

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS: 92I/10E

7052

INDUCED POLARIZATION GEOPHYSICAL SURVEY

ROPER LAKE PROPERTY

HAPPY DAYS CLAIMS

Greenstone Mountain Area, Kamloops Mining Division, B.C.

Latitude: $50^{\circ}35'N$; Longitude: $120^{\circ}39'W$

Work Performed: July 5 - 16, 1978

On Claims: Happy Days, Happy Days No. 3

NOVEMBER 1978

ALAN SCOTT

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INTRODUCTION

The Happy Days claims are located some 35 kilometers west southwest of Kamloops, B.C., just south of the fire tower on Greenstone Mountain. They are accessible by gravel road, south from Cherry Creek on highway 97, west of Kamloops. The general location of the property is indicated on plate 145-78-1, and the location of the grid surveyed relative to the claims is shown on plate 145-78-2.

During the period July 5-16, 1978, a Cominco geophysical crew completed some 20.5 line kilometers of two separation induced polarization survey over parts of the Happy Days claims.

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

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 Huntec 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 the survey, with an "a" spacing of 90 meters and "n" separation of 1 and 2 only. The current electrode was kept to the south 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 chargeability and apparent resistivity values are plotted in standard pseudo section format on accompanying plates 145-78-3 to 145-78-9. Plate 145-78-2 shows the location of the survey lines relative to the claims and geographical features. Chainages on the survey lines is also indicated along with any observed errors in the picket numbers.

A zone of high chargeability was detected along the northern portion of all the survey lines. This zone has readings of greater than 50 millivolts/volt on all lines except 350 East, and peaks at 74 millivolts/volt on line 15+50E at station 1170 North.

Chargeability highs, outside this main zone, were detected at:

Line 0+00 ; stations 1080 - 990S; peak value 20 mv/v
Line 3+50E; stations 90N- 360N; peak value 51 mv/v
Line 6+50E; stations 360S- 90N; peak value 31 mv/v
Line 15+50E; stations 540S- 450S; peak value 20 mv/v

CONCLUSIONS

Portions of the Happy Days claims were surveyed by time domain IP in the summer of 1978.

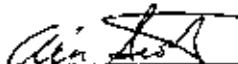
A continuous zone of high chargeability values was detected on the northern portion of the survey lines. Four other chargeability highs were detected, outside of this zone, as noted above.

Correlation of this data to geological and geochemical information may indicate if further work is required.

ARS/deb
27 November 1978

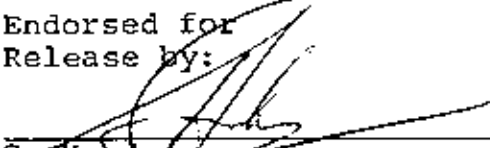
Distribution:
Mining Recorder (2)
Western District (1)
Geophysics File (1)

Respectfully submitted:



Alan Scott, Geophysicist

Endorsed for
Release by:



G. Harden
Manager, Exploration
Western District

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 HAPPY DAYS MINERAL CLAIMS
ON THE ROPER LAKE PROPERTY
LOCATED 35 KM WSW OF KAMLOOPS IN THE KAMLOOPS MINING DIVISION
OF THE PROVINCE OF BRITISH COLUMBIA, MORE PARTICULARLY
N.T.S. 92I/10E

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 AND LINECUTTING ON THE HAPPY DAYS
MINERAL CLAIMS;
3. THAT THE SAID EXPENDITURES WERE INCURRED BETWEEN THE
5TH OF JULY AND 16TH OF JULY 1978, FOR THE PURPOSE
OF MINERAL EXPLORATION OF THE ABOVE NOTED CLAIMS.



Alan Scott, Geophysicist

ARS/deb

27 November 1978

APPENDIX II

ROPER LAKE PROPERTY (HAPPY DAYS CLAIMS)

STATEMENT OF EXPENDITURES

(Induced Polarization Survey, Linecutting)

SALARIES:

G.J. Niemeyer	July 5-12, 15, 16	10 days @ \$120=\$1,200	
R. Grant	July 5-12, 15, 16	10 days @ \$ 82=\$ 820	
I. Cummings	July 5-12, 15, 16	10 days @ \$ 82=\$ 820	
M. Siefert	July 5-12, 15, 16	10 days @ \$ 82=\$ 820	
C. LaPrairie	July 5-12	8 days @ \$ 82=\$ 656	
J.M. Niemeyer	July 15	1 days @ \$ 82=\$ 82	
J. Reader	July 16	1 days @ \$ 82=\$ 82	
			<hr/>
			\$ 4,480.00

