

3704

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3704 MAP

REPORT ON
MAGNETOMETER & INDUCED POLARIZATION SURVEYS
IMPERIAL CLAIM GROUP
GERMANSEN LANDING AREA, BRITISH COLUMBIA
ON BEHALF OF
DOLMAGE CAMPBELL AND ASSOCIATES LIMITED
93N/13E

by

Peter J. Fominoff, B. A. Sc.

and

L. T. Jory, Ph.D., P.Eng.

October 6, 1971

CLAIMS:

Name

IMPERIAL 1 - 6, 7 Fr., 8, 9

LOCATION:

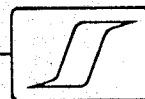
About 40 miles Northwest of GERMansen Landing, B. C.
Omineca Mining Division
125° 55° NW

DATES:

July 12 to July 15, 1971

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| (in envelope) | |
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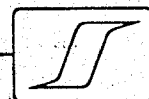
SUMMARY

On the Imperial West claims the present induced polarization survey has revealed a location of increased chargeability responses which is coincident with a location of decreased resistivities. The magnetometer survey has shown the location of the increased chargeabilities to be coincident with a location of decreased magnetic susceptibility.

Further induced polarization surveying is recommended to delimit the area of increased chargeabilities if geological investigations should warrant it.

On the Imperial East claims the induced polarization survey has not revealed any definitely anomalous chargeability responses. A magnetic and resistive contact which may indicate a geological contact has been located.

If geological considerations should warrant it, further induced polarization surveying is recommended for a more complete evaluation of the property.



REPORT ON
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GERMANSEN LANDING AREA, BRITISH COLUMBIA
ON BEHALF OF
DOLMAGE CAMPBELL AND ASSOCIATES LIMITED

INTRODUCTION

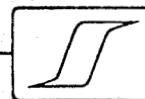
During the period July 12 to July 15, 1971, a geophysical field party under the direction of Mr. Mauro Berretta executed an induced polarization survey in the Germansen Landing area, British Columbia on behalf of Dolmage Campbell and Associates Limited.

As shown on Plate 1, on the scale of 1 inch = 4 miles, the property lies approximately 40 miles northwest of Germansen Landing, British Columbia. The topography of the area surrounding the property may be described as mountainous with the survey grid lying in a border region between alpine meadows and tree growth. Access was by helicopter.

The claims covered by the present survey are listed on the cover page of this report and are shown on Plate 2, on the scale of 1 inch = 400 feet.

Seigel Mk VII time domain (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kilowatts and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the rising and falling primary voltages set up in the ground by the transmitter. The integration of the transient polarization voltages takes place for 0.65 seconds after a 0.45 second delay time following the termination of the current-on pulse.

The purpose of an induced polarization survey is to map the subsurface distribution of metallicly conducting mineralization beneath



the grids covered. In the present area such mineralization could include pyrite, chalcopyrite and other metallic sulphide minerals. As well, minerals such as magnetite, sericite, chlorite and others may contribute to chargeability responses and may not always be distinguishable from responses due to sulphides.

The three electrode array was employed for the survey. For this electrode array, one current electrode and two potential electrodes traverse the profiles with an interelectrode spacing called "a". The second or "infinite" current electrode is placed a distance greater than $5a$ from the measuring point which is defined as the midpoint between the moving current electrode and the near potential electrode. For the reconnaissance survey observations were taken for $a = 400$ feet with 200 foot station intervals on the Imperial West grid and for $a = 200$ feet with 100 foot station intervals on the Imperial East grid. One line on the Imperial East grid was surveyed with both $a = 200$ feet and $a = 400$ feet.

The survey grid consisted of several widely spaced lines as shown on the grid map on Plate 2. The total survey line length was about 4700 feet.

GEOLOGY

The geology of the area including and surrounding the present claims is shown on GSC map sheet 844 A on a scale of 1 inch = 4 miles. The survey grid lies within a large area mapped as underlain by acidic intrusive rocks of the Upper Jurassic or Lower Cretaceous Omineca Intrusions.

The geology of the property has been described by L. T. Jory of Dolmage Campbell and Associates Limited as follows:

"Bedrock is exposed over about 25 percent of the Imperial claim



group. The principal exposures are in a high rock ridge along the southern margin of the claims and in north-facing rock bluffs on Imperial 8 and 9 claims.

Three principal rock types are present. Sedimentary gneisses in northwesterly trending, lenticular zones up to about 500 feet wide are enclosed in medium-to coarse-grained syenites. Peripheral to the syenites are medium grained monzonites, in part gradational with the syenites. The major structures trend northwesterly parallel to the gneissosity."

