3472

BRALORNE CAN-FER RESOURCES LTD.

GEOPHYSICAL REPORT

P J Claim Group, 106 miles S.W. of Fort Nelson, B.C.
Latitude 58° 08' North Longitude 125° 15' West

AUTHOR: Glen E. White, Chief Geophysicist

P. ENGINEER: W. G. Stevenson

DATE OF WORK: June 28 - July 5, 1971

CONTENTS

ILLUSTRATIONS

INTRODUCTION

During the period June 28 to July 5, 1971, inclusive, Tri-Con Exploration Surveys Ltd., on behalf of Bralorne Can-Fer Resources Ltd., conducted a programme of V.L.F. Electromagnetometer and Induced Polarization surveying on the PJ claims group located some 106 miles southwest of Fort Nelson, B.C., in the Liard Mining Division, Province of British Columbia.

The induced polarization survey was undertaken to try and locate areas of high chargeability, possibly indicative of a large body of sulphide mineralization, while the V.L. F. electromagnetometer survey was conducted to try and trace known mineralized and graphitic fault zones and to try and delineate any near surface lenses of sulphide mineralization.

PROPERTY

The PJ property as shown on claims map 94K 3W (M), consists of some 86 full-sized, contiguous mineral claims.

The geophysical surveys were conducted completely or partially on mineral claims PJ 12, 14, 16, 43, 44, 45, 46, 47 and 48 which are illustrated in respect to the complete claim group in Figure 1.

LOCATION AND ACCESS

The PJ property is situated at 58° 08' North latitude and 125° 15' West longitude, some 106 miles southwest of Fort Nelson, B.C., on the Gataga River and some 24 miles due west of the Tuchodi Lakes, in the Liard Mining Division, N.T.S. 94K/3.

Facile access to the property is by helicopter to the Bralorne Can-Fer camp on the Gataga River and then by blazed and flagged trail, some 3200 feet northeast to the grid-proper.

SURVEY SPECIFICATIONS

Survey Grid

The geophysical surveys were conducted on a previously established survey grid consisting of 3000 feet of baseline directed in a north 20° west direction and 32,200 feet of well-cut and flagged

survey lines turned off at right angles from the baseline at 200 foot intervals. Some 6.1 line miles of V.L.F. electromagnetometer and induced polarization surveying were conducted respectively. An additional 1900 feet of detailed induced polarization surveying was conducted with "a" spacings of 10, 50, and 100 feet.

The Electromagnetometer Survey

This survey was conducted using a Geonics V.L.F. E.M. - 16 electromagnetometer. This instrument acts as a receiver only. It utilizes the primary electromagnetic fields generated by V.L.F. marine communication stations. These stations operate at a frequency between 15-25 KHZ, and have a vertical antenna-current resulting in a horizontal primary field. Thus, this V.L.F. - E.M. measures the dip-angle of the secondary field induced in a conductor.

For maximum coupling, a transmitter station located in the same direction as the geological strike should be selected, since the direction of the horizontal electromagnetic field is perpendicular to the direction of the transmitting station.

Readings were taken at 50 foot intervals and the data filtered in the field by the operator as described by D. C. Fraser, Geophysics Vol. 34, No. 6 (December 1969). The advantage of this method is that it removes the dc and attenuates long spatical wave lengths to increase resolution of local anomalies, and phase shifts the dip-angle data by 90 degrees so that crossovers and inflections will be transformed into peaks to yield contourable quantities.

The Induced Polarization Survey

The induced polarization survey was conducted with a Hewitt 1 KW I.P. transient pulse type unit deployed in the Wenner electrode configuration with an "a" spacing and traverse interval of 200 feet. In the pulse (also known as time domain) method a steady direct current is impressed into the ground for a few seconds, abruptly

terminated for a short time (usually equal to the length of pulse time) and then a steady current is impressed in the reverse direction for a few seconds and then abruptly terminated for a few seconds. This is one cycle which can be repeated. A fraction of a second after each cessation of the current pulse the decay voltage is integrated and measured. The current and total integrated primary voltage and total integrated decay voltage are then recorded for the given number of cycles. From these three measurements the chargeability in millivolts/volt and apparent resistivity in ohm-feet are calculated. The values calculated are then plotted at the center position of the array for a given set of readings.

Data Presentation

The induced polarization and V.L.F. electromagnetometer data have been plotted at a horizontal scale of 1" = 400 feet and accompany this report as contour maps as follows:

Figure 2 Induced Polarization - chargeability contoured at an interval of 1 mv/v.

Figure 3 Induced Polarization - resistivity contoured at 1000 ohm-feet levels.

Figure 4 V.L.F. Electromagnetometer dip-angle contoured at 5, 10, and 15 degree levels.

Plate 1 Detail induced polarization, V.L.F. electromagnetometer line 16+00S.

Plate 2 Detail induced polarization line 0+00

DISCUSSION OF RESULTS

The property is situated in the Rocky Mountain Belt on the flank of a U-shaped valley containing the Gataga River. The property is understood to be underlain primarily by steeply dipping siltstone. These siltstones have been strongly faulted and contain

shear zones bearing lenses of massive chalcopyrite mineralization.

The filtered V.L.F. E.M. - 16 dip-angle data illustrated in figure 4, shows two strong intersecting conductors, one trending in a north 32° west direction and the other in a due north-south direction. The direction to the V.L.F. transmitter station at Jim Creek, Washington is also shown in figure 4. Both conductors trend in a general north-south bearing parallel to the direction and thus will yield an optimum electromagnetic response. The strongest electromagnetic response occurs at the intersection of the two conductor axis at line 12+00S - 3+00E.

