

GUY & CHRISTOPHER DELORME

(Owners & Operators)

GEOLOGICAL ASSESSMENT REPORT

(Event 5483611)

of a

STRUCTURAL ANALYSIS

on

Tenure 581003

of the 11 claim

Bertha 581003 Claim Group

Kamloops Mining Divisions

BCGS Maps 092I.046/.047

work done from

December 1, 2013 to December 5, 2013

Centre of Work

5,592,171N 656,392E

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**BC Geological Survey
Assessment Report
34765**

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SUMMARY

Tenure 581003 of the 11 claim Bertha 581003 Claim Group is located in the Highland Valley of south central British Columbia within 15 kilometres east of the Highland Valley Copper mine; one of the largest copper mining and concentrating operations in the world which, with the Lornex Mine, has measured and indicated ore reserves of 761 million tonnes of 0.408 per cent copper and 0.0072 molybdenum.

The Highland Valley copper/molybdenum deposit lies within the Guichon Creek batholith in the Bethsaida Phase of porphyritic quartz monzonite and granodiorite. The most prominent structural features are the north trending, west dipping Lornex fault and the east trending Highland Valley fault. At the Lornex deposit, mineralization is controlled by the distribution and density of fracture sets.

As indicated by the BC government supported MapPlace geological maps, the Claim Group covers the northerly trending fault and irregular contact between portions of the Gump Lake Phase, the Border Phase, and the Highland Valley Phase of the Guichon Batholith to the west and the Western Volcanic Facies of the Nicola Group. Northerly trending slivers of the Nicola Group occur within the Guichon rocks.

Three cross-structures between east-west and northerly primary structures were indicated from the structural analysis of Tenure 581003. The cross-structures are located within the volcanic rocks of the Nicola Group within fifteen hundred metres east of the Nicola Group/Guichon Batholith north trending fault contact.

The two primary fault directions may have been influenced by the same dynamic forces as in the development of the two major faults which are associated with the mineral controls of the Highland Valley Copper deposit 15 kilometres west. The northerly structure of Tenure 581003 parallels the major Lornex Fault; the east-west structure on Tenure 581003 parallels the left hand laterally displaced Highland Valley Fault.

As fracture density was apparently the most important single factor in influencing ore grades of the Highland Valley mineral deposits, the most significant mineral deposit, the Highland Valley Copper deposit, located at the intersection of the Highland Valley and the Lornex Faults, might be attributed to the increased fracture density over a larger area and thus the significant mineral resource developed at the Highland Valley/Lornex mineral deposit.

The fault intersections on Tenure 581003 within the Nicola volcanics may not appear as important as those within the Guichon Batholith; however, surficial mineralization in the area hosted by structures within the volcanics, such as at the Bertha Molly and the Rhyolite mineral showing and past producer, may have been derived from deep-seated hydrothermal sources. Localized intrusive outcrops in the Nicola Group area could be the hydrothermal source of the mineralization.

Accordingly, the three structural intersections on Tenure 581003 should be explored for surficial geological indicators of a potential economic sub-surface mineral resource. The approximate UTM locations of the intersections are shown in Table III.

The eight Minfile descriptions copied herein from a BC Government supported Minfile directory, provide information as to the geological indicators for a productive mineral deposit or for surficial geological indicators of a potential underlying mineral resource.

INTRODUCTION

In December 2013 a structural analysis was completed on Tenure 581003 of the 11 claim Bertha 581003 claim group (Property). The purpose of the program was to delineate potential structures which may be integral in geological controls to potentially economic mineral zones that may occur on Tenure 581003 or other claims of the Bertha property.

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

PROPERTY DESCRIPTION AND LOCATION

Property Description

The Property is comprised of 11 contiguous claims covering an area of 3497.0247 hectares. Particulars are as follows:

Table 1. Tenures of Bertha 581003 Claim Group

Tenure Number	Type	Claim Name	Good Until*	Area (ha)
580999	Mineral		20141010	493.5198
581000	Mineral		20141010	493.5177
581002	Mineral		20141010	432.0029
581003	Mineral		20141010	514.2854
585385	Mineral		20141010	123.5592
585386	Mineral		20141010	205.6435
596226	Mineral	LOGAN	20141010	493.6639
596301	Mineral	PONYBOY NORTH	20141010	390.9753
596302	Mineral	PONYBOY SE	20141010	164.7113
605003	Mineral	JERICO GIRL	20141010	164.5672
696823	Mineral		20141010	20.5785

*Upon the approval of the assessment work filing, Event Number 5483611.

Location

The Bertha 581003 Claim Group is located within BCGS Maps 092I.046/.047 of the Kamloops Mining Division, 212 kilometres northeast of Vancouver, 39 kilometres north of Merritt, 41 kilometres southwest of Kamloops, and within 17 kilometres east of the world-class producing Highland Valley Copper mine.

The centre of the work area on Tenure 581003 was at 5,592,171N, 656,392E (10) (NAD 83).

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Access

From Logan Lake, the Bertha 581003 claim group can be accessed by traveling one kilometre west from Logan Lake on Highway 97D to a junction with the Tunkwa Lake road, Highway 97C, and the Highland Valley road, thence southward for 200 metres on Highway 97C or the Mamit Lake road to the northern boundary of Tenure 581000, one of the northernmost claims of the Bertha 581003 claim group. Numerous secondary roads would provide access to most areas of the Property.

Figure 1. Location Map
(from MapPlace)



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

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 & Infrastructure

Merritt, or Kamloops, historic mining centres could be a source of experienced and reliable exploration and mining personnel and a supply for most mining related equipment. Kamloops is serviced daily by commercial airline and is a hub for road and rail transportation. Vancouver, a port city on the southwest corner of, and the largest city in the Province of British Columbia is four hours distant by road and less than one hour by air from Kamloops. Logan Lake, where many of the Highland Valley Copper Mine employees reside, has many facilities to accommodate any preliminary exploration crew.

Physiography

The topography within Tenure 581003 of the property is of gentle slopes covered with sparse to heavy forested growth increasing to the higher elevations in the north and east. Elevations range from 994m in the southwest corner to 1,345m in the northeast.

