NW of Mamit Lk on Dupuis Ck — Include as a reference to deposit covered by As Rpt 122 (MDI card begun)

GEOPHYSICAL REPORT
INDUCED POLARIZATION SURVEY
AUG and CAL Claims 50°25'
Lat 50°22' N; Lon 120°50' W; 120°51'
N.T.S. 92 1/7
16 and 29 November 1968
GEO-X Surveys Ltd. Cannoo Mines Ltd.

GEOPHYSICAL REPORT

ON THE

INDUCED POLARIZATION SURVEY
ON THE

AUG AND CAL CLAIMS

SITUATED IMMEDIATELY NORTHWEST

OF THE MAMIT LAKE

ON DUPUIS CREEK

NICOLA MINING DIVISION

SOUTH CENTRAL BRITISH COLUMBIA

LATITUDE 50°22' NORTH; LONGITUDE 120°50' WEST

NTS 92I/7W

FIELD WORK BETWEEN 16 AND 29 NOVEMBER 1968

BY GEO - X SURVEYS LTD.

J. PASHE INSTRUMENT OPERATOR
AND ON BEHALF OF

CANNOO MINES LTD., MERRITT, B.C.

REPORT BY: D.R. COCHRANS
P. ENG.
DECEMBER 16, 1968

GEOPHYSICAL REPORT

on the

Induced Polarization Survey

on the

Aug and Cal Claims

Situated Immediately Northwest

of Mamit Lake

on Dupuis Creek

Nicola Mining Division
South Central British Columbia

Latitude 50°22'North; Longitude 120°50'West
N.T.S. 92 I/7

Field Work between 16 and 29 November 1968
by

GEO-X SURVEYS LTD.

J. Pasche Instrument Operator
and on behalf of

Cannoo Mines Ltd.
Merritt, B.C.

Report By:

D.R. Cochrane,
P. Eng.
December 16, 1968.

604-685-4296
TELEX 04-50404

GEO-X SURVEYS LTD. 627 HORNBY STREET, VANCOUVER 1, B.C.

1881

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Appendix

Figures

SUMMARY AND CONCLUSIONS

During November, 1968, a Geo-X Surveys field crew completed close to ten line miles of an induced polarization survey on the Aug and Cal claims, on Dupuis Creek. The mineral property, situated northwest of Mamit Lake in the Nicola area, is owned by Canoo Mines Ltd., of Merritt, B.C.

The area surveyed was approximately 3/4 of a mile wide by one mile long, and was conducted along east-west crosslines spaced 400 feet apart. Much of the grid lies on the top and east to northeast slope of a ridge rising 1000 to 1500 feet above Mamit Lake. Dupuis Creek flows southeast within a steep "V" shaped valley, obliquely through the area investigated.

The Aug and Cal claims cover a copper prospect, which lies within a band of pyrite and several phases of the Guichon acedic intrusive. The purpose of the survey was to outline high chargeability areas in order to guide further exploration.

A Hewitt Enterprises pulse type induced polarizing unit was employed. The Wenner array was utilized throughout, with an "a" spacing of 200 feet.

Self potential, d.c. apparent resistivity and induced polarization profiles and plans accompany this report.

The results are discussed in the report body.

The average of the apparent resistivities is 720 ohm-feet, which is more indicative of moderately well fractured and altered rocks than massive varieties. A very crude resistivity trough of low response extends the length of the area surveyed, (along the base line) and becomes lower in amplitude, (and Anomalous) at the north end. A prominent bimodal resistivity profile pattern exists east of the base line on lines 12, 16, 20 and 24. It is believed to be caused by a north striking, major, steeply dipping fault.

The average chargeability is 3.9 millivolt seconds per volt (m.s.) and a complex and sinuous zone of above average response trends north-northwest across the property. This zone contains a total of fourteen isolated patches of Anomalously high IP response.

A number of these Anomalies are believed to be caused by sulphides.

A depth probe of 16 north, 4 west indicated roughly 20 feet of overburden, and that the body responsible for the high is rather discontinuous, and smaller than first suspected. Further investigation of the cliams, with reference to the accompanying information, is recommended. However, sometimes the mineralogical phase change from iron to copper sulphides is accompanied by a decrease in chargeability. Therefore, economic target areas may not be entirely restricted to areas of high induced polarization response. Lower chargeability embayments may be important.

Respectfully submitted,

D. R. Cochrane.

P. Eng.

December 16, 1968.
Vancouver, B.C.

INTRODUCTION

Between 16 and 29 November, 1968 a Geo-X Surveys field crew completed 9.28 line miles of induced polarization survey on the Aug and Cal claims owned by Canoo Mines Ltd. The property is situated just northwest of Mamit Lake on Dupuis Creek, close to the Highland Valley area of southern British Columbia.

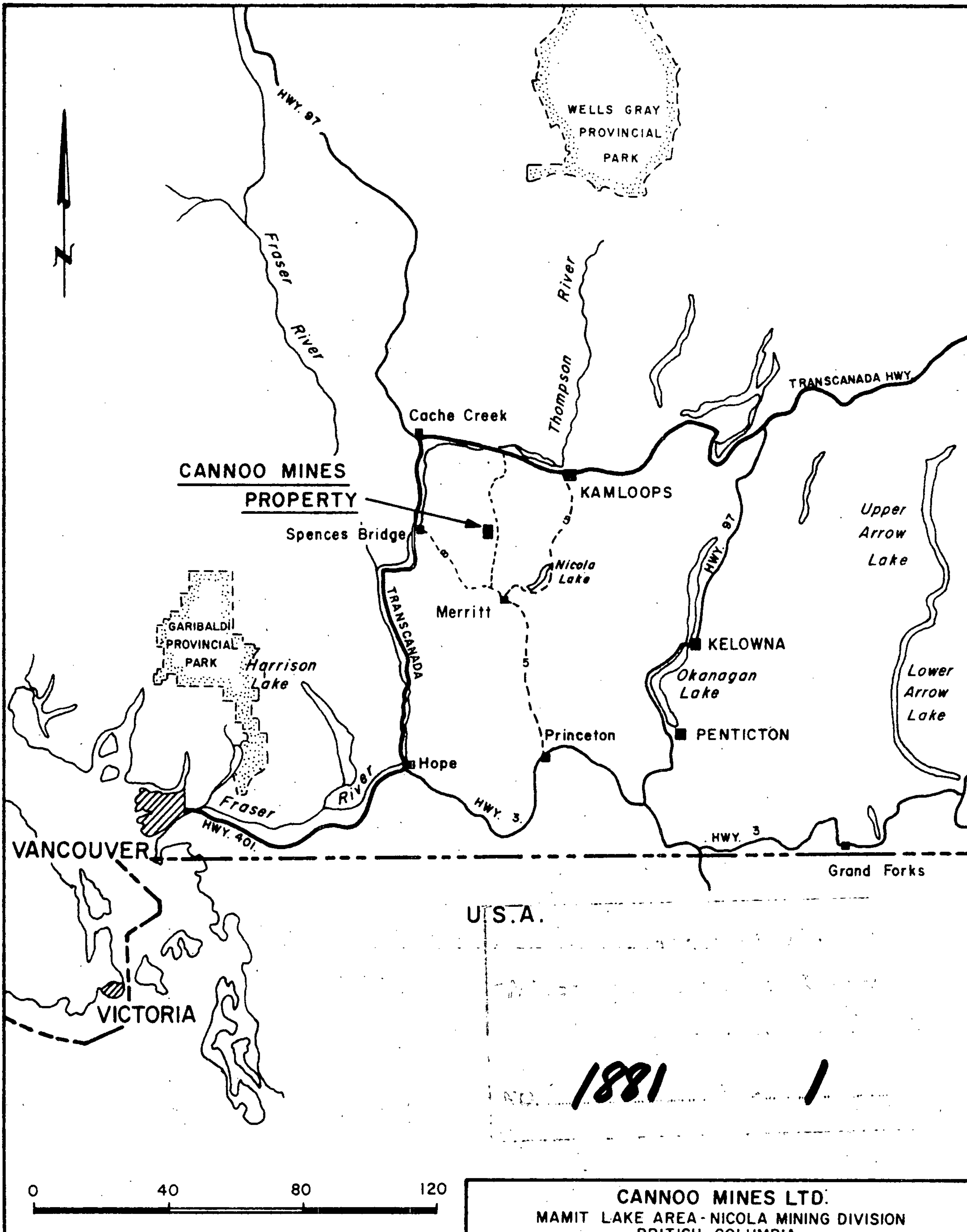
The purpose of the survey was to outline a partially investigated sulphide zone in order to guide future exploration.

