RICHARD BILLINGSLEY

(Owner & Operator)

GEOLOGICAL ASSESSMENT REPORT

(Event 5423583)

on a

STRUCTURAL ANALYSIS

Work done on

Tenures 504335, 504336

of the 16 Tenure

Porcupine 504335 Claim Group

Nicola Mining Division

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

Centre of Work
5,538,400N, 673,800E (NAD 83)

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SUMMARY

The Porcupine 504335 claim group is situated within the Intermontane belt of rocks traversing the extent of British Columbia and hosting some of the most historic and/or currently productive copper mines of North America such as at Copper Mountain, Craigmont, Afton/New Afton, and the Highland Valley/Lornex; all within 70 kilometres of the Porcupine Property.

The Porcupine Property is located in southern British Columbia within the historic Aspen Grove Camp where mineral exploration has been explored since the early 1900's. The result was 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 volcanic which has a greater intrusive activity than the paucity of intrusives in the Eastern Belt.

The mineral zones, each documented in the BC government Minfile directory, currently remain as mineral showings, mineral prospects, or developed prospects. Some are classed as past producers, but solely based on limited production, usually by hand sorting and shipping of the higher grade material.

With the numerous mineral indications in the area and the favourable geology, the discovery potential for a substantial economic mineral resource in the area is substantial.

The 16 claim Porcupine property covers 12 documented Minfiles with seven on the two claims which are the subject of this report. The CM mineral prospect area located within the Nicola volcanics on Tenure 504335 has been called the Snowflake Gold area, and is the most significant as the main mineral zone, the Igneous Breccia Zone, is indicated to dip westward to the regional Kentucky-Alleyne Fault which is a fault contact with an intrusive.

Drill hole core assays of 1.05 and 2.45 oz/t (opt) Au within the Breccia Zone with peripheral variable alteration in addition to shear zones and spotty mineralization suggests a mineral bearing intrusive source. The results of the Structural Analysis on Tenure 504335 indicated a structural intersection one kilometre west of the mineralized Breccia Zone which could have tapped a deep-seated mineral source and provided a conduit for any indicative sub-surface mineral generated activity to reach the surface or as a conduit to any accessible location below the surface such as at the Igneous Breccia Zone and/or the numerous smaller structures. The minor surficial mineralization in the area may be surface seepage along shear zones from a Nicola volcanic capped mineral source should be the exploration objective.

A 500 metre vertical drill hole in the location of Area A of Figure 10 is recommended to test for a mineralized intrusive. The drill hole would also provide information on the stratigraphy of the Nicola volcanics and possibly locate other types and characteristics of mineralization that are referred to in the 17 included MINFILE property descriptions contained herein.

The four structural intersection locations as designated on Figures 10 & 12 would be prime prospective areas to explore for surficial geological indicators of a potential sub-surface mineral source. These should be explored and studied utilizing all the historical exploration results of the proximal Minfile properties.

INTRODUCTION

In December 2012, a Structural Analysis was completed on Tenures 504335, and 504336 of the 15 claim Porcupine 504335 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 Tenures 504335, and 504336 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 1980.

PROPERTY DESCRIPTION AND LOCATION

The Property is located within BCGS Map 092H.097/.098 and 092I.007/.008 of the Nicola Mining Division, 204 direct kilometres from Vancouver and 26 direct kilometres from Merritt.

Figure 1. **Location Map**

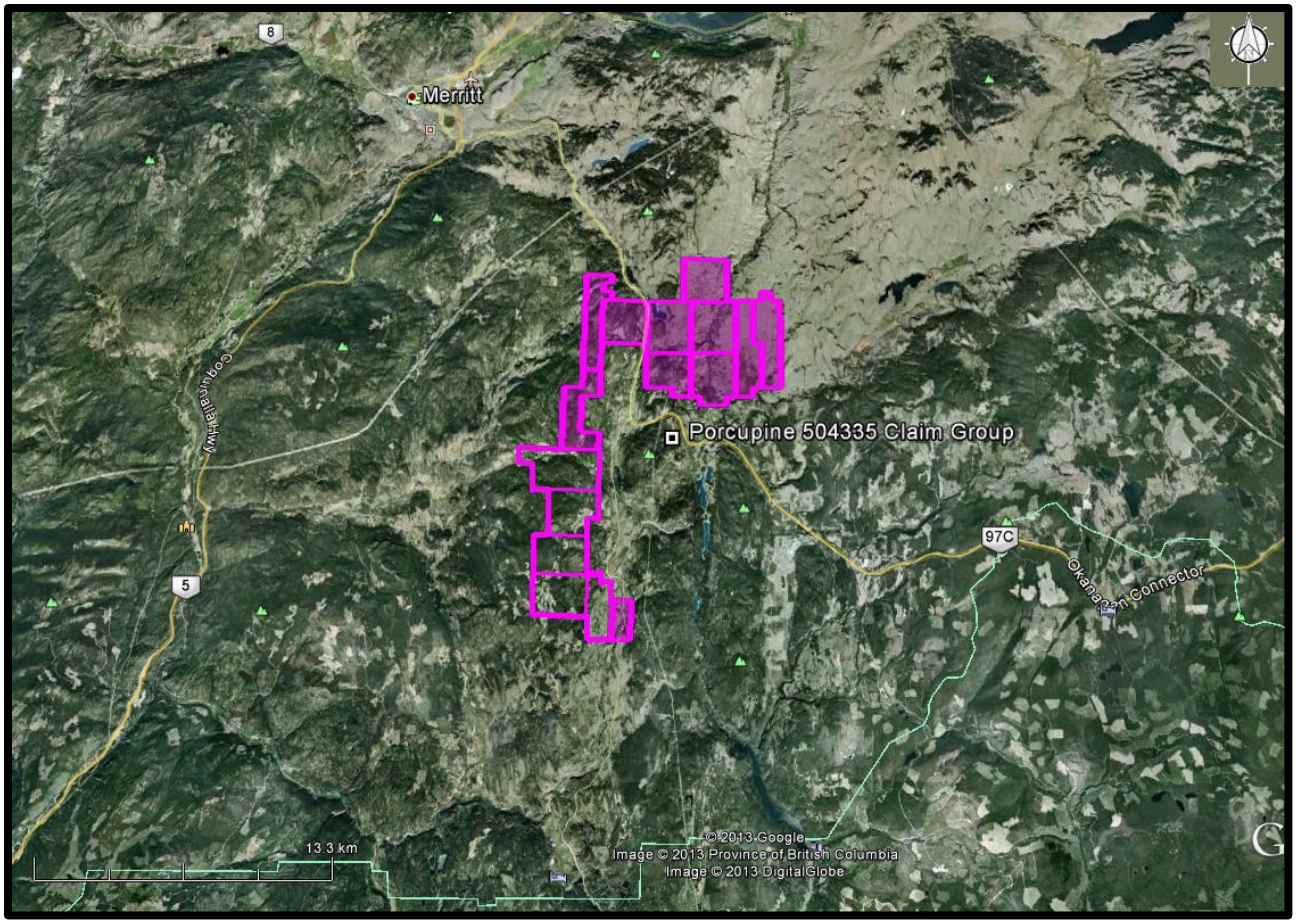
***Property Description and Location** (cont'd)*

The Property is comprised of 16 claims covering an area of 8002.9168 hectares. Particulars are as follows:

Tenure Number	Type	Claim Name	Good Until*	Area (ha)
504333	Mineral		20130611	623.12
504335	Mineral		20130611	457.158
504336	Mineral		20130611	581.861
504337	Mineral		20130611	623.111
524872	Mineral	RED JAY A	20130611	519.016
526115	Mineral	RED JAY WEST	20130611	519.249
559067	Mineral	NEW EAST 1	20130611	560.939
559068	Mineral	NEW EAST 2	20130611	540.0912
856136	Mineral	CASPER SOUTH	20130611	166.6231
917409	Mineral	ASPEN GROVE WEST 1	20130615	498.469
917410	Mineral	ASPEN GROVE WEST 2	20130615	498.9208
940170	Mineral	ASPEN GROVE WEST 11	20130107	519.9891
940173	Mineral	ASPEN GROVE WEST 14	20130107	478.5586
940175	Mineral	ASPEN GROVE WEST 16	20130107	499.565
940177	Mineral	ASPEN GROVE WEST 18	20130107	499.7373
940178	Mineral	ASPEN GROVE WEST 19	20130107	416.5087

*Upon the approval of the assessment work filing, Event 5423583.

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



ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access to the Property is southward from Merritt via Highway 5A/97C for 21 kilometres to the northern boundary of Tenure 504333 of the Property. Secondary roads provide access to most general areas of the Property.

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.

Sufficient water for all phases of the exploration program could 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, would have to be transported.

