3055

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 3055 MAP

REPORT ON AN INDUCED POLARIZATION SURVEY NORMAN CLAIMS PORT HARDY AREA, BRITISH COLUMBIA ON BEHALF OF GIANT EXPLORATIONS LIMITED

92L/12W

by

Peter J. Fominoff, B.A.Sc.

and

Richard O. Crosby, B.Sc., P.Eng.

May 12, 1971

CLAIMS:

Names	Record Numbers
NORMAN 1 - 2	17384 - 17385
RAS 3 - 4	17868 - 17869
HSW 2 - 3	18641 - 18642
DOLLY	18019
DIANE	18017

LOCATION:

About 17 miles west of Port Hardy, B. C.
Nanaimo Mining Division
127° 50° NW

DATES:

April 10 to April 18, 1971

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SUMMARY

About 4.0 line miles of grid were cut and chained and about 3.5 line miles of induced polarization surveying has been completed. Much of the area covered by the grid has been found to exhibit above background chargeability responses. Three locations exhibit responses indicative of at least 2 percent by volume metallically conducting material. One drill hole has been recommended at the location of the greatest chargeability increases and trenching has been recommended for all areas requiring further investigation.

REPORT ON
AN INDUCED POLARIZATION SURVEY
NORMAN CLAIMS
PORT HARDY AREA, BRITISH COLUMBIA
ON BEHALF OF
GIANT EXPLORATIONS LIMITED

INTRODUCTION

During the period from April 10 to April 18, 1971, a geophysical field party under the direction of Mr. Christian Zogg cut and chained a grid and executed an induced polarization survey in the Port Hardy area, British Columbia on behalf of Giant Explorations Limited.

As shown on Plate 1, the property lies about 17 miles west of Port Hardy, B. C. The property is reached from Port Hardy by a good gravel road. The survey area is in thickly forested and rugged terrain.

The claims covered, in whole or part, by the present survey are listed on the title page of this report and are shown on Plate 2, on the scale of 1 inch = 400 feet. These claims are held by Giant Explorations Limited.

Scintrex Mk VII time-domain, (pulse-type) induced polarization equipment has been employed on this property. The transmitting unit had a rating of 2.5 kilowatts and equal on and off times of 2.0 seconds. The receiving unit was a remote, ground-pulse type triggered by the rising and falling primary voltages set up in the ground by the transmitter. The integration of the transient polarization voltages takes place for 0.65 seconds after a 0.45 second delay time following the termination of the current on pulse.

The purpose of an induced polarization survey is to map the subsurface distribution of metallically conducting mineralization beneath

the grids covered. In the present area such mineralization could include chalcopyrite, molybdenite, pyrite and other metallic sulphide minerals. Metallic minerals such as graphite and magnetite as well as non-metallic minerals such as chlorite and sericite can give responses not always distinguishable from sulphide mineralization.

The three electrode array was employed for the survey. For this electrode array, one current electrode and two potential electrodes traverse the profiles with an interelectrode spacing called "a". The second or "infinite" current electrode is placed a distance greater than 5a from the measuring point which is defined as the midpoint between the moving current electrode and the near potential electrode. For the reconnaissance survey observations were taken for a = 200 feet and 400 feet. Station intervals were 200 feet. In areas of increased chargeabilities detail observations were taken with a = 50 feet and 100 feet and 100 feet station intervals.

In the present survey a grid was established with a 1600 foot baseline bearing about N 10° E. Five 4000 foot grid lines were cut perpendicular to the baseline and spaced 400 feet apart. Stations were chained every 100 feet along the grid lines. The line cutting totalled 4.0 line miles and the induced polarization survey totalled 3.5 line miles.

GEOLOGY

The geology of the property including the present survey area has been studied by Ron Sutherland, geologist, of Giant Explorations Limited and is the subject of his report dated October 12, 1966.

The geology is complex, and includes at least six different rock types. Intrusive rocks consisting of monzonite and gabbrodiorite are found in the north and central portions of the property, together with

limestones in the central portion and andesites in the northern portion. Limey sediments and rhyolite occur in the southern part of the property. Areas of skarn are found throughout the property.

