REPORT ON

AN INDUCED POLARIZATION (I.P.) SURVEY

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

FOR

ANVIL MINING CORPORATION LIMITED

BY

HUNTEC LIMITED

VANCOUVER B.C.

SEPTEMBER 1967

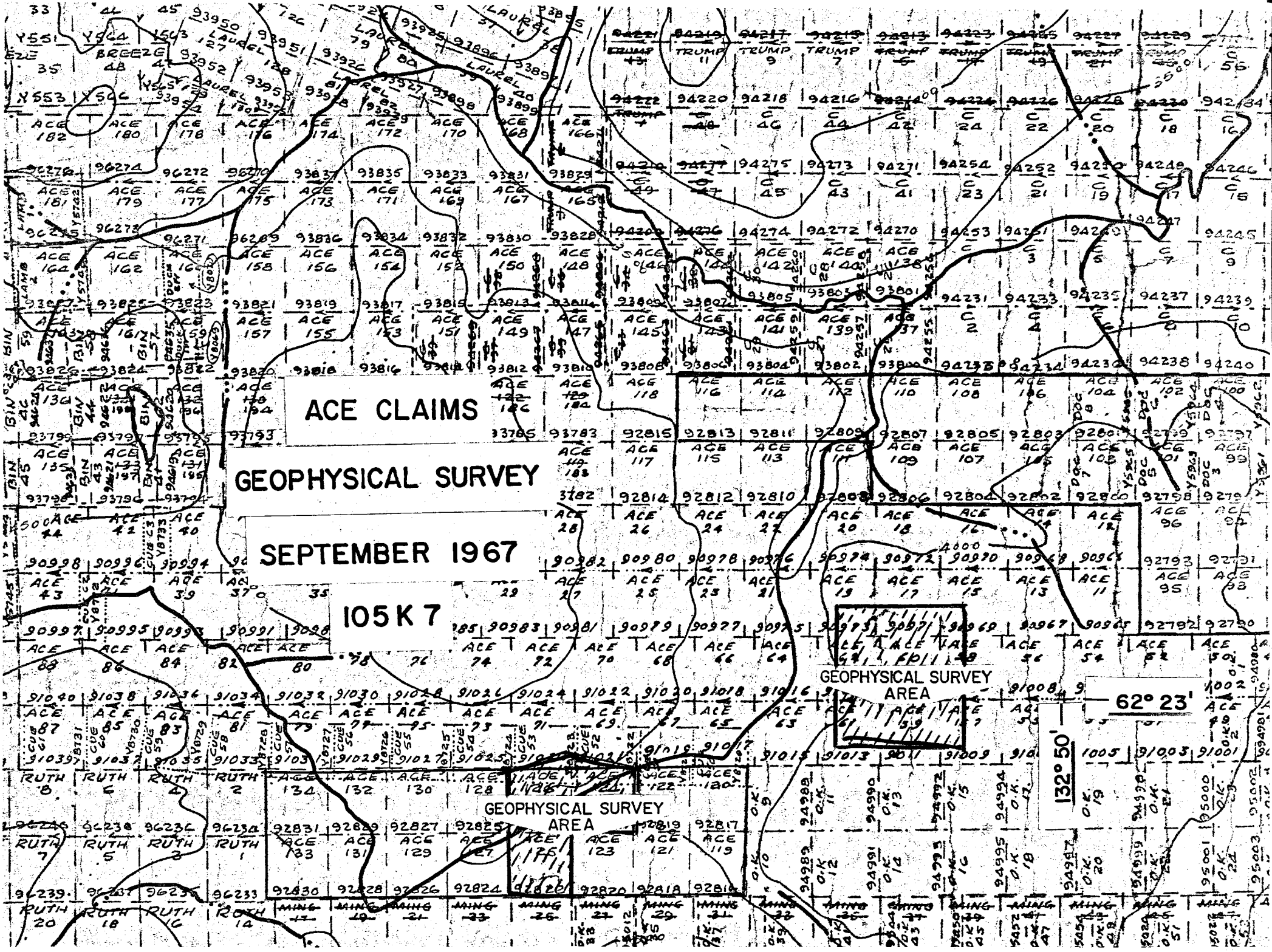

ACE CLAIMS
GEOPHYSICAL SURVEY
SEPTEMBER 1967
105K7
GEOPHYSICAL SURVEY AREA
GEOPHYSICAL SURVEY AREA
62° 23'
132° 50'

TABLE OF CONTENTS

INTRODUCTION

General

This report contains the results of an Induced Polarization survey carried out by Huntec Limited for the Anvil Mining Corporation Limited on the Ace Claim Group in the Whitehorse Mining District, Yukon Territory.

The survey of this claim group was part of a larger program which was designed to test the capability of the Induced Polarization method for detecting the type of sulphide mineralization which has been found in commercial quantities during the last few years in this district, and to prospect for additional ore. Part of this test included several test profiles over the Faro ore body.

Field work was carried out between August 16th and August 27th, 1967. The field party chief was Mr. John James and the project was supervised from Vancouver by Mr. R. K. Watson.

The Property

The Ace Group lies some 16 miles east north-east of the Anvil airstrip and base camp. It is accessible by helicopter or on foot. Detailed geology is not available to the writer at this time but it is believed that the property lies within the Mississippian quartz-sericite schist formation which is associated with most of the economic mineralization found in this general area.

