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: $ 7,000.00

AUTHOR(S): Laurence Sookochoff, PEng **SIGNATURE(S):** Laurence Sookochoff

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

YEAR OF WORK: 2014

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5513228 July 17, 2014

PROPERTY NAME: Ketchan

CLAIM NAME(S) (on which the work was done): 1024300

COMMODITIES SOUGHT: Copper Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HNE092 092HNE153 092HNE254

MINING DIVISION: Nicola **NTS/BCGS:** 092H.078

LATITUDE: 49 ° 45 ' 31.32 " **LONGITUDE:** 120 ° 30 ' 59.4 " **(at centre of work)**

OWNER(S):

1) Stephen Scott Brian Scott
2) Christopher Delorme

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

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

Upper Triassic Nicola Group Eastern Volcanic Facies of basaltic volcanic rocks in a regional northerly trending contact with the Central Volcanic Facies of andesitic volcanic rocks. Four cross-structures from major northerly and northwesterly structures. At the Shamrock prospect mineralization consists of massive veinlets and disseminations of chalcocite and a few grains of chalcopyrite and pyrite developed along the shears and fractures.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 3955, 14141

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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	104 hectares	1024300	$ 7,000.00
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:	$ 7,000.00

BRIAN SCOTT
STEVEN SCOTT
CHRISTOPHER DELORME

(Owners & Operators)

GEOLOGICAL ASSESSMENT REPORT

(Event 5513228)

STRUCTURAL ANALYSIS

(Work done from July 5, 2014 to July 9, 2014)

on

Tenure 1024300

of the three claim

AG 1024300 Claim Group

Nicola Mining Division

BCGS 092H.078

Centre of Work

5,518,620N 675,767E
(Zone 10U NAD 83)

Author & Consultant

Laurence Sookochoff, PEng
Sookochoff Consultants Inc.

Amended Report Submitted

August 12, 2015

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SUMMARY

The three claim AG 1024300 Claim Group covers an area of 483 hectares located 195 kilometres east-northeast of Vancouver, 43 kilometres south-southeast of Merritt, 33 kilometres north of Princeton, and 45 kilometres north of the Copper Mountain Mine *(Minfile 092HSE001)* where mill-feed was 27,600 tonnes per day in 2013.

At Copper Mountain, production commenced in 2011 with a super-pit *(Figure 8)* designed to envelop the former three pits.

Pit 1 where the bulk of the ore was emplaced along the Main fault in massive and fragmental volcanic rocks above the lower bedded tuff horizon with recognizable pre-ore porphyritic intrusive rocks scarce;

Pit 2 lies along an indistinct and irregular contact of volcanic rocks with Lost Horse intrusive rocks, both rock types being host to ore with faults controlling the boundaries of the orebody to a considerable degree;

Pit 3 is hosted almost entirely in the Nicola Group volcanics with mineralization occurring 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 fault These rocks, being more brittle than the adjacent flows, tuffs and agglomerates, shattered readily yielded more "ore fractures".

The BC government supported MapPlace geological map indicates that Tenure 1024300 of the AG 1024300 Claim Group is bisected by a northerly trending regional fault contact with the Nicola Group Central Volcanic Facies (uTrNC) of andesitic rocks to the west and the Nicola Group Eastern Volcanic Facies (uTrNE) of basaltic rocks to the east.

Four cross-structures were delineated on Tenure 1024300; two within the andesitic volcanics of the Central Volcanic Facies and two within the basaltic volcanics of the Eastern Volcanic Facies. As the Central portion hosts the majority of intrusives and the mineralization, the Central Facies may be the more favourable area of exploration even though the Eastern Facies contains sparse intrusives, possibly comagmatic with the basalts.

Increased brecciation at the four Tenure 1024300 cross-structures could have been enhanced by the lateral and/or vertical movement of the regional fault bisecting the four intersections.

The three Minfile mineral descriptions of two showings and one prospect on the adjacent structurally analyzed Tenure of the AG 1024300 Claim Group indicate mineralization on restricted (?) areas of fractures or shear zones. This restricted mineralization may be the result of surface seepage from a mineral source at depth and may not have the extensive zone of brecciation that a cross-structural location would have for extensive mineral controlling deposition.

Thus, the four cross-structures are prime prospective areas to explore for surficial geological indicators of a potential economic mineral resource at a depth where m. These indicators may be revealed by the surficial alteration or mineral products that would be subject to interpretation as to economic mineral indicators.

Excluding other variable geological conditions, the structures are essential in the localization of potentially economic mineral zones on the Property. Other mineral deposit types such as skarn or porphyry mineralization are evident from the prospects as indicated by the geology and the Minfile reports included herein.

INTRODUCTION

In July 2014 a Structural Analysis was completed Tenure 1024300 of the three claim AG 1024300 Claim Group ("Property"). The purpose of the program was to delineate potential structures which may be integral in geological controls to potentially economic mineral zones that may occur on Tenure 1024300 or other claims of the AG 1024300 Claim Group.

Information for this report was obtained from sources as cited under Selected References.

Figure 1. ***Location Map***

PROPERTY DESCRIPTION AND LOCATION

Description

The Property is comprised of three claims covering an area of 438.3565 hectares. Particulars are as follows:

Table I: **Tenures of AG 1024300 Claim Group**
(from MtOnline)

Tenure Number	Type	Claim Name	Good Until	Area (ha)
1024072	Mineral	KETCHAN SOUTH	20171220	313.1214
1024299	Mineral		20171220	20.8749
1024300	Mineral		20171220	104.3602

Total Area: 438.3565 ha

*Upon the approval of the assessment work filing, Event Number 5513228.

