.10	1.9
AOB17071	Rock	0.006	2.2	6.3	0.16	429.4	0.076	3	0.37	0.001	0.17	<0.1	1.1	0.04	0.03	18	0.2	0.10	1.2
AOB17072	Rock	0.085	8.0	24.0	0.78	227.3	0.217	5	2.57	0.062	0.25	0.3	6.8	0.05	<0.02	8	0.1	<0.02	9.4
AOB17073	Rock	0.086	9.0	30.2	1.16	121.2	0.182	5	2.43	0.050	0.13	0.3	9.6	0.03	<0.02	28	<0.1	<0.02	9.3
AOB17074	Rock	0.065	6.7	29.4	0.83	123.4	0.207	4	2.42	0.061	0.16	0.2	7.0	0.04	<0.02	12	<0.1	<0.02	8.7
AOB17075	Rock	0.062	6.9	26.4	0.74	206.9	0.212	4	2.04	0.066	0.21	0.2	7.1	0.05	<0.02	8	0.2	0.04	7.7
AOB17076	Rock	0.075	7.2	27.7	0.91	112.8	0.164	4	2.71	0.049	0.16	0.2	8.5	0.04	<0.02	13	<0.1	<0.02	8.8
AOB17077	Rock	0.090	10.7	25.1	1.43	227.7	0.220	4	2.51	0.016	0.28	0.3	9.1	0.05	<0.02	50	<0.1	0.03	8.0

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Project: Black Creek
Report Date: January 12, 2018

QUALITY CONTROL REPORT VAN17003094.1

		Method	WGHT	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
		Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
Pulp Duplicates																						
AOB17008	Rock		0.31	0.36	11.86	3.51	11.9	55	2.9	0.5	35	0.69	0.8	0.1	3.0	1.5	14.2	0.02	0.16	0.14	4	<0.01
REP AOB17008	QC			0.31	12.00	3.48	11.3	52	2.9	0.5	34	0.68	0.5	0.1	2.5	1.6	13.7	0.02	0.16	0.13	4	<0.01
AOB17043	Rock		0.18	0.10	26.58	5.12	54.0	40	13.1	11.1	663	2.48	4.7	0.4	0.5	1.2	237.7	0.10	0.09	0.03	72	3.39
REP AOB17043	QC			0.10	26.60	5.16	56.7	45	12.5	11.3	654	2.56	4.6	0.3	<0.2	1.2	239.4	0.12	0.09	0.04	76	3.51
AOB17072	Rock		0.20	0.32	18.21	6.40	65.2	34	9.2	9.0	850	2.40	0.5	0.3	2.0	1.1	269.2	0.13	0.06	0.05	74	4.07
REP AOB17072	QC			0.32	18.13	6.45	65.6	30	9.3	8.6	829	2.36	0.1	0.3	1.4	1.1	273.3	0.13	0.07	0.05	72	4.03
Reference Materials																						
STD DS11	Standard			13.57	151.89	133.94	339.9	1674	79.2	13.7	1053	3.08	41.9	2.6	85.2	7.8	65.9	2.23	8.02	12.08	49	1.08
STD DS11	Standard			14.36	155.37	136.32	337.0	1709	82.0	14.0	1047	3.12	43.0	2.6	110.0	7.8	71.1	2.39	8.22	12.52	50	1.08
STD DS11	Standard			14.41	151.48	138.14	351.4	1695	80.7	13.5	1050	3.13	42.5	2.9	66.0	8.4	69.8	2.42	8.29	12.19	48	1.07
STD OXC129	Standard			1.20	26.47	5.98	37.8	11	78.8	20.3	409	2.97	0.6	0.7	183.1	1.8	176.4	0.02	0.03	<0.02	51	0.66
STD OXC129	Standard			1.22	27.96	6.09	40.0	11	82.8	20.6	426	3.04	0.5	0.7	186.2	1.8	193.9	0.01	0.03	<0.02	53	0.73
STD OXC129	Standard			1.15	26.78	5.98	38.8	7	81.3	20.5	423	3.00	0.3	0.7	188.3	1.8	200.1	0.02	0.03	<0.02	50	0.74
STD OXC129 Expected				1.3	28	6.2	42.9	13	79.5	20.3	421	3.065	0.6	0.69	195	1.9		0.03	0.04		51	0.684
STD DS11 Expected				14.6	149	138	345	1710	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
BLK	Blank			<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
BLK	Blank			<0.01	0.06	0.03	0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
BLK	Blank			<0.01	0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
Prep Wash																						
ROCK-VAN	Prep Blank			0.79	3.39	1.98	39.2	10	1.9	3.8	555	1.79	1.2	0.4	2.8	2.1	22.1	0.03	0.05	0.04	24	0.59
ROCK-VAN	Prep Blank			0.82	4.27	1.66	45.9	13	2.6	4.2	602	1.85	1.2	0.4	2.3	2.1	21.7	0.03	0.05	0.03	25	0.60

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	Method	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
	MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
Pulp Duplicates																			
AOB17008	Rock	0.004	6.0	7.9	0.11	1003.2	0.003	3	0.31	0.010	0.13	<0.1	0.9	0.04	0.05	21	0.1	<0.02	1.4
REP AOB17008	QC	0.005	5.7	7.9	0.11	1046.0	0.003	3	0.30	0.009	0.13	<0.1	0.9	0.04	0.04	24	0.2	0.03	1.4
AOB17043	Rock	0.085	7.4	30.6	0.89	166.5	0.229	4	2.64	0.059	0.24	0.2	7.3	0.05	<0.02	19	<0.1	0.03	8.9
REP AOB17043	QC	0.085	7.4	31.1	0.91	165.5	0.221	5	2.65	0.061	0.24	0.2	7.3	0.05	<0.02	14	<0.1	<0.02	9.0
AOB17072	Rock	0.085	8.0	24.0	0.78	227.3	0.217	5	2.57	0.062	0.25	0.3	6.8	0.05	<0.02	8	0.1	<0.02	9.4
REP AOB17072	QC	0.083	7.9	23.9	0.77	225.6	0.213	5	2.48	0.061	0.24	0.3	6.8	0.05	<0.02	12	<0.1	<0.02	9.0
Reference Materials																			
STD DS11	Standard	0.066	18.5	58.2	0.83	368.2	0.094	7	1.15	0.071	0.40	2.8	3.2	4.68	0.27	239	2.2	4.53	4.9
STD DS11	Standard	0.073	19.1	59.9	0.85	365.5	0.097	8	1.17	0.073	0.41	2.8	3.3	4.65	0.28	244	2.2	4.54	4.9
STD DS11	Standard	0.069	19.9	61.1	0.86	371.7	0.103	8	1.23	0.074	0.41	2.9	3.4	4.94	0.28	263	2.2	4.67	5.3
STD OXC129	Standard	0.092	12.6	51.6	1.52	49.7	0.392	<1	1.52	0.569	0.35	<0.1	0.9	0.03	<0.02	<5	<0.1	<0.02	5.1
STD OXC129	Standard	0.099	12.4	53.6	1.54	50.3	0.402	1	1.61	0.577	0.36	<0.1	1.0	0.03	<0.02	<5	<0.1	<0.02	5.4
STD OXC129	Standard	0.095	13.1	52.4	1.55	52.0	0.409	1	1.64	0.590	0.35	<0.1	0.8	0.03	<0.02	<5	<0.1	<0.02	5.9
STD OXC129 Expected		0.102	12.5	52	1.545	50	0.4	1	1.58	0.59	0.3655	0.08	1.1	0.03					5.5
STD DS11 Expected		0.0701	18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	3.4	4.9	0.2835	260	2.2	4.56	5.1
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
Prep Wash																			
ROCK-VAN	Prep Blank	0.036	6.2	5.2	0.49	53.3	0.072	2	0.91	0.081	0.09	<0.1	3.0	<0.02	0.03	<5	<0.1	<0.02	3.8
ROCK-VAN	Prep Blank	0.039	5.9	7.7	0.52	51.4	0.075	2	0.94	0.073	0.08	<0.1	3.1	<0.02	0.04	<5	<0.1	<0.02	3.9

