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GEOCHEMICAL & GEOLOGICAL ASSESSMENT REPORT

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on the

Hope Property

Lillooet Mining Division, British Columbia

Field Work:	Aug 17, Sept 18, 1997 and July 14, Aug 1-2, 1998
Claims:	Hope No. 1 to Hope No. 4
Location:	 30 Km South of Gold Bridge, B.C. NTS Map No. 92J/10W
	T 4'4 L 600 26 61 N

- Latitude: 50° 35.5' North
- Longitude: 122° 58.8' West

Prepared By:

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W. Gruenwald, P. Geo.

September 4, 1998

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SUMMARY

The Hope property is situated in southwestern British Columbia approximately 30 kilometres south-southwest of the town of Gold Bridge. The property is comprised of four 2 post claims recorded in the Lillooet Mining Division. Recent logging activity has provided easy access to the claims.

The claims are located near the Bridge River mining camp, the foremost gold producing district of the province. No record of previous work is documented for the property. Mining activity dating back to the 1920's is recorded on several mineral occurrences situated near Tenquille Lake approximately seven kilometres to the southeast.

Geologically, the Hope property lies on the east flank of the Coast Plutonic Complex. In this region, several large roof pendants of upper Triassic Cadwallader Group sediments and volcanic rocks are encompassed and intruded by large granitic intrusions. Observed lithologies on the property include steeply dipping, northwesterly trending, chloritic metavolcanics that appear to have been derived from tuffaceous rocks. Intruding these rocks are several dykes(?) of feldspar porphyry. To date, only 15% of the property has been mapped or explored.

Two types of mineralization have been discovered on the property, namely disseminated to semi-massive pyritesphalerite and skarn hosted magnetite-copper zones. The sulphide rich zone appears to be conformable to the schistosity of the host chloritic metavolcanics. Sampling from this zone has yielded values of up to 6.4% zinc, 2.70 oz/ton silver and 0.045 oz/ton gold. The second type of mineralization is related to a zone of strongly epidotized metavolcanics that host a north-northwest trending, steeply dipping band of semi-massive magnetite-garnet with chalcopyrite and malachite. A two metre chip sample yielded 0.168% copper. Another magnetite occurrence, discovered 78 metres northerly, returned 0.236% copper as well as quite anomalous levels of silver, bismuth and molybdenum.

Recent exploration has concentrated on road cut rock sampling and more recently on a geochemical and mapping program in the area of the above mineralized zones. Soil and silt sampling returned numerous anomalous copper and zinc values over a considerably larger area than the known mineralized zones. A west-northwesterly projection of the pyrite-sphalerite sulphide showing corresponds to the higher copper, zinc and lead soil geochemical values. The two styles of mineralization found thus far are considered "new discoveries". This, combined with the available infrastructure, offer excellent exploration potential and definitely warrants further exploration.



INTRODUCTION

During the summer of 1997, the property area, located south-southwest of Gold Bridge, was brought to the attention of the writer by Mr. Tom Illidge of Gold Bridge, B.C. A recently constructed logging road along Hope Creek exposed rusty and pyritic volcanic rocks. A sample collected by the writer returned anomalous gold values. The Hope claims (No. 1-4) were subsequently staked and have been subjected to small scale exploration programs. The results have so far been quite encouraging and further exploration is most definitely warranted.

LOCATION AND ACCESS

The Hope property is located in southwestern British Columbia approximately 145 kilometres north-northeast of Vancouver and 30 kilometres south-southwest of the town of Gold Bridge (Figure 1). Geographic coordinates for the property are 50° 35.5' North latitude and 122° 58.8' West longitude on NTS Map No. 92J/10W.

The property is readily accessible from Pemberton or Gold Bridge via the Hurley River road. A major logging road departs the Hurley River road approximately 35 kilometres from Gold Bridge and heads southerly along the Hope Creek valley. The property is situated near the nine kilometre mark of the Hope Creek road. Several branch logging roads transect the claims and provide excellent access. Travel time from Gold Bridge is approximately 45 minutes.

