REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE KENC EAST CLAIM GROUP QUESNEL LAKE AREA, B.C. FOR CHAPMAN, WOOD AND GRISWOLD LTD.

ΒY

PHILIP G. HALLOF, Ph.D.

NAME AND LOCATION OF PROPERTY:

KENO EAST CLAIM GROUP, QUESNEL LAKE AREA CARIBOO MINING DIVISION, B.C. 52°/121° N.E.

> DATE STARTED: MAY 24, 1965 DATE COMPLETED: AUGUST 4, 1965

# MCPHAR GEOPHYSICS LIMITED

# NOTES ON THE THEORY OF INDUCED POLARIZATION AND THE METHOD OF FIELD OPERATION

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i. e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d.c. current is allowed to flow through the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces to effectively stop all current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the "metal factor" or "M.F." are a measure of the amount of polarization present in the rock mass being surveyed. This parameter has been found to be very successful in mapping areas of sulphide mineralization, even those in which all other geophysical methods have been unsuccessful. The induced polarization measurement is more sensitive to sulphide content than other electrical measurements

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because it is much more dependent upon the sulphide content. As the sulphide content of a rock is increased, the "metal factor" of the rock increases much more rapidly than the resistivity decreases.

Because of this increased sensitivity, it is possible to locate and outline zones of less than 10% sulphides that can't be located by E. M. Methods. The method has been successful in locating the disseminated "porphyry copper" type mineralization in the Southwestern United States.

Measurements and experiments also indicate that it should be possible to locate most massive sulphide bodies at a greater depth with induced polarization than with E. M.

Since there is no I. P. effect from any conductor unless it is metallic, the method is useful in checking E. M. anomalies that are suspected of being due to water filled shear zones or other ionic conductors. There is also no effect from conductive overburden, which frequently confuses E. M. results. It would appear from scale model experiments and calculations that the apparent metal factors measured over a mineralized zone are larger if the material overlying the zone is of low resistivity.

Apropos of this, it should be stated that the induced polarization measurements indicate the total amount of metallic constituents in the rock. Thus all of the metallic minerals in the rock, such as pyrite, as well as the ore minerals chalcopyrite, chalcocite, galena, etc. are responsible for the induced polarization effect. Some

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oxides such as magnetite, pyrolusite, chromite, and some forms of hematite also conduct by electrons and are metallic. All of the metallic minerals in the rock will contribute to the induced polarization effect measured on the surface.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points a distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes. The distance between the nearest current and potential electrodes is an integer number (N) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (NX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (N); i. e. (N) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (N) used.

In plotting the results, the values of the apparent resistivity and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. The resistivity values are plotted above the line and the metal factor values below. The lateral displacement of a given value is determined by the location along the survey

- 4 -

line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (NX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. These plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field, model and theoretical investigations. The position of the electrodes when anomalous values are measured must be used in the interpretation,

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 100 feet to 1000 feet for (X). In each case, the decision as to the distance (X) and the values of (N) is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

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The diagram in Figure 1 below demonstrates the method used in plotting the results. Each value of the apparent resistivity and the apparent "Metal factor" is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i. e. the depth of the measurement is increased.

# METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS



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### 24 pieces

Dwg. Misc. 4171

#/Plan Map (in pocket)

### L.P. Data Plots

-Dwgs. I. P. 2244-1 to -23

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# McPHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE KENG EAST CLAIM GROUP QUESNEL LAKE AREA, B. C. FOR CHAFMAN, WOOD AND GRISWOLD LTD.

### 1. INTRODUCTION

At the request of Chapman, Wood and Griswold Ltd., an induced pelarization and resistivity survey has been carried out on the Keno East Claim Group in the Quesnel Lake Area of British Columbia. The property is in the Cariboo Mining Division, in the northeast quadrant of the one degree quadrilateral whose southeast corner is at 52°N - 121°W.

The general area was chosen for exploration on the basis of air-photo interpretation. Subsequent geologic examination and geochemical sampling indicated the widespread presence of copper bearing sulphide mineralization. The induced polarization survey was planned in an attempt to locate and outline the zones of metallic mineralization present.

### 2. PRESENTATION OF RESULTS

The induced polarization and resistivity results are shown on the following enclosed data plots. The results are plotted in the manner described in the notes preceding this report.

