

**BC Geological Survey
Assessment Report
37664**

Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

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

TOTAL COST: \$3410.00

AUTHOR(S): H. Sigurgeirson SIGNATURE(S): _____

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): _____ YEAR OF WORK: 2018

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): EV#5703939

PROPERTY NAME: Tom Cat

CLAIM NAME(S) (on which the work was done): 1053089

COMMODITIES SOUGHT: Copper

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HNE166, 257, 167, 087, 089, 088, 086

MINING DIVISION: Nicola NTS/BCGS: 092H/087 & 088

LATITUDE: 49 ° 53 ' _____ " LONGITUDE: 120 ° 35 ' _____ " (at centre of work)

OWNER(S):
1) Sierra Iron Ore Corporation 2) _____

MAILING ADDRESS:
13236 Cliffstone Court
Lake Country, BC

OPERATOR(S) [who paid for the work]:
1) Sierra Iron Ore Corporation 2) _____

MAILING ADDRESS:
13236 Cliffstone Court
Lake Country, BC

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Nicola Group, Triassic, Central Belt, Andesite, Basalt, Lahar, flows, Diorite, Copper, chalcopyrite, Chalcocite, Porphyry

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 5908, 6761, 6821, 9491, 14141, 20393, 20551, 22382, 28782, 37000

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	1:500, 0.7 hectares		\$1705
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
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) 1:5000, 30 hectares			\$1705
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:	\$3410

Geological and Prospecting
Assessment Report
on the Tom Cat Property

Aspen Grove, British Columbia
Nicola Mining Division

Map Sheets 092H/087 & 088

UTM 672900 E, 5528 000 N (Zone 10)

Claim 1053089

Prepared for:
Sierra Iron Ore Corporation

Prepared by:
Helgi Sigurgeirson, P.Geol.
November 1, 2018

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Introduction

Location, Access and Physiography

The property is about 25 km southeast of Merritt in south-central British Columbia (Figure 1). It is accessed by taking highway 5A southeast from Merritt to Bates Road, then east along Bates Road until 674290 E, where a logging road heads south onto the property. The property is covered by forest on the higher ground, with grassland at lower elevations. Slopes are generally gentle to moderate. The property ranges in elevation from about 1285 m in the area of high ground in the central to northwest of the property, to about 1040 m in the north-south trending valleys on the east and west sides of the property.

Snow can be expected from November to April.



Figure 1 – Location Map

Property Definition

The Tom Cat Property consists of claim 1053089, shown in Figure 2 (MapPlace, 2017). The claims are 100% held by Sierra Iron Ore Corporation. A Statement of Work (EV#5703939) was filed for the work described in this report on July 12, 2018. The claim covers 687.06 ha and is good to July 15, 2019. Six mineral claim crown grants are shown on the property (Figure 2). All but the southernmost Crown Grant (Edith, DL 1553) have reverted to the crown. The exact status of the Edith is unclear (“converted”), but MTO indicates that the ground is held by the crown. Two private lots overlie part of the western side of the property (Figure 2).

Previous Work

Old workings, including pits, trenches, short adits and shafts, are encountered frequently on the property. Some of these date back to at least the early 1900's.

Approximately 15 – 20 diamond drill holes were drilled on the property up to 1967, but are poorly documented. A hole drilled by Pyramid Mining Company Ltd. in 1965 assayed an average of 0.32% from select samples taken every 1.5 m over two 15.2 m sections in a 45.7 m interval (McKechnie, 1965). Scope Development Ltd. and Alscope Consolidated Ltd. conducted geologic mapping, geophysics, geochemistry and trenching over most of the showing areas (Carr, 1964).

Between 1975 and 1981? the Bluey claim group in the central part of the current property was held by Fred Gingell, who conducted various geochemical and geophysical surveys (Yorke-Hardy, 1976 and Morrison, 1981)

In 1978 geophysics and soil surveys were conducted on adjacent properties covering the north part of current property for Belmont Resources Ltd. (Mark, 1978a) and Silver Acorn Developments Ltd. (Mark, 1978b).

In 1985 Vanco Explorations Ltd. conducted geological mapping over the area west of the Tom Cat Prospect as well as soil and rock sampling (Lisle, 1985).

