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

Assessment Report
Title Page and Summary

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

TOTAL COST: $ 6,700.00

AUTHOR(S): Laurence Sookochoff, PEng

SIGNATURE(S) Laurence Sookochoff

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

YEAR OF WORK: 2015

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5546720 March 14, 2015

PROPERTY NAME: Porcupine

CLAIM NAME(S) (on which the work was done): 526115

COMMODITIES SOUGHT: Copper Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HSE036 / 052 / 054 / 061 / 145 / 147 / 168 / 174 / 203 / 207

MINING DIVISION: Nicola

NTS/BCGS: 092H.097 092H.098 092I.007 092I.008

LATITUDE: 49 ° 58 ' 26 " **LONGITUDE:** 120 ° 33 ' 43 " **(at centre of work)**

OWNER(S):

1) Richard Billingsley

2)

MAILING ADDRESS:

11114 147A Street
Surrey BC V3R 3W2

OPERATOR(S) [who paid for the work]:

1) Richard Billingsley

2)

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11114 147A Street
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PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Pleistocene to Holocene volcanics. Upper Triassic Nicola Group Eastern and Central Volcanic Facies. Regional Kentucky-Fault System. Within Tenure 526115 major northerly and northwesterly faults. Four cross-structures. Epidote alteration in the volcanics. At the Copper Star past producer chalcopyrite, bornite, chalcocite, and native copper are hosted in shear zones or in brecciated fracture zones. A grab sample analyzed 0.7 per cent copper.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 7365 12113 13714 14983 17523 18019 24041 31213

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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	519 hectares	526115	$ 6,700.00
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)			
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:	$ 6,700.00

BC Geological Survey
Assessment Report
35463

RICHARD BILLINGSLEY

(Owner & Operator)

GEOLOGICAL ASSESSMENT REPORT

(Event 5546720)

on a

STRUCTURAL ANALYSIS

on

Tenure 526115

of the 12 Tenure

AG 526115 Claim Group

Nicola Mining Division

BCGS Maps 092H.097/.098, 092I.007/.008

Dates of work

February 15, 2015 to March 14, 2015

Centre of Work

674,808E; 5,538,521N
10 (NAD 83)

Author & Consultant

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Sookochoff Consultants Inc.

Submitted

August 2, 2015

(Amended September 17, 2015)

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ILLUSTRATIONS

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SUMMARY

The 12 claim 4216 hectare AG 526115 claim group ("Property") is located within the Intermontane belt of rocks traversing the extent of British Columbia which hosts some of the most historic and/or currently productive copper mines of North America such as the Copper Mountain, Craigmont, Afton/New Afton, and the Highland Valley/Lornex; all within 76 kilometres of the Property.

The AG 526115 claim group is located within the historic Aspen Grove Camp in southern British Columbia where mineral exploration has been explored for since the early 1900's. The result was the discovery of an abundance of variable sized workings on mineral zones occurring predominantly as skarns, volcanogenic, polymetallic veins, and as porphyry mineralization within the Central Belt of the Nicola volcanics which hosts a greater abundance of mineral occurrences than the paucity of mineral occurrences within the Eastern Belt and the Western Belt.

As indicated by the BC government supported MapPlace geological maps the AG 526115 Claim Group covers Nicola Group andesitic rocks of the Central Volcanic Facies (uTrNC) adjacent and west of the conformable contact with the basaltic rocks of the Eastern Volcanic Facies (uTrNE) to the west. Late Triassic to Jurassic unnamed granodioritic stocks (LTrJdr) intrude the volcanics and some are capped by Pleistocene and Eocene alkalic volcanic rocks (Qvk).

Continuous, discontinuous, and splay faults of the major Kentucky-Alleyne Fault system are in a contact relationship with portions of the volcanics and stocks and all of the northern extension of a tear-shaped formation of Cretaceous unnamed sedimentary rocks on Tenure 526115.

In the structural analysis of Tenure 591361, four cross-structures were delineated from the two major northerly and two major northwesterly trending indicated structures. These cross-structures would be central as a breccia zone or pipe to an expansive zone of pervasive brecciation and fracturing. Any recurrent movements along these fault, and the healing of the newly created breccia by the repeated influx of solidifying mineral solutions mineral would continually expand and/or enrich the porphyritic mineral zones as at the productive Highland Valley and Copper Mountain mineral deposits and at the formerly productive Brenda Mine where structures are the mineral controlling features.

At the AG 526115 Claim Group, the northerly structures may be en-echelon or splay structures from the regional Kentucky-Alleyne fault system which are manifest as contacts between the Nicola volcanics and the Cretaceous sediments (Figure 4}.

An indication of the potential of a mineral resource in the immediate area of the structurally analyzed Tenure 526116 is at the proximal CM mineral zone *(Minfile 092HNE174)* where a drill hole intersected a mineral zone of 36 grams per tonne gold over 1.4 metres within a pyritic argillite. The volcanic/argillite contact reportedly extends for 1,500 metres.

The cross-structures would be the most prospective areas to explore for surficial geological indicators of a potential concealed mineral resource that would be related to an underlying intrusive and the Nicola volcanics as indicated in Figure 8. These geological indicators may be revealed as pathfinder minerals, minerals and/or alteration products that would be subject to interpretation as economic mineral indicators to advanced exploration.

INTRODUCTION

During February and March 2015 a structural analysis was completed on Tenure 526115 of the 12 claim AG 526115 claim group ("Property"). The purpose of the program was to delineate structures which may be integral in geological controls to potentially economic mineral zones that may occur on Tenure 526115 or other claims of the Property.

Information for this report was obtained from sources as cited under Selected References and from mineral exploration work the writer has done in the Aspen Grove Camp since the 1980's.

PROPERTY LOCATION and DESCRIPTION

Location

The Property is located within BCGS Maps 092H.097/.098 and 092I.007/.008 of the Nicola Mining Division, 204 air kilometres east-northeast of Vancouver, 80 kilometres south of Kamloops, and 22 kilometres south of Merritt in southwestern British Columbia.

Figure 1. **Location Map**

Description

The Property is comprised of 12 claims covering an area of 4216.0135 hectares. Particulars are as follows:

Table I. **Tenures of the AG 526115 Claim Group**

Tenure Number	Type	Claim Name	Good Until	Area (ha)
504332	Mineral		20150826	186.775
504333	Mineral		20150826	623.12
504335	Mineral		20150826	457.158
504336	Mineral		20150826	581.861
504337	Mineral		20150826	623.111
524872	Mineral	RED JAY A	20150826	20.7625
524873	Mineral	PORCUPINE 1	20150826	518.847
526115	Mineral	RED JAY WEST	20150826	519.249
530397	Mineral	DOR 2	20150826	186.864
530401	Mineral		20150826	124.577
530402	Mineral		20150826	311.4
530407	Mineral	ROBIN	20150826	62.289

*Upon the approval of the assessment work filing, Event 5546720.

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access

Access to the Property is southward from Merritt via Highway 5A/97C for 16 kilometres to the northern boundary of Tenure 558838 of the Property. Secondary roads provide access to most general areas of the Property.

Climate

The Property 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°C and average 25°C with the winter temperatures reaching a low of -10°C and averaging 8°C. On the Property snow cover on the ground could be from December to April and would not hamper a year-round exploration program.

Accessibility, Climate, Local Resources, Infrastructure and Physiography *(cont'd)*

Local Resources & Infrastructure

Merritt, and/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

Tenure 526115 covers an area of predominantly low to moderate slopes with local forested areas. Elevations range from 925 metres within a creek valley in the south-central to 1,122 metres in the extreme southwest.

HISTORY: PROPERTY AREA

The history of the more significant mineral MINFILE reported showings, prospects, and producers peripheral to the Property (*Figure 4*) is reported as follows. The distance from the Property is relative to Tenure 526115 which is the subject of the structural analysis.

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)
MINFILE 092HSE001
Seventy six kilometres south

Development by Granby Consolidated Mining, Smelting and Power Company Ltd. during the 1950's and by Newmont Mining Corporation of Canada during 1968-69, outlined two areas of economic grade mineralization centred on Pit 1 and Pit 2. Most of the ore from the Copper Mountain mine came from glory hole and underground mining, but also included production from several open pits mined from 1952 to 1957. The mine closed in 1957. From 1959 through 1962 the mine was leased and small amounts of ore shipped.

In 1977-1978 the Ingerbelle mine (092HSE004) and Copper Mountain mine consolidated operations (the Ingerbelle open pit and mill are across the Similkameen River, west of the Copper Mountain mine). Production from the Ingerbelle orebody commenced in 1972 and mining in the Ingerbelle pit was completed in August 1981. With the installation of an ore conveyor across the Similkameen River canyon, the delivery of Copper Mountain ore from Pit 2 to the Ingerbelle mill began on a limited scale in October 1980, but full production was not implemented until September 1981 after the Ingerbelle orebody was depleted. The mining operation is currently called the Similco mine.

In 1995, with support from the Explore B.C. Program, Similco Mines Ltd. completed a modest program of geophysical survey and trenching on the P-4 zone located immediately east of Wolf Creek. This program, consisting of 9.82 kilometres of ground IP, 45 rock samples and 344 metres of excavations in 14 trenches, was designed to ground test airborne geophysical anomalies from earlier surveys

Results were disappointing in that IP anomalies were found to be due to 1-3 per cent disseminated pyrite in mildly propylitically altered Nicola volcanics. No trace was found of potassic or albitic alteration, or of Lost Horse intrusions, commonly associated with economic copper mineralization.

In June 1996 copper prices took a sudden and unpredictable fall as a result of events involving trading irregularities on world markets.

Figure 2. **Property Location**
(from MapPlace & Google Earth)