The induced polarization resistivity data, figure 3 shows moderate variations from a low of 1580 ohm-feet to a high of 8840 ohm-feet. These changes in general can be attributed to variations in the physical characteristics of the overburden and in the depth to bedrock. Correlation of the electromagnetic and resistivity data indicates that the two strong electromagnetic highs, one on line 2+00S and the other on line 12+00S, are coincident with resistivity lows.

The induced polarization chargeability data figure 2, varies from a high background response of some 6 mv/v to a high of 18.7 mv/v. The strongest chargeability response is located on the eastern side of the survey area and is coincident with a resistivity low. Some of the other areas of moderately high chargeability also show some correlation with areas of low resistivity values. Correlation of the electromagnetometer and chargeability data shows that several areas contain coindicent anomalous values. Such as line 26 +00S - 1+00W, 12+00S - 3+50W, lines 14+00S and 16+00S at 1+50E and 2 +00E respectively and line 16+00S 8+00E. Plate 1 shows that this anomaly is situated just on the flank of the chargeability high, but that the 10 foot and 50 foot "a" spacings indicate a narrow vein of chargeable material in this area. The resistivity data on Plate 1 indicates a general increase in resistivity with increasing depth, while the detail chargeability data indicated a maximum per volume

response with the 50 foot "a" spacing. This would indicate a probable maximum concentration of chargeable material in the 30 to 50 foot depth range. The detail induced polarization surveying on line 0+00 shown on plate 2, located a slight increase in response at 3+50E. The area on line 0+00 designated as "Pit" on the maps contains small veinlets of chalcopyrite mineralization. The electromagnetometer survey located a strong electromagnetic high striking in this direction on line 4+00S while the induced polarization data indicated that this mineralization lies on the flanks of a moderate chargeability anomaly which reaches a high of 10.1 on line 4+00S 3+00E. It would appear that the electromagnetometer survey likely delineated fault zones and/or near surface massive sulphide mineralization, whereas the induced polarization survey may have detected discontinuous veinlets of mineralization and/or areas of significant amounts of graphite. In either case, the per volume of chargeable material does not increase with depth in the areas detailed, though a narrow vein of mineralization could do so and not be detected by the larger "a" spacings.

CONCLUSIONS AND RECOMMENDATIONS

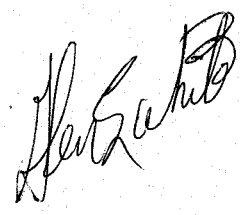
A program of V.L.F. electromagnetometer and induced polarization surveying were conducted on the PJ claim group in the Liard Mining Division on behalf of Bralorne Can-Fer Resources Ltd.

The electromagnetometer survey delineated an area of intersecting north-south conductors which may possibly reflect fault zones and/or lenses of sulphide mineralization. The induced polarization data located one area of particularily strong chargeability response and several other areas of moderately anomalous intensities which are likely caused by graphite and/or sulphide mineralization.

The electromagnetic conductor zones could likely be evaluated by surface trenching. The detail induced polarization surveying indicated that the chargeable body is relatively near surface, thus, tren-

ching and/or packsack diamond drilling and/or a limited amount of detail soil sampling would significantly evaluate the chargeability anomalies.

Respectfully submitted,
TRI-CON EXPLORATION SURVEYS LTD.



Glen E. White, B.Sc.
Chief Geophysicist

A P P E N D I X

Instrument Specifications

ELECTROMAGNETOMETER

A Instrument

a. Type - Geonics V.L.F.-E.M.

b. Make - Ronka E.M.-16

B Specifications

Measurement

(1) Utilizes primary fields generated by V.L.F. marine communication stations, measures the vertical field components in terms of horizontal field present.

(2) Frequency range 15 - 25 KHZ.

(3) Range of measurement - in phase ±150% or ±90°
- quadrature ±40%

(4) Method of reading - null detection by earphone, real and quadrature from mechanical dials.

(5) Accuracy - ±1% resolution.

C Survey Procedures

Method

a. Select closest V.L.F. station perpendicular to traverse lines.

b. In-phase dial measures degree of tilt from vertical position.

c. Quadrature dial calibrated in percent - null.

d. Station plot - plot values read at station surveyed.

e. Manually filter dip-angle data.

A P P E N D I X

Instrument Specifications

INDUCED POLARIZATION

A Instrument

(a) Type - Transient Pulse Prospecting Equipment
(b) Make - Hewitt Enterprises 200
(c) Size - 13¼"W x 15½"L x 9½" Deep

B Specifications

(a) Transmitter
  (1) 1,000 Watt nickle cadmium battery supply
  (2) operation mode 2 seconds on, 2 seconds off, 2 seconds reverse
      4 seconds on, 4 seconds off, 4 seconds reverse
  (3) Cycles .5, 1, 2, 3, 4 selected on switch
  (4) Timing - solid state logic circuitry
  (5) Current Ranges 10, 50, 100, 500, 1,000, 5,000 milliampere