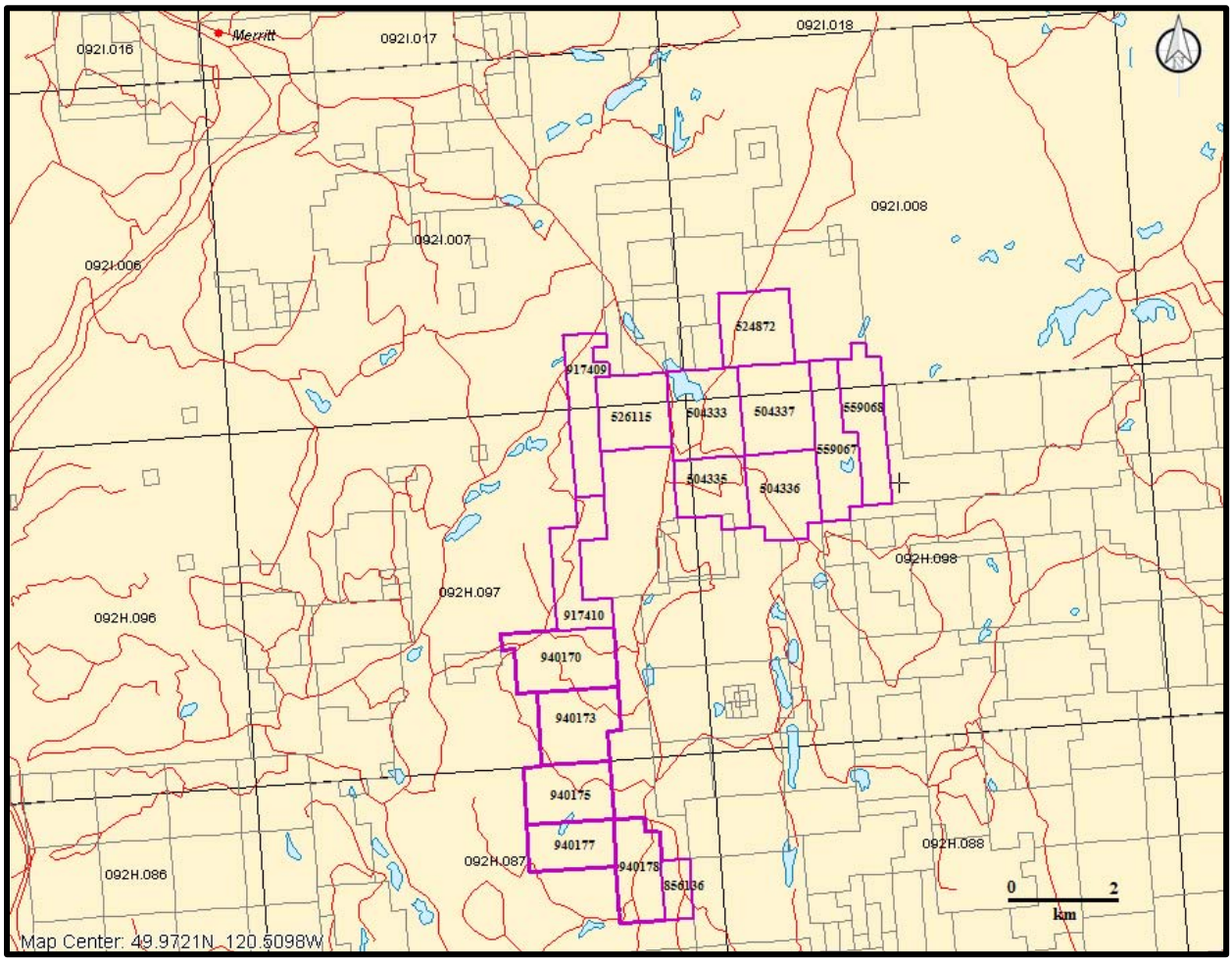
Accessibility, Climate, Local Resources, Infrastructure, and Physiography *(cont'd)*

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.

HISTORY: PROPERTY AREA

The geology on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers on the Property and peripheral to the Property (*Figure 4*) are reported as follows. The distance from the Property is relative to adjoining Tenures 504335 and 504336 which are the subjects of the structural analysis.

Figure 3. **Claim Map**



History: Property Area *(cont'd)*

COPPER STAR *past producer (Volcanic redbed Cu)*
MINFILE 092HNE036
Three kilometres south

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, page 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

PORCUPINE *developed prospect (Volcanic redbed Cu)*
MINFILE 092HNE054
Six kilometres north

1966: Amalgamated Resources Ltd. completed an Induced Potential and Resistivity Survey (**AR 962)** over ground covered by the Porcupine shaft.

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

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 504335 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.

Doublestar Resources Ltd. acquired an interest in the property in 1998.

GOLDEN SOVEREIGN *prospect (Volcanic redbed Cu0*
MINFILE 092HNE072
One kilometre 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.

History: Property Area *(cont'd)*

BIG SIOUX *past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au*
MINFILE 092HNE073
Eight kilometres southwest

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

BIG KIDD *prospect (Alkalic porphyry Cu-Au; Volcanic redbed Cu)*
MINFILE 092HNE074
Nine kilometres south

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

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

The next program by Christopher James Gold was a 2 staged drilling program completed during the fall in 1999. This program drilled a fan of three holes to the southwest and one parallel hole along the Big Kidd Breccia north contact. All four 1999 holes intersected significant lengths of gold-copper mineralized intrusion breccia with late porphyritic monzonite dyke and potassic (K-feldspar) alteration zones. In 2003, Christopher James Gold Corp. drilled 9 holes and dug three trenches to test alkalic porphyry hosted by the Big Kidd breccia. Broad intervals of low-grade mineralization were encountered.

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

***PAYCINCI** developed prospect (Volcanic redbed Cu)*
MINFILE 092HNE084
Twelve kilometres south

The Cincinnatti deposit was first explored by the Bates brothers in the early 1900s. A number of trenches, and one adit 120 metres long, were excavated between 1899 and 1913. Payco Mines Ltd. and Alscope Consolidated Ltd. conducted geological and geophysical surveys, trenching and diamond and percussion drilling between 1963 and 1967. An additional 15 holes totalling 1000 metres were drilled by Gold River Mines and Enterprises Ltd. in 1973 and Sienna Developments Ltd. in 1979. The deposit was most recently sampled by Pacific Copperfields Ltd. in 1992.

In 1998, Christopher James Gold Corp. optioned the property. Reserves are estimated at 1.8 million tonnes grading 1 per cent copper (Tom Schroeter, 1998).

Rock chip samples assayed up to 0.67 per cent copper and 0.16 per cent molybdenum (Assessment Report 17277).

SNOWFLAKE 6 *showing (Volcanic redbed Cu)*
MINFILE 092HNE145
One kilometre north

The Snowflake 6 occurrence is a small area 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 on a small cluster of old workings 1 kilometre south of Courtney Lake, 500 metres east of Highway 5A, 6 kilometres north of the community of Aspen Grove (Assessment Report 3555).

BLUEY *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE167
Nine kilometres south

Numerous geophysical and soil and rock geochemical surveys were conducted by F. Gingell between 1976 and 1981, by Vanco Explorations Ltd. in 1985 and Laramide Resources Ltd. in 1987.

LM *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE252
Twelve kilometres south

The LM showing is on the west bank of Otter Creek, 3.75 kilometres west-southwest of the south end of Bluey Lake and 7.55 kilometres northwest of the north end of Missezula Lake.
The showing was initially explored by a 3-metre long adit and several trenches excavated some time in the distant past. Lornex Mining Corporation conducted geological, geophysical and soil geochemical surveys in 1982.

SNOWFLAKE 2 *showing (Volcanic redbed)*
MINFILE 092HNE265
One kilometre south

The Snowflake 2 showing is 1.1 kilometres west of the south end of Tule Lake and 3.0 kilometres northeast of Aspen Grove.

HISTORY: PROPERTY

TAB *prospect (Volcanic redbed Cu; Alkalic porphyry Cu-Au)*
MINFILE 092HNE052
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.

The Tab prospect has been explored by various operators, beginning with Granby Mining, Smelting and Power Company Ltd. in 1958, which completed a magnetometer survey over the occurrence. Norranco Mining and Refining drilled one hole in 1969 and conducted additional magnetometer surveying in 1971. Cominco Ltd. drilled a number of percussion holes in 1978 and 1979, with negative results. Snowflake Mining Company and Laramide Resources Ltd. completed geological and rock geochemical surveys in 1981 and 1985. Similar surveys were conducted by Quilchena Resources Ltd. in 1991.

JUNE *prospect (Cu skarn; Volcanic redbed Cu; Fe skarn; Alkalic porphyry Cu-Au)*
MINFILE 092HNE061
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.

CM *prospect (Polymetallic veins Ag-Pb-Zn+-Au; Intrusion-related pyrrhotite veins; Volcanic redbed Cu)*
MINFILE 092HNE174
Tenure 504335

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.

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

SKI *prospect (Alkalic porphyry Cu-Au)*
MINFILE 092HNE203
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)*
MINFILE 092HNE267
Tenure 504336

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

SNOWFLAKE 7 *showing (Volcanic redbed)*
MINFILE 092HNE268
Tenure 504336

The Snowflake 7 showing is 400 metres southwest of Quilchena Creek and 5.5 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 and 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. The Property is situated within the central belt of the Nicola Group which is bounded on the east by the northerly striking Kentucky-Alleyne fault zone.

GEOLOGY: PROPERTY AREA

The geology on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers on the Property and peripheral to the Property (Figure 4) are reported as follows. The distance from the Property is relative to adjoining Tenures 504335 and 504336 which are the subjects of the structural analysis.

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

COPPER STAR *past producer (Volcanic redbed Cu)*
MINFILE 092HNE036
Three kilometres south

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 age.

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).

PORCUPINE *developed prospect (Volcanic redbed Cu)*
MINFILE 092HNE054
Six kilometres north

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).

