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

BC Geological Survey
Assessment Report
37619

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geophysical

TOTAL COST: $ 8,534.46

AUTHOR(S): R.T. Walker

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5701529 / June 21, 2018

PROPERTY NAME: SED

CLAIM NAME(S) (on which the work was done): 392163

COMMODITIES SOUGHT: Gold, Silver, Copper

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Kamloops

NTS/BCGS:

LATITUDE: 50 ° 27 ' 07 " LONGITUDE: 120 ° 37 ' 58 " (at centre of work)

OWNER(S):
1) Balto Resources Ltd
2)

MAILING ADDRESS:
Suite 401 – 850 West Hastings Street
Vancouver, BC V6C 1E1

OPERATOR(S) [who paid for the work]:
1) Balto Resources Ltd
2)

MAILING ADDRESS:
Suite 401 – 850 West Hastings Street
Vancouver, BC V6C 1E1

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Nicola Group volcanics, Upper Triassic, carbonate-quartz-mariposite alteration, VLF-EM, Fraser Filter

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 36,082, 34,821, 33,849, 33,127, 32,253, 30,703
29,979, 29,193, 28,396, 27,725, 27,329, 27,156, 25,405, 22,992, 22,346, 19,140, 18,048, 17,337, 17,070, 14,959,13,302, 11,296

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TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other VLF-EM	8.46 Line Km	392163	$8,534.46
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	8,534.46

ASSESSMENT REPORT

VLF-EM Survey

Tenure 392163

Kamloops Mining Division
NTS
092I.047/.048

Centre of Work
668,890 E, 5,589,980N

Submitted For:
BALTO RESOURCES LTD.
Suite 401 - 850 West Hastings Street,
Vancouver, BC
V6C 1E1

Submitted By:
Rick Walker, P.Geol.
Dynamic Exploration Ltd.
1616 - 7th Avenue South
Cranbrook, BC
V1C 5V

Submitted
June 22, 2018

1.0 SUMMARY

The Balto Claim Group consists of two tenures, a Legacy Claim (tenure # 392163) and a Mineral Tenure On-line tenure (tenure # 1029696), together comprising an area of approximately 1,014 hectares. The Property is located 210 kilometres northeast of Vancouver in the Highland Valley area of south central British Columbia. The Property straddles the Coquihalla (#5) Highway and is immediately south of Highway 97D (to Logan Lake), located approximately 48 km north of Merrit and 38 km south of Kamloops.

The Property is characterized by gently rolling, low relief topography, with elevations ranging between 1,215 and 1,350 metres above sea level. Open meadows are located within a dense forest of pine, fir and spruce, with very little or no underbrush. Local, moderately steeply incised stream valleys are present. Wetlands may be present in low lying areas along streams and around lakes.

The Property is located in the southern Intermontane Belt of British Columbia on the southern extent of the Quesnel Terrane. The predominant geological features are Late Triassic island-arc volcanic rocks and mudstone, siltstone and shale clastic sedimentary rocks correlated to the Nicola Group and Late Triassic to early Jurassic intrusive granodiorites.

The Nicola Group on the Ashcroft map sheet, which includes the Balto Claim Group, has been sub-divided into the Eastern, Central and Western Belts on the basis of lithological and chemical differences (Preto 1979). In the immediate area of the property, the Eastern and Central Belts have been mapped.

The property is predominantly underlain by lithologies correlated to the Central Belt of the Nicola Group (Monger and MacMillan 1989), with the northern portion of tenure 392163 underlain by rocks of the Eastern Belt. These strata are juxtaposed to the east, on tenure 1029696, against "Amphibolite, foliated diorite, mylonite and chlorite schist derived from Nicola Group (Monger and MacMillan 1989) by the north trending Clapperton Fault. These strata host small intruive bodies of interpreted Eocene granodiorite and/or quartz monzonite correlated to the Nicola Batholith.

"Central volcanic faces of Nicola group; intermediate, plagioclase, augite plagioclase porphyry pyroclastics, local pillowed and plagioclase porphyry flows

Eastern volcanic facies of Nicola group; mafic, augite and hornblende porphyry bearing breccia and tuff, local intercalated argillite" (Monger and MacMillan 1989).

Between June 5 and 8, 2018, the author completed a small VLF-EM geophysical survey east of the Surrey Lake Forest Service Road (FSR) and north of Desmond Lake on tenure 392163. On this tenure, the FSR is essentially north-south. A total of 329 readings were taken, with station locations ascertained using a Magellan Mobile Mapper hand-held GPS. Survey stations were established every 25 m along east-west survey lines spaced 50 m apart. A total of 8.46 line kilometres of VLF-EM was completed.

The cumulative results of 11 years of successive VLF-EM surveys, predominantly completed to fulfill assessment requirements, have delineated a number of anomalies, interpreted to be possible sub-surface conductors, which appear to be spatially associated with the mapped geology and/or aeromagnetic anomalies. The presence of an Eocene Granodioritic intrusion immediately to the east, the Nicola Batholith, is expected to have acted as a local heat source driving hydrothermal activity. A previous operator interpreted the aeromagnetic low "... as being caused by a small granitic intrusion underlaying (sic.) the Nicola Volcanics rather close to the surface. The existence of a small monzonite plug immediately south of the property as well as evidence of widespread and intense hydrothermal activity further substantiate this theory. Since the small intrusive bodies elsewhere in the Nicola Belt were found to be

associated with important copper molybdenum mineralization the property is more than a fair exploration target" (Cukor 1982).

Given the rich metal (copper-molydenum) endowment in the Highland Valley and, more specifically, associated with intrusions (i.e. the Guichon Batholith), the presence of MINFILE occurrences in the immediate area, together with anomalous copper ± gold mineralization surface geochemical results and VLF-EM conductors, are interpreted to suggest further work on the Balto Claim Group is warranted.

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2.0 INTRODUCTION

The Balto Claim Group consists of two tenures, a Legacy Claim (tenure # 392163) and a Mineral Tenure On-line tenure (tenure # 1029696), together comprising an area of approximately 1,014 hectares. The Property is located 210 kilometres northeast of Vancouver in the Highland Valley area of south central British Columbia (Fig. 1 and 2). The Property straddles the Coquihalla (#5) Highway and is immediately south of Highway 97D (to Logan Lake), located approximately 48 km north of Merrit and 38 km south of Kamloops (Fig. 3).

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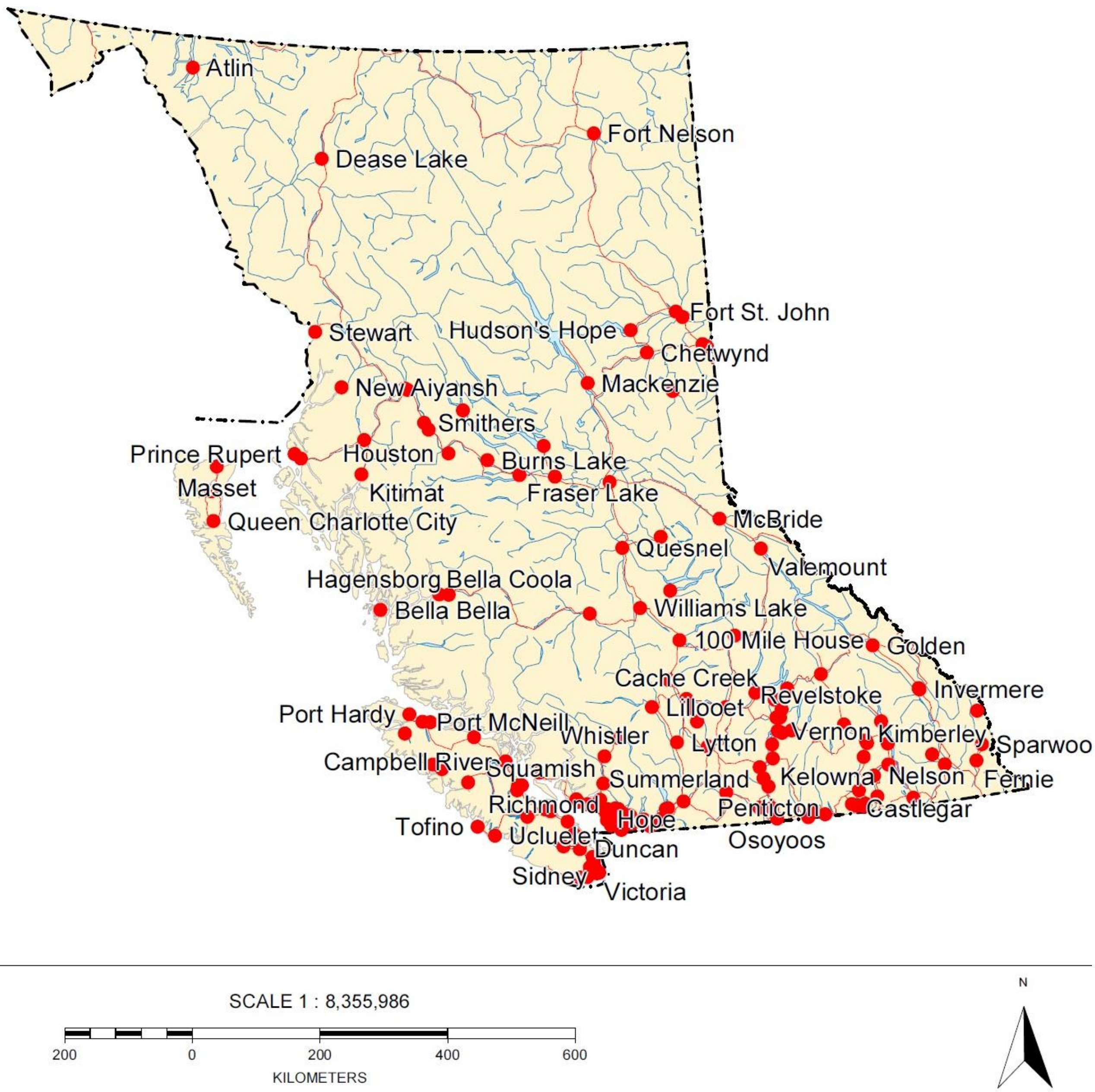
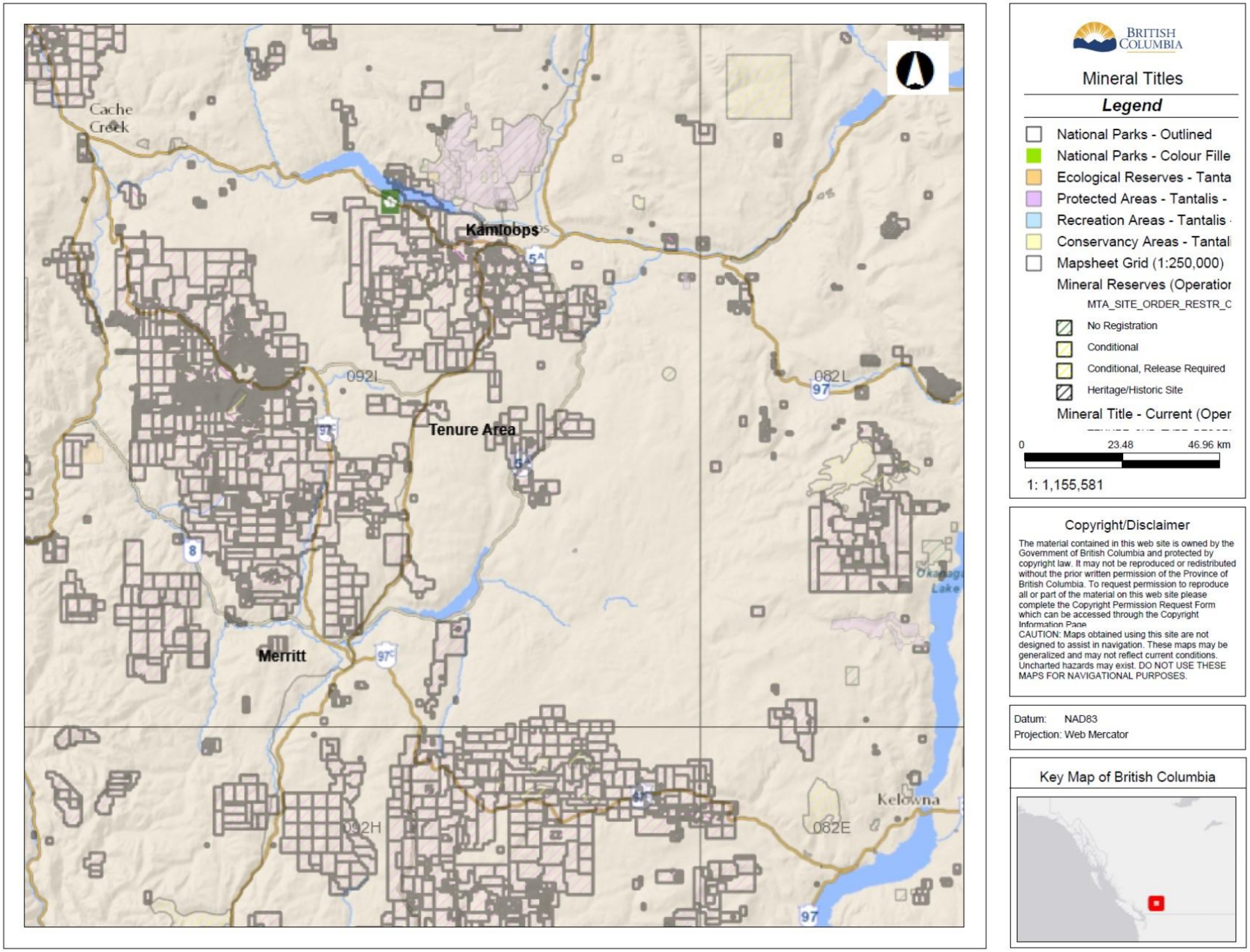


Figure 1 – Regional Location Map

Figure 2 (Following Page) – Tenure Location Map

Figure 3 – (Following Page) – Property Location Map


Cache Creek
Kamloops
Tenure Area
Merritt
Kelowna
Okanagan Lake
092I
082L
092H
082E
British Columbia
Mineral Titles
Legend
National Parks - Outlined
National Parks - Colour Fille
Ecological Reserves - Tanta
Protected Areas - Tantalis -
Recreation Areas - Tantalis -
Conservancy Areas - Tantal
Mapsheet Grid (1:250,000)
Mineral Reserves (Operatior
MTA_SITE_ORDER_RESTR_C
No Registration
Conditional
Conditional, Release Required
Heritage/Historic Site
Mineral Title - Current (Oper
0
23.48
46.96 km
1: 1,155,581
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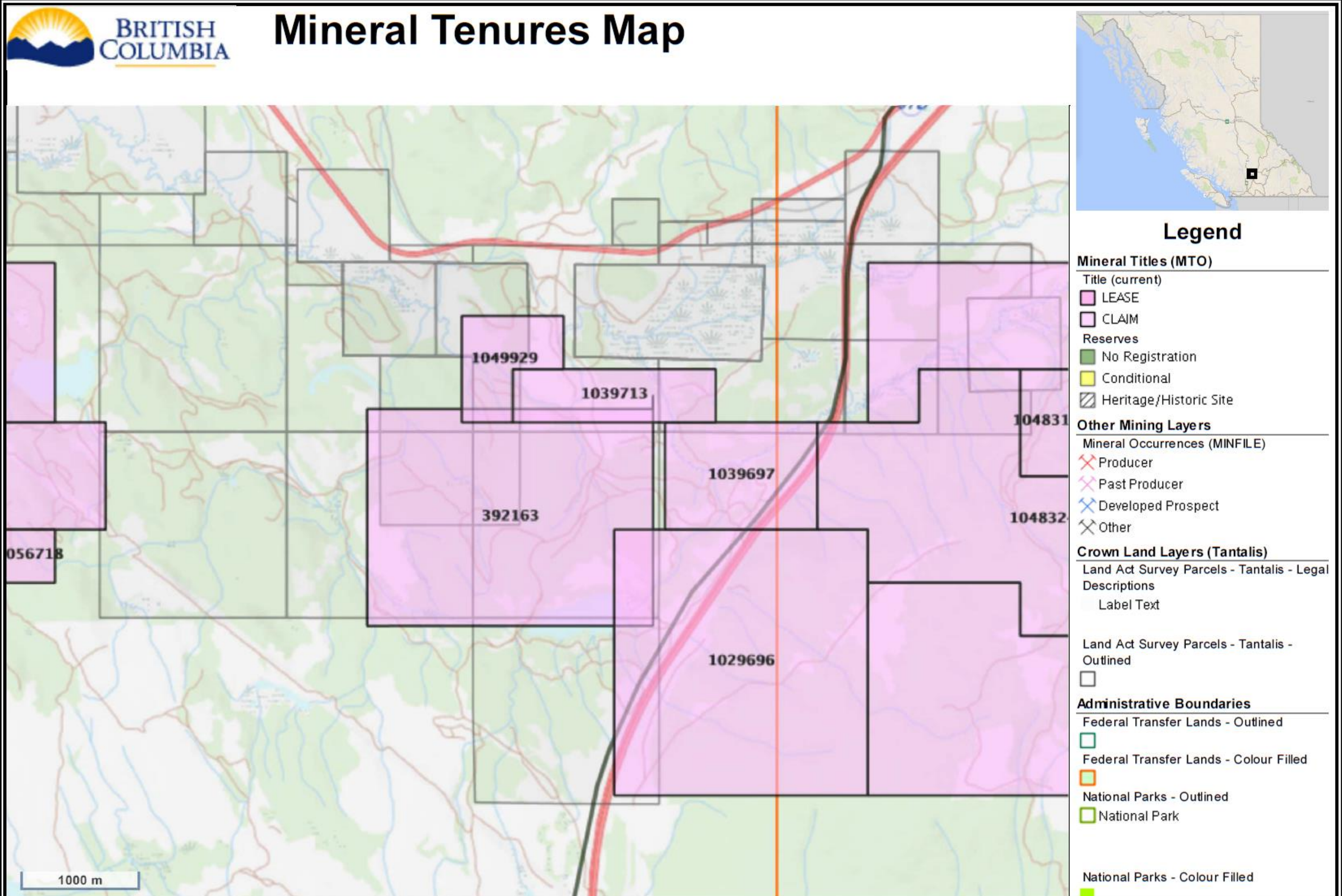
CAUTION: Maps obtained using this site are not designed to assist in navigation. These maps may be generalized and may not reflect current conditions. Uncharted hazards may exist. DO NOT USE THESE MAPS FOR NAVIGATIONAL PURPOSES.
Datum: NAD83
Projection: Web Mercator
Key Map of British Columbia



This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Tenures comprising the Balto Claim Group and adjacent tenures.

