1937

PART 2

A GEOPHYSICAL REPORT ON AN INDUCED POLARIZATION (I.P.) SURVEY PRICE CLAIM GROUP, HIGHLAND VALLEY, B. C. (50°, 120°, S.W.)

- for -

PATHFINDER URANIUM AND NICKLE MINES LIMITED

FROM JANUARY 24 TO FEBRUARY 24, 1969

- by -

W. A. FINNEY, B. Sc.

- and -

N. R. PATERSON, Ph. D., P. ENG.

A REPORT ON

AN INDUCED POLARIZATION (I.P.) SURVEY

PRICE CLAIM GROUP, HIGHLAND VALLEY, BRITISH COLUMBIA

FOR

PATHFINDER URANIUM AND NICKLE MINES LIMITED

BY

HUNTEC

A Division of Kenting Exploration Services Limited

CALGARY, ALBERTA

APRIL, 1969

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INTRODUCTION

General

This report contains the results of an Induced Polarization (I.P.) survey carried out by HUNTEC, A Division of Kenting Exploration Services Limited (formerly Huntec Limited), for Pathfinder Uranium and Nickle Mines Limited on the Price Group of claims, Highland Valley, British Columbia.

The purpose of the survey was to prospect two relatively small areas for disseminated sulphide mineralization. The I.P. method has been used successfully in the general area for many years and is capable of detecting sulphides even when the volume percentage is very low.

The field work was completed during the period from January 24 to February 24, 1969, under the direction of Mr. W. Mairs and later, Mr. M. Samilski. The project was supervised from Calgary by Mr. W. Finney.

The Property

The survey area was covered by two separate line grids, both cut on 400-foot line spacing and picketed at 200-foot intervals. Both grids are located close to Roscoe Lake and one of the grids traverses the lake from east to west.

The property is located about eight miles (true distance) in a direction South 10° East of the Highland Valley Mining Camp. Access to the property was by 4 x 4 wheel drive vehicle on gravel and logging roads and finally, by Ski-doo.

The claims surveyed include:

Price	1 to 7, 15 to 18, 20, 26, 28 to 30, 32, 50 and 52
Ruby	11 and 12
Ruby Fraction	4, 13, 14 and 25

SURVEY SPECIFICATIONS

The Equipment

The survey was carried out using Induced Polarization pulse-type equipment manufactured in Toronto by Huntec. Both the 2.5 kw and 7.5 kw systems were used for different parts of the survey. The following specifications apply:

Type of current	Direct Current broken at periodic intervals.
Period	1.5 seconds "current on" and 0.5 seconds "current off". Alternate pulses have reverse polarity.
Integrating time	400 milliseconds
Maximum power available	2.5 kw and 7.5 kw
Maximum current available	3.0 amps and 8.0 amps

Measurements taken in the field were:

1. The current flowing through the current electrodes C_1 and C_2.
2. Primary voltage V_p between measuring electrodes during "current on" time.
3. Secondary voltage V_s between measuring electrodes during "current off" time.

The apparent chargeability (M_a) in milliseconds is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400 which is the sampling time in milliseconds of the receiver unit. The apparent resistivity is calculated by dividing

V_p by the current and multiplying by the geometrical factor appropriate to the electrode array being used.

Electrode Configuration

Both the reconnaissance and detailed parts of the survey were carried out in the pole/dipole configuration. In this array, the current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the line to be surveyed. The quantity "a", or "electrode separation" is the distance between C_1 and P_1. In this array the distance between P_1 and P_2 is kept equal to one-half "a". For the reconnaissance phase of the survey on the grid covering Roscoe Lake, the value of "a" was kept at 400 feet. For the work on the other grid, the value of "a" was 200 feet.

Since the value of "a" is a rough approximation to the depth penetration, detailing of anomalies discovered in the reconnaissance phase was done by profiling the anomalies at the different values of "a". This additional data provides information from which depth, dip and location of detected causative bodies may be calculated more easily than from a single profile.

