

1575

AUTHOR - W. A. FINNEY
REPORT ON AN INDUCED
POLARIZATION (I. P.) SURVEY ^{NO}
DEN GROUP 925/11E
HIGHLAND VALLEY, KAMLOOPS, M. D.
BRITISH COLUMBIA
(50°, 121°, N. W.)
- for -
ADERA MINING LIMITED

HUNTEC LIMITED
JUNE, 1968

TABLE OF CONTENTS

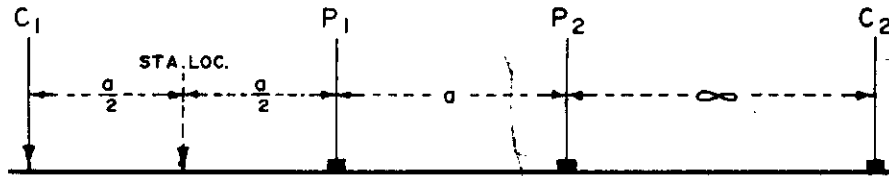
		PAGE
INTRODUCTION	...	1
General	...	1
The Property	...	1
RESULTS AND INTERPRETATION		3
Presentation	...	3
Interpretation	...	3
CONCLUSIONS AND RECOMMENDATIONS		7
SUMMARY	...	8
BIOGRAPHICAL NOTES		9
APPENDIX A - Assessment Credit Data		i
Accompanying maps:		<u>Scale</u>
Drawing No. 1	Apparent Chargeability Contours with Interp.	1" = 400' # 1
Drawing No. 2	Apparent Resistivity Contour	1" = 400' # 5
Drawing No. 3	Detail Profile - Line 12N with Interpretation	1" = 200' # 2

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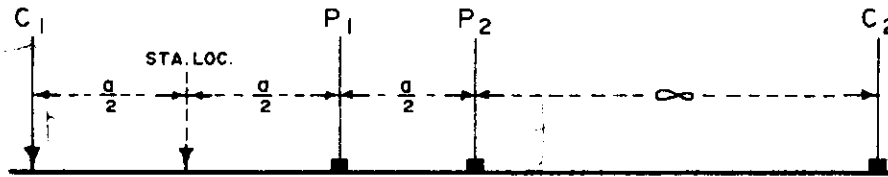
DEN GROUP.

ASHCROFT AREA, KAMLOOPS M.D., - B.C.

3 - ELECTRODE ARRAY



POLE - DIPOLE ARRAY



NOTE:

P₁ P₂ are Receiver Electrodes.
C₁ C₂ are Transmitter Electrodes.

LEGEND

- ——— ● a = 50'
- ——— ○ a = 100'
- X ——— X a = 200'
- ——— ■ a = 300'
- △ ——— △ a = 400'
- ▲ ——— ▲ a = 600'
- ——— □ a = 800'

Horizontal Scale: 1 inch = 200 feet.

Vertical Scales:

Chargeability 1 inch = 2.0 milliseconds.

Resistivity 2 inches = 1 logarithmic cycle (ohm-meters)

DATE: May 1968.

JOB N^o: PH. 779.

INTRODUCTION

General

This report contains the results of an Induced Polarization survey carried out by Huntec Limited for Adera Mining Limited on the Den Group of claims in the Kamloops Mining Division, British Columbia.

The purpose of the survey was to prospect for sulphide mineralization in both massive and disseminated form. The significance of previously determined geochemical anomalies was to be checked out with a view to outlining possible drilling targets.

The field work was carried out between April 10th and May 7th, 1968, using a five-man crew, under the direction of Mr. W. Mairs. The project was supervised from Vancouver by Mr. W. A. Finney.

The Property

The claim group is situated about 3 miles from the Highland Valley mining camp, approximately 30 miles by road from Ashcroft. Access was by 'logging-type' roads from the main Ashcroft - Bethlehem route.

The claims surveyed include Den 13, 15-22, 29-38, 47-49, 59, 72, 74-76, 78-80. The details surface geology of the property is not known fully but the area is underlain mainly by Bethlehem Quartz Diorite and Beaver Quartz Diorite. The contact between these two rock types runs

in a north-south direction through the centre of the property. Minor occurrences of andesitic flows and aplite dykes have been recorded. A few showings of copper mineralization, bornite and malachite have been detected in widely scattered localities within the property.

