

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

N.T.S.: 82L/4W

GEOPHYSICAL REPORT

ON AN

INDUCED POLARIZATION SURVEY

DOBBIN PROPERTY

Tadpole Lake Area, B.C.; Vernon Mining Division

Latitude: 50°01'N; Longitude: 119°46'W

Work Performed: August 20 to 29, 1978

On Claims: TAD 1, 3, 4

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

7269
NO.

part 2 of 2

JANUARY 1979

ALAN SCOTT

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ATTACHMENTS

Plate 127-78-1	Location Plan
127-78-2	Claim and Grid Map
127-78-3 to 5	Induced Polarization and Apparent Resistivity Pseudosections - Cu Grid
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INTRODUCTION

The DOBBIN property is located some 27 kilometers northwest of Kelowna, as indicated on the accompanying location map, plate 127-78-1. The location of the survey lines relative to the claims is shown on plate 127-78-2.

During the period August 20-29, 1978, a Cominco geophysical crew completed some 13.5 line kilometers of multi separation induced polarization survey on the property. The survey was conducted on two separate grids, namely the "Cu Grid" and the "Mo Grid".

This report describes the induced polarization survey, presents the data and discusses the results.

LOCATION AND ACCESS

The claims surround Tadpole Lake, at the headwaters of North Lambly Creek. Approximate geographic coordinates are 50° 01' N latitude by 119° 46' W longitude.

A good system of logging roads give access to the property, from highway 97 on the west side of Okanagan Lake. It is about a 45 minute drive from Kelowna.

GEOLOGY

The DOBBIN property consists of two distinct geological targets, a porphyry Mo target near Tadpole Lake in the north ("Mo Grid"), and an alkaline porphyry Cu target to the south ("Cu Grid"). The geology has been described in a report submitted for assessment purposes by Osatenko, May 10, 1978.

INDUCED POLARIZATION SURVEY

G. J. Niemeyer, geophysical technician, was the party chief/receiver operator on the survey.

A Scintrex IPR-8 receiver, in combination with a Hunttec 7.5 kw motor generator/transmitter were used on the survey. This equipment operates in the time domain, employing a 2 second current on/2 second current off alternating square wave. The chargeability (IP) values plotted are the M232 values, and the units are millivolts/volt. To convert to the more common millisecond value (such as would be obtained with the older model IPR-7), the numbers should be multiplied by 0.7, for a "typical" decay curve. For a more detailed discussion of this instrument, the reader is referred to the Scintrex manual for the IPR-8.

The pole-dipole electrode array was used on both the Cu and Mo grid surveys, with an "a" spacing of 50 meters and "n" separation of 1, 2, 3, and 4. The current electrode was kept to the west of the potential dipole.

The apparent resistivity data is given in units of ohm-meters. It was calculated from the relation:

$$\text{apparent resistivity} = (V/I) \cdot K$$

where V is the voltage across the potential measuring dipole due to a current I, and K is a constant dependant upon the "a" spacing and "n" separation.

DESCRIPTION OF RESULTS

The induced polarization (chargeability) and apparent resistivity data is presented in standard pseudo section format on accompanying plates 127-78-3 to 5 for the "Cu Grid", and on plates 127-78-6 to 11 for the "Mo Grid". This is a schematic form of data presentation, and no geometrical or depth to target information is implied by it.

Cu Grid:

Lines 8+00S, 4+00S and 6+00N were surveyed on the Cu Grid. Anomalous responses were detected on all three survey lines, as discussed below:

Line 8+00S: - A strong chargeability high lies between 350W-550W. It peaks at 65 millivolts per

volt at $n=1$, and is coincident with an apparent resistivity low. Chargeability values are generally high from 100W to the end of the survey line at 800W. A moderate chargeability high lies between 550E to 650E.

Line 4+00S: - Chargeability values are generally high from 250W to the end of the survey line at 1100W. Strongest response at $n=1$ was between 350W to 450W and from 1050W to 1100W (end of line). A moderate chargeability high lies between 350E to 450E.

Line 6+00N: - Chargeability values are generally high from 50W to end of survey line at 700W. Strongest $n=1$ response in this zone is between 500W to 600W, but is associated with an apparent resistivity high.

A moderate to strong chargeability high lies between 550E to the end of the survey line at 750E. It is associated with an apparent resistivity low.

This survey served to confirm and relocate, anomalous chargeability highs coincident with pyrite/chalcopyrite mineralization. (The grid had been surveyed more completely on behalf of Atlas Exploration in 1969).

Mo Grid:

Lines 4+00N to 14+00N were surveyed at a 200 meter line interval over the Mo Grid (plates 127-78-6 to 11).

A strong chargeability high extends along the western portion of the Mo survey grid, and was detected on lines 4+00N to 12+00N. It is likely that line 14+00N did not extend far enough to detect the zone. The strongest response was on line 10+00N, where a $n=1$ value of 86.0 millivolts/volt plots at 875W. The greater than 60 mv/v zone on this line, extends from 550W to the end of the line at 1000W.

Outcroppings of sediments (argillites) containing up to 4% visible pyrite are coincident with this high charge-

ability area. The eastern edge of the high response area corresponds to the geologically mapped contact of the argillites to a granodiorite and/or quartz monzonite intrusive.

