

**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 Geophysical

TOTAL COST: \$ 9,350.00

AUTHOR(S): Laurence Sookochoff, PEng

SIGNATURE(S): *Laurence Sookochoff*

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

YEAR OF WORK: 2016

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5621127 October 5, 2016

PROPERTY NAME: Toni

CLAIM NAME(S) (on which the work was done): 998423

COMMODITIES SOUGHT: Copper Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HNE002 092HNE059

MINING DIVISION: Nicola

NTS/BCGS: 092H.088 092H.098

LATITUDE: 49 ° 53 ' 57 " LONGITUDE: 120 ° 25 ' 45 " (at centre of work)

OWNER(S):

1) Victory Resources Corporation

2)

MAILING ADDRESS:

132366 Cliffstone Court

Lake Country BC V4V 2R1

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

1) Victory Resources Corporation

2)

MAILING ADDRESS:

132366 Cliffstone Court

Lake Country BC V4V2R1

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

Pleistocene-Holocene, Triassic-Jurassic, Granodiorites, Eastern Volcanic Facies, Volcanics, Mudstone, Siltstones, Shales,

Nicola Volcanics, Basalts

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 03556, 04081, 04082, 04229, 04230, 08970,

09078, 24036, 24806, 26469, 28905, 30405, 30728, 31129, 31207, 31194, 32705, 33166, 34285, 35241, 35532

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping			
Photo interpretation	520 hectares	998423	\$ 6,000.00
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic	2.0	998423	3,350.00
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil			
Silt			
Rock			
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
<b>TOTAL COST:</b>			<b>\$ 9,350.00</b>

**VICTORY RESOURCES CORPORATION**

*(Owner & Operator)*

**GEOLOGICAL & GEOPHYSICAL**

**ASSESSMENT REPORT**

*(Event 5621127)*

*Work done between September 15, 2016 and September 25, 2016*

*on*

**Tenure 998423**

*of the 10 claim*

**Toni 998423 Claim Group**

*Nicola Mining Division*

BCGS Map 092H.088/.090/.098/.099/.100

Centre of Work

**5,530,577N 684,613E**

*Author & Consultant*

**Laurence Sookochoff, PEng**

*Sookochoff Consultants Inc.*

*Submitted*

**April 19, 2017**

**BC Geological Survey  
Assessment Report  
36539**

## TABLE OF CONTENTS

	page
Summary -----	4.
Introduction -----	5.
Property Location and Description -----	5.
Accessibility, Climate, Local Resources, Infrastructure and Physiography -----	7.
History: Property Area -----	8.
092HNE047 – BRENDA -----	8.
092HNE058 – HN-WEN -----	8.
092HNE084 – PAYCINCI -----	8.
092HNE096 – ELK -----	8.
092HNE204 – POT 1 -----	9.
092HNE292 – SNOW -----	9.
092HNE311 – WAVE 1 -----	9.
092HNE312 – WAVE 2 -----	9.
History: Property -----	10.
092HNE002 – MAL -----	10.
092HNE058 – ECHO -----	10.
Geology: Regional -----	10.
Geology: Property Area -----	10.
092HNE047 – BRENDA -----	10.
092HNE058 – HN-WEN -----	13.
092HNE084 – PAYCINCI -----	13.
092HNE096 – ELK -----	14.
092HNE144 – AU-WEN -----	14.
092HNE204 – POT 1 -----	14.
092HNE275 – BREW -----	15.
092HNE292 – SNOW -----	15.
092HNE311 – WAVE 1 -----	15.
092HNE312 – WAVE 2 -----	16.
Geology: Property -----	16.
092HNE002 – MAL -----	16.
092HNE058 – ECHO -----	16.
Mineralization: Property Area -----	16.
092HNE047 – BRENDA -----	16.
092HNE058 – HN-WEN -----	19.
092HNE084 – PAYCINCI -----	19.
092HNE096 – ELK -----	20.
092HNE144 – AU-WEN -----	23.
092HNE204 – POT 1 -----	23.
092HNE275 – BREW -----	24.
092HNE292 – SNOW -----	24.
092HNE311 – WAVE 1 -----	24.
092HNE312 – WAVE 2 -----	24.

**Table of Contents (cont'd)**

Mineralization: Property -----	25.
092HNE002 – MAL -----	25.
092HNE058 – ECHO -----	25.
Structural Analysis -----	25.
Magnetometer Survey -----	28.
Interpretation & Conclusions -----	32.
Selected References -----	34.
Statement of Costs -----	35.
Certificate -----	36.

**ILLUSTRATIONS**

Figure 1. Location Map -----	5.
Figure 2. Claim Location -----	6.
Figure 3. Claim Map -----	6.
Figure 4. Geology, Claims, Index, & Minfile -----	11.
Figure 5. Lineaments as Indicated Structures on Tenure 998423 -----	26.
Figure 6. Rose Diagram from Indicated Structures (Lineaments) -----	26.
Figure 7. Cross-structural locations on Google Earth -----	27.
Figure 8. Magnetometer Survey Grid -----	28.
Figure 9. Magnetometer Survey Data -----	29.
Figure 10. Magnetometer Survey Data Contoured -----	29.
Figure 11. Magnetometer Survey Data Colour Contoured -----	30.
Figure 12. Elk Soil Anomalies -----	31.
Figure 12a. Elk Vein Zones -----	31.
Figure 13. Copper Mountain Camp: Major Structures -----	32.

**TABLES**

Table 1 Tenures of the Toni-998423 Claim Group -----	7.
Table II Approximate UTM Location of Cross-Structures -----	27.

**APPENDICES**

Appendix I Magnetometer Survey Data -----	35.
---	-----

## SUMMARY

The 10 claim 4386 hectare Toni 998423 Claim Group ("Property") is located in south-central British Columbia, 208 kilometres northeast of Vancouver, 36 kilometres southeast of Merritt, eight kilometres southeast of, and 30 kilometres west of, the formerly productive Elk and Brenda mines respectively.

The Brenda (*MINFILE 092HNE047*) mineral deposit, hosted by the "Brenda stock", a composite quartz diorite/granodiorite body which forms part of the Pennask batholith, was comprised of a core of intense fracturing with mineralization decreasing outwardly from this zone; the centre of the main mineral zone. The grade of the deposit and the outward limits of the deposit was a function of fracture (vein) density and of the thickness and mineralogy of the filling material.

The Elk (*MINFILE 092HNE096*) mineral deposit was developed at one of eight anomalous gold-in-soil zones which are located at the intersection of the major northerly trending ELK/Siwash fault and transverse easterly to northeasterly fault sets as shown on Figure 12.

The main mineral controls at both of these mines in addition to currently productive mineral deposits, such as at Copper Mountain, and at Highland Valley Copper, can be attributed to cross-structural conditions between major and/or subsidiary structures.

As indicated by the BC government supported MapPlace geological maps, the Toni 998423 Claim Group is predominantly underlain by the Nicola Volcanics Eastern Volcanic Facies of basalts (uTrNE). In the southeastern sector, the basalts are locally covered by a portion of the Nicola Volcanics Eastern Volcanic Facies of sediments (uTrNsf) and are intruded by a small body of granodiorite in the extreme west. In the northeastern sector the property, the Nicola basalts are in an undulating northeasterly and northerly contact with the Pennask Batholith (LTrJgd). Tenure 998423 is underlain by the Nicola volcanics.

In the structural analysis of Tenure 998423 one cross-structure was delineated from an indicated primary northerly trending structure intersected by an indicated northeasterly trending structure.

The localized magnetometer survey, which covered a 12.5 hectare area of the 520 hectare Tenure 998423 claim which included the cross-structure, indicated a localized anomalous magnetometer low (mag LO), a localized anomalous magnetometer high (mag HI), a 250 metre open-ended sub-anomalous mag LO.

Upon the premise that a magnetometer low (mag LO) is the result of hydrothermal alteration and that a magnetometer high (mag HI) is potentially an indication of intrusion-related gold pyrrhotite veins or polymetallic veins of silver, lead, zinc and potentially gold mineralization, which commonly occur peripheral to porphyry mineralization, the localized, open to the south, anomalous mag LO may indicate a relatively obscure hydrothermally altered cross-structure and fault zone with the localized, open to the north, anomalous mag HI indicating a relatively obscure cross-structure hosting magnetic vein material.

The prime exploration target for a masked mineral resource is the 250 metre long open-ended, sub-anomalous mag LO zone with indicated cross-structures and the delineated cross-structure "A".

## INTRODUCTION

During September, 2016 a structural analysis and a localized magnetometer survey were completed on Tenure 998423 of the 10 claim Toni 998423 claim group ("Property"). The purpose of the program was to delineate potential structures and correlative magnetic responses which may be integral in geological controls to potentially economic mineral zones that may occur on Tenure 998423 or on other claims of the Property.

Information for this report was obtained from sources as cited under Selected References and from work the author has performed on the Toni Property since 2006.

*Figure 1. Location Map*



## PROPERTY LOCATION & DESCRIPTION

### Location

The Property is located within BCGS Map 092H.088/.090/.098/.099/.100 of the Nicola Mining Division, 208 kilometres northeast of Vancouver, 36 kilometres southeast of Merritt and 82 kilometres south of Kamloops. The formerly productive Brenda mine is 30 kilometres east.

### Description

The Property is comprised of 10 contiguous claims covering an area of 4386.1506 hectares.

Particulars are as follows:

Property Location & Description (cont'd)

