BC Geological Survey Assessment Report 33286

ASSESSMENT REPORT On

GEOLOGIC MAPPING

ROBOCOP PROPERTY

Phillips Creek Area

Fort Steele Mining Division

TRIM Maps 82G.005 & 82G.006

UTM 5431500N 647000E

By

PETER KLEWCHUK, P. Geo.

August, 2012

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT

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1.00 INTRODUCTION

1.10 Location and Access

The Robocop claims are located mainly within the drainage of Phillips Creek, about 4 kilometers NNE of Roosville and about 75 kilometers SE of Cranbrook, B.C., in the Fort Steele Mining Division. The property is centered approximately at UTM coordinates 5432700N, 645400E (Figures 1 and 2), on TRIM maps 82G.005 and 82G.006.

Access is gained by road from Highway 93 which passes about 3 kilometers west of the claim block. The Phillips Creek Forest Service Road crosses the lower southwestern portion of the claims and an older trenching and drill access trail provides further road access to the claims.

1.20 Property

The Robocop property at the time the current work program was completed consisted of 3 Mineral Tenures, 547692, 557544 and 557544 totalling 1038.06 hectares (Figure 2). The claims are owned by Robert Klewchuk of Kimberley, B.C.

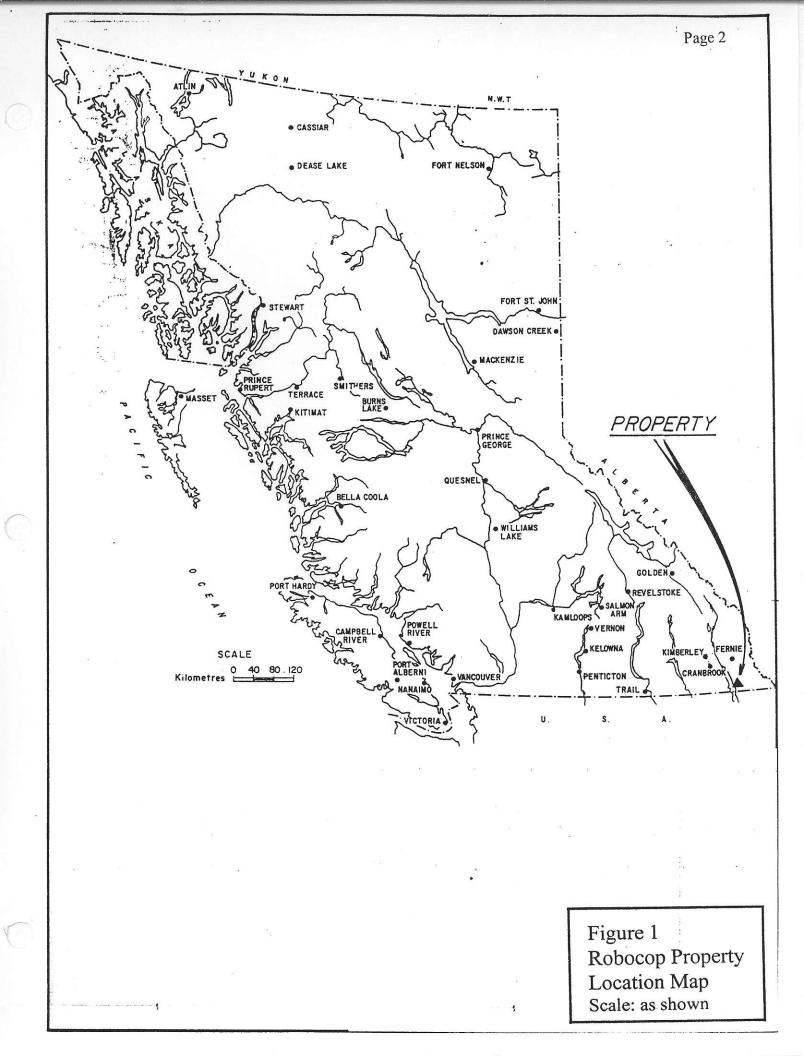
1.30 Physiography

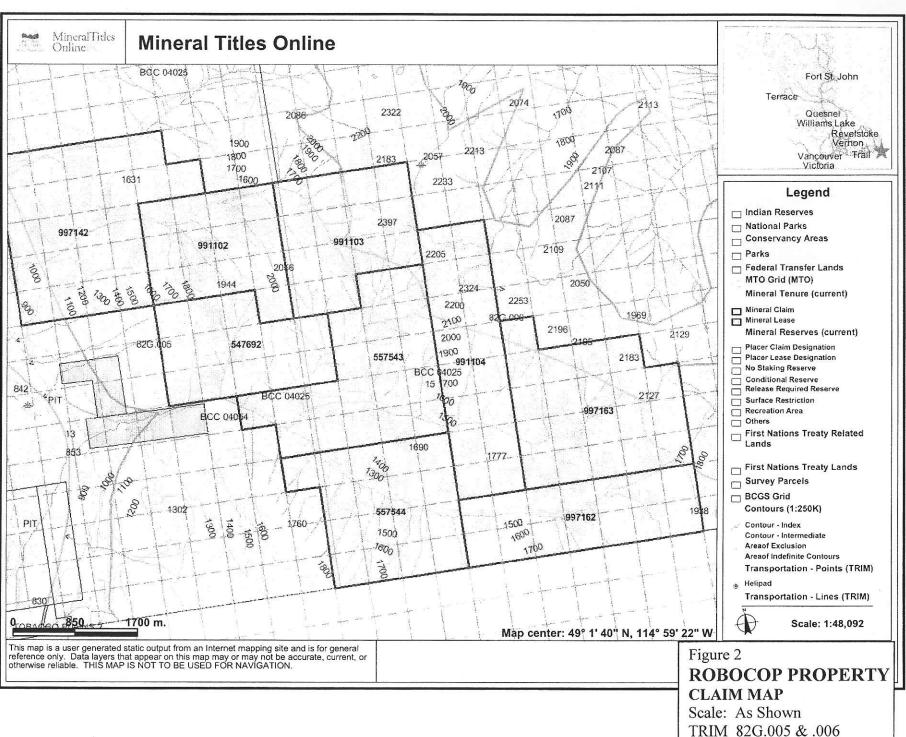
The Robocop property is located just north of the Canada – U.S.A. border, immediately east of the Rocky Mountain Trench and in the Galton Range of the Rocky Mountains. The claims cover steep south-facing slopes on the north side of Phillips Creek with sparse to dense vegetation consisting primarily of Douglas Fir, pine, larch, aspen and alder.

1.40 History of Previous Exploration