2017 Black Creek Property, Geochemistry
Quality Control Report

Bureau Veritas Commodities Canada Ltd. Final Report																																							
Client:	Donald Bunce																																							
File Created:	08-May-2018																																							
Job Number:	VAN17003094																																							
Number of Samples:	77																																							
Project:	Black Creek																																							
Shipment ID:																																							
P.O. Number:																																							
Received:	28-Dec-2017																																							
Method		WGHT	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251	AQ251
Analyte		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
Unit		KG	PPM	PPM	PPM	PPM	PPB	PPM	PPM	PPM	%	PPM	PPM	PPB	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM	PPM	%	PPB	PPM	PPM	PPM
MDL		0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
Sample	**Type**																																							
Pulp Duplicates																																								
AOB17072	Rock	0.20	0.32	18.21	6.40	65.2	34	9.2	9.0	850	2.40	0.5	0.3	2.0	1.1	269.2	0.13	0.06	0.05	74	4.07	0.085	8.0	24.0	0.78	227.3	0.217	5	2.57	0.062	0.25	0.3	6.8	0.05	<0.02	8	0.1	<0.02	9.4
AOB17072	REP		0.32	18.13	6.45	65.6	30	9.3	8.6	829	2.36	0.1	0.3	1.4	1.1	273.3	0.13	0.07	0.05	72	4.03	0.083	7.9	23.9	0.77	225.6	0.213	5	2.48	0.061	0.24	0.3	6.8	0.05	<0.02	12	<0.1	<0.02	9.0
AOB17008	Rock	0.31	0.36	11.86	3.51	11.9	55	2.9	0.5	35	0.69	0.8	0.1	3.0	1.5	14.2	0.02	0.16	0.14	4	<0.01	0.004	6.0	7.9	0.11	1003.2	0.003	3	0.31	0.010	0.13	<0.1	0.9	0.04	0.05	21	0.1	<0.02	1.4
AOB17008	REP		0.31	12.00	3.48	11.3	52	2.9	0.5	34	0.68	0.5	0.1	2.5	1.6	13.7	0.02	0.16	0.13	4	<0.01	0.005	5.7	7.9	0.11	1046.0	0.003	3	0.30	0.009	0.13	<0.1	0.9	0.04	0.04	24	0.2	0.03	1.4
AOB17043	Rock	0.18	0.10	26.58	5.12	54.0	40	13.1	11.1	663	2.48	4.7	0.4	0.5	1.2	237.7	0.10	0.09	0.03	72	3.39	0.085	7.4	30.6	0.89	166.5	0.229	4	2.64	0.059	0.24	0.2	7.3	0.05	<0.02	19	<0.1	0.03	8.9
AOB17043	REP		0.10	26.60	5.16	56.7	45	12.5	11.3	654	2.56	4.6	0.3	<0.2	1.2	239.4	0.12	0.09	0.04	76	3.51	0.085	7.4	31.1	0.91	165.5	0.221	5	2.65	0.061	0.24	0.2	7.3	0.05	<0.02	14	<0.1	<0.02	9.0
Reference Materials																																								
STD OXC129	STD		1.20	26.47	5.98	37.8	11	78.8	20.3	409	2.97	0.6	0.7	183.1	1.8	176.4	0.02	0.03	<0.02	51	0.66	0.092	12.6	51.6	1.52	49.7	0.392	<1	1.52	0.569	0.35	<0.1	0.9	0.03	<0.02	<5	<0.1	<0.02	5.1
STD DS11	STD		13.57	151.89	133.94	339.9	1674	79.2	13.7	1053	3.08	41.9	2.6	85.2	7.8	65.9	2.23	8.02	12.08	49	1.08	0.066	18.5	58.2	0.83	368.2	0.094	7	1.15	0.071	0.40	2.8	3.2	4.68	0.27	239	2.2	4.53	4.9
STD OXC129	STD		1.22	27.96	6.09	40.0	11	82.8	20.6	426	3.04	0.5	0.7	186.2	1.8	193.9	0.01	0.03	<0.02	53	0.73	0.099	12.4	53.6	1.54	50.3	0.402	1	1.61	0.577	0.36	<0.1	1.0	0.03	<0.02	<5	<0.1	<0.02	5.4
STD DS11	STD		14.36	155.37	136.32	337.0	1709	82.0	14.0	1047	3.12	43.0	2.6	110.0	7.8	71.1	2.39	8.22	12.52	50	1.08	0.073	19.1	59.9	0.85	365.5	0.097	8	1.17	0.073	0.41	2.8	3.3	4.65	0.28	244	2.2	4.54	4.9
STD OXC129	STD		1.15	26.78	5.98	38.8	7	81.3	20.5	423	3.00	0.3	0.7	188.3	1.8	200.1	0.02	0.03	<0.02	50	0.74	0.095	13.1	52.4	1.55	52.0	0.409	1	1.64	0.590	0.35	<0.1	0.8	0.03	<0.02	<5	<0.1	<0.02	5.9
STD DS11	STD		14.41	151.48	138.14	351.4	1695	80.7	13.5	1050	3.13	42.5	2.9	66.0	8.4	69.8	2.42	8.29	12.19	48	1.07	0.069	19.9	61.1	0.86	371.7	0.103	8	1.23	0.074	0.41	2.9	3.4	4.94	0.28	263	2.2	4.67	5.3
BLK	BLK		<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
BLK	BLK		<0.01	0.06	0.03	0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
BLK	BLK		<0.01	0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
Prep Wash																																								
ROCK-VAN	Prep Bl		0.79	3.39	1.98	39.2	10	1.9	3.8	555	1.79	1.2	0.4	2.8	2.1	22.1	0.03	0.05	0.04	24	0.59	0.036	6.2	5.2	0.49	53.3	0.072	2	0.91	0.081	0.09	<0.1	3.0	<0.02	0.03	<5	<0.1	<0.02	3.8
ROCK-VAN	Prep Bl		0.82	4.27	1.66	45.9	13	2.6	4.2	602	1.85	1.2	0.4	2.3	2.1	21.7	0.03	0.05	0.03	25	0.60	0.039	5.9	7.7	0.52	51.4	0.075	2	0.94	0.073	0.08	<0.1	3.1	<0.02	0.04	<5	<0.1	<0.02	3.9

LITHOGEOCHEMISTRY CONTOUR MAPS:

