

# **Geochemical Sampling Program on the Natlan Project**

Omineca Mining Division

Tenure Numbers:

1039699, 1043207, 1043213, 1043214,  
1049165, 1049166

**UTM Zone 09  
608000E 6141000N  
(NAD 83)  
55°24'N, 127°18'W  
NTS: 093M/06**

Work performed August 25-September 03, 2016  
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## Table of Contents

### TITLE

Item 1: Summary.....	1
Item 2: Introduction.....	3
2.1 Qualified Person and Participating Personnel.....	3
2.2 Terms, Definitions and Units.....	3
2.3 Source Documents.....	3
2.4 Limitations, Restrictions and Assumptions.....	4
2.5 Scope.....	4
Item 3: Reliance on Other Experts.....	4
Item 4: Property Description and Location.....	4
Item 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography.....	6
Item 6: History.....	8
Item 7: Geological Setting and Mineralization.....	15
7.1 Regional Geology.....	15
7.2 Property Geology.....	17
Item 8: Deposit Types.....	20
8.1 Porphyry Copper/Molybdenum.....	20
8.2 Polymetallic Silver/Lead/Zinc Veins.....	21
8.3 Subvolcanic Copper/Gold/Silver Veins.....	22
8.4 Epithermal (low Sulphidation).....	23
Item 9: Exploration.....	24
Item 10: Drilling.....	26
Item 11: Sample Preparation, Analyses and Security.....	26
Item 12: Data Verification.....	27
Item 13: Mineral Processing and Metallurgical Testing.....	27
Item 14: Mineral Resource Estimates.....	27
Item 15: Adjacent Properties.....	27
15.1 Bell Copper Mine (Minfile 093M 01, rev. McMillan, 1991).....	27
15.2 Granisle Mine (Minfile 093L 146, rev. Duffett, 1987).....	28
15.3 Morrison-Hearne Hill Project (From Simpson, 2007).....	30
15.4 Wolf (Minfile 093M 008, rev. McMillan, 1991).....	30
15.5 Huckleberry (Minfile 093E 037, rev. Meredith-Jones, 2012).....	31
15.6 Berg (Minfile 093E 046, rev. Flower, 2009).....	31
15.7 Poplar (Minfile 093L 239, rev. Duffett, 1988).....	32
15.8 Mt. Thomlinson (Minfile 093M 080, rev. Owsjacki, 1990).....	33
15.9 Fireweed (Minfile 093M 151, rev. Payie, 2009).....	34
15.10 Equity Silver (Minfile 093L 001, rev. Robinson, 2009).....	35
Item 16: Other Relevant Data and Information.....	36
Item 17: Interpretation and Conclusions.....	36
Item 18: Recommendations.....	38
Item 19: References.....	40
Item 20: Date and Signature Page.....	43
Item 21: Statement of Expenditures.....	44
Item 22: Software used in the Program.....	45
Item 23: Appendices.....	46

**List of Illustrations**

Figure 1: Property Location Map.....	5
Figure 2: Natlan Project Claim Map.....	6
Figure 3: Stacked RRs-Precious Metals NH-15, NH-23 - NH-25 are off scale for Au..	10
Figure 4: Stacked RRs-Base Metals.....	11
Figure 5: Stacked RRs-Alteration Elements.....	11
Figure 6: East Transect.....	12
Figure 7: 2012 North Extension.....	13
Figure 8: Main Road Transect.....	13
Figure 9: Northwest Spur Road Transect.....	14
Figure 10: Southwest Spur Road Transect.....	14
Figure 11: Regional Geology.....	15
Figure 12: Property Geology.....	13
Figure 13: Rock Sample Location Map.....	25
Figure 14: 2016 Central Transect.....	26

**List of Tables**

Table 1: Claim Data.....	5
Table 2: Geology Legend.....	16
Table 3: Rock Sample Descriptions.....	24
Table 4: Humus Sample Descriptions.....	25
Table 5: Resources and Production of major Babine Porphyry Deposits.....	27

**List of Photographs**

Plate 1: Satellite Image of Natlan Project.....	7
Plate 2: Noranda Exploration claim post.....	8
Plate 3: Probable Silica Alteration.....	9

**Item 1: Summary**

The Natlan/Ace property consists of 6 mineral tenures (217 cells) totalling 3970.67ha. The property lies roughly 70 km north of Smithers and 23 km northeast of New Hazelton in west-central B.C on mapsheet NTS 93M/06 at latitude 55°24'N, longitude 127°18'W. Logging roads extend from Highway 16 up the Natlan and Itzul Creek valleys to within 2km to the west of the Ace prospect (Minfile 093M 036) and 5km to the east of the Natlan showing, (Minfile 093M 033).

The property covers a large Late Cretaceous Bulkley Plutonic Suite monzonite to quartz-monzonite stock intruding Middle Jurassic to Late Cretaceous Bowser Lake Group sediments. The sediments are domed away on all sides from the intrusive body and it is thought that the area represents the roof zone of a shallowly buried mineralized pluton.

The area was initially explored as part of the porphyry boom in the mid-1960s. The Natlan showing was discovered in 1974 by Canadian Nickel Company Limited and consists of an extensive area of molybdenum mineralization primarily on the eastern margin of the large monzonite intrusion. Composite chip sampling, of unspecified widths, returned values up to 700ppm copper and 1650ppm molybdenum.

The area was explored by Mastodon-Highland Bell Mines Ltd. in 1967, following up on a regional silt sampling program. W.R. Bacon P. Eng., chief geologist for the program, stated that (in comparing) "results from thousands of silt and soil samples taken by the company in the area between Hazelton and Babine Lake, the majority of the samples taken (on the Ace property) contained abnormal amounts of copper. A lesser number returned anomalous molybdenum values." At that time, the company had outlined an open ended >500ppm copper-in-soil anomaly in excess of 1800m long and up to 800m wide. Maximum values in the 1967 geochemical survey reached 1850ppm copper and 500ppm molybdenum in soils. The companies noted the extensive leaching of metals from the surface environment and believed that better grades could be found below the zone of oxidation.

Exploration by Teck Corp., in 1997, confirmed the anomalous soils at the Ace showing and identified the presence of significant porphyry style mineralization in sericite altered granodiorite. Two significant samples from the program include a 5m chip sample assaying 910ppb Au, 36gm/t Ag and 1169ppm Cu and a second 10m chip sample, deeper into the porphyry system, that returned 578ppm Ag, 1219ppm Cu and 4138ppm Pb. A short program by Paget Resources in 2008 returned values to 0.6% Cu, 0.245% Mo, 3.27ppm Au and 200ppm Ag from select grab samples on the Ace target.

Satellite Aster Imagery analysis reveal wide areas of iron oxide alteration that coincides with the historical Ace soil anomaly and other gossanous areas on the claim group. Coincident with the anomaly at the Ace showing is moderate to strong Hydroxyl alteration (clay alteration), probable Alunite alteration (indicative of advanced argillic alteration) and probable Sericite alteration supporting the observations of moderate to strong, pervasive sericite alteration over a large portion the dykes present (Evans, 1998). One kilometre to the north and paralleling the Ace anomaly, the Aster images

showed a wide area of intense silica alteration with a strike length of approximately 4500m.

Studies funded by Geoscience BC over the Kwanika and Mt. Milligan deposits compared various soil geochemical methods and assessed their usefulness in detecting blind mineralization. It was found that sampling the humus Ah horizon produced the most convincing, high to moderate contrast apical or rabbit-ear responses for Cu, Au, Ag, W, As, Sb and Ca over mineralization down to depths of up to 300m at Kwanika (Heberlein and Samson, 2010).

Sampling by the author in 2012 confirmed earlier C-horizon soils across the highly gossanous area at the Ace showing. Results returned an average of 528ppm Cu over 950m with maximum values to 1410ppm Cu, 742ppm Mo, 1880ppm Pb and 2220ppm Zn. Approximately 2000m to the west and on strike with the intense silica alteration, humus-Ah samples identified an area 1150m wide that is highly anomalous in base and precious metals. A 900m section of this anomaly averages 0.080ppm Au, with values up to 0.397 ppm Au from fire assay analysis. Calcium and strontium form “rabbit ear” anomalies peripheral to the apical gold anomaly.

Sampling in 2013 outlined a number of multi-element anomalies that appear to trend to the northeast. Response Ratios are moderate to strong in Mo, Cu, Fe, Bi, Au and Ag as well as other elements. Extensive humus sampling expanded the 2012 anomalous zone and identified a number of significant Ah anomalies along strike and in suspected parallel structural zones. Response Ratios for Au reached a maximum of 31 x background within a 400m wide anomaly with narrower widths anomalous in Cu to 14, Fe to 9, As to 20 and Bi to 8 x background. This 2000m long anomaly is open to both the northeast and southwest.

The 2016 program collected fifteen humus samples over a distance of 1400m approximately 150m west of the strong Au-in-humus anomaly discovered in 2012. The line revealed several areas anomalous for precious and base metals with widths of up to 300m and RRs of up to 540 x background for Au. Prospecting located mineralized float near the north end of the line within the previously mention 300m wide multi-element anomaly which included Au RRs up to 335 x background. This massive sulphide cobble assayed 17,952.5ppm Ag, 2.52 ppm Au, 1.63% Cu, >20% Pb and 15.8% Zn. Several other float samples returned strongly anomalous values in Cu up to 2340ppm, Mo to 214ppm, Pb to 732ppm and Ag up to 32.5ppm.

The claims that are subject to this report are 100% owned by K. Galambos in partnership with Ralph Keefe of Francois Lake, BC. The surrounding claims are at present owned by Vector Resources Inc. awaiting transfer as part of an option agreement with a third party. This agreement has not been formalized at the time of the writing of this report.

It is the author's belief that previous exploration programs on the Natlan and Ace showings demonstrate the potential for significant porphyry style mineralization. Additional exploration in the form of geological, geophysical and geochemical surveys

and drilling is warranted to determine if one or more economic mineralized bodies are present within the existing property boundaries.

## **Item 2: Introduction**

This report is being prepared for the author for the purposes of filing assessment on the claims comprising the Natlan property and to create a base from which further exploration will be completed.

### **2.1 Qualified Person and Participating Personnel**

Mr. Kenneth D. Galambos P.Eng. supervised and participated in the current exploration program and interpreted the data to focus further exploration and to make recommendations to test the economic potential of the area. One trip was made to the property in August, 2016 and included the assistance of Ralph Keefe and Brian Keefe, both of Francois Lake, BC.

This report describes the property in accordance with the guidelines specified in National Instrument 43-101 and is based on historical information and an examination and interpretation of technical data covering the property. This exploration included a field program completed by the author over a time period of August 25-29, 2016 and included one extra day to make notes and sort samples.

### **2.2 Terms, Definitions and Units**

- All costs contained in this report are denominated in Canadian dollars.
- Distances are primarily reported in metres (m) and kilometres (km) and in feet (ft) when reporting historical data.
- GPS refers to global positioning system.
- Minfile showing refers to documented mineral occurrences on file with the British Columbia Geological Survey.
- The term ppm refers to parts per million, equivalent to grams per metric tonne (g/t).
- ppb refers to parts per billion.
- The abbreviation oz/t refers to troy ounces per imperial short ton.
- The symbol % refers to weight percent unless otherwise stated. 1% is equivalent to 10,000ppm.
- Elemental and mineral abbreviations used in this report include: arsenic (As), antimony (Sb), copper (Cu), gold (Au), iron (Fe), lead (Pb), molybdenum (Mo), silver (Ag), zinc (Zn); arsenopyrite (Aspy), chalcopyrite (Cpy), molybdenite (MoS<sub>2</sub>) and pyrite (Py).

### **2.3 Source Documents**

Sources of information are detailed below and include the available public domain information and private company data.

- Research of the Minfile data available for the area at <http://www.emp.gov.bc.ca/Mining/Geoscience/MINFILE/Pages/default.aspx>
- Research of mineral titles at <https://www.mtonline.gov.bc.ca/mtov/home.do>

- Review of company reports and annual assessment reports filed with the government at <http://www.empr.gov.bc.ca/Mining/Geoscience/ARIS/Pages/default.aspx>
- Review of geological maps and reports completed by the British Columbia Geological Survey at <http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/MainMaps/Pages/default.aspx>.
- Published scientific papers on the geology and mineral deposits of the region and on mineral deposit types.

## **2.4 Limitations, Restrictions and Assumptions**

The author has assumed that the previous documented work in the area of the property is valid and has not encountered any information to discredit such work.

## **2.5 Scope**

This report describes the geology, previous exploration history, interpretation of regional and property specific geophysical, geochemical surveys and enhanced aster satellite imagery and the mineral potential of the Natlan project. Research included a review of the historical work that related to the immediate and surrounding areas. Regional geological data and current exploration information have been reviewed to determine the geological setting of the mineralization and to obtain an indication of the level of industry activity in the area.

### **Item 3: Reliance on Other Experts**

Some data referenced in the preparation of this report was compiled by geologists employed by various companies in the mineral exploration field. These individuals would be classified as “qualified persons” today, although that designation did not exist when some of the historic work was done. The author believes the work completed and results reported historically to be accurate but assumes no responsibility for the interpretations and inferences made by these individuals prior to the inception of the “qualified person” designation.

### **Item 4: Property Description and Location**

The Natlan property consists of 6 mineral tenures (217 cells) totalling 3970.67ha, on Natlan Peak, 70 km north of Smithers and 23 km northeast of New Hazelton in west-central B.C. The property is located on NTS 93M/06, at 608000E 6141000N, UTM Zone 09, (latitude 55°24'N, longitude 127°18'W). Logging roads extend from Highway 16 up the Natlan and Itzul Creek valleys onto the existing claims. The claims lie within the Omineca Mining Division and are administered out of Smithers, BC.

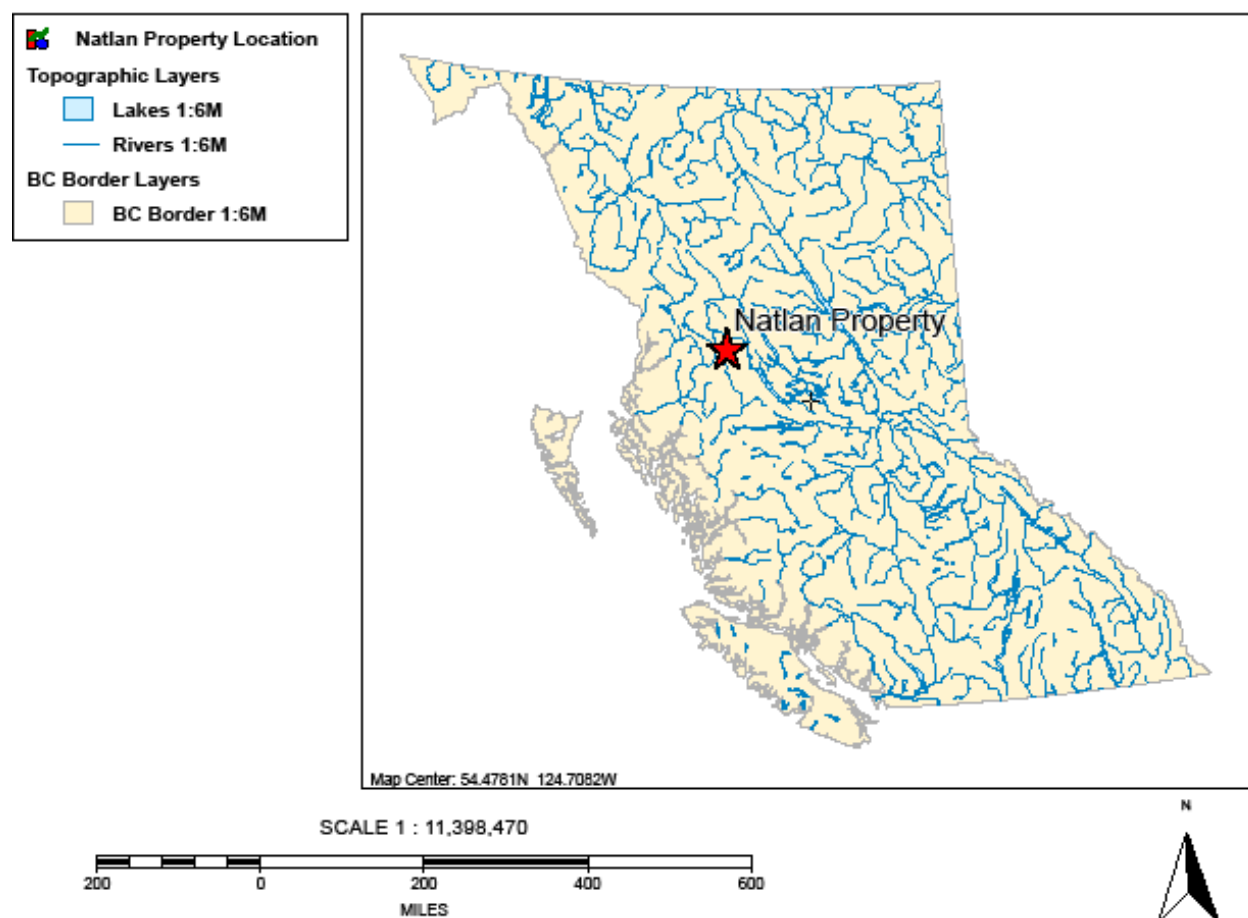


Figure 1: Property location map

Upon acceptance of this report, the highlighted mineral tenures will have their expiry dates moved to **October 1, 2022**.

Table 1: Claim Data

Tenure #	Claim	Issue date	Expiry date	Area (Ha)	Owner
1039699		2015/Nov/02	2022/Oct/01	110.24	GALAMBOS, KENNETH D 100%
1043207		2016/Apr/02	2022/Oct/01	110.23	GALAMBOS, KENNETH D 100%
1043213		2016/Apr/02	2022/Oct/01	55.12	GALAMBOS, KENNETH D 100%
1043214		2016/Apr/02	2022/Oct/01	36.74	GALAMBOS, KENNETH D 100%
1049165		2017/Jan/13	2018/Jan/13	1819.04	Vector Resources Inc. 100%
1049166		2017/Jan/13	2018/Jan/13	1839.3	Vector Resources Inc. 100%
			Total	3970.67	

The Natlan/Ace Property is 100% owned by Ken Galambos in partnership with Ralph Keefe of Francois Lake, BC.

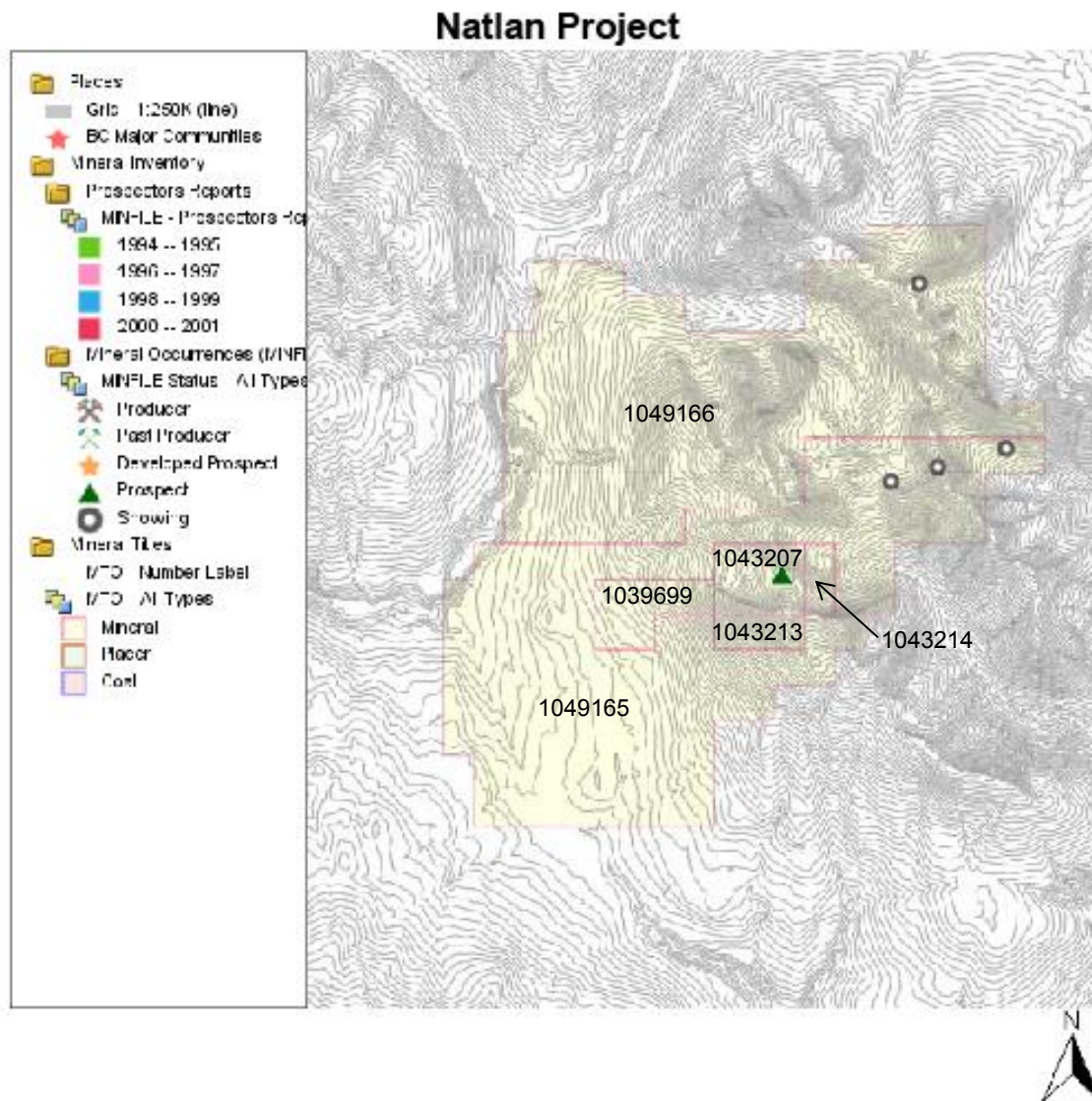


Figure 2: Natlan Project claim map

The Claims comprising the Natlan property as listed above are being held as an exploration target for possible hardrock mining activities which may or may not be profitable. Any exploration completed will be subject to the application and receipt of necessary Mining Land Use Permits for the activities recommended in this report. There is no guarantee that this application process will be successful.

The Claims lie in the Traditional territories of a number of local First Nations and to date no dialog has been initiated with these First Nations regarding the Natlan property. There is no guarantee that approval for the proposed exploration will be received.

#### **Item 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography**

The Natlan property is located in the Babine Range of the Skeena Mountains and is accessed with roughly 50km of logging roads. The Suskwa Forest Road exits to the

north off Highway 16 at a point approximately 11km east of New Hazelton. The main haul road continues for 11km to a junction with the Itzul West Forest Service Road which eventually parallels the Shegunia River to a point within 2km to the west of the Ace showing. The Suskwa Forest Road continues through the eastern part of the claim group and comes within 5km to the east of the Natlan showing at a point 17km from the Itzul West junction.

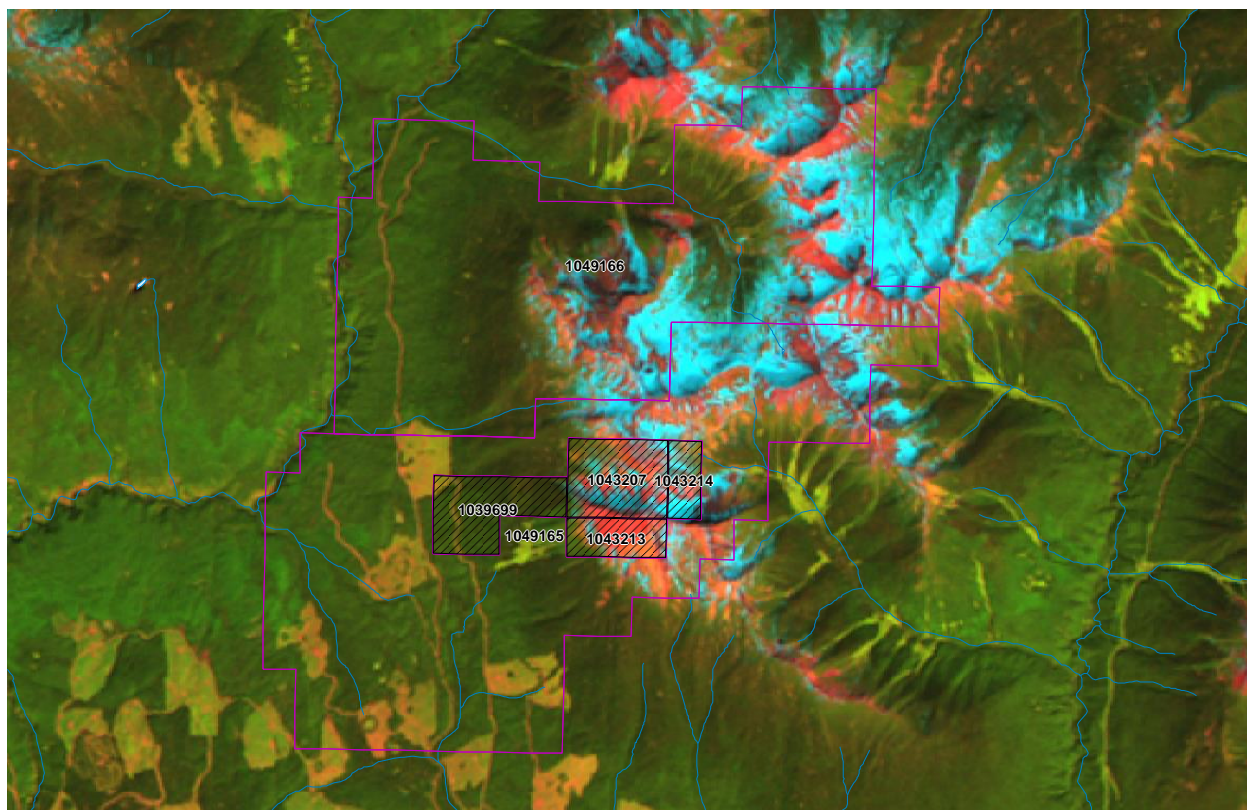


Plate 1: Satellite Image of Natlan Project

Elevations on the property range from 675m to 1872m, and topography is rugged, with steep cliff exposures and extensive talus fans in the upper reaches of Natlan Peak. Much of the property is above treeline in alpine terrain, with subalpine fir and spruce at lower elevations. The area receives moderate precipitation of 500 to 700mm, with snow cover from September to June.

Lodging and groceries are available in the small community of New Hazelton while nearby centers such as Smithers and Terrace host regional airports serviced from Vancouver and businesses such as helicopter charter companies and building supply stores. Both communities support diamond drilling and exploration service companies.

The lower-relief areas near the property contain adequate space for concentrator site, tailing ponds or waste dumps required in any contemplated mine operation. A residential capacity power line is located along Highway 16, a distance less than 20km, and could easily be routed into the Property along existing roads.

**Item 6: History**

The area was explored by Mastodon-Highland Bell Mines Ltd. in 1967 following up on a regional silt sampling program. The company completed geology and geochemical surveys over an area that had been identified as having “widespread copper mineralization over a substantial area” (Bacon, 1967). At that time, the company had outlined an open ended soil anomaly, generally greater than 500ppm and up to 1500ppm Cu and up to 500ppm Mo, in excess of 1800m long and up to 800m wide.

The Natlan showing, approximately 3500m to the north, was discovered in 1974 by Canadian Nickel Company Limited and consists of an extensive area of molybdenum mineralization, primarily on the eastern margin of a large Bulkley intrusive. Composite rock-chip sampling of highly oxidized, gossanous intrusive returned Mo values to 1650ppm and Cu to 700ppm over an area 3600m x 1800m.

Noranda Exploration staked the Ace area repeatedly between 1971 and 1987 but no records of any work completed have been located in the public domain.



Plate 2: Noranda Exploration claim post

In 1997, Teck Corp. completed geological and geochemical surveys in the central part of the Ace soil anomaly. Results confirmed the anomalous soils over an area up to 500m wide and identified the presence of significant porphyry style mineralization in sericite altered granodiorite. Rock sampling returned copper assays commonly 0.1- 0.48%, silver values between 0.4- 578ppm and gold values from 5-910ppb. Chip sampling returned 910ppb Au, 36gm/t Ag and 1169ppm Cu over 5m from moderately sericite altered granodiorite with moderate quartz stockwork with occasional arsenopyrite veinlets.

Paget Resources completed a two day evaluation of the Ace target in 2008 with select rock samples returning results up to 0.6% Cu, 0.245% Mo, 3.27gm/t Au and 200gm/t Ag from samples of mineralized intrusive and sedimentary rocks.

In 2011, the author completed a review and interpretation of Regional Geochemical Survey (RGS) data to determine drainages containing anomalous elements commonly associated with porphyry copper-molybdenum deposits. The review found that the Natlan Peak area is highly anomalous in, antimony (6.9ppm), arsenic (55ppm), gold (38ppb), mercury (180ppm), and molybdenum (12ppm) and moderately anomalous in

copper (70ppm). The eastern half of the claim block has a precious metal enhancement possibly due to being higher in a porphyry environment.

An interpretation of the regional geophysical surveys was completed to assess the claim area for magnetic electromagnetic and gravity anomalies. The majority of the claim group is underlain by a large 1<sup>st</sup> Vertical Derivative magnetic anomaly which is intimately associated with the surface exposure of a small Bulkley intrusion. The south eastern area has what appears to be two small buried intrusions at the intersection of NE and NW trending magnetic linears which may reflect faulting. The Ace soil anomaly is associated with one of the NE trending zones.

