

2125

INDUCED POLARIZATION AND RESISTIVITY SURVEY

AXE GROUP, MINERAL CLAIMS

49° 120° SE

B.O. BRYNELSEN, P. ENG.

J.T. WALKER

NORANDA EXPLORATION COMPANY, LIMITED

SIMILKAMEEN MINING DIVISION

JULY 7, 1969 TO JULY 21, 1969

**Department of**  
**Mines and Petroleum Resources**  
**ASSESSMENT REPORT**  
 NO. 2125 MAP.....

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<i>1" = 400 feet</i>	

Induced Polarization and Resistivity Survey  
on the  
AXE Group, Mineral Claims  
Kalco Property  
Noranda Exploration Company, Limited

INTRODUCTION:

The AXE Group, Mineral Claims referred to in this report lie approximately ten air miles south 16° west of Princeton, British Columbia. Access to the property is by Provincial Highway Number 3. The highway passes through the south-east corner of the claim group approximately fourteen road miles south of Princeton (See Figure 1).

The claim group consists of sixteen contiguous mineral claims, AXE 1 to 16; Record Numbers 13357 to 13372 inclusive, in the Similkameen Mining Division optioned to Noranda Exploration Company, Limited by Kalco Valley Mines Limited. The Induced Polarization and Resistivity Survey described in this report was carried out to further test conductive zones as indicated by an Electromagnetic Survey conducted by Noranda Exploration Company, Limited during November 1968.

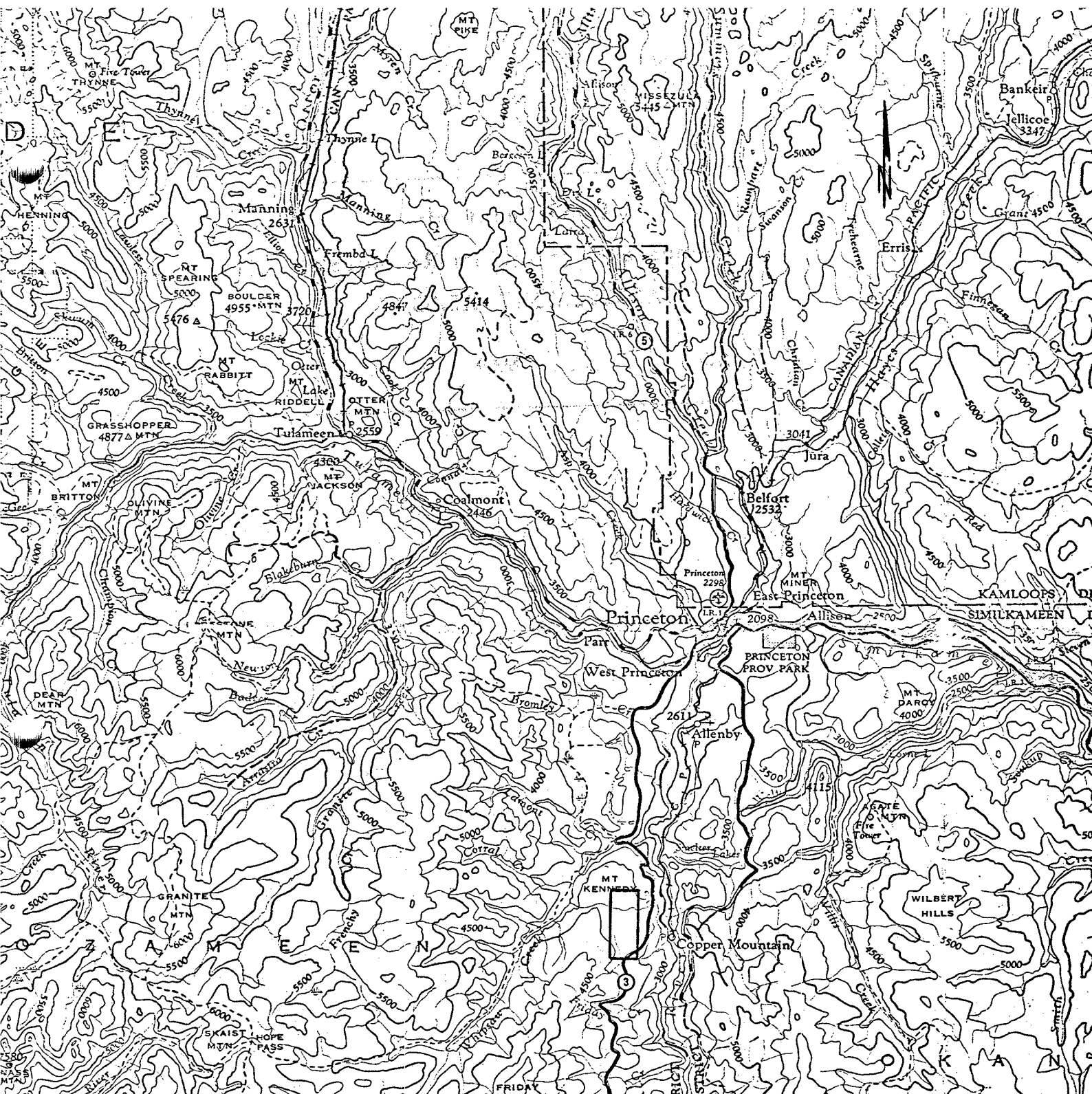
The Induced Polarization Survey was carried out by Noranda Exploration Company, Limited personnel under the direction of B.O. Brynelsen, P. Eng., with field supervision by J.T. Walker. The survey was conducted during the period July 7, 1969 to July 21, 1969 inclusive.