According to Wolfhard (1967) "There was minor high-grading from quartz veins about 1900, and a shipment of one carload of barite in the '20's or '30's.", and, regarding development "A number of short workings have been driven on quartz veins. These include: -4 shafts (20-50'), 4 adits (up to 100') and at least 6 open cuts (10-20' long). This work was completed prior to 1940, and was done mainly around 1900. In addition, in 1966 and 1967, Cominco and the present owners completed 15,000' of cat roads suitable for 4-WD vehicles, and 1,940 cu. yds. of cat stripping."

In 1967 Cominco Ltd. completed geologic mapping and a soil geochemical survey (Wolfhard, 1967). In 1989 Teck Explorations Ltd. conducted geologic mapping and trenching (Thompson, 1990a) and in 1990 they carried out additional geological mapping and sampling and completed the first diamond drill program of 605.6 meters of NQ core in eight holes (Thompson, 1990b). The drilling was carried out from three drill sites spaced approximately 570 meters apart.





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Copper mineralization was intersected in each of the three drill site areas with best results reporting 0.806% Cu over 11.0m core length.

In 1992 Noranda Exploration Company, Limited conducted geologic mapping, rock and soil geochemistry (Kemp, 1992) and in 1993 they carried out a three hole diamond drill program totalling 475.5 meters with low values of copper and cobalt reported (Kemp, 1993).

In 2004 a reconnaissance ground geophysics program was initiated to try and detect structures that might be a control for copper mineralization (Klewchuk, 2005).

In 2007 Ruby Red resources conducted a program of geological mapping, prospecting and rock and soil geochemistry (Kennedy, 2007) and in 2008 they completed a program of geological mapping, soil geochemistry and diamond drilling (Pighin, 2009) with 868.5 meters drilled in six NQ sized holes. On the basis of this drilling Pighin (2009) subdivided the Upper and Lower Sheppard Formation into 16 separate and distinct lithologic members.