Faulting is common and strike direction varies from slightly north of west to about N 40° W. Mineralization including copper, lead and zinc sulphides and pyrite and magnetite is widespread. A geochemical survey has, in a general way, outlined the previously known mineralized areas.

The induced polarization survey was undertaken in an attempt to further outline the mineralized areas and locate the most favourable drilling targets.

DISCUSSION OF RESULTS

Plate 2 on the scale of 1 inch = 400 feet, shows the grid layout and the claims surveyed.

Plate 3 on the scale of 1 inch = 400 feet, shows the chargeability (induced polarization characteristic of the rock) and resistivity results in profile form. The vertical scales for these profiles are 1 inch = 10.0 milliseconds for chargeability and 2 inches = 1 logarithmic cycle with line trace taken as 1000 ohm-meters for resistivity.

The induced polarization results indicate that background chargeabilities are less than 10.0 milliseconds and generally average about 5.0 milliseconds in the northern part of the grid and about 8.0 milliseconds in the southern part. With this background, a uniform subsurface distribution of 1 percent by volume of metallically conducting mineralization would be expected to add approximately 10.0 milliseconds to the background level. Since deposits of low concentrations of base

metal sulphides of sufficient dimensions may have economic significance, areas exhibiting chargeabilities in excess of 10.0 milliseconds may be worthy of further investigation.

Zones exhibiting chargeability responses in excess of 10.0 milliseconds occur on all lines except L 0 + 00. Line 4 + 00 S exhibits increased chargeabilities east of 8 + 00 W. The source of the increased chargeabilities approaches to within 50 feet of ground surface at 1 + 00 W. There is another source of increased chargeability responses on the same line east of 4 + 00 E and centred on 11 + 00 E. The second source has a peak chargeability of 24.5 milliseconds, dips steeply to the west and contains about 2 percent by volume metallically conducting material.

Chargeability increases of the greatest amplitude occur on L 8 S at 2 W. Peak amplitude is 58.5 milliseconds and the source is interpreted to approach within 15 feet of ground surface. It is interpreted to consist of several narrow closely spaced bodies dipping steeply to the east. The metallically conducting material content is about 5 percent by volume.

The most strongly anomalous zone on L 8 S extends from about 4 W to the baseline. However the responses from 12 W to 6 E are significantly increased above background indicating a metallically conducting material content of between 1 percent and 2 percent by volume. The whole length of L 8 S from 12 W to 6 E may therefore warrant further investigation.

The area covered by L 12 S is underlain by material exhibiting above background chargeability responses. Responses of the highest amplitude indicating a metallically conducting material content of about 2 percent by volume occur between 6 W and 3 E. The responses over the whole length of the line are indicative of at least 1 percent

by volume of metallically conducting material.

On L 16 S a zone of increased chargeability responses occurs east of 9 E. The peak chargeability response is 34.5 milliseconds and the metallically conducting mineral content of the zone reaches 3 percent by volume. The zone is indicated by chargeability increases of more than three times background and therefore warrants geological examination.

The chargeability responses from both of the electrode spacings employed in this survey are similar on L 0 + 00 indicating less than 30 feet of overburden, or that the overburden is of the same chargeability as the bedrock. East of 4 E on L 8 S and on L 16 S, the background chargeabilities obtained with the 200 feet electrode spacings are about 20 percent lower in amplitude than those obtained with the 400 feet electrode spacings. The decrease in chargeabilities with the decrease in electrode spacings in these areas indicates that overburden of low polarizability covers the area under the two lines mentioned or that the bedrock increases in polarizable material content with depth.

There is no definite correlation between the chargeability increases and the resistivity responses on any of the lines. The resistivity values obtained with the narrower electrode spacings are generally lower than those obtained with the wider spacings. The cause is most likely overburden of lower resistivity covering the higher resistivity bedrock.

CONCLUSIONS AND RECOMMENDATIONS

The present induced polarization survey has revealed several zones exhibiting increased chargeability responses. Three locations exhibit responses indicative of at least 2 percent by volume of metallically

conducting material.