GENERAL GEOLOGY:

Rocks in the vicinity of the claim group consist of Nicola Group Volcanics and sedimentary rock intruded by Copper Mountain Intrusives and overlain by Princeton Group Volcanics and sedimentary rocks on the south and west.

GRID PREPARATION:

Ground control of the I.P. survey was maintained by use of the previously prepared grid, consisting of a zero base line oriented north-south and generally following the claim location line. Ten east-west grid lines, spaced at 400-foot intervals were traversed.



92H/7 E

NORANDA EXPLORATION COMPANY, LIMITED

LOCATION MAP

**AXE CLAIM GROUP**  
(Kalco Property)

Similkameen Mining Division

SCALE: 1" = 4 Mi.

Fig. 1

*J. J. Walker*  
*B. Brynner*

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NO. 2125<sup>1</sup> MAP #1

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 200 feet. A constant separation of 200 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 200-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 milli-amperes).
- (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 & 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. Claim boundaries are indicated.

The measured Percent Frequency Effect and calculated apparent resistivity data are plotted at mid point between the grid location of electrodes  $C_1$  and  $P_1$ .

Percent Frequency Effect data is plotted and contoured on Drawing Number 1. Apparent resistivity data is plotted and contoured on Drawing Number 2.

#### Discussion of Results:

Ten grid lines were surveyed using the I.P. method. Two moderate to strong I.P. anomalous zones are indicated, and are well defined by the 10% Frequency Effect contour as shown on Drawing No. 1. Zone A extends from line 24N to line 16N and trends NNW. Zone B, trending NE, extends from line 4N to line 16N. Both frequency effect zones are located along the edge of higher resistivity areas. Zone A does not coincide with an electromagnetic conductor, however the south half of Zone B does overly a zone of electromagnetic conductivity.

#### RECOMMENDATIONS AND CONCLUSIONS:

The Induced Polarization and Resistivity Survey has indicated no I.P. response over one electromagnetic conductive zone and weak to moderate response over the second electromagnetic zone. No further investigation of these con-

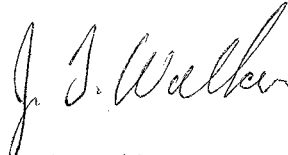
ductive zones is warranted, however the anomalous Frequency Effect zones as indicated by the Induced Polarization survey should be tested by drilling.

Respectfully submitted,



*B. Brynelsen*

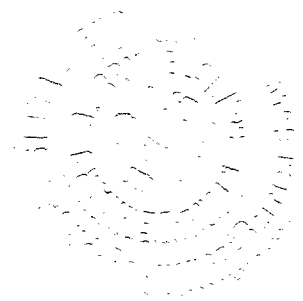
B.O. Brynelsen, P. Eng.



