

McDougal Creek,

Clearwater, BC

Kamloops Mining Division 92P/9E and 82M/12W Long.: 120°00', Lat.: 51°33' 5715075N 707900E, UTM Zone 10

November, 1999

Owner/Operator: Spokane Resources Ltd.

480 – 650 West Georgia St. Vancouver, BC, V6B 4N9

Contractors: Fox Geological Consultants Ltd., Vancouver, BC & SJ Geophysics Ltd., Vancouver, BC

> GEOLOGICAL SURVEY BRANCH Author: Kirk D. Hancock, P.Geo. GEOGRAPHIC REPORT



Table of Contents

	Page
Summary	3
Location and Access	4
History	4
Claims Status	5
Geology	5
Physical Work Program	6
Geophysical Survey Summary	6
Statement of Costs	7
Statement of Qualifications	8
References	9
Geophysical Report	Appendix I
· · ·	

List of Figures

Figure 1: Location of property	following page 4
Figure 2: Detail map of claims location, grid outlines and access	following page 4
Figure 3: Geological map of the project area	following page 5

Summary

The McDougal Creek claims are located 120 kilometers north of Kamloops, BC and 10 kilometers south of Clearwater, BC. The property covers parts of map sheets 92P/9E and 82M/12W and the main grid start point is at 5715075N 707900E, UTM Zone 10 (92P/9E). The property is in the Adams Plateau region and is rugged, hilly upland. Barrier Reef Resources Ltd. first staked claims in the area of McDougal Creek in 1978 as part of an area play following the discovery of mineralization at the Chu Chua deposit 10 kilometers south southwest. Craigmont Mines Ltd optioned the claims as part of the play. They did an airborne EM/mag survey but little else on the Barrier Reef Resources Ltd. claims. Craigmont's primary interest was in the Foghorn property three kilometers south east of the claims. Craigmont had disappointing drill results on the Foghorn property and as a result dropped all its options. Esso Resources Ltd. optioned several claim groups in the area and did follow up ground geophysics. Shortly after this work, Esso dropped its options. Lucero Resources Ltd. staked the MC claims following the discovery of the Samatosum deposit in 1987 and optioned them to Pilgrim Holdings Ltd. They did more, detailed geophysics and geochemical work in 1988. The property was subsequently optioned to Initial Developers Ltd. in 1990. They drilled five diamond drill holes. Of the five holes, one cut zinc-lead mineralization with a best intercept of 2.48% zinc, 0.88% lead and 40 g/t silver over 2 meters within a broad stringer zone. The claims were later allowed to lapse.

In November 1998, Spokane Resources Ltd. staked three blocks of claims, totalling 55 units, covering the central MC ground including the main geophysical anomalies and drilling sites. A program of line cutting, ground HLEM and prospecting was done and is described in this report.

Location and Access

The McDougal Creek claims are located 120 kilometers north of Kamloops, BC and 10 kilometers south of Clearwater, BC (Figure 1). Access is from Highway 1 to the Clearwater ski hill and either left and up the McDougal Creek forestry road or right and up the Blackpool forestry road. The McDougal Creek road access leads directly to the base line at the south end of the grid. The Blackpool Creek road leads to a logging cut and an approximately 800-meter long trail to the north end of the grid. (Figure 2)

The property covers parts of map sheets 92P/9E and 82M/12W and the main grid start point is at 5715075N 707900E, UTM Zone 10 (92P/9E). The UTM boundary between zones 10 and 11 roughly splits the property in half, west to east.

The property is in the Adams Plateau region and is a rugged, hilly upland. The area is characterized by the low valley bottom of the North Thompson River at about 455 meters elevation and rises sharply to about 1675 meters base elevation for the plateau. The mountain tops range from 1830 to 2130 meters elevation. The slopes are thick with tall, close spaced fir and spruce forest. Open areas are thick with buck brush and similar vegetation. Swamps and small lakes dot the uplands in virtually every depression. Close bush and rough slopes make travel difficult off the logging roads and cut lines. The region receives abundant rainfall in the summer and an equivalent amount of snow in winter. At the time of work on the property there was in excess of 1 meter of snow on the ground. This made road access difficult and snow machines were required to reach the site for the majority of the project.