The chargeability responses of the highest amplitude occur between 4 W and the baseline on L 8 S. The peak seen at 2 W on L 4 S may be a response from the same source, however the peak consists of only one reading and thus the line to line correlation is tenuous. The metallically conducting material content of the source of the responses is about 5 percent by volume of sulphides, or graphite or considerably more by volume of magnetite, sericite or other material known to give induced polarization repsonses.

The source of the increased chargeabilities approaches to within 15 feet of ground surface near 2 W on L 8 S and may even outcrop. The location should be investigated by trenching, and if the results should warrant a drill hole, the following is recommended:

COLLAR	DIRECTION	DIP	MINIMUM LENGTH
L 8 S, Baseline	West	-45°	300 feet

The other two locations of chargeability increases indicative of at least 2 percent by volume metallically conducting material are east of 10 E on L 16 S and east of 8 E on L 4 S. The metallically conducting material content of the sources is about 3 percent and 2 percent by volume respectively. Both of these locations should be investigated geologically by trenching.

Much of lines 4 S, 8 S, 12 S and 16 S are underlain by at least 1 percent by volume metallically conducting material.

If the results of geological investigations by trenching should warrant it, further drilling can be recommended from the results of the present survey.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

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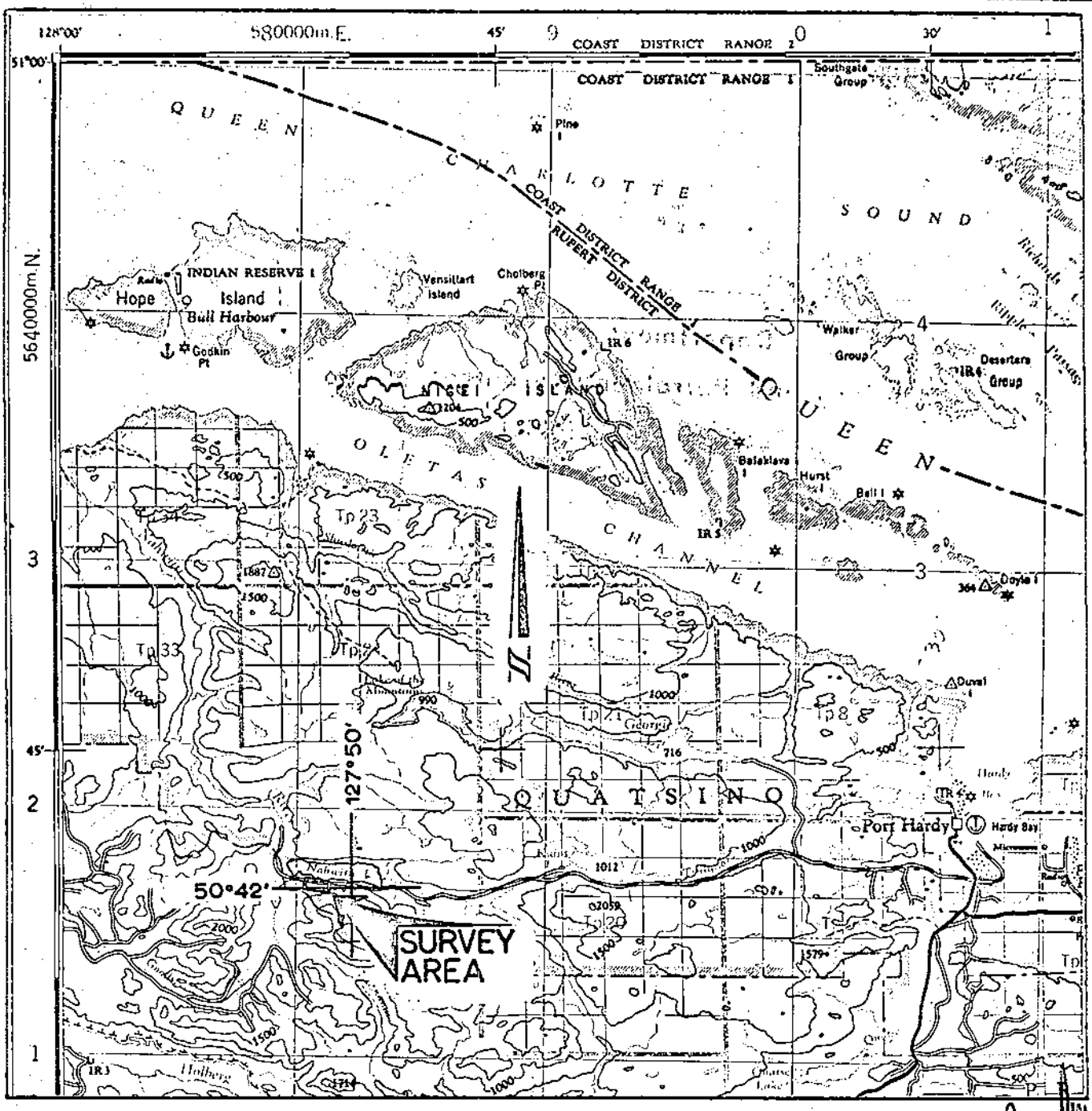
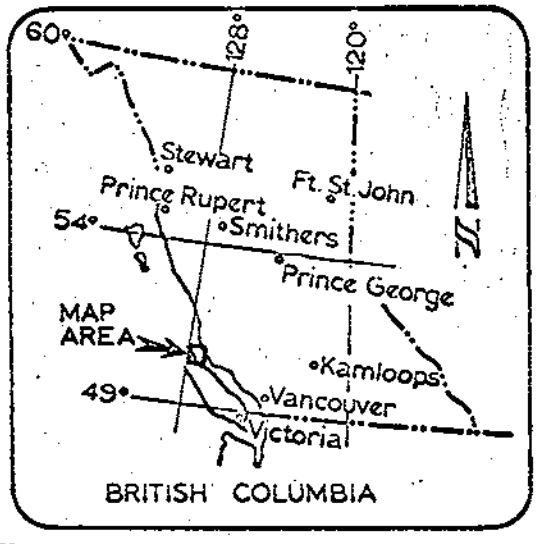
Vancouver, B. C.
May 12, 1971