TERRAIN

The Hope property lies within the eastern flank of the Coast Range Mountains. The property is transected by Hope Creek and several small subsidiary drainages (Figure 2). Hope Creek is a substantial creek that flows northerly into the Hurley River that joins the Bridge River at Gold Bridge. Slopes on the property range from very gentle to very steep, and are most often to the east. The steepest slopes occur in the northernmost area of the property. Elevations range from 1,460 metres at the centre of the property to 1,750 metres at the northwest corner of the claims. A prominent peak east-southeast of the property attains an elevation of 2,290 metres (7,500 ft). Overburden cover is quite variable, however in many areas, especially on east facing slopes, the thickness likely does not exceed 1 to 2 metres. Outcroppings and angular float attest to the thin overburden cover. East of the tributary stream in the Hope No. 1 claim, the overburden cover is more substantial and consists of fluvio-glacial till.

Vegetation on the property consists predominantly of balsam, spruce and pine. The northeastern portion of Hope No. 2 and southeastern portion of Hope No. 4 cover a broad, flat, marshy area. Very recent logging has taken place on the Hope No. 1 and No. 2 claims with an estimated 30% of the area having been clearcut.



PROPERTY

The Hope property consists of four 2-post claims recorded in the Lillooet Mining Division (Figure 2). Details of the claims are as follows:

Claim Name	Record No.	No. of Units	Expiry Date*
Hope No. 1	358426	1	August 14, 2004
Hope No. 2	358427	1	August 14, 2004
Hope No. 3	358428	1	August 14, 2004
Hope No. 4	358429	1	August 14, 2004

The registered owner of the Hope claims is Mr. Tom Illidge of Gold Bridge, B.C. The property is situated on Crown Land with no private land situated within 5 kilometres. Two four post claims totalling 40 units surround the Hope property. These are owned by Mr. Peter Newman of Pemberton B.C.

HISTORY

REGIONAL:

The Gold Bridge region has a long history of mineral exploration dating back to the late 1800's. In 1882, gold was found at the mouth of the Hurley River near the present site of Gold Bridge and in 1886 on a tributary, namely Cadwallader Creek. By the late 1890's, gold bearing veins were discovered along lower Cadwallader Creek and the Bridge River mining camp was born. This prolific area comprises five former producing mines that include the Bralorne and Pioneer mines and three smaller producers, the Wayside, Minto and Congress. In all, the Bridge River camp includes more than 60 mineral occurrences and has the distinction of being British Columbia's most productive gold camp. Collectively, the Bralorne and Pioneer mines produced just over four million ounces of gold.

LOCAL:

According to B.C. Mineral Inventory Map (92J/W½) and assessment report records, there are no mineral occurrences or exploration work reported for the Hope property area. During the 1920's, several skarn type mineral occurrences were explored in the Tenquille Lake area, approximately seven kilometres southeast of the Hope claim (Figure 3). Commodities reported were gold and silver, along with copper, lead, zinc and in three cases magnetite. One occurrence known as the Crown (Minfile Occurrence No. 092JNE053) was explored during the 1920's by two shallow shafts and lateral workings. Records indicate that sampling of five tons of mined material assayed 4,000 g/tonne silver and 7.3% combined lead-zinc. In all, 9 mineral occurrences are found within a 20 square kilometre area. The only other reported mineral occurrence in the area is situated approximately seven kilometres northwest of the Hope property. This occurrence, known as the Cap property, dates back to at least the 1960's as it is described in annual reports by the Mines Department (1965 and 1990). The showing is tentatively described as a copper porphyry.