(b) Receiver
  (1) Solid State
  (2) dV and I.P. solid state memory storage
  (3) dV ranges 10, 50, 100, 1,000, 1,500 millivolts
  (4) I.P. ranges .1, .5, 1.0, 5, 10, 15 millivolts
  (5) Self-potential-direct dial reading from polartometer
  (6) A.C. filtering-low pass active filter
  (7) Transient delay period .4 seconds
  (8) Integrating period 1.2 seconds
  (9) Power supply-four 9 volt transistor radio batteries

C Survey Procedure
(1) Wenner, pole-dipole or schlumberger array

D Data Presentation
(1) chargeability percent chargeability in milliseconds or $\frac{\text{millivolts}}{\text{volt}}$
(2) Resistivity - ohm-feet
(3) Self-potential-millivolts often not used

C E R T I F I C A T I O N

TO WHOM IT MAY CONCERN:

I, GLEN ELMO WHITE, of the City of Richmond in the Province of British Columbia, hereby certify:

1. That I am a Geophysicist and reside at 117-641 Gilbert Road in Richmond, B.C.
2. That I studied Geophysics and Geology and graduated from the University of British Columbia with the degree of Bachelor of Science.
3. That I have been engaged in Mining Exploration for eight years.
4. That I do not have, nor do I expect to receive, either directly or indirectly, any interest in the PJ Claims or in the securities of Bralorne Can-Fer Resources Ltd.
5. That this report is based on information derived from an Induced Polarization Survey and an Electromagnetometer Survey, carried out by Tri-Con Exploration Surveys Ltd. under my supervision.

Dated this 23 day of July 1971.

Glen E. White, B.Sc.,
Chief Geophysicist

CERTIFICATE

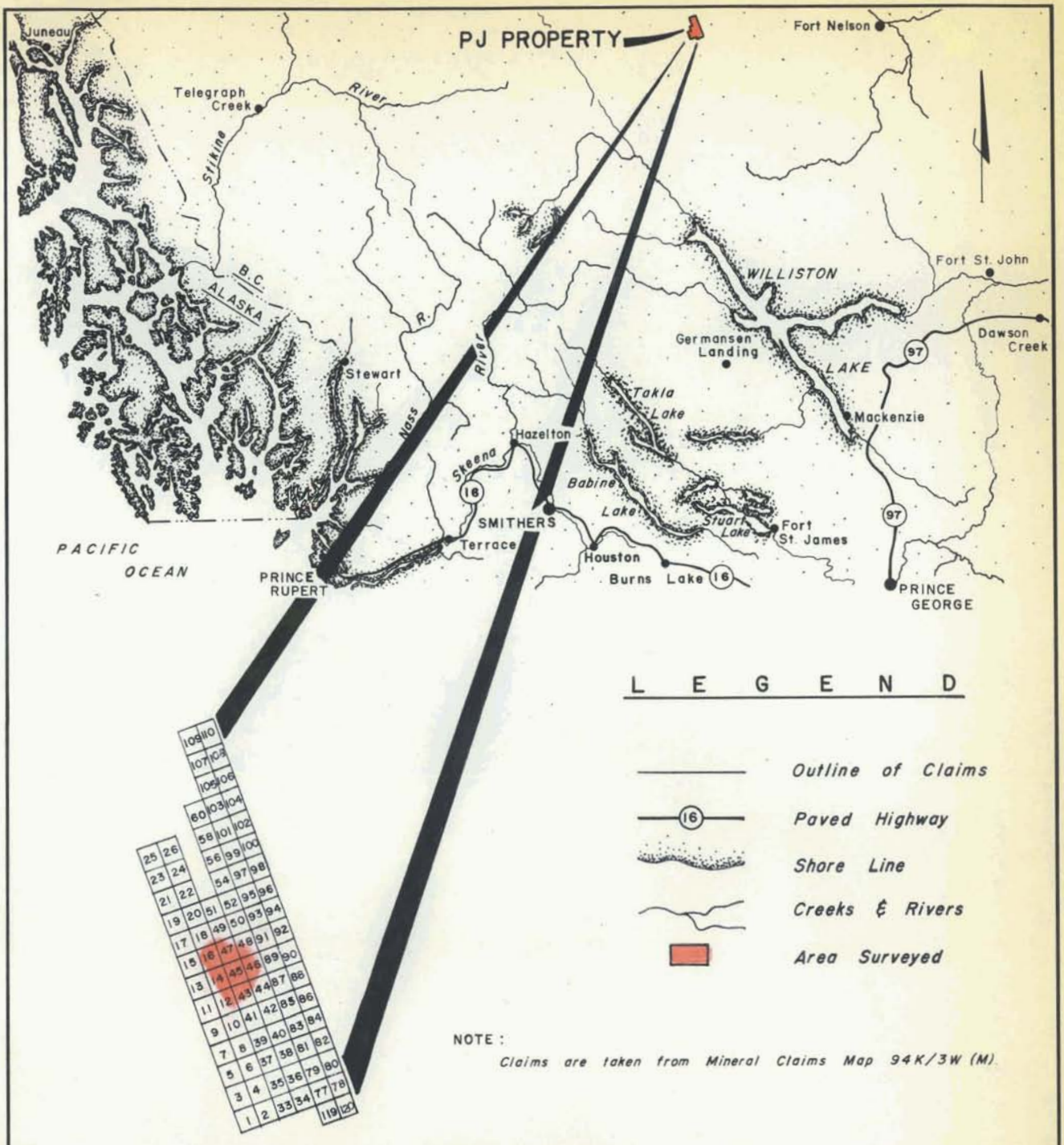
I, William G. Stevenson, DO HEREBY CERTIFY:

- That I am a Consulting Geological Engineer with offices at Suite 209 Stock Exchange Building, 475 Howe Street, Vancouver 1, B.C.
- That I am a graduate of the University of Utah, 1946, with a B.Sc. Degree.
- That I am a registered Professional Engineer in the Association in British Columbia.
- That I have practised my profession for 22 years.
- That I have no direct, indirect or contingent interest in the PJ Mineral Claims or in the securities of Bralorne Can-Fer Resources Ltd., nor do I intend to receive any such interest.
- That I have reviewed a report dated July 23, 1971 based on work conducted by Tri-Con Exploration Surveys Ltd. under the supervision of Glen E. White, Chief Geophysicist.

