

SIERRA IRON ORE CORPORATION

GEOLOGICAL ASSESSMENT REPORT

(Event 5467103)

Work done on Tenure 516703

of the five claim

**BC Geological Survey
Assessment Report
34673**

TOM CAT 516703 CLAIM GROUP

(Work done from August 14-17, 2013)

Nicola Mining Division

BCGS 092H.087/.088/.097/.098

British Columbia, Canada

Centred Near:

UTM (NAD 83 Canada) 5528061N, 673040E

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SUMMARY

From the results of a structural analysis on Tenure 516703, five cross-structural locations between major indicated structures have been delineated that would be prime prospective areas to explore for surficial geological indicators of a potential economic mineral resource. The cross-structural locations could be a location of increased structural activity to the development of preferential zones of mineral accommodation such as at the Elk (*Minfile 092HNE096*) or at the Brenda (*Minfile 092HNE275*) past producers where increased mineralization appears to be associated with structural intersections and/or intense fractured or breccia zones.

The mineral zones on the Elk property are an indication of the cross-structural significance to mineral controls. In addition to the main Elk (*Minfile 092HNE096*), productive mineral zone the mineral zones on the Elk property tend to be proximally associated with the major north trending Elk structure and are indicated to be controlled by the intersections with northeasterly structures.

The Elk structure is topographically indicated over a distance of at least 25 kilometres from south of the Elk mineral zones to north of the SNOW (*Minfile 092HNE292*) mineral showing. At the SNOW mineral showing a drill hole intersected minor copper mineralization in weakly to moderately chloritized granite of the Pennask batholith and is indicated near the intersection of the Elk fault and the northwesterly trending Snow fault.

The main mineral zone at the Brenda copper-molybdenum deposit is hosted by the “Brenda Stock”, a composite quartz diorite/granodiorite body which forms part of the Early Jurassic Pennask batholith. It is suggested that intermittent east-west compressional forces intensely fractured the rocks of the Brenda stock during several stages of time and tapped a hydrothermal source, either a later phase of the Brenda stock or a separate intrusive system. As each stage of fractures developed, hydrothermal fluids introduced vein material which healed the fractures. Renewed build-up of compressional forces again fractured the rocks, which were again healed. Repetition of this sequence can explain all stages of mineralization within the Brenda deposit. East-west compression continued after ore deposition ceased and produced prominent east-northeast and northwest striking shear zones (*Minfile 092HNE275*).

The five claim 2,208 hectare Tom Cat 516703 Claim Group is located in the historic Aspen Grove Mining Camp area which was recognized for its potential for economic mineral deposits when copper mineralization was first discovered in the late 1880's. Four of the earliest discoveries, Tom Cat, Boomerang, Portland, and Bunker Hill, were made on the ground presently covered by Tenure 516703, the subject of the structural analysis (*Figure 7*).

Although the ground of Tenure 516703 has a history of periodic exploration, the only significant result reported prior to 2006 was a drill intersection of 45.7 metres of 0.32% copper in a 1965 Pyramid Mining drill hole on the Tom Cat showing (*Minfile 092HNE086*). Later exploration work by Bold Ventures resulted in the delineation of viable chargeability IP drill targets and copper soil anomalies associated with mineral showings. A drill hole on the Tom Cat showing confirmed the historic result in the intersection of 4.4 meters of 0.54% copper from a 40 meter section of mineralization. The former and the latter drill results are indicative of the potential for economic mineral zones on Tenure 516703 or in the Tom Cat 516703 Claim Group.

Summary (cont'd)

The area of the Tom Cat diamond drilling was within 750 metres west of one of the five delineated cross-structures within Tenure 516703 where surficial mineral seepage may be exposed via a minor structural assemblage. This exposure may be indicative of a significant porphyritic mineral zone/resource at depth.

Exploration of the five cross-structural locations should provide additional geological indicators such as minerals, pathfinder minerals, and/or alteration patterns, to interpret as to the mineral potential at depth.

INTRODUCTION

In August 2013 a structural analysis was completed on Tenure 516703 of the five claim Tom Cat 516703 Claim Group ("Property"). The purpose of the program was to delineate potential structures which may be integral in geological controls to potentially economic mineral zones that may occur on Tenure 516703 or other claims of the Property.

Information for this report was obtained from sources as cited under Selected References and from the completion of the structural analysis as reported on herein.

Figure 1. Location Map



PROPERTY DESCRIPTION AND LOCATION

Description

The Property consists of five contiguous claims totaling 2208.4816 hectares. Particulars are as follows:

Table 1. Tom Cat 516703 Claim Group Tenures
(from MtOnline)

<u>Tenure Number</u>	<u>Type</u>	<u>Claim Name</u>	<u>Good Until</u>	<u>Area (ha)</u>
515845	Mineral		20150930	293.755
516703	Mineral		20140731	582.976
516705	Mineral		20140731	416.267
516708	Mineral		20140731	374.651
1018452	Mineral	NAA1	20140731	540.8326

Location

The Property is located in the Nicola Mining Division of British Columbia Canada, within BCGS 092H.087/.088/.097/.098, 19 kilometres south-southeast of Merritt, and 200 kilometres east-northeast of Vancouver.

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access

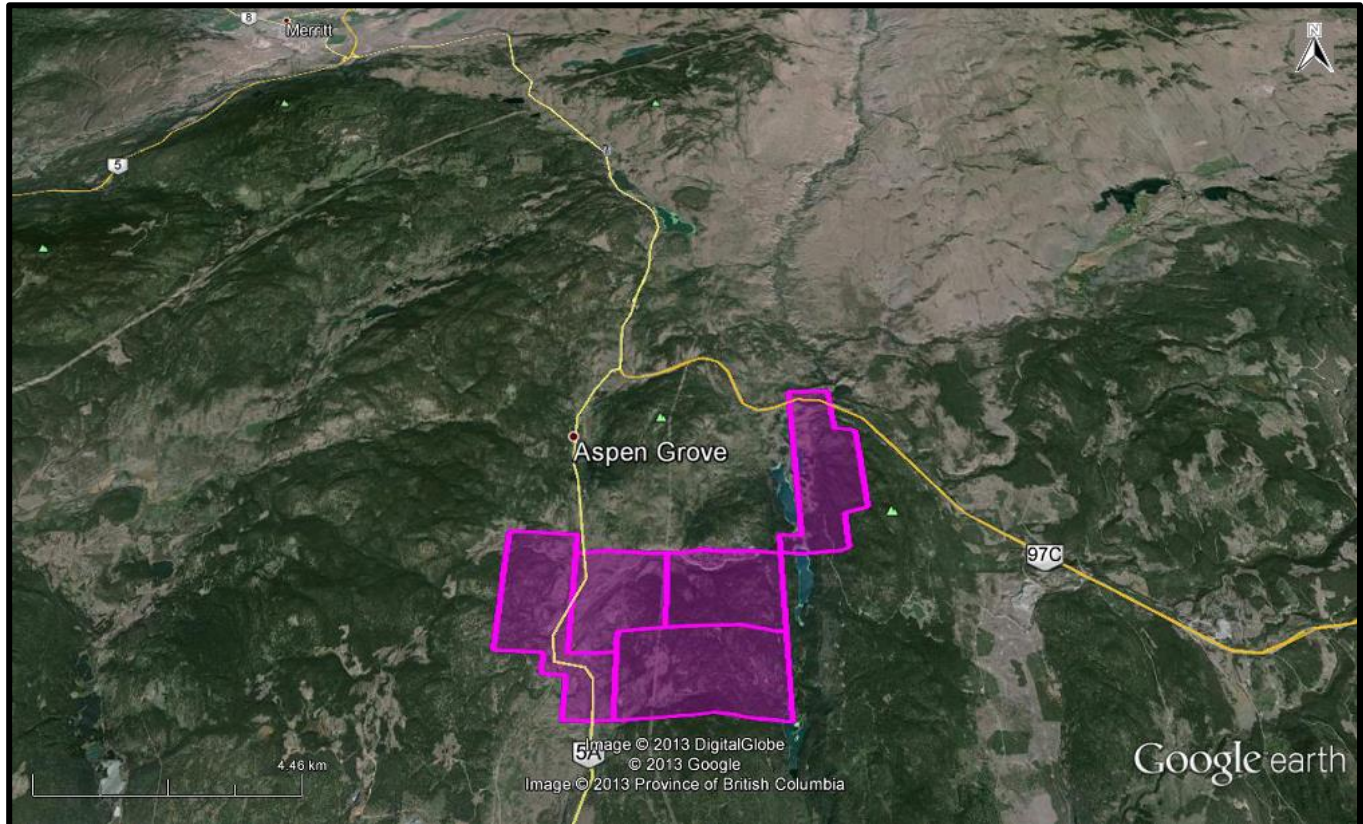
Access is southward from Merritt via Highway 5A for 26 kilometres to the Aspen Grove Junction, a junction between Highway 97C/Coquihalla connector to the east and the Princeton-Kamloops Highway 5A to the south. The Property can be accessed from either Highway; Highway 5A intersects Tenure 1018452 three kilometres east of the Junction and Highway 5A intersects Tenure 516708 six kilometres south of the Junction.