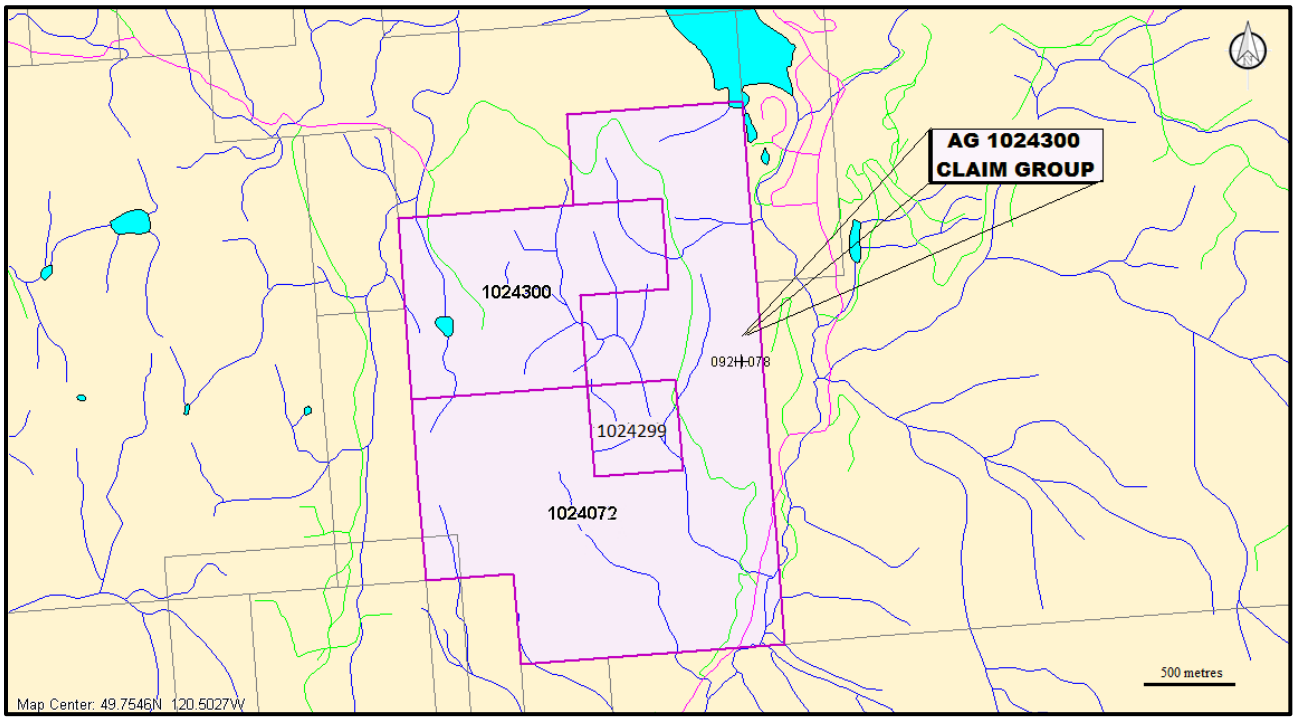
Location

The Property is located within BCGS Map 092H.078 of the Nicola Mining Division, 195 kilometres east-northeast of Vancouver, 43 kilometres south-southeast of Merritt, 33 kilometres north of Princeton, and 45 kilometres north of the Copper Mountain Mine *(Minfile 092HSE001)* where mill-feed was 27,600 tonnes per day in 2013.

Property Description and Location *(cont'd)*

Figure 2. ***Claim Location***
(Base map from MapPlace & Google)

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



ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY

Access

Access to the Property is north from Princeton via Highway 5A for nine kilometres to the Summers Creek secondary road, thence northerly for 27 kilometres to the southern boundary of Tenure 1024072 of the AG 1024300 Claim Group.

Forestry roads provide access to many areas on the Property.

Climate

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

Local Resources and Infrastructure

Princeton, the resource centre for the Copper Mountain Mine, 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 three hours distant by road and less than one hour by air from Kamloops or two hours distant from Merritt.

Physiography

Tenure 1024300 of the AG 1024300 Claim Group covers an area of forested gently rolling hills with approximately 60% second growth timber. Relief is in the order of 137 metres from an elevation of 1,255 metres in the northeast to 1,392 metres in the southwest.

WATER and POWER

Sufficient water for all phases of the exploration program should be available from the many lakes and creeks, which are located within the confines of the property. Water may be scarce during the summer months and any water required for exploratory purposes may have to be obtained from lakes on the Property and transported to the worksite.

A 150 KV power-line is within three kilometres of the western Property boundary.

HISTORY: PROPERTY AREA

The history on some of the more significant mineral *MINFILE* reported occurrences, prospects, and past producers peripheral to the Property are reported as follows:

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)
MINFILE 092HSE001
Forty five 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.

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

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 (Explore B.C. Program 95/96 - A100).

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

PRIMER (NORTH ZONE) developed prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE056
Three kilometres east-northeast

This occurrence was initially staked and trenched by local prospectors between 1937 and 1941. Primer Group Minerals Ltd. optioned the property to McIntyre Porcupine Mines Ltd in 1962, after acquiring the property in 1961. The company completed various geological, soil geochemical and geophysical surveys before giving up the option.

Primer Group Minerals continued to explore the deposit, drilling 15 diamond-drill holes totalling 1402 metres and seven percussion holes totalling 390 metres between 1965 and 1968.

Additional geological, soil geochemical and magnetometer surveys were completed by the company in 1969. Giant Piper Exploration Inc. (formerly Piper Petroleums Ltd.) and Consolidated Silver Butte Mines Ltd. conducted minor surface exploration in 1977, 1978 and 1987.

RUM prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE099
Seven kilometres south

This prospect was discovered by Plateau Metals Ltd. in 1963, after detecting a strong lineament extending southward from the Coke occurrence. The deposit has been extensively explored by various operators since then.

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

A number of geological, geophysical and soil surveys were completed between 1963 and 1976 by Plateau Metals, Adera Mining Ltd., Amax Exploration Inc., Kalco Valley Mines Ltd. and Ruskin Developments Ltd. Two percussion holes totalling 110 metres and 7 diamond drill-holes totalling 757 metres were drilled by these companies between 1966 and 1972. Since then, several geophysical and soil and rock geochemical surveys were conducted by Cominco Ltd. in 1980 and 1981, and P. Peto in 1985 and 1986.

KETCHAN LAKE NORTH prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE115
Three kilometres northwest

This prospect was first staked by Plateau Metals Ltd. in 1962, after copper mineralization was uncovered during a logging operation. The company completed a magnetometer survey and drilled three holes, totalling 145 metres, in 1962.

An additional seven holes, totalling 512 metres, were drilled in 1966 after the property was optioned to Adera Mining Ltd. Various geophysical and geological surveys and 768 metres of trenching were also completed in 1966. A channel sample of hard, well-fractured, silicified diorite, containing evenly disseminated fine crystals of chalcopyrite, yielded 1.36 per cent copper over 3.05 metres (National Mineral Inventory).

A section of gossan near the north end of the zone analysed 0.17 per cent copper and 8.23 grams per tonne silver over 29 metres (Assessment Report 977). Hole P3 was drilled in the vicinity and yielded 0.22 per cent copper over 39.6 metres (Assessment Report 977).

The deposit was restaked by Bethlehem Copper Corporation in 1973. The company drilled three percussion holes totalling 322 metres, two diamond drillholes totalling 227 metres and one rotary hole, 218 metres deep, in 1974 and 1975. Rotary drilling near the centre of the zone intersected disseminated chalcopyrite to a depth of 218 metres (Assessment Report 5824).

Cominco Ltd. completed 1067.3 metres of percussion drilling in 15 holes in 1991. A second hole drilled 695 metres south-southeast of hole P3 assayed 0.379 per cent copper and 0.076 gram per tonne gold over 86.6 metres (Assessment Report 21746). In 1992, Cominco Ltd. conducted an eight-hole percussion drill program totalling 640 metres. Highlights include drillhole M92-4, which returned 81.4 metres grading 0.2595 per cent copper and 0.124 grams per tonne gold (Assessment Report 22555).

In 2004, William Richard Bergey completed reconnaissance geological mapping on the Aspen Grove property.

In 2005, Copper Belt Resources Ltd. conducted geological mapping and a 10-hole diamond drill program totalling 1210.2 metres. Drillhole K05-07 intersected a 35.8 metre section that assayed 0.54 per cent copper and 0.19 grams per tonne gold (Assessment Report 28484).

In 2006 and 2007, Midland Resources Corp. completed 1416 metres of diamond drilling in seven holes. Highlights include drillhole K-06-11, which returned 36.75 metres grading 0.29 per cent copper and 0.17 grams per tonne gold (Assessment Report 29453).

In 2011, Moag Copper-Gold Resources Inc. completed a mobile metal ion geochemical sampling survey in areas throughout the Aspen Grove property.