SURVEY SPECIFICATIONS

The Equipment

The Induced Polarization equipment used was a 2.5 kw pulse-type instrument manufactured in Toronto by Huntec Limited. The following specifications apply:

Type of current	Direct Current broken at periodic intervals.
Frequency	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
Maximum current available	3.0 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 second 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

The entire survey was carried out using the pole

dipole electrode configuration or array. 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. The distance between P_1 and P_2 is kept at some convenient distance equal to "a" or a simple fraction of "a". For the reconnaissance phase of this survey the value of "a" was kept at 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 different electrode separations. This additional data provides information from which depth, dip and location may more easily be calculated than from a single profile.

Data Presentation

The data for the reconnaissance survey is shown on Plate 1 located in the pocket inside the back cover of this report. This map is at a scale of 1" to 400 ft. and shows apparent chargeability and apparent resistivity as measured in the field in contour form. Interpretation is shown in the form of outlines of interpreted causative bodies associated with the major anomalies. Those portions of lines which were surveyed in detail are shown with a double line and arrows.

The detailed profiles are shown on Figs. 1 to 4, which are included as separate fold-outs bound into this report. The interpreted causative bodies are located on these profiles along with recommended drill holes.

RESULTS AND INTERPRETATION

Grid "A"

The reconnaissance survey covered 1.70 line-miles of this grid.

The chargeability background over the whole grid is unusually high, averaging between 12 and 15 milliseconds with several individual peaks reading higher and lower than background. The strongest readings were observed at the south ends of lines 204 and 208W and these sections of both lines were detailed using electrode spacings of 400, 600 and 800 feet. These detailed readings are shown in Figs. 1 and 2. The anomaly, which these two detailed sections cover, is designated No.3 and is open both to the south and west. The sub-surface body causing the anomaly is interpreted as having a high chargeability and a low resistivity indicating that it is probably a relatively massive electrical conductor. In this geological setting it could be either graphite or sulphide mineralisation or a combination of both. The depth to its upper surface is interpreted to be within the order of 100 feet, although an accurate calculation of this cannot be made.

While the causative body is not completely outlined, it is believed that there is enough information to recommend a drill hole which should be located at station 34+00S on line 208W. This should be a vertical drill hole extending for a minimum of 400 feet. If drilling yielded encouraging results the rest of the anomaly could be drilled out on a systematic pattern basis, although it might be more economic to find the full extent of the anomaly with additional I.P. detailing.

The data at the south end of lines 180W to 188W also

show an increase in chargeability which may be indicative of the sub-surface conductor, although it is not supported by a corresponding decrease in resistivity. In any case this area should be detailed further to find the full extent of the anomaly.

Grid "B"

The I.P. survey on this grid consisted of 2.58 line-miles of reconnaissance profiling plus detailed surveying at several different spacings on lines 112W and 120W.

The general chargeability background throughout the area appears to lie between 6 and 9 milliseconds, and two rather well defined anomalies (designated Nos. 1 and 2) were discovered. Anomaly No. 1 was detailed on line 112W and 120W and the detailing on the latter was extended to cover Anomaly No.2. This information is shown on Figs. 3 and 4 bound into this report.

The detailing on line 112W indicates that the sub-surface material under this line, north of the base line, is composed of two layers of different chargeabilities. The upper layer is approximately 175 feet in thickness and has a true chargeability of approximately 4 to 5 milliseconds. This layer overlies a second layer having a chargeability of 20 milliseconds between the two anomalies, with a higher chargeability under each anomaly as shown in Fig.4. The upper layer may represent overburden or a relatively barren section of bedrock. The lower layer probably represents bedrock with a high chargeability caused by either sulphide mineralization or graphite or both. A true chargeability of 20 milliseconds could represent a total sulphide content of between 3% and 6% by volume. If particles of graphite formed part of the matrix then, of course, the percentage of sulphides would be lower.

Anomaly No. 1 is seen on both detailed profiles as a highly conductive mass having a true chargeability of probably more than 30 milliseconds. The causative body causing this anomaly is interpreted as a strong conductor, probably containing massive sulphides and/or graphite and is considered worthy of further investigation. The depth to the top of the causative body is probably in excess of 150 feet and the co-linear effect of the anomaly peaks indicates that the body has considerable depth extent, possibly beyond 600 feet from the surface. A follow-up drilling program is recommended for further investigation and two drill holes are recommended as shown in detailed profiles and on the contour map, located at station 1+25N on line 120W and station 1+00N on line 112W respectively.

Anomaly No. 2 does not show the same high conductivity as Anomaly No. 1 and it probably is caused by a bedrock chargeable mass, but it is considered to be composed of disseminated conductive particles rather than massive. A drill hole located at station 15+00N on line 112W would probably be the optimum for intersecting the cause of the anomaly.

SUMMARY

1. The Induced Polarization survey over the two grids on the Ace Claim Group covered 4.28 line-miles and discovered three anomalies which were detailed using several different electrode separations.

2. Anomalies Nos. 1 and 3 appear to represent sub-surface zones which have both a high chargeability and a relatively high conductivity. These are interpreted as probable zones of strong concentrations of conductive sulphides or graphite or a combination of both, and further investigation by drilling is recommended.

3. Anomaly No. 2 shows an increase in chargeability but relatively little increase in conductivity and is more likely to be a zone consisting of disseminated conductive particles rather than a massive conductor. Further investigation by drilling is also recommended for this anomaly.