Baseline	400' electrode intervals	Dwg. IP 2244-1
Line 8W	400' electrode intervals	Dwg, IP 2244-2
	100 <sup>4</sup> electrode intervals	Dwg. IP 2244-3
Line 24W	400' electrode intervals	Dwg. IF 2244-4
Line 32W	400' electrode intervals	Dwg. IP 2244-5
Line 40W	400' electrode intervals	Dwg. IP 2244-6
Line 45W	400' electrode intervals	Dwg. IF 2244-7
	25' electrode intervals	Dwg. IP 2244-8
Line 48W	400' electrode intervals	Dwg. IP 2244-9
	2:00' electrode intervale	Dwg. IP 2244-10
Line 52W	400' electrode intervals	Dwg. IP 2244-11
	200 <sup>+</sup> electrode intervals	Dwg. IF 2244-12
	100° electrode intervals	Dwg. IP 2244-13
Line 56W	400' electrode intervals	Dwg. 1P 2244-14
Line 64W	400' electrode intervals	Dwg. IP 2244-1!
	400 <sup>+</sup> electrode intervals	Dwg. IP 2244-16
Line 72W	400' electrode intervals	Dwg. IF 2244-17
	400' electrode intervals	Dwg. IF 2244-10
	200 <sup>+</sup> electrode intervals	Dwg. IF 2244-1
Line 76W	400' electrode intervals	Dwg. IP 2244-2(
	200 <sup>1</sup> electrode intervals	Dwg. IF 2244-2
Line 84W	400 <sup>+</sup> electrode intervals	Dwg. IP 2244-27
Line 92W	400' electrode intervals	Dwg. IF 2244-2

Also enclosed with this report is Dwg. Misc. 4171, a plan map of the area covered by the survey. The definite and possible induced polarisation anomalies are indicated by solid and broken bars respectively on this plan map as well as the data plots. These bars represent the surface projection of the anomalous somes as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the induced polarisation measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the spread length; i.e. when using 400' spreads the position of a narrow sulphide body can only be determined to lie between two stations 400' apart. In order to locate sources at some depth, larger spreads must be used, with a corresponding increase in the uncertainties of location. Therefore, while the center of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

### 3. DISCUSSION OF RESULTS

The reconnaissance survey was carried out using 400' electrode intervals. The results suggest a large number of distinct anomalous senes for which the patterns overlap, or more probably, large volumes of rocks containing variable amounts of metallic mineralisation. When the largest magnitude anomalies shown by the 400' spread results are checked with

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200' or 100' electrode intervals, the results look much the same; there are large areas of moderate magnitude IP effects with narrow seases of much higher IP effects.

This fact was very well demonstrated by the detailed results on Line 45W. The 400' spread results are typical for the area) there is a strong, shallow source indicated at 125 to 85. These was little, or no, overburden in much of this area, and a trench was cut along the line. Almost all of the rock exposed, seminined some metailic mineralization. The geology is complicated, and there is some surface rock with no visible mineralization; however, in most places there was sulphide mineralization varying from disseminated to quite mineralize.

A detailed survey was carried out on Line 45W from station 0+09 to station 125, using 25' spreads. The results look much like these measured for larger electrode intervals. There are large areas with M.F.'s from 100 to 500; there are a few, aarrow, very strong anomalies.

Within the brand anomalous areas, the apparent efforts manaured must be nearly equal to the true efforts for both 400' spreads and 25' spreads. Therefore, it is not surprising that the magnitudes are approximately equal. The marrow, strong anomalies are much larger in magnitude with 25' spreads because the electrode interval is nearly equal to the source. The marrow sense located at 10+08 to 9+758 and at 9+508 to 9+285 on Line 45W must contain massive mineralization.

The very large IP effects measured with 25' spreads correlate emictly with the largest effects measured using 400' spreads, The averaging

- 4 -

properties of the IP measurement are quite evident. The bread, medewate magnitude, IP effects measured with 400<sup>4</sup> spreads are due to several of the lower magnitude source shown by the 25<sup>4</sup> spreads.

The minuralization exposed by the trenching contained visible copper minorals and asympt show that the amount of copper present is of economic interest. The considerable problem remains, of depermining if, and where, a commercial ere-body exists within this large none of mineralized reck. The problem is even more complicated by the fact that it is not even possible to state with certainty that the most copper will be contained in the most concentrated sulphide mineralization. As more geologic information becomes available, some of the existing quostions may be answered.