Bates Road which junctions with Highway 5C seven kilometres south of the Aspen Grove junction extends easterly to the Kentucky-Alleyne Lakes and with subsidiary roads, provides access to the four southern claims. From the Kentucky Lake Provincial campsite a northerly road with subsidiary roads, links with Highway 5C and provides access to most areas of the northern Tenure 1018462 claim.

Climate

The region is situated within the dry belt of British Columbia with rainfall between 25 and 30 cm per year. Temperatures during the summer months could reach a high of 35° and average 25°C with the winter temperatures reaching a low of -10° and averaging 8°. On the Property snow cover could be from December to April which should not hamper a year-round exploration program.

Figure 2. Claim Location
(Map from MapPlace and Google)



ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY (cont'd)

Local Resources and Infrastructure

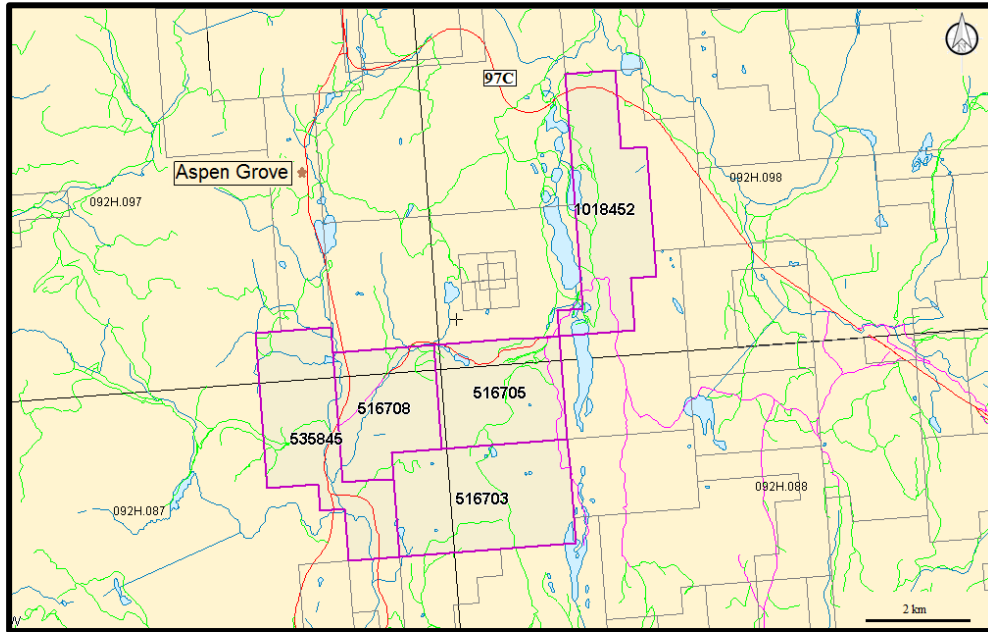
Merritt or Kamloops, historic mining centres, could be a source of experienced and reliable exploration and mining personnel and a supply for most mining related equipment. Kamloops is serviced daily by commercial airline and is a hub for road and rail transportation. Vancouver, a port city on the southwest corner of, and the largest city in the Province of British Columbia, is four hours distant by road and less than one hour by air from Kamloops.

Physiography

The Property is situated at the western edge of the Douglas Plateau, which is within the physiographic area designated as the Interior Plateau of British Columbia. Vegetation is grassland with pine groves and thickets of fir at higher elevations.

Gentle to moderate forested slopes predominate on Tenure 516703. Elevations range from 1036 m along in the northwest corner to 1,290 m at the south mid boundary.

Figure 3. **Claim Map**
(Claim Map from MapPlace)



HISTORY: PROPERTY AREA

The history of exploration in the Aspen Grove copper camp dates to the late nineteenth century when copper mineralization was discovered. The history on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers peripheral to the Property are reported as follows; the distance is from Tenure 516703, the subject of the Structural Analysis.

HN-WEN prospect (Volcanic redbed Cu)

MINFILE 092HNE058

Eleven kilometres northeast

Adits and trenches were initially cut around 1900; later work included diamond drilling and trenching in the 1960s and 1970s.

BIG SIOUX past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au)

MINFILE 092HNE073

Seven kilometres north

This deposit was one of the first showings to be explored in the Aspen Grove copper camp. It was staked in 1899, and investigated periodically by H.H. Schmidt up to 1914. One shaft, 10 metres deep, an adit, 46 metres long, and numerous pits and trenches were excavated during this time. Forty-four tonnes of ore were shipped in 1918 grading 9.78 per cent copper and 67.9 grams per tonne silver. David Minerals Ltd., Amax Exploration Inc. and Norranco Mining and Refining completed soil and rock geochemical and geophysical surveys over the deposit between 1968 and 1978. The occurrence was restaked in 1989 after copper mineralization was exposed in a roadcut along the north side of the recently completed Coquihalla Highway (Phase 3 - Okanagan Connector). The deposit was subsequently mapped and sampled by Amex Exploration Services Ltd. in 1990, Northair Mines Ltd. in 1991 and Placer Dome Inc. in 1992. Christopher James Gold Corp. drilled the area, including the Big Kidd (092HNE074) in 1997.

History: Property Area (cont'd)**BIG KIDD** prospect (Volcanic redbed Cu; alkalic porphyry Cu-Au)

MINFILE 092HNE074

Six kilometres north

This occurrence was first explored by H.H. Schmidt, with the excavation of several trenches and one adit, 69 metres long, between 1900 and 1915. An additional three adits, 12 to 90 metres long, were excavated sometime between 1916 and the 1950s. The deposit was trenched and drilled by Noranda Mines Ltd. in 1956 after completing geological and geophysical surveys. Additional geophysical and soil geochemical surveys were carried out by Norranco Mining and Refining in 1969 and Amax Exploration Inc. in 1971. Amax also mapped and drilled the deposit in 1972. David Minerals Ltd. conducted geological and self-potential surveys, trenching and 112 metres of diamond drilling in three holes between 1975 and 1980. The deposit was sampled by Northair Mines Ltd. in 1991 and Placer Dome Inc. in 1992. Drilling by Placer intersected 71 metres averaging 0.75 gram per tonne gold and 0.2 per cent copper in the north zone of the Big Kidd breccia.

Christopher James Gold Corp. drilled 10 holes, totalling 2074 metres in 1997. A 116-metre intersection graded 0.801 grams per tonne gold and 0.124 per cent copper, including a higher grade section of 19.46 metres grading 3.09 grams per tonne gold and 0.113 per cent copper (Exploration in B.C. 1997, page 38). This intersection is from the North zone. The Southwest zone, 350 metres to the south, and the Northeast zone also contained mineralization.

The next program by Christopher James Gold was a 2 staged drilling program completed during the fall in 1999. This program drilled a fan of three holes to the southwest and one parallel hole along the Big Kidd Breccia north contact. All four 1999 holes intersected significant lengths of gold-copper mineralized intrusion breccia with late porphyritic monzonite dyke and potassic (K-feldspar) alteration zones.

In 2003, Christopher James Gold Corp. drilled 9 holes and dug three trenches to test alkalic porphyry hosted by the Big Kidd breccia. Broad intervals of low-grade mineralization were encountered.

PAYCINCI prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Four kilometres north

The Cincinnatti deposit was first explored by the Bates brothers in the early 1900s. A number of trenches, and one adit 120 metres long, were excavated between 1899 and 1913. Payco Mines Ltd. and Alscope Consolidated Ltd. conducted geological and geophysical surveys, trenching and diamond and percussion drilling between 1963 and 1967. An additional 15 holes totalling 1000 metres were drilled by Gold River Mines and Enterprises Ltd. in 1973 and Sienna Developments Ltd. in 1979. The deposit was most recently sampled by Pacific Copperfields Ltd. in 1992. In 1998, Christopher James Gold Corp. optioned the property. Reserves are estimated at 1.8 million tonnes grading 1 per cent copper (Tom Schroeter, 1998).

History: Property Area (cont'd)

ELK past producer (Intrusion-related Au pyrrhotite veins; Polymetallic veins Ag-Pb-Zn +/-Au; Au-quartz veins)
MINFILE 092HNE096
Eighteen kilometres east

From 1992 and 1995 (inclusive), 16,570 tonnes of ore were mined and milled and 1,518,777 grams (48,830 ounces) of gold and 1,903,000 grams (61,183 ounces) of silver recovered.

In 1996, Fairfield shipped all remaining stockpiles, estimated to contain 2700 tonnes and grading greater than 12 grams per tonne (Information Circular 1997-1, page 21). A total of 994 metres of ramp access and three development levels exist underground.

Reverse circulation drilling, underground diamond drilling, reclamation, road construction, water sampling and aerial photography were also undertaken during this period.

Surface and underground diamond drill programs were carried out in the Siwash Mine area from 1994 to 1996 to define the resource. Exploration surface drilling was also carried out during the 1995 and 1996 field seasons to test trench targets between the Siwash mine site and the South Showing area 2.5 kilometres to the south. Limited prospecting and environmental monitoring was undertaken from 1997 to 1999.

In 1995, Fairfield Minerals with the support from the Explore B.C. Program carried out an extensive program including geochemistry, 13,972 metres of surface and underground diamond drilling in 315 holes and reserve calculations.