Figure 2. Claim Location
(Base Map from Google Earth)

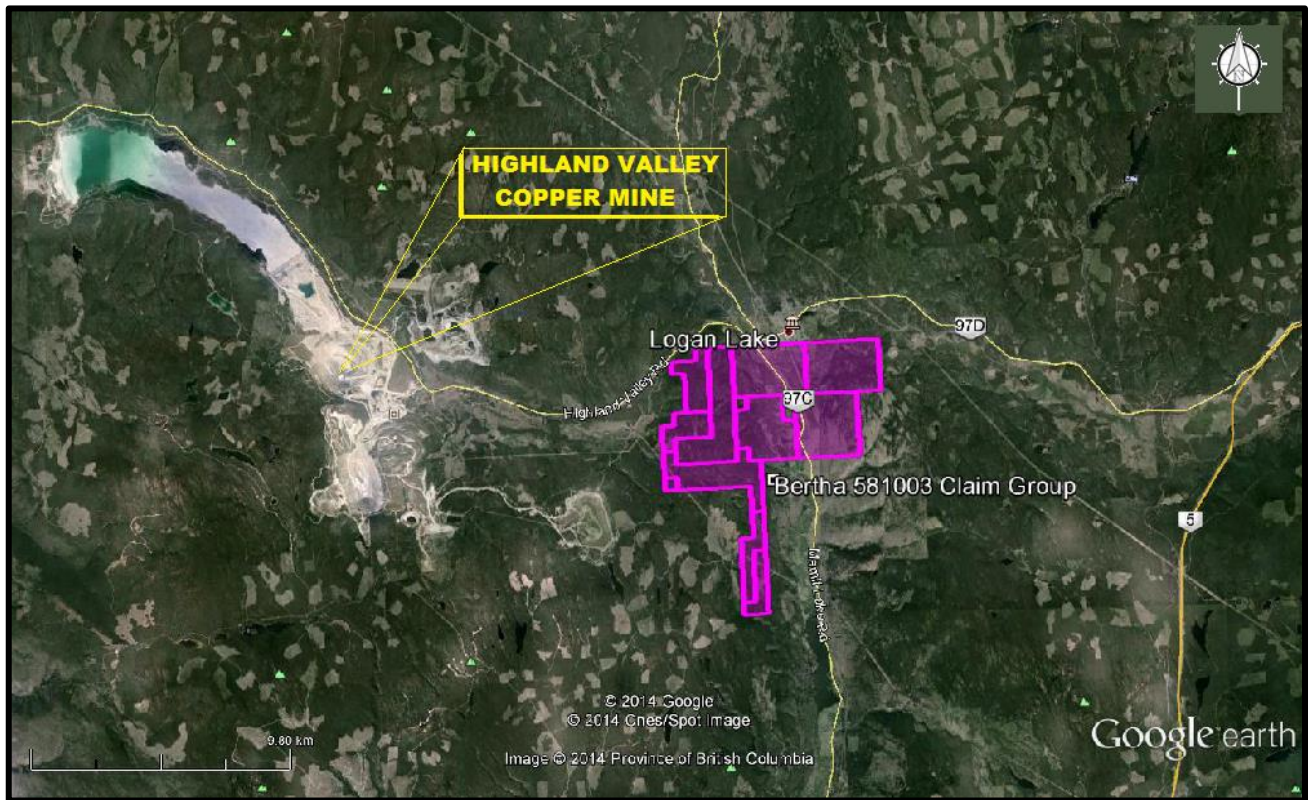
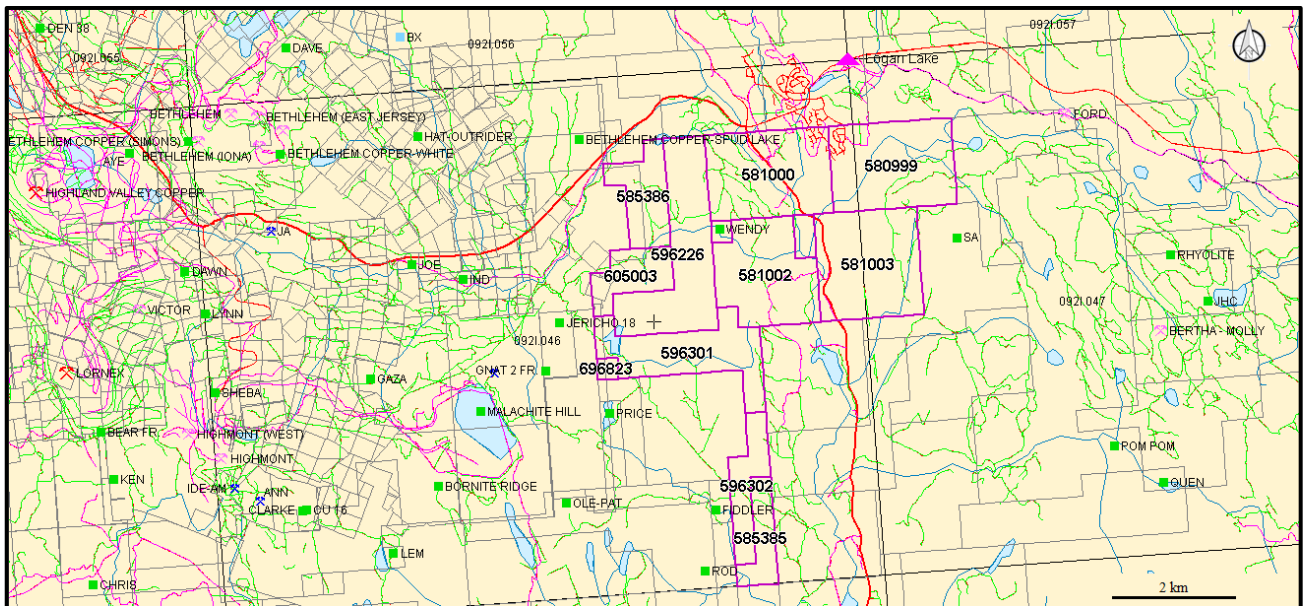


Figure 3. Claim Map
(from Google Earth)



WATER & POWER

There would be an ample water supply for the needs of any exploration program from the many lakes, rivers, or streams within the confines of the Property.

Two 169KV power lines cut across the Bertha 581003 Claim Group; one in the southwest and one in the northeastern.