### Baseline

The results from this east-west line are fairly typical for the area. There is a bread irregular source at 90% to 76% and another at 52% to 36%. The results suggest bread somes containing variable amounts of metallic mineralization. Some of the sources appear to be shallow, and could therefore be better evaluated using shorter electrode intervals.

### Line SW

This is the easternment of the lines surveyed; these asomalous sence have less width than to the west. The results measured using 100<sup>4</sup> electrode intervals show several strong, marrow sources. The source centered at 15+50N is the must definite.

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### Line 24W

The only anomalous effects measured on this line were at the northern and.

### Line SIW

From this line, west to Line 92W, the results are much the same. There is a narrow smemaly at 20N to 24N that is shallow; the source contored at 38N is also shallow, but has grouber width. There is a narrow, strong, cource at depth at 6N to 12N, and a broad source gotting deeper to the south at 36S to 34S.

### Line 40W

The results here are much the same as on Line 32N.

### Line 45W

The 400' sprand results on this line show a very strong, narrow anomaly at 125 to 55. A treach was buildowed over this interval, and a considerable amount of mineralization was exposed. However, the concentration of the mineralization was variable, even over short intervals.

As a test of the detailed character of the minoralization, the line was surveyed from 12+505 to 0+00 using 25<sup>1</sup> electrode intervals. The results show marrow (less than 25<sup>1</sup>) strong anomalies within broad weak anomalies that indicate dissuminated minoralization. The strongest of the sarrow sources indicate massive minoralization, which could possibly be exposed by the trenching. The broad weaker anomalies could certainly be caused by the disseminated minoralization aiready exposed.

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Several short holes have been drilled along i.ine 45W, in addition to the trenching. The results of this drilling, and a goologic section along the trench, should be prepared in order to correlate the IP anomalies with the known mineralization.

### L4ne 45W

The results on this line are similar to these to the east. The 400' spread results have been extended to 100N, and the anomalous effects extended to the end.

The 200" sprind dotail results confirm the anomalies, and give more information concerning the character of the source. For instance, the single high reading at 0+06 to 4N has been confirmed with very large values, and some width indicated. The low magnitude, bread anomaly entending to 10N is much the same; the similar bread anomaly south of the baseline has also been confirmed.

### Line 52W

This was one of the lines choose for considerable detail. The anomalies have also been checked using vertical loop XM and Afmag.

When 400' electroic intervals were used, the effects from the individual anomalies are averaged together; however, the 200' spread results abov four marrow, strong, anomalies with weak effects between. The strong shallow anomaly contered at 265 gives a definite EM and Afmag conductor; some of the effect IP anomalies also correlate with weaker conductors.

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The 100' spread results on this line are very similar to those on Line 8W, except that there are more anomalies. There is a very strong, shallow source at 27+50S, with a second source at depth at 24+50S. These two were averaged into one anomaly on the 200' spread results. There is a large magnitude, complex anomaly at 225 to 185 that was also shown as a single anomaly by the 200' spread results.

To the north, the results show a series of narrow anomalies with low magnitude IP effects between.

### Line 56W

These 400' spread results show several anomalous zones. The relatively large 400' electrode intervals do not show enough of the character of the anomalies to permit: much correlation from line to line.

### Line 64W

The results on this line have the same character as these on Line 56W. The 400' spread results have been checked shifting, the electrodes 200'; the results are almost exactly the same.

### Line 72W

This is the third line that has been chosen for detail. The 400' spread results show several strong anomalies. The 200' spread results confirm the senes.

A typical anomaly is shown as being shallow at 16N to 20N using 400' electrode intervals. The 200' spreads show a larger magnitude source, at depth.

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Line 76W

The 400' spread results here are much the same as on Line 72W. The 200' spread results confirm the presence of the very strong sources.

### Line 84W

The 400' spread results on this line show larger magnitude anomalies than were measured on most of the lines to the east. This was one of the last lines surveyed, and no time was available for detail with shorter electrode intervals.

### Line 92W

There was no detail carried out on this line either, and some very definite anomalies shown by the 400' spread results.

### 4. CONCLUSIONS AND RECOMMENDATIONS

The LP results from the Keno East Property show the widespread presence of metallic mineralization of variable concentration. Many of the broad anomalies are probably due to only a few percent of disseminated mineralization; the very strong, narrow anomalies outlined by the detailed measurements must have massive mineralization as a source.

