

This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:

*O. C. Yudlay*  
RESIDENT GEOLOGIST

Approved as to cost in the amount  
of: \$ 1500.00

*R. B. Hedley*  
RESIDENT MINING ENGINEER

Accepted as representation work  
under Section 53(4) Yukon Quartz  
Mining Act.

*M. J. Mil*  
COMMISSIONER OF YUKON

MAGNETIC AND ELECTROMAGNETIC  
GEOPHYSICAL SURVEYS

ANT MINERAL CLAIM GROUP

FYRE LAKE AREA

WATSON LAKE MINING DIVISION

YUKON TERRITORY

LONG: 130° 38' West

LAT: 61° 12' North

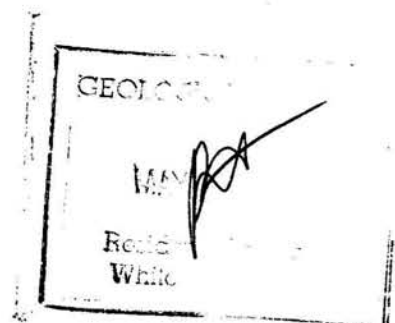
BY

JOHN S. BROCK

ATLAS EXPLORATIONS LIMITED

June 28- July 1 and

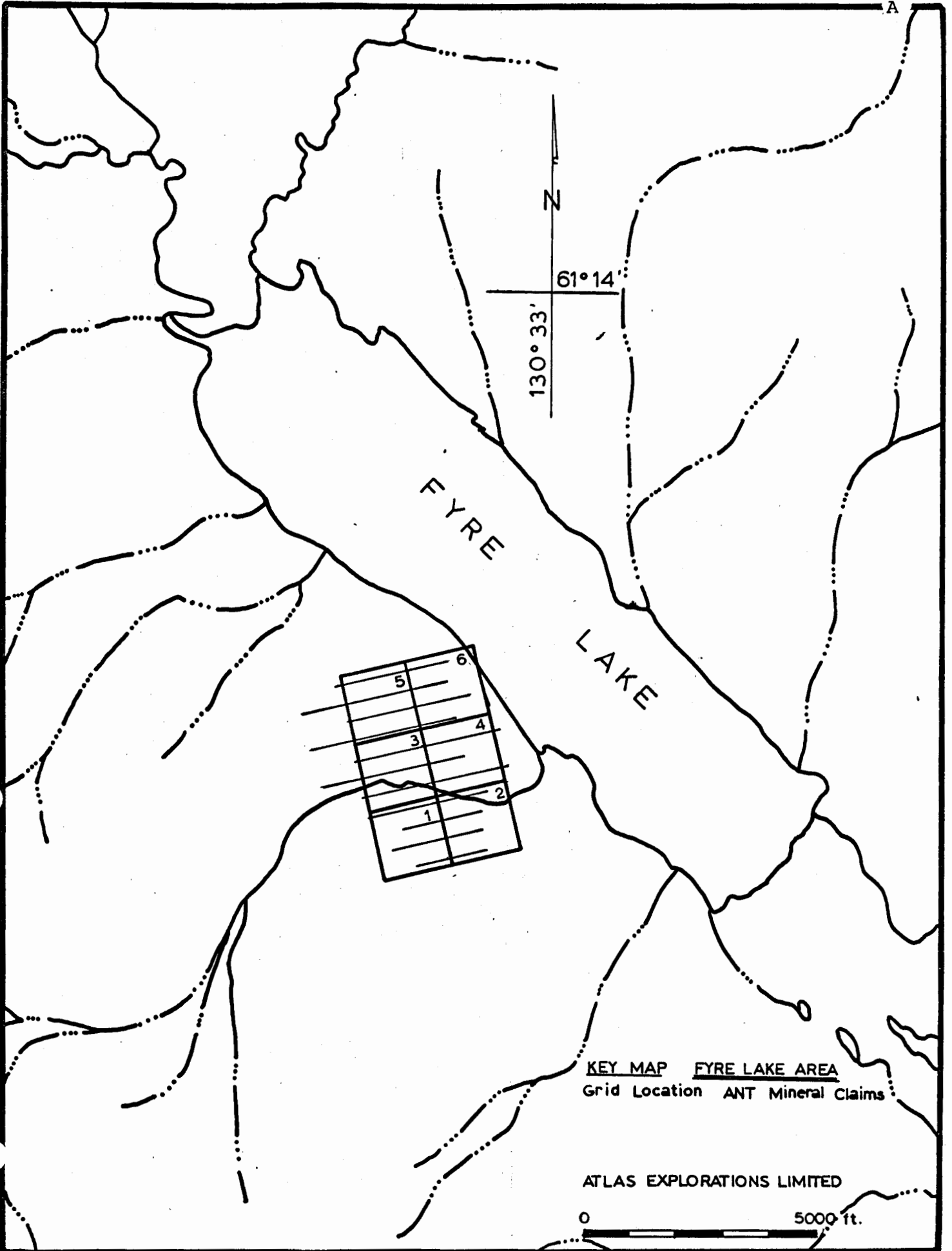
July 25- July 29, 1966



MAGNETIC AND ELECTROMAGNETIC  
GEOPHYSICAL SURVEYS  
ANT MINERAL CLAIMS

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FYRE  
LAKE

5	6
3	4
	2
1	

N  
61° 14'  
130° 33'

KEY MAP FYRE LAKE AREA  
Grid Location ANT Mineral Claims

ATLAS EXPLORATIONS LIMITED

0 5000 ft.

LIST OF CLAIMS

<u>CLAIM NO.</u>	<u>GRANT NOS.</u>	<u>DATE RECORDED</u>
ANT 1- 6	Y7373- Y7378 Y7337- Y7372	April 25, 1966

# ATLAS EXPLORATIONS LIMITED

(N. P. L.)

330 MARINE BUILDING  
355 BURRARD STREET  
VANCOUVER 1, B.C.

## INTRODUCTION

After the Dub Mineral claims were acquired by Atlas Explorations in the Fyre Lake area, the region was flown with airborne electromagnetic and magnetic surveys. As a result of the geophysical surveys outlining anomalies in proximity to the Dub Group, an area of known sulphide mineralization, the Ant Group of 6 mineral claims was staked and recorded April 25, 1966.

The claims were staked by Atlas Explorations as part of an intensive follow-up program after completion of the airborne surveys. Ground was obtained in preparation of ground geochemical, geophysical and geologic surveys that were to be employed to delineate airborne anomalies. Commencing June 28, 1966, a crew consisting of geologic, geochemical, linecutting and camp support personnel, were placed on the property to investigate the anomalous electromagnetic and magnetic airborne responses. It was hoped that possible diamond drill targets could be outlined and tested in conjunction with a proposed drill program on the Dub Mineral claims.