Orthorectified 14 band Aster images (with enhancement to map sericite; ferrous oxide (FeO); hydroxyl alteration: probable kaolinite - probable alunite zones; and silica alteration zones) were studied and compared to geology and geophysical interpretations. The ferrous oxide (FeO) alteration coincided well with highly gossanous areas of intrusive activity or areas of hornfelsing of the overlying sedimentary rocks in the area of the Ace soil anomaly. The image and flights over the property show extensive gossanous areas over large areas of the project.

Hydroxyl alteration images show widespread sericite and clay alteration at the Ace anomaly which was verified by field observations. Weak possible silica alteration is mapped in the area of the historic sampling. An intense area of probable silica alteration is indicated approximately 1000 metres to the north with an even larger area along strike to the north east. The strike length of these Probable Silica zones is approximately 4.5km. Silica alteration is also seen on the west, north and northeastern margins of the Bulkley intrusion.

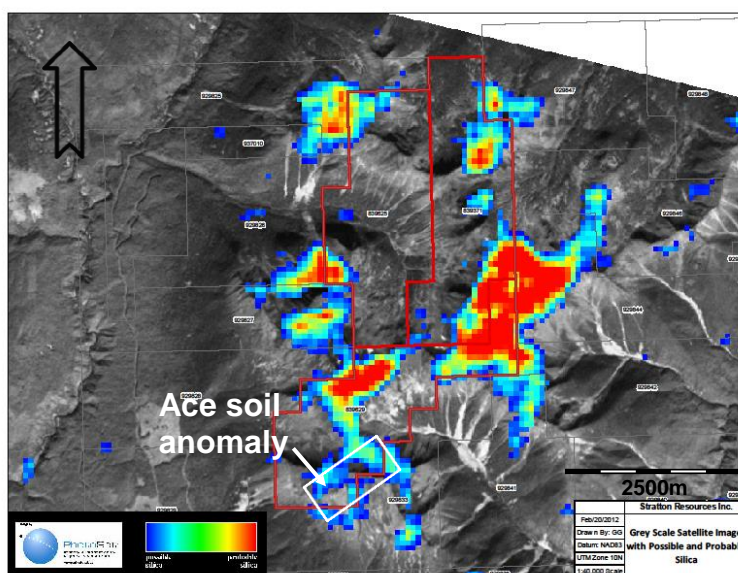


Plate 3: Silica Alteration Probable

In 2012, two trips were made to the property by the author. Initially, a helicopter was used to access the upper parts of the claim group in the area of the historic Ace showing. Fourteen chip and selective grab samples of outcrop and talus were collected in an attempt to determine the precious metal content of the mineralized system. Rock outcroppings made up roughly 90% of the immediate ridge top but quickly became buried in talus of undetermined thickness to the west. Small islands of bedrock could be seen on the western slopes while the tall cliff at the historic Ace showing exposures were in abundance at the headwaters of the eastern drainage. Much of the area was

highly gossanized from the dyking which cuts obliquely across the ridge from the northeast to the southwest.

Results from the program suggest being at the top of a high level porphyry environment. Narrow sulphide veining containing abundant (2.0-18.9%) arsenopyrite returned precious metal values of 177ppm-210ppm Ag and 0.74ppm-3.16ppm Au. Sheeted quartz veins and stockwork quartz +/- sulphides were in evidence. C-horizon soils were collected in two lines during the program. One line was run along the ridge top, to duplicate Teck's 1997 L-2 line. Results averaged 528ppm Cu over a distance of 950m with individual elemental values up to 11ppm Ag, 886ppm As, 1410ppm Cu, 742ppm Mo, 1300ppm Pb, 404ppm Sb and 2220ppm Zn. A second line was completed 125m west of the ridgeline and deeper into the porphyry system. The line returned much stronger values with silver averaging 6.3ppm over 700m and 15.45ppm over 250m. The lower line also averages 200ppm As, 592ppm Cu, 70.6ppm Mo, 395ppm Pb, 160ppm Sb and 651ppm Zn over its entire 700m length.

Humus Ah samples were collected adjacent to a logging road roughly 2000m west of and along strike of the mineralization at the Ace showing. Samples were taken at 50m intervals over a distance of 2650m. Results returned moderate to high contrast Response Ratios for Mo, Cu, As, Ag, W and a host of other elements. Fire assay of the Ah samples returned a very high contrast Au anomaly. Results averaged 80ppb Au over 900m and peaked at 397ppb. Response Ratios (RRs) for the anomaly averaged 159 x background with a maximum RR of 794 x background for Au.

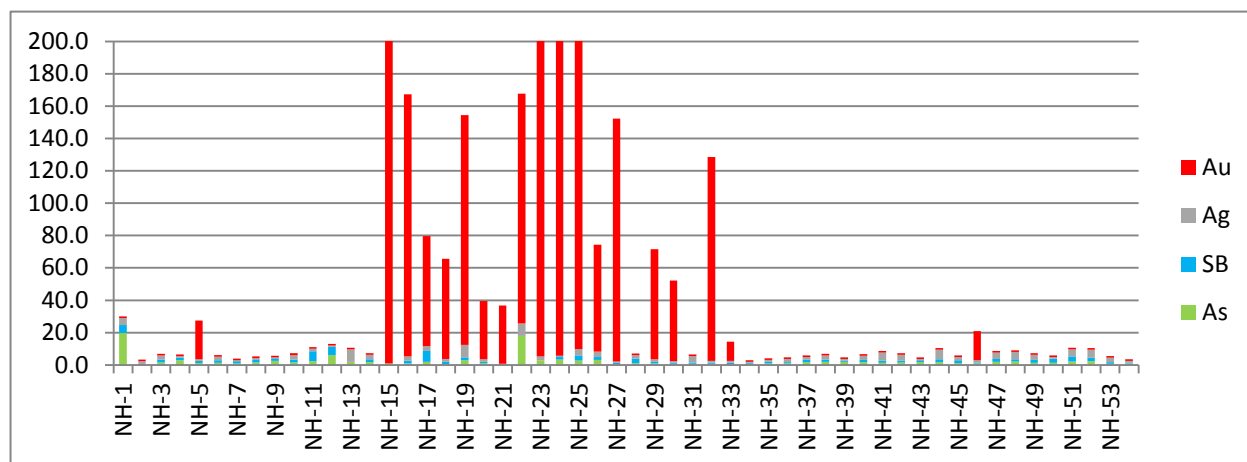


Figure 3: Stacked RRs-Precious Metals (NH-15, NH-23-NH-25 are off-scale for Au)

Copper is only weakly anomalous within the gold anomaly and forms a narrow 100m wide anomaly immediately to the north that reaches 8.4 x background. The area is highly anomalous in Lanthanum (La) suggesting the presence of a mineralized acid intrusion below the area.

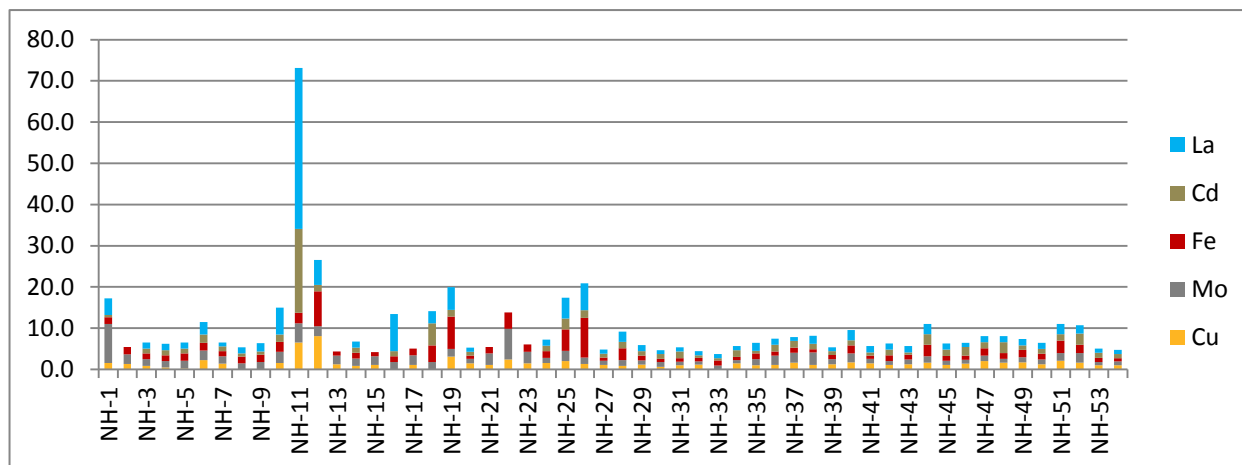


Figure 4: Stacked RRs-Base Metals

The gold anomaly has a corresponding partial “rabbit ear” anomaly for both Ca, Sr and Mn which typically form at the edges of an underlying, oxidizing, sulphide body.

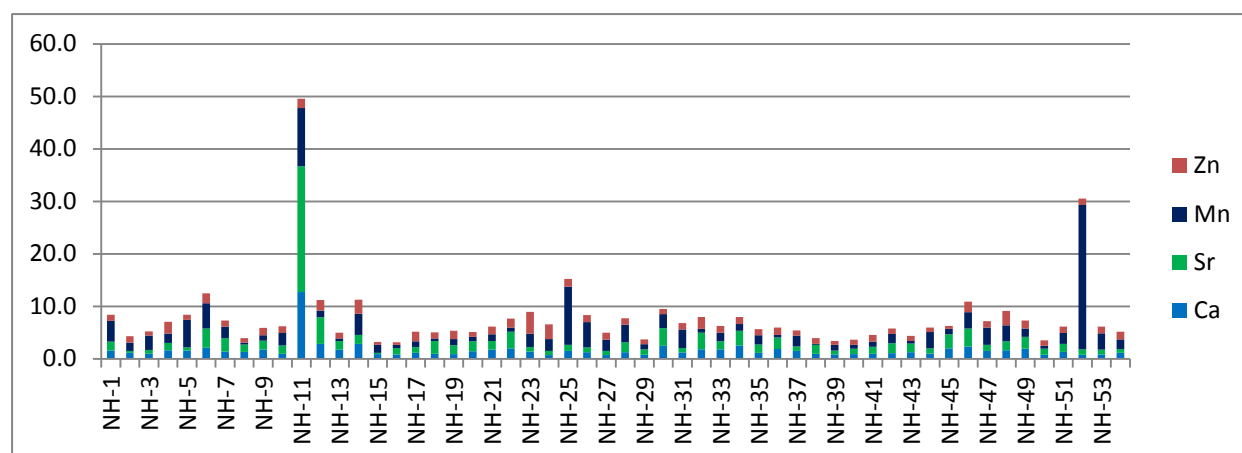


Figure 5: Stacked RRs-Alteration Elements

In 2013 the author with the assistance of Ralph Keefe completed an extensive exploration program on the Property. Assays were graciously completed with the assistance of Anglo American PLC. The lower Ace showing area was briefly visited and sampled. In the Ace showing area, several semi-massive sulphide and quartz sulphide veins were identified which returned significant values from chip and selective grab sampling. Precious metal values ranged up to 1.037ppm Au and 275.6ppm Ag, 2.36% Pb and 3.96% Zn with overlimits of As and Sb from sample 45078, a 1m subcrop chip of massive arsenopyrite/quartz/sphalerite/hematite veining. Base metal values ranged up to 1.16% Cu in sample 45064, to 502ppm Mo in sample 45077. Zn values of up to 6.63% in sample 45059 also contained 12.5% Pb and 168.3ppm Ag.

Fine to medium grained sediments underlying the Ah Au anomaly returned only background values and did not explain the significant Au anomaly identified in 2012 Ah sampling. The source for the Au may lie beneath the sedimentary cover.

A number of float samples returned significant base and precious metal values from the western areas of the property. Sample 45170 returned 2.5ppm Au, 0.28% Cu from a sub-angular, highly chloritic, semi-massive sulphide float sample.

The 2013 program included a comprehensive Ah sampling program adjacent to all of the access roads on the property in 2013. A total of 158 humus Ah samples were collected at 100m intervals over a distance of roughly 15.3km. One line was run 300-400m east of the 2012 Ah transect while other lines followed alongside existing logging roads on or near the property, which resulted in line spacings generally between 400m and 1400m. Humus samples were analysed following the methodologies outlined in GBC 2010-03 and resulted in much lower yet statistically significant Au values. Results of the survey returned moderate to highly anomalous Response Ratios for, Mo, Cu, Fe, As, Au, Ag as well as other elements

The following charts offer transects across the property at a number of locations. Care should be taken in interpreting the data as most sampling lines followed existing roads for ease of sample collection and the lines are not straight. The data is presented from the east transect to the west with all charts having north to the left and south to the right. (ie. looking east).

The eastern Ah line returned a number of 100m-400m wide multi-element anomalies with Response ratios for Mo up to 11, Cu to 6, As to 36, Ag to 7 and Au to 12 x background. The strongest and widest anomaly remains open to the south.

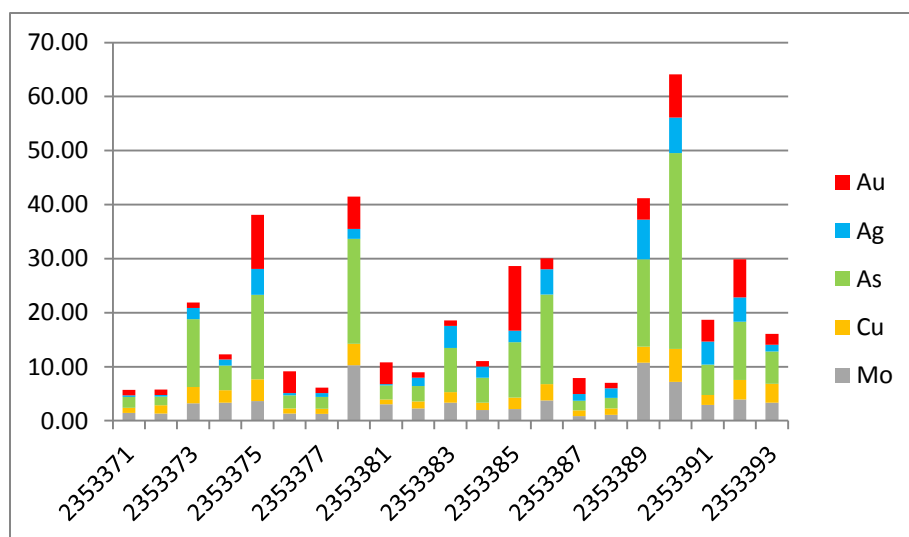


Figure 6: East Transect

Additional sampling extended the multi-element anomaly that was identified in the 2012 to at least a 300m width. The 900m wide Au anomaly is purposely omitted from the chart to highlight the smaller anomaly present at the north end of the 2012 line. Response Ratios for Au are between 6 and 13 x background. This anomaly remains open to the north.

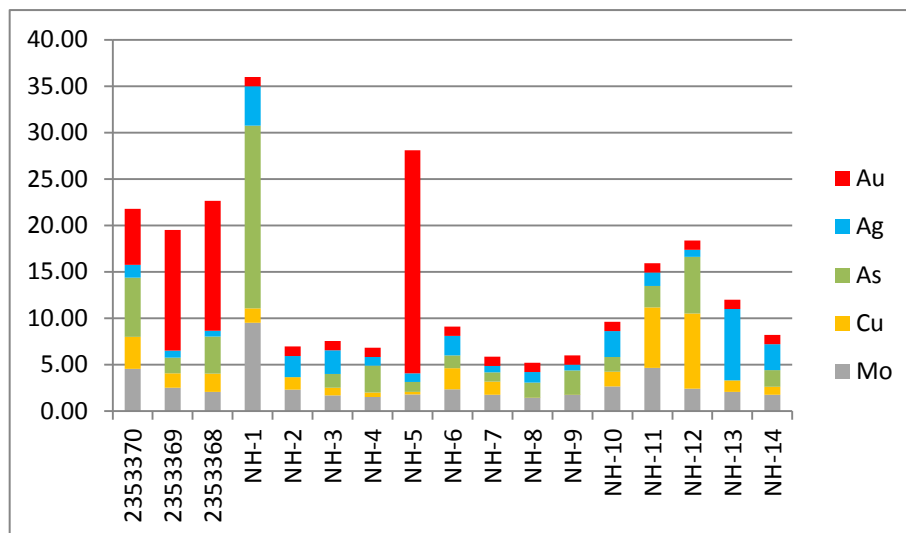


Figure 7: 2012 North Extension

The main road through the western part of the property was sampled for almost its entire length. A total of 8000m returned a number of single station anomalies and several up to 200m in width. The north end of the line is distinctly anomalous in As towards the arsenopyrite showing drilled by Amarc in 2006. The company did not file the drilling for assessment as only minor, narrow intercepts of Au were found in the two holes drilled. A 200m wide Au anomaly is present near the end of the line with Response Ratios of up to 31 x background. A number of sample sites near the centre of the line returned Response Ratios of greater than 10 x and up to 26 x background. for Au.

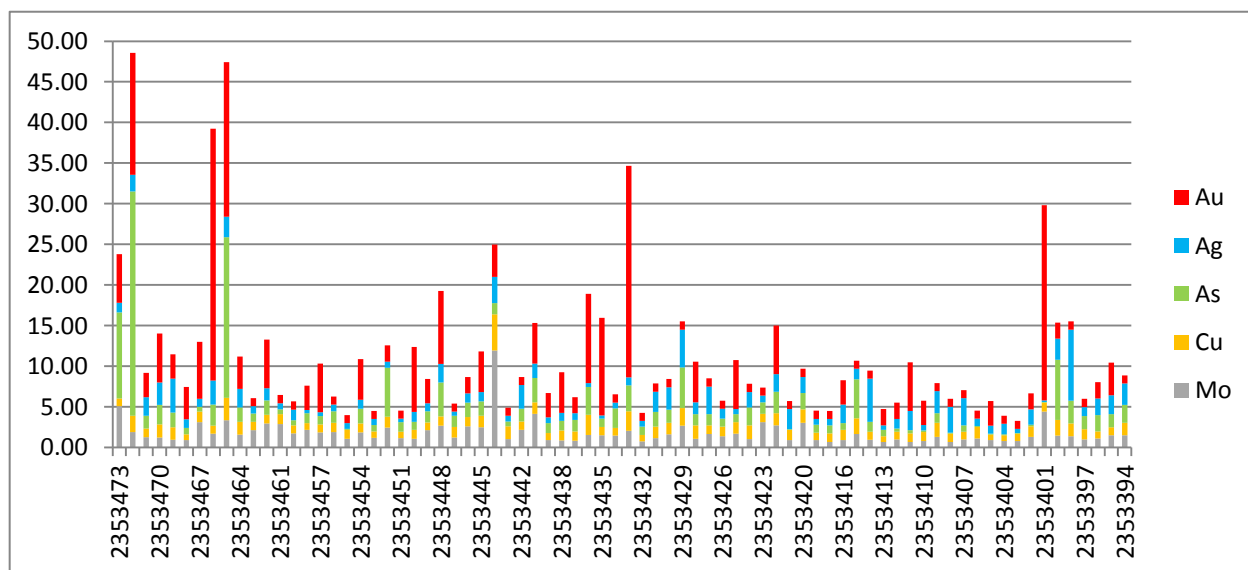


Figure 8: Main Road Transect

Two spur roads were sampled to the west of the main road. The northwestern spur, along strike of the silica alteration zone, identified in satellite imagery analysis, returned several single site multi-element anomalies with significant Cu/Ag Response Ratios up to 5.5 x background for Cu and 11 x background for Ag as well as at least two anomalies at least 100m wide. Au Response Ratios reached maximums of 16 x background.

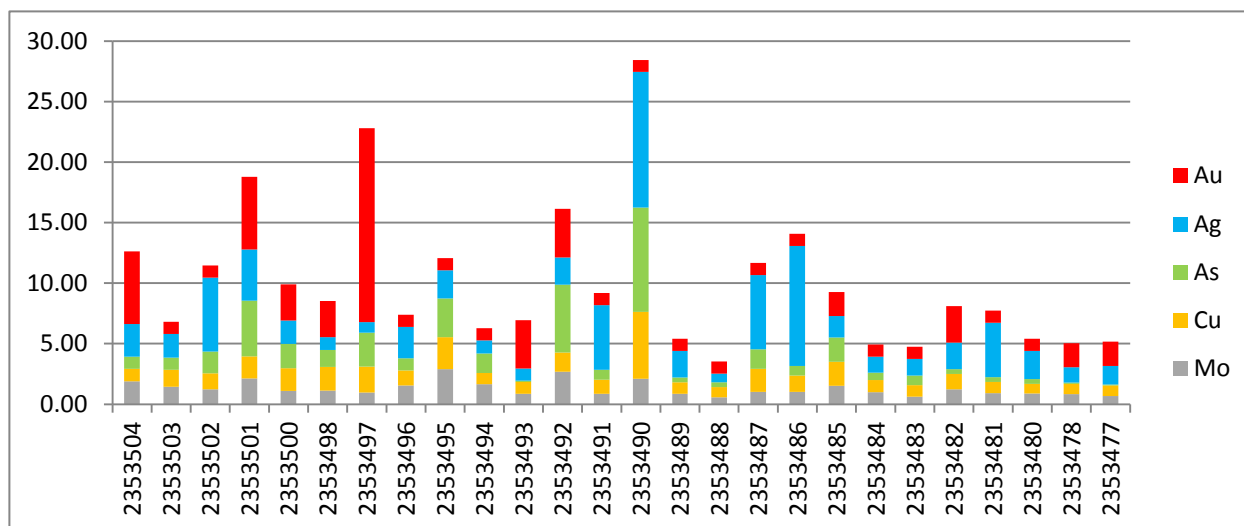


Figure 9: Northwest Spur Road Transect

The southwest spur, along strike of the Ace mineralized system, returned a number of multi-element anomalies at least 200m and up to 300m in width. Au Response Ratios at three sites are in excess of 10 x background. Response Ratios in either Ag or Au is 5 x background or greater for more than 500m at the north end of the line.

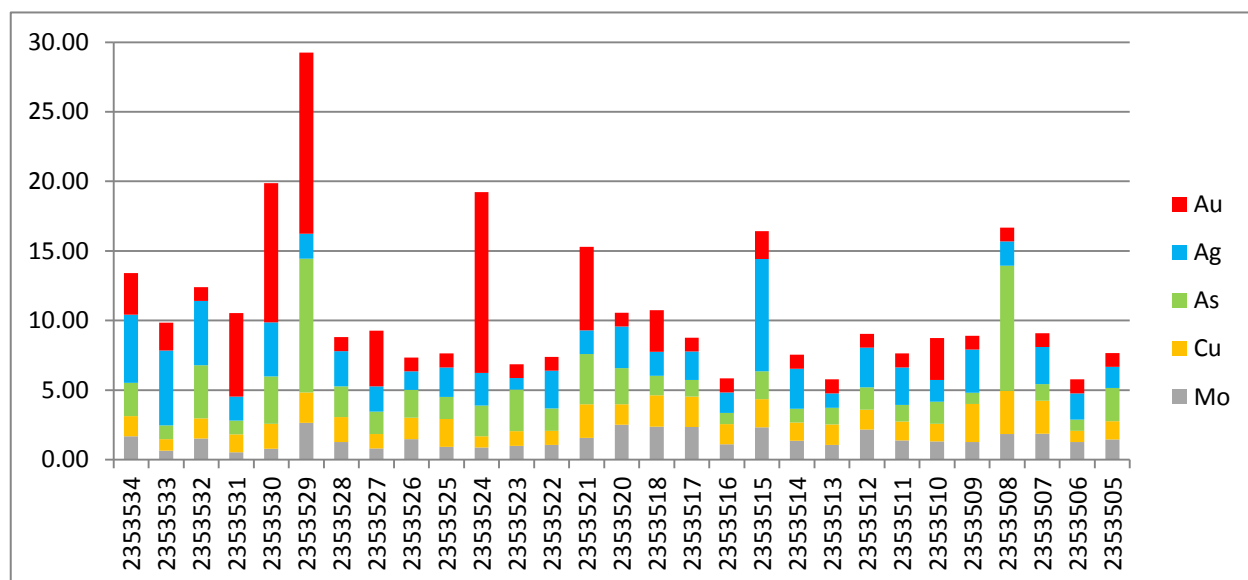


Figure 10: Southwest Spur Road Transect

## Item 7: Geological Setting and Mineralization

### 7.1 Regional Geology

The Natlan claims lie on the Skeena arch of the Intermontane Tectonic Belt (Gidluck, 1974). Although the claims are overlain by extensive overburden, information on the regional geology of the area is available through old assessment reports done on nearby, currently lapsed claims. The driving force for mineralization in the area is the many “granitic” stocks and plutons which have intruded into host sandstones, siltstones, and greywackes of the Bowser Basin host rocks (Evans, 1998). The Bowser Basin sediments have been found to be Upper Triassic to Lower Cretaceous in age and appear to warp upwards by the intruding pluton (Gidluck, 1974). The sediments are made up by a shallow marine-lacustrine alluvial suite which conformably overlies the younger Hazelton Group (Evans, 1998). The “granitic” intrusions are Late Cretaceous Bulkley intrusives varying in composition from granodiorite to diorite (Evans, 1998). The Bowser Basin is also invaded by Later Tertiary Nanika and Babine intrusives which take the form of small plugs (Evans, 1998).

Regional mapping to the north suggests an anticlinal structure in the sediments immediately on strike with the Bulkley Intrusive body and approximately 13 km to the northwest of the intrusion (Gidluck, 1997). The regional structure of the Natlan Property area is dominated by block faulting, with the lower Bowser sediments and intrusives within domed portions as the horsts and the upper Bowser sediments located in the valley bottoms as grabens (Evans, 1998). There are a number of diverse copper (+/- molybdenum, silver, and gold) porphyry systems in the area (Huckleberry, Glacier Gulch, Ox Lake, Louise Lake, etc.) and all appear to be related to the series of Bulkley intrusions in the area (Evans, 1998).

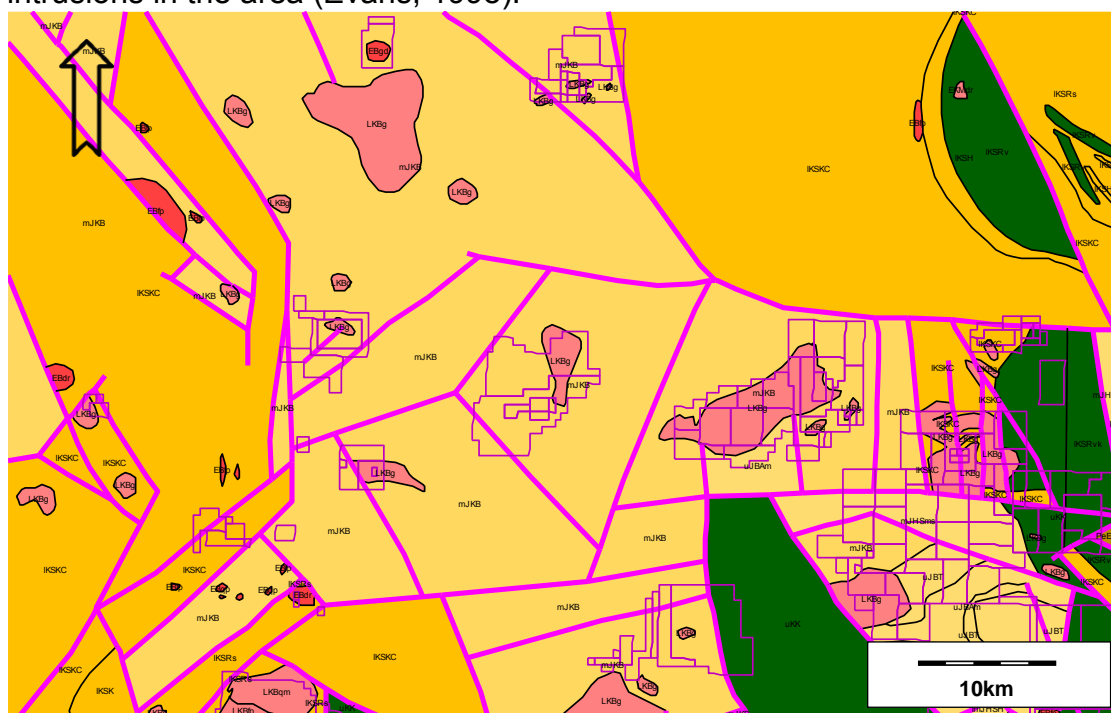







Figure 11: Regional Geology

**Table 2 Geology Legend****Eocene*****Babine Plutonic Suite***

	<b>EBdr</b>	dioritic intrusive rocks
	<b>EBfp</b>	feldspar porphyritic intrusive rocks
	<b>EBgd</b>	granodioritic intrusive rocks
	<b>EBqp</b>	high level quartz phyric, felsitic intrusive rocks

***Nechako Plateau Group***

	<b>EEvl</b>	<b>Endako Formation:</b> coarse volcanoclastic and pyroclastic volcanic rocks
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**Paleocene to Eocene**

	<b>PeEs</b>	undivided sedimentary rocks
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**Cretaceous*****Kasalka Group***

	<b>uKK</b>	andesitic volcanic rocks
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**Late Cretaceous*****Bulkley Plutonic Suite***

	<b>LKBfp</b>	feldspar porphyritic intrusive rocks
	<b>LKBg</b>	intrusive rocks, undivided
	<b>LKBqm</b>	quartz monzonitic intrusive rocks



**Early Cretaceous*****McCauley Island Plutonic Suite***





	<b>EKMdr</b>	dioritic intrusive rocks
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***Skeena Group***

	<b>IKSRvk</b>	<b>Rocky Ridge Formation - Subvolcanic Rhyolite Domes:</b> alkaline volcanic rocks
	<b>IKSRvf</b>	<b>Rocky Ridge Formation - Subvolcanic Rhyolite Domes:</b> rhyolite, felsic volcanic rocks
	<b>IKSKC</b>	<b>Kitsuns Creek Formation:</b> undivided sedimentary rocks
	<b>IKSRs</b>	<b>Red Rose Formation:</b> undivided sedimentary rocks

**Lower Cretaceous**

	<b>IKSRv</b>	<b>Rocky Ridge Formation:</b> alkaline volcanic rocks
	<b>IKSKC</b>	<b>Kitsuns Creek Formation:</b> coarse clastic sedimentary rocks



	<b>IKSRs</b>	<b>Red Rose Formation:</b> coarse clastic sedimentary rocks
	<b>IKSH</b>	<b>Hanawald Conglomerate:</b> conglomerate, coarse clastic sedimentary rocks
	<b>IKSK</b>	<b>Kitsumkalum Shale:</b> mudstone, siltstone, shale fine clastic sedimentary rocks
	<b>IKS</b>	undivided sedimentary rocks

### Middle Jurassic to Late Cretaceous


#### *Bowser Lake Group*

	<b>mJKB</b>	undivided sedimentary rocks
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### Upper Jurassic


	<b>uJBAm</b>	<b>Ashman Formation:</b> mudstone, siltstone, shale fine clastic sedimentary rocks
	<b>uJBT</b>	<b>Trout Creek Formation:</b> undivided sedimentary rocks

### Middle to Late Jurassic

	<b>uJBAmst</b>	<b>Ashman Formation:</b> argillite, greywacke, wacke, conglomerate turbidites
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### Middle Jurassic

#### *Hazelton Group*

	<b>mJHSms</b>	<b>Smithers Formation:</b> marine sedimentary and volcanic rocks
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### Early to Middle Jurassic

	<b>ImJHSH</b>	<b>Saddle Hill Formation:</b> undivided volcanic rocks
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### Lower Jurassic to Middle Jurassic

### Lower Jurassic

	<b>IJHNk</b>	<b>Nilkittwa Formation:</b> undivided sedimentary rocks
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## 7.2 Property Geology

The sediments overlying the intrusion of interest (herein to be referred to as the Bulkley Intrusion) dip away from the stock in all directions and appear to form a shallow cover over the Bulkley Intrusion's southern margin, suggesting a southward plunging intrusive body.