For reasons of operational convenience, some detailing was done using the "three-array" which is the same as the pole/dipole array except that the distance $P_1 - P_2$ is equal to $C_1 - P_1$. The response is almost identical and the two types of data may be used in combination for interpretation of the causative body.

RESULTS AND INTERPRETATION

Presentation

The results of the survey are presented as contours of apparent chargeability and apparent resistivity in Drawing Nos. 1 and 2, respectively. Apparent chargeabilities are contoured at a 1.0 millisecond interval. Apparent resistivities are contoured using a logarithmic contour interval.

The contours in Drawing Nos. 3 and 4 are not completed as further work is anticipated on this property. Several stations were not read in the initial survey and contouring has been deferred until such time as these data are available.

Interpretation

Lake Grid

The I.P. response as indicated in Drawing No. 1 is relatively weak and inactive, typical of non-mineralized rocks of the Guichon Creek Batholith type. No significant anomalies were detected in this grid and additional geophysical work is not recommended. Minor anomalies are located at station 8W, Line 48N; station 1W, Line 52N and station 8E on Lines 32N and 36N. The peak response at these locations is of the order 5.0 milliseconds and never greater than 6.2 milliseconds.

In comparison to the local background, these readings could be considered anomalous. However, as they are not sustained over any appreciable lateral extent, it is concluded that these moderate highs reflect very local mineralization. None of these anomalies appear to originate from any appreciable volume of mineralized ground and consequently,

no follow-up work such as diamond drilling is recommended.

The resistivity values show rapid local variations, but the amplitude of the changes is within the range to be expected from local lithologic variations.

The resistivity low at station 8E on Line 32N coincides with one of the minor chargeability anomalies. The higher conductivity in this region, therefore, might be due partly to sulphide mineralization. This is considered the most interesting feature in the whole grid but the overall dimensions of it are such as to probably rule out anything of economic significance.

Land Grid

The survey of this grid was severely hampered by the high contact electrical resistance encountered at the electrodes. This resulted in extremely low currents being applied to the ground with consequent very low signal return. No readings were obtained at a number of stations because of the low signal-to-noise ratio, with the result that contouring of apparent chargeability and apparent resistivity has not been attempted due to lack of complete data.

The survey will be completed at a later date when snow cover and frost conditions have disappeared; when, it is hoped, the conditions will permit stronger currents (and signals) to be applied with greater success.

A preliminary inspection of the results to date, Drawing Nos. 3 and 4, indicates a chargeability background of 2.0 to 2.5 milliseconds similar to the "Lake Grid". Variations about the background are generally small with the exception of a few readings at the eastern end of Line 32N and Line 28N, and near the Baseline on Line 24N. There is a possibility of an anomaly developing in this region but insufficient data exist at present to say if it is dimensionally significant. The amplitude of the I.P. effect has not been determined on any other electrode separation which is essential in estimating size and grade of any causative body.

The resistivity results do not indicate any strong conductors in the grid. If a sulphide body does exist at the east side of the grid, then the mineralization is in disseminated form, which is typical of mineralized occurrences elsewhere in the general area.

SUMMARY

1. The I.P. survey of the Price Claim Group consisted of 4.55 line miles of reconnaissance traversing using a pole/dipole electrode array.

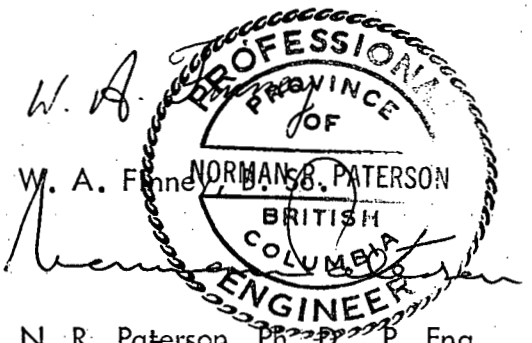
2. Three minor anomalies were detected on the "Lake Grid" but none of these is considered to be economically significant.