A moderate to strong chargeability high was detected on the eastern side of the Mo grid on lines 10+00N and 12+00N. It extends from 800E to the end of the survey line at 900E on line 10+00N; and from 750E to the end of the survey line at 1100E on line 12+00N. The strongest response was on line 12+00N. A coincident outcrop of argillites suggests this anomaly is mapping the eastern contact of the intrusive to sediments.

The central portion of the Mo Grid is characterized by low chargeability response. As only a very weak response could be expected at the low volume percent of molybdenite that would be of economic interest, the Mo potential of this central zone is indeterminate from the IP results alone. Weak local highs, such as on line 12+00N around 200E, could represent the response to weak concentrations of pyrite and/or molybdenite. More detailed correlation of these results to geological and geochemical information may indicate if further work is warranted.

CONCLUSIONS

Portions of the DOBBIN property were surveyed with time domain IP in the summer of 1978. Work was done on two separate grids, namely the "Cu Grid", an alkaline porphyry Cu prospect; and the "Mo Grid", a porphyry Mo target.

Only 3 widely spaced lines were surveyed on the Cu Grid, and strong chargeability highs were detected on all three lines. These highs were coincident with showings of pyrite/chalcopyrite mineralization, and served to confirm and relocate the results of a previous (1969) IP survey.

Work on the Mo Grid showed that an extensive zone of strong chargeability response lies on the western portion of the grid. A second chargeability high response

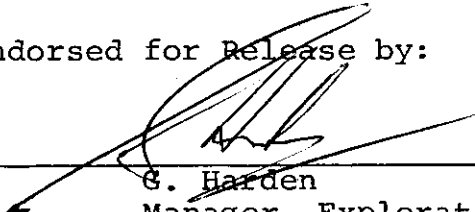
area was detected on two lines on the eastern side of the grid. These IP highs are believed to be caused by disseminated pyrite in sediments. The central portion of the grid has generally low chargeability values.

Respectfully submitted:



Alan Scott
Geophysicist

Endorsed for Release by:



G. Harden
Manager, Exploration
Western District

ARS/deb

17 January 1979

Distribution:

Mining Recorder (2)
Western District (1)
Geophysics File (1)


APPENDIX I

IN THE MATTER OF THE B.C. MINERAL ACT
AND IN THE MATTER OF A GEOPHYSICAL PROGRAMME
CARRIED OUT ON PORTIONS OF THE TAD MINERAL CLAIMS
ON THE DOBBIN PROPERTY
LOCATED 27 KM NW OF KELOWNA IN THE VERNON MINING DIVISION
OF THE PROVINCE OF BRITISH COLUMBIA, MORE PARTICULARLY
N.T.S. 82L/4W

S T A T E M E N T

I, ALAN SCOTT, OF THE CITY OF VANCOUVER IN THE PROVINCE
OF BRITISH COLUMBIA, MAKE OATH AND SAY: -

1. THAT I AM EMPLOYED AS A GEOPHYSICIST BY COMINCO LTD.
AND, AS SUCH, HAVE A PERSONAL KNOWLEDGE OF THE FACTS
TO WHICH I HEREINAFTER DEPOSE;
2. THAT ANNEXED HERETO AND MARKED AS "APPENDIX II" TO
THIS STATEMENT IS A TRUE COPY OF EXPENDITURES INCURRED
ON GEOPHYSICAL SURVEY ON THE TAD MINERAL CLAIMS;
3. THAT THE SAID EXPENDITURES WERE INCURRED FOR THE
PURPOSE OF MINERAL EXPLORATION OF THE ABOVE NOTED
CLAIMS BETWEEN THE 20TH TO 29TH OF AUGUST, 1978.



Alan Scott
Geophysicist

ARS/deb
17 January 1979

APPENDIX II

TAD CLAIMS (DOBBIN PROPERTY)

STATEMENT OF EXPENDITURES

(IP Survey)

SALARIES: (IP survey done Aug. 20-29, 1978)

G.J. Niemeyer	10 days @\$120/day	\$1,200
T. Maurer	10 days @\$ 82/day	\$ 820
P. Harden	10 days @\$ 82/day	\$ 820
S. Heggie	9 days @\$ 82/day	\$ 738
K. Weaver	10 days @\$ 82/day	\$ 820
J.M. Niemeyer	10 days @\$ 82/day	\$ 820
		<hr/>
		\$5,218.00

MISCELLANEOUS:

Food, lodging, gas, consumables \$2,217.74

OPERATING CHARGES:


(Towards report, drafting, supervision)

9 days IP survey @ \$175/day \$1,575.00

GEOPHYSICAL EQUIPMENT & TRUCK RENTALS
AND CHARGES:

9 days IP survey @ \$282/day \$2,538.00

TOTAL:.....\$11,548.74



Alan Scott
Geophysicist

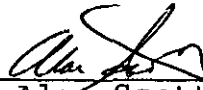
ARS/deb
17 January 1979

APPENDIX III

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

I, Alan Scott, of 4013 West 14th Avenue, in the city of Vancouver, in the Province of British Columbia, do hereby certify that: -

