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REPORT ON

INDUCED POLARISATION & MAGNETONETER SURVEYS

ON THE LODE GROUP CLAIMS

(Lode, Chow, Pat 1-5, Golden Cougar, Bee) (Deerhorn, Tri Fr., Little Buffalo Fr., Buck Fr.) (Horn Fr., Gem and Hidden Treasure)

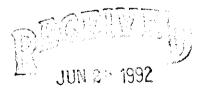
Deadwood Camp - Greenwood Mining Division

LAT: 49⁰06.5'W LONG: 118⁰43.5'W WT8: 82E/2E

Owners: H.H. Shear Bill Markin

Operator: H.H. Shear

By: M.H. Shear, P.Eng P.E. Walcott, P.Eng



GOVERNMENT AGENT NELSON, B.C.

GEOLOGICAL BRANCH Annual Work Approxy 5 MENT REPORT KAM92 - 1400090-1581

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INTRODUCTION

General - The project has been named the Lode Group Project. The project area is centred four kilometers west of the north end of Greenwood, B.C. and lies along both sides of Mother Lode Creek. Topographic relief is moderate with elevations ranging from 945m (3100') along the lower section of Mother Lode Creek in the southeast part of the work area to 1220m (4000') in the north part on the ridge between Mother Lode Creek and Deadwood Creek. Access is via a good all weather gravel logging road up Mother Lode Creek from Greenwood. Several spur roads provide excellent access to all parts of the work area.

Property Definition and History - The property consists of 42 units comprised of three modified grid claims, five reverted crown grant mineral claims, three fractional mineral claims, and five 2 post claims. Prospecting was carried out on the claims area since before 1900 but work was limited to surface prospect pits.

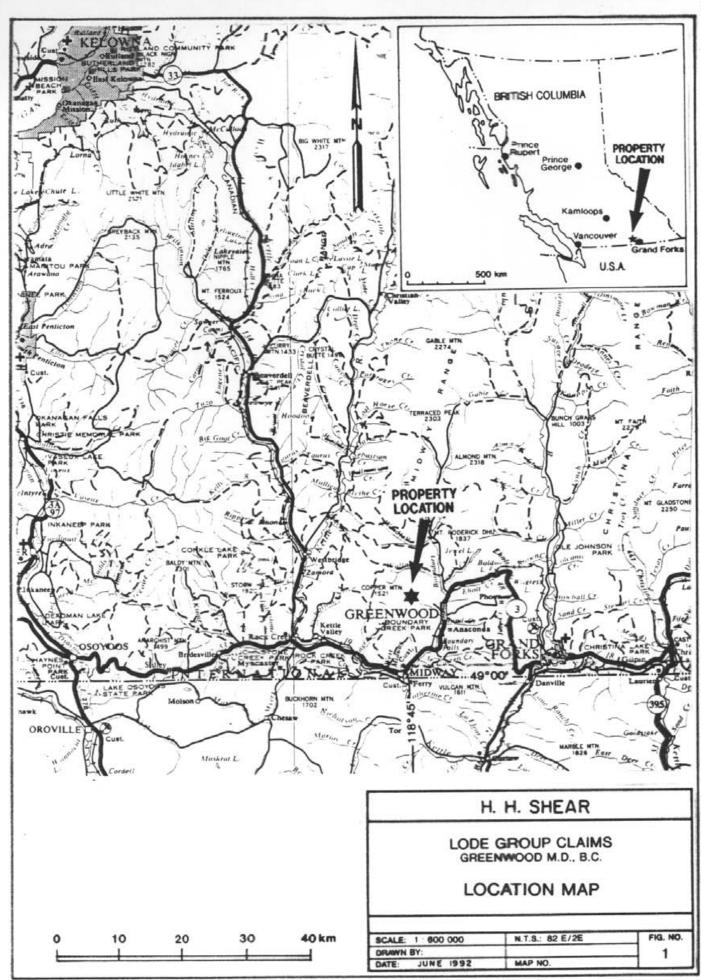
Over 3000' of underground headings are reported to have been completed on the Morrison claim from 1897 to 1902. This claim is mostly surrounded by the Lode group but is not part of the property. About 2900 tons of pyritic ore averaging about 0.4% Cu and 0.079 oz/ton Au are reported to have been shipped from the Morrison prior to 1907. The Mother Lode Mine, second largest copper-gold producer in the Boundary District, lies 1km northeast of the Morrison.

The owner of the Golden Cougar and Pat 1-5 claims is Bill Markin, Box 163, Greenwood, B.C. The operator and the owner of the rest of the claims is H.H. Shear, Box 188, Greenwood, B.C. An agreement was reached to participate in a work program to file assessment on the combined properties.