In 2013, West Cirque Resources Ltd. acquired the Aspen Grove property, which consists of 37 mineral claims, totalling 5629 hectares, including the Ketchan Lake North prospect, and proceeded to complete an exploration program of geological mapping and rock sampling throughout the property. Twelve samples were taken from trenches and outcrops at the Ketchan Lake North prospect and assayed up to 1.07 per cent copper, 0.458 grams per tonne gold and 52.5 grams per tonne silver (Press Release, West Cirque Resources Ltd., June 11, 2013).

History: Property Area *(cont'd)*

NORTH MDA showing (Alkalic porphyry Cu-Au)
MINFILE 092HNE118
Two kilometres northwest

Sheba Copper Mines Ltd. geologically mapped, soil sampled and magnetically surveyed the showing in 1972. Vanco Explorations Ltd. and Laramide Resources Ltd. sampled and mapped the showing in 1985 and 1987.

DEX 2 showing (Volcanic redbed Cu)
MINFILE 092HNE140
Five hundred metres west

The Dex 2 showing is 980 metres east-southeast of a small unnamed lake, 2.7 kilometres southeast of the south end of Ketchan Lake and 2.3 kilometres southwest of Missezula Lake.

COKE prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE240
One kilometre south-southwest

The Coke copper prospect is situated atop the plateau overlooking the steep east-facing slope of the Summers Creek valley, 31.5 kilometres north of Princeton. The Rum occurrence (MINFILE 092HNE099) is 950 metres to the south.

HISTORY: PROPERTY

The history of *MINFILE* reported showings and prospects within the Property are reported as follows:

SHAMROCK prospect (Volcanic redbed Cu)
MINFILE 092HNE240
Within Tenure 1024072

This showing was first explored in 1929, with the excavation of several trenches and a short adit. A small shipment of ore mined that year averaged 5.78 per cent copper (Minister of Mines Annual Report 1929, page 278). Consolidated Woodgreen Mines Ltd. conducted additional trenching and drilled at least three holes in 1963. Various geological, geophysical and geochemical surveys were completed over the showing by Delkirk Mining Ltd., Belcarra Explorations Ltd. and Rio Tinto Canadian Exploration Ltd. between 1969 and 1972. The deposit was sampled for precious metals by Vanco Explorations Ltd. in 1985.

MISSEZULA LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE254
Within Tenure 1024072

The Missezula Lake showing is 400 metres southwest of Missezula Lake, and 3.8 to 4.0 kilometres east-southeast of the south end of Ketchan Lake.

GEOLOGY: REGIONAL

Thomson (2011) aptly describes the regional geology as follows:

The Ketchan property is located in Quesnellia in the southern part of the Intermontane Belt of the Canadian Cordillera. In the southern part of Quesnellia, the dominantly magmatic arc sequence volcanic rocks of the Upper Triassic Nicola group crop out within a north trending belt, up to 50 kilometres in width, extending more than 200 kilometres from south of Princeton to north of Kamloops. This belt of rocks contains four major copper and copper-gold camps in the region (Afton-Ajax, Highland Valley, Craigmont and Copper Mountain). Copper deposits are particularly abundant, within the eastern part of the Nicola belt, in an area that trends north along Summers Creek and Missezula Lake, to just beyond the village of Aspen Grove.

Geology: Regional *(cont'd)*

These porphyry copper deposits are hosted in Nicola Group volcanic rocks, and tend to be associated with small fine-grained dioritic to monzonitic intrusions. One such occurrence is the ***Axe*** *prospect (092HNE040), located 20 kilometres north of Princeton. This deposit contains 57.5 million tonnes grading 0.50 per cent copper in three zones of mineralization (092HNE040, 142. 143). A second occurrence, the* ***Cincinnatti*** *prospect (092HNE084), is located 4.5 kilometres southeast of Aspen Grove and contains 1.8 million tonnes grading 1 .0 per cent copper.*

The rocks of the Nicola Group were invaded by a large number of alkaline plutons that appear to be comagmatic in part with the volcanic assemblage that they intrude (e.g. Allison Lake pluton). The largest of these, the Iron Mask batholith, is the host for the Afton and Ajax copper-gold porphyry deposits. Large bodies of somewhat younger (Jurassic) calc-alkaline intrusive rocks are found along the margins of the Nicola volcanic belt

These include the Guichon batholith that hosts the immense copper deposits of the Highland Valley and appears to be the source for the copper at the Craigmont Mine, along the margin of the intrusion. These rocks are unconformably overlain by Cretaceous and Tertiary volcanic rocks and clastic sediments (e.g. Spences Bridge and Princeton groups).

During his detailed study of the group within the area between Merritt and Princeton, Preto (1979) divided the Nicola volcanic assemblage into three north-trending facies.

His partitioning was based on field observations that indicated that major changes in the character of the volcanic assemblage took place at two regional north-south strike-slip fault zones, the Summers Creek Kentucky-Alleyne/Quilchena fault zone and the Allison fault zone. The Ketchan Lake copper-gold prospect lies within a central zone bounded on the west by the Allison Fault and on the east by the Summers Creek fault. It is speculated that the abundant faulting found at the Ketchan property is related to fault splays branching from the relatively proximal, Summers Creek Fault.

Preto (1979) believed that the sharply contrasting belts along these major fault systems was too systematic and complete to be due entirely to late fault displacement, unrelated in origin to Nicola volcanism, but probably the result of an old system of deep-seated crustal features, which dominated the structural framework of this region in Upper Triassic time. The Western Belt comprises a succession of calc-alkaline andesitic to dacitic volcanic rocks with minor amounts of limestone and chert. Alkalic basaltic and andesitic volcanic rocks dominate both the Central and Eastern Belts. However, the alkaline plutons that are coeval with the volcanic rocks are mainly confined to the Central Belt.

GEOLOGY: PROPERTY AREA

The geology on some of the more significant mineral *MINFILE* reported occurrences, prospects, and developed prospects peripheral to the Property are reported as follows:

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)
MINFILE 092HSE001
Forty five 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.

Geology: Area *(cont'd)*
Copper Mountain *producer (cont'd)*

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.

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.

Geology: Area *(cont'd)*
Copper Mountain *producer (cont'd)*

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).

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.

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

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. 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 (Canadian Institute of Mining and Metallurgy Special Volume 15).

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.

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

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

PRIMER (NORTH ZONE) developed prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE056
Three kilometres east-northeast

The hostrocks are hydrothermally altered in areas of stronger shearing and fracturing. Secondary minerals include chlorite, epidote, albite, carbonate, sericite and kaolinite. The andesite is cut by a prominent set of steeply dipping, north-northwest striking shears and fractures. Numerous northwest and northeast striking shear zones are also evident. Gypsum (selenite) veins are frequent, while quartz and calcite veins are less common.

This region in the vicinity of Missezula Lake is underlain by the Eastern volcanic facies of the Upper Triassic Nicola Group, comprising mafic to intermediate, augite and hornblende porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic. Much of the copper mineralization and associated alteration frequenting this portion of the Nicola belt can be attributed to the emplacement of such intrusions.

The deposit is largely hosted in variably plagioclase and hornblende porphyritic andesite of the Nicola Group (Eastern belt, Bulletin 69). A body of diorite and microdiorite, possibly related to the andesite, lies immediately northwest of the deposit. Short sections of schist and occasional hornblende porphyritic diorite dikes occur at depth in the andesite.