DATED at Vancouver, British Columbia, this 28th day of July 1971.

W. G. STEVENSON & ASSOCIATES LIMITED
Consulting Geologists

W. G. Stevenson, P. Eng.



NOTE:
Claims are taken from Mineral Claims Map 94K/3W (M)

BRALORNE CAN-FER RESOURCES

PJ PROPERTY
PJ CLAIMS

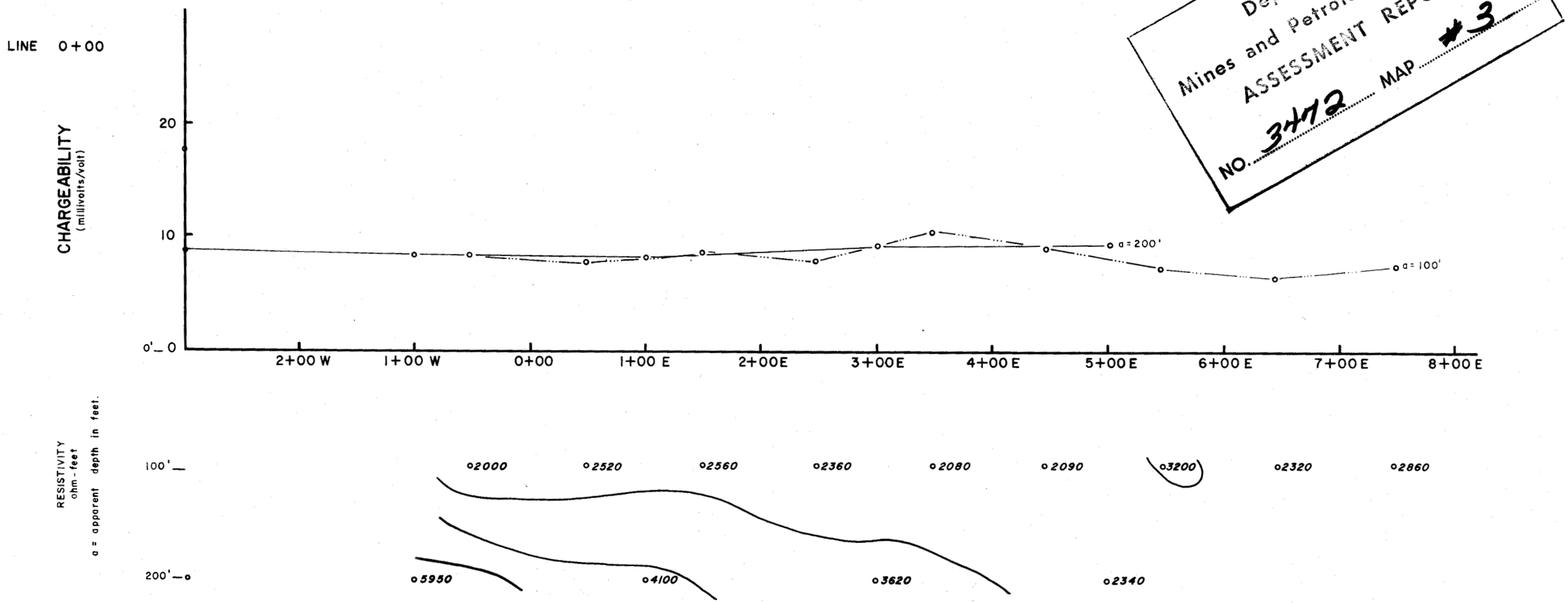
LOCATION AND CLAIMS MAP

SCALE: LOCATION MAP: 1" = 80 MILES APPROX. — CLAIMS MAP 1" = 1000 FEET APPROX.

Tri-Con EXPLORATION SURVEYS LTD.

Fig. 1
File: C11

Ken Postma July 1971. 1971



DETAIL INDUCED POLARIZATION SURVEYING

CHARGEABILITY & RESISTIVITY PROFILES

Vertical Scale 1" = 10 millivolts/volt and 1" = 100' Horizontal Scale 1" = 100'

BRALORNE CAN-FER RESOURCES

PJ PROPERTY

PJ CLAIMS

Tri-Con
EXPLORATION SURVEYS LTD.

Plate 2
File C 11

Ken Postma July 1971

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of

GEOPHYSICAL SURVEYS:

I, Glen E. White

of Tri-Con Exploration Surveys Ltd. #200 - 1405 Hunter Street North Vancouver in the Province of British Columbia, do solemnly declare that in the matter of Geophysical Surveys on the PJ Claim Group for Bralorne Can-Fer Resources Ltd. the following is a true statement.