The survey was carried out along a grid of east-west lines 400 feet apart. Readings were taken at intervals of 200 feet along the lines in the reconnaissance phase of the survey.

RESULTS AND INTERPRETATION

Presentation

The results of the reconnaissance phase of the work are shown in Drawings No. 1 and No. 2 as contours of apparent chargeability and apparent resistivity respectively. These are located in the map pocket inside the back cover of the report.

The portions of those lines which were surveyed in detail are shown by the double lines and arrows. The results of the detail work are shown separately in Drawing No. 3 which is bound into the body of the report.

Outlines of interpreted causative bodies or zones of possible interest are indicated on the contour maps and a section of one of those is shown under the detail profile in Drawing No. 3. Recommended diamond drill holes are shown on all drawings where applicable.

Interpretation

The apparent chargeability response throughout the area surveyed is generally weak and inactive. This can be seen clearly from the contours on Drawing No. 1 where no strong anomalies have been outlined. The background chargeability is of the order 2.5 - 3.5 milliseconds which is typical of unmineralized rocks of the Guichor Batholith in the Highland Valley area.

Only small variations above this background level occur, and these are comparatively few. It is most likely that these small zones of stronger response within the granodiorite represent limited localities which have a slightly higher percentage of chargeable material than the average country rock; this chargeable material is probably sulphide mineralization in disseminated form. The volume of the mineralization appears to be quite small and none of the zones (with one possible exception) would appear to carry economic grades.

These anomalous zones are outlined on the contour map (Drawing No. 1) by the heavy broken lines. The only zone which might warrant further investigation is the zone centred at 12N, 6 + 50E.

Detailing of this anomaly was carried out using additional electrode separations of 200 feet and 100 feet and the I. P. response with the three different separations is shown in profile form in Drawing No. 3.

The chargeability values obtained using the 400 feet spacing are the strongest; maximum value 5.0 milliseconds which is twice background in this region. Only minor increases in chargeability were detected using the 200 feet electrode spacing, about 1.0 millisecond above background, and slight increase, 0.6 millisecond, using the 100 feet spacing. These results indicate that the causative body is relatively deep seated, probably centred around 250 - 300 feet below ground level.

There are only weak anomalous readings on Line 8N and Line 16N associated with the high values on Line 12N. This implies that the

causative body must be quite small in areal extent as well as being low in percentage sulphide mineralization. This is not very encouraging as regards to the economic potential of this body and a second detracting factor is the general increase in resistivity coinciding with the chargeability anomaly. Elsewhere in the Highland Valley it has been noted that chargeability anomalies with associated resistivity 'highs' have usually proven to be of little economic value.

If other work, either geological or geochemical, should prove this region to be favourably located then the additional evidence in support of the geophysical indications might make further investigation worthwhile; in which case a drill hole collared at 12N, 6+00E and drilled at an angle of 60° to the east would be recommended to test the causative body.

A second chargeability anomaly which may prove of interest is located at 8N, 12W. In an east-west direction this anomaly does not rise very much above background; in a north-south direction, however, the anomaly attains some significance. This minor chargeability anomaly attains greater significance through its correlation with an apparent resistivity low of 76 ohm-metres and its close proximity to the geological contact. If the anomaly correlates with other geological factors increasing its significance, then further work would be justifiable.

None of the chargeability anomalies appear to be sufficiently large in either amplitude or areal extent to justify further work on them.

The geochemical 'highs' do not appear to be reflected in the I. P. results which show background values in these regions.

The apparent resistivity results are fairly varied but the pattern appears to be controlled by local variations in thickness of overburden rather than changes of rock type.

CONCLUSIONS AND RECOMMENDATIONS

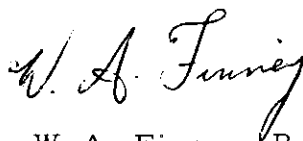
1. The Induced Polarization survey did not detect any strong anomalies which would be indicative of substantial sulphide mineralization.
2. Only minor anomalous zones were resolved and in all of these the amplitude and areal extent of the anomalies are small.
3. None of the anomalous zones can be correlated with any of 'high' readings observed in the earlier geochemical survey.
4. Only one anomaly, centred at 12N, 7 + 50E, appears to warrant any further investigation. However, work is recommended only if there is other supporting geological evidence. To test the anomaly a diamond drill hole collared at 12N, 6+00E, angled 60° to east is proposed.

