

REPORT ON THE
INDUCED POLARIZATION
AND RESISTIVITY SURVEY
ON THE
NAKINILERAK LAKE PROPERTY
OF
NORANDA EXPLORATION COMPANY, LIMITED
OMINECA MINING DIVISION, BRITISH COLUMBIA
by
David K. Fountain, P.Eng.

~~93M/8E~~
NAKINILERAK LAKE PROPERTY
OMINECA MINING DIVISION 93 M 8
BRITISH COLUMBIA 55°N/126°W S.W. SE
Date Started: June 29, 1967
Date Completed: July 11, 1967
CLAIMS DA 1-32, 34, 37/38, 40, 55, 57-60, 71-78
Wendy 1, 3, 5, 7, 9.

8611

1198

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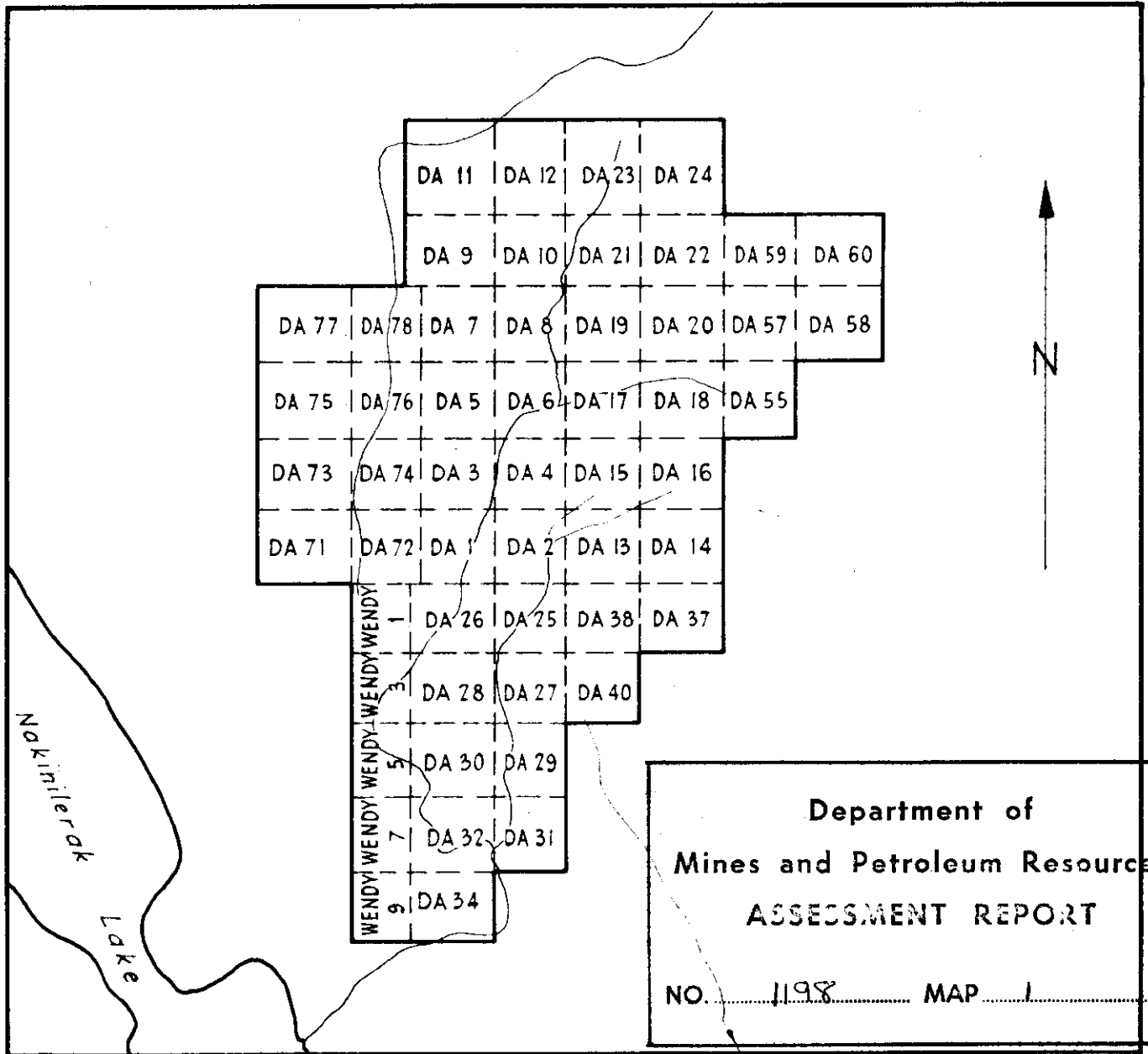
REPORT ON THE
INDUCED POLARIZATION
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ON THE
NAKINILERAK LAKE PROPERTY
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NORANDA EXPLORATION COMPANY, LIMITED
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INTRODUCTION:

The Nakinilerak Lake Property referred to in this report is located approximately 50 air miles north-east of the town of Smithers, British Columbia and on the east side of Nakinilerak Lake. Access to the property is by helicopter to the central portion of the area or by fixed-wing float aircraft to Nakinilerak Lake and bush trail to the property.

The property comprises 54 contiguous mineral claims in the Omineca Mining Division held by Noranda Exploration Company, Limited. In particular, the claims are as follows:

<u>Claims</u>	<u>Record Numbers</u>
DA 1 - 32	24961 - 80 incl.
34	24982
37 - 38	24997 - 98
40	25000
55	25015
57 - 60	25017 - 20 incl.
71 - 78	25031 - 38 incl.
WENDY 1	25220
3	25222
5	25224
7	25226
9	25228



NORANDA EXPLORATION CO. LTD.
CLAIM MAP
NAKINILERAK LAKE PROPERTY
OMINECA MINING DIVISION, B.C.
SCALE : 1" = 1/2 MILE

FIG. 1

The mineral claims comprising the property were staked on the basis of showings of possible economic mineralization, and favourable regional information, both geological and geophysical. During the fall and winter of 1964 and 1965 geophysical and geological surveys were carried out and a limited programme of diamond drilling completed. The results were not encouraging. The geophysical survey described in this report was carried out to further evaluate particular areas of interest on the property. On the basis of this work further diamond drilling or trenching would be carried out if warranted.

INDUCED POLARIZATION AND RESISTIVITY SURVEY:

Method

The Induced Polarization and Resistivity Survey was carried out utilizing a McPhar Variable Frequency I.P. unit. The unit and operator were on contract from McPhar Geophysics Limited of Toronto.

The theory and method of operation of the Variable Frequency Induced Polarization Method is fully described in the literature and will not be further described here.

In this particular survey, a dipole-dipole electrode configuration was employed with 200 foot dipoles and reading three dipole separations on all lines except Line 0 on which four dipole separations were employed to get greater depth coverage. The frequencies employed throughout the survey were 0.3125 cps and 5 cps.

The survey crew was comprised of five men: the operator,

the transmitter operator, and three field assistants.

Presentation of Results

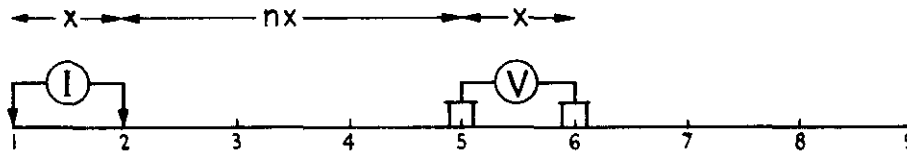
The induced polarization and resistivity results are shown on the enclosed data plots. In plotting these results, the values of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. This is clear from the accompanying diagram.