HN-WEN *prospect (Volcanic redbed Cu)*
MINFILE 092HNE058
Fourteen kilometres southeast

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

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

***HN-WEN** prospect (cont'd)*

The occurrence lies in the northern assemblage of the Eastern belt of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine 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 occurrence is underlain by augite porphyritic volcanic flows of andesitic to basaltic composition, fragmental rocks including tuff and breccia, and argillites (Assessment Reports 1586, 4230). The argillites are dark grey to black, well bedded, and locally limy. They are somewhat carbonaceous and pyritic. Minor rock types present include feldspar porphyry and locally lenses of diorite. About 2.5 kilometres to the northeast is the contact with the Early Jurassic Pennask batholith, a large intrusion of medium-grained granodiorite to quartz diorite.

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

***GOLDEN SOVEREIGN** prospect (Volcanic redbed Cu)*
MINFILE 092HNE072
One kilometre 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.

BIG SIOUX *past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au)*
MINFILE 092HNE073
Eight kilometres southwest

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

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

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

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

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

MINFILE 092HNE074

Nine kilometres south

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

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

A vertical or subvertical breccia pipe, nearly circular in outline and about 300 metres wide, is developed in a body of fine- grained diorite, which may in part be recrystallized volcanics. The pipe consists of angular to subrounded clasts of volcanics, fine- grained diorite (microdiorite) and pinkish grey monzonite and syenomonzonite porphyry in a matrix of altered diorite intrusive material and finely comminuted rock. The fragments are 1 centimetre to several metres in diameter.

Parts of the breccia, especially on the north and east sides of the pipe, show extensive late magmatic and/or hydrothermal alteration and recrystallization. Breccia clasts in these areas have pronounced grey and pinkish grey alteration rims, and the matrix is extensively replaced by epidote, chlorite and calcite.

***PAYCINCI** developed prospect (Volcanic redbed Cu)*

MINFILE 092HNE084

Twelve kilometres south

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

The intrusions vary from diorite to monzonite in composition and are thought to be comagmatic with the Nicola Group, ranging in age from Late Triassic to Early Jurassic.

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

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

***BUNKER HILL** showing (Volcanic redbed Cu)*
MINFILE 092ISE089
Ten kilometres south
Several trenches and old pits expose chalcocite, bornite, chalcopyrite, pyrite, malachite and azurite in brecciated and altered pyroxene plagioclase porphyritic andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69). Brown carbonate (?) alteration is associated with sulphide mineralization.

SNOWFLAKE 6 *showing (Volcanic redbed Cu)*
MINFILE 092HNE145
One kilometre north
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). 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 age.

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.

BLUEY *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE167
Nine kilometres south

The Bluey occurrence is hosted in brecciated and altered pyroxene-plagioclase porphyritic andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

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

LM *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE252
Twelve kilometres south

A 4 to 5-centimetre thick fracture zone in andesite of the Upper Triassic Nicola Group (Central belt, Bulletin 69) is filled with brecciated andesite containing abundant malachite staining. The fracture zone strikes 175 degrees and dips 53 degrees west.

SNOWFLAKE 2 *showing (Volcanic redbed Cu)*
MINFILE 092HNE265
One kilometre south

Three closely-spaced shafts expose native copper, chalcocite, malachite and azurite in augite basalt porphyry of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

GEOLOGY: PROPERTY

As indicated by the BC government supported MapPlace geological maps the Porcupine 504335 clam group is underlain predominantly by the Central Facies of the upper Triassic Nicola Group of basaltic volcanic rocks (uTrNC). Major regional north-northeasterly trending structures, covered by portions of the Property occur in the north and the west. In the north, the discontinuous Kentucky-Alleyne fault, is in a fault contact between the Nicola volcanics and a dioritic intrusive stock (Tenure 504335) and/or a fault contact between a southeasterly trending band of Pleistocene to Holocene volcanic rocks (Qvk) and a dioritic stock (LTrJdr).

In the west a series of variably northerly oriented short splay faults (?) form a continuous adjoined 12 kilometre fault system with two individual fault sections forming a contact between Nicola volcanics and bands of Cretaceous undivided sedimentary rocks (Ks) which are indicated to displaced left laterally for approximately four kilometres.

TAB *prospect (Volcanic redbed Cu; Alkalic porphyry Cu-Au)*
MINFILE 092HNE052
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.

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

***TAB** prospect (cont'd)*

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. 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, albite, quartz, biotite, hematite, and secondary potassium feldspar, although some of these minerals may represent metamorphic recrystallization (Assessment Report 7122).

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

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 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.

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).

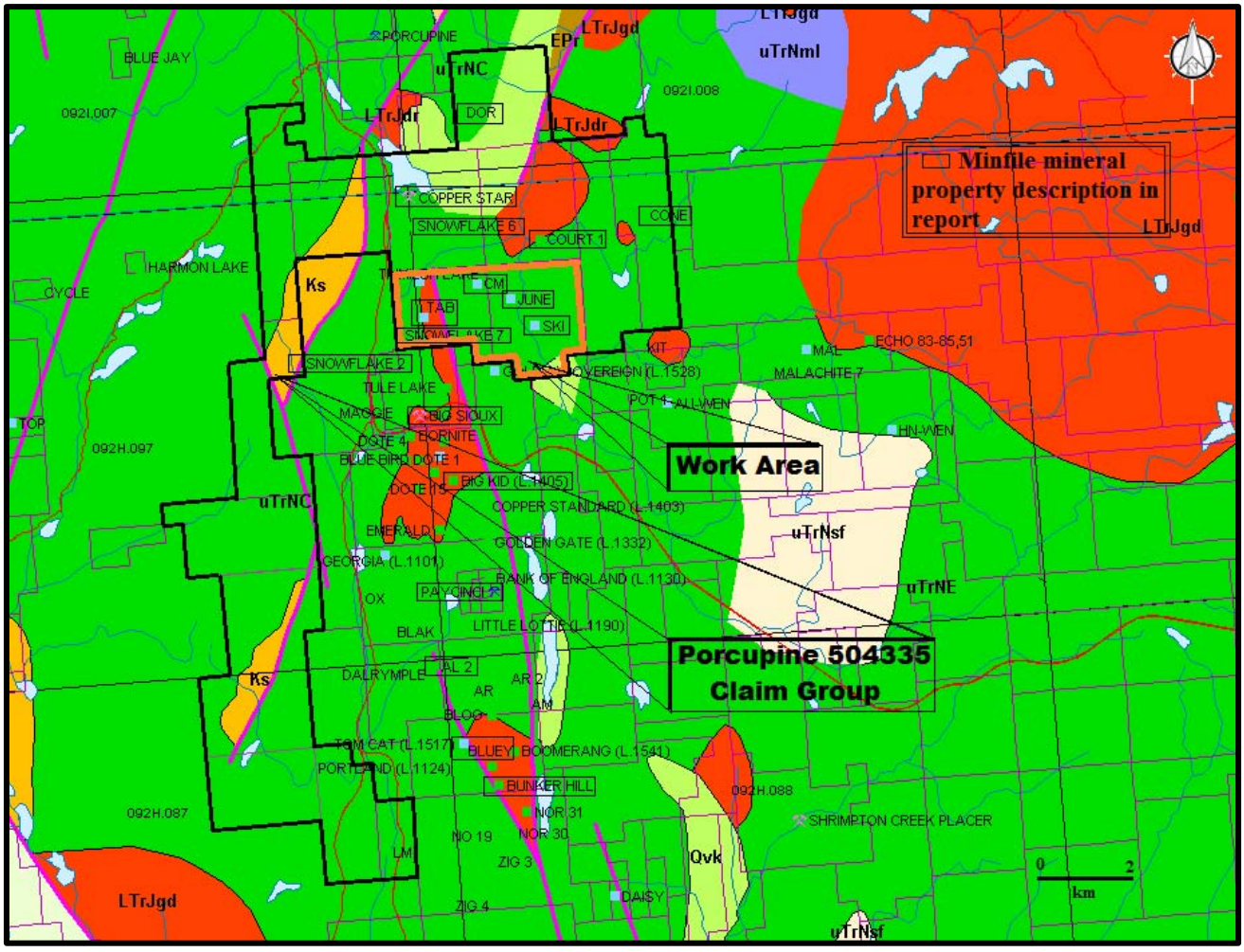
***Geology: Property** (cont'd)*

***JUNE** prospect (cont'd)*

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.

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



GEOLOGY MAP LEGEND

(For Figure 15)

Pleistocene to Holocene

Qvk
Unnamed alkalic volcanic 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 *prospect (Polymetallic veins Ag-Pb-Zn+-Au; Intrusion-related pyrrhotite veins; Volcanic redbed Cu)*
MINFILE 092HNE174
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). 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)*

***CM** prospect (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).

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). 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).

SKI *prospect (Alkalic porphyry Cu-Au)*
MINFILE 092HNE203
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.

SNOWFLAKE 10 *showing (Volcanic redbed Cu)*
MINFILE 092HNE267
Tenure 504336

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

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

SNOWFLAKE 7 *showing (Volcanic redbed Cu)*
MINFILE 092HNE268
Tenure 504336
Chalcopyrite, pyrite and magnetite, with associated malachite, occur in massive green laharic breccia of the Upper Triassic Nicola Group (Central belt, Bulletin 69).

MINERALIZATION: PROPERTY AREA

The geology on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers on the Property and peripheral to the Property *(Figure 4)* are reported as follows. The distance from the Property is relative to adjoining Tenures 504335 and 504336 which are the subjects of the structural analysis.