SILVER

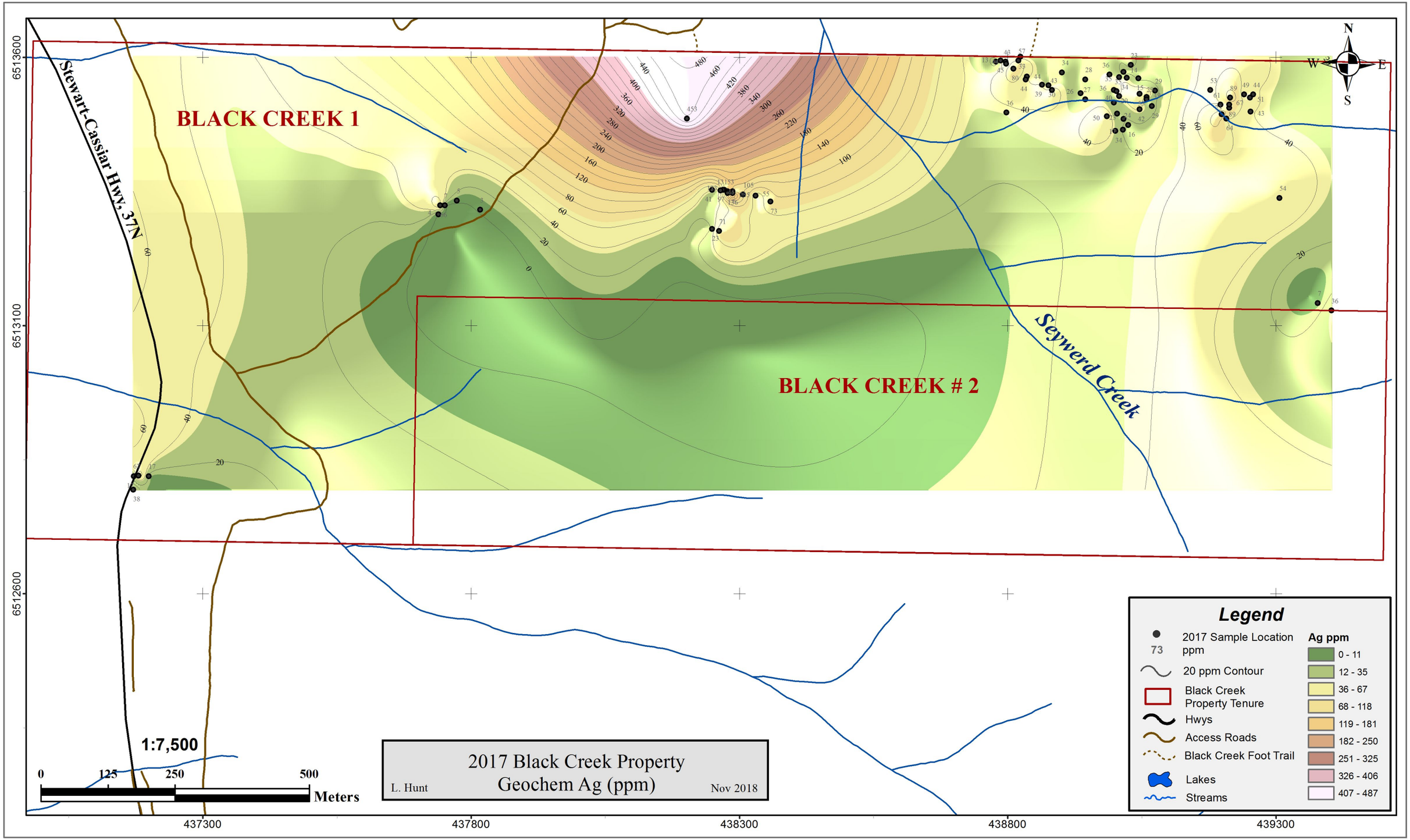
CHROMIUM

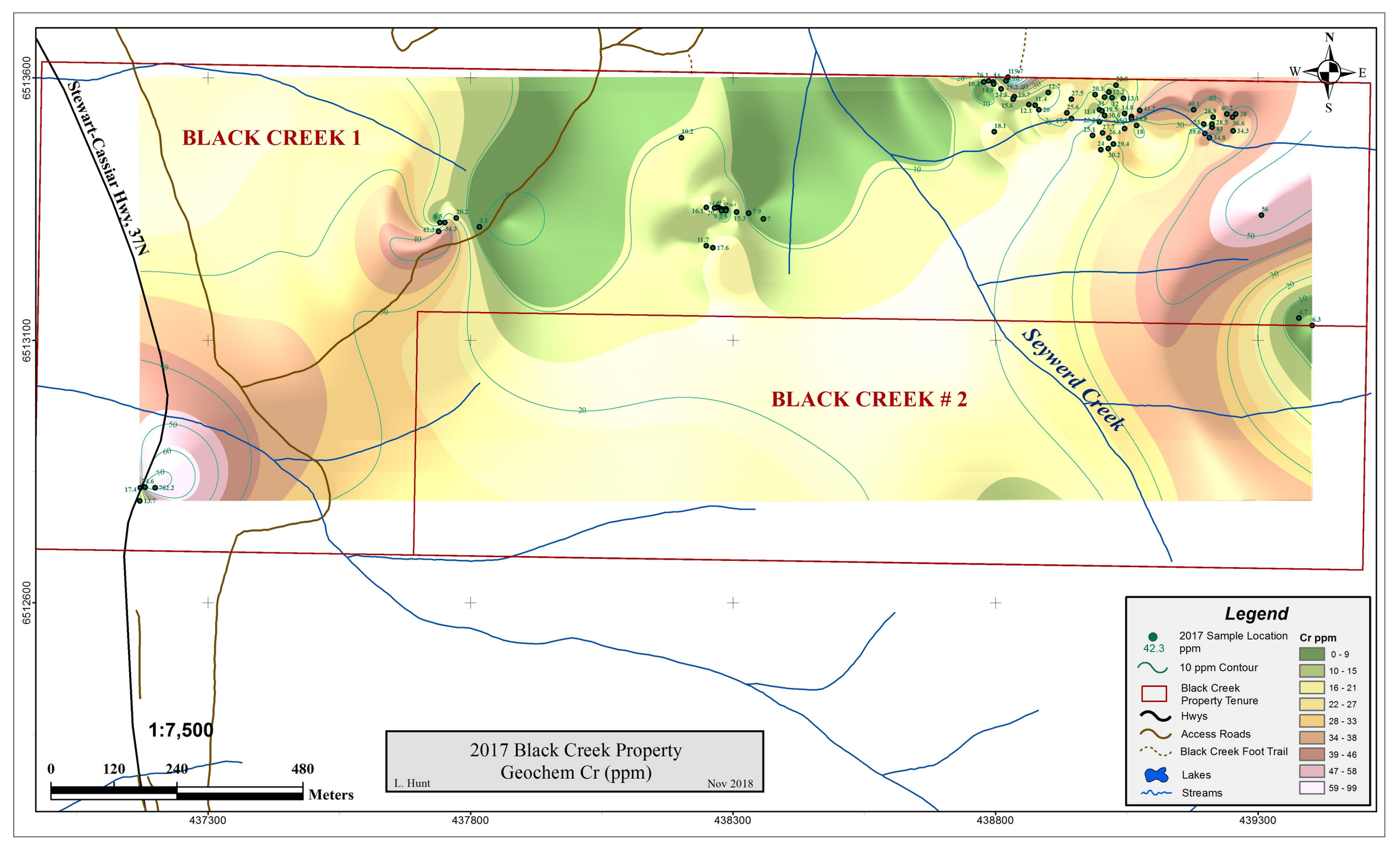
COPPER

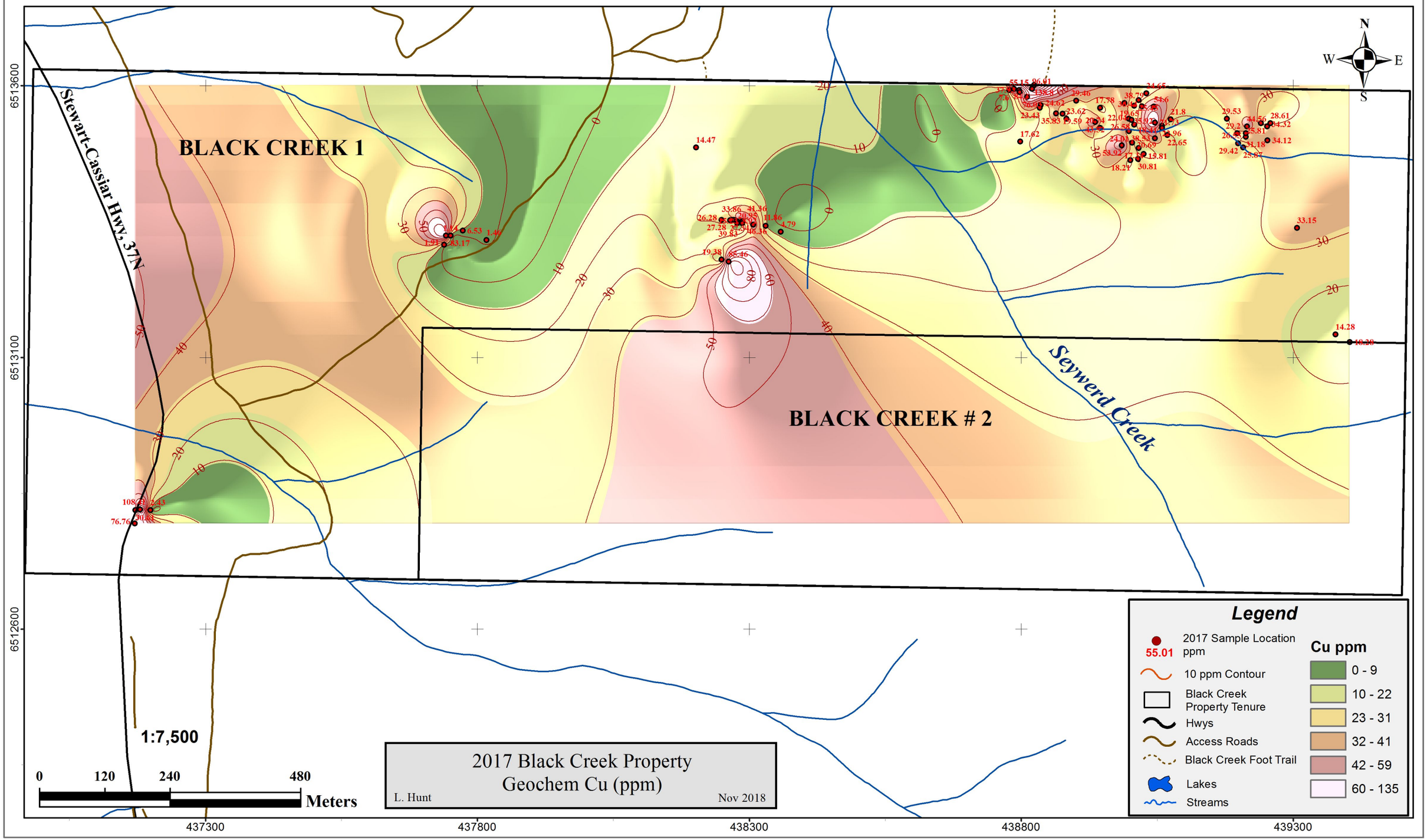
MANGANESE

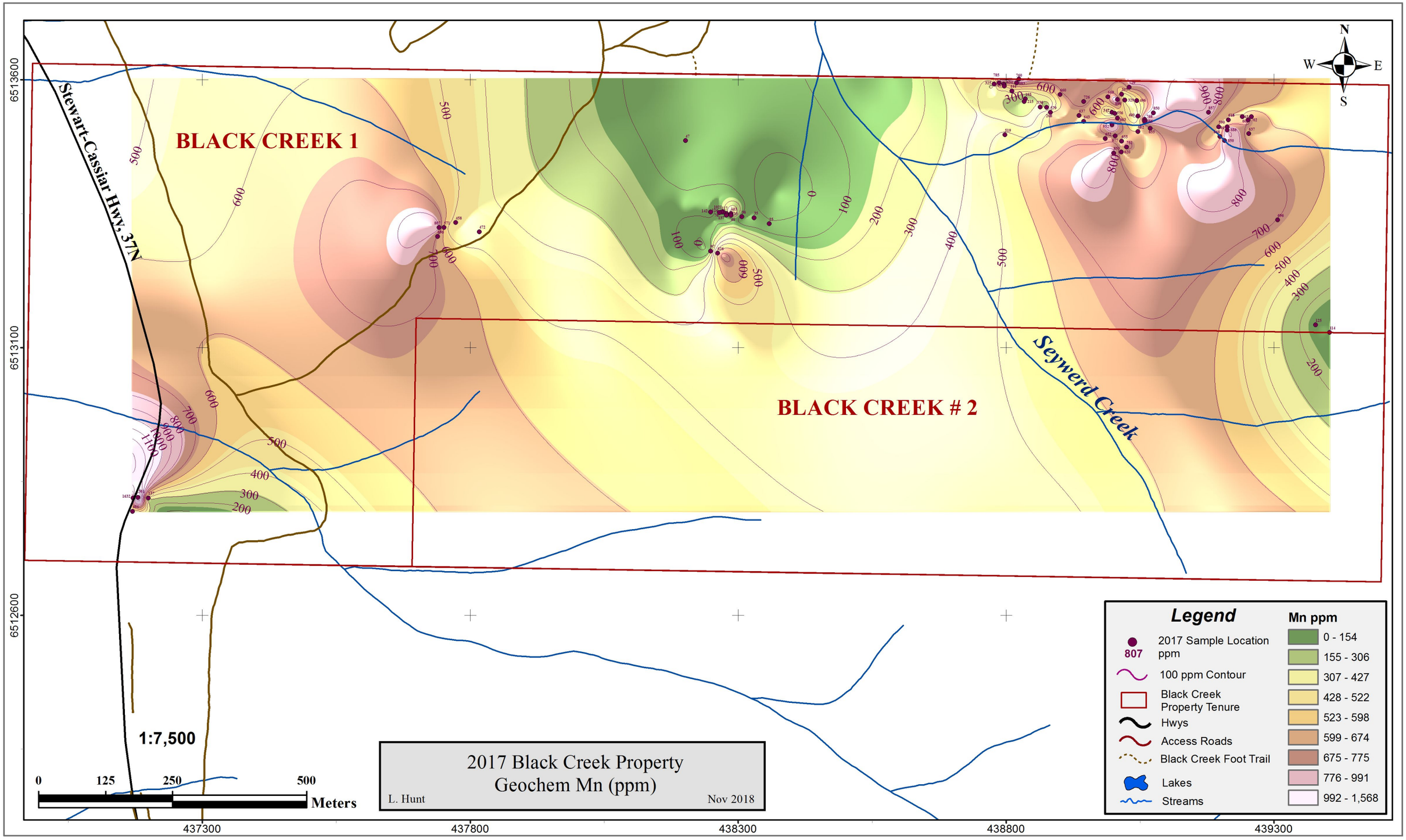
NICKEL

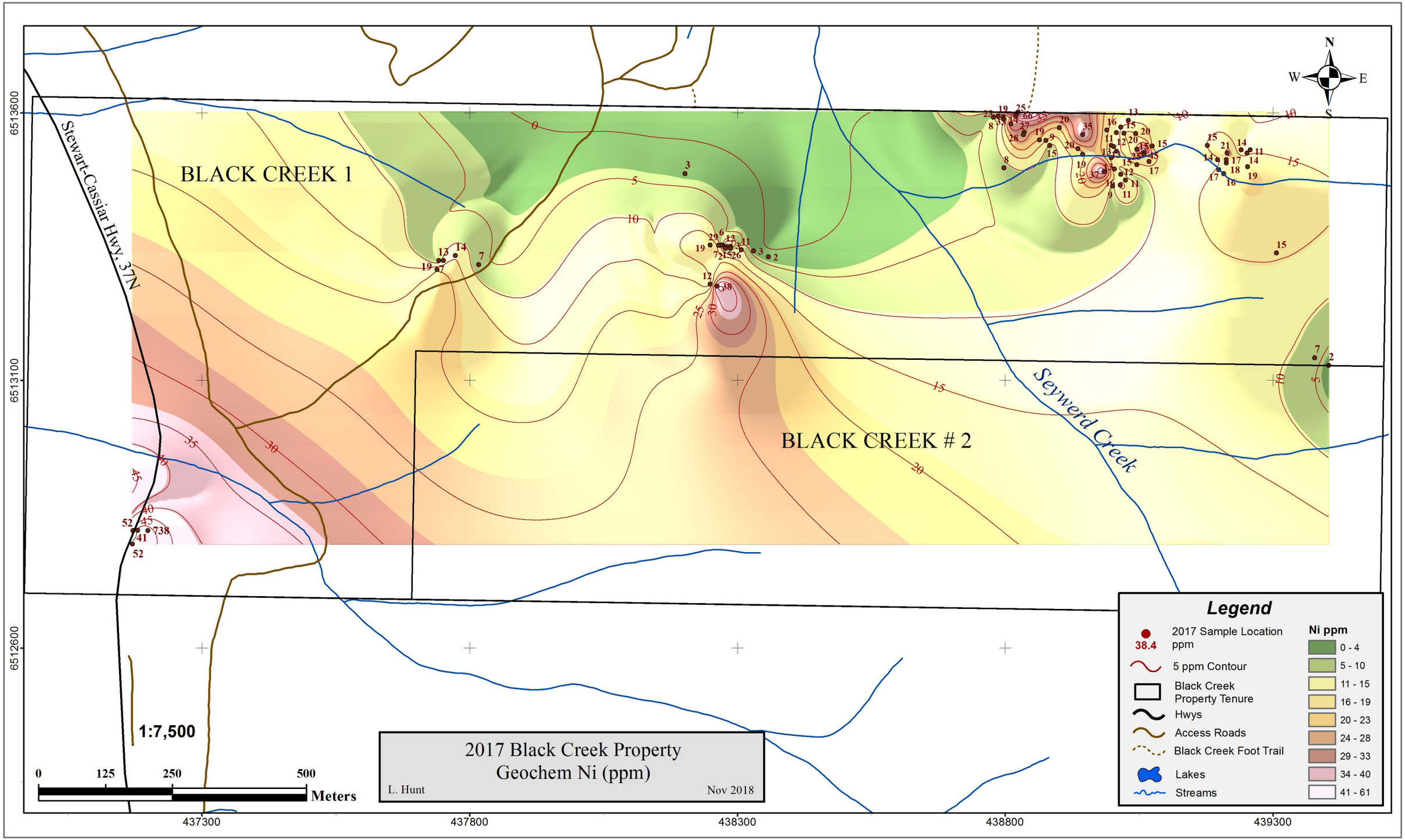
ZINC

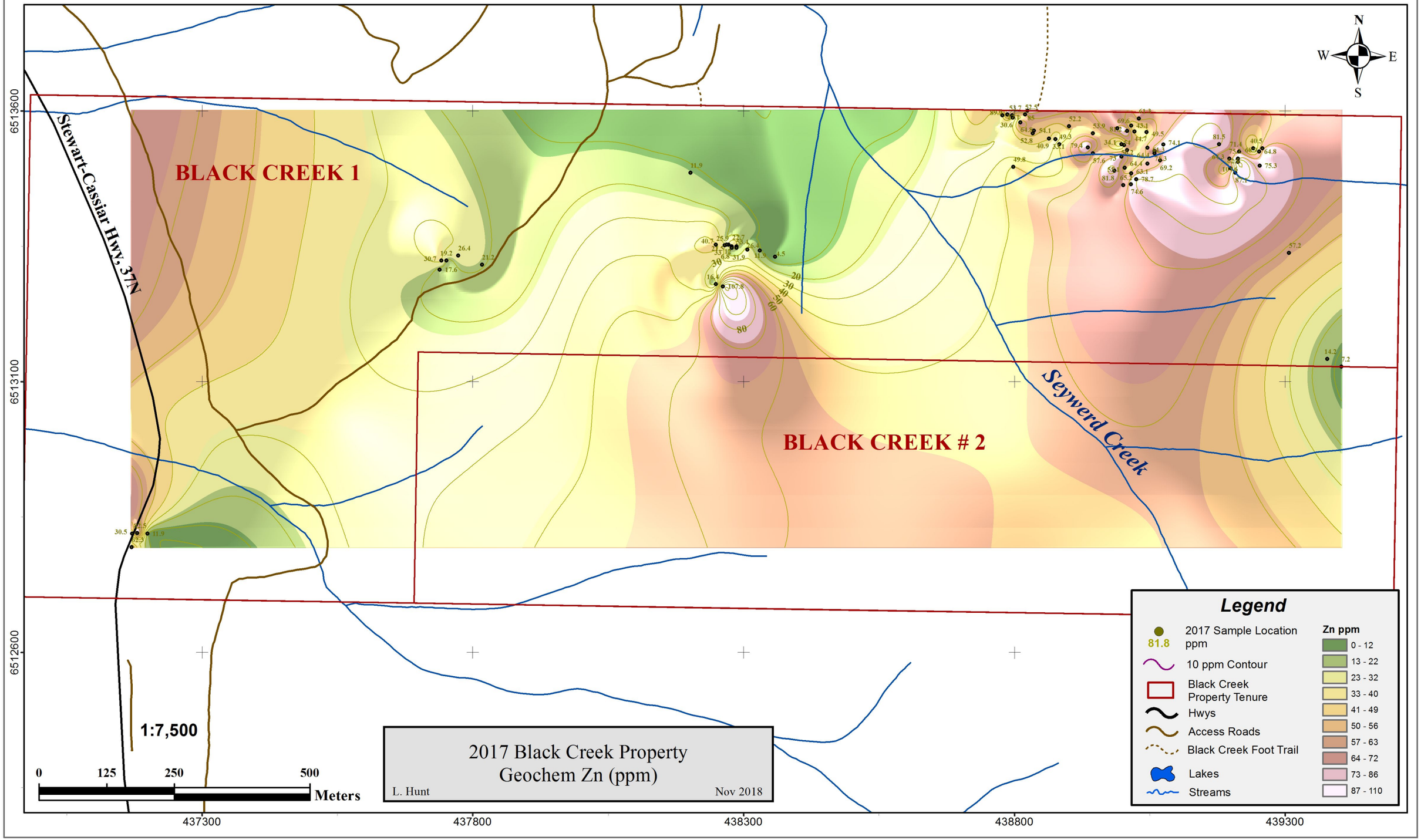

BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy, 37N
Seyward Creek
N
S
E
W
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0
125
250
500
Meters
2017 Black Creek Property
Geochem Ag (ppm)
L. Hunt
Nov 2018
Legend
2017 Sample Location
73
ppm
20 ppm Contour
Black Creek
Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Ag ppm
0 - 11
12 - 35
36 - 67
68 - 118
119 - 181
182 - 250
251 - 325
326 - 406
407 - 487


BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy, 37N
Seyward Creek
N
W
E
S
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0
120
240
480
Meters
2017 Black Creek Property
Geochem Cr (ppm)
L. Hunt
Nov 2018
Legend
2017 Sample Location
ppm
10 ppm Contour
Black Creek
Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Cr ppm
0 - 9
10 - 15
16 - 21
22 - 27
28 - 33
34 - 38
39 - 46
47 - 58
59 - 99


BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy, 37N
Seyward Creek
N
W
E
S
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0
120
240
480
Meters
2017 Black Creek Property
Geochem Cu (ppm)
L. Hunt
Nov 2018
Legend
55.01 2017 Sample Location ppm
10 ppm Contour
Black Creek Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Cu ppm
0 - 9
10 - 22
23 - 31
32 - 41
42 - 59
60 - 135


BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy 37N
Seyward Creek
N
W
E
S
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0
125
250
500
Meters
2017 Black Creek Property
Geochem Mn (ppm)
L. Hunt
Nov 2018
Legend
807 2017 Sample Location ppm
100 ppm Contour
Black Creek Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Mn ppm
0 - 154
155 - 306
307 - 427
428 - 522
523 - 598
599 - 674
675 - 775
776 - 991
992 - 1,568


BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy. 37N
Seyward Creek
N
W
E
S
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0 125 250 500
Meters
2017 Black Creek Property
Geochem Ni (ppm)
L. Hunt
Nov 2018
Legend
38.4 2017 Sample Location ppm
5 ppm Contour
Black Creek Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Ni ppm
0 - 4
5 - 10
11 - 15
16 - 19
20 - 23
24 - 28
29 - 33
34 - 40
41 - 61


BLACK CREEK 1
BLACK CREEK # 2