Center: 50°26'22", -120°37'46"
Scale: 1 : 67710
SRS: EPSG:3857
UTM Zone: 10

N

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Given the rich metal (copper-molydenum) endowment in the Highland Valley and, more specifically, associated with intrusions (i.e. the Guichon Batholith), the presence of MINFILE occurrences in the immediate area, together with anomalous copper ± gold mineralization surface geochemical results and VLF-EM conductors, are interpreted to suggest further work on the Balto Claim Group is warranted.

3.0 PROPERTY LOCATION, DESCRIPTION, ACCESS, PHYSIOGRAPHY and CLIMATE

3.1 Location

The two tenures comprising the Balto Claim Group are located between Desmond Lake to the south and Highway 97D (Logan Lake – Kamloops Highway) to the north, within the Kamloops Mining Division (Fig. 3).

The property is located within BC Geographic Services 1:20,000 Terrain and Resource Inventory Maps (TRIM) 092I047 and 048, National Topographic Services (NTS) mapsheet 092I/07, having an approximate centre at Latitude 50° 25' 59" N, Longitude 120° 37' 4" W (UTM Coordinates 668,820 E, 5,590,300 N, Zone 10, NAD 83 Datum).

3.2 Description

The property consists of two contiguous tenures, comprising an area of 1014.6567 hectares, owned by Balto Resources Ltd. Tenure 392163 (SED Claim) is a Legacy tenure, while 1029696 (unnamed) is a Mineral Titles On-Line tenure. Pertinent tenure information is as follows:

Table 1 - Balto Claim Group

Tenure Number	Type	Claim Name	Good To Date*	Area (ha)
392163	Mineral	SED	2019/06/26	500
1029696	Mineral		2018/06/26	514.6567

*Upon the approval of the 2018 Assessment Report.

3.3 Access

The property is located approximately 48 km north of Merritt and 38 km south of Kamloops, straddling the Coquihalla (#5) Highway. The property can be accessed from the Coquihalla Highway via Exit 336 to Logan Lake (Highway 97D). Proceed west along Highway 97D (toward Logan Lake) for approximately 7 km to the Surrey Lake Forest Service Road (south side of highway). The northern boundary of tenure 392163 (SED Claim) is approximately 1.4 south of Highway 97D. The Summit Lake Forest Service Road extends south through the core of the SED Claim for approximately 2 km, passing immediately west of Desmond Lake at the southern boundary of the Property.

Access throughout the claim group is available using a number of forestry roads, with the exception of the southeastern portion of Tenure 1026969 where road access is lacking. In addition, numerous cut blocks are present on the property which facilitate access.

3.4 PHYSIOGRAPHY and CLIMATE

The Property is characterized by gently rolling, low relief topography, with elevations ranging between 1,215 and 1,350 metres above sea level. Open meadows are located within a dense forest of pine, fir and spruce, with very little or no underbrush. Local, moderately steeply incised stream valleys are present. Wetlands may be present in low lying areas along streams and around lakes.

The property is within the B.C. Dry Belt which experiences a continental climate characterized by cold winters and hot summers. The Government maintains a weather station at Merritt (ID 1125079; Latitude 50°06'51.004" N, Longitude 120°48'03.005" W, Elevation 609 m), approximately 48 km to the south (Government of Canada 2016).

Between 1981 and 2010 the average temperature in January is -2.9°C, ranging between -7.0°C and 1.1°C. The record low of -42.8°C occurred on December 27, 1980. Average precipitation in December is 36.0 mm, with 13.3 mm falling as rain and 22.7 mm as snow. The average snow depth is 67 cm.

The average temperature in July is 18.8°C, ranging between a high of 26.7°C and a low of 10.8°C. The record high of 39.5°C occurred on July 23, 1994. Average precipitation is 29.1 mm of rain.

Average annual precipitation for the same period is 254.5 mm of rain and 66.7 mm of snow, for a total of 321.1 mm. Snow can be expected on the ground between November (average of 1 cm) and February (2 cm).

Considerably more snow should be expected at the higher elevations characterized by the area of the tenures at an approximate elevation of 1,300 m above sea level. Snowfall can be expected to occur earlier, and persist later, in the season, with the property expected to be available for exploration between the end of March and mid-October.

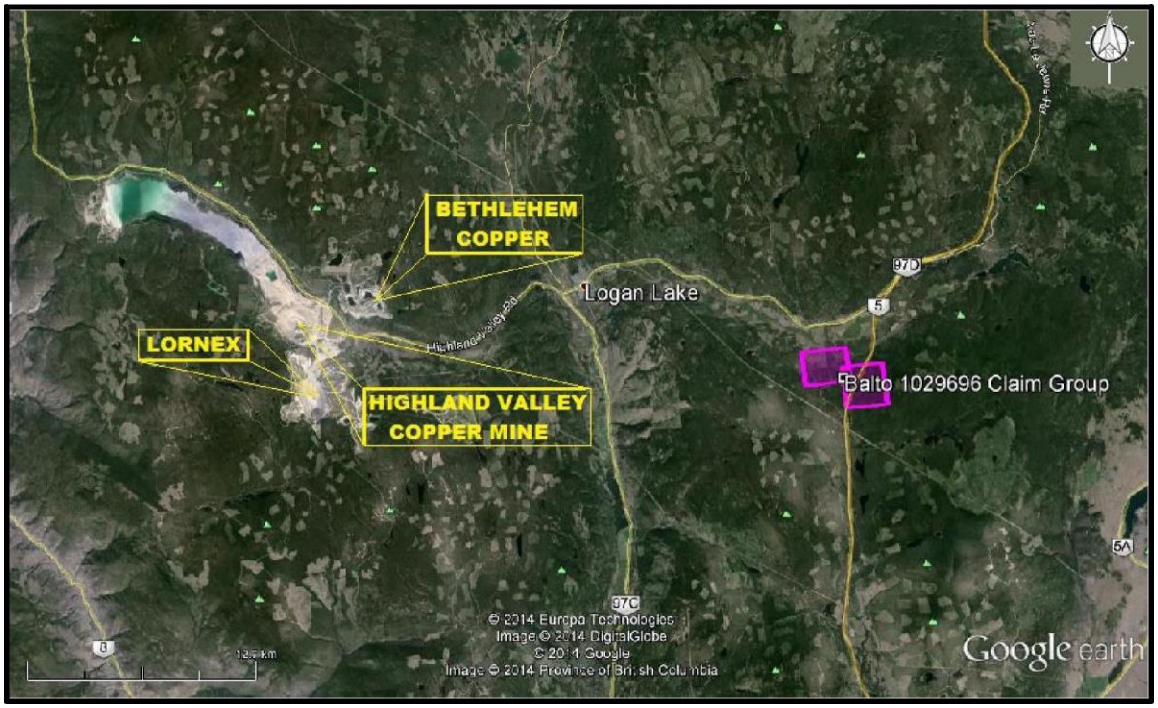


Figure 4 – Location with respect to major past and current producers in Highland Valley area.

4.0 HISTORY

The following was taken from Crooker and Rockel (1986) with respect to the WRT claims immediately north of the Balto Claim Group:

"A report in the B.C. MMAR for 1888 makes reference to the Bertha and Molly claims (near Dupont Lake) owned by Meadow Creek Mines. At that time, 120 sacks of copper ore had been prepared for shipment and, in the process, a 75 foot shaft of unknown age had been filled in with waste rock." The following was taken from Lammle (1972):

"G.S.C. describes two copper showings in the vicinity of Des Group - the Ford and the Dupont Prospects. The initial work on these prospects was done in 1929.

The Ford is a copper showing in basalt along Meadow Creek Road, 6 miles northwest of Desmond Lake. A short adit has been driven into outcrop along the side of the road, and reportedly, a 30 ton shipment from the workings yielded 0.3 oz/ton Ag and 2.14% Cu.

The Dupont prospect is just west of Homfray Lake, 4 miles from Desmond Lake. A 75' shaft in fractured and mineralized rock has now been near obliterated by bulldozing. A short string of open cuts, 1500' west of the shaft, expose copper mineralization along a braided, southeast trending fracture zone. A five ton shipment is said to have been made from this prospect.

For the most part, Meadow Creek area was not seriously explored during the Highland Valley boom, but several shallow cat trenches, and a few small core diamond drill holes collars are evident on what is now Des Group."

The following has been modified from Sookochoff (2015):

1972

Texada Mines Ltd. completed 11 miles of line-cutting, a 14.5 line mile magnetometer survey, a soil geochemical survey comprising 10 miles of line sampled at 200 foot intervals (total of 268 samples) and 1,400 feet of percussion drilling (Nordin and Deleen 1972) on the Plug claims which subsequently lapsed and now is ground covered in part by the northeast corner of the Balto Claim Group. The surveys covered a small portion of the property adjacent to the Balto Claim Group. The results of the surveys outlined four geochemical anomalies and one magnetometer anomaly.

Sampling consisted of 142 samples on the east portion of the grid, (assayed for Cu, Zn and Ag) and 126 samples on the west side of the grid (assayed for Cu only). Work was completed on the Plug claims, which subsequently lapsed and is partially covered by the northeast corner of the Balto Claim Group, with the surveying undertaken on a small portion of the property adjacent to the Balto Claim Group. The results of the surveys outlined four geochemical anomalies and one magnetometer anomaly.

The prime geochemical anomalies were isolated one station anomalies with values of just over 100 ppm copper. They were designated as the “B” anomaly, located within 50 metres of the northern boundary of the Balto Claim Group, and the “A” anomaly located next to Meadow Creek and within 1,000 metres east of the eastern boundary of the Balto Claim Group.

Texada Mines Ltd. completed an Induced Potential survey comprising 5.1 miles of gradient array (“a” spacing of 400 and 800 feet) and 8.9 line miles of Wenner array Induced Potential Surveying (“a” spacing of 1,000 feet) which resulted in identification of a chargeability anomaly, SP anomaly and a resistivity low correlative with the “B” soil anomaly and sub-correlative with the “A” anomaly (Scott and Cochrane 1972).

Percussion drill holes are indicated on the Texada maps; however, there is no information as to their results. The drill holes appear to have tested the correlative “B” and “A” anomalous zones. One drill hole designated as P-72-6 is located on the “B” anomaly at the boundary of the Balto Claim Group. The “B” correlative anomaly is indicated to extend for 250 metres into the Balto Claim Group.

1982

Visa Resources Ltd. completed a reconnaissance program of geological mapping, geochemical soil sampling and initial ground magnetic surveys, using the existing road network, over an area that included all the ground of the Balto Claim Group (Cukor 1982). On the accompanying maps to his report, Cukor outlines some trenches, which are indicated to be located on the Texada correlative anomaly “B”. These trenches are also indicated to be located in part on the Balto Claim Group. Cukor (1982) concluded that the broad, airborne magnetic low could be easily interpreted as being caused by a small granitic intrusion underlying the Nicola Volcanic rather close to the surface and recommended that additional work was warranted.

2003

Dancing Girl Resources Ltd. - A lineament array analysis was completed SED claim to fulfill assessment requirements for one year and to determine the structural control potential for economic mineral zones in this specific area.

“A total of 59 lineaments were marked, compiled into a 5° class interval and plotted on a Rose diagram ...

The results of the lineament array analysis indicated a conjugate fault system with directions of 025° to 050° and 310° to 330°. The 310° to 330° fault set is indicated topographically by the northwesterly trending Meadow Creek river system which the northeastern portion of the SED mineral claim covers. The second major indicated structural direction, at 025° to 050” is not as obvious, as the topographical lineaments are characterized by discontinuous or localized depressions.

Due to the subdued topography, the associated structures to the two major structures is not clearly defined, however, are indicated by the northerly trending structures” (Sookochoff 2003).

2004

Dancing Star Resources Ltd - A localized soil sampling program was completed on the northern boundary of the SED claim. … The purpose of the survey was to detect any mineralization that may be associated with anomaly A on the adjacent claim and proximal to the common boundary with the SED claim. ...

The soil geochemical survey was not successful in disclosing any continuity of the gold anomaly into the SED claim. The one “anomalous” site should be checked in the field and a parallel line of soil samples taken” (Sookochoff 2004).

2005

Dancing Star Resources Ltd - “A localized soil geochem survey in 2003 over the greater portion of the ground covered by the current VLF-EM survey resulted in copper values up to 105.9 ppm and gold values up to 15.2 ppb.

The current VLF-EM survey indicated a north-south trending anomaly correlating to some of the higher copper geochemical values” (Sookochoff 2005).

2006-2014

A series of small VLF-EM surveys, as well as one magnetometer survey, completed on localized areas on the SED mineral claim for Alto Resources Ltd. And, subsequently, Balto Resources Ltd.

2006

Alcor Resources Ltd. - “(A)localized magnetometer and the VLF-EM survey was completed on the SED mineral claim, which was “... successful in delineating anomalies that may indicate geological controls corresponding to the mineralization (Texada anomaly B) on the property to the north. However, (the) causative source of the anomalies is not clear and could only be clearly interpreted by a field examination” (Sookochoff 2006).

2007

Alcor Resources Ltd. - "(A)localized VLF-EM survey completed on the SED mineral claim in July, 2006 resulted in the delineation of indicated zones of structural intersections that may localize potentially economic mineralization" (Sookochoff 2007).

2008

Balto Resources Ltd. - "(A) localized VLF-EM survey was completed on the SED mineral claim, which resulted in the delineation of two areas of structural intersections that may localize potentially economic mineralization" (Sookochoff 2008).

2009

Balto Resources Ltd. - "The 2008 VLF-EM survey was successful in delineating three prime anomalous zones, each of which is generally indicated as the southerly extension of the three 2006 VLF-EM anomalous zones which were open to the south. Correlating the three 2008 and the 2006 anomalous zones, Zone A would be a 600 metre anomaly closed to the north and open to the south; Zone B would be a 700 metre anomaly open to the north and to the south; and Zone C would extend in a general north-south direction for up to 500 metres and open to the south.

The results of the 2008 VLF-EM survey also disclosed seven potential cross-structural locations which would be prime exploration areas to search for geological and/or mineralogical indications of potentially economic deepseated mineral zones" (Sookochoff 2009).

2010

Balto Resources Ltd. - A small "... exploration program comprised of localized VLF-EM survey was completed on the SED mineral claim....

The 2009 VLF-EM survey was successful in delineating three prime anomalous zones, each of which is indicated as an area zone of intersecting structures where surface seepage of mineralization channelled from depth may have occurred. Thus, these areas would be prime exploration areas to search for geological and/or mineralogical indications of potentially economic deep-seated mineral zones" (Sookochoff 2010).

2011

Balto Resources Ltd. - "A small "... exploration program comprised of localized VLF-EM survey was completed on the SED mineral claim....

The 2010 VLF EM survey was successful in delineating two prime northwesterly trending anomalous zones, orindicated structures, A, and BC. with cross cutting northeasterly indicated structures resulting in two locations ofindicated intersections. These locations would be prime areas to explore for surficial geological indications of potentially sub surface economic mineral zones. A third prime exploration area is indicated midway along thewestern boundary where the 2009 VLF EM survey results combined with the 2010 VLF EM survey results-indicate a cross structure" (Sookochoff 2011).

2012

Balto Resources Ltd. - "A small "... exploration program comprised of localized VLF-EM survey was completed on the SED mineral claim....

The 2011 VLF-EM survey was successful in delineating six potential mineral controlling cross-structural locations which would be prime areas to explore for surface geological indications of potentially sub-surface economic mineral zones" (Sookochoff 2012).

2013

Balto Resources Ltd. - "A small "... exploration program comprised of localized VLF-EM survey was completed on the SED mineral claim....

"Three structural intersections … were located where surficial geological indicators of a potential sub-surface mineral resource may be located. The structural Interpretation of each of the three locations is as follows.

Location 1; Zone A

The prime location for exploration as it may be the intersection of three structures.

- Structure A is indicated as the structure correlating with a watercourse.
- Structure B, the southeast trending fork of structure A, is indicated as an off-setting structure to structure A with the continuation to the south indicated as Structure B in the 2011 VLF-EM survey (AR 33,127). The three structures may, however, may reflect the northerly flowing watercourse ...
- Structure C1, the southwest trending fork of structure A, is indicated as a significant structure as it is indicated to continue through the 2011 VLF-EM survey area where it is open to the southwest (AR 33,127).
- Structure C is a localized en-echelon structure.

Location 2; Zone A

- Structure E is indicated as a localized splay structure of the main structure A. Location 3; Zone C
- The intersection of structures F & G where structure G is indicated as a potential major southeasterly trending structure projecting for 300 metres through the 2011 VLF-EM survey area and open to the south (AR 33,127)" (Sookochoff 2013).