COPPER STAR *past producer (Volcanic redbed Cu)*
MINFILE 092HNE036
Three kilometres south

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; 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, page 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.

PORCUPINE *developed prospect (Volcanic redbed Cu)*
MINFILE 092HNE054
Six kilometres north

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.

***Mineralization: Property Area** (cont'd)*
***PORCUPINE** developed prospect (cont'd)*

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.

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-age 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-age porphyry copper mineralization at depth.

***GOLDEN SOVEREIGN** prospect (Volcanic redbed Cu0*
MINFILE 092HNE072
One kilometre 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.

Mineralization: Property Area *(cont'd)*

GOLDEN SOVEREIGN *prospect (cont'd)*

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).

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.

BIG SIOUX *past producer (Volcanic redbed Cu; Alkalic porphyry Cu-Au)*
MINFILE 092HNE073
Eight kilometres southwest

Copper mineralization is exposed along a 300-metre long roadcut and in various old workings north of the roadcut, in an area 500 metres long and 300 metres wide. Mineralization consists primarily of pyrite and chalcopyrite, as disseminations, blebs, fracture fillings, and in calcite and epidote veins. Pyrite also forms thin bands, comprising up to 25 per cent of the hostrock. Malachite occurs along fractures in many surface exposures. Chalcocite forms fracture fillings in one prominent 1.8-metres wide shear zone, striking 075 degrees and dipping 75 degrees north. Minor bornite is also reported. One chip sample taken along the roadcut assayed 3.27 per cent copper, 14.45 grams per tonne gold and 34.1 grams per tonne silver over 10 metres (Assessment Report 20834, page 5).

Channel sampling along a trench analysed 0.223 per cent copper, 0.106 gram per tonne gold and 1.26 grams per tonne silver over 27 metres (Assessment Report 7100, page 11, trench 4). A composite grab sample from the dump of a shaft, excavated in the chalcocite-bearing shear zone, assayed 12.6 per cent copper, 0.7 gram per tonne gold and 82 grams per tonne silver (Minister of Mines Annual Report 1901, page 1181).

BIG KIDD *prospect (Alkalic porphyry Cu-Au; Volcanic redbed Cu)*
MINFILE 092HNE074
Nine kilometres south

Mineralization is erratic and consists of abundant magnetite, and pyrite, lesser chalcopyrite, and traces of bornite and chalcocite, as disseminations, lenses, scattered blebs and veinlets. Cuprite and native copper are also reported. This mineralization tends to favour the zones of alteration, but is not proportional to the intensity of alteration. The sulphides are in part controlled by zones of shearing and fracturing in the northeastern portion of the deposit.

Mineralization: Property Area *(cont'd)*

BIG KIDD *prospect (cont'd)*

Limonite, malachite and azurite are present at or near surface. Pyrite occurs primarily as disseminations up to 5 millimetres in diameter. The mineral also occurs along fractures in association with chalcopyrite, orthoclase, quartz and/or carbonate. Chalcopyrite tends to be finely disseminated and is usually associated with magnetite, intimately associated with pyrite, and forms pseudomorphs after pyrite. Pyrite-chalcopyrite intergrowths are prevalent along fractures. Bornite is often found in magnetite-chalcopyrite blebs and veinlets, which often display epidote halos.

Copper content is quite variable, and precious metal values are low but anomalous. Channel sampling of an adit yielded 0.901 per cent copper, 0.141 gram per tonne gold and 13.66 grams per tonne silver over 14 metres (Assessment Report 7100, page 8, adit no. 1) Channel sampling of a trench, 90 to 190 metres west of the adit, yielded 0.237 per cent copper, 0.095 gram per tonne gold and 3.37 gram per tonne silver over 35 metres (Assessment Report 7100, page 9, trench no. 12). Trenching and sampling of the northern margin of the breccia pipe yielded gold values of up to 1.97 grams per tonne over 6 metres (Assessment Report 8743, Figure 3, samples 3413, 3414).

PAYCINCI *developed prospect (Volcanic redbed Cu)*

MINFILE 092HNE084

Twelve kilometres south

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

Drill indicated reserves are 54,000 tonnes grading 0.876 per cent copper (Assessment Report 7654, page 1). Precious metal values are generally low. Six rock samples analysed 1.1 to 2.4 per cent copper, 0.005 to 0.010 gram per tonne gold and 1.3 to 5.7 grams per tonne silver (Assessment Report 14108, Figure 5, samples 2051 to 2056). One chip sample taken along a trench yielded 0.89 per cent copper over 49 metres (George Cross News Letter No. 90 (May 8), 1992).

BUNKER HILL *showing (Volcanic redbed Cu)*

MINFILE 092ISE089

Ten kilometres south

A rock sample analysed 0.391 per cent copper (Assessment Report 14141, Figure 5b, sample 88603). Copper mineralization is also found 470 metres east-southeast of the trenches, in red volcanic breccia and lahar deposits. Four rock samples analysed 0.229 to 0.857 per cent copper (Assessment Report 14141, Figure 5b, samples 2211, 2285, 2286, 2289).

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

BLUEY *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE167
Nine kilometres south

Mineralization consists primarily of chalcopyrite and malachite, as fracture coatings, and as streaks and disseminations interstitial to breccia fragments. Chalcopyrite and galena are found in calcite and quartz veinlets. Chalcocite and azurite are also reported. This mineralization is exposed in several trenches over a 20 square metres area. Pervasive brown carbonate alteration is associated with sulphide mineralization and veining. Analyses of four rock samples spaced along a northerly trending trench over 85 metres averaged 0.711 per cent copper and 5.4 grams per tonne silver (Assessment Report 14141, Drawing 5b, samples 2059-2062).

LM *showing (Volcanic redbed Cu; Cu Skarn)*
MINFILE 092HNE252
Twelve kilometres south

A chip sample analysed 8.3 per cent copper, 0.0002 per cent molybdenum and 22.5 grams per tonne silver over 5 centimetres (Assessment Report 11197, page 4).

SNOWFLAKE 2 *showing (Volcanic redbed Cu)*
MINFILE 092HNE265
One kilometre south

Three rock samples analysed 1.2 to 5.7 grams per tonne silver and 0.005 to 0.010 gram per tonne gold (Assessment Report 13714, Drawing 2, samples R011, R012, R013).

An outcrop of basalt porphyry, 250 metres west-northwest of the shafts is mineralized with malachite, chalcocite and galena. A sample analysed 12.2 grams per tonne silver and 0.010 gram per tonne gold (sample R014A).

MINERALIZATION: PROPERTY

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

Mineralization is exposed over a north-south distance of 300 metres in numerous trenches in this volcanic-intrusive contact zone, which has also been explored by percussion and diamond drilling (Assessment Report 9386). At the Tab showing, fine patchy disseminated chalcopyrite, pyrite and minor malachite occur in altered and fractured porphyritic diorite/gabbro, which is gradational westwards with andesitic and basaltic volcanics and siltstones (Preliminary Maps 10, 15; Bulletin 69; Assessment Reports 3555, 5875, 6260, 13714, 22148). Biotite alteration is pervasive here (Assessment Report 3555).

Copper values are low grade and erratic, and are generally proportional to the degree of alteration and fracturing, although the primary control appears to be the contact zone of the dioritic intrusion (Assessment Report 9386). The best copper assay from the surface at the Tab showing was 1.6 per cent over 3 metres in a trench (Assessment Report 7122).

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

***TAB** prospect (cont'd)*

The best intersections in percussion-drill holes in the area were 0.26 per cent copper over 18.3 metres (hole BJP-7, 79.2 to 97.5 metres), and 0.115 per cent copper over 24.4 metres (hole BJP-1, 51.8 to 76.2 metres) (Assessment Report 7122, Plate 2; Vancouver Stockwatch Jan. 4, 1990, page 10). Precious metal values are low, the maximum being 1.4 grams per tonne silver (Assessment Report 9386). One chip sample analysed 0.17 gram per tonne gold and 1.6 per cent copper over 2.0 metres (Assessment Report 22148, page 18). Silver geochemical anomalies correlate more with magnetic and induced polarization highs, which reflect pyrite content, than with copper anomalies, which is consistent with the inverse relationship between pyrite and copper mineralization (Assessment Report 6260).

Additional copper mineralization is found in an area extending up to 1000 metres west-southwest of the main showing. One showing exposed in numerous trenches, 500 metres southwest, consists of epidote and calcite-veined purple andesitic breccia with minor native copper, chalcocite and malachite mineralization. One rock sample analysed 3.9 grams per tonne silver (Assessment Report 13714).

A third showing lies about 500 metres farther southwest. Here, a shaft and adit contain bornite, chalcopyrite and malachite in green volcanic and laharic breccia.

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

A percussion hole drilled near the north end of the zone graded 0.07 per cent copper over 91 metres (Assessment Report 9386, page 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).

CM *prospect (Polymetallic veins Ag-Pb-Zn+-Au; Intrusion-related pyrrhotite veins; Volcanic redbed Cu)*
MINFILE 092HNE174
Tenure 504335

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.

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

***CM** prospect cont'd)*

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). 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 (Alkalic porphyry Cu-Au)*

MINFILE 092HNE203

Tenure 504336

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 quartz veins occupy many of the fractures, which are likely related to the north-striking Kentucky-Alleyne fault, nearby to the west.

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

Tenure 504336

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)

SNOWFLAKE 7 *showing (Volcanic redbed Cu)*

MINFILE 092HNE268

Tenure 504336

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).