1.50 Purpose of Work

Pighin's (2008) work based on geologic mapping and diamond drilling demonstrated that the lithologic units which host copper mineralization at the Robocop property vary in thickness on a local scale. Nash and Hahn (1989) studied the copper-cobalt deposits at the Black Bird Mine in Idaho, U.S.A. and indicated that "Co-Cu deposits are in local sub basins created by a combination of growth faults and clastic wedges; they are interpreted to have formed from tuffaceous and exhalative eruptions associated with a hypabyssal alkali basalt complex." Thus it can be concluded that a detailed knowledge of the host stratigraphy at Robocop could be useful to guide exploration. In particular, an emphasis could be put on determining variation in any of the important lithologic units. Detailed geologic mapping of the copper-cobalt bearing stratigraphy was undertaken on the Robocop property in 2012 to provide a broader understanding of the variation in thickness of these lithologic units. The appropriate stratigraphy was studied near the area of previous drill programs and within the copper-cobalt soil geochemical anomaly defined in 2008 (Pighin, 2008).

2.00 GEOLOGY

Thompson (1990a) provides a good description of the regional and property geology at the Robocop property and the following is from his report:

Regional Geology

The Belt / Purcell Supergroup comprises up to 15,000 metres of Proterozoic clastic and carbonate sediments, which extend over the East Kootenay area of south-eastern British

Columbia, northern Idaho and northwestern Montana. They were deposited in an intracratonic basin, which may have been related to rifting. In the Galton range of the East Kootenays, on the eastern margin of the Rocky Mountain Trench, this sequence consists of Helikian sandstones, argillites and dolomites.

The Siyeh Formation is composed predominantly of fine-crystalline dolomite and limestone, with thin upper and lower members of green argillite. Overlying the Siyeh Formation are up to 180 metres of andesitic flows termed the "Purcell Lavas" by Price (1961) and the "Nicol Creek Formation" by Hoy and Carter (1988). This unit includes pillowed, vesicular or amygdaloidal flows ranging from andesite to basalt in composition.

The Sheppard Formation, termed the "lower member of the Gateway Formation" by Leech (1960), unconformably overlies the Nicol Creek Formation with a total thickness of approximately 50 meters. It consists of a basal conglomerate overlain by "light-coloured, dolomitic and quartzitic, fine- or medium-grained quartz sandstone, dolomite and oolitic dolomite. The upper part comprises light-coloured very fine crystalline dolomite, sandy and silty dolomite and stromatolitic dolomite with minor amounts of dolomitic sandstone" (Price, 1961).

The Gateway Formation upper member is composed of about 300 metres of greenish grey and grey argillaceous siltstones in thin beds with partings of red argillite. Salt casts, mud cracks, ripple marks and intraformational conglomerates are common.

The Phillips Formation consists of 200 metres of red and purplish red quartz sandstone and siltstone, with partings of argillite and micaceous argillite. These are gradational into the overlying Roosville Formation, which consists of over 1000 metres of green and grey argillite, siltstone and sandstone with lesser argillaceous and stromatolitic dolomite.

Property Geology

Wolfhard (1967) recognized three Proterozoic volcanic and sedimentary rock units on the Roo (now Robocop) property. The oldest is basaltic Nicol Creek Formation, which is composed of "a lower pillowed unit 80 feet thick, overlain by green amygdaloidal volcanic and purple massive and amygdaloidal volcanic. The abundance of purple rocks increases up section. The upper 50 feet occasionally contains lenticular beds of angular to sub-rounded volcanic detritus of coarse sand size."

The Nicol Creek basalts are unconformably overlain by Sheppard Formation clastic sediments and dolomites, subdivided by Wolfhard (1967) into two units.

"The lower unit varies from 15 feet to 300 feet in thickness. In the thicker parts, the section includes a basal conglomerate, overlain by purple siltstones and sandstones, probably composed mainly of volcanic detritus, weathered very little chemically before deposition. Higher up section, sediments grade to arkose, feldspathic sandstone, quartz sandstone and sub greywacke. Medium to thick bedded, cross-bedded and current ripple marked, quartzitic and dolomitic sandstones usually complete the upper 10 to 30 feet of the section...

The upper Sheppard begins at the base of the first stromatolitic dolomite above the top of the Purcell lavas. Above this 5 to 15 foot member, the unit includes 20 to 40 feet of medium bedded grey quartzite with minor argillite and siltstone. Cross bedding and ripple marks are fairly common. The quartzite is overlain by a second 5 to 15 foot stromatolitic dolomite, followed by 10+ feet of red siltstone and dolomitic sandstone. The top is not exposd."