In the Ace showing area, a prominent gossan exists along a NE trending series of Bulkley granodiorite dyke swarms. These dykes and related hornfelsing cover an area in excess of 2.0 km's strike length over a width of 1.0+ kms, This system appears very high level with abundance and widths of dykes diminishing with increasing elevation. The sediments near the intrusives vary from strong to weak pervasive biotite hornfelsing and a doming or antiform appears developed along the NE trend likely as a result of the intrusion.

Mineralization consists of porphyry style disseminated Cu, Ag, Au, Mo within the altered dykes and Au, Ag, Pb, Zn, Sb massive sulphide veins within the hornfelsed sediments. The Bowser sediments consist of argillites, siltstone with lesser sandstone formed in a deltaic environment as demonstrated by the presence of occasional carbonaceous leaf fossils. These units are commonly bedded on a 1cm scale with graded bedding common (Evans, 1998).

Proximal to the intrusive dykes the sediments become biotite hornfelsed to varying degrees. Intensity is reflected by a darkening of the rock (increase in biotite) and the development of a conchoidal fracture. This is also accompanied by a dark limonite gossan related to the presence of 1-10% disseminated Po and Py. The various hornfels extend 200-400 meters outboard of the dyke swarm and likely reflects a larger intrusive at depth. The Bulkley Intrusion at this location is a medium-coarse grained unit that ranges from granodiorite to diorite in composition. The SE portion of the dyke swarms tends to be more mafic probably due to assimilation of the sediments (typically coarse grained biotite books). This unit is typically equigranular with minor disseminated magnetite and pyrrhotite. Large portions of the dykes are moderately to strongly pervasively sericite altered. The alteration when intense destroys all primary texture and develops a light yellow color to the rock. Commonly disseminated pyrite (1-10%) and disseminated chalcopyrite (tr-1%) is associated with this rock. Most samples of sericite altered granodiorite also contained varying amounts of quartz stockwork. This alteration is the most widespread and contains the most obvious potential porphyry mineralization both disseminated in the sericite matrix and disseminated within the quartz stockwork. Values ranged from 5-910 ppb Au, 0.4-578.0 ppm Ag, with commonly 0.10-0.48% Cu. These results are somewhat unusual suggesting more of a Cu-Ag system rather than a Cu-Au system (Evans, 1998).

Quartz stockwork alteration is normally associated with the pervasive sericite alteration but occasionally is present with the potassic and biotite altered granodiorite which suggests a slightly different timing to this system. The quartz veinlets range from 0.5-20 cm in thickness and form true stockwork systems with a number of veinlet orientations. These milky white quartz veins comprise 10-40% of the rock mass. Normally 1-5% disseminated pyrite is present with lesser amounts of chalcopyrite, molybdenite, manganese, stibnite and sphalerite (Evans, 1998).

The southern portion of the Bulkley dyke swarm has a noticeably higher potassic alteration, possibly due to sediment contamination. This alteration forms pervasive pink orthoclase overprint to the intrusive. Less common is veinlets and masses of medium-coarse grained biotite books (Evans, 1998).

To the north, the Bulkley intrusion is an north-south aligned, oval shaped acid intrusive stock composed solely of a homogeneous relatively fresh monzonite phase, weakly porphyritic in some areas. The total quartz content increases to a "quartz monzonite" classification in some areas near the eastern meta-sediment contact. The stock is moderately fractured with the intensity increasing towards the contacts, especially the eastern margin. Although essentially multi-directional, the more prominent fracturing

tends to vary between 0° and 040° azimuth with a near vertical dip. A secondary trend of steep fracturing ranges between a strike of 120° and 160° (Gidluck, 1974).

Minor amounts of widespread disseminated pyrite and chalcopyrite mineralization occur throughout most of the monzonite stock.

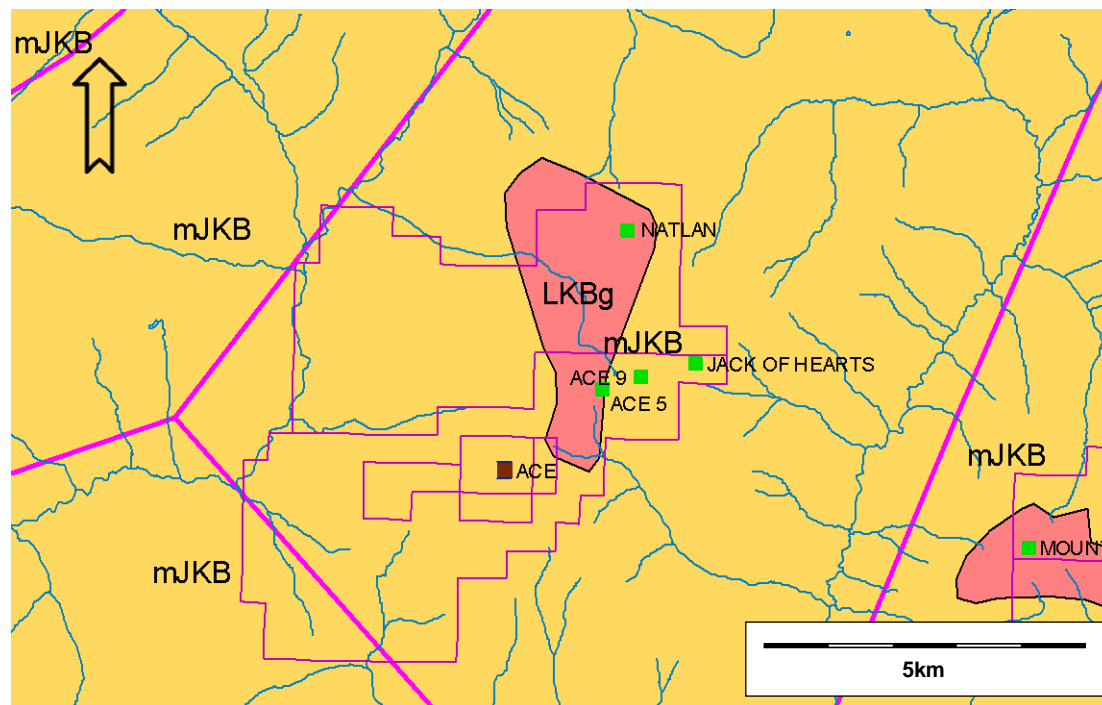


Figure 12: Property Geology

Several zones of greater mineralization with the addition of molybdenite occur marginal to the eastern sedimentary contact. Rock-chip values reach a maximum of 700ppm Cu and 1650ppm Mo. The chalcopyrite favours thin fractures, quartz veins and veinlets. It is usually associated with pyrite and occasionally molybdenite. Normally the molybdenite occurs by itself in dry fractures or as clots with quartz veinlets. Rarely is molybdenite seen in the disseminated form at Natlan. Neither chalcopyrite nor molybdenite appears to favour one set of fracturing. Although both occur in the same outcrop they appear to be associated with two different phases or pulses of mineralizing fluids. Almost without exception chalcopyrite and molybdenite were not observed in the same fracture or quartz vein. Certainly the molybdenum in quartz veins is later than the disseminated chalcopyrite in the monzonite (Gidluck, 1974).

Associated with the meta-sedimentary “hornfels” halo is a pyritic zone especially well developed and gossaned along the eastern contact. Although pyrite was not actually observed exceeding 1 or 2% of the total volume of the rock, greater quantities probably exist. The heavy oxidation due to weathering on the surface has likely removed a large portion of the iron (and other?) sulphides (Gidluck, 1974).

## Item 8: Deposit Types

The most important mineral occurrences in the area of the Property are gold-bearing porphyry copper deposits associated with the late Cretaceous Bulkley Plutonic Suite granodiorite and quartz diorite intrusive rocks and Eocene Nanika Plutonic Suite quartz monzonite intrusions. The nearby, Huckleberry mine and many major prospects are located in the same assemblage of rocks as the Property. There is also low sulphidation epithermal VMS potential with silver-lead- zinc mineralization similar to that at the New Moon prospect in Lower-Middle Jurassic Hazelton Group rocks. The formerly producing Silver Queen mine is classified as a polymetallic Ag/Pb/Zn +/- Au vein and occurs in upper Cretaceous to Eocene Endako Group volcanics associated with late Cretaceous Bulkley Plutonic Suite felsic to basaltic dykes and sills.

A number of deposit models are relevant for the general area with the porphyry copper/molybdenum model being the main focus of the current program. Other intrusion related models that may be significant are the low sulphidation epithermal model, the subvolcanic copper/gold/silver model, and the polymetallic silver/lead/zinc model.

### **8.1 Porphyry copper/molybdenum**

The porphyry Copper/Molybdenum target is the main deposit type thought to be associated with the Natlan/Ace property. Panteleyev, (1995) describes the Porphyry Cu+/-Mo+/-Au model in Selected British Columbia Mineral Deposit Profiles, Volume 1 - Metallics and Coal, Open File 1995-20, pages 87-92 as a Calcalkaline porphyry Cu, Cu-Mo, Cu-Au deposit type. Classic British Columbia examples include: Brenda (092HNE047), Berg (093E 046), Huckleberry (093E 037) and Schaft Creek (104G 015); while others include Casino (Yukon, Canada), Inspiration, Morenci, Ray, Sierrita-Experanza, Twin Buttes, Kalamazoo and Santa Rita (Arizona, USA), Bingham (Utah, USA), El Salvador, (Chile), Bajo de la Alumbrera (Argentina).

Host intrusions vary from coarse-grained phaneritic to porphyritic stocks, batholiths and dike swarms, with compositions that range from quartz diorite to granodiorite and quartz monzonite. There are commonly multiple emplacements of intrusive phases and a wide variety of breccias that modify the stock geometry. The deposits usually exhibit a lateral outward zoning of alteration and sulphide minerals from a potassic (K-feldspar and biotite) altered core through phyllic (quartz-sericite-pyrite) alteration to propylitic (chlorite-epidote-calcite). Less commonly argillic and in the uppermost parts of some ore deposits, advanced argillic (kaolinite-pyrophyllite) alteration occur.

Characteristics of this deposit type have large zones, up to 10 km<sup>2</sup> in size, of hydrothermally altered rock containing stockworks of quartz veins and veinlets, closely spaced fractures and breccia zones containing pyrite and chalcopyrite +/- molybdenite, bornite and magnetite. Disseminated sulphide minerals are present but in minor amounts. Deposit boundaries are determined by economic factors that outline ore zones within larger areas of low-grade, concentrically zoned mineralization.

Ore controls include igneous contacts with the surrounding wallrocks and internal contacts between intrusive phases; cupolas and the uppermost, bifurcating parts of stocks, dike swarms, early formed intrusive breccias and hydrothermal breccias. Ore minerals are chalcopyrite; molybdenite, lesser bornite and rare (primary) chalcocite.

Subordinate minerals are tetrahedrite/tennantite, enargite and minor gold, electrum and arsenopyrite. In many deposits late veins commonly contain galena and sphalerite in a gangue of quartz, calcite and barite.

Two main periods of deposit formation occurred in the Canadian Cordillera during the Triassic/Jurassic (210-180 Ma) and Cretaceous/Tertiary (85-45 Ma). Elsewhere deposits are mainly Tertiary, but range from Archean to Quaternary.

British Columbia porphyry Cu/Mo  $\pm$  Au deposits range from <50 to >900 Mt with 0.2 to 0.5% Cu, 0.0 to 0.04% Mo, <0.1 to 0.6gm/t Au, and 1 to 3gm/t Ag. Median values for 40 B.C. deposits with reported reserves are: 115 Mt with 0.37% Cu, 0.01% Mo, 0.3gm/t Au and 1.3gm/t Ag.

Porphyry deposits contain the largest reserves of Cu, significant Mo resources and close to 50% of Au reserves in British Columbia.

## **8.2 Polymetallic Silver/Lead/Zinc Veins**

Numerous examples of this model exist in the Natlan area. The Silver Standard property, (Minfile 093M 049), located 18km to the southwest is the most significant of the past producers in the immediate area. The deposit was mined intermittently from 1913 to 1989 and produced 237,387,811g of Ag, 464,632g Au, 12,283,325kg of Zn, 7,957,686kg of Pb, 202,650kg of Cu and 146,767kg of Cd from 205,056 tonnes of ore.

Lefebvre and Church (1996) describe the deposit type as sulphide-rich veins containing sphalerite, galena, silver and sulphosalt minerals in a quartz and carbonate gangue. The deposit type is analogous to silver/base metal epithermal deposits and can host significant Ag, Pb, Zn (Cu, Au, Mn).

Other British Columbia examples include: Wellington (082ESE192) and Highland Lass-Bell (082ESW030, 133), Beaverdell camp; Silver Queen (093L 002), Duthie (093L 088), Cronin (093L 127), Porter-Idaho (103P 089), Indian (104B 031)

Veins occur in country rock marginal to an intrusive stock. The veins typically crosscut volcanic or meta-sedimentary sequences and follow pre-existing volcano-tectonic structures, such as caldera ring-faults or radial faults. In some cases the veins cut older intrusions. In many districts there is a close association to felsic to intermediate intrusive bodies. Mafic igneous rocks are less common. Many veins are associated with dikes that follow the same structures. Veins are typically narrow, steeply dipping, tabular or splayed and occur as sets of parallel or offset veins. Individual veins can vary from centimetres up to more than 3 m wide and can be traced from a few hundred metres to more than 1000m in length and depth. Veins can widen to tens of metres in stockwork or breccia zones. Mineralization occurs as fine-grained disseminations or coarse-grained sulphides as patches and pods and is generally confined to the veins.

Regional structures are important to ground preparation but, veins are typically associated with smaller, second order structures. In igneous rocks the faults may relate to volcanic centers. Significant deposits are restricted to competent lithologies that are more susceptible to brittle failure. Dikes are often emplaced along the same faults and

at some locations are believed to be roughly contemporaneous with mineralization. Some polymetallic veins are found surrounding intrusions with porphyry deposits or prospects. Ore mineralogy is comprised of galena, sphalerite, tetrahedrite-tennantite and other sulphosalts including pyrrargyrite, stephanite, bournonite and acanthite, native silver, chalcopyrite, pyrite, arsenopyrite, stibnite. Silver minerals often occur as inclusions in galena. Native gold and electrum occurs in some deposits yet Au grades are normally low for the amount of sulphides present. Vein gangue mineralogy is composed of primarily quartz and carbonate and may contain specular hematite, hematite, barite and fluorite. Alteration is usually limited to a few metres, but in volcanic and intrusive hostrocks the alteration assemblage is argillic, sericitic or chloritic and may be quite extensive.

British Columbian deposits are mainly Cretaceous to Tertiary in age but can date back as old as the Proterozoic. Individual vein systems can range from several hundred to several million tonnes grading from 5 to 1500gm/t Ag, 0.5 to 20% Pb and 0.5 to 8% Zn. In British Columbia, for deposits larger than 20,000 tonnes, the average is 161,000 tonnes with grades of 304gm/t Ag, 3.47% Pb and 2.66% Zn. Copper and gold are reported in less than half the occurrences, with average grades of 0.09% Cu and 4gm/t Au. Polymetallic veins are the most common deposit type in British Columbia with over 2,000 occurrences and were a significant source of Ag, Pb and Zn until the 1960s. They have declined in importance as industry focused more on syngenetic massive sulphide deposits. Larger polymetallic vein deposits are still attractive because of their high grades and relatively easy beneficiation.

### **8.3 Subvolcanic copper/gold/silver veins**

Panteleyev (1995) describes this transitional or intrusion-related (polymetallic) stockwork and vein model as pyritic veins, stockworks and breccias in subvolcanic intrusive bodies with stratabound to discordant massive pyritic replacements, veins, stockworks, disseminations and related hydrothermal breccias in country rocks. These deposits are located near or above porphyry Cu hydrothermal systems and commonly contain pyritic auriferous polymetallic mineralization with Ag sulphosalt and other As and Sb-bearing minerals. Extensional tectonic regimes allow high-level emplacement of the intrusions. Rhyodacite and dacite flow-dome complexes with fine to coarse-grained quartz-phyrlic intrusions are common. Dike swarms and other small subvolcanic intrusions are likely to be present.

These deposits represent a transition from porphyry copper to epithermal conditions with a combination of porphyry and epithermal characteristics. Mineralization is related to hydrothermal systems derived from porphyritic, subvolcanic intrusions and occurs in strongly fractured to crackled zones in cupolas and internal parts of intrusions and flow-dome complexes and along faulted margins of high-level intrusive bodies. Stockworks and closely-spaced to sheeted sets of sulphide-bearing veins occur within intrusions and as structurally controlled and stratabound or bedding plane replacements along permeable units and horizons in surrounding country rock. Veins and stockworks form in transgressive hydrothermal fluid conduits that can pass into pipe-like and planar breccias. Breccia bodies are commonly tens of metres and, rarely, hundreds metres in size. Massive sulphide zones can pass outward into auriferous pyrite-quartz-sericite

veins and replacements. Multiple generations of veining and hydrothermal breccias are common. Pyrite is dominant and quartz is minor to absent in veins. The vein and replacement style deposits can be separated from the deeper porphyry Cu mineralization by 200 to 700 m. Ore mineralogy consists of pyrite, commonly as auriferous pyrite, chalcopyrite, tetrahedrite/tennantite; enargite/luzonite, covellite, chalcocite, bornite, sphalerite, galena, arsenopyrite, argentite, sulphosalts, gold, stibnite, molybdenite, wolframite or scheelite, pyrrhotite, marcasite, realgar, hematite, tin and bismuth minerals. Depth zoning is commonly evident with pyrite-rich deposits containing enargite near surface, passing downwards into tetrahedrite/tennantite + chalcopyrite and then chalcopyrite in porphyry intrusions at depth.

The deposits can be quite large such as those at Equity Silver where the bulk mineable reserves were approximately 30Mt grading 0.25% Cu, 86gm/t Ag and 1gm/t Au. International examples include the Recsk deposit in Hungary where a shallow breccia-hosted Cu-Au ores overlie a porphyry deposit containing ~1000 Mt with 0.8% Cu. The closely spaced pyritic fracture and vein systems at Kori Kollo, La Joya district, Bolivia contained 10 Mt oxide ore with 1.62 gm/t Au and 23.6 gm/t Ag and had sulphide ore reserves of 64 Mt at 2.26 gm/t Au and 13.8 gm/t Ag.

#### **8.4 Epithermal (low Sulphidation)**

Panteleyev (1996) describes low sulphidation epithermal deposits as quartz veins, stockworks and breccias that carry precious metals and variable amounts of base metals in high-level (epizonal) to near surface environments. Mineralization commonly exhibits open-space filling textures and is associated with volcanic-related hydrothermal to geothermal systems. The tectonic settings of the deposits are volcanic island arc, continent-margin magmatic arcs and continental volcanic fields with extensional structures. They are associated with regional-scale fracture systems related to grabens, resurgent calderas, flow-dome complexes and rarely with maar diatremes. Extensional structures are common and graben or caldera-fill clastic rocks may be present in higher level systems. Locally resurgent or domal structures are related to underlying intrusive bodies such as high-level (subvolcanic) stocks and/or dikes and pebble breccia diatremes.

Most deposits occur in calcalkaline volcanic rocks of andesitic composition while some deposits occur in areas with bimodal volcanism and extensive subaerial ashflow deposits. Ore zones are typically localized in extensional structures with high-grade ore shoots commonly found in dilational zones in faults at flexures, splays and in cymoid loops. Significant mineralization can occur where ore forming fluids invade permeable lithologies. Upward-flaring ore zones centered on structurally controlled hydrothermal conduits are typical. Individual veins can range from >1m and hundreds of metres in strike length to mm in scale. The vein systems can be laterally extensive but ore shoots generally have relatively restricted vertical extent of a few hundred metres. Deposits can be strongly zoned along strike and vertically. Deposits are commonly zoned vertically over 250 to 350 m from a base metal poor, Au-Ag-rich top to a relatively Ag-rich base metal zone and an underlying base metal rich zone grading at depth into a sparse base metal, pyritic zone. As a result of the confined nature of the mineralization, deposits are

generally small. The median deposit size of 41 Comstock-type 'bonanza' deposits is 0.77 Mt grading 7.5 gm/t Au, 110 gm/t Ag with minor Cu, Zn and Pb.

In British Columbia, Jurassic deposits are important while worldwide Tertiary deposits are most abundant. Significant examples of this deposit type in British Columbia include the Toodoggone district deposits - Lawyers (094E 066), Baker (094E 026), Shas (094E 050); Blackdome (092O 050, 092O 051, 092O 052, 092O 053); Premier Gold (Silbak Premier), (104B 054) and Cinola (103F 034).

### Item 9: Exploration

The 2016 exploration program on the Natlan/Ace property consisted of the collection of 15 humus samples in one 1400m long line. Humus samples were collected at 100m intervals on a line between 150 and 300m west of the 2012 Au Ah anomaly. The north end of the line was situated in an area previously logged which resulted in the exposure of numerous float samples, including a cobble sized sample of massive sulphide material. Where sulphide or oxide mineralization was encountered as float or in outcrop, a representative sample was collected for analysis. Coordinates were recorded at each humus and rock sample site. Five rock samples were collected during the program. Rock sample descriptions and locations can be found in the table 3 below.

Table 3: Sample Descriptions - Rock

Sample #	UTM Easting	UTM Northing	Sample Type	Sample Description
1043561	604051	6139045	grab subcrop?	35-40cm subcrop? Showing of rough angular rusty red granodiorite with 3-5% Py and 1% Cpy.
1043562	604037	6139035	grab float	40cm angular boulder of biotite-granodiorite with 5% Py and 1-2% Cpy.
1043563	604059	6139032	grab float	rusty cobble of massive sulphide fault breccia. 30% galena, 20% antimony, 20% spalerite
1043564	603954	6139067	grab float	rusty cobble of fine crystalline quartz with stringers of Py and Cpy.
1043565	603854	6139067	grab float	small cobble of granodiorite. 2-3% Py, 1-2% Cpy both disseminated and in veinlets. Trace bornite.

All of the rock samples collected were mineralized to varying degrees. Intrusive and sedimentary float samples assayed between 430 and 2340ppm Cu, 4-214ppm Mo, <0.5 to 32.5ppm Ag and between 7 and 732ppm Pb. The massive sulphide sample was heavily mineralized and returned results of 17,952.5ppm Ag, 2.52ppm Au, 1.63% Cu, >20% Pb and 15.8% Zn.

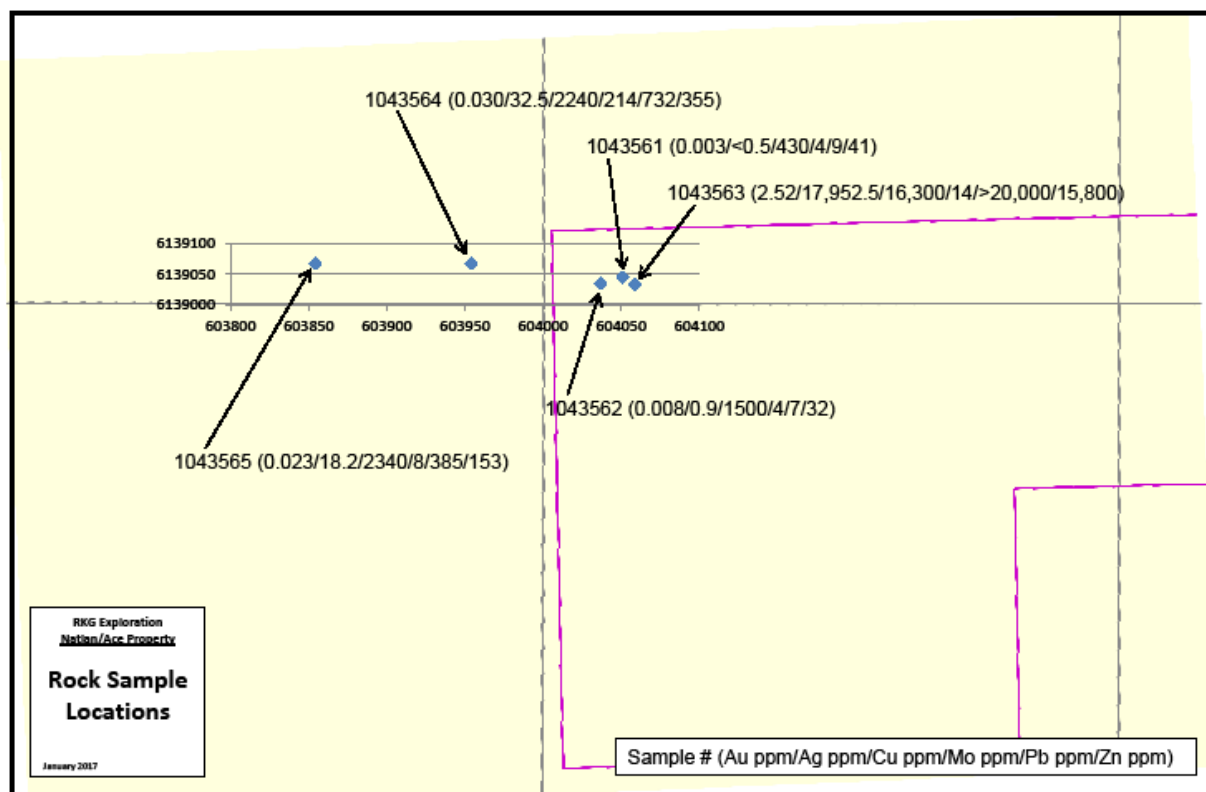


Figure 13: Rock sample location map

A 200m wide area at the north end of the line, over the area of rock sampling, returned moderate to strongly anomalous for Au up to 33.5ppb with a 100m section also moderately anomalous for As, Sb, Fe and Bi and weakly anomalous for Ag and Mo. A second area to the south returned strongly anomalous Au over a 400m width with values up to 54ppb with spotty weak Bi and Sb values. Humus sample descriptions can be found in Table 4 below. A humus sample location map is located in Appendix A, elemental plots in Appendix B and humus assay certificates in Appendix C. Assay certificates for rock samples are located in Appendix D.

Table 4: Sample Descriptions - Humus

Sample #	UTM Easting	UTM northing	Sample type
103852	604004	6139197	Ah
103853	604036	6139102	Ah
103854	604071	6138994	Ah
103855	604104	6138898	Ah
103856	604132	6138795	Ah
103857	604158	6138699	Ah
103858	604192	6138583	Ah
103859	604205	6138500	Ah
103860	604197	6138401	Ah
103861	604221	6138301	Ah

103862	604239	6138185	Ah
103863	604269	6138103	Ah
103864	604290	6137998	Ah
103865	604301	6137898	Ah
103866	604334	6137797	Ah

Response Ratios (RRs) are an efficient method of handling trace and ultra-trace data where absolute values are often meaningless. Stacked profiles offer a visual picture of areas that are considered anomalous compared to background values. The data is presented the charts having north to the left and south to the right (ie. looking to the east). The vertical axis has been restricted to 100 x background in order to see the more subtle anomalies. Samples 103853, 103859 103861, 103863 and 103865 are off-scale for Au RRs. A subtle Ag anomaly exists over 100-200m at the north end of the line with increasing As, Sb, Bi and Fe to the southern end of the anomaly. The southern half of the line is highly anomalous in Au with a few sample sites returning background values. Other indicators are not present with the exception of weak to moderate RRs for Sb and Bi.

