



32D05SW0070 2.3435 ARNOLD

010

2.3435

**RECEIVED**

SEP - 8 '80

**MINING LANDS SECTION**

GEOPHYSICAL REPORT

JAMES OPTION

ARNOLD TOWNSHIP

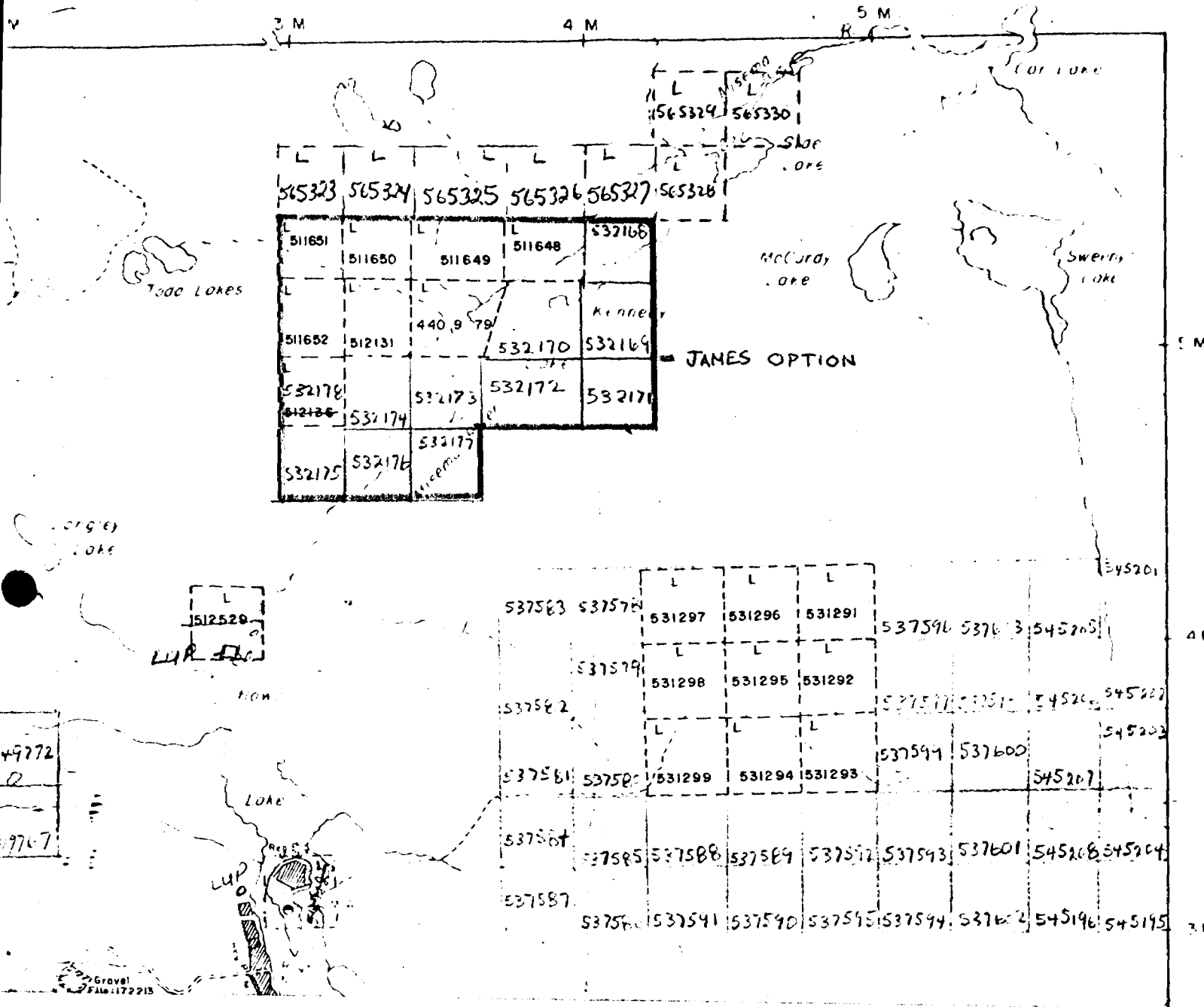
LARDER LAKE MINING DIVISION

Author: Ronald C. Wells  
Lacana Mining Corporation  
Toronto, Ontario

*qualification?*

July 14, 1980

# Clifford Twp. (M. 338)



LOCATION MAP JAMES OPTION ARNOLD TOWNSHIP

## LOCATION AND ACCESS

The James option in the north half of Arnold Township consists of eighteen contiguous unpatented claims which cover much of the southwest end of Kennedy Lake and the adjacent highlands. The claims are as follows: L440979, L511648, L511649, L511650, L511651, L511652, L512131, L532168, L532169, L532170, L532171, L532172, L532173, L532174, L532175, L532176, L532177, and L532178. Access to the property is gained from the Esker Lake Park access road by the way of an old logging road which runs to the north of Motherwell and Todd Lakes or by canoe from Howard Lake via a short portage into Kennedy Lake.

## GENERAL GEOLOGY AND SULFIDE OCCURRENCES

Blake River Group mafic to intermediate massive, pillowed, crystal tuffaceous and porphyritic metavolcanic rocks outcrop within the claim group area. Much of the western part of the claim group is overlain by thick deposits of aeolian dune sand with isolated outcrops. Around Kennedy Lake, however, occur excellent semi-continuous exposures of bedrock volcanics. The volcanics occupy the southern limb of an easterly trending syncline close to the fold axis. Kennedy Lake follows a major northeasterly trending fault zone.

The D. James copper-gold occurrence near the centre of claim L440979 was visited by the author. A semi-continuous quartz carbonate vein up to 1 foot wide containing sulfides, mainly chalcopyrite and sphalerite, has an easterly trend. Sulfides also occur in quartz carbonate veins and stringers within the adjacent wallrocks which consist predominantly of chlorite rich flow breccias with numerous carbonated clasts. Pyritic lenses in the surrounding breccias may have a syngenetic origin. Assays for the occurrence supplied by D. James average