## METHOD OF SURVEY

### Instruments Used

For the magnetometer survey, A Jalander 46-65 magnetometer was used, the instrument is hand-held and measures the vertical magnetic component by use of an oil-dampened fluxgate which automatically levels itself in the direction of the vertical field. The range of this instrument is 10 to 250,000 gammas over five sensitivity ranges, the lowest being 10 gammas per scale division. The magnetometer is of light weight and readings can be obtained quickly, a conversion factor is necessary before gamma values can be determined.

The electromagnetic survey was carried out with a Crone JEM dual frequency unit. The Crone is of the inductive type and may be either used as a horizontal or vertical loop apparatus. Measurements are made of the resultant dip angle of the field and the width of null or out of phase component. It is designed to be operated with a maximum coil spread of 300 feet on frequencies of 480 and 1800 cycles per second with no interconnecting cables. The effective depth penetration is 300 feet for a horizontal conductor with maximum coil spread (no skin effect allowance) and 100 feet for a vertical conductor.

The effective lateral coverage is a direct function of the spread under ideal conditions. The equipment was chosen in order to give reliable information on the attitude and configuration of a conductor, the physical properties of the host rock, dimensions of the conductor and results free from error due to topographic relief.

#### Survey Method, Linecutting

All grids designed for ground geophysical and geochemical surveys were laid out using eight hundred foot line spacing with one hundred foot station intervals. Over areas of interest, four hundred foot spacing was used and two hundred foot spacing over areas requiring detailed information. Central base lines were used for survey control, all cross lines were surveyed by picket and chain methods. Linecutters were hired from the native settlement of Ross River; survey control was checked by the party chief.