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

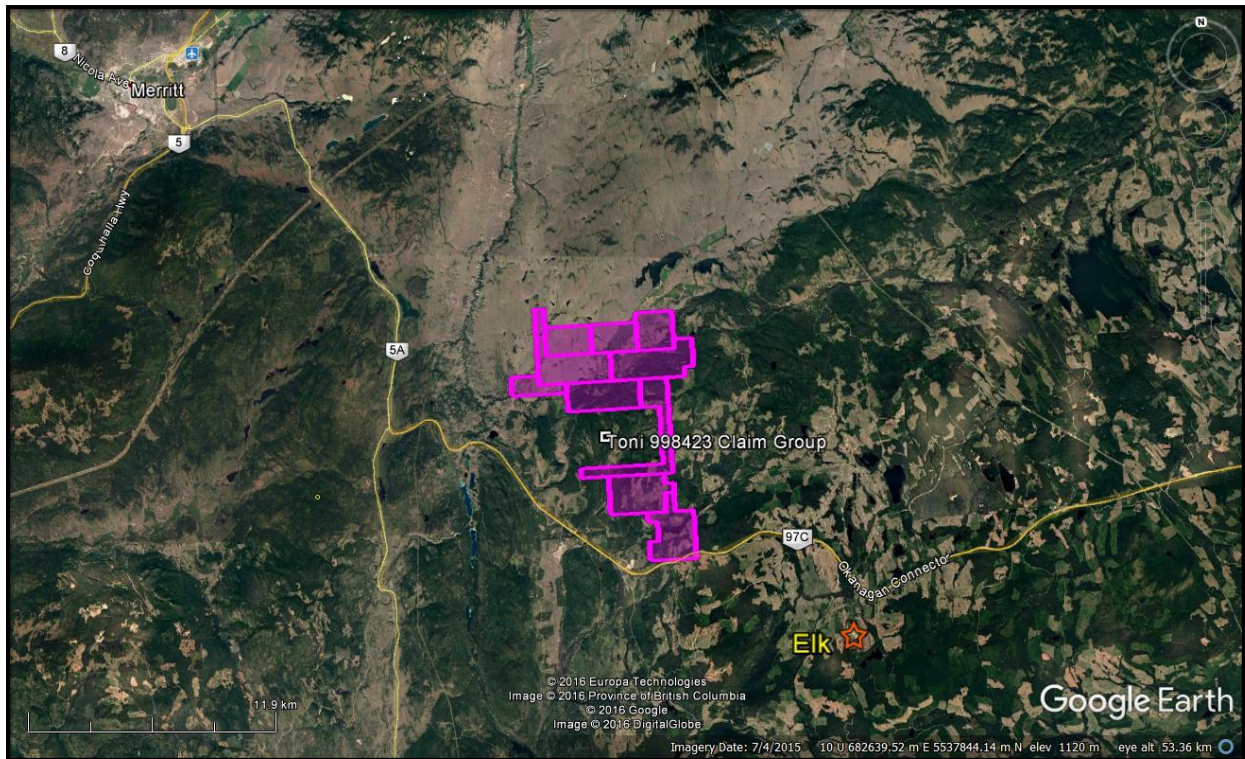
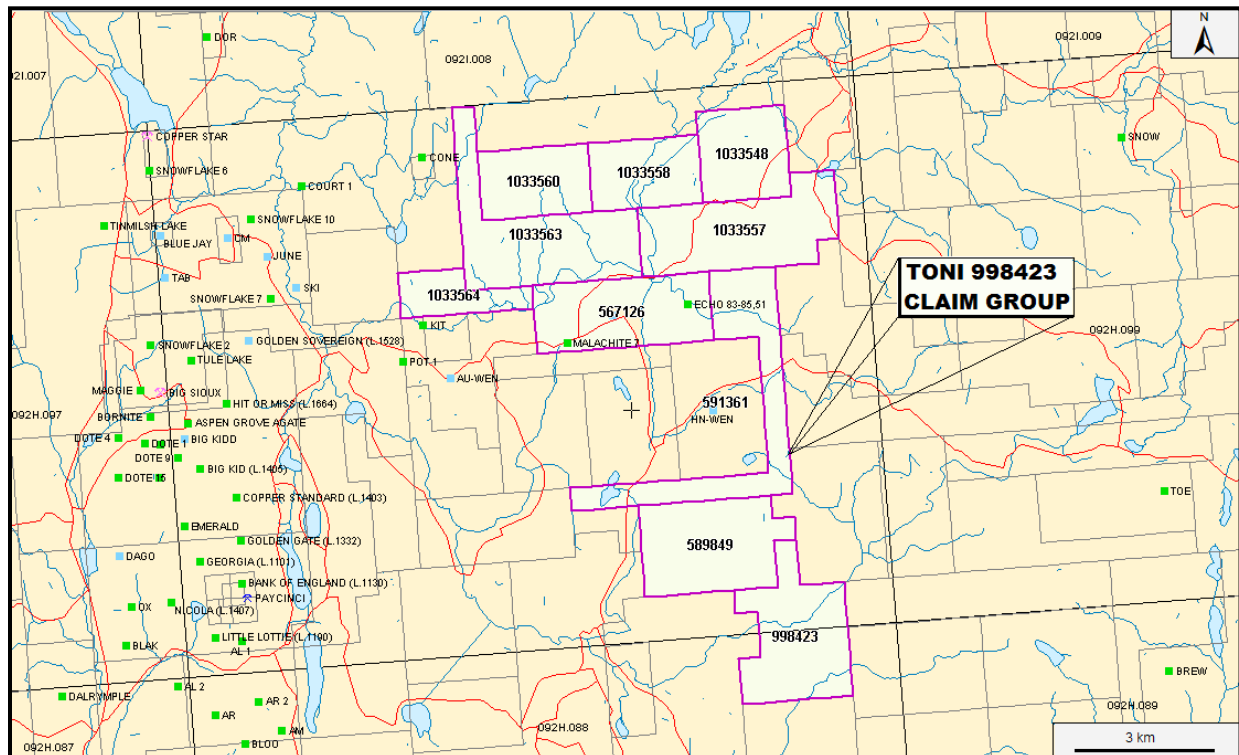


Figure 3. Claim Map  
(Base Map from MapPlace)





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

**Table I. Tenures of the Toni 998423 Claim Group**  
(from MapPlace)

<u>Tenure Number</u>	<u>Type</u>	<u>Claim Name</u>	<u>Good Until</u>	<u>Area (ha)</u>
<a href="#">567126</a>	Mineral	AU-WEN EAST	20170720	498.8479
<a href="#">589849</a>	Mineral	TONI 1	20170419	520.1029
<a href="#">591361</a>	Mineral	WIN 8	20170717	519.8243
<a href="#">998423</a>	Mineral	BREW	20170419	520.2953
<a href="#">1033548</a>	Mineral		20170720	332.3785
<a href="#">1033557</a>	Mineral		20170720	581.8294
<a href="#">1033558</a>	Mineral		20170720	311.6187
<a href="#">1033560</a>	Mineral		20170720	311.6192
<a href="#">1033563</a>	Mineral		20170720	602.5859
<a href="#">1033564</a>	Mineral		20170720	187.0485

\*Upon the approval of the assessment work filing, Event Number 5621127

## **ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY**

### **Access**

Access to the Property is southward from Merritt via Highway 5A/97C for 26 kilometres to the Aspen Grove junction thence eastward via Highway 97C or the Okanagan Connector for 19 kilometres to the southern boundary of Tenure 899909 of the Toni 998423 claim group. A network of logging roads provide access routes to many areas within Tenure 998423, the subject of the structural analysis.

### **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**

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 three hours distant by road and less than one hour by air from Kamloops.

### **Physiography**

The topography of Tenure 998423 is of a gentle sloped area with localized forested, clear-cut and second growth areas. Elevations range from 1,260 metres in the southwest corner to 1,528 metres in the extreme northern portion of the claim.

**HISTORY: PROPERTY AREA**

The history on some selected *MINFILE* mineral properties peripheral to the Toni 998423 Claim Group is reported as follows. The distance is relative to the Toni 998423 Claim Group.

**BRENDA** past producer (Porphyry Cu +/- Mo +/- Au)

MINFILE 092HNE047

Thirty kilometres east

*The Brenda mine began production in early 1970 with measured geological (proven) reserves of 160,556,700 tonnes grading 0.183 per cent copper and 0.049 per cent molybdenum at a cutoff of 0.3 per cent copper equivalent [ $eCu = \% Cu + (3.45 \times \% Mo)$ ]. The mine officially closed June 8, 1990.*

**HN-WEN** prospect (Volcanic redbed Cu)

MINFILE 092HNE058

One kilometre west

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

*Map 41-1989). The volcanics may be affected by low grade propylitic and chloritic alteration. Less than 1 kilometre to the north of the occurrence is the east-striking contact of the Early Jurassic Pennask batholith, a large intrusion of medium-grained granodiorite to quartz diorite.*

*The occurrence lies in the northern assemblage of the Eastern belt of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine volcanoclastic rocks 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, and volcanic tuff and breccia (Assessment Report 1586; Geological Survey of Canada*

**PAYCINCI** prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Eleven kilometres west

*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).*

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

MINFILE 092HNE096

Eight kilometres southwest

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

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

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

*Reverse circulation drilling, underground diamond drilling, reclamation, road construction, water sampling and aerial photography were also undertaken during this period. Surface and underground diamond drill programs were carried out in the Siwash Mine area from 1994 to 1996 to define the resource. Exploration surface drilling was also carried out during the 1995 and 1996 field seasons to test trench targets between the Siwash mine site and the South Showing area 2.5 kilometres to the south. Limited prospecting and environmental monitoring was undertaken from 1997 to 1999.*

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

**POT 1** showing (Volcanic redbed Cu)

MINFILE 092HNE204

100 metres west

*The Pot 1 occurrence is a showing of gold-silver-copper mineralization, just east of the historical Aspen Grove copper camp, between Merritt and Princeton.*

*The occurrence is located 1.1 kilometres northeast of Pothole Lake, between Quilchena and Pothole creeks, 7 kilometres east-northeast of the community of Aspen Grove.*

**SNOW** showing (Porphyry Cu+/-Mo+/-; Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE292

Eight kilometres east

*The Pine showing is 500 metres south of Quilchena Creek and 4.8 kilometres north-northeast of the north end of Boot Lake. A drillhole intersected minor copper mineralization in weakly to moderately chloritized granite of the Early Jurassic Pennask batholith.*

*A sample of drill core from 28.0 metres depth contained fine-grained magnetite accompanied by fine-grained chalcocite or bornite along the margins of a zeolite vein.*

**WAVE 1** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE311

Thirteen kilometres east

*Between 1986 and 1995, Fairfield Minerals conducted exploration, including a program of wide-spaced grid soil sampling. The Wave 1 and 2 claims were staked to cover areas of mineralized quartz float and coincidental soil and stream anomalies. Recently, the area has been explored by Sookochoff Consultants as a part of the Toni property.*

**WAVE 2** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE312

Fourteen kilometres east

*Between 1986 and 1995, Fairfield Minerals explored the area and completed a program of wide-spaced grid soil sampling.*

**History: Property Area (cont'd)****Wave 2 anomaly (cont'd)**

The Wave 1 and 2 claims were staked to cover areas of mineralized quartz float and coincidental soil and stream anomalies. In 1991, samples of mineralized vein float, up to 0.20 metres in diameter, returned up to 25.7 parts per million silver, 1732 parts per million lead and 2107 parts per million zinc (Assessment Report 22864). Recently, the area has been explored by Sookochoff Consultants as a part of the Toni property.

**HISTORY: PROPERTY****MAL** prospect (Cu skarn; Fe skarn; Au skarn)

MINFILE 092HNE002

Within Tenure 567126

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

**ECHO** showing (Volcanic redbed Cu)

MINFILE 092HNE058

Within Tenure 567126

The Echo occurrence refers to a group of minor copper showings in an area east of the historical Aspen Grove copper camp, between Merritt and Princeton. The occurrence is centred on the northernmost of three showings which were worked on in the 1960s, in a small area (less than 0.5 square kilometre) located southeast of Quilchena Creek, 8.5 kilometres west-northwest of Boot Lake, and 13 kilometres east of the community of Aspen Grove (Assessment Report 1586).

**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 the Highland Valley, Craigmont, Copper Mountain, Afton, and Brenda, 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 litho-geochemistry and by major fault systems. Variation from calc-alkaline to shoshonitic compositions from west to east has been interpreted to reflect eastward dipping subduction in the Nicola arc.