HISTORY: PROPERTY

Four Minfile mineral occurrences located on Tenure 516703 of the Tom Cat 516703 Claim Group are described following, as copied from files of the government website www.mapplace. Eight are copied as described by Kerr (2008).

The Bunker Hill and the Tom Cat showings, two of the ten Minfiles, located within the Tom Cat property, are two of the earliest mineral showings discovered in the Aspen Grove Copper Camp. Numerous mineral exploratory workings comprised of pits, shafts, and trenches occur on the Tom Cat property. Much of the historical information is included in the Minfile records or in Aris reports pertaining to the ground covered by the Tom Cat property. However, the Minfile records are not updated to include the most recent work; the most significant being the exploration performed by Bold Ventures in 2007 and 2008

History: Property (cont'd)**Table 2 Summary of exploration work on the ground of the Tom Cat property since 1964.**

Year of Work	Owner and/or Operator	Work Completed	Results
1964-1974	Scope Development Ltd.	Geological mapping, geophysical surveys, geochemical surveys & trenching	Unknown
	Alscope Consolidated Ltd.		Unknown
1965	Pyramid Mining	1,042 metres drilling in 13 drill holes	45.7 metres of 0.32% Cu
1975-1981	Fred Gingell	Geochemical & geophysical surveys	Unknown
1983-1985	Vanco Explorations Ltd.	Localized geological mapping	Unknown
1986-1989	Laramide Resources Ltd.	Geochemical & geophysical surveys	Unknown
2005-2006	Bold Ventures Inc.	3D IP survey & soil sampling	Viable chargeability IP drill targets in areas associated with mineral showings. Copper soil anomalies associated with mineral showings * see Figure 5
2007	Bold Ventures Inc.	1,018 metres drilling in 6 drill holes	4.4 metres of 0.54% Cu

TOM CAT prospect (Volcanic redbed-Cu; Subvolcanic-Cu-Ag-Au (As-Sb);
 Porphyry Mo (Low F-type)
 MINFILE 092HNE086
 Within Tenure 516703

The occurrence was initially prospected and trenched by W. Murray between 1906 and 1913. Pyramid Mining Company Ltd. drilled 13 holes totalling 1042 metres in 1965.

BOOMERANG showing (Alkalic porphyry Cu-Au)
 MINFILE 092HNE087
 Within Tenure 516703

The Boomerang showing is 830 metres northwest of the north end of Bluey Lake and 1.4 kilometres southwest of the south end of Kentucky Lake.

This showing was explored as early as 1901. Several trenches and shallow shafts were excavated by 1904 and two diamond-drill holes were drilled by 1928. Scope Development Ltd. and Alscope Consolidated Ltd. conducted trenching, soil sampling, geophysical surveying and some diamond drilling in 1964 and 1967. Various geological, geochemical and geophysical surveys were completed by F. Gingell between 1976 and 1981, Vanco Explorations Ltd. in 1985 and Laramide Resources Ltd. in 1987.

History: Property (cont'd)

PORTLAND showing (Volcanic redbed Cu)
MINFILE 092HNE088
Within Tenure 516703

The Portland showing is 1.95 kilometres west-northwest of the north end of Bluey Lake and 2.6 kilometres southwest of the south end of Kentucky Lake.

This occurrence was explored periodically between 1900 and 1905. Portland Mining Company excavated a shaft, 35 metres deep and a drift from the bottom of the shaft, 32 metres long, in 1905.

BUNKER HILL showing (Volcanic redbed Cu)
MINFILE 092HNE089
Within Tenure 516703

The Bunker Hill showing is 1.05 kilometres west-southwest of the north end of Bluey Lake and 2.25 kilometres southwest of the south end of Kentucky Lake.

GEOLOGY: REGIONAL

Kerr provides an excellent account of the regional geological setting in a 2006 assessment report (AR 28,782).

“The project area lies within the Intermontane belt of Mesozoic rocks between Princeton and Merritt. This belt of rocks carries south into the United States and north into the Yukon Territory. The distinguishing and oldest rock group in this belt is the volcanic and sedimentary rocks of the Triassic Nicola group.

Preto (Bulletin 69) has subdivided this group into the western, central, and eastern facies. The eastern facies is dominantly intermediate purple/gray/green flows, breccias, tuffs, lahar breccias, with minor sandstones and siltstones. The central facies is intermediate to basic flows, breccias and tuffs, with more dominant limestone, siltstone, argillite, and conglomerate. The western facies is acidic to intermediate flows, breccias and tuffs, with minor limestone. Intruding the Nicola volcanics are numerous stocks, sills, small plutons, batholiths and dikes of various ages and of a varied composition.

The more sizeable intrusions are the Jurassic Pennask batholith, the lower Jurassic Allison Lake pluton, and the Cretaceous Summers Creek stocks. The intrusive rocks are acidic to basic in composition, however most are alkalic in nature. The most dominant rock descriptions are diorite, monzonite and granodiorite. The lower Cretaceous Kingsvale group of dominantly volcanic rocks unconformably overly the Nicola group and earlier intrusions. These rocks are intermediate to felsic flows, tuffs, ash flows and lahar breccias. The Summers Creek stocks intrude rocks of the Kingsvale group, Overlying all rocks are Tertiary basalts and andesites of the Princeton group and sedimentary rocks of the Coldwater beds.”

GEOLOGY: PROPERTY AREA

The geology on some of the more significant mineral *MINFILE* reported occurrences, prospects, and past producers peripheral to the Tom Cat Property are reported as follows; the distance is from Tenure 516703, the subject of the Structural Analysis.

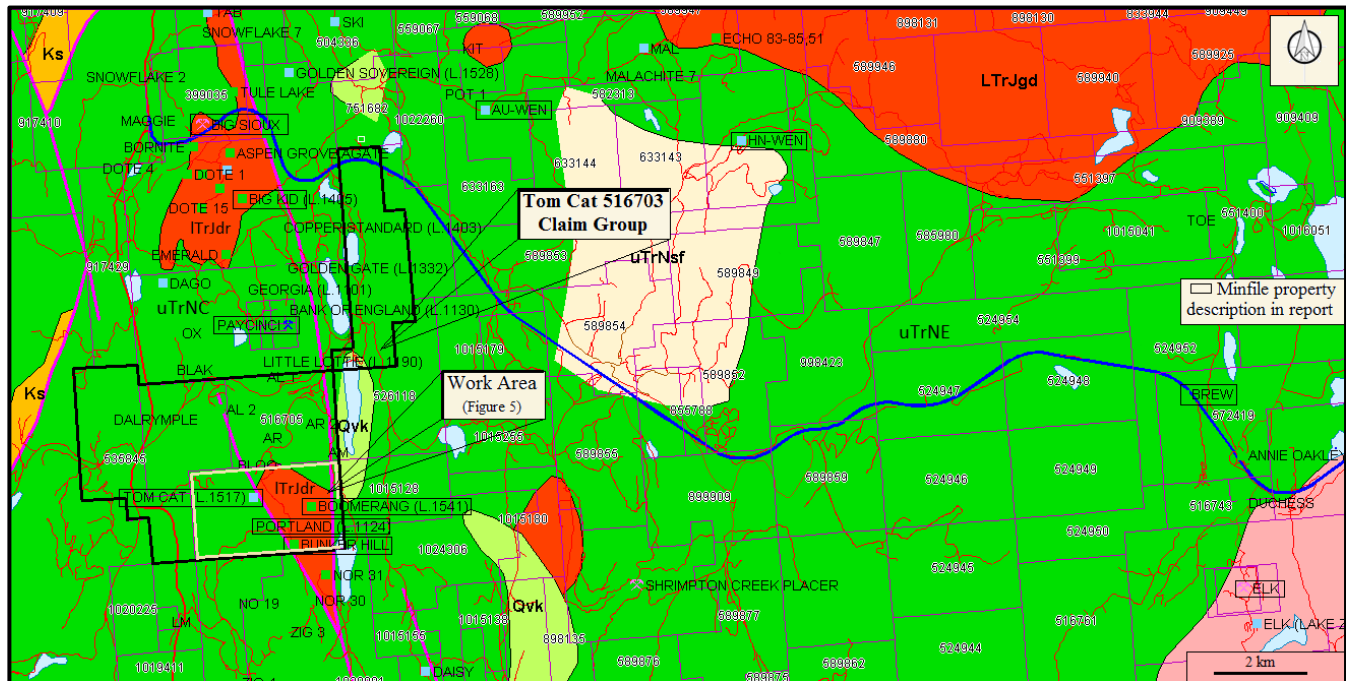
HN-WEN prospect (Volcanic redbed Cu)
MINFILE 092HNE058
Eleven kilometres northeast

Geology: Property Area (cont'd)**HN-WEN prospect (cont'd)**

The HN-WEN occurrence is hosted in the Upper Triassic Nicola Group, which regionally consists of alkalic and calcalkalic volcanics and intrusions of island arc origin, and which is the principal component of the Quesnel Terrane in southern British Columbia (Geological Survey of Canada Maps 41-1989, 1713A). This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization.

The occurrence lies in the northern assemblage of the Eastern belt of the Nicola Group (after Preto, Bulletin 69).