The target of the present survey was a large tonnage low grade type of copper sulphide deposit which might lie within 300 feet of ground surface.

Data from a magnetometer survey carried out by personnel of Dolmage Campbell and Associates Limited has been made available to the writers and is incorporated in this report.

DISCUSSION OF RESULTS

Plate 2, on the scale of 1 inch = 400 feet shows the grid layout, claim locations and geophysical profiles. The geophysical profiles consist of chargeability (the induced polarization characteristic of the rock), resistivity and magnetometer data. The vertical scales for these profiles are 1 inch = 10.0 milliseconds for chargeability, and 2 inches = 1 logarithmic cycle with the Base Line taken as 1000 ohm-meters for resistivity. The magnetometer scale is 1 inch = 1600 gammas.

The profiles indicate that the background chargeability range is from 6.0 to 8.0 milliseconds, a normal response range for acidic intrusive rocks as are believed to underlie the present property. With this background a subsurface distribution of 1 percent by volume of electronically conducting



mineralization would be expected to add approximately 10.0 milliseconds to the background level.

Imperial West Claims

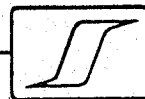
The chargeability responses reach a maximum of 15.0 milliseconds which would indicate an electronically conducting material content of about 1 percent by volume. However, since only one electrode spacing was employed there is not sufficient data to make depth estimates to the source of the chargeability increases. Also, since only one line was surveyed and the anomaly was not delimited to the north, the areal extent of the region of increased chargeabilities is not known.

The resistivities range from about 500 to 1500 ohm-meters. A decrease in resistivity level north of 2 N corresponds to an increase in chargeabilities over the same location.

The magnetometer survey indicates a magnetic contact near the resistivity and chargeability contacts at 2 N. Material of lower magnetic susceptibility lies to the north of the contact and material of higher susceptibility lies south of the contact. A northerly dipping magnetic source lies between 8 S and the Base Line.

Imperial East Claims

Maximum chargeability responses of 9.0 milliseconds on Lines 6 E and 20 E are about 3.0 milliseconds above the local background. Such an increase would indicate a uniform distribution of less than 1/2 of 1 percent by volume of electronically conducting material. Only two readings of 9.0 milliseconds are recorded on each line and the increases are not delimited on one side. Since the survey lines were spaced 600 feet or more apart, there was no continuous lateral line to line coverage and thus line to



line correlations cannot be made.

Electrode spacings of 200 feet and 400 feet were employed over Line 30 E. The maximum responses were 8.5 milliseconds, a normal response range for acidic rocks.

The resistivity responses range from 300 to 4000 ohm-meters. Again, line to line correlation is not possible. However, resistivities increase to the north on each line.

The magnetometer results indicate a magnetic contact at the Base Line on all lines surveyed. The higher susceptibility material lies to the north. The increasing resistivity and magnetic susceptibility north of the Base Line might indicate a geological contact.

CONCLUSIONS AND RECOMMENDATIONS

Imperial West Claims

The present induced polarization survey has revealed a location of increased chargeability responses, north of 2 N, coincident with decreased resistivity responses. The area of increased chargeabilities is also coincident with a zone of decreased magnetic susceptibility.

The source of the chargeability increases contains the equivalent of about 1 percent by volume of electronically conducting material.

Since only one line of induced polarization surveying was completed and only one electrode spacing was employed, the areal extent of the increased chargeability responses is unknown.

If geological investigations show the area to be favourable for the occurrence of economic type of metallic sulphides, further induced polarization surveying with multiple interelectrode spacings is recommended to delimit the area of increased chargeabilities. Depth estimates to the source of the increased chargeability responses could be made and drill hole



locations could be recommended based upon the additional induced polarization survey results.

Imperial East Claims

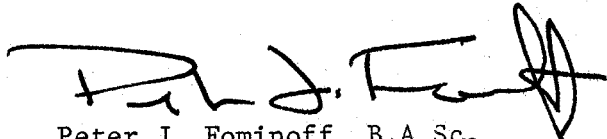
The induced polarization survey has not revealed any definitely anomalous chargeability responses. Slight increases in chargeability on the southern end of Line 6 E and on the northern end of Line 20 E may be indications of metallic sulphide deposits. However, more data delimiting the chargeability increases and multiple electrode spacing readings would be required to make a more meaningful interpretation.

A magnetic and resistive contact which may be indicative of a geological contact occurs near the Base Line on all lines.

If geological investigation should warrant it, further induced polarization surveying is recommended to detect and delimit any chargeability increases and to make a more complete interpretation.