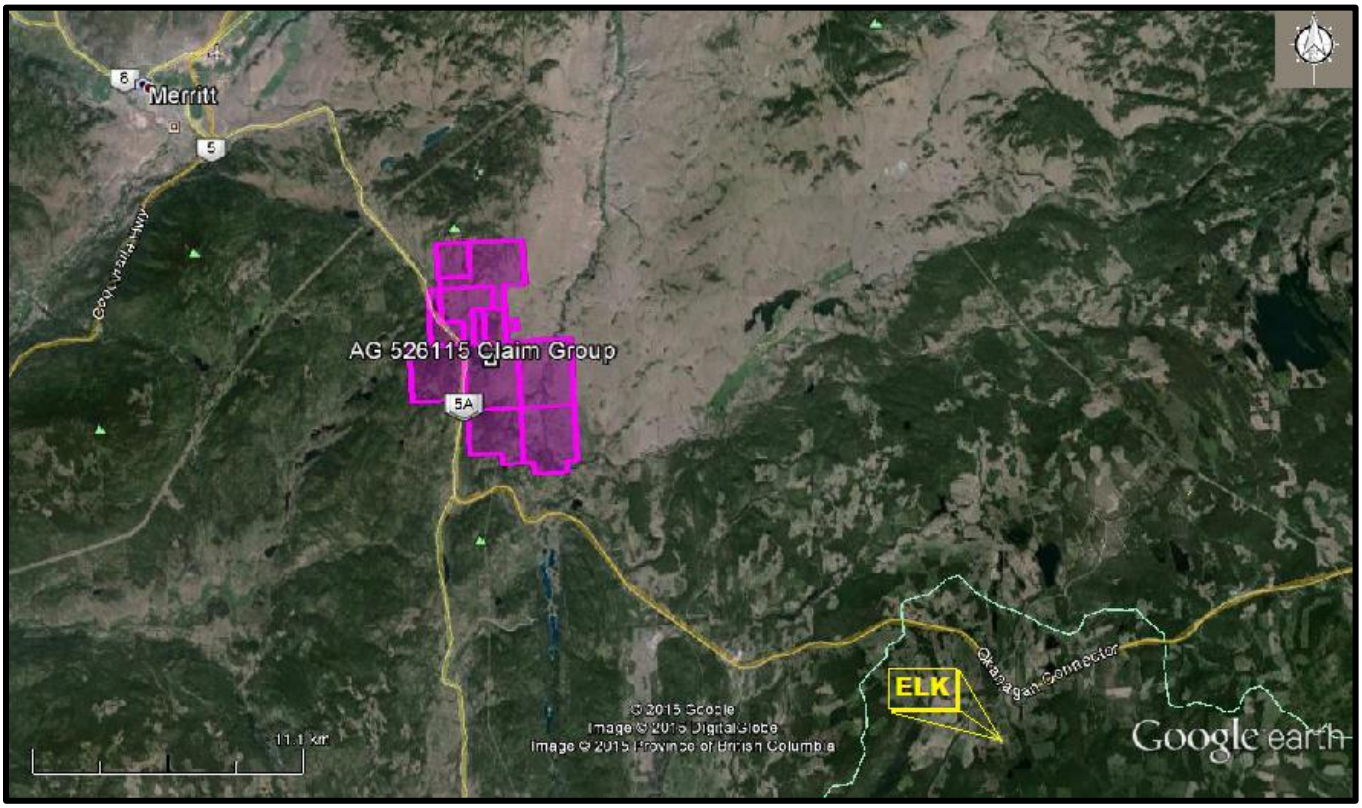
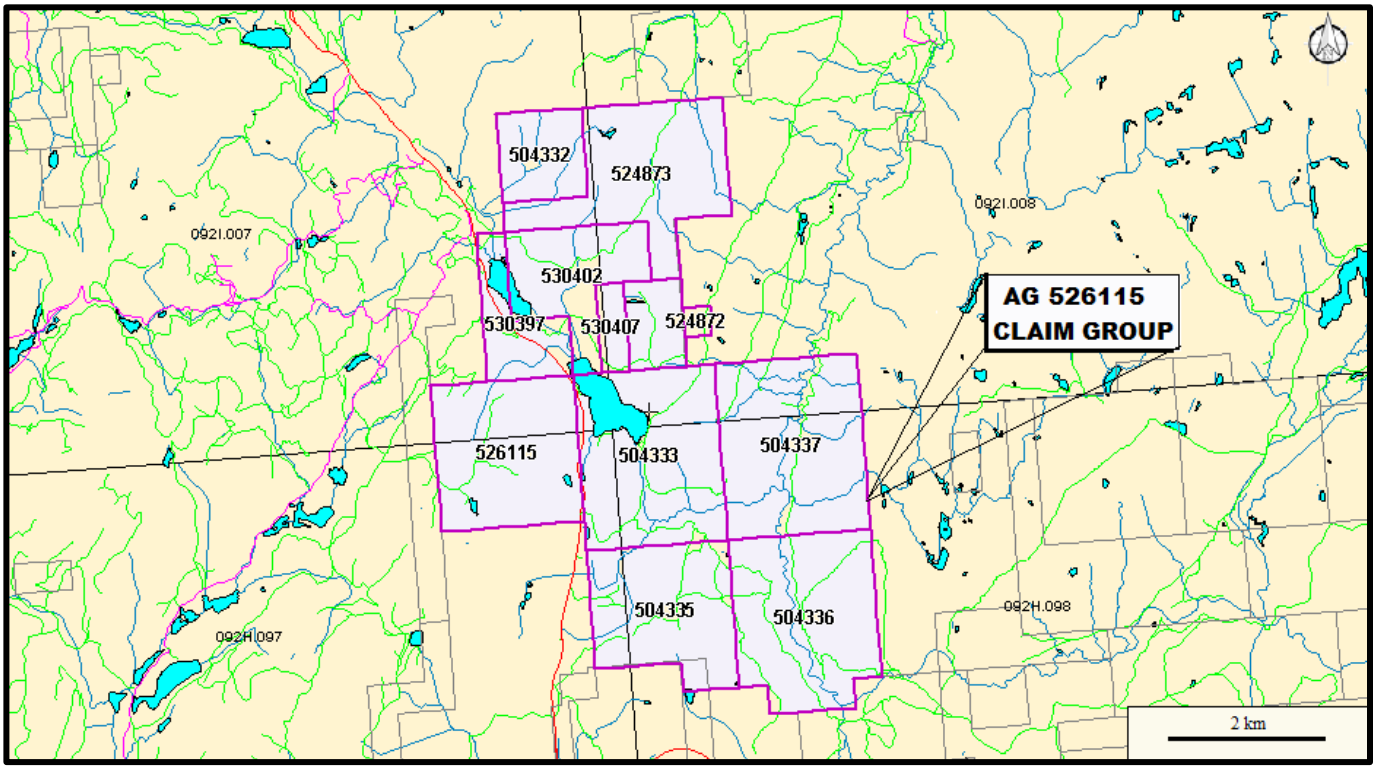


Figure 3. **Claim Map**
(Base map from MapPlace)



History: Property Area *(cont'd)*
Copper Mountain *producer (cont'd)*

This, coupled with the inability of Similco to obtain attractive forward prices for its 1997 production and significant capital investment required to commence mining operations on the Copper Mountain side, resulted in the decision to proceed with an orderly shutdown and to place the operation on a care and maintenance basis. Similco ceased mining operations on November 8, 1996 and milling of residual ore was completed by November 12, 1996. Production compared favourably with 1995 in spite of the shutdown. The operation went on care and maintenance status on November 15, 1996.

Copper Mountain Mining Corporation commenced production on June 4, 2011 (News Release June 6, 2011).

MAL prospect (Cu skarn; Fe skarn; Au skarn)
MINFILE 092HNE002
Six kilometres east

Initial work consisted of diamond drilling and trenching in the early 1960s on the main showing (Malachite 1 2 and Chalcocite 1-2 claims), on which the occurrence is centred. This is located on access road number 5116, 1 kilometre south of Quilchena Creek, 11.5 kilometres east-northeast of the community of Aspen Grove. A second showing, smaller and less significant but with the same characteristics, is located 1 kilometre to the southwest (Malachite 7, 092HNE269).

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

HIGHLAND VALLEY COPPER producer (Porphyry Cu+/-Mo+-Au)
MINFILE 092ISW012
Fifty-eight kilometres northwest

Highland Valley Copper was created in mid-1986 by bringing together the Highland Valley mining operations of Lornex Mining Corporation Ltd. and Cominco Ltd. into a new single entity, structured as a partnership.

On the south side of the valley was the Lornex mine which started mining in 1972. In 1981, the Lornex concentrator had been expanded to become one of the largest in the industry.

On the north side was Bethlehem Copper (092ISE001) which started mining in 1963. In 1981, this operation was absorbed by Cominco who already owned the Valley orebody (092ISW012) located west of the Lornex pit on the south side of the valley. Mining of the original Bethlehem Copper pits ceased in 1982.

Production from the Lornex mine (092ISW045) was combined with the Valley operations in 1987.

The Highmont mill on the south side of the valley was acquired in 1988 when Highmont Mining Company joined the partnership. This mill had been closed down in 1984 when the Highmont deposit (092ISE013) became uneconomical.

Lornex Mining Corporation Ltd. was wound up at the end of 1988 with the result that Rio Algom Limited, Teck Corporation and Highmont Mining Company obtained direct participation in the cash flow from the partnership.

History: Property Area *(cont'd)*
Highland Valley Copper *producer (cont'd)*

In 1995, with Explore B.C. Program support, Highland Valley Copper carried out 197 line kilometres of high-powered induced polarization surveys for very deep penetration, and drilled 1701 metres in 4 holes. This work was done on the Lornex SW Extension, Roscoe Lake and JA zones.

No anomalies of merit were detected in Lornex SW Extension, and Roscoe Lake gave only limited encouragement. IP work on the JA zone detected an anomaly extending to the south, well beyond the limits of known mineralization, and another anomaly 2000 by 1500 metres in size at the east end of the grid. Both anomalies warrant drill testing (Explore B.C. Program 95/96 - M80).

At the end of 1996, mine plans called for another 200 metres in depth in the Valley pit to the 2008. In addition, the partnership may consider mining the remaining 120 million tonnes grading 0.33 per cent copper estimated to exist in the Lornex pit (Information Circular 1997-1, page 8).

Highland Valley Copper suspended mining on May 15, 1999; they resumed August 30, 1999.

In September 2005, Highland Valley announced that mine life would be extended by five years to 2013. Very late in the year, Teck Cominco also announced that it is considering building a modern hydrometallurgical refinery on site.

Most ore comes from the Valley pit, augmented by a small amount from the Lornex pit. Following a successful 300,000 tonne bulk sample test, the Highmont East pit, closed since the mid-1980s, was re-opened in the fall of 2005 to take advantage of higher molybdenum prices. In addition, exploration drilling was conducted nearby in the Highmont South area and results are being evaluated.

GOLDEN SOVEREIGN prospect (Volcanic redbed Cu)
MINFILE 092HNE072
One hundred metres south

The prospect was periodically explored between 1900 and 1913. Nine tonnes of ore grading 5.0 per cent copper were mined in 1916, likely from the high-grade shear zone on the Golden Sovereign claim (Lot 1528). Snowflake Mining Company Ltd. examined the occurrence in 1981.

DOR showing (Porphyry Cu+/-Mo+-Au)
MINFILE 092ISE164
100 metres east

The Dor showing is located 1.8 kilometres north east of Courtney Lake, approximately 18.3 kilometres south east of Merritt.

A number of historic trenches and adits, of unknown age, occur on the property. In the late 1980's Redding Gold Corp. explored the showing. In 2004, G. Diakow prospected the showing under the Fox claims of the Double Loon property.

TINMILSH LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE168
100 metres west

The Tinmilsh Lake showing is 700 metres northeast of the north end of Tinmilsh Lake, 300 metres west of Highway 5 and 5.0 kilometres north of Aspen Grove.

***History: Property Area** (cont'd)*

KIT showing (Alkalic porphyry Cu-Au; Porphyry Mo (Low F type))
MINFILE 092HNE270
Two kilometres east

The Kit showing is exposed on the north bank of Quilchena Creek, 2.0 kilometres east-northeast of the creek's confluence with Pothole Creek and 7.8 kilometres northeast of Aspen Grove. The intrusive was first prospected for molybdenum by J.E. Bate in 1915. Marengo Mines Ltd. excavated one trench, 60 metres long, and drilled two holes in 1967

SNOWFLAKE 7 showing (Volcanic redbed Cu)
MINFILE 092HNE278
100 metres west

The Snowflake 7 showing is 400 metres southwest of Quilchena Creek and 5.5 kilometres northeast of Aspen Grove.

HISTORY: PROPERTY

The history of the more significant mineral MINFILE reported showings and prospect within the Property (*Figure 4*) are reported as follows.

COPPER STAR past producer (Volcanic redbed Cu)
MINFILE 092HNE036
Within Tenure 504333

A small amount of production from the old workings is reported in 1915, when 41 tonnes of hand-sorted ore were shipped to a smelter. According to the returns, this shipment graded 8.7 per cent copper and 75.4 grams per tonne silver (Minister of Mines Annual Report 1915, Ag 227). Tanjo Mines Ltd. completed geological, geophysical and soil geochemical surveys over the showings between 1970 and 1972. Similar surveys were conducted by Redding Gold Corporation in 1988.

TAB prospect (Volcanic redbed; Alkalic porphyry Cu-Au)
MINFILE 092HNE052
Within Tenure 504335

The Tab occurrence covers a small group of showings of copper mineralization in part of the historical Aspen Grove copper camp, between Merritt and Princeton, where exploration dates back to the turn of the twentieth century. It is centred on a zone of mineralization called Zone 1 in Assessment Report 9386. This is located 1 kilometre east of Highway 5, about 4 kilometres north of the community of Aspen Grove, 700 metres northwest of the northern end of Tule Lake. The Blue Jay prospect (092HNE105) is about 500 metres to the north.