In 1990, geological mapping, over essentially the same area as that mapped by Vanco, was conducted by MineQuest Exploration Associates Ltd (Richards, 1990). Limited rock sampling was also done (Gourley, 1990).

In 2006, Bold Ventures Inc. Carried out an IP survey and soil sampling over most of the property (Kerr, 2007).

Bold Ventures Inc. drilled 6 holes in 2007, four of which were drilled on the current property and totalled 754.1 m. One of the holes drilled at the Tom Cat Prospect returned 0.54% Cu over 5.6 m (Garrow, 2010).

Sierra Iron Ore Corporation did geological mapping over the area of the Tom Cat showing in 2017 (Sigurgeirson, 2017).

The following Minfiles (locations shown on Figure 3) are on the property:

AM (092HNE166)	Bunker Hill (092HNE089)
Bloo (092HNE257)	Portland (092HNE088)
Bluey (092HNE167)	Tom Cat (092HNE086)
Boomerang (092HNE087)	

Work Program Summary

The purpose of the 2018 work program was to produce a geologic map of the Portland Showing and to locate the Bloo Showing and a nearby adit. Two days of fieldwork were done on July 2 and 3, 2018. 0.7 hectares were mapped at a 1:500 scale and 10 prospecting stations were described within a 30 hectare area at a 1:5000 scale.