GEOLOGY AND MINERALIZATION

REGIONAL:

The Hope property is situated along the eastern flank of the Coast Plutonic Complex of Jurassic to Tertiary age. This tectonic belt is characterized by northwest trending roof pendants and fault systems. Roof pendants of Mesozoic volcanic and sedimentary rocks belonging to the Cadwallader and Bridge River (Fersusson) Group are entrained in quartz diorite and granodiorite plutons (Figure 3). Large northwesterly trending fault systems occur throughout the region. Heading northeasterly from the Owl Creek fault near the Lillooet River, these are the Cadwallader Creek, Marshall Creek and the Yalakom River fault systems.

Regionally, mineralization is often related to nearby granitic intrusions. These provided the heat sources and subsequent hydrothermal activity along fault systems and within deformed and/or chemically reactive roof pendant rocks. The Bralorne-Pioneer deposits are examples of mineralization related to deep seated faults proximal to granitic intrusions. The Tenquille Lake occurrences are associated with skarns developed within Cadwalladcr Group rocks, especially carbonate rich beds. The proximity to granitic intrusions and the Owl Creek fault likely played roles in the mineralizing events in the Tenquille Lake area.

LOCAL:

On more local scale, the Hope property occurs within a large, northwest trending roof pendant of upper Triassic Cadwallader Group rocks (GSC Open File 482). Rock types include andesitic breccia, tuff and flows, greenstone with lesser amounts of slate, argillite, phyllite, conglomerate, limestone, rhyolitic breccia and flows. Mapped immediately to the east of the claims is a 30 square kilometre area comprised of Tertiary age andesitic and basaltic flows, breccias and minor dacite.

Rocks observed to date on the Hope property consist predominantly of chloritic, schistose metavolcanics that appear to have been tuffaceous volcanic rocks (Figure 4). In some areas, a distinctly fragmental texture is evident ranging from crystal to lapilli tuffs. Rocks generally strike northwesterly and dip steeply to the northeast. These rocks are locally intruded by white to gray feldspar±quartz porphyry dykes. These may suggest the presence of a nearby granitic body. Large areas of rusty weathering rocks near the northern portion of the claims may also reflect the effects of more abundant intrusive rocks. Detailed descriptions of recently collected rock samples are found in Appendix A and are plotted on Figure 4.

Two types of mineralization have been discovered on the property, namely disseminated to semi-massive pyritesphalerite-silver-gold and skarn hosted magnetite-copper zones. The former is exposed in a road side open cut referred to as the No. 1 showing where an approximately 2 metre width of chloritic metavolcanic contains 10 to 50%+ sulphides comprised mainly of fine to medium grained pyrite and 1 to 7%± dark gray sphalerite. Sulphide minerals appear concordant to foliation with the sphalerite locally forming thin parallel bands. The host rocks to the mineralization strike northwesterly and dip 60-70° northeast. The south wall of the open cut exposes what appears to be a fault with an attitude of $305^{\circ}/65^{\circ}NE$. This separates more massive chloritic metavolcanics to the southwest from more fractured and/or mineralized metavolcanics to the northeast. As the mineralization occurs



only in this pit, no substantial strike length has yet been demonstrated. The rocks hosting this mineralization are locally epidotized, contain very little or no carbonate and are generally non magnetic.

The second type of mineralization found on the property is related to a skarn zone situated in a recently clearcut area at L-1S;1+14W referred to as the *No. 2 showing*. Here a small outcrop is comprised of strongly epidotized metavolcanics and contains a band of semi-massive magnetite with fine grained brown garnet (grossularite?) and minor calcite. Disseminations of chalcopyrite and malachite stain are present and most visible in the limonitic weathered "rind" of the skarn. The mineralized zone was traced for approximately twelve metres along the base of the outcrop. A copper value of 0.168% was returned from a 2 metre random chip sample. Rocks immediately adjacent and westerly of the skarn are siliceous, very epidotized and locally quartz stockwork veined. Evidence of malachite was observed along the line to 1+20W. A crude attitude for the mineralized zone is 330°/70°-80°NE. It is worth noting that at 1+50W a feldspar quartz porphyry outcropping (dyke?) was observed suggesting the possibility that the skarn mineralization may be intrusion related.