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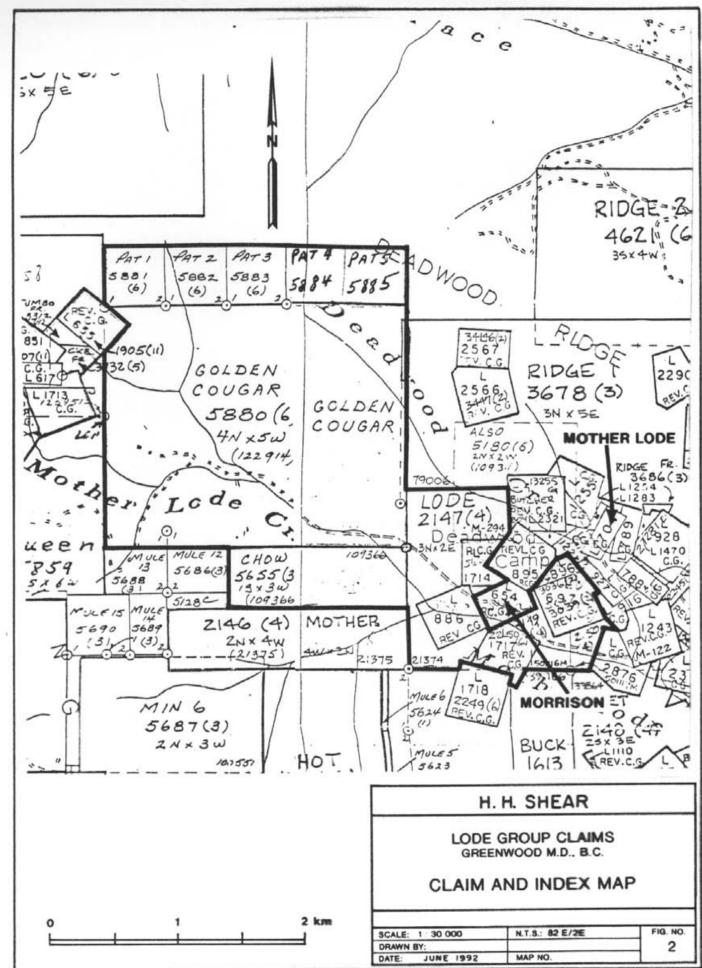
Past interest in the area was in locating copper-gold deposits similar to the Phoenix and Mother Lode ore bodies which occur with skarn alteration in calcareous Triassic rocks east of the project area. Current interest is in locating similar gold-copper deposits hosted in skarn zones in the older rock formations or epithermal gold zones along fault boundaries with the Tertiary formations.

Work Summary - A program of linecutting and magnetometer and I.P. surveys was carried out on the Lode, Deerhorn and Bee claims between May 1 - June 1, 1992. Work also extended into the Morrison claim in order to adequately define the situation along the property boundary there. Adding to lines completed in 1990, an additional 5.20km of lines were established by axe, flagging and blazing. Adding to a 1990 survey, 8.10km of magnetometer surveying was run. Additional mapping of geology and surface features was An induced polarization survey totalling 3.4km on 4 completed. Initially Line 0 was covered for 1000m. lines was done. A good anomaly was disclosed next to the Morrison claim and nothing of interest to the west. Therefore, three short lines were completed to investigate this anomaly on either side of Line 0.



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Claims - The property consists of the following mineral claims totalling 42 units:

Name	Mineral Tenure #	Units	Owner	Expiry Date*
Golden Cougar	215744	20	Markin	07 Jun 1993
Pat 1-5	215745-49	5	Markin	07 Jun 1993
Lode	214464	6	Shear	29 Apr 1995
Buck Fr.	214466	1	Shear	29 Apr 1995
Horn Fr.	214467	1	Shear	29 Apr 1995
Little Buffalo Fr.	214483	1	Shear	05 Jun 1995
Chow	215519	3	Shear	01 Mar 1995
Deerhorn	215530	1	Shear	15 Mar 1995
Hidden Treasure	215543	1	Shear	15 Mar 1995
Bee	215544	1	Shear	15 Mar 1995
Gem	215545	1	Shear	15 Mar 1995
Tri Fri.	215549	1	Shear	19 Mar 1995

* Includes work filed based on this report.

PURPOSE OF PROGRAM

The Lode Group claims in the writer's name were acquired because of interesting reports in the B.C. Ministry of Mines Annual Reports on the Morrison claim from 1897 - 1902. No modern geochemical or geophysical prospecting has been done in the area prior to my 1990 program, and there is widespread overburden cover north, west and south of the Morrison. Ore shipped from the Morrison was massive pyrite carrying economic copper and gold values. The fault contact between Tertiary and older rocks passing through the Lode Group is considered to be a possible target zone for locating disseminated epithermal gold mineralization. Skarn type copper-gold or gold only deposits in the older rocks is also a possibility.

During some prospecting carried out by the writer in March, 1992, a boulder of float was found at 5+50S, 4+00E relative to the Lode Group grid. Chips from the boulder assayed 1.3% Cu and 0.038 oz/ton Au. The boulder was slightly magnetic due to the presence of minor magnetite. It is believed that the source of this boulder is east of the Tertiary contact and not very far to the north. The purpose of the program was to explore for gold mineralization in older host rocks and occurring in magnetically high skarn zones under Tertiary or overburden cover, disseminated epithermal gold zones along the Tertiary - Permian fault contact which passes through the property, and massive sulphide copper-gold bearing mineralization similar to ore shipped in the early 1900's from the Morrison claim.