It should be mentioned here that the sectional plot does not represent an electrical cross-section of the ground. The patterns developed from the observed readings can be interpreted by comparison with expected patterns obtained from computer programmes, model studies and previous experience. Both on the data plots and the plan map, the vertical projection of the I.P. anomalies are indicated by solid, dashed or hatched lines depending upon their distinctiveness. The data plots for the individual lines are presented in Figures 2 to 11 inclusive. Figure 12 is a plan map of the property at a scale of one inch equals 400 feet on which the vertical projection of the I.P. anomalies have been indicated.

Discussion of Results

The results of the I.P. survey will be discussed in terms of two areas.

**METHOD USED IN PLOTTING DIPOLE-DIPOLE
INDUCED POLARIZATION AND RESISTIVITY RESULTS**



Stations on line

x = Electrode spread length
 n = Electrode separation

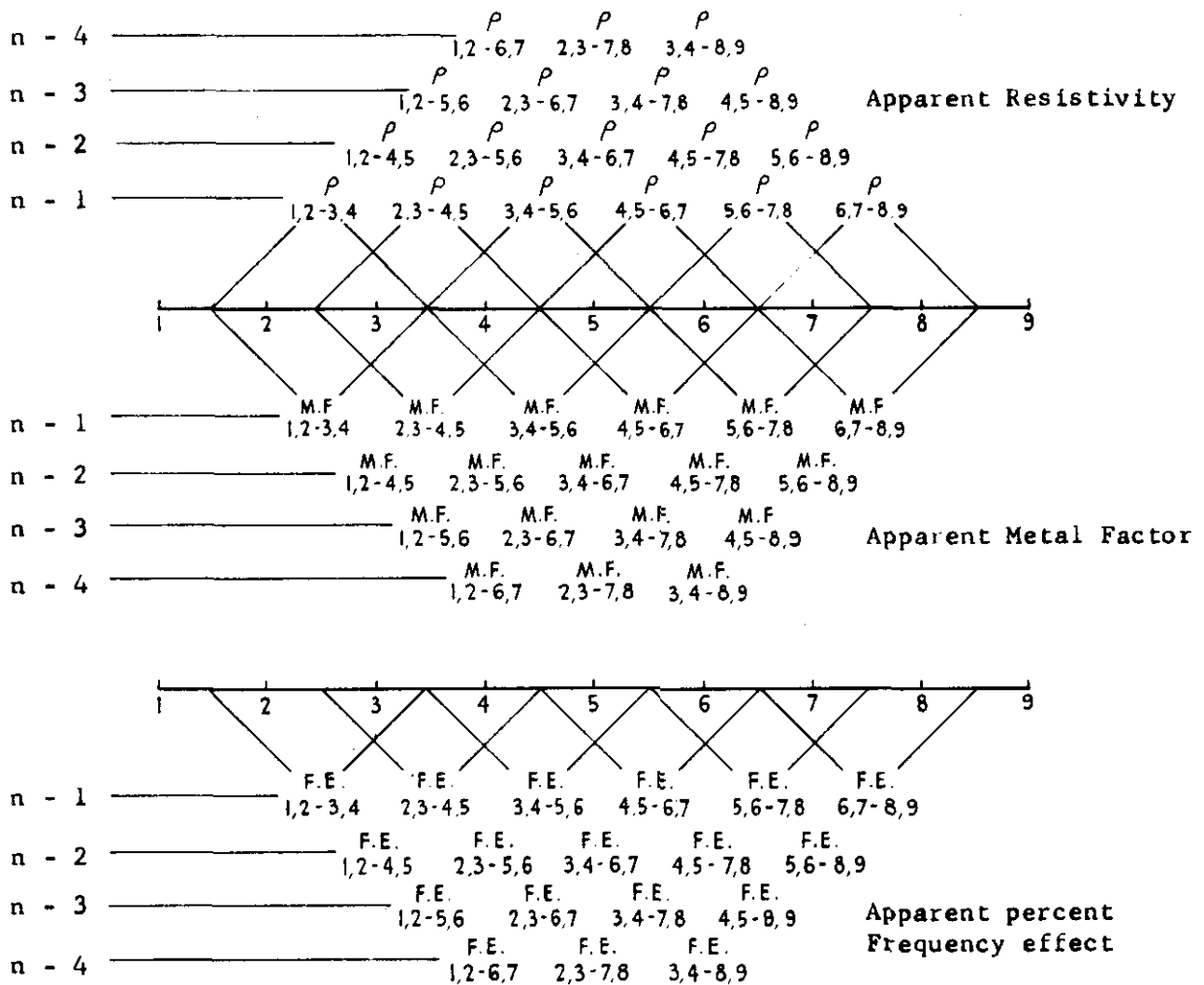


Fig. A

AREA "A"

This area is comprised of the five short lines: Line 8N, Line 12N, Line 16N, Line 20N and Line 24N. The previous geophysical work had indicated this to be an area of intermediate I.P. response, weaker than a strong zone to the East, but of higher response than the low area to the West. Combined geophysical and geochemical information suggested the presence of economic mineralization, which would be of a low total sulphide content. Therefore even a weakly anomalous I.P. response could be considered significant.

The present work was carried out to delimit these low magnitude anomalous zones and therefore I.P. responses marked as definite anomalies in this particular area do not necessarily relate in magnitude to those indicated in other parts of the property.

Line 24N

A distinct anomaly is indicated centered at 2+00E and probably extending from 1+00W to 5+00E. The start of an anomaly is indicated from 13+00E and continuing to the east.

Line 20N

A broad zone of weakly anomalous response is indicated from 0+00 to 12+00E, increasing in magnitude to the east of 12+00E.

Line 16N

As in the case of Line 20N there is a broad zone of weakly anomalous response extending from 3+00E to 13+00E and continuing with an increase in magnitude from 13+00E to the east.

Line 12N

There is no significant anomalous response on this line.

Line 8N

There is a weak anomalous response on this line starting at 11+00E and extending to the east.

AREA "B"

Five long lines were surveyed with I.P. across the southern portion of the property.

Line 0

Low magnitude I.P. anomalies are indicated from 24+00W to 21+00W and from 11+00E to the east of this line. The eastern anomalous response is open to the east and would appear to be increasing in magnitude.

Line 4S

A weak questionable anomalous response is indicated from 20+00W to 17+00W. A second anomaly starts at 11+00E and is open to the east. As in the case of Line 0 this second anomaly appears to be increasing in magnitude to the east.

Line 12S

Three distinct I.P. anomalies are indicated on this line; from 39+00W to 35+00W, with probable continuation to 31+00W; from 19+00W to 15+00W, with probable extension to 13+00W; and from 5+00W, increasing in magnitude and open to the east. Detail work employing shorter spreads would serve to better delimit the source of the anomalous response in all three cases.

Line 20S

Anomalous I.P. responses are indicated on this line as follows: centered at 34+00W and from 30+00W to 28+00W forming part of a zone of higher I.P. response from 39+00W to 26+00W; from 20+00W to 11+00W, with probable extension to 23+00W; and from 6+00W to 3+00W. In the case of the broader zones, detail surveying employing shorter spreads would serve to delimit the anomalies.

Line 24S

On this line a broad zone of high I.P. response is indicated from 41+00W to 21+00W with stronger more distinct sections from 36+00W to 31+00W and from 25+00W to 21+00W. Other distinct anomalies are indicated from 17+00W to 11+00W and from 3+00W open to the east. Detail surveying employing shorter spreads again would serve to better delimit the sources of the anomalous I.P. response especially in the area of 17+00W to 12+00W where the source could represent a narrow section of near massive sulphide mineralization.

RECOMMENDATIONS AND CONCLUSIONS

The Induced Polarization and Resistivity Survey has indicated several areas of anomalous I.P. response.