3. The work on the "Land Grid" was partly completed and there are indications of an anomaly developing at the eastern end of Lines 24N, 28N and 32N.

4. Completion of the "Land Grid" survey is recommended with an extension of the grid to the east to outline the anomaly completely. Detailing of the anomaly using at least one other electrode separation is also recommended.

Respectfully submitted,

HUNTEC
A Division of Kenting Exploration Services Limited



W. A. Fenney, B. Sc.

N. R. Paterson, Ph. D., P. Eng.
Expiry Date: September 24, 1969

APPENDIX A

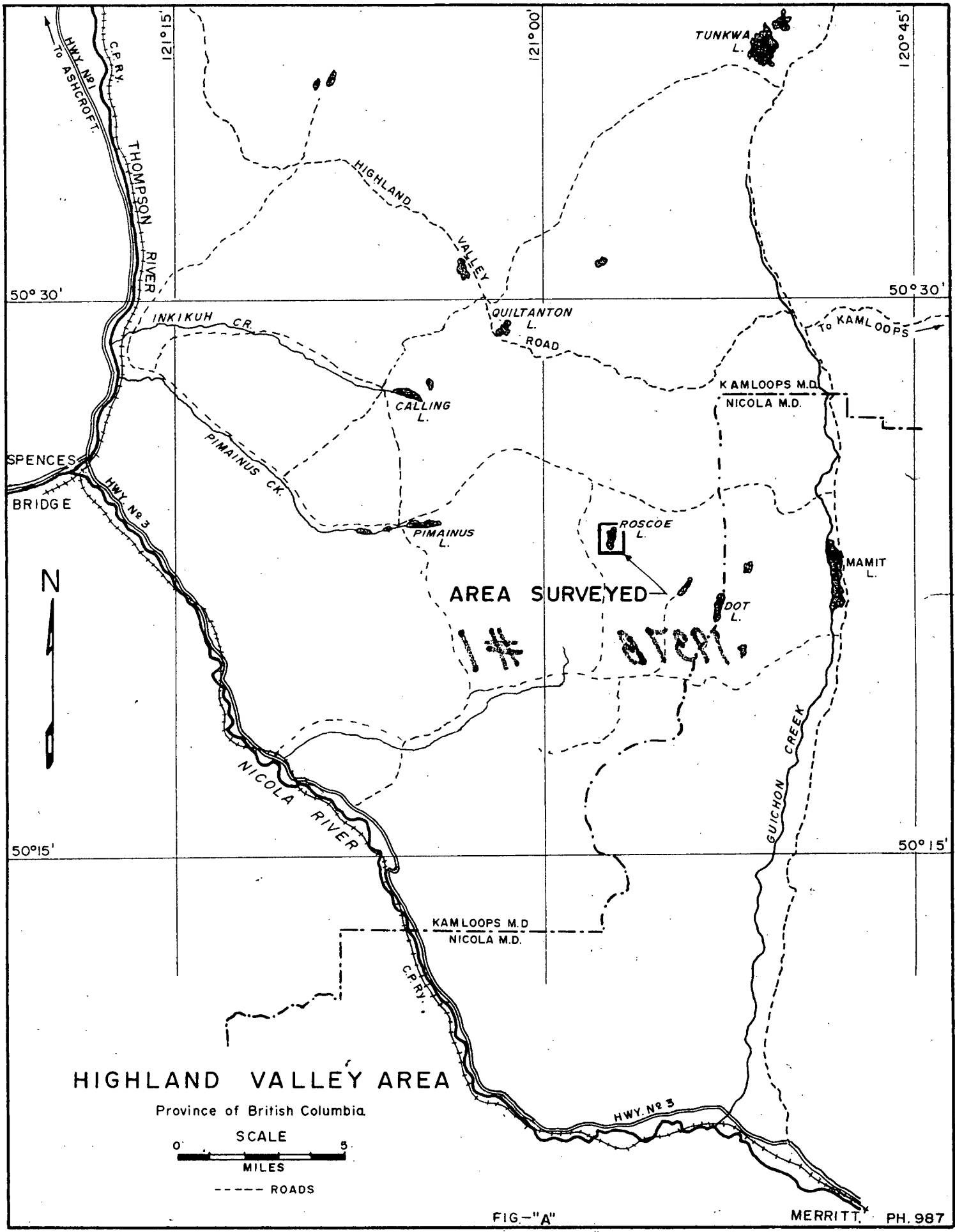
ASSESSMENT CREDIT DATA

Miles Surveyed

Reconnaissance Phase	4.55 line miles
Detail Phase	-
TOTAL	4.55 line miles

Personnel

Name	Position	Dates	Rate/day	Total Charges
W. Mairs	Senior Operator/ Party Chief	Jan. 24 - Feb. 24, 1969	$ 90.00	$1,210.00
M. Samilski	Senior Operator/ Operator/ Party Chief	Jan. 29 - Feb. 24, 1969	90.00/75.00	675.00
P. Slominski	Operator/Helper	Jan. 24 - Feb. 24, 1969	75.00/45.00	895.00
T. Doubt	Helper	Jan. 23 - Feb. 8, 1969		320
C. Hekter	Helper	Jan. 23 - Feb. 8, 1969		
M. Hrushowy	Helper	Feb. 3 - Feb. 20, 1969		
E. Helkio	Senior Draftsman	March 7, 10, 1969	75.00	150.00
M. Cole	Draftsman	April 3, 1969	60.00	60.00
M. Cody	Typist	April 22, 23, 1969	25.00	30.00