HUNTEC LIMITED

R. K. Watson

R.K.Watson, B.A.SC., P.Eng.,
Geophysicist

APPENDIX A

ASSESSMENT CREDIT DATA

Survey Coverage:

"A" Grid -

Reconnaissance	1.70 line-miles
Detail	0.55 line-miles

"B" Grid -

Reconnaissance	2.58 line-miles
Detail	1.36 line-miles

Personnel:

Name	Position	Dates
J. James	Operator/party chief	Aug.16 - Aug.27, 1967
M. Samilski	Operator	Aug.16 - Aug.27, 1967
A. Hovi	Helper	Aug.16 - Aug.27, 1967
P. Bucholtz	Helper	Aug.16 - Aug.19, 1967
R. Johns	Helper	Aug.20 - Aug.27, 1967
E. Helkio	Drafting	Sept.7,8, & 9, 1967
R. Watson	Geophysicist	Sept. 7 & 8, 1967
M. Vatcher	Typing	Sept. 8, 1967

Total Man-days = 54

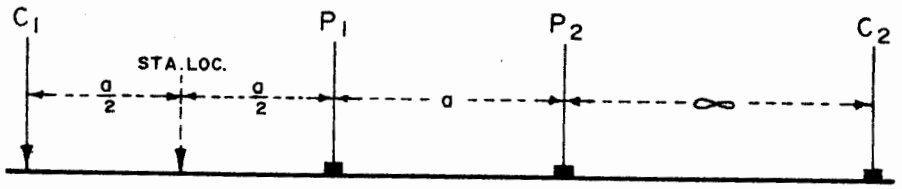
DETAIL PROFILES of APPARENT CHARGEABILITY & RESISTIVITY

ANVIL MINING CORPORATION LIMITED.

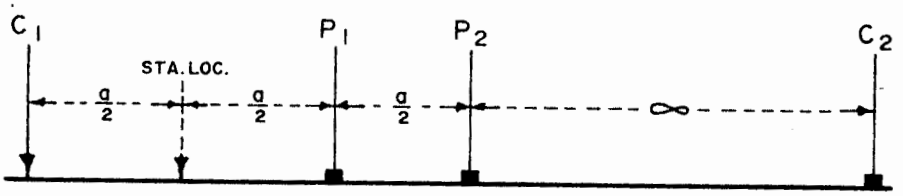
ACE GRIDS

ZONE - "A" --- 1 & 2 FIGS.
ZONE - "B" --- 3 & 4. FIGS.

3 - ELECTRODE ARRAY



POLE - DIPOLE ARRAY



NOTE:

P_1 P_2 are Receiver Electrodes.
C_1 C_2 are Transmitter Electrodes.

LEGEND

- a = 50'
- a = 100'
- a = 200'
- a = 300'
- a = 400'
- a = 600'
- a = 800'

Horizontal Scale: 1 inch = 200 feet.

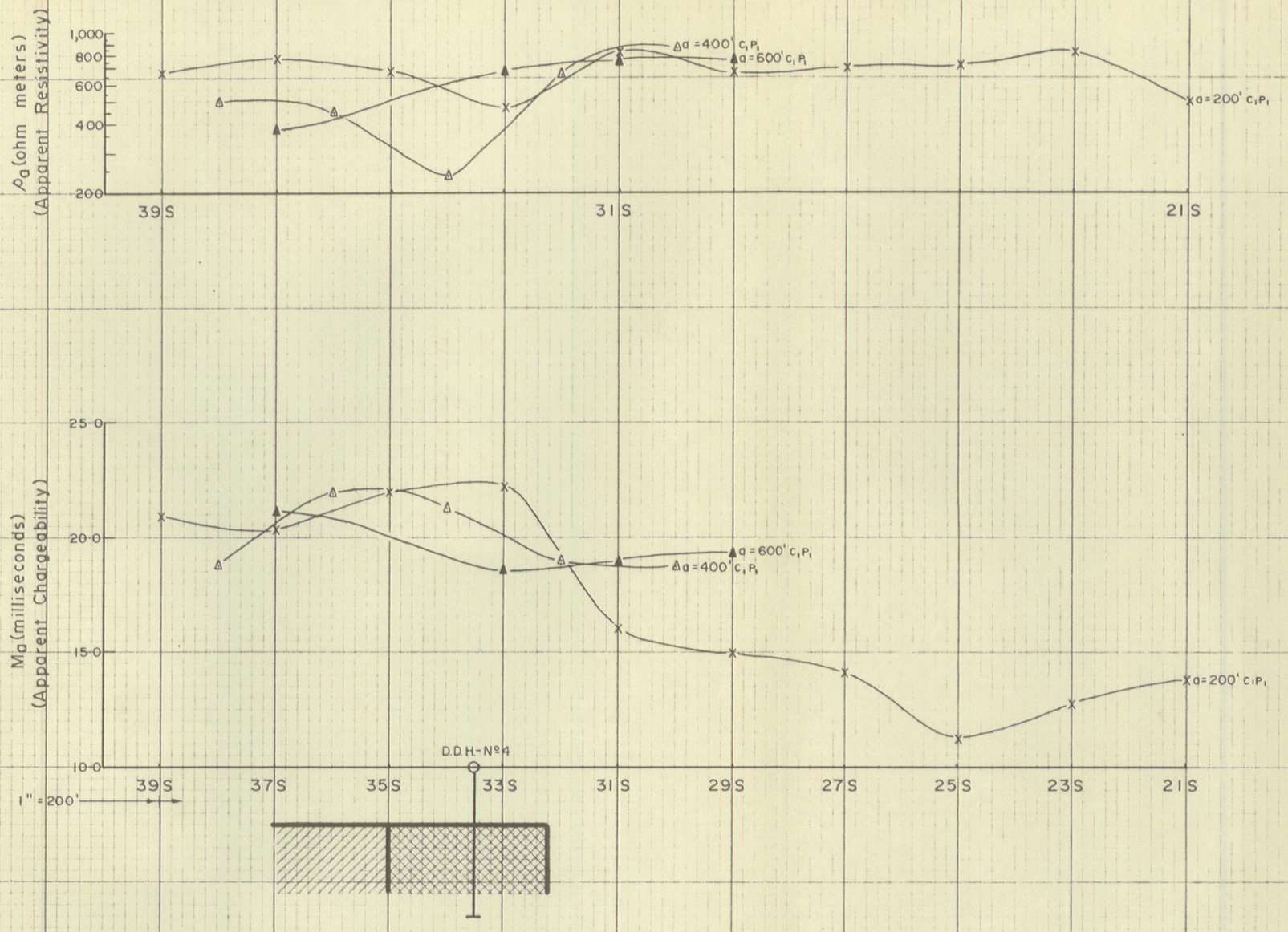
Vertical Scales:

Chargeability 1 inch = 5·0 milliseconds.
Resistivity 2 inches = 1 logarithmic cycle (ohm - meters)

DATE: AUG. 1967.
JOB Nº: PH. - 666.

INDUCED POLARIZATION SURVEY.

DETAIL PROFILE: LINE-208W.



ANOMALY - 3

LEGEND

STRONGER & WEAKER ANOMALOUS ZONES.

RECOMMENDED D.D. Holes

ACE GRID - ZONE "A"

To accompany report by R. K. Watson

R.K. Watson, B.A.Sc., P.Eng., Geophysicist.

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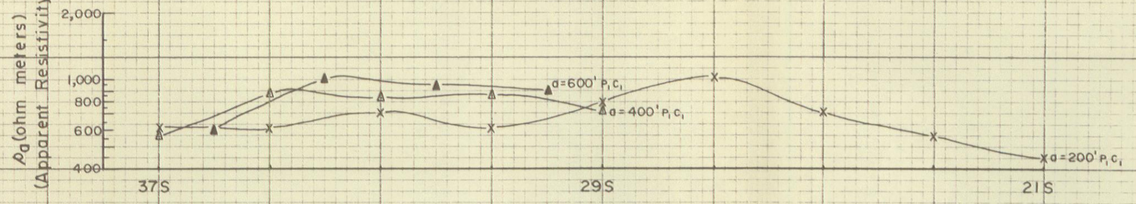
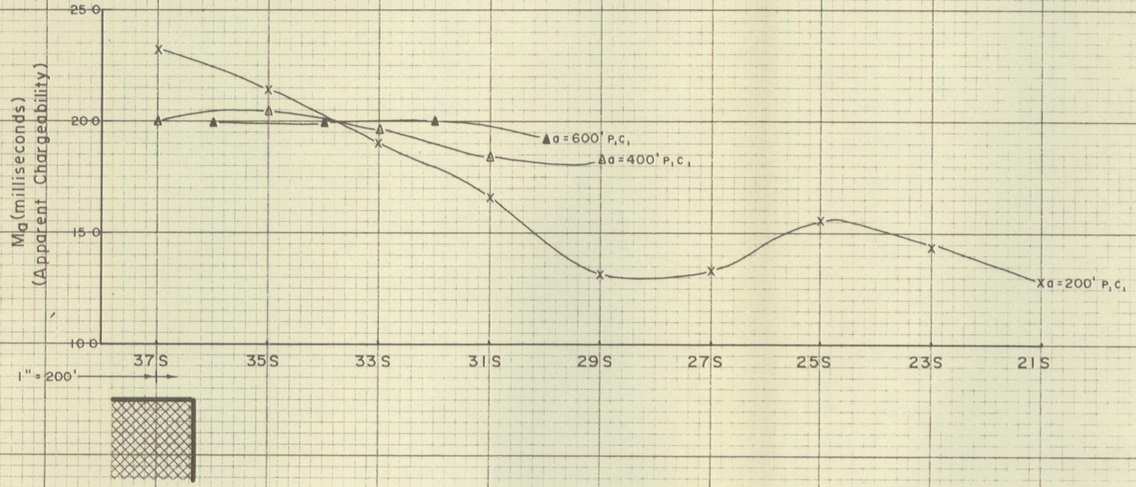
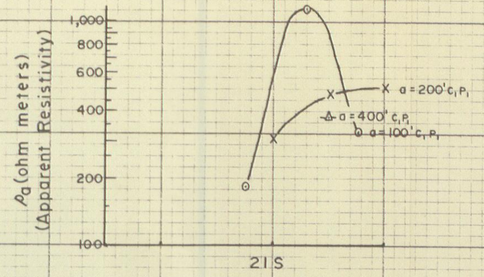
FIG. - 1

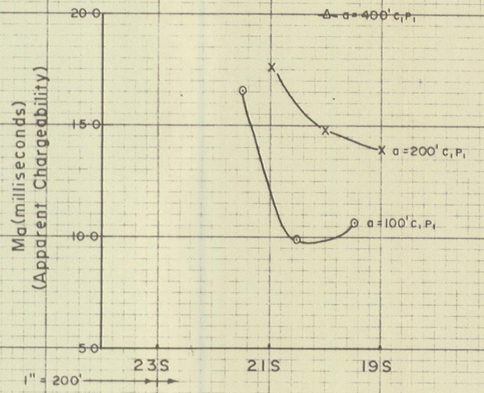




ANOMALY - 3

LINE - 204 W





LINE - 176 W

INDUCED POLARIZATION SURVEY

DETAIL PROFILE: LINE - 204W. & LINE - 176W.