PERSONNEL	PERIOD	MAN DAYS	WAGES/DAY	TOTAL
Neil Bonner	June 28-July 5, 1971	8	$60	$ 480.00
Tom Swann	" " "	8	$60	$ 480.00
Instrument Lease	Induced Polarization Unit 8 days @ $50/day			$ 400.00
	V.L.F. Electromagnetometer 8 days @ $15/day			$ 120.00
Geophysical Interpretation Maps and Reports				$ 850.00
Secretarial				$ 48.00
				$2378.00

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 28 day of July 1971, A.D.

Glen E. White

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

Mining Recorder

COST OF WORK AND APPLICATION

GEOPHYSICAL SURVEY:

Paid to Tri-Con Exploration Surveys Ltd.,
#200 - 1405 Hunter Street, North Vancouver, B.C.,

the sum of $2,378.00

Bralorne Can-Fer Resources Limited supplied additional crew and services and the following is a true statement.

Personnel	Period	Man Days	Wages/Day	
J. Szakacs	June 28/July 5/71	8	$60.00	480.00
W. Strutt	- do -	8	60.00	480.00
W. Wiseman	- do -	8	60.00	480.00
R. Osterhout	- do -	8	60.00	480.00
Camp cost @ $10.00 per man - 6 men for 8 days		48		480.00
Helicopter hours required 6 Bell 206A @ $250.00 per hour				1,500.00
TOTAL				$6,278.00

APPLICATION:

Work is to be applied to the PJ1 and PJ No. 2 group as follows:

PJ #1 group $1,000.00
PJ #2 group $5,278.00

Declared before me at the , in the
Province of British Columbia VANCOUVER, B.C.
this JAN 12 1972 A.D.

P. J. Wishaupt

BRALORNE CAN-FER RESOURCES LIMITED

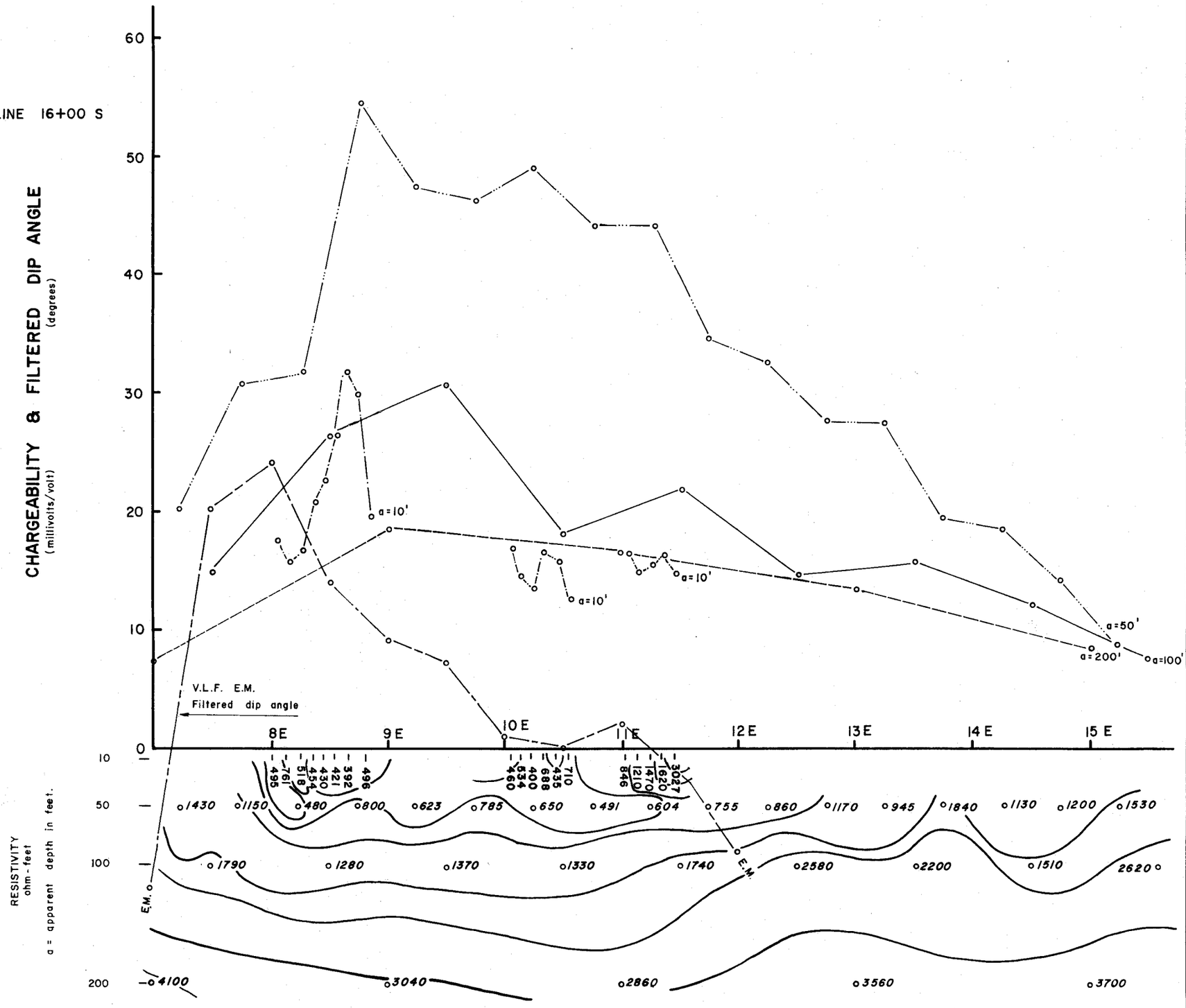
Sub-Mining Recorder

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

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. S. THOMSON

(J.S. Thomson, P.Eng., Vice-President)