PORCUPINE developed prospect (Volcanic redbed Cu)
MINFILE 092ISE054
Within Tenure 504332

***1968**: Amalgamated Resources Ltd. completed a geochemical survey (AR 1,595) over ground covered by the Porcupine shaft.*

History: Property Area *(cont'd)*
Porcupine *(cont'd)*

1978*: Burdos Mines Ltd. completed a VLF-EM survey (AR 7,043) over an area which covered the Porcupine shaft. The results indicated that the Porcupine shaft is located 50 metres west of the northern end of a 450 metre long 020 trending anomaly; the strongest anomaly of the survey.*

1979*: Pentagon Resources Ltd. completed 5 diamond drill holes totalling 444.4 metres (AR 7,876).*

1999*: Corbett Lake Minerals, Inc. completed prospecting and soil sampling (AR 26,232).over a localized area approximately 500 metres south of the Porcupine shaft*

2009*: Etna Resources Ltd. completed geological, geophysical, and geochemical surveys (AR 31,213) on the Aspen Grove property which included ground covered by the Porcupine 559067 Claim Group, the subject of this report. Specific to the exploration completed was a localized area which included the Porcupine mineral showing which was held almost continuously by individuals and/or companies, and has been a focus of exploration since the early 1900's.*

JUNE prospect (Cu skarn; Volcanic redbed Cu; Fe skarn; Alkalic porphyry Cu-Au)
MINFILE 092HNE061
Within Tenure 504336

The June occurrence consists of minor copper mineralization in part of the historical Aspen Grove copper camp, between Merritt and Princeton, where exploration dates back to the turn of the twentieth century. It is centred 400 metres west of Quilchena Creek, 3.2 kilometres east of Highway 5A, 6 kilometres northeast of the community of Aspen Grove. The June claims appear to overlap with the Ski claims, which contain mineralization covered by the Court 1 (092HNE147) and Snowflake 7 (092HNE203) occurrences.

The Cone occurrence is a minor copper showing in part of the historical Aspen Grove copper camp, between Merritt and Princeton, where exploration dates back to the turn of the twentieth century. It is located just northeast of the former Ski group of claims, 3 kilometres east of Quilchena Creek, 9.5 kilometres northeast of the community of Aspen Grove (Bulletin 69; Assessment Report 925).

COURT 1 showing (Volcanic redbed Cu)
MINFILE 092HNE147
Within Tenure 504337

The Court 1 occurrence is a minor copper showing in part of the historical Aspen Grove copper camp, between Merritt and Princeton, where exploration dates back to the turn of the twentieth century. It is located on the former Ski group of claims (particularly Ski 13-16), on a tributary of Quilchena Creek, 3.5 kilometres east of Highway 5A, 7.5 kilometres northeast of the community of Aspen Grove (Assessment Report 925; Preliminary Map 15; Bulletin 69).

CM prospect (Polymetallic veins Ag-Pb-Zn+/-Au; Intrusion-related Au pyrrhotite veins; Volcanic redbed Cu)
MINFILE 092INE174
Within Tenure 504335

History: Property Area *(cont'd)*
CM (cont'd)

The CM occurrence is a showing of copper-gold-silver mineralization in part of the historical Aspen Grove copper camp, between Merritt and Princeton, where exploration dates back to the turn of the twentieth century. It is centred on a diamond-drill hole which intersected significant mineralization in 1983; this hole was later discovered to be only 40 metres away from the 1967 diamond- drill hole which discovered the mineralized zone when it was part of the CM claims (Assessment Reports 12113, 14983, 17523; George Cross News Letter 1967). The occurrence is located 2.3 kilometres east of Highway 5A, about 6 kilometres north of the community of Aspen Grove.

This prospect was first discovered by Vananda Explorations Ltd. and Merritt Copper Company Ltd. in 1967, when three diamond-drill holes totalling 438 metres and one percussion hole, 248 metres deep, were drilled to test a geophysical anomaly. The deposit was rediscovered by Laramide Resources Ltd. in 1983, with the drilling of 12 holes totalling 996 metres. An additional 6 holes totalling 577 metres were drilled by Lornex Mining Corporation in 1986. Gerle Gold Ltd. also conducted 1543 metres of diamond drilling in 18 holes in 1987 and 1988. Total drilling between 1983 and 1988 amounts to 3801 metres in 41 holes.

SKI prospect (Volcanic redbed Cu)
MINFILE 092HNE203
Within Tenure 504336

The Ski prospect is exposed along the east bank of Quilchena Creek, 2.4 to 2.7 kilometres north-northwest of Pothole Lake and 6 kilometres northeast of the community of Aspen Grove. This prospect was first explored by Chataway Exploration Co. Ltd. The company conducted geological mapping, soil sampling geophysical surveying, trenching and 302 metres of diamond drilling in two holes in 1966 and 1968. An additional three holes totalling 90 metres were drilled by Ballinderry Explorations Ltd. in 1973. The occurrence was prospected and magnetically surveyed by Newconex Canadian Exploration Ltd. in 1974. Laramide Resources Ltd. sampled and mapped the deposit in 1985.

SNOWFLAKE 10 showing (Volcanic redbed Cu)
MINFILE 092HNE267
Within Tenure 5504336

This showing is 550 metres west of Quilchena Creek and 6.3 kilometres northeast of Aspen Grove.

GEOLOGY: REGIONAL

The Aspen Grove geological district is located within the regional Quesnel Trough, a 30 to 60, km wide belt of Lower Mesozoic volcanic and related strata enclosed between older rocks and much invaded by batholiths and lesser intrusions (Campbell and Tipper, 1970). The southern part is the well-known Nicola belt, continuing nearly 200 km to its termination at the U.S. border and containing the important copper deposits of Highland Valley, Craigmont, Copper Mountain, Afton, in addition to the historic Hedley gold camp.

The Nicola Group has been divided into Western, Central, and Eastern belts on the basis of lithology, lithogeochemistry and by major fault systems. Variation from calc-alkaline to shoshinitic compositions from west to east has been interpreted to reflect eastward dipping subduction in the Nicola arc.

GEOLOGY: PROPERTY AREA

The geology of the more significant mineral MINFILE reported showings, prospects, and producers peripheral to the Property (*Figure 4*) is reported as follows. The distance from the Property is relative to Tenure 526115 which is the subject of the structural analysis.

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)

MINFILE 092HSE001

Seventy six kilometres south

The regional geological setting is characterized by major north-striking high-angle faults which form an ancient, long-lived rift system that extends from the United States border to at least 160 kilometres north. This system was the locus of a long, narrow marine basin in which Nicola Group rocks were deposited during Triassic time, and it then accommodated basins of continental volcanism and sedimentation in Early Tertiary time. The central part of the Nicola basin is marked by an abundance of high-energy, proximal volcanic rocks and contains a large number of coeval, comagmatic, high-level plutons with several associated copper deposits.

A group of such plutons, some of which are differentiated, are known as the Copper Mountain Intrusions The copper deposits of the Copper Mountain camp occur chiefly in a northwest-trending belt of Upper Triassic Nicola Group rocks, approximately 1100 metres wide and 4300 metres long, that is bounded on the south by the Copper Mountain stock, on the west by a major normal fault system known as the Boundary fault, and on the north by a complex of dioritic to syenitic porphyries and breccias known as the Lost Horse complex. Copper mineralization diminishes markedly to the east, where the Copper Mountain stock and Lost Horse complex diverge sharply.

The Nicola rocks in the vicinity of Copper Mountain are andesitic to basaltic and are composed predominantly of coarse agglomerate, tuff breccia and tuff, with lesser amounts of massive flow units and some lensy layers of volcanic siltstone. These rocks were previously included with the Wolf Creek Formation (Geological Survey of Canada Memoir 171).

The coarse fragmental rocks, which locally contain clasts up to 35 centimetres in diameter, rapidly grade to the southeast and south into massive flows, abundant waterlain tuff and some pillow lava. This distribution of coarse fragmental volcanics, and their spatial association with the porphyry breccia complex and with the copper deposits indicate that one or more Nicola volcanic centres were localized close to the Lost Horse complex. It also indicates the close relationship between copper mineralization and Nicola magmatism in this camp.

West of the Boundary fault, the Nicola Group consists of intercalated volcanic and sedimentary rocks that include massive and fragmental andesites, tuff and generally well-bedded calcareous shale, siltstone and sandstone.

The Copper Mountain Intrusions include the Copper Mountain, Smelter Lake and Voigt stocks. These plutons form a continuous alkalic-calcic rock series ranging in composition from pyroxenite to perthosite pegmatite and syenite. The Copper Mountain stock is a concentrically differentiated intrusion, elliptical in plan, and approximately 17 square kilometres in area. Its major axis is 10 kilometres long and strikes 300 degrees. The stock is zoned, with diorite at its outer edge grading through monzonite to syenite and perthosite pegmatite at the core. The two smaller satellites, the Smelter Lake and Voigt stocks, show no differentiation, but are similar in composition to the outer phase of the Copper Mountain stock.

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

***Copper Mountain** producer (cont'd)*

The Lost Horse complex is approximately 4300 metres long and 760 to 2400 metres wide, and consists of porphyries and porphyry breccias which range in composition from diorite to syenite, showing widespread but variable albitization, saussuritization and pink feldspar alteration.

These porphyries are not a continuous mass, but are a complex of dykes, sills and irregular bodies. Some phases of the complex are mineralized, but others, such as some major dykes, are clearly post-mineral.

Radiometric age dates on the Lost Horse complex, the Smelter Lake and Voigt stocks, and on sulphide-bearing pegmatite veins indicate that the apparent age of these intrusions and of the associated mineralization is Early Jurassic (Bulletin 59, page 43; Canadian Journal of Earth Sciences, Volume 24, page 2533).

Nicola Group rocks near Copper Mountain exhibit secondary mineral assemblages which are characteristic of greenschist facies, or of albite-epidote hornfels.

The volcanic rocks have widespread epidote, chlorite, tremolite-actinolite, sericite, carbonate and locally biotite and prehnite. In the immediate vicinity of the Copper Mountain stock, a narrow aureole of contact metamorphism, generally less than 60 metres wide, overprints the above assemblages and is characterized by a widespread development of granoblastic diopsidic pyroxene, green hornblende, brown to reddish biotite, abundant epidote, intermediate plagioclase and some quartz.

In the narrow belt of Nicola rocks, between the Ingerbelle mine (092HSE004) to the west and Copper Mountain, the alteration differs and, where best developed, involves widespread development of biotite, followed by albite-epidote, with subsequent local potash feldspar and/or scapolite metasomatism in both Nicola rocks and Lost Horse intrusions. The feldspar and scapolite metasomatism is characterized by intense veining and is controlled by the presence and intensity of fractures and by the proximity of large bodies of Lost Horse intrusive rocks.

The area near Copper Mountain is characterized by brittle deformation which produced a large number of faults and locally, intense fracturing. Very broad, northerly trending folds have been recognized or postulated at widely-spaced localities, but these folds decrease quickly in amplitude and down section. The area is dominated regionally by well-developed, northerly striking, high-angle faults which are best described as forming a rift system. Copper Mountain is dominated by strong easterly and northwesterly faulting.

The narrow belt of Nicola rocks between Ingerbelle and Copper Mountain, confined between the Copper Mountain stock and the Lost Horse complex, is highly faulted and fractured, but does not appear appreciably folded. The strata are mostly flat-lying or very gently dipping where marker beds exist, and the few areas of steep dips can best be explained as blocks tilted by faulting. Faults in this area have been grouped in order of decreasing relative age of their latest movement into: easterly faults (Gully, Pit), "mine breaks", northwest faults (Main), northeast faults (Tremblay, Honeysuckle) and the Boundary fault. Of these, the Boundary fault is part of the regional rift system; the others appear to be local structures, the genesis and history of which are closely related to the evolution of the Copper Mountain Intrusions (Canadian Institute of Mining and Metallurgy Special Volume 15).

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

***Copper Mountain** producer (cont'd)*

Three major orebodies are confined to a 1100 by 4300-metre belt. Numerous other occurrences of copper mineralization related to the Copper Mountain Intrusions are found over an area with maximum dimensions of 10 by 11 kilometres.

The Pit 1 (Princess May) orebody lies in a chalcopyrite zone immediately northwest of the underground mine.