SUMMARY

1. The Induced Polarization survey over the Den claim group in the Highland Valley area, covered 30.55 line miles of reconnaissance work and 0.35 line miles of detail work.
2. The apparent chargeability values obtained were generally low and typical of the background exhibited by rocks in this geological environment which are barren of sulphide mineralization.
3. Several small anomalies were observed, only one of which appears worthy of further investigation. This is located at 12N, 7+50E.
4. If other evidence exists to support the I. P. anomaly on Line 12N then a diamond drill hole at 12N, 6+00E, angled 60° to the east, is recommended to test the causative body.

Respectfully submitted

HUNTEC LIMITED



W. A. Finney, B.Sc.
Geophysicist

BIOGRAPHICAL NOTES

Name: William Alexander Finney

Company: Huntec Limited

Professional Capacity: Geophysicist

Place and date of birth: Belfast, Northern Ireland, July 26, 1938

Academic Qualifications: B.Sc. Physics, 1960.

Experience: 1960-64 Engineer with Short Bros. and Harland Ltd., Belfast. Engaged in development and use of analogue computing systems for solution of non-linear control systems.

1964-67 Geophysicist with the Bureau of Mineral Resources, Canberra, Australia. Employed in the air-borne section carrying out magnetic and radiometric surveys. In charge of crews on both oil and metalliferous type surveys, including all aspects such as field operations, interpretation and report writing.

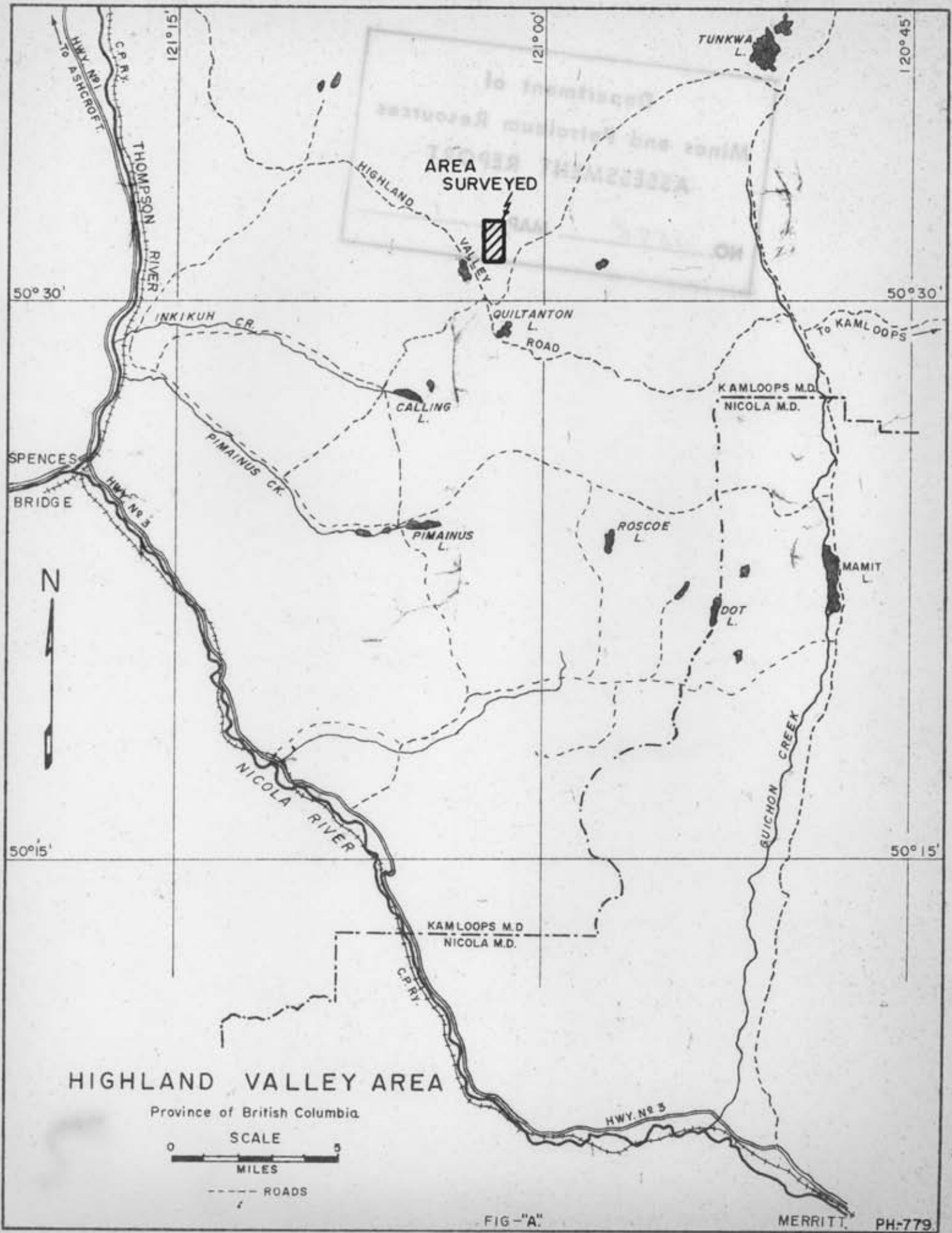
1967 Joined Huntec; involved in ground geophysical surveys, mainly I. P., throughout British Columbia.