Figure 4. Geology, Claims, Minfile, & Index Map
(Base map from MapPlace)

**GEOLOGY MAP LEGEND****Pleistocene to Holocene****Qvk**

Unnamed alkalic volcanic rocks

Upper Triassic: Nicola Group

Eastern Volcanic Facies

uTrNE

lower amphibolite/kyanite grade metamorphic rocks

uTtNsf

mudstone, siltstone, shale, fine clastic sedimentary rocks

uTrNMI

basaltic volcanic rocks

uTrJum

unnamed ultramafic rocks

Central Volcanic Facies

uTrNc

andesitic volcanic rocks

Late Triassic to Early Jurassic**LTrJgd**

unnamed granodiorite intrusive rocks

LTrJdr

dioritic to gabbroic intrusive rocks

Geology: Property Area (cont'd)**HN-WEN prospect (cont'd)**

This assemblage mainly consists of well-bedded submarine volcanoclastic rocks and volcanic flows. The main Aspen Grove copper camp lies several kilometres to the west in the Central belt, separated by the north-striking Kentucky-Alleyne fault system (Bulletin 69).

The area of the occurrence is underlain by augite porphyritic volcanic flows of andesitic to basaltic composition, fragmental rocks including tuff and breccia, and argillites (Assessment Reports 1586, 4230). The argillites are dark grey to black, well bedded, and locally limy. They are somewhat carbonaceous and pyritic. Minor rock types present include feldspar porphyry and locally lenses of diorite. About 2.5 kilometres to the northeast is the contact with the Early Jurassic Pennask batholith, a large intrusion of medium-grained granodiorite to quartz diorite.

The contact between the volcanic rocks and the argillites passes through the centre of the mineralized area. The contact is parallel to bedding, striking 130 degrees and dipping 40 degrees southwest, with the volcanic rocks on the northeast side (Assessment Report 4230).

BIG SIOUX past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au)

MINFILE 092HNE073

Seven kilometres north

The Fairweather Hills region is underlain by the Central volcanic facies of the Upper Triassic Nicola Group, comprising intermediate, feldspar and feldspar augite porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic.

Locally, the area is underlain by red and green laharc breccias, augite andesite porphyry and minor sediments of the Nicola Group (Central belt, Bulletin 69). The units generally strike north-northwest and dip east. This sequence is broken up into a series of tilted fault blocks trending north.

The occurrence is hosted in variably amphibole, augite and feldspar porphyritic basaltic andesite, subjected to extensive fracturing, shearing and faulting. Alteration minerals include abundant epidote, and minor silica and chlorite. Some microdiorite and diorite are also present.

BIG KIDD prospect (Volcanic redbed Cu; alkalic porphyry Cu-Au)

MINFILE 092HNE074

Six kilometres north

The deposit is located along the northern margin of an area of hilly upland situated in the centre of the Aspen Grove copper camp, known as the Fairweather Hills. The Fairweather Hills region is underlain by the Central volcanic facies of the Upper Triassic Nicola Group, comprising intermediate, feldspar and feldspar augite porphyritic ash flows, and associated alkaline intrusions.

The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic. Locally, the area is underlain by red and green laharc breccias, augite andesite porphyry and minor sediments of the Nicola Group (Central belt, Bulletin 69). The units generally strike north-northwest and dip east. This sequence is broken up into a series of tilted fault blocks trending north.

Geology: Property Area (cont'd)**BIG KIDD** prospect (cont'd)

A vertical or subvertical breccia pipe, nearly circular in outline and about 300 metres wide, is developed in a body of fine- grained diorite, which may in part be recrystallized volcanics. The pipe consists of angular to subrounded clasts of volcanics, fine- grained diorite (microdiorite) and pinkish grey monzonite and syenomonzonite porphyry in a matrix of altered diorite intrusive material and finely comminuted rock

PAYCINCI prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Four kilometres north

The deposit is located in the southern portion of an area of hilly upland situated in the centre of the Aspen Grove copper camp, known as the Fairweather Hills. The Fairweather Hills region is underlain by the Central volcanic facies of the Upper Triassic Nicola Group, comprising intermediate, feldspar and feldspar augite porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic.

Locally, the area is underlain by red and green laharic breccias, augite andesite porphyry and minor sediments of the Nicola Group (Central belt, Bulletin 69). The units generally strike north-northwest and dip east. This sequence is broken up into a series of tilted fault blocks trending north.

Hypogene and supergene copper mineralization occurs in green laharic breccia, near the contact with red laharic breccia to the east. This mineralization consists primarily of disseminated and fracture controlled chalcocite and native copper, accompanied by lesser malachite and azurite, and minor chalcopyrite, bornite, cuprite and pyrite. Drilling indicates chalcopyrite becomes more abundant at depth at the expense of chalcocite. This mineralization is exposed along the crest and east flank of a small northerly trending ridge, over a north-south distance of 400 metres.

AU-WEN prospect (Intrusion-related Au pyrrhotite veins; Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE144

Six kilometres north-northeast

The AU occurrence is hosted in the Upper Triassic Nicola Group, which regionally consists of alkalic and calcalkalic volcanics and intrusions of island arc origin, and which is the principal component of the Quesnel Terrane in southern British Columbia (Geological Survey of Canada Maps 41-1989, 1713A). This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization.

The occurrence lies in the northern assemblage of the Eastern belt of the Nicola Group (after Preto, Bulletin 69).

This assemblage mainly consists of well-bedded submarine volcanoclastic rocks, ranging from tuffaceous volcanic siltstones characteristic of the lower part, to coarse volcanic conglomerate and laharic breccias in the upper part.

Geology: Property Area (cont'd)**Au-Wen prospect (cont'd)**

The assemblage is characterized by a paucity of intrusive rocks in comparison to the main Aspen Grove copper camp in the Central belt a few kilometres to the west, separated by the Kentucky-Alleyne fault system (Bulletin 69).

The AU occurrence is centred on the main gold showing, a small stripped, drilled and trenched area just off a gravel road south of Quilchena Creek (Assessment Reports 5766, 16008). This and most of the surrounding area is underlain by andesitic to dacitic tuff, cherty tuff, black argillite, and volcanic sandstone and siltstone. The rocks are strongly fractured in a variety of orientations. Bedding in the tuff has been measured to strike 060 degrees and dip 54 degrees northwest, but it varies.

About 1 kilometre to the north of the main showing is biotite hornblende granodiorite and quartz monzonite of the Early Jurassic Pennask batholith, and about 500 metres to the west are porphyritic andesitic and basaltic volcanic rocks (Bulletin 69; Assessment Report 16008). Small bodies of diorite and micromonzonite, possibly subvolcanic, are quite common in the area, on the surface and in drill core (Assessment Report 16008).

ELK past producer (Intrusion-related Au pyrrhotite veins; Polymetallic veins Ag-Pb-Zn +/-Au; Au-quartz veins)

MINFILE 092HNE096

Eighteen kilometres east

The Elk property is underlain by Upper Triassic volcanics and sediments of the Nicola Group and by Middle Jurassic granites and granodiorites of the Osprey Lake batholith. The contact between these units trends northeasterly across the property. Early Tertiary feldspar porphyry stocks and dikes of the Otter intrusions occur throughout the property. The western property area is underlain by steeply west-dipping andesitic to basaltic flows, agglomerates, tuffs and minor siltstone and limestone units of the Nicola Group. The eastern half of the property is underlain by granitic rocks of the Osprey Lake batholith.

BREW showing (Alkalic porphyry Cu-Au; Subvolcanic Cu-Ag-Au; As-Sb)

MINFILE 092HNE275

Eleven kilometres northeast

This occurrence is hosted in volcanics and minor sediments of the Upper Triassic Nicola Group, 2.6 kilometres northwest of the Middle Jurassic Osprey Lake batholith. The volcanics consist primarily of andesite and fine-grained diorite. The contact between the two units is gradational, suggesting the diorite may be a subvolcanic equivalent of the andesite. Minor tuffs, lapilli tuffs, agglomerates, and feldspar porphyritic andesite are also present. The sediments consist of mudstone, siltstone, shale, and rare carbonate, intercalated with the pyroclastic units.

A major fault zone, the Brew fault, striking 140 degrees and dipping steeply southwest, is exposed along the Coquihalla Highway for 600 metres.

The zone is approximately 40 metres wide. It is somewhat gossanous and exhibits carbonate and clay alteration and sporadic silicification. Some quartz +/- calcite stringers and blebs are present but not common.

Geology: Property Area (cont'd)**BREW** showing (cont'd)

Pyrite is ubiquitous along the entire fault. Sections of the zone are strongly mineralized with massive veins, narrow stringers and occasional disseminations of marcasite, pyrite and pyrrhotite. Samples of pyritic clay-altered sections have yielded up to 0.280 gram per tonne gold and 0.445 per cent arsenic (Assessment Report, 18041, page 8, samples 128665, 44719)

A sample from a zone of quartz stringers analysed 0.600 gram per tonne gold (sample 239716).

This fault is traversed by several significant fault/shear zones striking 100 to 120 degrees. One major crossfault, the Mugwump fault, is exposed west of the Brew fault, striking 100 degrees and dipping 60 degrees south.

GEOLOGY: PROPERTY

Kerr (2007) provides an excellent account of the Tom Cat property geology in a 2006 assessment report on the geophysical and geochemical surveys completed of the Tom Cat property (AR 28,782).