It is 700 metres long and up to 300 metres wide, with open pit ore extending to a maximum depth of 170 metres. The bulk of the ore was emplaced along the Main fault in massive and fragmental volcanic rocks above the lower bedded tuff horizon. Recognizable pre-ore porphyritic intrusive rocks are scarce. Sulphides occur mainly as fine disseminations of chalcopyrite and pyrite and only rarely as blebs and stringers. Mineralization at the west end of the orebody, between the stock contact and the fault, consists typically of thin fracture coatings of bornite and chalcopyrite in the fine-grained tuff bed. Pits 1 and 7 are developed in this orebody.

The Pit 2 orebody is 900 metres long, 90 to 360 metres wide and appears to have a maximum mineable depth of 170 metres. It is located 240 metres northeast of Pit 1. It lies along an indistinct and irregular contact of volcanic rocks with Lost Horse intrusive rocks, both rock types being host to ore. Faults control the boundaries of the orebody to a considerable degree. The northern boundary is formed in part by a zone of faulting and crushing; the southern boundary, although relatively straight, has not been related to any structure to date. To the west, the ore diminishes in grade in the vicinity of a strong northerly fault; to the east, the outline of the orebody becomes most irregular and mineralization grades to predominant pyrite with minor chalcopyrite. Within the orebody, ore-grade material is distributed irregularly, but several local trends and centres of copper mineralization occur. The sulphides are predominantly chalcopyrite and pyrite; bornite is rare.

The largest known breccia pipe in the area, 90 metres in diameter and at least 150 metres deep, lies in the north-central part of the orebody. Although fine disseminations and fracture coatings of sulphide are common, the Pit 2 orebody has a much greater proportion of coarse blebs and veinlets than Pit 1.

The Pit 3 (Sunset) orebody begins 200 metres southeast of the Pit 1 orebody and continues southeast, along the eastern margin the Copper Mountain stock, for 1200 metres. This zone is located over old caved and collapsed workings of the underground mine and is therefore also referred to as the Subsidence Area zone (Bulletin 59, page 68). The orebody is 120 to 250 metres wide over most of its length, and is hosted almost entirely in the Nicola Group volcanics. Mineralization occurs along the northwest-striking intrusive contact, along major faults such as the Main fault or the "Mine breaks" or at the intersection of a series of steeply-dipping, west-striking, Lost Horse porphyry dykes with northeast-striking breaks and pegmatite-sheeted zones. Mineralization penetrates only a metre or so into the diorite of the stock. The form of the orebody segments is pipe-like in many places, as a result of their control by steep planar elements and division by a series of barren north-striking felsite dykes. The diameter of the segments that were mined ranged from about 15 to 60 metres.

The contact orebody, which produced about half of the underground ore, was mined over widths of 9 to 38 metres, along a length of 900 metres and a maximum depth of 400 metres. The most productive areas of the mine consisted mainly of sequences of fine-grained bedded tuffs.

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

***Copper Mountain** producer (cont'd)*

These rocks, being more brittle than the adjacent flows, tuffs and agglomerates, shattered readily and yielded more "ore fractures". The lower bedded unit warped downward near the contact of the stock, so that it also formed a hostrock on deeper levels of the orebody. In addition, Lost Horse Intrusions which occur within the less favourable massive flows and coarse tuffs contained more fractures, and copper mineralization was concentrated in the contact areas of these irregular masses. Ore minerals are bornite and chalcopyrite in roughly equal proportions, with most of the bornite occurring within 60 metres of the stock contact. Minor chalcocite occurs with the best bornite ore.

Pyrite exists in areas of chalcopyrite mineralization, but was absent in areas where bornite was present. The sulphide content of the rocks generally decreases sharply at the limits of the mine area. This orebody has been mined from the Nos. 3, 5 and 6 pits over a vertical elevation of 450 metres and from an elaborate system of underground workings.

Concentric patterns of rock alteration about individual orebodies at Copper Mountain are not evident. Alteration appears to be related mainly to the intrusive bodies and also controlled in distribution by faults and fractures. Biotite is well-developed along the stock contact in the underground mine and appears to be associated with the orebodies, and also forms selvages on bigger veins. Pale green bleaching of both volcanic and intrusive rocks is best developed at Pit 2, but also occurs and is locally intense at several other localities throughout the camp, such as along the Lost Horse contact, in portions of Pit 1 and in the outer part of the underground mine.

It appears to follow the biotite stage and involves the development of albitic plagioclase and epidote, and the destruction of biotite and disseminated magnetite. Pink potash feldspar developed along fractures in the latest stage of alteration and is often accompanied by pegmatite veins. These "veins", found in most orebodies and elsewhere at Copper Mountain, consist of potash feldspar, biotite, calcite, fluorite, apatite and also some chalcopyrite and bornite. They are usually less than 0.3 metre wide and have formed in part by replacement of the wallrock. Closely-spaced thin pegmatite veins form the northeast sheeted zones of ore fractures. As at the Ingerbelle mine, copper mineralization appears to have occurred during the intermediate and late stages of alteration

The well-differentiated Copper Mountain stock is thought to have been emplaced at the roots of an active volcanic centre. The various phases of the Lost Horse complex were intruded, with rapid uplift and erosion, as a series of separate injections from a differentiating magma. Their shallower, subvolcanic level of emplacement is indicated by their finer grained porphyritic texture, their highly variable contact relationships, including chilled margins, and the pipes and irregular bodies of breccia. The various characteristics of the orebodies suggest that they formed during the later stages of this magmatism.

The Copper Mountain stock was probably not the immediate source of hydrothermal fluids at that time, but it most likely was still a hot mass and could easily have provided a temperature gradient as well as a physical and chemical barrier to the sulphide-bearing fluids which probably came from the same source as the Lost Horse rocks. This hypothesis might explain, at least in part, the crude sulphide zoning noted at the mine, which is characterized by a predominance of bornite and chalcopyrite near the Copper Mountain stock, and by a sharp decrease of bornite and an increase of pyrite toward the Lost Horse complex (Canadian Institute of Mining and Metallurgy Special Volume 15).

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

MAL prospect (Cu skarn; Fe skarn; Au skarn)
MINFILE 092HNE002
Six kilometres east

The Malachite 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 or facies of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine volcaniclastic 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 Malachite occurrence is underlain by dark green, augite porphyritic andesitic to basaltic volcanics and fragmental rocks, with subordinate black argillite with local limy horizons, and feldspar porphyry (Assessment Reports 449, 1586). Some volcanic flow breccia contains pink trachytic fragments (Assessment Report 9590). Stratified rocks strike north-northwest and dip moderately to steeply west (Geological Survey of Canada Map 41-1989). Within 1 or 2 kilometres to the north of these rocks is the east-trending contact of the Early Jurassic Pennask batholith, a large intrusion of medium-grained granodiorite to quartz diorite.

The volcanics and sedimentary rocks have been altered, probably the result of hydrothermal activity related to the Pennask batholith. Epidote alteration is common; potassium feldspar alteration is more restricted. Skarn alteration is most characteristic of this occurrence, as it hosts the main mineralization. It is closely associated with limy rocks, and is marked by epidote and garnet. North-trending gossanous shear zones have been exposed in trenches near the skarn zones (Assessment Report 449).

HIGHLAND VALLEY COPPER producer (Porphyry Cu+/-Mo+-Au)
MINFILE 092ISW012
Fifty-eight kilometres northwest

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.

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

***Highland Valley Copper** (cont'd)*

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 closely-spaced.

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).

GOLDEN SOVEREIGN prospect (Volcanic redbed Cu)
MINFILE 092HNE072
One hundred metres south

A gentle ridge, trending north-northwest and lying between Tule Lake and Quilchena Creek, is underlain by a sequence of green and red volcanic and laharic breccias, with minor thinly-bedded green tuff, of the Upper Triassic Nicola Group (Central belt, Bulletin 69). The units strike northwest and dip 40 to 85 degrees southwest.

DOR showing (Porphyry Cu+/-Mo+-Au)
MINFILE 092ISE164
One hundred metres east

The area is underlain by Upper Triassic pyroxene and plagioclase-rich andesitic and basaltic flows, breccia, conglomerate and lahar deposits, and comagmatic dioritic intrusions. These are part of the central belt of the Nicola Group which are locally overlain by Pleistocene vesicular olivine valley basalts. The property lies along the Summers Creek-Quilchena fault system which trends north-northeast and has been mapped for over 160 kilometres.

Copper mineralization on the Dor showing is hosted by red volcanic breccia, lahar deposits and brecciated augite porphyritic andesitic flows.

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

***Dor** (cont'd)*

Three shallow shafts less than 3 metres deep expose north trending shear or fracture zones carrying calcite and quartz stringers with chalcopyrite, chalcocite and malachite. The sulphides also occur on fracture surfaces and as fine disseminations in the brecciated andesite. Relatively heavy hematite and/or epidote alteration is associated with the mineralization.

TINMILSH LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE168
One hundred metres west

Native copper occurs in red volcanic and laharic breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69). The showing lies immediately east of the faulted contact with a small body of Triassic-Jurassic quartz diorite.

KIT showing (Alkalic porphyry Cu-Au; Porphyry Mo (Low F type))
MINFILE 092HNE270
Two kilometres east

A small body of granodiorite of Late Triassic to Early Jurassic age intrudes volcanics of the Upper Triassic Nicola Group. The granodiorite is cut by narrow, steeply-dipping shears striking north and northeast, near the faulted contact with slightly pyritic Nicola Group greenstone to the northwest.

SNOWFLAKE 7 showing (Volcanic redbed Cu)
MINFILE 092HNE278
One hundred metres west

Chalcopyrite, pyrite and magnetite, with associated malachite, occur in massive green laharic breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

GEOLOGY: PROPERTY

As indicated by the BC government supported MapPlace geological maps the AG 526115 Claim Group covers Nicola Group andesitic rocks of the Central Volcanic Facies (uTrNC) adjacent and west of the conformable contact with the basaltic rocks of the Eastern Volcanic Facies (uTrNE) to the west. Stocks Late Triassic to Early Jurassic dioritic to gabbroic rocks (LTrJdr) occur within the volcanics and may be in part capped by Pleistocene and Eocene alkalic volcanic rocks (Qvk).

Continuous, discontinuous, and splay faults of the major Kentucky-Alleyne Fault system are in a contact relationship with portions of the volcanics and stocks and all of the northern extension of a tear-shaped formation of Cretaceous unnamed sedimentary rocks on Tenure 526115.

The geology of the more significant mineral MINFILE reported showings and prospects within the Property (*Figure 4*) is reported as follows.

***Geology: Property** (cont'd)*

COPPER STAR past producer (Volcanic redbed Cu)
MINFILE 092HNE036
Within Tenure 504333

The Copper Star occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). This belt mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillite and limestone. The volcanics are locally intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic Porcupine.

The region is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. Two important fault systems in the Aspen Grove area, the Kentucky-Alleyne fault and a splay of the Allison fault converge in the Copper Star area, just south of Courtney Lake. Numerous shear zones which host mineralization, described below, are probably related to these structures.

The Copper Star group of showings is hosted in red and green, augite and/or plagioclase porphyritic flows, breccias and tuffs of andesitic or basaltic composition (Assessment Report 17554). The volcanics contain magnetite. The strata strike northwest and dip southwest.

Epidote alteration of the volcanics is pervasive, and is commonly accompanied by disseminated jasper or hematite. Alteration is greater in shear fractures, which may also contain quartz and calcite veins as well as jasper and hematite. Epidote alteration, grain size in the volcanics, and copper mineralization all tend to increase from east to west (Assessment Report 17554).