APPENDIX AASSESSMENT CREDIT DATAMiles surveyed:

Reconnaissance	30.55 line miles
Detail	<u>0.35</u> " "
	30.90 " "

Personnel :

<u>Name</u>	<u>Position</u>	<u>Dates</u>	<u>Wages (per day)</u>	<u>Total Costs</u>
W. Mairs	Operator/ Party chief	April 10-23	\$92.00	\$1,288.00
M. Samilski	-do-	Apr. 10 - May 7	77.88	2,180.64
J. Cox	Operator	-do-	58.96	1,650.88
C. Kittson	Helper	-do-	47.98	1,345.44
P. Slominski	Helper	-do-	47.67	667.38
R. Nishimura	Helper	Apr. 24 - May 3	52.00	520.00
E. Helkio	Helper/draftsman	Apr. 10 - May 3	57.20	1,372.80
W. A. Finney	Geophysicist	May 4, 10, 28-31	125.00	750.00
I. P. Unit	----	Apr. 10 - May 7	-	1,240.00
Truck	----	-do-	-	<u>361.86</u>
			Total costs	\$11,375.00



HIGHLAND VALLEY AREA

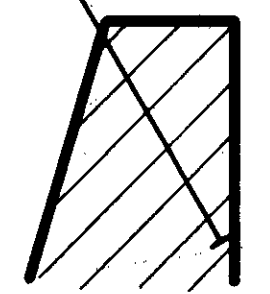
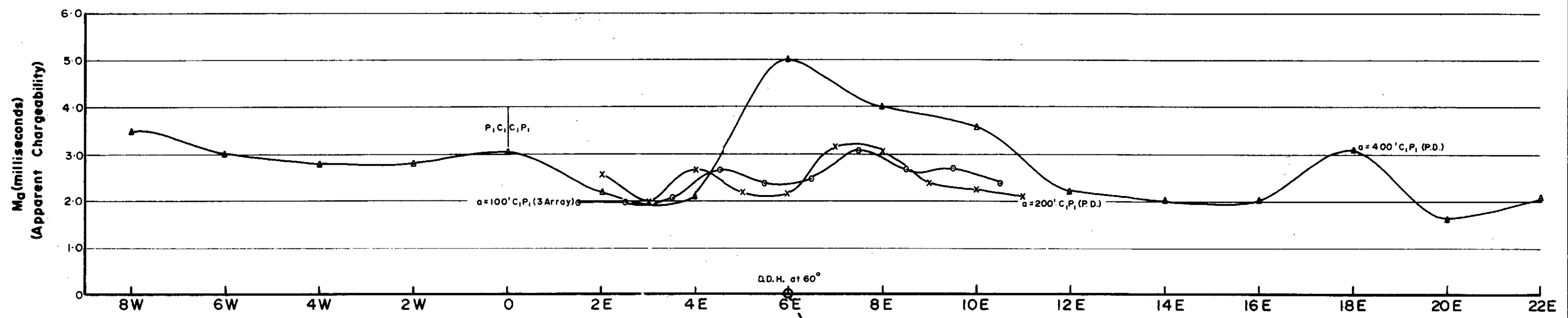
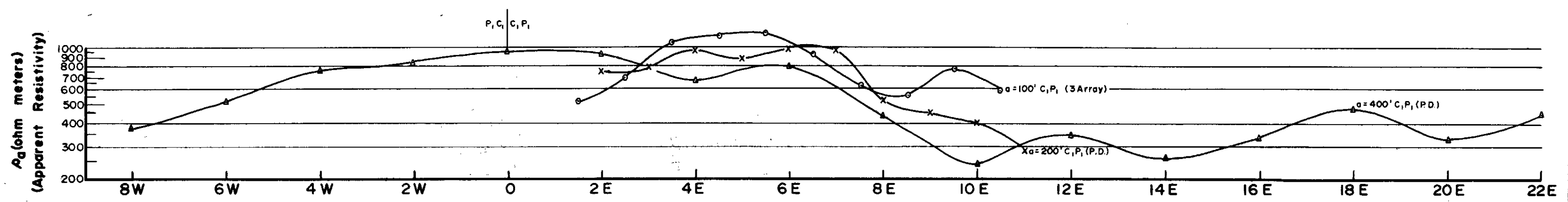
Province of British Columbia