Stewart-Cassiar Hwy 37N
Seyward Creek
N
W
E
S
6513600
6513100
6512600
437300
437800
438300
438800
439300
1:7,500
0 125 250 500
Meters
2017 Black Creek Property
Geochem Zn (ppm)
L. Hunt
Nov 2018
Legend
2017 Sample Location
81.8 ppm
10 ppm Contour
Black Creek Property Tenure
Hwys
Access Roads
Black Creek Foot Trail
Lakes
Streams
Zn ppm
0 - 12
13 - 22
23 - 32
33 - 40
41 - 49
50 - 56
57 - 63
64 - 72
73 - 86
87 - 110

APPENDIX B

ACME Labs

Rock Sample
Preparation & Analysis
Procedures

AQ250

Package Description	Ultra Trace Geochemical aqua regia digestion
Sample Digestion	HNO3-HCl acid digestion
Instrumentation Method	ICP-ES and ICP-MS
Legacy Code	1F
Applicability	Sediment, Soil, Non-mineralized Rock and Drill Core

METHOD DESCRIPTION:

Prepared sample is digested with a modified Aqua Regia solution of equal parts concentrated HCl, HNO3 and DI H2O for one hour in a heating block or hot water bath. Sample is made up to volume with dilute HCl. Sample splits of 0.5g, 15g or 30g can be analyzed.

Lead isotope Add On (+ISO) Pb_{204}, Pb_{206}, Pb_{207}, Pb_{208} are suitable for geochemical exploration of U and other commodities where gross differences in natural to radiogenic Pb ratios, is a benefit. Isotope values can be reported in both concentrations and intensities. Sample splits of 0.5g, 15g or 30g can be analyzed.

Element	AQ250 Detection	Upper Limit
Ag	2 ppb	100 ppm
Al*	0.01%	10%
As	0.1 ppm	10000 ppm
Au	0.2 ppb	100 ppm
B*^	20 ppm	2000 ppm
Ba*	0.5 ppm	10000 ppm
Bi	0.02 ppm	2000 ppm
Ca*	0.01%	40%
Cd	0.01 ppm	2000 ppm
Co	0.1 ppm	2000 ppm
Cr*	0.5 ppm	10000 ppm
Cu	0.01 ppm	10000 ppm
Fe*	0.01%	40%
Ga*	0.1 ppm	1000 ppm
Hg	5 ppb	50 ppm
K*	0.01%	10%
La*	0.5 ppm	10000 ppm
Mg*	0.01%	30%
Mn*	1 ppm	10000 ppm
Mo	0.01 ppm	2000 ppm
Na*	0.001%	5%
Ni	0.1 ppm	10000 ppm
P*	0.001%	5%
Pb	0.01 ppm	10000 ppm
S	0.02%	10%

Element	Detection Limit	Upper Limit
Sb	0.02 ppm	2000 ppm
Sc	0.1 ppm	100 ppm
Se	0.1 ppm	100 ppm
Sr*	0.5 ppm	10000 ppm
Te	0.02 ppm	1000 ppm
Th*	0.1 ppm	2000 ppm
Ti*	0.001%	5%
Tl	0.02 ppm	1000 ppm
U*	0.05 ppm	2000 ppm
V*	2 ppm	10000 ppm
W*	0.05 ppm	100 ppm
Zn	0.1 ppm	10000 ppm
Extended Package		
Be*	0.1 ppm	1000 ppm
Ce*	0.1 ppm	2000 ppm
Cs*	0.02 ppm	2000 ppm
Ge*	0.1 ppm	100 ppm
Hf*	0.02 ppm	1000 ppm
In	0.02 ppm	1000 ppm
Li*	0.1 ppm	2000 ppm
Nb*	0.02 ppm	2000 ppm
Rb*	0.1 ppm	2000 ppm
Re	1 ppb	1000 ppb
Sn*	0.1 ppm	100 ppm
Ta*	0.05 ppm	2000 ppm