#### Magnetometer Survey

Prior to the actual magnetometer survey, readings were taken along the central base line at cross line intersection points. These stations were looped and re-read every hour as a means of controlling drift and diurnal variations. With base stations of an established

value serving as a means of controlling drift and diurnal variations, a rapid and precise check was kept on magnetic variations and the entire survey was thus kept on a relative basis during day to day operation. Each cross line was read with re-checks at the base station within every hour, this method provided an internal control for detecting diurnal and drift variations. The survey was done by one operator using the same instrument.

#### Electromagnetic Survey

All surveys were run with horizontal loop configuration and 300 foot coil spacing in order that highest response could be obtained from flat lying sulphide bodies. Both 1800 and 480 cps readings were taken at each station. The coil configuration was not adaptable to conditions of conductive overburden and maximum response from such was expected. All traverses were made by the 'in line method' and done over the same grid as used for the magnetometer surveys. In some cases shorter spacing was adopted for better resolution of shallow conductors, and for the same reason line spacing was reduced to 300 feet over areas of interest. The two man EM crew did all their ground work in coincidence with the magnetometer and soil sampling crew.

## TREATMENT OF DATA

### Magnetic Results

Magnetic results were corrected for diurnal and drift each night by the field operator. The final gamma values were then plotted on a grid plan using scale of 400 feet to one inch. This data was presented to the party chief who profiled and contoured the data on overlay material in order that he could remain familiar with day to day results and progress of the survey, direct its course and have results available for comparison with electromagnetic and geological-geochemical data. Field plots of this information were forwarded to the base office at Ross River at the end of the survey for final plotting and examination on a scale of 1 inch to 400 feet. Magnetic data is presented in this report on a map showing gamma value-profile results (see Appendix). All maps show major topographic features and locations of mineral claim posts.

### Electromagnetic Results

All results as derived in the field were plotted each night by the EM operators on a grid plan using a scale of 1 inch to 400 feet. High and low frequency results were presented to the party chief for inspection and profiling in order that this data be compared with the

other surveys and the course of the electromagnetic survey be directed on a daily basis. Plots of readings and profiles were sent to Ross River base at the end of the survey for final plotting and compilation on grid plans similar to those used for the magnetic maps. Electromagnetic data is presented in this report showing values-profiles (1800 and 480 cps).

### GEOLOGY

The Fyre Lake properties are in proximity to the Fyre Lake fault, a parallel structure to the Tintina Trench. A general sequence of quartz-biotite-chlorite schists striking northwest and dipping generally to the northeast, lies between sizeable stocks of intrusive granodiorite both to the northeast and southwest. The schists are intersected by a series of northeast trending cross faults thus giving rise to an identical geologic setting to that in the Dynasty-Vangorda area. Known mineral occurrences include a potentially sizeable flat lying pyritic zone containing chalcopyrite replacing quartzose-chloritic schists on the Dub Mineral Claims.

### GEOPHYSICAL RESULTS

The airborne electromagnetic survey defined an isolated conductor of 7 ppm in phase response and conductive ratio of about 2. There appeared to be some magnetic

correlation on the tapes. However, it was not plotted as such on the contour maps (see appendix).

A general irregular negative dip angle response was outlined on the ground over the grid west of the baseline. Magnetic anomalies reaching peak values of over 1000 gammas total intensity flank the eastern boundaries of the EM anomalies, no coincidence is apparent.