--- ROADS

FIG-"A"

INDUCED POLARIZATION SURVEY.
 DETAIL PROFILE: LINE - 12N.



LEGEND

- INTERPRETED CAUSATIVE BODY.
- PROPOSED D.D. HOLE.

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT

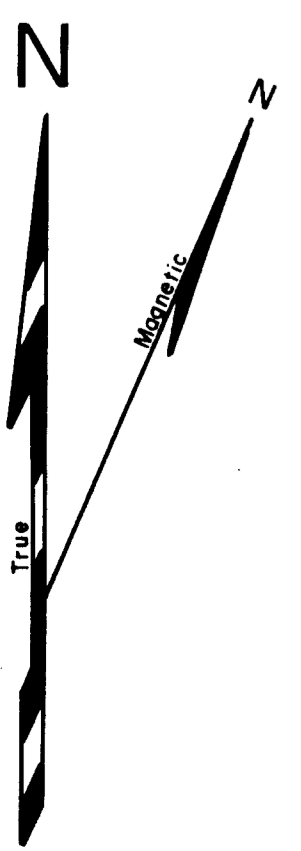
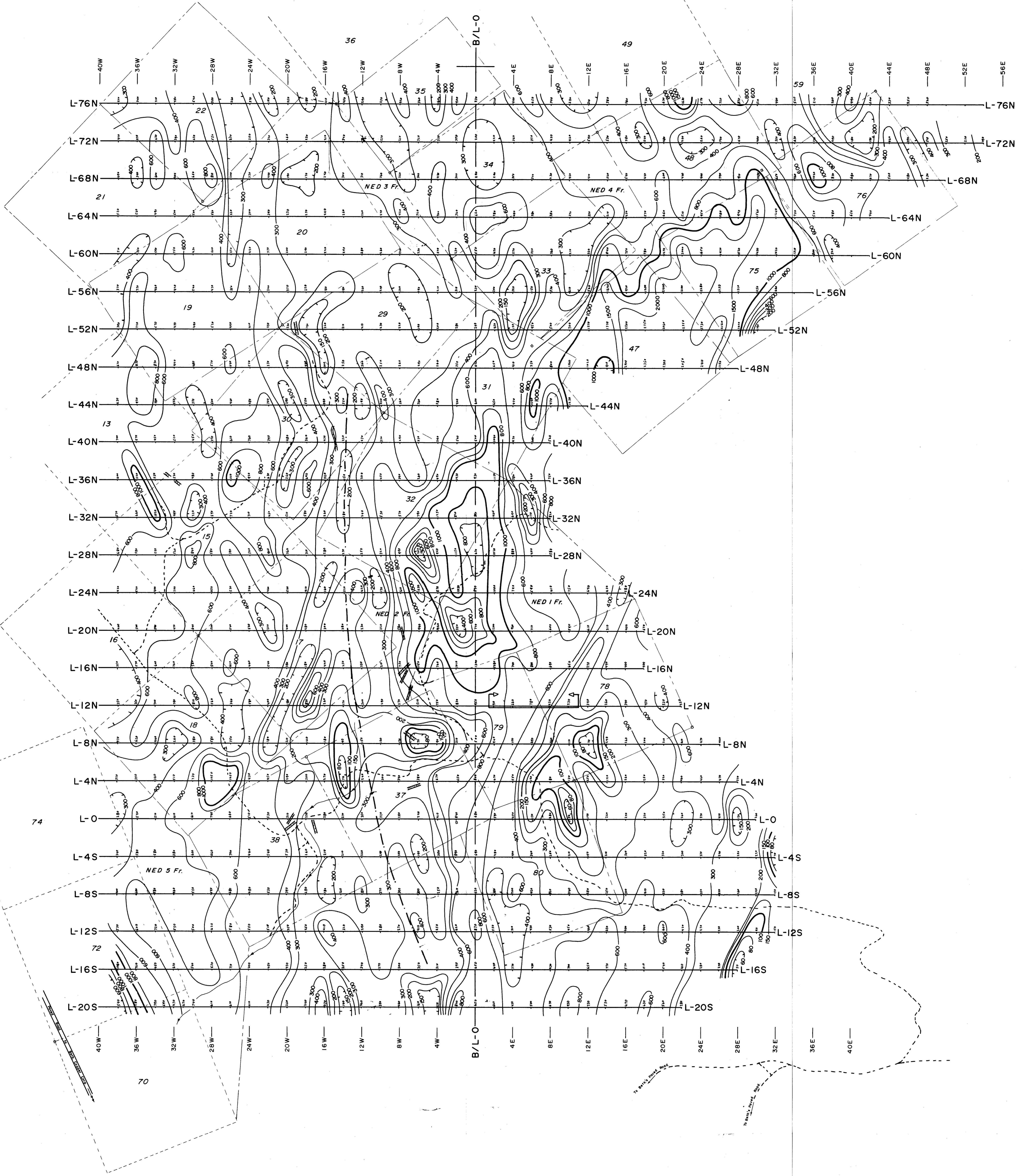
NO. 1575 MAP 2