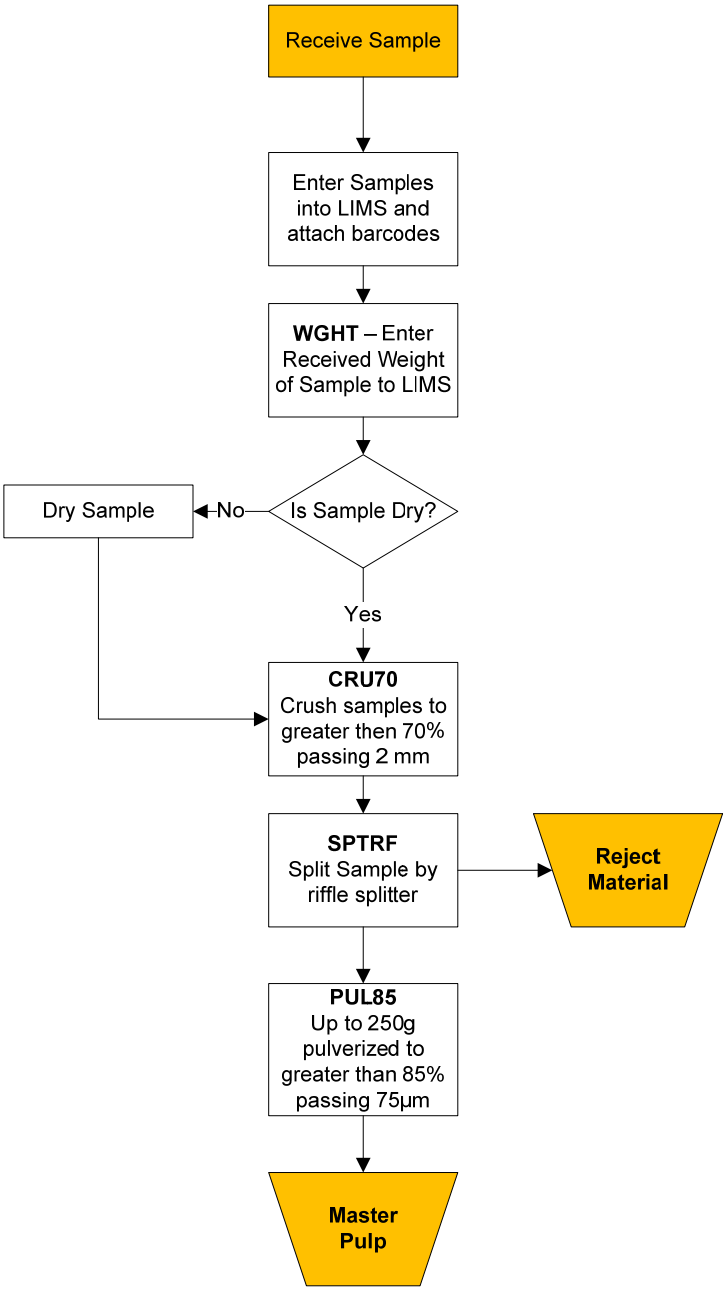
Element	Detection Limit	Upper Limit
Y*	0.01 ppm	2000 ppm
Zr*	0.1 ppm	2000 ppm
REE Add On		
Pr	0.02 ppm	2000 ppm
Nd	0.02 ppm	2000 ppm
Sm	0.02 ppm	10000 ppm
Eu	0.02 ppm	10000 ppm
Gd	0.02 ppm	10000 ppm
Tb	0.02 ppm	10000 ppm
Dy	0.02 ppm	10000 ppm
Ho	0.02 ppm	10000 ppm
Er	0.02 ppm	10000 ppm
Tm	0.02 ppm	10000 ppm
Yb	0.02 ppm	10000 ppm
Lu	0.02 ppm	10000 ppm
Lead Isotopes		
Pb_{204}	0.01 ppm	10000 ppm
Pb_{206}	0.01 ppm	10000 ppm
Pb_{207}	0.01 ppm	10000 ppm
Pb_{208}	0.01 ppm	10000 ppm
PGM Add on		
Pt*	2 ppb	100 ppm
Pd*	10 ppb	100 ppm

* Solubility of some elements will be limited by mineral species present. ^Detection limit = 1 ppm for 15g / 30g analysis.

PRP70-250

Package Description Sample Preparation of Rock and Drill Core

FLOW CHART



Received samples are entered into the Laboratory Information Management System (LIMS), weighed, dried and crushed to ensure that greater than 70% pass a 2mm sieve. A split of the crushed material is then pulverized to greater than 85% passing a 75µm sieve.

At random intervals and at the start of each shift QC testing is completed on both crushed and pulverized material to ensure that the above specifications are met.

The flowchart to the left describes the standard practice. Additional splits of the pulp or reject may be taken at client request and to prepare internal Prep QC duplicates.

By default if clients have not specified otherwise Master Pulps are retained and storage charges apply. Rejects are stored for 90 days and are then disposed of at the client's cost.

Sample Preparation

Receiving Samples arrive via courier, post or by client drop-off; shipment inspected for completeness.

Sorting and Inspection Samples sorted and inspected for quality of use (quantity and condition). Pulp samples inspected for homogeneity and fineness.

SOILS

SS80, SS230, SSXXX Drying and Sieving Wet or damp soil samples are dried at 60°C (Air dried or 40°C if specified by the client). Soil and sediment sieved to -80 mesh (SS80) or -230 mesh (SS230), unless client specifies otherwise (SSXXX). Sieves cleaned by brush and compressed air between samples.

ROCKS AND DRILL CORE

PRP70-250, PRP70-500, PRP70-1000 Rock and Drill Core crushed to 70% passing 10 mesh (2mm), homogenized, riffle split (250g, 500g, or 1000g subsample) and pulverized to 85% passing 200 mesh (75 microns). Crusher and pulverizer are cleaned by brush and compressed air between routine samples. Granite/Quartz wash scours equipment after high-grade samples, between changes in rock colour and at end of each file. Granite/Quartz is crushed and pulverized as first sample in sequence and carried through to analysis.

PUL85, PULCB Samples requiring pulverizing only are dried at 60°C and pulverized to 85% passing 200 mesh (75 microns), using a mild-steel pulverizer (PUL85), per 250g or a ceramic pulverizer (PULCB), per 100g.

PULHP Rock and Drill Core are pulverized by using a mortar and pestle.

VEGETATION

VGMAS Plant material is dried then milled to 1mm

VA475 Up to 0.1 kg of wet vegetation is ashed by heating to 475°C.

VGWSH Plant samples are washed with Type-1 water then dried at 60°C prior to analysis, per 100g.

APPENDIX C

BLACK CREEK PROPERTY

ULTRA PETROGRAPHY & GEOSCIENCE INC.

2017 PETROGRAPHIC REPORT

Ultra Petrography & Geoscience Inc

Report for: Mr. Donald Bunce

Sent to: Mr. Donald Bunce
Mrs. Lesley Hunt

Report 170781

December 12, 2017

Petrographic Report on Three Rock Samples for Mr. Donald Bunce

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Table of Contents

1. Introduction

Mr. Donald Bunce submitted 3 rock samples to Vancouver Petrographics for petrographic analysis. The client did not provide the provenance of the samples, a geological introduction to the area where they were gathered, or multi-elemental geochemical analysis related to the samples.

The attached “Petrographic Descriptions” section provides the following for each sample: (i) the petrographic rock classification; (ii) a brief microstructural description; (iii) a table with the modal percentage and average grain size for each mineral; and (iv) a detailed description of the minerals in decreasing order of abundance.

Samples 1–3 (see Table 1) were cut and prepared as ~20 × 40 mm polished thin sections (see the image of the billet on the first page of each description), and were analyzed with a petrographic microscope under polarized transmitted, and polarized reflected light.

The petrographic classification follows the recommendations of Gillespie et al. (2011), Gillespie and Styles (1999), and Robertson (1999).

The microstructural terminology used in this report follows the recommendations and definitions of Vernon (2004), Passchier and Trouw (2005), and Ramdohr (1980). Some of the petrographic and microstructural terms are defined in the glossary.

The magnetic susceptibility (see Table 1) was measured with a hand-held KT Magnetic Susceptibility Meter, and is intended to provide only an approximate estimate of the relative content of magnetic minerals within each sample.

2. Summary of Results

Sample 1: AOB17-066B—Brecciated andesite—This polished thin section consists of inequigranular anhedral crystals of plagioclase, and subordinate quartz, chlorite, and iron oxides. The plagioclase-rich aggregate is fractured and filled in by quartz.

Sample 2: AOB17-066B-1—White mica schist—Elongate and angular fragments dominated by very fine-grained and iso-oriented flakes of white mica and/or clay are immersed within a very fine-grained matrix dominated by very fine-grained quartz and/or albite and subordinate white mica.

Sample 3: AOB17-066B-2—White-mica schist—This polished thin section is dominated by very fine-grained quartz and iso-oriented flakes of white mica, which define a continuous schistosity. Within the schistosity, sub-rounded, angular, irregularly shaped domains of polycrystalline fine-grained quartz are immersed. Veinlets of quartz crosscut at low angles the schistosity.

Table 1: List of samples with their magnetic susceptibility and petrographic classification[1].

Sample No.	Sample ID	Magnetic Susceptibility (SI $\cdot 10^{-3}$)	Rock Type	Alteration
1	AOB17-066B	0.115	Brecciated andesite	quartz-chlorite: weak; iron oxides: subtle
2	AOB17-066B-	0.413	White mica schist	
3	AOB17-066B-	0.259	White-mica schist; Quartz veinlets	

1 Rock classification after Gillespie et al. (2011), Gillespie and Styles (1999), and Robertson (1999).

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This report consists of 14 pages and is signed by

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4. Petrographic Descriptions

Sample 1: AOB17-066B

Brecciated andesite

This polished thin section consists of inequigranular anhedral crystals of plagioclase and subordinate quartz, chlorite, and iron oxides. The plagioclase-rich aggregate is fractured and filled in by quartz.

Alteration: quartz-chlorite: weak; **iron oxides**: subtle.