GEOLOGY

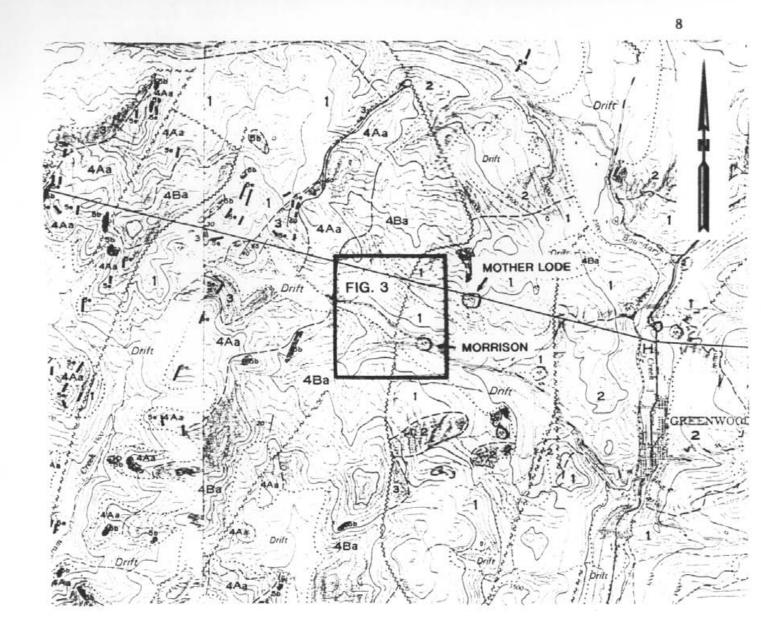
Regional - The table on the following page and the geologic map, Fig. 5 on page 8 describes the regional geology around the Lode Group claims. The table and map are from G.S.C. paper 67-42, Early Tertiary Stratified Rocks, Greenwood Map Area, by J.W.H. Mouger. The numbered geologic formations on the map are keyed on the table. For years the Triassic and Permian rocks in the Greenwood area were undifferentiated and lumped together as the Anarchist Group. More recent work has separated this unit into the Permian Knob Hill Group and the Triassic Brooklyn Formation and Rawhide Shale (argillite). The claims straddle a major fault boundary between Marron Formation to the west and older Knob Hill Group rocks to the east. The calcareous rocks of the Brooklyn Formation host the Mother Lode copper-gold deposit just east of the project area.

Property Geology - The property was geologically mapped and the surface features were recorded. The Tertiary - Permian contact was noted where exposed and extended through the mapped area where covered based on the I.P. data. Figure 3 shows the geology and surface features as mapped. Almost all outcrops occurring on the Deerhorn, Gold Bug, Morrison, Bee and Little Buffalo Fr., east of the contact are Knob Hill chert and greenstone. The exception is a small limestone lens associated with the known mineralization on the Morrison, and it is considered to also belong to the Knob Hill Group. Some outcrops of very dark green to black Knob Hill rocks occur in the area of the west corner of the Morrison and on the Tri

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Era	Period	Formation and thickness (feet)	Lithology
	Pleistocene to Recent		Glacial silts and sands, alluvium, etc.
		Unconformity	
	Oligocene (?) Undesignated breccia		Brecciated chert, greenstone, igneous plutonic rocks
CENOZOIC	UU	Inconformity (?)	_
-1		Marron Formation and related intrusions 5, 900 +	Porphyritic andesite and trachyte, minor pyroclastic rocks
ુ	Eocene	Kemle River Formation 300 m 4,000	Volcanic sandstones, acidic pyroclastic and flow rocks, shale, conglomerate
		Unconformity	
2	Cretaceous	(?) Valhalla and Nelson intrusions	Granite, quartz mon- zonite, granodiorite, quartz diorite, minor serpentine
MESOZOIC	Intrusive contact		
4	Triassic	Brooklyn Form.	Limestone, chert sharpstone conglom- erate, minor skarn, siltstone, green argillite and agglomerate
Uncanformity (?)			
PALAEOZOIC	Permian and/or earlier	18,006 H.11 5-200	Chert, greenstone, black phyllite, schist, amphibolite, lime - stone and argillire

TABLE OF FORMATIONS





Fr. Most of these outcrops are strongly magnetic and coincide with the west end of a magnetometer high anomaly. These rocks contain minor disseminated pyrite, are very silicious and could be altered chert rather than greenstone. The Knob Hill chert is usually slightly rusty and probably contains some disseminated pyritic which would account for the higher I.P. background values over it.

One of the objectives of this program was to explore the possibility that the potentially favourable contact zone and older favourable host rocks might subcrop well up the bottom of Mother Lode Creek and its tributary coming in along the west end of L2+00S. However, work completed during this program proves that this is not the case as shown on Figures 3 and 4. No significant mineralization has been reported on the Lode claims but the property is well located with regard to past production. Recent drilling by Minnova has intersected interesting amounts and widths of gold mineralization in shear zones in Knob Hill chert and greenstone on claims bordering the Lode Group to the south.

GRID

The grid location was established from the west corner of the Morrison claim at grid station ON, 3+00E. Crosslines were run using axes and line locations were turned off the baseline using a tripod mounted brunton compass due to high magnetic susceptibility in the Morron Volcanics. Lines 4 and 5 north were recut to the west because they were found to be too far off their intended location.

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MAGNETOMETER SURVEY

The fill-in and detailed magnetometer survey was completed by Bill Markin under the writer's supervision on May 8th and 14th, 1992. The instrument used was a Unimag TM Model G-836 proton magnetometer manufactured by Geo-Metrics. Readings are taken by pressing a button, releasing it, and reading an automatic battery powered lighted digital display. The reading is 4 digits representing the first 4 digits in the earth's total magnetic field. Therefore the instrument measures the total magnetic field to the nearest 10 gammas.

The magnetometer survey results are shown on Fig.4 in the pocket of this report. Base stations established during the 1990 survey located at BL 0+00E, 3+00N and BL 0+00E, 3+00S, were used and a new base station was established at 0+00N, 3+00E.

Readings were taken in traverses of less than one hour with first and last readings at the base station. Base stations were tied to each other immediately using a vehicle to drive back and forth. The first base station was assigned a value of the first reading there. Where diurnal variation occurred during a traverse a linear correction against time was made to the nearest 10 gammas. Then all values were corrected for the difference between the base station's assigned original value versus drift during the course of the survey. All values are plotted on Fig. 4 as the corrected total magnetic field in gammas less 56,000 gammas for convenience.

During this 1992 survey, new readings were taken at a number of the old stations. Correlation was usually very good and new plotted values are averaged from the old and new readings. On those very few readings where a significant difference occurred, a judgement was made to discard what appeared to be the more erroneous value based on surrounding data.