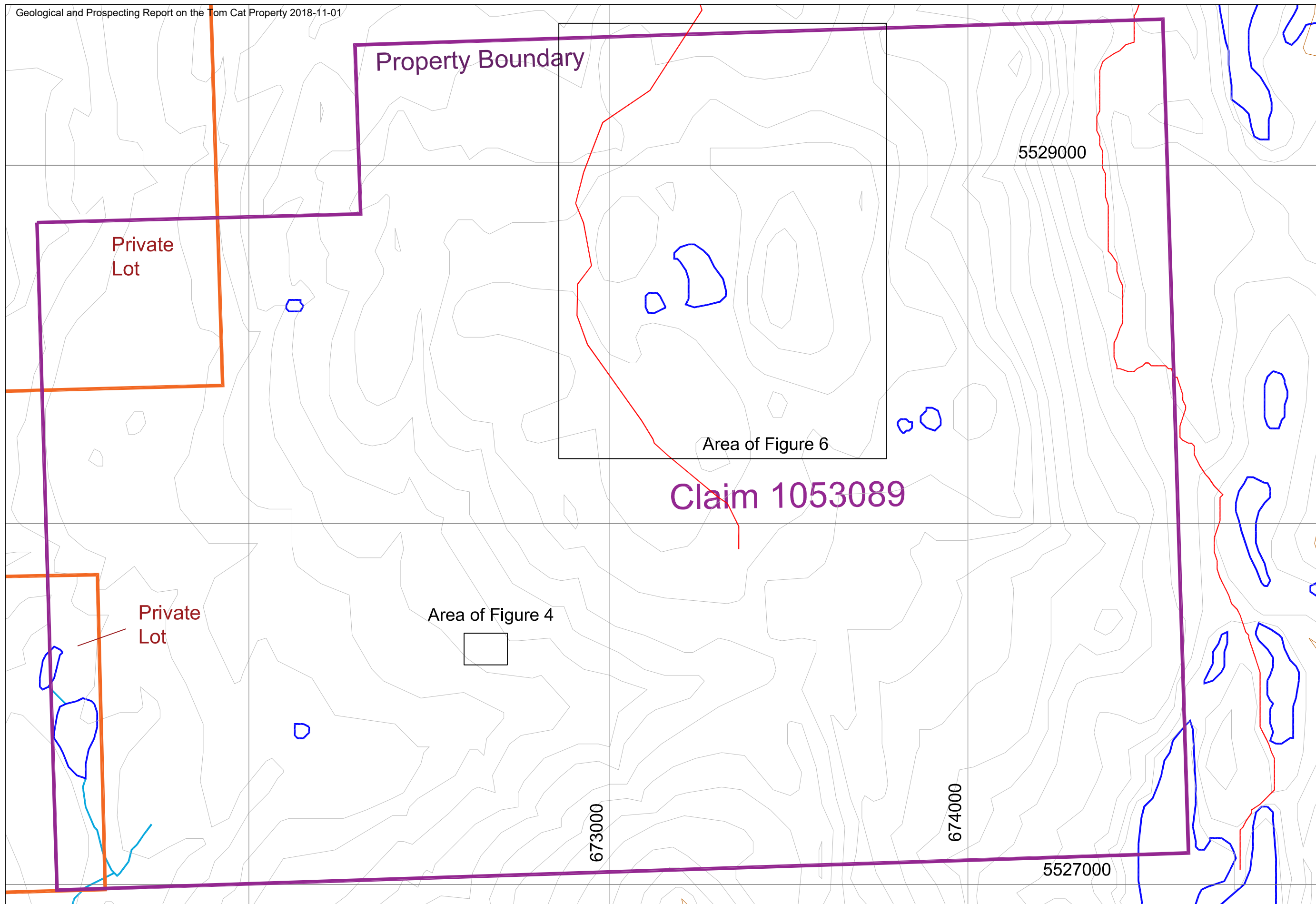


Figure 2: Claim Map

Scale = 1:10 000

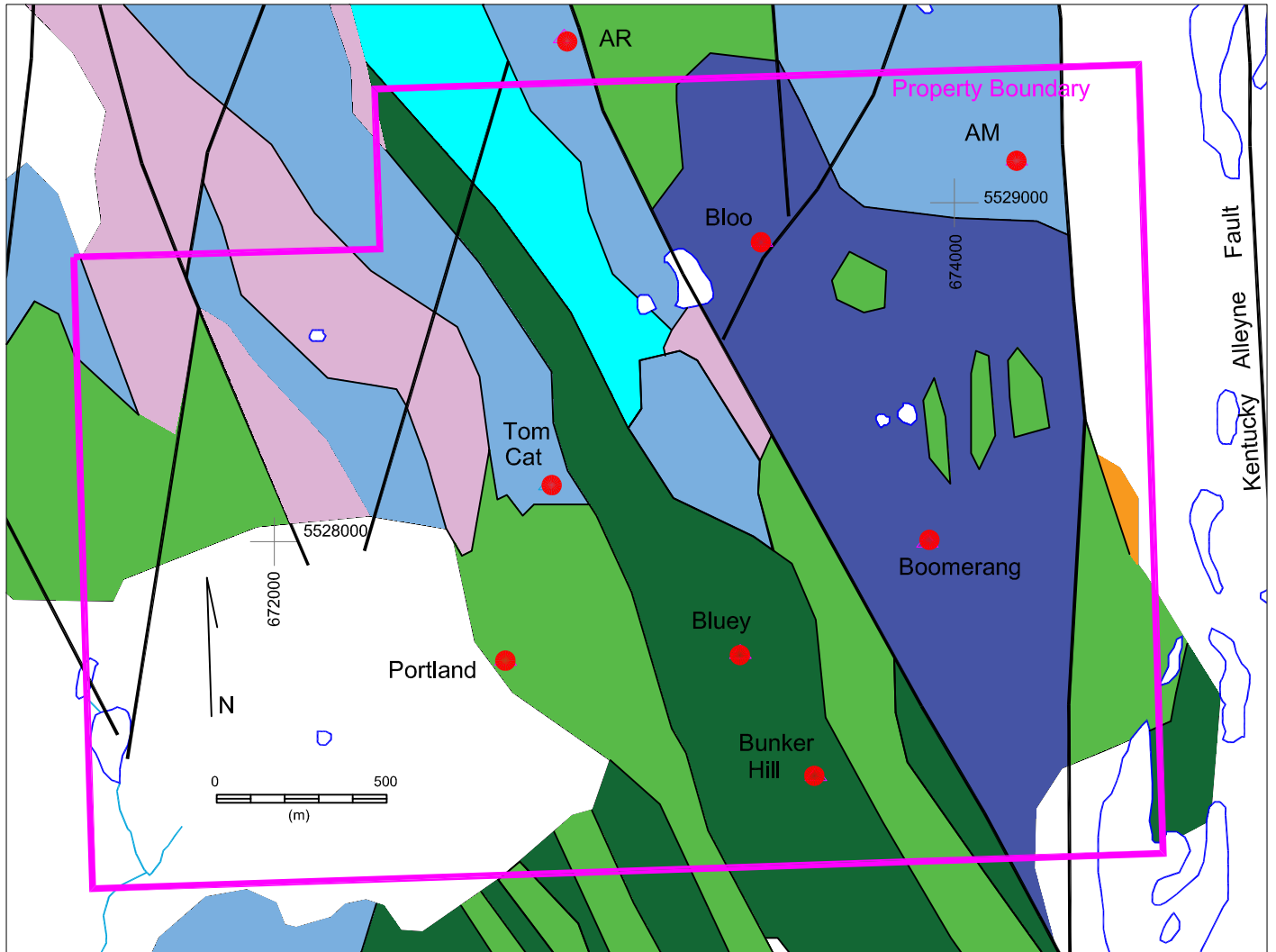
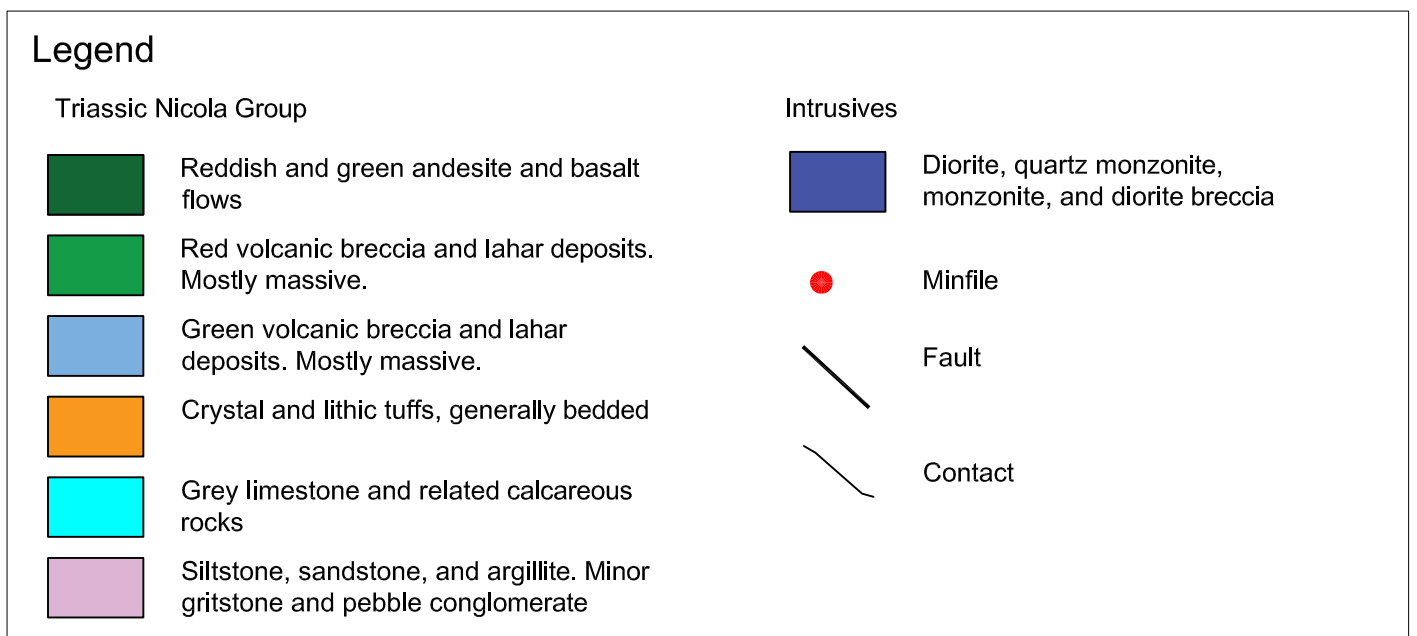


Figure 3 - Property Geology

Scale = 1:20 000



Regional Geology

The property is underlain by volcanic and sedimentary rocks of the central belt of the Upper Triassic Nicola Group (Preto, 1979). Most Nicola rocks are massive, non-foliated, and weakly metamorphosed to sub-greenschist facies. Dioritic intrusives (possibly comagmatic with the volcanics) occur throughout the central belt.

Property Geology

The property geology is shown on Figure 3, and is after Preto (1979)

The volcanic rocks on the property consist of andesite and basalt flows, red and green volcanic breccias and lahars, and bedded crystal and lithic tuffs. The sedimentary rocks consist of grey limestones and related calcareous rocks, siltstone, sandstone, argillite, and minor gritstone and pebble conglomerate.