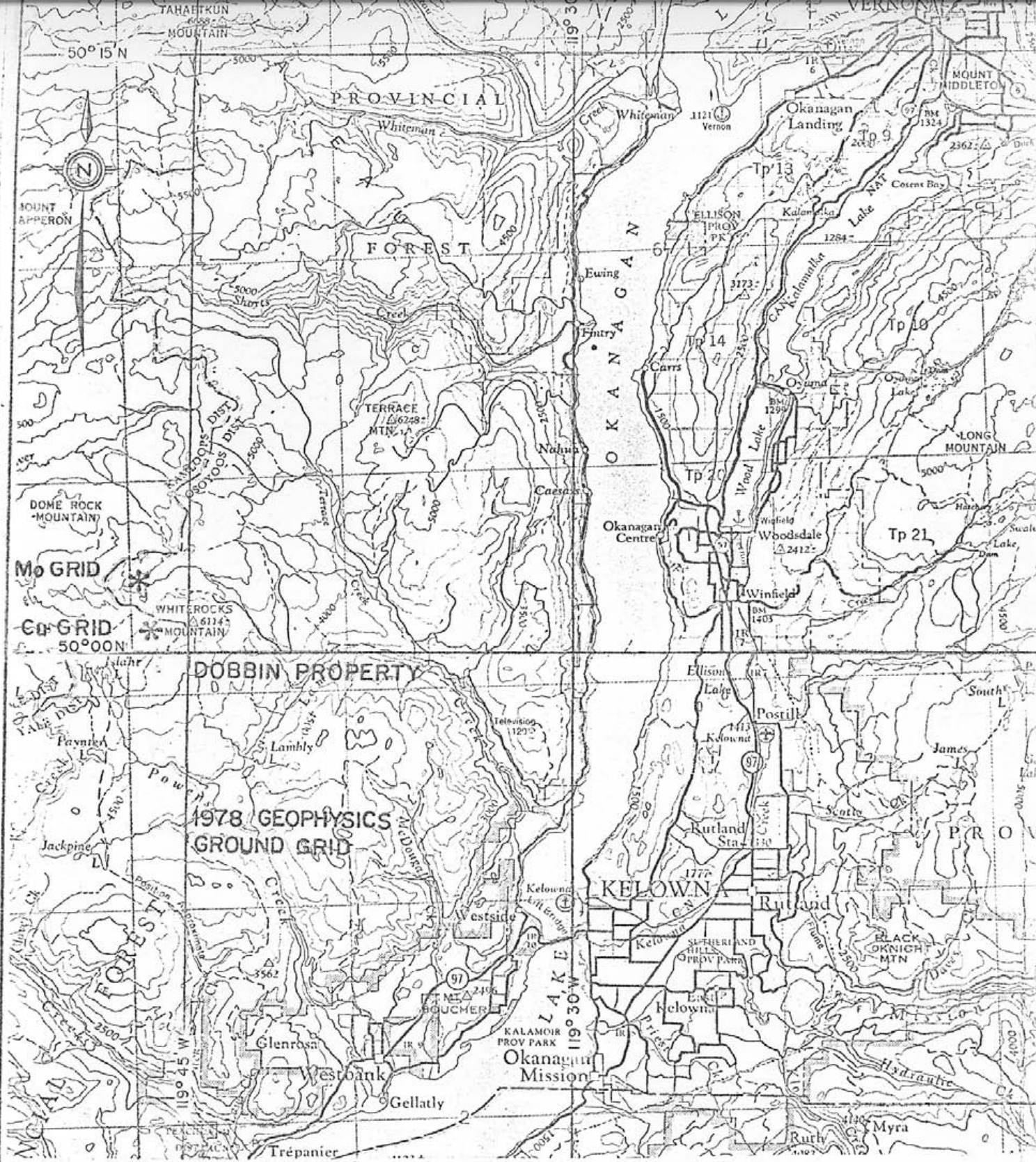
1. I graduated from the University of British Columbia in 1970 with a B.Sc. in Geophysics.
2. I am a member of the Association of Professional Engineers of the Province of Saskatchewan, the Society of Exploration Geophysicists of America, and the British Columbia Geophysical Society.
3. I have been practising my profession for the past nine years.



Alan Scott
Geophysicist

ARS/deb

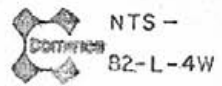
17 January 1979



Scale 1:250,000



DOBBIN PROPERTY
Mo, Cu GRIDS

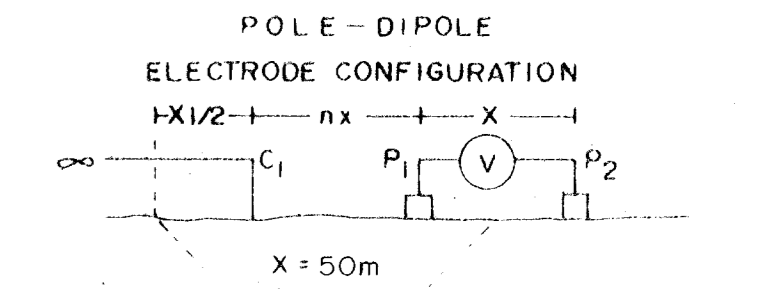


Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LOCATION MAP
VERNON M.D., B.C.