Wolfhard (1967) interpreted a very shallow anticline in the Nicol Creek Formation, with an amplitude of 160 metres and wave length of approximately two kilometres. The Sheppard Formation is gently warped, with dips up to 15° to the east.

Mineralization

Several kinds of mineralization occur on the Roo (Robocop) property:

1. disseminated chalcocite and chalcopyrite with accompanying high values in silver, cobalt and barium in sandstones below a stromatolitic dolomite horizon.

2. quartz barite veins containing scattered patches of primary chalcocite and chalcopyrite (+/- specularite).

3. weak disseminated chalcopyrite +/- chalcocite within lowermost one metre of stromatolitic dolomite at base of Sheppard Formation.

4. one occurrence of fine grain syenite dyke with quartz-barite veinlets carrying disseminated chalcopyrite – possibly related to #2 above.

The mode of copper-silver-cobalt mineralization within feldspathic sandstones, below a stromatolitic dolomite horizon, appears to be the most economically promising on the Roo *(Robocop)* property.

This type of occurrence has the highest and most consistent assay values over economic widths. Anomalous values in barium and nickel are also associated with economic copper-silver-cobalt mineralization.

To date, this type of occurrence is known in two separate areas; the first being the 1989 trenching area and the second located approximately 1 km southeast of the trenched area. This second area is adjacent to the trench area access road and is obscured by overburden except for about 5 metres of locally mineralized sandstones. This second area is significant in that copper-silver-cobalt mineralization occurs in similar sandstones as the trenched area, giving a favourable horizon over at least a one kilometer strike length. Two samples gave assay values of 0.47% and 0.70% copper over 1.0m and 0.5m intervals with high accompanying values in silver and cobalt.

Copper mineralization associated with quartz barite veining (+/- specularite) occurs in several locations throughout the northwest portion of the Roo (*Robocop*) claims. Mineralization of this type is present at the upper end of trench #8 (see Thompson, 1990) and in dump material from an old shaft located approximately 175m east of the trenched area. The quartz barite veining with accompanying copper mineralization probably represents remobilization of primary

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mineralization from sandstone horizons. The heat source for the remobilization process is likely from a deeper seated syenite intrusive body. The probable source for the copper mineralization is the Nicol Creek basalts. One float sample of basalt contained fine grained chalcopyrite within pore spaces.

The suggested sequence of events resulting in mineralization on the Roo (*Robocop*) property is as follows:

1. Emplacement of Nicol Creek basalts containing high copper content.

2. Deposition of lower unit of Sheppard Formation (conglomerate, sandstone, siltstone).

3. Diagenetic subsurface brines extracted copper from Nicol Creek basalts, transported it through oxidized beds, and precipitated it by reduction in anoxic sediments.

4. Later stage remobilization process caused by syenite intrusive with scavenging of copper from surrounding sediments by quartz-barite veins.

Kemp (1992) provides a more detailed sequence of events for deposition of the Phillips Creek stratigraphy in the areas of the copper mineralization. With regard to deposition of the mineralization, he attributes "Deposition of copper and cobalt mineralization in the upper part of Roo *(Lower Sheppard Formation)* horizon in a sabkha environment" but doesn't suggest a source for the mineralization. Kemp (1992) did map a northerly trending, steeply westerly dipping fault which he considered active during sedimentation, as a rift-related normal fault along the eastern edge of a north trending graben.

Pighin (2009) used detailed diamond drill information to subdivide the Upper and Lower Sheppard Formation into 16 separate and distinct lithologic members, many of which vary significantly in thickness over the area of the 2008 drilling. He suggested that the variation in thickness in one of the subdivided lithologic units (which occurs immediately above a stromatolitic dolomite unit) is due to "topographic relief produced by growth of the stromatolite colony".

Regarding the location of copper mineralization within the stratigraphy, Thompson (1990) states that "In all cases (4 of 8 diamond drill holes), the greatest copper concentration occurred at the top of a thick sequence of quartzo-feldspathic wackes close to their interface with overlying stromatolitic dolomites / dolomitic sandstones". In the 2008 drilling Pighin (2009b) indicates that the best copper-cobalt mineralization occurs within conglomerates and grits immediately above a trachyte flow which sits on a pyroclastic and lithic grit unit immediately over the volcanic sequence. He also notes that "The mineralized horizon in the northern holes occurs at the top of the grit – conglomerate sequence, and in the southern holes the mineralization occurs at the base of the grit-conglomerate sequence." This supports an epigenetic origin for the copper mineralization.

