

1973

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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1973 MAP

GEOCHEMICAL SOIL SURVEY;
INDUCED POLARIZATION AND RESISTIVITY SURVEYS
OF THE
BIN 1-28 AND B 1-3 FRACTIONAL MINERAL CLAIMS

50° 121° SE

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NORANDA EXPLORATION COMPANY, LIMITED

KAMLOOPS MINING DIVISION

MAY 26, 1969 TO AUGUST 10, 1969

Geochemical Soil Survey;
Induced Polarization and Resistivity Surveys
of the
Bin 1-28 and B 1-3 Fractional Mineral Claims
Noranda Exploration Company, Limited

INTRODUCTION:

The claims referred to in this report are registered in the name of Noranda Exploration Company, Limited (No Personal Liability) under option from Largo Mines Ltd. (N.P.L.). The names and record numbers of the mineral claims are: Bin 1-28 and B 1-3 fractions: 70380 to 70407 and 78900 to 78902 respectively. The surveys were conducted on the Largo property located approximately 14 miles south 75° east of Spences Bridge, British Columbia on the west of Skuhost Creek. Access to the claims is by hard-surface, all-weather road from Spences Bridge or Merritt, B.C. on highway No. 8 to a turn off at the 14 mile village on Indian Reserve No. 11. This dry-weather road follows Skuhun Creek for 8 miles. From this point a two-wheel drive dry-weather road leads north 2 miles to the claim group. A four-wheel drive road traverses the southern half of the grid. A four-wheel drive vehicle was used to transport men, equipment and supplies during the course of the surveys.

Elevation ranges from 4,750 to 5,700 feet. Topography is gentle and rolling with local steep slopes along one creek in the claim group.

During May, June, July and August of 1969 work was performed on the Bin 1-28 and B 1-3 claims consisting of line preparation by Amex Exploration Service Ltd., contractors, and Geophysical and Geochemical Surveys by Noranda Exploration Company, Limited.

Work was done under the direction of B.O. Brynelsen, P. Eng. with field supervision by J.D. Knauer (geochemical) and J.T. Walker (geophysical), a crew of 12 men and line preparation by Amex Exploration Service Ltd., contractors. Results of the Geochemical and Geophysical Surveys are plotted on 1 inch to 400 feet base maps. The surveys were carried out from May 26, 1969 through August 10, 1969.

GENERAL GEOLOGY:

The area of the survey is underlain by quartz diorite of the Guichon Creek batholith. Mineralization in observed rock consists of sphene, magnetite and sparse specs of pyrite.

GRID PREPARATION:

In order to carry out the Geochemical and Geophysical Surveys, a 50 East base line was developed on a true north bearing. The base line extends from 4N to 120N. Thirty E-W grid lines were layed out perpendicular to the base line. The grid lines are spaced at 400-foot intervals, chained and picketed every 200 feet. Noranda personnel developed the 11,600 foot base line. Amex Exploration Services Ltd. developed the grid lines, a total of 25.7 miles.

GEOCHEMISTRY:

All samples were analyzed for copper and molybdenum in the Noranda Exploration Company, Limited laboratory located at 1050 Davie Street, Vancouver 5, B.C.

Sampling Method:

Samples were obtained by digging holes with a mattock and shovel, to a depth at which the visible grey C Horizon was encountered. The C Horizon was sampled and the lower part of the B Horizon, where visible, was also sampled on a majority of the lines. Profiles were taken at specific locations on the grid. The sampled material was placed in "Hi Strength Kraft, 3 1/2" by 6 1/8" Open End" envelopes and the grid station locations were marked on the envelopes with indelible felt pens. Soil samples were taken at 200-foot intervals along the lines, east and west.

Laboratory Determination Methods:

The samples are first hung in a dry cabinet for a period of 24 hours to 48 hours. They are then mechanically screened and sifted to obtain a -80 mesh fraction.