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detailed magnetometer survey outlines several distinct The Most of the area covered west of the Tertiary-Permian features. contact is characterized by a number of mag highs and lows which is interpreted to represent interbanded flows of magnetically higher andesites and felsic units of low magnetic susceptibility, the Marron Volcanics. For the most part, the Knob Hill chert covered is represented by indistinctive background readings in the 1100 to 1400 gamma range. A distinct magnetometer high was outlined from the area around the west corner of the Morrison claim and trends west-north-west, along the norther border of the Morrison and off The west end of this anomaly is the survey area to the east. associated with several outcrops of strongly magnetic greenstone. The east part of this anomaly trends across some large relatively uninteresting outcrops of chert in the northcentre of the Morrison claim. There is no surface explanation for the mag high there.

A low order mag high, defined by a 1500 gamma contour, trends from the west end of the mag high, just described above, and trends westerly, through the Tertiary-Permian contact and up Mother Lode Creek to about 2N, 2W. It was hoped that this represented a mineral and sulphide bearing zone, either exposed in a window west of the main contact or dipping shallowly under the Marron Volcanics. The I.P. survey returned no evidence to this effect, and most of this anomaly is spacially related to a prominent bench of thick glacial outwash located between Mother Lode Creek and the main road.

A mag low, defined by a 1000 gamma contour on lines 3S and 4S, trends northeast across the general trend. Its cause is as yet not known.

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DISCUSSION OF INDUCED POLARIZATION SURVEY

by Peter E. Walcott, P.Eng.

Introduction - Between May 29th and June 1st, 1992, Peter E. Walcott & Associates Limited carried out limited induced polarization surveys over parts of the Lode Claim group, located in the Greenwood area of British Columbia, for Mr. H.H. Shear. The survey was carried out over portions of four easterly trending lines that were part of a grid established by personnel working for Mr. Shear.

Measurements (first to fourth) separation of apparent chargeability (the I.P. response parameter) and resistivity were made every 50 metres along the lines using the pole-dipole method of surveying with a 50 metre dipole. In addition, some fifth and sixth separation readings were taken on Line 0.

The I.P. data are presented in contour form on individual pseudosections bound in this report.

Purpose - The purpose of the survey was to (1) carry out sufficient work to satisfy assessment requirements on the property and (b) to see if any skarn type mineralization might be indicated at depth by the I.P. method between Mother Lode Creek and the Morrison Shaft as suggested by the shallow magnetic response circa 350E on Line 100N.

SURVEY SPECIFICATIONS.

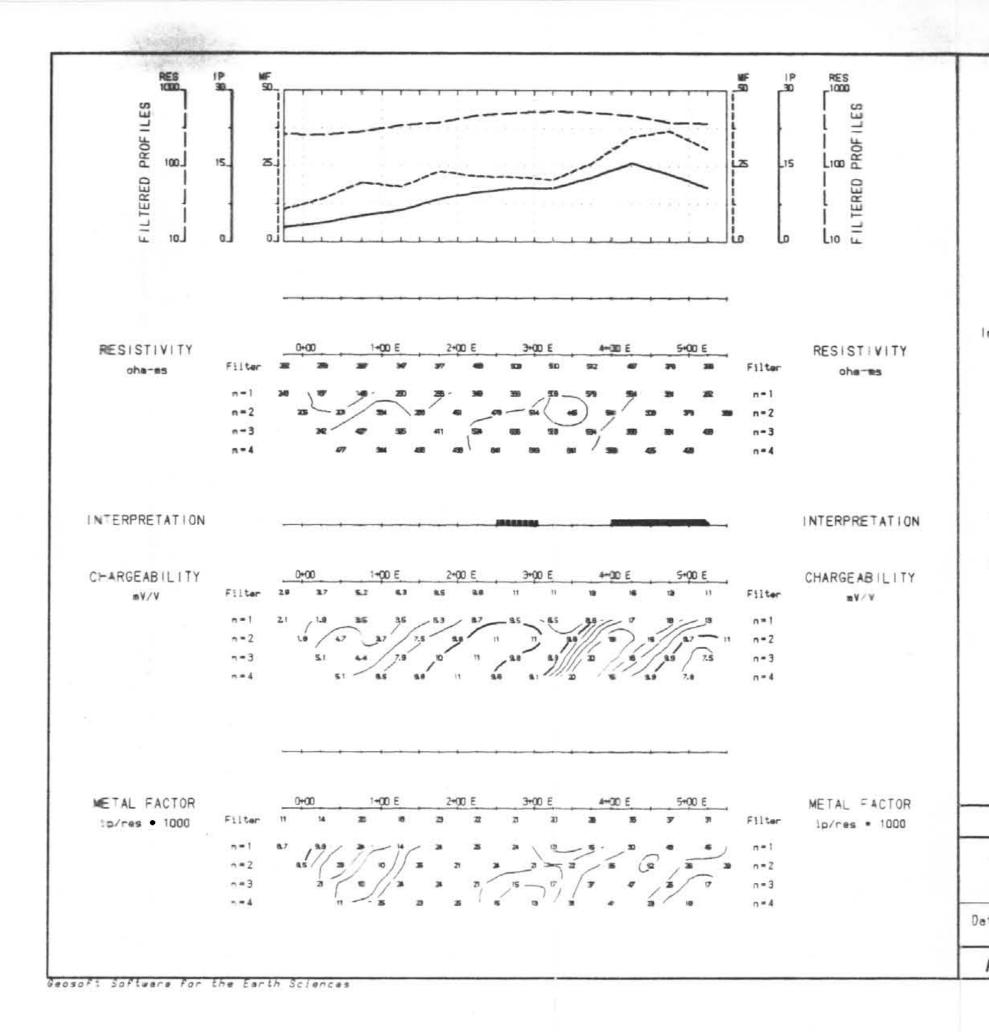
The induced polarization (I.P.) survey was conducted using a pulse type system, the principal components of which are manufactured by Huntec Limited of Metropolitan Toronto, Ontario, and BRGM Instruments of Orleans, France.