GIANT EXPLORATIONS LTD.

LOCATION MAP

NAHWITTI LAKE AREA · BRITISH COLUMBIA

SCALE 1 : 250,000

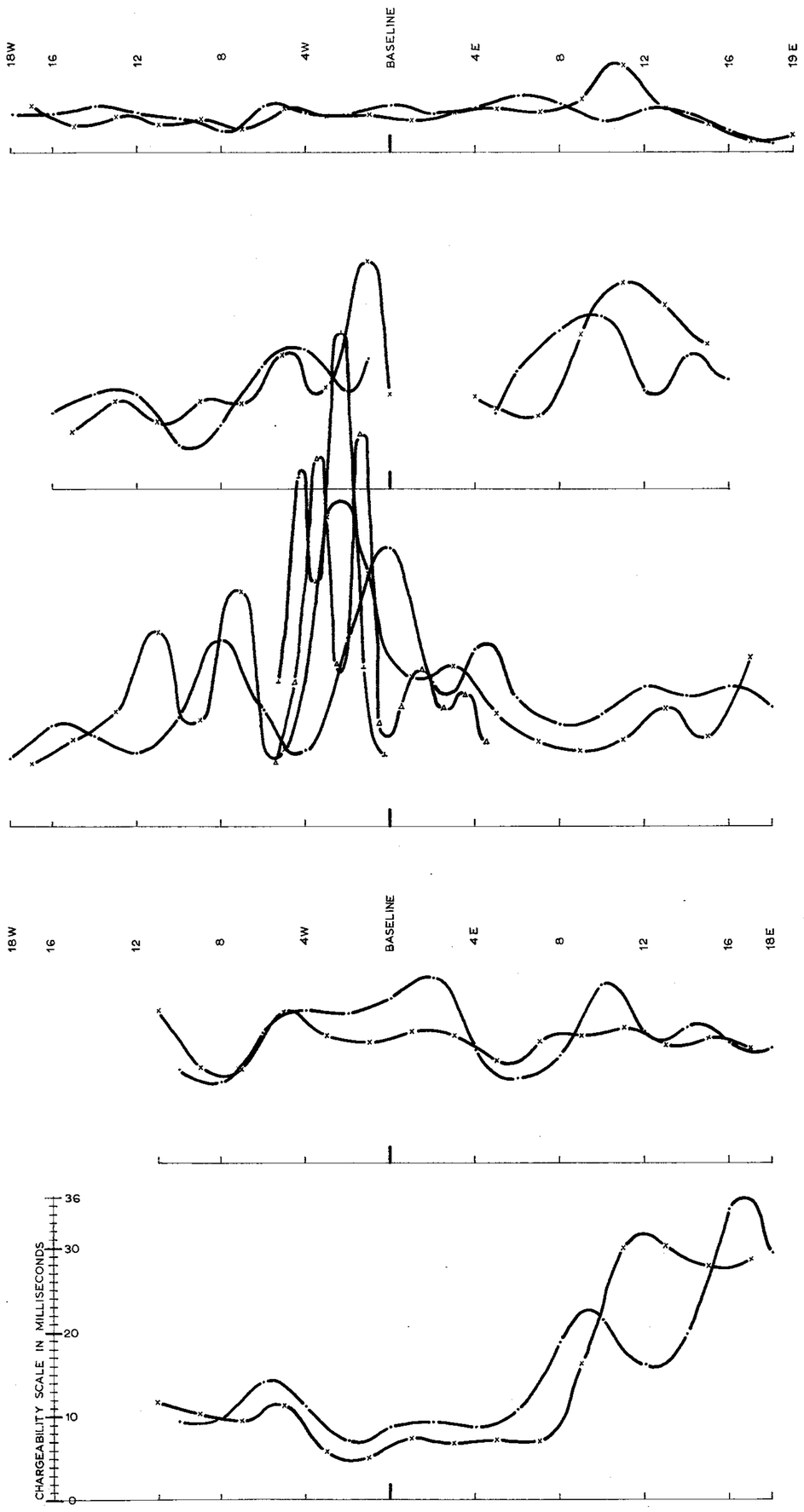
4 miles 0 4 miles

Survey by
SEIGEL ASSOCIATES LIMITED
April 1971

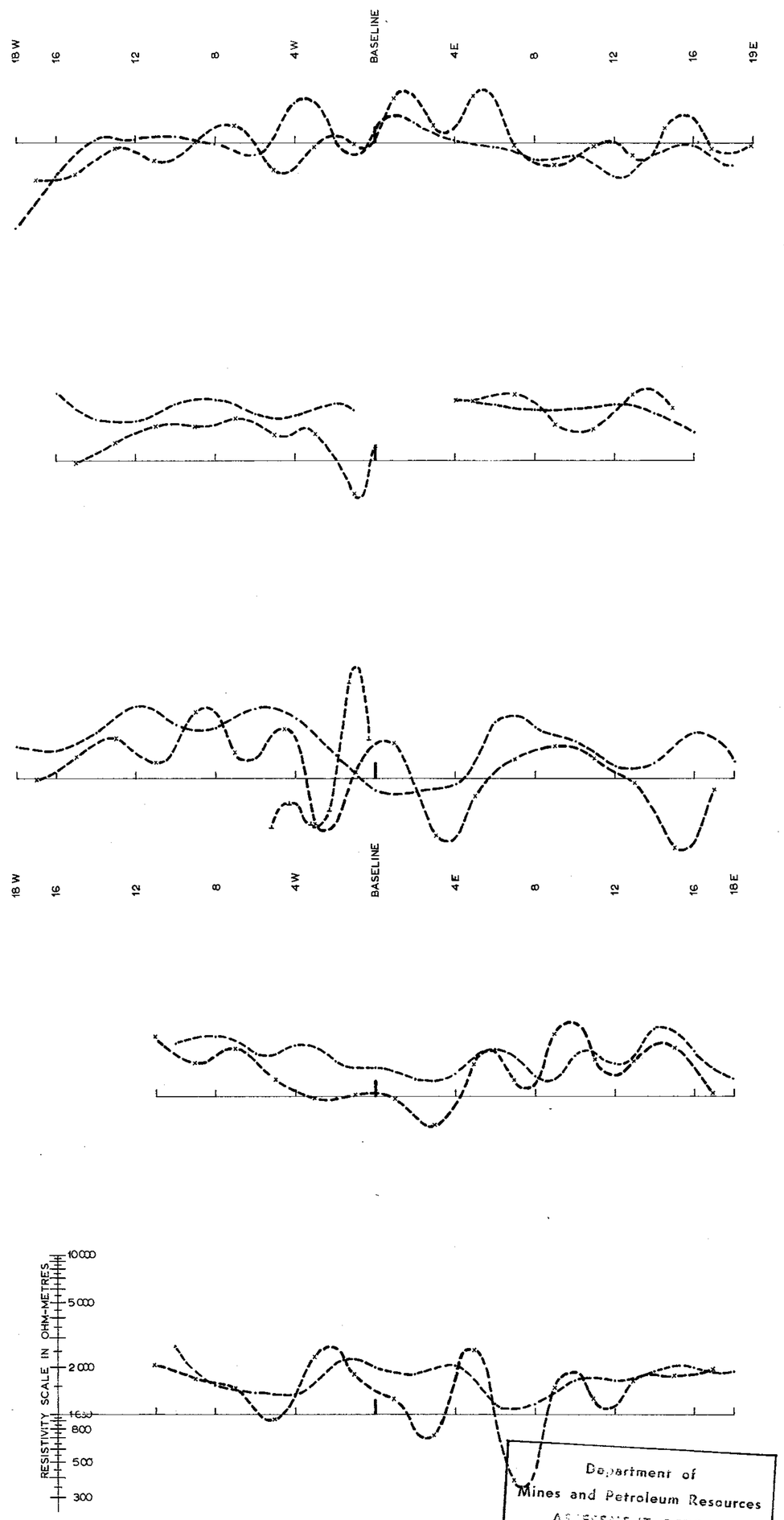
PLATE 1

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3035 MAP #1

CHARGEABILITY



RESISTIVITY



L 0+00

L 4 S

L 8 S

L 12 S

L 16 S

LEGEND

CHARGEABILITY SCALE : 1 inch = 10 MILLISECONDS

ELECTRODE SPACING
- a = 400'
- a = 200'
- a = 100'
- a = 50'

RESISTIVITY SCALE : 2 inches = 1 LOGARITHMIC CYCLE WITH LINE TRACE TAKEN AS 1000 OHM-METRES

ELECTRODE SPACING
- a = 400'
- a = 200'
- a = 100'
- a = 50'

NOTES

SCINTREX MK VII INDUCED POLARIZATION INSTRUMENTATION

THREE ELECTRODE ARRAY

INTERLINE SPACING NOT TO SCALE

TO ACCOMPANY A GEOPHYSICAL REPORT
BY P.J. FOMINOFF AND R.O. CROSBY DATED MAY 12, 1971

3055 M.3

PLATE 3

GIANT EXPLORATIONS LTD.