This report describes the field procedure and discusses the results of the survey.

LOCATION AND ACCESS

The Aug and Cal claims are situated near Mamit Lake, and north of Gypsum Mountain, along Dupuis Creek, in the Nicola Area of British Columbia.

Normal access is via truck, proceeding west from Merritt on Highway #8 to the Mamit Lake road, then north on this gravel road for approximately 20 miles to the B.C. Hydro substation at the north end of Mamit Lake. The claims access road proceeds west, through the Wiggins' ranch, along the power line, then south to the camp, a distance of 1 1/2 miles or so, from the substation. (See Figures 1 and 2)



CANNOO MINES LTD.
MAMIT LAKE AREA - NICOLA MINING DIVISION
BRITISH COLUMBIA

LOCATION MAP

GEO - X SURVEYS LTD.	DRAWN R.K.	DATED Dec. 16/68	FIG. NO. 1
	CHECKED [signature]	JOB NO. 1062	

CLAIMS AND OWNERSHIP

The Aug and Cal claims, Nicola Mining Division, are owned outright by Cannoo Mines Ltd., Box 1409, Merritt, British Columbia.

Claims information is shown on B.C. Department of Mines claim map 92 I/7. They have the following record numbers:

Claim Name(s)	Record Number(s)
Cal 1 to 4 incl.	24614-17 incl.
Cal 9 to 12 incl.	24622-25 incl.
Cal 13 and 14	24628-27
Cal 15 to 20	24628-33
Cal 31	34801
Cal 34 and 36	34803, 05
Cal 37 to 41	34806-10
Aug 1 to 6	25019-24

This may not represent all the claims however, as I understand there has been some overstaking in the area.

GEOMORPHOLOGY

The Dupuis Creek property of Canoo Mines lies within the Thompson Plateau subdivision of the Central Interior Plateau system. This region of British Columbia is characterized by relatively moderate rolling topography, with elevations, for the most part, between 4000 and 5000 feet.

The highest point in the vicinity is Gypsum Mountain (5075') whereas Mamit Lake itself, within the broad "U" shaped Guichon Valley, is slightly less than 3200 feet in elevation.

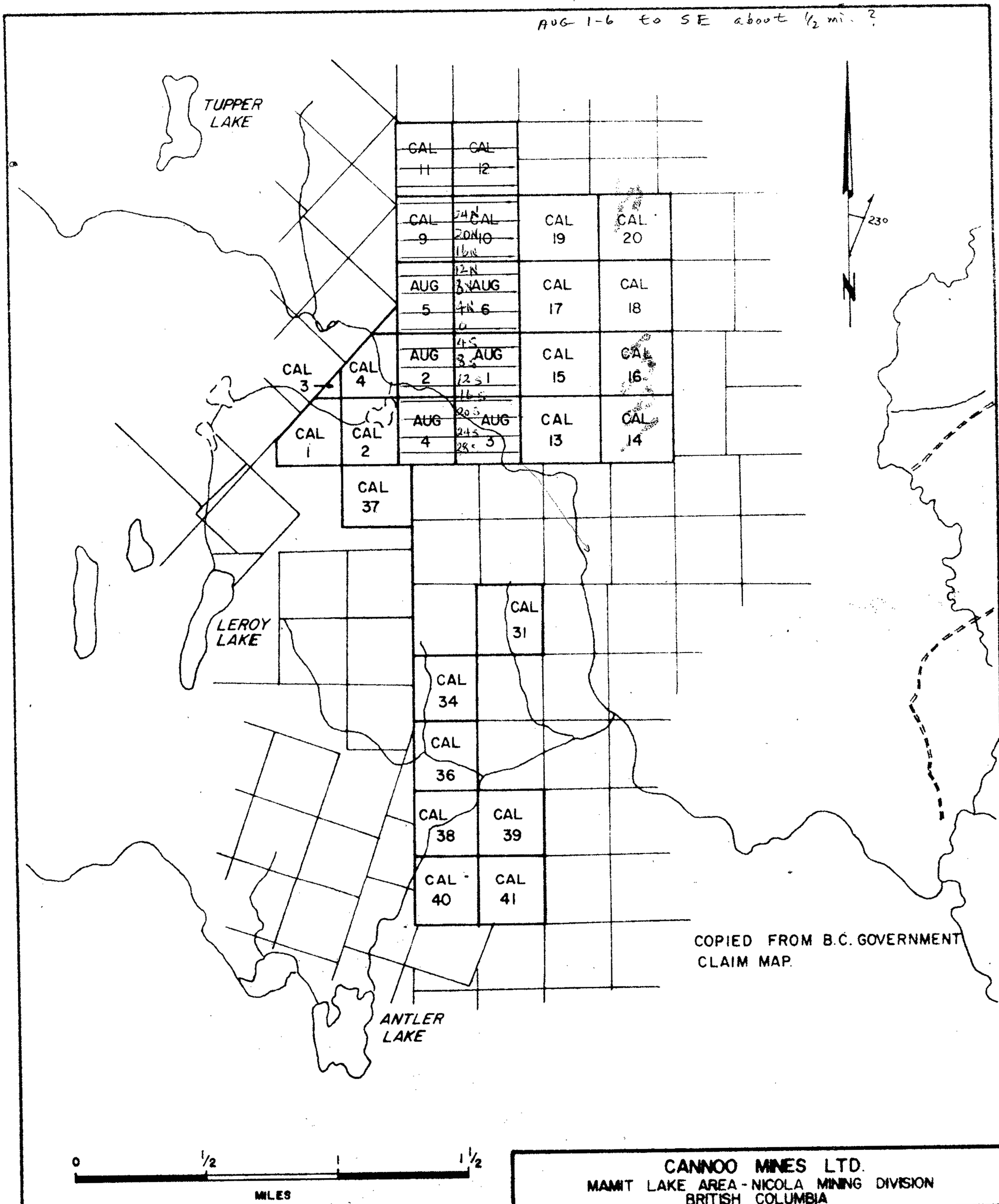
The claims are located on the crest, and east sloping sidehill, of the moderately steep ridge lying immediately west of Mamit Lake.