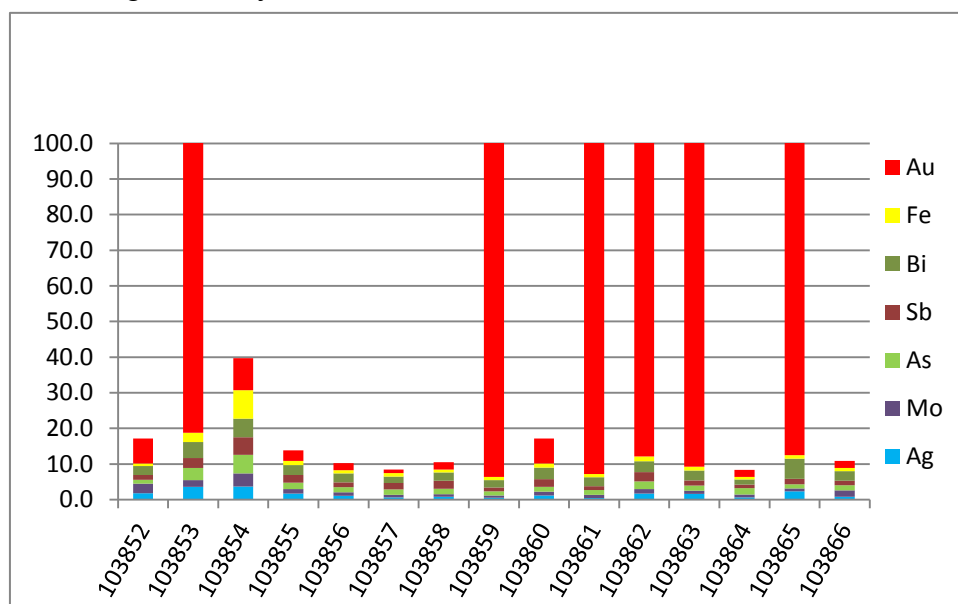


Figure 14: 2016 Central Transect

**Item 10: Drilling**

No drilling was completed as part of the exploration program.

**Item 11: Sample Preparation, Analyses and Security**

All rock samples collected were placed in clean 12x20 poly bags with a sample tag and tied closed with flagging tape. Ah-humus samples were collected in clean 9x12 poly bags, labeled with a sample tag and tied closed with flagging tape. The samples were transported to Francois Lake where they were placed into a woven rice bag and sealed with a zip tie. Samples were then transported to Prince George and then shipped to the ALS Minerals laboratory in North Vancouver.

Rocks were initially crushed to 70% passing 2mm. A 250g sub-sample was then split and pulverized to 85% passing 75 microns. Rock samples were analyzed for 33 elements plus gold. 30g splits were subjected to a four acid digestion prior to elemental

determination using ICP-AES (ME-ICP61). Gold determinations were completed using a Fire Assay of a 30g split (ICP21).

Humus samples were screened to -180micron (-80 mesh). A 0.5g sub-sample was split and leached in hot aqua regia digestion prior to using Super Trace analytical procedures (ME-MS41L). Humus samples were analyzed for 52 elements plus gold. Gold determinations were also completed using a Fire Assay of a 25g split (ICP21).

#### **Item 12: Data Verification**

No data verification was completed as part of the exploration program.

#### **Item 13: Mineral Processing and Metallurgical Testing**

No mineral processing or metallurgical testing was completed as part of the exploration program.

#### **Item 14: Mineral Resource Estimates**

No mineral resource estimates were completed as part of the exploration program.

#### **Item 15: Adjacent Properties**

Porphyry copper-gold deposits and occurrences in the Babine district, located approximately 85km to the southeast, described below, serve as analogues to the exploration model applied to the Property. The table below lists resources and production from major deposits in the district. The values from Bell and Granisle pre-date NI 43-101 reporting standards and should not be considered reliable. They are included as geological information only.

Table 5: Resources and Production of major Babine Porphyry Deposits

Property	Mineral Resource			Mined			Reference	Category
	Million Tonnes	Cu %	Au g/t	Million Tonnes	Cu %	Au g/t		
Bell	296	0.46	0.20	77.2	0.47	0.26	Carter et al, 1995	non NI 43-101 compliant
Granisle	119	0.41	0.15	52.7	0.47	0.20	Carter et al, 1995	non NI 43-101 compliant
Morrison	207	0.39	0.2				Simpson, 2007	measured+ indicated
Hearne Hill	0.14	1.73	0.8				Simpson, 2008	indicated

The author has been unable to verify the information on mineral occurrences and deposits detailed below. Mineralization style and metal grades described are not necessarily representative of mineralization that may exist on the subject Property, and are included for geological illustration only. The mine and mineral occurrence descriptions described as follows are modified after the BC MINFILE occurrence descriptions and BC ARIS assessment report files.

#### **15.1 Bell Copper Mine (Minfile 093M 01, rev. McMillan, 1991)**

The Bell mine is a porphyry copper deposit hosted primarily in a biotite-feldspar porphyry (BFP) stock of the Eocene Babine Intrusions. The stock is crosscut by the northwest trending Newman fault which juxtaposes the two groups that host the

intrusion. These groups are the Lower Jurassic Telkwa Formation (Hazelton Group) and the Lower Cretaceous Skeena Group. Telkwa Formation rocks are primarily fine grained tuffs and andesites and the younger Skeena Group rocks are mostly fine grained greywackes. The deposit overlaps onto both of these assemblages. The mineralization has been dated at 51.0 million years (Bulletin 64).

Chalcopyrite and lesser bornite occur as disseminations in the rock matrix, in irregular quartz lenses and in a stockwork of 3 to 6- millimetre quartz veinlets which cut the feldspar porphyries and the siltstones. Molybdenite is rare, and occurs in the feldspar porphyry in the northern part of the mineralized zone. Gold occurs as electrum associated with the copper mineralization. Specular hematite and magnetite are common in quartz veinlets and hairline fractures. There is also significant supergene enrichment with chalcocite coating chalcopyrite. A supergene chalcocite zone capped the deposit and extended to depths of 50 to 70 metres. Some gypsum together with copper-iron sulphate minerals and iron oxides were also present (Open File 1991-15). The ore zone has pervasive potassic (mainly biotitization) alteration with a surrounding concentric halo of chlorite and sericite-carbonate alteration (propylitic and argillic) which corresponds to the two kilometre pyrite halo which surrounds the deposit. A late quartz-sericite-pyrite-chalcopyrite alteration has been superimposed on part of the earlier biotite-chalcopyrite ore at the western part of the ore body. A number of late-stage breccia pipes cut the central part of the ore zone near the Newman fault and alteration associated with their intrusion has apparently depleted the copper grades in the area of the pipes. Veinlets of gypsum are present in the upper part of the ore body. Anhydrite is a significant component in the biotite chalcopyrite zone but is not present in other alteration facies. Monominerallic veinlets of anhydrite are rare (Open File 1991-15).

The copper mineralization occurs in a crescent-shaped zone along the western contact of the porphyry plug. Better grades of copper mineralization are contained in a 60 by 90-metre thick flat-lying, blanket-like deposit which is connected to a central pipe-like zone, centred on the western contact of the intrusive. The pipe-like zone of copper mineralization is 150 metres in diameter and extends to a depth of at least 750 metres.

Reserves in the open pit and in the Extension zone were (in 1990) 71,752,960 tonnes grading 0.23 gram per tonne gold, 0.46 per cent copper and 0.48 gram per tonne silver (Noranda Inc. Annual Report 1990).

### **15.2 Granisle Mine (Minfile 093L 146, rev. Duffett, 1987)**

MacDonald Island is underlain by Lower-Middle Jurassic Telkwa Formation (Hazelton Group) volcanics comprised of green to purple waterlain andesite tuffs and breccias with minor intercalated chert pebble conglomerates in the central and eastern part of the island. These rocks strike northerly and dip at moderate angles to the west and are overlain in the western part of the island by massive and amygdaloidal andesitic flows and thin bedded shales.

Copper mineralization at the Granisle mine is associated with a series of Eocene Babine Intrusions which occur in the central part of the island. The oldest is an elliptical

plug of dark grey quartz diorite approximately 300 by 500 metres in plan. The most important intrusions are biotite-feldspar porphyries of several distinct phases which overlap the period of mineralization. The largest and oldest is a wide north easterly trending dike which is intrusive into the western edge of the quartz diorite pluton. The contact is near vertical and several small porphyry dikes radiate from the main dike. Several of the phases of the porphyry intrusions are recognized within the pit area. Potassium-argon age determinations on four biotite samples collected in and near the Granisle ore body yielded the mean age of 51.2 Ma plus or minus 2 Ma (Minister of Mines Annual Report 1971).

The wide porphyry dike which strikes northeast is bounded by two parallel northwest striking block faults. The westernmost crosses the island south of the mine and the eastern fault extends along the channel separating the island from the east shore of Babine Lake.

An oval zone of potassic alteration is coincident with the ore zone. The main alteration product is secondary biotite. This potassic alteration zone is gradational outward to a quartz-sericite- carbonate-pyrite zone which is roughly coaxial with the ore zone. Within this zone, the intrusive and volcanic rocks are weathered to a uniform buff colour with abundant fine-grained quartz. Mafic minerals are altered to sericite and carbonate with plagioclase clouded by sericite. Pyrite occurs as disseminations or as fracture-fillings. Beyond the pyrite halo, varying degrees of propylitic alteration occurs in the volcanics with chlorite, carbonate and epidote in the matrix and carbonate-pyrite in fractured zones. Clay mineral alteration is confined to narrow gouge in the fault zones.

The principal minerals within the ore zone are chalcopyrite, bornite and pyrite. Coarse-grained chalcopyrite is widespread, occurring principally in quartz-filled fractures with preferred orientations of 035 to 060 degrees and 300 to 330 degrees with near vertical dips. Bornite is widespread in the southern half of the ore zone with veins up to 0.3 metres wide hosting coarse-grained bornite, chalcopyrite, quartz, biotite and apatite.

Gold and silver are recovered from the copper concentrates. Molybdenite occurs within the ore zone, most commonly in drusy quartz veinlets which appear to be later than the main stage of mineralization. Magnetite and specularite are common in the north half of the ore zone where they occur in fractures with chalcopyrite and pyrite. Pyrite occurs in greatest concentrations peripheral to the orebody as blebs, stringers and disseminations.

Mining at Granisle was suspended in mid-1982. Production from 1966 to 1982 totalled 52,273,151 tonnes yielding 69,752,525 grams of silver, 6,832,716 grams of gold, 214,299,455 kilograms of copper and 6,582 kilograms molybdenum. Unclassified reserves are 14,163,459 tonnes grading 0.442 per cent copper (Noranda Mines Ltd. Annual Report 1984).

Remaining in situ reserves, as modelled in 1992 using a 0.30 per cent copper cutoff, are estimated to be 119 million tonnes grading 0.41 per cent copper and 0.15 grams per tonne gold (CIM Special Volume 46, page 254).

### **15.3 Morrison–Hearne Hill Project (From Simpson, 2007)**

The Morrison deposit is a calc-alkaline copper-gold porphyry hosted by a multi-phase Eocene intrusive body intruding Middle to Upper Jurassic Ashman Formation siltstones and greywackes. Copper-gold mineralization consists primarily of chalcopyrite and minor bornite concentrated in a central zone of potassic alteration. A pyrite halo is developed in the chlorite-carbonate altered wall rock surrounding the copper zone.

Sulphide mineralization at Morrison shows strong spatial relationships with the underlying biotite-feldspar porphyry (BFP) plug and associated alteration zones. The central copper-rich core is hosted mainly within a potassically altered BFP plug with intercalations of older siltstone. This plug was initially intruded into the siltstone unit as a near-vertical sub-circular intrusion approximately 700 m in diameter. It was subsequently disrupted by the East and West faults and now forms an elongated body extending some 1500 metres in the northwest direction.

Chalcopyrite is the primary copper-bearing mineral and is distributed as fine grained disseminations in the BFP and siltstone, as fracture coatings or in stockworks of quartz. Minor bornite occurs within the higher grade copper zones as disseminations and associated with the quartz-sulphide stockwork style of mineralization.

Alteration is concentrically zoned with a central biotite (potassic) alteration core surrounded by a chlorite-carbonate zone. No well-developed phyllic zone has been identified.

Hearne Hill deposit lies two kilometres southeast of Morrison. The Hearne Hill Property has been extensively explored, and a comparatively small but high grade copper-gold resource has been defined in two breccia pipes within a larger porphyry system.

### **15.4 Wolf (Minfile 093M 008, rev. McMillan, 1991)**

The Wolf prospect is located on the west side of Morrison Lake. The Wolf area has been explored since 1965 when it was staked as the Bee claims.

A granodiorite stock containing phases of quartz monzonite and hornblende biotite feldspar porphyry of the Eocene Babine Intrusions cuts grey, locally graphitic siltstones of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group). A north-northwest trending block fault separates Ashman Formation rocks from volcanoclastic sandstones and tuffs of the Jurassic Smithers Formation (Hazelton Group) on the east side of the property. The Newman fault, associated with mineralization in the area, occurs just to the northeast of the claims parallel to the baseline.

At least nine copper occurrences, hosted in quartz monzonite, have been documented. Chalcopyrite occurs as disseminations and as grains and films on fracture surfaces and

is occasionally accompanied by molybdenite. Minor malachite and iron-oxides have been noted.

A drill hole in biotite feldspar porphyry intersected 1.2 metres grading 4.2 per cent copper (Assessment Report 8779).

### **15.5 Huckleberry (Minfile 093E 037, rev. Meredith-Jones, 2012)**

At the Huckleberry deposit, 190km to the southwest, porphyry copper and molybdenum mineralization is associated with a near elliptical stock of Upper Cretaceous age granodiorite porphyry (Bulkley Intrusions) measuring approximately 670 by 425 metres. The stock intrudes fine-grained crystal tuff of the Lower-Middle Jurassic Hazelton Group. Tuffs adjacent to the intrusion have been hornfelsed.

Mineralization consists of chalcopyrite and minor molybdenite in fractures, principally in the hornfelsed volcanics but also in the stock. Minerals accompanying chalcopyrite are quartz, orthoclase and pyrite with probably later calcite, gypsum and zeolite. Magnetite occasionally accompanies chalcopyrite. Disseminated chalcopyrite also occurs. Molybdenite usually occurs with quartz in hairline fractures. The mineralization generally occurs around the stock contact but the extent outward from the contact and the grade vary greatly. The best mineralization occurs on the east side of the stock. Potassic, pyrite and chlorite alteration haloes surround the stock.

The ore zones at Huckleberry are enclosed by an easterly-oriented zone of alteration approximately 4 kilometres long and 1 kilometre to 2 kilometres wide. The Main zone occurs along the eastern periphery of a sub-circular stock located in the western part of the alteration zone and is further centred on an apophysis of the stock. Most of the mineralization occurs in an arc measuring 500 metres by 100 metres. The East zone occurs within and surrounding a similar porphyritic stock in the eastern part of the system and is approximately 900 metres by 300 metres and remains open at depth. The East zone appears to be centred on an apophysis of the East zone.

The Huckleberry mine has been in production since October, 1997. Published reserves for the deposit in 2010 were Proven and Probable reserves totaling 14.01 million tonnes grading 0.362% Cu, 0.005% Mo, Measured and Indicated reserves of 182.9M tonnes grading 0.321% Cu and Inferred reserves of 45.4M tonnes grading 0.288% Cu. Reserves were calculated with 0.20% Cu cut-off grade.

### **15.6 Berg (Minfile 093E 046, rev. Flower, 2009)**

The area of the Berg porphyry copper-molybdenum deposit, situated 175km to the south, is underlain by massive and clastic volcanic and sedimentary rocks of the Lower-Middle Jurassic Hazelton Group. These rocks have been intruded by an elongate body of quartz diorite and a circular quartz monzonite porphyry stock (Berg Stock) approximately 800 metres in diameter. A breccia pipe and quartz latite porphyry dikes postdate the stock. Volcanic and sedimentary rocks adjacent to the stock have been metamorphosed to biotite hornfels. Mineralization is associated with the Eocene age porphyry stock.

The most common forms of primary mineralization are fracture-controlled and disseminated pyrite and chalcopyrite with quartz stockworks of pyrite, molybdenite and chalcopyrite. Less commonly, quartz and quartz-carbonate veins contain pyrite, sphalerite, galena, chalcopyrite and sulphosalt minerals. Secondary copper sulphides, with chalcocite being the most important, are found in an enrichment blanket over most of the deposit. Primary ore minerals are most abundant in an asymmetrical annular zone around the quartz monzonite stock. In general, the best molybdenum mineralization is within and adjacent to the stock while the highest copper values are normally 70 metres or more beyond the contact. The best developed mineralization occurs along the eastern side of the stock. A pyrite halo extends 300 to 600 metres beyond the stock contact. Potassic, phyllic, propylitic and argillic alteration types are all present at Berg.

The deposit has a recently published 43-101 compliant measured & indicated resource of 557.8.5 million tonnes, grading 0.30% Cu and 0.037% Mo and 3.77g/t Ag and an inferred resource of 159.4 million tonnes grading 0.23% Cu, 0.033% Mo and 2.5 g/t Ag using a 0.30% copper equivalent cut-off grade.

#### **15.7 Poplar (Minfile 093L 239, rev. Duffett, 1988)**

The Poplar deposit is located 155km south of the Property, where Lower-Middle Jurassic Hazelton Group volcanics are intruded by a Middle-Late Cretaceous Bulkley Intrusions. The Hazelton rocks are comprised of massive andesite, tuff, lapilli tuff, agglomerate, flow breccia with narrow bands and interbedded argillite. This group is overlain by Juro-Cretaceous sediments which are estimated to be 400 metres thick. The basal unit is comprised of gritty argillite overlain by sorted to unsorted medium to coarse-grained sandstone and conglomerate. The average bedding strikes 035 degrees and dips 60 degrees to the southeast.

The Bulkley Intrusions are comprised of a granodiorite to biotite monzonite porphyry which is aplitic near the contact margins. The stock is weakly mineralized with chalcopyrite, molybdenite and pyrite in fracture-fillings. As well, the biotite porphyry hosts an estimated 1.5 per cent of disseminated sulphides, mainly pyrite with minor chalcopyrite.

A 200-metre wide dike swarm associated with the biotite porphyry stock crosscuts the volcanics which have undergone considerable fracturing/faulting and hornfelsing throughout. Mineralization in the quartz veins and dike swarms is comprised of pyrite with minor chalcopyrite.

There is a well-developed hydrothermal alteration facies concentric to the biotite porphyry which includes potassic, phyllic, argillic and propylitic zones. There is weak hornfelsing throughout the volcanics and it is strongest near the contact with the granodiorite stock. Mineralization in the hornfelsed aureole consists mainly of disseminated pyrite with very minor chalcopyrite.

Reserves were estimated at 75,000,000 tonnes at 0.35 per cent copper, 0.06 per cent molybdenum (0.1 per cent MoS<sub>2</sub>) and 2.8 grams per tonne silver (CIM Special Volume 37, page 185).

### **15.8 Mt. Thomlinson (Minfile 093M 080, rev. Owsjacki, 1990)**

The Mount Thomlinson property is located on the north side of Mount Thomlinson Mountain Range, 5 kilometres north of Thomlinson Peak, 40 kilometres north of Hazelton and 23km northwest of the Property.

Massive black argillaceous siltstones and argillites of the Middle Jurassic to Lower Cretaceous Bowser Lake Group have been intruded by a roughly circular stock (1400 metres diameter) of leucocratic quartz monzonite porphyry of the Eocene Babine Intrusions. Near the contact, the sedimentary rocks have been deformed and metamorphosed to medium or dark grey schists in a zone 91 to 152 metres wide. Stock contacts are sharp and biotite, muscovite, cordierite and andalusite have been formed in the contact aureole. The margins of the stock are foliated parallel to the contact and to the schistosity in the intruded rocks up to 100 metres from the contact. Much of the stock is a coarse-grained porphyry with potassium feldspar phenocrysts up to 5 centimetres long. In many areas, the stock is cut by narrow (2-10 centimetres) aplite dikes. These dikes occur in swarms and occupy well-defined fractures. A potassium-argon age date from biotite from the stock resulted in an age of 54 Ma (Geological Survey of Canada Open File 2322).

Molybdenite, chalcopyrite and pyrite are associated with a system of quartz vein stockworks within the intrusive, along the contact hornfelsed zone with the argillaceous rocks. The quartz stockwork is best developed along this stock contact and post-dates the aplite dikes. The mineralized zone trends north-northeast (030 degrees) along the margin of the stock, and dips 58-65 degrees west. It is tabular and up to 100 metres wide. Molybdenite is most common as fine flakes in quartz veinlets and as smears along fracture planes. Locally it occurs as coarse flakes in quartz veins. Weathering of mineralization has been considerable, and in many areas extends from 60 to 91 metres below the surface. Limonite, ferrimolybdate, malachite and to a lesser extent, azurite, are the principal secondary minerals. Chalcopyrite, malachite and azurite also occur along fractures and veins. Although chalcopyrite is found in the same general areas as molybdenite, the two sulphides occur independently of each other. Pyrite (1-5 per cent) is found as disseminations, fracture-fillings and patchy crystalline concentrations in the intrusive and adjacent argillites. Minor amounts of magnetite, scheelite and pyrrhotite are also evident. The better grade rock lies several metres from the contact within the intrusive rock. In general the mineralization extends farther into the intrusive than into sediments, and in many places the amount of mineralization drops off sharply at the contact.

Although mineralization has been found over a strike length of 900 metres, the width and grades vary considerably. The zone becomes more complex and less well-defined to the northeast with narrow sections of mineralized rock separated by relatively barren

rock. Deposition of sulphides appears to have been largely controlled by this northwest dipping zone of fracturing and shearing.

Alteration within and close to the mineralized zone comprises substantial silicification with argillic and chloritic assemblages and sericitic overprinting.

Measured, indicated and inferred reserves are 40.82 million tonnes grading 0.071 per cent molybdenum (0.12 per cent MoS<sub>2</sub>)(CIM Special Volume 15 (1976), Table 3, page 422). Conversion to Mo using the factor 1.6681.

### **15.9 Fireweed (Minfile 093M 151, rev. Payie, 2009)**

The Fireweed occurrence is located on the south side of Babine Lake, approximately 54 kilometres northeast of Smithers. In the occurrence area, Upper Cretaceous marine to non-marine clastic sediments, of Skeena group are found adjacent to volcanic rocks of the Rocky Ridge Formation. Interbedded mudstones, siltstones and sandstones of a thick deltaic sequence, appear to underlie much of the area and were originally thought to belong to the Kisum Formation of the Lower Cretaceous Skeena Group. They are now assigned to the Red Rose Formation. The sediments commonly strike 070 to 080 degrees and dip sub-vertically. Locally the strike varies to 020-030 degrees at the discovery outcrop, the MN showing. Several diamond-drill holes have intersected sills of strongly altered feldspar porphyritic latite.

Skeena Group sediments are dominantly encountered in diamond drilling. The sediments are dark and medium to light grey and vary from mudstone and siltstone to fine and coarse-grained sandstone. Bedding can be massive, of variable thickness, changing gradually or abruptly to finely laminated. Bedding features such as rip-up clasts, load casts and cross-bedding are common. The beds are cut by numerous faults, many of them strongly graphitic. Drilling indicates Skeena Group sediments are in fault contact with Hazelton Group volcanic rocks. Strongly sericitized and carbonatized latite dikes cut the sediments.

Mineralization generally occurs in one of three forms: 1) breccia zones are fractured or brecciated sediments infilled with fine to coarse-grained massive pyrite-pyrrhotite and lesser amounts of sphalerite, chalcopyrite and galena 2) disseminated sulphides occur as fine to very fine grains which are lithologically controlled within coarser grained sandstones, pyrite, marcasite, sphalerite, galena and minor tetrahedrite are usually found interstitial to the sand grains and 3) massive sulphides, which are finegrained, commonly banded, containing rounded quartz-eyes and fine sedimentary fragments, occur as distinct bands within fine-grained sediments. The massive sulphides generally contain alternating bands of pyrite/ pyrrhotite and sphalerite/galena. They are associated with the breccia zones and are commonly sandwiched between altered quartz latite dikes.

Alteration in the sediments occurs in the groundmass and appears associated with the porous, coarse sandstones. Common secondary minerals are quartz, ankerite, sericite, chlorite and kaolinite.

Three main zones have been identified by geophysics (magnetics, induced polarization) and are named the West, East and South zones. Three other zones identified are the 1600, 3200 and Jan zones.

#### **15.10 Equity Silver (Minfile 093L 001, rev. Robinson, 2009)**

Silver, copper and gold were produced from the Equity Silver deposit, located 150km to the southeast of the Property.

The mineral deposits are located within an erosional window of uplifted Cretaceous age sedimentary, pyroclastic and volcanic rocks near the midpoint of the Buck Creek Basin. Strata within the inlier strike 015 degrees with 45 degree west dips and are in part correlative with the Lower-Upper Skeena(?) Group. Three major stratigraphic units have been recognized. A lower clastic division is composed of basal conglomerate, chert pebble conglomerate and argillite. A middle pyroclastic division consists of a heterogeneous sequence of tuff, breccia and reworked pyroclastic debris. This division hosts the main mineral deposits. An upper sedimentary-volcanic division consists of tuff, sandstone and conglomerate. The inlier is flanked by flat-lying to shallow dipping Eocene andesitic to basaltic flows and flow breccias of the Francois Lake Group (Goosly Lake and Buck Creek formations).

Intruding the inlier is a small granitic intrusive (57.2 Ma) on the west side, and Eocene Goosly Intrusions gabbro-monzonite (48 Ma) on the east side.

The chief sulphides at the Equity Silver mine are pyrite, chalcopyrite, pyrrhotite and tetrahedrite with minor amounts of galena, sphalerite, argentite, minor pyrargyrite and other silver sulphosalts. These are accompanied by advanced argillic alteration clay minerals, chlorite, specularite and locally sericite, pyrophyllite, andalusite, tourmaline and minor amounts of scorzalite, corundum and dumortierite. The three known zones of significant mineralization are referred to as the Main zone, the Southern Tail zone and the more recently discovered Waterline zone. The ore mineralization is generally restricted to tabular fracture zones roughly paralleling stratigraphy and occurs predominantly as veins and disseminations with massive, coarse-grained sulphide replacement bodies present as local patches in the Main zone. Main zone ores are fine-grained and generally occur as disseminations with a lesser abundance of veins. Southern Tail ores are coarse-grained and occur predominantly as veins with only local disseminated sulphides. The Main zone has a thickness of 60 to 120 metres while the Southern Tail zone is approximately 30 metres thick. An advanced argillic alteration suite includes andalusite, corundum, pyrite, quartz, tourmaline and scorzalite. Other zones of mineralization include a zone of copper-molybdenum mineralization in a quartz stockwork in and adjacent to the quartz monzonite stock and a large zone of tourmaline-pyrite breccia located to the west and northwest of the Main zone.

Alteration assemblages in the Goosly sequence are characterized by minerals rich in alumina, boron and phosphorous, and show a systematic spatial relationship to areas of mineral deposits. Aluminous alteration is characterized by a suite of aluminous minerals including andalusite, corundum, pyrophyllite and scorzalite. Boron-bearing minerals

consisting of tourmaline and dumortierite occur within the ore zones in the hanging wall section of the Goosly sequence. Phosphorous-bearing minerals including scorzalite, apatite, augelite and svanbergite occur in the hanging wall zone, immediately above and intimately associated with sulphide minerals in the Main and Waterline zones. Argillic alteration is characterized by weak to pervasive sericite-quartz replacement. It appears to envelope zones of intense fracturing, with or without chalcopyrite/tetrahedrite mineralization.

The copper-silver-gold mineralization is epigenetic in origin. Intrusive activity resulted in the introduction of hydrothermal metal-rich solutions into the pyroclastic division of the Goosly sequence. Sulphides introduced into the permeable tuffs of the Main and Waterline zones formed stringers and disseminations which grade randomly into zones of massive sulphide. In the Southern Tail zone, sulphides formed as veins, fracture-fillings and breccia zones in brittle, less permeable tuff. Emplacement of post-mineral dikes into the sulphide-rich pyroclastic rocks has resulted in remobilization and concentration of sulphides adjacent to the intrusive contacts. Remobilization, concentration and contact metamorphism of sulphides occurs in the Main and Waterline zones at the contact with the postmineral gabbro-monzonite complex.

The Southern Tail deposit has been mined out to the economic limit of an open pit. With its operation winding down, Equity Silver Mines does not expect to continue as an operating mine after current reserves are depleted. Formerly an open pit, Equity is mined from underground at a scaled-down rate of 1180 tonnes-per-day. Proven and probable ore reserves at the end of 1992 were about 286,643 tonnes grading 147.7 grams per tonne silver, 4.2 grams per tonne gold and 0.46 per cent copper, based on a 300 grams per tonne silver-equivalent grade. Equity has also identified a small open-pit resource at the bottom of the Waterline pit which, when combined with underground reserves, should provide mill feed through the first two months of 1994 (Northern Miner - May 10, 1993).

Equity Silver Mines Ltd. was British Columbia's largest producing silver mine and ceased milling in January 1994, after thirteen years of open pit and underground production. Production totaled 2,219,480 kilograms of silver, 15,802 kilograms of gold and 84,086 kilograms of copper, from over 33.8 Million tonnes mined at an average grade of 0.4 per cent copper, 64.9 grams per tonne silver and 0.46 gram per tonne gold.

#### **Item 16: Other Relevant Data and Information**

There is no other relevant data or information other than that included in this report.

#### **Item 17: Interpretation and Conclusions**

Historical exploration highlights on the Ace target (Mastadon-Highland-Bell and Teck Resources) include: a northeast trending, >500ppm Cu-in-soils anomaly over widths of 250-800m and with a strike length in excess of 1800m with peak values of Cu to 1500ppm, Mo to 500ppm, Ag to 22.8ppm and Au to 500ppb.

Historical rock sampling from the northeast trending, sericite-altered, granodiorite dyke swarms returned significant results including one chip sample that returned 910ppb Au,

36gm/t Ag and 1169ppm Cu over 5m and a second 10m chip sample that returned 578ppm Ag, 1219ppm Cu and 4138ppm Pb. Selective grab sampling by Paget Resources in 2008 returned values up to 0.6% Cu, 0.245% Mo, 3.27gm/t Au and 200gm/t Ag. Rock sampling in 2012 duplicated many of the historic values indicating that the Ace showing area sits at the top of a high level porphyry system that has precious metal enrichment.

