COMINCO LTD.

EXPLORATION WESTERN DISTRICT

N.T.S. 92I/11W E

INDUCED POLARIZATION

VLF-EM AND MAGNETICS GEOPHYSICAL SURVEYS

LOFAR PROPERTY

ORION CLAIM

Ashcroft Area, B.C., Kamloops Mining Division

Latitude: 50°35'N; Longitude: 121°13'W

WORK PERFORMED

May 29 - June 1, 1979

On Claim

ORION MINERAL CLAIM

AUGUST 1979

ALAN SCOTT

TABLE OF CONTENTS

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ATTACHMENTS

INTRODUCTION AND SUMMARY

During the period May 29 to June 1, 1979, a Cominco geophysical crew completed some 3.6 line kilometers of multi separation induced polarization (IP) and total field magnetics surveying over portions of the ORION mineral claim.

The ORION mineral claim, LOFAR property, is located some 16 kilometers south of Ashcroft, B.C. Access is gained via the trans Canada highway, which passes through the eastern edge of the claim (See accompanying location plan, Plate 144-79-1).

The exploration target of the survey was volcanogenic massive sulphide mineralization. This report describes these geophysical surveys, presents the data, and discusses the results.

GEOPHYSICAL SURVEYS

Magnetics

A Scintrex MP-2 total field proton precession magnetometer was used for the magnetics survey of the ORION claim. The instrument has a digital display that reads to the nearest gamma. Diurnal variation was monitored by repeating base station readings.

Readings were taken at 25 meter intervals on crosslines 200 metres apart. The results are plotted in profile form on the IP psuedosections.

Induced Polarization

G.J. Niemeyer was the party chief/receiver operator on the IP survey.

A Huntec 7.5 kw induced polarization motor generator/transmitter, in combination with a Scintrex IPR-8 receiver were employed on the survey. Readings were taken in the time domain using a 2 second current on/2 second current off alternating square wave as the transmitted signal. The chargeability (IP) values plotted are those for the M_{232} measurement window (from 650 to 1170 milliseconds after cessation of the current pulse, and normalized for primary voltage). Chargeability units are millivolts per volt.

The pole dipole electrode array was used on the survey 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 values are given in units of ohm meters. They were calculated from the relation:

apparent resistivity = K (V/I)

where V is the voltage measured across the potential dipole during the current on period (primary voltage), I is the current impressed in the ground, and K is a geometric factor dependent upon the "a" spacing and "n" separation.

DESCRIPTION OF RESULTS

The four separations of apparent resistivity and chargeability data are plotted in pseudosection format on accompanying plates 144-79-3 to 7. This is purely a schematic form of representing the data, and no quantitative depth to target or target geometry is implied by it.

No chargeability anomalies were detected on the survey that could be interpreted as representing the response to a massive sulphide source. One weak unexplained anomaly is centered at 375 west on line 1200 north. Magnetic field relief over the survey area was flat, with the greatest variation being some 200 gammas above background at station 500 west on line 1200 north.

CONCLUSIONS

A multiseparation time domain IP and total field magnetics survey was completed over the ORION mineral claim during the summer of 1979.

No strongly, nor moderately anomalous chargeability anomalies were detected on the survey. One weak unexplained anomaly is centered at 375 west on line 1200 north. No further work on the claim can be recommended at this time, on the basis of these geophysical surveys.

Respectfully submitted

ALAN SCOTT
Geophysicist

Endorsed for Release by

G.HARDEN
Manager, Exploration

ARS/pm
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 ORION MINERAL CLAIM

ON THE LOFAR PROPERTY

LOCATED 17 KM SOUTH OF ASHCROFT IN THE KAMLOOPS MINING DIVISION

OF THE PROVINCE OF BRITISH COLUMBIA MORE PARTICULARLY

N.T.S. 92I/11W

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 ORION MINERAL CLAIM;

3. THAT THE SAID EXPENDITURES WERE INCURRED FOR THE PURPOSE OF MINERAL EXPLORATION OF THE ABOVE NOTED CLAIM BETWEEN THE 29TH OF MAY AND 1ST OF JUNE, 1979.