W. Finney	Geophysicist	March 10, 11, April 18, 19, 21, 1969	125.00	505.00
I.P. Unit		Jan. 24 - Feb. 24, 1969	70.00	1,150.00
		TOTAL		$4,675.00


121°15'
121°00'
120°45'
50°30'
50°15'
HWY. No 1
To ASHCROFT
C.P.R.Y.
THOMPSON RIVER
HIGHLAND VALLEY
TUNKWA L.
INKIKUH CR.
QUILTANTON L.
ROAD
To KAMLOOPS
KAMLOOPS M.D.
NICOLA M.D.
CALLING L.
PIMAINUS CK.
SPENCES BRIDGE
HWY. No 3
PIMAINUS L.
ROSCOE L.
MAMIT L.
DOT L.
AREA SURVEYED
N
NICOLA RIVER
GUICHON CREEK
KAMLOOPS M.D.
NICOLA M.D.
C.P.R.Y.
HWY. No 3
HIGHLAND VALLEY AREA
Province of British Columbia
SCALE
0 5
MILES
ROADS
FIG.-"A"
MERRITT
PH. 987

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1937B MAP #1

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of the induced polarization survey on the Red, Green and Orange Groups, Highland Valley, B.C.

I, R. Philp

of 201 - 714 West Hastings St., Vancouver 1, B.C.

in the Province of British Columbia, do solemnly declare that the following personnel were employed and costs incurred during January and February in conducting the survey.

Personnel:

K. Hektor - establish grid, survey helper: 19 days @ $30.00/day	$ 570.00
B. Mottershead - survey helper, geologist : 8 days @ $30.00/day	240.00
T. Doubt - survey helper: 16 days @ $20.00/day	320.00
B.M. Hrushowy - survey helper: 6 days @ $25.00/day	150.00
	$1280.00

Disbursements:

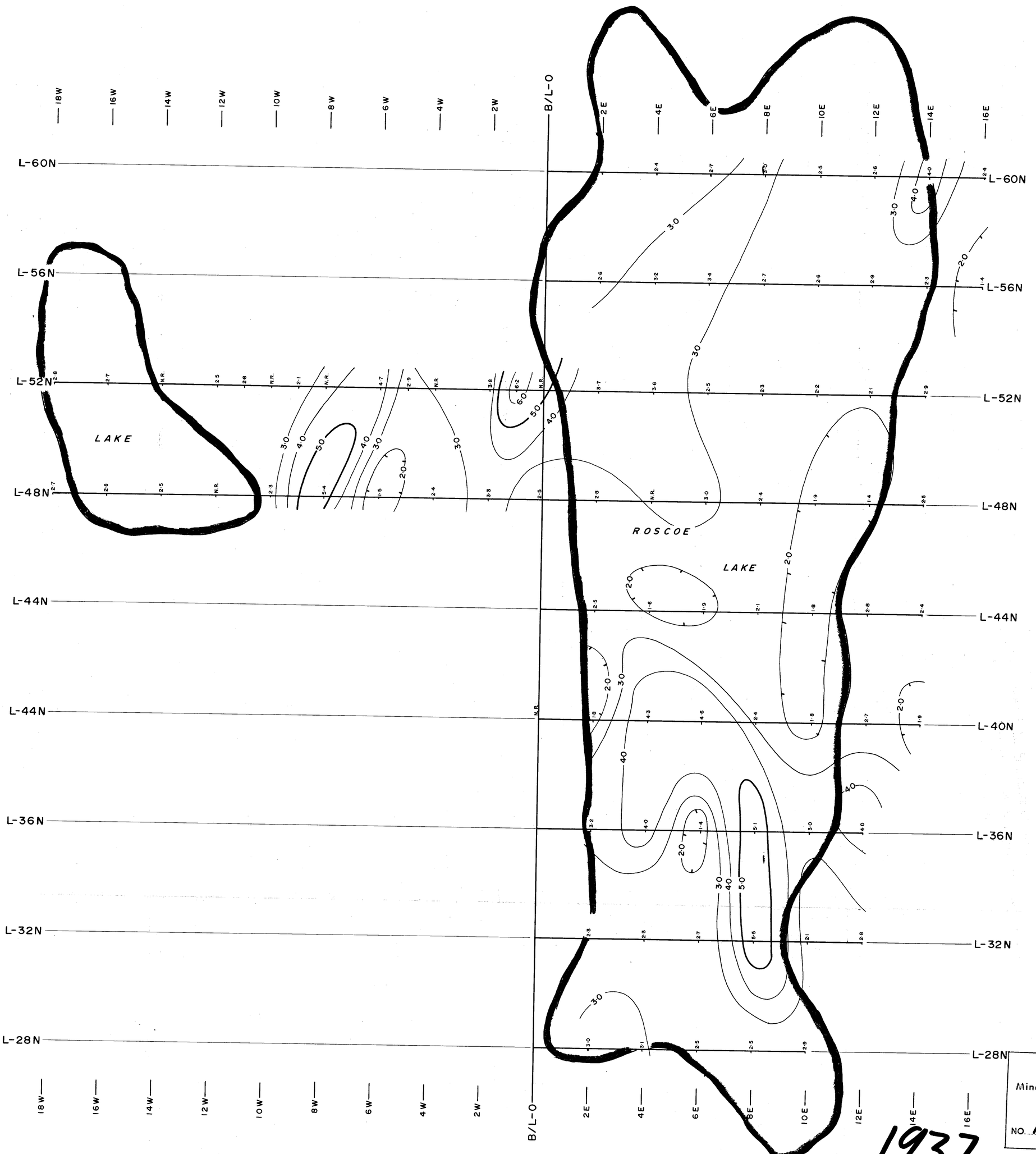
Groceries	$ 145.47
Truck rental	250.57
Supplies, gas, fuel	106.47
Camp equipment	61.90
Telephone	15.67
Skidoo rental and repairs	513.40
	$1093.48
Total	$2373.48

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the
of , in the
Province of British Columbia, this
day of , A.D.

A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.

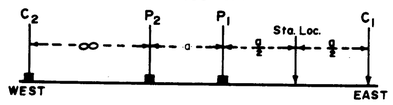
1937



N

3 – ELECTRODE ARRAY.

a = 400 feet.



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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1937B MAP #2

1937

PATHFINDER URANIUM & NICKEL MINES LIMITED.