The north-south trending Summer Creek / Kentucky Lake Fault passes a few hundred meters to the east of the property (Figure 3), and marks the boundary between the central and eastern zones of the Nicola Group. Bedding in the area of the property is generally NNW striking and moderately to steeply east dipping.

Mineralization on the property commonly occurs as fracture coatings, disseminations and stringers of Chalcopyrite, chalcocite and bornite in shear zones, though the extents of the zones are generally poorly defined.

Samples have been taken from a number of areas which assay up to several % Cu. Ma staining is common in these areas. The mineralizations occurs in both the volcanics and the diorites. Rare galena and native copper have also been reported. Magnetite, hematite, calcite, a brown carbonate and epidote are associated with the mineralization.

Geological Mapping

The Portland Showing was mapped at a 1:500 scale (Figure 4). The showing is in an area with little outcrop. Frequent malachite staining occurs on fractures within a partly exposed zone at least 1.2 m wide above a water filled shaft. The orientation of the zone is difficult to ascertain, but appears to be steeply dipping and approximately north-south striking. Spotty malachite staining can be seen in fractured outcrop for about 15 m to the north west. Malachite staining is common in the dump to the south of the shaft and was also seen in float in the trench about 60 m to the north west of the shaft. The mineralization is hosted by red and green volcanic conglomerates.

The lithology hosting the Tom Cat mineralization was not confidently determined during the 2017 season. Rock samples were collected from the Tom Cat showing (672792E, 5528168N) and slabbed to rectify this. The fractured and gossanous samples taken from the main zone were both green, crystal rich volcanic conglomerates with sparse to frequent clasts (Figure 5). A very fine grained, metallic grey mineral (probably chalcocite) occurs in clots up to 1 cm across, intermixed with lesser, red hematite. Where exposed, the clots are stained with malachite.