ALAN SCOTT
GEOPHYSICIST

ARS/pm
16 AUGUST 1979

APPENDIX II

STATEMENT OF EXPENDITURES

LOFAR PROPERTY: ORION CLAIM

(Induced Polarization and Magnetometer Surveys, Linecutting)

SALARIES (May 29 - June 1)			
G. J. Niemeyer	- 4 days @ $105 =	420	
D. Saunders	- 4 days @ 81 =	324	
J. Bell	- 4 days @ 81 =	324	
I. Cummings	- 4 days @ 81 =	324	
S. Kirstiuk	- 4 days @ 81 =	324	
R. Prefontain	- 4 days @ 81 =	324 -	$ 2,040.00
MISCELLANEOUS			
Food, lodging, gas, consumables			621.55
OPERATING CHARGES			
(towards report, drafting, supervision)			
3 survey days @ 175/day			525.00
EQUIPMENT RENTALS AND CHARGES			
7.5 kw IP survey system	3 days @ 251		753.00
magnetometer rental	3 days @ 10		30.00
		Total:	$ 3,969.55

16 August 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

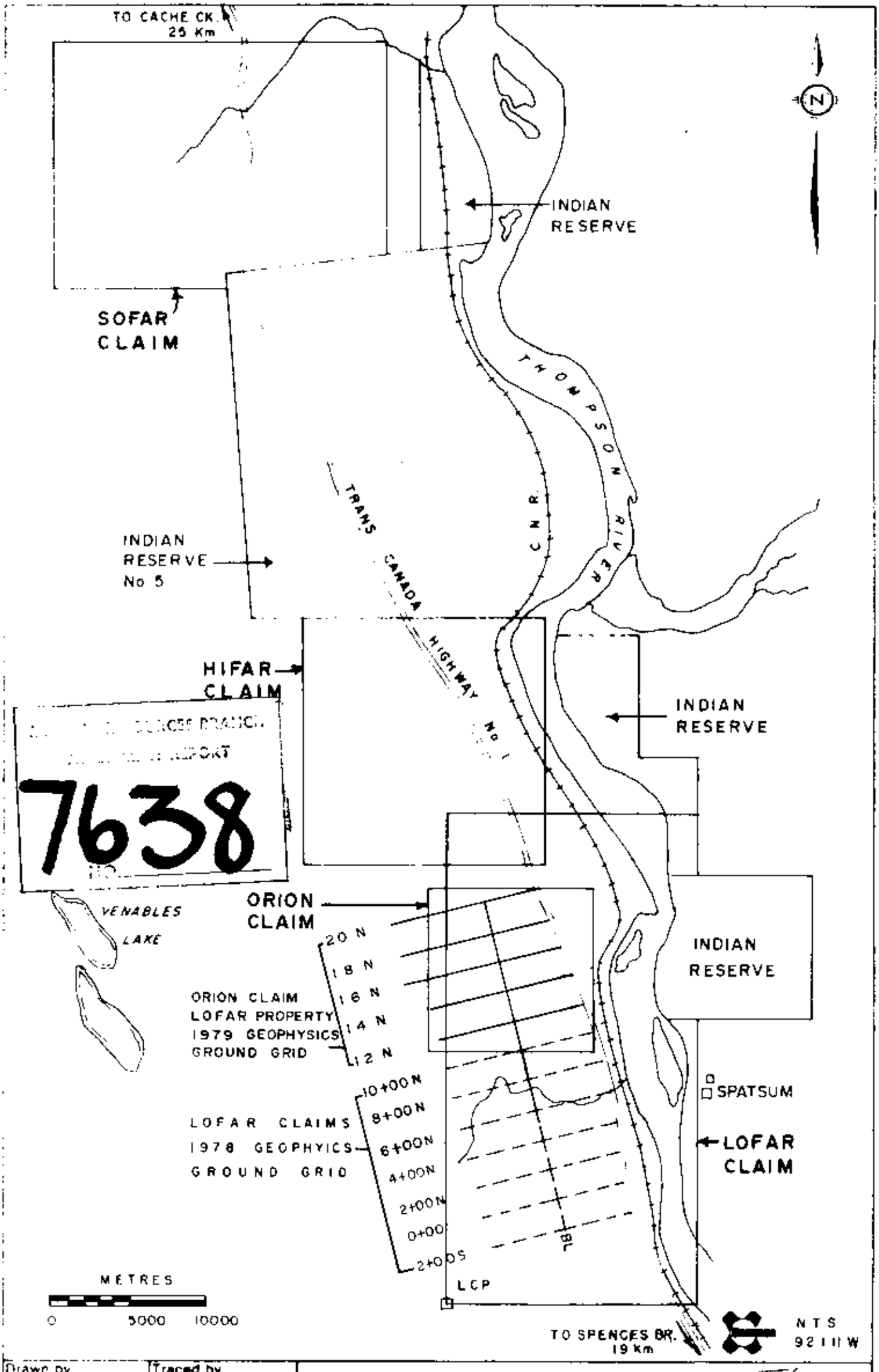
ARS/pm
16 AUGUST 1979

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date
		JAH	AUG. 1979

LOCATION MAP

KAMLOOPS M.D., B.C.

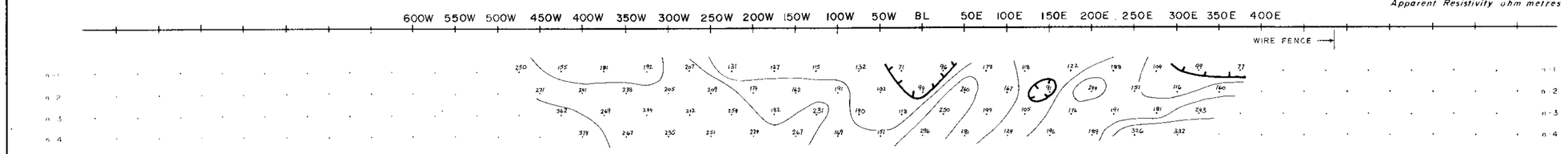
Scale:	Date:	Plate:
1:125,000	SEPT., 1978	152-79-1

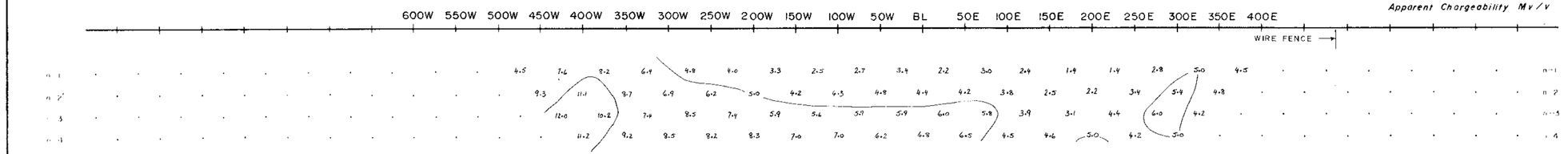


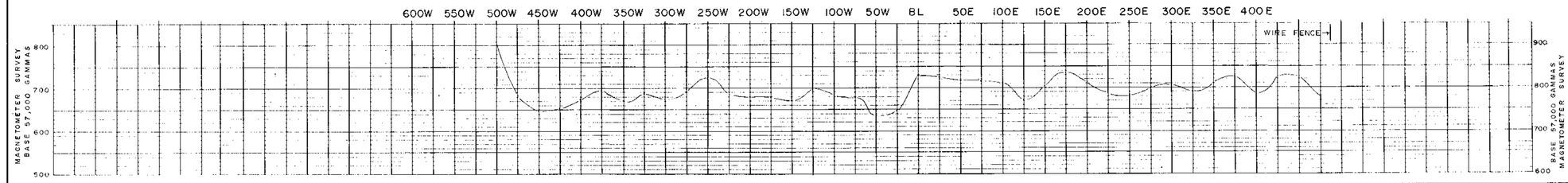
Drawn by	Traced by	
	Revised by: J.P.S.	Date: AUG. 1979

LOFAR PROPERTY
CLAIM MAP
KAMLOOPS M.D., B.C.