Respectfully submitted,

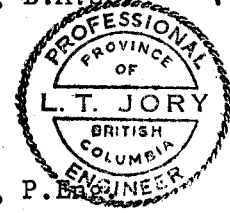
SEIGEL ASSOCIATES LIMITED



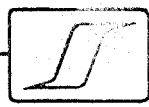
Peter J. Fominoff, B.A.Sc.
Geophysicist

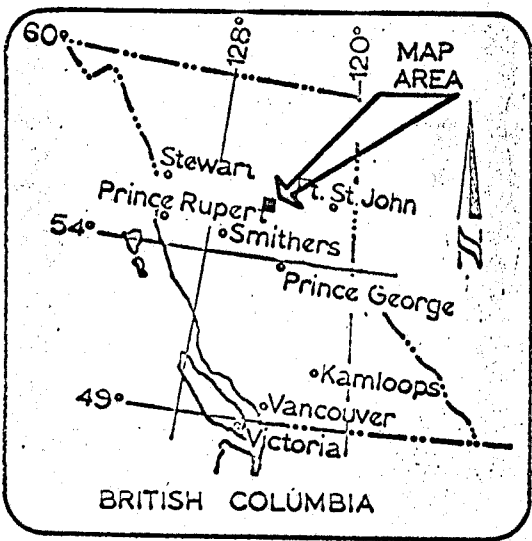


L. T. Jory, Ph.D., P. Eng.



Vancouver, B. C.





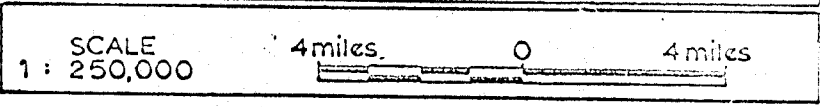
DOLMAGE CAMPBELL & ASSOCIATES LIMITED

LOCATION MAP
IMPERIAL GROUP

GERMANSEN LANDING AREA BRITISH COLUMBIA

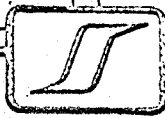
[Signature]

PROFESSIONAL
PROVINCE OF
M. T. JORY
BRITISH COLUMBIA
ENGINEER



Survey by
SEIGEL ASSOCIATES LIMITED
JULY 1971

PLATE 1



DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of

I, Lisle T. Jory

of #1000 - 1055 West Hasting Street,
Vancouver 1, British Columbia

in the Province of British Columbia, do solemnly declare that

Expenditures for work performed on the Imperial Claim Group between
July 12 and July 15, 1971 are as follows:

| | |
|---|-------------------------|
| Geophysical Survey (contracted Selgel Associates Ltd.) | \$870.56 |
| Wages - 4 man days | \$ 93.80 |
| Camp Maintenance, food, fuel, etc. (24 man days @ \$10/man/day | \$240.00 |
| Transportation, helicopter from Germansen Landing (35 miles) G-2: 4 hours @ \$130. | <u>\$520.00</u> |
| | <u><u>\$1724.36</u></u> |

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."

Declared before me at the *City*
of *Vancouver*, in the
Province of British Columbia, this *22*
day of *June* *1972*, A.D.