RUM prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE099
Seven kilometres south

This region along Summers Creek is underlain by the Eastern volcanic facies of the Upper Triassic Nicola Group, comprising mafic to intermediate, augite and hornblende porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic. Much of the copper mineralization and associated alteration frequenting this portion of the Nicola belt can be attributed to the emplacement of such intrusions.

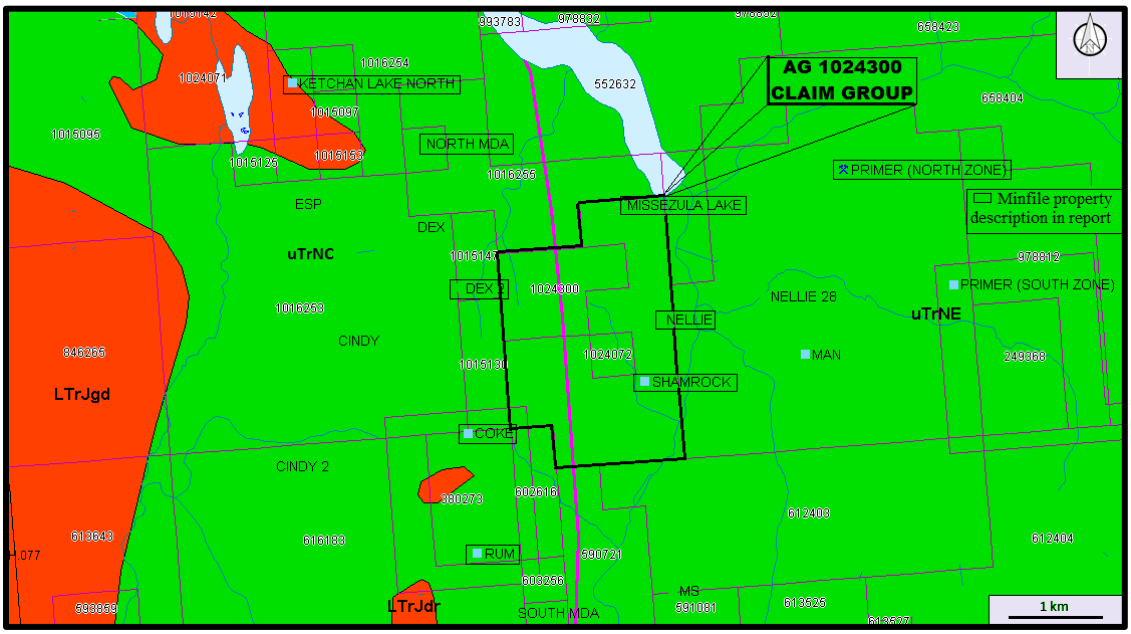
Locally, the area is underlain by andesitic to basaltic flows, with lesser lapilli and crystal tuffs and minor sediments of the Nicola Group (Central belt, Bulletin 69). This sequence is intruded by a north trending, sill-like body of hornblende augite microdiorite, 3000 by 600 metres in area. The stock is truncated to the east by the north-northeast striking Missezula Mountain fault, a branch of the Summers Creek fault to the east, which juxtaposes steeply dipping lapilli and crystal tuffs with minor limestone lenses against the diorite. Rocks along the fault are strongly fractured and gossanous.

KETCHAN LAKE NORTH prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE115
Three kilometres northwest

***Geology: Property Area** (cont'd)*
***Ketchan Lake North** prospect (cont'd)*

Locally, the area is underlain by northwest-striking, moderately northeast-dipping andesitic flows, with lesser andesitic lapilli and crystal tuffs and minor lahar deposits of the Nicola Group (Central Belt, Bulletin 69). This sequence is intruded by a west-trending mass of fine to medium-grained diorite (microdiorite), roughly centred about Ketchan Lake, measuring 4000 by 2000 metres.

Figure 4. **Property, Index, Geology, & Minfile**
(Base map from MapPlace)



GEOLOGY MAP LEGEND

Pleistocene to Holocene
Qvk
unnamed alkalic volcanic rocks

Eocene
Egd
unnamed granodioritic intrusive 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 Area** (cont'd)*
***Ketchan Lake North** prospect (cont'd)*

The diorite commonly contains seams and irregular replacements of orthoclase. Epidote is widespread, and is frequently developed along northwest-striking, northeast-dipping fractures. Disseminations and veinlets of magnetite are also present in this stock.

This region southwest of Missezula Lake is underlain by the eastern volcanic facies of the Upper Triassic Nicola Group, comprising mafic to intermediate augite and hornblende porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic. Much of the copper mineralization and associated alteration frequenting this portion of the Nicola belt can be attributed to the emplacement of such intrusions.

NORTH MDA showing (Alkalic porphyry Cu-Au)
MINFILE 092HNE118
Five kilometres southeast

Chalcopyrite occurs together with magnetite and epidote in an elongate stock of fine-grained diorite, near its east end. Malachite occasionally accompanies this mineralization. The stock intrudes andesitic flows and pyroclastics of the Upper Triassic Nicola Group (Central belt, Bulletin 69). The andesites exhibit epidote alteration accompanied by some weak copper mineralization in a poorly defined area extending up to 600 metres north and 300 metres east of the stock.

DEX 2 showing (Volcanic redbed Cu)
MINFILE 092HNE140
Five hundred metres west

Weak copper mineralization occurs in calcite veins exposed in a roadcut comprised of andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69). Malachite is associated with the calcite veining.

LOG 1 showing (Volcanic redbed Cu)
MINFILE 092HNE152
One kilometre west

Several occurrences of chalcopyrite, chalcocite and malachite are hosted in augite plagioclase porphyritic andesite and volcanic breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

COKE prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE240
One kilometre south-southwest

This region along Summers Creek is underlain by the eastern volcanic facies of the Upper Triassic Nicola Group, comprising mafic to intermediate augite and hornblende porphyritic pyroclastics and flows, and associated alkaline intrusions. The intrusions range from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic. Much of the copper mineralization and associated alteration frequenting this portion of the Nicola belt can be attributed to the emplacement of such intrusions.

Locally, the area is underlain by andesitic to basaltic flows, with lesser lapilli and crystal tuffs and minor sediments of the Nicola Group (Central Belt, Bulletin 69). This sequence is intruded by a north-trending, sill-like body of hornblende augite microdiorite, 3000 metres long and 600 metres wide. The stock is truncated to the east by the north-northeast–striking Missezula Mountain fault, a branch of the Summers Creek fault to the east, which juxtaposes steeply dipping lapilli and crystal tuffs with minor limestone lenses against the diorite. Rocks along the fault are strongly fractured and gossanous.

GEOLOGY: PROPERTY

The BC government supported MapPlace geological map indicates that Tenure 1024300 of the Property is bisected by a northerly trending fault with the Nicola Group Central Volcanic Facies (uTrNC) of andesitic rocks to the west and the Nicola Group Eastern Volcanic Facies (uTrNE) of basaltic rocks to the east.

Alkalic basaltic and andesitic volcanic rocks dominate both the Central and Eastern Belts. However, the alkaline plutons that are coeval with the volcanic rocks are mainly confined to the Central Belt (Preto, 1979).