The depositional environment at the Robocop property appears to have been suitable for the development of local subbasins. Basaltic volcanism which included pyroclastic deposits, along with possible faulting active at the time of deposition (as indicated by Kemp, 1992) probably created local subbasins into which the conglomerate and grit units which host the copper and cobalt mineralization were deposited.

Nash and Hahn (1989) studied the copper-cobalt deposits at the Black Bird Mine in Idaho, U.S.A. and indicated that "Co-Cu deposits are in local sub basins created by a combination of growth faults and clastic wedges; they are interpreted to have formed from tuffaceous and exhalative eruptions associated with a hypabyssal alkali basalt complex."

3.00 GEOLOGIC MAPPING

Geologic mapping undertaken on the Robocop property in 2012 focused on the copper bearing stratigraphy in two areas of the property to look at variations in lithology and thickness of individual lithologic units as these may be important factors leading to concentration of coppercobalt mineralization. The part of the stratigraphic section which includes the stromatolitic dolomites and copper-bearing sandstones above the Nicol Creek basalts was visually measured to determine thickness variations within this stratigraphy. Exposures were looked at near 5432200N 646400E and near 5431100N 646700E (Figures 3, 5 & 6). The northern section occurs east of the "Robo Fault" and includes previously recognized volcanoclastic units within the Nicol Creek Formation. For comparison, a 'Section A' was also drafted up for the area of the 2008 drilling, based on the detailed stratigraphic description provided by Pighin (2009) (Figure 4).

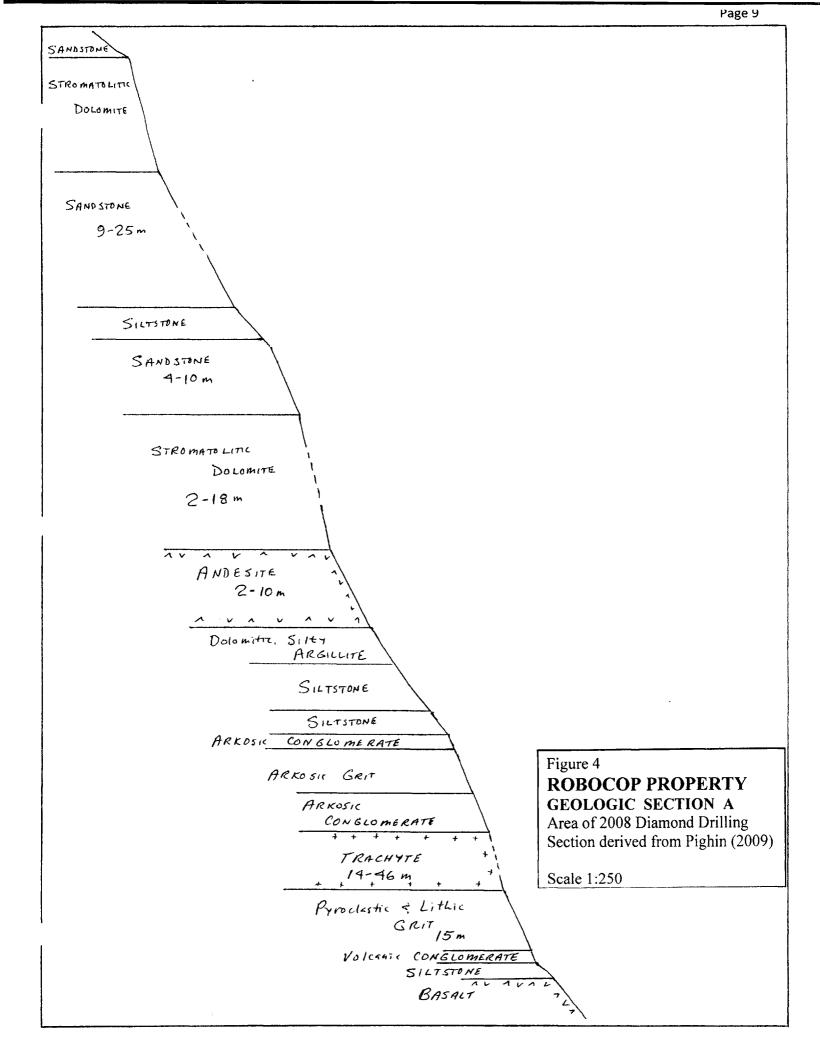
The top of the stromatolitic dolomite sequence in Section B (Figure 5) is at 646432E 5432195N and the same stratigraphic contact for the 3 parts of Section C (Figure 6) are:

Section C-1	646987E	5431124N
Section C-2	647113E	5431024N
Section C-3	647194E	5430943N

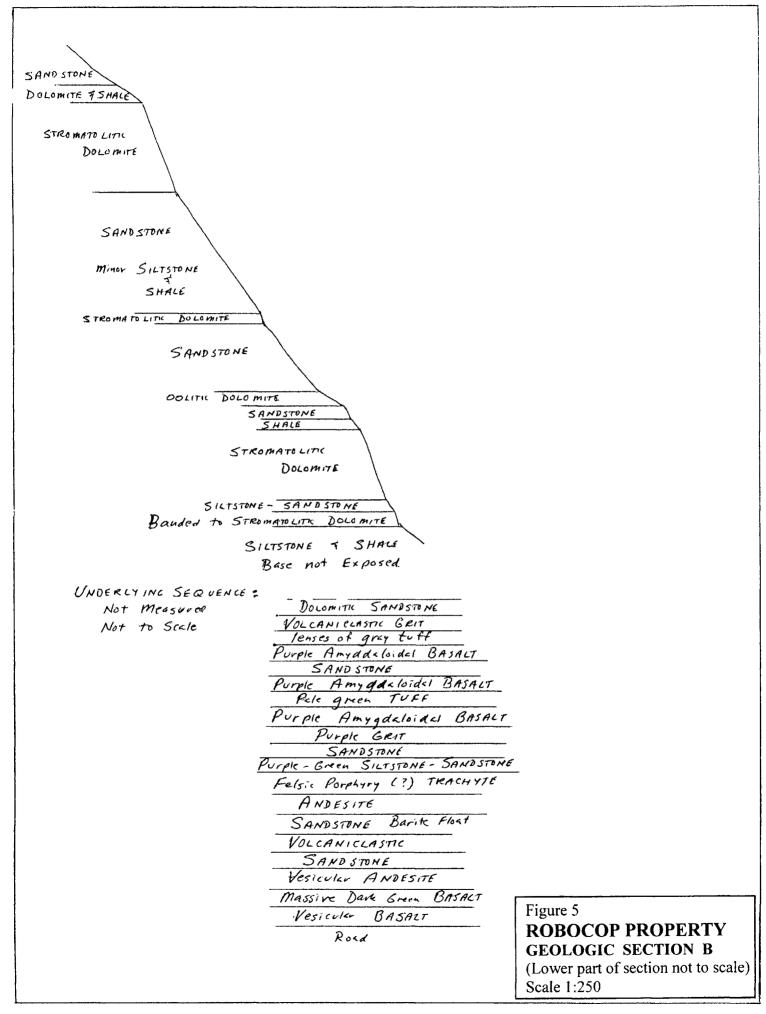
The stromatolitic dolomite units are the most visually distinct units; in section A there are two, generally thick stromatolitic dolomite units; in Section B there are two medium thick stromatolitic dolomite units and two thinner ones; in Section C there are as many as five medium to thin stromatolitic dolomite units.