MISCELLANEOUS:

Food, lodging, gas, consumables \$ 1,303.86

OPERATING CHARGES:

(towards report, drafting, supervision)

8 days IP survey @ \$175/day \$ 1,400.00

EQUIPMENT RENTALS AND CHARGES:

8 survey days @ \$282/day	\$ 2,256	
1 day truck rental only @ \$30	\$ 30	
		<hr/>
		\$ 2,286.00

LINECUTTING:

20 line kilometers @ \$180 \$ 3,600.00

TOTAL:..... \$ 13,069.00

ARS/deb
27 November 1978



APPENDIX III

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

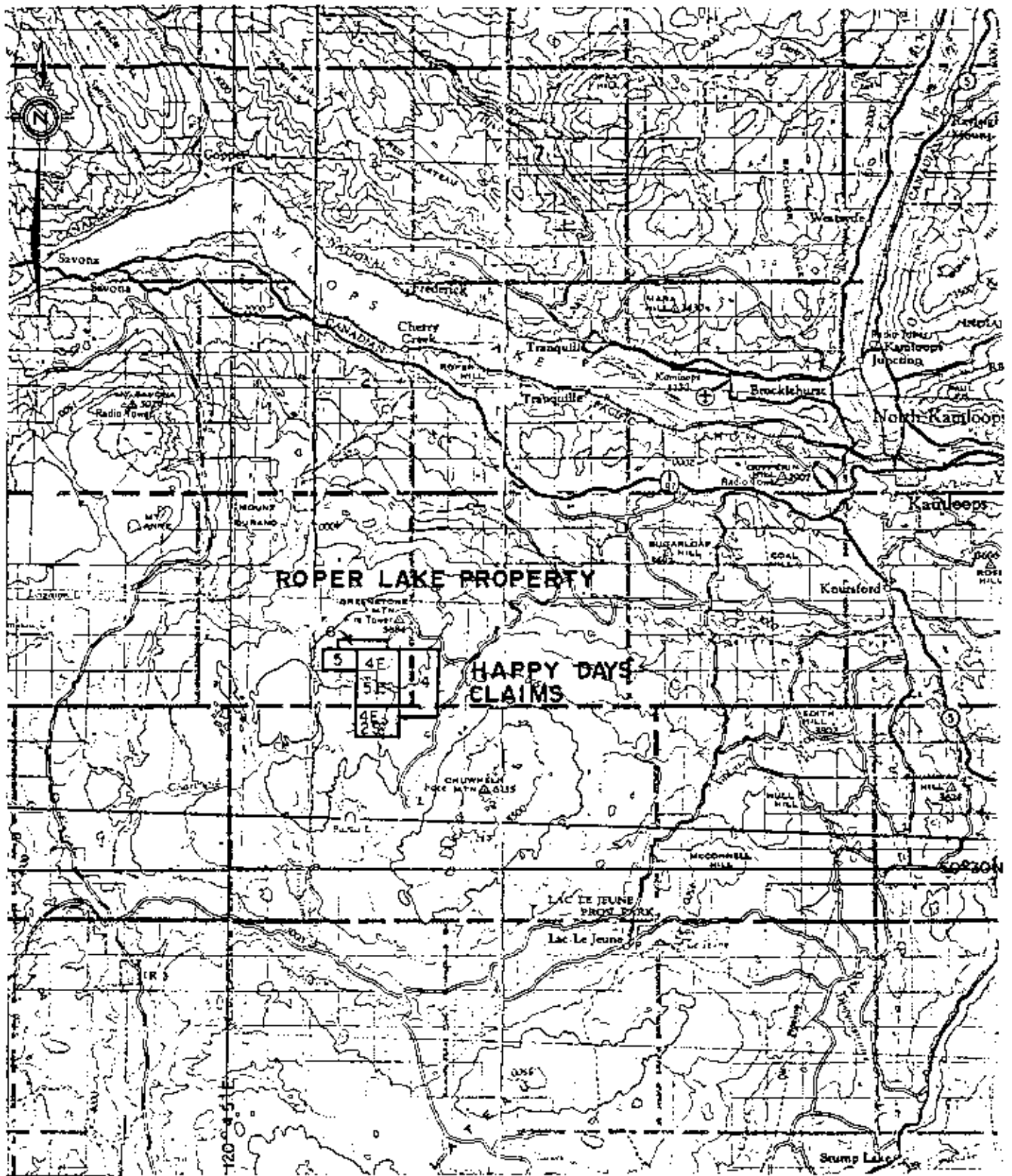
I, Alan Scott, of 4013 West 14th Avenue, in the city of Vancouver, in the Province of British Columbia, do hereby certify that: -

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 eight years.