History

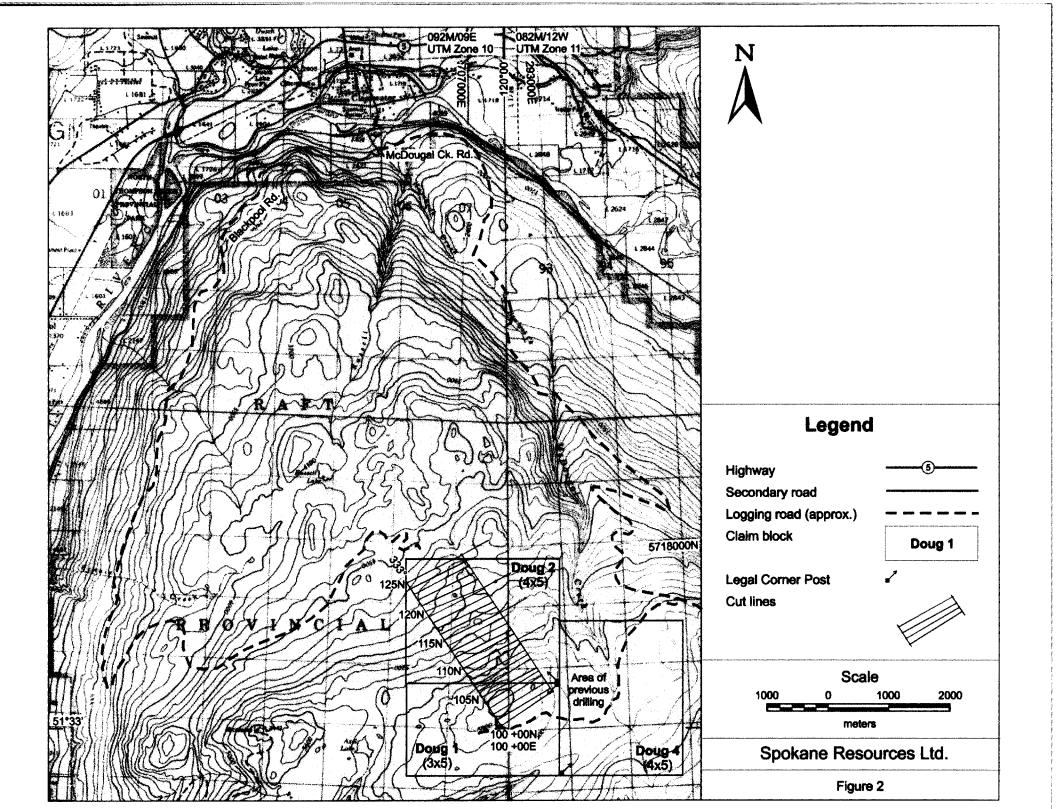
Barrier Reef Resources Ltd. first staked claims in the area of McDougal Creek in 1978 as part of an area play following the discovery of mineralization at the Chu Chua deposit. Craigmont Mines Ltd. flew an airborne EM and magnetic survey and identified several conductors. No further work was done due to difficult access at the time. Craigmont Mines drilled several holes on the adjacent Foghorn property to the south and had discouraging results. They then dropped their option on the claims. Esso Resources Ltd. optioned the claims as well as the Foghorn ground in 1972. A ground EM survey was done over a target known as the "A" anomaly identified by Craigmont Mines Ltd. (*see* Figure 2: Previously drilled area) A road was started towards the "A" anomaly but never completed. Esso Resources Ltd. dropped their option shortly thereafter and the claims were allowed to lapse.

Following the discovery of the Samatosum deposit in 1987, the MC claims were staked by Lucero Resources Ltd. to cover the original claim area and optioned to Pilgrim Holdings Ltd. They did more detailed geophysics and geochemical work in 1988 (J.M Dawson, 1988; P.E. Walcott, 1988). The property was subsequently optioned to Initial Developers Ltd. in 1990. They drilled five diamond drill holes on the "A" anomaly (N. Vollo, 1990) (*see* Figure 2: Previously drilled area). Of the five holes, one (90-3) cut zinc-lead mineralization with a best intercept of 2.48% zinc, 0.88% lead and 40 g/t silver





Spokane Resources Ltd.



over 2 meters within a broad stringer zone. The mineralization was adjacent to the contact of andesite with rhyolite. Four other holes (90-1, 2, 4 & 5) cut broad zones, 14 to 15 meters wide, of semi-massive pyrite mineralization in altered or siliceous rhyolite. Following the drilling program there are no records of work and the MC claims lapsed.