**GEOLOGY: PROPERTY AREA**

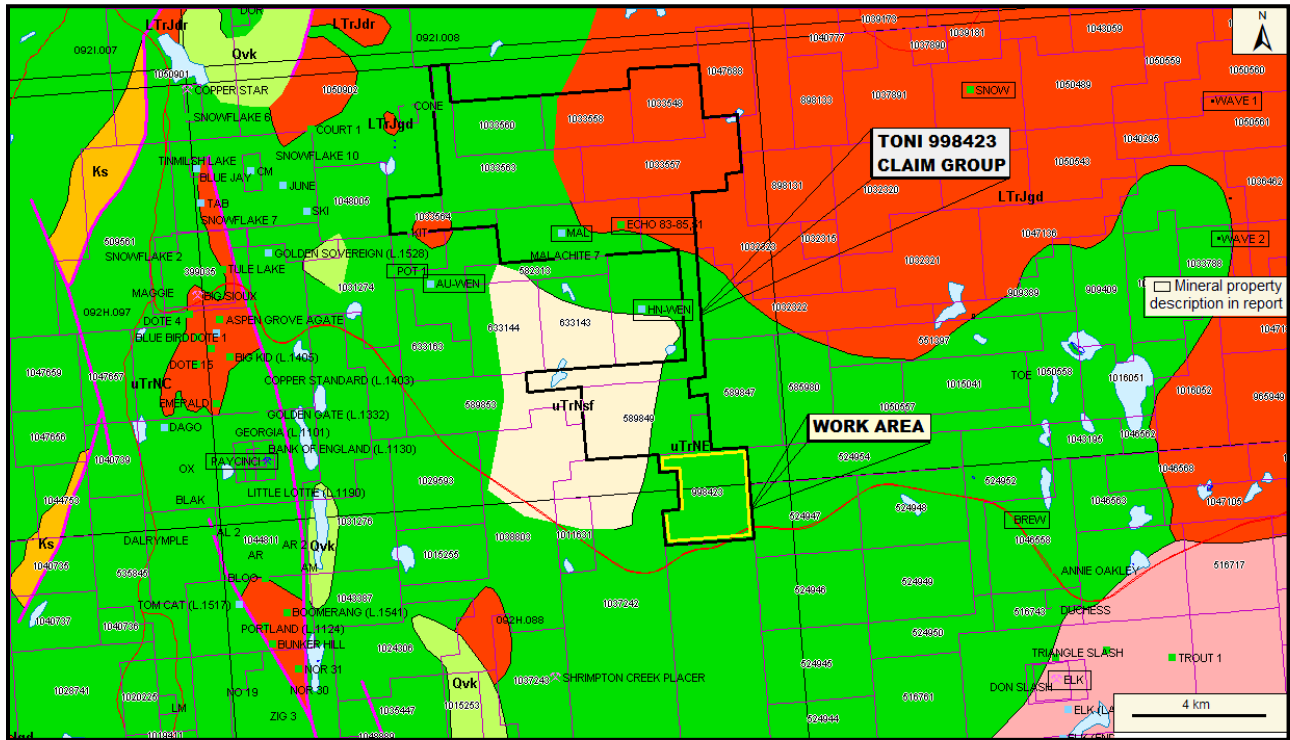
The geology on some selected MINFILE mineral showings, and past producers peripheral to the Property is reported as follows. The distance is relative to the Toni 998423 Claim Group.

**BRENDA** past producer (Porphyry Cu +/- Mo +/- Au)

MINFILE 092HNE047

Thirty kilometres east

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



**GEOLOGY MAP LEGEND**

**Pleistocene to Holocene**

Qvk

Unnamed alkalic volcanic rocks

**Eocene**

EPrb: Princeton Group

andesitic volcanic rocks

**Upper Triassic: Nicola Group**

**Eastern Volcanic Facies**

uTrNE

basaltic volcanic rocks

uTtNsf

mudstone, siltstone, shale, fine clastic sedimentary rocks

uTrNMI

basaltic volcanic rocks

uTrJum

unnamed ultramafic rocks

**Late Triassic to Early Jurassic**

LTrJgd

unnamed granodiorite intrusive rocks

LTrJdr

dioritic to gabbroic intrusive rocks

**Geology: Property Area (cont'd)****Brenda past producer (cont'd)**

*The Brenda copper-molybdenum deposit is within the "Brenda stock", a composite quartz diorite/granodiorite body which forms part of the Pennask batholith. Several ages and compositions of pre and post-ore dikes cut the stock. The deposit is approximately 390 metres from the contact with Nicola Group rocks to the west.*

*Nicola Group tuffs, volcanic breccias and flows adjacent to the Brenda stock have been altered to "schistose hornfels". This hornfels, which is as wide as 450 metres, is characterized by the development of bands and aligned lenses of felted brown to black biotite. Schistosity generally strikes roughly parallel to the intrusive contact and dips west at 30 to 70 degrees.*

*The schistose hornfels grades westerly into recognizable west-dipping volcanic rocks which in turn are overlain by greywacke, argillite and shales. The Brenda stock is a composite, zoned quartz diorite to granodiorite body which can be divided into two units. Unit 1 is of quartz diorite composition and contains abundant mafic minerals (hornblende > biotite) and angular quartz grains, whereas unit 2 is porphyritic granodiorite and contains fewer mafic minerals (biotite > hornblende), well-defined biotite phenocrysts and subhedral quartz grains.*

*The contact between units 1 and 2 is generally gradational, but locally sharp. At sharp contacts, unit 2 is chilled against unit 1.*

*Dikes of several ages and compositions cut the Brenda stock. At least four types, aplite-pegmatite, andesite, trachyte porphyry and basalt, have been identified in the Brenda orebody. Similar dikes, as well as felsite, dacite and quartz diorite have been mapped beyond the limits of economic mineralization. The aplite-pegmatite dikes are cut by all other dikes and by all mineralized fractures. The andesite dikes have been altered and mineralized during ore formation. Two types of quartz diorite dikes are found and both are cut by quartz-sulphide veins. Dacite porphyry and felsite dikes are also cut by quartz-sulphide veins.*

*A trachyte porphyry dike up to 4.5 metres wide and 300 metres in strike length is exposed in the Brenda pit. A weakly mineralized vein was observed in the dike which suggested an intermineral age for the dike. Further evidence has clearly shown that the dikes cut all stages of mineralization, except some of the latest quartz veins (Canadian Institute of Mining and Metallurgy Special Volume 15). Several post-mineral hornblende lamprophyre dikes also occur within the Brenda orebody and are probably genetically related to the trachyte porphyry dikes. Irregular, branching basalt dikes, probably related to Tertiary volcanism, have been intruded along pre-existing fault zones. They cut all phases of mineralization and alteration.*

*Initial potassium-argon dating of two samples from the Brenda mine area resulted in different ages for hornblende (176 Ma) and biotite (148 Ma). Interpretation of these results suggests that the Brenda stock crystallized about 176 million years ago. Biotite samples from the pit area have been dated at about 146 Ma, which probably represents the age of mineralization (Canadian Institute of Mining and Metallurgy Special Volume 15). Faults in the Brenda pit are expressed as fracture zones in which the rock is intensely altered to clay minerals, sericite, epidote and chlorite. These fracture zones range in width from a few centimetres to 9 metres. Most strike 070 degrees and dip steeply south. Northwest-striking faults exhibit left-lateral movement. The faults transect all mineralization, except some calcite veins. Sulphides, especially molybdenite, have been smeared along fault planes. Shear zones are wider and more numerous in the north half of the pit, where they control bench limits.*

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

MINFILE 092HNE058

One kilometre west

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

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

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

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

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

**PAYCINCI** prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Eleven kilometres west

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

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

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

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

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

MINFILE 092HNE096

Eight kilometres southwest

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

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

MINFILE 092HNE144

Two kilometres south

*The occurrence lies in the northern assemblage of the Eastern belt of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine volcanoclastic rocks, ranging from tuffaceous volcanic siltstones characteristic of the lower part, to coarse volcanic conglomerate and laharic breccias in the upper part.*

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

*The AU occurrence is centred on the main gold showing, a small stripped, drilled and trenched area just off a gravel road south of Quilchena Creek (Assessment Reports 5766, 16008). This and most of the surrounding area is underlain by andesitic to dacitic tuff, cherty tuff, black argillite, and volcanic sandstone and siltstone.*

*The rocks are strongly fractured in a variety of orientations. Bedding in the tuff has been measured to strike 060 degrees and dip 54 degrees northwest, but it varies.*

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

**POT 1** showing (Volcanic redbed Cu)

MINFILE 092HNE204

One kilometre south

*The Pot 1 occurrence is hosted in the Upper Triassic Nicola Group, which regionally consists of alkalic and calcalkalic volcanics and intrusions of island arc origin, and which is the principal component of the Quesnel Terrane in southern British Columbia (Geological Survey of Canada Maps 41-1989, 1713A). This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization.*

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



**Geology: Property Area** (cont'd)**Pot 1** showing (cont'd)

*This assemblage mainly consists of alkalic volcanic flows and well bedded submarine volcanoclastic rocks, ranging from tuffaceous volcanic siltstones characteristic of the lower part, to coarse volcanic conglomerate and laharic breccias in the upper part. The assemblage is characterized by a paucity of intrusive rocks in comparison to the main Aspen Grove copper camp in the Central belt a few kilometres to the west, separated by the Kentucky-Alleyne fault system (Bulletin 69).*

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

MINFILE 092HNE275

Six kilometres west

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

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

*The zone is approximately 40 metres wide. It is somewhat gossanous and exhibits carbonate and clay alteration and sporadic silicification. Some quartz +/- calcite stringers and blebs are present but not common. Pyrite is ubiquitous along the entire fault. Sections of the zone are strongly mineralized with massive veins, narrow stringers and occasional disseminations of marcasite, pyrite and pyrrhotite. Samples of pyritic clay-altered sections have yielded up to 0.280 gram per tonne gold and 0.445 per cent arsenic (Assessment Report, 18041, page 8, samples 128665, 44719)*

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

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

**SNOW** showing (Porphyry Cu+/-Mo+/-; Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE292

Eight kilometres east

*The Pine showing is 500 metres south of Quilchena Creek and 4.8 kilometres north-northeast of the north end of Boot Lake. A drillhole intersected minor copper mineralization in weakly to moderately chloritized granite of the Early Jurassic Pennask batholith.*

*A sample of drill core from 28.0 metres depth contained fine-grained magnetite accompanied by fine-grained chalcocite or bornite along the margins of a zeolite vein.*

**WAVE 1** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE311

Thirteen kilometres east

*The area is underlain by granitic rocks of the Jurassic Pennask batholith and basaltic volcanics of the Triassic Nicola Group.*

**Geology: Property Area** (cont'd)**WAVE 2** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE312

Fourteen kilometres east

*The area is underlain by granitic rocks of the Jurassic Pennask batholith and basaltic volcanics of the Triassic Nicola Group.*

**GEOLOGY: PROPERTY**

As indicated by the BC government supported MapPlace geological maps, the Toni 998423 Claim Group is predominantly underlain by the Nicola Volcanics Eastern Volcanic Facies of basalts (uTrNE). In the southeastern sector, the basalts are locally covered by a portion of the Nicola Volcanics Eastern Volcanic Facies of sediments (uTrNsf) and are intruded by a small body of granodiorite in the extreme west. In the northeastern sector the property, the Nicola basalts are in an undulating northeasterly and northerly contact with the Pennask Batholith. Tenure 998423 is underlain by basalts of the Nicola volcanics.

