Regional Geologist, Cranbrook **Date Approved:** 2005.07.29 **Off Confidential:** 2005.12.09

ASSESSMENT REPORT: 27690 **Mining Division(s):** Fort Steele

Property Name: Robocop

Location:								
NAD 27	**Latitude:**	49 01 45	**Longitude:**	115 00 36	**UTM:**	11	5432387	645469
NAD 83	**Latitude:**	49 01 45	**Longitude:**	115 00 40	**UTM:**	11	5432604	645383
NTS:	082G03E							
BCGS:	082G005							

Camp:

Claim(s): Robocop 2-6

Operator(s): Klewchuk, Peter
Author(s): Klewchuk, Peter

Report Year: 2005

No. of Pages: 12 Pages

Commodities Searched For: Copper

General Work Categories: GEOP

Work Done: Geophysical
EMGR Electromagnetic, ground (3.4 km;VLF) No. of maps : 1 ; Scale(s) : 1:2500

Keywords: Helikian, Siyeh Formation, Nicol Creek Formation, Sheppard Formation, Siltstones, Limestones, Andesites, Chalcocite, Chalcopyrite

Statement Nos.:
3221643

MINFILE Nos.:
082GSW020, 082GSW019, 082GSW001

Related Reports:
01023, 19898, 20700, 22644, 23083

ASSESSMENT REPORT

on

VLF-EM GEOPHYSICS

ROBOCOP CLAIMS

Phillips Creek Area

FORT STEELE MINING DIVISION

TRIM MAPS 82G.005 & 82G.006

UTM 5432700N 645400E

By

PETER KLEWCHUK, P. Geo.

March, 2005

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1.00 INTRODUCTION

1.10 Location and Access

The Robocop claims are located on the steep south-facing slopes of the north side 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 this work was done was a contiguous block of six 2-post claims, tenure numbers 407354 to 407359 (Fig. 2), staked in the name of the author. The claim block was subsequently converted to the new Map Selection system as tenure number 504834.

1.30 Physiography

The Robocop property is located just north of the 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, but with some pine, 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 about 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 geological mapping and trenching (Thompson, 1990). In 1990 Teck Explorations Ltd. carried out additional geological mapping and sampling and drilled 605.6 meters of NQ core in eight holes. The drilling was carried out from three drill sites spaced approximately 570 meters apart. Copper mineralization was intersected in each of