The determination procedure for total copper is as follows: 0.125 grams of -80 mesh material is fused with potassium bisulfate. This is dissolved in .5 ml. of 0.5N hydrochloric acid. A 2 ml. aliquot is shaken with 10 ml. acetate buffer and 1 ml. biquinolin solution. The samples are then compared with colorimetric standards.

The determination procedure for total molybdenum is as follows: 0.1 gram sample of the -80 mesh material is fused with a sodium carbonate mixture. It is then dissolved in water (demineralized) and diluted to 10 ml. A 2 ml. aliquot is shaken with 2 ml. hydroxylamine hydrochloride solution and 0.5 ml. dithiol solution. The samples are then compared with colorimetric standards.

Presentation of Results:

Results of this survey are presented in Dwg. No. 1 of this report, a plan map showing copper and molybdenum determinations in parts per million. Copper values greater than 200 p.p.m. are contoured by solid lines.

Discussion of Results:

Values for total copper range from a background of less than 120 p.p.m. to anomalous values greater than 200 p.p.m. Molybdenum values were all in a background range of 0 - 5 p.p.m. Results for copper indicate small anomalous areas over most of the claim group. The main anomalies occur in the northern portion of the grid and scattered smaller anomalies in the south. Molybdenum values are indicated on the enclosed map, none are considered anomalous.

INDUCED POLARIZATION AND RESISTIVITY SURVEY:

Method:

The Induced Polarization and Resistivity Survey was carried out utilizing Variable Frequency I.P. equipment owned by Noranda Exploration Company, Limited and operated by Noranda personnel.

The theory of Variable Frequency Induced Polarization is fully described in the literature and will not be described in this report.

In the field procedure, current is applied to the ground at two points (C_1 & C_2), and voltages are measured at two other points (P_1 & P_2). Throughout this survey measurements were made along prepared grid lines using a dipole-dipole electrode configuration ($C_2 C_1 P_1 P_2$) with a dipole separation of 400 feet. A constant separation of 400 feet was also maintained between the near current and voltage electrodes (C_1 & P_1).

A four man crew, one man stationed at each electrode was used to carry out the survey. Electrodes and survey equipment were transported station to station along the survey lines with measurements made at 400-foot intervals.

The following data are recorded at each station:

Grid location of the current electrodes C_1 & C_2
Grid location of the potential electrodes P_1 & P_2

In addition the following electrical measurements are made and recorded as follows:

- (1) Transmitter current on, Frequency - 10 Hz (Current recorded in milliamperes).
- (2) Receiver measures developed voltage (recorded in millivolts).
- (3) Transmitted current frequency changed to 0.3 Hz (Current maintained constant as recorded above).
- (4) Receiver measures percent change in voltage caused solely by change in frequency (recorded as Percent Frequency Effect).

Note on Reading Number 4:

By definition, Percent Frequency Effect equals the percent change in apparent resistivity caused by a change in frequency of the transmitted current. Apparent resistivity is proportional to voltage and current. Provided the current is constant at each frequency, the percent voltage change equals percent apparent resistivity change and this voltage change may be read directly as Percent Frequency Effect.

From the above current and voltage measurements, the apparent resistivity at each station is calculated.

Presentation of Results:

The results of the Induced Polarization and Resistivity Survey are shown on plan maps at a scale of 1 inch equals 400 feet. Location of the survey lines, the claim names and boundaries are shown.

The measured Frequency Effect in percent and the calculated apparent resistivity are plotted at mid-point between the position of electrodes C_1 and P_1 .

Frequency Effect results are plotted and contoured on Dwg. No. 2.

Apparent resistivity results are plotted and contoured on Dwg. No. 3.

Discussion of Results:

Fifteen east-west lines at 800-foot intervals were surveyed with the I.P. method. The I.P. response, as indicated on the Percent Frequency Effect Contour Map, is extremely low with no significant anomalous area indicated.