The system consists basically of three units, a receiver (BRGM), a transmitter and a motor generator (Huntec). The transmitter, which provided a maximum of 2.5kw d.c. to the ground, obtains its power from a 2.5 kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through the current electrodes C_1 and C_2 , the primary voltages (V) appearing between any two potential electrodes, P_1 through P_7 , during the "current-on" part of the cycle, and the apparent chargeability, (M₄) presented as a direct readout in millivolts per volt using a 100 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor - the sample window is actually the total of ten individual windows of 100 millisecond widths.

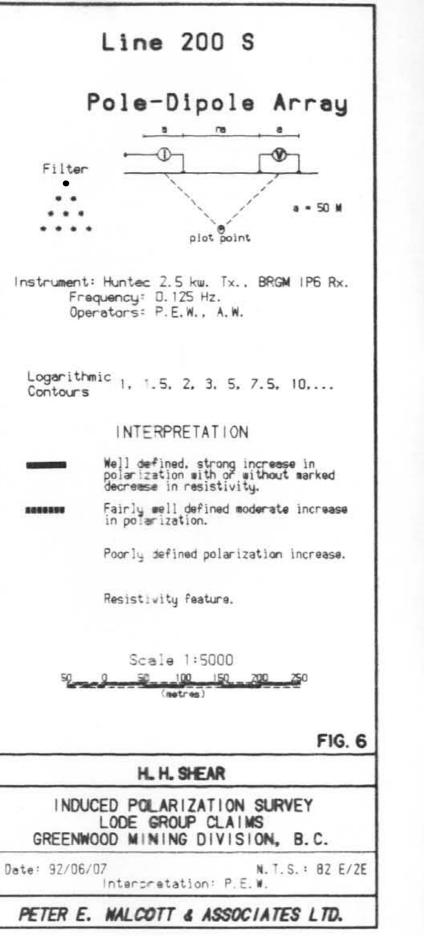
The apparent resistivity (\int_a) in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values wich that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

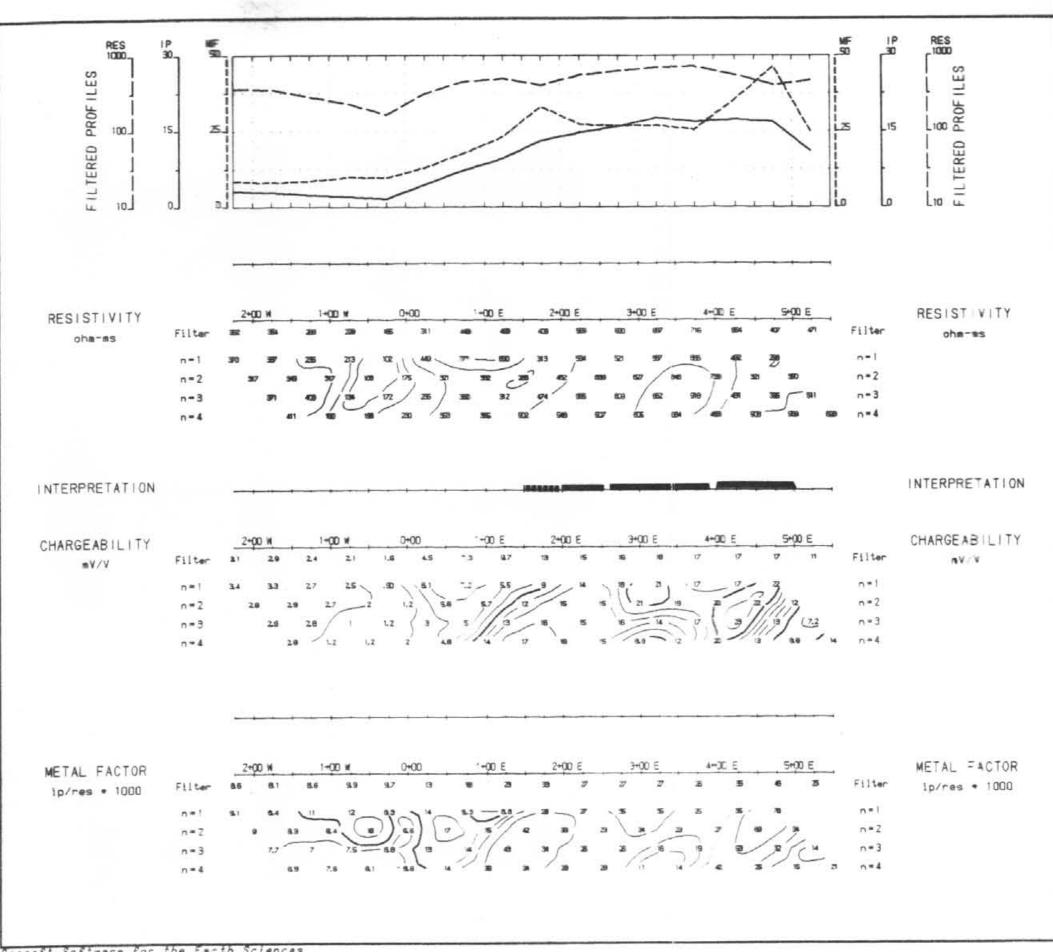
The survey was carried out using the "pole-dipole" method of surveying. In this method the current electrode, C_1 , and the potential electrodes, P_1 through P_7 , are moved in unison along the survey lines at a spacing of "a" (the dipole) apart, while the second current electrode, C_2 , is kept constant at "infinity". The distance, "na" between C_1 and the nearest potential electrode generally controls the the depth to be explored by the particular separation, "n", traverse.