Alan Scott, Geophysicist

ARS/deb
27 November 1978



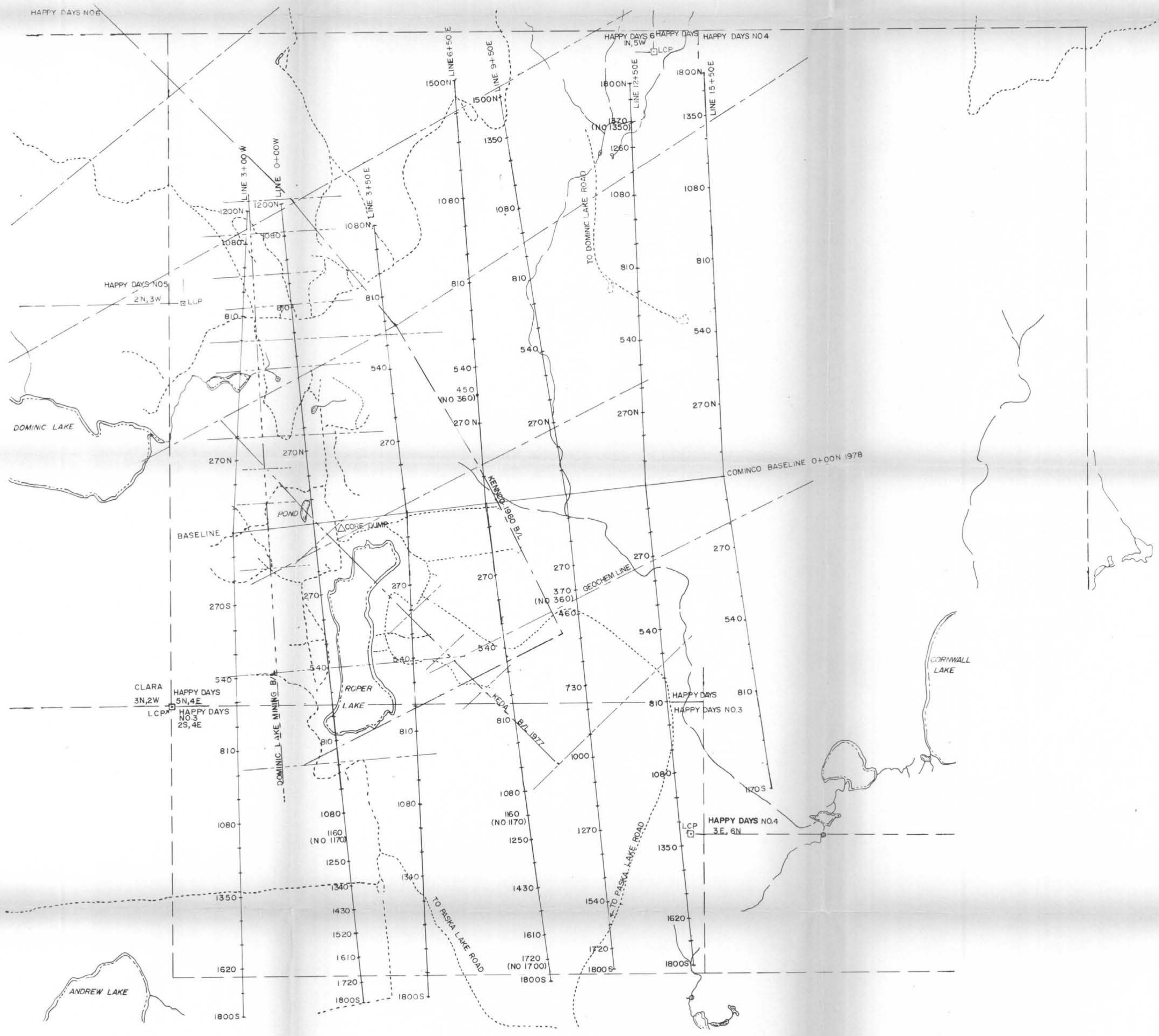
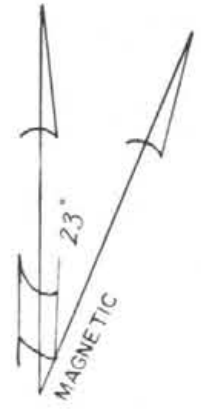
ASHCROFT
92-1