TAB prospect (Volcanic redbed; Alkalic porphyry Cu-Au)
MINFILE 092HNE052
Within Tenure 504335

The 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 Tab occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). These rocks mainly consist of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillite and limestone. Locally the strata strike north to northwest and dip southwest. The volcanics are intruded by a north-trending body of comagmatic diorite to monzonite, about 500 metres wide, of Late Triassic to Early Jurassic age. The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

The area around the Tab occurrence is underlain by fine-grained porphyritic basaltic and andesitic volcanics and equivalent volcaniclastics, and minor sedimentary rocks, and a composite body of fine, medium and coarse-grained diorite and porphyritic monzonite. Hybrid or gradational volcanic-intrusive characteristics in some rocks in the contact area support a comagmatic origin.

***Geology: Property** (cont'd)*

PORCUPINE developed prospect (Volcanic redbed Cu)
MINFILE 092ISE054
Within Tenure 504332

The Porcupine occurrence is located in a northeast trending, fault-bound belt of Lower Cretaceous intermediate to felsic continental volcanic rocks with associated sedimentary and intrusive rocks which correlate with the Kingsvale Group. Locally, stratigraphic contacts strike 030 degrees and dip 35 degrees to the southeast and unconformably overlie Upper Triassic Nicola Group volcanics. In the vicinity are reddish brown to maroon coloured andesitic to basaltic flows which are rich in plagioclase and, to a lesser extent, augite and zeolite (laumontite).

JUNE prospect (Cu skarn; Volcanic redbed Cu; Fe skarn; Alkalic porphyry Cu-Au)
MINFILE 092HNE061
Within Tenure 526115

The June 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 is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). This belt of rocks mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone. The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic AG. The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

Outcrop exposure of the Nicola Group is sparse in the area around the June occurrence, being mostly visible in trenches. Bedrock consists of green basaltic to andesitic volcanic flows and tuff (Minister of Mines Annual Report 1966; Geology, Exploration and Mining in B.C. 1973).

Propylitic alteration is widespread, with chlorite and local patches of epidote skarn alteration containing secondary clinopyroxene (probably diopside) and garnet (Geology, Exploration and Mining in B.C. 1970, 1973). Potassium feldspar alteration, and limonite or ankerite due to oxidation are also present.

Two prominent fracture sets are evident. One set of fractures and shears strikes east and dips steeply north, and a second set of fractures strikes north and dips steeply east. Numerous quartz veins and veinlets strike west.

SNOWFLAKE 6 showing (Volcanic redbed Cu)
MINFILE 092HNE145
Within Tenure 504333

The occurrence is hosted in red and green, augite and/or plagioclase porphyritic flows, breccias, tuffs and laharic deposits of andesitic to basaltic composition (Bulletin 69; Assessment Report 3555).

Geology: Property *(cont'd)*

Snowflake 6 *(cont'd)*

The strata strike northwest and dip southwest. Alteration is generally present, mainly represented by epidote, particularly in fractures, shears and veins. Epidote may be accompanied by calcite, quartz and chlorite.

The 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 Snowflake 6 occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69).

This belt mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillite and limestone. The volcanics are locally intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic Porcupine.

The region is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. Two important fault systems in the Aspen Grove area, the Kentucky-Alleyne fault and a splay of the Allison fault, converge just south of Courtney Lake, in the vicinity of the Snowflake 6 occurrence.

The occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). This belt of rocks mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone. The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic Porcupine. The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

COURT 1 showing (Volcanic redbed Cu)
MINFILE 092HNE147
Within Tenure 504337

The Court 1 occurrence is located 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 is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). This belt of rocks mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone.

The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic Porcupine.

Geology: Property *(cont'd)*

Court 1 *(cont'd)*

The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

The Court 1 occurrence is centred on an outcrop of andesitic to basaltic volcanic rocks in a creek draining into Quilchena Creek (Bulletin 69).

This coincides with a copper soil anomaly (Assessment Report 925). These rocks are intruded by aplite dikes (Assessment Report 925). A short distance away there is an outcrop of skarn alteration (Assessment Report 925).

TINMILSH LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE168
Within Tenure 509561

Native copper occurs in red volcanic and laharic breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

CM prospect (Polymetallic veins Ag-Pb-Zn+/-Au; Intrusion-related Au pyrrhotite veins; Volcanic
redbed Cu)

MINFILE 092INE174
Within Tenure 504335

The 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).

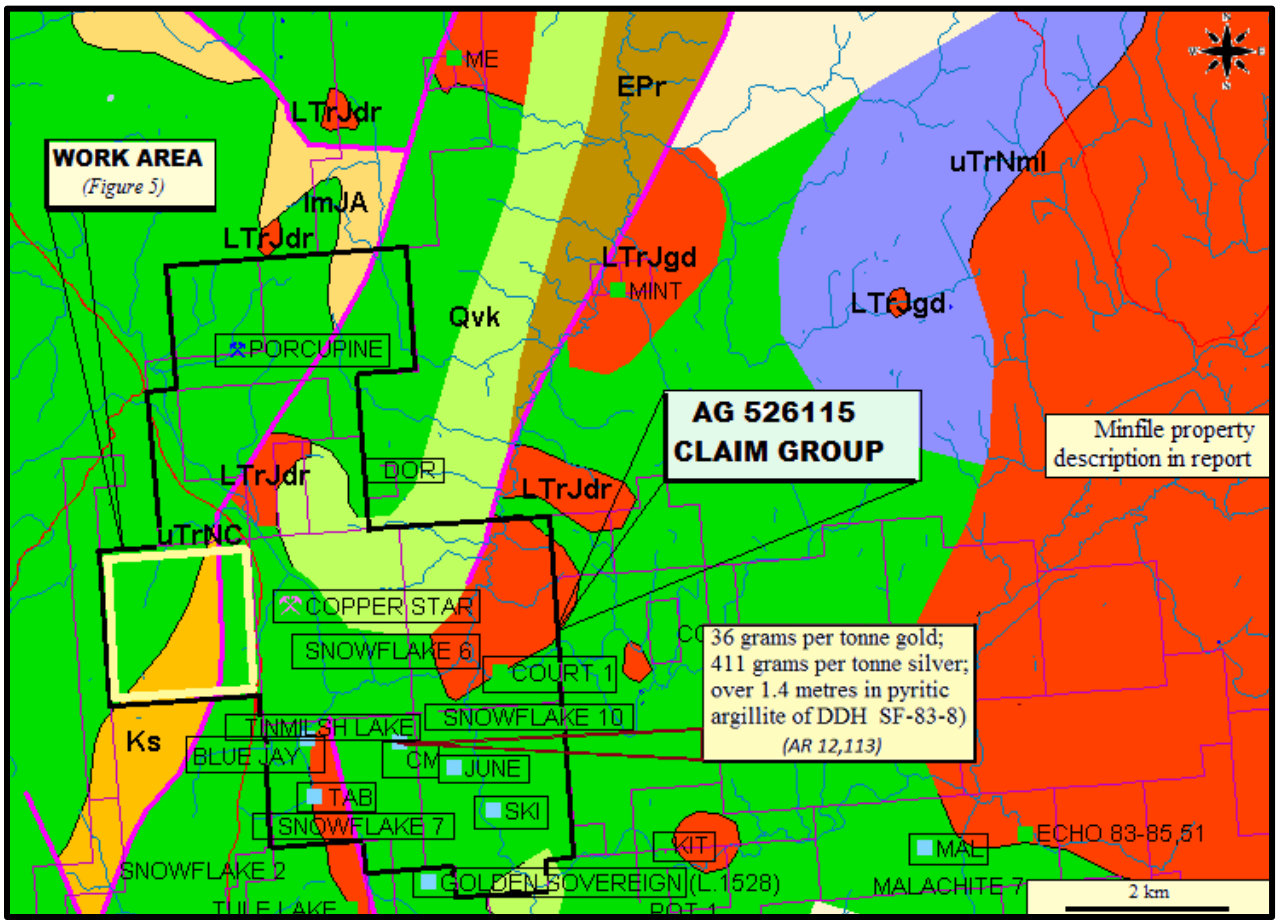
This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization. The CM occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69. hese rocks mainly consist of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone.

Locally the strata strike north or northwest and dip gently to steeply west. The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic age. The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

The area of the CM occurrence has been called the Snowflake Gold zone or area (Area 4 in Assessment Report 13714). This is a thinly bedded volcanic-sedimentary sequence consisting of a composite unit of dark grey to black, carbonaceous, pyritic calcareous argillite or impure limestone, greywacke, chert and siltstone, which is overlain and underlain, possibly structurally, by andesitic to basaltic augite porphyry flows, tuffs and breccias (Assessment Reports 12113, 13714). The volcanics are weakly to moderately propylitized, marked by epidote, calcite, quartz and pyrite (Assessment Report 12113). The sequence is cut by a number of faults and shear zones.

***Geology: Property** (cont'd)*

Figure 4. **CLAIMS, INDEX, GEOLOGY, & MINFILE**
(Base Map from MapPlace)



GEOLOGY MAP LEGEND

Pleistocene to Holocene

Qvk
Unnamed alkalic volcanic rocks

Cretaceous

Ks
Unnamed undivided sedimentary rocks

Upper Triassic: Nicola Group

Eastern Volcanic Facies

uTrNE
basaltic volcanic rocks

uTtNsf
mudstone, siltstone, shale, fine clastic sedimentary rocks

uTrNMl
lower amphibolite/kyanite grade metamorphic 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 *(cont'd)*

CM *(cont'd)*

The Snowflake Gold zone is marked by a strong induced polarization conductor (Assessment Report 14983).Outcrop in the Snowflake Gold zone is virtually absent, so detailed information is based on drill core (Assessment Reports 12113, 14983, 17523, 18019). A zone of silicification and pyritic and argillic alteration, tens of metres wide, straddles the contacts between the volcanic and sedimentary rocks, particularly the lower contact. In this alteration zone are fracture-controlled quartz and quartz-calcite veins, 1 to 6 centimetres thick, which host pyrite, chalcopyrite, and malachite; gold and silver, mainly as electrum, are associated with these sulphides (Assessment Reports 12113, 13714, 14983).

SKI prospect (Volcanic redbed Cu)
MINFILE 092HNE203
Within Tenure 504336

The occurrence is located 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 Ski occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69). This belt of rocks mainly consists of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone. The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic age.

The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization. The CM occurrence is one of many in the Aspen Grove area. It lies in the Central belt or facies of the Nicola Group (after Preto, Bulletin 69.

These rocks mainly consist of subaerial and submarine, red or purple to green augite plagioclase porphyritic andesitic and basaltic flows, volcanic breccia and tuff, and minor argillites and limestone.

Locally the strata strike north or northwest and dip gently to steeply west. The volcanics are intruded by bodies of comagmatic diorite to monzonite of Late Triassic to Early Jurassic age. The area is characterized by long-lived, primarily north-striking faults and related fracturing, which originally controlled intrusion emplacement. East-striking faults are subordinate, and commonly offset intrusive contacts.

The area of the CM occurrence has been called the Snowflake Gold zone or area (Area 4 in Assessment Report 13714).

Geology: Property *(cont'd)*

Ski *(cont'd)*

This is a thinly bedded volcanic-sedimentary sequence consisting of a composite unit of dark grey to black, carbonaceous, pyritic calcareous argillite or impure limestone, greywacke, chert and siltstone, which is overlain and underlain, possibly structurally, by andesitic to basaltic augite porphyry flows, tuffs and breccias (Assessment Reports 12113, 13714). The volcanics are weakly to moderately propylitized, marked by epidote, calcite, quartz and pyrite (Assessment Report 12113). The sequence is cut by a number of faults and shear zones. The Snowflake Gold zone is marked by a strong induced polarization conductor (Assessment Report 14983).

SNOWFLAKE 10 showing (Volcanic redbed Cu)
MINFILE 092HNE267
Within Tenure 504335

Chalcopyrite and pyrite are hosted in massive grey to green andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69)

MINERALIZATION: PROPERTY AREA

The mineralization of the more significant mineral MINFILE reported showings, prospects, and producers peripheral to the Property (*Figure 4*) is reported as follows. The distance from the Property is relative to Tenure 526115 which is the subject of the structural analysis.