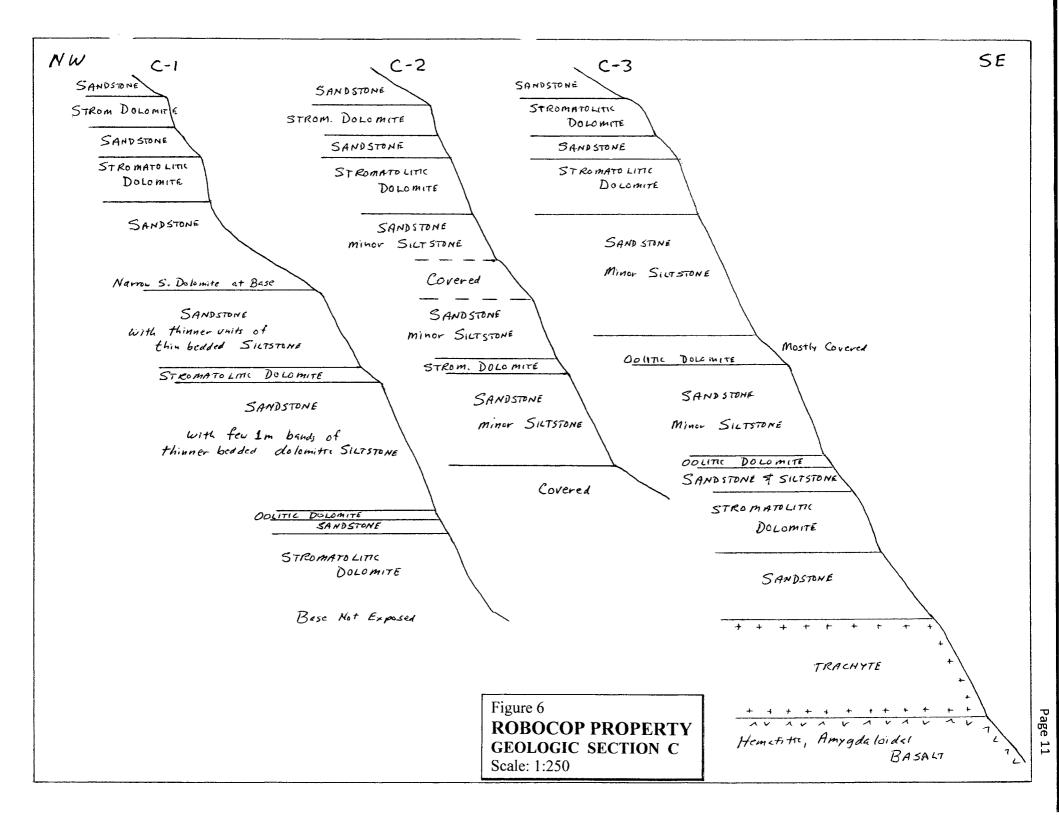
The 14 to 46 meter thick trachyte unit which underlies the copper-bearing arkosic grits and conglomerates in the Section A area was only seen in Section C-3 where it is about 6.5 meters thick. In section A the trachyte overlies a pyroclastic lithic grit unit whereas in Section C-3 the trachyte overlies a purple hematitic amygdaloidal basalt which is the top of the Nicol Creek Formation.

The copper-bearing stratigraphy which occurs generally above the basaltic volcanics and below the stromatolitic dolomite sequence is generally only poorly exposed or not exposed in the areas of Sections B and C. Section C is where a large copper-cobalt soil geochemistry anomaly was defined in 2008 (Pighin, 2009). Because of the poor exposure of this favourable stratigraphy in the Section C area, effective evaluation of this stratigraphy here will require trenching and diamond drilling.



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4.00 CONCLUSIONS AND RECOMMENDATIONS

1. The stratigraphy which hosts the best copper mineralization in the area of previous drilling is either not exposed or is only poorly exposed in the area of Section C where a large copper-cobalt soil geochemistry anomaly was defined in 2008. Further exploration of this large soil geochemical anomaly will require trenching and diamond drilling.

2. The sedimentary package between the top of the Nicol Creek Formation volcanics and the base of the stromatolitic dolomite sequence of the upper Sheppard Formation is much thinner in the Section C area than in the Section A area where previous diamond drilling has occurred. This supports a 'sub-basin' or 'clastic wedge' having developed where the current best known copper-cobalt mineralization exists. Further detailed geologic work may define similar favourable sites for copper-cobalt mineralization on the property.

3. Considerable historic and more recent exploration activity has now been completed on the Roo / Robocop property; various phases of geologic mapping: 2 phases of trenching; 3 phases of diamond drilling and numerous soil geochemistry surveys. A comprehensive data compilation program is warranted to allow a better understanding of the geologic details so that future exploration activity can be better directed.