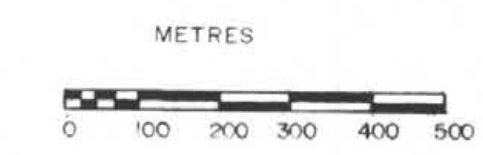
ROPER LAKE PROPERTY

Drawn by	Traced by
Checked by	Dated by Date

LOCATION MAP



- 1978 GEOPHYSICS GROUND GRID
- KENCO 1960 GRID
- KEDA 1977 GRID
- DOMINIC LAKE MINING REF. GAVIN DUDON, 1976 GRID
- LAKE, POND
- ~ CREEKS
- ROADS, TRAILS
- ⊕ LEGAL CORNER POST
- △ CORE DUMP
- APPROXIMATE LOCATION OF THE CLAIM BOUNDARY

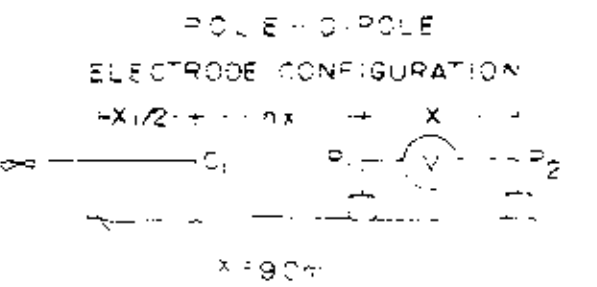


MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
7052
NO.

ROPER LAKE PROPERTY				NTS 92 1 10
Drawn by:	Traced by:	HAPPY DAYS CLAIMS		CLAIM MAP
Revised by / Date	Revised by / Date	KAMLOOPS M.D., B.C.		
		Scale: 1:10000		
		Date: OCT 1978	Plate: 45-7B-2	FORM 210 (6/80)

COMINCO LTD.
ROPER LAKE PROPERTY
HAPPY DAYS CLAIMS
KAMLOOPS M.D., B.C.