LEGEND

STRONGER & WEAKER ANOMALOUS ZONES

ACE GRID - ZONE "A"

To accompany report by R. K. Watson

R.K. Watson, B.A.Sc., P.Eng., Geophysicist.

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FIG. - 2

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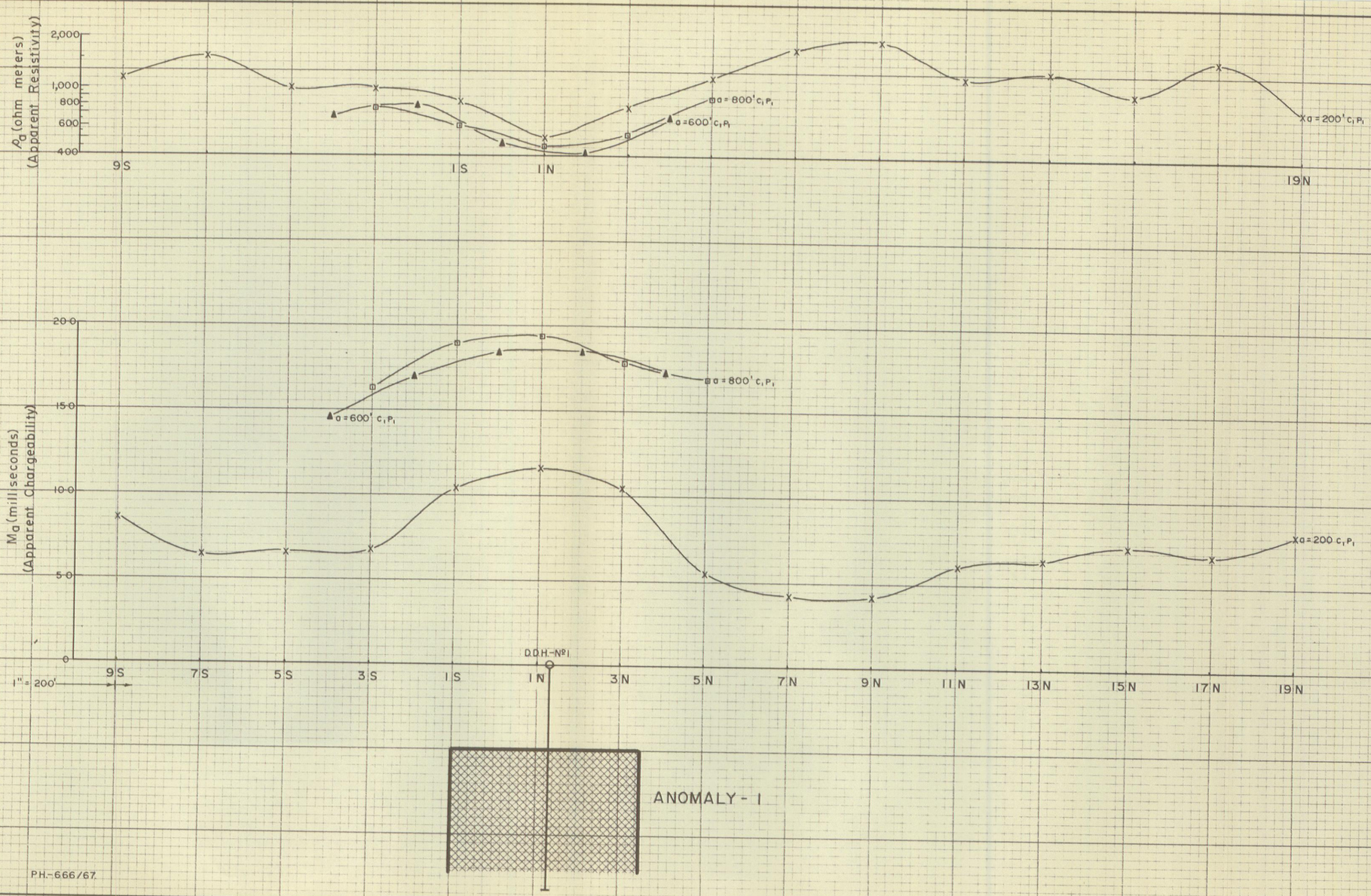
INDUCED POLARIZATION SURVEY.

DETAIL PROFILE: LINE - 120W.



LEGEND

STRONGER & WEAKER ANOMALOUS ZONES.

RECOMMENDED D.D.Holes.

ACE GRID - ZONE "B"

To accompany report by R. K. Watson

R.K. Watson, B.A.Sc., P.Eng., Geophysicist.