HISTORY: BERTHA 581003 CLAIM GROUP AREA

The history on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers peripheral to the Bertha 581003 Claim Group is reported as follows. The distance to the Minfile locations is relative to Tenure 581003 of the Bertha 581003 Claim Group.

JERICHO developed prospect (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISE011

Six kilometres west

The No. 1 zone was discovered in 1956 and subsequently developed by two adits.

HIGHLAND VALLEY COPPER producer (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISW012

Fifteen kilometres west

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

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

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

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

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

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

In 1995, with Explore B.C. Program support, Highland Valley Copper carried out 197 line kilometres of high-powered induced polarization surveys for very deep penetration, and drilled 1701 metres in 4 holes. This work was done on the Lornex SW Extension, Roscoe Lake and JA zones. No anomalies of merit were detected in Lornex SW Extension, and Roscoe Lake gave only limited encouragement. IP work on the JA zone detected an anomaly extending to the south, well beyond the limits of known mineralization, and another anomaly 2000 by 1500 metres in size at the east end of the grid. Both anomalies warrant drill testing (Explore B.C. Program 95/96 - M80).

History: Bertha 581003 Claim Group Area (cont'd)**Highland Valley Copper producer**

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

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

In September 2005, Highland Valley announced that mine life would be extended by five years to 2013. Very late in the year, Teck Cominco also announced that it is considering building a modern hydrometallurgical refinery on site. Most ore comes from the Valley pit, augmented by a small amount from the Lornex pit. Following a successful 300,000 tonne bulk sample test, the Highmont East pit, closed since the mid-1980s, was re-opened in the fall of 2005 to take advantage of higher molybdenum prices. In addition, exploration drilling was conducted nearby in the Highmont South area and results are being evaluated.

BERTHA - MOLLY past producer (Stockwork)

MINFILE 092ISE012

Five kilometres east

In 1942, George Campbell did some surface-stripping on a copper showing, about 457 metres west of an old shaft. Production from this occurrence, known as the Lost group, was 31 tonnes, yielding 218 grams of silver and 626 kilograms of copper.

RHYOLITE showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE021

Five kilometres east

Trenches, 1.25 kilometres north-northwest of Homfray Lake, 8.5 kilometres south-southeast from Logan Lake (Assessment Report 18048).

LORNEX Producer (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISW045

Fourteen kilometres west

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

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

GEOLOGY: REGIONAL

The Bertha 581003 Claim Group is located on the southern Intermontane Belt of British Columbia on the southern extent of the Quesnel Trench. The central geological features of this region are the Late Triassic island-arc volcanic rocks of the Nicola Group, and Late Triassic mudstone, siltstone and shale clastic sedimentary rocks located to the east, and intrusive granodioritic rocks of the Late Triassic to early Jurassic. The Nicola Group is a succession of Late Triassic island-arc volcanic rocks. The Nicola Group volcanic rocks form part of a 30km to 60km wide northwest-trending belt extending from southern B.C. into the southern Yukon. This belt is enclosed by older rocks and intruded by batholiths and smaller intrusive rocks.

Geology: Regional (cont'd)

Major batholiths in the area of the Logan Copper Property include the Guichon Creek Batholith to the west, the Wild Horse Batholith to the east, and the Iron Mask Batholith to the north northeast.

The Guichon Creek batholith is a large, composite intrusion with a surface area of about 1,000 square kilometers. A cluster of nine major porphyry copper deposits lie within a 15 square kilometer zone in the center of the batholith. The Bertha 581003 Claim Group is situated partly on the eastern contact of the Guichon Creek Batholith and predominantly on the Nicola volcanics within 14 kilometres east of the Highland Valley Copper Mine.

The batholith is a semi-concordant composite intrusive that is elliptical and elongated slightly west of north. A central, steeply plunging root or feeder zone is inferred under Highland Valley, and the major deposits lie around the projection of the feeder zone to the surface.

The batholith has intruded and metamorphosed island-arc volcanic and associated sedimentary rocks of the Nicola Group, and a metamorphic halo up to 500 meters wide is developed adjacent to the contact. Rocks along the edge of the batholith are older and more mafic, and successive phases moving inward toward the core are younger and more felsic.

Although contacts can be sharp, they are generally gradational and chilled contacts are not common. Variations in the batholiths geochemistry indicate local areas of assimilated country rock in the border zone and roof pendants in the intrusion. Outcrop areas have inclusions of amphibolite and "granitized" metamorphic rocks and compositional variations.

Two younger volcanic-dominated successions are important in the area. First, a northwest trending belt of Cretaceous continental volcanic and sedimentary rocks of the Spences Bridge Group unconformably overlie both the Nicola Group country rock and intrusive rocks along the southwest flank of the batholith. Distribution of the Spences Bridge Group rocks was locally controlled by reactivation of older faults that were important mineralization conduits in the batholith, such as the Lornex fault. Second, continental volcanic and sedimentary rocks of the Tertiary Kamloops Group cover extensive areas of the batholith and also overlie Triassic and Jurassic rocks from north of Highland Valley to the Thompson River.

GEOLOGY: BERTHA 581003 CLAIM GROUP AREA

The geology of some of the more significant mineral MINFILE reported occurrences, prospects, and past producers peripheral to the Bertha 581003 Claim Group is reported as follows. The distance to the Minfile locations is relative to Tenure 581003 of the Bertha 581003 Claim Group.

JERICHO developed prospect (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISE011

Six kilometres west

The upper adit, located on a low ridge, was driven 269.4 metres at a bearing of 084 degrees. The Jericho adit zone is situated on the eastern flank of the Lower Jurassic Guichon Creek batholith. The property is underlain by Guichon variety rocks of the older Highland Valley phase of the batholith. These rocks are medium to coarse-grained, cream grey-pink coloured granodiorite to quartz diorite, rich in biotite and plagioclase. Foliation strikes 305 degrees. Intense sericite, chlorite and clay alteration is associated with east-northeast striking and north dipping fault zones which host mineralized quartz veins.