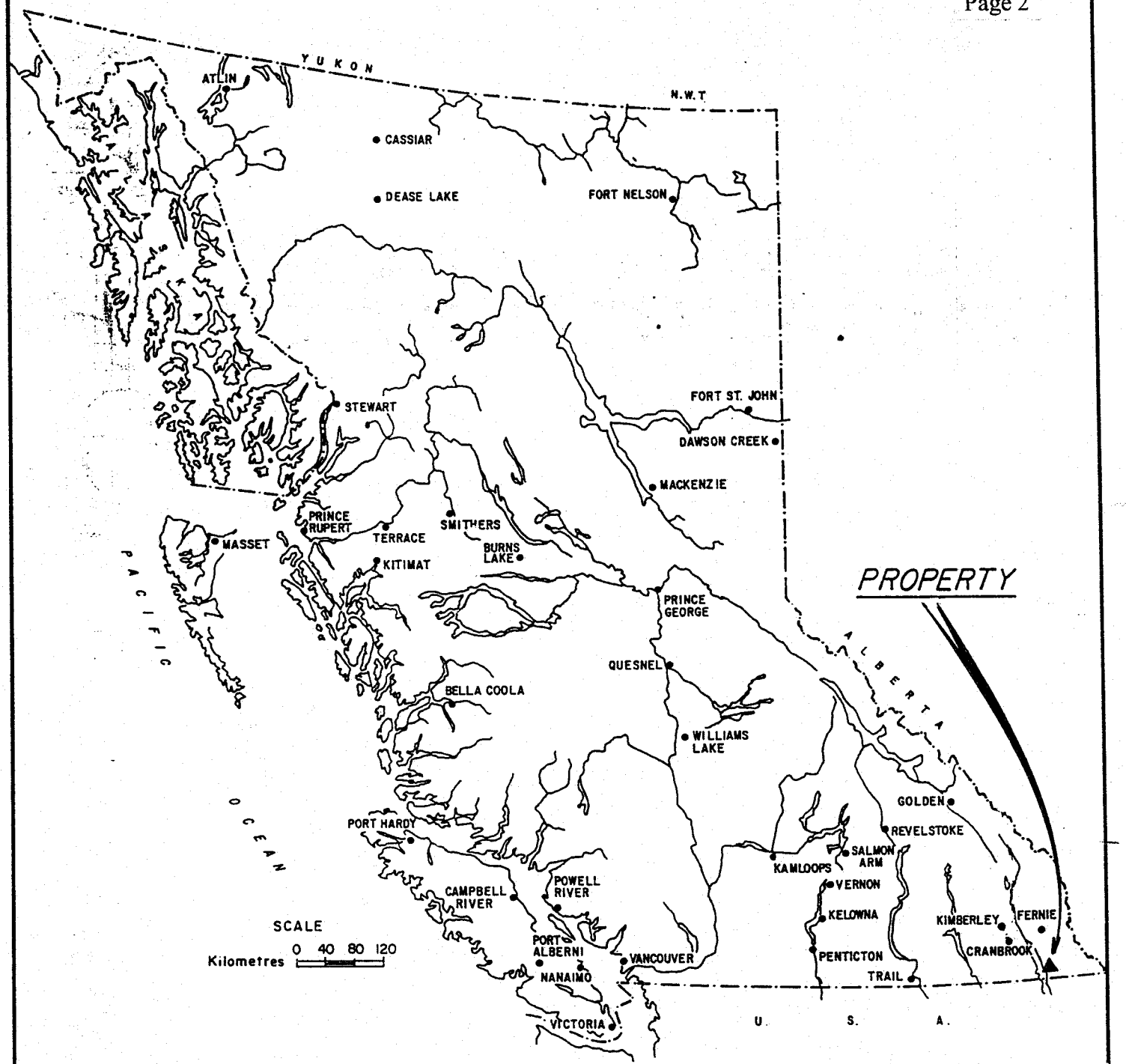


Figure 1
Robocop Property
Location Map
Scale: as shown

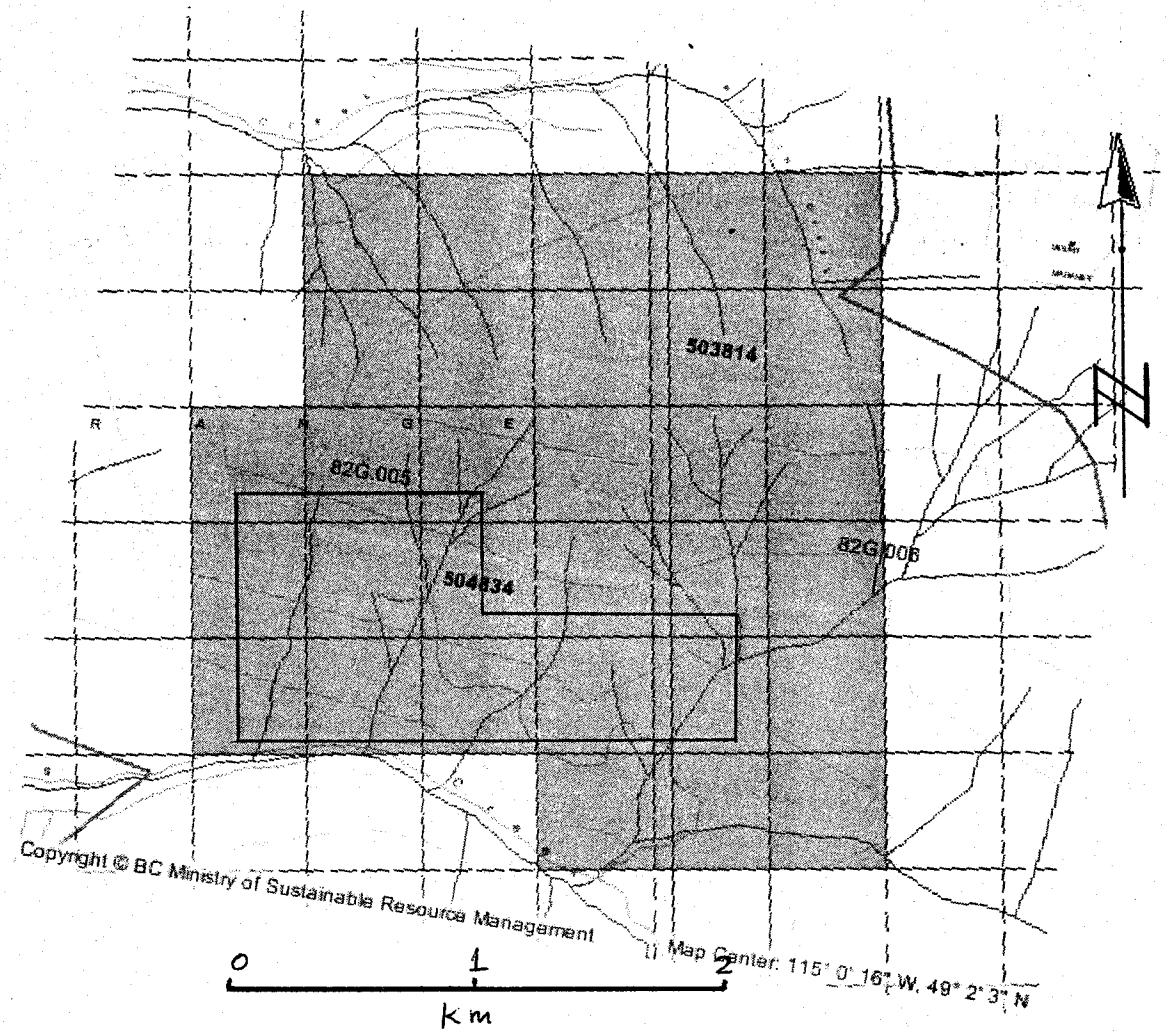


Figure 2
Robocop Property
Claim Map
Scale: as shown
TRIM 82G.005 & 006

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 totaling 475.5 meters with low values of copper and cobalt reported (Kemp, 1993).

1.50 Purpose of Survey

In 2004 a reconnaissance VLF-EM survey was carried out over the Robocop claims to detect structures that might be a control for copper mineralization.

2.00 GEOLOGY

As the author is relatively unfamiliar with the geology of the area, the following description is taken from Thompson (1990):

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 metres. 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 the basaltic Nicol Creek Formation, which is composed of

> "a lower pillowed unit 80 feet thick, overlain by green amygdaloidal volcanics and purple massive and amygdaloidal volcanics. 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 exposed."

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, 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 kilometre 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 mineralization from sandstone horizons. The heat source for the remobilization process is likely from a deeper seated syenitic intrusive body. The probable source of 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 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 the 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.

3.00 VLF-EM GEOPHYSICS

3.10 Introduction