A 50 metre dipole was employed on this survey, and first to fourth separation measurements made along 50 metres along the survey lines. In all some 3.4 kilometres of surveying were completed using this procedure.



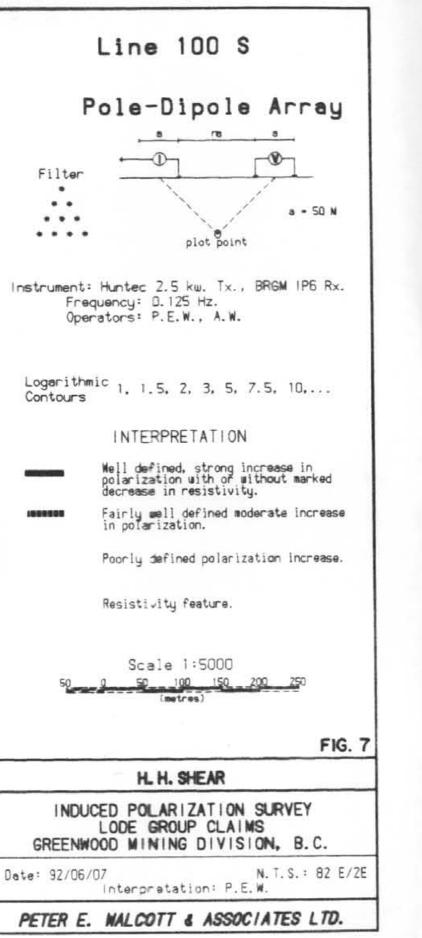
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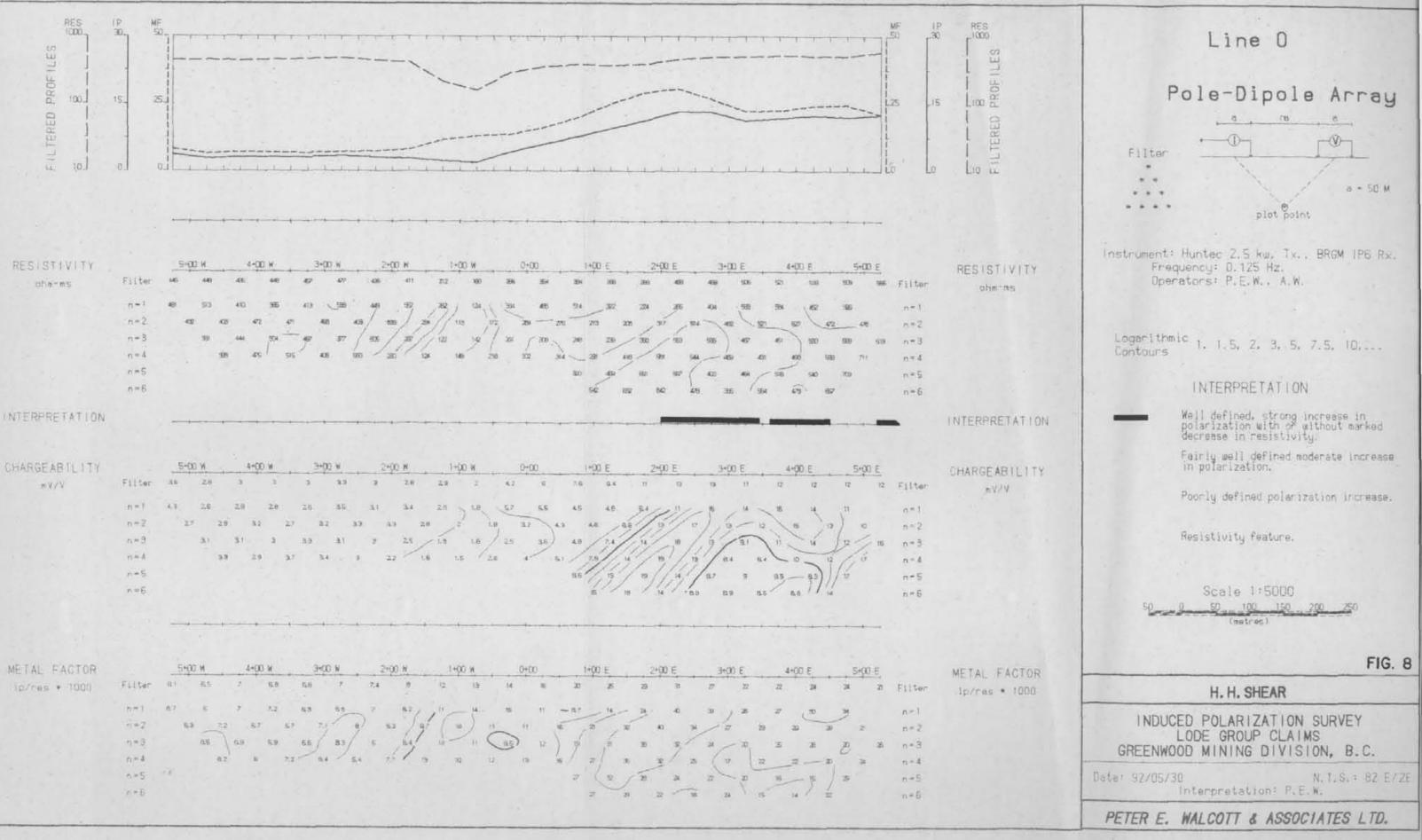