The Doug 1-3 claims were staked in late November 1998 and comprise 55 units in three blocks. The claims cover the central part of what was staked as the MC claims and includes the main geophysical anomalies and drilling sites.

Claims Status

Claim Name	Tenure Number	Number of Units	Expiry Date*	Owner
Doug 1	367232	15	Nov. 19, 2003	Spokane Resources Ltd.
Doug 2	367233	20	Nov. 24, 2003	Spokane Resources Ltd.
Doug 4	367234	20 ·	Nov. 22, 2003	Spokane Resources Ltd.

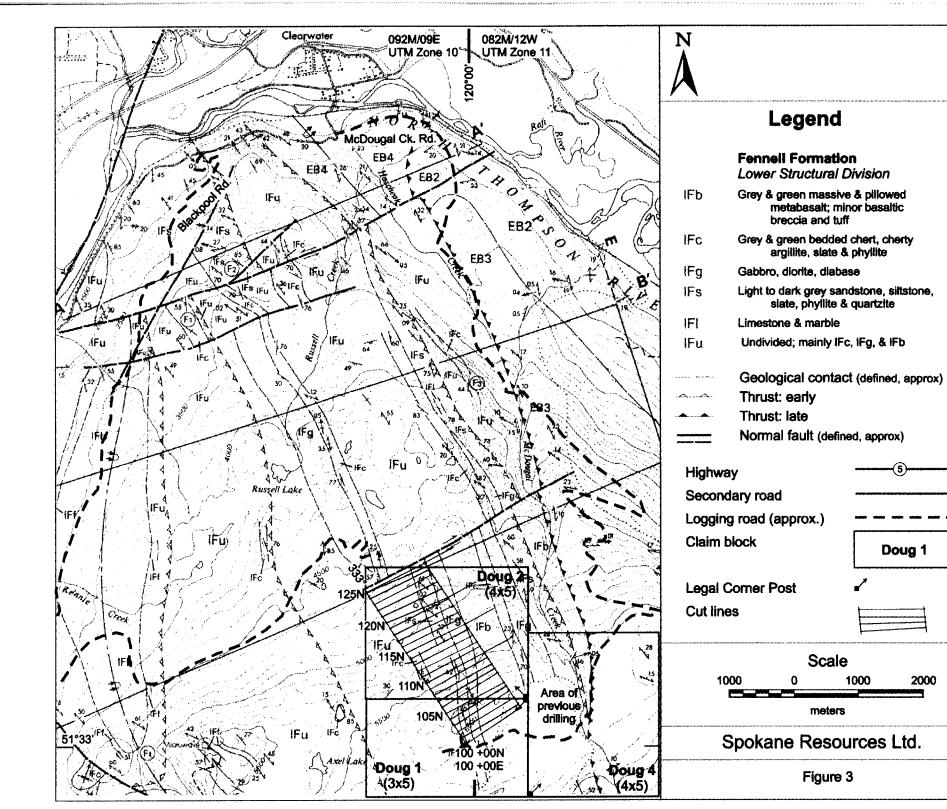
*: pending acceptance of this report

Geology

The geology of the property is summarized briefly from the work of Schiarizza (1981) and Schiarizza and Preto (1987) of the BC Ministry of Energy and Mines. This because deep snow entirely covered the property at the time of the project and no geological information could be gathered. It is the intention of the company to map the property as soon as possible.

Rocks of the Devonian to Permian Fennell Formation within the Slide Mountain terrane underlie the property area (Figure 3). It is comprised of several thrust slices and the property is underlain by a fault slice of the lower Fennell Formation. The most prominent rock types are grey and green massive to pillow basalt and related fragmental rocks and tuffs. These rocks are very uniform throughout the succession and it is difficult to define stratigraphy on a local scale. Grey and green chert, cherty argillite and interbeds of slate and phyllite are the next most prominent rock unit. This unit is discontinuous and may grade into grey sandstone, slate, phyllite and quartzite along strike. Intruded into the succession are massive fine to coarse-grained gabbro sills and dykes as well as some extrusive equivalents.

The Fennell Formation is structurally imbricated by steep, east verging thrusts and has been emplaced against the age equivalent Eagle Bay Formation to the east. Three, in some places four, thrust panels have been identified within the Fennell Formation. However, due to the uniformity of the lithologies and poor age date control, there may be other unidentified panels. Bedding is sub-vertical and west facing. Metamorphism is of greenschist grade.