*J. T. Walker*

J.T. Walker  
Geophysical Coordinator

November 21, 1969

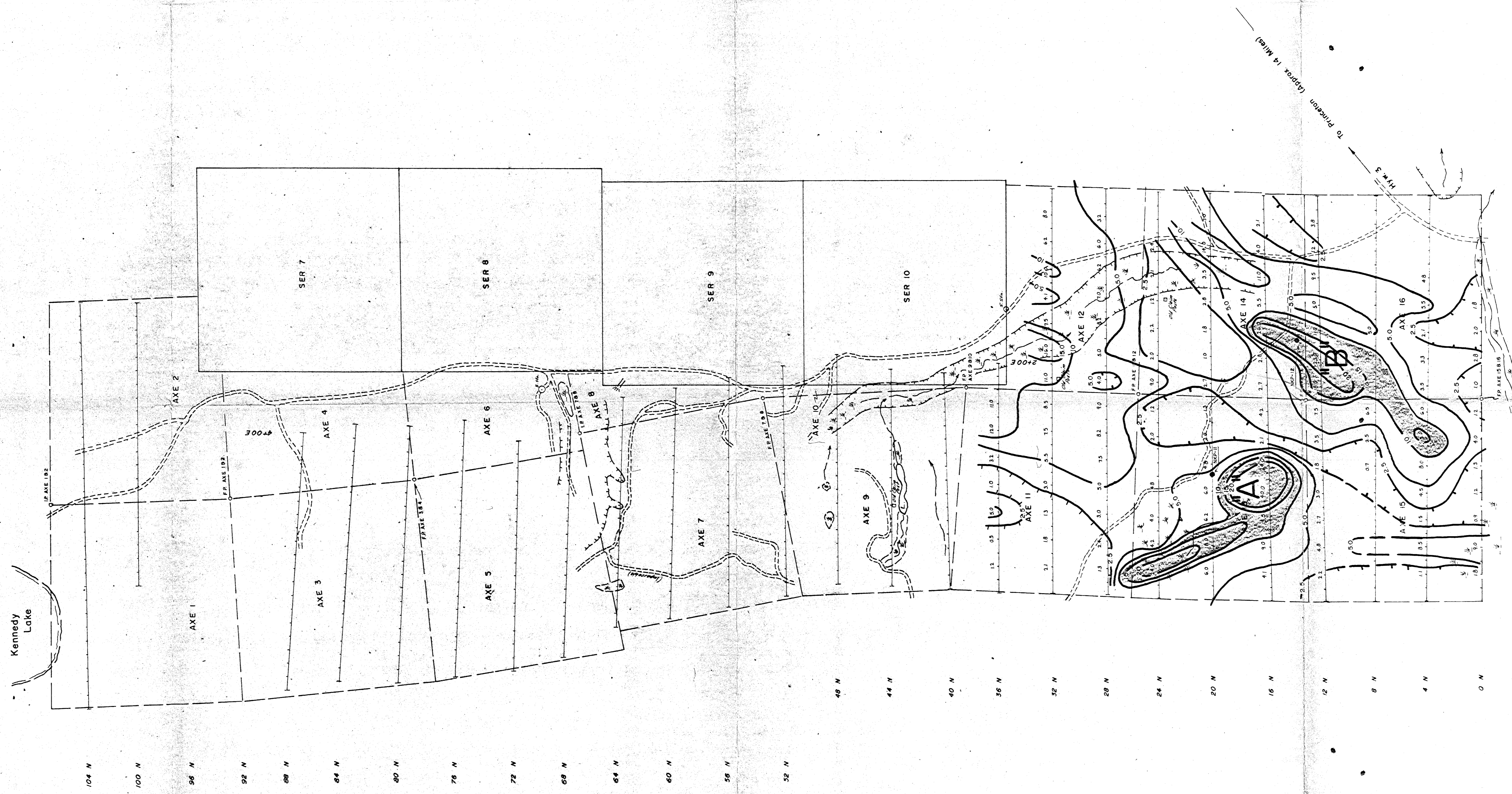








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To accompany Report on Induced Polarization and Resistivity Survey by B.O. Brynelsen, P.Eng., and J.T. Walker, Geophysical Co-ordinator on the AXE Claim Group of the Kato Valley Property.  
 Similkameen Mining Division. Dated - Nov. 21, 1969.

*J.T. Walker*  
*B.O. Brynelsen*

Department of  
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 NO. 2125 MAP #2

REVISED	AXE CLAIM GROUP	
	I.P. SURVEY	
	FE. % CONTOUR MAP	
	X=200' N=1 FREQ 0.3 & 10 Hz	
	DIPOLE-DIPOLE ARRAY	
	PROJECT: KALCO PROPERTY	
PROJ. NO.	SURVEYED BY: Noranda	DATE: July 1969
N.T.S. 92.11/72	DRAWN BY: C. Rappell	SCALE: 1" = 490 feet
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
1	OFFICE: VANCOUVER	