.08 oz./ton Au, .88 oz./ton Ag and 1.25% Cu.

A second pit occurs within claim L512131 at the edge of a cliff face 300 feet northwest of Kennedy Lake. Strongly carbonated fragmental volcanic rocks locally contain large disseminated blebs of chalcopyrite and bornite. The mineralization does not seem to be continuous.

Other pits on the property were visited and assayed, and although significant concentrations of pyrite occurred in some pits, assays showed no significant gold or base metal concentrations.

## GEOPHYSICS

### a) METHOD

A grid 22.92 miles long was cut and chained by Gelinas and Associates Ltd. during the winter of 1979/80 to cover the entire claim group. Geox Ltd. of Timmins were contracted to run an Apex Max Min II horizontal loop EM survey over the grid, using 1777 hz and 444 hz frequencies and 400 foot coil separation. In and out of phase readings were taken at 100 foot intervals using both frequencies and the results are plotted in Figures 1 and 2. Some areas on the grid could not be surveyed, owing to vertical cliffs and open water.

One day was spent on tracing weak conductors within claim L440979, using fixed transmitter-vertical loop-frequency 3555 hz (Apex Max Min II) and the results are plotted in Figure 3.

b) RESULTS AND CONCLUSIONS

Two north trending, weak conductors of short length occur on the north shore of Kennedy Lake within claim L440979. These conductors cross-cut the local stratigraphy. Another weak conductor with possibly a northeasterly trend occurs in claims L511648 and L532168 on the Lake and may be in some way related to the Kennedy Lake fault zone.