2014

Balto Resources Ltd. - "A small "... exploration program comprised of localized VLF-EM survey was completed on the SED mineral claim....

The results of the 2013 VLF-EM survey on the SED mineral claim indicated only one area that would warrant exploration for surficial geological indicators of a potentially economic sub-surface mineral resource; area B, indicates an intersection of three structures which shows an anomalously large area that may display structurally induced brecciation amenable to the hosting of hydrothermal fluid sourced mineralization. If the structures were of significant strength, the brecciated zone may well extend to a depth whereby any hydrothermal fluids may be introduced to fill the brecciated voids. The degree and area of brecciation, and the mineral content of the fluids, are only some of the factors in the creation of a mineral resource" (Sookochoff 2014).

Tenures 392163 and 1029696 transferred to Balto Resources Ltd.

2015

Balto Resources Ltd. - (A) "Structural Analysis was accomplished marking the observed lineaments on a DEM Hillside Shade map of Tenure 1011890. A total of 73 lineaments were indicated. A Georient 32v9 software program was used to create a Rose Diagram reflecting the grouping of the lineaments into an individual 10 degree class sector angle interval ...

On Tenure 1029696, three cross-structural locations were defined where central breccia zones with accompanying peripheral fracture zones would be the ideal mineral controlling location for a potential mineral resource.

A dioritic intrusive hosts two of the Tenure 1029696 cross-structures where a surficial indication of a potential underlying mineral resource would be expressed in the mineral assemblage and/or alteration pattern which should provide sufficient information to determine the justification to additional exploration" (Sookochoff 2015).

2016

Balto Resources Ltd. - A small VLF-EM geophysical survey along the Surrey Lake Forest Service Road (FSR) on tenure 392163. A total of 125 readings were taken, with station locations ascertained using a hand-held Garmin 76 hand-held GPS. A total of 2.2 kilometres of VLF-EM was completed.

2017

Balto Resources Ltd. - A ground magnetic survey was completed on the Sed claim. The survey consisted of some 8 line kilometers of ground magnetics, conducted on eight north-south orientated survey lines with a nominal spacing of some 100 m.

Additional work included: 1) a compilation of previous VLF survey data, 2) a small VLF-EM geophysical survey to fill in a gap between historical surveys and the Surrey Lake Forest Service Road (FSR) on tenure 392163, and 3) an initial compilation of soil geochemical analyses partially overlapping the northern boundary of tenure 392163. VLF-EM data from approximately 1630 stations were compiled, together with approximately 688 multi-element soil analyses.

A total of 432 readings were taken as part of the 2017 VLF-EM survey, with station locations ascertained using a hand-held Garmin 76 hand-held GPS and Magellan Mobile Mapper GPS. Survey stations were established every 25 m on east-west survey lines spaced 50 m apart. Approximately 11.3 line kilometres of VLF-EM was surveyed.

4.1 Immediately Adjacent Properties

MEADOW CREEK (PLUG) MINFILE 092ISE155)

Showing (Volcanogenic), 500 m north

In 1986 through 1988, Western Resources Technologies completed programs of geological mapping, prospecting, soil geochemical sampling and geophysical (VLF-EM and magnetometer) surveys. In 1992, G.F. Crooker completed a program of magnetometer and VLF-EM surveys on the JB claims.

In 1995, Goldcliff Resource acquired the property as the S 1 to 48 claims and completed programs of prospecting, geochemical sampling, geophysical surveys, trenching and drilling through 2006.

In 1997, trench-03 gave an average of 0.53 gram per tonne gold and 76.9 grams per tonne silver over a strike length of 31.99 metres and a width of 0.94 metres; including 2.24 grams per tonne gold and 400.6 grams per tonne silver over 4.44 metres, and 6.14 grams per tonne gold and 1715.0 grams per tonne silver over 0.36 metre. The same year, percussion drilling (PDH-01) tested trench-03 returned an average of 0.08 gram per tonne gold and 27.8 grams per tonne silver over a length of 47.25 metres (Assessment Report 25405).

Commerce Resource Corporation reports a best mineralized drill intersection of 3.5 metres containing 2.83 grams per tonne gold and 37.7 grams per tonne silver (Press Release June 14, 2002).

1985-1988

Western Resources Technologies Inc. completed geological, geochemical and geophysical surveys on the WRT group of mineral claims located adjacent to the north of the Balto Claim Group and on ground now covered by the Balto Claim Group. Work was carried out over two localized areas designated as the Rhyolite Grid and the Meadow Creek Grid (the southern portion of which is now covered by the Balto Claim Group). The Meadow Creek grid also includes the West Central and the South Central Plug showings which are the renamed Texada "B" correlative anomaly (West Central Plug showing) and the Texada "A" anomaly (South Central Plug showing).

1986

A silt sampling survey was carried out over all drainages covered by the claims. Three grids were established and soil sampling, magnetometer and VLF-EM surveying, and some IP surveying were carried over the grids.

Some rock geochemical sampling was also carried out.

Of pertinence to the Balto Claim Group was establishment of the Meadow Creek Grid, with baseline oriented north-south, and survey lines perpendicular to the baseline, spaced between 100 and 200 meters apart and a station spacing of 50 metres.

Survey totals - Geochemical soil sampling - 11.2 line kilometres / 221 samples

VLF-EM survey – 11.2 line kilometres

Magnetometer survey - 12.7 line kilometres

Induced Potential survey - 225 m.

“Work has been done in the past by Texada Mines Ltd. who drilled a series of eight percussion drill holes to test a feldspar porphyry for copper. The results are not available but presumably the mineralization was not economic. Other reported occurrences of minerals have been noted. One is a silver-bearing galena-sphaleritechalcopyrite zone in a quartz, mariposite schist. The mariposite is reported as an alteration product along faults and is normally accompanied by carbonate and quartz.

As gold is often found associated with the above alteration, the Meadow Creek Grid is of considerable importance in any further exploration” (Crooker and Rockel 1986). **1987**

VLF-EM and Magnetometer surveys completed on grid (16.2 line km) with baseline oriented northsouth, and survey lines perpendicular to baseline, spaced between 100 and 200 meters apart and a station spacing of 25 meters. Soil sampling completed on grid, over 14.8 line km, total of 289 soil samples every 50 m, analyzed by 31 element ICP

> “The program on the Meadow Creek grid outlined a number of weak to moderate gold geochemical anomalies with values of up to 700 ppb Au. Two copper geochemical anomalies were also outlined. Prospecting of old trenches revealed weak to moderate quartz + carbonate + mariposite alteration over several hundred meters. Outcrop is sparse over most of the areas underlain by the geochemical anomalies ...
>
> The magnetometer survey indicated several area of higher magnetic activity while the VLF EM survey indicated several conductors. The most favourable results however came from the soil geochemical survey which outlined a number of weak to moderate gold anomalies with values of up to 700 ppb Au. Several copper anomalies were also outlined. Three old trenches were found and quartz + carbonate + mariposite alteration noted at a number of locations.
>
> The presence of the mariposite alteration, gold geochemical anomalies and lack of outcrop make this the priority target on the property for precious metal exploration. Most of the area is covered with thick overburden and weak geochemical responses may be quite significant.” (Crooker and Rockel 1988a).

1988

“On the Meadow Creek Grid, fill-in lines and soil geochemical sampling as well as prospecting and geological mapping were carried out. ... The program on the Meadow Creek Grid outlined a number of weak to moderate gold geochemical anomalies with values of up to 700 ppb gold. Several silver and copper geochemical anomalies were also outlined. Prospecting and sampling of the old trenches at the west central zone revealed weak to moderate carbonate + quartz + mariposite alteration over several hundred meters, with a grab sample (88-23) yielding gold and silver values of 7500 ppb (0.282 oz/ton) and 67.5 ppm respectively.

Several soil samples taken from the same trench as sample 88-23 gave 70 and 150 ppb gold. Two grab samples taken of quartz + carbonate + mariposite schist with galena and sphalerite from the south central zone yielded 605 and 482 ppb gold, and 165.1 and 258.4 ppm silver" (Crooker and Rockel 1988b).

1992

Crooker (1992) completed a geophysical (magnetometer and VLF-EM) survey on the "south central zone" of the Meadow Creek grid on the JB 1 to 12 Claims (former WRT Tenures). The tenures covered the previously identified anomalous zones "A" and "B".

Two magnetic features were outlined by the survey. A prominent, roughly circular magnetic high centered at 8825N on line 196503 may be the expression of a buried intrusive body. A number of northwest-southeast trending magnetic lows form a linear feature cutting across the central portion of the grid. This feature may represent a fault zone.

A large number of weak to moderate conductors were delineated by the VLF-EM survey" (Crooker 1992).

PLUG (MINFILE 092ISE196)

Showing (Volcanogenic), 50 m north

Between 1986 and 1988, Western Resources Technologies completed programs of geological mapping, prospecting, soil geochemical sampling and geophysical (VLF-EM and magnetometer) surveys. A grab sample of carbonate altered rock from the west- central zone along Meadow Creek assayed 7.5 grams per tonne gold and 67.5 grams per tonne silver (Assessment Report 18048). In 1992, G.F. Crooker completed a program of magnetometer and VLF-EM surveys on the JB claims.

In 1995, Goldcliff Resource acquired the property as the S 1 to 48 claims and between then and 2006 they completed programs of prospecting, geochemical sampling, geophysical surveys, trenching and drilling. In 1995, five rock samples returned gold values ranging from 0.060 to 2.620 grams per tonne and silver values ranging from 1.8 to 114.5 grams per tonne (Assessment Report 24862). In 1997, trench-02 gave an average of 4.35 grams per tonne gold and 52.2 grams per tonne silver over a strike length of 11.98 metres and a width on 1.33 metres; including 20.78 grams per tonne gold and 113.0 grams per tonne silver over a width of 0.56 metre. The same year, percussion drilling (PDH-02) tested trench-02 and returned an average of 1.30 grams per tonne gold and 17.2 grams per tonne silver over a length of 9.91 metres (Assessment Report 25405). Commerce Resource Corporation reports a best mineralized drill intersection of 3.5 metres containing 2.83 grams per tonne gold and 37.7 grams per tonne silver (Press Release June 14, 2002).

Former DES Claims

Immediately south of Desmond Lake and the southern boundary of tenure 392163)

Newco Ventures Ltd. completed geochemical survey over DES 1-98 claims, extending south from the Desmond Lake area (on current tenure 392163) for approximately 2 km south of the Balto Claim Group (Lammle 1972). A total of 1128 soil samples were analyzed for copper.

"Two large soil anomalies of moderate intensity, but in masking limy soils, have been located in Nicola Group volcanic rocks in vicinity of interesting intrusive diorite. Also these anomalies are either subjacent to, or in the immediate proximity of an intriguing group of intersections of regional aeromagnetic lineaments, several of which are known to be economically significant."

<u>1977</u>

"In 1977, two lines of I.P. Survey were carried out on the southeast portion of the (DES) property (La Rue 1987).

<u>1980</u>

"During the last part of September, 1979, a combined magnetic and VLF-EM survey was carried out on the DES Claim. The VLF-EM and Magnetic readings were taken every 50 meters on 100-meter separated eastwest lines (Mark 1980). ... A total of 4.1 line km of survey were done with 86 readings taken. ...

Northerly and northwesterly trending VLF-EM anomalies were located on the Des Claim. These correlate directly with magnetic highs varying from low to high intensities. The VLF-EM anomalies are quite likely reflecting fault, shear or fracture zones which may contain copper sulphides."

<u>1981</u>

"A total of 2.8 line km of Induced Potential surveying (dipole - dipole array with an "a" spacing of 100m and "n"= 2) was completed on the DES Claim. The survey (was interpreted to) indicate the presence of a northerly to northwesterly striking zone of anomalous Induced Potential effects in the western part of the grid, and a weakly anomalous area coincident with the previously indicated copper geochemical anomaly" (MacQuarrie 1981).

<u>1983</u>

Visa Resources Ltd. completed a localized magnetometer survey south of Desmond Lake, utilizing the existing road network (Cukor 1983). The results of the survey were inconclusive.

<u>1984</u>

A total of 1.4 km. of Induced Potential surveying (dipole - dipole array with an "a" spacing of 100m and "n"= 1) was completed on the DES Claim (MacQuarrie and Boitard 1984).

"The 1984 program has extended the anomalous Induced Potential zone an additional 200 m. northerly from its previously defined limits in the 1981 survey. … The anomalous responses detected by the 1984 program are probably related to source rocks as was interpreted in the 1981 report, that being pyrite+/chalcopyrite mineralization in Nicola Volcanic rocks."

1987

A total of 3 km of Induced Potential survey was carried out (on the DES Claim), consisting of 44 readings at 50 meter intervals. The Induced Potential survey was carried out with 100 meter dipole-dipole spacing with readings taken at 50 meter intervals (La Rue 1987).

"The results of the 1987 Induced Potential Survey have extended the north-northwest trending I.P. anomaly an additional 200 meters northerly from the previously defined limits of the 1981 and 1984 Surveys. ... (and) ...are probably related to source rocks as was interpreted in the 1981 report, that being pyrite +/- chalcopyrite mineralization in Nicola Volcanic rocks."

1989

"A diamond drilling program consisting of seven holes totalling 2046.60 m was completed on the Des Claim Group (Author's Note: immediately south of Desmond Lake and the southern boundary of tenure 392163) ... The purpose of drilling was to drill the Induced Potential anomaly to locate sulphides which could be associated with sulphides of economic value.

Based on ... examinations of the drill cores for Holes Des 89-1 through Des 8-7, the drill tested area is mainly underlain by variants of basaltic lithotype. A portion of the northeastern sector of the drill tested area appears to be underlain by andesite to trachyandesite. As common with regional metamorphic effects in the Nicola volcanics, chloritization, epidotization and hematoankeritization are evident in the area of question. Scapolitization occurs commonly in the basaltic rock at depth, about 150 meters below the surface. Bleaching, kaolinization and argillization plus mylonitized shear zones in places present moderate sulphide mineralization, but its auriferous content would not be significant to date" (Kim 1989).

5.0 REGIONAL GEOLOGY

The following has been modified from Sookochoff (2015):

The Property is located in the southern Intermontane Belt of British Columbia on the southern extent of the Quesnel Terrane. The predominant geological features are Late Triassic island-arc volcanic rocks and mudstone, siltstone and shale clastic sedimentary rocks correlated to the Nicola Group and Late Triassic to early Jurassic intrusive granodiorites.

The Late Triassic Nicola Group is a succession of volcanic rocks deposited in an island-arc setting, within a 30 to 60 km wide, northwest-trending belt extending from southern B.C. to the southern Yukon. This belt is juxtaposed against older rocks and was subsequently intruded by intrusive batholiths and stocks. Major batholiths in the area include the Guichon Creek Batholith (west), the Wild Horse Batholith (east) and the Iron Mask Batholith (north-northeast).

> "Nicola Group volcanic rocks in this part of Central British Colombia, including volcanic rocks between the Iron Mask and the Guichon batholiths, west of the Guichon batholith and East of the Iron Mask batholith have been divided into three belts (or facies) on the basis of their distinct facies and assemblages, following the recognition by Preto (1979): (1) a western belt consisting predominantly of subaqueous felsic, intermediate and mafic volcanic rocks of calcalkalic affinity that grade upward into volcanic rocks, (2) a central belt that includes alkalic and calcalkalic subaqueous and subaerial basalts and andesite flows, volcanic breccias and lahars, and (3) and eastern belt comprised predominantly of subaqueous and subaerial alkalic intermediate and mafic volcanic flows, fragmental and at the classic rocks (Owsiaki, 2003). These three faceis are labelled N_{VW}, N_{VC} and N_{VE}, respectively. ... The eastern facies is widespread, but the central facies is restricted to the northwestern part of the area near Savona. The belt of Nicola Group volcanic rocks along the eastern margin of the area is designated as undivided volcanic rocks (N_{VU})" (Thomas 2010).

The Guichon Batholith has intruded a succession of island-arc volcanic and associated sedimentary lithologies of the Nicola Group. Associated thermal alteration has produced a metamorphic halo up to 500 meters wide, developed within host lithologies the adjacent to the contact. Intrusive phases along the margin of the batholith are older and more mafic, with younger and more felsic successive phases identified inward toward the core. Although contacts can be sharp, they are generally gradational and chilled contacts are not common. Variations in the geochemistry of different phases within the batholith are interpreted to indicate local areas of assimilated country rock in the border zone, as well as roof pendants within the intrusion. Exposed outcrops may have inclusions of amphibolite and "granitized" metamorphic rocks, with associated compositional variations.

The Guichon Creek batholith is a large, composite intrusion having nine major porphyry copper deposits within a 15 square kilometer zone in the core of the batholith. The Balto Claim Group is hosted within Nicola volcanics approximately 10 kilometres east of the intrusive contact between the Guichon Batholith and host Nicola Group volcanics. The batholith is a semi-concordant, composite intrusive, having an elliptical shape elongated slightly west of north. A steeply plunging root or feeder zone is inferred under Highland Valley, with the known major deposits located at the projection of this feeder zone to surface.

Major copper-molybdenum porphyry deposits in the area include the producing mines within the Highland Valley (20 to 28 km west), New Afton Mine (formerly the Afton mine - 30 km north-northeast) and the recently identified

KGHM/Ajax deposit (26 kilometres north-northeast). The KGHM/Ajax deposit (formerly the Ajax mine) is scheduled to commence production in the near future.

The following summaries have been taken from the BC Geological Survey Branch's MINFILE database and are considered as possible exploration models for the Balto Claim Group.