COMINCO LTD.
DOBBIN PROPERTY
Cu GRID
VERNON M.D., B.C.

LINE NO. 8+00S

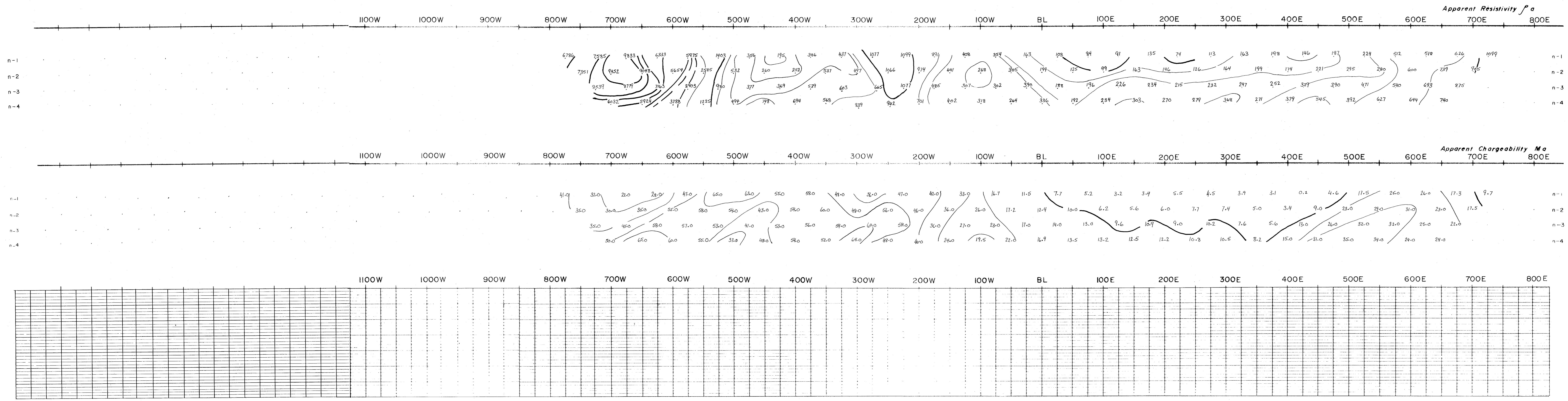


DATE SURVEYED AUGUST 29, 1978

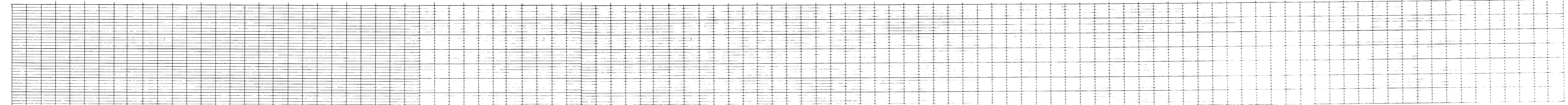
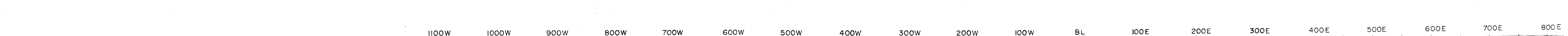
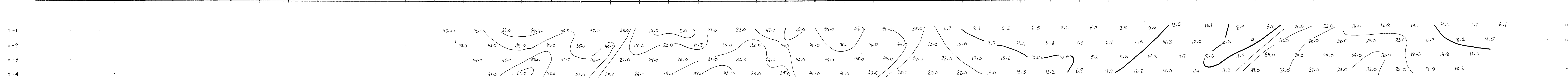
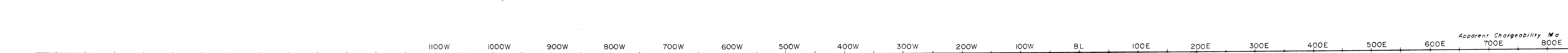
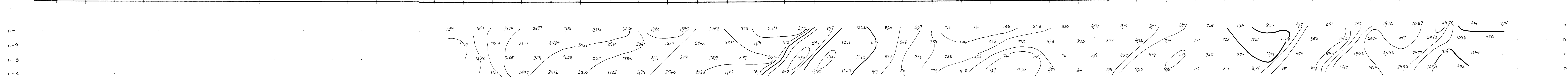
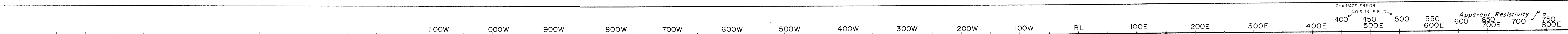
CONTOUR INTERVALS:
 APP RES — LOGARITHMIC OHM METRES APPROVED AT
 APP CHARG — 5.0 Mv/V

DATE 7269
PART 2
 TRANSMITTER — HUNTEC 75 Kw
 RECEIVER — IPR8

INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD. EXPLORATION DIVISION

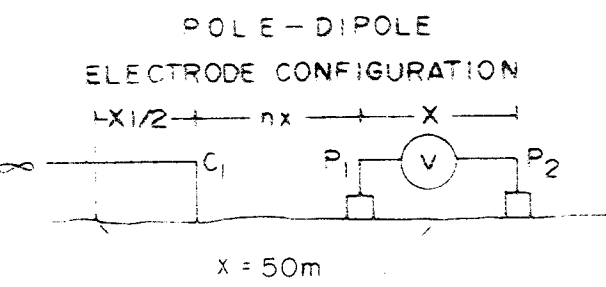


LINE 8+00S



COMINCO LTD.
DOBBIN PROPERTY
Cu GRID
VERNON M.D., B.C.