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)
MINFILE 092HSE001
Seventy six kilometres south

Magnetite-rich parts of the Copper Mountain orebodies demonstrate textures of magmatic origin; the elevated PGE (platinum group elements) content of sulphide ore supports a mantle source similar to that of coeval and possibly cogenetic PGE-rich zoned Alaskan-type intrusions in eastern Quesnellia (e.g. Tulameen Ultramafic Complex, Polaris Intrusive Complex). Analyses of sulphide concentrate from the mine yielded up to 2.8 grams per tonne palladium and 0.155 gram per tonne platinum. A sample of a bornite- chalcopyrite vein from the glory hole yielded 3.25 grams per tonne palladium (Property File - Cordilleran Roundup 1991, Program and Abstracts Volume).

MAL prospect (Cu skarn; Fe skarn; Au skarn)
MINFILE 092HNE002
Six kilometres east

Copper mineralization is concentrated in the skarn zones. Pyrite and subordinate magnetite and chalcopyrite are associated with quartz-calcite veins, or are disseminated in variable amounts (Assessment Report 1586). Chalcocite and malachite are also present at the main showing (Assessment Report 8453). Finely disseminated pyrite is common in most rocks, particularly the argillaceous rocks (Assessment Reports 1718, 9590). A zone of massive, medium-grained pyrite between 1 and 13 metres thick, in altered volcanic rocks, has been found below the surface by diamond drilling; the paragenesis is epidote, magnetite, pyrite (Assessment Report 9590).

Mineralization: Property Area *(cont'd)*

Mal *(cont'd)*

Copper values appear to be erratic. In early diamond drilling, the best result reported is 1.62 per cent copper over 6 metres; this section contained at least 50 per cent magnetite (Assessment Report 449, page 6).

More recent diamond drilling has resulted in generally low metal values, although one split core sample assayed 0.37 per cent copper and 6.8 grams per tonne silver (Assessment Report 9590). A grab sample from the main trenched and drilled area assayed 0.34 gram per tonne gold, 3.4 grams per tonne silver, and 0.2 per cent copper (Assessment Report 8453).

The high magnetite and pyrite content of the rocks at this occurrence is reflected in significant magnetic and induced polarization anomalies, respectively, over the mineralized zones (Assessment Reports 1586, 8453).

HIGHLAND VALLEY COPPER producer (Porphyry Cu+/-Mo+-Au)
MINFILE 092ISW012
Fifty-eight kilometres northwest

Sulphides occur chiefly as disseminations in quartz veinlets, and in phyllic (bornite) and potassic (chalcopyrite) alteration zones. Mineralization includes bornite and chalcopyrite, with minor digenite, covellite, pyrite, pyrrhotite, molybdenite, sphalerite and galena. The oxide zone averages 4.5 metres in thickness, and contains limonite, malachite, pyrolusite, digenite, native copper, and tenorite(?).

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.

GOLDEN SOVEREIGN prospect (Volcanic redbed Cu)
MINFILE 092HNE072
One hundred metres south

Copper mineralization is confined largely to one horizon of red breccia exposed near the crest of the ridge. The bed strikes 150 degrees, dips 60 degrees southwest, and is about 50 metres wide on surface. Mineralization consists primarily of disseminated flakes of chalcocite and minor chalcopyrite, occurring in a zone up to 40 metres wide, near the contact with underlying green breccia. The zone is exposed periodically over a strike length of up to 400 metres. Some chalcopyrite is present in the green breccia, where the red and green breccias are faulted against each other. Pyrite is also reported. A chip sample assayed 0.9 per cent copper, 0.7 gram per tonne gold and 10 grams per tonne silver over 4.6 metres (Minister of Mines Annual Report 1901, page 1180). A second chip sample assayed 0.25 per cent copper over 3.0 metres (Minister of Mines Annual Report 1913, page 222).

Geology: Property *(cont'd)*

Golden Sovereign (*cont'd)*

A second, possibly parallel zone of mineralization, 50 metres wide, is exposed about 100 metres west of the north end of the previous zone. A bed of impure limestone, 50 metres wide, separates the two zones. Here, the breccia exhibits some greenish yellow epidote, and yellowish white serpentine. The mineralized zone contains veinlets of chalcocite and blebs and nuggets of native copper up to 22 kilograms in size. Abundant chalcocite and native copper are concentrated along one prominent shear zone, 0.15 to 1.0 metres wide, striking 050 degrees and dipping 75 to 90 degrees southeast. Malachite and minor azurite are developed along two intersecting sets of fractures in the vicinity of the shear.

DOR showing (Volcanic redbed Cu)
MINFILE 092HNE164
Within Tenure 524872

In 1989, rock samples from old adits and workings assayed up to 0.12 per cent copper (Prospectus, Redding Gold Corporation).

In 2004, sampling of the former second Dor adit returned up to 1.2 per cent copper and 4 grams per tonne silver. Two samples from the third Dor adit returned 0.434 per cent copper, 3 grams per tonne silver and 0.773 per cent copper (Assessment Report 27549).

KIT showing (Alkalic porphyry Cu-Au; Porphyry Mo (Low F type))
MINFILE 092HNE270
Two kilometres east

Some of the shears are graphitic and they locally contain quartz lenses 2.5 to 5 centimetres wide with minor disseminated molybdenite. The intrusive is also fractured to some extent, with one prominent set striking 055 to 070 degrees and dipping steeply southeast. Some of the fractures contain quartz with minor chalcopyrite, malachite and molybdenite

SNOWFLAKE 7 showing (Volcanic redbed Cu)
MINFILE 092HNE278
One hundred metres west

A rock sample analysed 0.020 gram per tonne gold and 0.3 gram per tonne silver (Assessment Report 13714, Drawing No. 2, sample 922).

MINERALIZATION: PROPERTY

The mineralization of the more significant mineral MINFILE reported showings and prospects within the Property (*Figure 4*) is reported as follows.

COPPER STAR past producer (Volcanic redbed Cu)
MINFILE 092HNE036
Within Tenure 504333

Mineralization is most commonly hosted in the shear zones or in brecciated fracture zones. Here, alteration minerals are accompanied by malachite and pyrite, and smaller amounts of chalcopyrite, bornite, chalcocite, and locally minor native copper (Annual Report 1915; Assessment Report 17554;

Mineralization: Property *(cont'd)*

Copper Star *(cont'd)*

Geological Survey of Canada Memoir 243). Outside the shear zones, there are local concentrations of disseminated chalcopyrite and up to 10 per cent pyrite in volcanic tuff and breccia.

A number of old trenches, adits and opencuts exist in the area, and are most commonly located on the altered and mineralized shear zones or fractures in augite porphyry volcanics. The various old workings are scattered about an area, 200 metres wide, trending northeast for 290 metres.

Copper values from these areas are generally not high; however, one sample was analysed at 0.29 per cent copper, and another grab sample assayed 0.7 per cent copper (Assessment Reports 4779, 17554). Silver values are also low, the maximum being 2 grams per tonne (Assessment Report 17554).

A small amount of production from the old workings is reported in 1915, when 41 tonnes of hand-sorted ore were shipped to a smelter. According to the returns, this shipment graded 8.7 per cent copper and 75.4 grams per tonne silver (Minister of Mines Annual Report 1915, Ag 227). Tanjo Mines Ltd. completed geological, geophysical and soil geochemical surveys over the showings between 1970 and 1972. Similar surveys were conducted by Redding Gold Corporation in 1988.

TAB prospect (Volcanic redbed; Alkalic porphyry Cu-Au)
MINFILE 092HNE052
Within Tenure 504335

Most rocks contain fracture-related and disseminated pyrite and magnetite. Patterns of induced polarization and ground magnetic response correlate well with the concentration of pyrite (Assessment Reports 7122, 6260). The best copper mineralization occurs in rocks with little or no pyrite, that is, on the flanks of the induced polarization conductors (Assessment Report 7122).

Hydrothermal alteration and mineralization is strongest in a zone measuring at least 1100 by 120 metres that straddles the volcanics to the west and the fine-grained margin of the dioritic intrusion to the east (Assessment Reports 6260, 7122).

The Tab occurrence is near the southern end of this zone (the Blue Jay occurrence, 092HNE105, is near the northern end). This zone is also characterized by strong fracturing, brecciation in the diorite, and by above-average pyrite. The alteration is propylitic and carbonate, there being widespread epidote (especially along fractures), calcite, chlorite,

PORCUPINE developed prospect (Volcanic redbed Cu)
MINFILE 092ISE054
Within Tenure 504332

Mineralization consists of disseminations of chalcocite, native copper, cuprite, bornite, chalcopyrite, pyrite, magnetite and specular hematite in brecciated tops of subaerial flows. Minerals occur in amygdules and thin fractures. Minor malachite and azurite occur near the surface.

The main showing contains a 15 metre deep inclined shaft sunk on a mineralized amygdaloidal, dark grey basaltic flow which is overlain by red tuffs.

Mineralization: Property *(cont'd)*

Porcupine *(cont'd)*

Drill indicated reserves are reported as 125,179 tonnes grading 2.0 per cent copper and inferred (possible) reserves as 453,550 tonnes grading 1.9 per cent copper (Northern Miner - 1967, 1969).

Ostler (2009) reports (AR 31,213) that mineralization near the Porcupine main shaft comprises mostly bornite, malachite, and azurite deposited in a matrix of basaltic flow breccia in Late Cretaceous-Ag Kingsvale group volcanic rocks. The surface exposure of mineralization extends south-southwestward from the main shaft for 80 metres (262 feet).A composite chip sample on a 1.2 metre thickness of autobreccia on the northern wall of the inclined shaft contained: 1.93% copper, 8.0 ppm silver, and 4.4 ppb gold.

Another composite chip sample taken from a 1.0 m thickness of autobreccia from the southern wall of the shaft contained: 0.92% copper, 2.4 ppm silver, and 3.8 ppb gold. In a trench about 30 m south of the shaft, the thickness of mineralization in the autobreccia was less than 0.5m. The last trace of malachite was observed in a trench about 80m south of the shaft.

The main shaft is located about 3m south of a sub-vertical fault that trends about 126 (306) degrees in the workings area. The extensively trenched area near the shaft northeast of the fault hosts no mineralization. Three 1979 percussion drill holes located north of the fault within 25m of the main shaft also contained no significant copper mineralization.

Bailey (2011) reports that copper grade intersected in drill holes *(Figure 12)* ranged from 1.66% to greater than 6.0% over a true thickness of about 3 metres. A second, overlying mineralized horizon is suggested by the intersection in DDH-7 of 1.70% copper over a true thickness of 1.2 metres. A log of lithologies intersected by DDH-7 indicates that other mineralized horizons may be present. The fault that bounds mineralization at the Porcupine workings is an extensive structure that can be traced both by limonitic soils and outcrops on the ground and by the 2007 airborne electromagnetic survey results of the area.

It was concluded that mineralization at the Porcupine workings was the result of fluids that ascended the fault plane and deposited copper mineralization in a favourable horizon in the Kingsvale Group volcanics. Orthoclase and quartz deposited on fracture planes adjacent to mineralization at the Porcupine main shaft indicates that mineralizing fluids were scavenged Triassic-Ag porphyry copper mineralization at depth.

JUNE prospect (Cu skarn; Volcanic redbed Cu; Fe skarn; Alkalic porphyry Cu-Au)
MINFILE 092HNE061
Within Tenure 504336

Trenching has outlined a zone of sulphide mineralization stretching 700 metres northeastward towards Quilchena Creek. In the more northerly exposures pyrite, pyrrhotite, chalcopyrite and malachite occur as sparse disseminations in the volcanics and as fracture fillings and coarse blebs in some quartz veinlets. Magnetite is widespread. To the southwest, epidote skarn zones host up to 0.5 per cent chalcopyrite, and shear zones in diorite contain up to 1 per cent malachite near zones of carbonate alteration. Farther southwest, pyrrhotite and pyrite, with traces of chalcopyrite and malachite, form massive segregations in cherty sediments and fine-grained tuffs.