“The dominant rock types of the property are volcanic and sedimentary rocks of the central facies of the Triassic Nicola group, and stocks and small batholiths of Triassic diorites and monzonites. The eastern facies is present along the eastern property boundary. The central facies of the Nicola group has been subdivided into three basic units; flows, pyroclastics and sediments. The flows are most abundant and are described as purple/green amygdaloidal augite andesite with interbedded trachyandesite feldspar porphyry. The pyroclastic units are massive to finely bedded crystalline andesite tuffs with interbedded siltstone and light gray/green dacite tuff. Graded bedding is locally identified, with occasional diagnostic lapilli sized fragments, common to explosive breccias and lahars.

The sediments are dominantly interbedded greywacke, siltstone and minor conglomerate and massive beds of gray to light brown limestone. All Triassic rocks are hornfelsic in nature near the contact of intrusions. Some of the sedimentary horizons have developed slaty and/or schistose cleavages. The intrusive rocks on the property have been classified as alkalic late Triassic granodiorite and quartz diorite, and are located in one small batholith covering the southeastern area of the property. Late felsic and porphyritic dike swarms are found in all areas of the property, dominantly in the contact area of the batholith. The ages are unknown, however are probably related to late phase intrusive activity. Very late basic dikes are related to Tertiary volcanism. These dikes are post-mineralization.”

Structural Geology

“Bluey and Kentucky Lakes form a strong lineal feature that probably is related to the northern projection of the Summers Creek fault. This lineament passes through the eastern boundary area of the claims. A splay fault trending northwest forms the western boundary of the granodiorite intrusion. Small local shears and fault zones were noted during the time of the property examination.”

TOM CAT prospect (Volcanic redbed Cu; Subvolcanic Cu-Ag-Au (As-Sb);

Porphyry Mo (Low F- type)

MINFILE 092HNE086

Within Tenure 516703

Geology: Property (cont'd)**TOM CAT prospect (cont'd)**

This deposit is hosted in green laharc breccia or basaltic flow breccia near the contact with red laharc breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69). The unit strikes north-northwest and dips 60 degrees east. Massive basaltic flows outcrop to the northeast. Alteration of the breccia consists of some chloritization of olivine and pyroxene, and sericitization of feldspar.

BOOMERANG showing (Alkalic porphyry Cu-Au)

MINFILE 092HNE087

Within Tenure 516703

Chalcocite, bornite and malachite occur along fractures in fine-grained diorite (microdiorite) or dioritized volcanics of the Upper Triassic Nicola Group (Central belt, Bulletin 69). The diorite is chloritized and occasionally brecciated. Where brecciated, blebs and stringers of bornite, chalcocite and malachite occur between the fragments. Abundant disseminated magnetite, calcite and epidote are reported to accompany the brecciation. The mineralized zone appears to trend northwest.

PORTLAND showing (Volcanic redbed Cu)

MINFILE 092HNE088

Within Tenure 516703

Chalcocite, magnetite and hematite occur in a fracture zone in red and green laharc breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

BUNKER HILL showing (Volcanic redbed Cu)

MINFILE 092HNE089

Within Tenure 516703

Several trenches and old pits expose chalcocite, bornite, chalcopyrite, pyrite, malachite and azurite in brecciated and altered pyroxene plagioclase porphyritic andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69). Brown carbonate (?) alteration is associated with sulphide mineralization. A rock sample analysed 0.391 per cent copper (Assessment Report 14141, Figure 5b, sample 88603)

MINERALIZATION: PROPERTY AREA

The mineralization on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers peripheral to the Tom Cat property are reported as follows; the distance is from Tenure 516703, the subject of the Structural Analysis.

HN-WEN prospect (Volcanic redbed Cu)

MINFILE 092HNE058

Eleven kilometres northeast

The mineralization is restricted to the volcanics. It is exposed in 3 adits and at least 8 trenches, and is marked by alteration, mainly epidotization, silicification, carbonatization, moderate chloritization and local pyritization.

Mineralization: Property Area (cont'd)**HN-WEN** prospect (cont'd)

Chalcopyrite is the only copper mineral: it is disseminated, or concentrated in quartz and calcite veins and veinlets between 0.3 and 30 centimetres thick, usually about 8 centimetres thick. Pyrite, pyrrhotite and rare specular hematite are also present in the veins. Locally oxidation has produced abundant malachite, azurite and limonite.

The mineralized zone measures 760 by 90 metres and has a depth of about 75 metres. Diamond drilling indicates that it strikes 160 degrees and dips vertically or steeply east, so it is not parallel to the volcanic-sedimentary contact, indicating that the contact is not the controlling factor.

Rather, the veins hosting the mineralization are structurally controlled by numerous faults and fractures which consistently strike 160 degrees and dip 85 degrees east (Assessment Report 4230). Incidentally, the Echo occurrence (092HNE059) lies on this trend, 2 kilometres to the north-northwest, and the mineralization may also extend south-southeast of the HN-WEN occurrence (Assessment Report 4230).

Some significant copper and silver values have been obtained from the workings and diamond drill core. A 1.5-metre chip sample from Adit Number 1 was assayed at 4.39 per cent copper, 92.6 grams per tonne silver, and 0.7 gram per tonne gold (Assessment Report 4230).

A grab sample from here was assayed at 4.84 per cent copper, 46.6 grams per tonne silver and 0.7 gram per tonne gold (Assessment Report 4230). Both samples were from oxidized material and may not be representative of grade throughout the deposit (Assessment Report 4230). A drill core sample (hole HNS 72-1) assayed 1.12 per cent copper and 3.4 grams per tonne silver (Assessment Report 4230).

The average grade of the whole deposit has been estimated at 0.08 per cent copper, with a generally low gold and silver content (Assessment Report 4230).

BIG SIOUX past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au
MINFILE 092HNE073
Seven kilometres north

Pyrite, pyrrhotite, chalcopyrite and arsenopyrite are disseminated sporadically in the tuffaceous rocks and argillite, up to about 1 per cent, and also occur in fractures (Assessment Reports 11241, 16008). Native gold is associated with the sulphides in narrow quartz-filled fractures in these rocks (Assessment Report 16008). Minor malachite occurs in volcanics.

The overall extent of the mineralization has not been determined, although diamond drilling has demonstrated that minor pyrite, pyrrhotite and chalcopyrite, disseminated or associated with quartz or calcite fracture veinlets, does persist below the surface (Assessment Reports 11241, 16008).

Gold values in the area are generally low, but high values have been obtained from trench sampling and drill core at the main showing. Significant gold assays in chip samples range from 6.8 grams per tonne over 5.1 metres to 10.8 grams per tonne over 4.9 metres (Assessment Report 16008).

Mineralization: Property Area (cont'd)**BIG KIDD** prospect (Volcanic redbed Cu; alkalic porphyry Cu-Au)

MINFILE 092HNE074

Six kilometres north

Mineralization is erratic and consists of abundant magnetite, and pyrite, lesser chalcopyrite, and traces of bornite and chalcocite, as disseminations, lenses, scattered blebs and veinlets. Cuprite and native copper are also reported. This mineralization tends to favour the zones of alteration, but is not proportional to the intensity of alteration. The sulphides are in part controlled by zones of shearing and fracturing in the northeastern portion of the deposit. Limonite, malachite and azurite are present at or near surface. Pyrite occurs primarily as disseminations up to 5 millimetres in diameter. The mineral also occurs along fractures in association with chalcopyrite, orthoclase, quartz and/or carbonate. Chalcopyrite tends to be finely disseminated and is usually associated with magnetite, intimately associated with pyrite, and forms pseudomorphs after pyrite. Pyrite-chalcopyrite intergrowths are prevalent along fractures. Bornite is often found in magnetite-chalcopyrite blebs and veinlets, which often display epidote halos.

Copper content is quite variable, and precious metal values are low but anomalous. Channel sampling of an adit yielded 0.901 per cent copper, 0.141 gram per tonne gold and 13.66 grams per tonne silver over 14 metres (Assessment Report 7100, page 8, adit no. 1) Channel sampling of a trench, 90 to 190 metres west of the adit, yielded 0.237 per cent copper, 0.095 gram per tonne gold and 3.37 gram per tonne silver over 35 metres (Assessment Report 7100, page 9, trench no. 12). Trenching and sampling of the northern margin of the breccia pipe yielded gold values of up to 1.97 grams per tonne over 6 metres (Assessment Report 8743, Figure 3.)

PAYCINCI prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Four kilometres north

Hypogene and supergene copper mineralization occurs in green laharic breccia, near the contact with red laharic breccia to the east. This mineralization consists primarily of disseminated and fracture controlled chalcocite and native copper, accompanied by lesser malachite and azurite, and minor chalcopyrite, bornite, cuprite and pyrite. Drilling indicates chalcopyrite becomes more abundant at depth at the expense of chalcocite.

This mineralization is exposed along the crest and east flank of a small northerly trending ridge, over a north-south distance of 400 metres.

Drill indicated reserves are 54,000 tonnes grading 0.876 per cent copper (Assessment Report 7654, page 1). Precious metal values are generally low. Six rock samples analysed 1.1 to 2.4 per cent copper, 0.005 to 0.010 gram per tonne gold and 1.3 to 5.7 grams per tonne silver (Assessment Report 14108, Figure 5, samples 2051 to 2056).