Scale: 1cm = 300 m | Date: SEPT 1978 | Plate 152-79-2







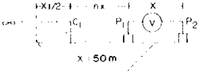
N T S 92-I

DWG NO 152-79-3

COMINCO LTD.
LO FAR PROPERTY
ORION CLAIM
KAMLOOPS M.D., B.C.

LINE NO. 12 N

POLE - DIPOLE
ELECTRODE CONFIGURATION
1-X1/2-1 - nx - 1 X 1



PLOTTING POINT
n = 1, 2, 3, 4

CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

ANOMALY DESCRIPTION

STRONG
MODERATE
WEAK

DATE SURVEYED MAY 30, 1979

CONTOUR INTERVALS:
APP RES - 1,1.5,2,3,5,7.5,10 ohm /m.
APP CHARG - 0.5 Mv/V

APPROVED

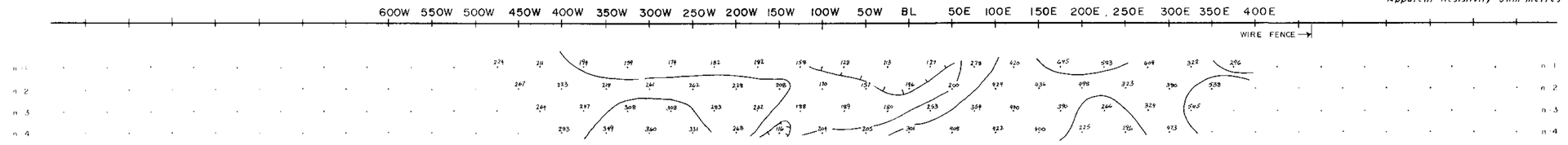
DATE

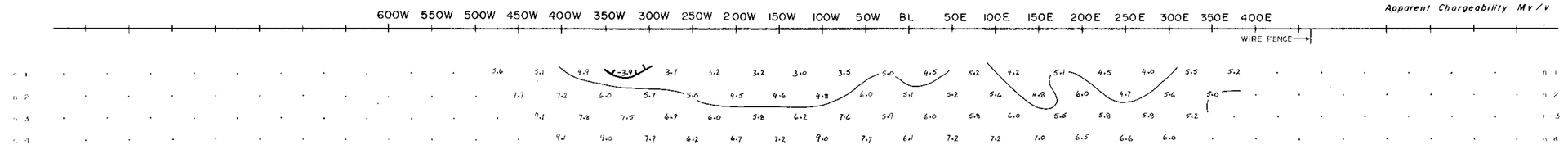
TRANSMITTER - HUNTEC 7.5 Kw
RECEIVER - IPR 8
INSTRUMENT - SCINTREX MP 'II' PROTON PRECESSION MAGNETOMETER

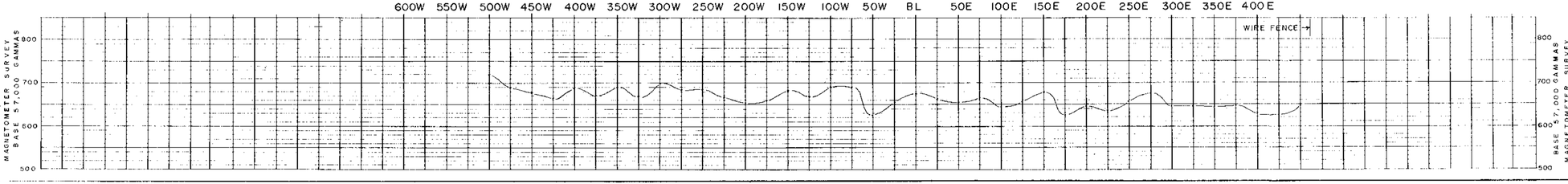
INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY COMINCO LTD., EXPLORATION DIVISION

ASSESSMENT REPORT NO. 7638

12 N







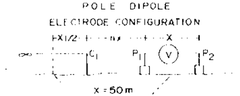
NTS 92-I

DWG NO 152-79-4

COMINCO LTD.
LO FAR PROPERTY
ORION CLAIM
KAMLOOPS M.D., B.C.