Mineral	*Alteration and Weathering Mineral*	*Modal %*	*Size Range (mm)*	*Distinguishing Features*
andesitic rock(?) (~90% of PTS)				
plagioclase		75–77	0.05–1.5	low relief, first order grey birefringence, albite twinnings
	chlorite	8–10	up to 0.05	moderate relief, very weak pleochroism with pale green tints, straight extinction, low birefringence
quartz		5–8	up to 0.1	low relief, birefringence up to first order white
	iron oxides	0.5–0.7	<0.01	
quartz-rich infill (~10% of PTS)				
quartz		10	up to 0.4 long	low relief, birefringence up to first order white
calcite		tr	up to 0.6 long	high relief, extreme birefringence, brisk reaction to cold dilute (10%) HCl

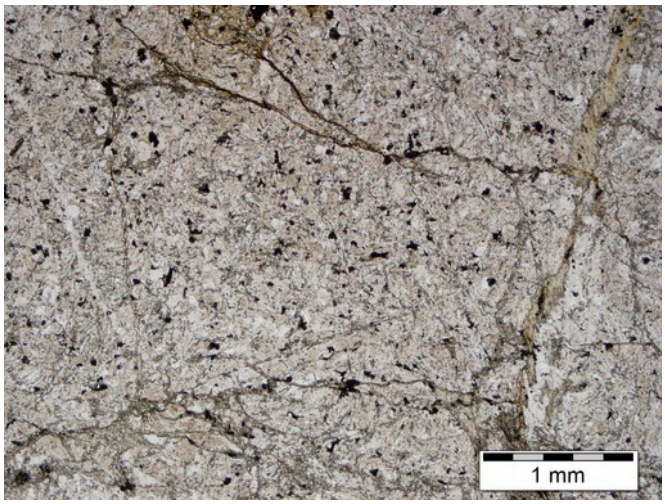
Plagioclase dominates the composition of the fractured rock as inequigranular (up to 1.5 mm long laths) and anhedral crystals, which are randomly oriented and only in some cases show a preferred dimensional orientation. The occurrence of longer laths (Photomicrograph 1b)

suggests that this plagioclase-rich rock derived from a magma of andesitic composition. The plagioclase shows albite twinnings and its interstices are filled in by anhedral crystals of quartz.

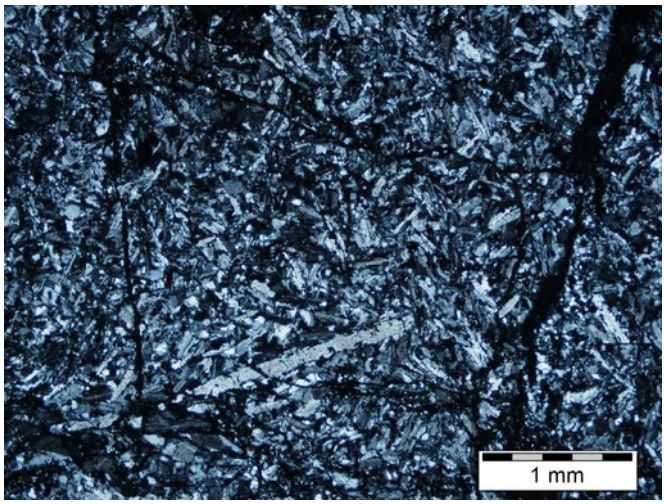
Quartz forms irregular infill domains occupying the interstices of the plagioclase and the triangular microstructures generated by the brittle deformation of the plagioclase-rich rock. The quartz is associated with subordinate chlorite and **calcite**. Fine-grained anhedral crystals of quartz are dispersed within the plagioclase-rich rock.

Very fine- to fine-grained flakes of **chlorite** are heterogeneously dispersed within the fractured rock and in some cases are associated with very fine-grained unresolved aggregate of chlorite or epidote(?). In some cases, the chlorite is the only mineral filling in the cracks of the fractured plagioclase-rich rock.

Iron oxides are dispersed within the interstices between the plagioclase crystals (Photomicrograph 1a) and completely replaced an unknown magmatic mineral.

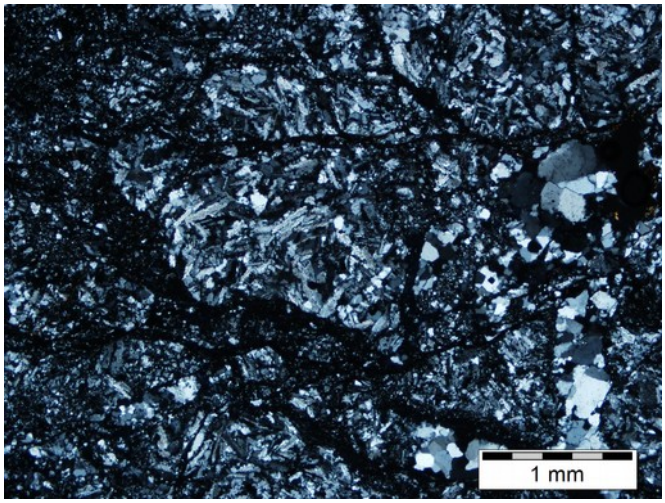


***Photomicrograph 1a**: Fractured domains of plagioclase (white) and rare iron oxides (opaque) are filled in by chlorite and quartz. Plane-polarized transmitted light.*



***Photomicrograph 1b**: Same area as shown in Photomicrograph 1a. The plagioclase crystals dominate the composition of the fractured rock and form inequigranular anhedral laths. Crossed Nicols transmitted light.*

***Photomicrograph 1c**: In some parts of the polished thin section, the fractures are associated with rotation and mechanical wearing of the fragments. The interstices between the fragments are filled in by quartz (white on the right of this photomicrograph). Plane-polarized transmitted light.*



***Photomicrograph 1d**: Same area as shown in Photomicrograph 1c. Within the fragments, the plagioclase is inequigranular anhedral. Crossed Nicols transmitted light.*

Sample 2: AOB17-066B-1

White mica schist

Elongate and angular fragments dominated by very fine-grained and iso-oriented flakes of white mica and/or clay are immersed within a very fine-grained matrix dominated by very fine-grained quartz and/or albite, and subordinate white mica.

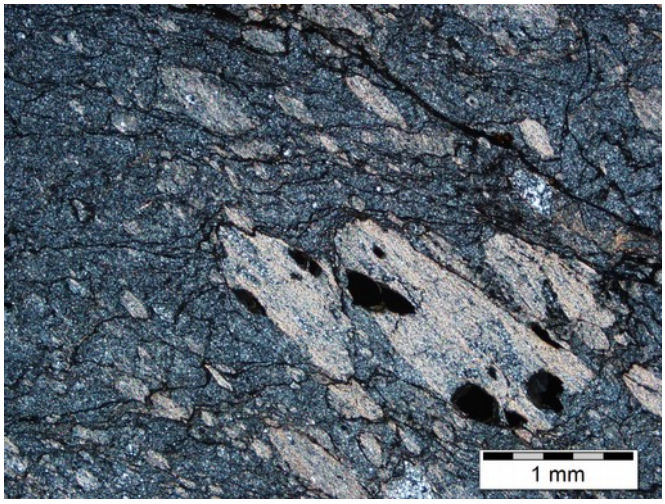
Mineral	*Alteration and Weathering Mineral*	*Modal %*	*Size Range (mm)*	*Distinguishing Features*
quartz and/or albite		55–58	up to 0.02	low relief, birefringence up to first order white
white mica(?)		35–40	up to 0.05	moderate relief, birefringence up to third order yellow, straight extinction
pyrrhotite		1–1.5	up too 0.6 long	high reflectance, light brown, anisotropic
chlorite		0.5–1	up to 0.05	moderate relief, very weak pleochroism with pale green tints, straight extinction, low birefringence
chalcopyrite		tr	up to 0.05	high reflectance, yellow

Quartz (and/or albite?) forms a very fine-grained matrix hosting the white mica-rich fragments. The very fine-grained aggregate of quartz is intergrown with subordinate flakes of white mica and/or clay and it is associated with anastomosing and in some cases stylolite-like cleavage domains filled in by **iron oxides** and **limonitic material**.

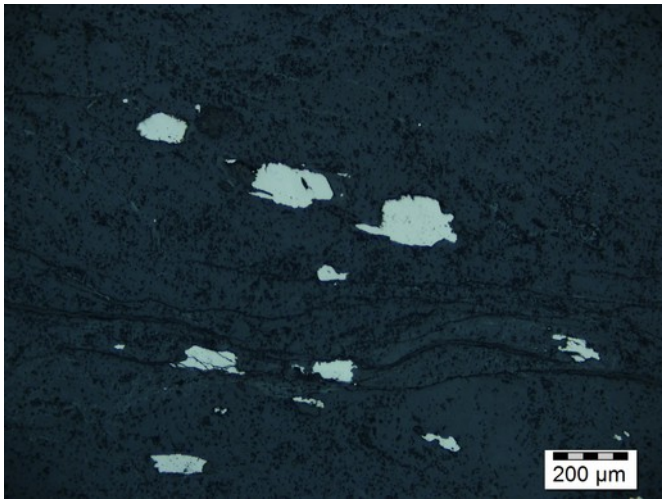
White mica(?) is very fine-grained and dominates the composition of inequigranular elongate (up to 25 mm long in this polished thin section) fragments. Within the fragments, the flakes are iso-oriented and define an internal continuous foliation. The elongate fragments are iso-oriented, and their internal foliation are iso-oriented within the polished thin section (Photomicrograph 2a).

Pyrrhotite forms anhedral crystals (up to 0.2 mm long, and in some cases up to 0.6 mm long) iso-oriented within the fragments and the matrix. The pyrrhotite is intergrown with rare **chalcopyrite** and is surrounded by symmetric strain shadows filled in by chlorite. The occurrence of symmetric strain shadows around the iso-oriented crystals of pyrrhotite, and the irregular cleavage domains filled by iron oxides and limonitic material suggest that this sample

may have been deformed by pure shear. The deformation probably compacted a sedimentary rock.



***Photomicrograph 2a**: Angular fragments dominated by iso-oriented flakes of white mica are immersed within a very fine-grained matrix dominated by less birefringent quartz and/or albite. Crossed Nicols transmitted light.*



***Photomicrograph 2b**: Iso-oriented crystals of pyrrhotite are dispersed within the fragments and the matrix. Plane-polarized reflected light.*

Sample 3: AOB17-066B-2

White-mica schist

Quartz veinlets

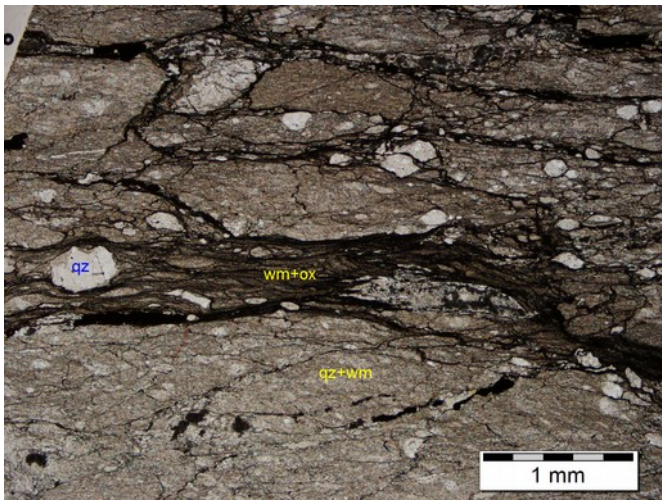
This polished thin section is dominated by very fine-grained quartz and iso-oriented flakes of white mica. The white mica defines a continuous schistosity, which hosts sub-rounded, angular, irregularly shaped domains of polycrystalline fine-grained quartz. Veinlets of quartz crosscut at low angles the schistosity.