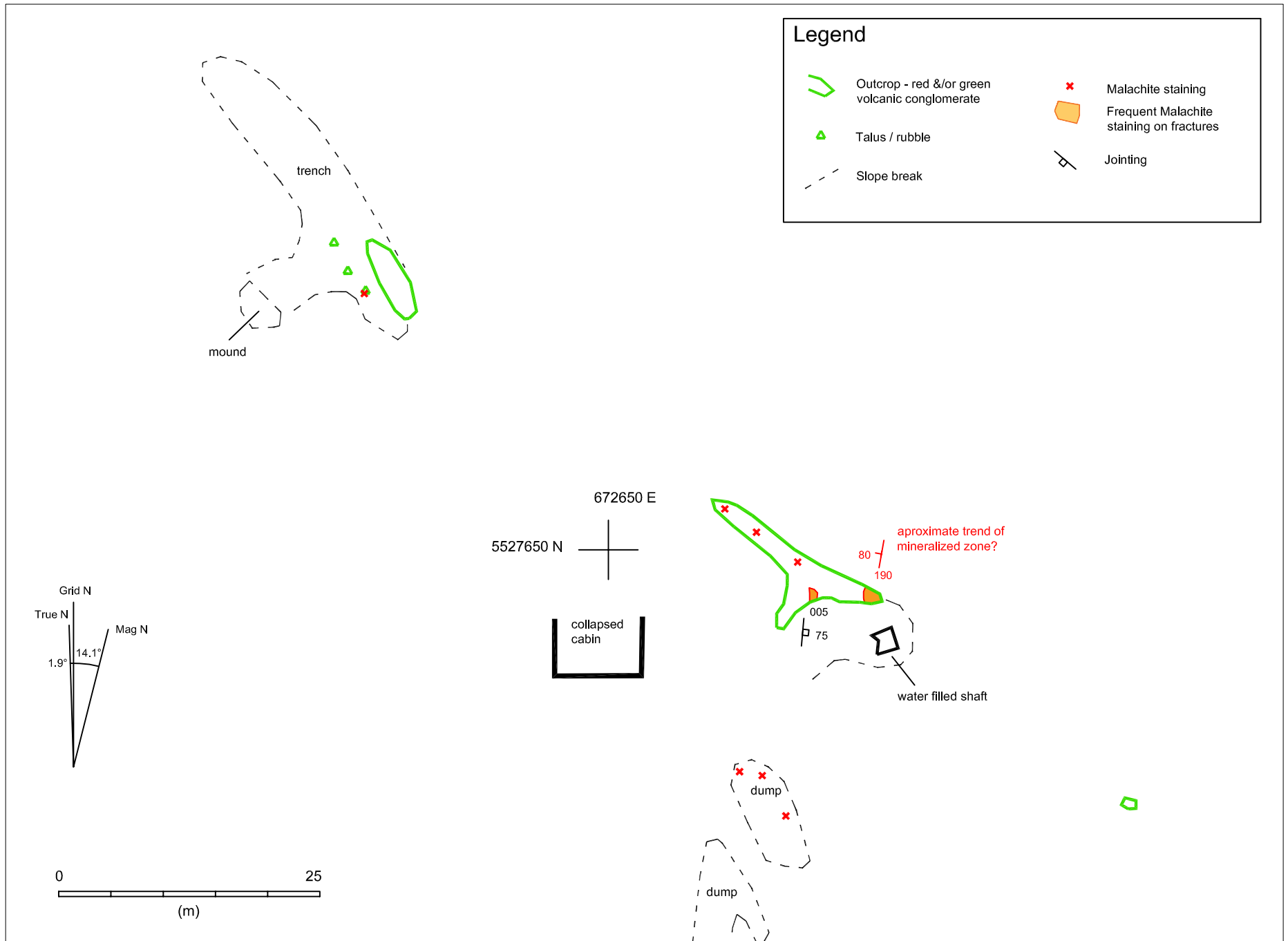


Figure 4: Portland Showing Map



Figure 5: Volcanic conglomerate with chalcocite clots and malachite staining from the Tom Cat Showing.

Prospecting

Prospecting was carried out over an area of about 30 hectares (Figure 6). The purpose of the prospecting was to find 2 showings that comprise the Bloo Minfile and which were not located during recent programs. The area of an adit shown in Assessment Report 20551 (Gourley, 1990) was searched, but no mineralization or workings were found. A group of trenches shown in Assessment Report 14141 (Lisle, 1985) were also sought, to no avail. Prospecting stations are described in Table 1.

Table 1: Prospecting Stations

Station	Easting	Northing	Description
1	673705	5528952	drk gn-gy, vfg BAS. Frequent Epd veinlets. No Sx.
2	673702	5529054	drk gn-gy, vfg TUFF?. Occasional sand sized clast. No Sx.
3	673734	5528972	drk gn-gy, fg, indistinctly crystalline, anhedral Fld phyric DIO.
4	673604	5528831	med gy-gn,fg indistinctly crystalline DIO. 1-2% fine bk Mfcs & Fld patches (~25%).
5	673455	5528823	drk gn-gy, fg, DIO. 7% fine bk Mfcs.
6	673477	5528881	drk gn-gy, fg, DIO.
7	673281	5528479	drk gn-gy, fg, indistinctly crystalline DIO.knobby weathering. 1% Qtz phenocrysts. tr Py.
8	673195	5528671	South facing pit w sheared, fractured and chloritized DIO.Frequent Epd & Crb veinlets. Lim & Mng staining. No Sx.
9	673477	5528637	Epd – Chl – Crb altered DIO. No Sx.
10	673482	5528637	med gy-gn DIO.7% anhedral Mfcs in a fg, gn-wh, feldspathic groundmass. No Sx.