Physical Work Program

Work on the site consisted of three parts. First was staking of 55 units in three blocks. The LCPs were placed and located by GPS as well as the corner posts. All claims were filed at the Kamloops Mining Recoders office. Second, 31 line kilometers of grid were cut. The grid comprises a base-line, tie-line, 2500 meters long each and 1000 meter long, 100 meter spaced cross lines. The base-line, tie-line and first cross-line were tight chained in and oriented by compass. The rest of the lines were flagged in by hip-chain and compass. Due to heavy snow conditions, several lines were flagged in but not cut because of budget limits. Third, the author walked several of the lines in an effort to locate outcrops and prospect for mineralization. The heavy snow obscured all but two small outcrops, so this will have to be done later to get meaningful data.

Geophysical Survey Summary

The second component of the program was a multi-frequency, HLEM electromagnetic survey over the grid. The full geophysical report is attached in Appendix I. All of the cut lines were surveyed either in full or in part because of budget limits.

In summary, the survey identified two strong, well-defined conductors in both the in-phase and out-of-phase components. Based on the regional geological mapping of Schiarizza and Preto (1987), the western conductor is at the contact of a gabbro sill and a unit of pillow basalt and minor tuff and related breccia. The second, eastern conductor is within the pillow basalt and minor tuff and related breccia unit. Both conductors parallel the vertical bedding and are consistent with potential sulphide mineralization of a Besshi-type volcanogenic massive sulphide deposit. The property will need to be mapped and sampled in detail to correlate the geophysics with the geology.

Statement of Costs

Claims Staking

Costs avail	able for assessment (does not include claims staking)	<u>\$61856.07</u>
Total projec		\$75605.26
٠	General overhead (wages, etc. not charged)	\$0.00
•	Acme Labs: analyses	107.50
•	Travel expenses for K. Hancock (room, food, vehicle) Nov. 30 – Dec. 4, 1998	\$708.42
On site pro	oject evaluation by Kirk Hancock, P.Geo.	
•	S.J. Geophysics Ltd.: 14.5 Line kilometres of HLEM survey	\$14535.68
Geophysic	al Survey	
٠	Fox Geological Services Ltd.: 31 Line kms established and cut includes project setup, monitoring & logistics.	\$46504.47
Physical W	/ork: Line cutting	
•	Fox Geological Services Ltd.: 55 units staked includes project setup, monitoring & logistics.	\$13749.19

7

Statement of Qualifications

I, Kirk Douglas Hancock, certify the following:

- 1. I am a professional geologist residing in Victoria, British Columbia
- 2. I am a registered member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 3. I am a graduate of the University of British Columbia with a Bachelor of Science (B.Sc.) degree in geology.
- 4. I have been practicing geology continuously since my graduation from university in 1987.
- 5. This report is based on my examination of the property on December 1st and 2nd, 1998 as well as published papers and assessment reports.
- 6. Spokane Resources Ltd. employs me as their Exploration Manager.

FESSIO Kirk D. Hancock, P. Geo. OSCIEN לי אוביים לקברבבבבב

References

- Dawson, J.M. (1988): Geochemical Report on the MC Property; *BC Ministry of Energy* and Mines, Assessment Report 17782, 35 pages and 5 maps.
- Schiarizza, P. (1981): Geology of the Barriere River Clearwater Area, BC Ministry of Energy, Mines and Petroleum Resources, Preliminary Map 53, 1:50 000.
- Schiarizza, P. and Preto, V.A. (1987): Geology of the Adams Plateau Clearwater Vavenby Area; *BC Ministry of Energy, Mines and Petroleum Resources*, Paper 1987-2, 88 pages, 1 map and 2 sections.
- Vollo, N. (1990): Drilling Report on the 82M/12 MC Claim Group of Initial Developers Ltd.; *BC Ministry of Energy and Mines*, Assessment Report 20209, 37 pages.
- Walcott, P.E. (1988): A Geophysical Report on a Ground Electromagnetic Survey; BC Ministry of Energy and Mines, Assessment Report 18814, 17 pages and 10 maps.

Appendix I

Geophysical Report

GEOPHYSICAL REPORT

HORIZONTAL LOOP EM SURVEY

CLEARWATER PROJECT

Kamloops Mining Division, N.T.S. 92P/9 and 82M/12

BC, Canada

SPOKANE RESOURCES LTD.