*R. C. Wells*  
*12/1/81*

RECEIVED

JAN 19 1981

(3) CONCLUSIONS AND RECOMMENDATIONS

MINING LANDS SECTION

No significant conductors occur on the property. The single conductor in the eastern claims occurs in an area of thick overburden. It is not clear whether the conductor has a bedrock or overburden (clay) source.

*R. C. Wells*  
12/1/81



GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_  
Station interval \_\_\_\_\_ Line spacing \_\_\_\_\_  
Profile scale \_\_\_\_\_  
Contour interval \_\_\_\_\_

MAGNETIC

Instrument \_\_\_\_\_  
Accuracy - Scale constant \_\_\_\_\_  
Diurnal correction method \_\_\_\_\_  
Base Station check-in interval (hours) \_\_\_\_\_  
Base Station location and value \_\_\_\_\_  
\_\_\_\_\_

ELECTROMAGNETIC

Instrument APEX MAX MIN II - 2 MEN 1 DAY  
Coil configuration VERTICAL LOOP  
Coil separation VARIABLE  
Accuracy 1%  
Method:  Fixed transmitter  Shoot back  In line  Parallel line  
Frequency 3555 Hz (specify V.L.F. station)  
Parameters measured DIP ANGLE %

GRAVITY

Instrument \_\_\_\_\_  
Scale constant \_\_\_\_\_  
Corrections made \_\_\_\_\_  
\_\_\_\_\_  
Base station value and location \_\_\_\_\_  
\_\_\_\_\_  
Elevation accuracy \_\_\_\_\_

INDUCED POLARIZATION  
RESISTIVITY

Instrument \_\_\_\_\_  
Method  Time Domain  Frequency Domain  
Parameters - On time \_\_\_\_\_ Frequency \_\_\_\_\_  
- Off time \_\_\_\_\_ Range \_\_\_\_\_  
- Delay time \_\_\_\_\_  
- Integration time \_\_\_\_\_  
Power \_\_\_\_\_  
Electrode array \_\_\_\_\_  
Electrode spacing \_\_\_\_\_  
Type of electrode \_\_\_\_\_





GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 1169 Number of Readings 1004 x 2 (2008)
Station interval 100 FT Line spacing 400 FT, T.L AT 1000 FT
Profile scale 1" = 20' Contour interval

MAGNETIC

Instrument APEX MAX MIN II
Accuracy - Scale constant HORIZ
Diurnal correction method
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