Figure 5. **1987 Snowflake Property Diamond Drill Hole Plan**
(see *Figure 10* for reference location of DH 83-8 on Tenure 504335)
(Base map selection from AR 17,523B p3)

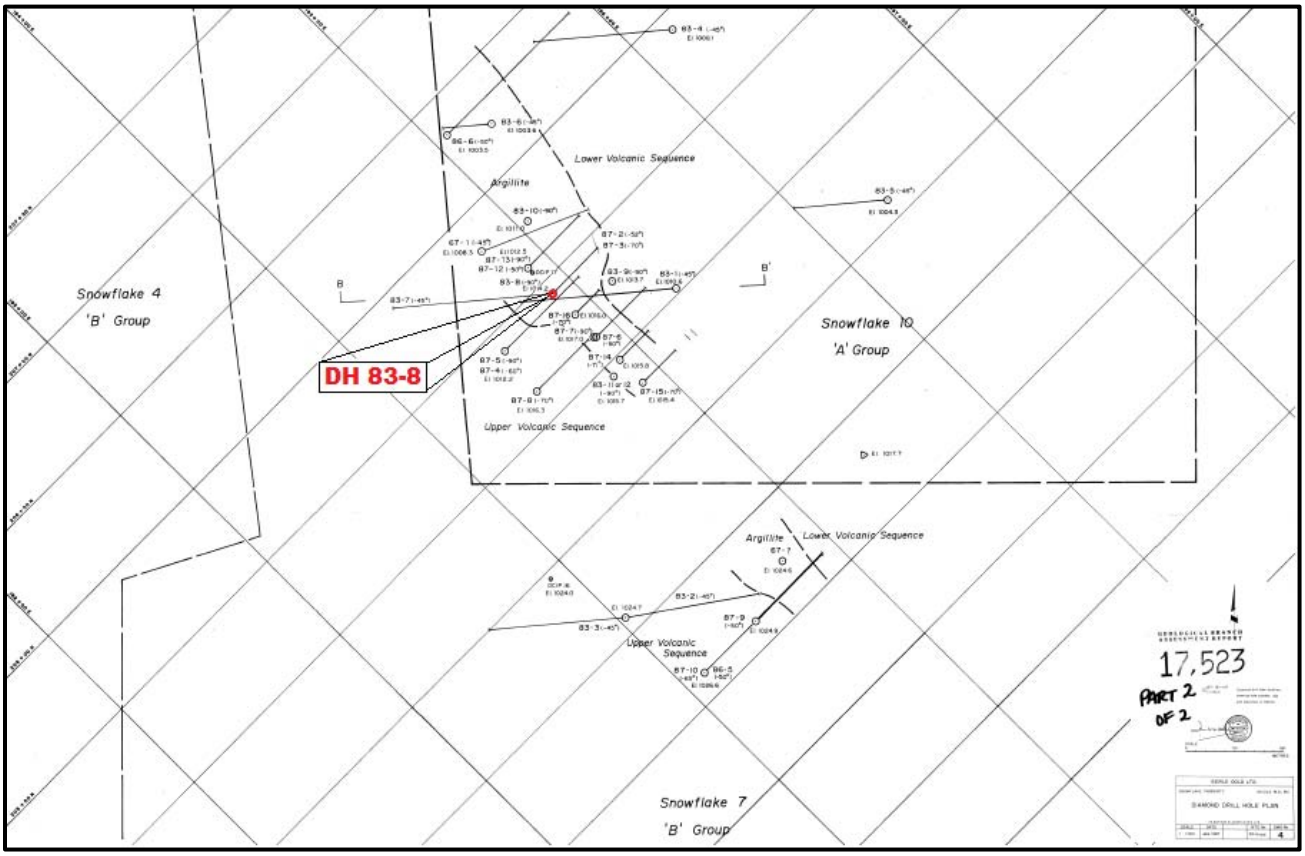


Figure 6. **1987 Snowflake Property Diagrammatic Drill-Hole Cross Section Geology**
(see *Figure 10* for reference location of DH 83-8 on Tenure 504335)
(Base map selection from AR 17,523B p19)

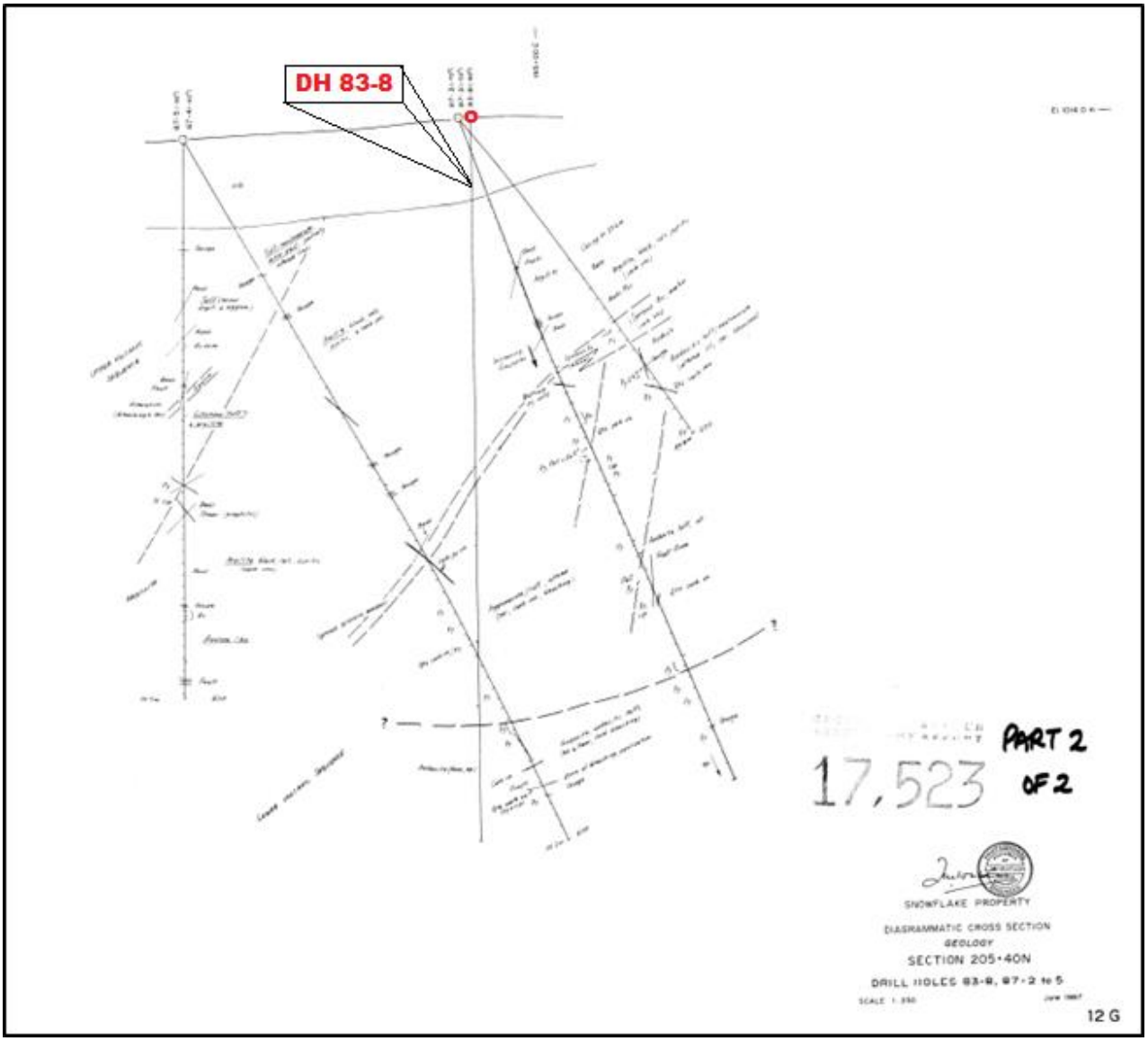


Figure 7. **1987 Snowflake Property Diagrammatic Drill-Hole Cross Section Gold Analyses**

(see Figure 10 for reference location of DH 83-8 on Tenure 504335)

(Base map selection from AR 17,523B p14)