AREA "A"

Due to the nature of the sulphide mineralization in this area, even weak I.P. anomalous response may be of economic significance. Based upon the I.P. results alone, the best area to carry out further work either in the form of diamond drilling or trenching would be on Line 12N in the area from 1+00E to 3+00E. Detail geologic mapping and prospecting would assist in choosing the best area for further work.

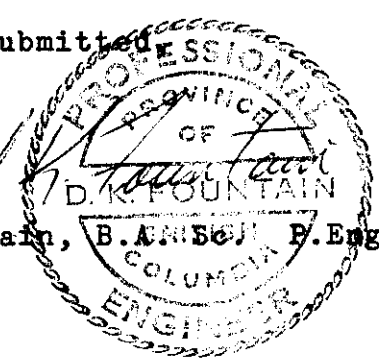
AREA "B"

The areas of anomalous I.P. response on all the lines in this area and especially those on Line 12S, Line 20S and Line 24S should be further investigated with prospecting, trenching and detail geological and geochemical mapping to determine the nature of the mineralization causing the I.P. response. Detail I.P. surveying employing shorter spreads would assist in delimiting the source of the anomalies, especially if it is found that the mineralization of possible economic interest is concentrated in narrow sections as opposed to being more weakly disseminated over large areas.

Depending upon the results of the above work, a programme of diamond drilling and/or deep trenching could be laid out to fully evaluate the I.P. anomalies.

Respectfully Submitted

David



David K. Fountain, B.A.Sc. P.Eng.
Geophysicist.

February 7, 1968.

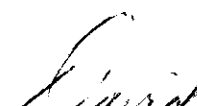
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C E R T I F I C A T E

I, DAVID KIRKMAN FOUNTAIN, of the City of Toronto, Province of Ontario, do certify that:

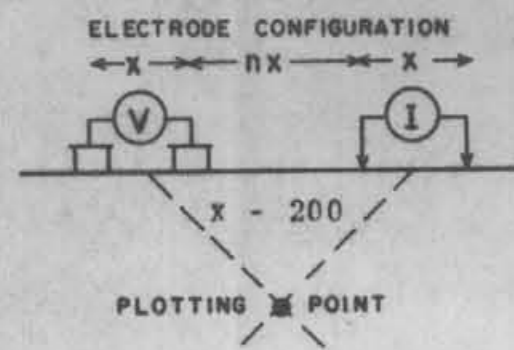
1. I am a geophysicist residing at 44 Highgate Road, Toronto 18, Ontario.
2. I am a graduate of the University of Toronto with a B.A.Sc. Degree in Engineering Physics (Geophysics).
3. I am a member of the Society of Exploration Geophysicists, the European Association of Exploration Geophysicists and the Canadian Institute of Mining and Metallurgy.
4. I am a registered Professional Engineer in the provinces of British Columbia and Ontario, and have been practising my profession for seven years.
5. The statements made in this report are based on a study of published literature and unpublished private reports and geophysical data.

DATED at Toronto this 7th day of February, 1968.

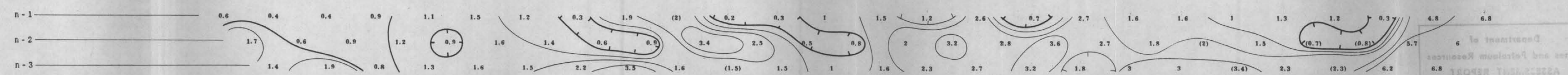
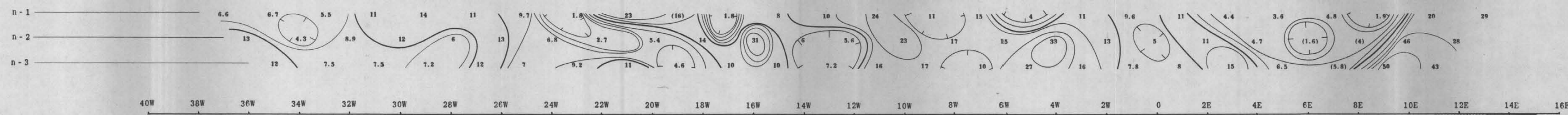
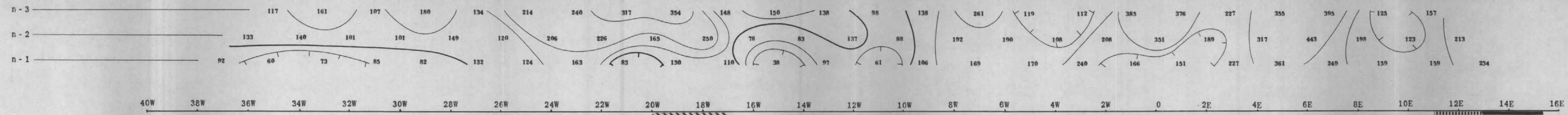

DAVID K. FOUNTAIN, DBKAFSCEJNPE.Eng.
PROFESSIONAL
OF
BRITISH
COLUMBIA
ENGINEER

Expiry Date: April 25, 1968

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE —————
PROBABLE
POSSIBLE - - - - -

NORANDA EXPLORATION COMPANY, LIMITED
NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
6.8

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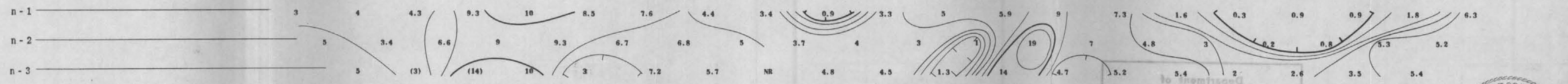
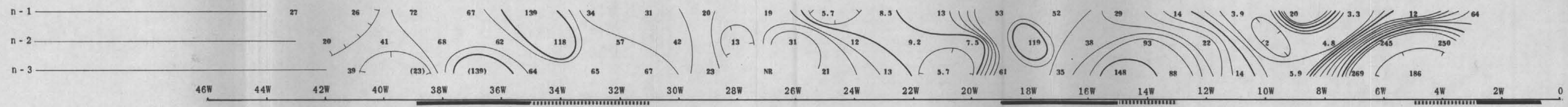
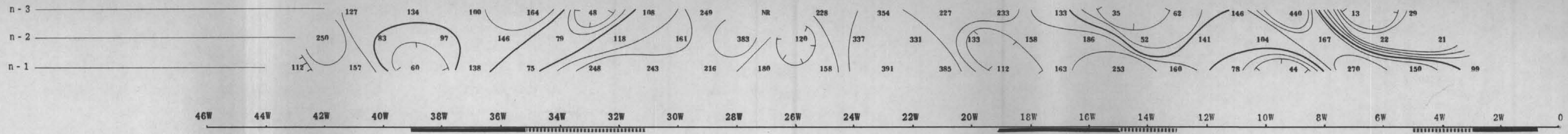
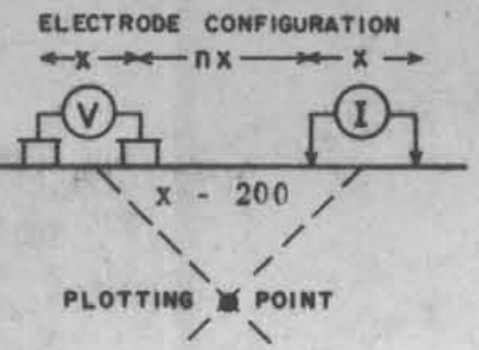
PROFESSIONAL ENGINEER
D. K. FOUNTAIN
DATE SURVEYED JULY 1967
APPROVED
Expiry Date: April 25, 1969

LINE NO.-45

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

McPHAR GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale—One inch= 200 Feet
NOTE LOGARITHMIC CONTOUR INTERVAL