AU-WEN prospect (Intrusion-related Au pyrrhotite veins; Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE144

Six kilometres north-northeast

Mineralization: Property Area (cont'd)**AU-WEN** prospect (cont'd)

Pyrite, pyrrhotite, chalcopyrite and arsenopyrite are disseminated sporadically in the tuffaceous rocks and argillite, up to about 1 per cent, and also occur in fractures (Assessment Reports 11241, 16008). Native gold is associated with the sulphides in narrow quartz-filled fractures in these rocks (Assessment Report 16008). Minor malachite occurs in volcanics. The overall extent of the mineralization has not been determined, although diamond drilling has demonstrated that minor pyrite, pyrrhotite and chalcopyrite, disseminated or associated with quartz or calcite fracture veinlets, does persist below the surface (Assessment Reports 11241, 16008).

Gold values in the area are generally low, but high values have been obtained from trench sampling and drill core at the main showing. Significant gold assays in chip samples range from 6.8 grams per tonne over 5.1 metres to 10.8 grams per tonne over 4.9 metres (Assessment Report 16008). Grab and select samples assayed between 14.4 and 91 grams per tonne gold (Assessment Reports 5766, 16008). The best drill core intersection assayed 4.97 grams per tonne gold over 1.5 metres (Assessment Report 16008).

Copper is associated with the gold mineralization; one rock sample from the main trench yielded 0.29 per cent copper (Assessment Report 7293). Another sample yielded 26 grams per tonne silver and 0.14 per cent lead (Assessment Report 7293). Silver in diamond drill core is generally under 1 gram per tonne (Assessment Report 11241).

ELK past producer (Intrusion-related Au pyrrhotite veins; Polymetallic veins Ag-Pb-Zn +/-Au; Au-quartz veins)

MINFILE 092HNE096

Eighteen kilometres east

Gold-silver mineralization on the Elk property is hosted primarily by pyritic quartz veins and stringers in altered pyritic granitic and, less frequently, volcanic rocks.

Crosscutting relationships indicate that the veins are Tertiary in age; they may be related to Tertiary Otter intrusive events.

To date, mineralization has been located in four areas on the Elk property: Siwash North, South Showing (092HNE261), North Showing (092HNE281) and Siwash Lake (092HNE041, 295).

The Siwash Lake zone is 800 metres south of the Siwash North deposit; the North Showing and South Showing areas are 2 and 3 kilometres south of Siwash North respectively.

In the Siwash North area, gold occurs in veins measuring 5-70 centimetres wide, hosted by a zone of strongly sericitic altered granite and, in the west, volcanic rocks. In general, the mineralized zone trends east-northeast with southerly dips from 20-80 degrees (from east to west), and appears to be related to minor shearing. Quartz veining occurs in a number of parallel to subparallel zones.

Each zone consists of one or more veins within an elevation range of 5 to 10 metres that can be correlated as a group to adjacent drill holes. In the eastern parts of the area, up to six subparallel zones occur. Five of these zones are consistent enough to be labelled the A, B, C, D and E zones.

Mineralization in the west has been identified in one or locally two zones (the B and C zones). The main mineralized zone (B) is consistent, with only minor exceptions, across the entire drill grid.

Mineralization: Property Area (cont'd)**Elk past producer** (cont'd)

The Siwash North structure has been tested to 335 metres down dip and along a strike length of 925 metres. The zone remains open to depth and along strike.

At surface, supergene alteration has leached out most of the sulphides with some pyrite and chalcopyrite remaining. Mineralization occurs primarily as native gold, occasionally as spectacular aggregates of coarse flakes in frothy quartz (strong pyrite boxwork) or in fractures in the vein. Electrum was noted in one area as very coarse-grained flakes associated with strong manganese staining. Gold is rarely seen in boxworks in sericitic (phyllic) alteration.

In drill core, mineralization has not been affected by supergene processes. Metallic minerals in drill core include pyrite, chalcopyrite, sphalerite, galena, tetrahedrite, maldonite? pyrrhotite and native gold in order of decreasing abundance.

Gold is strongly associated with pyrite and with a blue-grey mineral. Photomicrographs show the gold commonly in contact with this mineral, which may be a gold-bismuth alloy (maldonite?) or a copper-bismuth-antimony sulphosalt.

Gangue mineralogy consists primarily of quartz and altered wallrock fragments. Ankerite is commonly present, with lesser amounts of calcite. Minor barite is also present. Fluorite was noted in one vein as very small (less than 1 millimetre) zoned purple cubes scattered in the quartz.

Stronger alteration generally accompanies higher grade gold mineralization. Seven main types of alteration were recognized in the granitic rocks throughout the property: propylitic, argillic, sericitic, potassium feldspar stable phyllic, phyllic, advanced argillic and silicic.

Locally, potassic alteration, skarnification and silicification are evident, but are relatively minor and do not appear to be related to mineralization.

Propylitic alteration is generally light green with biotite and hornblende altered to chlorite, and plagioclase is saussuritized.

In volcanics, the colour is generally olive green, and the rock is soft. Argillic alteration is exemplified by bleached rock, with plagioclase white and clay-altered; potassium feldspar is slightly altered.

Volcanics are bleached to light green or grey. Sericitic alteration is typically pale green with a micaceous sheen, with plagioclase altered to sericite; trace disseminated pyrite may be present. This type of alteration is often associated with quartz veins and appears to be the lowest grade alteration associated with gold mineralization. It is not recognized in volcanics.

Potassium feldspar stable phyllic alteration is light pink, green or yellowish with potassium feldspar fresh and pink and blocky. Plagioclase and mafic minerals are altered to fine-grained quartz-sericite-pyrite. It often occurs with veins and is associated with gold mineralization; it is not recognized in volcanics.

Phyllic alteration is generally grey, fine-grained quartz-sericite-pyrite alteration usually associated with veins and often gradational to quartz and often auriferous. Advanced argillic alteration is exemplified by most or all of feldspar being destroyed, quartz is "free-floating".

Mineralization: Property Area (cont'd)**Elk past producer** (cont'd)

The alteration is often sheared and white in colour and is often associated with quartz veins. Volcanics are white or blue coloured. Silicic alteration is quartz veining or replacement that is hard with moderate conchoidal fracture. There is a strong symmetrical zoning of alteration around the quartz veins: vein-advanced argillic-phyllitic-potassium feldspar stable phyllic-argillic-propylitic.

Measured geological reserves of the Siwash North deposit are 308,414 tonnes grading 22.17 grams per tonne gold and 24.68 grams per tonne silver using a cutoff grade of 10 grams per tonne gold.

Reserves are based on results from 107 drillholes at 50-metre grid spacings along 804 metres of strike length to 304 metres down dip. All veining intercepts have been adjusted for true width and assays diluted to 2-metre mining widths (George Cross News Letter No. 223 (November), 1991).

The revised drill indicated reserve, based on more realistic open pit and underground mining widths of 0.39 to 0.79 metre with 20.5 grams per tonne gold cutoff grade, is 122,458 tonnes averaging 54.5 grams per tonne gold (George Cross News Letter No. 65 (April 2), 1993).

Surface drilling was done on fences 10-50 metres apart, underground drilling on fences 10 metres apart. Reserve calculations by the company and consultant Roscoe Postle gave the following results (Explore B.C. Program 95/96 - A38):

Probable (undiluted) 16,991 tonnes at 28,200 tonnes at 50.2 g/t gold 26.6 g/t gold

Possible (undiluted) 50,260 tonnes at 66,400 tonnes at 42.0 g/t gold 31.4 g/t gold

The 1996 exploration program consisted of 6873 metres of drilling in 91 holes. The Siwash zone has been traced along a 914 metre strike length and down dip to 245 metres.

Reserves estimated by the company at January 1, 1996 were 121,350 tonnes grading 25.4 grams per tonne gold and 35.3 grams per tonne silver.

These include a diluted, probable open-pit resource of 11,340 tonnes grading 58.97 grams per tonne gold, an underground probable resource below the open pit of 20,225 tonnes grading 26.74 grams per tonne gold, and a further possible underground resource of 89,790 tonnes grading 23.66 grams per tonne gold (Information Circular 1997-1, page 21).

Surface diamond drilling totaling 1413.96 metres in 12 holes was completed on the Siwash Mining lease during 2000 testing the B, WD and Gold Creek West (GCW) zones.

A trenching program was carried out in 2001 in the Siwash East Area consisting of six trenches totaling 202 meters. Almaden Resources and Fairfield Minerals Ltd. merged into Almaden Minerals Ltd. in February, 2002.

In 2002, Almaden undertook a 26 hole surface diamond drill program for a total of 4995.67 metres testing the B, WD, GCW and Bullion Creek zones. During the 2003 field season a 6570 metre, 30 hole, diamond drill program was carried out by Almaden in the Siwash North area testing the WD zone. The WD vein system is located approximately 100 metres north of the Siwash B zone vein and has been tested over a strike length of 610m and down dip for 380m.

Mineralization: Property Area (cont'd)**Elk past producer** (cont'd)

By the end of May 2004, a total of eight mineralized veins had been discovered on the property. Four vein systems had been drilled in the Siwash area: the B system with a strike length of 900 m has been tested down dip to 320 m; the WD zone with a strike length of 650 m has been tested to 370 m down dip; the GCW zone with a strike length of 300 m has been tested to 130 m down dip and the Bullion Creek (BC) zone which has been tested with two holes to a depth of 75 m.