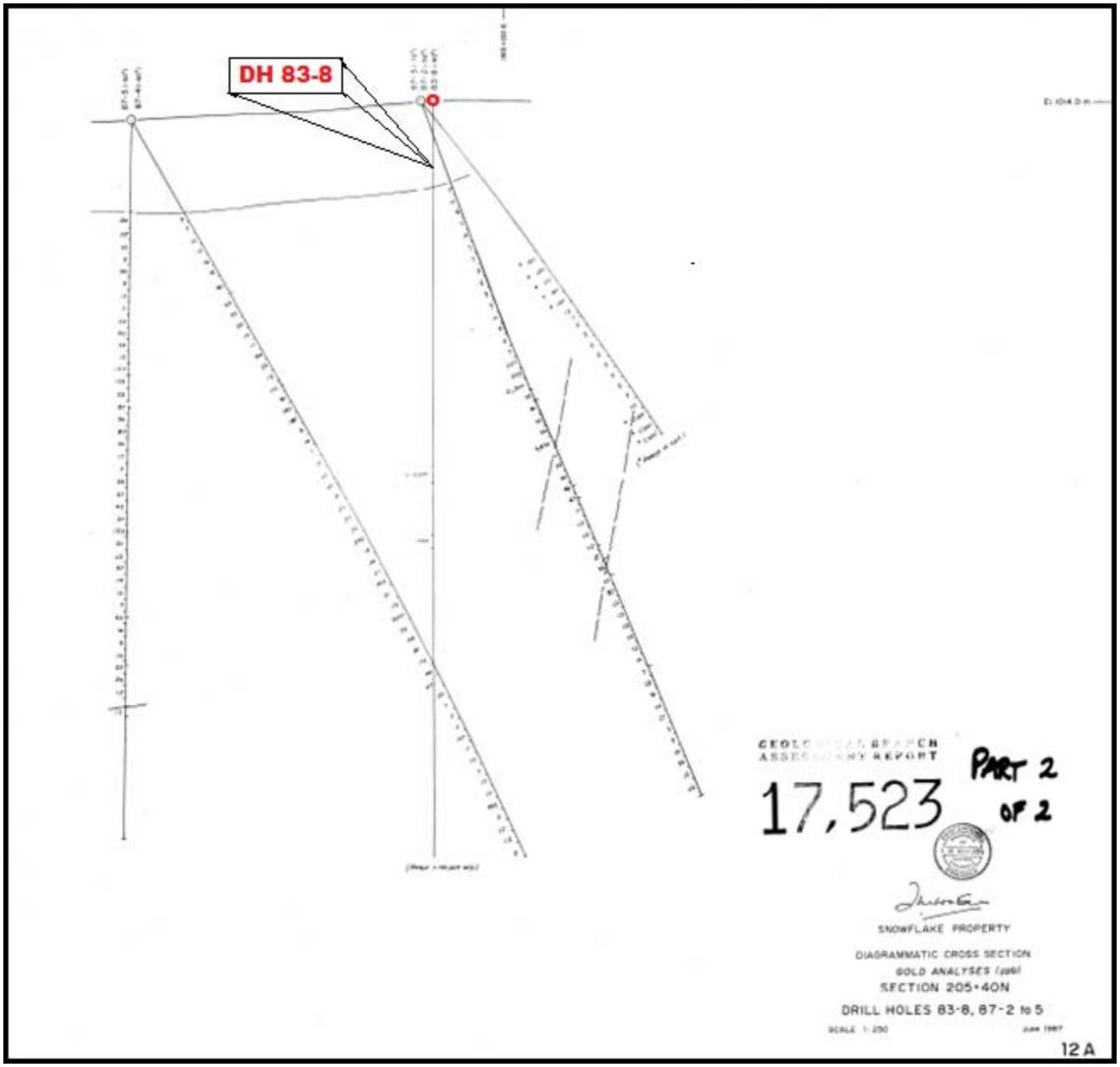
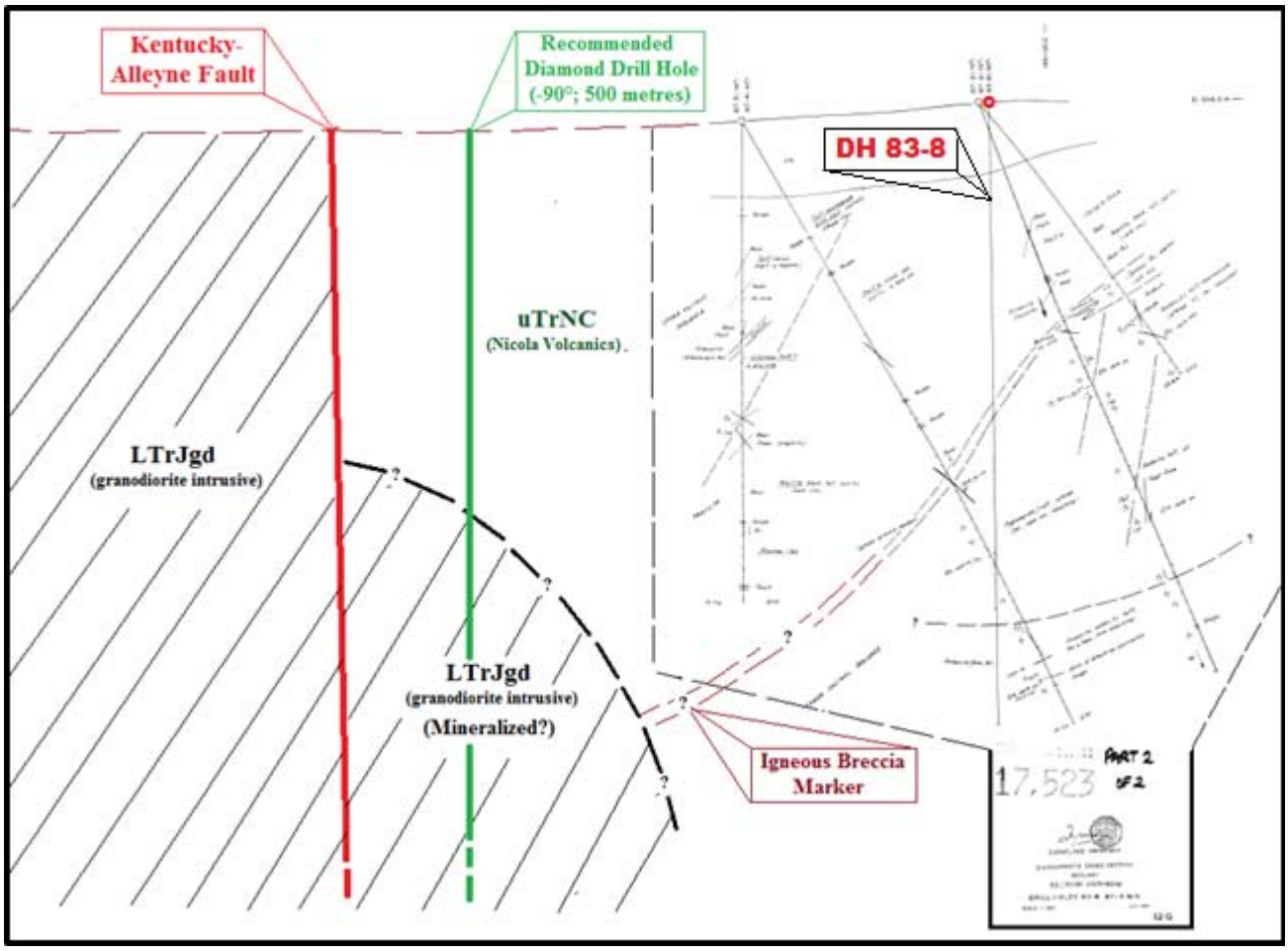


Figure 8. **1983 Drill-Hole Cross Section showing Geology and Assays**
(see *Figure 10* for reference location of DH 83-8 on Tenure 504335)

(Base Map from AR 12,113 p118)

Figure 9. **Schematic Diagrammatic Cross Section* showing five Snowflake Property Drill Holes and the Location of a Recommended Diamond Drill Hole to Test for a Mineralized Porphyritic Intrusive**

(see *Figure 10* for reference location of DH 83-8 on Tenure 504335)
(Base Map selection from AR 17,523 p19)



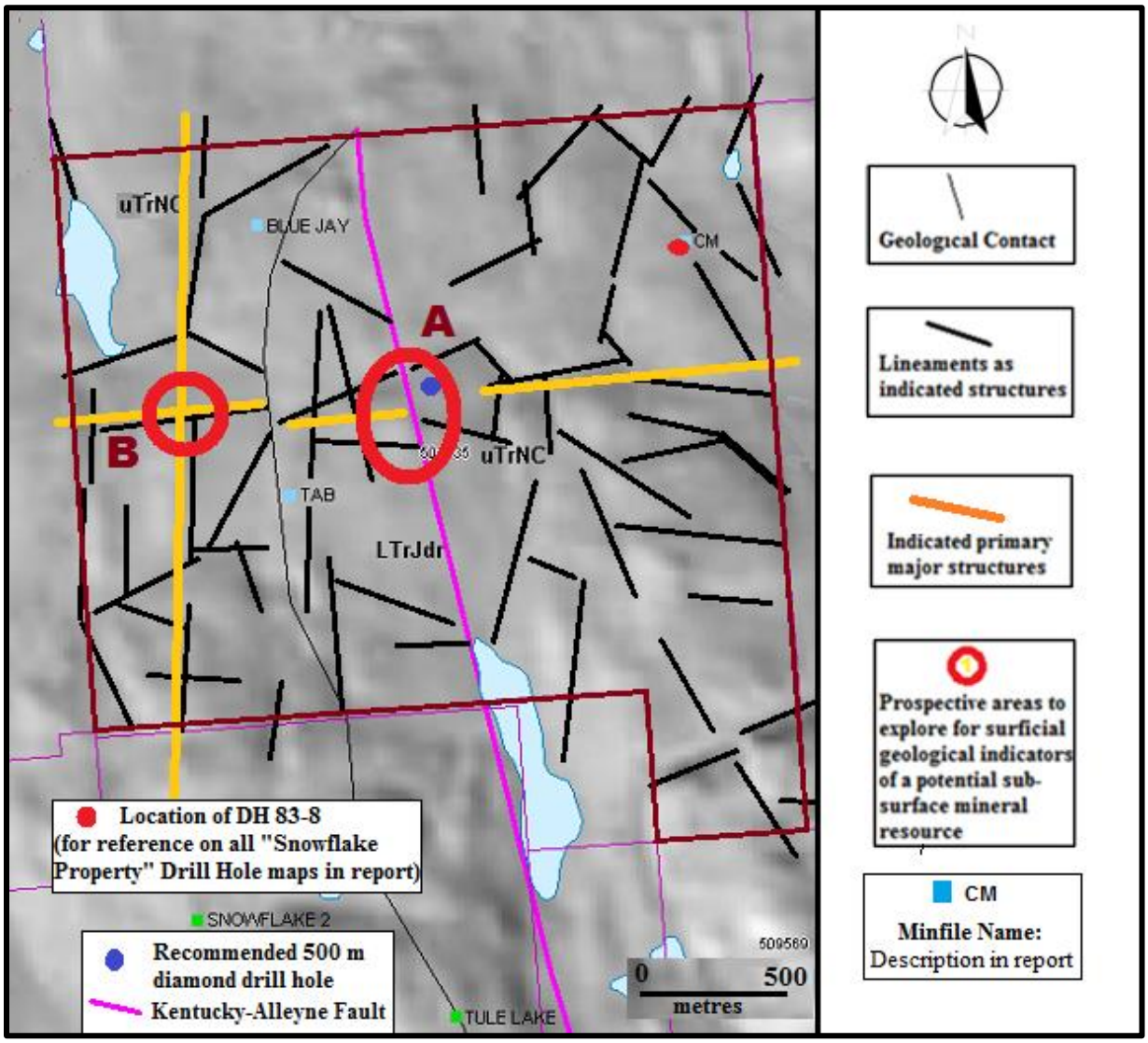
- *Not to Scale;
- *General location of recommended drill hole is at UTM (NAD 83) 5,538,700N; 672,750E;
- *Location for drilling the recommended drill hole to be determined after a field investigation.