**MAL** prospect (Cu skarn; Fe skarn; Au skarn)

MINFILE 092HNE002

Within Tenure 567126

*The Malachite occurrence is hosted in the Upper Triassic Nicola Group, which regionally consists of alkalic and calcalkalic volcanics and intrusions of island arc origin, and which is the principal component of the Quesnel Terrane in southern British Columbia (Geological Survey of Canada Maps 41-1989, 1713A). This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization. The occurrence lies in the northern assemblage of the Eastern belt or facies of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine volcanoclastic rocks and volcanic flows.*

*The area of the Malachite occurrence is underlain by dark green, augite porphyritic andesitic to basaltic volcanics and fragmental rocks, with subordinate black argillite with local limy horizons, and feldspar porphyry (Assessment Reports 449, 1586). Some volcanic flow breccia contains pink trachytic fragments (Assessment Report 9590). Stratified rocks strike north-northwest and dip moderately to steeply west (Geological Survey of Canada Map 41-1989).*

**ECHO** showing (Volcanic redbed Cu)

MINFILE 092HNE058

Within Tenure 567126

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

*Chalcopyrite and malachite are present in trenches and open cuts in volcanics over an area 1000 by 800 metres. Chalcopyrite is disseminated, or concentrated in quartz-calcite veins (Assessment Report 1586). The Echo occurrence lies directly along the strike of prominent fractures which host significant copper-silver mineralization at the HN-WEN occurrence (092HNE058), 2 kilometres to the south-southeast (Assessment Report 4230).*

**MINERALIZATION: PROPERTY AREA**

The mineralization on some of the selected reported MINFILE mineral properties, peripheral to the Property is reported as follows. The distance is relative to the Toni 998423 Claim Group.

**BRENDA** past producer (Porphyry Cu +/- Mo +/- Au)

MINFILE 092HNE047

Thirty kilometres east

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

*The Brenda orebody is part of a belt of copper-molybdenum mineralization that extends north-northeast from the Nicola Group-Brenda stock contact.*

*Mineralization of economic grade (0.3 per cent copper equivalent) is confined to a somewhat irregular zone approximately 720 metres long and 360 metres wide. Ore-grade mineralization extends more than 300 metres below the original surface.*

*Lateral boundaries of ore-grade mineralization are gradational and appear to be nearly vertical.*

*Primary mineralization is confined almost entirely to veins, except in altered dike rocks and in local areas of intense hydrothermal alteration which may contain minor disseminations. The grade of the orebody is a function of fracture (vein) density and of the thickness and mineralogy of the filling material. The average total sulphide content within the orebody is 1 per cent or less.*

*Chalcopyrite and molybdenite, the principal sulphides, generally are accompanied by minor, but variable, quantities of pyrite and magnetite. Bornite, specular hematite, sphalerite and galena are rare constituents of the ore.*

*Johnson (1973), in a study of 17 samples from the deposit, reported minor pyrrhotite, mackinawite, carrollite, cubanite, ilmenite, rutile and native gold (?), as well as several secondary sulphides (Canadian Institute of Mining and Metallurgy Special Volume 15).*

*Pyrite is most abundant in altered andesite dikes and in quartz-molybdenite veins. The ratio of pyrite to chalcopyrite in the orebody is about 1:10, with the chalcopyrite content diminishing beyond the ore boundaries.*

*Because mineralization is confined almost entirely to veins in relatively fresh homogeneous rock, the veins are divided into separate stages, based on crosscutting relations and their mineralogy and alteration effects on the hostrock. The vein density within the orebody is not uniform.*

*Ranges are recorded from less than 9 per metre near the periphery of the orebody to 63 per metre and occasionally 90 per metre near the centre of the orebody. Some veins have very sharp contacts with wallrocks, but most contacts are irregular in detail where gangue and sulphide minerals replace the wallrock. A vein may show features characteristic of fracture-filling in one part and of replacement in another. Mineralized solutions were introduced into fractures and, during development of the resultant veins, minor replacement of the wallrock ensued.*

*The chronological stages of mineralization are as follows: (1) biotite-chalcopyrite (oldest); (2) quartz-potassium feldspar-sulphide; (3) quartz-molybdenite-pyrite; (4) epidote-sulphide-magnetite; and (5) biotite, calcite and quartz. Stages 1 through 4 are all genetically related to a single mineralizing episode, which was responsible for the orebody. Stage 5 represents a later, probably unrelated, event(s) (Canadian Institute of Mining and Metallurgy Special Volume 15). Stage 2 veins form the bulk of the mineralization in the deposit, and are the most important source of ore.*

*Hydrothermal alteration at the Brenda deposit generally is confined to narrow envelopes bordering veins. These alteration envelopes commonly grade outward into unaltered or weakly propylitic-altered rock. Where veins are closely spaced, alteration envelopes on adjacent veins may coalesce to produce local areas of pervasive alteration. For the most part, hydrothermal alteration at the Brenda deposit is exceptionally weak for a porphyry copper system.*

*Four types of alteration are recognized in the Brenda deposit, three of which are related to the mineralizing process.*

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

*Two of these are potassic (potassium feldspar) and biotite, and the other is propylitic. Later argillic alteration has been superimposed on the system along post-mineral faults.*

*Potassium feldspar and biotite alteration generally are separated in space, but locally occur together. Both types of alteration accompanied sulphide deposition. Potassium feldspar replaces plagioclase adjacent to most stage 2 and, to a lesser extent, stage 3 veins.*

*These irregular envelopes range in width from a centimetre or less up to a metre, with an average of about 2 centimetres. Potassium feldspar also occurs as a minor constituent of stage 1 veins.*

*Hydrothermal biotite replaces magmatic mafic minerals (hornblende, biotite) and, more rarely, plagioclase in hostrock adjacent to stage 2 and especially stage 3 veins. These envelopes of hydrothermal biotite range in width from less than 1 millimetre to several centimetres.*

*Weak to intense propylitic alteration, which is characterized by the development of chlorite and epidote, as well as less obvious microscopic sericite and carbonate, is sporadically distributed throughout the Brenda stock.*

*Large areas within the orebody have not been propylitized and in these areas, veins with potassic alteration envelopes clearly cut across propylitized quartz diorite, indicating an early hydrothermal or even a pre-ore origin for the propylitization (Canadian Institute of Mining and Metallurgy Special Volume 15). A second period of propylitization accompanied the development of stage 4 veins and is reflected as envelopes of epidote and chlorite. Locally intense argillic alteration is confined to post-mineral fault zones where the hostrock has been highly shattered. Kaolinite, sericite and epidote have almost completely replaced the host rocks.*

*Surface weathering, which is expressed predominantly by the development of limonite, extends as a highly irregular blanket over the mineralized zone for depths ranging from a few metres to greater than 30 metres. In this weathered area, limonite stains all fractures. Fault zones have been especially susceptible to surface weathering, and the argillic alteration of these zones may be primarily the result of groundwater action. Secondary minerals developed during weathering, all highly subordinate in quantity to limonite, include malachite, azurite, hematite, ferrimolybdate, powellite and cupriferous manganese oxides. Cuprite, covellite, chalcopyrite, native copper, tenorite and ilsemanite are rare constituents. Copper-molybdenum mineralization in the Brenda deposit was developed during several sequential stages, all of which constitute one mineralizing episode.*

*Each stage occupies unique sets of fractures, which are filled with specific combinations of metallic and gangue minerals. Although the attitudes of veins in each stage are unique in detail, most stages include conjugate steeply dipping sets of northeast and northwest striking veins. If these veins occupy shear fractures, it is probable that they were formed by generally east-west compressive forces. Examination of the structure in the Nicola Group rocks to the west reveals that north-northwest and north trending fold axes also indicate an east-west compression.*

*It is suggested that intermittent east-west compressional forces intensely fractured the rocks of the Brenda stock during several stages of time and tapped a hydrothermal source, either a later phase of the Brenda stock or a separate intrusive system. As each stage of fractures developed, hydrothermal fluids introduced vein material which healed the fractures. Renewed build-up of compressional forces again fractured the rocks, which were again healed. Repetition of this sequence can explain all stages of mineralization within the Brenda deposit. East-west compression continued after ore deposition ceased and produced prominent east-northeast and northwest striking shear zones (Canadian Institute of Mining and Metallurgy Special Volume 15).*

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

MINFILE 092HNE058

One kilometre west

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

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

*The mineralized zone measures 760 by 90 metres and has a depth of about 75 metres. Diamond drilling indicates that it strikes 160 degrees and dips vertically or steeply east, so it is not parallel to the volcanic-sedimentary contact, indicating that the contact is not the controlling factor. Incidentally, the Echo occurrence (092HNE059) lies on this trend, 2 kilometres to the north-northwest, and the mineralization may also extend south-southeast of the HN-WEN occurrence (Assessment Report 4230).*

*Some significant copper and silver values have been obtained from the workings and diamond drill core. A 1.5-metre chip sample from Adit Number 1 was assayed at 4.39 per cent copper, 92.6 grams per tonne silver, and 0.7 gram per tonne gold (Assessment Report 4230). A grab sample from here was assayed at 4.84 per cent copper, 46.6 grams per tonne silver and 0.7 gram per tonne gold (Assessment Report 4230). Both samples were from oxidized material and may not be representative of grade throughout the deposit (Assessment Report 4230). A drill core sample (hole HNS 72-1) assayed 1.12 per cent copper and 3.4 grams per tonne silver (Assessment Report 4230).*

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

**PAYCINCI** prospect (Volcanic redbed Cu)

MINFILE 092HNE084

Eleven kilometres west

*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).*

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

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

MINFILE 092HNE096

Eight kilometres southwest

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

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

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

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

*In the Siwash North area, gold occurs in veins measuring 5-70 centimetres wide, hosted by a zone of strongly sericitic altered granite and, in the west, volcanic rocks.*

*In general, the mineralized zone trends east-northeast with southerly dips from 20-80 degrees (from east to west), and appears to be related to minor shearing. Quartz veining occurs in a number of parallel to subparallel zones. Each zone consists of one or more veins within an elevation range of 5 to 10 metres that can be correlated as a group to adjacent drill holes. In the eastern parts of the area, up to six subparallel zones occur.*

*Five of these zones are consistent enough to be labelled the A, B, C, D and E zones.*

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

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

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

*In drill core, mineralization has not been affected by supergene processes. Metallic minerals in drill core include pyrite, chalcopyrite, sphalerite, galena, tetrahedrite, maldonite? pyrrhotite and native gold in order of decreasing abundance. Gold is strongly associated with pyrite and with a blue-grey mineral. Photomicrographs show the gold commonly in contact with this mineral, which may be a gold-bismuth alloy (maldonite?) or a copper-bismuth-antimony sulphosalt.*

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

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

*Stronger alteration generally accompanies higher grade gold mineralization. Seven main types of alteration were recognized in the granitic rocks throughout the property: propylitic, argillic, sericitic, potassium feldspar stable phyllic, phyllic, advanced argillic and silicic. Locally, potassic alteration, skarnification and silicification are evident, but are relatively minor and do not appear to be related to mineralization.*