LINE NO. 4+00S



PLOTTING POINT
 n = 1, 2, 3, 4
 CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

DATE SURVEYED AUGUST 8, 1978

CONTOUR INTERVALS:
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 APP CHARG - 5.0 MV/V

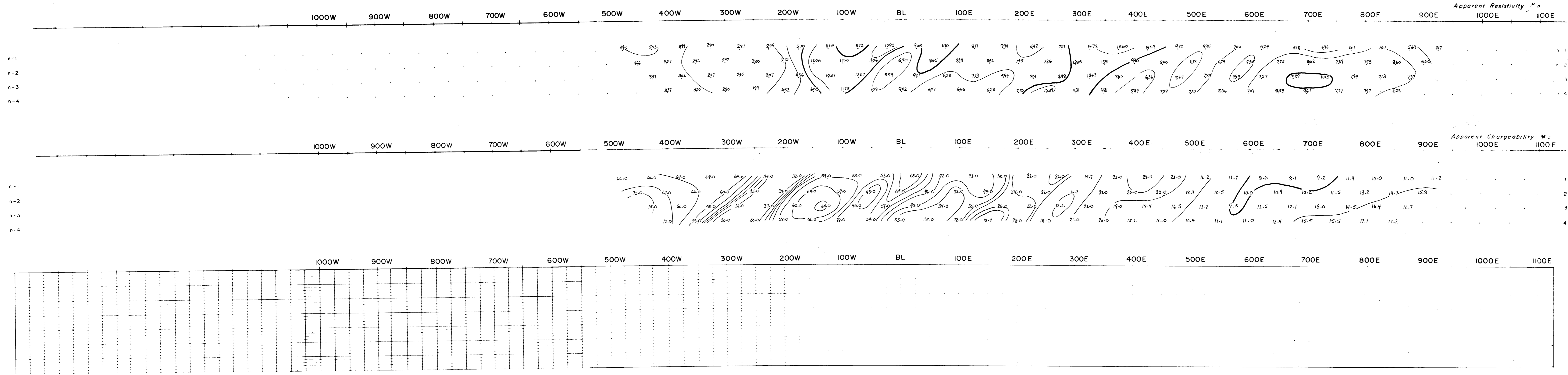
DATE

7269
PART 2

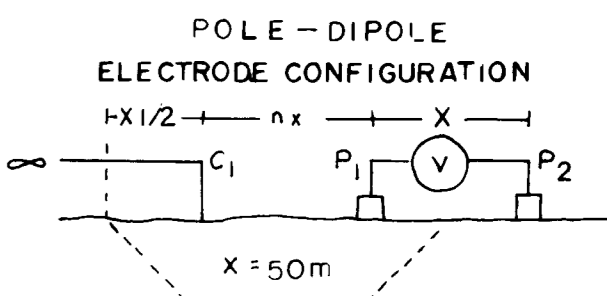
INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD., EXPLORATION DIVISION

LINE 4+00S

COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.



LINE NO. 4+00N



PLOTTING POINT
n = 1, 2, 3, 4
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

DATE SURVEYED AUGUST 24, 1978

CONTOUR INTERVALS:
RESISTIVITY - LOGARITHMIC OHMMETRES APPROVED
CHARGEABILITY - 5.0 %

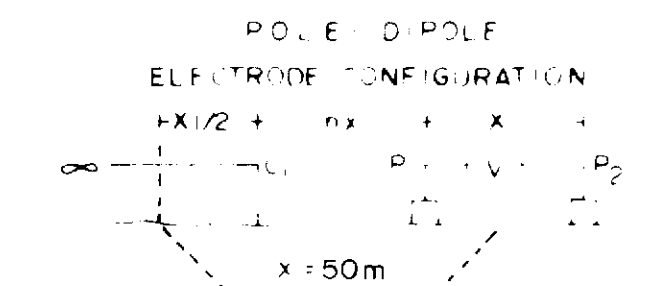
DATE
7269
PART 2

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY COMINCO LTD., EXPLORATION DIVISION

LINE 4+00N

COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.