LINE NO 14 N

POLE DIPOLE
ELECTRODE CONFIGURATION
EXIZ: n=1, a=X



CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

ANOMALY DESCRIPTION
STRONG
MODERATE
WEAK

DATE SURVEYED MAY 30, 1979

CONTOUR INTERVALS:
APP RES 1,1.5,2,3,5,7.5,10 ohm /m
APP CHARG 0.5 Mv/V

APPROVED

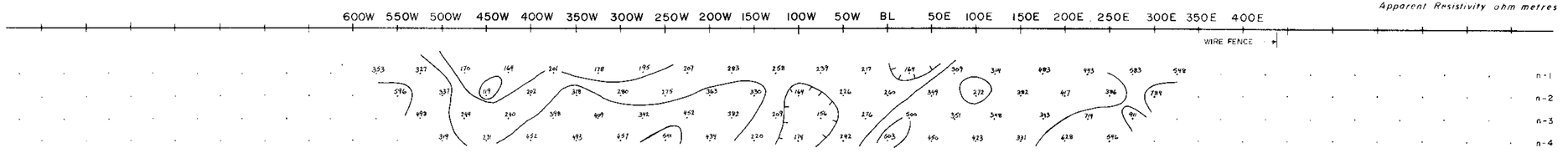
DATE

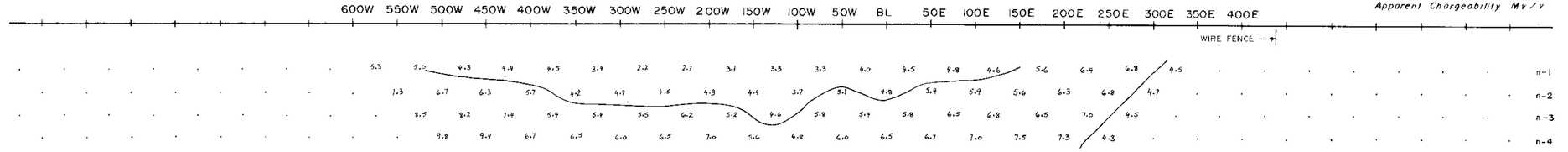
TRANSMITTER - HUNTEC 7.5 Kw
RECEIVER - IPR 8
INSTRUMENT - SCINTREX MP II PROTON PRECESSION MAGNETOMETER

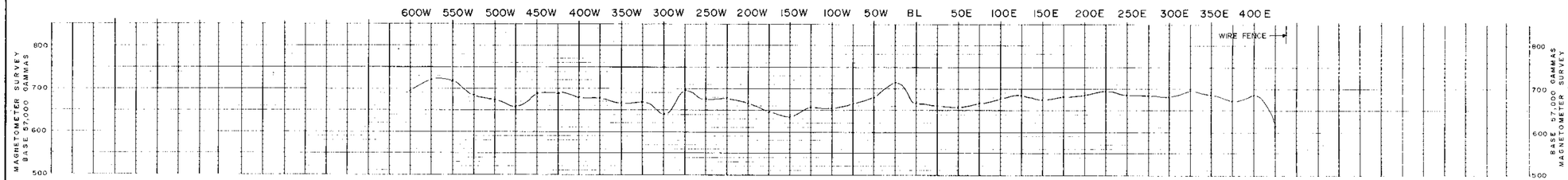
MINING RECORDER
7638

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

LINE 14 N







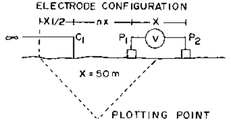
NTS 92-I

DWG NO 152-79-5

COMINCO LTD.
LO FAR PROPERTY
ORION CLAIM
KAMLOOPS M.D., B.C.