RECOMMENDATIONS AND CONCLUSIONS:

There are no distinct I.P. anomalies indicated from the results of the combined Induced Polarization and Resistivity Survey on this claim group.

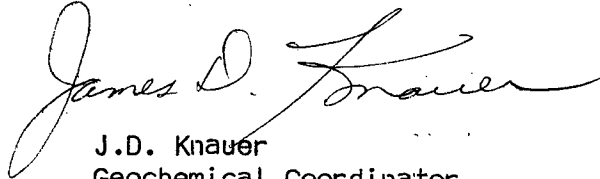
Results of the soil survey indicate several small (copper) anomalous areas. However, weak I.P. response over these copper anomalies suggests limited additional investigation.

No additional geophysical or geochemical work is warranted on this claim group. Limited drilling and surface work is recommended in the weakly anomalous areas.

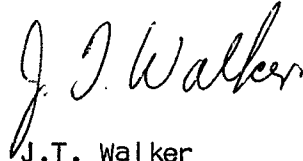
Respectfully submitted,



B.O. Brynelsen, P.Eng.



J.D. Knauer
Geochemical Coordinator



J.T. Walker
Geophysical Coordinator



NORANDA EXPLORATION COMPANY, LIMITED

LOCATION MAP

B. Bryncker

BIN I-28, B I-3 Fr. M.C.'s

Kamloops M.D., B.C.

1" = 4 miles

J. J. Walker James D. Krauer

FIG. 1

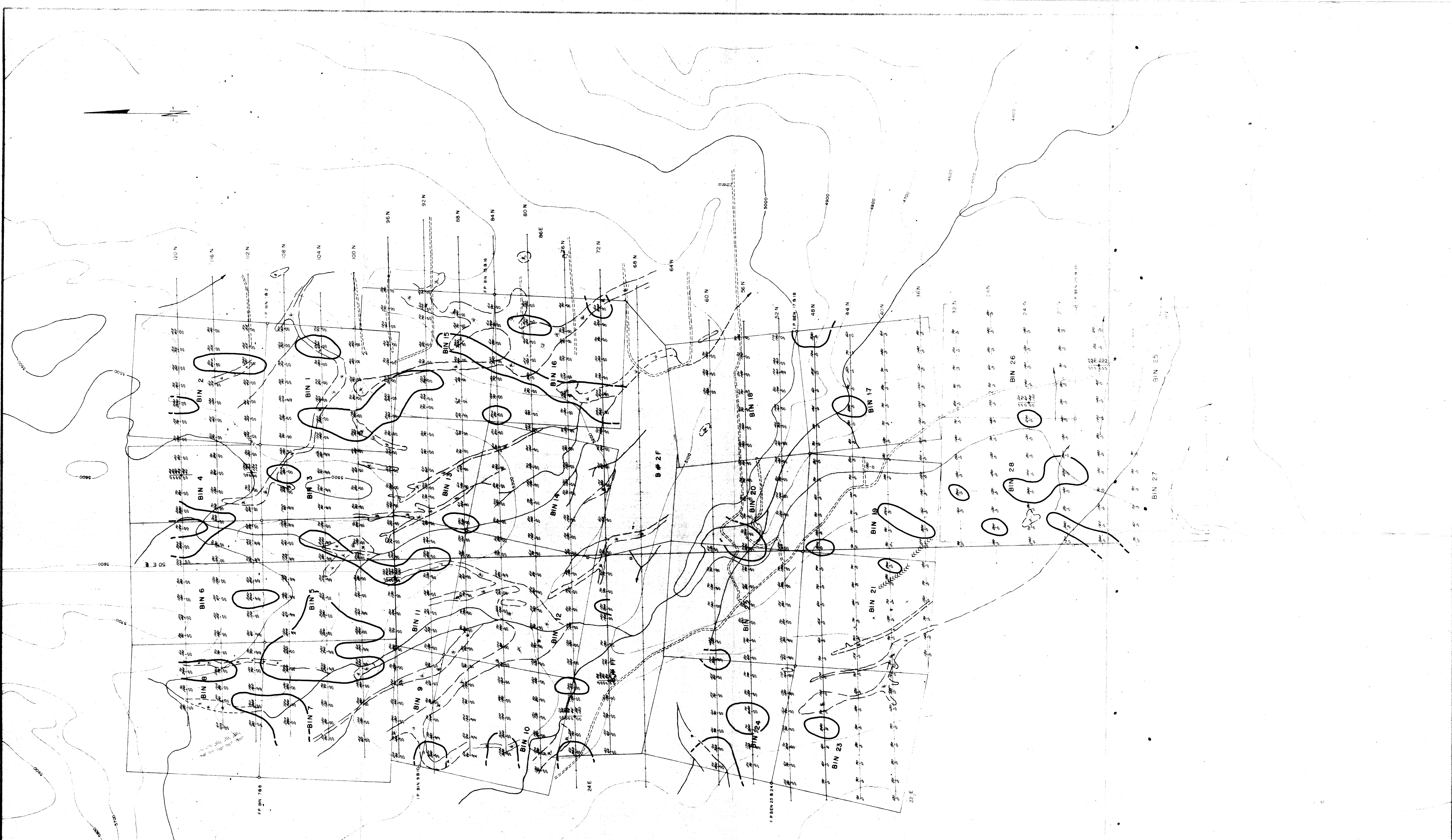
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NO. 1973 MAP #1