LINE NO 6+00N



PLOTTING POINT
n = 1, 2, 3, 4
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

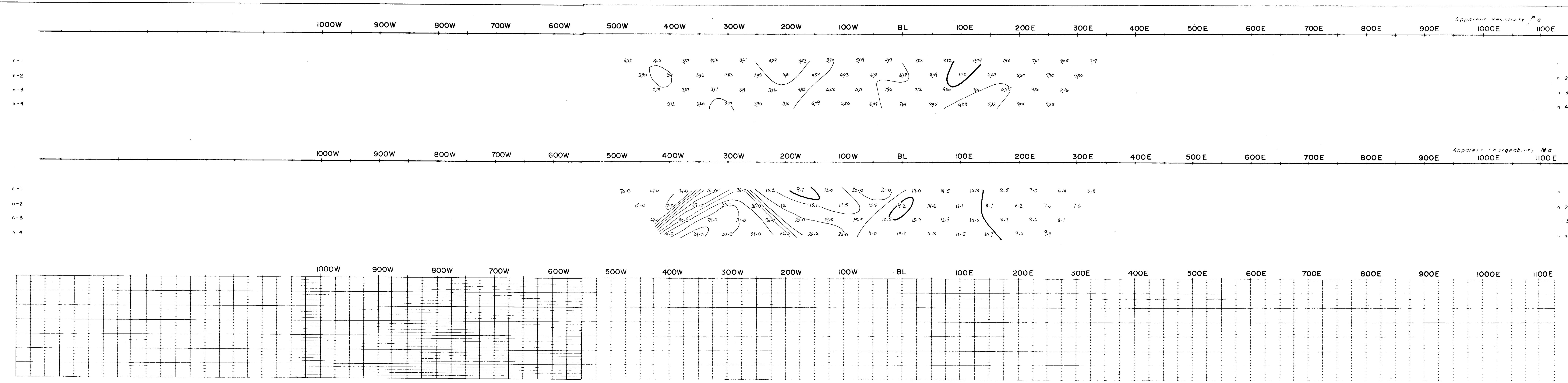
DATE SURVEYED AUGUST 23, 1978

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APP CHARG - 5.0 Mv/V

TRANSMITTER - HUNTEC 75KW
RECEIVER - IPR 8

7269
PART 2

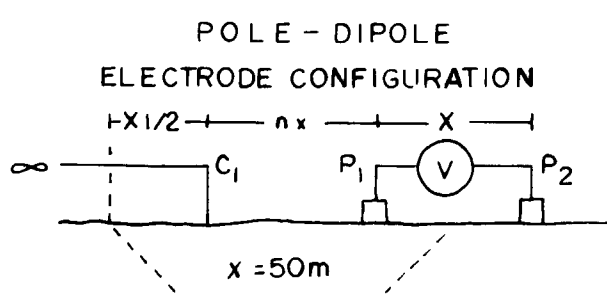
INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



LINE 6+00N

COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.

LINE NO. 8+00N



PLOTTING POINT
n=1, 2, 3, 4
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

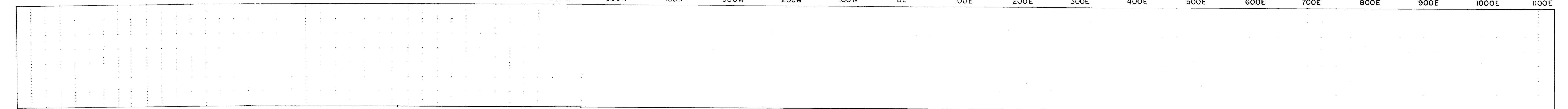
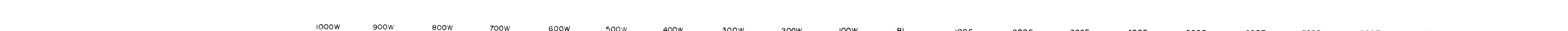
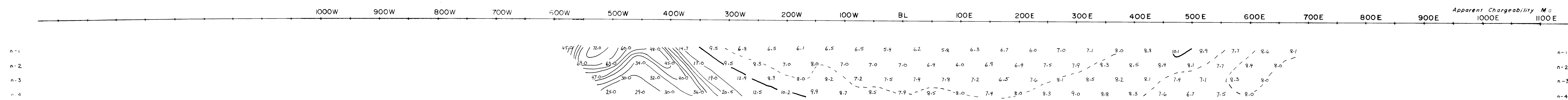
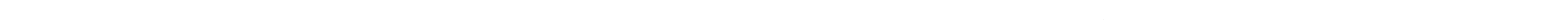
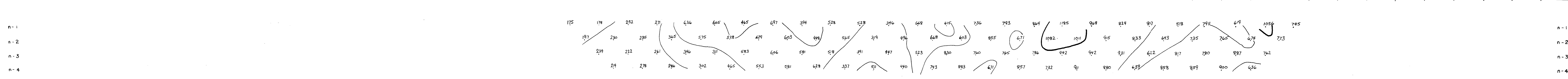
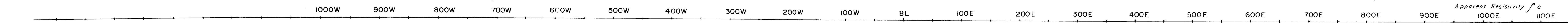
DATE SURVEYED AUGUST 22, 1978

CONTOUR INTERVALS :
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APP. MARG. 5.0 Mv/V

TRANSMITTER HUNTEC 75kw
RECEIVER IPR 8

DATE
7269
PART 2

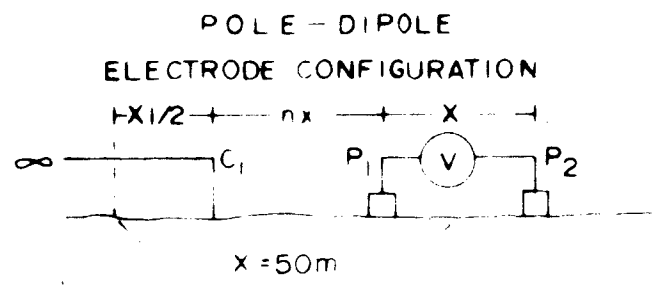
INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



LINE 8+00N

COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.