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FIG. - 3

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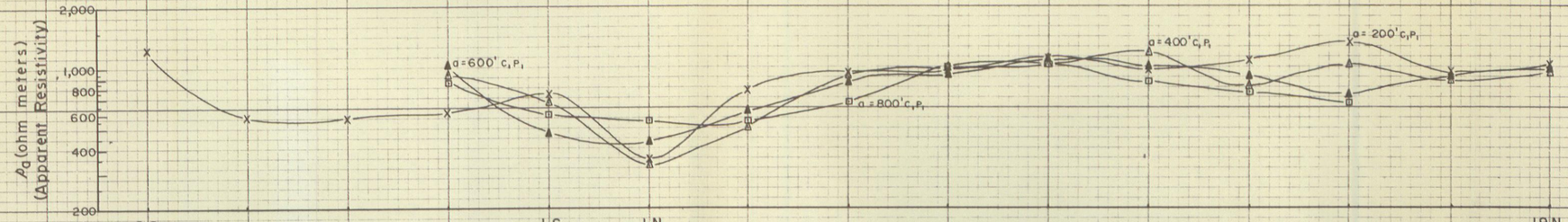
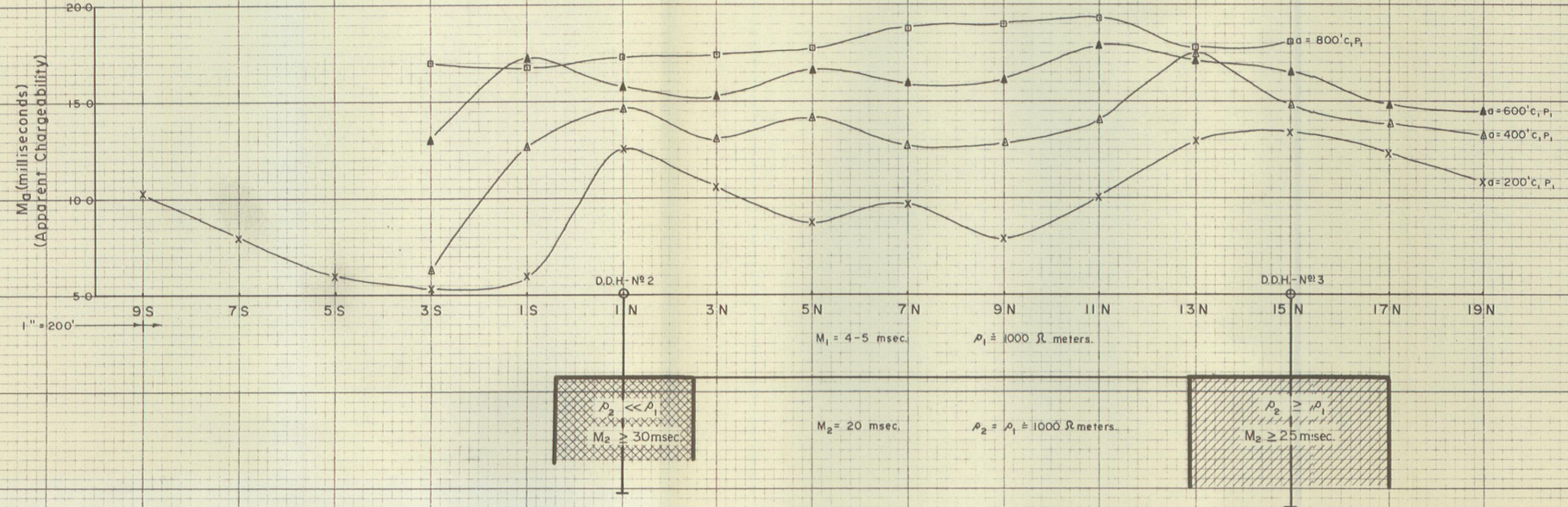
INDUCED POLARIZATION SURVEY.

DETAIL PROFILE: LINE - 112W.





LEGEND

STRONGER & WEAKER ANOMALOUS ZONES.

RECOMMENDED D.D. Holes.

ACE GRID - ZONE "B"