The collection of C-horizon soils over the ridge area in 2012 returned an average of 528ppm Cu over 950m which corresponds well with historical sampling. A short distance to the west and at a slightly lower elevation, sampling outlined a significant multi-element anomaly over 700m. The lower line averaged 6.3ppm Ag, 200ppm As, 592ppm Cu, 70.6ppm Mo, 395ppm Pb, 160ppm Sb and 651ppm Zn over its entire 700m length. Within this anomaly, a 250m section averaged 15.45ppm Ag while two samples 50m apart averaged 27.45ppm Ag. The suggestion by Evans that the mineralization appears to be a silver enriched porphyry system is supported by the 2012 sampling in the Ace area. As with the Teck sampling to the east of the ridge, the 2012 sampling to the west of the ridge at slightly lower elevations has revealed significant silver-in-soils mineralization, suggesting there may be mineral zoning processes, possibly associated with oxidation, occurring at higher elevations.

Rock sampling in 2013 within this Ag anomaly noted a number of narrow 1-2m wide faults and semi-massive to massive sulphide veins occurring within both the intrusive and hornfelsed sediments. Metal values varied widely in the samples collected suggesting several separate mineralized pulses occurred in the system. Massive sulphide float returned 12.5% Pb, 6.6% Zn and 168ppm Ag from sample 45059. Sampling of hornfelsed sediment returned values up to 1.16% Cu from float and up to 0.267% Cu over 1.3m in chip sampling, with slightly elevated Mo values. Six of ten samples of mineralized intrusive rock below the Ag anomaly returned values in Mo over 100ppm and up to 502ppm. All samples collected in this area returned Cu values between 120ppm and 1481ppm indicating a highly mineralized system containing both Cu and Mo credits. One chip sample of massive quartz-sulphide veining in subcrop within the granodiorite returned 1.037ppm Au, 2.4% Pb, 3.96% Zn and 275.6ppm Ag over 1m. It is believed that the narrow quartz and massive sulphide veining containing significant Au and Ag values is a late event in the mineralizing of the Ace showing area.

The discovery of highly anomalous gold-in-humus on strike of intense Probable Silica alteration has opened the possibility of a wide, gold rich system, parallel to the Ace trend. Aster imagery shows this trend to be in excess of 4500m at higher elevations and possibly 6500m in strike length if associated with the gold-in-soils anomaly. Sampling of the sedimentary bedrock exposures immediately underlying the Au anomaly returned background values indicating the anomalous humus Au values are not sourced from the surface rocks.

Composite chip sampling at the Natlan target, by Canadian Nickel Company Limited, of highly oxidized and gossanous Bulkley intrusion, returned values of Mo up to 1650ppm and Cu to 700ppm over an area 3600m x 1800m. This area was not visited during the 2012, 2013 or 2016 programs.

On review of the historical exploration data in conjunction with the interpretations of RGS, regional magnetic and satellite reflectance data, the Natlan property presents as an intriguing exploration project with multiple target areas worthy of further exploration. The author believes that the Natlan property is a property of merit and has the potential of hosting one or more significant mineral deposits.

**Item 18: Recommendations**

The Natlan property hosts a number of significant exploration targets, some of which have received preliminary evaluation in the past. While none of the historic data is believed to be erroneous, most of it would be regarded as dated. As a result, a two phase exploration program is proposed. Phase 1 would include flying the property with a High Resolution Magnetic Airborne survey. The project area was not covered by the Quest West survey and the data obtained may possibly identify structural controls such as intrusive contacts or regional faulting which is suspected to control mineralization at both the Natlan and Ace showings. Such an undertaken would possibly eliminate the need for a more intensive ground survey in the future. Phase 1 would also include expanding the Ah and C-horizon soil surveys completed in 2012, 2013 and 2016 by establishing a picket grid over both the Ace and Natlan showing areas for follow up geochemical and geophysical (Induced Potential) surveys.

At the Ace target, grid should be established with an 8000m long baseline oriented at 055° with 2000m long lines spaced 200 and 400m apart. Lines should be wide spaced over the entire grid with closer spacing over areas of known or suspected mineralization. This line orientation will cross the trend of the proposed northeast fault and the general strike of the mineralized dykes. The grid would also cover the area of “probable iron oxide” alteration noted approximately 2000m to the northeast of the known area of Cu-in-soils anomaly and the large zone of intense “probable and possible silica” alteration. Geochemical sample spacing should initially be at 50m intervals along the lines resulting in approximately 1476 samples over 72 line km of grid at the Ace target and extensions to both the east and west. Geophysical surveys (Induced Potential) should be initially completed at 400m line spacing over the southwestern 4km of grid resulting in 26 line km of grid being surveyed. Most of this area could be accessed by road resulting in substantial cost savings.

In the Natlan target area, grid should be established with a 3000m long north/south oriented baseline along the eastern margin of the Bulkley intrusion with east/west trending lines, initially spaced 400m apart. The Natlan showing area appears much more rugged and it is doubtful that meaningful soil geochemical data could be collected. An IP geophysical program is recommended over the area. With 2000m lines spaced at 400m a total of 19 line km of grid would be surveyed. A mapping, prospecting and sampling program should be conducted over areas of interest identified by the satellite imagery.

Phase 2 would be dependent on the results obtained in the geochemical and geophysical surveys and would include the initial drilling of 2000m of NQ core in 10 holes over the property. Samples should be assayed in 2m intervals from surface with the entire hole being analysed.

**Proposed budget****Phase 1**

Heliborne High Resolution Magnetic Survey (600 line km @ \$50.00/line km)	30,000
Mob/demob	10,000
Fuel	10,000
Interpretation	15,000
Project Geologist (21 days @ \$600/day)	12,600
Geologist (21 days @ \$500/day)	10,500
Prospector/sampler x 4 (21 days @ \$300/day)	25,200
Grid layout/line cutting (117 line km @ \$100/km)	11,700
Assaying (1600 samples @ \$50/sample)	80,000
Geophysical surveys IP (45 line km @ 2000/km)	90,000
Helicopter (50hrs @ \$1600/hr wet)	80,000
Room and Board (250 person days @ \$150/day)	37,500
Mob/demob	10,000
Reporting	<u>20,000</u>
	442,500

Contingency (15%)	<u>66,375</u>
Phase 1 Total	\$508,875

**Phase 2**

Project Geologist (70 days @ \$600/day)	42,000
Geologist (70 days @ \$500/day)	35,000
Core cutter (70 days @ \$200/day)	14,000
Drilling NQ (2000m @ \$220/m)	440,000
Assaying (1000 samples @ \$55/sample)	55,000
Helicopter (200hrs @ \$1600/hr wet)	320,000
Room and Board (510 person days @\$150/day)	76,500
Mob/demob	15,000
Reporting	<u>20,000</u>
	1,017,500
Contingency (15%)	<u>152,625</u>
Phase 2 Total	1,170,125

Respectfully submitted, this 21<sup>st</sup> day of January, 2017  
 "Signed and Sealed"

Ken Galambos P.Eng.  
 KDG Exploration Services

Victoria, BC.

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**Item 20: Date and Signature Page**

1) I, Kenneth Daryl Galambos of 1535 Westall Avenue, Victoria, British Columbia am self-employed as a consultant geological engineer, authored and am responsible for this report entitled "Geochemical Sampling Report on the Natlan Property", dated January 21, 2017.

2) I am a graduate of the University of Saskatchewan in Saskatoon, Saskatchewan with a Bachelor's Degree in Geological Engineering (1982). I began working in the mining field in 1974 and have more than 29 years mineral exploration and production experience, primarily in the North American Cordillera. Highlights of this experience include the discovery and delineation of the Brewery Creek gold deposit, near Dawson City, Yukon for Noranda Exploration Ltd.

3) I am a registered member of the Association of Professional Engineers of Yukon, registration number 0916 and have been a member in good standing since 1988. I am a registered Professional Engineer with APEGBC, license 35364, since 2010.

4) This report is based upon the author's personal knowledge of the region and a review of additional pertinent data.

5) As stated in this report, in my professional opinion the property is of potential merit and further exploration work is justified.

6) To the best of my knowledge this report contains all scientific and technical information required to be disclosed so as not to be misleading.

7) I am partners with Ralph Keefe on the Natlan property and a number of other properties in British Columbia. My professional relationship is as a non-arm's length consultant, and I have no expectation that this relationship will change.

8) I consent to the use of this report by Mr. Keefe for such assessment and/or regulatory and financing purposes deemed necessary, but if any part shall be taken as an excerpt, it shall be done only with my approval.

Dated at Victoria, British Columbia this 21st day of January, 2017.

"Signed and Sealed"

Ken Galambos, P.Eng. (APEY Reg. No. 0916, APEGBC license 35364)  
KDG Exploration Services  
1535 Westall Ave.  
Victoria, British Columbia V8T 2G6

**Item 21: Statement of Expenditures****Personnel (August 25- September 3, 2016)**

Ken Galambos (8 days @ \$600/day)	\$3600.00
Ralph Keefe (6 days @ \$350/day)	\$2100.00
Brian Keefe (6 days @ \$200/day)	\$1200.00

**Transportation and Camp costs**

KDG Vehicle (2 days @ \$100/day)	\$200.00
Mileage Francois Lake-Victoria (1154km @ \$0.50/km)	\$577.00
BC Ferries (Tsawassan to Swartz Bay)	\$71.50
Truck (4 days @ \$100/day)	\$400.00
Mileage (500km @ \$0.50/km)	\$250.00
Trailer (4 days @ \$50/day)	\$200.00
Food (14 person days @ \$35/day)	\$490.00
Field supplies	\$30.00

**Sampling costs**

Rock samples (5 @ \$35/ea)	\$175.00
Soil samples (15 @ \$35/ea)	\$525.00
Shipping	\$30.00

**Report**

Report (2 days @ \$600/day)	\$1200.00
Total	\$12,248.50

**Item 22: Software used in the Program**

Adobe Acrobat 9

Adobe Photoshop Elements 8.0

Adobe Reader 8.1.3

ArcGIS 10

Google Earth

Internet Explorer

Microsoft Windows 7

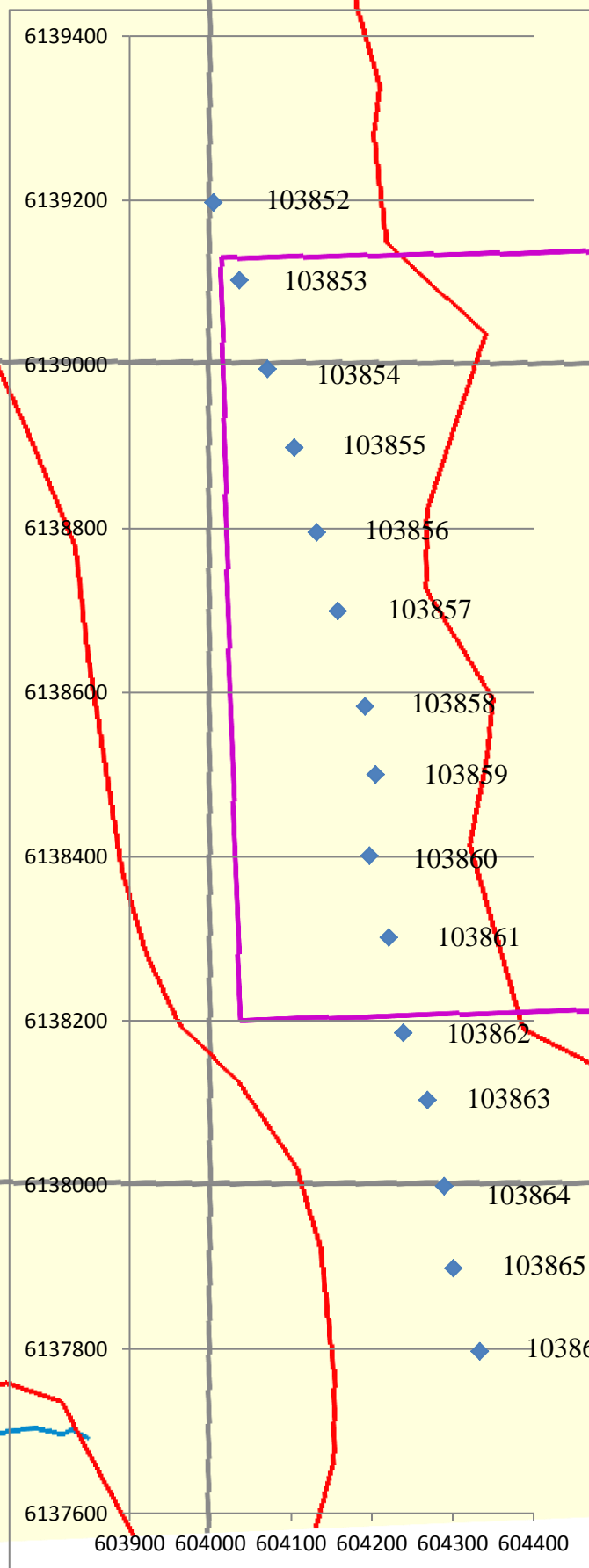
Microsoft Office 2010

Manifold

## **Item 23 Appendices**

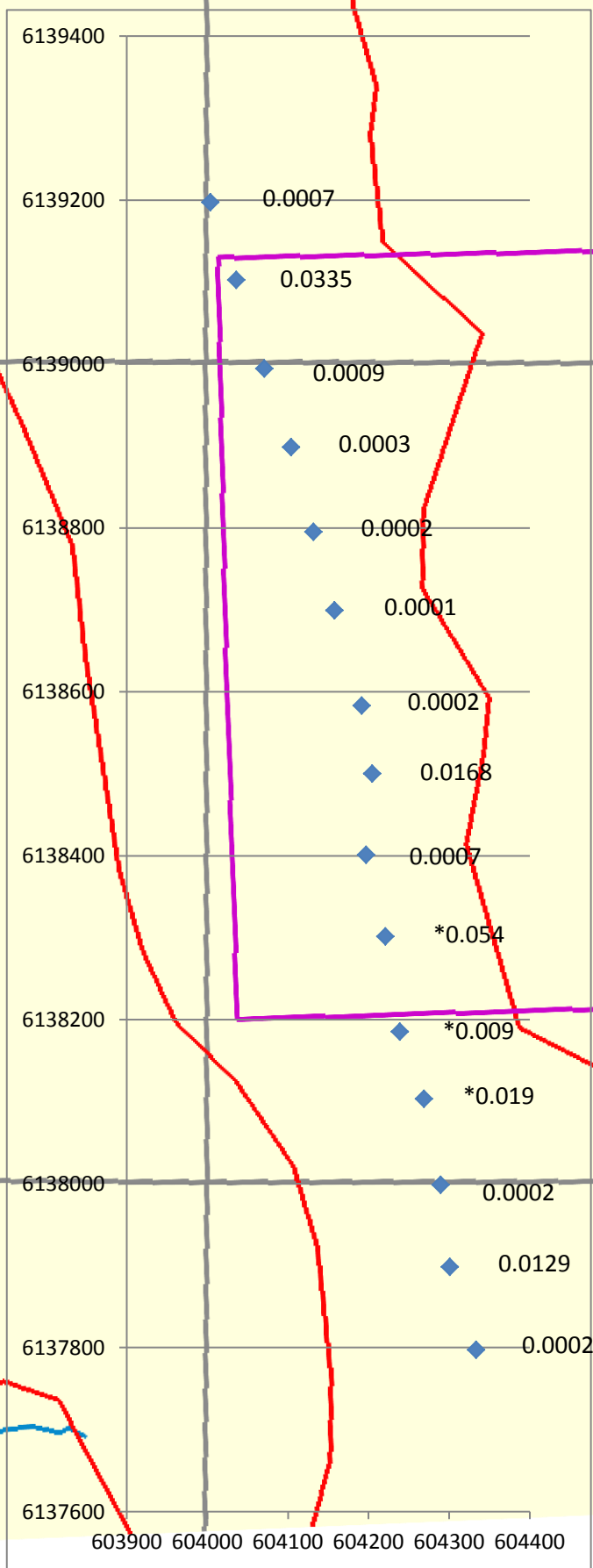
## **Appendix A**

### **Sample Location Map Humus**



## **Appendix B**

### **Geochemical Results Humus**

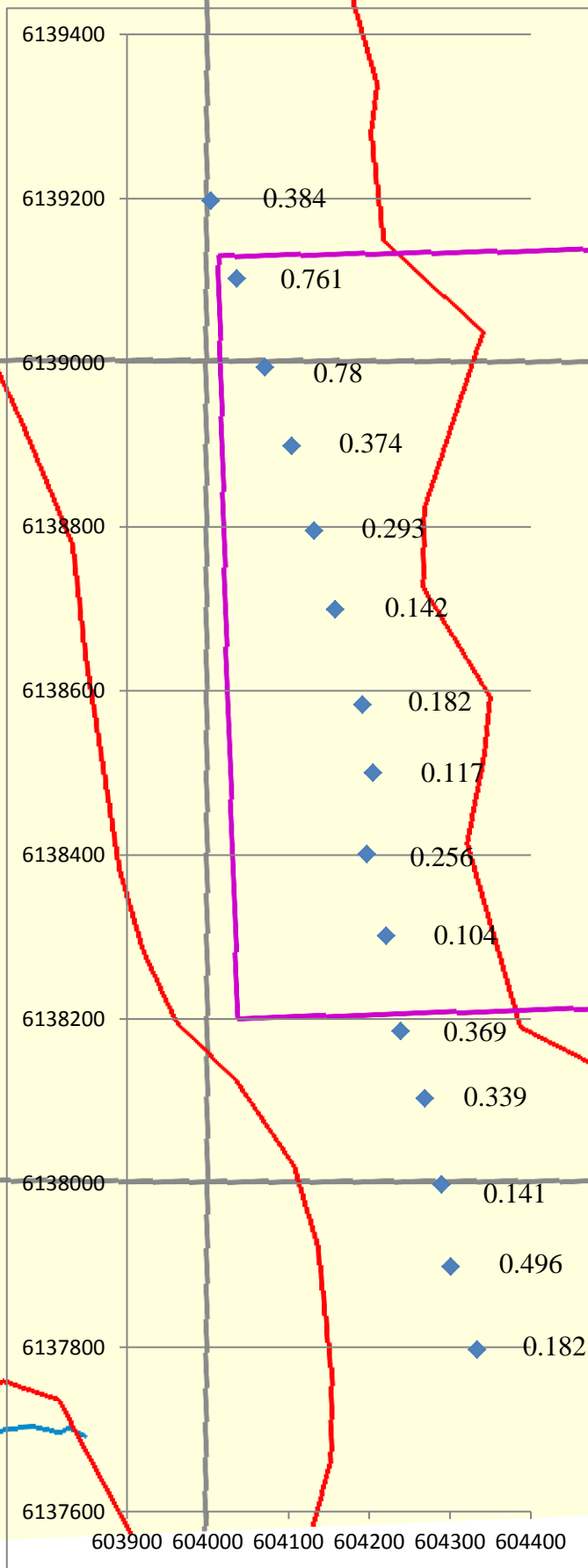


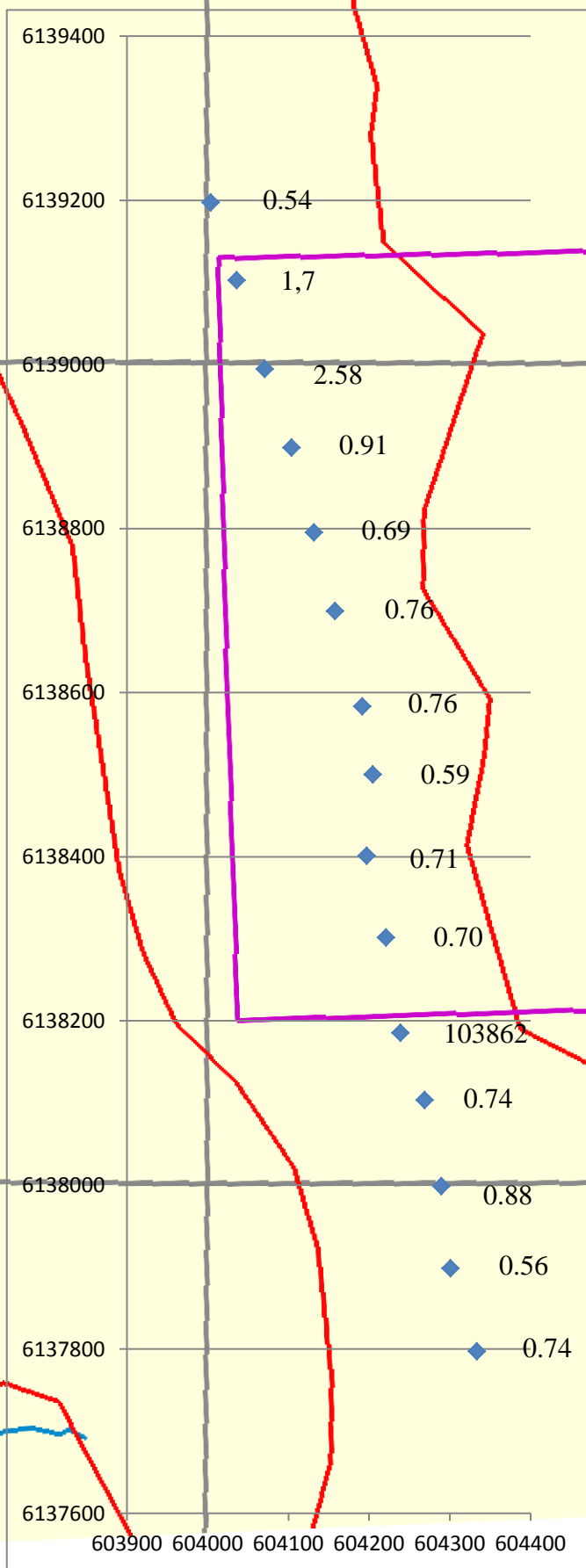
RKG Exploration  
Natlan/Ace Property

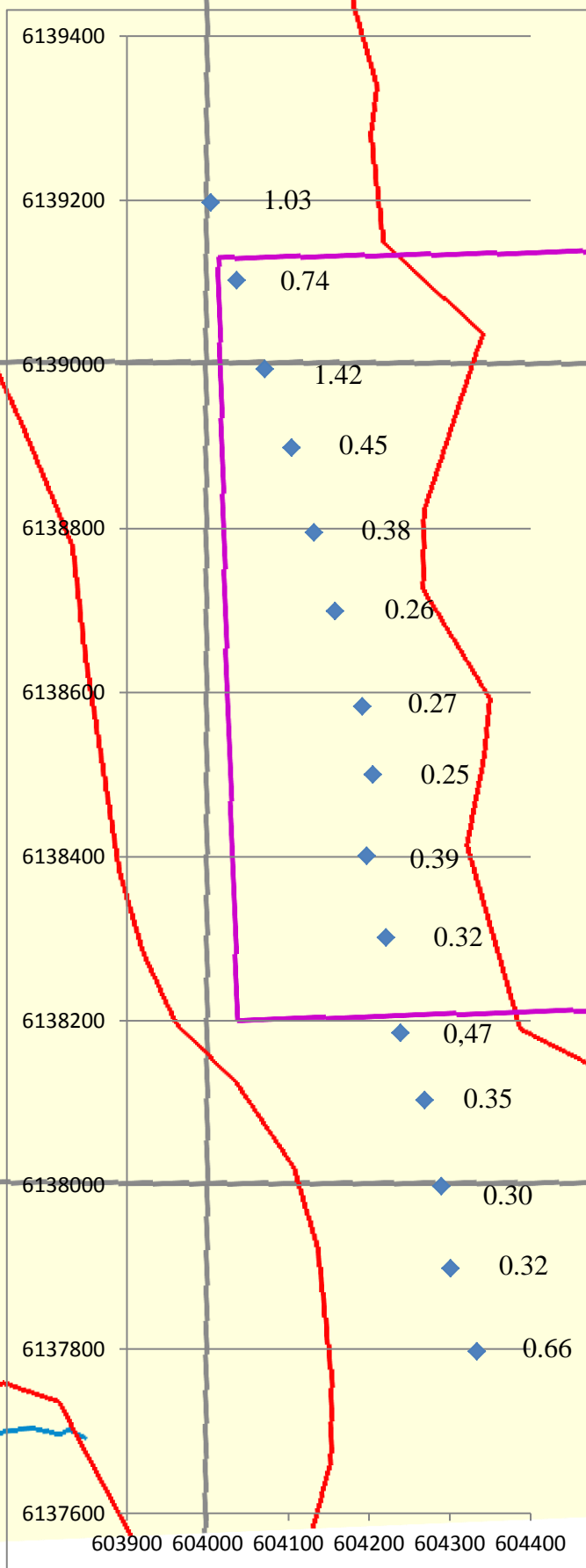
**Gold  
ppm**

\* fire assay value

January 2017







RKG Exploration  
Natlan/Ace Property  
**Molybdenum**  
**ppm**  
January 2017

## **Appendix C**

### **Assay Certificates Humus**



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
www.alsglobal.com

To: ALTIUS RESOURCES INC.  
PO BOX 8263  
STN. A  
ST JOHNS NL A1B 3N4

Page: 1  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

## CERTIFICATE VA16178041

Project: BC Proj.Generation- Ralph Keefe

This report is for 138 Soil samples submitted to our lab in Vancouver, BC, Canada on 13- OCT- 2016.

The following have access to data associated with this certificate:

SHANE EBERT

ALTIUS RESOURCES WEBTRIEVE

LAWRENCE WINTER

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 22	Sample login - Rcd w/o BarCode
SCR- 41	Screen to - 180um and save both

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au- ICP21	Au 30g FA ICP- AES Finish	ICP- AES
ME- MS41L	Super Trace Lowest DL AR by ICP- MS	

To: ALTIUS RESOURCES INC.  
ATTN: SHANE EBERT  
PO BOX 8263  
STN. A  
ST JOHNS NL A1B 3N4

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
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Page: 2 - A  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg	Au- ICP21 Au ppm	ME- MS41L Au ppm	ME- MS41L Ag ppm	ME- MS41L Al %	ME- MS41L As ppm	ME- MS41L B ppm	ME- MS41L Ba ppm	ME- MS41L Be ppm	ME- MS41L Bi ppm	ME- MS41L Ca %	ME- MS41L Cd ppm	ME- MS41L Ce ppm	ME- MS41L Co ppm	ME- MS41L Cr ppm
		0.02	0.001	0.0002	0.001	0.01	0.01	10	0.5	0.01	0.001	0.01	0.001	0.003	0.001	0.01
103751		0.24	<0.001	<0.0002	0.245	0.18	0.24	20	482	0.03	0.023	3.44	2.99	1.605	2.43	1.18
103752		0.30	0.001	<0.0002	0.168	0.10	0.38	10	337	0.03	0.024	2.74	2.63	1.235	1.800	1.67
103753		0.48	NSS	0.0005	0.393	0.15	0.35	10	50.3	0.02	0.012	0.54	1.440	0.604	0.525	1.57
103754		0.46	NSS	<0.0002	0.367	0.40	0.72	10	130.5	0.13	0.026	2.04	2.57	6.55	1.615	3.83
103755		0.26	<0.001	0.0006	0.141	0.13	0.46	10	141.0	0.03	0.033	2.23	0.973	1.320	2.03	2.69
103756		0.30	<0.001	0.179	0.297	0.23	0.60	10	406	0.04	0.034	3.05	0.892	2.20	2.60	4.00
103757		0.66	<0.001	0.0002	0.251	2.05	3.73	<10	2710	0.76	0.088	1.01	1.360	21.6	10.30	20.1
103758		0.70	<0.001	0.0002	0.197	0.31	0.58	10	719	0.04	0.030	0.65	1.655	2.61	0.943	2.78
103759		0.36	<0.001	<0.0002	1.085	0.31	0.35	10	2150	0.04	0.034	1.26	1.350	1.615	1.780	1.38
103760		0.42	0.003	0.0003	0.193	0.44	0.99	10	1285	0.17	0.045	2.36	2.11	7.44	3.17	6.53
103761		0.50	0.001	<0.0002	0.570	0.28	1.33	10	754	0.09	0.035	1.90	6.32	4.60	2.89	4.95
103762		0.30	0.020	<0.0002	0.031	0.01	0.17	30	340	0.01	0.009	2.67	1.220	0.203	0.355	0.49
103763		0.40	0.002	<0.0002	0.210	0.04	0.20	30	460	0.02	0.028	2.60	2.43	0.512	0.485	0.79
103764		0.42	<0.001	0.0004	0.142	0.78	0.71	20	301	0.42	0.025	2.13	0.851	26.7	2.00	5.29
103765		0.34	0.004	0.0003	0.086	0.20	0.30	20	619	0.02	0.011	2.83	4.38	0.537	1.060	0.83
103766		0.54	0.002	0.0002	0.110	0.12	0.35	20	535	0.04	0.016	3.09	1.450	1.120	1.220	0.99
103767		0.32	0.004	<0.0002	0.176	0.15	0.39	10	787	0.04	0.021	1.89	1.960	1.655	1.900	1.80
103768		0.30	0.007	0.0005	0.120	0.07	0.26	10	305	0.03	0.025	2.70	1.305	0.896	1.010	0.78
103769		0.32	<0.001	<0.0002	0.079	0.08	0.35	20	281	0.02	0.019	3.55	1.535	0.524	0.550	0.55
103770		0.28	0.001	<0.0002	0.078	0.02	0.12	50	356	0.01	0.009	3.79	0.984	0.215	0.359	0.32
103771		0.30	0.001	0.0003	0.072	0.07	0.23	30	308	0.02	0.018	3.56	1.910	0.785	1.405	0.71
103772		0.24	<0.001	<0.0002	0.365	0.08	0.30	30	726	0.03	0.030	3.44	5.04	1.440	3.29	0.92
103773		0.58	<0.001	0.0002	1.035	0.56	1.74	20	2300	0.19	0.047	2.07	4.47	6.12	4.76	9.44
103774		0.66	<0.001	<0.0002	0.427	1.57	5.62	10	4690	0.59	0.075	1.54	2.73	32.7	10.85	14.50
103775		0.50	<0.001	<0.0002	0.220	0.55	1.02	10	479	0.11	0.042	1.00	5.91	4.29	3.09	5.61
103776		0.32	0.002	0.0002	0.337	0.52	1.60	<10	240	0.11	0.043	0.99	2.56	3.30	2.54	5.36
103777		0.22	<0.001	0.0008	0.349	0.21	0.55	10	651	0.05	0.027	1.21	10.80	1.510	1.545	2.05
103778		0.28	<0.001	<0.0002	0.290	0.13	0.55	30	875	0.05	0.034	2.70	3.23	2.24	3.16	2.91
103779		0.22	0.008	0.0002	0.242	0.29	0.67	<10	163.5	0.12	0.034	0.55	2.70	12.20	1.840	2.55
103780		0.46	<0.001	0.0003	0.186	0.29	0.58	10	672	0.05	0.022	1.55	2.55	2.02	1.515	2.62
103781		0.36	<0.001	<0.0002	0.197	0.05	0.32	50	477	<0.01	0.014	3.28	8.68	0.361	0.608	0.62
103782		0.30	<0.001	0.0002	0.234	0.08	0.26	10	578	0.03	0.026	2.47	1.900	1.025	0.925	1.06
103783		0.20	<0.001	<0.0002	0.485	0.10	0.35	10	406	0.03	0.022	2.15	1.945	1.090	0.857	1.39
103784		0.34	<0.001	<0.0002	0.024	0.01	0.12	50	164.0	<0.01	0.004	2.82	0.356	0.091	0.206	0.25
103785		0.28	0.001	<0.0002	0.026	0.02	0.09	10	157.5	0.01	0.013	1.44	0.125	0.217	0.079	0.30
103786		0.18	<0.001	0.0002	0.083	0.30	0.49	10	357	0.02	0.033	2.82	1.245	1.870	1.785	2.28
103787		0.30	<0.001	0.0007	0.293	0.18	0.29	<10	128.0	0.03	0.017	0.64	0.920	1.535	1.145	1.87
103788		0.42	<0.001	0.0003	0.206	0.29	0.87	10	143.0	0.07	0.017	2.57	2.24	4.45	2.07	2.03
103789		0.30	0.004	0.0003	0.181	0.48	2.34	10	104.0	0.08	0.033	1.45	0.823	2.49	2.81	4.36
103790		0.44	<0.001	0.0006	0.193	0.50	3.70	<10	139.0	0.06	0.053	0.87	0.809	5.29	3.53	6.05