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 DEN GROUP.
 ASHCROFT AREA, KAMLOOPS M.D., - B.C.

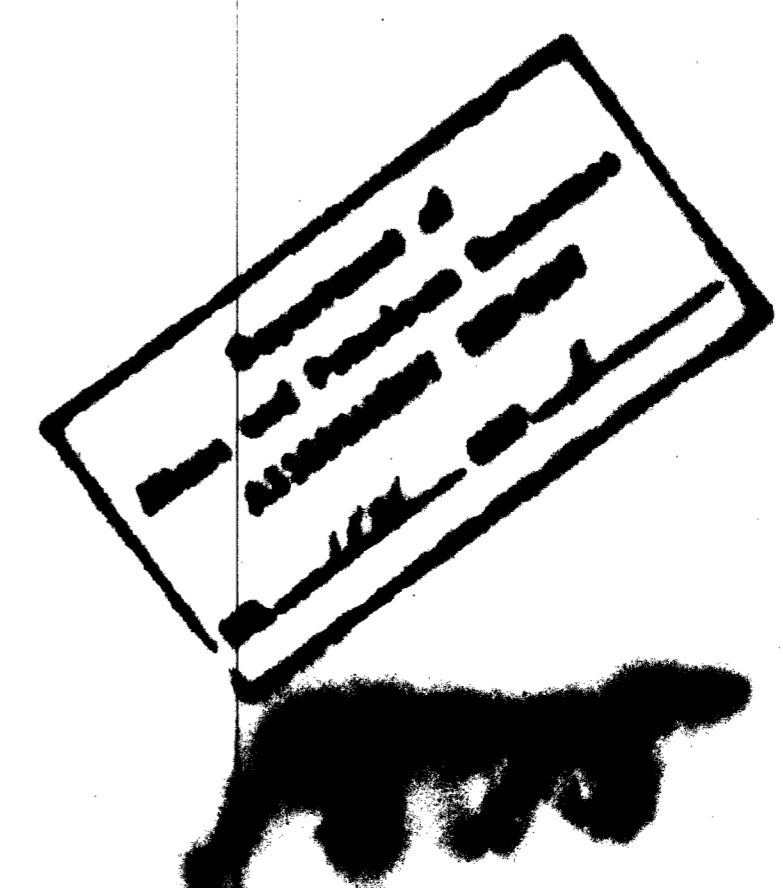
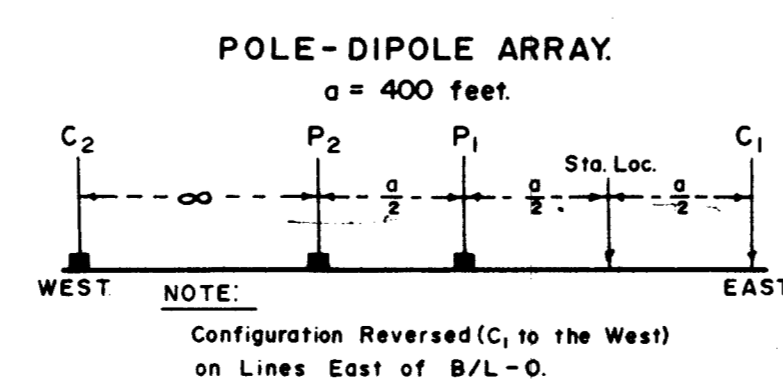
Horizontal Scale: 1 inch = 200 feet.
 Vertical Scales:
 Chargeability - 1 inch = 2.0 milliseconds.
 Resistivity - 2 inches = 1 logarithmic cycle (ohm-meters)