*Propylitic alteration is generally light green with biotite and hornblende altered to chlorite, and plagioclase is saussuritized. In volcanics, the colour is generally olive green, and the rock is soft. Argillic alteration is exemplified by bleached rock, with plagioclase white and clay-altered; potassium feldspar is slightly altered.*

*Volcanics are bleached to light green or grey. Sericitic alteration is typically pale green with a micaceous sheen, with plagioclase altered to sericite; trace disseminated pyrite may be present.*

*This type of alteration is often associated with quartz veins and appears to be the lowest grade alteration associated with gold mineralization. It is not recognized in volcanics.*

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

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

*Volcanics are white or blue coloured. Silicic alteration is quartz veining or replacement that is hard with moderate conchoidal fracture*

*There is a strong symmetrical zoning of alteration around the quartz veins: vein-advanced argillic-phyllic-potassium feldspar stable phyllic-argillic-propylitic.*

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

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

*The revised drill indicated reserve, based on more realistic open pit and underground mining widths of 0.39 to 0.79 metre with a 20.5 grams per tonne gold cutoff grade, is 122,458 tonnes averaging 54.5 grams per tonne gold (George Cross News Letter No. 65 (April 2), 1993). Surface drilling was done on fences 10-50 metres apart, underground drilling on fences 10 metres apart.*

*Reserve calculations by the company and consultant Roscoe Postle gave the following results (Explore B.C. Program 95/96 - A38):*

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

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

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

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

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

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

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

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

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

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

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

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

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

*In 2004 a diamond drill program consisting of 10,265 meters of NQ drilling in 44 holes was completed.*

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

*In 2004 a diamond drill program consisting of 10,265 meters of NQ drilling in 44 holes was completed.*



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

*As reported by Almaden in 2001, a possible extension to the B and WD vein systems was found roughly two kilometres along strike to the east, on the other side of an area of overburden cover and no outcrop, as part of a trenching program.*

*Grab samples of the vein material taken at surface returned averaged analyses of 31.6 grams per tonne gold and 104.4 grams per tonne silver (News Release, Almaden Minerals Limited, March 4, 2005. This discovery added about two kilometres of prospective, unexplored strike length to the high-grade vein system.*

**Update**

Gold Mountain Mining Corporation, the present owner of the Elk property reports (2012 Corporate Presentation) on recent information at the Elk Property; past gold production at 51,500 ounces at 97 g/t (>3 opt) and an existing gold resource of 301,000 ounces gold in a measured and indicated category with 263,000 ounces of gold in an inferred category.

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

MINFILE 092HNE144

Two kilometres south

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

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

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

*Grab and select samples assayed between 14.4 and 91 grams per tonne gold (Assessment Reports 5766, 16008). The best drill core intersection assayed 4.97 grams per tonne gold over 1.5 metres (Assessment Report 16008).*

**POT 1** showing (Volcanic redbed Cu)

MINFILE 092HNE204

One kilometre south

*Mineralization comprises erratically disseminated chalcopyrite, malachite, azurite and pyrite (Preliminary Map 15; Assessment Report 13714). The copper minerals occur in narrow zones striking southwest, transverse to the regional strike but parallel to a fault 1 kilometre to the northwest (Bulletin 69).*

*Individual rock samples from the showing were analysed at up to 0.95 gram per tonne gold and 4.8 grams per tonne silver (Assessment Report 13714). A composite chip sample across the showing was analysed at 2.55 grams per tonne gold and 1.9 grams per tonne silver over 130 metres (Assessment Report 13714, Drawing No. 2, sample W301). Gold and silver values appear to be proportional to the degree of alteration and copper mineralization (Assessment Report 13714).*

**Mineralization: Property Area (cont'd)****BREW** showing (Alkalic porphyry Cu-Au; Subvolcanic Cu-Ag-Au; As-Sb)

MINFILE 092HNE275

Six kilometres west

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

**SNOW** showing (Porphyry Cu+/-Mo+/-; Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE292

Eight kilometres east

*The Pine showing is 500 metres south of Quilchena Creek and 4.8 kilometres north-northeast of the north end of Boot Lake. A drillhole intersected minor copper mineralization in weakly to moderately chloritized granite of the Early Jurassic Pennask batholith. A sample of drill core from 28.0 metres depth contained fine-grained magnetite accompanied by fine-grained chalcocite or bornite along the margins of a zeolite vein.*

**WAVE 1** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE311

Thirteen kilometres east

*Locally, mineralized quartz vein float was found and contain disseminated pyrite and limonite with occasional specks of chalcopyrite, galena or sphalerite.*

*In 1991, samples of mineralized vein float, up to 0.20 metre in diameter, returned up to 8230 parts per billion gold, 249.3 parts per million silver, 844 parts per million copper and 4091 parts per million lead (Assessment Report 22864). Recently, the area has been explored by Sookochoff Consultants as a part of the Toni property.*

**WAVE 2** anomaly (Polymetallic veins Ag-Pb-Zn+/-Au)

MINFILE 092HNE311

Fourteen kilometres east

*Locally, mineralized quartz vein float was found and contain disseminated pyrite and limonite with occasional specks of chalcopyrite, galena or sphalerite. In 1991, samples of mineralized vein float, up to 0.20 metres in diameter, returned up to 25.7 parts per million silver, 1732 parts per million lead and 2107 parts per million zinc (Assessment Report 22864).*

*Locally, mineralized quartz vein float was found and contain disseminated pyrite and limonite with occasional specks of chalcopyrite, galena or sphalerite. In 1991, samples of mineralized vein float, up to 0.20 metres in diameter, returned up to 25.7 parts per million silver, 1732 parts per million lead and 2107 parts per million zinc (Assessment Report 22864).*

## MINERALIZATION: PROPERTY

**MAL** prospect (Cu skarn; Fe skarn; Au skarn)

MINFILE 092HNE002

Within Tenure 567126

*The Malachite occurrence is hosted in the Upper Triassic Nicola Group, which regionally consists of alkalic and calcalkalic volcanics and intrusions of island arc origin, and which is the principal component of the Quesnel Terrane in southern British Columbia (Geological Survey of Canada Maps 41-1989, 1713A). This belt has been of major economic interest because of its potential for porphyry copper-gold mineralization. The occurrence lies in the northern assemblage of the Eastern belt or facies of the Nicola Group (after Preto, Bulletin 69). This assemblage mainly consists of well-bedded submarine volcanoclastic rocks and volcanic flows.*

*The area of the Malachite occurrence is underlain by dark green, augite porphyritic andesitic to basaltic volcanics and fragmental rocks, with subordinate black argillite with local limy horizons, and feldspar porphyry (Assessment Reports 449, 1586). Some volcanic flow breccia contains pink trachytic fragments (Assessment Report 9590). Stratified rocks strike north-northwest and dip moderately to steeply west (Geological Survey of Canada Map 41-1989).*

**ECHO** showing (Volcanic redbed Cu)

MINFILE 092HNE058

Within Tenure 567126

*Chalcopyrite and malachite are present in trenches and open cuts in volcanics over an area 1000 by 800 metres. Chalcopyrite is disseminated, or concentrated in quartz-calcite veins (Assessment Report 1586). The Echo occurrence lies directly along the strike of prominent fractures which host significant copper-silver mineralization at the HN-WEN occurrence (092HNE058), 2 kilometres to the south-southeast (Assessment Report 4230).*

## STRUCTURAL ANALYSIS

### a) Purpose

The purpose of the structural analysis was to delineate any area of major fault intersections which location could be the centre of maximum brecciation and be depth intensive to provide the most favourable feeder zone to any convective hydrothermal fluids sourced from a potentially mineral laden reservoir. The fluid constituents and/or the indications thereof could be etched in the surface material; where, by means of standard exploratory procedures, the source and location may be identified and a foundation on which to warrant any follow-up exploration.

These surficial indications such as prime minerals, indicator minerals, or alteration patterns, may be an indication of a masked mineral resource. Thus, a cross-structural location would be the prime area to initially prospect for the surficial indicators which may be revealed as pathfinder minerals, minerals and/or alteration products that would be subject to interpretation as economic mineral indicators.

### b) Method

The structural analysis was performed on a MapPlace DEM image hillshade map of Tenure 998423 by viewing of the map and marking the lineaments, or indicated structures, thereon. A total of 53 lineaments were marked. The lineaments were compiled into a 10 degree class interval and plotted as a rose diagram as shown on Figure 6. The indicated primary structural trend was then plotted on the lineament map with the general trend influenced by the predominant lineaments as shown by the Rose Diagram.

**Structural Analysis (cont'd)**

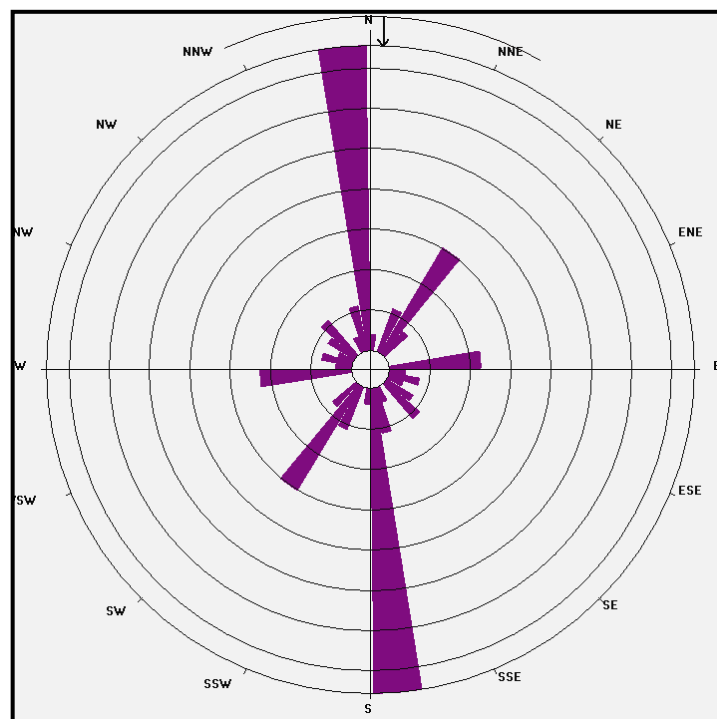
**Figure 5. Lineaments as Indicated Structures on Tenure 998423**



**c) Results**

One cross-structure was delineated from an indicated primary northerly trending structure intersected by an indicated northeasterly trending structure.