NELLIE showing (Volcanic redbed Cu)
MINFILE 092HNE153
Within Tenure 1024072

Several trenches situated 400 metres west of Summers Creek and 1.4 kilometres south-southwest of the south end of Missezula Lake expose chalcocite, malachite, chalcopyrite and pyrite in massive to crudely bedded lahar deposits of the Upper Triassic Nicola Group (Eastern belt, Bulletin 69). A sample analysed 0.486 per cent copper and 1.4 grams per tonne silver (Assessment Report 14141, Drawing 13a, sample 2152).

SHAMROCK prospect (Volcanic redbed Cu)
MINFILE 092HNE240
Within Tenure 1024072

The Shamrock showing is hosted in massive to crudely bedded lahar deposits and volcanic conglomerate of the Upper Triassic Nicola Group (Eastern belt, Bulletin 69). The beds strike north and dip 40 to 60 degrees west. Previous mapping has also described the lahars as being andesitic flow breccias. The volcanics are cut by a zone of narrow shears and fractures striking 020 to 025 degrees and dipping 70 degrees northwest. The zone trends 015 degrees for 37 metres and is 3 to 6 metres wide over most of its length. The shears are displaced by two post mineral faults striking 075 and 150 degrees and dipping 80 to 90 degrees north and 80 degrees northeast respectively.

MISSEZULA LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE254
Within Tenure 1024072

Malachite and hematite occur in several road cuts, 300 metres apart, in red volcanic breccia and augite plagioclase porphyritic andesite and basalt of the Upper Triassic Nicola Group (Eastern belt, Bulletin 69). A sample of andesite with malachite and hematite analysed 0.887 per cent copper and 2.0 grams per tonne silver (Assessment Report 14141, Drawing 13a, sample R1900). A second sample of breccia with malachite, 285 metres northwest of sample R1900, analysed 0.436 per cent copper and 1.2 grams per tonne silver (sample R1600).

MINERALIZATION: PROPERTY AREA

COPPER MOUNTAIN producer (Alkalic porphyry Cu-Au)
MINFILE 092HSE001
Forty five 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).

Mineralization: Property Area *(cont'd)*

PRIMER (NORTH ZONE) developed prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE056
Three kilometres east-northeast

Mineralization consists of pyrite and chalcopyrite, generally as veins and fracture fillings, but also as disseminations and blebs. Gossanous zones of stronger shearing, fracturing and alteration contain 3 to 20 per cent pyrite, 1 to 3 per cent magnetite and trace to 1 per cent chalcopyrite. Chalcopyrite to pyrite ratios are about 1 to 3. Malachite and azurite accompany chalcopyrite and pyrite in trenches with intensely fractured and sheared andesite. These surface exposures suggest stronger mineralization is controlled by shearing. Disseminated chalcopyrite and pyrite are also found in chloritized andesite.

Magnetite occurs as veinlets and is present in chalcopyrite seams in minor amounts. Chalcopyrite is also associated with epidote alteration and to a minor extent, carbonate-quartz veining.

Exploration work has outlined a zone of erratic copper mineralization with anomalous gold values that trends west-southwest for 850 metres and varies from 150 to 170 metres wide over most of its length. Diamond drilling intersected significant copper mineralization to depths of 200 metres.

An angled drillhole in the eastern part of the deposit yielded 0.47 per cent copper over 30.5 metres (L. Manning and Associates Ltd, 1968, hole 65-1). Two other holes drilled 127 metres north and 440 metres west of hole 65-1 yielded 0.495 and 0.119 per cent copper over 43.1 and 128.0 metres respectively (Assessment Report 2354, core logs, holes 67-7, 68-2). Unclassified reserves are 23 million tonnes grading 0.20 per cent copper (CIM Special Volume 15, Table 1, Occurrence No. 20). Gold values in drill core ranged from nil to 1 gram per tonne (Assessment Report 2354).

A grab sample of brecciated calcic volcanics with abundant chalcopyrite assayed 4.81 per cent copper, 2.7 grams per tonne gold and 51.1 grams per tonne silver (Assessment Report 21198, section 11.0 - analytical results, sample PN-R3).

RUM prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE099
Seven kilometres south

Near the fault, the microdiorite hosts pyrite, as disseminations and fracture coatings, and lesser chalcopyrite, bornite and chalcocite, in fracture fillings and quartz-carbonate veins. Chalcopyrite is also weakly disseminated. Similar mineralization occurs in the Coke prospect to the north. Trenching and diamond drilling indicates copper mineralization is largely confined to a north-trending zone, 250 metres long and up to 200 metres wide. Chip sampling of a trench analysed 0.16 per cent copper over 183 metres, including 0.29 per cent over 53.3 metres (L. Sookochoff, 1975, page 9, trench 7). A second trench averaged 0.10 per cent copper over 137 metres (trench 8W). One percussion hole yielded 0.09 per cent copper over 27.4 metres (L. Sookochoff, 1975, page 10, hole PR 10, 9.2 to 36.6 metres). Core from a diamond-drill hole assayed 1.41 per cent copper over 0.76 metre (L. Sookochoff, 1975, page 11, hole K-3, 48.62 to 49.38 metres). Rock sampling yielded gold values of up to 0.071 gram per tonne (Assessment Report 14304, sample R1).

KETCHAN LAKE NORTH prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE115
Three kilometres northwest

Trenching and drilling have intersected copper mineralization in a northwest-trending zone 1400 metres long and up to 600 metres wide, roughly paralleling the northeastern margin of the stock.

Mineralization: Property Area *(cont'd)*
Ketchan Lake North *prospect (cont'd)*

Mineralization is hosted in the diorite and consists of pyrite and chalcopyrite, usually as disseminations, but also as fracture fillings. Rare bornite and chalcocite are also reported. Seams, patches and blebs of orthoclase, epidote and/or magnetite are sometimes associated with this mineralization. Some malachite is also present in surface exposures. Chlorite, sericite and traces of secondary biotite occur with the sulphides at depth.

NORTH MDA showing (Alkalic porphyry Cu-Au)
MINFILE 092HNE118
Two kilometres northwest

A rock sample assayed 3.1 grams per tonne silver and 0.1452 per cent copper (Assessment Report 14141, Drawing 13a, sample 88611).

DEX 2 showing (Volcanic redbed Cu)
MINFILE 092HNE140
Five hundred metres west

Weak copper mineralization occurs in calcite veins exposed in a roadcut comprised of andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69). Malachite is associated with the calcite veining.

COKE prospect (Alkalic porphyry Cu-Au)
MINFILE 092HNE240
One kilometre south-southwest

Mineralization occurs near the fault in the microdiorite, and consists of pyrite as disseminations and fracture coatings and lesser chalcopyrite, bornite and chalcocite in fracture fillings and quartz-carbonate veins. Chalcopyrite also occurs as disseminations and in calcite and epidote veinlets. Similar mineralization is found at the Rum prospect to the south. Malachite and azurite accompany limonite in surface exposures. Trenching and drilling has intersected significant copper mineralization in a zone up to 150 metres wide, trending north for 450 metres, along the west flank of the Missezula Mountain fault. Chip sampling of a trench assayed 0.20 per cent copper over 51.8 metres (Property File - L. Sookochoff, 1975, page 9, trench 1). Analyses from a second trench averaged 0.28 per cent copper and 9.9 grams per tonne silver over 24.4 metres (trench 4). One diamond drillhole graded 0.23 per cent copper over 83.2 metres (L. Sookochoff, 1975, page 11, hole K-4, 29.6 to 112.8 metres). Rock sampling yielded low gold values, generally not exceeding 0.032 gram per tonne; however, a sample of microdiorite, with pyrite, chalcopyrite and malachite, assayed 0.35 gram per tonne gold (Assessment Report 14304, sample R8).