Abbreviations

vfg = very fine grained

fg = fine grained

drk = dark

med = medium

wh = white

gn = green

bk = black

BAS = basalt

DIO = diorite

w = with

o/c = outcrop

mod = moderate

tr = trace

Fld = feldspar

Qtz = quartz

Mfc = mafic mineral

Py = pyrite

Epd = epidote

Sx = sulphides

Lim = limonite

Mng = manganese

Crb = carbonate

Chl = chlorite

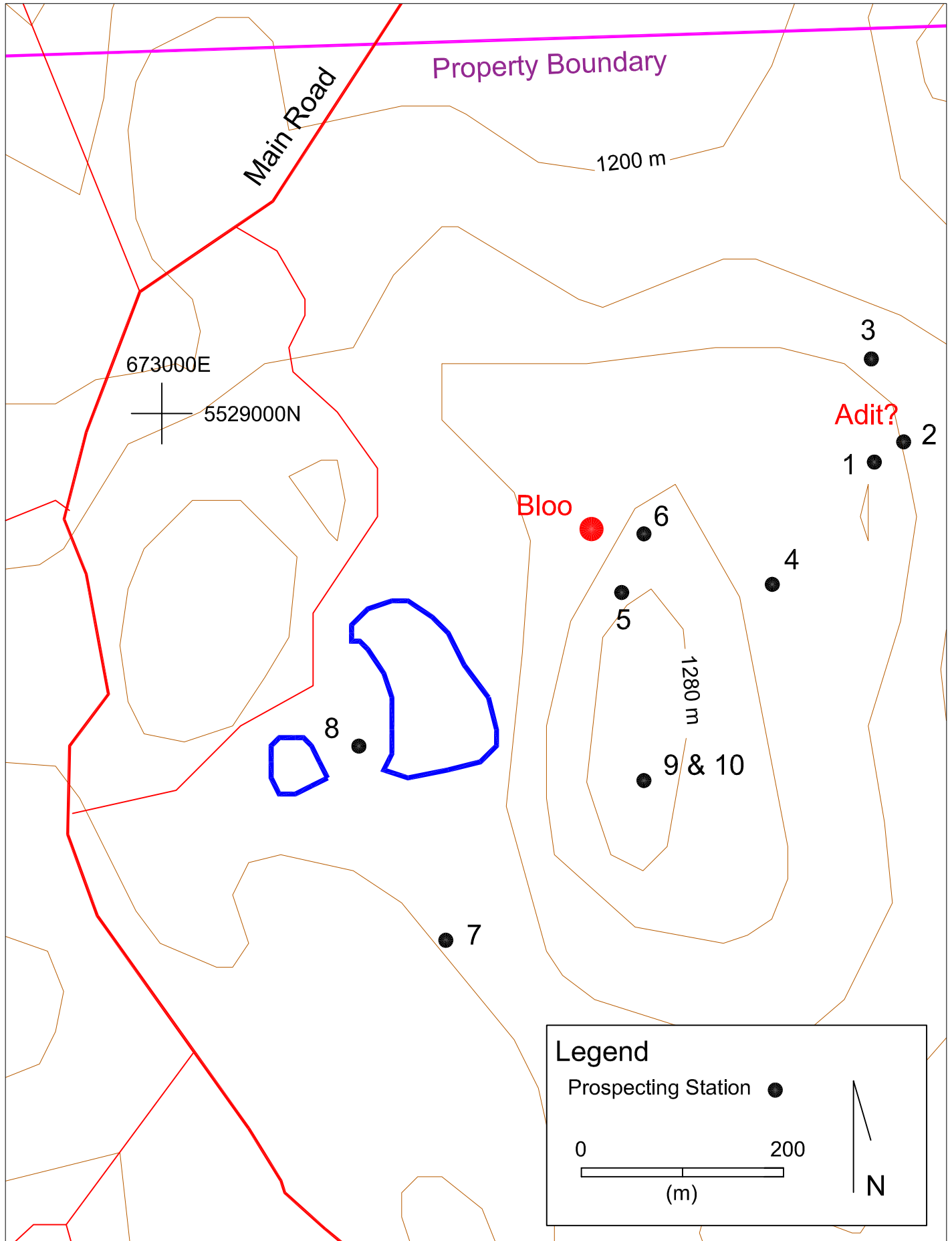


Figure 6: Prospecting Stations

Conclusions and Recommendations

The Portland Showing is similar to the Tom Cat Showing in that it appears to be a mineralized shear zone within volcanic conglomerates. The primary mineralization was not identified, and samples should be slabbed to facilitate mineral identification.

Little detailed mapping has been done on the property, consequently, there is little solid information available on the size, orientation, host rock or patterns of associated alteration for many of the showings. A number of the showings have not been accurately located. While a number of soil surveys have been done over the years, there is no information on the types of overburden on the property that would allow the results to be confidently interpreted. Significant till was noted by the author at a number of locations on the property.

Future work should be directed towards comprehensive mapping of the property, supported by petrographic studies, with the specific aim of determining whether the showings could be part of a porphyry system.