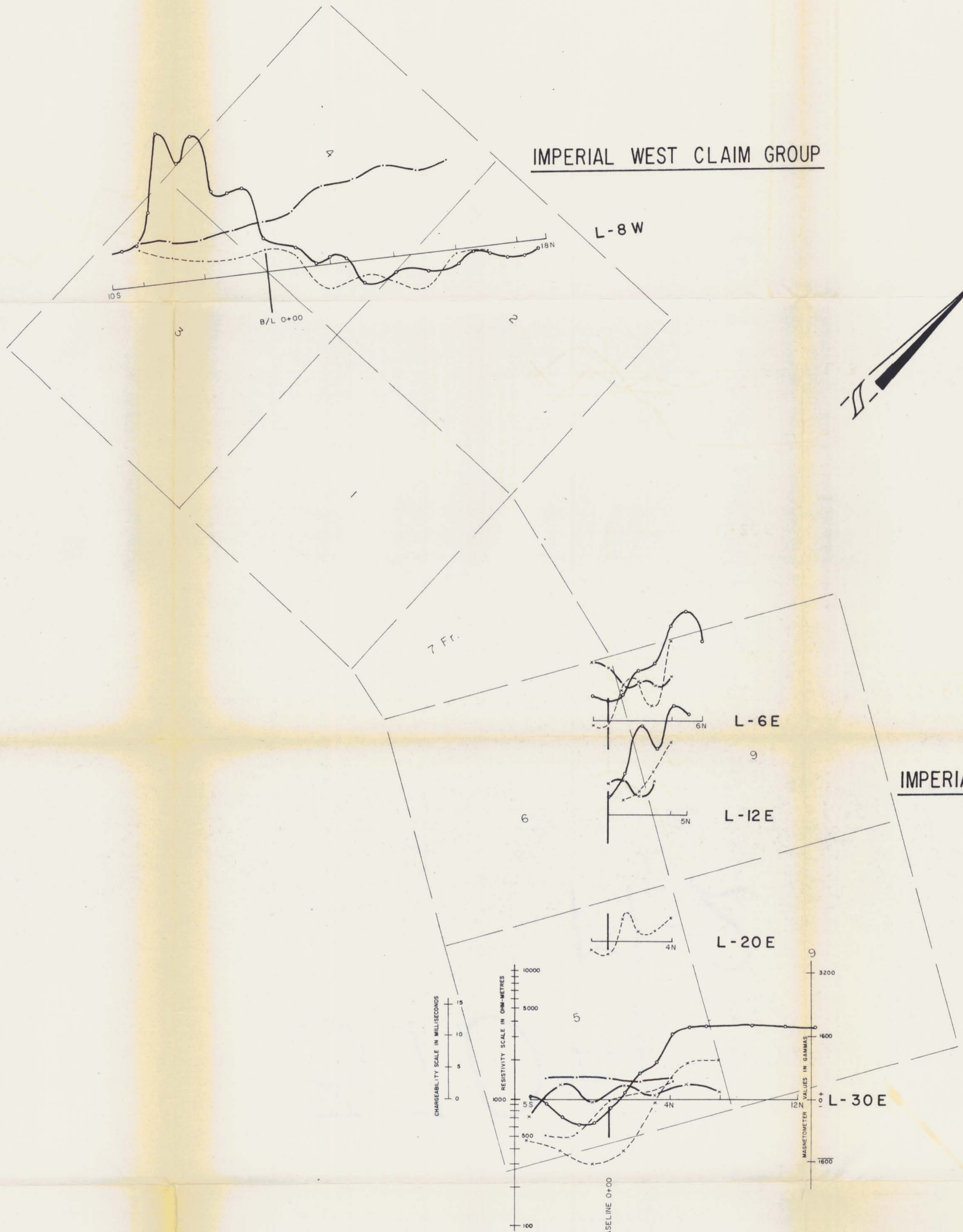
Lisle T. Jory

Jill Turner
A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.
Notary Public

APPENDIX 2STATEMENT OF LABOUR COSTS

| <u>Name</u> | <u>Dates</u> | <u>No. of Days</u> | <u>Daily Rate</u> | <u>Cost</u> |
|---|------------------|--------------------|-------------------|----------------|
| J. Tenta (Linecutting, Control) | July 11-12, 1971 | 2 | \$24.80 | \$49.60 |
| S. Mathews (Linecutting, Control) | July 11-12, 1971 | <u>2</u> | <u>\$22.10</u> | <u>\$44.20</u> |
| | | 4 man days | | \$93.80 |

*Note: Daily rates include 15% labour overhead for holiday pay, employees contribution to Canada Pension Plan etc.



IMPERIAL WEST CLAIM GROUP

L-8W

IMPERIAL EAST CLAIM GROUP

L-6E

L-12E

L-20E

L-30E

3704
M-2

LEGEND

- CHARGEABILITY SCALE: 1 inch = 10 MILLISECONDS
- RESISTIVITY SCALE: 2 inches = 1 LOGARITHMIC CYCLE WITH LINETRACE TAKEN AS 1000 OHM-METRES
- ELECTRODE SPACING: $a = 200'$ (solid line)
- ELECTRODE SPACING: $a = 400'$ (dashed line)
- MAGNETOMETER SCALE: 1 inch = 1600 GAMMAS (line with circles)
- ELECTRODE SPACING: $a = 200'$ (dashed line)
- ELECTRODE SPACING: $a = 400'$ (dashed line)

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3704 MAP #2

PLATE 2
DOLMAGE CAMPBELL & ASSOCIATES LIMITED
IMPERIAL EAST AND IMPERIAL WEST PROPERTIES
GERMANSEN LANDING AREA, BRITISH COLUMBIA
GROUND MAGNETOMETER & INDUCED POLARIZATION SURVEYS
GROUND MAGNETOMETER, CHARGEABILITY AND RESISTIVITY PROFILES
GRID AND CLAIMS
SCALE: 1 inch = 400 feet
400 feet 0 400 feet
SURVEY BY SEIGEL ASSOCIATES LIMITED JUNE 1971