MINERALIZATION: PROPERTY

The mineralization of *MINFILE* reported showings and prospects within the Property are reported as follows:

NELLIE showing (Volcanic redbed Cu)
MINFILE 092HNE153
Within Tenure 1024072

Several trenches situated 400 metres west of Summers Creek and 1.4 kilometres south-southwest of the south end of Missezula Lake expose chalcocite, malachite, chalcopyrite and pyrite in massive to crudely bedded lahar deposits of the Upper Triassic Nicola Group (Eastern belt, Bulletin 69). A sample analysed 0.486 per cent copper and 1.4 grams per tonne silver (Assessment Report 14141, Drawing 13a, sample 2152).

SHAMROCK prospect (Volcanic redbed Cu)
MINFILE 092HNE240
Within Tenure 1024072

Mineralization: Property *(cont'd)*
Shamrock *prospect (cont'd)*

Mineralization consists of massive veinlets and disseminations of chalcocite and a few grains of chalcopyrite and pyrite developed along the shears and fractures. Native copper is also reported. The sulphides are accompanied by malachite and azurite. Three chip samples, taken across widths of 4.3 to 4.9 metres and spaced evenly over a strike length of 17 metres, averaged 2.40 per cent copper (Assessment Report 3955, page 2). A composite sample of the three chip samples assayed 4.8 grams per tonne silver and 0.10 gram per tonne gold (Assessment Report 3955, page 11). Sampling over a length of 30 metres and an average width of 5.2 metres yielded 1.42 per cent copper (National Mineral Inventory).

A trench 137 metres southwest of the shear zone exposes minor disseminated chalcocite over a length of 60 metres. This mineralization may be related to a diorite dike. A series of grab samples from the trench averaged 0.23 per cent copper (Assessment Report 3955, page 11). Other northeast and northwest striking shears mineralized with chalcopyrite, chalcocite and pyrite occur north and south of the main zone of shearing over a distance of 600 metres. The shears appear to be confined to the same stratigraphic horizon.

MISSEZULA LAKE showing (Volcanic redbed Cu)
MINFILE 092HNE254
Within Tenure 1024072

Malachite and hematite occur in several road cuts, 300 metres apart, in red volcanic breccia and augite plagioclase porphyritic andesite and basalt of the Upper Triassic Nicola Group (Eastern belt, Bulletin 69). A sample of andesite with malachite and hematite analysed 0.887 per cent copper and 2.0 grams per tonne silver (Assessment Report 14141, Drawing 13a, sample R1900). A second sample of breccia with malachite, 285 metres northwest of sample R1900, analysed 0.436 per cent copper and 1.2 grams per tonne silver (sample R1600).

STRUCTURAL ANALYSIS

The structural analysis was performed on a MapPlace hillside shade map of Tenure 1024300 by viewing of the map and marking the lineaments, or indicated structures, thereon. A total of 59 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 at 5,514,762N, 678,865E (NAD 83).

***Structural Analysis** (cont'd)*

Figure 5. **Indicated Structures from Lineaments on Tenure 1024300**

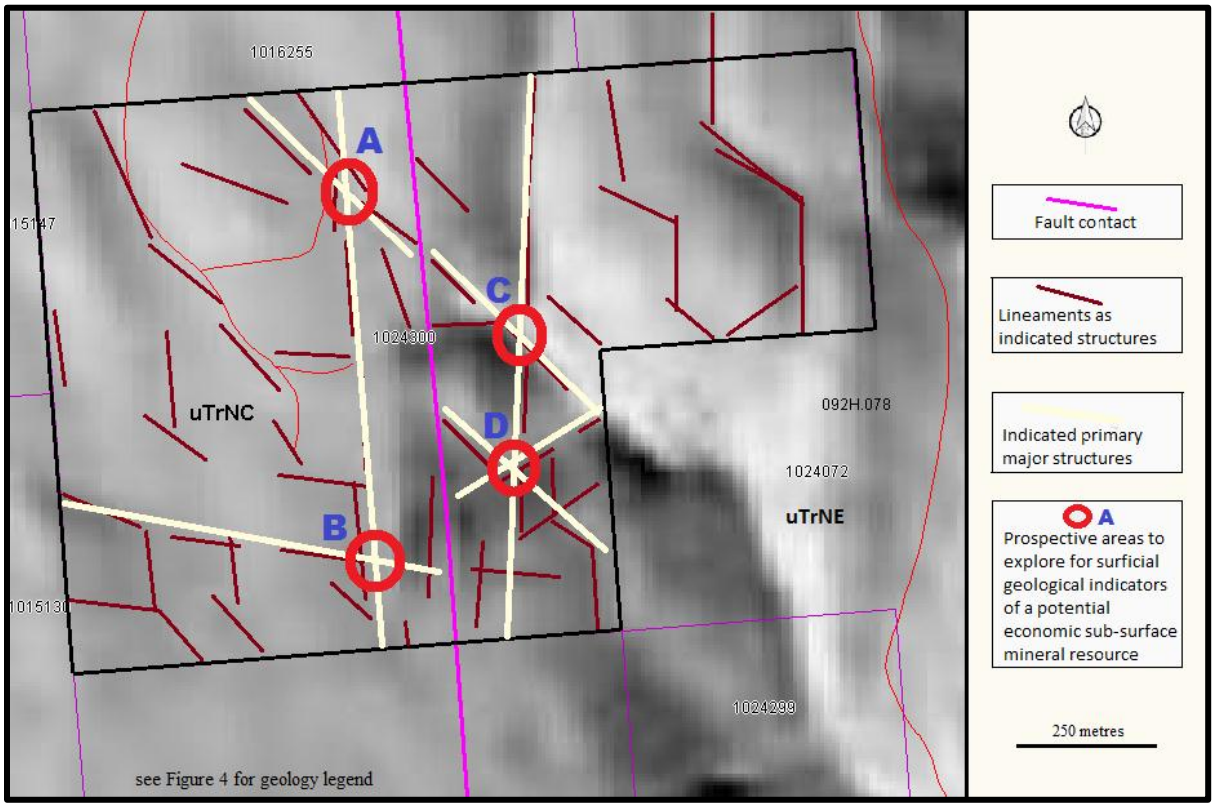
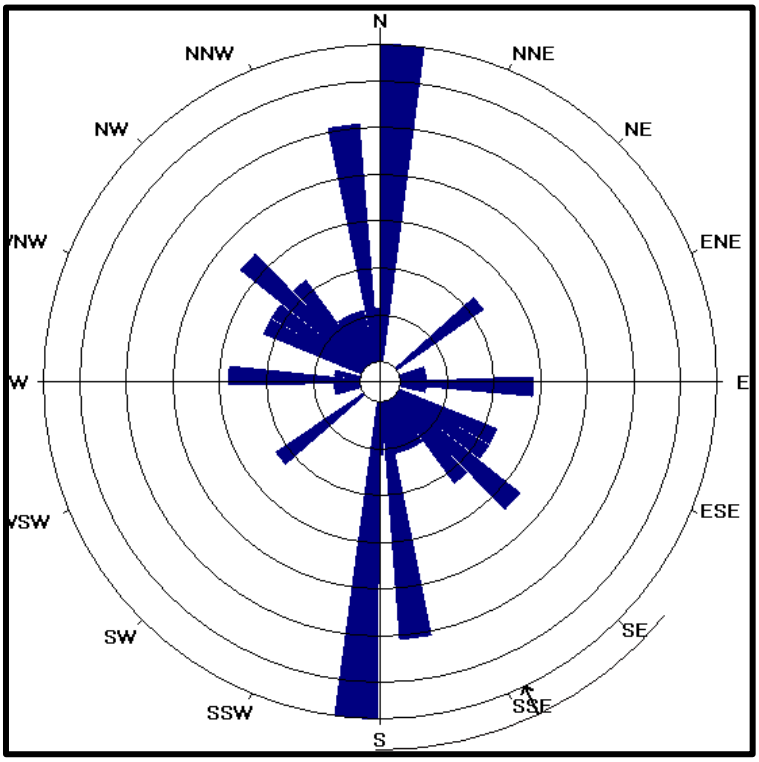