Geophysical Report for work recorded on Harmon No. 182
Groups on July 2, 1969.



To accompany Geochemical Soil Survey Report by B.O. Brynelsen, P.Eng. and J. Knauer on BIN 1-28 M.C.'s and BIN 1-5 Fractional M.C.'s. Kamloops Mining Division, B.C. Dated - Sept. 5, 1969.

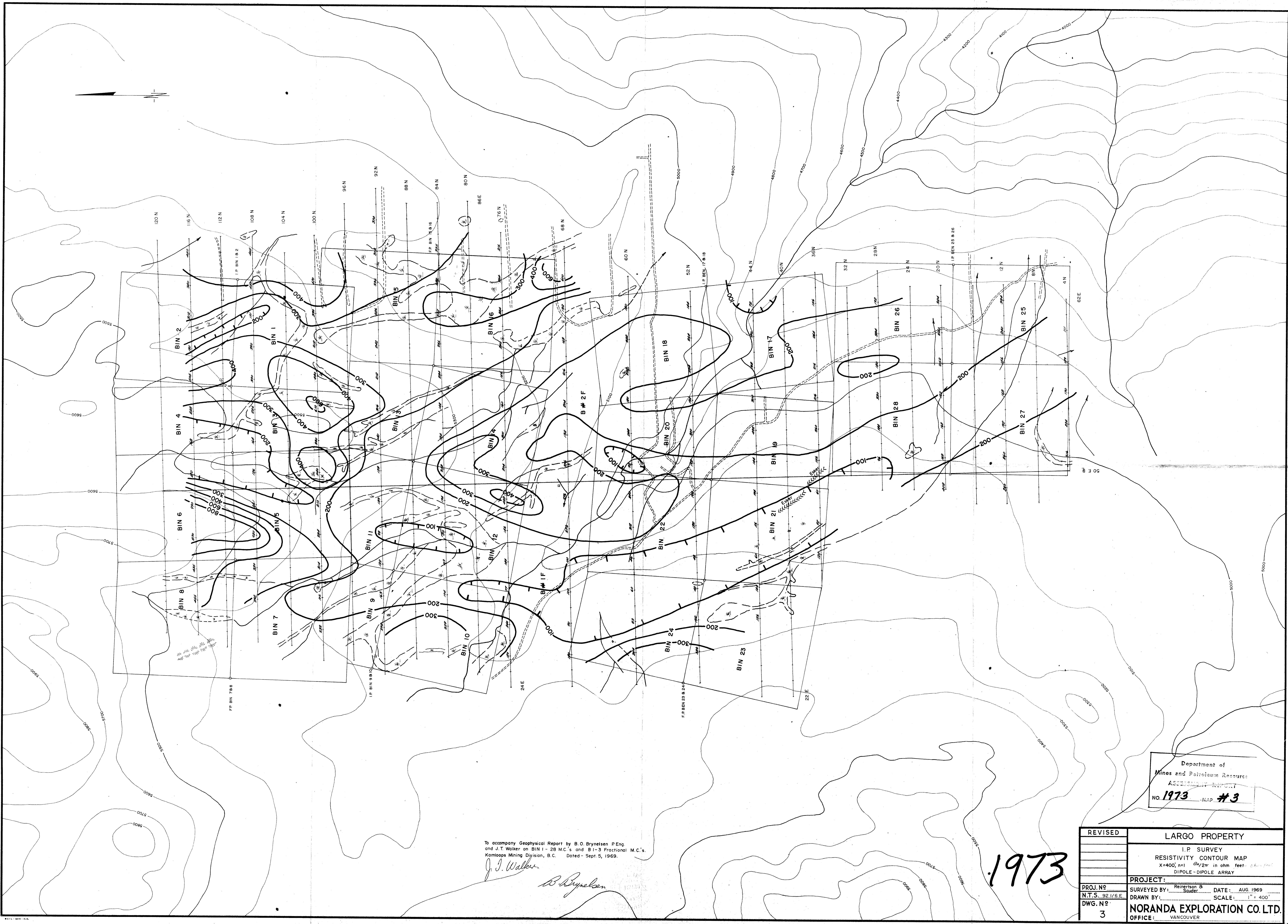
James D. Francis *B. Brynelsen*

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NO. 1973 MAP #2

COPPER ANOMALIES
200 ppm Total Cu

REVISED	LARGO PROPERTY	
	SOIL SURVEY	
	PROJECT	
PROJ. NO.	SURVEYED BY	DATE Aug 1969
NTS 92/1/6E	DRAWN BY F.M.F. REF	SCALE 1" = 400'
DWG. NO. 1	NORANDA EXPLORATION CO. LTD.	
	OFFICE	