Discovered 78 metres northerly of the above skarn occurrence was a rusty, weathering, fragmental metavolcanic. This rock contains 15-20% fine grained magnetite and returned surprisingly anomalous values for copper, molybdenum, bismuth and silver. A random chip sample yielded 0.236% copper in the apparent absence of visible copper. This and the previously described skarn occurrence are likely related and have by no means been fully delineated. Further exploration of these newly discovered mineralized zones is most definitely warranted.

GEOCHEMISTRY

Since the acquisition of the Hope property in August, 1997 several episodes of sampling have been conducted. During 1997, rock chip sampling focused on altered and pyritic volcanic rocks that were exposed by logging road construction near the central claim post of the property (Figure 4). Although the writer obtained one sample with anomalous gold (0.022 oz/ton) the remainder of sampling efforts did not yield any significant values. On July 14, 1998, Mr. T. Illidge collected 3 samples from a roadside open cut 300 metres to the southwest (No. 1 showing) and obtained highly anomalous values in gold, silver and zinc from a sulphide rich zone in metavolcanics (Appendix B). It was this mineralized area that prompted the most recent geochemical sampling and mapping program.

On August 1-2, 1998 a small grid was established using the central claim post as a 0+00 point. A baseline (150° Az) was tight chained and picketed along the claim line to coordinate 5+00S, the point that represents the southern claim boundary. Crosslines spaced at 100 metre intervals were extended westerly from baseline coordinates 1S, 2S, and 3S. In all, 1.8 kilometres of grid lines were established. Sample intervals were 25 or 50 metres depending on proximity to mineralized zones or interpreted trends.

In all, 46 soil, 4 silt and 14 rock samples were collected. Soil samples were obtained from the B or C horizons where possible at depths from 20 to 40 cm. These were placed in grid labelled, kraft soil envelopes. Stream sediment samples consisted of "fines" from the active portions of the stream. Rock samples HWR 1-5 and 2A were

continuous chip samples while the remainder consisted of random grab samples. All soil, silt and rock samples were shipped to Chemex Labs in North Vancouver for 32 element ICP analysis. Gold was analyzed on silt and selected rock samples. Sample pulps for all soils were retained for further analysis (i.e. gold). Analytical methods and sample results are found in Appendix B. Figures 5, 6 and 7 show geochemical data for copper, zinc and lead respectively. Non statistical geochemical categories were assigned for each element.

The geochemical program, though limited in scope, revealed some interesting results. Soil sampling returned numerous anomalous values for copper and zinc and lesser but significant values for cadmium, lead and molybdenum. Copper and zinc in soils ranged up to 584 and 1,110 ppm respectively while the "highs" for cadmium, lead and molybdenum were 4.5, 44 and 40 ppm respectively. In many cases there was a coincidence between metal values, especially copper and zinc. It is worth noting that a west-northwesterly projection (strike) of the No. 1 showing corresponds to some of the most anomalous copper, lead and zinc values. All of the silt samples returned values greater than 300 ppm zinc. One sample at L-2S;3+86W yielded the highest zinc in silt (762 ppm) along with coincident anomalous copper (470 ppm) as well as 55 ppb gold and 6.0 ppm cadmium.

Rock sampling also yielded a number of significant results. The No. 1 showing was first sampled by Mr. Illidge in July, 1998. Three samples were collected (Hope #1-#3). Hope #3, taken across an estimated 1.8 metres, returned 6.40% zinc, 2.70 oz/ton silver and 0.045 oz/ton gold. These significant values prompted the recent follow up geochemical and mapping program. Seven continuous rock chip samples were collected by the writer covering the No. 1 showing. Sample HWR-5 corresponds roughly to the area of the Hope #3 sample. Although not similar in grade, sample HWR-5 yielded definitely anomalous values of 405 ppb Au, 24 ppm Ag, 240 ppm Cu, 535 ppm Pb and 9050 ppm Zn. Sample HWR-5A, representing a selected sub-sample of more sulphide rich material within HWR-5, returned significantly higher gold, silver and zinc values.