LINE 16+00 S



NOTE:

Resistivity Contoured Logarithmically at 500, 750,1000,1500,2000,3000,4000 and 5000 ohm feet levels

DETAIL INDUCED POLARIZATION SURVEYING

CHARGEABILITY, RESISTIVITY & E.M. PROFILES

Vertical Scale 1" = 10 millivolts/volt and 1" = 100' Horizontal Scale 1" = 100'

BRALORNE CAN-FER RESOURCES

PJ PROPERTY

PJ CLAIMS

Tri-Con
EXPLORATION SURVEYS LTD.

Ken Postma July 1971

15+00 W
11+00 W
7+00 W
3+00 W
Base Line
3+00 E
7+00 E
11+00 E
15+00 E
19+00 E

Line 0+00 S
Line 4+00 S
Line 8+00 S
Line 12+00 S
Line 16+00 S
Line 20+00 S
Line 24+00 S
Line 28+00 S

Approx. tree line

PIT

16
47
48
14
45
46
12
43
44

58° 10'
125° 16'

CLAIM POST

30°
ASTRO
MAGNETIC

L E G E N D

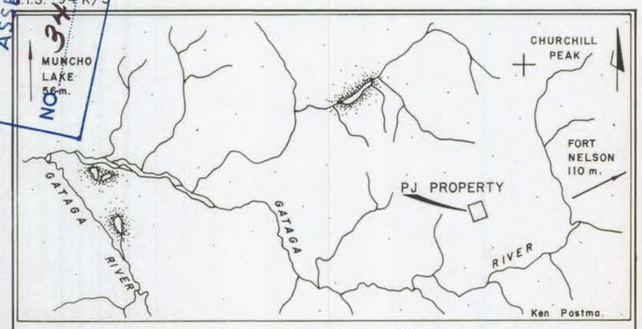
- Outline of PJ CLAIMS.
- Stations Surveyed & Readings. (0.6.7 0.6.4)
- Contour Line, Contour interval 1 millivolt/volt.
- Swamp.
- Creek, Showing Direction of Flow.

INSTRUMENT HEWITT 200 (Wenner Array – a = 200 feet)

CHARGEABILITY KEY

2.0	millivolts / volt.
10.0	millivolts / volt.
9.0	millivolts / volt.
8.0	millivolts / volt.
7.0	millivolts / volt.

N.T.S. 94 K/3



LOCATION MAP
SCALE: 1" = 4 MILES APPROX.

SCALE 400 0 400 800 FEET
1" = 400'

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
MAP
NO. 3472

NOTE:
To Accompany Geophysical Report,
Dated July 23, 1971 on PJ CLAIMS,
Liard Mining Division — British Columbia, Canada.
By: Glen E. White Chief Geophysicist.