Much of the region is underlain by the Lower Jurassic Guichon Batholith, a multiphase acidic intrusive bounded by the Thompson and Nicola rivers, and Guichon Creek. It is composed primarily of granites, and granodiorite, with porphyritic and gabroic phases.

On October 21, the author visited the property, and several trenches near camp exposed altered, sheared, quartz biotite gneiss, with considerable amounts of pyrite. Close by, moderately fresh, hornblende biotite granodiorite is present, with joint sets almost north-south and steeply dipping and at 100 degrees, and steep. Chalcopyrite and secondary copper minerals are observable at specific locations.

A relatively thin mantle of glacial till is believed to cover most of the bedrock.

The general topography of the area suggests a series of north directed faults. The geophysical response across these draws and gulleys is discussed in a later section.



CANNOO MINES LTD.
MAMIT LAKE AREA - NICOLA MINING DIVISION
BRITISH COLUMBIA

CLAIM MAP

GEO - X SURVEYS LTD.

Drawn D.E.Y.	Dated Dec. 16/68	Fig. No. 2
Checked [signature]	Job No. 1062	

Department of

Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 1881 MAP 2

GROUND CONTROL GRID

The ground control grid was layed out prior to survey commencement just over a year ago, by Cannoo Mines personnel. It was rechecked just before the survey started.

The base line is north-south, and extends from 28+00 south to 24+00 north. 0+00 on the base line is near camp. Perpendicular cross lines were established at 400 foot intervals and extend from 16 east to 16 west. Pickets and flags are present at 100 foot intervals along all lines.

It was within this grid that the survey took place.

GENERAL CONSIDERATIONS OF THE PULSE TYPE INDUCED POLARIZATION METHOD

Two induced polarization methods are in common use today in mineral exploration. The first is the time domain or pulse type method in which a steady direct current is impressed on the ground for a few seconds and then abruptly terminated. A fraction of a second after cessation of current impulse, the decay voltage, caused by capacitive-like storage, is measured. The second method is the variable (dual) frequency technique or frequency domain. In this variety, the percentage difference between the impedance (a.c. resistance) offered at two separate frequencies is measured.

The Hewitt (HEW 100) I.P. unit is a time domain unit and the exact method employed is outlined in the field procedure section.

The reader is referred to Wait, J.R. (1966) and/or Brant (1966), for a discussion of time domain.

I.P. effect occurs when a current is passed through a volume of rock containing electronic conductors. Geophysical electronic conductors, or "metallic minerals" include most sulphides (pyrite, chalcopyrite, bornite, molybdenite, but not sphalerite), certain oxides, clays, graphite and certain micas. Apart from the sulphides, minerals with highly unsatisfied basal lattice surfaces act as leaky condensers and give rise to I.P. effects. All rocks are responsive to some degree, and this response is designated background. It is often equivalent to one volume percent of scattered pyrite, and probably due to unsatisfied charges at lattice imperfections, boundaries, fractures and so on. Background in various parts of B.C. with the HEW-100 I.P. unit follows:

Area	Lithology	Background (mv/V)
Mamit Lake	Guichon Batholith (granodiorite)	5.9
Tonasket, Wash.	Granodiorite plug	12.3
Aspen Grove	Nicola Volcanics	7.6
Princeton	Princeton sediments	17.2

Factors other than the amount of metallic conductors which affect I.P. response are grain size, conductivity of mineral, porosity, tortuosity (pore geometry), type of gangue minerals, composition and amount of pore fluid, degree of alteration, and mode of mineralization (disseminated, lode, vein types, etc.).

Rogers, (1966), has pointed out that the resistivity of rock is only slightly influenced by changes in the sulphide content at low levels. Much of the change is due to other effects such as moisture content, fracturing, pore space, ground water, extent, degree and type of alteration, type of sulphides and mode of sulphide distribution, etc. However, alteration in combination with increased sulphide content, not uncommonly affects the resistivity significantly. Unfortunately, there are many additional recognized or predicted from resistivity data alone.

Background resistivity in various parts of B.C. with the HEW-100 I.P. unit follows:

Area	Lithology	Background (ohm-feet)
Mamit Lake	Guichon Batholith	1600
Tonasket, Wash.	Granodiorite plug	3500
Aspen Grove	Nicola Volcanic	1000
Princeton	Princeton sediments	500

Previous to current impression, the receiving pots are balanced, and this, the self potential value in millivolts is often a useful geophysical tool. When metallic lustered sulphide minerals are situated in a suitable geological-hydrological enviornment, the sulphides oxidize and a natural or spontanious "battery effect" occurs. Often the self potential effect over sulphide bodies is negative and in the order of a few hundred millivolts.

With a Wenner electrode configuration, the self potential and first derivative of the self potential are valuable information if the transit interval is equal to, or is one-half the "a" spacing distance. In other cases, where the "a" spacing and transit interval are not evenly proportional, the self potential results are of very little useful value.

BIBLIOGRAPHY

Frequency Domain:

Wait, J.R. (1951) Editor, Overvoltage Research and Geophysical Applications. Longon, Pergamon Press.

Time Domain:

Brant, A.A. (1966) Examples of Induced Polarization Field Results in the Time Domain - Society of Exploration Geophysicists' Mining Geophysics, Volume I, Case Histories.

Seigel, H.O. (1966) Three Recent Irish Discovery Case Histories using Pulse Type Induced Polarization -S.E.G. Volume I, Case Histories - p.p. 341.

Rogers, G.R. Introduction to the Search for Disseminated Sulphides, S.E.G. Volume I.

FIELD PROCEDURE

A Hewitt Enterprises Pulse Type IP unit was utilized on the Cannoo Mines Survey. Instrument specifications are described in Appendix IV.

The standard Wenner electrode array was employed with a "a" spacing (one-third the distance between current electrodes) of 200 feet.

The author visited the Dupuis Creek property in October,1968, and no overburden problem was apparent. A short test revealed that a 200 foot "a" spacing was suitable.

A brief description of the operator's field procedure follows:

Prior to voltage application, the self potential is balanced, and recorded, between the two receiving pot "a" feet apart. Normally a voltage of 250, 500 or 1000 volts is impressed between the back electrode (one "a" behind the instrument) and front electrode (two "a" in front of the instrument). The electrodes in high ground resistivity consists of a single steel or aluminium stake, and in low resistivity areas, of multiple aluminium foil electrodes situated about a central metal stake (to increase ground bearing, current and voltage). A four second pulse of d.c. current is applied, during which time the I (current in milliamperes) and dV (impressed EMF in millivolts) is observed and recorded. 0.3 seconds after cessation of pulse, the residual (decay) voltage is integrated for 0.8 seconds (on integration function #1). From these data, the apparent d.c. resistivity and normalized induced polarization value may be calculated, as described in the data reduction portion of this report.