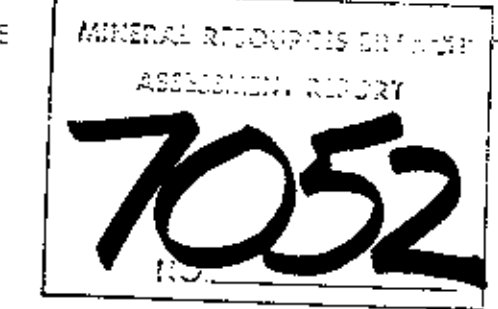
LINE NO. 3+00W



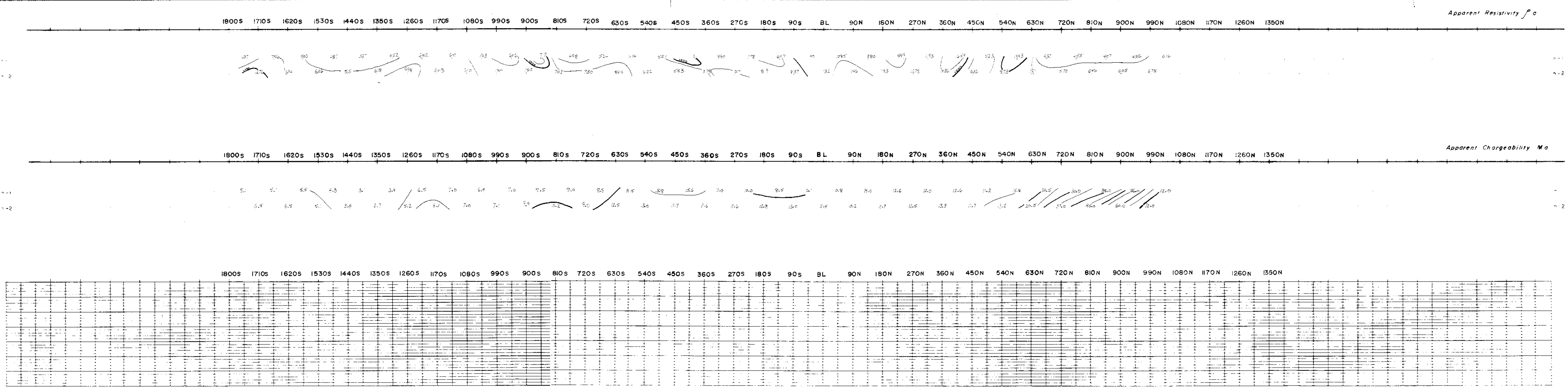
PLACING POINT
 CURRENT ELECTRODE SOUTH OF POTENTIAL ELECTRODE

DATE SURVEYED JULY 3, 1978
 APPROVED [Signature]
 APP. RES - COMINCO LTD.
 APP. CHARG - GEOPHYSICIST

DATE 7-1-78
 TRANSMITTER - HUNTEC 75 Km
 RECEIVER - PR 8



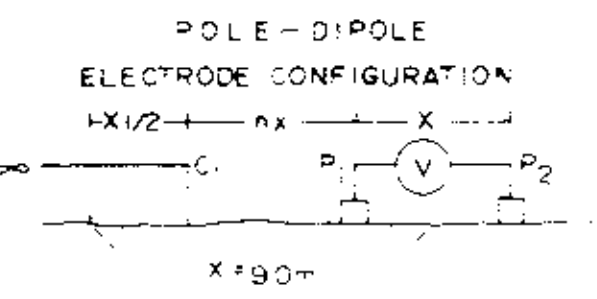
INDUCED POLARIZATION AND RESISTIVITY SURVEY
 SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



LINE 3+00W

COMINCO LTD.
 ROPER LAKE PROPERTY
 HAPPY DAYS CLAIMS
 KAMLOOPS M.D., B.C.