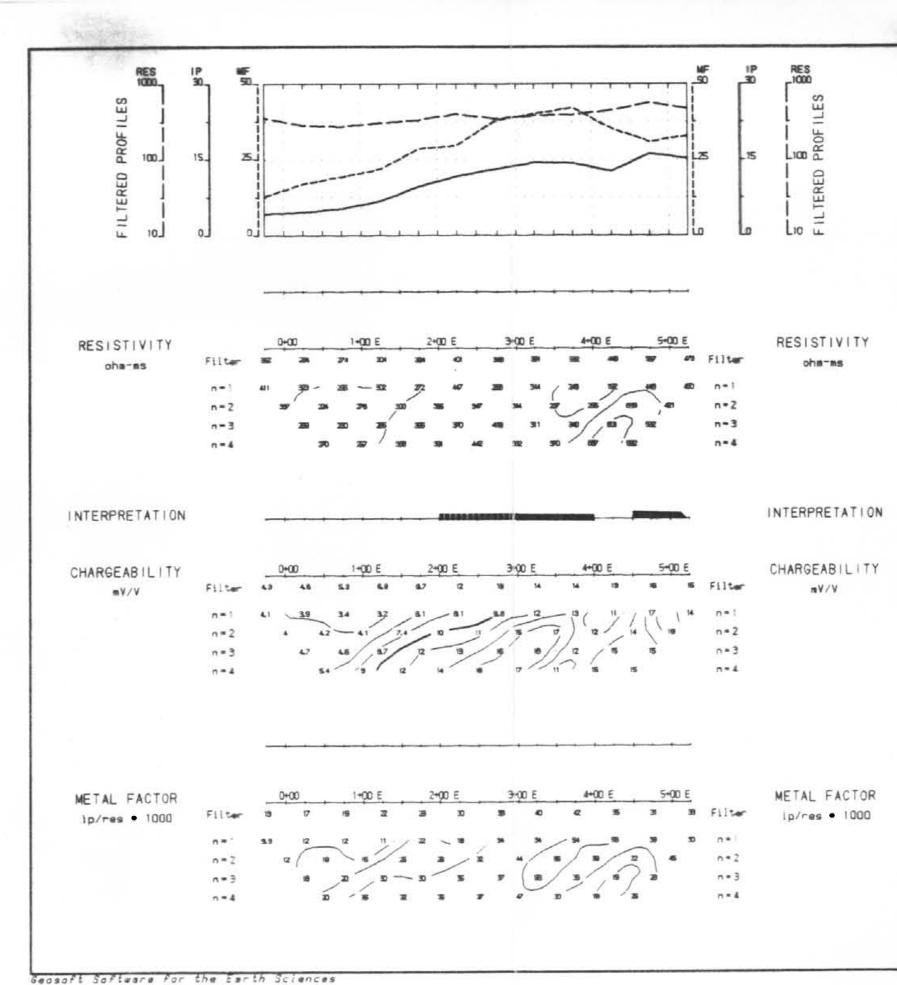


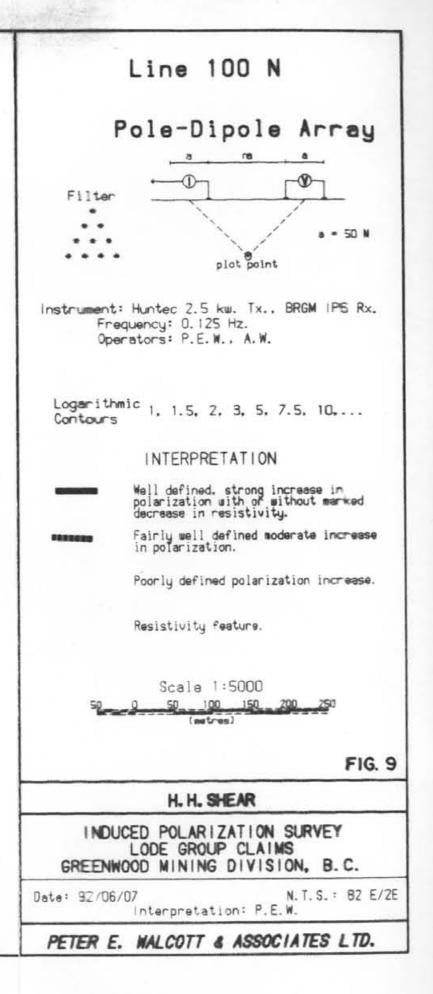
Geosoft Software for the Earth Sciences

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DISCUSSION OF RESULTS.

The I.P. survey showed the area covered to exhibit a low chargeability background - 2 to 4 mV/V - to the west over the Marron andesites and an apparent somewhat higher one to the east - 6 to 9 mV/V based on insufficient data - over the Knob Hill chert with the contact along the Deadwood Ridge fault trending northwards between 100 and 150E.

Two zones of anomalous chargeability readings are clearly discernible on the pseudo-sections trending in a northerly direction across the survey area, the more easterly of which is undefined to the east and corresponds to the pyritized mineralization associated with the old Morrison workings.

The more westerly and slightly weaker zone has been divided into two on Lines 100S and 0 respectively based on the signature of the former, as the readings over Line 0 exhibit the classical pattern over a causative source of limited depth extent.

This zone weakens in response to the south as indicated on Line 200S but would appear to have a similar causative source as its neighbour to the east.

SUMMARY, CONCLUSIONS & RECOMMENDATIONS.

Between May 29th and June 1st, 1992, Peter E. Walcott & Associates Limited carried out limited induced polarization (1.P.) surveying on four lines around and to the west of the old Morrison showings, located in the Greenwood mining camp of British Columbia.

The survey showed the area covered to exhibit a low chargeability background above which two complex anomalous zones were noted, the somewhat stronger of which was associated with the above mentioned showing.

The other zone, the main focus of investigation, is located beneath overburden cover, some 100 metres to the west and is believed by the writer to have a similar causative source.