Figure 6. **Rose Diagram from lineaments of Figure 5.**



***Structural Analysis** (cont'd)*

STATISTICS

Axial (non-polar) data
No. of Data = 59
Sector angle = 8°
Scale: tick interval = 3% [1.8 data]
Maximum = 20.3% [12 data]
Mean Resultant dir'n = 155-335
[Approx. 95% Confidence interval = ±25.5°]
(valid only for unimodal data)

Mean Resultant dir'n = 154.6 - 334.6
Circ.Median = 158.0 - 338.0
Circ.Mean Dev.about median = 32.5°
Circ. Variance = 0.22
Circular Std.Dev. = 39.92°
Circ. Dispersion = 2.85
Circ.Std Error = 0.2196
Circ.Skewness = 1.81
Circ.Kurtosis = -8.83

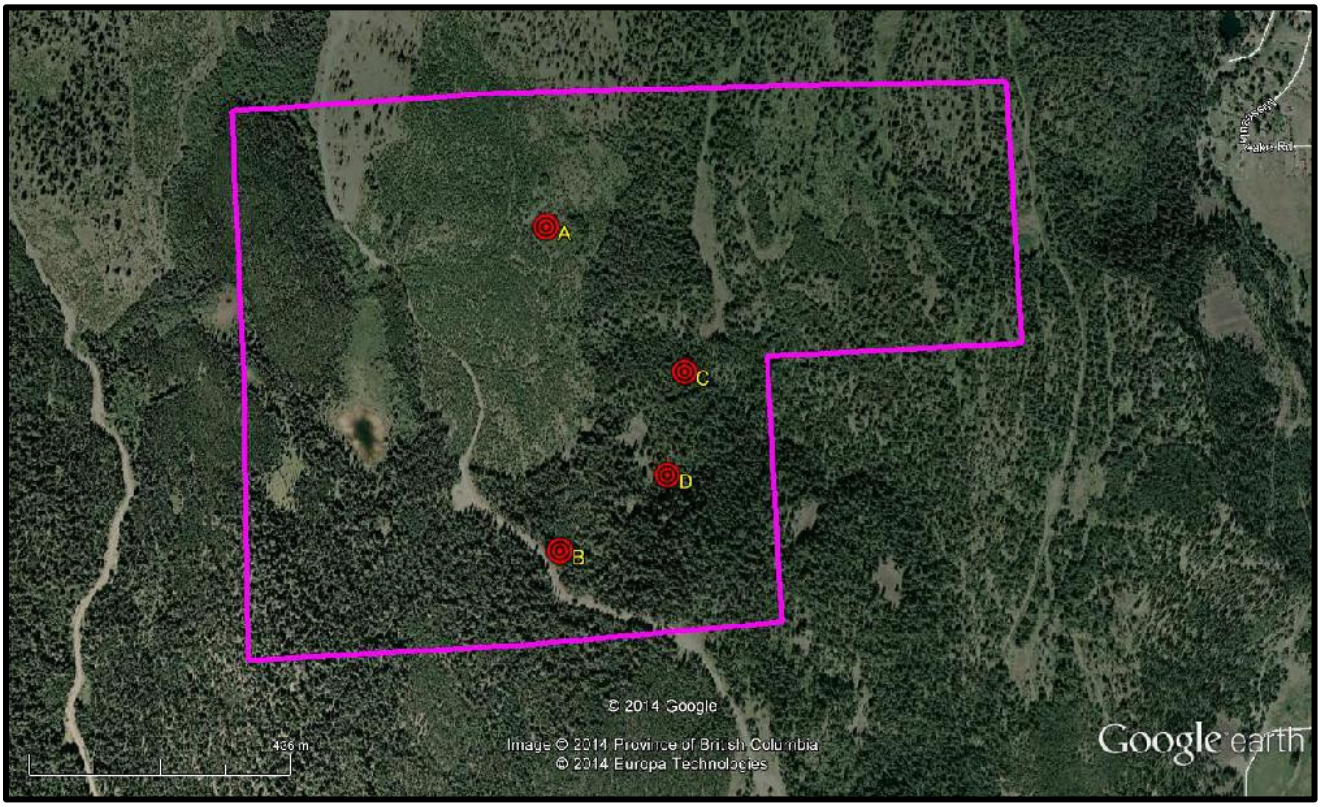
kappa = 0.82
(von Mises concentration param. estimate)

Resultant length = 22.34
Mean Resultant length = 0.3787

'Mean' Moments: Cbar = 0.2394; Sbar = -0.2934
'Full' trig. sums: SumCos = 14.1231; Sbar = -17.3105
Mean resultant of doubled angles = 0.1838
Mean direction of doubled angles = 179

(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 on Google Earth**
(Base map from MapPlace & Google Earth)



Structural Analysis *(cont'd)*

Table II. **Approximate UTM locations of Figures 5 & 7 cross-structures**

Location	UTM East	UTM North	Elevation (metres)
A	678,688	5,514,931	1,351
B	678,921	5,514,688	1,367
C	678,914	5,514,761	1,283
D	678,887	5,514,507	1,279

INTERPRETATION and CONCLUSIONS

Four cross-structures were delineated on Tenure 1024300; two within the andesitic volcanics of the Central Volcanic Facies and two within the basaltic volcanics of the Eastern Volcanic Facies. As the Central portion hosts the majority of intrusives and the mineralization, the Central Facies may be the more favourable area of exploration even though the Eastern Facies contains sparse intrusives, possibly comagmatic with the andesite.

In any event, "*Much of the copper mineralization and associated alteration frequenting this portion of the Nicola Belt can be attributed to the emplacement of such intrusions."* (Primer {North Zone} Minfile). Perhaps the anomaly in the favorability of the Central Facies to the Eastern Facies is in the Copper Mountain mineral deposit where mineralization is hosted by intrusive stocks and the Eastern Facies. Mining at Copper Mountain where production in 2013 was at 27,600 tonnes per day.