5.1 **BETHLEHEM** (MINFILE 092ISW001)

Past Producer (Porphyry Cu+/-Mo+-Au), 28 km west

The Bethlehem property lies within the Early Jurassic-Late Triassic Guichon Creek batholith and straddles an intrusive contact where younger Bethlehem phase rocks form an irregular embayment in older Guichon variety rocks. The Bethlehem phase is medium-grained granodiorite to quartz diorite which ranges from equigranular to hornblende-biotite porphyry. The Guichon variety is medium-grained granodiorite. Igneous breccias are postulated to have been forcefully emplaced. Clasts up to 20 centimetres in diameter are subrounded and sit in a generally compact, but sometimes vuggy matrix. The granodiorites and breccias are intruded by north trending, steeply dipping dykes which are compositionally similar to the enclosing rocks; contacts are chilled. Most of the dykes are dacite porphyry and range in width from less than 1 metre to 60 metres. The Bethlehem ore deposits East Jersey (092ISE002), Huestis (092ISE004), Iona (092ISE006), and Snowstorm (092ISE005) are controlled by north trending faults and are localized in zones of closely-spaced fractures. Mineralization is concentrated in breccia bodies, faults and highly fractured areas. The Jersey fault cuts through the centre of the Jersey pit.

Hydrothermal alteration is restricted to the immediate area of the ore zones. The distribution of secondary biotite defines an inner potassic zone, sericite with kaolinite and montmorillonite define an intermediate phyllic zone, and epidote defines a peripheral propylitic zone. There is an outer halo of chloritized mafic minerals. Calcite, zeolite and quartz veining and vug-filling is common.

Metallic mineral zoning is very similar to alteration patterns. Bornite and chalcopyrite occur in the hydrothermal biotite zone, specularite in the epidote zone and minor pyrite in the outer halo. Molybdenite, chalcocite and magnetite occur in minor amounts. Malachite, azurite, chrysocolla, cuprite, native copper, hematite, goethite and manganese oxides occur to shallow depths. An age date from a sample of a mixture of magmatic and hydrothermal biotite from the Iona ore zone (092ISE006) returned 199 Ma +/- 8 Ma (Canadian Institute of Mining and Metallurgy Special Volume 15).

The Jersey orebody hosts disseminated mineralization and occurs in an area of relatively evenly distributed and variously oriented pervasive fracturing. Irregular, discontinuous quartz veins also hosts mineralization.

5.2 HIGHLAND VALLEY COPPER (MINFILE 092ISW012)

Producer (Porphyry Cu+/-Mo+-Au), 27 km west

The Valley deposit lies within the Late Triassic to Early Jurassic Guichon Creek batholith and is hosted by Bethsaida phase porphyritic quartz monzonite and granodiorite.

Feldspar porphyry and quartz feldspar porphyry dykes 0.6 to 35 metres wide dip steeply eastward in the western and central areas, and northward in the southern area of the deposit. These dykes are cut by mineralized fractures and quartz veinlets, and have been dated at 204 Ma +/- 4 Ma.

The Bethsaida granodiorite is also intruded by aplite dykes up to 30 centimetres wide, tan-coloured felsite dykes up to 4.5 metres wide, and three types of lamprophyre dykes (spessartite, hornblende vogesite, vogesite).

The most prominent structural features are the north trending, west dipping Lornex fault and the east trending Highland Valley fault. Faults and fractures in the deposit comprise four main sets. Quartz veinlets are subparallel to two of the earlier formed fault and fracture sets.

Silicic, potassic, phyllic, argillic and propylitic alteration are intimately associated. Stockworks of quartz veinlets 1 to 2 centimetres in width are common. Vuggy veinlets have envelopes of medium-grained sericite and/or potassic feldspar, and contain minor amounts of sericite, plagioclase, potassium feldspar, calcite, hematite, bornite, chalcopyrite, molybdenite, digenite and covellite. These veinlets are moderately abundant within the 0.3 per cent copper isopleth. An area of well-developed barren quartz veinlets, generally 0.5 to 1.3 millimetres wide, without alteration envelopes, occurs in the southeastern part of the deposit.

In the west-central part of the deposit, potassium feldspar is associated with vein sericite in some replacement zones, as veinlet envelopes along fractures, and disseminated in quartz veinlets. Hydrothermal biotite occurs in small amounts. Flaky sericite and quartz, both as replacement zones and as envelopes around quartz veinlets, constitute the most common type of alteration associated with copper mineralization. Strong phyllic alteration coincides with the 0.5 per cent copper isopleth. Phyllic alteration is closely associated with pervasive argillization, which is strongest where fractures are most closelyspaced. Feldspars are altered to sericite, kaolinite, quartz and calcite. The phyllic-argillic zone grades outward to a peripheral zone of weak to moderate propylitization, characterized by clay, sericite, epidote, clinozoisite and calcite replacing plagioclase, and chlorite and epidote replacing biotite. The age of hydrothermal alteration is approximately 191 Ma.

At the Valley deposit, gypsum is interpreted to be secondary and post-ore. It is commonly fibrous and white to orange but locally it forms large platy crystals or may be massive. Anhydrite, which is also present, provides indirect evidence for the secondary nature of the gypsum. It is apparently the same age as and associated with sericitic and potassic alteration. Quartz-gypsum veins and quartz-potash feldspar veins in which gypsum fills interstices provide more direct evidence for its secondary nature. Gypsum is believed to have formed at the expense of anhydrite which was deposited from the ore-forming fluids. Gypsum veins are common in the lower portion of the orebody (Open File 1991-15).

Highland Valley Copper operates two distinct mines, the Valley mine and the Lornex mine, and between the two has measured and indicated ore reserves of 761 million tonnes of 0.408 per cent copper and 0.0072 molybdenum. The ore reserves of each mine are: Valley mine - 627 million tonnes at 0.418 per cent copper and 0.0056 per cent molybdenum; Lornex mine - 135 million tonnes at 0.364 per cent copper and 0.0144 per cent molybdenum. The individual mine reserves are calculated at an equivalent cutoff grade of 0.25 per cent copper using a molybdenum multiplying factor of 3.5 (CIM Bulletin July/August 1992, pages 73,74).

5.3 **LORNEX** (MINFILE 092ISW045)

Producer (Porphyry Cu+/-Mo+-Au), 25 km west

The Lornex deposit lies in the central core of the Late Triassic-Early Jurassic Guichon Creek batholith and occurs within Skeena variety granodiorite to quartz diorite. This rock is medium to coarse-grained and slightly porphyritic. The Lornex property straddles the north trending, west dipping Lornex fault which juxtaposes Skeena rocks on the east side with Bethsaida phase quartz monzonite on the west. A pre-mineral quartz porphyry dyke, probably related to the Bethsaida phase, trends northwest and pinches out in the Lornex deposit.

Mineralization is controlled by the distribution and density of fracture sets. Three major sets of copper-molybdenum veins strike north-northeast to east and dip moderately southeastward. There are two sets of post-mineral fault and fracture systems; one which roughly parallels the mineralized veins and another which offsets the first up to 2 metres. The most prominent structural feature is the Lornex fault which dips 55 degrees to the west in the southern part of the orebody, and steepens to nearly vertical in the north.

This fault truncates the northwestern part of the deposit. It is characterized by a 10 centimetre to 1.5-metre wide black gouge on the footwall and discontinuous mylonite pods 1 to 50 metres wide in the hanging wall. Five main types of hydrothermal alteration are related to quartz and sulphide mineralization. Pervasive silicification, consisting of close spaced quartz veins with associated quartz alteration, is hosted by the Skeena rocks. The quartz porphyry dyke is only weakly affected by hydrothermal alteration.

Potassium feldspar veinlets and hydrothermal biotite are erratically distributed. Argillic alteration is pervasive throughout the ore zone and is characterized by quartz, sericite, kaolinite, montmorillonite and chlorite. Copper grades generally correspond to the intensity of argillization. Within the argillic zone, phyllic alteration consists of grey quartz-sericite envelopes on mineralized veins. Pervasive propylitization, consisting of epidote (zoisite), chlorite and carbonates (calcite), is peripheral to the argillic zone. There is also an irregular zone of late-stage gypsum.

The Lornex deposit is 1900 metres long, 500 metres wide and plunges northwest to a depth of at least 750 metres. Chalcopyrite, bornite and pyrite constitute 1.5 per cent of the ore zone and occur in three roughly concentric sulphide zones respectively. Sulphides occur mainly with quartz as fracture-fillings and coatings. Veins average 5 to 15 millimetres in width. Molybdenite occurs as thin laminae in banded quartz veins and less often as rosettes in vuggy quartz veins. The oxide zone averages 3 to 30 metres in thickness and thins toward the east. Supergene minerals are malachite, limonite, pyrolusite, azurite, cuprite, chalcocite, covellite, and native copper.

Published reserves at January 1, 1995 were 539.7 million tonnes grading 0.42 per cent copper and 0.0073 per cent molybdenum. The mine life is estimated to be about fourteen more years (Information Circular 1995-9, page 6).

Mineralization is controlled by the distribution and density of fracture sets. Three major sets of copper-molybdenum veins strike north-northeast to east and dip moderately southeastward. There are two sets of post-mineral fault and fracture systems; one which roughly parallels the mineralized veins and another which offsets the first up to 2 metres.

The most prominent structural feature is the Lornex fault which dips 55 degrees to the west in the southern part of the orebody, and steepens to nearly vertical in the north. This fault truncates the northwestern part of the deposit. It is characterized by a 10 centimetre to 1.5-metre wide black gouge on the footwall and discontinuous mylonite pods 1 to 50 metres wide in the hanging wall.

5.4 **BERTHA - MOLLY** (MINFILE 092ISE012)

Past Producer (Stockwork), 5 km west

The Dupont Lake area is underlain mainly by Upper Triassic Nicola Group intermediate volcanics and derivatives.

Approximately 8 kilometres to the west, Nicola Group rocks are in contact with the Lower Jurassic Guichon Creek batholith. Quartz diorite outcrops southwest of Dupont Lake.

The Bertha-Molly showing is hosted by purplish amygdaloidal andesites with intercalated reddish tuffs. These rocks are strongly fractured and chloritized. The original shaft was sunk at a point where patches of cuprite occur in fractures. Small shipments were made.

Recent development has exposed malachite, azurite, chalcopyrite, cuprite and pyrite hosted by shears and fracture-fillings in vesicular volcanics and red tuffs. Mineralization is structurally controlled with an apparent north trend. A common alteration is calcite and epidote with silicification becoming stronger at depth.

5.5 **RHYOLITE** (MINFILE 092ISE021)

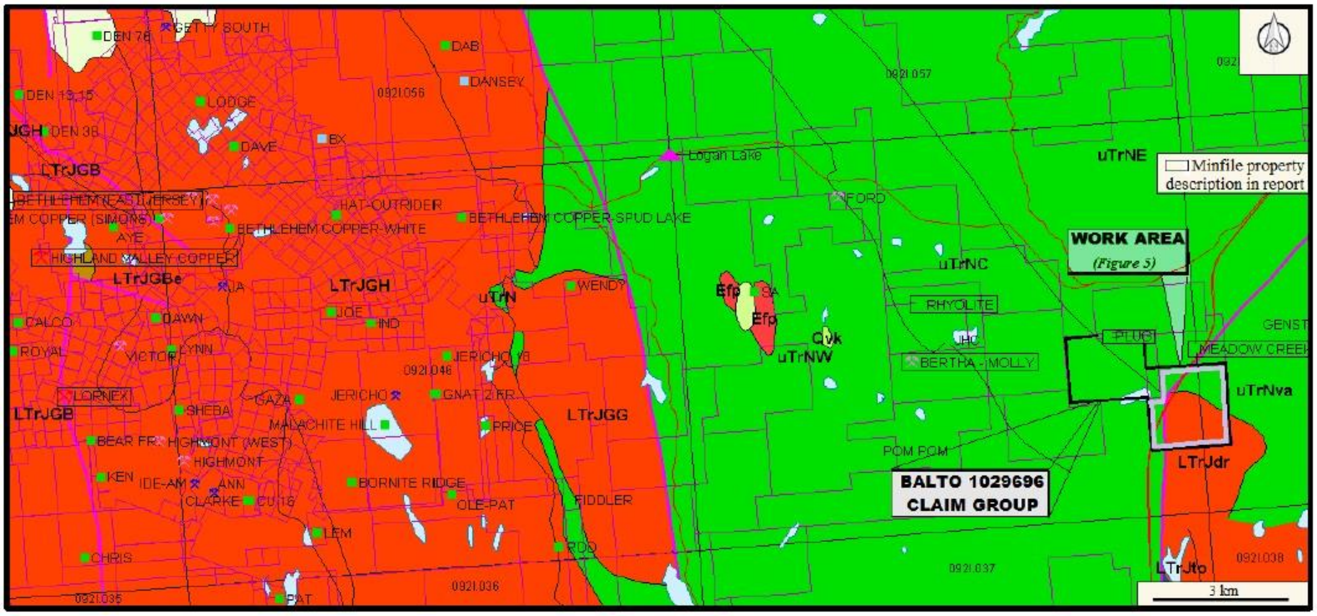
Showing (Porphyry Cu +/- Mo +/- Au), 5 km west

The area straddles a northwest trending contact between two volcanic sequences of the Upper Triassic Nicola Group. To the west are plagioclase, plagioclase-augite intermediate pyroclastic and epiclastic breccia, conglomerate, tuff, sandstone, local shale and augite porphyry bodies. The central portion to the east is underlain by aphanitic pillowed mafic flows. The contact between these two sequences hosts the Rhyolite occurrence.

The Rhyolite showing is underlain by grey, green or black amygdaloidal basalt of the Upper Triassic Nicola Group. Varicoloured calcite amygdules occur within an aphanitic groundmass. Several beds of maroon to green volcaniclastic breccia occur within the basalt and contain maroon, sub-rounded to sub-angular clasts ranging up to 30 by 15 centimetres. Two northwest trending, light grey-green, aphanitic, siliceous and pyritic felsic dykes, 3 to 4 metres wide, also occur.

Mineralization occurs in amygdaloidal basalt near the flow-volcaniclastic contact and is related to narrow quartz-carbonate veinlets within shears. Several old trenches indicate the shear zone strikes approximately 335 to 345 degrees and dips steeply west. Pyrite is present with minor chalcopyrite, azurite, malachite and sphalerite. Rock samples from this zone assayed up to 0.377 per cent copper, 0.218 per cent zinc and are weakly anomalous in gold and silver values (Assessment Report 18048).

Figure 5 – Geology Map of Highland Valley area, with Claims, MINFILE occurrences and Balto Claim Group indicated. (from Sookochoff 2015)



LEGEND

Qvk

Pleistocene to Holocene

Unnamed alkaline volcanic rocks

Efp

Eocene-Kamloops Group

Unnamed feldspar porphyritic intrusive rocks

Upper Triassic-Nicola Group

uTrNW

Western Volcanic Facies undivided

volcanic rocks **uTrNc**

Central Volcanic Facies undivided

volcanic rocks **uTrNE**

Eastern Volcanic Facies basaltic

volcanic rocks

uTrNva

andesitic volcanic

rocks **Late Triassic to Early Jurassic**

LTrJGB

GUICHON CREEK BATHOLITH

LTrJGG – Gump Lake Phase

granodioritic intrusive

rocks **LTrJGBo** – Border Phase

quartz dioritic intrusive rocks

6.0 PROPERTY GEOLOGY

"All outcrops examined belong to the Nicola Volcanics. Although monzonite intrusives were reported in the area, no such rock type was encountered. The volcanics include green to greenish grey andesites, black amygduloidal basalt flows and locally tuffs and volcanic breccia. In localities the rock is porphyritic. Fracturing is quite intense and widespread evidence of hydrothermal activity was noted. The most common alteration products are epidote, chlorite and hematite, and locally stockworks of quartz veinlets were observed. The most intense alterations were noted south of Desmond Lake, where original rock was almost completely decomposed into chloritized clay along strong north/northwest striking fracture system" (Cukor 1982).

"According to Minfile reports the Plug occurrence, within the Meadow Creek zone adjacent to (north of) the SED claim, is underlain by the Nicola Group volcanic rocks which are cut by small granitic plugs and sills. Sparse outcroppings of Nicola Group rocks along Meadow Creek consist of altered andesite, lapilli tuff, amygdoidal basalt and minor lenses of limy sediments which strike east to southeast and dip steeply to the north" (Sookochoff 2006).

The Nicola Group on the Ashcroft map sheet, which includes the Balto Claim Group, has been sub-divided into the Eastern, Central and Western Belts on the basis of lithological and chemical differences (Preto 1979). In the immediate area of the property, the Eastern and Central Belts have been mapped. They are described as follows:

> "**CENTRAL BELT**: The Central Belt assemblage … includes the oldest of the Nicola rocks … and is typified by an abundance of massive pyroxene and plagioclase-rich flows of andesitic and basaltic composition, coarse volcanic breccia, conglomerate, and lahar deposits and by lesser amounts of fine-grained pyroclastic and sedimentary rocks. Intrusive rocks mostly of gabbroic and dioritic composition, but including some syenite and monzonite, are abundant throughout the belt. The character and composition of these intrusives and lithologic changes in the surrounding intrusive rocks indicate that at least in some cases the stocks are the eroded remains of Upper Triassic volcanoes.
>
> Both subaerial and submarine assemblages occur in the Central Belt. In general, most of the red and purple flows and associated red laharic breccias … are considered to be of subaerial origin, whereas greenish flows and breccias, with associated small lenses of calcareous sandstone and impure limestone … are considered to be of submarine origin
>
> Most stocks in the Central Belt are elongated in a northerly direction and occur along the northerly trending faults. It is apparent that areas of stronger volcanic activity ... contain more faults and more intrusive rocks that areas of less intense volcanism. Although many of these faults are subsidiary to and part of the major regional systems, they are intimately associated with and dependent on the more localized volcanic history of the Nicola rocks.
>
> …
>
> **EASTERN BELT**: … The Eastern Belt can be described in terms of the northern and southern assemblage ... The northern assemblage consists of a well-bedded, westerly dipping succession of volcaniclastic rocks that range from thinly layered volcanic siltstone and sandstone in the lower parts of the section to coarse volcanic agglomerates and massive green laharic breccia in the upper part. This part of the Eastern Belt is characterized by a lack of intrusive rocks and mineral showings.
>
> …
>
> Rocks of the Central and Eastern Belts … are chemically similar and are in large part alkalic. … Field relationships and chemical data suggest that volcanic rocks of the Central and Eastern Belts were derived

locally from several stocks of diorite, micro monzonite, and syenite, the distribution and elongation of which is strongly control by the northerly trending minor faults" (Preto 1979).