2012 STRUCTURAL ANALYSIS

The structural analysis was performed on a MapPlace hillside shade map of each of Tenure 504335 and Tenure 504336 by viewing of the map and marking the lineaments, or indicated structures, thereon. A total of 62 lineaments were marked on Tenure 504335 (*Figure 9*), and 82 lineaments were marked on Tenure 504336 (*Figure 11*), and each compiled into a 10 degree class interval and plotted as a rose diagram as indicated on *Figure 10 and Figure 12.*

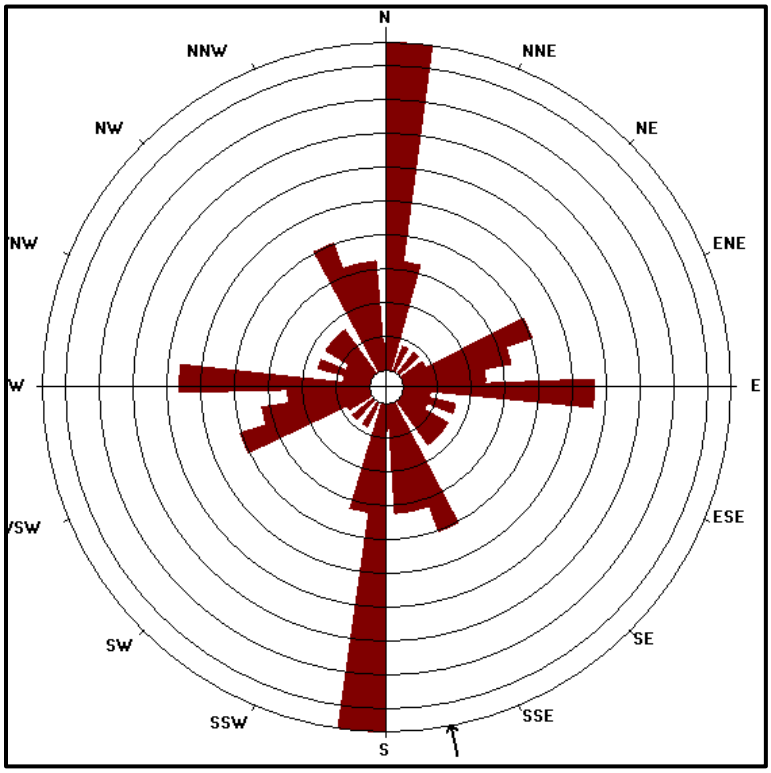
Figure 10. **Indicated Lineaments (Structures) on Tenure 504335 showing Location of Recommended Diamond Drill Hole***

(Base Map from MapPlace)



*Location to be determined after field investigation

Figure 11. **Rose Diagram from Lineaments of Tenure 504335**



STATISTICS

(Tenure 594335)

Axial (non-polar) data
No. of Data = 62
Sector angle = 8°
Scale: tick interval = 2% [1.2 data]
Maximum = 19.4% [12 data]
Mean Resultant dir'n = 169-349
[Approx. 95% Confidence interval = ±90.0°]
(valid only for unimodal data)

Mean Resultant dir'n = 169.1 - 349.1
Circ.Median = not calculated
Circ.Mean Dev.about median = not calculated
(Not calculated if too many data, or data are axial (non-polar), and too coarsely grouped
Circ. Variance = 0.40
Circular Std.Dev. = 57.82°
Circ. Dispersion = 17.55
Circ.Std Error = 0.532
Circ.Skewness = 0.84
Circ.Kurtosis = 1.34
kappa = 0.26
(von Mises concentration param. estimate)

Resultant length = 8.09
Mean Resultant length = 0.1304

'Mean' Moments: Cbar = 0.1212; Sbar = -0.0483
'Full' trig. sums: SumCos = 7.5116; Sbar = -2.9921
Mean resultant of doubled angles = 0.4032
Mean direction of doubled angles = 174

(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 12. **Indicated Lineaments (Structures) on Tenure 504336**
(Base Map from MapPlace)

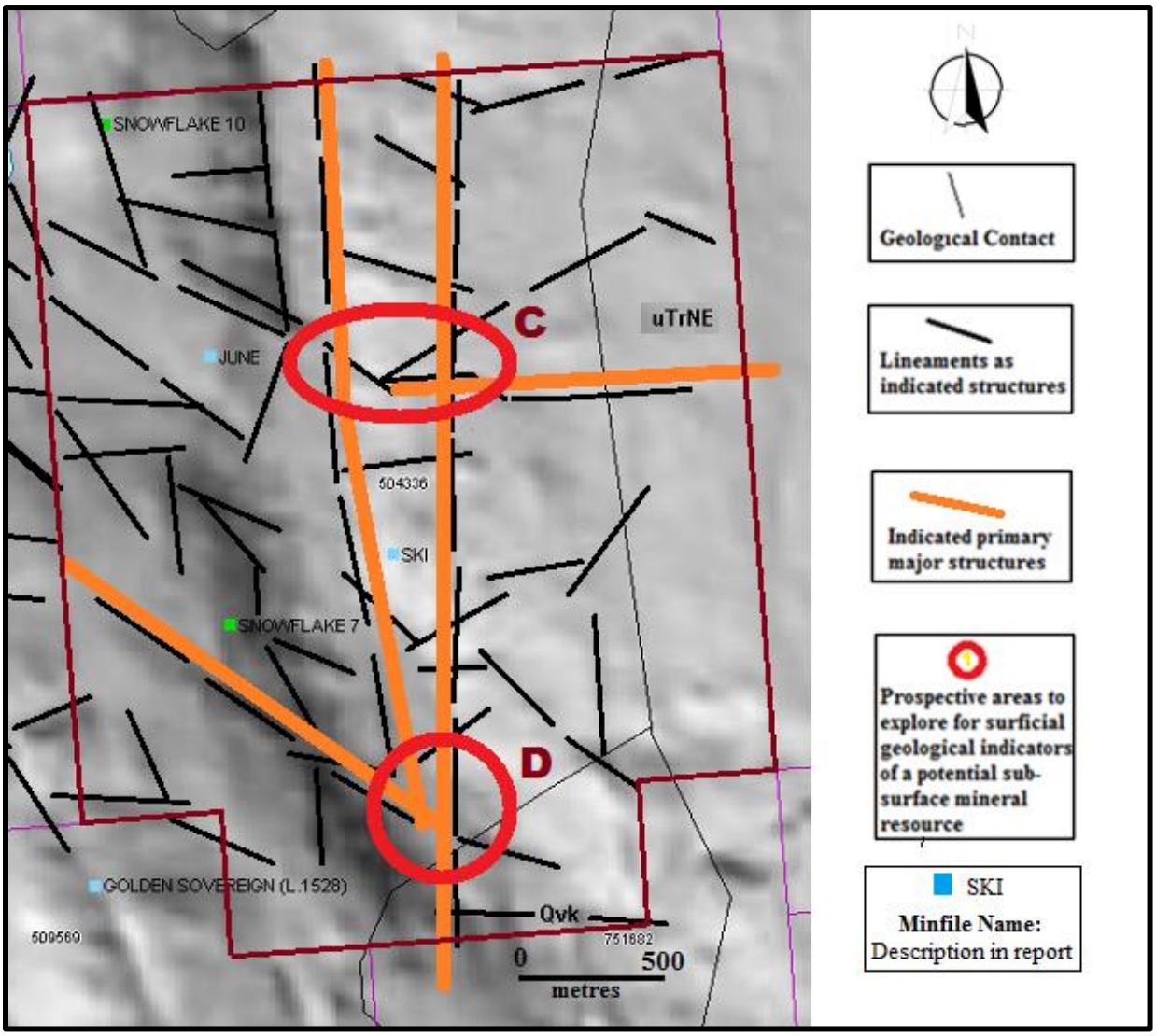
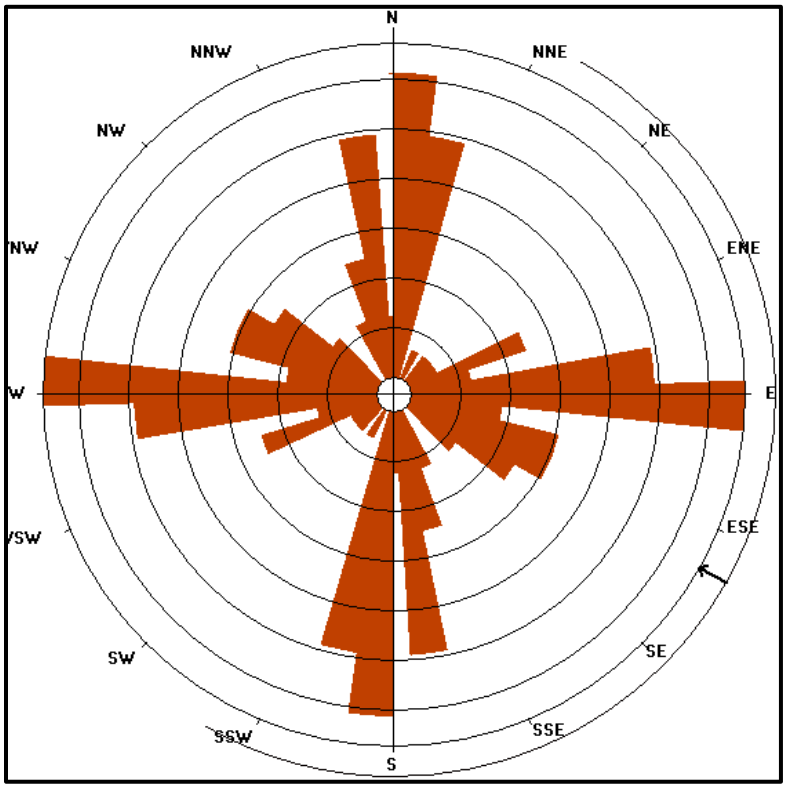