Mineralization: Property *(cont'd)*

June *(cont'd)*

A percussion hole drilled near the north end of the zone graded 0.07 per cent copper over 91 metres (Assessment Report 9386, Ag 16). A chip sample taken in the vicinity analysed 0.085 gram per tonne gold and 2.5 grams per tonne silver over 175 metres (Assessment Report 13714, Drawing No. 2, sample 695). Rock sampling over the rest of the zone yielded metal values of up to 0.0415 per cent copper, 0.105 gram per tonne gold and 1.9 grams per tonne silver (Assessment Reports 9386, 13714).

SNOWFLAKE 6 showing (Volcanic redbed Cu)
MINFILE 092HNE145
Within Tenure 504333

Several small pits and at least one adit at the Snowflake 6 occurrence lie close to a minor, east-striking fault (Assessment Report 3555). The pits expose fractures mineralized with chalcopyrite, bornite, chalcocite, malachite and azurite, and locally minor native copper. Two rock samples analysed 0.6 to 0.7 gram per tonne silver and 0.005 to 0.015 gram per tonne gold (Assessment Report 13714, Drawing 2, samples 211, 212).

COURT 1 showing (Volcanic redbed Cu)
MINFILE 092HNE147
Within Tenure 504337

Mineralization at the showing is exposed by stripping, and consists of chalcopyrite, pyrite, malachite and azurite. Chalcopyrite and molybdenite are present at the skarn-altered outcrop. The nature of the mineralization is not specified but in showings in the area minerals are characteristically disseminated or hosted in quartz veinlets.

CM prospect (Polymetallic veins Ag-Pb-Zn+/-Au; Intrusion-related Au pyrrhotite veins; Volcanic
redbed Cu)
MINFILE 092INE174
Within Tenure 1015528

In this alteration zone are fracture-controlled quartz and quartz-calcite veins, 1 to 6 centimetres thick, which host pyrite, chalcopyrite, and malachite; gold and silver, mainly as electrum, are associated with these sulphides (Assessment Reports 12113, 13714, 14983). Galena, sphalerite, bornite, molybdenite and argentite are less commonly associated (Assessment Reports 12113, 17523). The rocks also contain pyrite and pyrrhotite as fine disseminations and locally as massive lenses up to 0.3 metre across (Assessment Report 13714).Overall, rock analyses indicate that higher gold values occur in the thinly bedded, cherty and argillaceous sediments, although there are also high values locally in the volcanics away from the altered contact zone. Gold and silver values in drill core are generally low, although the better intersections, such as in hole 83-8, are in the 1 to 10 grams per tonne range for each metal (Assessment Report 12113). The highest assay from this hole was 36 grams per tonne gold and 411 grams per tonne silver, from a 1.4 metre interval of pyritic argillite that also yielded 0.29 per cent copper (Assessment Report 12113).

Mineralization: Property *(cont'd)*

CM *prospect (cont'd)*

In 1986 drilling, a zone of veined and altered volcanics analysed 4.49 grams per tonne gold, 21.94 grams per tonne silver, and 2.1 per cent copper over 2 metres (Assessment Report 14983).

A hole drilled in 1967 assayed 5.1 grams per tonne gold, 16.5 grams per tonne silver and 0.20 per cent copper (Assessment Report 13714, page 4).

More recent diamond drilling done in the late 1980s further defined the zone and controls of mineralization, although the high- grade values are generally erratic (Assessment Reports 17523, 18019).

SKI prospect (Volcanic redbed Cu)
MINFILE 092HNE203
Within Tenure 504335

Mineralization is hosted in hydrothermally altered latite/ andesite porphyry and adjacent weakly skarn altered, thinly bedded andesitic tuffs. The porphyry exhibits argillic, chlorite and sericitic alteration. The tuffs contain epidote, chlorite and minor orthoclase. All units are intensely faulted and fractured. The porphyry is traversed by closely-spaced fractures in several dominant sets, producing a sheeted appearance in outcrop. Narrow

Mineralization consists of chalcopyrite, pyrite and minor molybdenite, primarily in quartz veins and along fractures. Minor disseminated chalcopyrite occurs through the latite. Limonite, malachite and azurite accompany the sulphides in intensely weathered surface exposures. Hematite and magnetite are also reported. Trenching has exposed this copper mineralization over a north-south distance of at least 370 metres. Three rock samples from the trenches analysed 0.4 to 2.5 grams per tonne silver and 0.015 to 0.140 gram per tonne gold (Assessment Report 13714, Drawing No. 2, samples 923, 924 and 925).

SNOWFLAKE 10 showing (Volcanic redbed Cu)
MINFILE 092HNE267
Within Tenure 504335

A rock sample analysed 0.005 gram per tonne gold and 0.2 gram per tonne silver (Assessment Report 13714, Drawing No. 2, sample 669). A chip sample taken 160 metres east, yielded 0.225 gram per tonne gold and 1.5 grams per tonne silver over 50 metres (sample 670).

STRUCTURAL ANALYSIS

The structural analysis was performed on a MapPlace hillside shade map of Tenure 526115 by viewing of the map and marking the lineaments, or indicated structures, thereon. A total of 57 lineaments were marked (*Figure 5*), compiled into a 10 degree class interval, and plotted as a rose diagram as indicated on Figure 6.

The centre of the work area is 674,886E; 5,538,497N (NAD 83)

Figure 5. **Indicated Lineaments as Structures on Tenure 526115**
(Base Map from MapPlace)

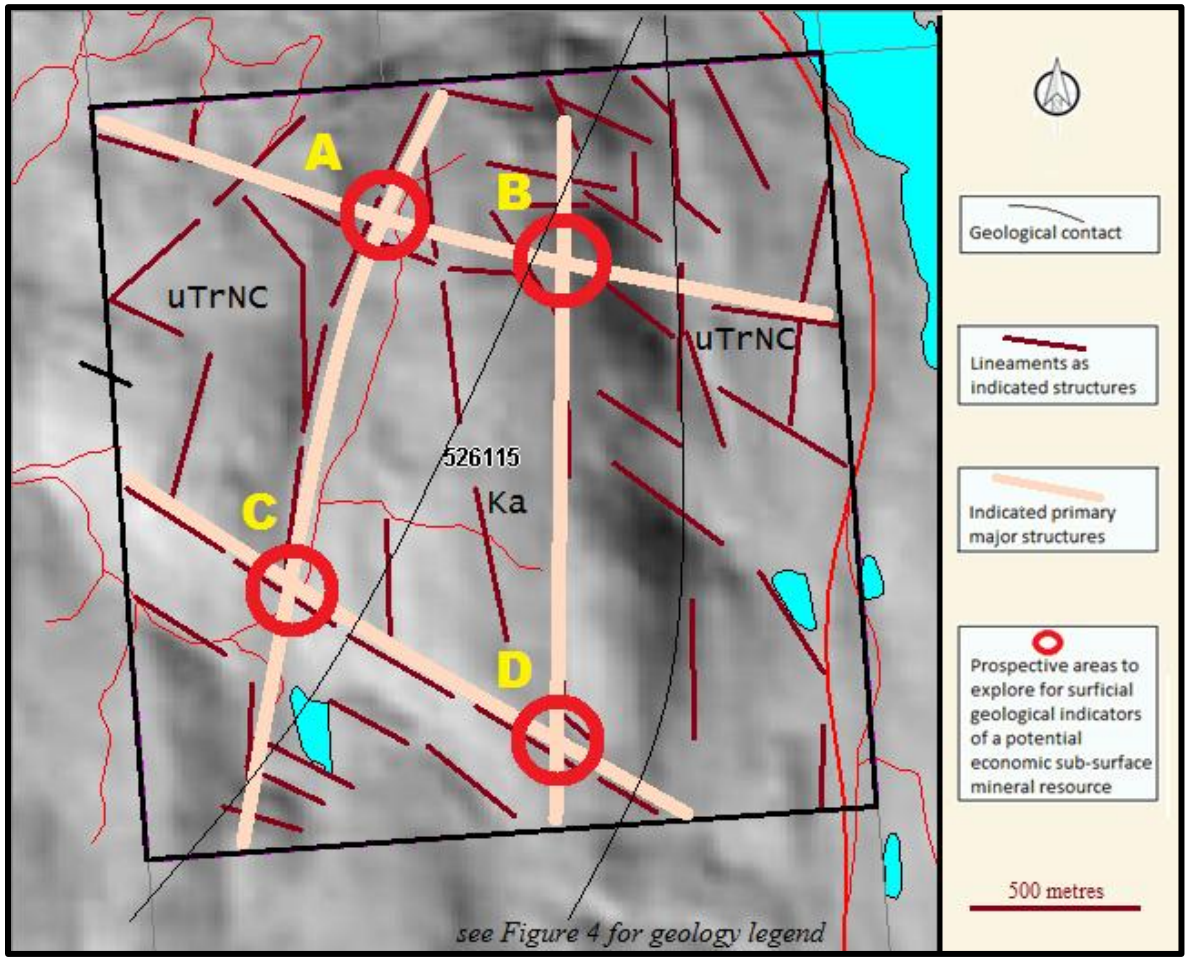
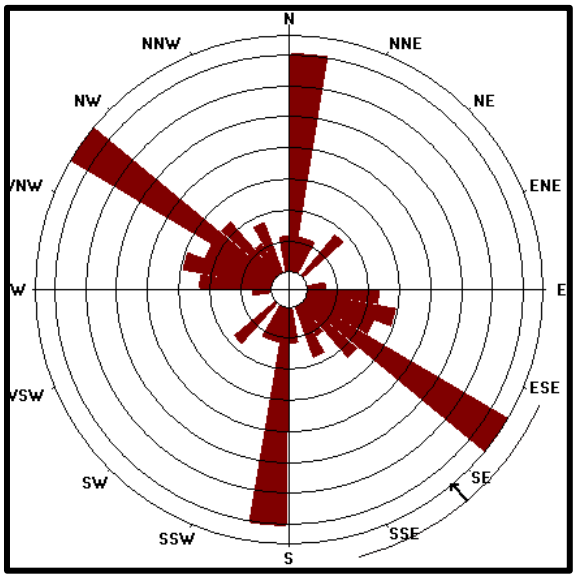


Figure 6. **Rose Diagram from Lineaments of Tenure 526115** *(Figure 5)***.**



Structural Analysis *(cont'd)*

STATISTICS

(Tenure 526115)

Axial (non-polar) data
No. of Data = 57
Sector angle = 10°
Scale: tick interval = 3% [1.7 data]
Maximum = 22.8% [13 data]
Mean Resultant dir'n = 140-320
[Approx. 95% Confidence interval = ±25.2°]
(valid only for unimodal data)

Mean Resultant dir'n = 140.0 - 320.0
Circ.Median = 134.0 - 314.0
Circ.Mean Dev.about median = 32.7°
Circ. Variance = 0.24
Circular Std.Dev. = 42.08°
Circ. Dispersion = 2.69
Circ.Std Error = 0.2174
Circ.Skewness = -3.03
Circ.Kurtosis = -8.69
kappa = 0.72