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

HUNTEC LIMITED - Vancouver, Canada - May, 1968.



- LEGEND**
- Claim Lines
 - - - - Geologic Contact
 - - - - Jeep Roads
 - ==== Built-up Trenches
 - ~ Stream
 - Portion of Line Covered by Detailed Surveying



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INDUCED POLARIZATION SURVEY
 APPARENT RESISTIVITY CONTOURS

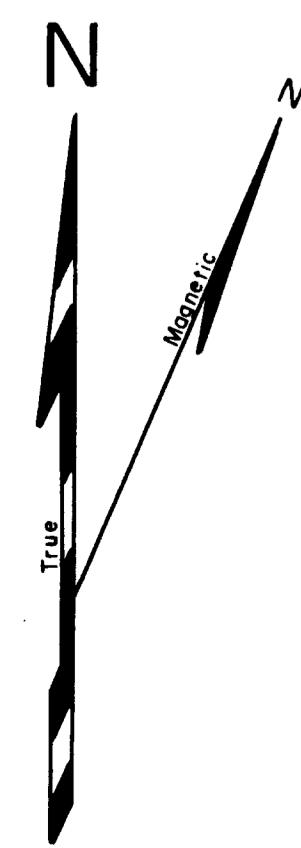
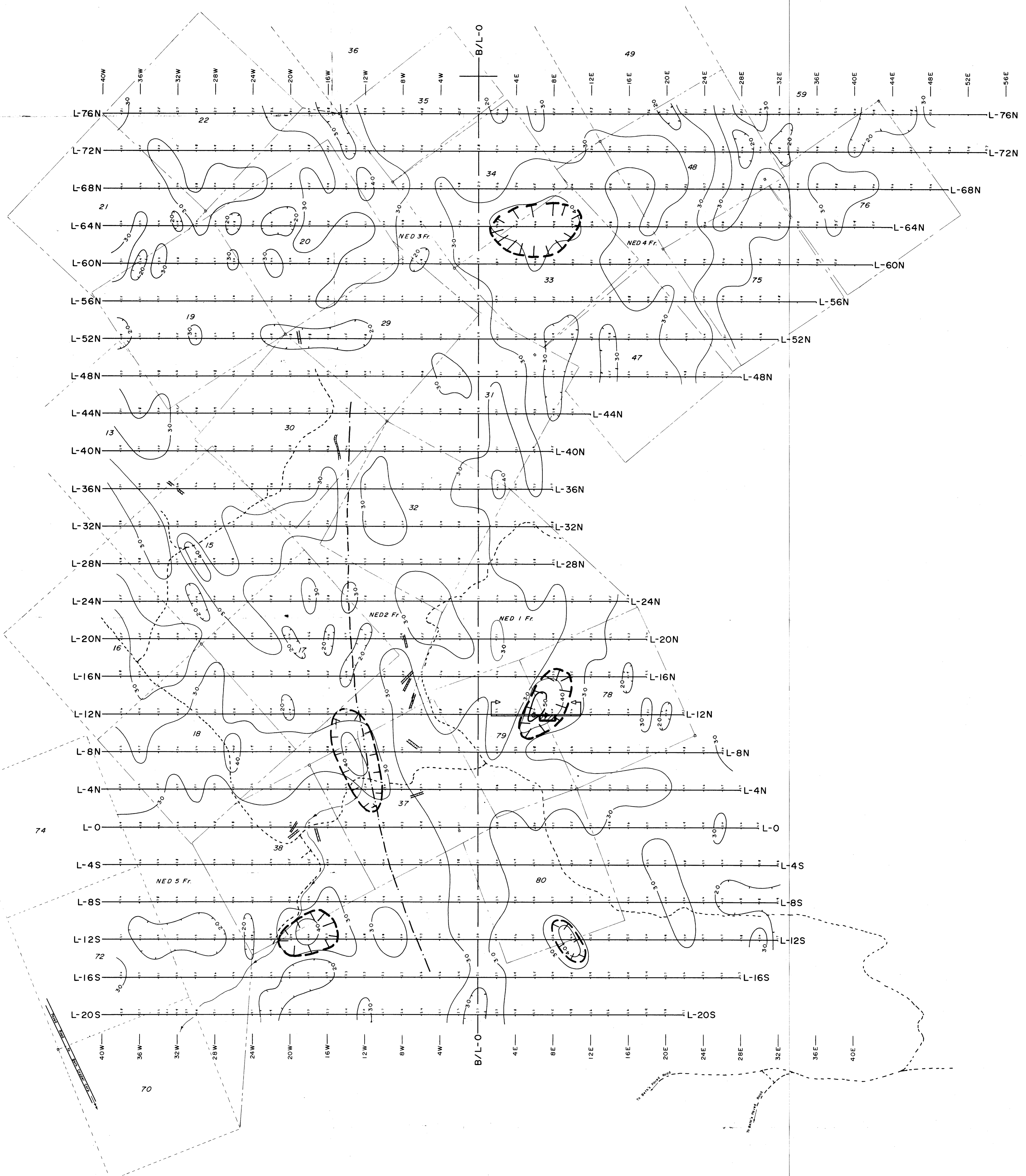
Contours at (logarithmic intervals): 150, 200, 300, 400, 600, 800, 1000 etc., ohm-meters.