#### CONCLUSIONS and RECOMMENDATIONS

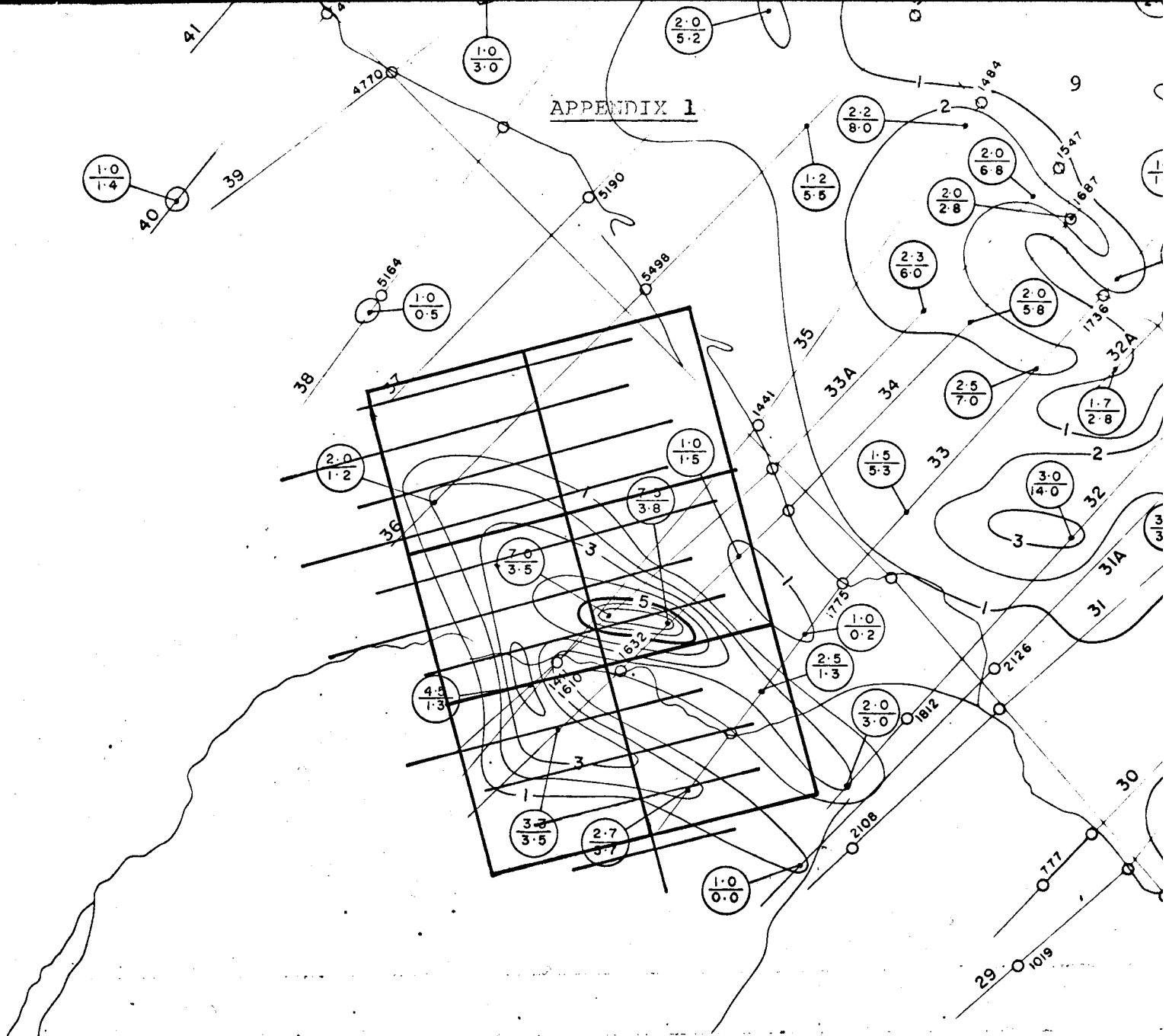
The geophysical responses were checked in location by geologic and geochemical follow-up. The electromagnetic anomaly appears to be due to graphite horizons and the magnetics due to greenstone intrusive bodies. No further work is recommended. However, the claims should be held in good standing pending further developments in the Fyre Lake area.

Respectfully Submitted



John S. Brock  
Assistant Exploration Manager

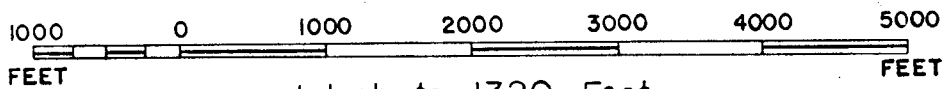




# FYRE LAKE AREA

YUKON TERRITORY  
ANJ MINERAL CLAIMS

SCALE



1 Inch to 1320 Feet

ELECTROMAGNETIC MAP

APPENDIX III

## FYRE LAKE AREA PROJECT

Ant Mineral Claim Group  
 Magnetic and Electromagnetic Ground  
 Geophysical Surveys