Geology: Bertha 581003 Claim Group Area (cont'd)**HIGHLAND VALLEY COPPER** producer (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISW012

Fifteen kilometres west

The Valley deposit lies within the Late Triassic to Early Jurassic Guichon Creek batholith and is hosted by Bethsaida phase porphyritic quartz monzonite and granodiorite. Feldspar porphyry and quartz feldspar porphyry dykes 0.6 to 35 metres wide dip steeply eastward in the western and central areas, and northward in the southern area of the deposit. These dykes are cut by mineralized fractures and quartz veinlets, and have been dated at 204 Ma +/- 4 Ma.

The Bethsaida granodiorite is also intruded by aplite dykes up to 30 centimetres wide, tan-coloured felsite dykes up to 4.5 metres wide, and three types of lamprophyre dykes (spessartite, hornblende vogesite, vogesite).

The most prominent structural features are the north trending, west dipping Lornex fault and the east trending Highland Valley fault. Faults and fractures in the deposit comprise four main sets. Quartz veinlets are subparallel to two of the earlier formed fault and fracture sets.

Silicic, potassic, phyllic, argillic and propylitic alteration are intimately associated. Stockworks of quartz veinlets 1 to 2 centimetres in width are common. Vuggy veinlets have envelopes of medium-grained sericite and/or potassic feldspar, and contain minor amounts of sericite, plagioclase, potassium feldspar, calcite, hematite, bornite, chalcopyrite, molybdenite, digenite and covellite.

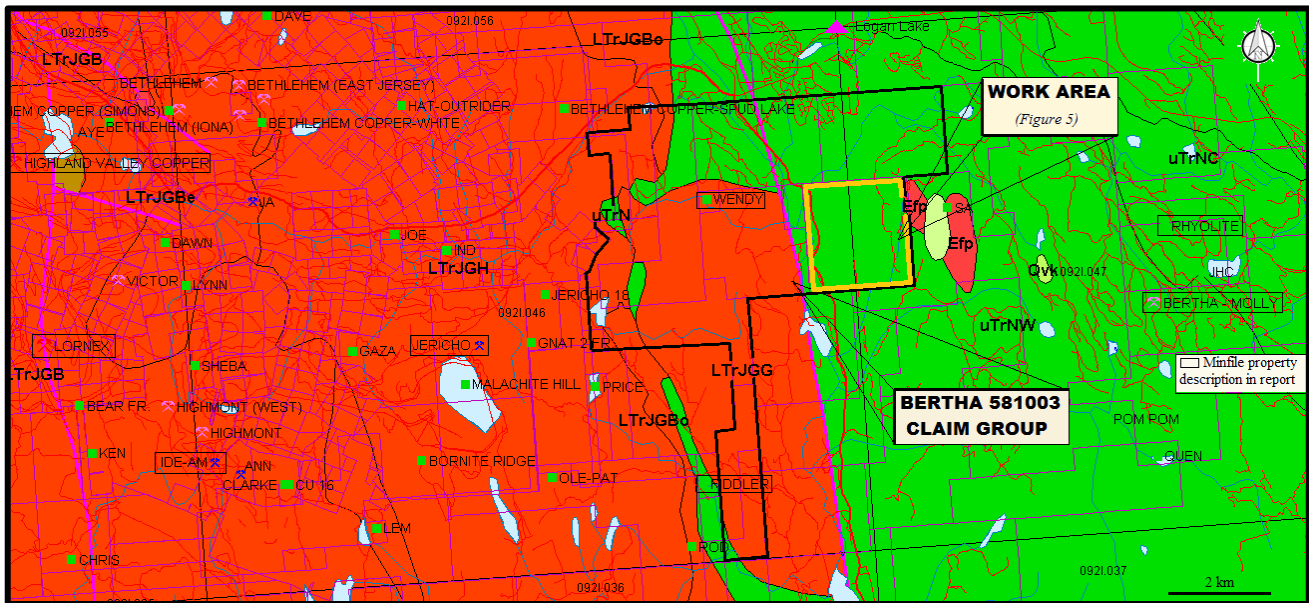
These veinlets are moderately abundant within the 0.3 per cent copper isopleth. An area of well-developed barren quartz veinlets, generally 0.5 to 1.3 millimetres wide, without alteration envelopes, occurs in the southeastern part of the deposit.

In the west-central part of the deposit, potassium feldspar is associated with vein sericite in some replacement zones, as veinlet envelopes along fractures, and disseminated in quartz veinlets. Hydrothermal biotite occurs in small amounts. Flaky sericite and quartz, both as replacement zones and as envelopes around quartz veinlets, constitute the most common type of alteration associated with copper mineralization.

Strong phyllic alteration coincides with the 0.5 per cent copper isopleth. Phyllic alteration is closely associated with pervasive argillization, which is strongest where fractures are most closely-spaced. Feldspars are altered to sericite, kaolinite, quartz and calcite. The phyllic-argillic zone grades outward to a peripheral zone of weak to moderate propylitization, characterized by clay, sericite, epidote, clinozoisite and calcite replacing plagioclase, and chlorite and epidote replacing biotite. The age of hydrothermal alteration is approximately 191 Ma.

At the Valley deposit, gypsum is interpreted to be secondary and post-ore. It is commonly fibrous and white to orange but locally it forms large platy crystals or may be massive. Anhydrite, which is also present, provides indirect evidence for the secondary nature of the gypsum. It is apparently the same age as and associated with sericitic and potassic alteration. Quartz-gypsum veins and quartz-potash feldspar veins in which gypsum fills interstices provide more direct evidence for its secondary nature. Gypsum is believed to have formed at the expense of anhydrite which was deposited from the ore-forming fluids. Gypsum veins are common in the lower portion of the orebody (Open File 1991-15).