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

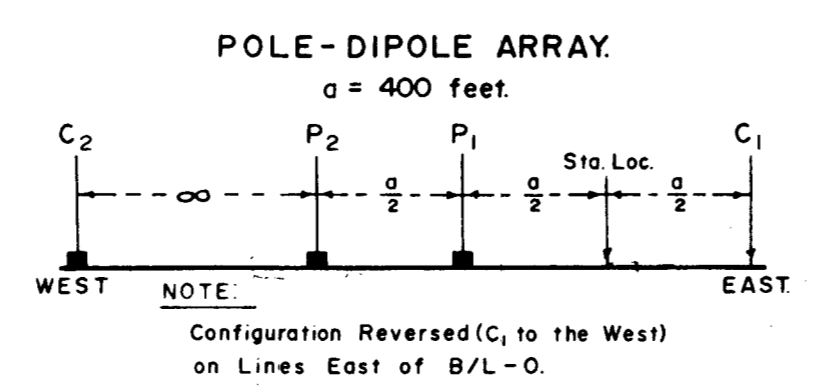
HUNTEC LIMITED VANCOUVER - CANADA

SCALE: 1 inch = 400 feet
 DRAWN: E.H.
 DATE: MAY, 1968.
 JOB NO. PH. 779.

DWG. NO. 779-2



- LEGEND**
- Claim Lines
 - - - - - Geologic Contact
 - - - - - Jeep Roads
 - ▬▬▬▬▬ Bulldozed Trenches
 - ~ Stream
 - ▬▬▬▬▬ Portion of Line Covered by Detailed Surveying
 - ▭▭▭▭▭ Outline of Anomalous Zone
 - ▭▭▭▭▭ Interpreted Causative Body
 - Proposed D.D. Hole



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

ADERA MINING LIMITED
DEN GROUP
ASHCROFT AREA, KAMLOOPS M.D., - B. C.

INDUCED POLARIZATION SURVEY
APPARENT CHARGEABILITY CONTOURS

CONTOUR INTERVAL = 1.0 milliseconds

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

HUNTEC LIMITED VANCOUVER - CANADA

SCALE: 1 inch = 400 feet
DRAWN: E.H.
DATE: MAY, 1968.
JOB NO. PH. 779.

DWG. NO. 779-1

1575