LINE NO. 0±0.0 BL



PLOTTING POINT
 n = 2
 CURRENT ELECTRODE SOUTH OF POTENTIAL D POLE

DATE SURVEYED JULY 8, 1978

CONTOUR INTERVALS:
 APP RES - LOGARITHMIC 0.5
 APP CHARG - 5.0 MV/V

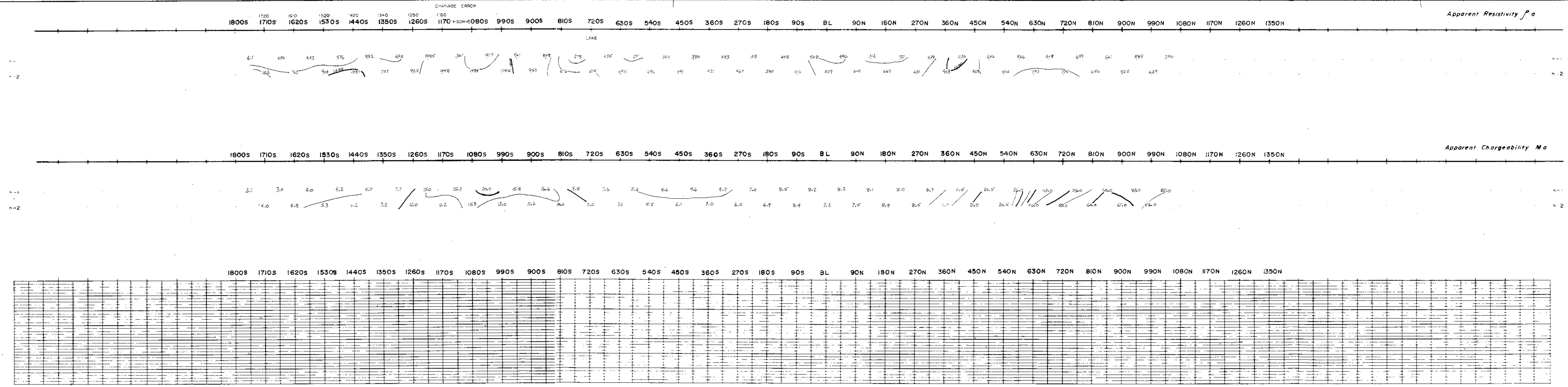
APPROVED

DATE

TRANSMITTER - HUNTEC 75 Km
 RECEIVER - IPR 8

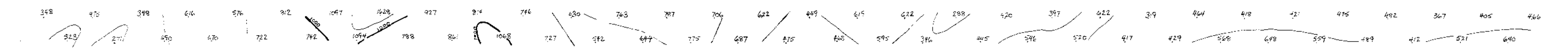
7052

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



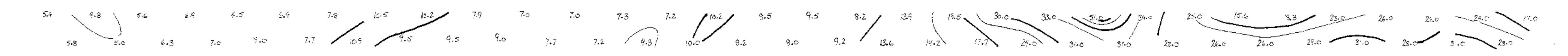
1720 160 1520 1430 1340 1250 CHARGE ERROR
 1705 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S B.L. 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Apparent Resistivity ρ_a

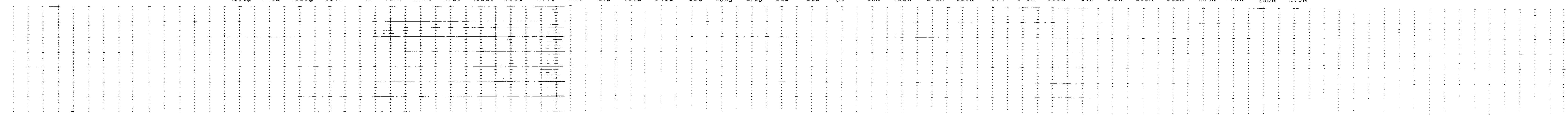


1800S 1710S 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S B.L. 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Apparent Chargeability M_a



1800S 1710S 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S B.L. 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N



S 92-1-10 DWG NO 45-78-5

COMINCO LTD.
 ROPER LAKE PROPERTY
 HAPPY DAYS CLAIMS
 KAMLOOPS M.D., B.C.

LINE NO 3+50E

CURRENT ELECTRODE SOUTH POTENTIAL BIPOLE

JULY 15, 1978

WELL INTERVAL
 APP RES LOGARITHMIC
 APP CHARGE 5.0 M/V

TRANSMITTED HUNTEG 7.5 Km
 RECORDED IPR B

7052

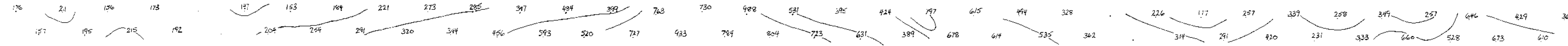
APPROVED FOR ORGANIZATION AND RESISTIVITY SURVEY
 PREPARED BY COMINCO LTD. 1978

3+50E

STN. NOS IN FIELD APPROX. 100m APART

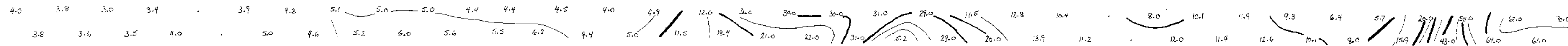
1800S 1710S 1610 1620S 1510 1530 STN. 1440 MISSING 1440 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S 8L 90N 180N 270N 360 STN. 360 MISSING 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Apparent Resistivity ρ_a



1800S 1710S 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S 8L 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Apparent Chargeability M_a



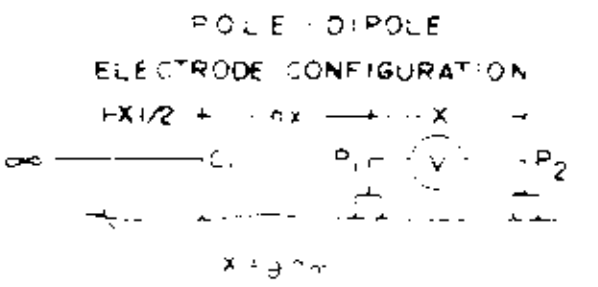
1800S 1710S 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S 8L 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Grid area for data recording with columns corresponding to station numbers and rows for data entry.

NT S -92-1-10 DWG. NO. -145-78-6

COMINCO LTD.
ROPER LAKE PROPERTY
HAPPY DAYS CLAIMS
KAMLOOPS M.D., B.C.