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



GEOLOGY MAP LEGEND

Mivb

Miocene-unnamed
Basaltic volcanic rocks

EKav

Eocene-Kamloops Group
Undivided volcanic rocks

EPrb

Eocene-Penticton Group
Andesitic volcanic rocks

Upper Triassic-Nicola Group

uTrNW
Western Volcanic Facies
undivided volcanic rocks

uTrNc
Central Volcanic Facies
undivided volcanic rocks

uTrNE
Eastern Volcanic Facies
basaltic volcanic rocks

uTrN
undivided volcanic rocks

Late Triassic to Early Jurassic
LTrJGB

GUICHON CREEK BATHOLITH

LTrJGBe – Bethlehem Phase
granodioritic intrusive rocks

LTrJGB – Bethsaida Phase
quartz monzonitic intrusive rocks

LTrJGH – Highland Valley Phase
granodioritic intrusive rocks

LTrJGG – Gump Lake Phase
granodioritic intrusive rocks

LTrJGBo – Border Phase
quartz dioritic intrusive rocks

Geology: Bertha 581003 Claim Group Area (cont'd)**Highland Valley Copper producer (cont'd)**

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

BERTHA - MOLLY past producer (Stockwork)

MINFILE 092ISE012

Five kilometres east

The Dupont Lake area is underlain mainly by Upper Triassic Nicola Group intermediate volcanics and derivatives. Approximately 8 kilometres to the west, Nicola Group rocks are in contact with the Lower Jurassic Guichon Creek batholith. Quartz diorite outcrops southwest of Dupont Lake.

The Bertha-Molly showing is hosted by purplish amygdaloidal andesites with intercalated reddish tuffs. These rocks are strongly fractured and chloritized. The original shaft was sunk at a point where patches of cuprite occur in fractures. Small shipments were made.

RHYOLITE showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE021

Five kilometres east

The area straddles a northwest trending contact between two volcanic sequences of the Upper Triassic Nicola Group. To the west are plagioclase, plagioclase-augite intermediate pyroclastic and epiclastic breccia, conglomerate, tuff, sandstone, local shale and augite porphyry bodies. The central portion to the east is underlain by aphanitic pillowed mafic flows. The contact between these two sequences hosts the Rhyolite occurrence.

The Rhyolite showing is underlain by grey, green or black amygdaloidal basalt of the Upper Triassic Nicola Group. Varicoloured calcite amygdules occur within an aphanitic groundmass. Several beds of maroon to green volcanoclastic breccia occur within the basalt and contain maroon, subrounded to subangular clasts ranging up to 30 by 15 centimetres. Two northwest trending, light grey-green, aphanitic, siliceous and pyritic felsic dykes, 3 to 4 metres wide, also occur.

LORNEX Producer (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISW045

Fourteen kilometres west

The Lornex deposit lies in the central core of the Late Triassic-Early Jurassic Guichon Creek batholith and occurs within Skeena variety granodiorite to quartz diorite. This rock is medium to coarse-grained and slightly porphyritic. The Lornex property straddles the north trending, west dipping Lornex fault which juxtaposes Skeena rocks on the east side with Bethsaida phase quartz monzonite on the west. A pre-mineral quartz porphyry dyke, probably related to the Bethsaida phase, trends northwest and pinches out in the Lornex deposit.

Mineralization is controlled by the distribution and density of fracture sets. Three major sets of copper-molybdenum veins strike north-northeast to east and dip moderately southeastward. There are two sets of post-mineral fault and fracture systems; one which roughly parallels the mineralized veins and another which offsets the first up to 2 metres.

Geology: Bertha 581003 Claim Group Area (cont'd)**Lornex producer (cont'd)**

The most prominent structural feature is the Lornex fault which dips 55 degrees to the west in the southern part of the orebody, and steepens to nearly vertical in the north. This fault truncates the northwestern part of the deposit. It is characterized by a 10 centimetre to 1.5-metre wide black gouge on the footwall and discontinuous mylonite pods 1 to 50 metres wide in the hanging wall.

Five main types of hydrothermal alteration are related to quartz and sulphide mineralization. Pervasive silicification, consisting of close spaced quartz veins with associated quartz alteration, is hosted by the Skeena rocks. The quartz porphyry dyke is only weakly affected by hydrothermal alteration. Potassium feldspar veinlets and hydrothermal biotite are erratically distributed. Argillic alteration is pervasive throughout the ore zone and is characterized by quartz, sericite, kaolinite, montmorillonite and chlorite. Copper grades generally correspond to the intensity of argillization. Within the argillic zone, phyllic alteration consists of grey quartz-sericite envelopes on mineralized veins. Pervasive propylitization, consisting of epidote (zoisite), chlorite and carbonates (calcite), is peripheral to the argillic zone. There is also an irregular zone of late-stage gypsum.

The Lornex deposit is 1900 metres long, 500 metres wide and plunges northwest to a depth of at least 750 metres. Chalcopyrite, bornite and pyrite constitute 1.5 per cent of the ore zone and occur in three roughly concentric sulphide zones respectively. Sulphides occur mainly with quartz as fracture-fillings and coatings. Veins average 5 to 15 millimetres in width. Molybdenite occurs as thin laminae in banded quartz veins and less often as rosettes in vuggy quartz veins.

The oxide zone averages 3 to 30 metres in thickness and thins toward the east. Supergene minerals are malachite, limonite, pyrolusite, azurite, cuprite, chalcocite, covellite, and native copper.

FIDDLER showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE072

Five kilometres southwest

The Fiddler showing is situated immediately east of the eastern border of the Lower Jurassic Guichon Creek batholith. To the east are rocks of the Upper Triassic Gump Lake quartz monzonite stock. The area to the west is underlain by leucocratic hornblende-biotite quartz diorite to granodiorite of the Highland Valley phase of the batholith. Pegmatitic granite lenses within this unit have quartz- epidote knots, some containing magnetite and chalcopyrite.

The main showing is underlain by fine to coarse-grained biotite granodiorite with gneissic foliations striking north and dipping steeply. About 125 metres to the southeast in the South zone, layers of foliated and gneissic or schistose granodiorite alternate. Pyritic aplite is present as stringers and lenses lying within the metamorphic foliation and as larger crosscutting bodies with biotite- rich and leucocratic layers.

IDE-AM developed prospect (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE088

Twelve kilometres west-southwest

Located in the central core of the Lower Jurassic Guichon Creek batholith, the property is underlain for the most part by Skeena variety quartz diorite to granodiorite intruded by the Gnawed Mountain quartz plagioclase porphyry (Bethsaida) dyke which trends southeast.

Geology: Bertha 581003 Claim Group Area (cont'd)**IDE-AM** developed prospect (cont'd)

A specularite breccia zone subparallel to the dyke is thought to be a clastic phase of the quartz porphyry. Minor aplite dykes occur throughout the property and are most abundant within the mineralized section of Skeena quartz diorite. Weak sericitic, chloritic and kaolinitic alteration is evident.