Further correlation with geochemical, geological and magnetic data would be needed before a commitment to more fully examine its causative source be given.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LTD.

Peter E. Walcott, P.Eng. Geophysicist

Vancouver, B.C.

June 1992

CERTIFICATION.

I, Peter E. Walcott, of the Municipalaity of Coquitlam, British Columbia, hereby certify that:

1.

I am a graduate of the University of Toronto in 1962 with a B.A. Sc. in Engineering Physics, Geophysics Option.

- 2. I have been practising my profession for the last thirty years.
- 3. I am a member of the Association of Professional Engineers of British Columbia and Ontario.

Peter E. Walcott, P.Eng.

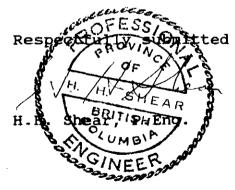
Vancouver, B.C.

June 1992

CONCLUSIONS

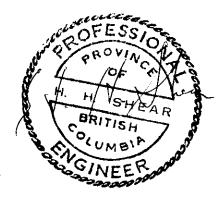
The initial objectives of the program, to find evidence of mineral potential west and northwest of the Morrison claim and the Tertiary-Permian contact, were not realized. However. the magnetometer survey disclosed a strong and distinct high trending onto the Lode Group on the Tri Fr., adjoining the west corner of the Morrison claim. Induced polarization surveying following the mag survey has partially outlined at least two anomalies trending northerly through the western third of the Morrison and on that area of the Lode Group immediately surrounding the Morrison. These anomalies occur in Knob Hill Group rocks, chert, greenstone and limestone. The I.P. anomaly on the Morrison on lines 1S and 2S are spacially related to the Morrison workings. Minnova Inc. has recently completed several thousand meters of diamond drilling in Knob Hill Group rocks just south of the Lode Group. A number of interesting gold intercepts were obtained with accompanying disseminated pyrite and minor chalcopyrite. Minnova's targets were I.P. and geochemical anomalies.

The I.P. anomalies partially outlined by this program require and warrant further investigation. Geochemical soil sampling could provide further encouragement to drill the targets but even if it doesn't, some investigative drilling of the down dip extension of these targets is warranted.



STATEMENT OF COSTS

Labour - linecutting and establishment:			
W. Markin May 1-4, 6-7 (*4 @ \$150/day)	\$ 600.00		
H. Shear May 1-4, 6-7 (*4 @ \$150/day)	600.00		
* several short days			
No an ob an ob an Anna Anna			
Magnetometer Survey:	150 00		
W. Markin May 8(1/2), 14(1/2) (1 @\$150/day)	150.00		
I.P. Survey:			
W. Markin May 30-31, June 1 (3 @ \$150/day)	450.00		
N. Laruche May 30-31, June 1 (22 hr @ \$12/hr	264.00		
T. Scott May 31 (6 hr @ \$12/hr)			
• • • • • •			
Supervision, Mapping, Mag Calc.:			
H. Shear May 9, 28, 30, 31, June 1			
(3.5 days @ \$225/day)	787.50		
	2,923.50		
	2,923.30		
I.P. Survey: Peter Walcott and Associates			
(see accompanying invoice)	4,415.17		
(bee accompanying invoice)	.,		
Report: Maps and Text			
H. Shear June 5-8, 11-12 (3 x \$225/day)	675.00		
Drafting, Secretarial	225.00		
	900.00		
Total Program	8,238.67		



Peter E. Walcott, B.A. Sc., P. Eng.



Date: June 8th, 1992

<u>To:</u> Mr. H. H. Shear, P.O. Box 188 Greenwood, B.C. VOH 1J0

Re: I.P. Survey, Greenwood, B.C., May 29th - June 1st, 1992

1.	Mobilization - pack gear, drive Vancouver - Greenwood May 29th - 2 men plus equipment plus gasoline - return	\$800.00
2.	Provision of senior geophysicist, operator, 2.5 kw pulse I.P. system, truck, computer & printer - May 30th - June 1st, 1992 = 3 days at \$1,125.00 per day	\$3,375.00
3.	Room & board 16.70, 35.00, 18.99, 24.03, 10.90, 134.55	240.17
		\$4,415.17

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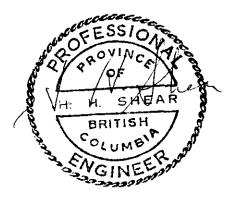
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STATEMENT OF QUALIFICATIONS

I, Henry Herbert Shear, of 325 S. Copper Street, Greenwood, British Columbia, do hereby certify:

- 1. That I am a graduate of the University of Arizona with B.Sc. degrees in Geological Engineering (1959) and Mining Engineering (1960).
- 2. That I have been actively pursuing my profession as an exploration geologist for the past 32 years, starting as a field geologist and advancing through to the senior geologist, project manager and consulting level.
- 3. I am a member of the Association of Professional Engineers of British Columbia.
- 4. Work covered by this report on the Lode Group Claims was either done by me or done under my direct supervision.

Dated at Greenwood, British Columbia, this 22nd day of June, 1992.



BIBLIOGRAPHY

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Flyes, J.T.: Verbal Communication. 1990

Geophysical Series (Aeromagnetic) Map 8497G; Greenwood, British Columbia; B.C. Dept. of Mines and Petro. Res. and Geol. Surv. Can.

Little, H.W.: Kettle River (east half), British Columbia; 1957 Geol. Surv. Can., Map 6-1957.

Monger, J.W.H.: Early Tertiary Stratified Rocks, Greenwood Map 1967 Area, (82 E/2), British Columbia; Geol. Surv. Can. Paper 67-42.

Shear, H.H. Report on Geochemical and Magnetometer Surveys on 1991 the Lode Group Claims.