6.1 **MEADOW CREEK (PLUG)** (MINFILE 092ISE155)

Showing (Volcanogenic), 500 m north

The area is underlain by volcanic rocks of the Upper Triassic Nicola Group which are cut by small granitic plugs and sills.

Sparse outcroppings of Nicola Group rocks along Meadow Creek consist of altered andesite, lapilli tuff, amygdaloidal basalt and minor lenses of limy sediments which strike east to southeast and dip steeply to the north. Alteration minerals include chlorite, epidote, carbonate and hematite. A quartz-mariposite-carbonate rock outcrops along Meadow Creek and is in contact with a chlorite-mica-feldspar(?) schist that strikes 020 degrees and dips 65 to 90 degrees to the east. The schist and mafic dioritic to hornblende andesite sills form a southeastward plunging asymmetrical syncline.

Locally, an alteration zone contains gold and silver mineralization and is exposed over a surface area of 32 metres long by 2 metres wide. The alteration zone consists of chlorite-mica (fuchsite) feldspar schist containing a quartz vein stockwork that is accompanied by pyrite, galena, sphalerite and chalcopyrite.

Two grab samples of quartz carbonate mariposite schist with galena and sphalerite yielded 605 and 482 parts per billion gold and 165.1 and 258.4 parts per million silver (Assessment Report 28815).

6.2 **PLUG** (MINFILE 092ISE196)

Showing (Volcanogenic), 50 m north

The area is underlain by volcanic rocks of the Upper Triassic Nicola Group that are cut by small granitic plugs and sills. Sparse outcroppings of Nicola Group rocks along Meadow Creek consist of altered andesite, lapilli tuff, amygdaloidal basalt and minor lenses of limy sediments that strike east to southeast and dip steeply to the north. Alteration minerals include chlorite, epidote, carbonate and hematite. A quartz-mariposite-carbonate rock outcrops along Meadow Creek and is in contact with a chlorite-mica-feldspar schist that strikes 20 degrees and dips 65 to 90 degrees to the east. The schist and mafic dioritic to hornblende andesite sills form a southeastward plunging asymmetrical syncline

The quartz-mariposite-carbonate rock contains minor amounts of silver-bearing galena, sphalerite and chalcopyrite. An outcrop of highly pyritic quartz feldspar porphyry contains minor amounts of chalcopyrite.

7.0 LOCAL GEOLOGY

> "The SED claim is entirely underlain by two subdivisions of the Nicola volcanic rocks, the boundary bisecting the property from the southeast to the northwest. In the northeast is unit UTN5 which is comprised of an augite porphyry, augite-plagioclase porphyry volcaniclastic breccia and tuff with interbedded argillite. In the southwest is unit UTN4 which is comprised of a pillowed basic flow.
>
> The SED claim is located at the intersection of two topographically indicated structures; the structures; the northeasterly trending structure of the Meadow Creek valley and the northwesterly trending Melba Creek valley structures" (Sookochoff 2014).

The property is predominantly underlain by lithologies correlated to the Central Belt of the Nicola Group (Monger and MacMillan 1989), with the northern portion of tenure 392163 underlain by rocks of the Eastern Belt. These strata are juxtaposed to the east, on tenure 1029696, against "Amphibolite, foliated diorite, mylonite and chlorite schist derived from Nicola Group (Monger and MacMillan 1989) by the north trending Clapperton Fault. These strata host small intruive bodies of interpreted Eocene granodiorite and/or quartz monzonite correlated to the Nicola Batholith.

"Central volcanic faces of Nicola group; intermediate, plagioclase, augite plagioclase porphyry pyroclastics, local pillowed and plagioclase porphyry flows

Eastern volcanic facies of Nicola group; mafic, augite and hornblende porphyry bearing breccia and tuff, local intercalated argillite" (Monger and MacMillan 1989).

8.0 2018 FIELD PROGRAM

Between June 5 and 8, 2018, the author completed a small VLF-EM geophysical survey east of the Surrey Lake Forest Service Road (FSR) and north of Desmond Lake on tenure 392163 (Fig. 6 and 7). On this tenure, the FSR is essentially north-south.

The following has been taken from Sookochoff (2014).

8.1 Instrumentation

"The VLF-EM survey was carried out with a VLF-EM receiver, Model 27, manufactured by Sabre Electronics Ltd. of Burnaby, British Columbia. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF-EM), which for this survey is transmitted at 24.8 kHz from Seattle (Jim Creek), Washington.

8.2 Theory

In all electromagnetic prospecting, a transmitter induces an alternating magnetic field (called the primary field) by having a strong alternating current move through a coil of wire.

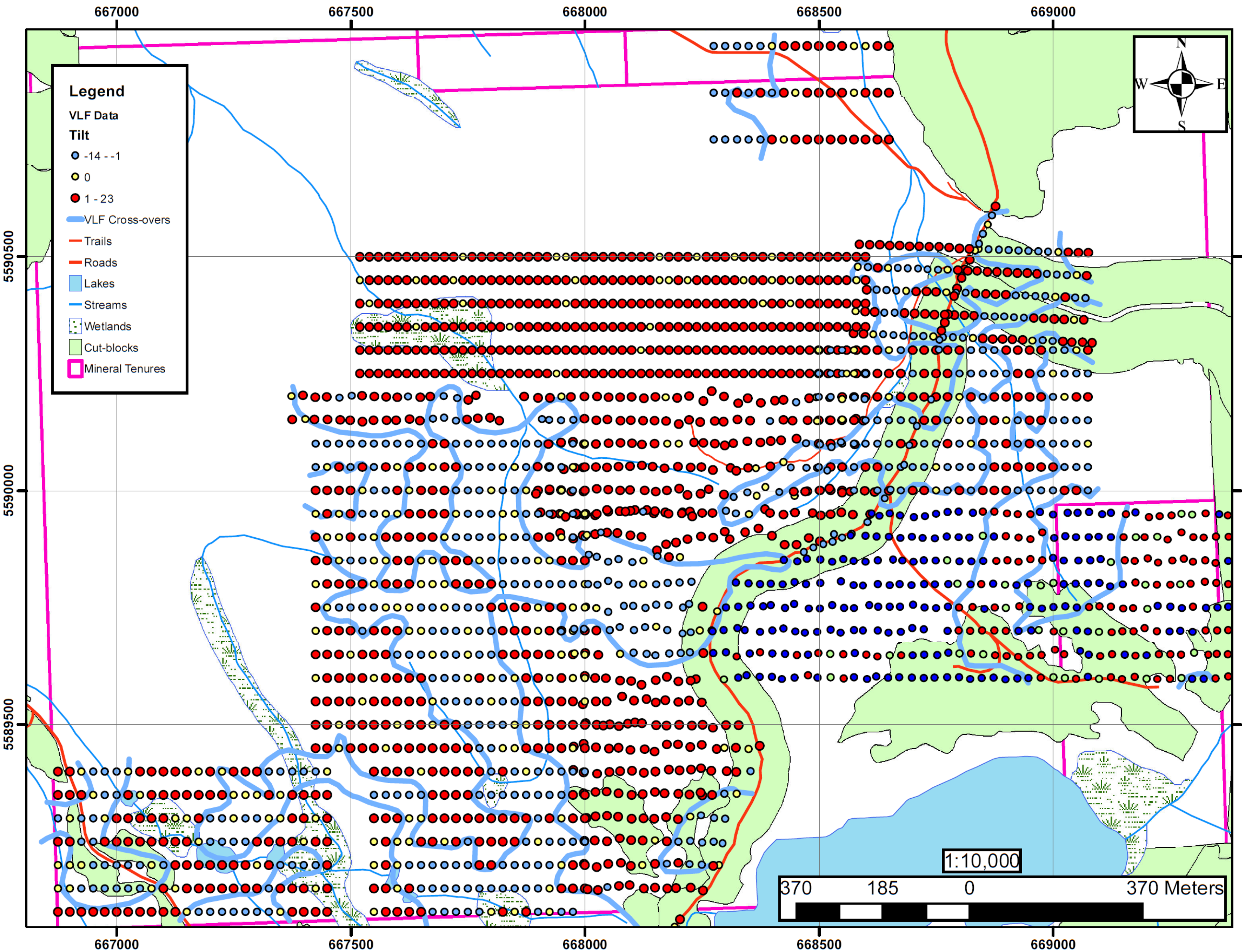
This primary field travels through any medium and if a conductive mass such as a sulphide body is present, the primary field induces a secondary alternating current in the conductor, and this current in turn induces a secondary magnetic field. The receiver picks up the primary field and, if a conductor is present, the secondary field distorts the primary field. The fields are expressed as a vector, which has two components, the "in-phase" (or real) component and the "out-of-phase" (or quadrature) component. For the VLF-EM receiver, the tilt angle in degrees of the distorted electromagnetic field with a conductor is measured from that which it would have been if the field was not distorted with a conductor.

Since the fields lose strength proportionally with the distance they travel, a distant conductor has less of an effect than a close conductor. Also, the lower the frequency of the primary field, the further the field can travel and therefore the greater the depth penetration.

The VLF-EM uses a frequency range from 13 to 30 kHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can pick up bodies of a much lower conductivity and therefore is more susceptible to clay beds, electrolyte-filled fault or shear zones and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulphide bodies of too low a conductivity for other EM methods to pick up.

Consequently, the VLF-EM has additional uses in mapping structure and in picking up sulphide bodies of too low a conductivity for conventional EM methods and too small for induced polarization. (In places it can be used instead of IP). However, its susceptibility to lower conductive bodies result in a number of anomalies, many of them difficult to explain and thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys".

Figure 6 – Station location map for stations (red) compiled from previous VLF-EM surveys (Sookochoff 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005), together with stations from 2018 survey (blue) on tenure 392163.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8.3 Survey Procedure

A total of 329 readings were taken (Fig. 7), with station locations ascertained using a Magellan Mobile Mapper hand-held GPS. Survey stations were established every 25 m along east-west survey lines spaced 50 m apart. A total of 8.46 line kilometres of VLF-EM was completed.

The field readings of VLF-EM survey are included in Appendix II.

8.4 Compilation of Data

The field data was filtered using the methodology of Fraser (1969). Results are presented in three maps: VLF-EM Raw Data (Fig. 7), Cross-overs (Figure 8 and 9), Calculated Fraser Filter results (Fig. 10) and contoured Fraser Filtered results (Fig. 11).

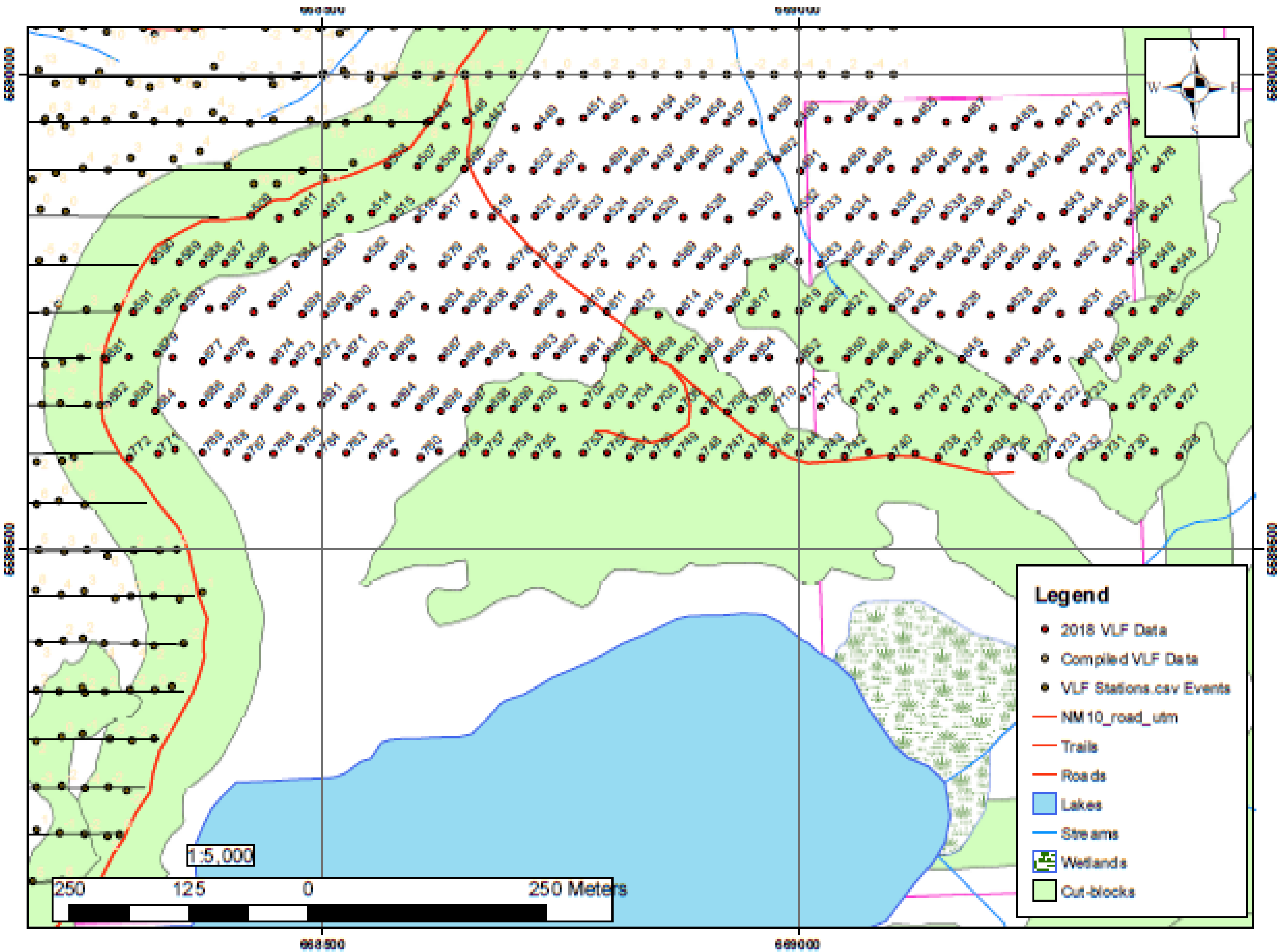
Figure 7 – Station Location data. Station location data for the 2018 survey, located east of the Surrey Lake Forest Service Road (FSR) and north of Desmond Lake.

Figure 8 (Following Page) – VLF-EM cross-overs from cumulative, compiled database. Cross-overs (from positive to negative Tilt Readings from Raw data) indicated by blue line.

Figure 9 (Following Page) – VLF-EM cross-overs from cumulative, compiled database, restricted to those occurring on the on SED claim (tenure392163). Cross-overs (from positive to negative Tilt Readings from Raw data) indicated by blue line.

Figure 10 (Following Page) – Calculated Fraser Filter results from compiled VLF-EM database using the method of (Fraser 1969). Calculated values for each station plotted.