Along with intrusive contacts, faulting plays a major role in ore control. The property is crossed by en-echelon north-northeast trending faults with strike lengths up to 750 metres (Waterhole fault). Sericitic alteration is associated with faulting. A system of steep to moderately dipping joints are developed striking 040 and 070 degrees.

WENDY prospect (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE154

Within confines of Property

The Wendy showing is situated along the eastern edge of the Guichon Creek batholith where Lower Jurassic quartz diorites and granodiorites have intruded Upper Triassic Nicola Group intermediate volcanics and sediments. These rocks were subsequently intruded by Gump Lake phase granodiorite to quartz monzonite.

The eastern portion of the property is underlain by hornfels, hornfelsed schists and granitic gneisses which have a rough north trending foliation of variable dip. The metamorphosed rocks are intruded by leucocratic, fine to medium-grained granitic dykes which increase in abundance to the west until the hornfelsic units grade into granitic units. The southwestern part of the property is underlain by fine to medium-grained diorite or granodiorite and coarse grey granite.

GEOLOGY: BERTHA 581003 CLAIM GROUP

As indicated by the BC government supported MapPlace geological maps, the Claim Group covers the northerly trending fault and irregular contact between portions of the Gump Lake Phase, the Border Phase, and the Highland Valley Phase of the Guichon Batholith to the west and the Western Volcanic Facies of the Nicola Group. Northerly trending slivers of the Nicola Group occur within the Guichon rocks.

MINERALIZATION: BERTHA 581003 CLAIM GROUP AREA

The mineralization on some of the more significant mineral MINFILE reported occurrences, prospects, and past producers peripheral to the Bertha 581003 Claim Group is reported as follows. The distance to the Minfile locations is relative to the Bertha 581003 Claim Group.

JERICHO developed prospect (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISE011

Six kilometres west

Starting approximately 45.7 metres from the portal, the adit intersects mineralized quartz veins which generally strike west to northwest and dip 65 degrees to the north. The principal sulphides are bornite associated with primary chalcocite, chalcopyrite and seams and disseminations of molybdenite. The vein walls are sheared and strongly altered. From 190 metres to its end, the upper adit intersects the No. 1 zone. The lower adit was driven in a south direction. At 525.8 metres, the 1725 zone was intersected and crosscut for a short distance.

Mineralization: Bertha 611523 Claim Group Area (cont'd)**Jericho showing (cont'd)**

The No. 1 zone is about 685 metres from the portal and was drifted on for short distances.

Approximate (indicated) reserves are 272,130 tonnes grading 1.0 per cent copper (Highmont Mining Corporation Annual Report 1977).

HIGHLAND VALLEY COPPER producer (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISW012

Fifteen kilometres west

Highland Valley Copper operates two distinct mines, the Valley mine and the Lornex mine, and between the two has measured and indicated ore reserves of 761 million tonnes of 0.408 per cent copper and 0.0072 molybdenum.

The ore reserves of each mine are: Valley mine - 627 million tonnes at 0.418 per cent copper and 0.0056 per cent molybdenum; Lornex mine - 135 million tonnes at 0.364 per cent copper and 0.0144 per cent molybdenum.

BERTHA - MOLLY past producer (Stockwork)

MINFILE 092ISE012

Five kilometres east

Recent development has exposed malachite, azurite, chalcopyrite, cuprite and pyrite hosted by shears and fracture-fillings in vesicular volcanics and red tuffs. Mineralization is structurally controlled with an apparent north trend. A common alteration is calcite and epidote with silicification becoming stronger at depth.

RHYOLITE showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE021

Five kilometres east

Mineralization occurs in amygdaloidal basalt near the flow-volcaniclastic contact and is related to narrow quartz-carbonate veinlets within shears. Several old trenches indicate the shear zone strikes approximately 335 to 345 degrees and dips steeply west. Pyrite is present with minor chalcopyrite, azurite, malachite and sphalerite. Rock samples from this zone assayed up to 0.377 per cent copper, 0.218 per cent zinc and are weakly anomalous in gold and silver values.

LORNEX Producer (Porphyry Cu+/-Mo+-Au)

MINFILE 092ISW045

Fourteen kilometres west

Published reserves at January 1, 1995 were 539.7 million tonnes grading 0.42 per cent copper and 0.0073 per cent molybdenum. The mine life is estimated to be about fourteen more years (Information Circular 1995-9, page 6).

Mineralization is controlled by the distribution and density of fracture sets. Three major sets of copper-molybdenum veins strike north-northeast to east and dip moderately southeastward. There are two sets of post-mineral fault and fracture systems; one which roughly parallels the mineralized veins and another which offsets the first up to 2 metres.

The most prominent structural feature is the Lornex fault which dips 55 degrees to the west in the southern part of the orebody, and steepens to nearly vertical in the north.

Mineralization: Bertha 611523 Claim Group Area (cont'd)**Lornex showing (cont'd)**

This fault truncates the northwestern part of the deposit. It is characterized by a 10 centimetre to 1.5-metre wide black gouge on the footwall and discontinuous mylonite pods 1 to 50 metres wide in the hanging wall.

FIDDLER showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE072

Five kilometres southwest

Mineralization is not obviously related to the sericitic and limonitic alteration of the aplite and the granodiorite. Chalcopyrite occurs as disseminations in relatively fresh quartzose or biotite-rich zones in the granodiorite, as disseminations in biotite aplite, and in veins or pockets with quartz, alone or with pyrite, potassium feldspar or epidote. Some veins parallel foliation, others dip gently. A chip sample across a 75 centimetre veined, rusty mineralized zone assayed 0.35 per cent copper with traces of gold and silver (Geology, Exploration and Mining in British Columbia 1974). Some molybdenite was reported when the showing was first discovered (1915).

Post-mineralization shears cut both the aplite and country rock. The most prominent fault zones are 2.7 metres wide, strike north and dip steeply subparallel to foliation. Lesser shears strike southeast and dip moderately to the southwest. Malachite or copper oxides are usually present.