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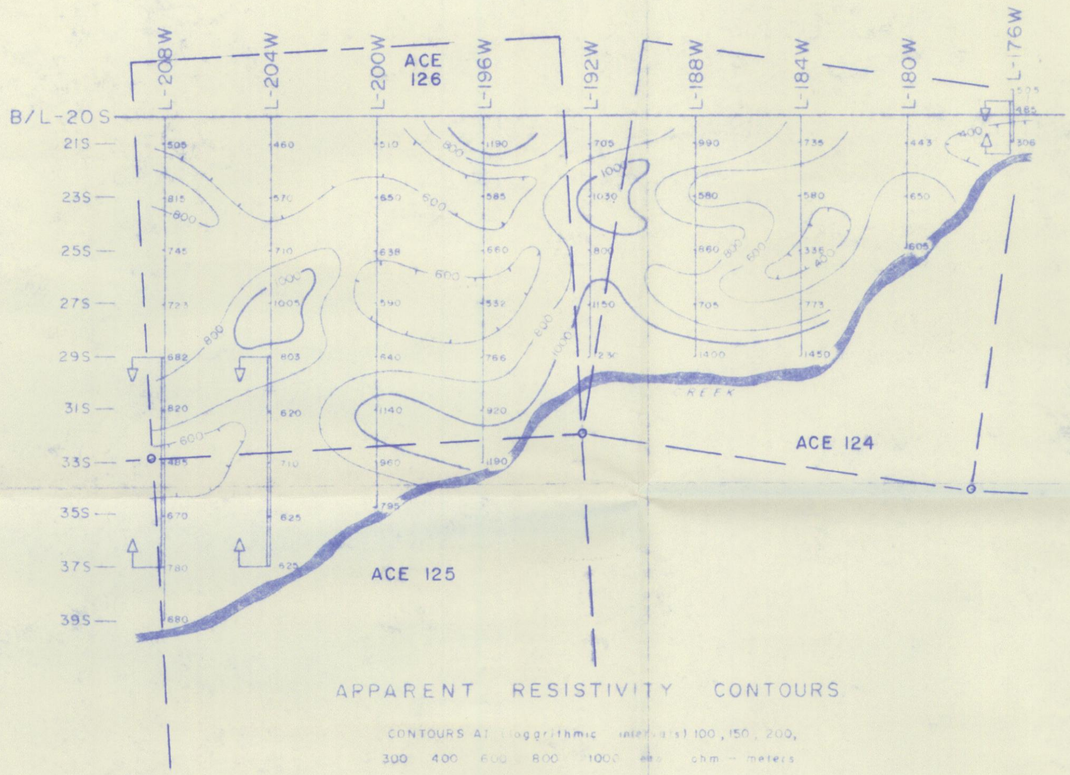
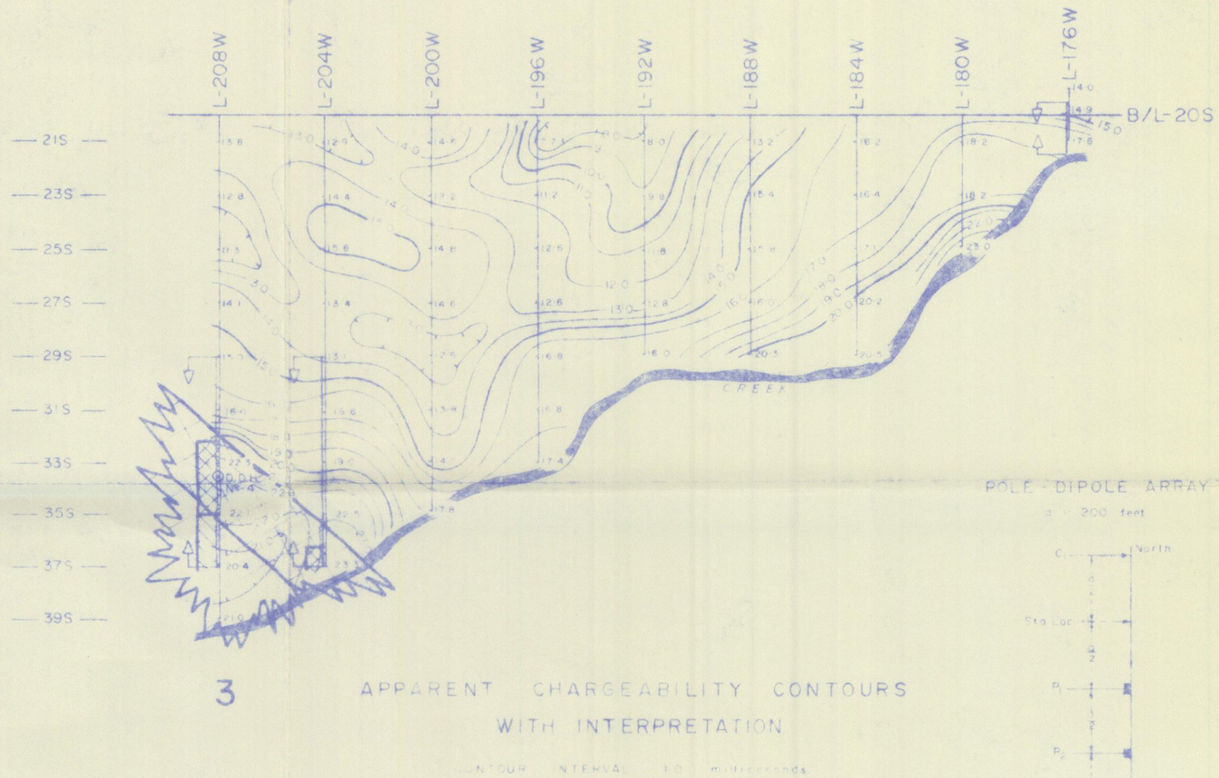
FIG.-4



APPARENT RESISTIVITY CONTOURS

CONTOURS AT (logarithmic intervals) 100, 150, 200, 300, 400, 600, 800, 1000 etc. ohm-meters