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
MAP _____ ON _____

1198

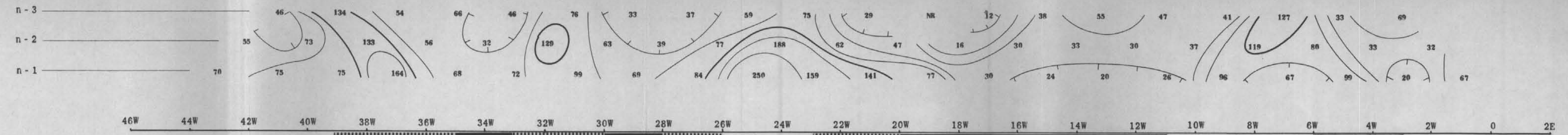
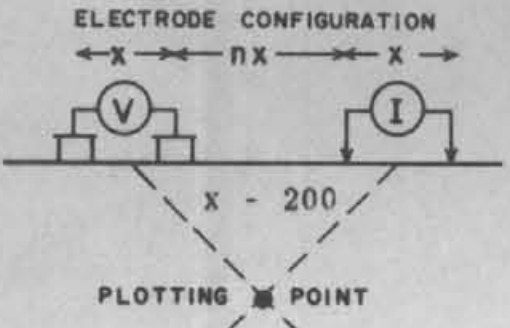


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APPROVED _____
DATE _____

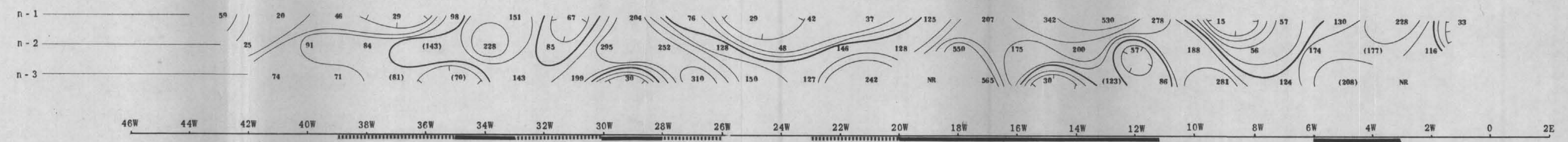
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NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

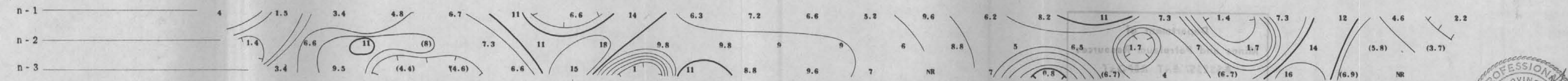
McPHAR GEOPHYSICS LIMITED INDUCED POLARIZATION AND RESISTIVITY SURVEY



$P_a/2\pi$
(OHM FEET)



(M.F.)_a



F. E. in %

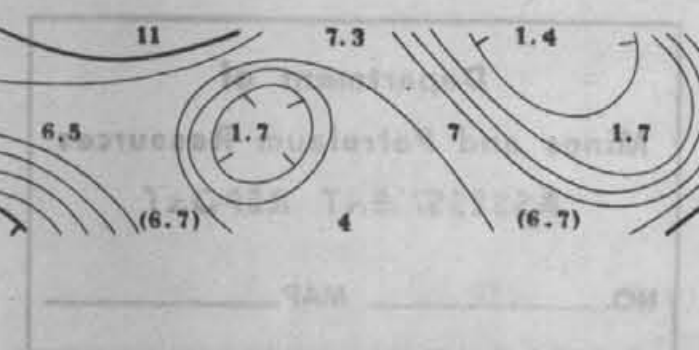
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.

Scale—One inch= 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL



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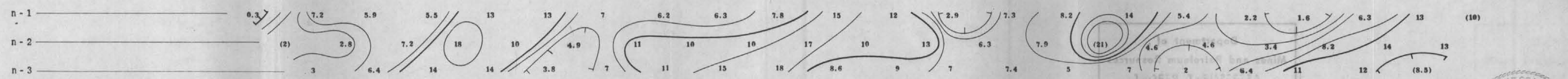
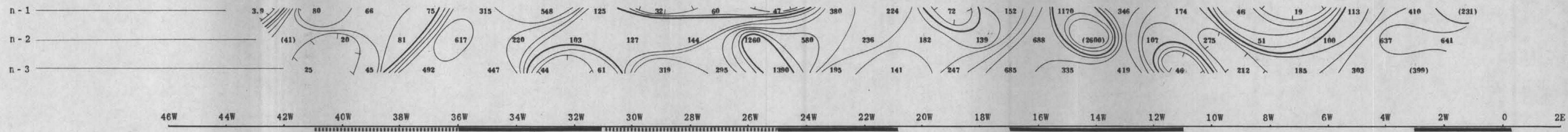
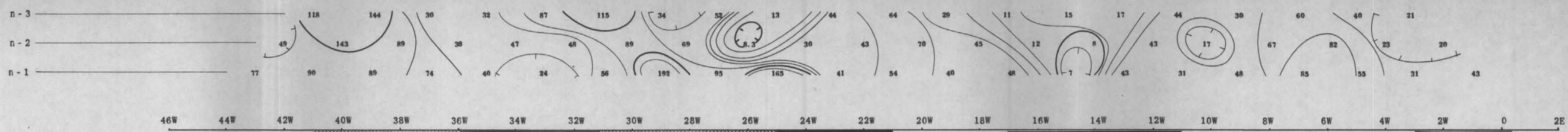
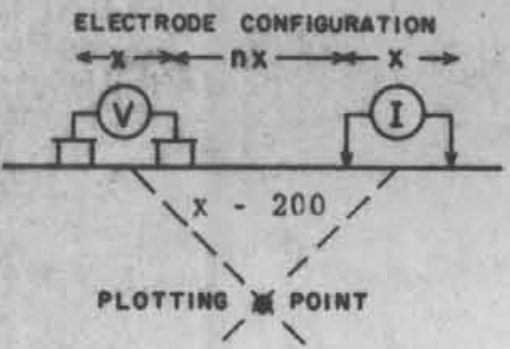
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Expiry Date: April 25, 1968

LINE NO.-205

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

McPHAR GEOPHYSICS LIMITED

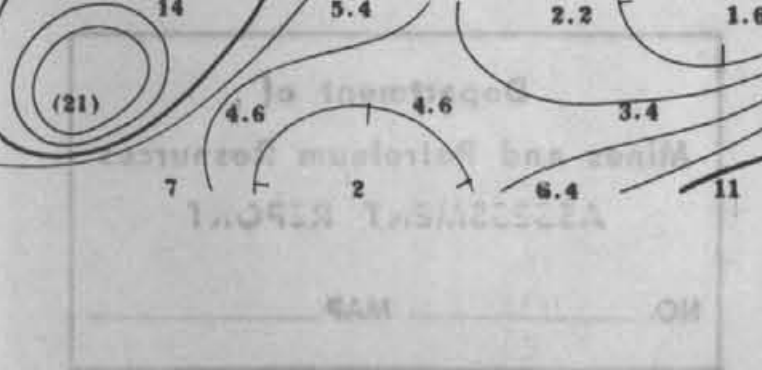
INDUCED POLARIZATION AND RESISTIVITY SURVEY



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale—One inch= 200 Feet
NOTE LOGARITHMIC CONTOUR INTERVAL



