

INDUCED POLARIZATION SURVEY

PIKE LAKE AREA, Y. T.

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## INTRODUCTION

An induced polarization survey has been carried out in the Pike Lake area for Atlas Explorations Ltd. This property is located 60 miles NE of Ross River, Yukon Territory.

Field work was carried out by D.B. Trussell and P.J. Horn, assisted by S. Smarch of Atlas, on July 29, 30, 31, August 1, 2, 3, 4, 1966.

## INSTRUMENTATION'

The induced polarization equipment was manufactured by Geoscience Incorporated of Lexington, Massachusetts. The Sender supplies a preset constant current that is applied to the ground through two electrodes. The voltage between two potential electrodes is passed into the Receiver. A meter is nulled at one frequency and gives a direct reading of the percent frequency effect at a second frequency. From the applied current and received potential, the apparent resistivity of the medium may be calculated.

## FIELD PROCEDURE

The electrodes are in a collinear array, with the current electrodes separated by a distance "a". The potential electrodes are also separated by a distance "a". The nearest current and potential electrodes are separated by a distance "Na", where N = 1, 2 or 3. By varying N, the sender-receiver spacing, one obtains a depth-probing

effect, since the effective depth of exploration varies with this spacing. The results are plotted at the intersection between  $45^{\circ}$  diagonal lines drawn from the midpoints of the sender and receiver dipoles. Percent frequency effect values are plotted below the reference line, resistivity values in ohm-feet above. The row of data nearest the reference line corresponds with  $N = 1$  values, the second row  $N = 2$  and the third  $N = 3$ .

### RESULTS

The results are plotted on the accompanying sectional diagrams. Line 60W was surveyed using an electrode spacing  $a = 200$  feet. The other lines, 56W, 44W, 32W and 16W were surveyed at  $a = 100$  feet. A high frequency of 3 cps and a low frequency of 0.1 cps was used. The symbol F denotes a noisy reading, X a station where the resistivity was so low that insufficient voltage was received.

In general, the pattern on each of lines 56 to 16W consists of a central I.P. low area with extended anomalous areas on the north and south. The center of the low occurs at the following points: L56W, 350N; L44W, 150S; L32W, 1050S; L16W, 1600S. This is consistently to the north of the center of the mineralized granite.

The I.P. high areas extend to the north and south ends of the lines except for the south ends of L56W and L44W, which terminate as indicated.

<u>LINE</u>	<u>SOUTHERN ANOMALY</u>	<u>NORTHERN ANOMALY</u>
56W	0 - 600S	600N - N end at 1200
44W	300S - 1000S	0 - N end at 1700
32W	1600S - S end at 3000	600S - N end at 1800
16W	1900S - S end at 3000	1400S - N end at 1800

The northerly ends of the Southern Anomaly mark copper-lead-zinc mineralization. It is therefore considered worthwhile to strip south from the known mineralization, along the I.P. anomaly, to prospect for more extensive mineralization. The source of the Northern Anomaly is unknown, but it is noteworthy that a geochemical anomaly occurs in this area.

Respectfully submitted,



DWS:ds

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