ROSCOE LAKE PROPERTY, HIGHLAND VALLEY AREA – B.C.

INDUCED POLARIZATION SURVEY.
APPARENT CHARGEABILITY CONTOURS.

CONTOUR INTERVAL = 10 milliseconds

To accompany report by: W.A. Finney, B.Sc., Geophysicist.

PROFESSIONAL ENGINEER
NORMAN R. PATERSON
CALGARY, CANADA.

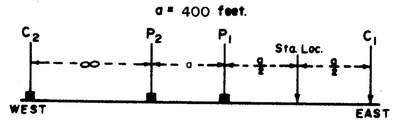
SCALE: 1 inch = 200 feet.
DRAWN: E.H.
DATE: February, 1969.
JOB Nº P.H. 987.

GEOPHYSICAL SURVEY DIVISION.
KENTING EXPLORATION SERVICES LIMITED.
Expiry Date: September 24, 1969
(Kenting Exploration Services Limited.)

DWG. Nº – 987-1

3 - ELECTRODE ARRAY.

a = 400 feet.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 19376 MAP #3

1937

PATHFINDER URANIUM & NICKEL MINES LIMITED.

ROSCOE LAKE PROPERTY, HIGHLAND VALLEY AREA - B.C.

INDUCED POLARIZATION SURVEY.

APPARENT RESISTIVITY CONTOURS

Contours at (logarithmic intervals): 150, 200, 300, 400, 600, 800, 1000 etc. ohm - meters.

To accompany report by: W.A. Finney, B.Sc., Geophysicist.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA NORMAN R. PATERSON

CALGARY, CANADA.

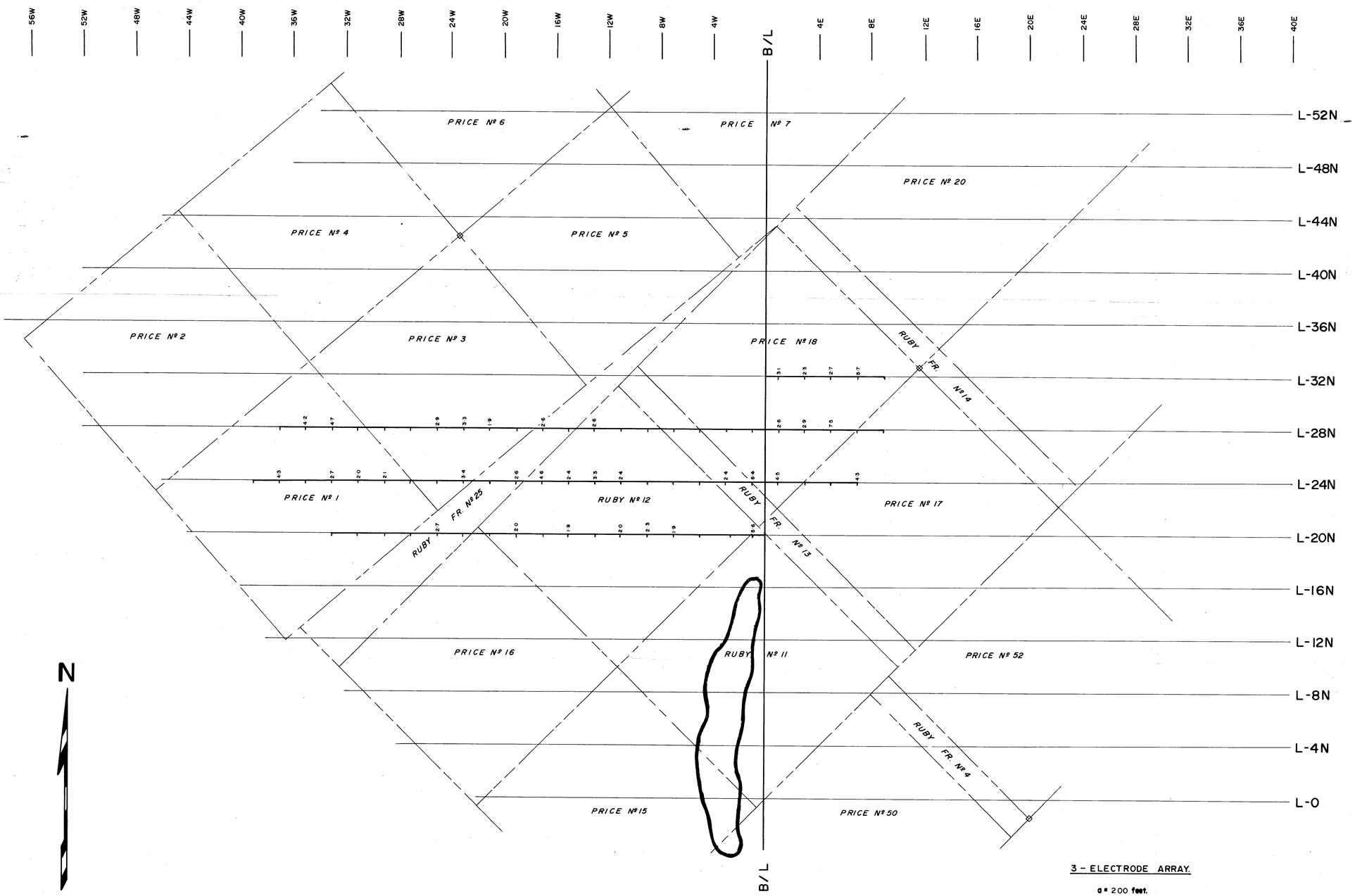
HUNTEC (1970) LIMITED.