Due to the high magnetite content of the skarn showings it was decided to further subject samples 1S,1+14W and HWR-6 to a tri-acid leach, in addition to the traditional aqua regia, leach prior to ICP analysis. Results indicated a marked increase in AI, Ca, Fe, K, Mn and Sr, however, values for Ag, Bi, Cd, Cu and Zn remained essentially unchanged. It is therefore apparent that the traditional aqua regia leach is sufficient for the determination of base and precious metal values.

The sampling of the skarn occurrence at L-1S;1+14W (No. 2 showing) yielded 0.161% Cu and 0.139% Zn across 2.0 metres. No significant precious metal values were associated with this zone. Molybdenum was weakly anomalous (15 ppm). The second skarn occurrence to the north was surprising in that it yielded 0.236% copper and quite anomalous values for silver, bismuth and molybdenum of 7.8, 36 and 64 ppm respectively. Although gold was not indicated, the elevated silver and bismuth values are noteworthy and may indicate the potential for precious metal enriched skarn mineralization. Further work on these skarn occurrences is definitely warranted.



T. ILLIDGE AND W. GRUENWALD GEOCHEMICAL PLAN (COPPER) HOPE PROPERTY LILLOOET MINING DIVISION, B.C.			
		Drawn By: W.G.	Scale: 1:2,000
		Nts No.: 92J/10W	Figure: 5
	and standard and		





HOPE NC 4 CLAIM

HOPE NO. 2 CLAIM

LEGEND

- 🚛 --- Creek
- Outcrop
- ==== Logging Road
- Clearcut Boundary
- ----- Claim Boundary
- Grid line with soil sample site 32 (lead value in ppm)
- x Rock sample site

GEOCHEMICAL CATEGORIES

<10 ppm Background
 10-20 ppm Anomalous
 >20 ppm Definitely Anomalous

T. ILLIDGE A	ND W. GRUENWALD
GEOCHEMICAL PLAN (LEAD) HOPE PROPERTY LILLOOET MINING DIVISION, B.C.	
Nts No.: 92J/10W	Figure: 7
	29 (1997)

CONCLUSIONS AND RECOMMENDATIONS

The limited amount of work conducted to date on the Hope property has resulted in the recognition of two styles of mineralization, namely precious metal bearing sulphides and copper bearing skarns. Soil sampling has been demonstrated to be effective, especially in the areas of shallow overburden. Geochemically anomalous soils cover an area considerably larger in extent than the known mineral occurrences. Anomalous values have also not been "closed off" and require further work to fully delineate their extent. The mineral showings encountered thus far are considered "new discoveries" and have yet to be traced to their full extent. The nature of the mineralization should be very amenable to geophysical surveys. Based on the indications thus far the Hope property offers excellent exploration potential that can be conducted at relatively low cost.

It is therefore strongly recommended that exploration continue on the property. A listing of recommended work is outlined as follows:

- 1. Expand the grid to cover the entire property.
- 2. Continue soil sampling north and south of the known showings. Reduce line spacings to 50 metres for better geochemical anomaly definition.
- 3. Geological mapping, prospecting and rock sampling.
- 4. Conduct magnetometer and electromagnetic surveys over entire grid.
- 5. Excavator trenching of accessible showings (i.e. in clearcuts).
- 6. Drilling program (contingent on favourable results/targets). Estimate for a Phase I program would be approximately 600-760 metres of NQ core drilling.

Respectfully submitted P. Geo.

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September 4, 1998

APPENDIX E

REFERENCES

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Woodsworth, G.J. (1977)	Open File 482 Pemberton (92J) Map Area
MEMPR (Sept, 1995)	Minfile Map 92J
Church, B.N. (1995)	Bridge River Mining Camp - Geology and Mineral Deposits (Paper 1995-3)
BCGS (1998)	Index of Assessment Reports for B.C.