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Page: 2 - B  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Cs ppm 0.005	Cu ppm 0.01	Fe % 0.001	Ga ppm 0.004	Ge ppm 0.005	Hf ppm 0.002	Hg ppm 0.004	In ppm 0.005	K % 0.01	La ppm 0.002	Li ppm 0.1	Mg % 0.01	Mn ppm 0.1	Mo ppm 0.01	Na % 0.001
103751		0.117	8.78	0.090	0.335	<0.005	0.003	0.177	0.010	0.32	1.150	0.3	0.17	3090	1.52	0.003
103752		0.115	8.62	0.154	0.431	0.014	0.008	0.198	0.005	0.18	0.804	0.4	0.15	2780	1.92	0.002
103753		0.060	8.27	0.094	0.226	0.006	0.003	0.225	0.006	0.09	0.357	0.2	0.05	414	0.65	0.009
103754		0.318	11.95	0.410	1.065	0.024	0.020	0.159	0.011	0.11	4.78	1.4	0.16	426	0.98	0.003
103755		0.181	7.04	0.310	0.721	0.011	0.006	0.175	0.007	0.13	0.697	0.6	0.14	1090	1.67	0.004
103756		0.776	9.95	0.400	0.919	0.014	0.007	0.114	0.011	0.12	1.195	1.4	0.15	895	1.05	0.003
103757		2.96	41.8	2.84	7.09	0.061	0.029	0.073	0.043	0.14	8.70	12.9	0.50	2100	0.55	0.003
103758		0.852	10.90	0.350	0.898	0.016	<0.002	0.213	0.007	0.12	1.300	0.4	0.06	945	0.24	0.004
103759		0.505	49.7	0.226	1.055	0.010	<0.002	0.239	0.012	0.14	0.648	0.7	0.10	6900	0.31	0.002
103760		0.628	23.9	0.810	1.855	0.035	0.008	0.160	0.012	0.14	2.87	3.2	0.21	2910	0.61	0.004
103761		0.224	13.50	0.620	1.255	0.020	0.016	0.185	0.009	0.16	2.45	1.7	0.18	2120	0.89	0.003
103762		0.127	7.70	0.025	0.093	0.006	0.003	0.161	<0.005	0.16	0.114	0.1	0.10	723	0.40	0.005
103763		0.121	9.38	0.074	0.194	0.007	0.003	0.292	<0.005	0.21	0.362	0.2	0.10	822	0.74	0.005
103764		0.239	19.00	0.590	1.680	0.091	0.036	0.120	0.017	0.10	12.65	2.2	0.27	383	0.60	0.015
103765		0.052	8.15	0.065	0.279	0.006	0.005	0.199	0.005	0.26	0.287	0.3	0.13	3530	0.38	0.002
103766		0.131	10.20	0.117	0.319	0.007	0.002	0.390	0.006	0.32	0.506	0.4	0.18	2330	0.35	0.004
103767		0.129	11.00	0.189	0.464	0.011	0.014	0.168	<0.005	0.15	0.873	0.6	0.15	901	1.69	0.003
103768		0.153	8.93	0.071	0.260	<0.005	0.004	0.232	0.006	0.20	0.997	0.2	0.16	2820	1.35	0.004
103769		0.120	9.65	0.050	0.213	0.008	<0.002	0.308	0.006	0.27	0.463	0.2	0.17	2260	1.03	0.003
103770		0.098	8.63	0.023	0.103	<0.005	<0.002	0.363	0.009	0.27	0.128	0.2	0.21	877	0.21	0.005
103771		0.164	11.30	0.079	0.271	0.009	0.004	0.335	<0.005	0.27	0.485	0.3	0.24	2270	0.73	0.005
103772		0.215	16.85	0.114	0.369	0.005	0.006	0.211	0.005	0.14	0.834	0.4	0.17	2390	0.51	0.005
103773		0.308	17.45	1.340	2.78	0.036	0.017	0.174	0.018	0.18	2.74	5.3	0.26	3580	0.56	0.003
103774		2.72	181.5	2.79	6.78	0.081	0.033	0.099	0.048	0.13	11.70	14.6	0.61	4830	0.59	<0.001
103775		0.812	9.31	0.650	1.555	0.021	0.003	0.199	0.015	0.12	1.995	2.1	0.12	3390	0.47	0.005
103776		0.473	7.94	0.710	1.525	0.017	0.004	0.209	0.014	0.14	1.560	2.4	0.10	2070	0.68	0.007
103777		0.311	7.95	0.223	0.534	0.016	0.009	0.201	0.006	0.11	0.742	0.8	0.08	1765	0.69	0.004
103778		0.680	11.50	0.290	0.740	0.016	<0.002	0.101	0.005	0.17	1.355	0.6	0.22	3990	0.98	0.005
103779		0.315	32.3	0.300	0.814	0.025	0.002	0.186	0.008	0.08	5.39	1.2	0.07	599	0.38	0.004
103780		0.295	9.10	0.320	0.856	0.013	0.006	0.259	0.013	0.10	0.923	0.9	0.12	1855	0.56	0.005
103781		0.088	13.30	0.055	0.240	<0.005	<0.002	0.307	0.010	0.18	0.247	0.3	0.29	2720	0.57	0.004
103782		0.245	9.70	0.104	0.531	0.006	0.006	0.442	0.008	0.11	0.538	0.4	0.07	6400	0.93	0.004
103783		0.151	8.67	0.149	0.510	0.010	0.007	0.299	0.006	0.11	0.565	0.4	0.08	3300	0.86	0.005
103784		0.061	2.59	0.012	0.085	<0.005	<0.002	0.078	0.005	0.09	0.036	0.1	0.21	388	0.91	0.021
103785		0.143	2.91	0.024	0.111	<0.005	0.003	0.296	<0.005	0.13	0.098	0.1	0.04	470	0.23	0.005
103786		0.194	9.63	0.181	0.628	0.015	0.002	0.191	0.009	0.42	1.335	0.5	0.20	4040	2.42	0.007
103787		0.106	7.17	0.208	0.509	<0.005	0.009	0.116	<0.005	0.16	0.980	0.3	0.07	1095	1.09	0.006
103788		0.298	12.90	0.300	0.593	0.020	0.012	0.109	<0.005	0.15	2.49	0.7	0.26	499	0.88	0.008
103789		0.207	7.53	0.750	1.350	0.019	<0.002	0.135	0.013	0.14	1.360	1.7	0.17	1950	0.69	0.007
103790		0.273	11.15	1.090	1.915	0.021	0.003	0.156	0.007	0.13	2.83	1.9	0.15	1710	1.01	0.010



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Page: 2 - C  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
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Project: BC Proj.Generation- Ralph Keefe

# CERTIFICATE OF ANALYSIS VA16178041

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Nb	Ni	P	Pb	Pd	Pt	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
		ppm 0.002	ppm 0.04	% 0.001	ppm 0.005	ppm 0.001	ppm 0.002	ppm 0.005	ppm 0.001	% 0.01	ppm 0.005	ppm 0.005	ppm 0.1	ppm 0.01	ppm 0.01	ppm 0.005
103751		0.042	5.94	0.221	3.93	<0.001	<0.002	4.94	<0.001	0.14	0.069	0.382	0.7	0.08	206	<0.005
103752		0.078	3.73	0.148	3.25	<0.001	<0.002	2.43	<0.001	0.15	0.085	0.444	0.9	0.11	154.5	<0.005
103753		0.034	3.04	0.117	2.35	<0.001	<0.002	1.370	<0.001	0.11	0.067	0.314	0.4	0.05	19.65	<0.005
103754		0.139	5.28	0.099	2.94	<0.001	<0.002	3.83	<0.001	0.14	0.130	1.200	0.8	0.10	102.0	<0.005
103755		0.152	2.58	0.127	4.53	<0.001	<0.002	3.15	<0.001	0.16	0.067	0.551	0.6	0.13	96.7	<0.005
103756		0.186	3.41	0.140	4.93	<0.001	<0.002	3.38	<0.001	0.14	0.087	0.625	0.7	0.16	77.6	<0.005
103757		0.634	15.75	0.150	40.8	<0.001	<0.002	21.0	<0.001	0.08	0.241	4.58	0.5	0.51	62.6	<0.005
103758		0.134	3.54	0.107	7.45	<0.001	<0.002	6.23	<0.001	0.10	0.087	0.412	0.6	0.20	26.0	<0.005
103759		0.080	3.59	0.131	6.89	<0.001	<0.002	5.08	<0.001	0.13	0.074	0.508	0.5	0.09	74.6	<0.005
103760		0.290	5.15	0.156	40.9	<0.001	<0.002	6.58	<0.001	0.12	0.130	1.430	0.7	0.22	62.2	<0.005
103761		0.217	6.72	0.132	21.2	<0.001	<0.002	4.23	<0.001	0.14	0.141	0.905	0.6	0.16	124.5	<0.005
103762		0.006	0.90	0.128	0.751	<0.001	<0.002	2.75	<0.001	0.21	0.032	0.247	0.6	0.01	129.0	<0.005
103763		0.039	1.78	0.130	2.24	<0.001	<0.002	2.77	<0.001	0.18	0.060	0.321	0.7	0.05	151.0	<0.005
103764		0.134	15.05	0.124	1.575	<0.001	<0.002	3.54	<0.001	0.20	0.409	1.860	0.7	0.10	289	<0.005
103765		0.016	3.69	0.190	2.09	<0.001	<0.002	1.565	<0.001	0.14	0.092	0.399	0.7	0.05	156.5	<0.005
103766		0.034	7.24	0.108	2.22	<0.001	<0.002	2.23	<0.001	0.14	0.050	0.553	0.8	0.04	166.5	<0.005
103767		0.042	3.84	0.120	2.28	<0.001	<0.002	2.07	<0.001	0.16	0.066	0.651	0.9	0.08	443	<0.005
103768		0.024	3.81	0.143	3.16	<0.001	<0.002	3.30	<0.001	0.17	0.066	0.348	0.8	0.02	139.5	<0.005
103769		0.018	2.91	0.143	2.13	<0.001	<0.002	3.79	<0.001	0.14	0.048	0.473	0.8	0.03	143.0	<0.005
103770		0.007	1.70	0.119	0.845	<0.001	<0.002	3.53	0.001	0.17	0.023	0.423	0.7	0.03	189.0	<0.005
103771		0.035	3.01	0.131	2.90	<0.001	<0.002	3.82	0.001	0.20	0.057	0.432	0.8	0.04	134.0	<0.005
103772		0.040	3.55	0.174	4.73	<0.001	<0.002	2.11	<0.001	0.19	0.075	0.468	0.9	0.09	180.5	<0.005
103773		0.690	7.55	0.200	26.7	<0.001	<0.002	6.17	<0.001	0.11	0.193	1.115	0.6	0.33	98.0	<0.005
103774		0.755	12.80	0.163	175.0	<0.001	<0.002	16.35	<0.001	0.10	0.460	6.47	0.7	0.55	80.3	<0.005
103775		0.228	6.71	0.115	9.61	<0.001	<0.002	6.87	<0.001	0.09	0.086	0.514	0.4	0.21	44.3	<0.005
103776		0.188	5.80	0.218	10.30	<0.001	<0.002	4.35	<0.001	0.10	0.102	0.701	0.6	0.13	49.0	<0.005
103777		0.090	3.31	0.121	5.78	<0.001	<0.002	2.35	<0.001	0.13	0.065	0.547	0.6	0.08	91.4	<0.005
103778		0.070	4.92	0.154	5.34	<0.001	0.002	3.18	<0.001	0.14	0.095	0.505	0.7	0.10	169.5	<0.005
103779		0.121	3.16	0.103	11.30	0.001	<0.002	2.39	<0.001	0.10	0.120	1.340	0.4	0.07	49.3	<0.005
103780		0.181	4.61	0.097	4.83	<0.001	<0.002	3.70	<0.001	0.12	0.070	0.548	0.5	0.08	106.5	<0.005
103781		0.028	4.28	0.135	2.43	<0.001	<0.002	2.05	<0.001	0.21	0.042	0.286	0.8	0.02	93.9	<0.005
103782		0.062	2.45	0.111	3.87	<0.001	<0.002	2.43	<0.001	0.13	0.080	0.517	0.5	0.05	116.5	<0.005
103783		0.076	2.07	0.098	3.24	<0.001	<0.002	1.800	<0.001	0.11	0.056	0.609	0.7	0.06	120.5	<0.005
103784		0.006	0.24	0.099	0.444	<0.001	<0.002	1.520	<0.001	0.16	0.033	0.337	0.6	0.01	190.0	<0.005
103785		0.010	0.36	0.106	0.964	<0.001	<0.002	2.79	<0.001	0.09	0.041	0.261	0.4	0.03	100.0	<0.005
103786		0.092	4.05	0.227	4.43	<0.001	<0.002	4.53	<0.001	0.16	0.064	0.407	0.9	0.08	146.0	<0.005
103787		0.106	2.24	0.124	2.22	<0.001	<0.002	2.33	<0.001	0.09	0.064	0.530	0.5	0.09	54.0	<0.005
103788		0.086	3.11	0.135	1.760	<0.001	<0.002	5.90	0.001	0.19	0.104	0.817	0.6	0.07	149.0	<0.005
103789		0.234	4.58	0.133	2.69	<0.001	<0.002	4.60	<0.001	0.11	0.150	0.468	0.5	0.15	42.1	<0.005
103790		0.283	6.13	0.116	4.93	<0.001	0.002	4.62	<0.001	0.10	0.245	1.230	0.5	0.20	37.9	<0.005



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Page: 2 - D  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
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Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Te	Th	Ti	TI	U	V	W	Y	Zn
		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
		0.01	0.002	0.001	0.002	0.005	0.1	0.001	0.003	0.1
103751		<0.01	0.021	0.002	0.012	0.020	1.5	0.021	1.080	428
103752		<0.01	0.024	0.005	0.022	0.026	3.7	0.020	0.669	359
103753		0.01	0.014	0.003	0.024	0.020	2.4	0.015	0.234	65.8
103754		0.01	0.057	0.006	0.039	0.150	7.0	0.023	5.53	131.5
103755		0.02	0.037	0.011	0.025	0.037	8.2	0.037	0.301	107.0
103756		0.01	0.024	0.012	0.034	0.052	10.0	0.047	0.749	134.0
103757		0.04	0.185	0.047	0.072	0.341	60.3	0.072	9.72	349
103758		<0.01	0.002	0.008	0.026	0.043	8.1	0.022	0.658	108.5
103759		0.01	0.012	0.005	0.133	0.030	3.8	0.019	0.416	325
103760		<0.01	0.047	0.014	0.034	0.090	16.3	0.055	2.83	230
103761		0.01	0.063	0.015	0.030	0.077	15.2	0.043	1.240	285
103762		<0.01	0.003	<0.001	0.016	0.008	0.4	0.014	0.098	130.0
103763		0.01	0.010	0.002	0.027	0.017	1.5	0.013	0.291	202
103764		0.01	0.069	0.004	0.065	0.301	9.5	0.019	22.8	31.8
103765		0.02	0.012	0.001	0.018	0.009	1.1	0.013	0.266	331
103766		0.01	0.025	0.002	0.014	0.021	2.3	0.013	0.520	199.5
103767		0.01	0.038	0.002	0.018	0.037	3.0	0.014	1.295	69.7
103768		0.03	0.023	0.002	0.040	0.013	1.4	0.019	0.869	203
103769		0.02	0.010	0.001	0.011	0.011	0.8	0.011	0.407	389
103770		<0.01	0.006	<0.001	0.014	0.008	0.4	0.008	0.131	251
103771		0.01	0.020	0.002	0.024	0.017	1.4	0.012	0.392	276
103772		<0.01	0.025	0.002	0.016	0.020	2.0	0.024	0.824	586
103773		0.01	0.016	0.044	0.026	0.129	33.8	0.056	1.970	575
103774		0.02	0.138	0.070	0.038	0.308	73.2	0.127	15.70	470
103775		<0.01	0.009	0.011	0.074	0.070	15.4	0.084	1.035	285
103776		<0.01	0.012	0.014	0.040	0.070	16.6	0.040	0.816	153.0
103777		0.01	0.027	0.007	0.031	0.029	5.2	0.032	0.449	276
103778		0.01	0.017	0.005	0.024	0.031	5.5	0.028	0.718	540
103779		0.04	0.032	0.009	0.037	0.084	6.9	0.028	5.95	140.0
103780		0.03	0.009	0.011	0.029	0.040	7.9	0.031	0.510	197.5
103781		0.01	0.007	0.001	0.029	0.008	1.0	0.008	0.187	630
103782		0.04	0.026	0.004	0.049	0.026	2.2	0.026	0.413	522
103783		0.01	0.023	0.006	0.034	0.029	3.7	0.017	0.366	269
103784		0.02	0.003	<0.001	0.029	0.005	0.3	0.005	0.040	77.7
103785		<0.01	0.005	0.001	0.031	0.008	0.5	0.009	0.068	75.0
103786		0.02	0.010	0.005	0.019	0.028	4.0	0.042	0.979	220
103787		0.02	0.025	0.008	0.020	0.033	5.2	0.025	0.572	73.4
103788		0.01	0.041	0.004	0.023	0.160	4.9	0.018	2.94	84.7
103789		0.01	0.006	0.010	0.024	0.053	14.6	0.038	0.716	138.0
103790		0.02	0.051	0.020	0.021	0.089	23.2	0.065	1.170	55.7



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Page: 3 - A  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

# CERTIFICATE OF ANALYSIS VA16178041

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg	Au- ICP21 Au ppm	ME- MS41L Au ppm	ME- MS41L Ag ppm	ME- MS41L Al %	ME- MS41L As ppm	ME- MS41L B ppm	ME- MS41L Ba ppm	ME- MS41L Be ppm	ME- MS41L Bi ppm	ME- MS41L Ca %	ME- MS41L Cd ppm	ME- MS41L Ce ppm	ME- MS41L Co ppm	ME- MS41L Cr ppm
		0.02	0.001	0.0002	0.001	0.01	0.01	10	0.5	0.01	0.001	0.01	0.001	0.003	0.001	0.01
103791		0.48	<0.001	0.0328	0.158	0.54	1.66	10	201	0.12	0.030	2.23	1.015	5.88	2.60	4.64
103792		0.56	<0.001	0.0004	0.197	0.22	0.82	10	157.5	0.05	0.024	1.84	0.487	3.00	1.350	1.86
103793		0.90	<0.001	0.0006	0.225	2.25	11.60	<10	371	0.62	0.097	0.85	0.537	24.1	14.60	23.9
103794		0.98	<0.001	0.0008	0.220	1.82	7.91	<10	353	0.42	0.082	1.14	0.558	19.65	13.80	19.90
103795		Not Recvd														
103796		Not Recvd														
103797		Not Recvd														
103798		Not Recvd														
103799		0.66	<0.001	<0.0002	0.376	0.48	0.66	10	1030	0.06	0.024	1.08	0.713	2.16	1.900	2.98
103800		0.18	<0.001	0.0002	0.124	0.33	0.54	10	1270	0.08	0.026	1.51	0.860	1.480	1.420	1.66
103801		0.52	<0.001	0.0074	0.142	0.65	2.30	10	187.0	0.24	0.029	3.14	1.340	19.30	2.32	3.49
103802		0.36	<0.001	0.0002	0.154	0.11	0.74	10	83.3	0.02	0.022	1.34	0.572	2.06	0.440	1.00
103803		0.28	<0.001	0.0013	0.577	0.65	6.81	10	489	0.19	0.068	3.02	1.700	10.00	1.945	5.12
103804		0.46	0.004	<0.0002	0.434	0.16	4.19	10	289	0.04	0.052	1.03	1.075	1.745	1.055	1.88
103805		0.50	<0.001	0.0016	0.382	0.82	7.47	10	237	0.28	0.054	2.78	0.655	13.05	3.14	7.37
103806		0.32	<0.001	<0.0002	0.199	0.34	1.73	10	201	0.07	0.046	0.88	0.680	3.34	2.04	4.09
103807		0.42	0.001	<0.0002	0.099	0.37	1.75	<10	125.5	0.06	0.063	0.56	0.425	4.42	2.21	5.46
103808		0.56	<0.001	0.0002	0.197	0.69	5.23	<10	256	0.15	0.078	0.94	0.742	6.24	4.75	9.59
103809		0.62	<0.001	0.0003	0.121	0.97	5.99	<10	130.5	0.20	0.066	0.96	0.691	8.82	6.88	10.50
103810		0.30	0.001	0.0002	0.766	0.66	5.91	10	113.5	0.15	0.048	1.92	9.72	5.02	7.66	6.23
103811		0.68	<0.001	<0.0002	0.112	0.65	2.16	20	419	0.10	0.038	2.44	0.618	5.56	3.80	6.09
103812		0.40	<0.001	0.0002	0.051	0.37	2.39	10	196.0	0.08	0.032	1.80	2.26	4.99	5.67	4.73
103813		0.48	<0.001	0.0005	0.121	0.20	1.39	20	408	0.04	0.042	2.26	0.505	2.14	1.105	3.06
103814		0.44	<0.001	0.0002	0.084	0.20	0.76	20	377	0.05	0.016	2.77	0.529	2.97	0.831	1.73
103815		0.42	<0.001	0.0003	0.207	0.31	0.85	30	1130	0.06	0.038	3.40	1.450	2.71	2.50	2.10
103816		0.40	0.002	0.0003	0.364	0.37	3.26	10	360	0.08	0.081	1.65	0.601	3.99	4.06	6.10
103817		0.42	<0.001	0.0004	0.126	0.87	4.91	10	184.5	0.23	0.069	0.93	0.517	8.69	6.15	11.45
103818		0.36	<0.001	0.0003	0.124	0.91	3.74	<10	410	0.35	0.052	1.02	0.447	22.4	7.47	7.86
103819		0.50	<0.001	0.0002	0.200	0.99	4.52	10	234	0.21	0.065	0.81	0.985	7.65	6.33	10.55
103820		0.96	<0.001	0.0004	0.207	0.84	4.77	<10	275	0.16	0.071	0.50	0.718	7.97	6.00	10.50
103821		1.24	0.045	0.0007	0.146	1.05	4.67	<10	381	0.25	0.082	0.69	0.452	10.80	7.60	14.05
103822		0.36	<0.001	<0.0002	0.158	0.36	1.57	10	70.6	0.05	0.020	0.94	0.676	1.890	1.775	2.66
103823		0.50	<0.001	0.0008	0.087	0.33	1.66	10	83.3	0.05	0.017	0.74	0.319	2.01	2.20	2.92
103824		0.56	0.012	0.0003	0.220	0.36	1.60	<10	481	0.05	0.050	1.17	0.792	3.23	2.49	4.20
103825		0.30	<0.001	0.0005	0.108	0.58	1.87	10	369	0.23	0.035	1.64	0.991	12.80	3.22	4.86
103826		0.34	<0.001	<0.0002	0.524	0.42	1.31	10	121.0	0.04	0.021	0.94	1.090	1.675	1.920	2.71
103827		0.52	<0.001	0.0223	0.277	0.69	1.85	10	479	0.30	0.059	1.31	0.605	15.90	4.41	4.76
103828		0.42	0.048	0.0004	0.184	0.31	1.31	10	202	0.09	0.036	1.16	0.200	4.51	4.35	3.29
103829		0.38	0.047	0.0010	0.159	0.10	0.72	10	62.6	0.03	0.022	0.34	0.331	1.100	1.480	1.12
103830		0.38	0.019	<0.0002	0.199	0.70	2.17	10	229	0.22	0.039	0.59	0.226	10.95	4.86	6.81



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Page: 3 - B  
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Plus Appendix Pages  
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Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
		ppm 0.005	ppm 0.01	% 0.001	ppm 0.004	ppm 0.005	ppm 0.002	ppm 0.004	ppm 0.005	% 0.01	ppm 0.002	ppm 0.1	% 0.01	ppm 0.1	ppm 0.01	% 0.001
103791		0.270	15.50	0.650	1.265	0.029	0.012	0.252	0.010	0.10	4.33	1.8	0.21	1165	0.79	0.008
103792		0.265	11.05	0.320	0.598	0.015	0.010	0.219	0.009	0.07	1.755	0.5	0.17	580	0.76	0.008
103793		0.579	24.1	3.93	5.44	0.091	0.045	0.118	0.053	0.08	10.00	12.9	0.50	1290	0.94	0.013
103794		0.615	17.40	3.64	4.39	0.077	0.031	0.112	0.028	0.06	7.34	22.3	0.38	3840	0.69	0.013
103795																
103796																
103797																
103798																
103799		1.445	9.24	0.450	1.110	0.016	<0.002	0.247	<0.005	0.27	1.020	1.5	0.17	1935	0.23	0.008
103800		0.816	7.85	0.202	0.887	0.005	0.002	0.308	<0.005	0.11	0.638	0.4	0.07	14050	0.36	0.006
103801		0.134	24.4	0.560	0.987	0.086	0.027	0.171	0.007	0.06	16.35	0.9	0.24	653	0.50	0.010
103802		0.101	11.55	0.104	0.238	0.015	<0.002	0.197	<0.005	0.06	1.685	0.2	0.12	47.6	1.08	0.005
103803		0.504	51.6	0.540	1.565	0.044	0.006	0.268	0.013	0.18	7.22	2.7	0.22	1215	0.80	0.008
103804		0.234	16.55	0.270	0.480	0.011	<0.002	0.207	0.006	0.11	1.095	0.4	0.09	123.0	1.31	0.007
103805		0.448	76.9	1.030	1.715	0.064	0.030	0.133	0.012	0.03	11.30	2.4	0.22	929	0.93	0.011
103806		0.194	10.40	0.590	1.125	0.017	<0.002	0.203	0.006	0.11	1.860	0.7	0.08	903	1.03	0.010
103807		0.276	9.85	0.770	1.820	0.014	<0.002	0.111	0.005	0.08	2.47	1.0	0.07	797	0.82	0.009
103808		0.395	14.75	1.430	2.74	0.018	<0.002	0.104	0.011	0.11	3.13	3.6	0.21	2400	0.70	0.009
103809		0.460	13.80	1.720	3.23	0.031	<0.002	0.064	0.013	0.10	4.57	5.2	0.29	1245	0.66	0.008
103810		0.610	13.30	1.280	1.930	0.020	<0.002	0.149	0.028	0.16	2.42	4.7	0.29	664	0.46	0.007
103811		0.608	23.5	0.870	1.730	0.029	0.003	0.125	0.007	0.19	3.08	1.7	0.24	1435	0.59	0.015
103812		0.206	11.85	0.790	1.220	0.030	<0.002	0.092	0.007	0.15	2.16	2.1	0.23	1495	0.67	0.008
103813		0.369	14.40	0.430	0.838	0.013	<0.002	0.243	<0.005	0.18	1.380	0.8	0.17	1100	1.02	0.008
103814		0.203	19.35	0.208	0.443	0.023	<0.002	0.147	<0.005	0.15	2.68	0.5	0.26	774	0.63	0.009
103815		0.311	37.2	0.270	0.705	0.009	<0.002	0.224	<0.005	0.14	1.585	0.6	0.14	9320	1.04	0.009
103816		0.383	23.4	0.920	1.720	0.021	<0.002	0.173	0.007	0.12	2.23	1.7	0.18	2290	1.32	0.008
103817		0.266	15.30	1.650	2.66	0.037	0.002	0.087	0.018	0.14	3.85	4.7	0.26	1140	0.91	0.008
103818		0.248	19.25	1.420	2.08	0.057	0.006	0.120	0.019	0.11	9.31	3.3	0.19	2110	0.60	0.009
103819		0.320	11.65	1.550	2.91	0.034	<0.002	0.068	0.019	0.16	3.67	3.9	0.19	2580	0.63	0.009
103820		0.282	14.50	1.630	2.77	0.028	<0.002	0.080	0.014	0.13	3.88	3.2	0.16	1385	0.86	0.008
103821		0.391	14.80	1.960	3.40	0.038	0.008	0.053	0.011	0.14	4.96	6.0	0.29	1550	0.69	0.008
103822		0.139	7.09	0.420	0.724	0.010	<0.002	0.127	<0.005	0.12	0.952	1.2	0.13	2020	0.41	0.006
103823		0.177	7.90	0.460	0.725	0.017	0.005	0.097	<0.005	0.19	1.060	1.3	0.15	950	0.44	0.006
103824		0.234	15.65	0.610	1.245	0.013	<0.002	0.126	<0.005	0.15	1.640	0.9	0.12	1550	0.89	0.007
103825		0.210	17.20	0.760	1.295	0.045	0.008	0.131	0.005	0.22	6.64	2.2	0.26	1295	0.64	0.009
103826		0.161	6.98	0.400	0.783	0.007	<0.002	0.141	0.007	0.15	0.822	1.2	0.10	4460	0.50	0.006
103827		0.162	19.45	0.750	1.695	0.034	0.002	0.250	0.010	0.17	6.17	1.7	0.17	3060	0.69	0.008
103828		0.264	8.02	0.550	0.958	0.014	0.007	0.204	0.005	0.22	1.770	0.7	0.17	1355	1.23	0.009
103829		0.231	8.63	0.192	0.260	<0.005	0.005	0.187	<0.005	0.14	0.481	0.2	0.10	604	2.42	0.010
103830		0.238	12.90	0.850	1.940	0.020	0.003	0.116	0.011	0.10	4.50	2.1	0.14	1630	0.69	0.008