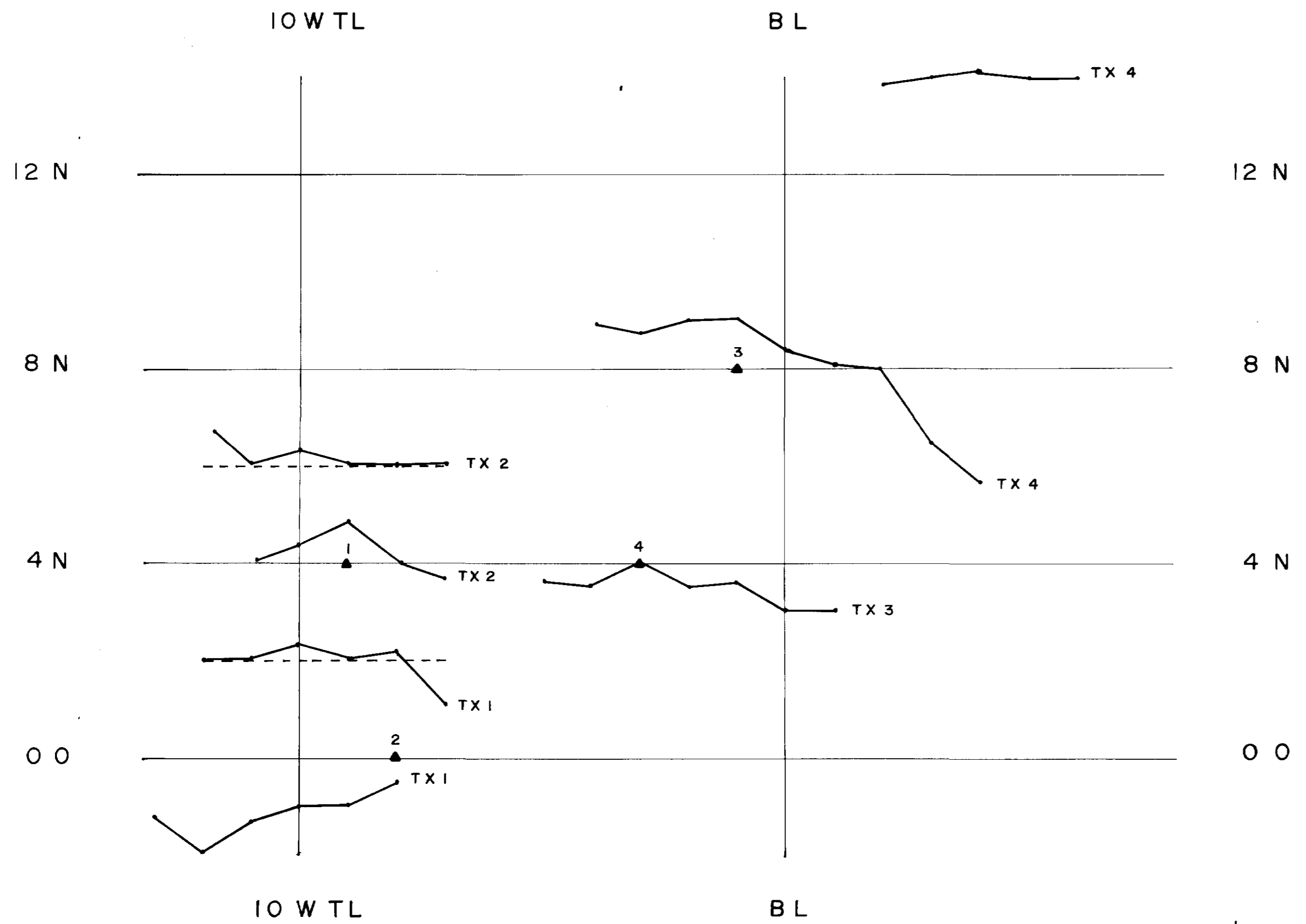
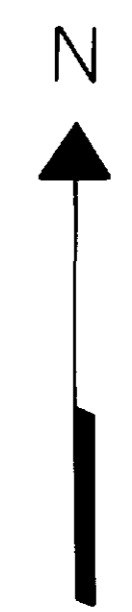
Instrument APEX MAX MIN II
Coil configuration HORIZONTAL LOOP
Coil separation 400 FT
Accuracy 1%
Method: [ ] Fixed transmitter [ ] Shoot back [x] In line [ ] Parallel line
Frequency 444 Hz, 1777 Hz (specify V.L.F. station)
Parameters measured In-Phase; Out of Phase

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [ ] Time Domain [ ] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode



**GEOPHYSICAL LEGEND**

Instrument APEX MAX MIN II  
 Method Fixed Transmitter  
 Vertical Loop  
 Frequency 3555 Hz  
 Operators GEOX LTD  
 Date March 1980

**PLOTTING CONVENTION**

Transmitter Location 1  
 Transmitter Location Used TX 1  
 Grid Lines   
 Intermediate Lines

*J. Buller*  
12/1/81

<b>LACANA</b>		CONVENTURES LIMITED MURPHY OIL COMPANY LTD. LACANA MINING CORPORATION	
CANADIAN MINERALS JOINT VENTURE			
<b>KIRKLAND PROJECT</b>			
<b>ARNOLD TWP</b>			
<b>EM SURVEY</b>			
PREPARED BY	SCALE	DATE	FIG. NO.
R W	1"=200'	July/80	32 D/4 3