SUMMARY OF COSTS

A. Linecutting	a) total footage cut	32,200 ft.	\$322.00	✓
	b) overall cost/ 1000'	\$10.00		
B. Magnetometer Survey	a) total line miles	4.6		
	b) overall cost/line mile	\$50.00	230.00	400
C. Electromagnetic Survey	a) total line miles	8.8		
	b) overall cost/line mile	\$110.00	968.00	600

NOTE:

overall cost per line mile includes:

- a) Supervision
- b) presentation of data
- c) camp costs and field subsistence
- d) transportation

TOTAL COST, Geophysical Surveys  
 Ant Group \$1,520.00


2,700.00 ✓  
 OK

APPENDIX IVAFFIDAVIT  
SUPPORTING SUMMARY OF COSTS

I, JOHN S. BROCK, Assistant Exploration Manager, Atlas Explorations Limited, of Ross River, Yukon Territory, do hereby state that to the best of my knowledge and belief the statement of costs as presented in Appendix III of this report "Magnetic and Electromagnetic Geophysical Surveys, Ant Mineral Claim Group", is both true and Correct.

  
\_\_\_\_\_  
John S. Brock

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
A Commissioner for taking oaths  
in and for the Yukon Territory

APPENDIX V

## PERSONNEL

FYRE LAKE, GEOLOGICAL GEOPHYSICAL,

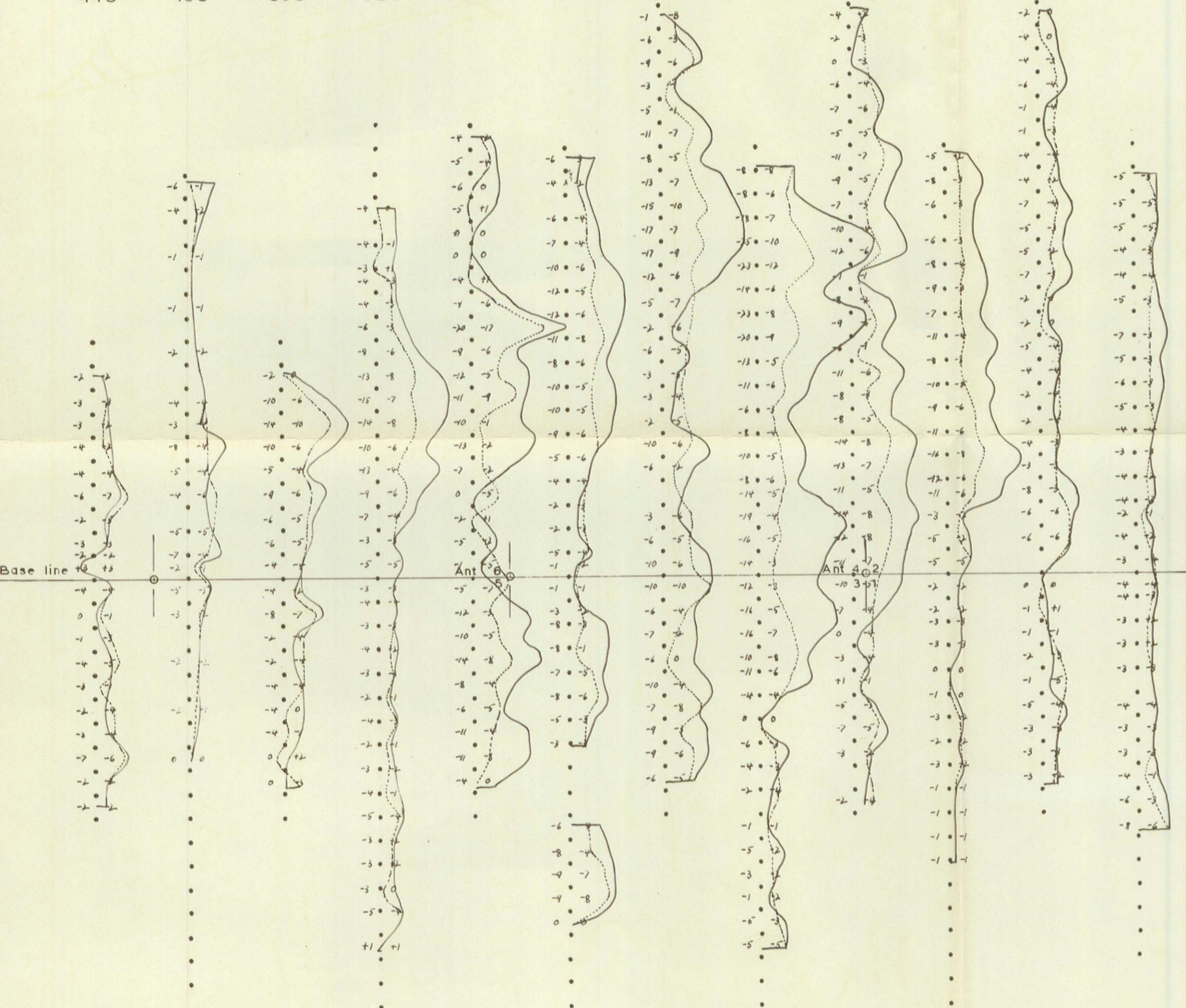
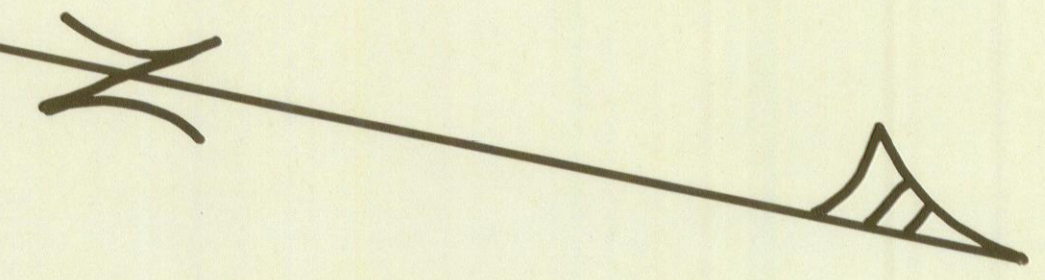
GEOCHEMICAL CREW