Telluric noise is a constant and serious problem and on several days, considerable noise was encountered. (Magnetic storms and accompanying telluric effects). These occurred on November 16, during which time testing was in progress. The storm cleared in the early morning on November 17. Another severe magnetic storm occurred on November 20, and forced shut down of the survey for that one day. A slight amount of normal daily noise was minimized by utilization of a large 50 pound nickel-cadmium battery (increase in power), multiple electrode configuration, double integration of the decay voltage, and repetition of pulses in specific areas. A great deal of filtering is accomplished by averaging over a series of decays. The transit interval was "a", or 200 feet along all lines.

DATA NORMALIZATION

The following information was recorded by Mr. J. Pasche, the instrument operator, at each pulse station:

1. The property, operator's initials, job and page number, "a" spacing, transit interval and remarks on topography.
2. The line and station co-ordinates;
3. The self potential reading in millivolts (S.P. mv);
4. The current in milliamperes (I ma);
5. The impressed emf in millivolts (dV mv);
6. The induced polarization decay voltage in millivolts (IP mv);
7. The resistor capacitor switch (R.C.);
8. The current electrode voltage switch value;
9. The integration function switch (I.F.);
10. The pulse time in seconds.

From this data, the apparent resistivity is calculated from the following relation:

$$\rho = \frac{2 \pi \times a \times dV}{I \text{ (ma)}}$$

Where: ρ = apparent resistivity in ohm-feet

π = 3.1416

"a" = 1/3 distance between the current electrodes

The normalized IP value is obtained by utilization of the following relation:

$$\text{IP norm} = \frac{\text{IP(mv)} \times 100 \times k \times \text{R.C.}}{\text{dV(mv)}}$$

Where: IP norm = normalized IP in millivolt seconds per millivolt or milliseconds

K = a constant depending on the IF setting.

R.C. = resistor - capacitor shunt setting.

A specific example from the data collected at 20+00S station 14W is tabulated below:

Pulse No.	I (ma)	dV	IP (mv)	R.C.	S.P.	I.F.	Remarks
1	370	420	5.5	1	-4	1	500V
2	370	420	6.0	1		1	
3	370	420	6.0	1		1	

Therefore: $$\rho = \frac{2 \times \pi \times 200 \times 420}{370} = 1426 \text{ ohm-feet}$$

$$\text{IP norm} = \frac{6 \times 100 \times 1 \times 1}{420} = 1.4 \text{ milliseconds}$$

These calculations were completed for each station on an Olivetti Underwood 101 computer.

The final apparent resistivity, self potential, and normalized IP values were plotted on the accompanying figures (Scale 1":400') at a point midway between the receiving pots (i.e. 100 feet in front of the instrument position).

DISCUSSION OF RESULTS

The results of the self potential, apparent resistivity and induced polarization are presented graphically in contoured plan or profile as Figures 4, 5 and 6 respectively.

The reader is advised to refer to these figures during the course of the following textual discussion.

A. Self Potential

Adjacent lines of self potential values are free floating and not reduced to a common base. Individual plotted values represent the potential, in millivolts that was measured and recorded between two pots 200 feet apart. The reading is plotted midway between P_1 and P_2.

In general, self potential trends are strongly north directed, except in the north east corner of the area surveyed, where the power line has exerted some self potential influence.

Three broad areas are characterized by negative polarity, and two of these are situated primarily north of 0+00, one on each side of the base line. A third lies in the south and east section of the area investigated. Lying between these three lows is an irregularly shaped positive potential zone.

Self potential results ranged from a high of 68 millivolts (m.v.) to a low of -106 m.v. The steepest potential gradient recorded was 108 m.v. between stations 5 and 7+00 east on line 0. A second area of rapid rate change (105 m.v.) was recorded between stations 11 and 13+00 east on line 24+00 south. Other areas of rapid change in surface potentials occurred; immediately east of the base line on line 12+00 north; immediately east of the base line on line 4+00 south; and in and around 5+00 west on line 0+00.

Some of the self potential effects are, at least partially attributable to topographic influence. However, others, must be caused by sulphide weathering.

The two largest rate change Anomalies (108 and 105 m.v.) are closely associated with a major fault trending northerly between 400 and 900 feet east of the base line.

B. Apparent Resistivity

The arithmetic mean of 218 apparent resistivities is 721 ohm-feet and the standard deviation is 329 ohm-feet. In general terms, this average is lower than that in many parts of the Guichon, and compares more favourably to more altered and/or fractured phases of the batholith.

Figure 5, the isoapparent resistivity plan has been contoured on the basis of the A.M. and , at 400, 700, 1000 and 1500 ohm-feet intervals.

The primary isoresistivity trends are north directed, with a well developed northwest-southeast disruption through the center of the survey area. There is a broad, very crude resistivity trough (low) close to, and along the base line. This trough becomes increasingly/more well developed and more pronounced at the north end of the base line, where a relatively large area of below 400 ohm-feet Anomalous response is situated. The cause of this rather irregular low may be due to more altered and/or fractured bedrock.

One of the most impressive features of the isoresistivity plan is located between lines 12 and 24 south, at approximately 8+00 east. On this area, a narrow band of north trending lows is flanked to the east and west by narrow parallel bands of relatively high resistivity. This is rather a classic and impressive response to a narrow, vertically dipping sheet, and has been interpreted as a major fault or shear zone.

Small, single isolated less than 400 ohm-feet response situated near the center of the survey area may be also due to shear zone.

The cause of the small areas, on the northeast, and east central areas, exhibiting less than 400 ohm-feet resistivity, is unknown. However, being situated at lower elevations, moisture is suspected.

A zone of higher apparent resistivity impinges on the west border of the area surveyed. Values up to 1933 ohm-feet were recorded here, and may indicate response to more massive bedrock.

C. Induced Polarization

The arithmetic mean of 215 normalized induced polarization measurements is 3.0 millivolt seconds per volt (m.s.) and standard deviation 1.9 m.s. Two negative IP responses occurred.

The induced polarization may be categorized as follows:

Range	Category
less than 2.0	Anomalously low
2.0 to 3.9	background range
4.0 to 5.9	above average
6.0 and above	Anomalously high

Dominant isoinduced polarization trends are north - northwest, with a subdominent northeast directed trend evident in north east corner of the survey area.

A rather large, sinuous and irregular above average chargeability zone trending across the grid, which is very approximately divided or disected into juxaposed blocks and irregular shapes. This is believed to be largely the effect of strong rectilineal faulting and/or bedrock compositional phase changes within the area investigated.

There are several areas of Anomalously high induced polarization response (6.0 m.s. and above) and these are very erratically distributed within the above average IP response zone.

One of the areas with fairly extensive Anomalously high chargeability is situated in the north third of the property, near the base line. Depth probing at 4+00 west, 16+00 north indicated the depth to the top of the chargeable body was approximately 20 feet. The apparent resistivity increased at a depth of 170 feet. However, the IP responses indicated a rather small and discontinuous target.

An unknown proportion of the Anomalies are believed to be attributable to sulphides, (especially pyrite). However, sometimes the mineralogical phase change from iron sulphides to copper sulphides is accompanied by a decrease in induced polarization response. Therefore, some of the spaces between the Anomalously high chargeability zones may be interesting targets, and even, possibly, background response IP embayments in the above average zones.