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Page: 3 - C  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
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Project: BC Proj.Generation- Ralph Keefe

# CERTIFICATE OF ANALYSIS VA16178041

Sample Description	Method Analyte Units LOR	ME- MS41L Nb ppm 0.002	ME- MS41L Ni ppm 0.04	ME- MS41L P % 0.001	ME- MS41L Pb ppm 0.005	ME- MS41L Pd ppm 0.001	ME- MS41L Pt ppm 0.002	ME- MS41L Rb ppm 0.005	ME- MS41L Re ppm 0.001	ME- MS41L S % 0.01	ME- MS41L Sb ppm 0.005	ME- MS41L Sc ppm 0.005	ME- MS41L Se ppm 0.1	ME- MS41L Sn ppm 0.01	ME- MS41L Sr ppm 0.01	ME- MS41L Ta ppm 0.005
103791		0.222	6.59	0.116	3.42	<0.001	<0.002	3.30	<0.001	0.17	0.175	1.810	0.7	0.13	79.7	<0.005
103792		0.090	3.31	0.091	2.47	<0.001	<0.002	2.36	<0.001	0.19	0.115	0.949	0.7	0.07	71.8	<0.005
103793		0.514	34.6	0.092	7.88	<0.001	<0.002	7.28	<0.001	0.05	0.323	5.66	0.7	0.45	106.0	<0.005
103794		0.407	31.6	0.089	6.18	<0.001	<0.002	8.58	0.001	0.08	0.270	4.60	0.6	0.33	93.2	<0.005
103795																
103796																
103797																
103798																
103799		0.331	3.65	0.109	11.80	<0.001	<0.002	7.09	<0.001	0.13	0.081	0.573	0.5	0.16	38.9	<0.005
103800		0.046	4.72	0.154	7.51	<0.001	<0.002	7.06	<0.001	0.13	0.096	0.413	0.5	0.09	47.3	<0.005
103801		0.119	6.71	0.146	1.955	<0.001	<0.002	1.905	0.004	0.22	0.682	1.205	0.8	0.07	163.0	<0.005
103802		0.020	2.60	0.076	1.800	<0.001	<0.002	2.01	<0.001	0.21	0.100	0.469	0.3	0.04	86.7	<0.005
103803		0.190	9.84	0.147	2.67	<0.001	<0.002	5.32	<0.001	0.19	0.196	2.19	0.5	0.17	142.0	<0.005
103804		0.073	3.00	0.109	3.87	<0.001	<0.002	2.29	<0.001	0.16	0.146	0.530	0.5	0.09	51.2	<0.005
103805		0.286	11.25	0.104	2.80	<0.001	<0.002	3.73	0.002	0.17	0.483	2.69	0.7	0.13	107.5	<0.005
103806		0.146	4.24	0.107	6.29	0.001	<0.002	1.900	<0.001	0.10	0.184	0.450	0.4	0.16	42.4	<0.005
103807		0.247	3.66	0.077	6.19	<0.001	<0.002	3.25	<0.001	0.06	0.179	0.337	0.2	0.26	23.6	<0.005
103808		0.339	7.92	0.116	6.90	<0.001	<0.002	6.01	<0.001	0.07	0.204	1.080	0.2	0.25	46.8	<0.005
103809		0.496	8.96	0.083	9.52	<0.001	<0.002	5.79	<0.001	0.07	0.234	1.720	0.3	0.28	52.6	<0.005
103810		0.350	6.64	0.134	202	<0.001	<0.002	3.72	<0.001	0.13	0.739	0.673	0.4	0.19	73.4	<0.005
103811		0.246	7.99	0.168	5.64	<0.001	<0.002	9.51	<0.001	0.16	0.137	0.929	0.4	0.18	130.0	<0.005
103812		0.152	6.39	0.151	3.68	<0.001	<0.002	3.52	<0.001	0.14	0.149	1.030	0.3	0.10	95.6	<0.005
103813		0.190	2.95	0.121	4.96	<0.001	<0.002	6.34	<0.001	0.17	0.146	0.508	0.2	0.14	108.0	<0.005
103814		0.051	3.42	0.155	2.98	<0.001	<0.002	3.72	<0.001	0.20	0.094	0.540	0.4	0.08	152.0	<0.005
103815		0.082	11.20	0.576	6.65	<0.001	<0.002	4.86	0.001	0.14	0.113	0.262	0.3	0.13	159.5	<0.005
103816		0.272	7.03	0.124	6.85	0.001	<0.002	7.72	<0.001	0.10	0.233	0.555	0.2	0.20	76.2	<0.005
103817		0.352	14.40	0.096	3.89	<0.001	<0.002	5.04	<0.001	0.07	0.249	1.325	0.4	0.24	48.5	<0.005
103818		0.309	18.30	0.114	3.72	<0.001	<0.002	3.40	<0.001	0.10	0.301	1.870	0.5	0.15	85.0	<0.005
103819		0.352	12.95	0.122	4.52	<0.001	<0.002	5.64	<0.001	0.06	0.199	1.235	0.5	0.28	43.5	<0.005
103820		0.405	13.60	0.095	5.91	<0.001	<0.002	6.74	<0.001	0.05	0.320	0.935	0.3	0.35	44.0	<0.005
103821		0.737	16.35	0.122	5.63	<0.001	<0.002	5.56	<0.001	0.04	0.284	2.10	0.4	0.36	71.2	<0.005
103822		0.112	5.82	0.145	1.435	<0.001	<0.002	1.705	<0.001	0.13	0.087	0.411	0.4	0.08	20.9	<0.005
103823		0.099	6.94	0.144	1.470	<0.001	<0.002	1.830	<0.001	0.13	0.109	0.707	0.5	0.07	40.2	<0.005
103824		0.137	6.49	0.125	5.47	<0.001	<0.002	3.40	<0.001	0.09	0.151	0.348	0.5	0.21	109.0	<0.005
103825		0.186	12.40	0.172	2.10	<0.001	<0.002	4.07	<0.001	0.16	0.253	0.668	0.5	0.12	164.5	<0.005
103826		0.091	4.51	0.160	1.895	<0.001	<0.002	2.24	<0.001	0.13	0.061	0.341	0.5	0.07	28.7	<0.005
103827		0.193	10.45	0.153	6.93	<0.001	<0.002	3.52	<0.001	0.08	0.223	0.466	0.4	0.19	114.5	<0.005
103828		0.314	4.99	0.147	2.39	<0.001	<0.002	7.81	<0.001	0.11	0.147	1.015	0.4	0.12	117.0	<0.005
103829		0.034	1.91	0.133	2.63	<0.001	<0.002	4.84	<0.001	0.09	0.132	0.529	0.3	0.07	31.6	<0.005
103830		0.316	10.45	0.104	3.13	<0.001	<0.002	4.72	<0.001	0.07	0.204	0.872	0.4	0.19	55.0	<0.005



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Page: 3 - D  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Te	Th	Ti	Ti	U	V	W	Y	Zn	Zr
		ppm 0.01	ppm 0.002	% 0.001	ppm 0.002	ppm 0.005	ppm 0.1	ppm 0.001	ppm 0.003	ppm 0.1	ppm 0.01
103791		0.02	0.088	0.006	0.039	0.269	10.3	0.024	5.74	85.6	0.61
103792		0.01	0.062	0.005	0.024	0.067	5.4	0.016	1.775	28.2	0.36
103793		0.04	0.557	0.011	0.079	0.605	52.9	0.090	12.75	92.5	1.43
103794		0.06	0.468	0.008	0.090	0.331	42.1	0.064	9.20	112.0	0.96
103795											
103796											
103797											
103798											
103799		0.02	0.013	0.012	0.026	0.042	8.9	0.026	0.547	189.0	0.27
103800		0.02	0.010	0.003	0.285	0.035	3.5	0.023	0.418	289	0.04
103801		0.01	0.072	0.004	0.069	0.475	6.2	0.016	30.1	21.7	0.93
103802		0.01	0.036	0.002	0.017	0.101	1.6	0.005	2.13	8.3	0.26
103803		0.05	0.138	0.005	0.069	0.307	9.2	0.039	9.86	133.0	0.52
103804		<0.01	0.069	0.005	0.016	0.050	4.7	0.019	0.966	110.0	0.19
103805		0.04	0.122	0.007	0.064	0.919	13.8	0.042	23.6	52.3	1.22
103806		0.02	0.008	0.014	0.021	0.069	15.1	0.043	1.085	77.7	0.10
103807		0.01	0.004	0.016	0.021	0.089	19.7	0.048	1.150	34.6	0.07
103808		0.02	0.024	0.024	0.035	0.118	30.3	0.061	2.00	117.5	0.07
103809		0.01	0.055	0.022	0.035	0.175	34.6	0.069	3.59	125.0	0.15
103810		0.02	0.017	0.012	0.015	0.066	23.1	0.052	2.22	1070	0.27
103811		0.01	0.048	0.016	0.026	0.091	19.1	0.047	2.35	150.0	0.46
103812		<0.01	0.103	0.013	0.020	0.079	15.0	0.046	1.890	157.5	0.47
103813		0.01	0.039	0.010	0.017	0.048	10.2	0.033	0.709	132.5	0.28
103814		0.01	0.030	0.004	0.015	0.063	4.1	0.018	2.96	161.0	0.43
103815		<0.01	0.017	0.005	0.044	0.043	5.2	0.035	1.130	395	0.11
103816		0.02	0.010	0.016	0.027	0.086	21.0	0.058	1.135	86.7	0.05
103817		0.02	0.063	0.010	0.033	0.192	26.7	0.057	2.81	92.9	0.14
103818		0.03	0.072	0.007	0.040	0.209	19.4	0.057	12.00	73.6	0.25
103819		0.02	0.056	0.011	0.038	0.160	24.8	0.080	1.545	111.5	0.10
103820		0.01	0.034	0.013	0.033	0.149	27.9	0.087	1.290	71.6	0.10
103821		0.01	0.289	0.019	0.037	0.201	31.2	0.093	2.38	84.5	0.33
103822		0.02	0.019	0.005	0.013	0.041	6.7	0.037	0.426	79.4	0.07
103823		0.01	0.047	0.006	0.015	0.053	6.6	0.027	0.618	57.2	0.19
103824		<0.01	0.007	0.005	0.019	0.069	10.2	0.049	0.800	97.3	0.05
103825		0.01	0.029	0.004	0.026	0.230	10.1	0.037	8.75	114.0	0.24
103826		0.01	0.006	0.003	0.022	0.040	5.6	0.024	0.559	101.0	0.02
103827		0.04	0.009	0.003	0.036	0.221	11.2	0.064	5.96	123.0	0.09
103828		0.03	0.046	0.005	0.018	0.202	6.8	0.162	2.04	56.5	0.35
103829		0.01	0.017	0.003	0.030	0.038	2.5	0.025	0.482	28.7	0.11
103830		0.03	0.052	0.006	0.042	0.187	16.1	0.044	4.16	66.7	0.14



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Page: 4 - A  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg	Au- ICP21 Au ppm	ME- MS41L Au ppm	ME- MS41L Ag ppm	ME- MS41L Al %	ME- MS41L As ppm	ME- MS41L B ppm	ME- MS41L Ba ppm	ME- MS41L Be ppm	ME- MS41L Bi ppm	ME- MS41L Ca %	ME- MS41L Cd ppm	ME- MS41L Ce ppm	ME- MS41L Co ppm	ME- MS41L Cr ppm
		0.02	0.001	0.0002	0.001	0.01	0.01	10	0.5	0.01	0.001	0.01	0.001	0.003	0.001	0.01
103831		0.52	<0.001	0.0002	0.174	0.54	2.04	10	228	0.17	0.047	0.55	0.552	7.06	4.34	6.36
103832		0.58	<0.001	0.0002	0.095	0.40	2.50	10	264	0.13	0.049	0.86	0.820	6.28	3.36	8.56
103833		0.46	<0.001	0.0003	0.110	0.10	0.71	20	700	0.02	0.022	3.99	1.645	0.848	0.995	1.41
103834		0.52	<0.001	0.0002	0.113	0.54	6.19	10	270	0.19	0.067	0.74	0.406	5.60	5.16	10.80
103835		0.50	<0.001	<0.0002	0.187	0.16	1.48	10	159.5	0.03	0.035	0.51	0.697	2.59	1.430	3.17
103836		0.52	<0.001	<0.0002	0.187	0.28	3.48	10	193.0	0.10	0.078	0.52	0.510	7.94	1.965	6.59
103837		0.56	<0.001	0.0003	0.127	0.40	2.74	10	365	0.16	0.049	1.05	0.497	8.21	3.25	6.36
103838		0.34	<0.001	<0.0002	0.168	0.14	0.90	10	477	0.05	0.017	2.08	0.636	2.16	1.460	2.45
103839		0.78	<0.001	0.0003	0.192	0.72	6.61	<10	181.0	0.31	0.071	0.24	0.267	13.85	5.40	11.85
103840		0.52	<0.001	0.0002	0.114	0.17	1.30	10	456	0.09	0.031	1.79	3.55	4.74	2.27	1.61
103841		0.32	<0.001	<0.0002	0.150	0.12	0.69	20	235	0.02	0.015	3.97	2.26	0.464	0.769	0.61
103842		0.40	<0.001	<0.0002	0.227	0.23	1.32	10	337	0.06	0.032	1.83	3.84	0.950	0.952	1.65
103843		0.50	<0.001	0.0004	0.082	0.34	3.37	10	169.5	0.12	0.047	1.57	0.988	3.24	3.99	6.25
103844		0.42	<0.001	0.0003	0.073	0.11	1.43	10	271	0.06	0.021	3.03	1.035	2.09	1.355	1.25
103845		0.36	0.003	0.0014	0.106	0.24	1.48	10	76.1	0.04	0.042	0.47	0.595	2.03	0.958	3.01
103846		0.46	0.012	0.0630	0.150	0.17	0.83	10	133.5	0.02	0.032	0.91	0.771	1.375	1.125	1.81
103847		0.42	<0.001	0.0009	0.102	0.07	0.31	20	645	0.02	0.014	3.63	0.972	0.540	0.663	0.59
103848		0.36	<0.001	0.0008	0.135	0.20	1.32	10	354	0.04	0.030	1.47	0.956	1.575	2.22	1.94
103849		1.22	<0.001	0.0012	0.083	0.04	0.55	20	116.0	0.02	0.016	2.75	0.631	0.507	0.362	1.08
103850		0.78	0.008	<0.0002	0.064	0.18	1.13	20	360	0.10	0.016	3.28	0.313	3.13	2.66	1.70
103851		0.28	0.032	0.0005	0.122	0.21	0.88	10	912	0.03	0.040	1.77	1.170	1.505	2.51	1.38
103852		0.68	<0.001	0.0007	0.384	0.05	0.54	10	54.8	0.01	0.025	0.70	0.278	0.490	0.211	0.67
103853		0.84	<0.001	0.0335	0.761	0.17	1.70	<10	90.9	0.02	0.045	0.56	0.448	0.869	1.300	1.34
103854		0.54	<0.001	0.0009	0.780	0.35	2.58	<10	113.0	0.03	0.052	0.68	0.470	2.17	1.240	1.72
103855		0.26	<0.001	0.0003	0.374	0.17	0.91	10	31.0	0.01	0.028	0.74	0.886	0.566	0.390	0.57
103856		0.40	<0.001	0.0002	0.239	0.09	0.69	<10	46.6	0.01	0.025	0.50	0.290	0.467	0.361	0.46
103857		0.28	<0.001	<0.0002	0.142	0.16	0.76	10	15.8	0.01	0.018	0.53	0.314	0.423	0.303	0.47
103858		0.44	<0.001	0.0002	0.182	0.10	0.76	<10	21.4	0.01	0.024	0.21	0.299	0.360	0.287	0.42
103859		0.36	0.008	0.0168	0.117	0.15	0.59	10	20.6	0.01	0.021	0.63	0.309	0.363	0.373	0.48
103860		0.40	<0.001	0.0007	0.256	0.20	0.71	<10	37.5	0.01	0.032	0.40	0.670	0.521	0.413	0.54
103861		0.40	0.054	<0.0002	0.104	0.22	0.70	10	31.7	0.01	0.025	0.76	0.391	0.386	0.500	0.47
103862		0.36	0.009	0.0003	0.369	0.14	1.08	<10	64.9	0.02	0.031	0.37	0.331	0.726	0.363	0.75
103863		0.42	0.019	0.0002	0.339	0.15	0.74	<10	26.5	0.01	0.028	0.45	0.804	0.504	0.535	0.52
103864		0.34	<0.001	0.0002	0.141	0.06	0.88	<10	39.5	0.01	0.015	0.34	0.249	0.326	0.286	0.38
103865		0.38	0.005	0.0129	0.496	0.14	0.56	<10	110.5	0.04	0.057	0.66	0.444	0.480	0.712	0.49
103866		0.32	<0.001	0.0002	0.182	0.07	0.74	<10	95.4	0.01	0.027	0.19	0.432	0.401	0.346	0.51
192401		0.40	0.001	0.0005	0.234	0.09	0.61	<10	79.9	0.02	0.065	0.89	0.512	0.678	0.560	0.78
192402		0.38	<0.001	0.0002	0.294	0.23	1.04	<10	125.0	0.05	0.183	0.40	0.245	3.53	0.786	4.12
192403		0.16	<0.001	0.0003	0.143	0.22	0.79	<10	64.8	0.03	0.073	0.56	0.518	1.465	0.905	1.77
192404		0.24	<0.001	0.0005	0.194	0.16	0.81	<10	77.8	0.02	0.092	0.53	1.515	1.110	1.130	1.77



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Page: 4 - B  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
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Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
		ppm 0.005	ppm 0.01	% 0.001	ppm 0.004	ppm 0.005	ppm 0.002	ppm 0.004	ppm 0.005	% 0.01	ppm 0.002	ppm 0.1	% 0.01	ppm 0.1	ppm 0.01	% 0.001
103831		0.211	13.80	0.800	1.730	0.021	<0.002	0.109	0.010	0.11	2.84	1.5	0.10	2010	0.70	0.006
103832		0.342	11.90	0.880	1.650	0.019	0.008	0.284	0.013	0.14	2.92	2.0	0.13	632	0.80	0.007
103833		0.082	11.35	0.167	0.381	<0.005	0.004	0.526	0.005	0.18	0.409	0.5	0.12	2110	0.36	0.007
103834		0.139	13.30	1.660	2.51	0.014	0.002	0.096	0.016	0.16	2.37	4.3	0.17	1040	0.81	0.005
103835		0.167	10.45	0.420	0.869	0.005	0.004	0.159	0.006	0.14	1.195	0.6	0.09	1200	0.54	0.007
103836		0.177	11.60	0.990	1.695	0.017	0.008	0.109	0.013	0.12	4.25	1.0	0.16	602	0.75	0.006
103837		0.199	12.90	0.860	1.590	0.021	0.006	0.194	0.010	0.14	4.28	2.4	0.17	1230	0.80	0.006
103838		0.152	8.85	0.238	0.661	<0.005	0.002	0.219	<0.005	0.17	0.804	0.6	0.10	5840	0.74	0.006
103839		0.218	13.05	1.590	2.76	0.026	0.002	0.065	0.015	0.11	5.94	4.2	0.15	575	0.51	0.004
103840		0.133	12.10	0.207	0.460	0.011	0.008	0.444	0.005	0.09	2.11	0.4	0.09	1885	0.74	0.007
103841		0.122	12.70	0.067	0.180	<0.005	0.002	0.620	<0.005	0.20	0.294	0.2	0.19	1535	0.17	0.005
103842		0.661	14.80	0.168	0.357	<0.005	0.006	0.630	<0.005	0.31	0.493	0.4	0.09	1480	0.32	0.006
103843		0.609	13.30	0.950	1.435	0.012	0.011	0.270	0.008	0.05	1.410	1.9	0.09	1500	1.62	0.004
103844		0.372	13.50	0.189	0.417	0.005	0.004	0.170	<0.005	0.08	1.665	0.6	0.20	1695	0.46	0.005
103845		0.304	7.96	0.390	0.890	0.009	0.003	0.296	<0.005	0.09	0.952	0.5	0.05	433	0.51	0.005
103846		0.175	11.85	0.220	0.488	<0.005	0.006	0.354	<0.005	0.11	0.674	0.5	0.07	1185	0.67	0.005
103847		0.126	12.15	0.043	0.250	<0.005	0.003	0.561	<0.005	0.13	0.384	0.1	0.13	3890	0.20	0.007
103848		0.402	13.30	0.280	0.644	0.006	0.002	0.478	<0.005	0.15	0.678	0.9	0.13	3960	0.40	0.005
103849		0.113	12.90	0.084	0.154	<0.005	0.003	0.281	<0.005	0.04	0.261	0.3	0.13	252	0.30	0.008
103850		0.121	9.65	0.560	0.713	0.016	0.009	0.177	<0.005	0.05	2.23	0.7	0.17	9370	0.61	0.012
103851		0.457	11.95	0.204	1.045	<0.005	0.005	0.457	<0.005	0.22	0.716	0.3	0.12	15050	0.43	0.009
103852		0.119	7.90	0.051	0.136	<0.005	0.003	0.223	<0.005	0.09	0.284	0.1	0.07	162.0	1.03	0.004
103853		0.145	5.58	0.184	0.376	<0.005	0.003	0.385	0.006	0.04	0.390	0.2	0.06	393	0.74	0.005
103854		0.481	10.95	0.560	1.340	0.010	0.003	0.329	0.006	0.08	1.005	1.1	0.10	1390	1.42	0.006
103855		0.500	9.16	0.083	0.300	<0.005	0.003	0.844	<0.005	0.12	0.278	0.1	0.04	3470	0.45	0.006
103856		0.407	5.02	0.066	0.185	<0.005	0.003	0.369	<0.005	0.13	0.243	0.1	0.03	769	0.38	0.005
103857		0.511	9.99	0.065	0.172	<0.005	<0.002	0.689	<0.005	0.13	0.211	0.1	0.04	1220	0.26	0.006
103858		0.277	6.47	0.056	0.130	<0.005	0.002	0.425	<0.005	0.10	0.175	0.1	0.03	221	0.27	0.005
103859		0.447	10.70	0.058	0.134	<0.005	<0.002	0.850	<0.005	0.15	0.196	0.1	0.04	703	0.25	0.005
103860		0.552	9.90	0.084	0.249	<0.005	<0.002	0.812	<0.005	0.15	0.286	0.1	0.03	2030	0.39	0.005
103861		0.718	10.80	0.065	0.228	0.006	0.003	0.875	<0.005	0.35	0.201	0.1	0.05	4200	0.32	0.004
103862		0.689	6.49	0.093	0.236	0.009	0.003	0.494	0.005	0.14	0.442	0.1	0.03	734	0.47	0.005
103863		0.709	9.47	0.075	0.224	0.021	<0.002	0.752	<0.005	0.13	0.267	0.1	0.04	3000	0.35	0.004
103864		0.397	4.39	0.049	0.106	0.018	<0.002	0.336	<0.005	0.09	0.193	0.1	0.03	77.0	0.30	0.003
103865		0.819	7.18	0.066	0.199	0.021	<0.002	0.677	0.005	0.13	0.262	0.1	0.04	3850	0.32	0.006
103866		0.163	3.19	0.062	0.148	0.017	<0.002	0.295	<0.005	0.04	0.221	0.1	0.03	50.0	0.66	0.003
192401		0.771	8.81	0.105	0.199	0.019	<0.002	0.327	<0.005	0.13	0.561	0.2	0.08	866	1.45	0.005
192402		0.802	8.91	0.440	1.610	0.023	<0.002	0.218	0.007	0.12	1.935	0.4	0.06	1255	0.80	0.007
192403		0.414	9.09	0.247	0.592	0.023	<0.002	0.242	<0.005	0.14	0.750	0.5	0.07	941	0.92	0.005
192404		0.592	8.74	0.212	0.426	0.024	0.007	0.298	<0.005	0.09	0.564	0.5	0.07	328	1.06	0.004



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Page: 4 - C  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Nb	Ni	P	Pb	Pd	Pt	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
		ppm 0.002	ppm 0.04	% 0.001	ppm 0.005	ppm 0.001	ppm 0.002	ppm 0.005	ppm 0.001	% 0.01	ppm 0.005	ppm 0.005	ppm 0.1	ppm 0.01	ppm 0.01	ppm 0.005
103831		0.205	9.90	0.117	5.39	<0.001	<0.002	4.20	<0.001	0.06	0.221	0.357	0.2	0.20	24.4	<0.005
103832		0.302	10.95	0.079	3.83	<0.001	<0.002	8.29	<0.001	0.09	0.214	1.210	0.3	0.17	72.9	<0.005
103833		0.064	5.88	0.098	2.13	<0.001	<0.002	1.735	<0.001	0.16	0.098	0.446	0.3	0.06	243	<0.005
103834		0.515	11.85	0.113	5.08	<0.001	<0.002	3.54	<0.001	0.07	0.339	0.656	0.2	0.27	54.0	<0.005
103835		0.137	3.47	0.115	3.36	<0.001	<0.002	2.28	<0.001	0.08	0.120	0.569	0.3	0.12	26.9	<0.005
103836		0.271	7.03	0.091	4.26	<0.001	<0.002	3.08	<0.001	0.06	0.268	1.055	0.2	0.20	40.3	<0.005
103837		0.301	10.50	0.134	4.31	<0.001	<0.002	3.47	<0.001	0.10	0.240	0.886	0.3	0.14	68.4	<0.005
103838		0.067	6.08	0.166	1.545	<0.001	<0.002	2.46	<0.001	0.13	0.068	0.446	0.3	0.08	97.3	<0.005
103839		0.463	13.95	0.080	5.05	<0.001	<0.002	4.80	<0.001	0.04	0.395	1.160	0.3	0.24	20.9	<0.005
103840		0.070	13.65	0.125	4.06	<0.001	<0.002	1.540	<0.001	0.19	0.106	0.488	0.5	0.09	103.0	<0.005
103841		0.025	4.24	0.119	2.19	<0.001	<0.002	2.55	<0.001	0.17	0.085	0.249	0.5	0.04	89.2	<0.005
103842		0.090	5.39	0.160	4.73	<0.001	<0.002	13.25	<0.001	0.17	0.145	0.368	0.3	0.13	52.9	<0.005
103843		0.328	8.52	0.088	5.32	<0.001	<0.002	4.65	<0.001	0.14	0.340	0.845	0.3	0.15	37.8	<0.005
103844		0.104	3.41	0.148	3.56	<0.001	<0.002	1.860	<0.001	0.22	0.103	0.363	0.3	0.08	93.2	<0.005
103845		0.141	3.09	0.088	4.24	<0.001	<0.002	3.01	<0.001	0.09	0.179	0.568	0.3	0.14	13.60	<0.005
103846		0.062	4.52	0.132	3.99	<0.001	<0.002	1.680	0.001	0.12	0.146	0.420	0.3	0.12	30.9	<0.005
103847		0.016	8.27	0.104	3.40	<0.001	<0.002	1.945	<0.001	0.18	0.053	0.199	0.3	0.04	70.8	<0.005
103848		0.084	4.99	0.134	5.05	<0.001	<0.002	3.51	<0.001	0.15	0.171	0.464	0.3	0.10	44.4	<0.005
103849		0.036	1.04	0.096	2.04	<0.001	<0.002	0.918	<0.001	0.20	0.086	0.262	0.3	0.04	140.0	<0.005
103850		0.053	5.58	0.118	1.355	<0.001	<0.002	1.020	<0.001	0.28	0.223	0.439	0.5	0.03	177.0	<0.005
103851		0.065	5.73	0.145	5.20	<0.001	<0.002	4.15	<0.001	0.14	0.154	0.374	0.3	0.11	54.2	<0.005
103852		0.026	0.76	0.098	2.35	<0.001	<0.002	0.768	<0.001	0.12	0.161	0.200	0.2	0.06	43.8	<0.005
103853		0.072	1.74	0.103	4.62	<0.001	<0.002	1.195	0.001	0.12	0.331	0.320	0.5	0.10	43.0	<0.005
103854		0.233	2.06	0.130	5.74	<0.001	<0.002	3.69	<0.001	0.13	0.598	0.613	0.5	0.17	40.8	<0.005
103855		0.020	1.26	0.135	3.16	<0.001	<0.002	3.48	<0.001	0.14	0.257	0.252	0.3	0.09	12.85	<0.005
103856		0.021	0.91	0.133	3.56	<0.001	<0.002	3.75	<0.001	0.11	0.162	0.222	0.3	0.07	17.30	<0.005
103857		0.018	1.20	0.149	6.32	<0.001	<0.002	4.59	<0.001	0.14	0.221	0.205	0.3	0.06	12.50	<0.005
103858		0.026	1.03	0.113	3.37	<0.001	<0.002	3.30	<0.001	0.11	0.264	0.192	0.3	0.07	10.75	<0.005
103859		0.014	1.57	0.140	2.73	<0.001	<0.002	4.80	<0.001	0.16	0.126	0.186	0.3	0.06	17.60	<0.005
103860		0.025	1.21	0.164	3.55	<0.001	<0.002	5.21	<0.001	0.13	0.257	0.235	0.4	0.09	13.05	<0.005
103861		0.031	1.93	0.197	3.21	<0.001	<0.002	11.45	<0.001	0.15	0.126	0.117	0.6	0.09	20.1	<0.005
103862		0.038	1.08	0.107	2.79	<0.001	<0.002	6.19	<0.001	0.08	0.308	0.234	0.8	0.11	26.2	<0.005
103863		0.021	1.21	0.141	3.20	<0.001	<0.002	5.19	<0.001	0.15	0.165	0.107	0.5	0.05	17.05	<0.005
103864		0.018	0.73	0.091	4.56	<0.001	<0.002	2.86	<0.001	0.10	0.119	0.073	0.2	0.07	28.0	<0.005
103865		0.022	1.79	0.133	3.58	0.001	<0.002	5.49	<0.001	0.13	0.187	0.080	0.4	0.07	28.8	<0.005
103866		0.026	0.96	0.066	2.87	<0.001	<0.002	1.710	<0.001	0.12	0.150	0.092	0.3	0.09	25.9	<0.005
192401		0.038	0.90	0.124	5.32	<0.001	<0.002	6.76	<0.001	0.13	0.094	0.150	0.3	0.05	41.1	<0.005
192402		0.204	2.12	0.084	6.60	<0.001	<0.002	7.61	<0.001	0.06	0.144	0.240	0.3	0.27	21.2	<0.005
192403		0.077	1.86	0.108	3.88	<0.001	0.002	4.03	<0.001	0.11	0.106	0.324	0.3	0.06	23.9	<0.005
192404		0.062	3.30	0.111	3.72	<0.001	<0.002	4.37	<0.001	0.13	0.126	0.348	0.3	0.06	32.6	<0.005