**Figure 6. Rose Diagram from indicated structures on Tenure 998423**



### STATISTICS

Axial (non-polar) data

No. of Data = 53

Sector angle = 10°

Scale: tick interval = 5% [2.7 data]

Maximum = 37.7% [20 data]

Mean Resultant dir'n = 002-182

[Approx. 95% Confidence interval = ±26.6°]  
(valid only for unimodal data)

Mean Resultant dir'n = 002.2 - 182.2

Circ. Median = 177.0 - 357.0

Circ. Mean Dev. about median = 30.8°

Circ. Variance = 0.23

Circular Std. Dev. = 41.37°

Circ. Dispersion = 2.77

Circ. Std Error = 0.2287

Circ. Skewness = -0.09

Circ. Kurtosis = -0.79

kappa = 0.75

(von Mises concentration param. estimate)

Resultant length = 18.69

Mean Resultant length = 0.3526

'Mean' Moments: Cbar = 0.3515; Sbar = 0.0273

'Full' trig. sums: SumCos = 18.6295; Sbar = 1.4459

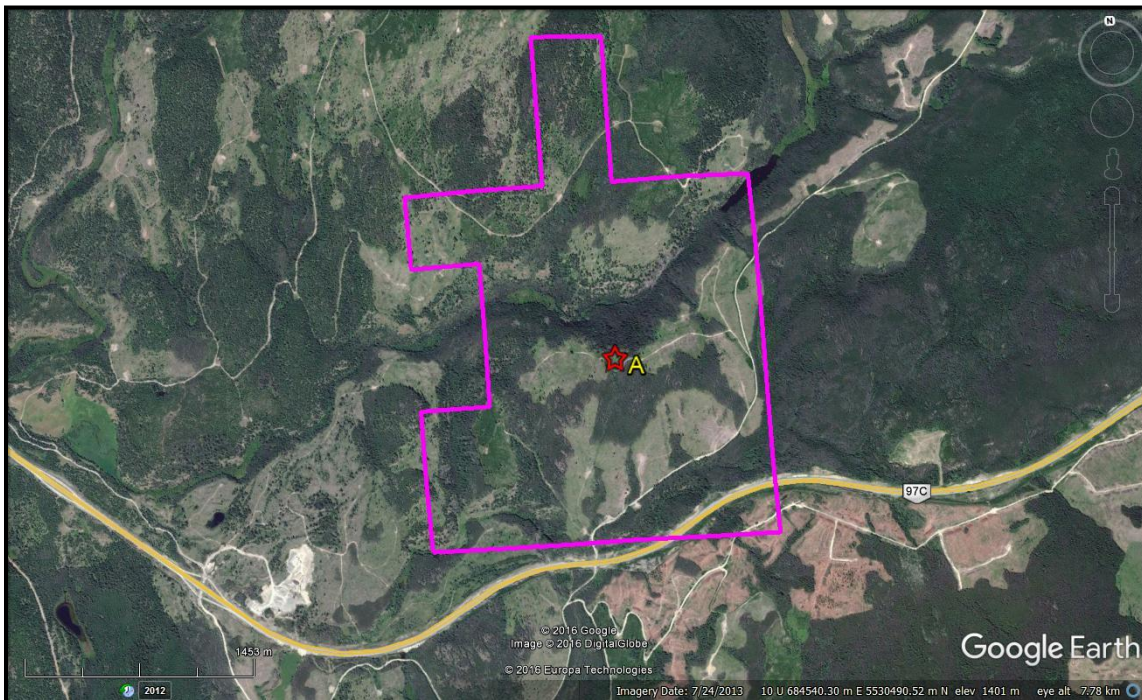
Mean resultant of doubled angles = 0.3109

Mean direction of doubled angles = 003

(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 location on Google Earth**  
(Base map from Google Earth)



**Table II. Approximate location of cross-structure**  
(UTM 10NAD 83)

Cross-Structure	UTM East	UTM North	Elevation (metres)
<b>A</b>	684,772	5,530,462	1,396



## Magnetometer Survey

### a) Instrumentation

A Scintrex MF 2 Model magnetometer was used for the magnetometer survey. Diurnal variations were corrected by taking repeated readings at a base point throughout the day. Stated magnetometer values are total intensity and relative.

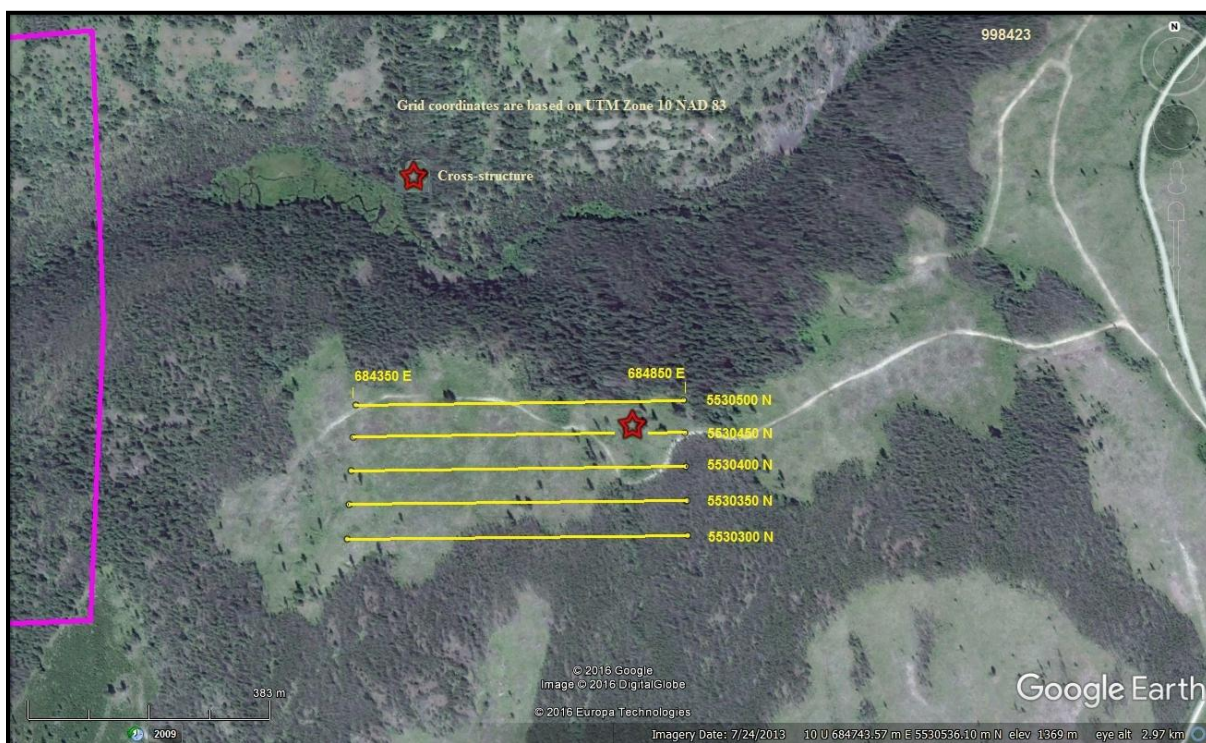
### b) Theory

Only two commonly occurring minerals are strongly magnetic, magnetite and pyrrhotite; magnetic surveys are therefore used to detect the presence of these minerals in varying concentrations. Magnetics is also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types have different background amounts of magnetite and/or pyrrhotite.

### c) Survey Procedure

From an initial grid station at 5530500N 684350E four additional base-line stations were established southerly at 50 metre intervals to 5530300N. Magnetometer readings were taken at 25 metre intervals along each of the five grid lines from 684350E to 684850E. The grid line stations were located with a GPS instrument. Line kilometres of magnetometer survey completed was 2.5. The field data is reported herein in Appendix I.

Figure 8. Magnetometer Survey Grid  
(Base map from Google Earth)



Magnetometer Survey (cont'd)