APPENDIX I

PERSONNEL

Name:	COCHRANE, Donald Robert
Education:	B.Sc. - University of Toronto M.Sc.(Eng.) - Queen's University
Professional Associations:	Professional Engineer of British Columbia, Ontario and Saskatchewan. Jr. member of C.I.M.M., member of G.A.C., M.A.C. Geological Engineer.
Experience:	Engaged in the profession since 1962 while employed with Noranda Exploration Co. Ltd., Quebec Cartier Mines Ltd., Meridian Exploration Syndicate. Presently employed as Engineer with Geo-X Surveys Ltd. Experience in West Indies, Latin America, South America, United States and Canada.

APPENDIX I

PERSONNEL

NAME: CERNE, James

EDUCATION: B.S. Geology (June 1967)
Case Institute of Technology - Cleveland, Ohio.

M.S. Geophysics (August 1968)
California Institute of Technology - Pasadena, California.

EXPERIENCE: July 1965 - June 1967 - Metallurgy Dept., Case Institute of Technology - Student Asst.

June - September 1967 - N.A.S.A. Manned Spacecraft CNT. Lunar and Earth Sciences Div., Geophysics Group, Houston, Texas.

September 1967 - August 1968 - California Institute of Technology, Seismological Laboratory, Graduate Research Asst.

September 1968 - present. Employed by Geo-X Surveys Ltd. as Geophysicist.

APPENDIX I

PERSONNEL

Name:	PASCHE, Juergen
Education:	Mittelschule - equivalent to Grade 12. Completed apprenticeship as precision mechanic with Carl Zeiss - Graduate Electrical Technology.
Experience:	3 years - Electro-Technician with SIEMENS of Braunschweig, Germany. 3½ years - Seismic Party Chief with PRAKLA Association for practical deposit research in Germany - including field experience in Switzerland, Italy, and North Africa.

APPENDIX I

PERSONNEL

Name:	YIP, David Edward
Education:	Grade 12 - Majors: Science, Mathematics, Social Studies and Industrial Arts. Lake Cowichan Secondary School. 1 year - Vancouver Vocational Institute - Drafting Training.
Experience:	Presently employed by Geo-X Surveys Ltd. since November 27, 1967 as Draftsman.

APPENDIX I

PERSONNEL

Name:	KEY, Robert A.
Education:	Grade XII Diploma. 1 year Petroleum Geology at the Institute of Technology and Arts in Calgary.
Experience:	2 years in Steam Heating Design Drafting. 12 years with Mobil Oil Canada Limited, Senior Draftsman.

APPENDIX II

PERSONNEL AND DATES WORKED

A. Field Work

D. R. Cochrane	P. Eng.	Nov. 3, 8
J. Pasche	Instrument Operator	Nov.16-28
W. Bellamy	Helper	Nov. 16-29
K. Moldowan	Helper	Nov. 16-28
J. Thompson	Helper	Nov. 16-20 26-28
J. Wiggins	Helper	Nov. 16-28

B. Data Processing & Report Preparation

D. R. Cochrane	P. Eng.	Dec. 6,9,11, 16, 17, 18.
J. Cerne	Geophysicist	Dec. 17

C. Drafting and Reproduction

D. Yip	Draftsman	Nov. 25-26 Dec. 2-5, 9-10, 18-20
R. Key	Draftsman	Nov. 29 Dec. 9-10,18-20
M. Abrey	Secretary	Dec. 19-20

APPENDIX III

COST BREAKDOWN

The following is a cost breakdown covering an I.P. Survey over the Aug and Cal Groups in the Merritt, B.C. area conducted by Geo-X Surveys Ltd. for Cannoo Mines Ltd.

9.28 line miles of survey @ $390/mi. $3,619.20

Ray Pitre

R.L. Pitre

APPENDIX IV

GENERAL SPECIFICATIONS OF THE HEWITT PULSE TYPE INDUCED POLARIZATION UNIT.

Transmitter Unit

Current pulse period (D.C. Pulse Manual initiated timer	1 - 10 seconds
Current measuring ranges	0 - 500 0 - 1000 Milliamperes 0 - 5000
Internal voltage converter 27 volt D.C. 350 watt output with belt back batteries	250 500 volts D.C. 1000 Nominal

500 watts using 27 volts aircraft batteries.

Transmitter can switch up to 3 amps at 1000 volts from generator or battery supply with resistive load. The switching is done internally in the transmitter unit. Remote control output can switch up to 10 kilowatts of power by using a separate control unit. A remote control cord is supplied with auxiliary equipment.

Receiver Unit

Self Potential Range	0 - 1000 millivolts 1 millivolt resolution
Impressed EMF Ranges	0 - 30 0 - 100 millivolts 0 - 300 0 - 1000
Input Terminals with Three Combinations	$P_1 - P_2$ $P_1 - P_0$ $P_2 - P_0$
Induced Polarization Ranges	0 - 30 0 - 60 millivolt 0 - 90 seconds
Integration Time Periods	.8 seconds 1.6 seconds

Tandem Integration Time Periods	1.6 seconds 3.2 seconds
Input Filtering	3 ranges plus 4 integration combinations
Delay Time from Cessation of Current Pulse	.3 seconds

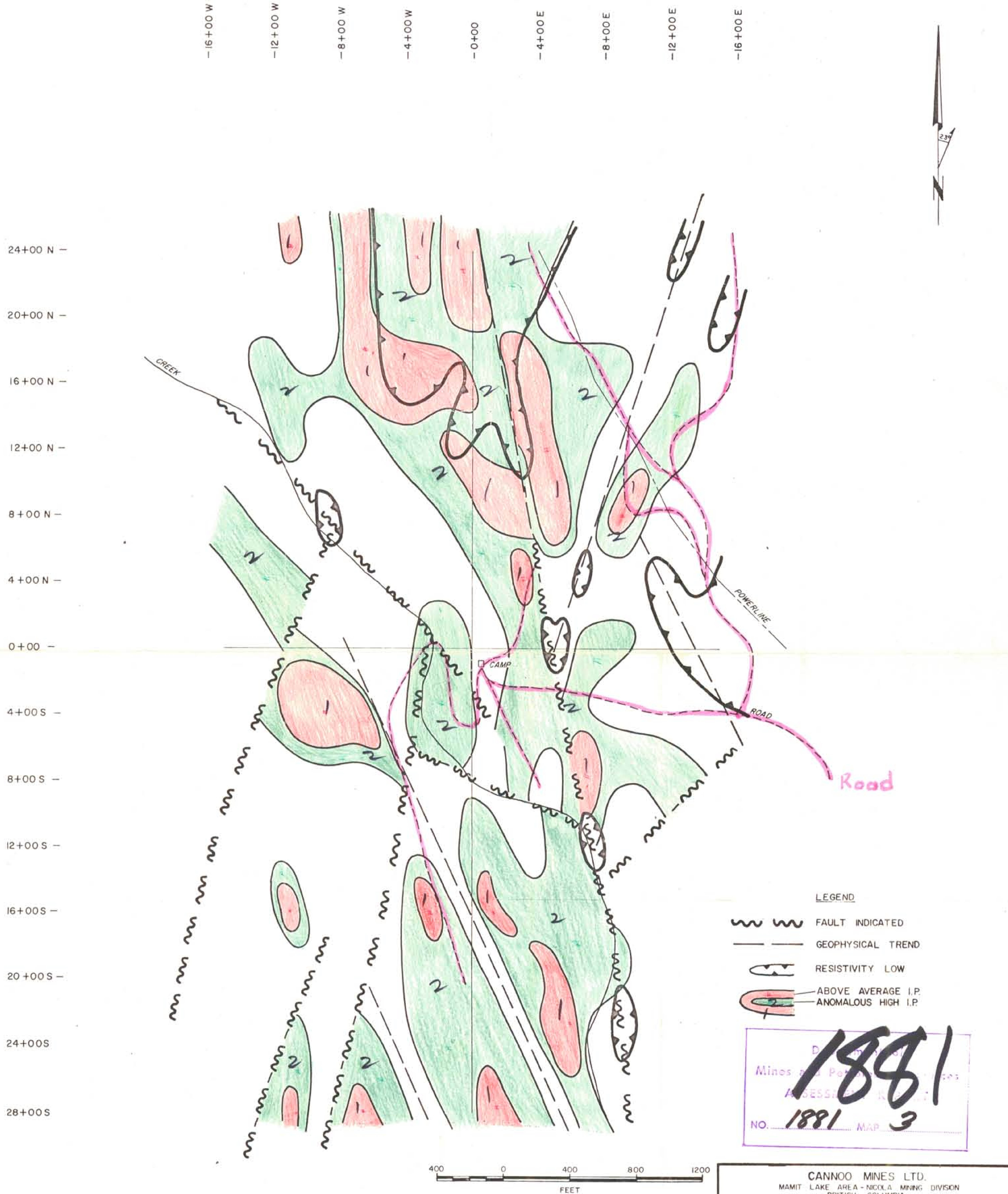
(Combined Photo Electric Coupled Receiver and Transmitter)