A new 43-101 compliant resource was calculated using drill data for the Siwash B and WD veins, just two of eight known mesothermal vein structures on the property.

Global (bulk-tonnage and underground mineable) measured and indicated resources were reported to total 668,300 tonnes grading 9.66 grams per tonne gold (207,600 ounces) plus an additional 1,317,200 tonnes grading 4.91 grams per tonne gold (207,800 ounces) in the inferred category (News Release, Almaden Minerals Limited, May 28, 2004).

Included in the global figures is a higher grade, underground-mineable resource totaling 164,000 tonnes grading 33.69 g/t gold in the measured and indicated category, plus another 195 200 tonnes grading 16.38 g/t gold in the inferred category.

In 2004 a diamond drill program consisting of 10,265 meters of NQ drilling in 44 holes was completed. As reported by Almaden in 2001, a possible extension to the B and WD vein systems was found roughly two kilometres along strike to the east, on the other side of an area of overburden cover and no outcrop, as part of a trenching program. Grab samples of the vein material taken at surface returned averaged analyses of 31.6 grams per tonne gold and 104.4 grams per tonne silver (News Release, Almaden Minerals Limited, March 4, 2005. This discovery added about two kilometres of prospective, unexplored strike length to the high-grade vein system.

BREW showing (Alkalic porphyry Cu-Au; Subvolcanic Cu-Ag-Au; As-Sb)

MINFILE 092HNE275

Eleven kilometres northeast

The zone has been traced on surface for 400 metres and is 30 to 40 centimetres wide. It is comprised of strongly gossanous clay and fault gouge containing 1 to 2 per cent pyrite. Quartz and quartz-calcite stringers and quartz blebs occur sporadically throughout the zone. A sample of quartz vein material yielded 0.14 gram per tonne gold and 14.4 grams per tonne silver (Assessment Report, 18041, page 8, sample 239774).

MINERALIZATION: PROPERTY

TOM CAT prospect (Volcanic redbed Cu; Subvolcanic Cu-Ag-Au (As-Sb); Porphyry Mo (Low F- type)

MINFILE 092HNE086

Within Tenure 516703

The laharic breccia is erratically mineralized with chalcocite, magnetite, bornite, chalcopyrite, native copper and hematite, as disseminations and fracture coatings. Trenching and diamond drilling has intersected this mineralization over a width of 30 metres and a depth of at least 45 metres.

Mineralization: Property (cont'd)**TOM CAT** prospect (cont'd)

One drillhole analysed 0.32 per cent copper over 45.7 metres (Minister of Mines Annual Report 1965, page 157, hole 1). Two chip samples assayed 2.4 and 1.6 per cent copper over 2.1 and 3.0 metres respectively (Minister of Mines Annual Report 1913, page 223).

BOOMERANG showing (Alkalic porphyry Cu-Au)

MINFILE 092HNE087

Within Tenure 516703

The mineralized zone appears to trend northwest. Three of five rock samples analysed 0.183 to 2.34 per cent copper, 0.4 to 7.9 grams per tonne silver and 0.016 to 0.980 gram per tonne gold (Assessment Report 14141, Drawing 5b, samples 2003, 2205, 2563). A selected sample assayed 14.7 per cent copper, 4.1 grams per tonne gold and 74.1 grams per tonne silver (Minister of Mines Annual Report 1901, page 1183).

Similar mineralization occurs 350 metres northwest, where chalcocite, malachite and azurite form fracture coatings in several narrow, north-striking shears in chloritized diorite.

Additional mineralization is found 200 metres west of the shears, where malachite and chalcocite occur at the intersections of shears striking 060 and 150 degrees in red andesite breccia.

PORTLAND showing (Volcanic redbed Cu)

MINFILE 092HNE088

Within Tenure 516703

The mineralized zone is reported to be over 9 metres wide. A sample from about 100 tonnes of dump material assayed 0.4 per cent copper (Minister of Mines Annual Report 1913, page 223). A sample from an opencut assayed 0.9 per cent copper (Minister of Mines Annual Report 1901, page 1183).

BUNKER HILL showing (Volcanic redbed Cu)

MINFILE 092HNE089

Within Tenure 516703

Copper mineralization is also found 470 metres east-southeast of the trenches, in red volcanic breccia and lahar deposits. Four rock samples analysed 0.229 to 0.857 per cent copper (Assessment Report 14141, Figure 5b, samples 2211, 2285, 2286, 2289).

STRUCTURAL ANALYSIS

The analysis was accomplished making the indicated lineaments on a DEM image hillshade map of Tenure 516703 downloaded from MapPlace. A total of 87 lineaments were marked, compiled into a 10 degree class interval, and plotted as a rose diagram. The UTM centre of the work area is at UTM (NAD 83 Canada) 5528061N, 673040E.

Structural Analysis (cont'd)

Figure 5. Tenure 516703 indicated structures and structural intersections
(Base map from MapPlace)

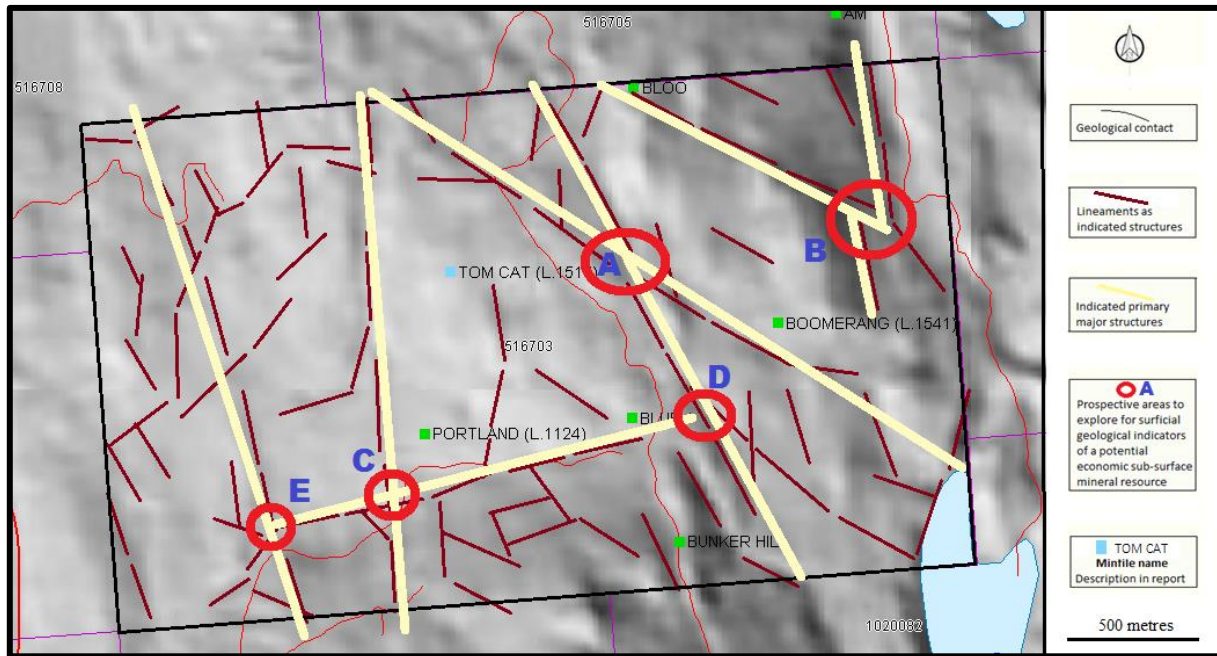
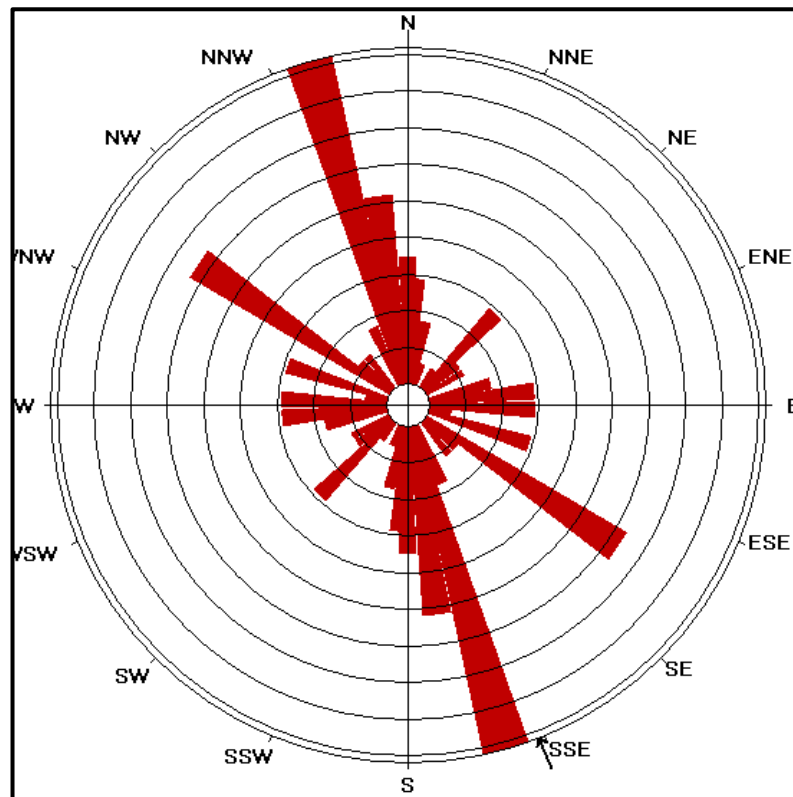