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Page: 4 - D  
Total # Pages: 5 (A - D)  
Plus Appendix Pages  
Finalized Date: 3- NOV- 2016  
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Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Te	Th	Ti	Tl	U	V	W	Y	Zn
		ppm 0.01	ppm 0.002	% 0.001	ppm 0.002	ppm 0.005	ppm 0.1	ppm 0.001	ppm 0.003	ppm 0.1
103831		0.02	0.011	0.007	0.035	0.118	16.5	0.065	2.10	76.1
103832		0.05	0.145	0.010	0.037	0.123	17.3	0.081	2.17	66.5
103833		0.02	0.037	0.003	0.009	0.021	3.2	0.023	0.270	230
103834		0.02	0.023	0.010	0.025	0.135	31.0	0.100	1.095	108.0
103835		<0.01	0.056	0.007	0.039	0.052	9.0	0.063	0.311	45.8
103836		0.05	0.096	0.011	0.021	0.125	22.1	0.080	1.075	36.4
103837		0.01	0.048	0.008	0.030	0.167	15.6	0.127	4.67	66.7
103838		0.01	0.028	0.003	0.022	0.034	4.3	0.027	0.555	209
103839		0.03	0.117	0.009	0.042	0.219	28.0	0.099	2.79	47.9
103840		0.01	0.043	0.003	0.019	0.059	3.8	0.043	2.48	143.5
103841		0.01	0.006	0.001	0.026	0.016	1.2	0.014	0.291	300
103842		0.02	0.041	0.003	0.112	0.028	3.0	0.034	0.291	370
103843		0.03	0.068	0.008	0.065	0.100	16.9	0.055	0.829	172.0
103844		0.01	0.021	0.002	0.040	0.018	2.3	0.044	0.734	97.8
103845		0.03	0.079	0.006	0.042	0.091	9.3	0.045	0.300	45.1
103846		0.02	0.032	0.004	0.046	0.035	4.7	0.027	0.268	79.5
103847		0.03	0.006	0.001	0.027	0.009	0.7	0.004	0.327	209
103848		0.02	0.036	0.004	0.055	0.035	4.9	0.031	0.381	133.0
103849		0.02	0.011	0.001	0.010	0.028	1.2	0.019	0.236	75.3
103850		0.02	0.023	0.002	0.048	0.116	3.0	0.019	5.07	21.9
103851		0.01	0.039	0.004	0.202	0.034	3.9	0.029	0.472	173.5
103852		0.02	0.016	0.001	0.025	0.024	0.9	0.035	0.117	28.1
103853		0.02	0.029	0.002	0.025	0.030	2.6	0.047	0.201	33.9
103854		0.01	0.080	0.006	0.036	0.053	8.5	0.075	0.399	31.1
103855		0.02	0.007	0.002	0.113	0.024	1.3	0.069	0.140	42.5
103856		0.01	0.012	0.001	0.045	0.033	1.1	0.031	0.125	30.2
103857		0.02	0.006	0.001	0.051	0.015	1.0	0.022	0.113	23.6
103858		0.01	0.008	0.001	0.035	0.019	1.0	0.024	0.079	26.1
103859		0.01	0.006	0.001	0.055	0.016	0.9	0.049	0.109	29.4
103860		0.02	0.008	0.002	0.104	0.024	1.3	0.025	0.130	24.9
103861		<0.01	0.005	0.001	0.083	0.016	1.0	0.019	0.139	78.5
103862		0.02	0.026	0.002	0.049	0.033	1.6	0.026	0.218	21.3
103863		0.01	0.002	0.001	0.089	0.024	1.2	0.024	0.135	24.1
103864		<0.01	0.004	0.001	0.030	0.016	0.8	0.100	0.088	24.3
103865		<0.01	0.008	0.001	0.180	0.020	1.0	0.019	0.163	36.9
103866		0.02	0.010	0.001	0.014	0.023	1.1	0.032	0.103	20.3
192401		0.01	0.025	0.002	0.087	0.040	1.9	0.026	0.345	41.2
192402		0.03	0.003	0.015	0.191	0.108	13.6	0.231	0.621	30.1
192403		0.03	0.035	0.007	0.085	0.072	4.7	0.063	0.396	48.8
192404		0.05	0.086	0.005	0.060	0.116	4.2	0.053	0.324	85.2



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Page: 5 - A  
 Total # Pages: 5 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 3- NOV- 2016  
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Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg 0.02	Au- ICP21 Au ppm 0.001	ME- MS41L Au ppm 0.0002	ME- MS41L Ag ppm 0.001	ME- MS41L Al % 0.01	ME- MS41L As ppm 0.01	ME- MS41L B ppm 10	ME- MS41L Ba ppm 0.5	ME- MS41L Be ppm 0.01	ME- MS41L Bi ppm 0.001	ME- MS41L Ca % 0.01	ME- MS41L Cd ppm 0.001	ME- MS41L Ce ppm 0.003	ME- MS41L Co ppm 0.001	ME- MS41L Cr ppm 0.01
192405		0.10	0.001	0.0006	0.934	0.36	2.62	<10	149.5	0.07	0.233	0.56	1.475	2.83	3.57	5.32
192406		0.26	<0.001	0.0002	0.308	0.37	1.20	<10	220	0.09	0.154	0.72	0.447	3.74	1.315	3.67
192407		0.22	0.007	0.0007	0.472	0.40	1.29	<10	147.0	0.09	0.168	0.87	0.386	5.24	1.345	3.05
192408		0.12	<0.001	0.0009	0.154	0.16	0.79	<10	156.5	0.03	0.105	1.08	0.542	1.035	0.784	1.42
192409		0.12	0.008	0.0011	0.143	0.65	5.65	<10	113.0	0.16	0.393	0.92	0.439	7.89	5.51	11.20
192410		0.24	<0.001	<0.0002	0.719	0.15	1.18	<10	87.6	0.02	0.109	0.58	0.461	1.195	0.491	1.75
192411		0.24	0.005	0.0010	0.309	0.37	1.62	<10	92.2	0.05	0.142	0.42	0.237	2.50	1.040	3.68
192412		0.38	0.015	0.0003	0.199	0.92	3.70	<10	128.5	0.18	0.209	0.80	0.347	7.05	4.66	9.81
192413		0.22	<0.001	0.0003	0.391	0.26	0.90	<10	108.0	0.04	0.083	0.94	0.388	1.280	0.691	1.50
192414		0.26	<0.001	0.0008	0.410	0.35	1.05	<10	99.6	0.04	0.101	0.61	0.410	1.950	1.105	2.59
192415		0.20	<0.001	0.0003	0.253	0.29	0.91	<10	75.0	0.05	0.087	0.56	0.333	1.210	0.681	1.23
192416		0.24	0.026	0.0007	0.412	0.22	1.12	<10	179.0	0.03	0.117	0.77	0.287	1.565	1.200	2.14
192417		0.20	<0.001	0.0555	0.103	0.17	0.69	<10	42.6	0.03	0.074	0.63	0.356	0.815	0.565	1.40
192418		0.26	0.014	0.0016	0.322	0.39	2.28	<10	357	0.08	0.171	1.05	0.732	3.49	3.57	5.09
192419		0.22	<0.001	0.0006	0.271	0.42	1.58	<10	324	0.07	0.159	1.03	0.752	2.56	2.42	3.36
192420		0.28	0.002	0.0004	0.204	0.25	0.77	<10	81.9	0.06	0.101	0.86	0.174	3.58	1.215	2.21
192421		0.24	0.005	0.0008	0.239	0.58	1.91	<10	111.5	0.17	0.213	0.38	0.252	4.35	1.285	5.42
192422		0.14	<0.001	0.0003	0.357	0.37	1.18	<10	63.5	0.05	0.090	0.51	0.371	1.815	1.005	2.13



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Page: 5 - B  
 Total # Pages: 5 (A - D)  
 Plus Appendix Pages  
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 Account: TDP

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Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
		ppm 0.005	ppm 0.01	% 0.001	ppm 0.004	ppm 0.005	ppm 0.002	ppm 0.004	ppm 0.005	% 0.01	ppm 0.002	ppm 0.1	% 0.01	ppm 0.1	ppm 0.01	% 0.001
192405		1.510	12.50	0.730	1.225	0.023	<0.002	0.392	0.013	0.15	1.445	1.7	0.11	3390	2.65	0.007
192406		0.670	10.15	0.480	1.380	0.024	<0.002	0.153	0.010	0.07	2.01	0.8	0.07	682	0.76	0.008
192407		0.543	10.40	0.400	1.415	0.033	<0.002	0.185	0.010	0.07	3.35	0.9	0.08	711	0.89	0.006
192408		0.461	6.21	0.158	0.323	0.016	<0.002	0.320	0.007	0.14	0.549	0.2	0.05	2940	1.18	0.005
192409		1.110	27.8	1.520	2.38	0.041	0.008	0.109	0.020	0.14	3.65	5.8	0.32	1190	1.81	0.013
192410		0.338	6.68	0.240	0.544	0.022	0.003	0.216	<0.005	0.07	0.612	0.3	0.06	164.0	0.62	0.006
192411		0.984	7.50	0.600	1.380	0.026	<0.002	0.212	0.008	0.07	1.405	0.9	0.07	275	0.76	0.007
192412		1.780	22.2	1.490	3.05	0.033	<0.002	0.117	0.014	0.11	3.10	6.7	0.27	879	1.22	0.010
192413		0.603	9.42	0.227	0.445	0.023	<0.002	0.320	<0.005	0.06	0.745	0.4	0.09	753	0.66	0.007
192414		0.917	8.02	0.420	1.015	0.019	<0.002	0.335	0.006	0.10	1.105	0.7	0.06	967	0.89	0.006
192415		0.669	8.45	0.174	0.371	0.023	0.002	0.340	0.009	0.08	0.711	0.3	0.04	472	1.01	0.006
192416		0.991	7.43	0.330	0.625	0.019	<0.002	0.271	0.005	0.07	0.880	0.5	0.06	545	1.13	0.007
192417		0.293	5.56	0.161	0.293	0.024	<0.002	0.248	<0.005	0.08	0.439	0.2	0.04	302	1.31	0.006
192418		1.525	12.10	0.820	2.12	0.019	<0.002	0.311	0.012	0.16	1.790	1.9	0.12	9160	1.27	0.008
192419		0.768	8.63	0.520	1.320	0.022	<0.002	0.306	0.009	0.11	1.350	1.5	0.09	9130	1.16	0.007
192420		0.846	6.18	0.320	0.871	0.025	0.002	0.205	0.005	0.08	1.900	0.5	0.07	103.0	0.91	0.009
192421		0.453	11.90	0.840	2.30	0.028	<0.002	0.149	0.014	0.08	3.18	1.5	0.08	462	0.92	0.007
192422		0.575	8.83	0.270	0.728	0.025	0.002	0.244	0.009	0.08	1.010	0.8	0.05	506	1.23	0.005

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*



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Page: 5 - C  
 Total # Pages: 5 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 3- NOV- 2016  
 Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	
		Nb	Ni	P	Pb	Pd	Pt	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta
		ppm 0.002	ppm 0.04	% 0.001	ppm 0.005	ppm 0.001	ppm 0.002	ppm 0.005	ppm 0.001	% 0.01	ppm 0.005	ppm 0.005	ppm 0.1	ppm 0.01	ppm 0.01	ppm 0.005
192405		0.143	4.10	0.130	11.25	<0.001	<0.002	10.25	<0.001	0.10	0.206	0.230	0.6	0.13	31.1	<0.005
192406		0.224	2.48	0.056	6.60	<0.001	<0.002	5.98	<0.001	0.06	0.130	0.199	0.4	0.19	45.2	<0.005
192407		0.350	2.67	0.075	7.24	<0.001	<0.002	7.20	<0.001	0.08	0.165	0.380	0.4	0.16	57.0	<0.005
192408		0.046	1.56	0.123	5.33	<0.001	<0.002	6.23	<0.001	0.13	0.199	0.302	0.4	0.11	61.6	<0.005
192409		0.346	8.28	0.109	9.49	<0.001	<0.002	6.91	<0.001	0.11	0.379	1.820	0.2	0.16	50.7	<0.005
192410		0.113	1.15	0.066	4.03	<0.001	<0.002	2.80	<0.001	0.10	0.134	0.330	0.3	0.10	18.80	<0.005
192411		0.353	2.38	0.068	4.93	<0.001	<0.002	9.56	<0.001	0.08	0.145	0.341	0.5	0.14	29.4	<0.005
192412		0.702	6.54	0.081	6.31	<0.001	<0.002	14.65	<0.001	0.08	0.264	1.255	0.3	0.23	23.7	<0.005
192413		0.095	2.18	0.085	3.96	<0.001	<0.002	4.48	<0.001	0.13	0.089	0.287	0.5	0.06	35.2	<0.005
192414		0.170	2.24	0.101	4.56	<0.001	<0.002	7.86	<0.001	0.10	0.143	0.230	0.3	0.13	27.1	<0.005
192415		0.075	2.03	0.090	5.46	<0.001	<0.002	4.46	<0.001	0.13	0.088	0.268	0.5	0.06	27.0	<0.005
192416		0.101	2.06	0.114	5.24	<0.001	<0.002	5.15	<0.001	0.13	0.111	0.233	0.3	0.07	23.5	<0.005
192417		0.055	1.52	0.100	5.50	<0.001	<0.002	4.16	<0.001	0.11	0.100	0.242	0.4	0.09	14.90	<0.005
192418		0.348	3.55	0.139	8.69	<0.001	<0.002	15.90	<0.001	0.09	0.218	0.250	0.3	0.17	47.6	<0.005
192419		0.213	3.25	0.143	9.12	<0.001	<0.002	7.50	<0.001	0.11	0.175	0.237	0.4	0.13	38.3	<0.005
192420		0.136	1.57	0.111	4.65	<0.001	<0.002	5.48	<0.001	0.13	0.150	0.553	0.3	0.11	74.4	<0.005
192421		0.508	3.01	0.094	8.31	<0.001	<0.002	5.83	<0.001	0.07	0.157	0.465	0.4	0.25	20.1	<0.005
192422		0.123	2.06	0.100	5.05	<0.001	<0.002	5.81	<0.001	0.10	0.128	0.256	0.5	0.10	28.1	<0.005



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Page: 5 - D  
 Total # Pages: 5 (A - D)  
 Plus Appendix Pages  
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 Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178041**

Sample Description	Method Analyte Units LOR	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L	ME- MS41L
		Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
		ppm 0.01	ppm 0.002	% 0.001	ppm 0.002	ppm 0.005	ppm 0.1	ppm 0.001	ppm 0.003	ppm 0.1	ppm 0.01
192405		0.06	0.011	0.010	0.128	0.162	17.7	0.139	0.706	95.6	0.02
192406		0.02	0.004	0.012	0.051	0.131	11.0	0.099	0.894	56.9	0.04
192407		0.03	0.012	0.017	0.079	0.125	10.0	0.137	2.51	44.0	0.14
192408		0.04	0.053	0.004	0.079	0.065	2.6	0.052	0.330	85.7	0.07
192409		0.12	0.501	0.029	0.076	0.596	33.4	0.305	3.57	85.0	0.57
192410		0.04	0.080	0.007	0.051	0.069	5.7	0.064	0.272	34.0	0.16
192411		0.05	0.014	0.014	0.068	0.097	14.6	0.140	0.625	34.2	0.12
192412		0.07	0.061	0.030	0.094	0.233	32.9	0.286	2.31	82.1	0.17
192413		0.04	0.071	0.006	0.077	0.070	4.3	0.043	0.441	66.9	0.13
192414		0.02	0.010	0.009	0.122	0.083	8.9	0.072	0.469	52.9	0.11
192415		0.01	0.062	0.004	0.070	0.075	3.0	0.037	0.508	44.3	0.11
192416		0.02	0.016	0.007	0.077	0.100	6.0	0.065	0.438	42.9	0.08
192417		0.05	0.071	0.005	0.041	0.065	3.0	0.033	0.242	43.9	0.11
192418		0.04	0.007	0.016	0.325	0.138	20.3	0.223	0.750	132.0	0.01
192419		0.03	0.009	0.011	0.301	0.099	10.3	0.078	0.762	127.5	0.02
192420		0.03	0.053	0.009	0.026	0.161	4.5	0.058	1.475	20.7	0.12
192421		0.02	0.017	0.022	0.040	0.144	19.8	0.224	1.475	36.2	0.06
192422		0.02	0.028	0.008	0.046	0.072	5.5	0.053	0.618	51.8	0.12



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Page: Appendix 1  
 Total # Appendix Pages: 1  
 Finalized Date: 3- NOV- 2016  
 Account: TDP

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**CERTIFICATE OF ANALYSIS VA16178041**

	CERTIFICATE COMMENTS
	<p><b>ANALYTICAL COMMENTS</b></p> <p>Applies to Method: NSS is non- sufficient sample.          ALL METHODS</p> <p>Applies to Method: Gold determinations by this method are semi- quantitative due to the small sample weight used (0.5g).          ME- MS41L</p> <p><b>LABORATORY ADDRESSES</b></p> <p>Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.</p> <p>Applies to Method: Au- ICP21 LOG- 22 ME- MS41L SCR- 41          WEI- 21</p>

## **Appendix D**

### **Assay Certificates Rock**



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Page: 1  
Total # Pages: 2 (A - C)  
Plus Appendix Pages  
Finalized Date: 1- NOV- 2016  
Account: TDP

## CERTIFICATE VA16178042

Project: BC Proj.Generation- Ralph Keefe

This report is for 21 Rock samples submitted to our lab in Vancouver, BC, Canada on 13- OCT- 2016.

The following have access to data associated with this certificate:

SHANE EBERT

ALTIUS RESOURCES WEBTRIEVE

LAWRENCE WINTER

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 21	Sample logging - ClientBarCode
CRU- QC	Crushing QC Test
CRU- 31	Fine crushing - 70% < 2mm
SPL- 21	Split sample - riffle splitter
PUL- 31	Pulverize split to 85% < 75 um

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME- ICP61	33 element four acid ICP- AES	ICP- AES
Ag- OG62	Ore Grade Ag - Four Acid	ICP- AES
ME- OG62	Ore Grade Elements - Four Acid	ICP- AES
Cu- OG62	Ore Grade Cu - Four Acid	ICP- AES
Pb- OG62	Ore Grade Pb - Four Acid	ICP- AES
Zn- OG62	Ore Grade Zn - Four Acid	ICP- AES
Ag- GRA21	Ag 30g FA- GRAV finish	WST- SIM
Au- ICP21	Au 30g FA ICP- AES Finish	ICP- AES

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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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Page: 2 - A  
 Total # Pages: 2 (A - C)  
 Plus Appendix Pages  
 Finalized Date: 1- NOV- 2016  
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**CERTIFICATE OF ANALYSIS VA16178042**

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg	Au- ICP21 Au ppm	ME- ICP61 Ag ppm	ME- ICP61 Al %	ME- ICP61 As ppm	ME- ICP61 Ba ppm	ME- ICP61 Be ppm	ME- ICP61 Bi ppm	ME- ICP61 Ca %	ME- ICP61 Cd ppm	ME- ICP61 Co ppm	ME- ICP61 Cr ppm	ME- ICP61 Cu ppm	ME- ICP61 Fe %	ME- ICP61 Ga ppm
		0.02	0.001	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	10
1043551		1.06	0.006	45.8	5.23	<5	2000	0.5	<2	0.13	0.7	4	8	5880	2.04	10
1043552		0.56	0.007	>100	7.76	<5	4370	1.2	<2	0.85	2.2	8	12	>10000	2.74	20
1043553		0.56	<0.001	0.8	8.69	<5	830	0.6	<2	7.08	0.9	16	26	85	6.30	20
1043554		0.62	0.014	1.6	8.10	5	490	1.3	<2	0.75	<0.5	6	14	314	4.51	20
1043555		0.38	0.001	<0.5	9.27	18	1740	0.6	<2	0.38	<0.5	11	23	34	7.57	20
1043556		0.24	<0.001	<0.5	9.33	7	440	0.8	<2	1.23	<0.5	3	17	23	5.51	20
1043557		0.34	0.001	<0.5	7.13	<5	1170	1.0	<2	5.61	<0.5	16	25	12	4.29	20
1043558		1.26	0.001	<0.5	7.48	<5	1330	1.4	<2	3.61	<0.5	14	47	42	3.71	20
1043559		0.80	<0.001	<0.5	7.99	6	2280	1.4	<2	1.49	<0.5	7	11	78	2.43	20
1043560		1.02	<0.001	<0.5	8.66	<5	3070	3.6	<2	2.13	<0.5	2	5	11	1.89	20
1043561		1.70	0.003	<0.5	8.33	<5	900	1.2	<2	2.32	<0.5	21	12	430	4.08	20
1043562		1.74	0.008	0.9	7.39	<5	860	1.2	<2	1.51	<0.5	20	10	1500	3.71	20
1043563		0.44	2.52	>100	0.09	319	70	<0.5	<2	0.01	>1000	<1	<1	>10000	3.76	<10
1043564		0.64	0.030	32.5	8.95	26	850	1.0	<2	2.41	4.9	17	12	2240	2.73	20
1043565		0.32	0.023	18.2	8.28	14	920	1.3	<2	2.11	1.9	22	9	2340	3.71	20
1043566		1.26	0.010	2.1	6.92	249	380	2.4	<2	0.03	<0.5	2	4	24	1.70	20
1043567		0.84	0.008	6.0	6.86	183	440	2.6	<2	0.04	12.7	1	5	57	2.25	20
1043568		0.46	0.007	0.8	6.36	361	430	2.3	<2	0.72	2.1	3	6	14	2.39	20
1043569		1.14	0.063	10.8	5.79	801	370	1.9	12	0.15	50.7	9	4	213	6.54	20
1043570		1.70	0.006	0.5	6.77	10	190	<0.5	<2	1.38	<0.5	9	9	28	3.10	10
1043571		2.14	0.004	1.1	7.73	9	490	0.6	<2	3.11	<0.5	14	16	49	4.48	10



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 Plus Appendix Pages  
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**CERTIFICATE OF ANALYSIS VA16178042**

Sample Description	Method Analyte Units LOR	ME- ICP61 K %	ME- ICP61 La ppm	ME- ICP61 Mg %	ME- ICP61 Mn ppm	ME- ICP61 Mo ppm	ME- ICP61 Na %	ME- ICP61 Ni ppm	ME- ICP61 P ppm	ME- ICP61 Pb ppm	ME- ICP61 S %	ME- ICP61 Sb ppm	ME- ICP61 Sc ppm	ME- ICP61 Sr ppm	ME- ICP61 Th ppm	ME- ICP61 Ti %
1043551		4.70	<10	0.50	958	1	1.07	<1	310	82	0.21	<5	9	2030	<20	0.20
1043552		4.99	20	0.85	1885	<1	1.50	4	1430	111	0.41	<5	21	77	<20	0.50
1043553		0.49	10	2.00	1430	5	2.49	9	1310	15	1.30	6	37	596	<20	0.65
1043554		3.81	10	0.13	165	19	2.81	7	1070	16	2.59	5	6	455	<20	0.23
1043555		1.81	<10	1.13	661	5	2.30	6	1030	23	1.58	<5	25	321	<20	0.56
1043556		0.78	10	0.34	274	3	2.69	2	410	6	0.41	<5	19	428	<20	0.42
1043557		0.35	20	0.28	1385	2	2.64	20	1830	7	0.09	<5	7	748	<20	0.47
1043558		1.64	30	1.51	612	2	3.12	38	2150	28	0.82	<5	8	1445	<20	0.39
1043559		2.10	30	0.63	169	7	3.30	10	1030	7	0.49	<5	4	632	<20	0.22
1043560		3.23	20	0.17	1240	<1	4.82	2	330	20	0.05	<5	1	1590	<20	0.18
1043561		1.39	20	1.03	198	4	3.23	7	1170	9	1.08	<5	8	608	<20	0.35
1043562		1.79	20	1.04	98	4	2.65	6	1010	7	2.54	5	7	525	<20	0.25
1043563		0.01	<10	0.01	61	14	0.01	<1	30	>10000	>10.0	>10000	<1	20	<20	<0.01
1043564		3.09	10	0.60	119	214	2.00	20	440	732	1.06	200	15	331	<20	0.26
1043565		2.04	20	1.21	132	8	2.63	7	1340	385	1.47	140	9	532	<20	0.33
1043566		2.94	40	0.21	74	3	0.08	1	120	31	0.26	53	3	15	20	0.13
1043567		2.97	40	0.20	254	1	0.06	2	280	234	1.18	27	3	18	20	0.12
1043568		2.20	40	0.19	1605	2	1.69	2	320	17	0.35	<5	2	85	20	0.11
1043569		2.53	30	0.25	4760	3	0.05	2	270	398	3.98	21	2	15	20	0.11
1043570		0.89	10	0.62	476	2	2.78	4	720	16	1.63	<5	10	186	<20	0.12
1043571		2.86	10	0.93	1035	1	0.93	4	880	38	2.01	10	15	185	<20	0.31



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Page: 2 - C  
 Total # Pages: 2 (A - C)  
 Plus Appendix Pages  
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**CERTIFICATE OF ANALYSIS VA16178042**

Sample Description	Method Analyte Units LOR	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	Ag- OG62	Cu- OG62	Pb- OG62	Zn- OG62	Ag- GRA21
		Tl	U	V	W	Zn	Ag	Cu	Pb	Zn	Ag
		ppm 10	ppm 10	ppm 1	ppm 10	ppm 2	ppm 1	% 0.001	% 0.001	% 0.001	ppm 5
1043551		<10	<10	12	<10	412					
1043552		<10	<10	51	<10	239	334	2.55			
1043553		<10	<10	161	<10	401					
1043554		<10	<10	62	90	59					
1043555		<10	<10	214	<10	64					
1043556		<10	<10	121	<10	39					
1043557		<10	<10	110	<10	93					
1043558		<10	<10	105	<10	90					
1043559		<10	<10	44	<10	25					
1043560		<10	<10	46	<10	82					
1043561		<10	<10	91	<10	41					
1043562		<10	<10	87	10	32					
1043563		<10	<10	1	<10	>10000	>1500	1.630	>20.0	15.80	>10000
1043564		<10	<10	116	60	355					
1043565		<10	<10	108	50	153					
1043566		<10	<10	14	<10	46					
1043567		<10	<10	13	<10	2080					
1043568		<10	<10	12	<10	425					
1043569		<10	<10	12	<10	8440					
1043570		<10	<10	57	<10	73					
1043571		<10	<10	132	<10	112					



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Page: Appendix 1  
Total # Appendix Pages: 1  
Finalized Date: 1- NOV- 2016  
Account: TDP

Project: BC Proj.Generation- Ralph Keefe

**CERTIFICATE OF ANALYSIS VA16178042**

	CERTIFICATE COMMENTS			
Applies to Method:	LABORATORY ADDRESSES			
	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.			
	Ag- GRA21	Ag- OG62	Au- ICP21	CRU- 31
	CRU- QC	Cu- OG62	LOG- 21	ME- ICP61
	ME- OG62	Pb- OG62	PUL- 31	SPL- 21
	WEI- 21	Zn- OG62		