The geochemical results and the limited geological information available from outcrop and trenching indicate widespread occurrences of copper mineralisation, in some form.

It is obvious from this data that a considerable amount of

evaluation and investigation are needed, and warranted, to determine the possible presence of a copper deposit of commercial importance. Initially. any drilling must also be designed to give geologic information and to help determine the type of mineralization, massive or disseminated etc., that could be important.

There are several places that could be tested with the first drill holes. The specific targets have been listed below, with no particular preference.

1.	Line 8W - 15+50N;	drill to intersect at depth of 125 to 150 feet
2.	Line 8N-3N to 5N;	drill at -45° to south from 5+50N
3.	Line 52W -27+50S and 24+50S;	drill at -45° to north from about 295
4.	Line 52W -22S to 18S;	drill north at -45° from about 22+50S
5.	Line 52W -2+50N;	drill to intersect at depth of 125 to 150 feet
6.	Line 52W -5+\$0N;	drill to intersect at depth of 125 to 150 feet
7.	Line 72W -118;	drill to intersect at depth of 200 feet
8.	Line 72W -75;	drill to intersect at depth of 200 feet
9.	Line 72W - 35;	drill to intersect at depth of 200 feet
10.	Line 84W -45;	drill to intersect at depth of 350 to 450 feet
11.	Line 92W-13N;	drill to intersect at depth of 250 to 350 feet

At the end of the first drilling program, the available information should be studied in detail to determine the requirements for further IF work. If the narrow zones above are of economic interest, further measurements using 200<sup>4</sup> spreads, and even 100<sup>4</sup> spreads, are necessary to locate the source. If the broad zones of disseminated mineralization must be evaluated by drilling, there would be no immediate need for further IP work on the lines already covered.

If it becomes important to know the complete extent of the zone of mineralisation, further IP work on additional lines will be necessary since the anomalies appear to extend off the grid in at least three directions.

MCPHAR GEOPHYSICS LIMITED

Philip G. Hallof, Geophysicist.

Dated: September 24, 1965

### ASSESSMENT DETAILS

PROPERTY: Keno East Group MINING DIVISION: Caribee SPONSOR: Chapman, Wood & Griswold Ltd. FROVINCE: British Columbia LOCATION: Quesnel Lake Area.

**TYPE OF SURVEY: Induced Polarisation** 

OPERATING MAN DAYS:	255	DATE STARTED: May 24, 1965
EQUIVALENT 8 HR. MAN DAYS	377.5	DATE FINISHED: August 4, 1965
CONSULTING MAN DAYS:	5.0	NUMBER OF STATIONS OCCUPIED: 622
DRAUGHTING MAN DAYS:	15.0	NUMBER OF READINGS TAKEN: 3722
TOTAL MAN DAYS:	397.5	MILES OF LINE SURVEYED: 37.89

CONSULTANTS:

Philip G. Hallof, 5 Minorca Place, Don Mills, Ontario.

### FIELD TECHNICIANS:

J. Parker, Box 340, Choiceland, Saskatchewan. K. Drobot, 723 Lawrence Avenue West, Toronto 19, Ontario. 3 Helpers supplied by client.

DRAUGHTSMEN:

E. Helkie, Apt. 4, 1203 Don Mills Road, Don Mills, Ontario. R. Woeds, Apt. 401, 1222 York Mills Read, Don Mills, Ontario. N. Lade, Apt. 7, 1209 Don Mills Road, Don Mills, Ontario.

MCPHAR GEOPHYSICS LIMITED

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Philip G. Hallof, Geophysicist.

Dated: September 24, 1965

# SUMMARY OF COSTS

Keno Kast

### Crew

20 days	Operating	@ \$185.00/day	\$3,700.00
20 days	Operating	@ \$180.00/day	3, 600, 00
11 days	Operating	@ \$175.00/day	1, 925. 00
3 days	Travel )	Ţ	
4-3/4 days	Bad Weather)[]	6 \$ 75.00/day	1, 143, 75
7-1/2 days	Standby )1/2	•	

# Consultant

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2 days		@ \$100.00/day	\$19, 568. 75
2 days	Travel	6 \$ 75.00 prozated	85.70

# Expenses

Meals and Accommodation	641.73	
Air Fares	507.04	
Freight and Brokerage	206.83	
Excess Baggage	26. 34	
Telephone and Telegraph	149. 60	
Taxis	41.06	
Supplies	38.77	1, 611, 37
		\$12,265.82

# MCPHAR GEOPHYSICS LIMITED

Shilp J. Hell

Philip G. Hallof, Geophysicist

### CERTIFICATE

I, Philip George Hallof, of the City of Toronto, Province of Ontario, do hereby certify that:

I am a geophysicist residing at 5 Minorca Place, Don Mills,
(Toronto). Ontaris.