References

- Carr, J.M. (1964) Kentucky (Scope Development Ltd.); in Minister of Mines Annual Report 1964, *BC Ministry of Energy, Mines and Petroleum Resources*, page 96.
- Garrow, T. (2010) NI 43-101 Technical Review for the Tom Cat Property. *Sierra Iron Ore Corporation*.
- Gourley, A.W. (1990) Ken claims Preliminary Geochemistry. Assessment Report 20551.
- Kerr, J.R. (2007) Geophysical and Geochemical Report on the Kentucky Lake Property. Assessment Report 28782.
- Lisle, T.E. (1985) Geological and Geochemical Report on the BLOO, CLIMAX, THOR, AND THOR 2 TO 16 MINERALS CLAIMS; THOR NORTH GROUP (BLOO, CIJMAX, THOR Z, 3, 4, 6); THOR CENTRAL GROUP (THOR 5, 8, 9); THOR SOUTH GROUP (THOR 7, 10, 11, 12, 13, 14, 15, 16). Assessment Report 14141.
- MapPlace (2017) BC Map UTM Zone 10 showing parts of Map Sheets 092H/087 & 088. *B.C. Ministry of Energy, Mines and Petroleum Resources*
<http://webmap.em.gov.bc.ca/mapplace/minpot/BC_UTM.cfm?zone=10> (October 10, 2017).
- Mark, D.G. (1978a) Geophysical-Geochemical Report on VLF-EM and soil sample surveys AR claim. Assessment Report 6761.
- Mark, D.G. (1978b) Geophysical-Geochemical Report on VLF-EM and soil sample surveys AM claim. Assessment Report 6821.
- McKechnie, N.D. (1965) Pyramid (Pyramid Mining Co. Ltd.); in Minister of Mines Annual Report 1965, *BC Ministry of Energy, Mines and Petroleum Resources*, pages 156-157.
- Morrison, M. (1981) Report on an economic geological appraisal of the Bluey Group of mineral claims. Assessment Report 9491.

Preto, V.A. (1979) Geology of the Nicola Group between Merritt and Princeton; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Bulletin 69.

Richards, J.B. (1990) Geological Report on the Ken claims. Assessment Report 20393.

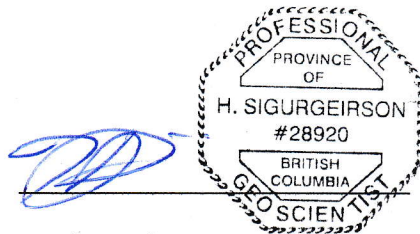
Sigurgeirson, H. (2017) Geological Assessment Report on the Tom Cat Property. Assessment Report 37000.

Yorke-Hardy, R.W. (1976) Geochemical Report covering the Bluey Group of claims. Assessment Report 5908.

Statement of Qualifications

I certify the following:

1. I graduated in 1995 from the University of British Columbia with a B.Sc. in the Geological Sciences.
2. I have worked in mining and mineral exploration continuously since graduation.
3. I have worked on VMS, porphyry, epithermal and mesothermal Au vein, anorthosite hosted Ti, nephrite and other exploration programs in Canada, Mexico and China. I have developed and operated 3 dimension stone quarries on the BC coast.
4. I am a professional geoscientist in the Association of Professional Engineers and Geoscientists of British Columbia, and have been a member in good standing (member #28920) since 2004.
5. I carried out the work program described herein and wrote this report.



H. Sigurgeirson, P. Geo

Nov. 1, 2018

Date

This document represents an electronic version of the original hard copy document, sealed, signed and dated by Helgi Sigurgeirson, P. Geo and retained on file. The content of the electronically transmitted document can be confirmed by referring to the original hard copy and filed

Cost Statement

Consultant	Description	Rate	Amount	Total
H. Sigurgeirson, P.Geo.	Fieldwork: July 2 - 3, 2018	\$540.00	2	\$1,080.00
	Travel (half rate)	\$270.00	1	\$270.00
	Report	\$1,200.00	1	\$1,200.00
Subtotal				\$2,550.00
Vehicles				
Pickup truck	per day	\$50.00	3	\$150.00
quad	per day	\$100.00	2	\$200.00
				\$350.00
Expenses				
Accommodations	per day	\$100.00	3	\$300.00
Fuel	per day	\$30.00	3	\$90.00
Food/meals	per day	\$40.00	3	\$120.00
Gear	per day	\$25.00	2	\$50.00
Subtotal				\$510.00
Total =				\$3,410.00