5.00 REFERENCES

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6.00 STATEMENT OF COSTS

Geologic Mapping 4.5 da	ys @ \$450/day	\$2025.00
Brush out road, clear off roc.	ks 1.5 days @ \$450/day	675.00
4X4 truck 6 days @ \$15	0/day	900.00
Report, including drafting	3 days @ \$450/day	1350.00
Total Cost		\$4950.00

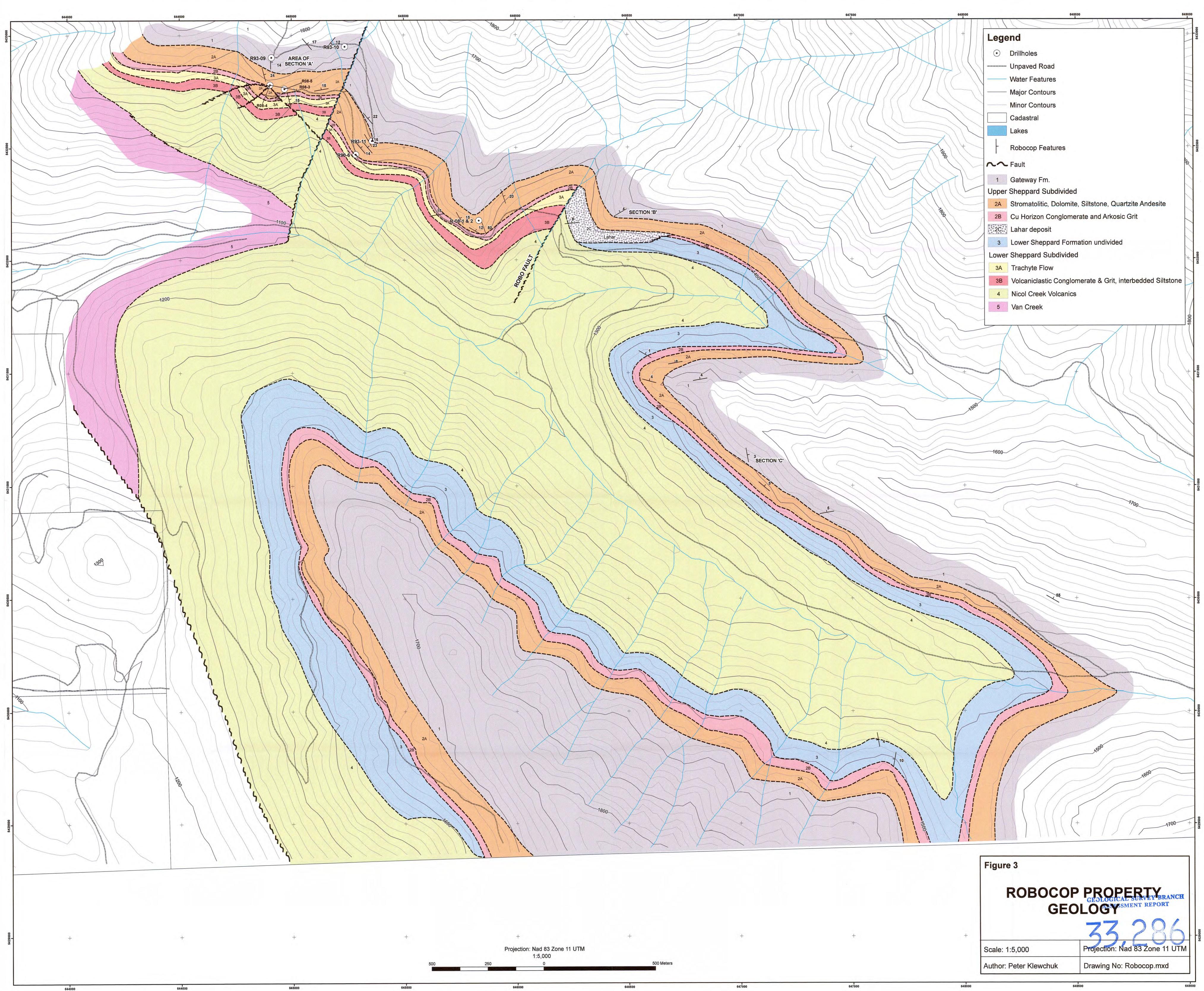
7.00 AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk, certify that:

- 1. I am an independent consulting geologist with offices at 408 Aspen Road, Kimberley, B.C.
- 2. I am a graduate geologist with a B. Sc. degree (1969) from the University of British Columbia and an M. Sc. degree (1972) from the University of Calgary.
- 3. I am a Fellow of the Geological Association of Canada and a member of the Association of Professional Engineers and Geoscientists of British Columbia.
- 4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 36 years.
- 5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia this 8th day of February, 2012.

ROVINCE FWCHIK Peter Klewchuk, P. Geo, BRITISH SCIE



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