Vancouver, B.C.

Canada

Survey by

SJ GEOPHYSICS LTD.

Report by S.J.V. CONSULTANTS LTD. Zoran Dujakovic, Geophysicist and E. Trent Pezzot, Geophysicist, Geologist

January, 1999

Clearwater Project - HLEM Survey, 1998

TABLE OF CONTENTS

1.	SUMMARY1
2.	INTRODUCTION1
3.	FIELD WORK AND INSTRUMENTATION2
4.	DATA PRESENTATION2
4.1	Stacked Profiles
4.2	Interpretation Plan Map3
5.	HLEM TECHNIQUE
6.	INTERPRETATION4
7.	CONCLUSIONS & RECOMMENDATIONS
7.1	Recommended Drill Testing6
Ар	pendix 1 – Statement of Qualifications - Zoran Dujakovic
Ар	pendix 2 - Statement of Qualifications for E. Trent Pezzot
Ар	pendix 3 - Interpreted Sections9

i

List of Plates:- These maps are located in the map pocket at the back of the report.

Plate G1A	HLEM SURVEY IN-PHASE PROFILES
Plate G1B	HLEM SURVEY QUADRATURE PROFILES
Plate G2	HLEM SURVEY INTERPRETATION MAP

List of Figures:- These figures are located in Appendix 3

Figure 1	HLEM SURVEY IN-PHASE PROFILES
Figure 2	HLEM SURVEY QUADRATURE PROFILES

SJ Geophysics Ltd. / S.J.V. Consultants Ltd. 11762 - 94th Ave., Delta, B.C. Canada tel: (604) 582-1100 fay: (604) 589-7466 e-mail: sydy@sigeop.bc.ca ii

1. SUMMARY

Horizontal Loop EM (HLEM) measurements were made on the BC Grid, a part of Spokane Resources Ltd.'s Clearwater Project. The geophysical data indicate three good conductors which could arise from metallic sulphide mineralization. Recommended drill site locations to test these conductors are listed in Section 7, Conclusion and Recommendations.

2. INTRODUCTION

This report describes the results of a ground geophysical exploration program that was undertaken during the period November 27 to December 7, 1998, on the BC Grid of the Clearwater Project. The purpose of the survey was to detect sulphide mineralization and to determine target depths. A horizontal loop electromagnetic (HLEM) survey was carried out to evaluate a limited region of the Clearwater property.

The survey was conducted under supervision of Spokane's project geologist, Kirk Hancock and totalled 15.2 km of HLEM measurements.

The survey grid is located about 10 km south of Clearwater, B.C. and is accessible by logging road from Clearwater.

The following geological description was provided by Spokane Resources Ltd.

" Rocks of the Devonian to Permian Fennel Formation of the Slide Mountain terrane underlie the property area. It is comprised of several thrust slices and the property is underlain by the third fault slice of the lower Fennel Formation. The most prominent rock types are grey and green massive to pillow basalt and related fragmental rocks and tuffs. These rocks are very uniform throughout the succession and it is difficult to define stratigraphy on a local scale. Grey and green chert, cherty argillite and interbeds of slate and phyllite are the next most prominent rock unit. This unit is discontinuous and may grade into grey sandstone, slate, phyllite and quartzite along strike. Intruded into the succession is massive fine to coarse-grained gabbro sills and dykes as well as some

extrusive equivalents.

The Fennel formation is structurally imbricated by steep, east verging thrusts and has been emplaced over the age equivalent Eagle Bay Formation to the east. Three, in some places four, thrust panels have been identified within the Fennel Formation. However, due to the uniformity of the lithologies and poor age date control, there may be other unidentified panels. Bedding is sub-vertical and west facing. Metamorphism is of greenschist grade."

This report is meant to be an addendum to a more complete report, and thus location maps, comprehensive description of geology and previous exploration work are treated only briefly, or not included.

3. FIELD WORK AND INSTRUMENTATION

The geophysical survey was conducted from November 27 to December 7, 1998, which included two mob-demob days and nine production days. The geophysical crew consisted of Zoran Dujakovic (geophysicist) and Robert Ewen (technician), both employees of SJ Geophysics Ltd. A discussion of the geophysical method used on this survey is included in Section 5. "Principle of HLEM Surveying."