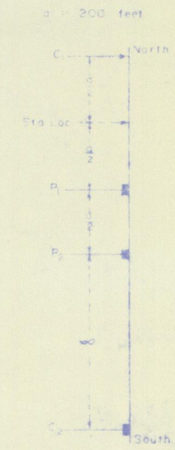


3

APPARENT CHARGEABILITY CONTOURS
WITH INTERPRETATION

CONTOUR INTERVAL 10 milliseconds

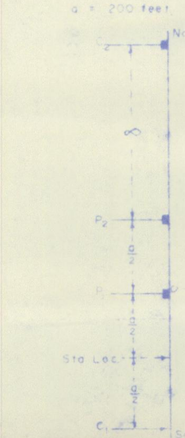
POLE-DIPOLE ARRAY
a = 200 feet

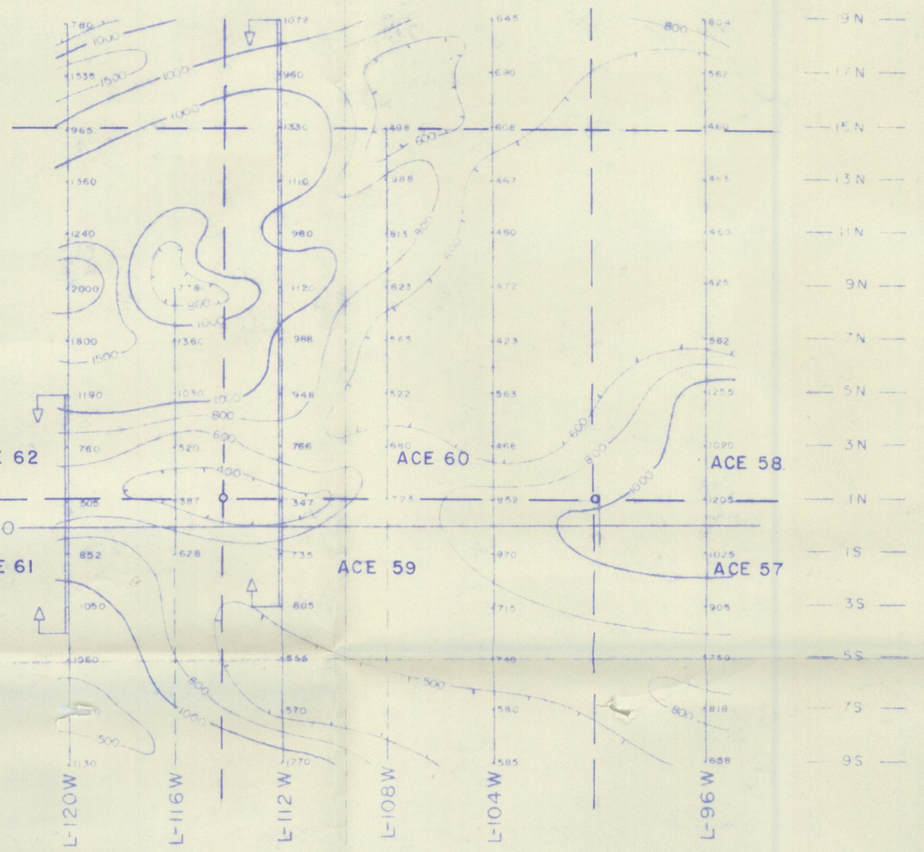


NOTE Configuration Reversed (C1 to the South) Lines 176 W & 208W

ZONE-"A"

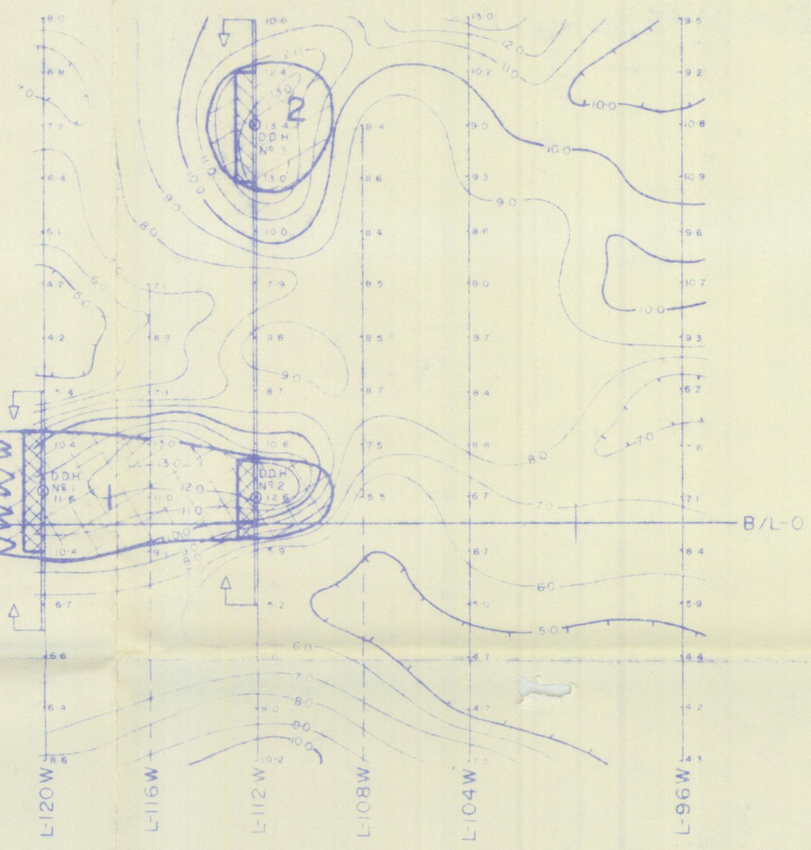
POLE-DIPOLE ARRAY
a = 200 feet





APPARENT RESISTIVITY CONTOURS

CONTOURS AT (logarithmic intervals) 100, 150, 200, 300, 400, 600, 800, 1000 etc. ohm-meters



APPARENT CHARGEABILITY CONTOURS
WITH INTERPRETATION

CONTOUR INTERVAL 10 milliseconds

ZONE-"B"

N

LEGEND

Outline of interpreted Anomalous Body

Section of Anomaly that was Detailed Showing Stronger & Weaker Anomalous Zones

VERTICAL
HORIZONTAL
Recommended D.D Holes

Distance of Line Covered by Detail

INDUCED POLARIZATION SURVEY.

ANVIL MINING CORPORATION LIMITED.

(ACE GRIDS.)

WHITEHORSE MINING DISTRICT, - Y.T.

SCALE 1 inch = 400 feet

To accompany report by R.K. Watson

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PLATE-1