Figure 13. **Rose Diagram from Lineaments of Tenure 504336**



STATISTICS

(Tenure 594336)

Axial (non-polar) data
No. of Data = 82
Sector angle = 8°
Scale: tick interval = 2% [1.6 data]
Maximum = 13.4% [11 data]
Mean Resultant dir'n = 119-299
[Approx. 95% Confidence interval = ±90.0°]
(valid only for unimodal data)

Mean Resultant dir'n = 119.5 - 299.5
Circ.Median = 119.5 - 299.5
Circ.Mean Dev.about median = 41.3°
Circ. Variance = 0.45
Circular Std.Dev. = 63.10°
Circ. Dispersion = 32.01
Circ.Std Error = 0.6248
Circ.Skewness = -1.59
Circ.Kurtosis = -0.95
kappa = 0.18

(von Mises concentration param. estimate)

Resultant length = 7.25
Mean Resultant length = 0.0884

'Mean' Moments: Cbar = -0.0456; Sbar = -0.0758
'Full' trig. sums: SumCos = -3.7392; Sbar = -6.2132
Mean resultant of doubled angles = 0.4993
Mean direction of doubled angles = 008

(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'

INTERPRETATION & CONCLUSIONS

Tenure 504335

The structural analysis indicated two prime structural directions; north-south and east-west. The north-striking structures or faults with related fracturing are primary regional structures, as indicated on the BC Government published geological map of the area. One of the regional structures, the Kentucky-Alleyne trends through Tenure 504335 and causes a complementary or an en-echelon fault array as indicated on the Indicated Structural Maps of *Figures 10 & 12*. These primary long-lived, deep-seated faults originally controlled, are indicated as contemporaneous, and also post to intrusion emplacement as they also are fault contacts with the Nicola volcanics. The east-west structures are subordinate but also regional and commonly offset intrusive contacts.

Both the north-south and the east-west structures in addition to the secondary northwest and the northeast structures are reflected topographically in the drainage and/or the lake patterns of the area, and moreso in the batholith contacts east of the subject property.

The mineral controls are, more often than not, related to the structures as evidenced in the incorporated text of the Minfile property description as on the SKI mineral prospect (*Minfile 092HNE203*) where "Narrow quartz veins occupy many of the fractures, which are likely related to the north-striking Kentucky-Alleyne fault, nearby to the west". Other structurally controlled mineralization is also described in the JUNE mineral prospect (*Minfile 092HNE061)* and other Minfile properties described in this report.

In addition to the structurally controlled mineralization related to the primary or secondary structures, mineral controls can be established from structures generated by intrusive emplacement or from fault activity generally along the sediment-volcanic generated contacts such as at the **Igneous Breccia Marker (IBM)** at the footwall of the Lower Argillite Sequence as determined from the 1983, 1986, and the 1987 drill holes *(Figure 6).* Numerous smaller fracture and gouge zones in the argillic and volcanic units as indicated in the drill hole sections may also result from the expanding intrusive. Any alteration or other geological indicators associated with these smaller structures can provide information to the interpretation to a location of a potential economic mineral source.

The **Igneous Breccia Marker (IBM)** and associated gold values is shown on *Figures 6 & 7*. The higher values of 1.050 opt Au in DH 83-8 and 21,300 ppb Au (2.45 opt Au) in 87-3 and the lower gold values of 2,700 ppb Au in DH 87-4 further west and nearer the indicated intrusive may reflect the erratic gold values within the **IBM** and/or or the zonation of gold mineralization relative to the indicated intrusive. This **IBM** may be the **Snowflake Gold Zone** of the 1967 drilling where a reported 60 foot section assaying 0.15 oz Au/ton was intersected in DDH#1 and which the apparent objective of the future drilling programs was to locate this specific gold zone.

Interpretation & Conclusions (cont'd)

Tenure 504335 *(cont'd)*

The Structural Analysis results indicated two potential locations which would be most conducive as a conduit for any indicative sub-surface mineral generated activity to reach the surface or as a conduit to any accessible location below the surface such as at the Igneous Breccia Zone and/or the numerous smaller structures

Location A on *Figure 10* is indicated as the cross structure for the transport and the introduction of the quartz/carbonate in various forms with or without gold bearing pyrite and fragments of diorite but mainly feldspar porphyry, amongst other indicators arising from a deep-seated active intrusive source into the **Igneous Breccia Marker**. The Zone dips variably to the west with the drill results indicating an increasing width of up to six metres. The westernmost drill hole 87-5 (Figures 6 & 9) was short of intersecting the projection of the Zone in the Nicola volcanics to the west where it would contact the cross structural area as indicated on *Figure 10*.

The Igneous Breccia Marker is indicated to extend westward to the Kentucky-Alleyne Fault. In *Figure 8*, which shows DH 83-3 with an assay >10.000 ppb Au (1.050 opt Au) between 42.6 and 44.0 metres and which is indicated as the Igneous Breccia Marker *(Figure 6),* DH 83-7 which was drilled semi-parallel to the Igneous Breccia Marker, the projection of the Igneous Breccia marker 90 metres down-dip from the DH 83-8 intersection may be indicated in the bottom 30.2 cm of DH 83-7 where massive to semi massive pyrite with elevated gold values are reported.

Tenure 504336

Two structural intersections, C & D, are indicated which would be prime prospective areas to explore for surficial geological indicators of a potential sub-surface mineral source.

A study into any association of the structural intersections and exploration results from the four Minfile properties, JUNE (*Minfile 092HNE061)*, SKI (*Minfile 092HNE203),* Snowflake 10 **(***Minfile 092HNE267)* and SNOWFLAKE 7 (*Minfile 092HNE268),* was not done.

RECOMMENDATIONS

Tenure 504335

1. Areas A & B as indicated on Figure 10 should be explored for any surficial geological indicators of sub-surface mineralization.
2. Sufficient historical exploration results are available to warrant a 500 metre drill hole in the location of Area A to test for a mineralized intrusive. The location of the drill hole with the approximate UTM coordinates is shown on *Figure 10.*

Tenure 504336

1. Areas C & D as indicated on Figure 12 should be explored for any surficial indicators of sub-surface mineralization.

2. All historical exploration results related to the four Minfile properties, JUNE, SKI, SNOWFLAKE 10, and SNOWFLAKE 7, should be analyzed and correlated with Areas C & D to determine the source of, and/or the controls to the prime mineralization be it structural or otherwise.

Respectfully submitted
Sookochoff Consultants Inc.

Laurence Sookochoff, PEng

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Bell, R.A., Sutherland, D.B. – Report on Induced Potential and Resistivity Survey of the Porcupine Claim Group for Amalgamated Resources Ltd. December 21, 1966. **AR 962**.

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Windsor, D.M. – Geochemical, and Geophysical Report on the Dor Claim for Redding Gold Corporation. February 28, 1988. **AR 17,554**.

STATEMENT OF COSTS

Work on Tenure 504335 and 504336 of the Porcupine 504335 Claim Group was done from October 2, 2012 to October 15, 2012 to the value as follows:

Structural Analysis

Laurence Sookochoff, PEng. 3 days @ $ 1,000.00/day ----	$ 3,000.00
Maps ----------	1,000.00
Report ----------	4,500.00
	$ 8,500.00
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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-six 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 1980.

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

Laurence Sookochoff, P. Eng.