LINE NO. 16 N

POLE-DIPOLE
ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

ANOMALY DISCRIPTION

STRONG

MODERATE

WEAK

DATE SURVEYED MAY 31, 1979

CONTOUR INTERVALS:

APP RES – 1,1.5,2,3,5,7.5,10 ohm/m

APP CHARG – 0.5 Mv/V

APPROVED

DATE

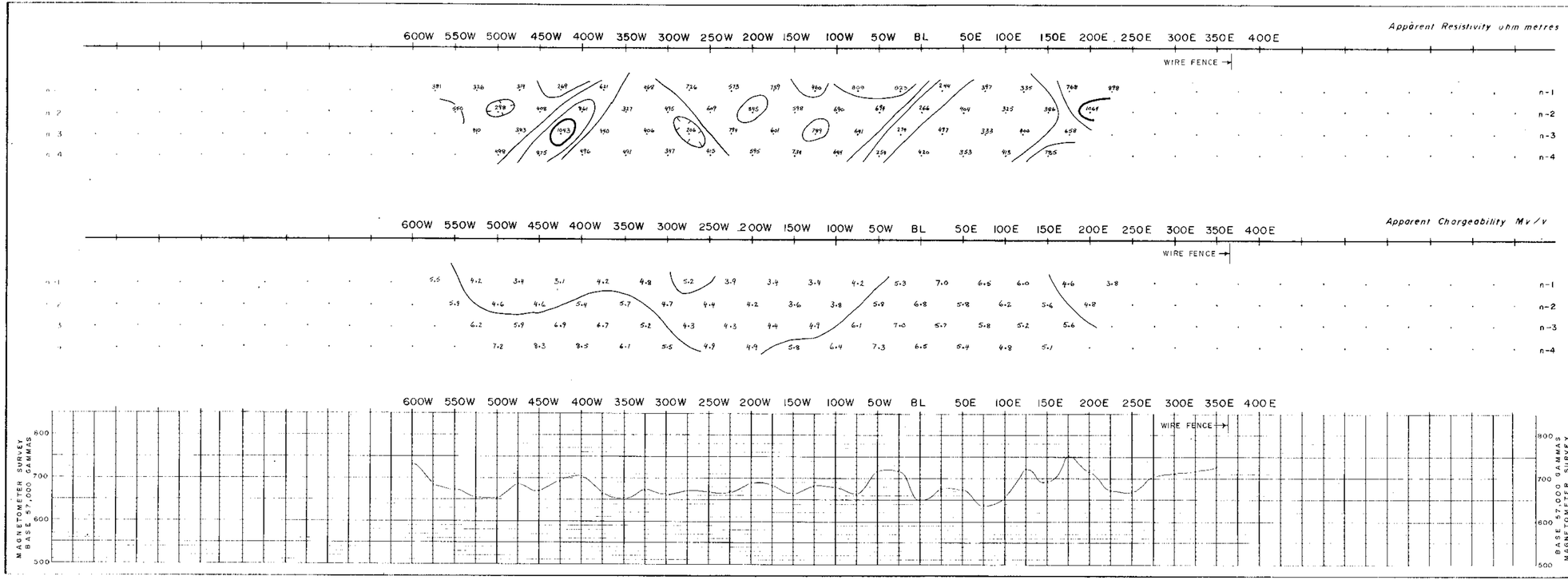
TRANSMITTER – HUNTEC 7.5 Kw

RECEIVER – IPR 9

INSTRUMENT – SCINTREX MP 11
PROTON PRECESSION MAGNETOMETER

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY COMINCO LTD., EXPLORATION DIVISION



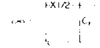
N T S 92-I

DWG NO 152-79-6

COMINCO LTD.
LO FAR PROPERTY
ORION CLAIM
KAMLOOPS M.D., B.C.