With copper mineralization at the Robocop claims potentially controlled by a recessively-weathered growth fault structure, a reconnaissance VLF-EM survey was undertaken on the property to identify possible fault structures. The available roads crossing the claims were surveyed, as well as one additional short line to provide confidence in the attitude of a VLF-EM response. A total of 3425 meters were surveyed.

3.20 VLF-EM Survey

3.21 Instrumentation and Survey Procedure

The VLF-EM (**V**ery **L**ow **F**requency **E**lectro**m**agnetics) method uses powerful radio transmitters set up in different parts of the world for military communication and navigation. In radio communication terminology, VLF means very low frequency, about 15 to 25 kHz. However, relative to frequencies generally used in geophysical exploration, the VLF technique actually uses very high frequencies. A Crone Radem VLF-EM receiver, manufactured by Crone Geophysics Ltd. of Mississauga, Ontario, was used for the VLF-EM survey. Seattle, Washington, transmitting at 24.8 kHz and at an approximate azimuth of 251° from the survey area, was used as the transmitting station.

In all electromagnetic surveying, a transmitter produces an alternating magnetic (primary) field by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulfide body is within this magnetic field, a secondary alternating current is induced within it, which in turn induces a secondary magnetic field that distorts the primary magnetic field. The VLF-EM receiver measures the resultant field of the primary and secondary fields, and measures this as the tilt or 'dip angle'. The Crone Radem VLF-EM receiver measures both the total field strength and the dip angle.