The survey grid was prepared by Spokane Resources Ltd. and is comprised of eighteen approximately E-W traverses at 100 and 200 metre intervals.

The HLEM equipment used was an APEX MAX-MIN I-10 horizontal loop EM system with MMC data logger. A 100 metre coil separation was used for the survey and the data from four frequencies was recorded --- 440Hz, 880Hz, 1760Hz and 7040Hz.

The HLEM data was gathered at 25 metre station intervals. All data was downloaded daily from the field instrumentation to a computer and processed using Geopak Systems software.

4. DATA PRESENTATION

The geophysical data from this survey are displayed in two formats, as indicated below.

4.1 Stacked Profiles

The in-phase and quadrature components of the HLEM data are presented as stacked profiles on separate maps at a scale of 1:5,000. All data are positioned using UTM coordinates.

Analysis of these profiles indicated a systemic shift of -15% in the in phase component. This bias does not affect the quality or validity of the data and was removed prior to plotting.

4.2 Interpretation Plan Map

The Interpretation Plan Map (Plate G2) was made to highlight the general trends and identify recommended drill targets.

5. HLEM TECHNIQUE

The basic principle behind HLEM surveying is that certain geological formations are electrically conductive and can be excited electrically by an "applied primary EM field" which may be detected above ground. In the horizontal loop method, the primary field is produced by a transmitting coil, which is fed an oscillatory current from the transmitter. This primary field is available in frequencies ranging from 110 Hz to 56320 Hz in the Max-Min I-10 system.

The primary field induces a secondary field in the ground and a combination of both fields is detected by the receiver. The secondary field is quite small compared to the primary. It is therefore necessary to account for the primary component before making secondary field measurements. This is done by means of a reference cable, which carries some of primary signal directly to receiver.

The separation distance between the transmitter and receiver coils determines the effective depth of penetration of the signal. The coil separation selected depends on the depth of the overburden or desired depth of penetration or both. The midpoint between transmitting and receiving coils is taken as the measuring point.

The primary signal also serves as a reference by which the secondary field can be resolved into two components: the in-phase (real) and out-phase (imaginary or

quadrature). The relative strengths of in-phase and out-phase components are a guide to the conductivity-width product of the buried conductor, which is usually related to the quantity of the conducting minerals present.

The strength of the secondary field is dependent on the size and conductance of the conductor. The secondary field is weaker if the conductor is deeper or if a layer of conductive material (overburden) covers it.

Measurement of the strength, character, and distribution of the secondary field also permits mapping of conductive formations and tells something about their size and nature.

6. INTERPRETATION

The HLEM survey shows several conductivity features across this grid. Three of these, shown on the interpretation map (Plate G2) as C1, C2 and C3, are classified as good conductors and may be related to sulphide and/or graphitic mineralization. Although C1 and C2 are shown as single conductors, the responses could also be caused by two or more closely spaced zones. C3 appears as a broad (100-200 m wide) response. This could be interpreted as a single, wide conductor, or a complex zone containing a number of narrow, conductive sheets or lenses.

The most prominent anomaly, C1, forms a linear feature that is traced for some 600 metres, from 10000N/10150E to 10600N/10500E, and is open to the south. The anomaly may be related to a shear zone, an altered contact zone or other such linear structure. Modelling on the HLEM data shows that a depth to the top of this conductor varies between 10 m and 20 m. The anomaly is strongest across line 10300N. As shown in Figure 1, conductor C1 is interpreted as "thin" sheet with a significant depth extent. It appears to dip steeply to the east near the surface (high frequency response) and near vertical at the depth (low frequency response).

Anomaly C2 is mapped from line 11000N to 10000N and is also open to the south. This anomaly is well defined as a good conductor north of line 10500N. It widens between lines 10800N and 11000N which may represent a local increase in the conductivity-thickness. The southern portion of anomaly C2 is mapped as a deeper, weak to moderate conductor. As shown in Figure 2, at line 10800E, conductor C2 is interpreted as a 25m wide unit that dips westerly and is closely related to a contact between Fennell basalts

and Eagle Bay volcanic tuffs. The depth to the top of the conductor is over 10m at 10800E.