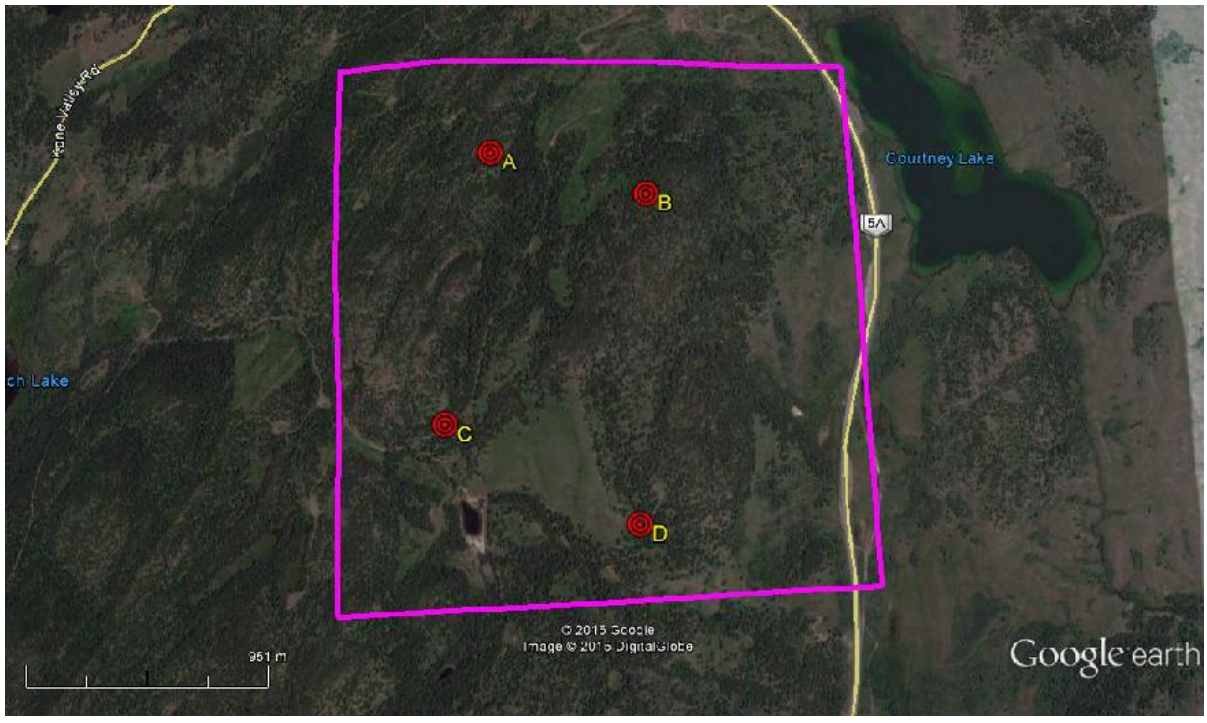
(von Mises concentration param. estimate)

Resultant length = 19.38
Mean Resultant length = 0.34

'Mean' Moments: Cbar = 0.0586; Sbar = -0.3349
'Full' trig. sums: SumCos = 3.3399; Sbar = -19.089
Mean resultant of doubled angles = 0.3774
Mean direction of doubled angles = 044

(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. **Cross structural locations** *(Figure 6)* **on Google Earth**
(Base map from MapPlace and Google Earth)



Structural Analysis *(cont'd)*

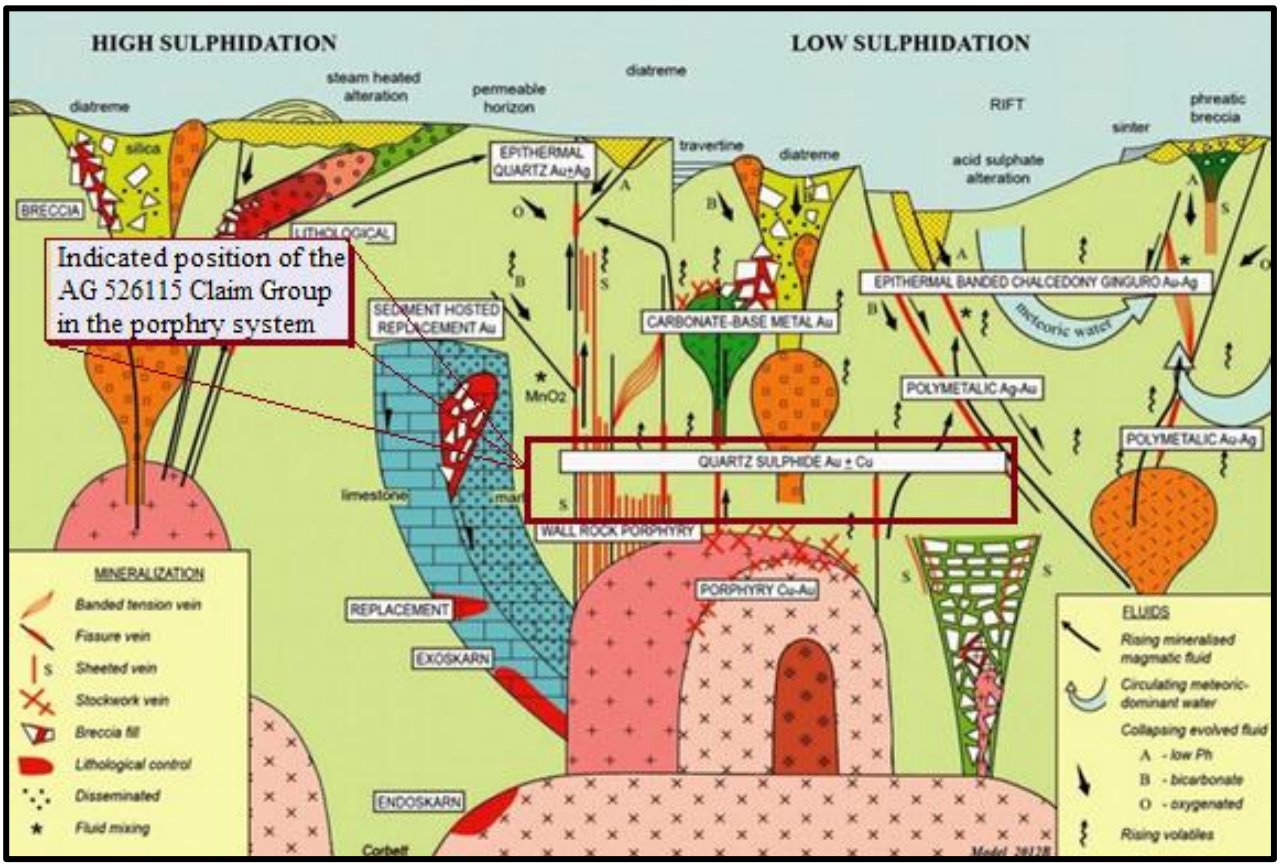
Table II. **Approximate UTM location of cross-structures & Minfiles on Tenure 526115.**

(Zone 10; UTM-NAD 83)

Location	UTM East	UTM North	Elevation
A	669,860	5,541,795	1,294
B	670,516	5,541,614	1,276
C	669,672	5,540,651	1,271
D	670,472	5,540,236	1,229

Figure 8 **Indicated position of the AG 526115 Claim Group in the porphyry system**

(Base map from Corbett)



INTERPRETATION & CONCLUSIONS

In the structural analysis of Tenure 591361, four cross-structures were delineated from the two major northerly and two major northwesterly trending indicated structures. These cross-structures would be the most prospective locations to explore for surficial indications of a concealed mineral resource as the cross-structures are depth intensive to provide a conduit for any migration from a hydrothermal fluid source and would create the most intensive open-space provision for the deposition of the potentially mineralized fluids.

Major structures with cross-structures are mineral controlling in the recently revived productive Copper Mountain (Minfile 092HSE001} and the world class Highland Valley mineral resources.

At Copper Mountain (Minfile 092HSE001}, three former major mined orebodies confined to a 1100 by 4300 metre belt, occur chiefly in a northwest-trending belt of Nicola Group rocks which have been intruded by stocks and bounded on the west by a major normal fault system known as the Boundary fault. Part of the area, characterized by brittle deformation, produced a large number of faults, and locally, intense fracturing.

The Highland Valley Copper Mine *(Minfile 092ISW012}* is one of the largest open pit copper mining and concentrating operations in the world. The mineral resource was established from the cross-structures of the major northerly trending Lornex Fault and the east trending Highland Valley Fault within the Bethsaida phase of the Guichon Batholith. Strike-slip movement along the Lornex Fault was to the extent that the original mineral deposit was split resulting in two deposits; the Lornex and the Highland Valley deposit which latter deposit has been developed to a world-class mine with current production at 130,000 tonnes per day.

The former Brenda (Minfile 092HNE047}, mineral deposit is an example of a resource growth from intense fracture development. The mineral resource developed from:

> *" … 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." and "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." and "The grade of the orebody is a function of fracture (vein) density and of the thickness and mineralogy of the filling material."*

As a surficial indication of a concealed mineral resource at depth, at the Brew mineral zone *(Minfile 092HNE27501}*, the northwesterly trending Brew fault is exposed along the Coquihalla Highway for 600 metres and is indicated to offset the major northerly trending Elk fault. Sections of the fault zone are strongly mineralized with massive veins, narrow stringers and occasional disseminations of marcasite, pyrite and pyrrhotite. 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.

Interpretation & Conclusions (cont'd)

An indication of the potential of a mineral resource in the immediate area of the structurally analyzed Tenure 526116 is at the proximal CM mineral zone *(Minfile 092HNE174)* where a drill hole intersected a mineral zone of 36 grams per tonne gold over 1.4 metres within a pyritic argillite. The volcanic/argillite contact reportedly extends for 1,500 metres.

At the AG 526115 Claim Group, the northerly structures may be en-echelon or splay structures from the regional Kentucky-Alleyne fault system which are manifest as contacts between the Nicola volcanics and the Cretaceous sediments (Figure 4}.

The cross-structures would be the most prospective areas to explore for surficial geological indicators of a potential concealed mineral resource that would be related to an underlying intrusive and the Nicola volcanics as indicated in Figure 8. These geological indicators may be revealed as pathfinder minerals, minerals and/or alteration products that would be subject to interpretation as economic mineral indicators to advanced exploration.

Excluding other variable geological conditions, the structures are essential in the localization of potentially economic porphyritic mineralization. For mineral deposit types that may occur within the Toni 526115 Claim Group reference is made in the report to the 17 Minfile properties described herein. These Minfile descriptions are copied from the BC Government Minfile records with the Minfile name blocked out on Figure 4, are included herein as potential types of surficial geological indicators that should be considered as indicators of an underlying porphyritic mineral resource when exploring the four cross-structural locations on Tenure 526115.

Respectfully submitted
Sookochoff Consultants Inc.

Laurence Sookochoff, PEng

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MtOnline - MINFILE downloads.

092HSE001 – COPPER MOUNTAIN
092HNE002 – MAL
092ISW012 – HIGHLAND VALLEY COPPER.
092HNE036 – COPPER STAR
092HNE052 – TAB
092HNE054 – PORCUPINE
092HNE061 – JUNE
092HNE072 – GOLDEN SOVEREIGN
092HNE145 – SNOWFLAKE 6
092HNE146 – CONE
092HNE147 –COURT 1
092HNE164 – DOR
092HNE165 – ME
092HNE168 – TINMISH LAKE
092HNE174 – CM
092HNE203 – SKI
092HNE267 – SNOWFLAKE 10
092HNE278 – SNOWFLAKE 7
092HNE270 – KIT

Ostler, J. – Geology of the Aspen Grove Property with Emphasis on the Tinmilsh Hydrothermal System. October 12, 2009. AR 31,213.

Scott, A. – Induced Polarization and Magnetometer Survey on the Grove Property Snowflake Claims for Cominco Ltd. July 1979. AR 7,365.

Smitheringale, W.G. – Diamond Drilling Report Snowflake 7 and Snowflake 10 Claims for Gerle Gold Ltd. July 27, 1988. AR 18,019.

Watson, L.M. – Diamond Drilling Report on the Snowflake "A" and "B" Groups for Gerle Gold Ltd. May, 1988. AR 17,523.

Watson, L.M. – Reconnaissance Geological and Geochemical Report and Magnetometer Survey on the Snowflake A and B Groups for J.M. Dawson and Laramide Resources Ltd. April, 1985. AR 13,714.

STATEMENT OF COSTS

Work on Tenure 526115 of the AG 526115 Claim Group was done from February 15, 2015 to March 14, 2015 to the value as follows:

Structural Analysis

Laurence Sookochoff, PEng. 3 days @ $ 1,000.00/day ----	$ 3,000.00
Maps ----------	500.00
Report ----------	3,200.00
	$ 6,700.00
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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-nine 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 Selected Reference section of this report and from periodic work the author has performed in the Aspen Grove area since the 1980's.

5) I have no interest in the Property as described herein.

Laurence Sookochoff, P. Eng.