2. I am a graduate of the Massachusetts Institute of Technology with a B. S. Degree (1952) in Geology and Geophysics, and a Ph. D. Degree (1957) in Geophysics.

3. I am a member of the Society of Exploration Geophysicists and the European Association of the Exploration Geophysicists.

4. I have been practising my profession for ten years.

5. I have an direct or indirect interest, nor do I expect to receive any interest, direct or indirect, in the property or securities of Chapman, Wood and Griswold Ltd.

6. The statements made in this report are based on a study of published literature and unpublished private reports and geophysical data.

**Dated at Toronto** 

Philip G. Hallof, PK.D.

This 24th day of September 1965.

R.C.L. FORM No. 63

Total

\$1,784.22

CANADA PROVINCE OF BRITISH COLUMBIA

In the Matter of Affidavits dated October 7, 1965

TO WIT:

on Application for Certificates of Work on KE Mineral

Claim Groups A, B, C and D.

J. John A. Wood, Vice-President of Helicon Explorations Ltd. 133 East 14th St. North Vancouver, B.C.

in the Province of British Columbia

do solemnly declare that the following expenditures have been incurred by Helicon Explorations Ltd. in implementation of an Induced Polarization-Resistivity Survey on the aforesaid Claim Groups in the Cariboo Mining Division, B.C.:

Perio	od of Survey:	May 24 through August 5, 1965	(August 5 - de-mobilization)
1.	McPhar Geop	hysics Ltd.	\$12,265.82
2.	Field helpers	and assistant technician supplied	5 353 50
	by Chapman,	wood & Grinwold Ltd.	\$17,618,32

Detail of Item 2:

Employee	Period	Rate Per Day	No. Days	Amount . Paid
W. Kowalkski	May 24 - Aug. 5	\$15.00	50	\$ 750.00
C. Critchlow	May 24 - Aug. 5	\$15.00	51	765.00
F. Critchlow	May 26 - Aug. 3	\$15.833	18	285.00
D. Addison	June 1 - Aug. 2	\$14.166	38	538.31
F. Baron	June 1 - June 30	\$15.00	15	225.00
R. A. Barr	May 31 - July 3	\$14.166	19	269.15
D. Wentworth	June 3, 4	\$18, 333	2	36.67
V.W. Shuttleworth	<b>June 21 - June 26</b>	\$18.333	6	110.00
A. O'Dell	June 6 - July 26	\$18.333	2	36.67
W. Orr	June 1 - Aug. 4	\$14.166	21	<b>2</b> 97.49
N. Blain	July 10 - July 31	\$14.166	18	254.99
				\$3, 568. 28
Surcharge by Chapm	an, Wood & Griswold	Ltd. to		

Helicon Explorations Ltd. for taxes, insurance, holiday pay, and other fringes

AND I make this solemn declaration, conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath, and by virtue of the CANADA EVIDENCE ACT.

in the

DECLARED before me at

Province of British Columbia, this

day ot

A. D., 19

A Notary Public in and for the Province of British Columbia. A Commissioner for taking affidavits within British Columbia

John a. Wood







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OF ANOMALOUS ZUNES	KENO EAST PROPERTY, QUESNEL
DEFINITE	Scale-One inc
POSSIBLE	NOTE LOGARITHMIC

![](_page_33_Figure_0.jpeg)

ELECTRODE CONFIGURATION $x - \pi x \rightarrow x \rightarrow x$ x - 400 PLOTTING X POINT	MCPHAR GEOPH INDUCED POLARIZATION A
n - 4	
n - 2 n - 1	
· · · · · · · · · · · · · · · · · · ·	3 25 285 24S 20S 16S ?
n - 1	151 <sup>3</sup> 65
n - 3	694 3 3 3 87 60.4 694 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
SURFACE PROJECTION OF ANOMALOUS ZONES	CHAPMAN, WOOD & ( KENO EAST PROPERTY, QUESNEL
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LINE NO- 76 W

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