Figure 11 (Following Page) – Contoured positive Fraser Filter results calculated for compiled VLF-EM database.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2018 VLF Data
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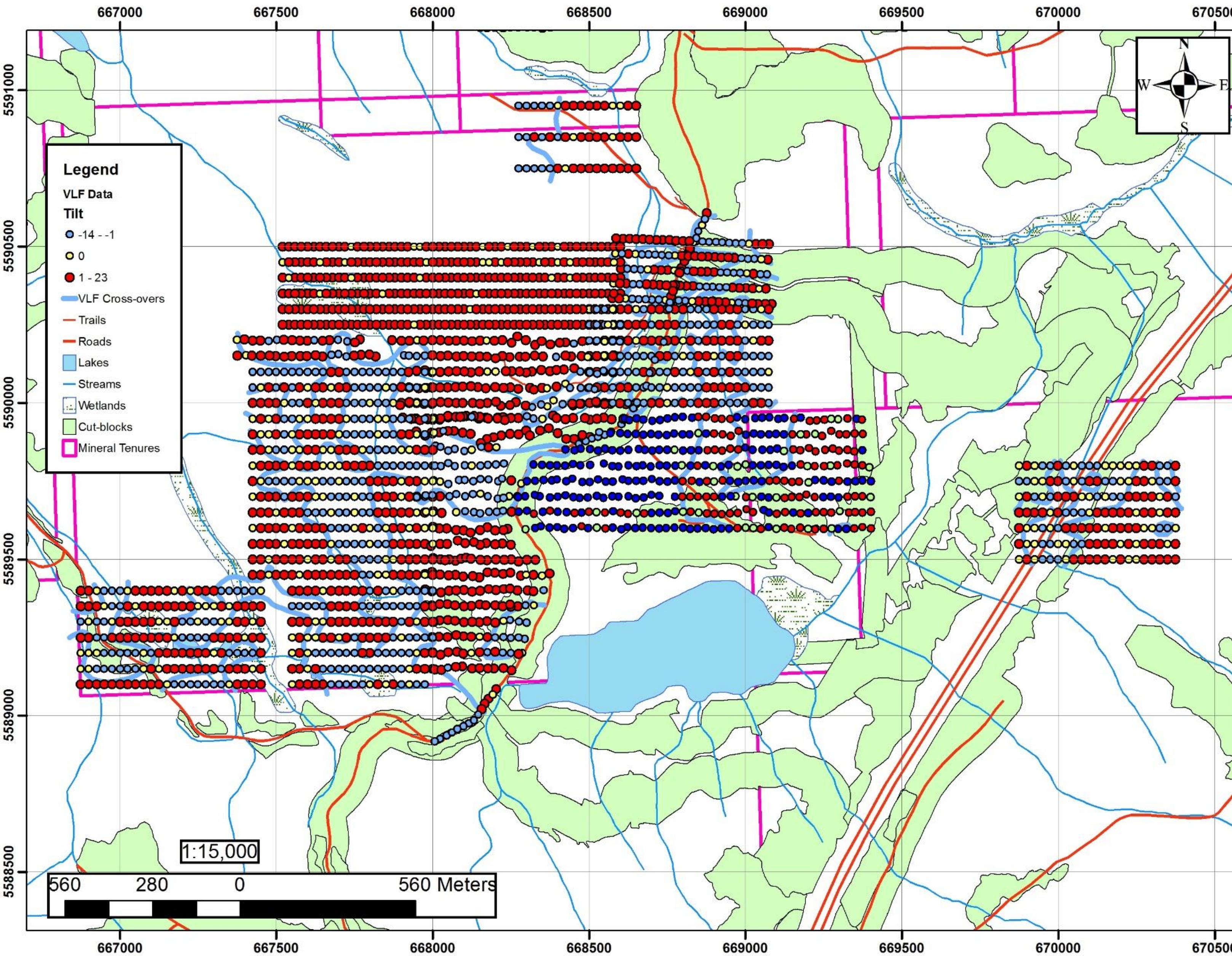
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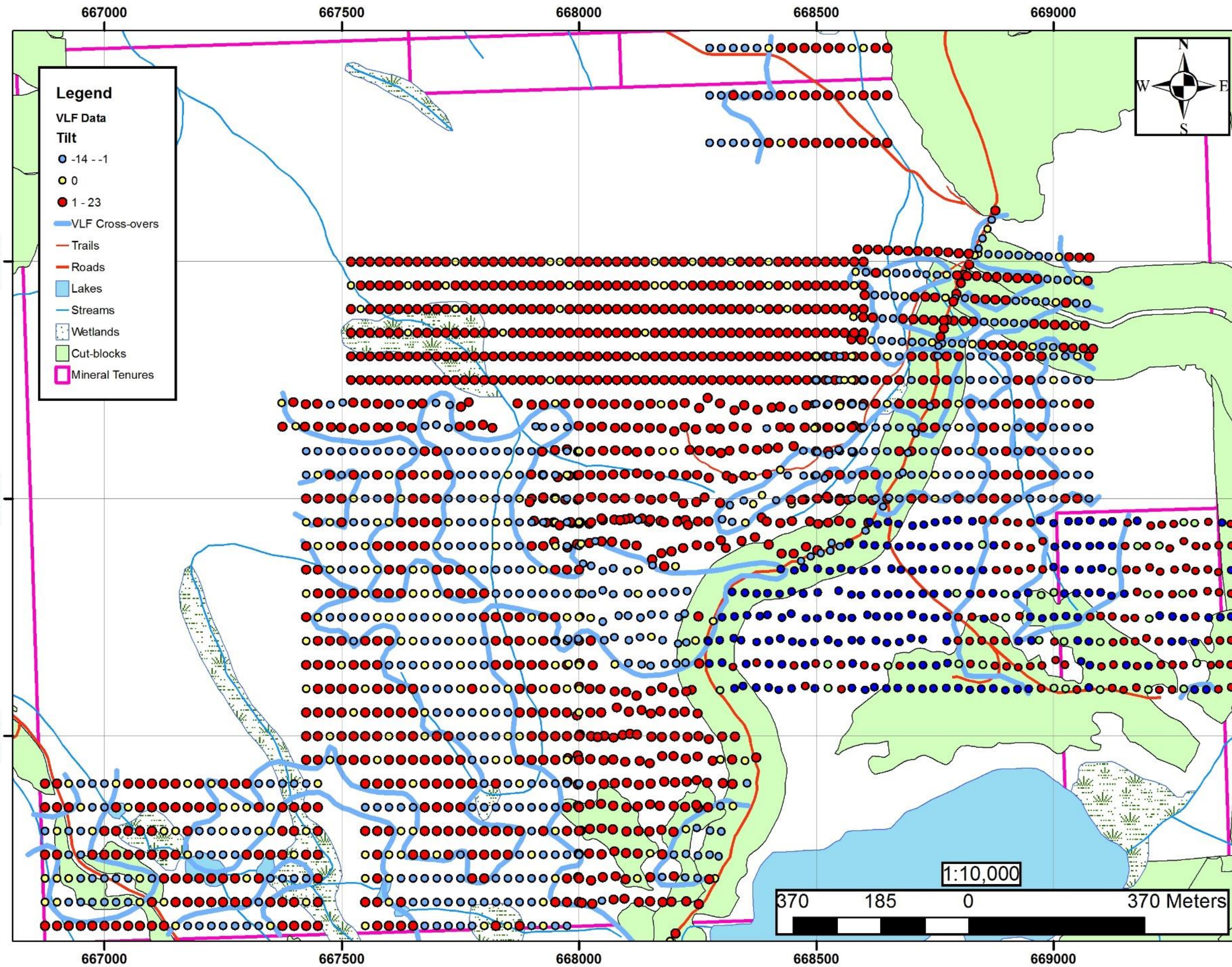
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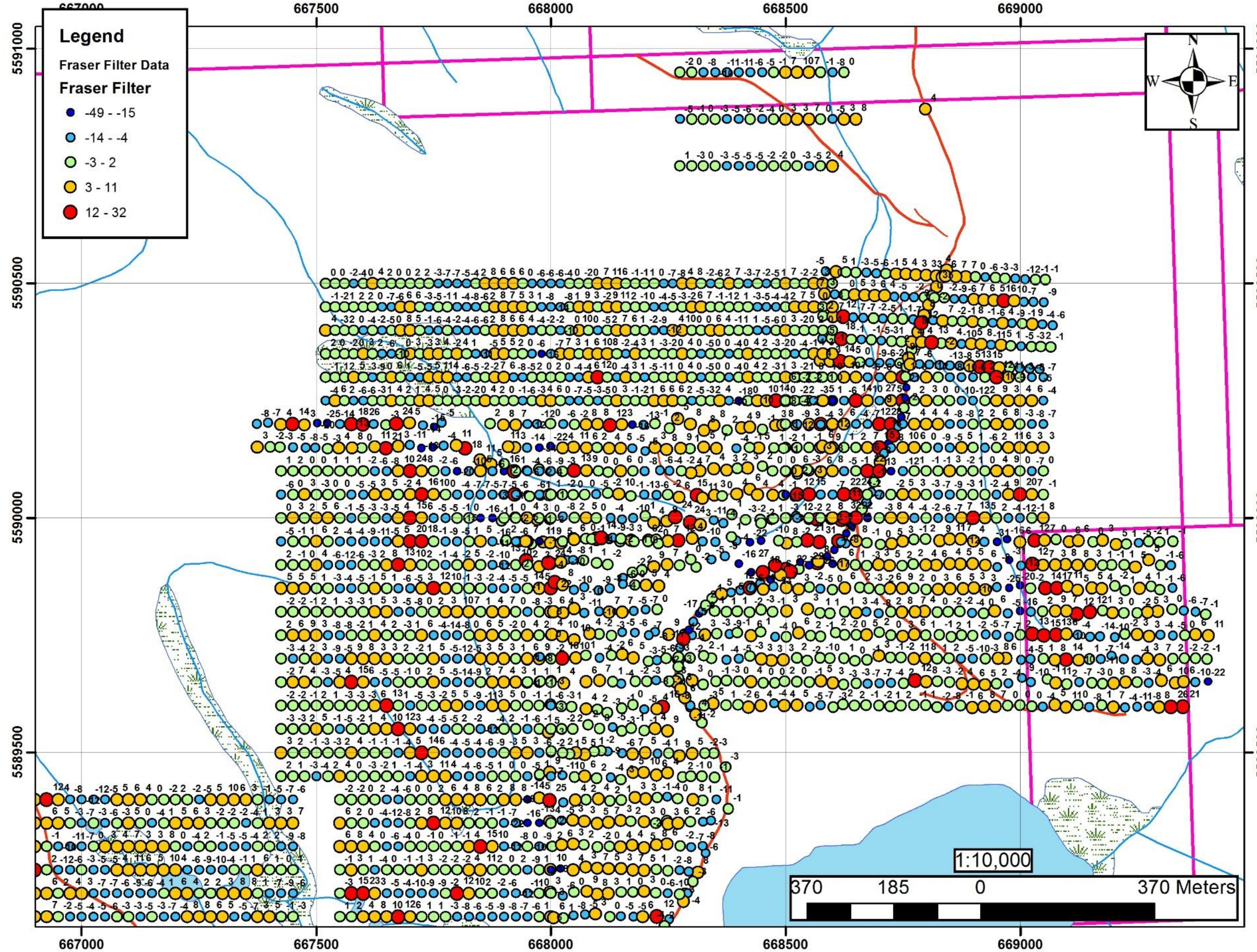
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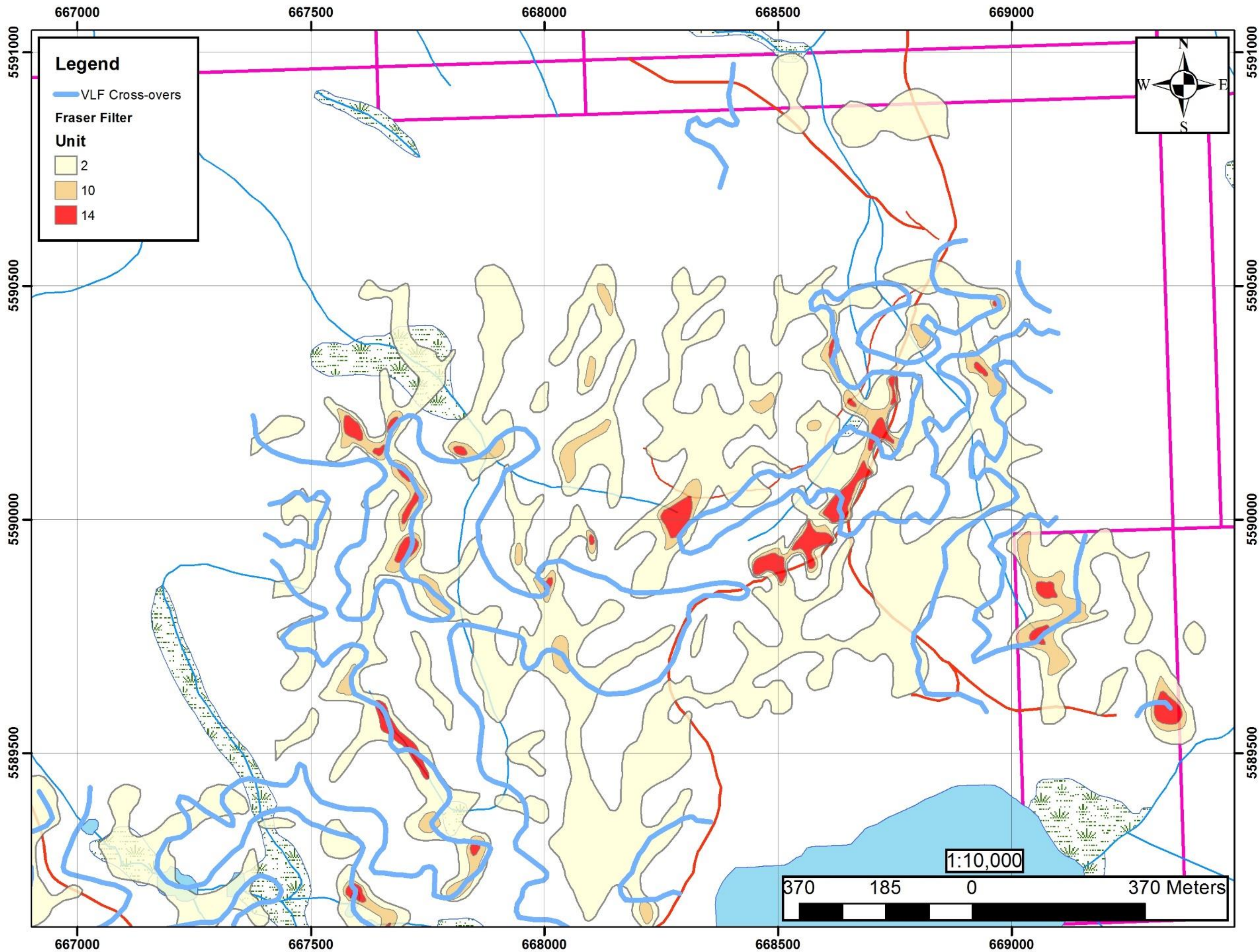
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9.0 INTERPRETATION

Data collected from the 2018 survey, comprising 329 stations, were appended to the data compiled in 2017 (Walker, 2017, 2016; Sookochoff 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005), resulting in a total of 2,428 stations. The data from this compilation has been plotted as raw VLF-EM results (Fig. 7), Cross-overs (Figure 8 and 9), Calculated Fraser Filter results (Fig. 10) and contoured Fraser Filtered results (Fig. 11). The results are discussed below.

Raw VLF-EM Data (Fig. 7)

VLF-EM data have been acquired from stations at approximately 25 m intervals, over numerous lines spaced 50 m apart, covering an estimated 60% of the area comprising the SED claim (tenure 392163). Data were collected from stations comprising a survey between the essentially east-west Surrey Lake Forest Service Road (FSR) and the eastern margin of the tenure (spatially associated with a north-south fence line). The survey was intended to fill a data gap between previous VLF-EM surveys in the eastern portion of the property. (Note: Additional data could be collected in the future from surveys in the west, north and south-east portions of the tenure to further complete coverage on the SED claim).

In general, compiled data from previous surveys (Fig. 8) agree well with data collected in 2018 (Fig. 7). The exception are data in the upper northwest portion of the compiled data (Sookochof 2006). Data in this area, comprising 6 lines, spaced 50 m apart and extending approximately 1.2 km east-west, is slightly elevated relative to data on immediately adjacent surveys and throughout the remainder of the compilation.

For this reason, interpretation of results in this area must be treated with caution.

In addition, there are variations between data collected in areas of overlap between different surveys. This variation is most evident along the road, for which data was collected in 2016 (Walker 2016) and against which numerous surveys, extending both east and west from the road, terminate.

Cross-overs (Figure 8 and 9)

Cross-overs, from negative to positive raw VLF-EM results along a given line, are evident throughout the entire compiled dataset (Figure 8) and for data within the SED claim SED claim (tenure 392163) (Fig. 9). Raw VLF-EM data were gridded and contoured using the "0" contour. Cross-over locations have been indicated in blue. Again, data in the northwest portion of the dataset are somewhat anomalous with the remainder of the compiled data, being slightly elevated.

The areas distinguished by the cross-overs define relatively amorphous areas. In general terms, data from the central portion of the compiled data appear to define north to north-west oriented trends, while data on the east side appear to define areas trending north to northeast. Despite slight variations between data from surveys in different years and the amorphous nature of the areas defined, the areas comprise relatively large areas of consistent results, interpreted to indicate the VLF-EM surveys have faithfully recorded sub-surface features inherent to the underlying bedrock.

Calculated Fraser Filter results (Fig. 10 and 11)

Fraser Filter values were calculated using the method recommended by Fraser (1969), comprising a "... data manipulation procedure … which transforms noisy non-contourable data into less noisy contourable data, thereby eliminating the dynamic range problem and reducing the noise problem. The manipulation is the result of the application of a difference operator to transform zero-crossings into peaks, and a low-pass smoothing operator to reduce noise" (Fraser 1969).

Calculated values for each station have been plotted as a bubble plot in Figure 10 and contoured in Figure 11. IN general, negative values are ignored, with interpretations made with respect to the positive values. The data document broad areas in which the data within the compiled dataset are in agreement, again interpreted to suggest the data are valid and record sub-surface variations between bedrock sources. To facilitate interpretation of results, only two contour intervals were used to contour positive values, 3-11 and 12 – 42. In contrast to the raw data, anomalies defined are north to northwest trending and the high-grade anomalies (12 – 42) are narrow and well defined. Use of additional contour intervals may define additional anomalous trends, however, it may result in more confusing anomalies and has not been attempted at this time.

Combined Ground Magnetic and Fraser Filter Results (Fig. 12)

A ground magnetic survey was completed in the northwestern portion of the SED claim (Walcott 2017). The results have been combined with contoured Fraser Filter results in Figure 12. The magnetic data, located within a regional low (see Fig. 16 in Walker 2017), delineated a "… zone of elevated magnetics … (mHA). This feature also appears to have a slight north-westerly orientation, with south-westerly dip" (Walcott 2017). Contoured Fraser Filter results document a high along the eastern flank of the magnetic anomaly, extending southeast and wrapping southwest around the southern margin of the anomaly. Interestingly, there is a minor Fraser Filter anomaly spatially coincident with an elevated area between two magnetic lows delineated by the ground magnetic survey.