LINE NO. 18N

POLE - DIPOLE
ELECTRODE CONFIGURATION
EXI/2-E-nx-I-I-X-I



PLOTTING POINT
n = 1, 2, 3, 4

CURRENT ELECTRODE WEST OF POTENTIAL DIPOLE

AMOMALY DESCRIPTION

STRONG

MODERATE

WEAK

DATE SURVEYED MAY 31, 1979

CONTOUR INTERVALS

APP. RES. 1,1.5,2,3,5,7.5,10 ohm /m. APPROVED

APP. CHARG. 0.5 Mv/V

DATE

TRANSMITTER HUNTEC 7.5Kw

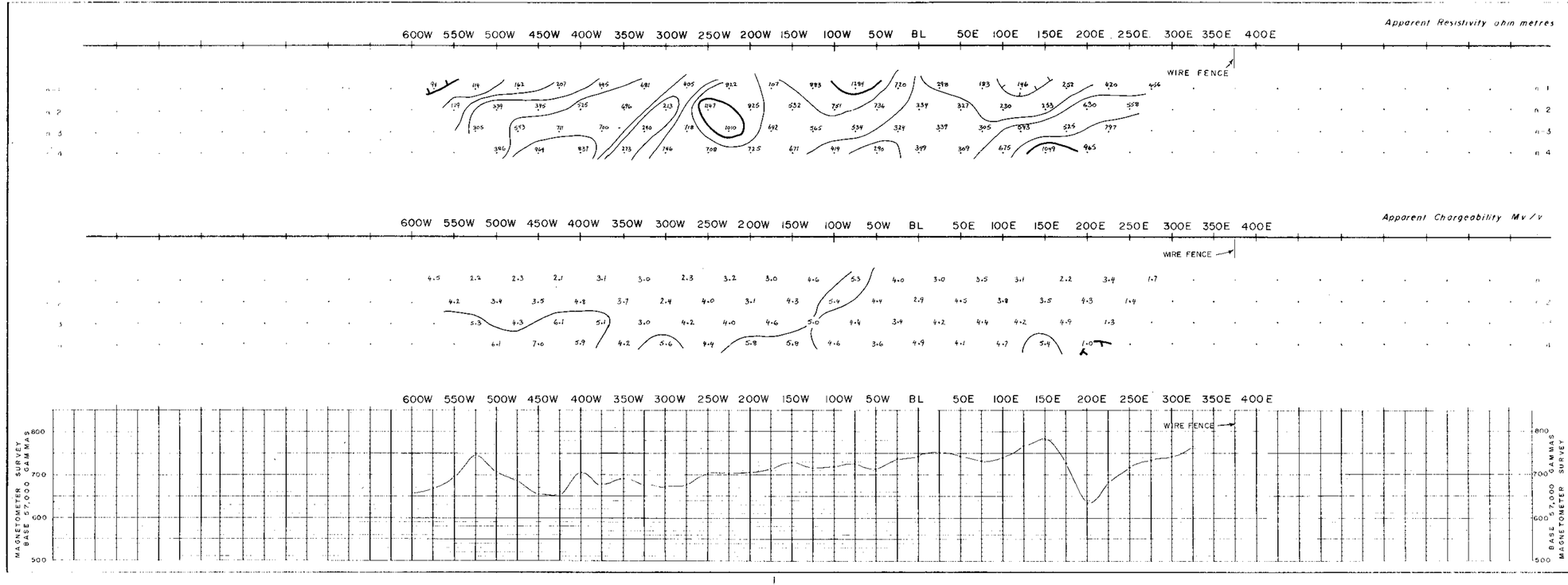
RECEIVER - IPR 8

INSTRUMENT - SCINTREX MPII PROTON PRECESSION MAGNETOMETER

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY COMINCO LTD., EXPLORATION DIVISION

18N



NTS 92-I

DWG. NO 152-79-7

COMINCO LTD.
LO FAR PROPERTY
ORION CLAIM
KAMLOOPS M.D., B.C.

LINE NO. 20N

POLE-DIPOLE
ELECTRODE CONFIGURATION
FXI/2 n x I x a

x = 50 m

PLOTTING POINT
n = 1, 2, 3, 4

CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE

ANOMALY DESCRIPTION

STRONG

MODERATE

WEAK

DATE SURVEYED JUNE 1, 1979

CONTOUR INTERVALS

APP. RES. 1,1.5,2,3,5,7.5,10 ohm/m.