Operation Temperature -25° F - 120° F

POWER SUPPLY

Receiver Unit	4 Eveready E136 Mercury Batteries 2 Eveready E134 Mercury Batteries 2 Eveready E401 Mercury Batteries
Transmitter Unit	Sealed Rechargeable 8 amp. hr. belt pack capable of driving the converter at 350 watts for a minimum of one day's operation before recharge.

Manufactured by Hewitt Enterprises, Box 978A, Sandy, Utah, 84070
Phone: 801 571-0157



HEWITT PULSE I.P.
WENNER ARRAY

a = 200'

TO ACCOMPANY THE GEOPHYSICAL SURVEY REPORT ON THE AUG & CAL GROUP OF CLAIMS OWNED BY CANNOO MINES LTD. SITUATED IN THE MAMIT LAKE AREA, NICOLA MINING DIVISION, BRITISH COLUMBIA BY DONALD R. COCHRANE, PROFESSIONAL ENGINEER, VANCOUVER BRITISH COLUMBIA

CANNOO MINES LTD.
MAMIT LAKE AREA - NICOLA MINING DIVISION
BRITISH COLUMBIA

GENERAL INTERPRETATION

GEO - X SURVEYS LTD.

DRAWN	D.E.Y.	JOB NO.	FIG. NO.
DATED	DEC 16, 1968.	1062	7
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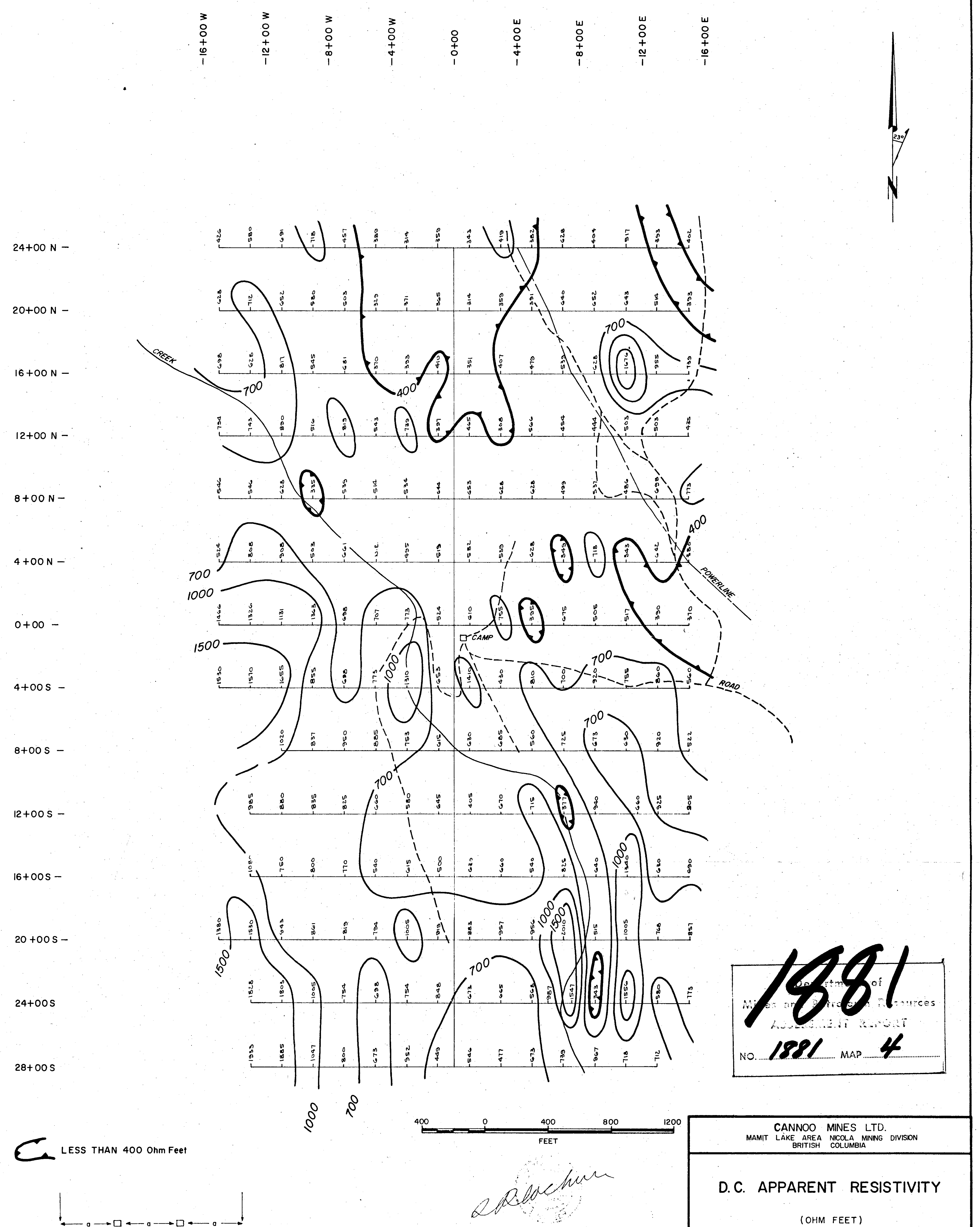


TO ACCOMPANY THE GEOPHYSICAL SURVEY REPORT ON THE AUG & CAL GROUP OF CLAIMS OWNED BY CANNOO MINES LTD. SITUATED IN THE MAMIT LAKE AREA, NICOLA MINING DIVISION, BRITISH COLUMBIA BY DONALD R COCHRANE, PROFESSIONAL ENGINEER, VANCOUVER BRITISH COLUMBIA