IDE-AM Developed prospect (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE088

Twelve kilometres west-southwest

Mineralization is evident throughout the property as disseminations in the country rock, as thin veneers on fracture surfaces and with a late system of quartz stringers. Bornite, chalcopyrite, malachite and azurite are widely distributed. Fine-grained molybdenite also occurs. Quartz veins are up to 10 centimetres wide and are typically coated with sericite.

Drill indicated reserves for the Am 32 Fr. zone are 11,480,257 tonnes grading 0.27 per cent copper and 0.005 per cent molybdenum. Grade given was 0.01 per cent MoS₂; conversion to Mo using the factor 1.6681. The deposit became part of Highmont (092ISE 013) in 1976 and may be included with reserves for that property (Statement of Material Facts Minex Development Ltd. February 2, 1972 - Bacon & Crowhurst Ltd. March 11, 1970).

WENDY prospect (Porphyry Cu +/- Mo +/- Au)

MINFILE 092ISE154

Within confines of Property

Minor chalcopyrite and malachite occur as narrow veins or along joint planes and as fine disseminations in the intrusive rocks.

STRUCTURAL ANALYSIS

The structural analysis was performed on a MapPlace Hillshade map of Tenure 581003 by viewing of the map and marking the lineaments as indicated structures thereon. A total of 93 lineaments were marked (*Figure 5*), compiled into a 10 degree class interval, and plotted as a rose diagram as indicated on *Figure 6*.

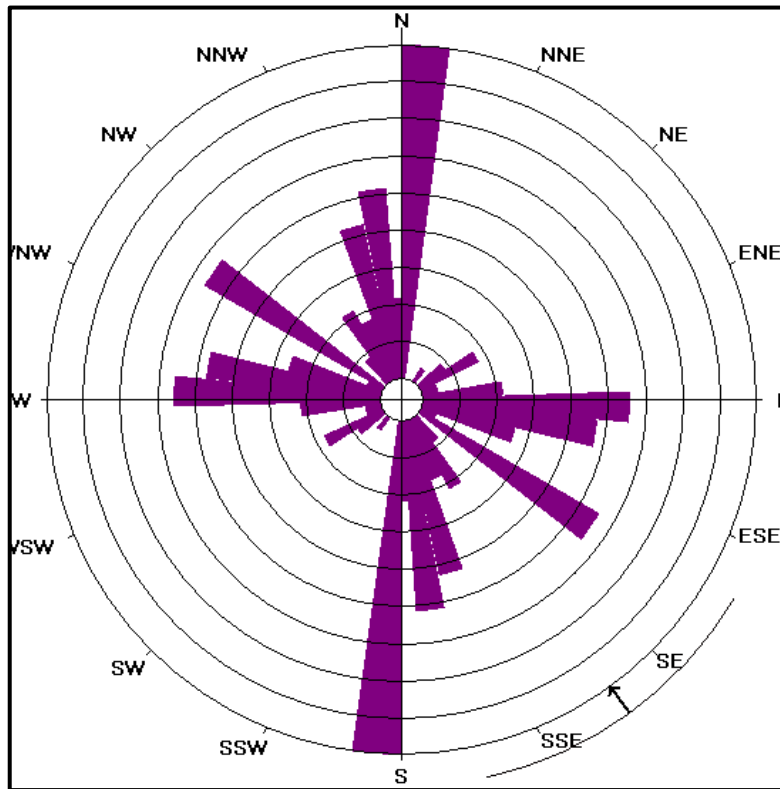
Structural Analysis (cont'd)

Figure 5. Indicated Lineaments on Tenure 581003



Structural Analysis (cont'd)

Figure 6. Rose Diagram from lineaments (Figure 5) of Tenure 581003



STATISTICS
(for Figure 6)

Axial (non-polar) data
 No. of Data = 117
 Sector angle = 8°
 Scale: tick interval = 2% [2.3 data]
 Maximum = 17.9% [21 data]
 Mean Resultant dir'n = 144-324
 [Approx. 95% Confidence interval = ±23.3°]
 (valid only for unimodal data)

Mean Resultant dir'n = 144.0 - 324.0
 Circ.Median = 144.0 - 324.0
 Circ.Mean Dev.about median = 36.8°
 Circ. Variance = 0.29
 Circular Std.Dev. = 47.89°
 Circ. Dispersion = 4.74
 Circ.Std Error = 0.2014
 Circ.Skewness = 1.41
 Circ.Kurtosis = -6.91

kappa = 0.51
 (von Mises concentration param. estimate)

Resultant length = 28.93
 Mean Resultant length = 0.2473

'Mean' Moments: Cbar = 0.0763; Sbar = -0.2352
 'Full' trig. sums: SumCos = 8.925; Sbar = -27.5188
 Mean resultant of doubled angles = 0.4199
 Mean direction of doubled angles = 002

(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'

Structural Analysis (cont'd)

Figure 7. Cross structural locations (Figure 5) on Tenure 581003
 (Base Map: Google Earth)