The VLF-EM uses a frequency range from about 15 to 28 kHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can detect zones of relatively lower conductivity. This results in it being a useful tool for geologic mapping in areas of overburden but it also often results in detection of weak anomalies that are difficult to explain. However the VLF-EM can also detect sulfide bodies that have too low a conductivity for other EM methods to pick up.

For control, various points on the roads and survey line were located using a Garmin 76 hand-held GPS receiver. All survey lines were measured with a hip-chain with VLF-EM readings (field strength and dip angle) taken at 25 meter spacings. Results were reduced by applying the Fraser Filter and both dip angle and Fraser Filter values are shown on the survey lines in Figure 3. The Fraser Filter is essentially a 4-point difference operator which transforms zero crossings into peaks, and a low pass operator which induces the inherent high frequency noise in the data.

Thus the noisy, often non-contourable data are transformed into less noisy, contourable data. Another advantage of this filter is that a conductor which does not show up as a zero crossover in the unfiltered data quite often shows up in the filtered data.

3.22 Discussion of Results

VLF-EM responses were identified by the reconnaissance survey in two areas of the property. One area is in the vicinity of historic trenching and diamond drilling, at the western edge of road access. The second area is about 1.25 km to the ESE where two weak responses were detected (Figure 3). Both VLF-EM response areas are near known better showings of copper mineralization on the property and the VLF-EM responses may be reflecting fault structures that had an influence on the deposition of copper-silver-cobalt mineralization.

The stronger western VLF-EM anomaly was detected on two roads and an intermediate line. The resultant anomaly of about 150 meters strike length trends ENE, follows a local subtle ridge, and is approximately parallel to adjacent stream gulleys. The ridge is unlikely to be the cause of the anomaly (as a topographic response) as similar ridge features within the area of the VLF-EM survey do not show up as anomalies. The weaker, eastern VLF-EM anomalies occur between a stream gulley and a south-trending ridge.

4.00 CONCLUSIONS

Reconnaissance VLF-EM surveying on the Robocop claims has detected anomalies in the vicinity of two known occurrences of better copper mineralization, the western one of which has been previously trenched and diamond drilled. The VLF-EM anomalies may reflect growth fault structures that influenced deposition of copper-silver-cobalt mineralization. Further exploration is warranted and should include delineation of the VLF-EM anomalies as well as geologic mapping to correlate the VLF-EM anomalies with geologic features.

5.00 REFERENCES

Hoy, T., and Carter, G, 1988 Geology of the Fernie West Half Map Sheet, BCMEMPR Open File 1988-14.

Leech, G.B., 1960 Fernie, West Half; GSC map 11-1960.

Price, R.A., 1961 Fernie Map-Area, East Half; GSC Paper 61-24, 65pp.

Kemp, R., 1992 Geological and geochemical report on the Roo 1-7 claim group, Fort Steele Mining Division, B.C. Geological Branch Assessment Report #22,644.

Kemp, R., 1993 Diamond drill report on the Roo belt claim group, Fort Steele Mining Division, B.C. Geological Branch Assessment Report #23,083.

Thompson, G., 1990 Geological and trenching report on the Roo claim group, Fort Steele Mining Division, B.C. Geological Branch Assessment Report #19,898.

Wolfhard, M.R., 1967 Report on geological and geochemical surveys of the Phil #2 group of 36 claims, Fort Steele mining Division; British Columbia Ministry of Energy, Mines and Petroleum resources, Assessment Report # 1,023.

6.00 STATEMENT OF EXPENDITURES

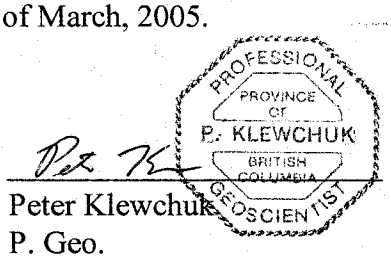
Field work (1.5 days) and report (1 day) ; 2.5 days @ $350.00/day	$875.00
4X4 truck 2 days @ $100.00/day	200.00
VLF-EM rental 2 days @ $30/day	60.00
Total expenditure	$1135.00

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 246 Moyie Street, 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 29 years.
5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 15th day of March, 2005.



Peter Klewchuk
P. Geo.

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ROBOCOP PROPERTY
GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT
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Dip Angle and Fraser Filter Values
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MAPSHEETS: 082G005.006