LINE NO. 10+00N



PLOTTING POINT
 n=1, 2, 3, 4

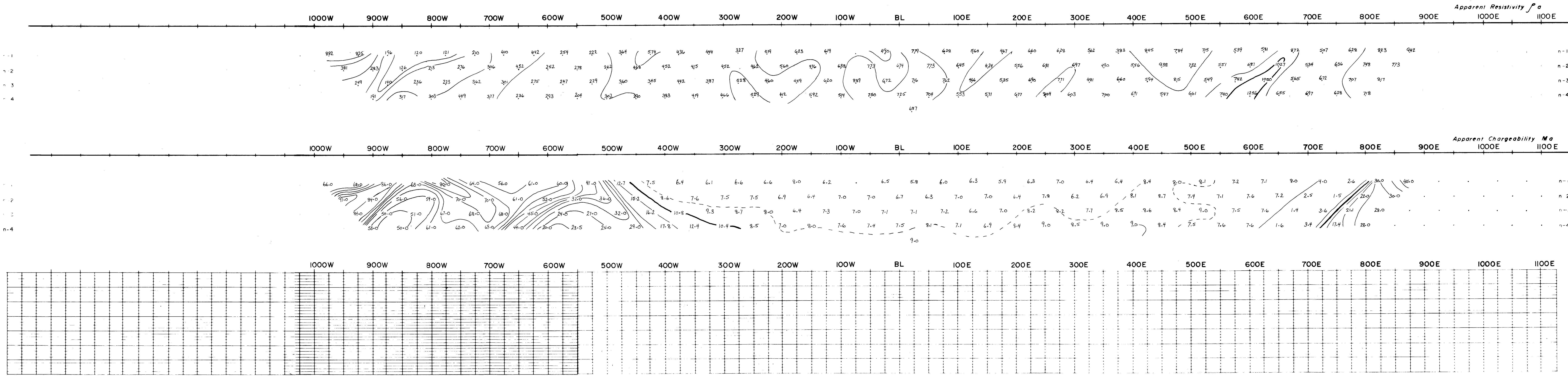
CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

DATE SURVEYED AUGUST 22, 1978

CONTOUR INTERVALS:
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 APP CHARG - 5.0 Mv/V

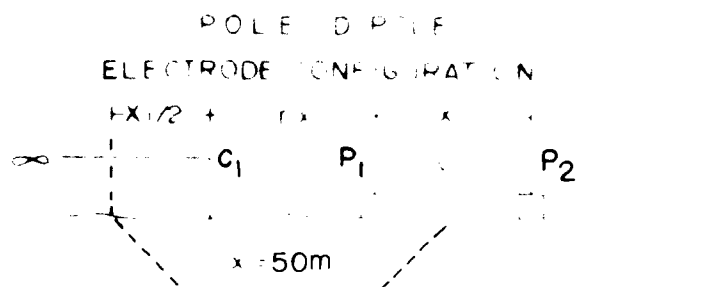
DATE
 TRANSMITTER - HUNTEC 75Kw
 RECEIVER - IPR 8
7269
PART 2

INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.

LINE NO 12+00N

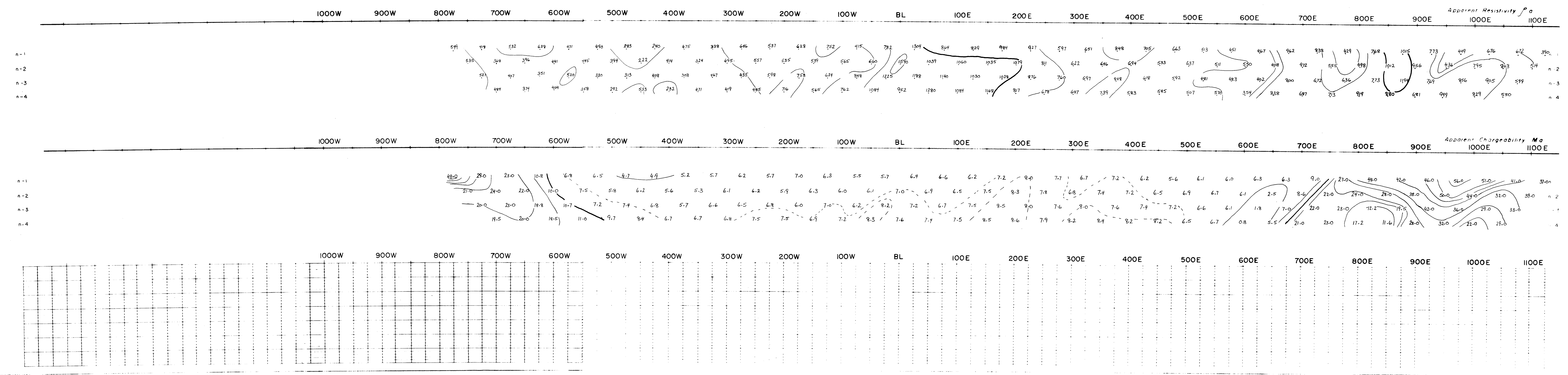


PLOTTING POINT
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 CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