SURVEYS:                   ANT MINERAL CLAIMS

Phil Nielsen	Party Chief	1600 Beach Avenue Vancouver 5, B.C.
Peter Tegard	EM Operator	4438 W. 13th Avenue Vancouver 8, B.C.
Murray Simpson	EM Operator	c/o General Delivery Whitehorse, Y.T.
Ted Lightfoot	EM Operator	7081 - 232nd Street RR #7, Langley, BC
William Barclay	Magnetometer Operator	6040 Iona Drive Vancouver 8, B.C.
Patrick Brownsword	Geochemical Sampler	3563 Quebec Street Vancouver, B.C.
Timothy Sadlier-Brown	Geologist	1490 Edecliffe Avenue Ottawa 3, Ontario
Douglas Tizya	Cook	c/o General Delivery Whitehorse, Y.T.
Joe Etzel	Linecutter	c/o General Delivery Whitehorse, Y.T.
Sam Smarch	Linecutter	c/o General Delivery Whitehorse, Y.T.
Mac Ladue	Linecutter	c/o General Delivery Ross River, Y.T.
Jim Atkinson	Linecutter	c/o General Delivery Ross River, Y.T.
George Johnny	Linecutter	c/o General Delivery Ross River, Y.T.

44S 40S 36S 32S 28S 24S 20S 16S 12S 8S 4S 0 24W

20W  
16W  
12W  
8W  
4W  
0  
4E  
8E  
12E  
16E

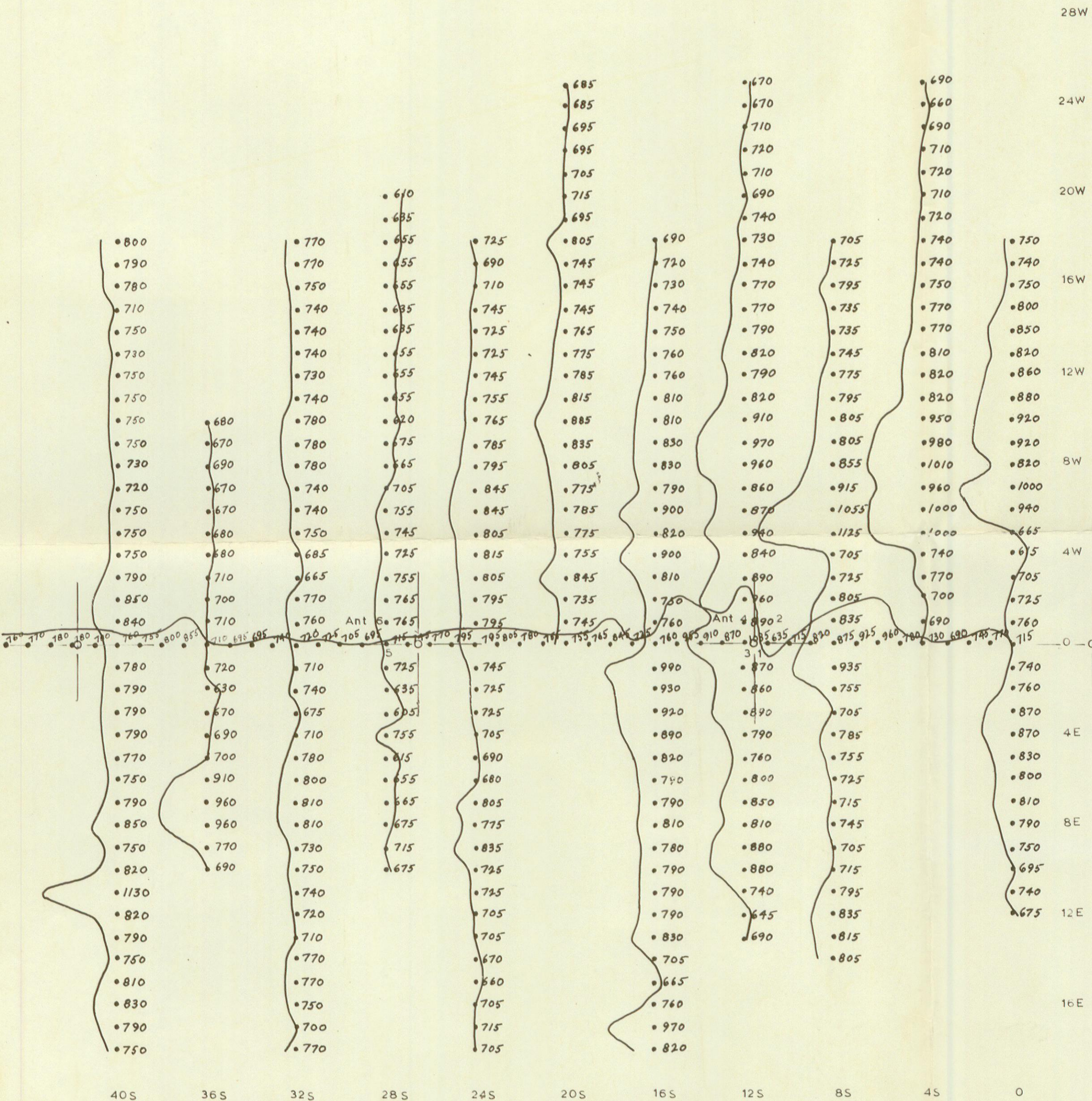


ATLAS EXPLORATIONS LTD.  
ROSS RIVER, YUKON

FYRE LAKE AREA  
ANT MINERAL CLAIMS

GROUND ELECTROMAGNETIC SURVEY  
JEM HORIZONTAL LOOP

Profile scale: 1/10" = 2° resultant dip angle +ve | -ve  
Scale: 1" = 400'  
Instrument: Crone 1800 c.p.s.  
Coil spacing: 300' 480 c.p.s.  
Operators: P. Teggart & T. Lightfoot  
Party chief: P. Nielson  
Date: June, 1966  
Drawn by: *Q.L. Wilkins*



ATLAS EXPLORATIONS LTD.  
ROSS RIVER, YUKON

FYRE LAKE AREA  
ANT MINERAL CLAIMS

GROUND MAGNETOMETER SURVEY  
GAMMA VALUES - PROFILES

Scale: 1" = 400'  
Instrument: Jalander  
Profile scale: 1" = 200 gammas  
Operator: W. Barclay  
Party chief: P. Nielson  
Date: July, 1966  
Drawn by: *A.L. Nielsen*

Claim post  $\frac{\text{Ant } 4}{3} \frac{2}{1}$