In the development process of many significant mineral resources, such as at the Copper Mountain mineral deposit, structures are a mineral controlling factor to the brecciation of the rock whereby a "home" is provided for the deposition of mineralizing fluids. In many cases, the strongest areas of brecciation generally contains the greatest mineralization; and the greatest brecciation is often at the intersection of major structures and to a greater extent, created by lateral displacement of the structures such as at the world-class Highland Valley mineral deposit.

Increased brecciation at the four cross-structures could have been enhanced by the lateral/vertical movement of the regional fault bisecting the four intersections.

The three Minfile mineral descriptions of two showings one prospect and on the adjacent Tenure of the three Tenure AG 1024300 Claim Group indicate mineralization on restricted (?) areas of fractures or shear zones, which may be surface seepage from a mineral source at depth. These locations may not have the extensive zone of brecciation that a cross-structural location would have for extensive mineral controlling deposition.

Thus, the four cross-structures are prime prospective areas to explore for surficial geological indicators of a potential economic mineral resource at a depth. These indicators may be revealed by the surficial alteration or mineral products that would be subject to interpretation as to economic mineral indicators.

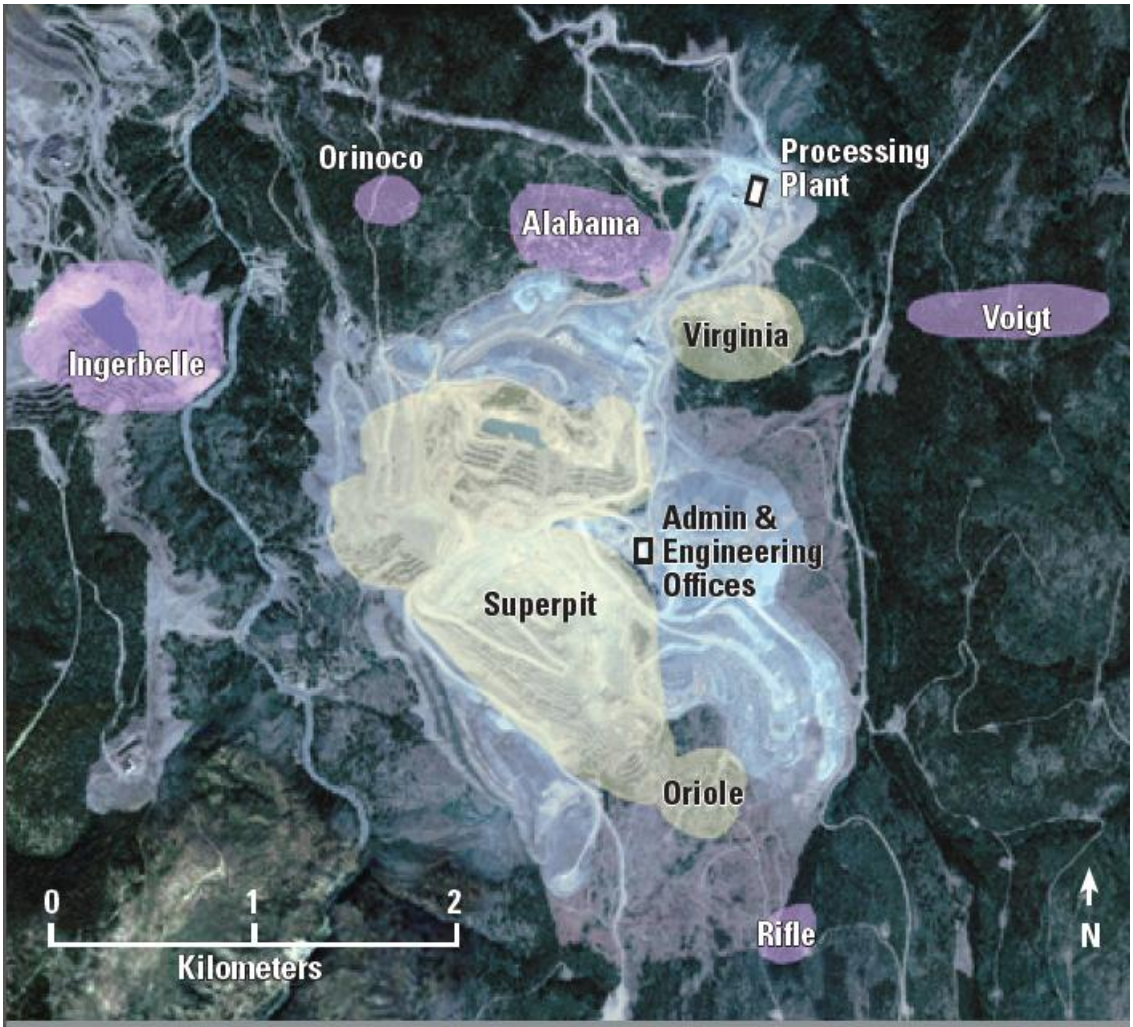
Excluding other variable geological conditions, the structures are essential in the localization of potentially economic mineral zones on the Property. Other mineral deposit types such as skarn or porphyry mineralization are evident from the prospects as indicated by the Minfile reports included herein.

Respectfully submitted
Sookochoff Consultants Inc.

Laurence Sookochoff, Peng

Figure 8. **Copper Mountain Mine**

(map from Copper Mountain Mining Corporation. 2013 Annual Report)



Distribution of resource and reserve areas within the mine site.

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Aulis, R.J. – Report on Percussion Drilling Missezula Property for Cominco Ltd. June 30, 1991. AR 21,746.

Bergey, W.R. - Geological and Geochemical Report on the Ketchan Property for Moag Copper-Gold Resources Inc. November 7, 2011. AR 32,884.

Copper Mountain Mining Corporation – 2013 Annual Report.

- November 2013 Presentation

Cormier, J. – 1990 Geochemical and Geophysical Report on the Dill Claim Group for Fairfield Minerals Ltd. March 1991. AR 21,198.

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Gutrath, G.C. – Outcrop Geology Report on the Prime Claim Group on behalf of Piper Petroleums Ltd. July 1979. AR 7,521.

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092HSE001 – COPPER MOUNTAIN
092HNE056 – PRIME (NORTH ZONE)
092HNE092 – SHAMROCK
092HNE099 – RUM
092HNE115 – KETCHAN LAKE NORTH
092HNE118 – NORTH MDA
092HNE140 – DEX 2
092HNE240 – COKE
092HNE254 – MISSEZULA LAKE

Thomson, G. – Diamond Drilling Assessment Report on the Ketchan Lake Property for Midland Resources Corporation. November 22, 2007. AR 29,453.

Thomson, G. – Diamond Drilling Assessment Report on the Ketchan Lake Property for Copper Belt Resources Corporation. April 28, 2006. AR 28,484.

STATEMENT OF COSTS

The Structural Analysis of Tenure 1024300 was completed from July 5, 2014 to July 9, 2014 to the value as follows:

Laurence Sookochoff, PEng.	
3 days @ $ 1000.00 ----------	$ 3,000.00
Maps ----------	1,000.00
Report ----------	3,000.00
	$ 7,000.00

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-eight 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 work the author has performed in the Aspen Grove area of the AG Property since 1982.

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

Laurence Sookochoff, P. Eng.