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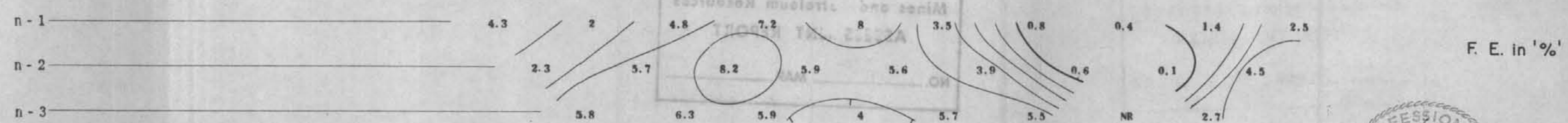
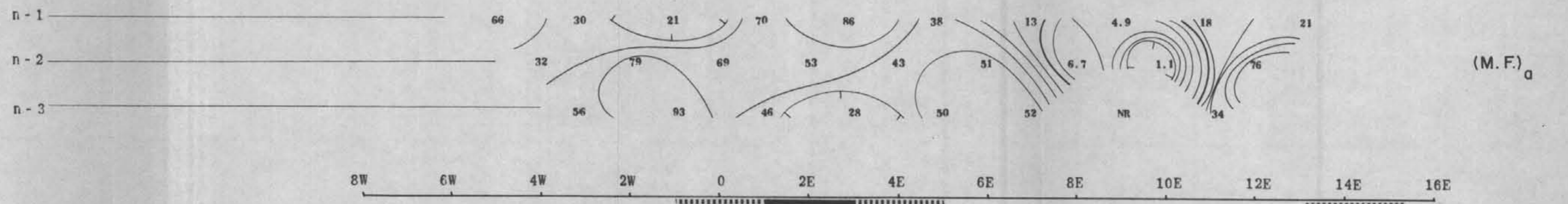
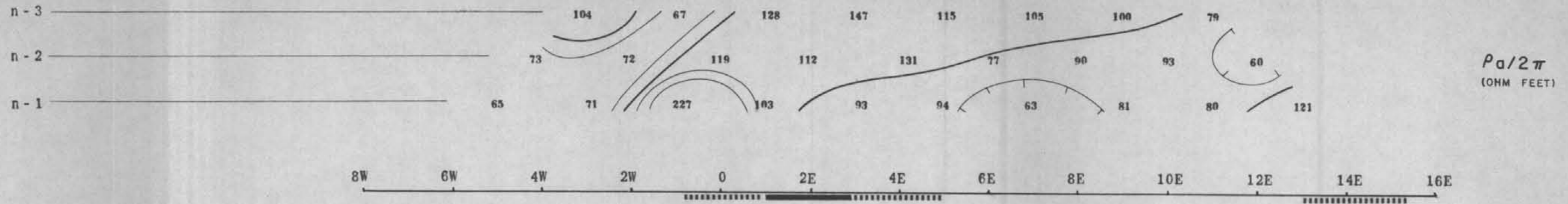
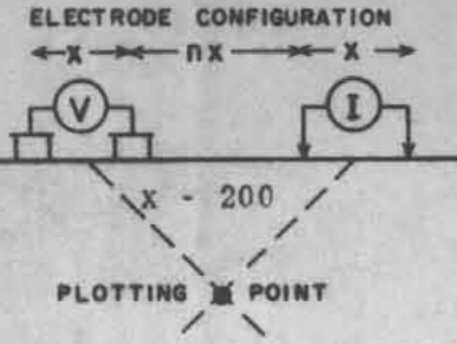
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DATE SURVEYED JULY 1967
APPROVED _____
DATE _____

Expiry Date: April 25, 1968

LINE NO.-245

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED
NAKINILERAK LAKE PROPERTY, OMINACA M.D., B.C.
Scale - One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

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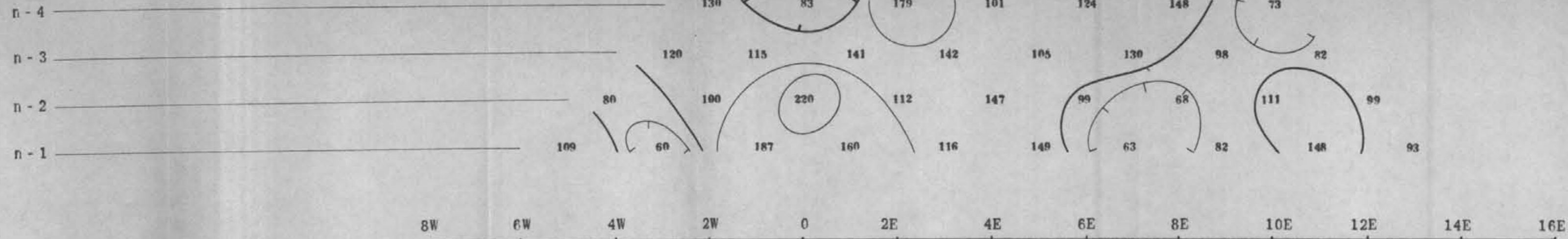
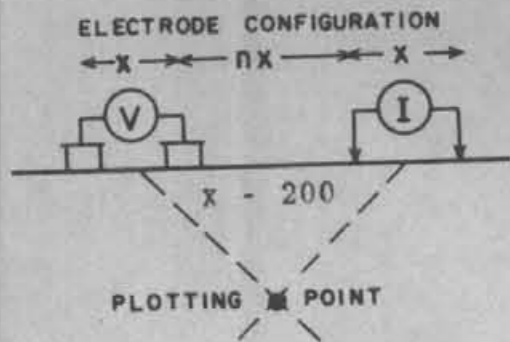
PROFESSIONAL ENGINEER
D. K. FOUNTAIN
BRITISH COLUMBIA
DATE SURVEYED JULY, 1967
APPROVED
DATE
Expiry Date: April 25, 1968
FREQUENCY 0.3 & 5 C.P.S.

LINE NO. - 24N

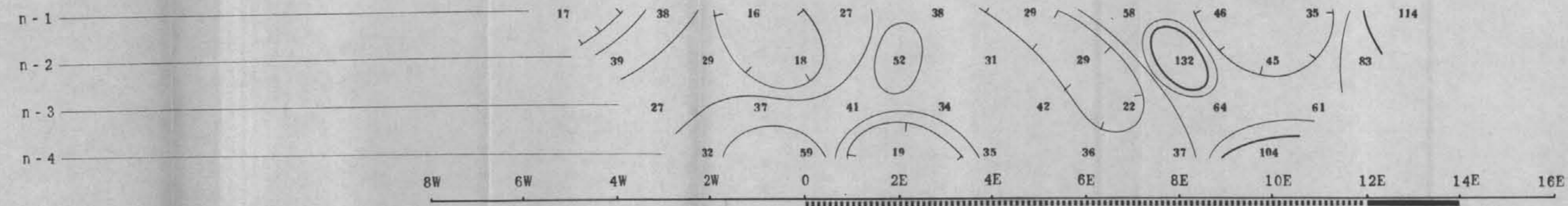
FIG. 3

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



$\rho_a / 2\pi$
(OHM FEET)



(M.F.)_a



F. E. in %

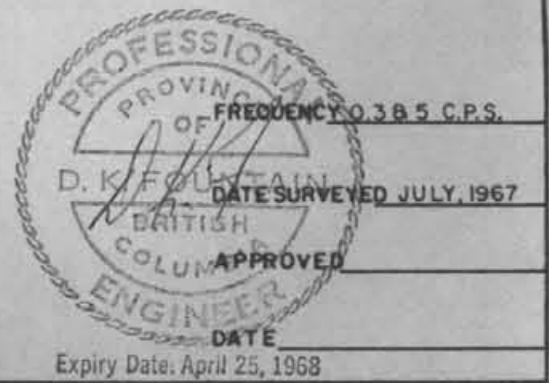
NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale - One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE

1198

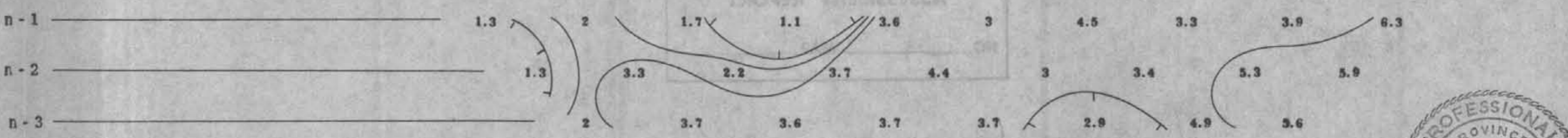
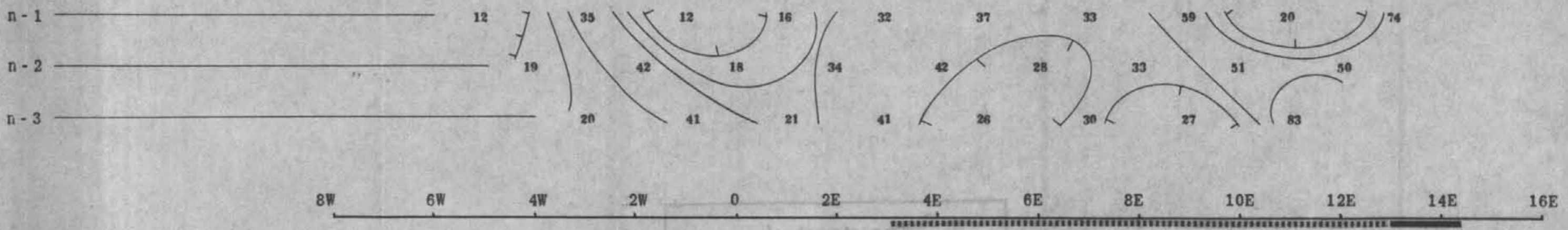
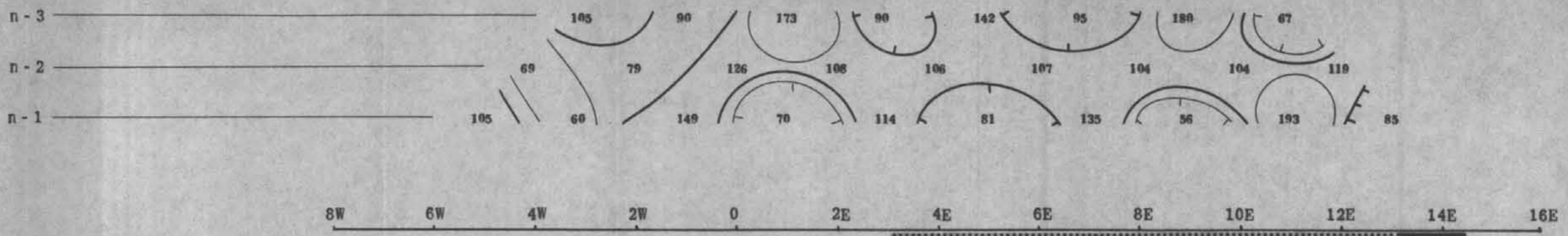
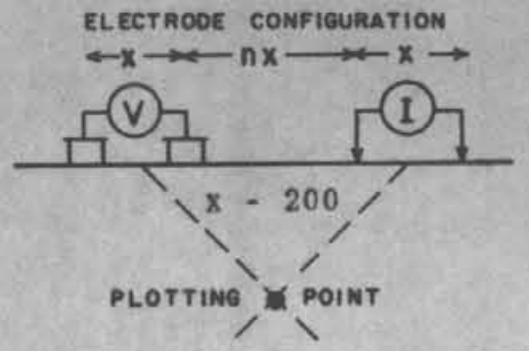


Expiry Date: April 25, 1968

LINE NO.-20N

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale - One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

1198



FREQUENCY 0.385 C.P.S.

DATE SURVEYED JULY, 1967

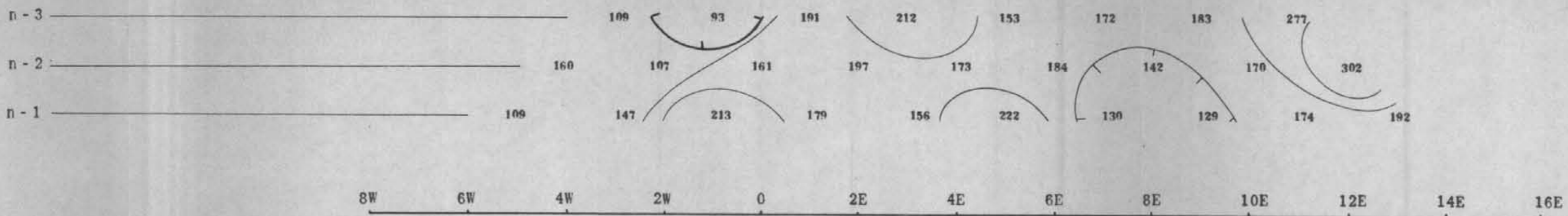
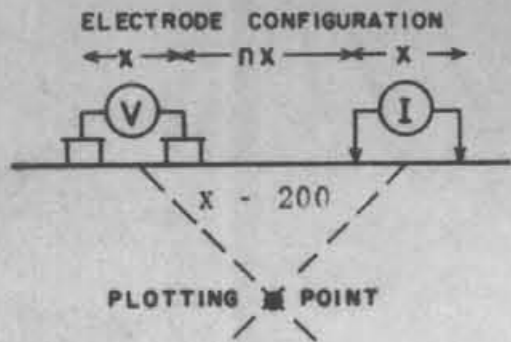
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Expiry Date: April 25, 1968 DATE

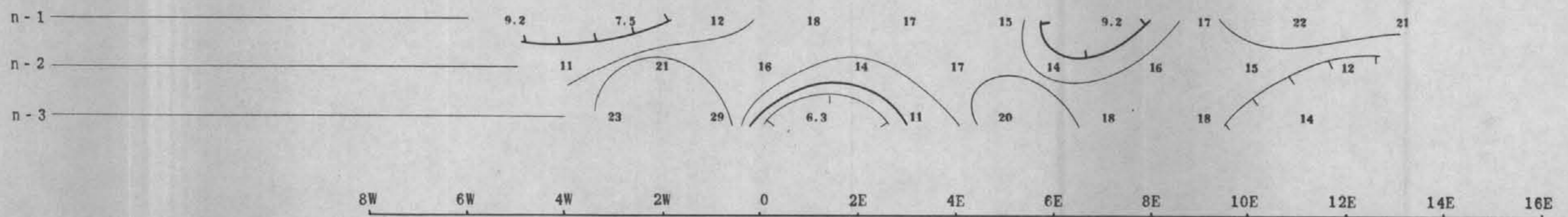
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McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY

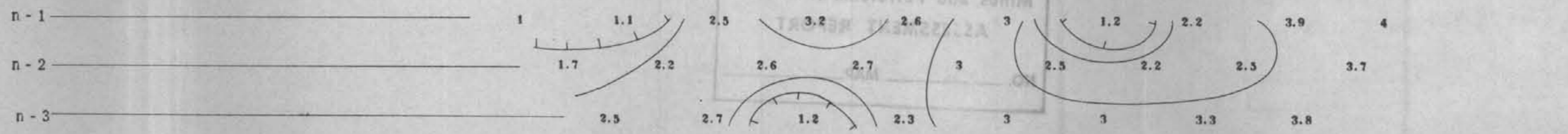
NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



$P_a/2\pi$
(OHM FEET)



(M.F.)_a



F. E. in '%'

FREQUENCY 0.385 C.P.S.