Mineral	*Alteration and Weathering Mineral*	*Modal %*	*Size Range (mm)*	*Distinguishing Features*
schist (~98% 0f PTS)				
quartz		61–63	up to 0.06	low relief, birefringence up to first order white
white mica		34–37	up to 0.02, rare up to 0.1	moderate relief, birefringence up to third order yellow, straight extinction
pyrrhotite		0.5–0.6	up to 1.5 long	high reflectance, light brown, anisotropic
chlorite		tr	up to 0.05	moderate relief, very weak pleochroism with pale green tints, straight extinction, low birefringence
chalcopyrite		tr	up to 0.05	high reflectance, yellow
quartz veinlets (~2% 0f PTS)				
quartz		2	up to 0.05	low relief, birefringence up to first order white

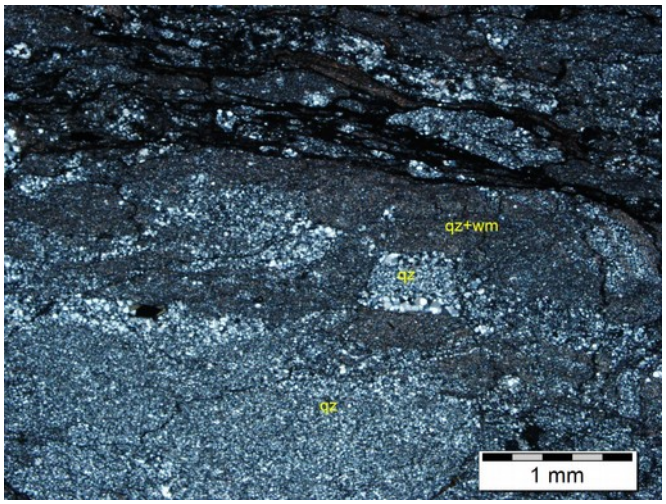
Quartz forms a very fine-grained aggregate intergrown with very fine-grained white mica within most of this polished thin section. The quartz is fine-grained within inequigranular sub-rounded, angular and irregular domains of polycrystalline aggregates (Photomicrograph 3b). I tentatively interpret these aggregates as recrystallized quartz-rich clasts and/or fragments of recrystallized infill domains of quartz. The quartz filled in thin veinlets crosscutting the schistosity (Photomicrograph 3b).

White mica is very fine-grained and its iso-oriented flakes are homogeneously dispersed within the matrix of this rock. Similarly to Sample 2, the matrix is crosscut by anastomosing cleavage domains of **iron-oxides** and **limonitic material** (see upper part of Photomicrographs 3a and 3b). The white mica is concentrated within irregular cleavage domains (Photomicrographs 3a). These microstructures are oriented parallel to the foliation defined by the white mica, I interpret the cleavage domains and the foliation as having been produced during the compaction of a sedimentary rock.

Pyrrhotite forms elongate anhedral crystals (up to 1.5 mm long) iso-oriented within the matrix and intergrown with rare anhedral crystals of **chalcopyrite**. Some of the pyrrhotite crystals are surrounded by strain shadows of **chlorite** and quartz.



***Photomicrograph 3a**: An irregular cleavage domain of white mica mixed with opaque iron oxides (wm+ox) crosscut the very fine matrix (qz+wm) hosting angular clasts of quartz (qz). Plane-polarized transmitted light.*



***Photomicrograph 3b**: Irregular domains of polycrystalline quartz (qz)are immersed within a matrix of very fine-grained quartz and white mica (qz+wm). Anastomosing cleavage domains (opaque) crosscut the matrix in the upper part of this photomicrograph. Crossed Nicols transmitted light.*

5. Glossary of Microstructural and Petrologic Terms Used in the Text

anhedral: Describes irregular grains showing no crystal-face boundaries.

cleavage domain*:* Layer or lens with a relatively high content of elongate grains (such as micas or amphiboles) and low content of equidimensional grains (such as quartz, feldspar, or carbonate). Together with microlithons they make up a spaced foliation. Micas in cleavage domains commonly have a preferred orientation parallel to or at a small angle to the domain.

foliation: Planar microstructural element that occurs penetratively on a mesoscopic scale in a rock. Primary foliation includes bedding and igneous layering; secondary foliations are formed by deformation-induced processes.

groundmass: Aggregate that is distinctly finer-grained than the phenocrysts in an igneous rock.

interlobate: With irregular lobate grain boundaries.

interstitial: Describes a mineral occupying angular cavities or interspace fillings between other minerals.

matrix: Aggregate that is distinctly finer-grained than the crystals, clasts, and lithic fragments in a metamorphic and volcaniclastic rock. The usage is similar to that of “groundmass” in an igneous rock.

pleochroism: A property of certain crystals of absorbing light to an extent that depends on the orientation of the vector of the light with respect to the optic axes of the crystal.

strain shadow: Region adjacent to a clast or porphyroblast that is protected from deformation, such that it may preserve earlier microstructures that have been obliterated from the rest of the matrix.

APPENDIX D

2017 BLACK CREEK PROPERTY

ROCK GRAB SAMPLE DESCRIPTIONS

&

DESCRIPTION ABBREVIATION KEY

2017 Black Creek Property Grab/Hand Sample Description

Sample No.	Rock Type	Grab Sample Description
AOB17-001A	Nephrite	med grey green, iSi, ifol, wfrac.
AOB17-002	Basalt?	Pale to med grey, massive to moderately fract., fn grained, wCarb alt (p), fine gr py diss 0.5%, tr cpy vfn gr, mSi locally, quartz vnlts to 3cm, local greenish pods - very small lensoidal patches.
AOB17-003A	Contact Rock	Alteration Contact Rock, med. To grey green, transitional rock, massive to wfol, mod fract
AOB17-004	Argillite	black, ifol, mSi
AOB17-005	Cherty Argillite	black, mod quartz carbonate vnlts
AOB17-006	Quartz Vein / Quartzite?	within Argillite? No noted Sx, cgr. Needs second look at outcrop
AOB17-007	Argillite	black, ifol, w - mSi, few quartz carbonate hairline fract subparallel to fol
AOB17-008	Argillite	black, ifol, iSi
AOB17-009	Argillite	black, massive with hairline quartz carbonate vnlts, tr carb (p) on HCL test
AOB17-010	Quartz Vein	cgr, Clear to white to grey, No Sx noted
AOB17-011A	Contact Rock	Altered Argillite, transitional rock, mod fol, white to grey, mod K, mfr.
AOB17-012	Cherty Argillite	black, wk - mod fol, no structures, no suphides noted
AOB17-013	Argillite	ifol, black, iSi, mod quartz carbonate vnlts within fol and perpendicular, Tr Py
AOB17-014	Argillite	black, ifol, iSi, Tr Py, weak quartz carbonate hairline fracs
AOB17-015	Argillite	ifol, black, iSi, mod quartz carbonate vnlts within fol and perpendicular, Tr Py
AOB17-016	Argillite	Black, wfract, massive to locally weakly foliated
AOB17-017	Argillite	black, ifol, mSi, py in subhedral grains to 2mm, wfracs, few quartz carbonate vnlts.
AOB17-018	Argillite	black, ifol, iSi, m to local intense hairline quartz carbonate filled fracs, Tr py
AOB17-019	Cherty Argillite	m to ifol, iSi, med grey
AOB17-020	Cherty Argillite	m to ifol, iSi, med grey, clotty carb., few quartz carbonate vnlts perp. to fol
AOB17-021	Cherty Argillite	massive, wfrac, mpdo, non mag, med to dk. Gry
AOB17-022	Nephrite?	mfol, pale to med. green, iSi, disseminated cpy, <mm sized single grains, carb lining on hairline fracts.
AOB17-023	Argillite	dk grey, mod to ifol, i quartz carbonate vnlts, mod to i pdo, avg 2-mm
AOB17-024	Argillite	med to dk. Grey, mfrac, m quartz carbonate vnlts, mSi
AOB17-025	Argillite	black, ifol, mfrac, wpdo, iSi
AOB17-026	Argillite	black, ifol, mfrac, wpdo, iSi
AOB17-027	Quartz Vein	Hosted in Argillite?, Carb lining fracts and in clots, white, bull, med to cgr, few arg. fragments defined, diffuse selvages, No noted Sulphides, w microfr., ipdo
AOB17-028	Argillite	massive, i blocky fracs, iSi, few quartz carbonate vnlts, dk grey
AOB17-029	Argillite	med grey, massive, micro quartz carbonate vnlts, 90° to fol., iSi
AOB17-030	Argillite	med grey, massive, micro quartz carbonate vnlts, 90° to fol., iSi
AOB17-031	Argillite	Black, iSi, w - mfol, few quartz carbonate vnlts 90° to fol.
AOB17-032	Argillite	ifol, ifrac to mfrac, quartz carbonate fill, mm scale, quartz carbonate vnlt Xcutting and within fol to 5mm
AOB17-033	Argillite	ifol, ifrac to mfrac, quartz carbonate fill, mm scale
AOB17-034	Argillite	Knobby texture, med grey, w-loc. moderate fracts.
AOB17-035	Argillite	intensely fol, dk. Grey, i carb (p) and (f)
AOB17-036	Argillite	intensely fol, dk. Grey, mod hairline frac., w quartz carbonate filling, local massive calcite
AOB17-037	Argillite	med. Grey, ifr, Sericite? on fractures,(silky sheen)
AOB17-038	Argillite	knobby texture, med grey, w fract. w to m quartz carbonate vnlts
AOB17-039	Argillite	Black, vfngr, ifr, very weak quartz carbonate vnlts, mm scale
AOB17-040	Argillite	weakly foliated to non foliated, more massive, very dk. grey,
AOB17-041	Argillite	Black, ifr blocky fracts, very weak quartz carbonate to locally intense, no pdo