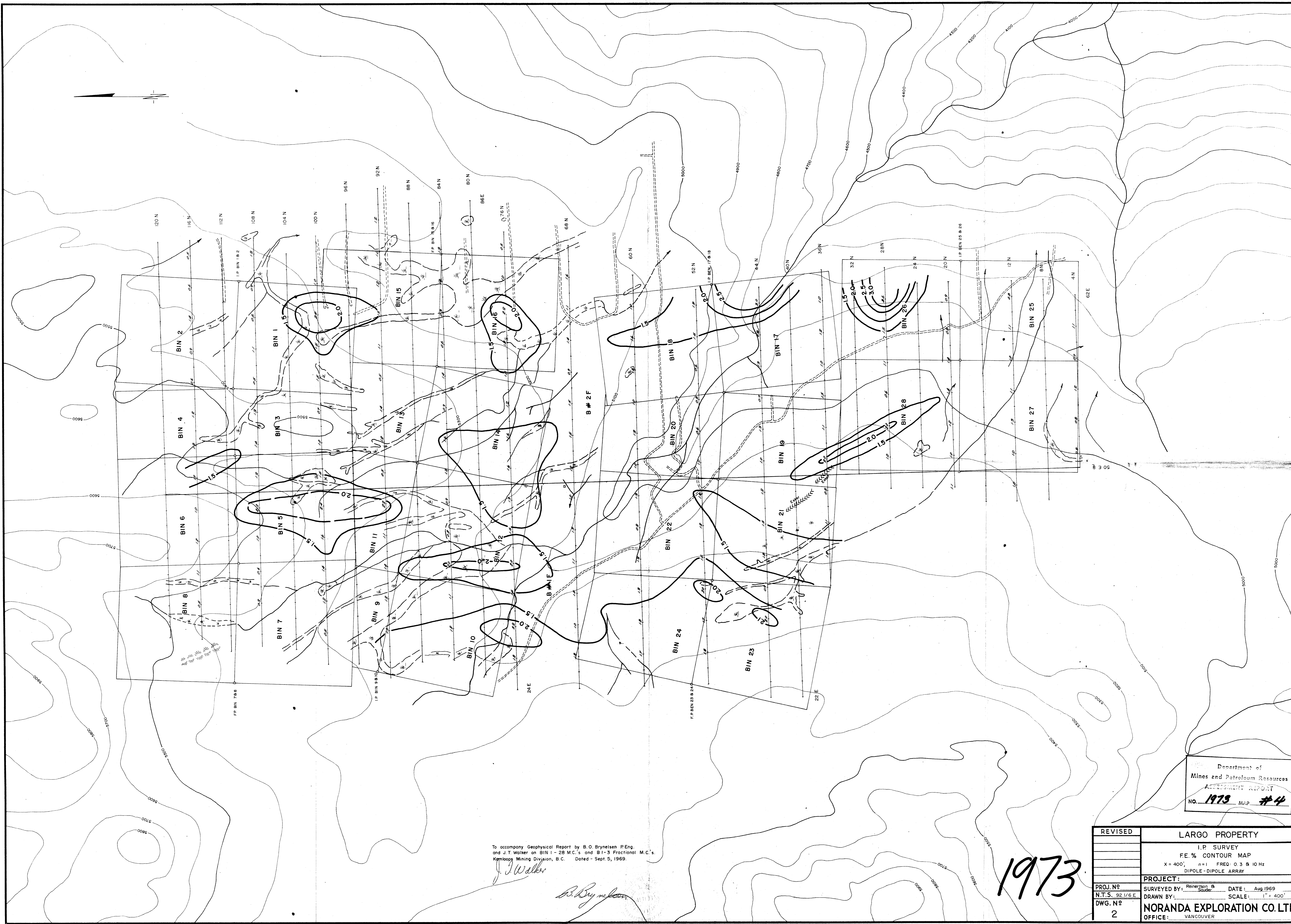
To accompany Geophysical Report by B.O. Brynelsen P.Eng. and J.T. Walker on BIN 1 - 28 M.C.'s and B1-3 Fractional M.C.'s. Kamloops Mining Division, B.C. Dated - Sept. 5, 1969.

J.T. Walker
B. Brynelsen

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REVISED	LARGO PROPERTY	
	I.P. SURVEY	
	RESISTIVITY CONTOUR MAP	
	X=400, n=1 2 1/2 in ohm feet	
	DIPOLE-DIPOLE ARRAY	
PROJECT:	Reingrison & Souter	DATE: AUG. 1969
PROJ. NO.		SCALE: 1" = 400'
N.T.S. 92.1/6.E.		
DRAWN BY:		
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
3	OFFICE: VANCOUVER	



To accompany Geophysical Report by B.O. Brynnesen P.Eng. and J.T. Walker on BIN 1 - 28 M.C.'s and B1-3 Fractional M.C.'s, Kamloops Mining Division, B.C. Dated - Sept. 5, 1969.

J.T. Walker

B.O. Brynnesen

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REVISED	LARGO PROPERTY	
	I.P. SURVEY	
	FE. % CONTOUR MAP	
	X = 400', n=1 FREQ. 0.3 & 10 Hz	
	DIPOLE-DIPOLE ARRAY	
PROJECT:	Remington & Saude	
PROJ. NO.	SURVEYED BY:	DATE: Aug. 1969
N.T.S. 98.1/6.E.	DRAWN BY:	SCALE: 1" = 400'
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
2	OFFICE: VANCOUVER	