M-4

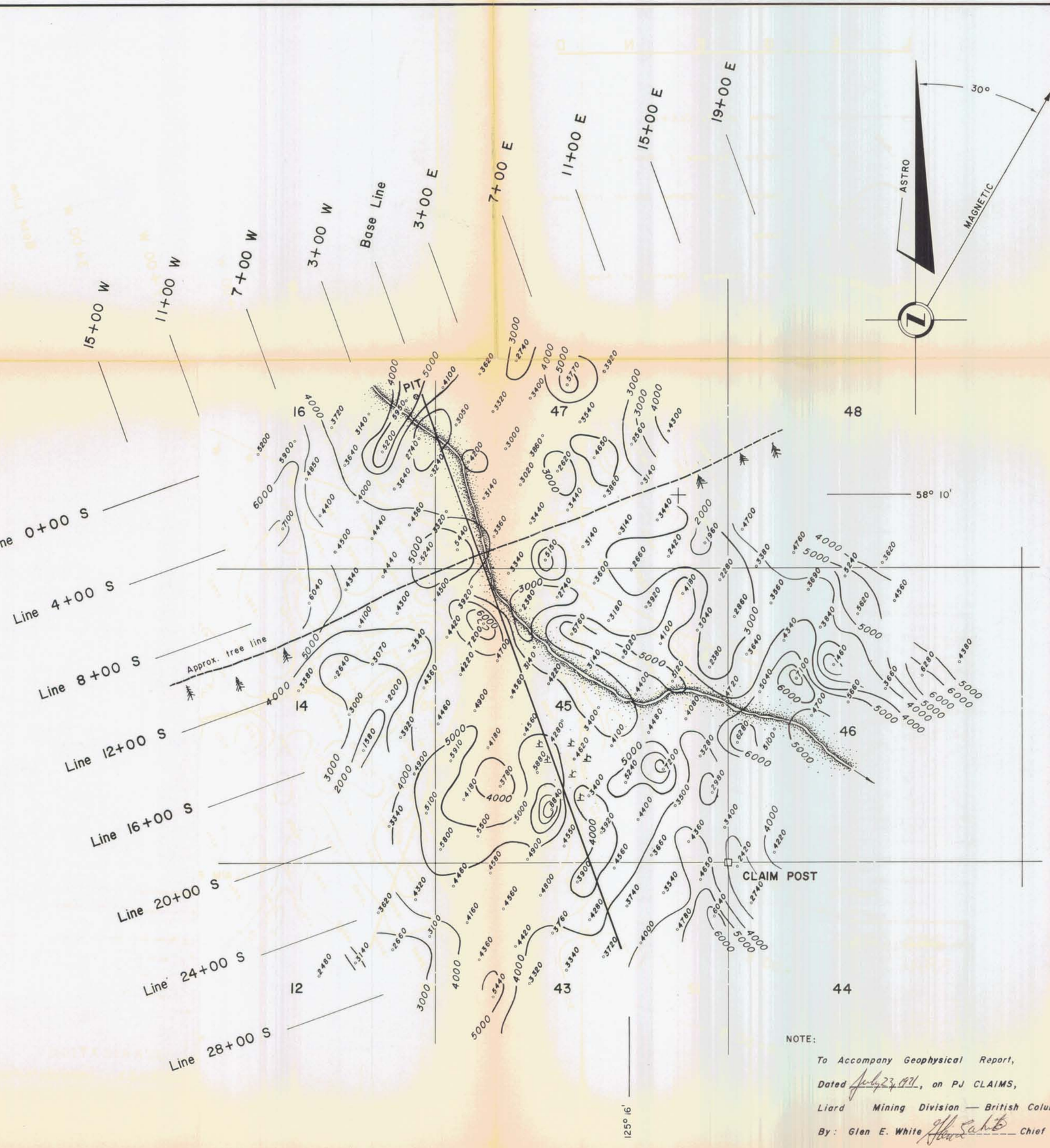
3472

BRALORNE CAN-FER RESOURCES
PJ PROPERTY
PJ CLAIMS
LIARD MINING DIVISION — BRITISH COLUMBIA, CANADA.

GEOPHYSICAL MAP
INDUCED POLARIZATION
PERCENT CHARGEABILITY (millivolts/volt)

Tri-Con EXPLORATION SURVEYS LTD.

		INTERPRETED by: Glen E. White	
		DRAFTED by: Ken Postma.	
		CHECKED by: GEW	Fig. 2
DATE: July 1971	REVISED	PROJECT No. 7110	FILE C11

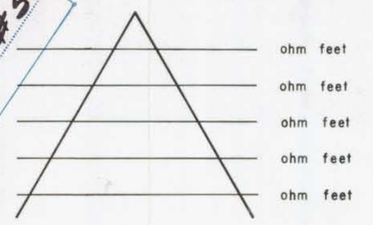


L E G E N D

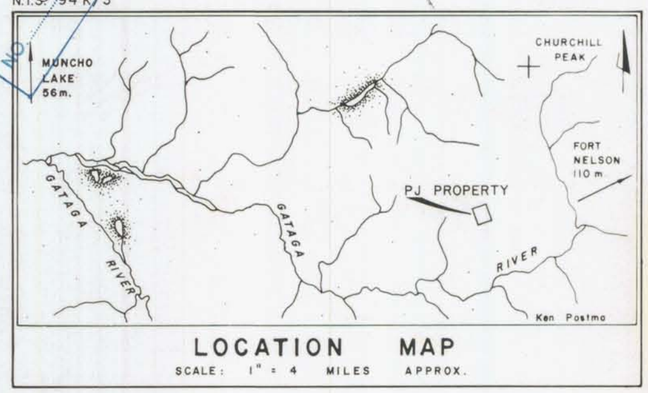
- Outline of PJ CLAIMS.
- Stations Surveyed & Readings.
- Contour Line, Contour interval 1000 ohm feet.
- Swamp.
- Creek. Showing Direction of Flow.

INSTRUMENT HEWITT 200 (Wenner Array — a = 200 feet)

RESISTIVITY KEY



N.T.S. 94 K/3



LOCATION MAP
SCALE: 1" = 4 MILES APPROX.

SCALE 400 0 400 800 FEET
1" = 400'

NOTE:

To Accompany Geophysical Report,
Dated July 27, 1971, *on PJ CLAIMS,*
Liard Mining Division — British Columbia, Canada.
By: Glen E. White Glen E. White *Chief Geophysicist.*