LINE NO. 6+50E



PLOTTING POINT
n=2
CURRENT ELECTRODE SOUTH OF POTENTIAL D POLE

DATE SURVEYED JULY 9, 1978

CONTOUR INTERVALS
APP. RES - 100 Ohm-m
APP. CHARG - 0.5%
APPROVED [Signature]

DATE

TRANSMITTER - HUNTEC 7.5 Km
RECEIVER - IPR 8

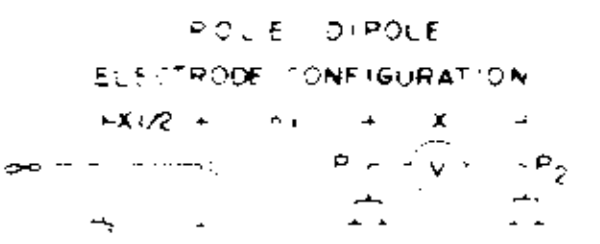
7052

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

LINE 6+50E

COMINCO LTD.
ROPER LAKE PROPERTY
HAPPY DAYS CLAIMS
KAMLOOPS M.D., B.C.

LINE NO. 9+50E



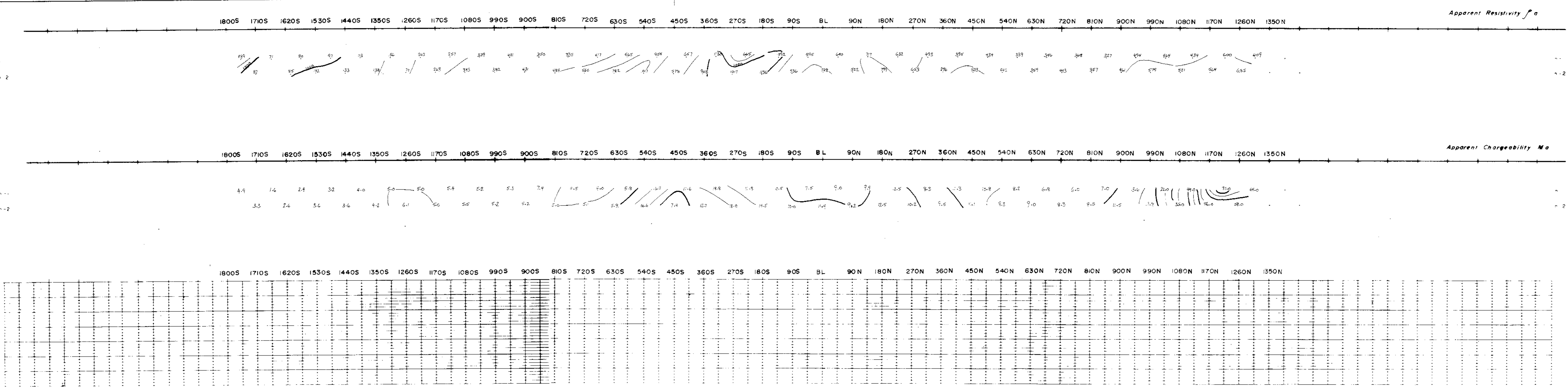
PLOTTING POINT
 # 2
 CURRENT ELECTRODE SOUTH OF POTENTIAL ELECTRODE

DATE SURVEYED JULY 10, 1978
 APPROVED *[Signature]*
 DATE

TRANSMITTER HUNTEC 7.5 Km
 RECEIVER IPR 8

7052

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



COMINCO LTD.
ROPER LAKE PROPERTY
HAPPY DAYS CLAIMS
KAMLOOPS M.D., B.C.

LINE NO. 12+50E

CURRENT ELECTRODE SOUTH OF POTENTIAL DIPOLE

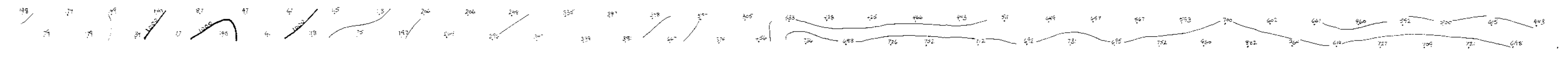
JULY 1, 1978

NTS 92-1-10
 APP. RES. LOGARITHMIC ρ_a
 APP. CHARGEABILITY M_a

7052

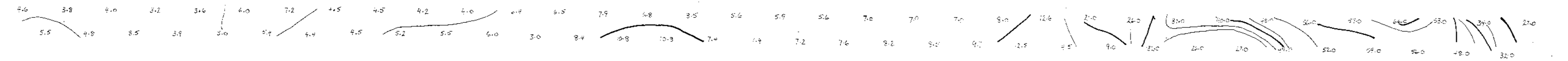
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Apparent Resistivity ρ_a