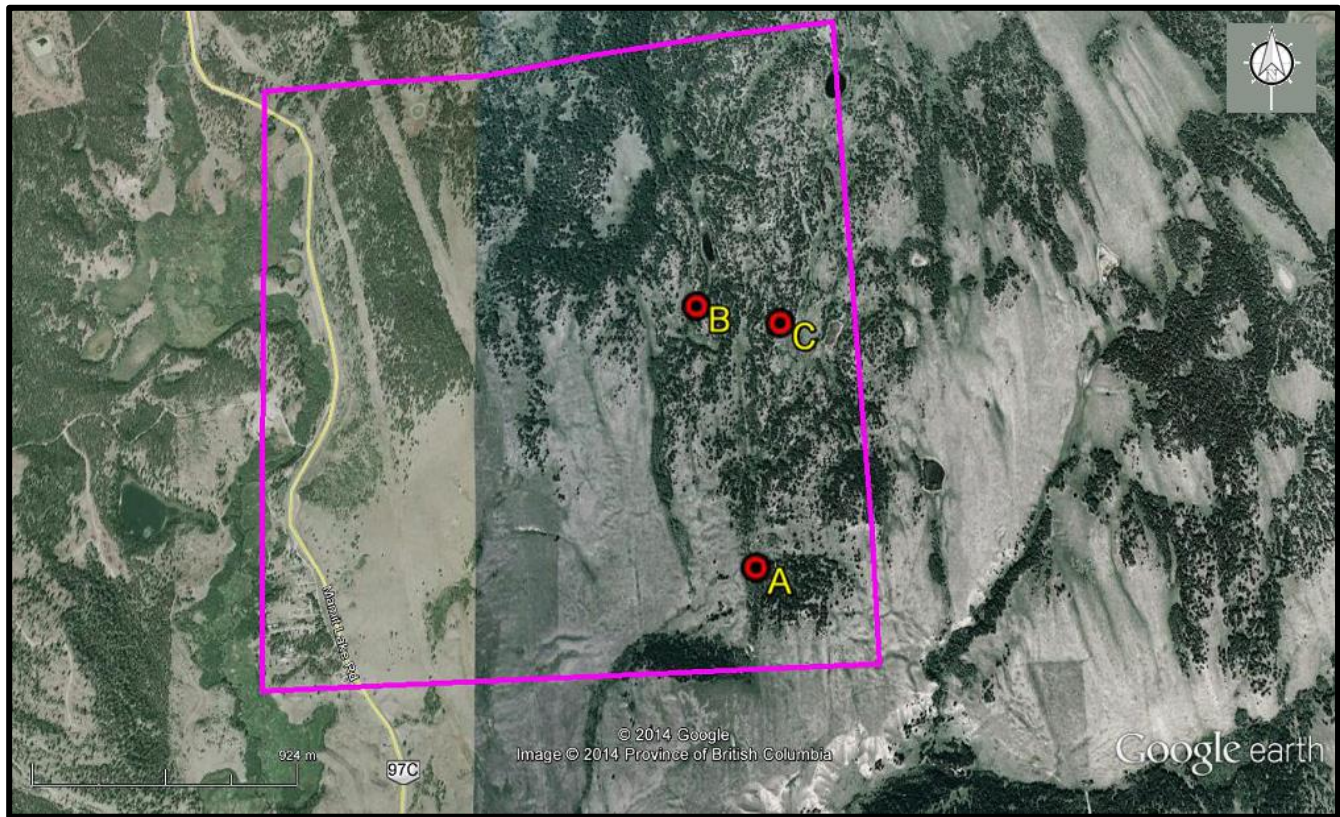


Table II. Approximate UTM locations of Figure 5 & 7 cross-structures
 (UTM-NAD 83)

Location	UTM East	UTM North	Elevation
A	657,022	5,591,328	1,216
B	656,835	5,596,264	1,260
C	657,132	5,592,188	1,294

INTERPRETATION and CONCLUSIONS

Three cross-structures between east-west and northerly primary structures were indicated from the structural analysis of Tenure 581003. The cross-structures are located within the volcanic rocks of the Nicola Group within fifteen hundred metres east of the Nicola Group/Guichon Batholith north trending fault contact.

The two primary fault directions may have been influenced by the same dynamic forces as in the development of the two major faults which are associated with the mineral controls of the Highland Valley Copper deposit 15 kilometres west. The northerly structure of Tenure 581003 parallels the major Lornex Fault; the east-west structure on Tenure 581003 parallels the left hand laterally displaced Highland Valley Fault.

As fracture density was apparently the most important single factor in influencing ore grades of the Highland Valley mineral deposits, the most significant mineral deposit, the Highland Valley Copper deposit, located at the intersection of the Highland Valley and the Lornex Faults, might be attributed to the increased fracture density over a larger area and thus the significant mineral resource developed at the Highland Valley/Lornex mineral deposit.

The fault intersections on Tenure 581003 within the Nicola volcanics may not appear as important as those within the Guichon Batholith; however, surficial mineralization in the area hosted by structures within the volcanics, such as at the Bertha Molly and the Rhyolite mineral showing and past producer, may have been derived from deep-seated hydrothermal sources. Localized intrusive outcrops in the Nicola Group area, could be the hydrothermal source of the mineralization.

Accordingly, the three structural intersections on Tenure 581003 should be explored for surficial geological indicators of a potential economic sub-surface mineral resource. The approximate UTM locations of the intersections are shown in Table III.

The eight Minfile descriptions copied herein from a BC Government supported Minfile directory, provide information as to the geological indicators for a productive mineral deposit or for surficial geological indicators of a potential underlying mineral resource.

Respectfully submitted
Sookochoff Consultants Inc.



Laurence Sookochoff, PEng

SELECTED REFERENCES

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Baird, J.G. - Report on Induced Polarization Survey on some Ezra Claims for New Indian Mines Ltd. July 28, 1969 [AR 1,976](#).

Garrow, T. – 2010 Diamond Drilling Assessment Report on the Dansey Project for Highland North Inc. January 20, 2012. [AR 32,980](#).

Hemsworth, F.J. - Report on the Geochemical Survey of the Ezra Claims for New Indian Mines Ltd. December, 1964. [AR 606](#).

Holcombe, R. – 2009: GEOrient, ver 9.4.4. Stereographic Projections and Rose Diagram Plots

MapPlace – Map Data downloads

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

MtOnline - MINFILE downloads.

092ISE011 – JERICHO
092ISW012 – HIGHLAND VALLEY COPPER
092ISE012 – BERTHA-MOLLY
092ISE021 – RHYOLITE
092ISW045 – LORNEX
092ISE072 – FIDDLER
092ISE088 – IDE-AM
092ISE154 – WENDY

Sookchoff, L., Zhonghua, P. – Dansey Project Technical Report for Logan Copper Inc. January 16, 2010.

Sookchoff, L. – Geological Assessment Report for Guy and Christopher Delorme on Tenure 585384 of the Bertha 585384 Claim Group. November 20, 2013.

STATEMENT OF COSTS

Work on Tenure 581003 was done from December 1, 2013 to December 5, 2013 to the value as follows:

Structural Analysis	
Laurence Sookochoff, P Eng. 3 days @ \$ 1,000.00/day -----	\$ 3,000.00
Maps -----	600.00
Report -----	<u>3,500.00</u>
	\$ 7,100.00
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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-eight years.
- 3) I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 4) The information for this report is based on information as itemized in the Selected Reference section of this report and from work the author has performed in the Bertha Property area.
- 5) I have no interest in the Bertha 581003 Claim Group as described herein.



Laurence Sookochoff, P. Eng.