BRALORNE CAN-FER RESOURCES

PJ PROPERTY

PJ CLAIMS

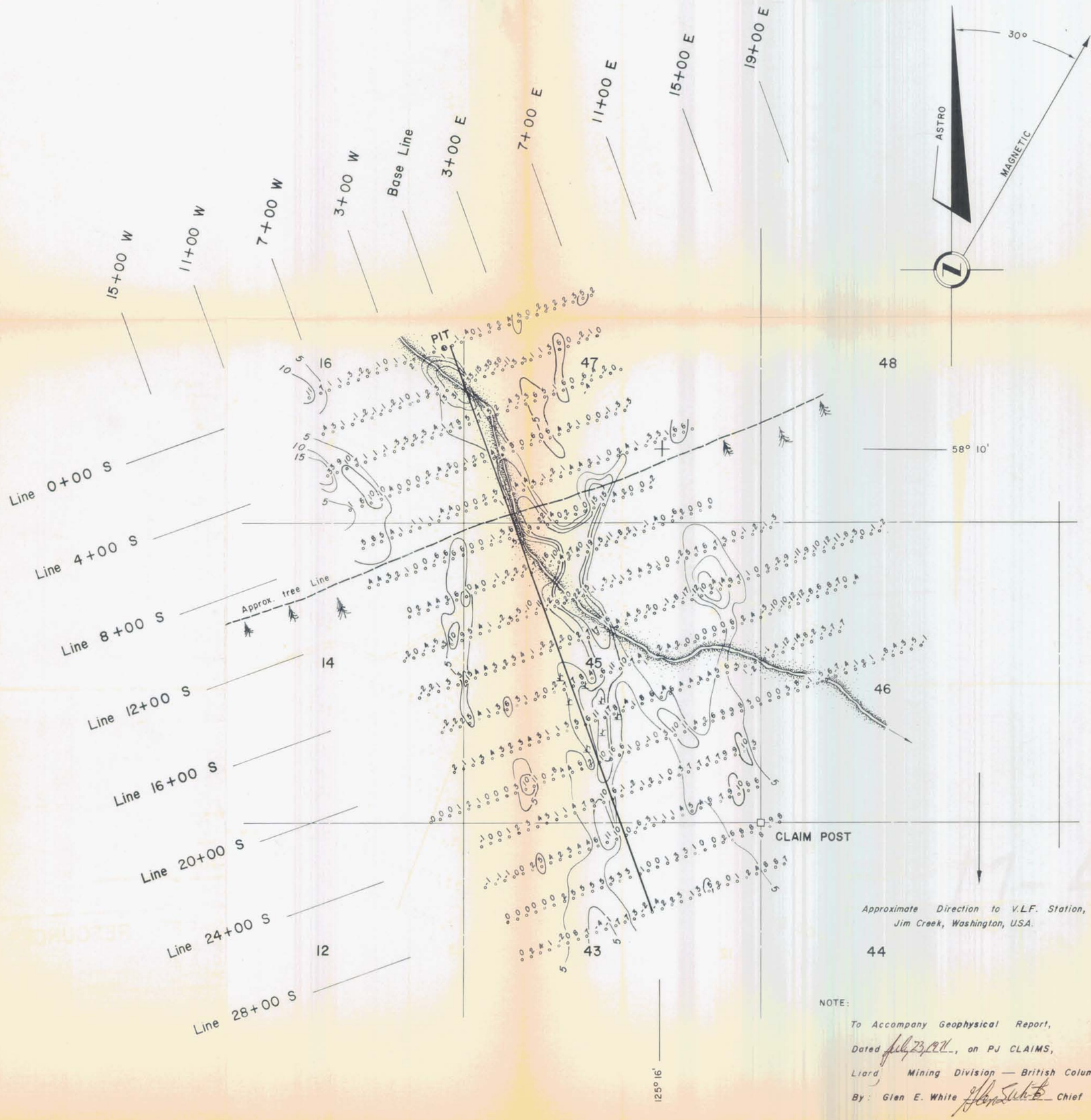
LIARD MINING DIVISION — BRITISH COLUMBIA, CANADA.

GEOPHYSICAL MAP

INDUCED POLARIZATION - RESISTIVITY (ohm feet)

Tri-Con EXPLORATION SURVEYS LTD

		INTERPRETED by Glen E. White	
		DRAFTED by Ken Postma.	
		CHECKED by GEW	Fig 3
DATE July 1971	REVISED	PROJECT No. 7110	FILE C11



Approximate Direction to V.L.F. Station, Jim Creek, Washington, USA.

NOTE:

To Accompany Geophysical Report,

Dated July 23, 1971, on PJ CLAIMS,

Liard Mining Division — British Columbia, Canada.

By: Glen E. White Chief Geophysicist.

L E G E N D

Outline of PJ CLAIMS.

Stations Surveyed & Readings.

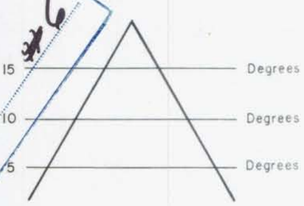
Contour Line, Contour interval 5 Degrees.

Swamp.

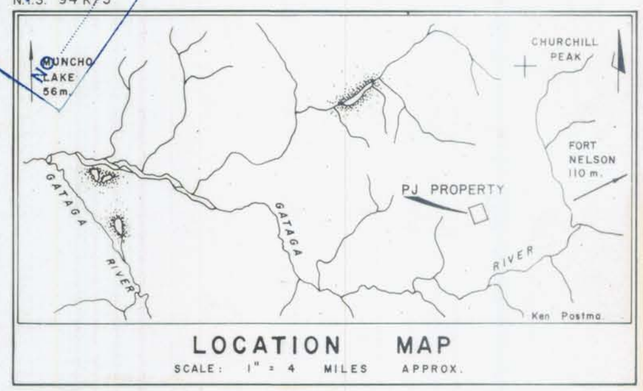
Creek, Showing Direction of Flow.

INSTRUMENT *GEONICS V.L.F. EM-16*

DIP - ANGLE KEY



N.T.S. 94 K/3



LOCATION MAP

SCALE: 1" = 4 MILES APPROX.

SCALE 400 0 400 800 FEET

1" = 400'

BRALORNE CAN-FER RESOURCES

PJ PROPERTY

PJ CLAIMS

LIARD MINING DIVISION — BRITISH COLUMBIA, CANADA.

GEOPHYSICAL MAP

ELECTROMAGNETOMETER FILTERED DIP-ANGLE

Tri-Con EXPLORATION SURVEYS LTD.

INTERPRETED by Glen E. White

DRAFTED by Ken Postma.

CHECKED by GW Fig 4

DATE July 1971 REVISED PROJECT No 7110 FILE C11