KENTING EXPLORATION SERVICES LIMITED.
(formerly Huntec Limited.)

SCALE:	1 inch = 200 feet.
DRAWN:	E.H.
DATE:	February, 1969.
JOB No	P.H. 987.

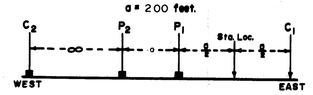
Expiry Date: September 2, 1981

DWG. No - 987-2



3 - ELECTRODE ARRAY.

a = 200 feet.



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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1937 MAP #4

PATHFINDER URANIUM & NICKEL MINES LIMITED.

ROSCOE LAKE PROPERTY, HIGHLAND VALLEY AREA - B.C.

INDUCED POLARIZATION SURVEY.
APPARENT CHARGEABILITY CONTOURS

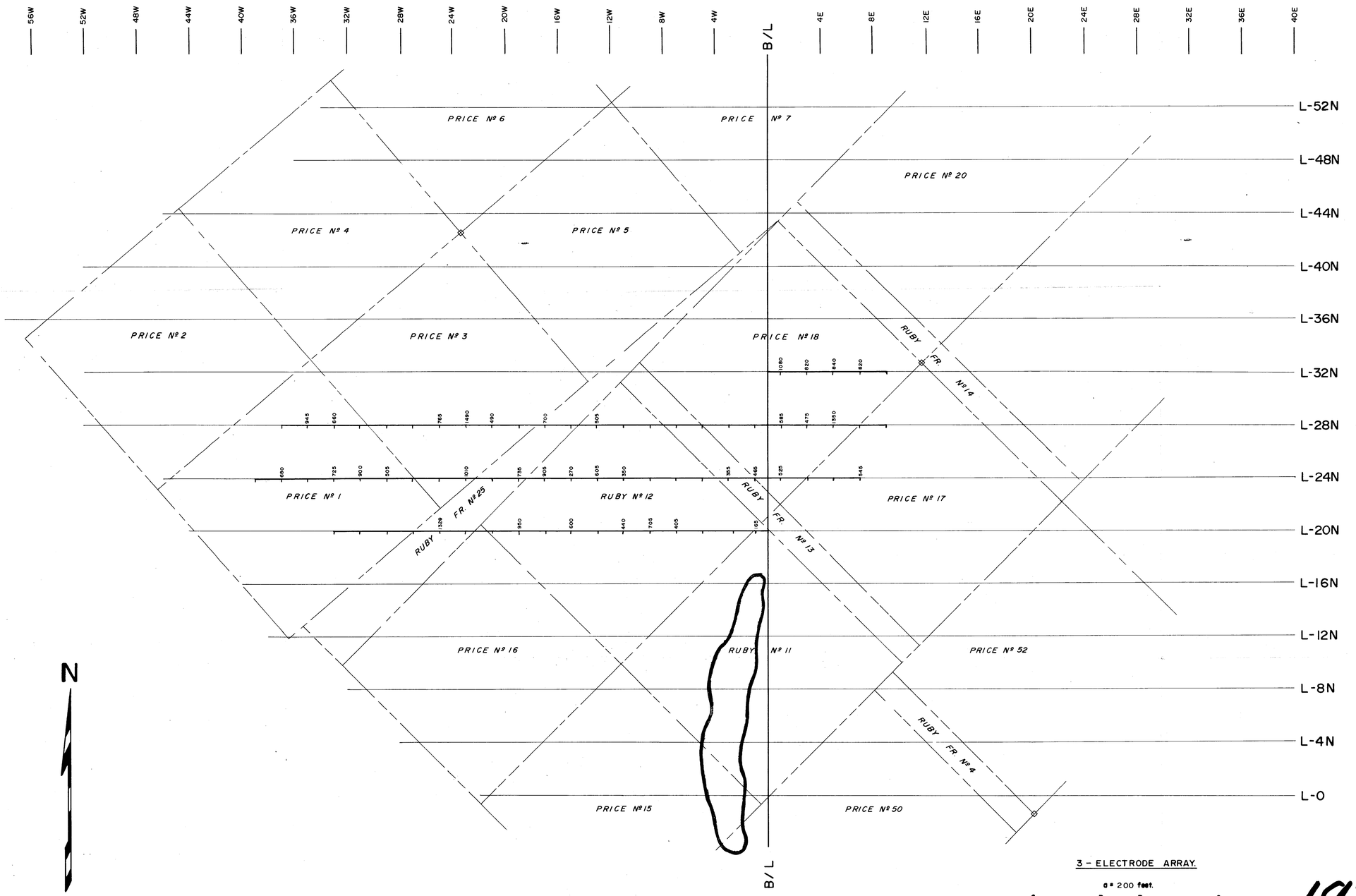
To accompany report by: W.A. Fraser, B.Sc. Geophysicist.
NORMAN R. PATERSON
CALGARY, CANADA.

PROFESSIONAL ENGINEER
BRITISH COLUMBIA

SCALE: 1 inch = 400 feet.
DRAWN: M.C.
DATE: February, 1969.
JOB Nº P.H. 987.

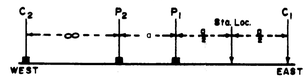
KENTING EXPLORATION SERVICES LIMITED.
Expiry Date: September 24, 1969
(formerly Huntec Limited)

DWG. Nº - 987 - 3



3 - ELECTRODE ARRAY.

a = 200 feet.



1937

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 19376 MAP #5

PATHFINDER URANIUM & NICKEL MINES LIMITED.

ROSCOE LAKE PROPERTY, HIGHLAND VALLEY AREA - B.C.

INDUCED POLARIZATION SURVEY.
APPARENT RESISTIVITY CONTOURS

To accompany report by:

W. A. Finney, B.Sc. Geophysicist.
NORMAN R. PATERSON
CALGARY - CANADA.

PROFESSIONAL ENGINEER
BRITISH COLUMBIA

SCALE: 1 inch = 400 feet.
DRAWN: M.C.
DATE: February, 1969.
JOB Nº P.H. 987.

HUNTEC DIVISION
KENTING EXPLORATION SERVICES LIMITED.
Expiry Date: September 24, 1969
(formerly Huntec Limited)

DWG. Nº -987-4