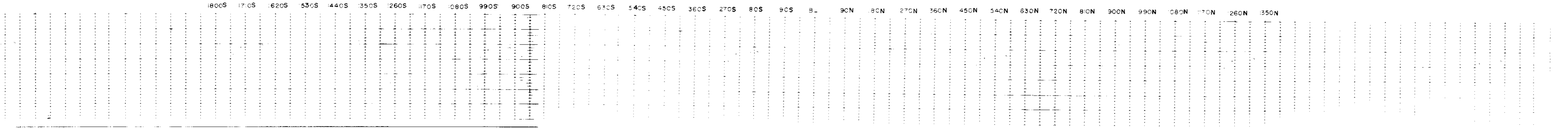


1800S 1710S 1620S 1530S 1440S 1350S 1260S 1170S 1080S 990S 900S 810S 720S 630S 540S 450S 360S 270S 180S 90S BL 90N 180N 270N 360N 450N 540N 630N 720N 810N 900N 990N 1080N 1170N 1260N 1350N

Apparent Chargeability M_a



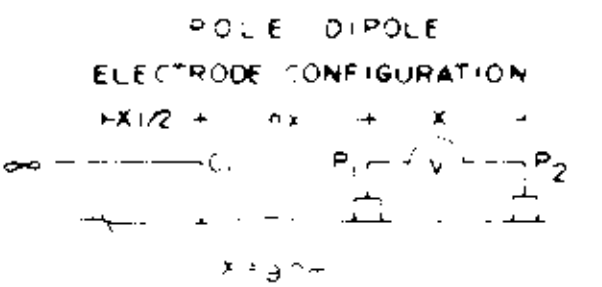
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NT 12+50E

COMINCO LTD.
ROPER LAKE PROPERTY
HAPPY DAYS CLAIMS
KAMLOOPS M.D., B.C.

LINE NO. 15+50E

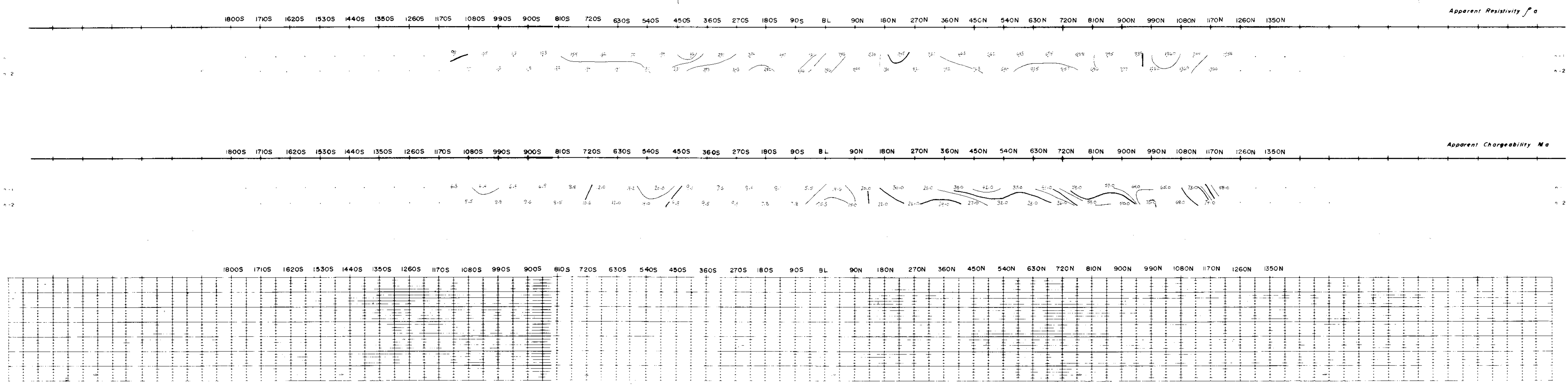


PLOTTING POINT
 n=1
 n=2
 CURRENT ELECTRODE POSITION OF POTENTIAL DIPOLE

DATE SURVEYED JULY 16, 1978
 APPROVED [Signature]
 APP. RES - LOGARITHMIC 10m
 APP. CHARG - 5.0 MV/V

DATE OF THIS SURVEY
 TRANSMITTER - HUNTEC 75 Km
 RECEIVER - IPR 8
7052

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



LINE 15+50E