2017 Black Creek Property Grab/Hand Sample Description

Sample No.	Rock Type	Grab Sample Description
AOB17-042	Argillite	Dk grey, w to m fol, mod quartz carbonate vnlts no pdo, mod fract
AOB17-043	Argillite	Dk grey, w to m fol, mod quartz carbonate vnlts, mod micro fracts & faulting, no pdo
AOB17-044	Argillite	Dk grey, w to m fol, mod quartz carbonate vnlts, one in particular to 0.75cm, icarb alt (p), mod micro fracts & faulting, no pdo
AOB17-045	Argillite	knobby texture, ifrac, med. Grey, m to i quartz carbonate, no pdo
AOB17-046	Argillite	Black, ifr blocky fracts, very weak quartz carbonate to locally intense, no pdo
AOB17-047	Argillite	dk grey, m fol, ifr, msi, w to m quartz carbonate
AOB17-048	Argillite	Black, ifr blocky fracts, very weak quartz carbonate to locally intense, no pdo
AOB17-049	Argillite	Weakly foliated, med grey, mod sil, mod fractures
AOB17-050	Argillite	Med grey, mod hairline fractures, mostly carb filled, mod. pdo
AOB17-051	Cherty Argillite	black, iSi, moderate hairline carb. frac.
AOB17-052	Basalt?	fn to med grained, w - mod frac, w knobby texture, mSi, mgrey - green, local clast? White to buff, msil, brecciated with black angular argillaceous frags, mm to cm size
AOB17-053	Argillite	Med grey, mod hairline fractures, mostly carb filled, mod. Pdo, w fol.
AOB17-054	Cherty Argillite	coinchiodal fracturing, MnO (pyrolusite) coating on locallized fractures, local shear fabric developed
AOB17-055	Cherty Argillite	coinchiodal fracturing, MnO (pyrolusite) coating on locallized fractures, local shear fabric developed
AOB17-056	Argillite	Foliated, m pdo sub parallel to frac. m grey, silver grey sulphide, few single grains, too small to id.
AOB17-057	Argillite	Med grey, mod hairline fractures, mostly carb filled, mod. pdo
AOB17-058	Cherty Argillite	coinchiodal fracturing, MnO (pyrolusite) coating on locallized fractures
AOB17-059	Cherty Argillite	local carb. Nodules to 0.75 cm, mSi, dk. Grey, m frac, blocky
AOB17-060	Argillite	Foliated, knobby texture, med. Grey and wht Quartz vnlts, mm scale, offset boudins right lateral.
AOB17-061	Cherty Argillite	m frac, quartz carbonate hairline fractures, quartz vein to 0.5cm, clear to pale grey
AOB17-062	Argillite	Dk grey, moderate Si (p), w carb alt (p)
AOB17-063	Argillite	dark grey, iSi, more massive, silliliar to 042, Contact Rock?
AOB17-064	Nephrite?	Pale green grey, iSil, mfol
AOB17-065	Nephrite	Jade, medium green, iSil, weakly translucent, need more sample
AOB17-066A	Nephrite?	Pale grey green, iSi, Trace sulphide, Cpy?, non mag, mod fol
AOB17-067	Argillite	ifol, wSil, med to pale grey
AOB17-068A	Cherty Argillite	ifol, med grained, non calc.
AOB17-069	Argillite	massive, dk grey to black, drusy qtz on fracts, blocky fracturing with weak pdo
AOB17-070	Argillite	ifol, mfract within fol, knobby text., weak quartz carbonate clots
AOB17-071	Argillite	isil, m-i fol, weak quartz carbonate mid frac
AOB17-072	Argillite	dark grey, blocky, massive, mfrac, quartz carbonate vnlts with py to 4mm, clotty carb., mSi
AOB17-073	Argillite	black, massive, knobby text, ifr, blue sheen on fracts, vfn gr sulphide? Mo?, Pyrolusite?, weak quartz carbonate in clots and irreg vnlts, w to mod mag.
AOB17-074	Argillite	weakly fol, i micro fract, mod quartz carbonate in clots and irreg. structs.
AOB17-075	Argillite	weak knobby text., mod quartz carbonate vnlts, no pdo, weak mag, ifr
AOB17-076	Argillite	massive, weak hairline quartz carbonate vnlts, mpdo, weak local fol.
AOB17-077	Argillite	black, ifr m fol, w to mod quartz carbonate vnlts hairline.

Sample Description Abbreviations

There are no dashes involved using the modifiers.	
Do Not use 'cb' for crackle breccia, only use cbx	
icbx	intense crackle breccia
5Cb	is a lithology code in the TM legend
BX	Capital BX is only used in Lith codes
5CaiDBX	Intensely Dolomitized Volcanic Breccia

Structure Modifiers	
MFLTZ	Major fault zone
mFLTZ	moderate fault Zone
mflt	moderate fault
wflt	weak fault
jnt(s)	joints
fr,frac	fracture, fractured
fol	foliation, foliated
pdo	preferred direction of orientation

Mineralization	
py	Pyrite
sph	Sphalerite
cpy	Chalcopyrite
tet	Tetrahedrite
aspy	Arsenopyrite
VG	Visible Gold
FeOx	Iron Oxides

VEINS	
Most Quartz Veins contain some carbonate	
QV	Quartz Vein < 30 cm (0.3 m)
QBBX	Quartz Vein Breccia
QSTR	Stringers 10 cm - 30 cm
QVLT	Veinlets > 10 cm
QSTKW	Quartz Stockwork

! All Modifiers & Lithologies are Case Sensitive !	
Alteration	
D	dolomite/dolomitization
Ser	Sericite
Si, Sil	Silica
K	Clay
Chl	Chlorite
G	Graphite
M	Mariposite
T	Talc
Ca	Carbonate/Calcite
Q/Qtz/q/qtz	Quartz
QC / qc	QuartzCcarbonate
alt	Alteration, Altered

Alteration Modifiers	
w	weak
m	moderate
i	intense
(p)	pervasive
(f)	fracture controlled

vfgr	Very fine grained
fgr	Fine grained
mgr	Medium Grained
cgr	Coarse Grained
CSE	Coarse sub to euhedral (Py)
tca	to core axis (angles)
uc	Upper contact
lc	Lower contact
BX	Breccia, Brecciation
cbx	Crackle Breccia

APPENDIX E

BLACK CREEK PROPERTY

2017 COST STATEMENT

2017 Black Creek Sampling Program Cost Statement

Exploration Work type	Comment	Days	Rate	Subtotal*	Totals
Personnel (Name)* / Position	**Field Days (list actual days)**	**Hours**	**Rate**	**Subtotal***	
Donald Bunce/Project Manager	July 6th thru Aug 28 2017	55.5	$40.00	$2,220.00	
Adena Bunce/ Laborer	July 6th thru Aug 28 2017	55.5	$30.00	$1,665.00	
				$3,885.00	**$3,885.00**
Office Studies	**List Personnel (note - Office only, do not include field days**				
Literature search			$0.00	$0.00	
Database & Rock Sample Preparation		17.0	$40.00	$680.00	
Computer modelling			$0.00	$0.00	
Reprocessing of data			$0.00	$0.00	
General research			$0.00	$0.00	
Report preparation	2017 Assessment Rpt. Lesley Hunt	1.0	$5,000.00	$5,000.00	
				$5,680.00	**$5,680.00**
Airborne Exploration Surveys	**Line Kilometres / Enter total invoiced amount**				
Aeromagnetics			$0.00	$0.00	
Radiometrics			$0.00	$0.00	
Electromagnetics			$0.00	$0.00	
Gravity			$0.00	$0.00	
Digital terrain modelling			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Remote Sensing	**Area in Hectares / Enter total invoiced amount or list personnel**				
Aerial photography			$0.00	$0.00	
LANDSAT			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Ground Exploration Surveys	**Area in Hectares/List Personnel**				
Geological mapping					
Regional		*note: expenditures here*			
Reconnaissance		*should be captured in Personnel*			
Prospect		*field expenditures above*			
Underground	Define by length and width				
Trenches	Define by length and width			$0.00	**$0.00**
Ground geophysics	**Line Kilometres / Enter total amount invoiced list personnel**				
Radiometrics					
Magnetics					
Gravity					
Digital terrain modelling					
Electromagnetics	*note: expenditures for your crew in the field*				
SP/AP/EP	*should be captured above in Personnel*				
IP	*field expenditures above*				
AMT/CSAMT					
Resistivity					
Complex resistivity					
Seismic reflection					
Seismic refraction					
Well logging	Define by total length				
Geophysical interpretation					
Petrophysics					
Other (specify)					
				$0.00	**$0.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Drill (cuttings, core, etc.)			$0.00	$0.00	
Stream sediment			$0.00	$0.00	
Soil			$0.00	$0.00	
Rock	**77**	77	$32.51	$2,503.04	
Water			$0.00	$0.00	
Biogeochemistry			$0.00	$0.00	
Whole rock			$0.00	$0.00	
Petrology			$0.00	$0.00	
Other (specify)	Polished Thin Sections	3.0	$0.00	$954.45	
				$3,457.49	**$3,457.49**

2017 Black Creek Sampling Program Cost Statement

Exploration Work type	Comment	Days	Rate	Subtotal*	Totals
(Cont'd)					
Drilling	**No. of Holes, Size of Core and Metres**	**No.**	**Rate**	**Subtotal**	
Diamond				$0.00	
Reverse circulation (RC)			$0.00	$0.00	
Rotary air blast (RAB)			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Other Operations	**Clarify**	**Hrs**	**Rate**	**Subtotal**	
Trenching			$0.00	$0.00	
Exploration Trail Construction			$0.00	$0.00	
Bulk sampling			$0.00	$0.00	
Underground development			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Reclamation	**Clarify**	**Hrs**	**Rate**	**Subtotal**	
After drilling				$0.00	
Monitoring			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Transportation		**Km**	**Rate**	**Subtotal**	
Airfare			$0.00	$0.00	
Taxi			$0.00	$0.00	
truck rental			$0.00	$0.00	
kilometers		1365.00	$0.68	$928.20	
ATV		91.10	$1.00	$91.10	
fuel			$0.00	$0.00	
Helicopter (hours)			$0.00	$0.00	
Fuel (litres/hour)			$0.00	$0.00	
Other			$0.00	$0.00	
				$1,019.30	**$1,019.30**
Accommodation & Food	**Rates per day**	Days			
Groceries			$0.00	$0.00	
Camp Rental			$0.00	$0.00	
Meals			$0.00	$0.00	
Room & Board	2 People 30 days	30.00	$100.00	$3,000.00	
				$3,000.00	**$3,000.00**
Miscellaneous					
Telephone			$0.00	$0.00	
Other			$0.00	$0.00	
				$0.00	**$0.00**
Equipment Rentals					
Field Gear (Specify)				$0.00	
General Camp Supplies	Sample Bags, 1 pkg	1.00	$25.00	$25.00	
				$25.00	**$25.00**
Freight, rock samples			$0.00	$0.00	
		1.00	$40.00	$40.00	
				$40.00	**$40.00**
				TOTAL Expenditures:	**$17,106.79**