DATE SURVEYED JULY, 1967

APPROVED _____

DATE _____

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale - One inch = 200 Feet

NOTE LOGARITHMIC CONTOUR INTERVAL

1198

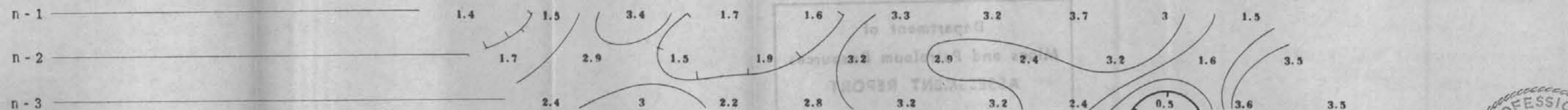
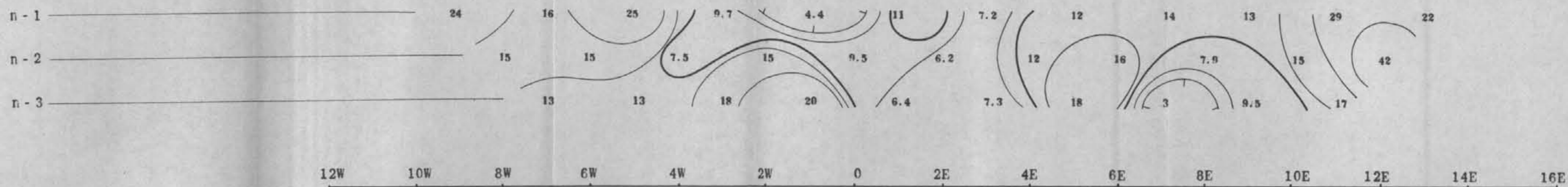
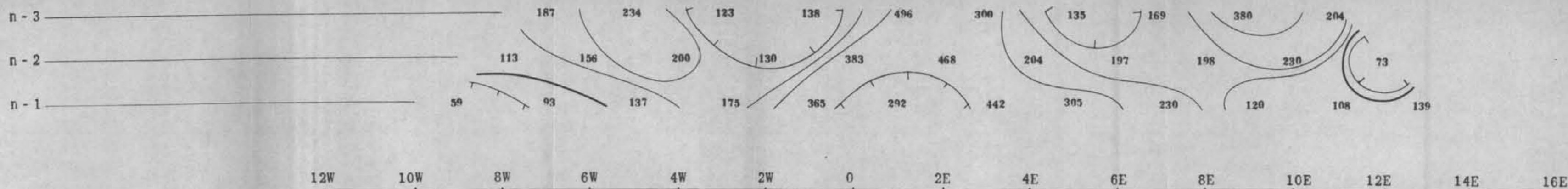
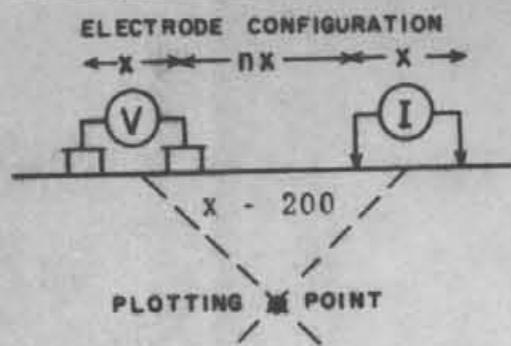
SURFACE PROJECTION OF ANOMALOUS ZONES

- DEFINITE
- PROBABLE
- POSSIBLE

LINE NO. - 12N

McPHAR GEOPHYSICS LIMITED
INDUCED POLARIZATION AND RESISTIVITY SURVEY

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINECA M.D., B.C.
Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

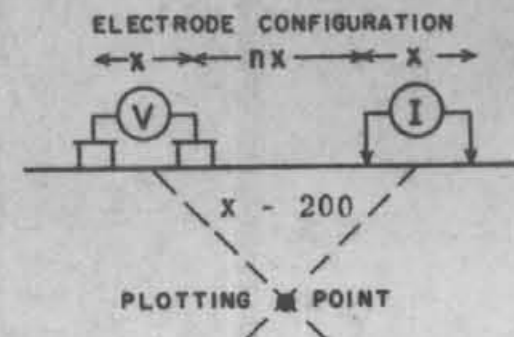
1198



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. K. FOURNIER
DATE SURVEYED JULY, 1967
APPROVED _____
DATE _____
Expiry Date: April 25, 1968

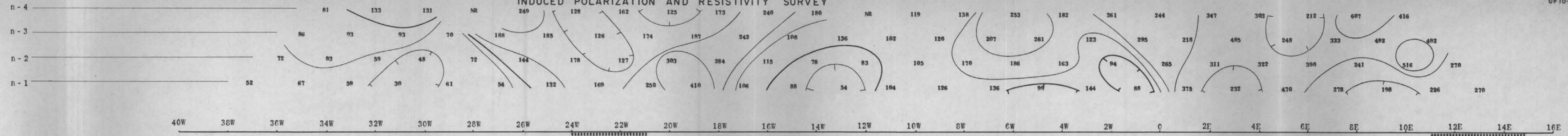
LINE NO-8N

NOTE: CONTOURS AT LOGARITHMIC MULTIPLES OF 10-15-20-30-50-75-100

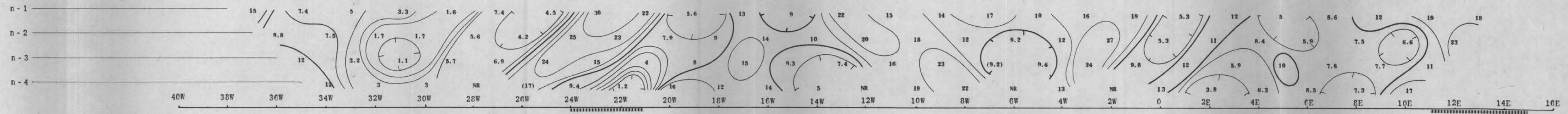


McPHAR GEOPHYSICS LIMITED

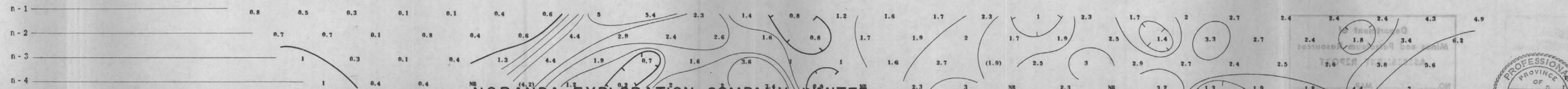
INDUCED POLARIZATION AND RESISTIVITY SURVEY



$\rho_a/2\pi$
(OHM FEET)



(M.F.)_a



F. E. in %

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE

PROBABLE

POSSIBLE

NORANDA EXPLORATION COMPANY, LIMITED

NAKINILERAK LAKE PROPERTY, OMINICA M.D., B.C.

Scale - One inch = 200 Feet

NOTE: LOGARITHMIC CONTOUR INTERVAL

Department of
Mines and Technical Resources
Geophysical Report
1198



FREQUENCY 0.3 & 5 C.P.S.