APP. CHARG. 0.5 Mv/V

APPROVED

DATE

TRANSMITTER HUNTEC 7.5 Kw

RECEIVER — IPR 8

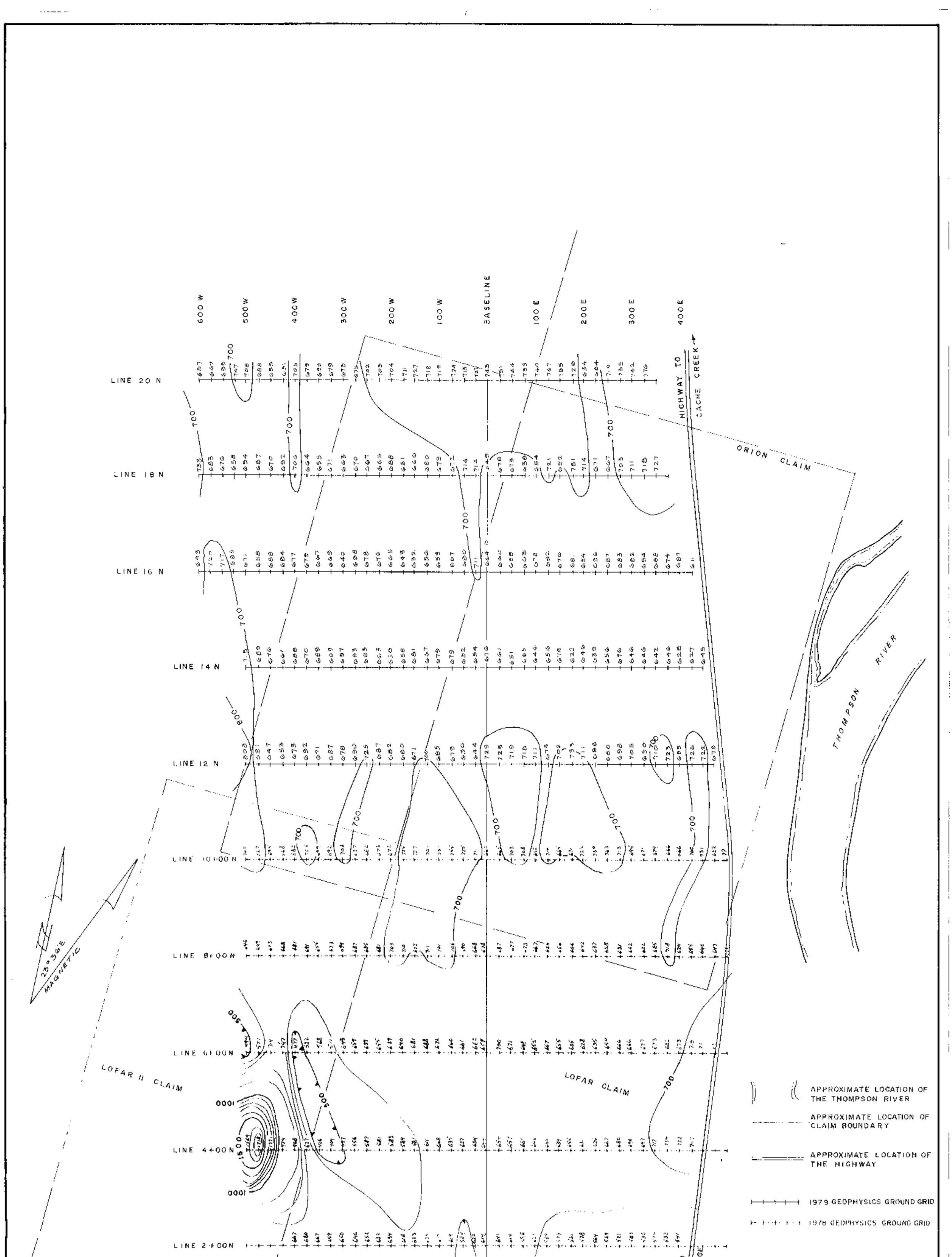
INSTRUMENT — SCINTREX MP II PROTON PRECESSION MAGNETOMETER

ASSESSMENT REPORT NO. 7638

INDUCED POLARIZATION AND RESISTIVITY SURVEY

SURVEYED BY COMINCO LTD., EXPLORATION DIVISION

LINE 20N



LOFAR PROPERTY, LOFAR CLAIMS

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

MAGNETOMER SURVEY

KAMLOOPS M.D., B.C.

Scale 1 : 5000 | Date SEPT, 1978 | Plate 152-79-3

Dominco

NTS 92 I/8W