Figure 9 .Magnetometer Survey Data

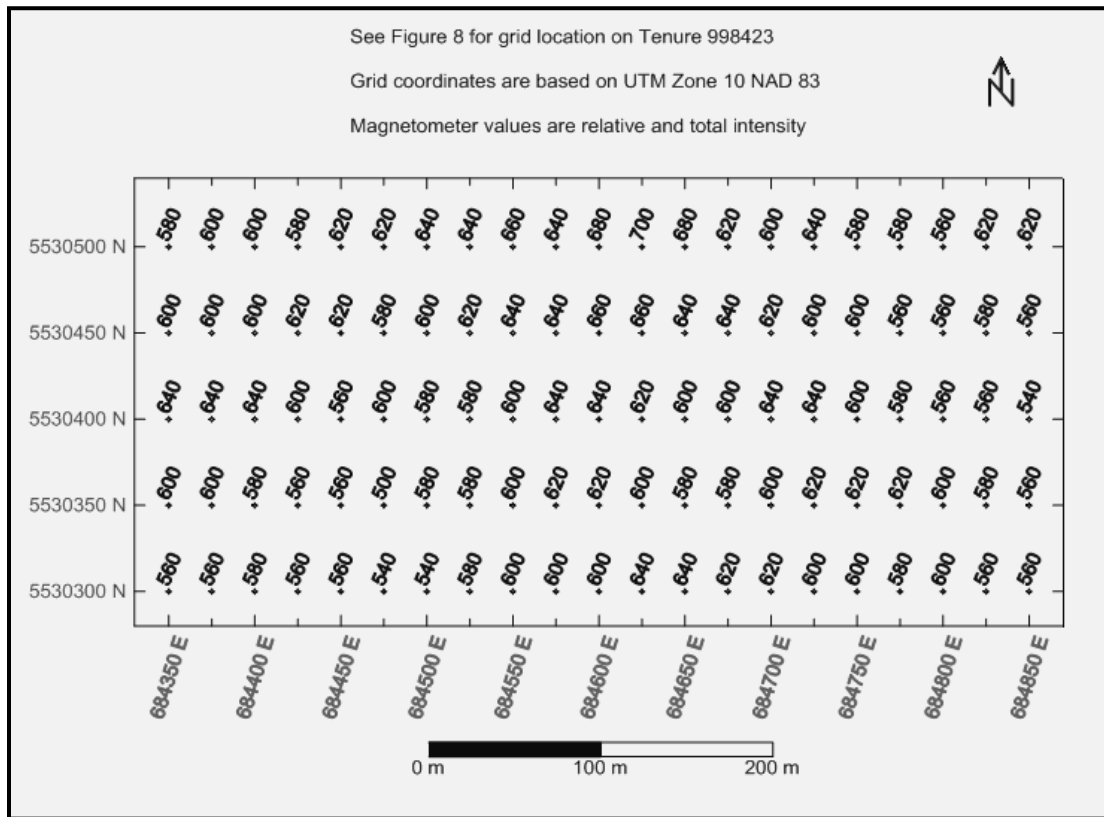
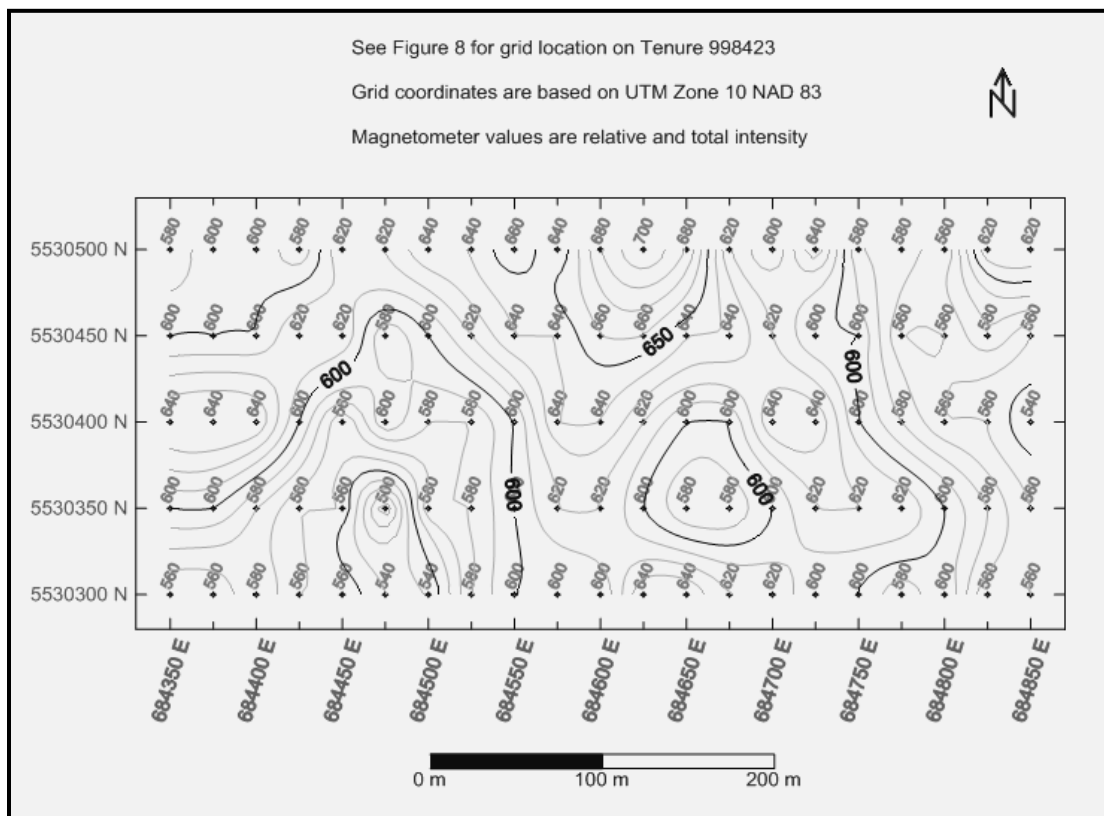
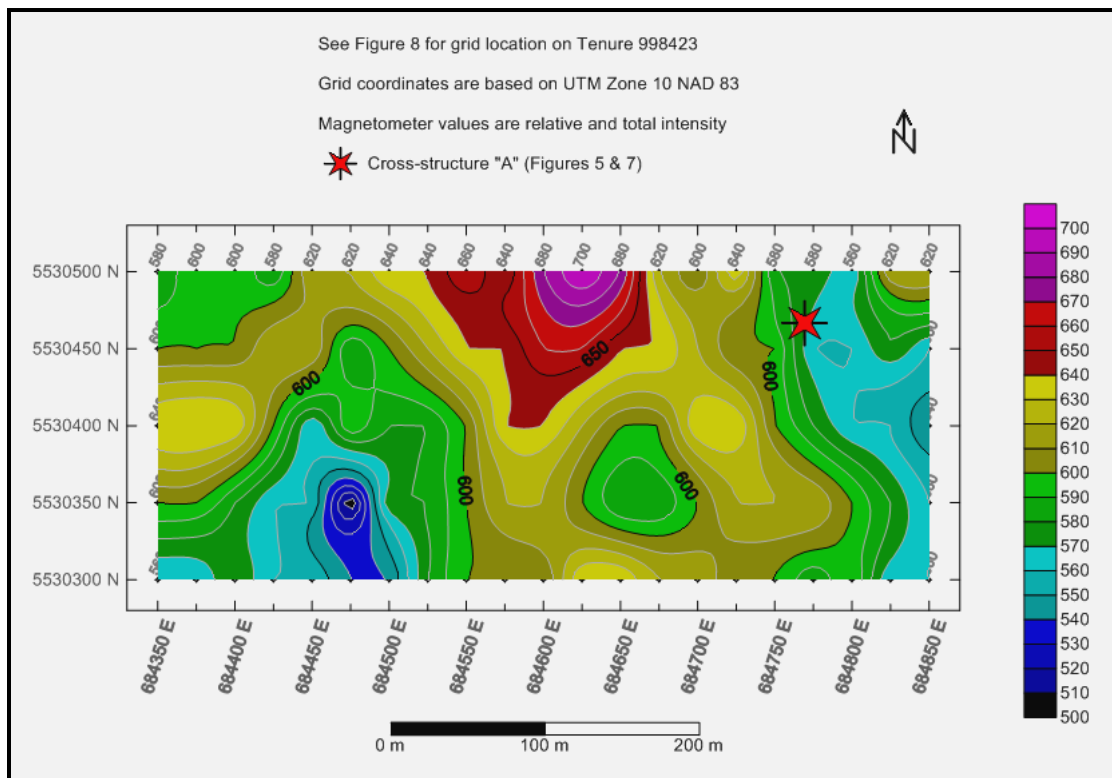


Figure 10. Magnetometer Survey Data Contoured



**Magnetometer Survey (cont'd)****Figure 11. Magnetometer Survey Data Colour Contoured****e) Results**

The localized magnetometer survey which covered a 12.5 hectare area of the 520 hectare Tenure 998423 claim and over Nicola basalts indicated a localized anomalous magnetometer low (mag LO), a localized anomalous magnetometer high (mag HI), and an open-ended sub-anomalous mag LO at the extreme eastern portion of the surveyed area.

The mag LO occurs as a 25metre wide 75 metre long zone, open to the south, with an indicated southerly trend. The mag HI is a 50 metre wide, 50 metre long zone, open to the north with an indicated northerly to north-northeasterly trend.

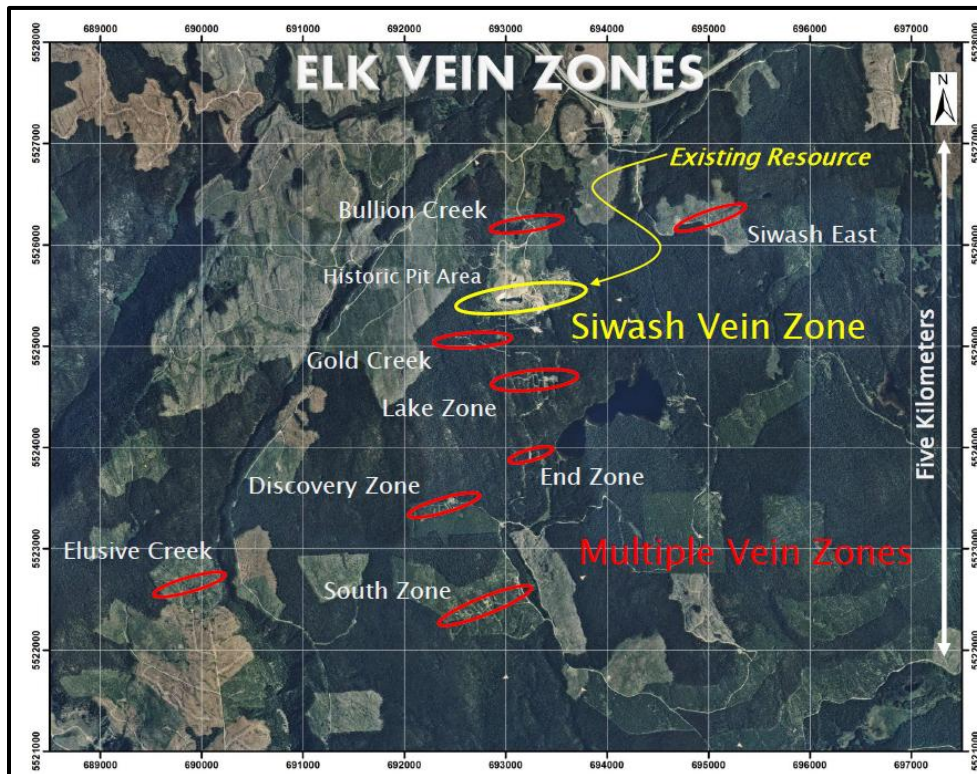
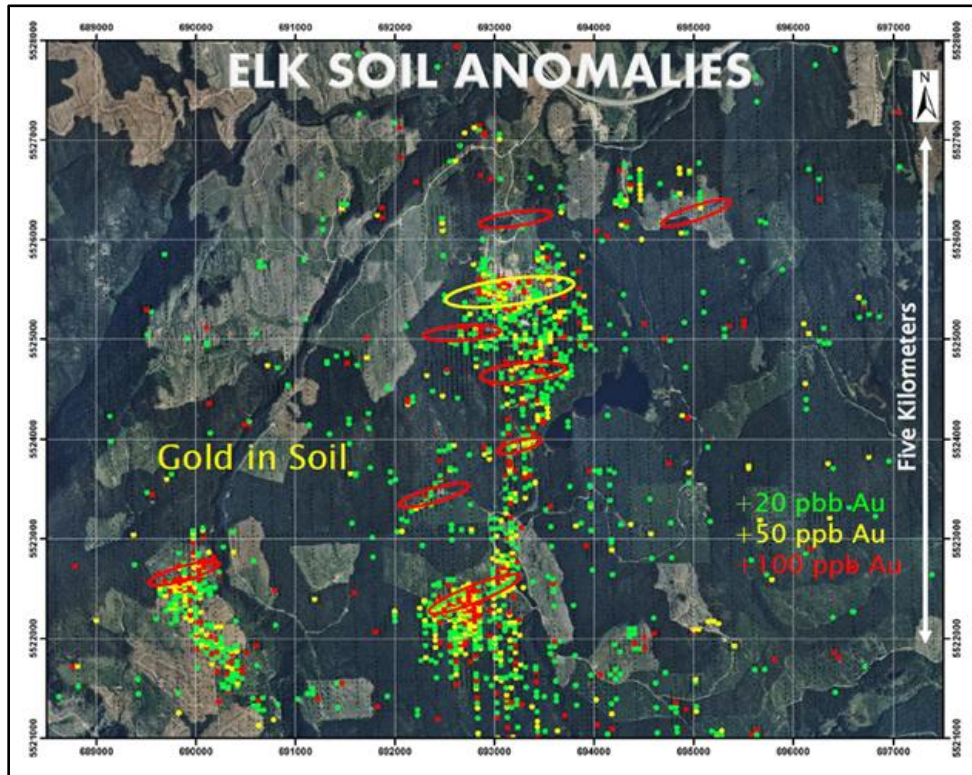
The northerly trending sub-anomalous mag LO is clearly defined on the western boundary, however, the eastern boundary is in part open with an open-ended bifurcation to the northeast at the midpoint and open-ended for 25 metres to the south and 50 metres to the east indicating an irregular trend to the south and to the south-southeast.

Cross-structure "A" is located along the western transitional portion of the sub-anomalous LO and within 50 metres of the mid bifurcation.



Figures 12 & 12a. Elk Soil Anomalies & Vein Zones showing the indicated localized association to structural intersections of the major north trending Elk/Siwash fault and a subsidiary set of easterly to east-northeasterly trending faults.