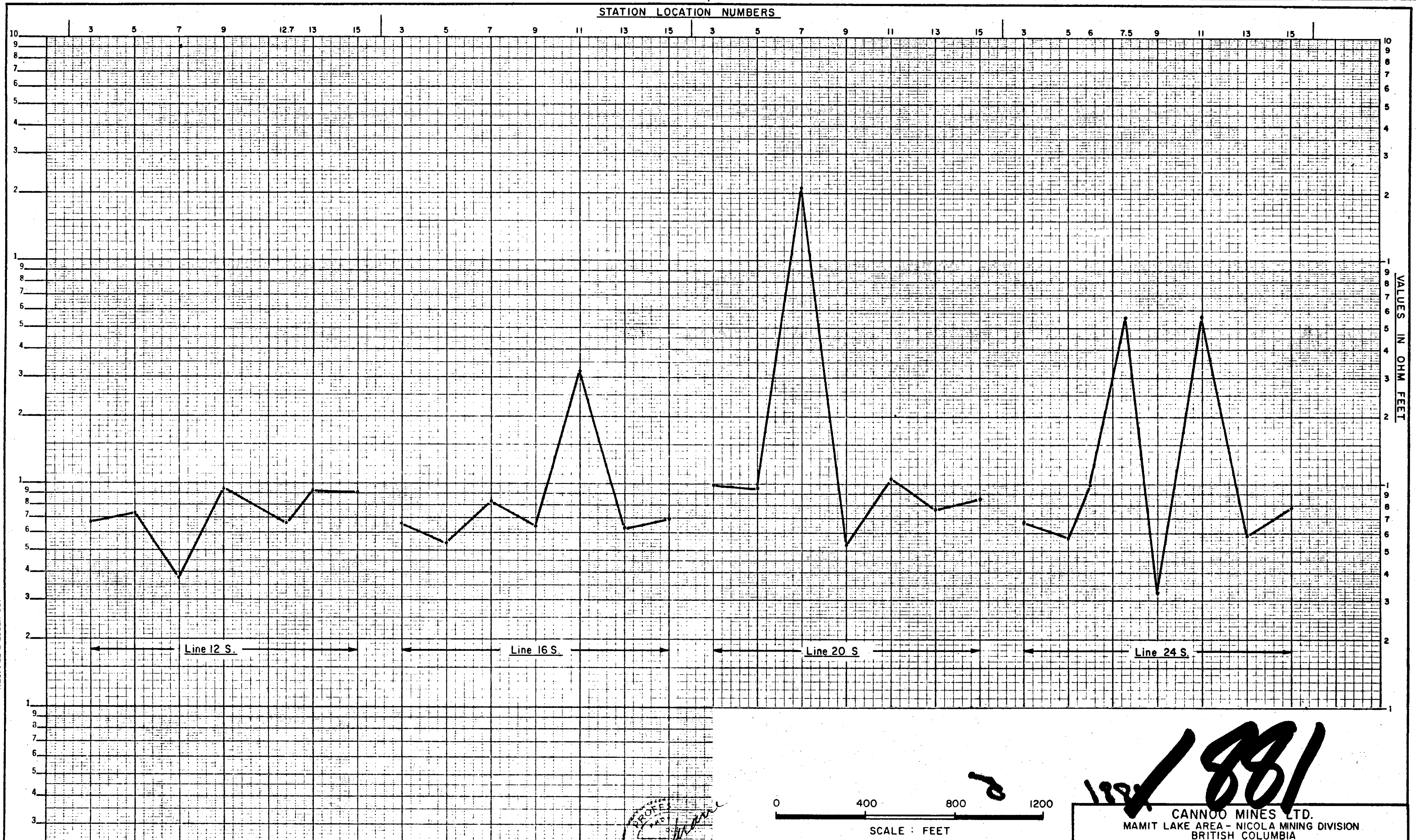
CANNOO MINES LTD.
MAMIT LAKE AREA NICOLA MINING DIVISION BRITISH COLUMBIA

D.C. APPARENT RESISTIVITY

(OHM FEET)

GEO - X SURVEYS LTD.

DRAWN	D.E.Y.	JOB NO.	FIG. NO.
DATED	DEC. 16, 1968.	1062	5
CHECKED			



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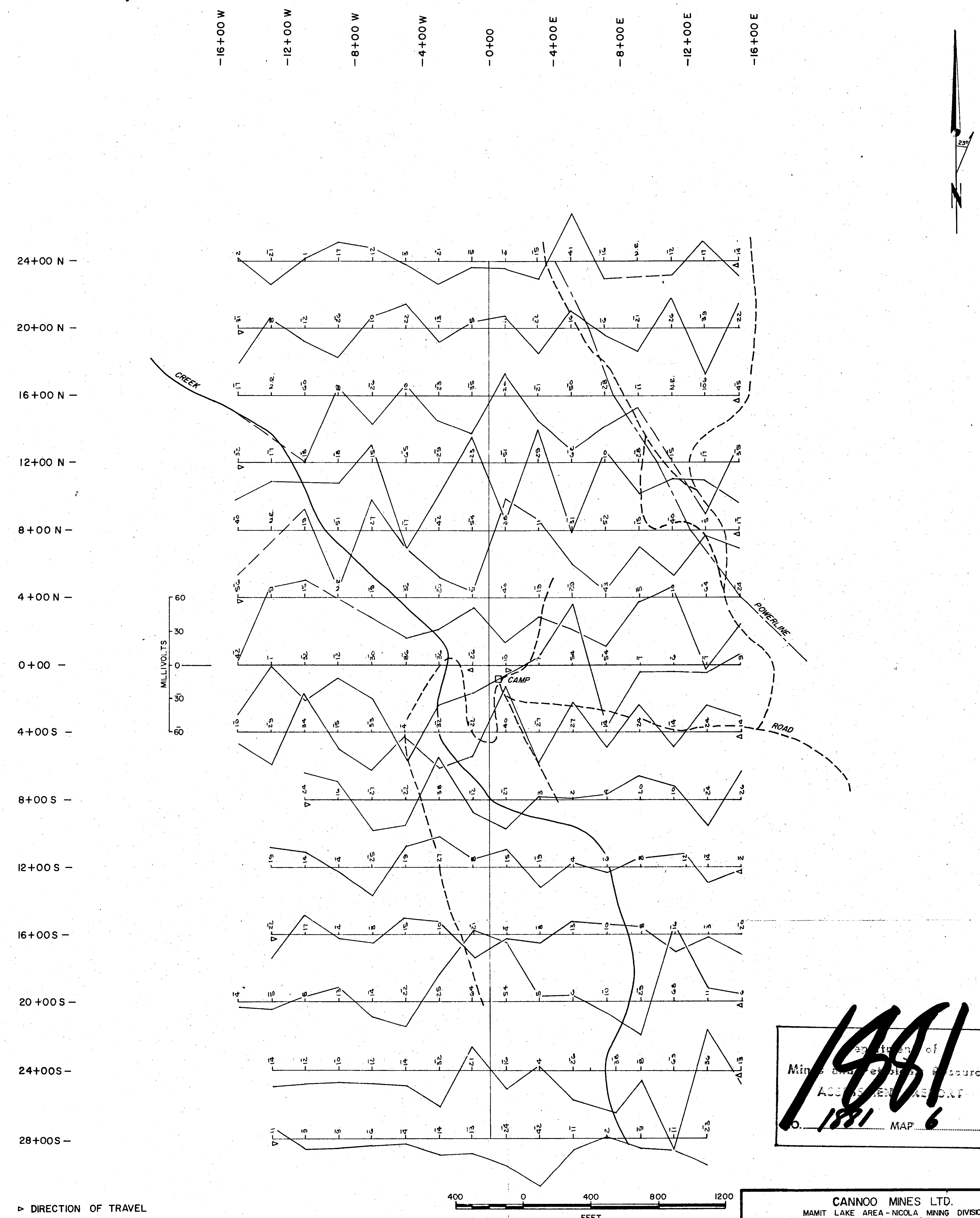
CANNOO MINES LTD.
MAMIT LAKE AREA - NICOLA MINING DIVISION
BRITISH COLUMBIA