DATE SURVEYED AUGUST 25, 1978
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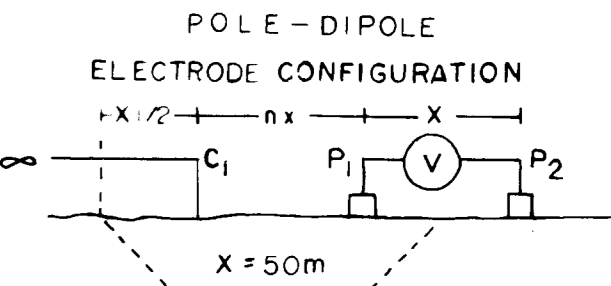
DATE
7269
PART 2

INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



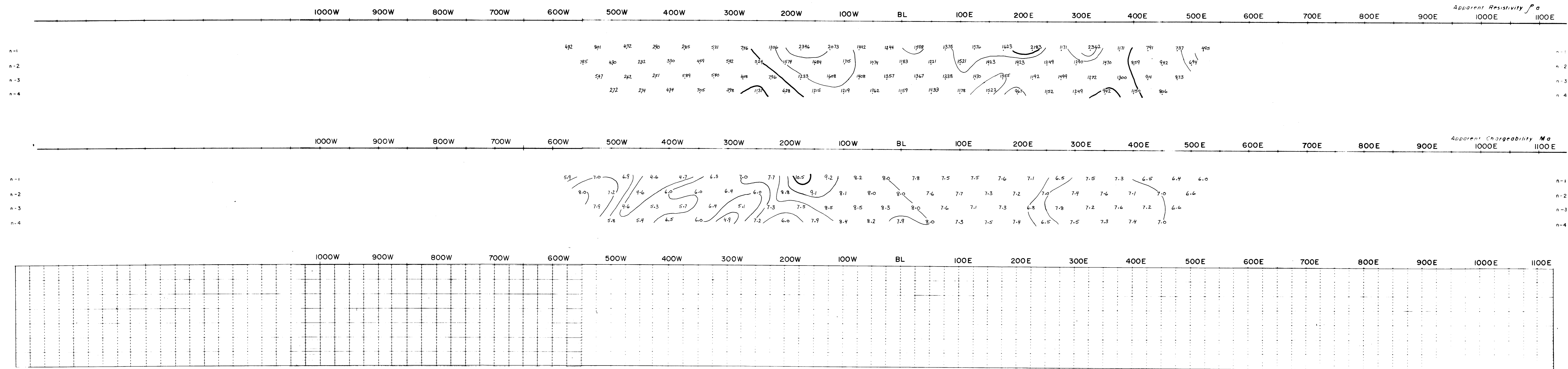
COMINCO LTD.
DOBBIN PROPERTY
Mo GRID
VERNON M.D., B.C.

LINE NO. 14+00N



PLOTTING POINT
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 CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

LINE 14+00N



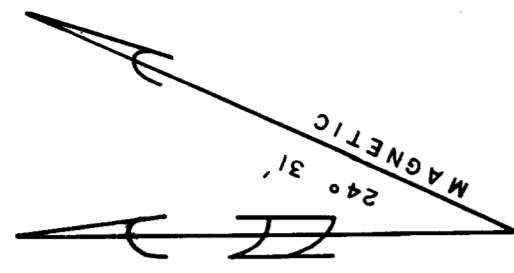
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 APP. CHARG. 5.0 Mv/V

DATE
 TRANSMITTER - HUNTEC 75KW
 RECEIVER - IPR 8

7269
Part 2

INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



LAMBLY CREEK

WHITEROCKS ROAD

to Kelowna

LINE 6+00N
LINE 4+00N
LINE 0+00N
LINE 8+00S

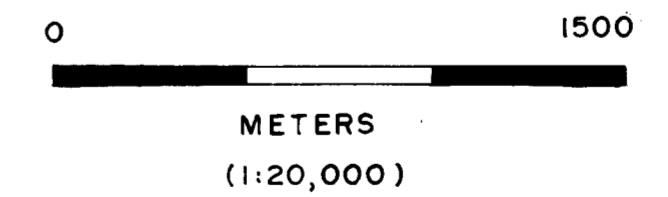
Cu GRID

Mo GRID

BASELINE

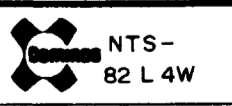
1978 GEOPHYSICS GRID

BASELINE



7269
PART 2

DOBBIN PROPERTY



Drawn by:	Traced by:
Revised by	Date
Revised by	Date

CLAIMS AND GRID MAP
VERNON M.D., B.C.

Scale: AS SHOWN Date: JANUARY 1979 Plate: 127 78-2