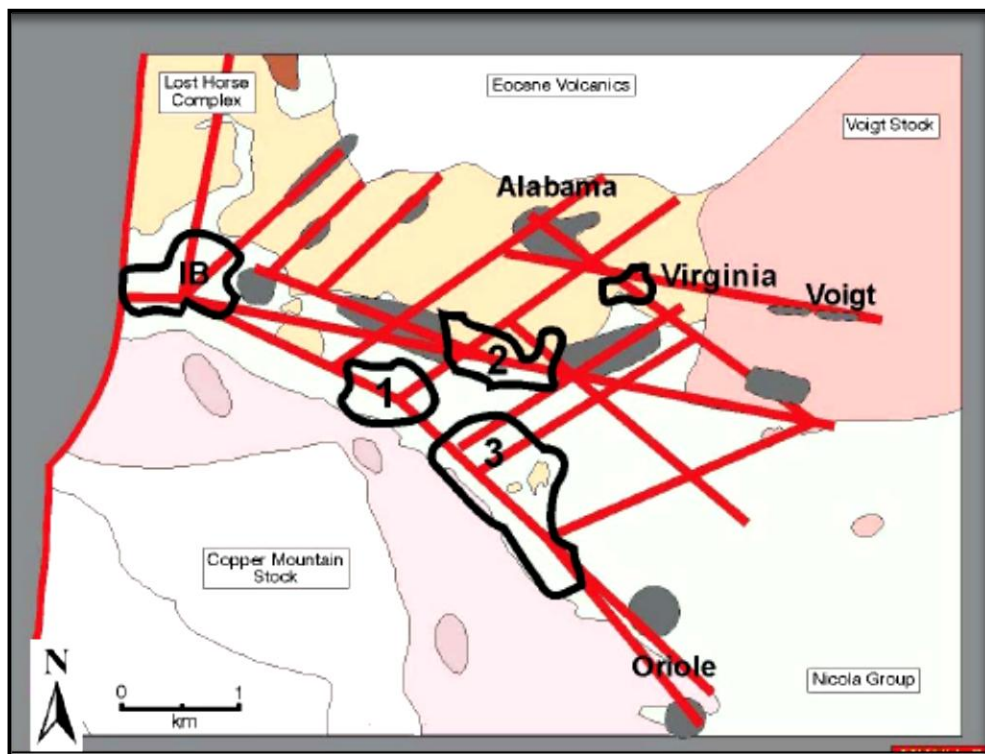
(Map from Gold Mountain Mining Corporation January 2012 Corporate Presentation)



**Figure 13. Copper Mountain Camp: Major Structures**

(Note the cross-structures at every mineral deposit)

(Map from Giroux & Holbek, Figure 9.4)



## INTERPRETATION and CONCLUSIONS

The area of the one cross-structure delineated on Tenure 998423 would be a prospective area to explore for surficial indications of a potential mineral resource. Cross-structures developed from a combination of two intersecting major structures or major and/or subsidiary structures are commonly mineral controlling features where hydrothermally generated mineral fluids gain favoured access through the depth penetration and the potential tapping of a fluid source at greater depths. The cross-structure provides, or controls the localization of the fluids, with the initial creation of a potential mineral resource in the breccia pipe or system created by the cross-structure.

The subsequent movement along the faults with the creation of additional open space fillings for the deposition of mineral fluids, and obviously the tenor of the fluids, the degree of brecciation, and other geological and economic features, would be an influence on the size of the resource. Some of these features were present in the development of the mineral resources at Brenda, Highland Valley Copper, Lornex, Elk, and others in the region including the Copper Mountain mineral deposits where the cross-structures are clearly a mineral controlling geological feature (Figure 13).

The interpretation of the magnetometer survey results were based on the premise that a magnetometer low (mag LO) is the result of hydrothermal alteration and the magnetometer high (mag HI) potentially an indication of intrusion-related gold pyrrhotite veins or polymetallic veins of silver, lead, zinc and potentially gold mineralization which commonly occur peripheral to porphyry mineralization.

**Interpretation and Conclusions (cont'd)**

On this basis;

- the anomalous mag LO may indicate a hydrothermally altered zone with the central portion of the open-ended anomalous mag LO indicating a relatively obscure cross-structure and the lower intensity southern projection indicating a fault zone;
- the localized anomalous mag HI may indicate a portion of magnetic (pyrrhotite) vein material intruded into a relatively obscure cross-structure;
- the 250 metre long open-ended sub-anomalous with bifurcating mag LO zones would be a prime exploration target as it indicates a low level hydrothermally altered continuous structure with potential cross-structures;
- as the location of cross-structure "A" is only approximate, the actual location may be 50 metres south where a cross-structure is indicated by the configuration of the sub-anomalous mag LO.

Thus, the prime exploration area is at cross-structural "A" where surficial geological indicators of a potential concealed mineral resource may be discovered. These geological indicators may be revealed as pathfinder minerals, minerals and/or alteration products that would be subject to interpretation as economic mineral indicators to follow-up exploration.

Respectfully submitted  
Sookochoff Consultants Inc.



**SELECTED REFERENCES**

**Giroux, G.H., Holbek, P.** - Resource Estimate Report Copper Mountain Project for Copper Mountain Mining Corporation. April 1, 2009

**Gold Mountain Mining Corporation** – Corporate Presentation January 2012.  
News Release. October 31, 2013

**Guilbert, J.M., Park Jr., C.F.** - The Geology of Ore Deposits. Waveland Press, Inc. 2007.

**John, D.A.** - Porphyry Copper Deposit Model. Scientific Investigations Report 2010-5070-B.U.S. Department of the Interior. U.S. Geological Survey, Reston, Virginia: 2010.

**MapPlace** – Map Data downloads

**Marshak, S., Mitra, G.** – Basic Methods of Structural Geology. pp 258-259, 264\* .Prentice-Hall Inc. 1988

**Mihalasky, M.J., Bookstrom, A.A. et al** - Porphyry copper assessment of British Columbia and Yukon Territory, Canada. U.S. Geological Survey Scientific Investigations Report 2010-5090-C, v.1.1. <http://pubs.usgs.gov/sir/2010/5090/c/>.

**Mohebi, A. et al** - Controls on porphyry Cu mineralization around Hanza Mountain, south-east of Iran: An analysis of structural evolution from remote sensing, geophysical, geochemical and geological data. Ore Geology Reviews. Volume 69. September 2015, Pages 187-198.

**MtOnline** - MINFILE downloads.

092HNE002 – MAL

092HNE047 – BRENDA .

092HNE058 – HN-WEN

092HNE059 – ECHO

092HNE084 – PAYCINCI

092HNE096 – ELK

092HNE144 – AU-WEN

092HNE204 – POT 1

092HNE275 – BREW

092HNE292 – SNOW

092HNE311 – WAVE 1

092HNE312 – WAVE 2

**Pareta, K., Pareta, U.** – Geomorphological Interpretation Through Satellite Imagery & DEM Data. American Journal of Geophysics, Geochemistry and Geosystems. Vol 1, No. 2 , pp19-36.

**Reynolds, J.M.** - An Introduction to Applied and Environmental Geophysics. John Wiley & Sons Ltd. 1997

**Similco Mines Ltd.** Copper Mountain Project. An Existing B.C. Porphyry Copper/Gold/Silver Mine. September 18, 2008.

[http://www.rdosmaps.bc.ca/min\\_bylaws/contract\\_reports/CorpBd/2008/09Sep18/4\\_1CooperMountainPresentat ion.pdf](http://www.rdosmaps.bc.ca/min_bylaws/contract_reports/CorpBd/2008/09Sep18/4_1CooperMountainPresentat ion.pdf)

**Solgold.plc: [www.solgold.com.au](http://www.solgold.com.au)** – Characteristics of Porphyry Copper Deposits.

**Sookochoff, L.** – Structural Analysis on Tenure 589859 of the seven claim Toni 589859 Claim Group for Victory Resources Corporation. October 2, 2013. AR 34,285.

**Sookochoff, L.** – Geological & Geophysical Assessment Report on Tenure 899909 of the 10 Claim Toni 899909 Claim Group for Victory Resources Corporation. October 1, 2015. AR 35,532.

**STATEMENT OF COSTS**

Work on Tenure 998423 was completed from September 15, 2016 to September 25, 2016 to the value as follows:

**Structural Analysis**

Laurence Sookochoff, P Eng. 3 days @ \$ 1,000.00/day ----- \$ 3,000.00

**Magnetometer Survey**

Rick Pearson & Ross Heyer

September 20-21, 2016

Four man-days @ \$ 300 ----- 1,200.00

Truck rental: 3 days @ \$120 ----- \$ 360.00

Kilometre charge: 362 @ \$0.70 ----- 253.40

Fuel ----- 62.55

Room & board 4 man days @ \$90.00 ----- 360.00

Mag rental 3 days @ \$80.00 ----- 240.00

1,275.95

\$ 5,475.95

Maps ----- 700.00

Report ----- 3,200.00

\$ 9,375.95

=====



## **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 fifty 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 on the Toni Property since 2006.
- 5) I have no interest in the Property as described herein.



Laurence Sookochoff, P. Eng.

*Appendix I*

**Magnetometer Data**

E 5621127 T 998423														
East	North	Mag	East	North	Mag	East	North	Mag	East	North	Mag	East	North	Mag
684350	5530500	580	684350	5530450	600	684350	5530400	640	684350	5530350	600	684350	5530300	560
684375	5530500	600	684375	5530450	600	684375	5530400	640	684375	5530350	600	684375	5530300	560
684400	5530500	600	684400	5530450	600	684400	5530400	640	684400	5530350	580	684400	5530300	580
684425	5530500	580	684425	5530450	620	684425	5530400	600	684425	5530350	560	684425	5530300	560
684450	5530500	620	684450	5530450	620	684450	5530400	560	684450	5530350	560	684450	5530300	560
684475	5530500	620	684475	5530450	580	684475	5530400	600	684475	5530350	500	684475	5530300	540
684500	5530500	640	684500	5530450	600	684500	5530400	580	684500	5530350	580	684500	5530300	540
684525	5530500	640	684525	5530450	620	684525	5530400	580	684525	5530350	580	684525	5530300	580
684550	5530500	660	684550	5530450	640	684550	5530400	600	684550	5530350	600	684550	5530300	600
684575	5530500	640	684575	5530450	640	684575	5530400	640	684575	5530350	620	684575	5530300	600
684600	5530500	680	684600	5530450	660	684600	5530400	640	684600	5530350	620	684600	5530300	600
684625	5530500	700	684625	5530450	660	684625	5530400	620	684625	5530350	600	684625	5530300	640
684650	5530500	680	684650	5530450	640	684650	5530400	600	684650	5530350	580	684650	5530300	640
684675	5530500	620	684675	5530450	640	684675	5530400	600	684675	5530350	580	684675	5530300	620
684700	5530500	600	684700	5530450	620	684700	5530400	640	684700	5530350	600	684700	5530300	620
684725	5530500	640	684725	5530450	600	684725	5530400	640	684725	5530350	620	684725	5530300	600
684750	5530500	580	684750	5530450	600	684750	5530400	600	684750	5530350	620	684750	5530300	600
684775	5530500	580	684775	5530450	<b>560</b>	684775	5530400	580	684775	5530350	620	684775	5530300	580
684800	5530500	560	684800	5530450	560	684800	5530400	560	684800	5530350	600	684800	5530300	600
684825	5530500	620	684825	5530450	580	684825	5530400	560	684825	5530350	580	684825	5530300	560
684850	5530500	620	684850	5530450	560	684850	5530400	540	684850	5530350	560	684850	5530300	560