Figure 6. Tenure 516703 Rose Diagram
(Based on Lineaments from Figure 5)



STATISTICS

Axial (non-polar) data

No. of Data = 87

Sector angle = 8°

Scale: tick interval = 2% [1.7 data]

Maximum = 18.4% [16 data]

Mean Resultant dir'n = 158-338

[Approx. 95% Confidence interval = ±28.3°]

(valid only for unimodal data)

Mean Resultant dir'n = 158.5 - 338.5

Circ. Median = 164.0 - 344.0

Circ. Mean Dev. about median = 34.4°

Circ. Variance = 0.28

Circular Std. Dev. = 46.51°

Circ. Dispersion = 5.07

Circ. Std Error = 0.2415

Circ. Skewness = 1.64

Circ. Kurtosis = -1.84

kappa = 0.56

(von Mises concentration param. estimate)

Resultant length = 23.29

Mean Resultant length = 0.2677

'Mean' Moments: Cbar = 0.1955; Sbar = -0.1829

'Full' trig. sums: SumCos = 17.0114; Sbar = -15.909

Mean resultant of doubled angles = 0.2727

Mean direction of doubled angles = 169

(Usage references: Mardia & Jupp, 'Directional Statistics', 1999, Wiley; Fisher, 'Statistical Analysis of Circular Data', 1993, Cambridge University Press)

Note: The 95% confidence calculation uses Fisher's (1993) 'large-sample method'

Figure 7. Structural intersections and Minfiles on Tenure 516703
(Base Map from MapPlace and Google Earth)

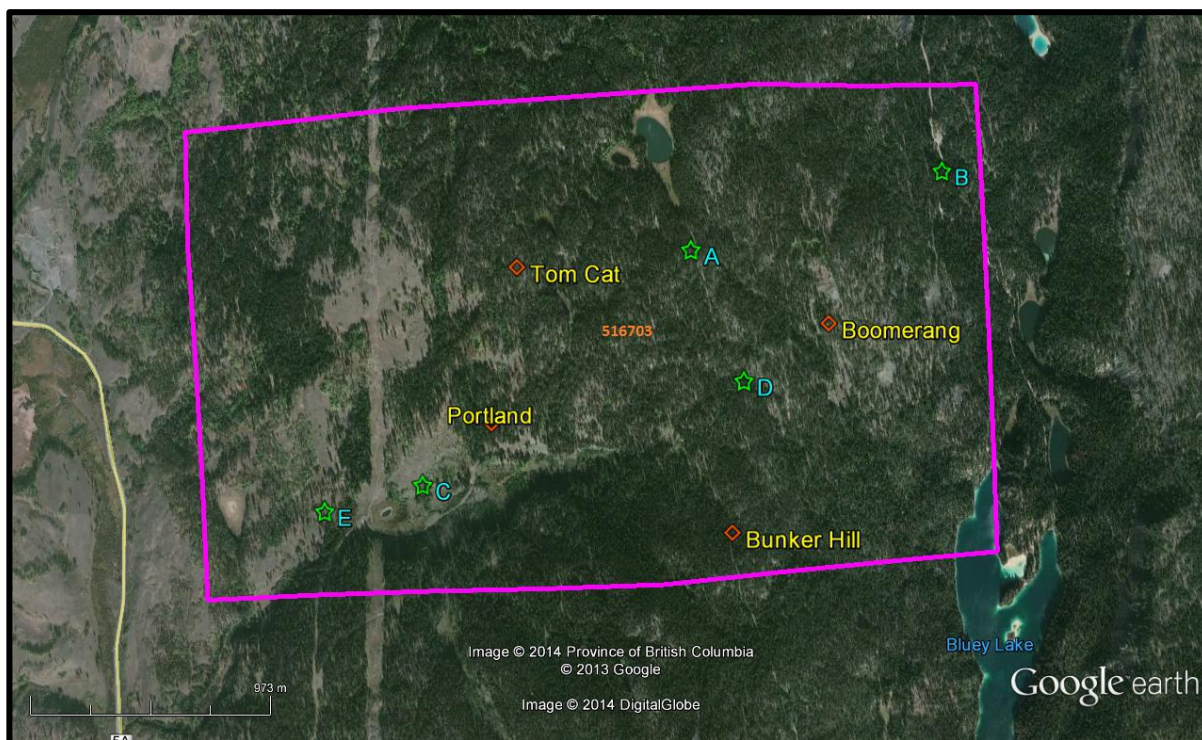


Table 3. Approximate location of Figure 7 structural intersections and Minfiles
(UTM-NAD 83 Zone 10)

Area	UTM East	UTM North	Elevation (metres)
Structural Intersections			
A	673,395	5,528,295	1,238
B	674,415	5,528,606	1,047
C	672,332	5,527,420	1,100
D	673,589	5,527,795	1,186
E	671,943	5,527,325	1,089
Minfiles			
Tom Cat	672,734	5,528,246	1,222
Boomerang	673,920	5,528,006	1,186
Portland	672,613	5,527,655	1,128
Bunker Hill	673,526	5,527,221	1,225

INTERPRETATION and CONCLUSIONS

Northerly, northwesterly, and northeasterly regional structures predominate in the area as indicated by the topographically influenced water courses and the Pennask batholith contacts. The northerly structures are significantly manifest in the northerly trending Kentucky-Alleyne fault system; a portion of which occurs on the subject structurally analyzed Tenure 516703 claim.

There are many examples of these structures as controls to various degrees of mineralization as noted in some of the 11 Minfile properties copied herein from the BC government supported MtOnline website. Perhaps the most noteworthy is the Elk property, a past producer of some 51,460 ounces gold from ore averaging more than three ounces per ton. The property has recently been re-explored by Gold Mountain Mining Corporation resulting in the delineation of a significant gold resource from which a test shipment of 500 tonnes of an average grade of 13.8 grams per tonne was recently made.

The mineral zones on the Elk property are indicative of the significance of structures as mineral controls. In addition to the main productive mineral zone (*Minfile 092HNE096*), the mineral zones on the Elk property tend to be proximally associated with the major north trending Elk structure. This structure is topographically indicated over a distance of at least 25 kilometres from south of the Elk mineral zones to north of the SNOW (*Minfile 092HNE292*) mineral showing.

At the SNOW mineral showing a drill hole intersected minor copper mineralization in weakly to moderately chloritized granite of the Pennask batholith and is indicated near the intersection of the northerly trending Elk fault and the northwesterly trending, Snow fault.

Interpretation and Conclusions (cont'd)

Although the dominant structures play a major role in mineral controls, the location of a cross-structure is more significant as it would be a location of increased structural activity to the development of preferential zones of mineral accommodation such as at the Elk or at the Brew (*Minfile 092HNE275*) where increased mineralization appears to be associated with structural intersections.

The degree of mineralization and thus the mineral resource potential is often dependent on the degree of fracture intensity as at the Brenda past producer (*Minfile 092HNE047*), where the grade of the orebody is a function of fracture (vein) density and of the thickness and mineralogy of the filling material. Mineralization decreases outwardly from the most intensely fractured/mineralized rock and the centre of the main mineral zone.

Thus, the five cross-structural locations delineated on Tenure 516703 are prime areas to explore for surficial indicators of potentially economic sub-surface mineralization. These locations may not be the surficial site of any mineral resource, however could be the location for the transport of any mineralized sub surface hydrothermal minerals to reach the surface and imprint the mineral indicators thereon. These geological indicators may be revealed as minerals and/or alteration products and would be subject to interpretation as economic mineral indicators.

Excluding other variable geological conditions, the structures are essential in the localization of potentially economic mineralization. For mineral deposit types that may occur within the Toni 516703 Claim Group reference is made in the report to the 11 Minfile properties. The location of these referenced Minfile mineral properties are shown on Figure 4.

Respectfully submitted,

Sookochoff Consultants Inc.



Laurence Sookochoff, PEng

STATEMENT OF COSTS

The structural analysis on Tenure 516703 was completed from August 14, 2013 to August 17, 2013 for the following costs.

Laurence Sookochoff, PEng.:3.5 days @ \$1,000.00 /day -----	\$ 3,500.00
Maps -----	750.00
Report -----	<u>3,000.00</u>
	\$ 7,250.00

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092HNE086 – TOM CAT
092HNE087 – BOOMERANG
092HNE088 – PORTLAND
092HNE089 – BUNKER HILL
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CERTIFICATE

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:
That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with an address at 120
125A-1030 Denman Street, Vancouver, BC V6G 2M6.

I, Laurence Sookochoff, further certify that:

- 1) I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
- 2) I have been practicing my profession for the past forty-seven years.
- 3) I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 4) The information for this report is based on information as itemized in the Reference section of this report and from a Tom Cat property examination.
- 5) I have no interest in the Tom Cat property as described herein.
- 6) I am a director of Sierra Iron Ore Corporation.



Laurence Sookochoff, PEng.