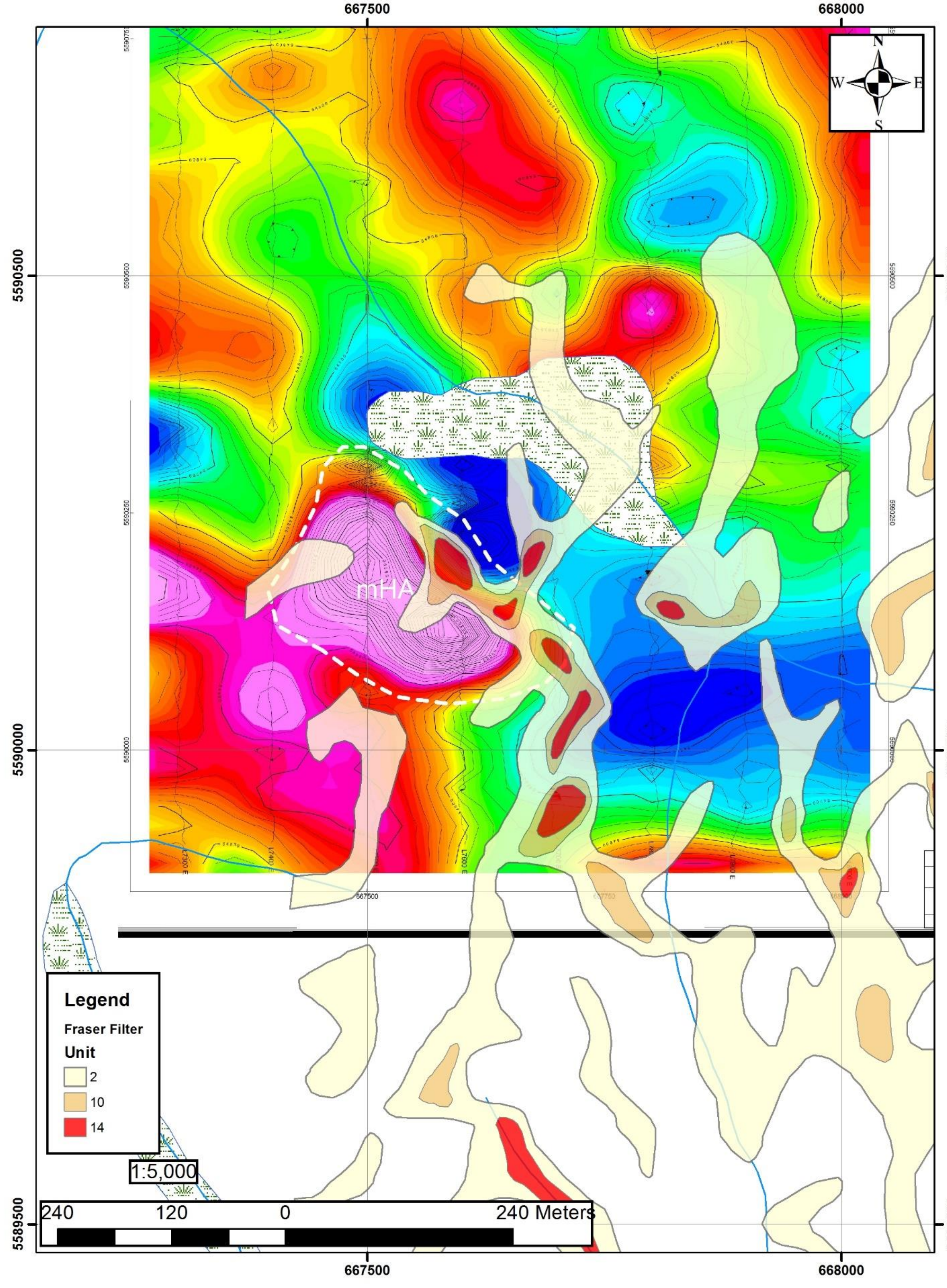
The results of the ground magnetic survey document a local, prominent magnetic high, spatially associated with a strong Fraser Filter anomaly along its flank, in an area where a regional magnetic survey **(**Geological Survey of Canada 1967) indicated a magnetic low. The results are interpreted to suggest a higher resolution magnetic survey of the claim may delineate magnetic anomalies worthy of subsequent follow-up.

Composite Map (Fig. 13)

Contoured Fraser Filter results, ground magnetic survey results and interpreted lineaments from air photo analysis have been plotted with respect to underlying geology in Figure 13. High-grade anomalies delineated by the calculated Fraser Filter results show no apparent correlation to the geological contact mapped between the Eastern and Central Volcanic of the Nicola Group. The geological contact trends northwest – southeast while the elongate and generally amorphous Fraser Filter anomalies trend generally north, at a high angle to the geological contact.

Figure 12 (Following Page) – Combined results of contoured Fraser Filter data (this study) and 2017 results from a ground magnetic survey (Walcott 2017).

Figure 13 (Following Page) – Composite map, with ground magnetic results, contoured Fraser Filter results and interpreted linears from air photo analysis (Sookochoff 2003) plotted with respect to underlying geology.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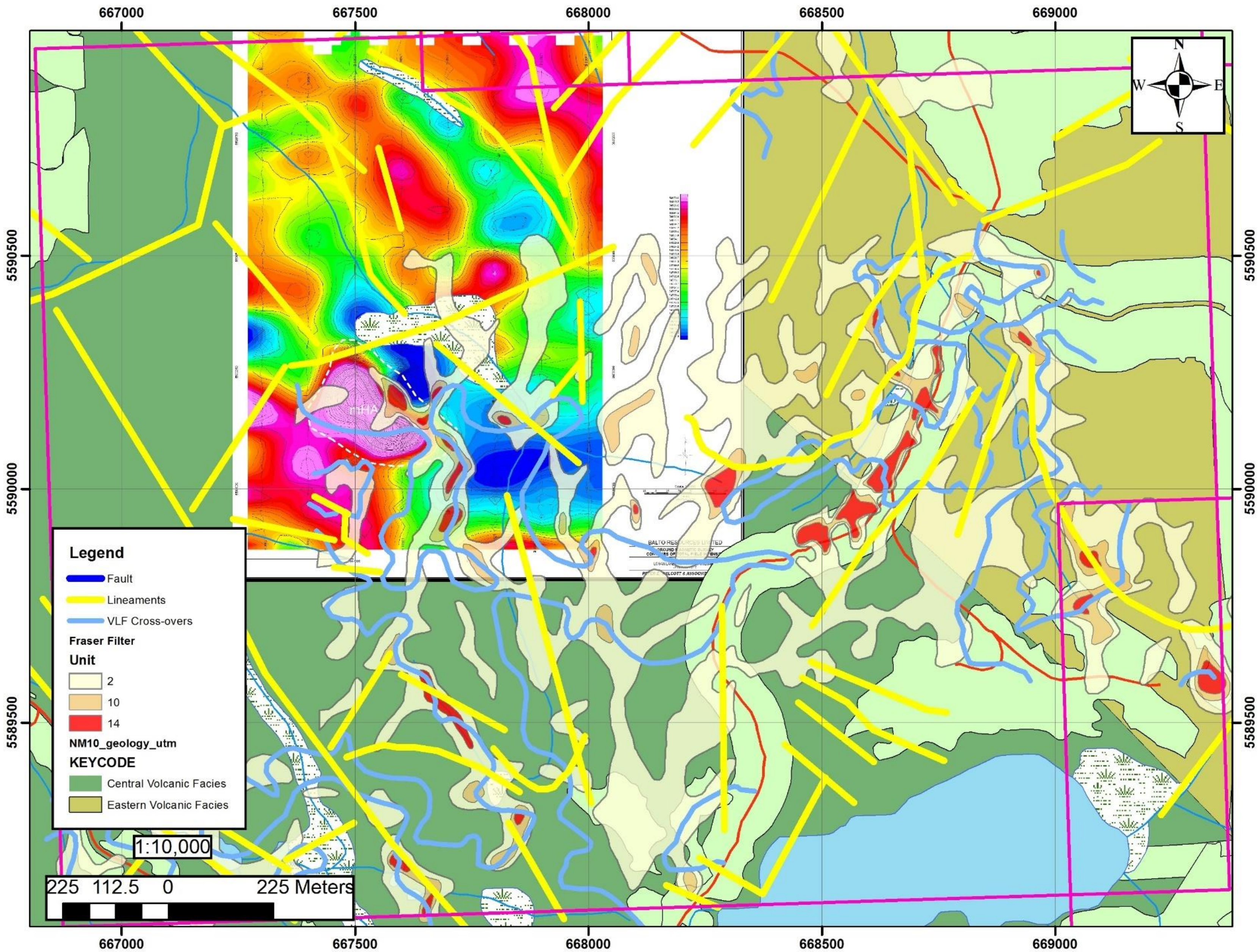
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Eastern Volcanic Facies
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An initial lineament analysis was completed for the SED claim (Sookochoff 2003). The lineaments identified have been digitized and plotted (in yellow) on Figure 13. Unfortunately, there is very little agreement between the linears (possible conductors) delineated by the compiled VLF-EM data and lineaments identified from air photo analysis. There is a weak (to moderate) spatial association between a curvilinear lineament, VLF-EM cross-overs and a high-grade Fraser Filter anomaly in the eastern portion of the SED claim, north of Desmond Lake. There is a prominent gully (probable source of the lineament), which widens out and opens to the south. It may be the locus of a fault, the presence of which is supported by several distinct and independent sets of data.

A second spatial association between a high-grade Fraser Filter anomaly and lineaments is evident along the Surrey Lake Forest Service Road north of Desmond Lake. The Fraser Filter anomaly coincides with the road, with sub=parallel air photo lineaments identified both east and west of the road. These features are oriented at a high angle (to perpendicular) to the interpreted geological contact between the Eastern and Central Volcanic Facies of the Nicole Group.

Finally, there are several weak to moderately strong correlations between straight to curvilinear air photo lineaments and underlying magnetic anomalies in the northwestern portion of the claim. Unfortunately, very little VLF-EM data is available for this area and the data available is inconsistent (being slightly elevated) with the remainder of the database. It is worth noting that the VLF-EM data immediately south of the suspect survey agrees reasonably well with the results of the ground magnetic survey (as briefly discussed above).

Previous work emphasized the presence of a prominent aeromagnetic low (Geological Survey of Canada 1967) extending northeast from the current SED Mineral Claims.

> "The former NADA Property, immediately north of, and partially overlapping, the SED Mineral Claim, was acquired to "... cover a large airborne magnetic low area" (Cukor 1982), showing a "... strong northwest/southeast lineament, which roughly coincides in trend and position with the outline of geochemical soil anomalies" (Cukor 1983).
>
> "The broad airborne magnetic low could be easily interpreted as being caused by a small granitic intrusion underlaying (sic.) the Nicola Volcanics rather close to the surface. The existence of a small Monzonite plug immediately south of the property as well as evidence of widespread and intense hydrothermal activity further substantiate this theory. Since the small intrusive bodies elsewhere in the Nicola Belt were found to be associated with important copper molybdenum mineralization the property is more than a fair exploration target" (Cukor 1982).

The following was taken from Lammle (1972):

> "An intriguing aspect of the Des Group is its proximity to the intersection of five regional aeromagnetic lineaments which are known to be authentic regional geological features, and which are thought to have originated at the time of emplacement of Guichon Creek Batholith.
>
> The Valley and South Bethsaida Lineaments (NZ and SZ lineaments, respectively) form north and south boundaries of the Bethsaida Quartz Monzonite and, of course, the former lineament is economically important. Greenstone Lineament links two monzodioritic stocks, both with some associated copper mineralization, and Tunkwa lineament (or fractures sympathetic with it) contain copper mineralization at Homfray Lakes. The soil copper analyses indicate that this lineament is cupriferous on Des Claims as well. Another lineament between Tunkwa and Greenstone lineaments (marked T on Map 5212 G) is subparallel with the eastern contact of Guichon Creek Batholith and can be projected north-northwesterly through the Tunkwa Lake mercury showing."

Geochemical results from soil and rock sampling have reportedly returned anomalous results in copper and gold, interpreted to suggest potential for identification of mineralization in addition to the local MINFILE occurrences. Mapped structures, as well as structures inferred from a series of VLF-EM surveys (Sookochoff 2015, 2003 and compiled herein), in proximity to the Eocene Diorite immediately west of the property are interpreted to suggest potential for structurally hosted mineralization. In addition, the potential for the structures to act as fluid conduits for local intrusives mapped at surface as well as blind intrusives

In a private report on the local geology of the former DES Claim (immediately south of the current SED Mineral Claim), Sookochoff (1976) stated the property was "... underlain by a variety of Nicola volcanic rock types from moderately to intensely metamorphosed with occasional recrystallization. Rock types consisted of black amygdaloidal basalt, ... grey green fine-grained andesites trending northerly ... and steeply dipping. The volcanics, chloritized to various degrees generally contain either calcite stringers or splashes of calcite on fractures and are locally epidotized". (MacQuarrie 1981). Therefore, despite limited outcrop described for the area, there is evidence of alteration (chlorite, epidote and calcite) in association with anomalous surface geochemistry.

> Similarly, "... volcanics include green to greenish grey andesites, black amygduloidal basalt flows, and locally tuffs and volcanic breccia. In localities the rock is porphyritic. Fracturing is quite intense and widespread evidence of hydrothermal activity was noted. The most common alteration products are epidote, chlorite and hematite, and locally stockworks of quartz veinlets were observed. The most intense alterations were noted south of Desmond Lake on the (former) Nada 4 claims, where original rock was almost completely decomposed into chloritized clay, along strong, north/northwest striking fracture system" (Cukor 1983).

10.0 CONCLUSIONS

Compilation of results from previous VLF-EM surveys on the SED Mineral Claim has greatly facilitated interpretation of the results with respect to the mapped geology (Monger and McMillan 2010) and the aeromagnetic map for the area (Geological Survey of Canada 1967). The area within, and surrounding the Balto Claim Group, has evidence of mineralization in the form of documented MINFILE occurrences and surface soil and rock geochemical results. Mapping of sparse outcrops to the immediate north report the area is "... underlain by a variety of Nicola volcanic rock types from moderately to intensely metamorphosed with occasional recrystallization. Rock types consisted of black amygdaloidal basalt, ... grey green fine-grained andesites trending northerly ... and steeply dipping. The volcanics, chloritized to various degrees generally contain either calcite stringers or splashes of calcite on fractures and are locally epidotized" (MacQuarrie 1981).

> Similarly, to the immediate south, "... volcanics include green to greenish grey andesites, black amygdaloidal basalt flows, and locally tuffs and volcanic breccia. In localities the rock is porphyritic. Fracturing is quite intense and widespread evidence of hydrothermal activity was noted. The most common alteration products are epidote, chlorite and hematite, and locally stockworks of quartz veinlets were observed. The most intense alterations were noted south of Desmond Lake ..., where original rock was almost completely decomposed into chloritized clay, along strong, north/northwest striking fracture system" (Cukor 1983).
>
> "The adjoining property includes the Plug mineral zone underlain by altered lapilli tuff, minor lenses of limey sediments and chlorite schist, with the Meadow Creek mineral zone underlain by chlorite-mica-feldspar schist and a highly pyritic quartz-feldspar porphyry. Historic exploration on the Plug (Minfile 092ISE196) showing included grab samples from a weak to moderate zone of carbonate-quartz-mariposite alteration over several hundred metres which yielded up to 7,500 ppb gold (0.282 oz/ton). Historic exploration on the Meadow Creek (Minfile 092ISE155) outlined a number of weak to moderate gold geochemical anomalies with values of up to 700 ppb gold (Sookochoff 2015).

The cumulative results of numerous small VLF-EM surveys, preferentially undertaken in the southwest portion of the SED Mineral Claim, and predominantly completed to fulfill assessment requirements, have delineated a number of high-grade Fraser Filter anomalies, interpreted to be possible sub-surface conductors, which appear to be spatially associated with ground magnetic and/or aeromagnetic anomalies. The presence of an Eocene Granodioritic intrusion immediately east, the Nicola Batholith, is expected to have acted as a local heat source driving hydrothermal activity. A previous operator interpreted the aeromagnetic low "... as being caused by a small granitic intrusion underlaying (sic.) the Nicola Volcanics rather close to the surface. The existence of a small monzonite plug immediately south of the property as well as evidence of widespread and intense hydrothermal activity further substantiate this theory. Since the small intrusive bodies elsewhere in the Nicola Belt were found to be associated with important copper molybdenum mineralization the property is more than a fair exploration target" (Cukor 1982).

Given the rich metal (copper-molydenum) endowment in the Highland Valley and, more specifically, associated with intrusions (i.e. the Guichon Batholith), the presence of MINFILE occurrences in the immediate area, together with anomalous copper ± gold mineralization surface geochemical results and VLF-EM conductors, are interpreted to suggest further work on the Balto Claim Group is warranted.

11.0 RECOMMENDATIONS

1. Should additional VLF-EM data be proposed for future surveys, additional data could be collected from the west, north and south-east portions of the tenure to complete coverage on the SED claim.

2. Data in the upper northwest portion of the compiled data (Sookochof 2006) do not agree well with data over the remainder of the surveyed area. Should additional VLF-EM data be proposed for future surveys, acquisition of data should be considered for this area to replace that previously collected. Alternatively, an attempt could be made to further evaluate, and potentially level, data previously collected.

3. Relatively small, Self Potential (SP) surveys should be considered to further evaluate high-grade anomalies identified from calculated Fraser Filter results. Collection of SP data should be considered over a series of spaced lines (spaced either 25 or 50 m apart, dependent upon initial results) to determine if sub-surface SP conductors are spatially associated with the VLF-EM anomalies.