RESISTIVITY PROFILES

GEO-X SURVEYS LTD.

Drawn R.K.	Dated Dec. 16/68	Fig. No. 4
Checked	Job No. 1062	



▷ DIRECTION OF TRAVEL

a = 200'

TO ACCOMPANY THE GEOPHYSICAL SURVEY REPORT ON THE AUG & CAL GROUP OF CLAIMS OWNED BY CANNOO MINES LTD SITUATED IN THE MAMIT LAKE AREA, NICOLA MINING DIVISION, BRITISH COLUMBIA BY DONALD R. COCHRANE, PROFESSIONAL ENGINEER, VANCOUVER BRITISH COLUMBIA

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. 1881 MAP 6

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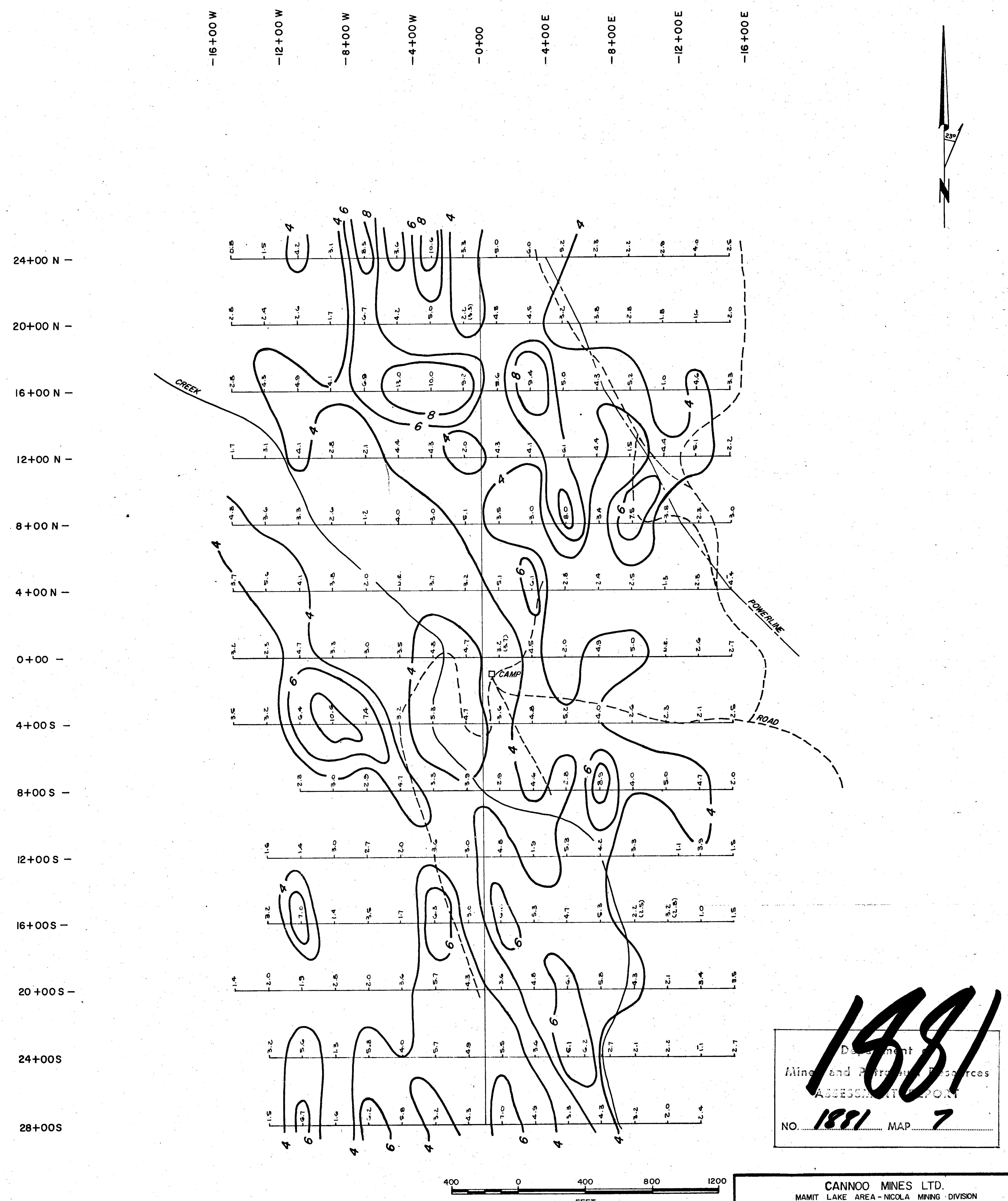
BRITISH COLUMBIA

SELF POTENTIAL

(MILLIVOLTS)

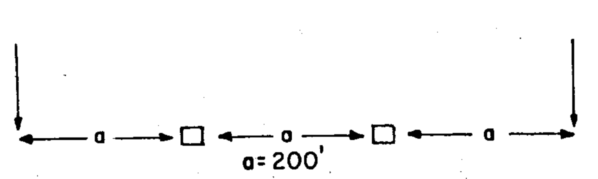
GEO - X SURVEYS LTD.

		JOB NO.	FIG. NO.
DRAWN	D.E.Y.	1062	3
DATED	DEC. 16, 1968		
CHECKED	DRC		



1881

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1881 MAP 7



TO ACCOMPANY THE GEOPHYSICAL SURVEY REPORT ON THE AUG & CAL GROUP OF CLAIMS OWNED BY CANNOO MINES LTD. SITUATED IN THE MAMIT LAKE AREA, NICOLA MINING DIVISION, BRITISH COLUMBIA BY DONALD R. COCHRANE, PROFESSIONAL ENGINEER, VANCOUVER BRITISH COLUMBIA

CANNOO MINES LTD.
MAMIT LAKE AREA - NICOLA MINING DIVISION
BRITISH COLUMBIA

NORMALIZED INDUCED POLARIZATION

CONTOUR INTERVAL: 2 MILLISECONDS

GEO - X SURVEYS LTD.

DRAWN	D.E.Y.	JOB NO.	FIG. NO.
DATED	DEC. 16, 1968.	1062	6
CHECKED	DRC		