NAHWITTI LAKE AREA BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY

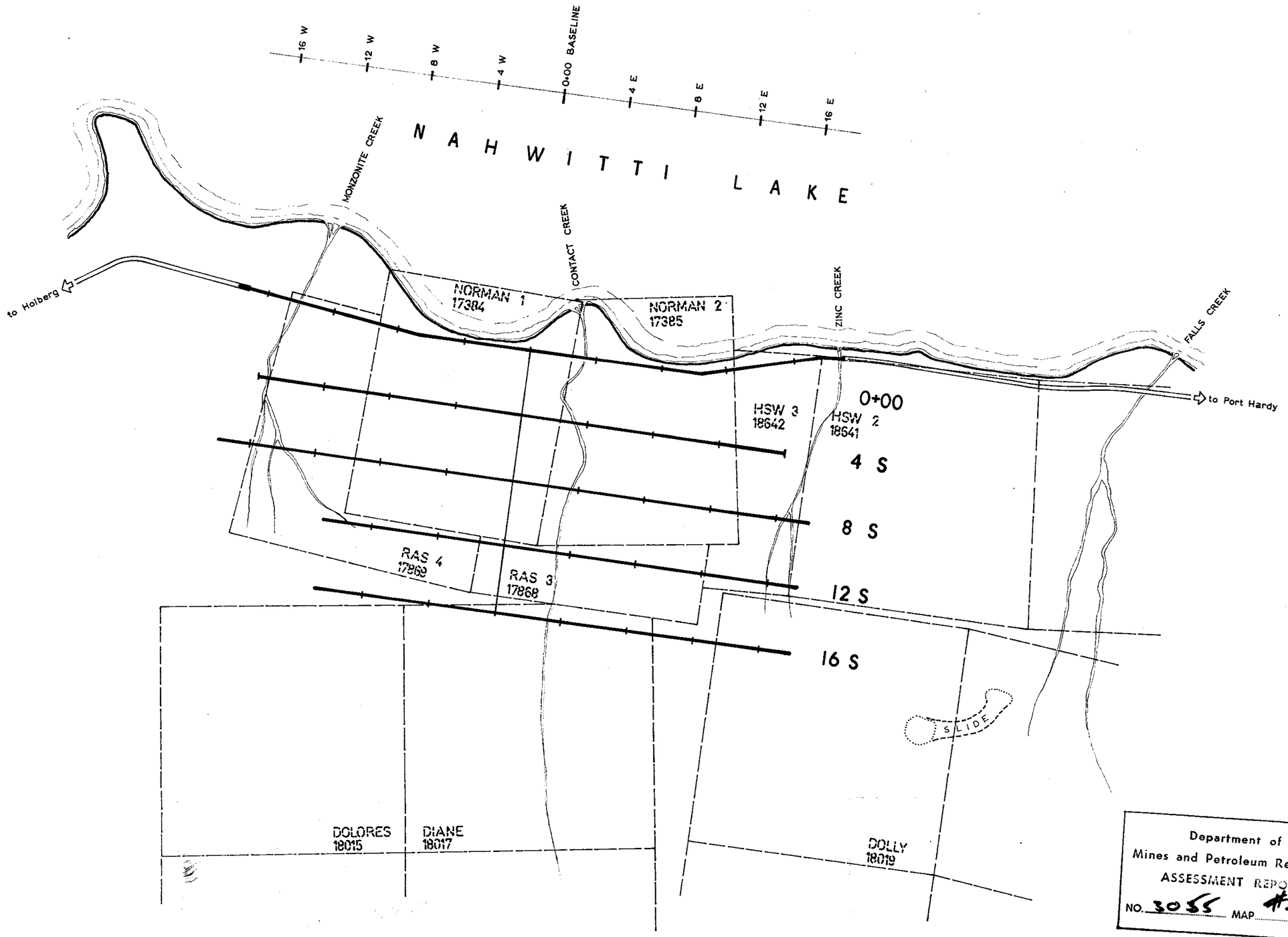
CHARGEABILITY AND RESISTIVITY PROFILES

SCALE : 1 inch = 400 feet

400 feet 0 400 feet

SURVEY BY SEIGEL ASSOCIATES LIMITED APRIL 1971

Richard O. Crosby



LEGEND

- SURVEY GRID
- CLAIM LIMIT
- LAKE SHORE
- DRAINAGE
- ROAD
- SLIDE AREA

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TO ACCOMPANY A GEOPHYSICAL REPORT
BY P. J. FOMINOFF AND R.O. CROSBY DATED MAY 12, 1971

PLATE 2

GIANT EXPLORATIONS LTD.

NAHWITTI LAKE AREA - BRITISH COLUMBIA

M-2

INDUCED POLARIZATION SURVEY

SURVEY GRID AND CLAIM LOCATION

SCALE : 1 inch = 400 feet

400 feet 0 400 feet

SURVEY BY SEIGEL ASSOCIATES LIMITED APRIL 1971

Richard O. Crosby