Anomaly C3 is mapped between lines 11500N and 12500N and is open to the north. Only three of the nine lines crossing this anomaly extended far enough to the east to delineate the eastern edge of the anomaly, but it appears to form a 100+ metre wide conductive zone that approaches to within 10 m of the ground surface. The response is complex and can be interpreted as either a single, wide conductor or a zone containing several, narrow and sub-parallel sheets. More detailed surveying, utilising a shorter coil separation and more closely spaced stations, will be required to resolve individual conductors within the broader zone.

A weak HLEM response seen west of and roughly parallel to C1 may be mapping a weak and deep conductor or geological contact.

Subtle variations are noted in the amplitude and character of the HLEM responses to the west and east of conductors C1 and C2. These are indicative of different geological units or facies and correlate with the geological mapping that shows Fennel basalts to the west and Eagle Bay volcanic tuffs to the east.

7. CONCLUSIONS & RECOMMENDATIONS

The HLEM survey on the BC Grid delineated three conductivity zones that lie along the Fennel / Eagle Bay contact and could be related to sulphide mineralization or graphitic units. Two of these anomalies (C1 and C2) form narrow, linear features that are likely related to a single (or two closely spaced) sheet-like bodies. The third anomaly (C3) is a much wider response and could be related to either a broad, uniformly conductive zone, or a complex sequence of multiple, sub-parallel zones.

The geophysical interpretation should be reviewed by the project geologist and compiled with geological and geochemical data.

The line separation of 200 metres is too coarse to correlate anomalies from line to line. Infill lines should be established to bring the line spacing down to 100 metres. Survey lines across the northern portion of the survey (11000N to 12500N) need to be extended 300 metres to the east in order to delineate the eastern flank of anomaly C3. The survey grid should also be extended to the north and south along the projected strike of the "open" conductors.

Anomalies C1, C2 and C3 warrant further investigation by diamond drilling. The drill recommendations listed below are spotted to test the centres of the geophysical anomalies however it is likely that a fence of drill holes (particularly on C3) will be required evaluate each conductive zone. These targets would also benefit from additional HLEM surveying, using a 50 metre coil separation and 12.5 metre station spacing in order to better resolve individual conductors.

7.1 Recommended Drill Testing

1. DDH#1 - Line 10300N Station 10300E, azimuth 60°, minus 45 degrees, drill 100 metres.

2. DDH#2 - Line 10800N Station 10750E, azimuth 60°, minus 45 degrees, drill 100 metres.

3. DDH#3 - Line 11700N Station 10750E, azimuth 60°, minus 45 degrees, drill 100 metres.

Respectfully submitted,

Per S.J.V. Consultants Ltd.

Labaric

Zoran Dujaković, (B.Sc.) Geophysicist

PZZC E. Trent Pezzot, eophysicist

Date Signed: $\underbrace{4}_{\alpha\alpha}$ 22, , 1999

<u> Appendix 1 – Statement of Qualifications - Zoran Dujakovic</u>

I, Zoran Dujakovic, of 7056 Waverley Avenue, Burnaby in the Province of British Columbia, DO HEREBY CERTIFY:

- THAT I am a graduate of the Belgrade University, Faculty of Mining and Geology - Geophysics Program with a Engineer of Geology (B.Sc.) degree in Geophysics.
- 2) THAT I have been engaged in mining and petroleum exploration since 1981.
- 3) THAT I am registered as an Engineer of Geology Geophysics Program with the Chamber of Commerce of Serbia.
- 4) THAT I hold no direct or indirect interest in, nor expect to receive any benefits from the mineral property or properties described in this report.

natoric Signed by;

Zoran Dujakovic, B.Sc.

an Date: \bigcirc

Appendix 2 - Statement of Qualifications for E. Trent Pezzot

I, E. Trent Pezzot, of the city of Surrey, Province of British Columbia, hereby certify that:

I graduated from the University of British Columbia in 1974 with a B.Sc. degree in the combined Honours Geology and Geophysics program.

I have practised my profession continuously from that date.

I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia.

I hold no direct or indirect interest in, nor expect to receive any benefits from, the mineral property or properties described in this report.

Signed by: E. Trent Pezzot, B. P.Geo.

JA 22 Date:

Clearwater Project - HLEM Survey, 1998

Appendix 3 - Interpreted Sections

- Line 10300N Interpreted Section
- Line 10800N Interpreted Section

SJ Geophysics Ltd. / S.J.V. Consultants Ltd. 11762 - 94th Ave., Delta, B.C. Canada