DATES SURVEYED JULY, 1967

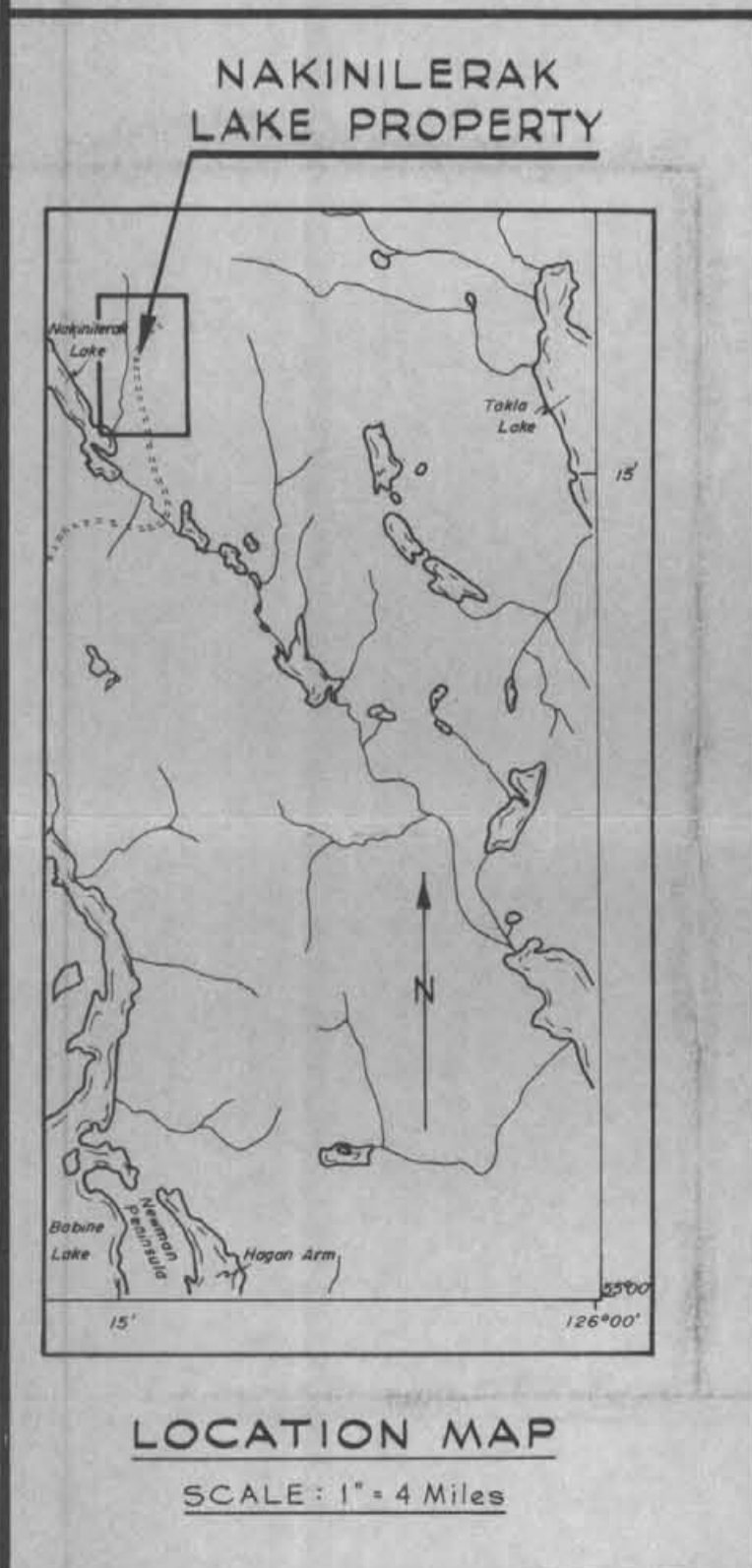
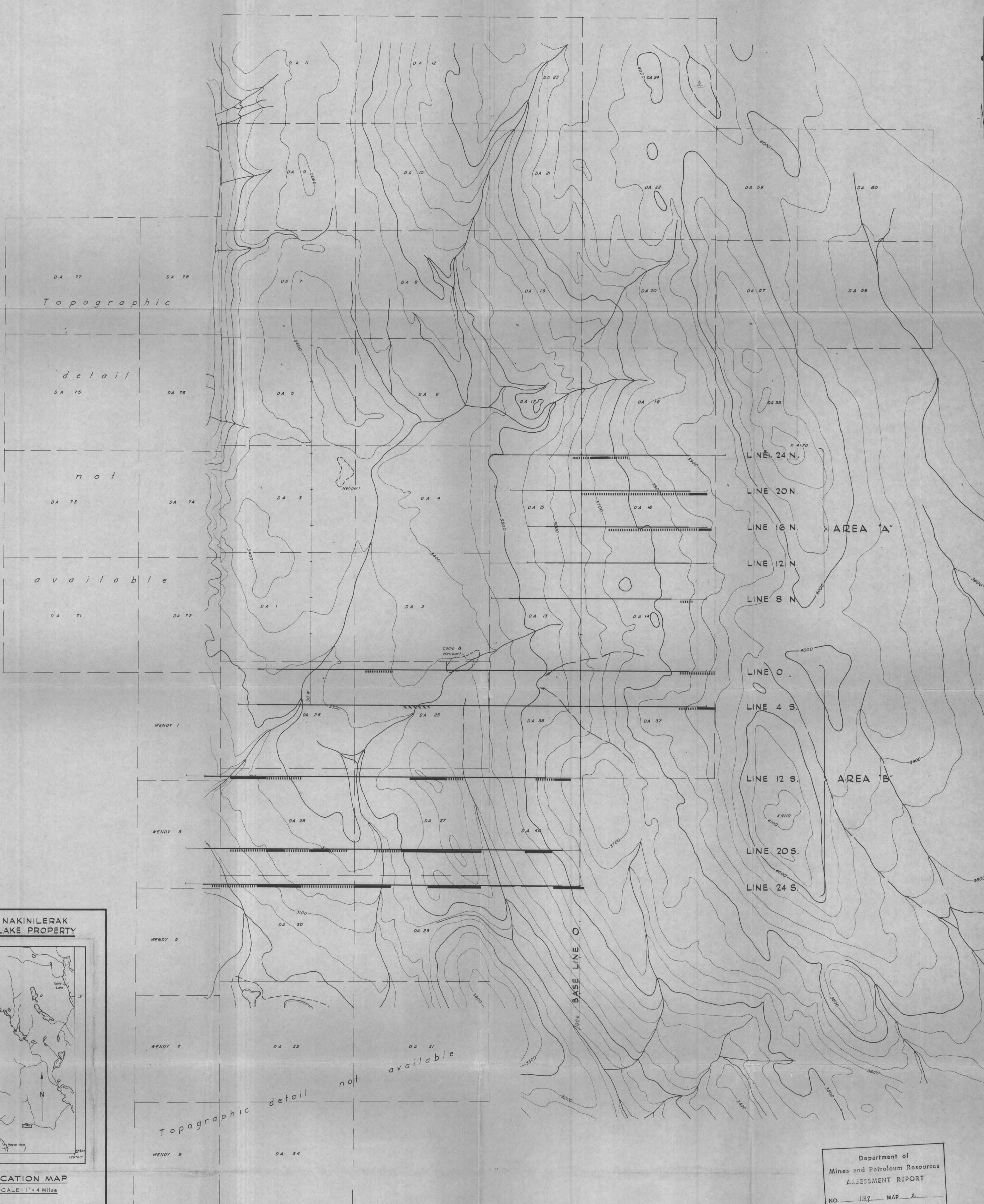
APPROVED _____

DATE _____

Expiry Date: April 25, 1968

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LINE NO. 10



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1198 MAP 8

NORANDA EXPLORATION CO. LTD.
**INDUCED POLARIZATION
AND RESISTIVITY SURVEY**
NAKINLERAK LAKE PROPERTY
OMINECA MINING DIVISION, B.C.

SCALE: 1" = 400'

- LEGEND**
- Surface projection of anomalous zones
 - Definite
 - Probable
 - Possible
 - Extent of effective coverage
 - Claim outline



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