4. Recent development of relatively low cost, drone mounted magnetometers have resulted in potential for cost effective magnetic surveys having similar resolution to ground geophysical surveys. Given the reasonably good correlation between VLF-EM (more specifically, calculated Fraser Filter) results and the 2017 ground magnetic survey, consider should be given to having a drone based magnetic survey of the property, comprising the SED and, possibly, the entire Balto Property.

5. Silver (Ag) results from previous soil sampling surveys was compiled in 2017. The remainder of the data should be compiled so as to assess the entirety of the multi-element ICP results relative to the existing VLF-EM data. The existing soils data is located north of, and partially overlaps, the current VLF-EM database, so a comparison between soil and VLF-EM results would be greatly facilitated by acquisition of additional VLF-EM data over the area covered by the soils data.

6. The available Terrain and Resource Inventory Management (TRIM) map(s) should be acquired, in digital format, for the property so as to provide 20 m topographic control, together with the associated Digital Elevation Model (DEM). Upon acquisition of the DEM, an analysis of possible lineaments should be done, based on the higher resolution control available from the TRIM data.

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APPENDIX 1 STATEMENT OF

QUALIFICATIONS

STATEMENT OF
QUALIFICATIONS

I, Richard T. Walker, of 1616 – 7th Avenue South, Cranbrook, BC, hereby certify that:

1) I am a graduate of the University of Calgary of Calgary, Alberta, having obtained a Bachelors ofScience in 1986.

2) I obtained a Masters of Geology at the University of Calgary of Calgary, Alberta in 1989.

3) I am a member of good standing with the Association of Professional Engineers and Geoscientists ofthe Province of British Columbia.

4) I am a consulting geologist with offices at 1616 – 7th Ave South, Cranbrook, British Columbia.

5) I am the author of this report which is based on a VLF-EM geophysical survey undertaken between June 5 and 8, 2018.

6) I have no interest in Balto Resources Ltd., nor do I expect to receive any.

Dated at Cranbrook, British Columbia this 22nd day of June, 2018.

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Richard T. Walker, P.Geo.

APPENDIX II

VLF-EM SURVEY DATA

Station	Easting	Northing	Tilt	Field Strength	Comments
07-Jun-18					
444	668613.2	5589951	13	100	
445	668629.4	5589946	11	100	
446	668651.5	5589951	5	96	
447	668673.3	5589947	4	96	
448	668703.2	5589943	4	92	
449	668726.2	5589945	6	90	
450	668750.2	5589950	2	94	
451	668774.6	5589954	3	94	
452	668798.8	5589955	2	96	
453	668829	5589953	4	97	
454	668850	5589956	-1	96	
455	668874.6	5589956	-2	95	
456	668901.6	5589951	-6	92	
457	668924.8	5589949	-4	87	
458	668951.8	5589949	-8	77	Bottom of gully
459	668972.6	5589955	10	84	Just above old road
460	669000.3	5589948	9	99	
461	669031.8	5589952	9	99	
462	669052.8	5589953	4	100	
463	669077.1	5589955	2	100	
464	669105.1	5589949	4	99	
465	669124.1	5589953	2	98	
466	669156.2	5589950	-2	98	
467	669176.2	5589953	2	96	
468	669205.1	5589943	-2	91	
469	669227.8	5589945	-1	93	
470	669253.1	5589947	-4	90	
471	669274.5	5589950	0	88	
472	669297.6	5589948	0	88	
473	669326.4	5589951	-2	88	
474	669354.8	5589950	1	86	
475	669373.7	5589947	-2	87	
476	669375.2	5589901	-1	87	
477	669348.5	5589902	-2	76	New line
478	669322.3	5589900	-4	76	
479	669300.3	5589900	-5	87	
480	669274.3	5589911	-2	85	
481	669245.3	5589896	-2	87	
482	669222.9	5589901	0	89	
483	669195.6	5589900	-3	92	
484	669176.8	5589900	0	93	

485	669150.6	5589900	-2	95	
486	669123.4	5589900	2	95	
487	669097.8	5589901	4	96	
488	669076	5589901	4	98	By old road
489	669049.5	5589900	5	100	
490	669026.8	5589902	10	98	
491	669002.3	5589898	11	87	Old road
492	668977.6	5589911	-8	79	Bottom of gully
493	668952.3	5589896	-2	81	
494	668926.9	5589900	-3	87	
495	668899.6	5589903	-1	92	
496	668873.8	5589902	1	92	
497	668850.1	5589904	0	95	
498	668821.4	5589900	4	95	
499	668799	5589901	3	93	
500	668772.9	5589902	5	95	
501	668748.1	5589898	4	95	
502	668721.8	5589899	6	93	
503	668698.3	5589901	8	95	
504	668673.9	5589899	5	96	678 old road
505	668649.2	5589901	6	95	on old road
506	668623.6	5589902	8	95	
507	668600	5589903	9	97	
508	668568.2	5589904	13	95	
509	668424.8	5589852	6	86	New line
510	668453.9	5589849	8	87	
511	668474.1	5589855	8	91	
512	668502.9	5589853	8	93	
513	668528.6	5589848	4	93	
514	668552	5589854	5	93	
515	668574.3	5589849	4	93	Old road with fork at 586
516	668600	5589848	7	92	
517	668626.3	5589851	7	93	
518	668659.2	5589853	4	91	
519	668678.1	5589850	4	91	
520	668702.4	5589848	5	91	
521	668723.9	5589851	6	89	
522	668749.8	5589851	5	90	
523	668774.3	5589851	0	91	
524	668800.1	5589849	2	90	
525	668825.7	5589849	1	88	
526	668851.4	5589849	1	85	
527	668879.4	5589849	-1	87	
528	668902.4	5589851	-3	85	

529	668926.7	5589848	-2	85	
530	668951.7	5589854	-5	81	
531	668977.2	5589851	-3	74	
532	669000.3	5589856	6	69	Bottom of gully
533	669023	5589851	11	81	Old road 025
534	669054	5589850	12	95	Old road 033
535	669079.5	5589851	7	92	
536	669101.8	5589854	2	92	
537	669123.5	5589847	0	95	
538	669153.8	5589851	-2	85	
539	669174.7	5589849	-1	86	
540	669202.8	5589856	-6	85	
541	669224.5	5589846	-1	83	
542	669255.2	5589850	-4	83	
543	669279.2	5589855	-4	82	
544	669299	5589848	-5	81	
545	669325.7	5589851	-4	82	
546	669347.4	5589845	-4	76	
547	669374.1	5589849	1	80	
548	669395.8	5589795	0	84	New line
549	669374.2	5589800	-3	77	
550	669349.3	5589803	-6	77	
551	669324.3	5589806	-3	80	
552	669294	5589801	-6	75	
553	669272.2	5589800	0	78	
554	669250.8	5589798	-4	78	
555	669222	5589798	-4	80	
556	669197.3	5589799	0	81	
557	669176.5	5589804	-5	83	
558	669149.3	5589799	2	76	
559	669121.8	5589795	5	79	
560	669099.1	5589803	4	81	
561	669075	5589802	10	82	
562	669048.8	5589802	8	80	057 on old road
563	669023	5589801	8	70	Gully
564	669000.7	5589803	0	68	
565	668974	5589797	0	67	Increase gained from 11-15.5
566	668946.9	5589802	3	100	
567	668922.5	5589797	3	100	
568	668897.5	5589799	0	100	
569	668872	5589801	2	100	
570	668847	5589800	-1	100	
571	668824.1	5589800	1	100	
572	668796.4	5589801	0	100	

573	668776.5	5589800	4	100	
574	668748.2	5589800	4	100	
575	668725	5589800	8	100	
576	668698	5589798	2	100	
577	668672.1	5589801	2	100	
578	668651.7	5589798	4	100	
579	668626.2	5589801	3	100	
580	668594.8	5589797	4	100	
581	668574.6	5589798	4	100	
582	668547.4	5589806	4	100	On old road
583	668503.3	5589803	7	100	
584	668472.4	5589800	4	100	
585	668448.3	5589804	6	100	
586	668423.1	5589800	2	97	
587	668397.6	5589801	6	99	
588	668374.3	5589801	3	94	
589	668349.9	5589802	6	95	
590	668323.1	5589804	4	100	
08-Jun-18					
591	668301.2	5589750	3	100	Gain at start of day 193
592	668328	5589752	5	100	
593	668354.3	5589754	2	97	
594	668381.3	5589753	3	100	
595	668397.3	5589755	7	100	
596	668427.4	5589750	7	100	
597	668447.4	5589758	4	99	
598	668478.5	5589748	4	100	3m West of old road
599	668502.5	5589748	6	100	
600	668528.1	5589755	6	100	Gain decreased to 185
601	668554.3	5589749	4	100	
602	668575.1	5589749	2	97	
603	668607.9	5589755	6	98	
604	668626.6	5589752	1	100	
605	668651.1	5589752	5	98	
606	668673.7	5589752	4	100	
607	668700.9	5589756	2	95	
608	668725.8	5589750	2	90	
609	668750.5	5589749	2	88	
610	668775.6	5589752	2	89	
611	668799.3	5589751	-1	87	
612	668828.3	5589751	-1	92	
613	668853.3	5589747	1	90	
614	668876	5589750	-2	93	

615	668899.2	5589749	0	100	
616	668927.8	5589753	-2	100	
617	668950.8	5589751	2	100	
618	668976.4	5589748	1	100	
619	669001.2	5589752	6	100	
620	669026.4	5589753	4	98	
621	669051.3	5589750	1	96	Edge of gully
622	669077.4	5589751	-4	85	Edge of gully
623	669099.3	5589753	-6	86	On old road
624	669123.7	5589752	-10	100	Gain decreased to 165.5
625	669149.8	5589748	-6	100	
626	669170.8	5589749	-6	93	
627	669202	5589747	0	94	
628	669223.8	5589753	2	92	
629	669250.6	5589752	2	100	
630	669275.5	5589748	2	100	
631	669299.5	5589752	-1	76	
632	669326.7	5589749	2	82	
633	669351.9	5589750	3	98	
634	669374.2	5589752	3	100	
635	669401.1	5589750	2	100	
636	669399.5	5589699	0	100	New line
637	669374.3	5589702	-1	100	Gain decreased to 142
638	669350.9	5589701	-1	100	
639	669326.4	5589701	-2	100	
640	669298.4	5589698	2	83	Massive deadfall
641	669272.3	5589700	2	100	288 old road
642	669248.9	5589699	1	100	
643	669221.8	5589700	-1	96	Deadfall
644	669195.7	5589706	-7	73	
645	669172	5589700	-7	100	Old road 5m West
646	669148.3	5589700	-8	98	Gully
647	669125.3	5589697	-5	95	Gully
648	669098.5	5589698	0	95	
649	669074.4	5589698	1	98	
650	669050.6	5589701	2	94	
651	669022.4	5589700	0	100	
652	669002.1	5589699	-2	100	
653	668969.9	5589702	0	100	
654	668953.3	5589701	4	100	
655	668926.2	5589700	2	100	Gain increased to 205
656	668899.8	5589701	-1	100	
657	668874.8	5589701	-3	100	
658	668848.7	5589701	-1	100	

659	668823.2	5589700	-1	100	
660	668798.3	5589701	-2	100	
661	668775	5589701	8	100	
662	668746.5	5589703		100	
663	668724.2	5589704	4	100	
664	668699.6	5589706	3	97	
665	668674.8	5589698	4	100	
666	668648.7	5589696	2	100	
667	668625.9	5589701	5	100	
668	668594.1	5589701	2	100	
669	668574.7	5589702	5	100	
670	668546.3	5589697	1	100	
671	668524.7	5589703	4	100	
672	668496	5589698	4	98	
673	668470.2	5589696	4	100	
674	668449.6	5589699	7	98	7m East old road
675	668424.4	5589705	4	100	
676	668400.8	5589701	4	99	
677	668374.6	5589698	2	100	
678	668342.5	5589702	2	100	
679	668326.2	5589706	3	100	
680	668296.5	5589702	3	100	
681	668272.8	5589700	1	100	
682	668274.1	5589653	3	100	New line
683	668301.3	5589654	2	100	
684	668324.3	5589646	-2	100	
685	668352.6	5589652	1	100	
686	668374.4	5589654	-1	100	
687	668400.7	5589652	1	100	
688	668427.7	5589651	2	100	
689	668453.1	5589649	-2	100	Gain at 12.5
690	668477.1	5589649	1	100	
691	668498.8	5589653	-1	100	
692	668524	5589651	0	97	
693	668552	5589650	-2	95	
694	668576.7	5589653	1	88	
695	668601.4	5589650	-2	88	
696	668624.8	5589646	-4	90	
697	668651.4	5589648	0	91	
698	668675.9	5589648	-3	100	
699	668700.3	5589648	2	95	
700	668725.2	5589649	2	96	
701	668752.6	5589649	4	100	
702	668776.4	5589654	4	97	

703	668800.1	5589652	0	93	
704	668824.6	5589652	-4	96	
705	668850.8	5589650	0	91	
706	668876.4	5589648	-1	100	
707	668901.2	5589646	-1	100	
708	668925.5	5589645	-4	100	
709	668950.9	5589647	-4	100	
710	668975.5	5589648	-6	100	
711	669004.1	5589660	-4	100	
712	669023.8	5589651	-2	100	
713	669058.3	5589657	1	91	Deadfall
714	669076.2	5589650	3	100	
715	669100.7	5589646	-3	100	
716	669126.3	5589651	-4	100	Edge of gully
717	669153	5589650	2	100	
718	669176.5	5589647	-2	98	
719	669200.3	5589648	3	100	
720	669226	5589651	-3	100	
721	669250.6	5589651	-4	100	
722	669274.1	5589650	-4	100	
723	669301.9	5589654	0	99	Deadfall
724	669331.8	5589650	-4	100	Deadfall
725	669349.9	5589652	-6	100	
726	669373.9	5589650	-8	100	
727	669400.6	5589652	-8	100	
728	669400.8	5589599	-14	100	New line
729	669374.2	5589603	-12	100	
730	669347.7	5589599	-8	100	
731	669322.2	5589598	3	100	
732	669297	5589598	3	100	
733	669274.8	5589600	0	100	Old road at 262
734	669250.2	5589598	-2	100	
735	669223.3	5589597	-6	100	
736	669200	5589598	0	100	
737	669174.8	5589602	-1	100	
738	669147.5	5589597	-4	100	
739	669123.7	5589601	-5	100	
740	669098.7	5589598	0	100	
741	669074.4	5589602	2	100	
742	669048.9	5589598	-2	100	
743	669025.5	5589600	0	100	
744	669001	5589602	0	100	
745	668974.2	5589600	-2	100	
746	668948	5589599	2	100	

747	668923.7	5589599	3	100	
748	668898.4	5589596	5	100	
749	668873.3	5589601	6	100	
750	668848	5589599	1	100	
751	668823.2	5589597	2	100	
752	668799.8	5589601	3	100	
753	668774.2	5589601	1	100	
754	668746.6	5589600	3	87	
755	668723.9	5589599	3	97	
756	668699.1	5589601	2	96	
757	668671.9	5589601	2	98	
758	668647.8	5589601	2	93	
759	668622.6	5589603	4	86	
760	668602.9	5589597	2	93	
761	668575.4	5589602	1	94	
762	668552.8	5589598	-2	100	
763	668525.1	5589601	0	100	
764	668497	5589600	4	100	
765	668476.5	5589606	-2	100	
766	668448.4	5589601	2	100	
767	668421.1	5589597	4	100	
768	668399.6	5589602	2	100	
769	668374	5589602	2	100	
770	668345.2	5589605	5	100	
771	668327.6	5589601	4	100	
772	668297.3	5589596	0	100	

APPENDIX III STATEMENT OF

EXPENDITURES

STATEMENT OF EXPENDITURES

The following expenditures were incurred as part of a VLF-EM survey of the SED claims between June 5 and 8, 2018.

Field Program

R. Walker, P. Geol. 4 day at $800 / day	$3,200.00
Assistant 4 days at $300 / day	$1,200.00
Equipment Rental – Sabre 27 VLF-EM - 4 days at $50 / day	$ 200.00
4WD Truck – 4 days at $100 / day	$ 600.00
Accommodations	$ 455.40
Fuel	$ 319.06
Meals - 8 man-days at $70 / day	$ 560.00
Sub-Total	**$6,534.46**

Report

Digitizing / Processing cumulative VLF-EM Results -1 day @ $800 / day	$ 800.00
Report Writing – 4.75 day @ $800 / day	$1,200.00
Sub-Total	**$2,000.00**
Total	**$8,534.46**

APPENDIX III

ACCOMPANYING DOCUMENTS

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Exploration and Development Work / Expiry Date Change Event Detail

Event Number ID	**5701529**
Recorded Date	2018/jun/21
Work Type	Technical Work (T)
Technical Items	Geological (G)
Work Start Date	2018/jun/05
Work Stop Date	2018/jun/08
Total Value of Work	$ 8452.03
Mine Permit Number	

Summary of the work value:

Title Numbers	**392163**
Claim Name/Property	SED
Issue Date	2002/feb/17
Work Performed Index	Y
Old Good To Date	2018/jun/26
New Good To Date	2019/jun/26
Numbers of Days Forward	365
Area in Ha	500.00
Applied Work Value	$ 8383.56
Submission Fee	$ 0.00

Financial Summary:

Total Applied Work Value:	$ 8383.56
PAC name	Balto Resources Ltd.
Debited PAC amount	$ 0.00
Credited PAC amount	$ 68.47
Total Submission Fees	$ 0.00
Total Paid	$ 0.00

Related Summary:

Existing Work Program
Event Numbers

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