

REPORT ON

AIRBORNE GEOPHYSICAL SURVEY

FALCON CLAIM GROUP

Claim Sheet 105-K-6

for

MALTA MINES LTD.

July, 1966



This report has been examined by  
the Geological Exploration Dept.  
*D. J. Gindley*  
1700.00  
*R. S. Hedley*  
... geophysical work  
... Quartz  
*[Signature]*  
COMMISSIONER OF YUKON



ARCHER, CATHRO & ASSOCIATES LTD.

R.J. Cathro, P. Eng.

April 6, 1967

INDEX

	page
Introduction . . . . .	1.
Interpretation of Helicopter Magnetic and Electromagnetic Survey, Anvil-Vangorda Area, Y.T., Malta Mines Ltd., by D.W. Smellie, P. Eng., Feb. 15, 1967. . . . .	2.
Appendix I- . . . . .	5.
Appendix II- . . . . .	6.
Appendix III- . . . . .	7.

MAPS

- Figure 1- Key Map- FALCON group.
- Figure 2- Airborne Mag. Survey.
- Figure 3- " EM Survey.

## INTRODUCTION

On July , 1966, an airborne geophysical survey was organized by the writer and flown over the FALCON claim group in the Anvil-Vangorda District. This group is located on the north flank of Mt. Mye, northwest of Anvil's ACE property, in claim sheet 105-K-6.

The same Lockwood system that proved so successful for Dynasty Explorations Ltd. was used on this survey. A total of 30 line miles was flown. The equipment was mounted in a Bell 204 B turbine helicopter chartered from Okanagan Helicopters Ltd. A preliminary plot of the uncorrected data was made in the field by Explorations Geophysics (Yukon) Ltd., and interpreted by Dr. D.W. Smellie, of that firm. Dr. Smellie's report, including a short discription of the instrumentation of the Lockwood system, follows.

## INTRODUCTION

A combined helicopter magnetic and electromagnetic survey has been carried out by Lockwood Survey Corporation Limited for Malta Mines Limited on the Falcon group. This is located in the Anvil-Vangorda area of the Yukon Territory. The survey was flown during July 1966.

## INSTRUMENTATION

The combined helicopter magnetic and electromagnetic installation consists of the Gulf Model III airborne magnetometer and the E.M. system developed by Hunting Survey Corporation (now Lockwood).

The E.M. system consists of coaxial transmitter and receiver coils mounted 30 feet apart in a "bird" that is suspended 100 feet below the helicopter when in operation. The instrument records the in-phase and quadrature components of the secondary field relative to the primary field at the receiver coil. The operating frequency is 4000 cycles per second.

## FIELD PROCEDURE

The survey was flown at an average line spacing of 1000 feet and at 200 feet mean terrain clearance.

The flight path was recovered by plotting positions on the ground determined by a positioning camera that takes a sequence of exposures while the survey is in progress. The magnetic data were corrected for diurnal variation and plotted in the form of contours of equal magnetic intensity. The E.M. data were plotted as contours of in-phase amplitude in parts per million with respect to the primary. Anomalies are shown by circled figures representing the amplitudes of the in-phase and quadrature components.

#### RESULTS

The results are shown on magnetic and electromagnetic contour maps at a scale of one inch equals 1320 feet.

The magnetic pattern is of low relief and no particular significance is attached to it.

Electromagnetic anomalies are generally of fair quality. A good-quality conductor shows at L6N (8464) and L7S (6740). This area is recommended for ground electromagnetic and geochemical investigation.

Respectfully submitted

  
D.W. SMELLIE, P.Eng.

for: Exploration Geophysics (Yukon) Ltd.

February 15, 1967

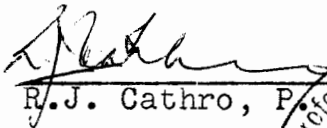
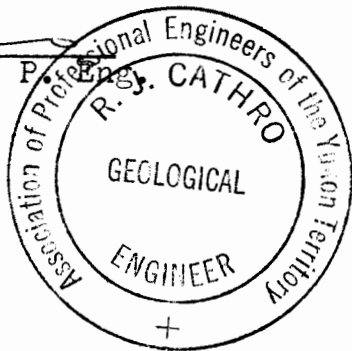
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Appendix I

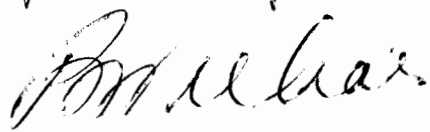
AFFIDAVIT

I, Robert J. Cathro, Consulting Geological Engineer, of Whitehorse, agent for Malta Mines Ltd., have compiled the statement of costs presented in Appendix II of this report, and do hereby make oath and say:

That to the best of my knowledge and belief, the statement of costs as presented is a true and accurate representation of expenditures, to be applied as assessment work on the FALCON claim group.

  
R.J. Cathro, P. Eng.  
The seal is circular with the text "Association of Professional Engineers of the Yukon Territory" around the perimeter. Inside the circle, it reads "R. J. CATHRO" and "GEOLOGICAL ENGINEER" with a plus sign at the bottom.

Sworn and subscribed to at  
Whitehorse this 6 day of  
*April* 1967.

  
A Commissioner for taking Affidavits  
in and for the Yukon Territory.

Appendix II

STATEMENT OF COSTS

Airborne Geophysical Survey- 30 Line-miles (LM)

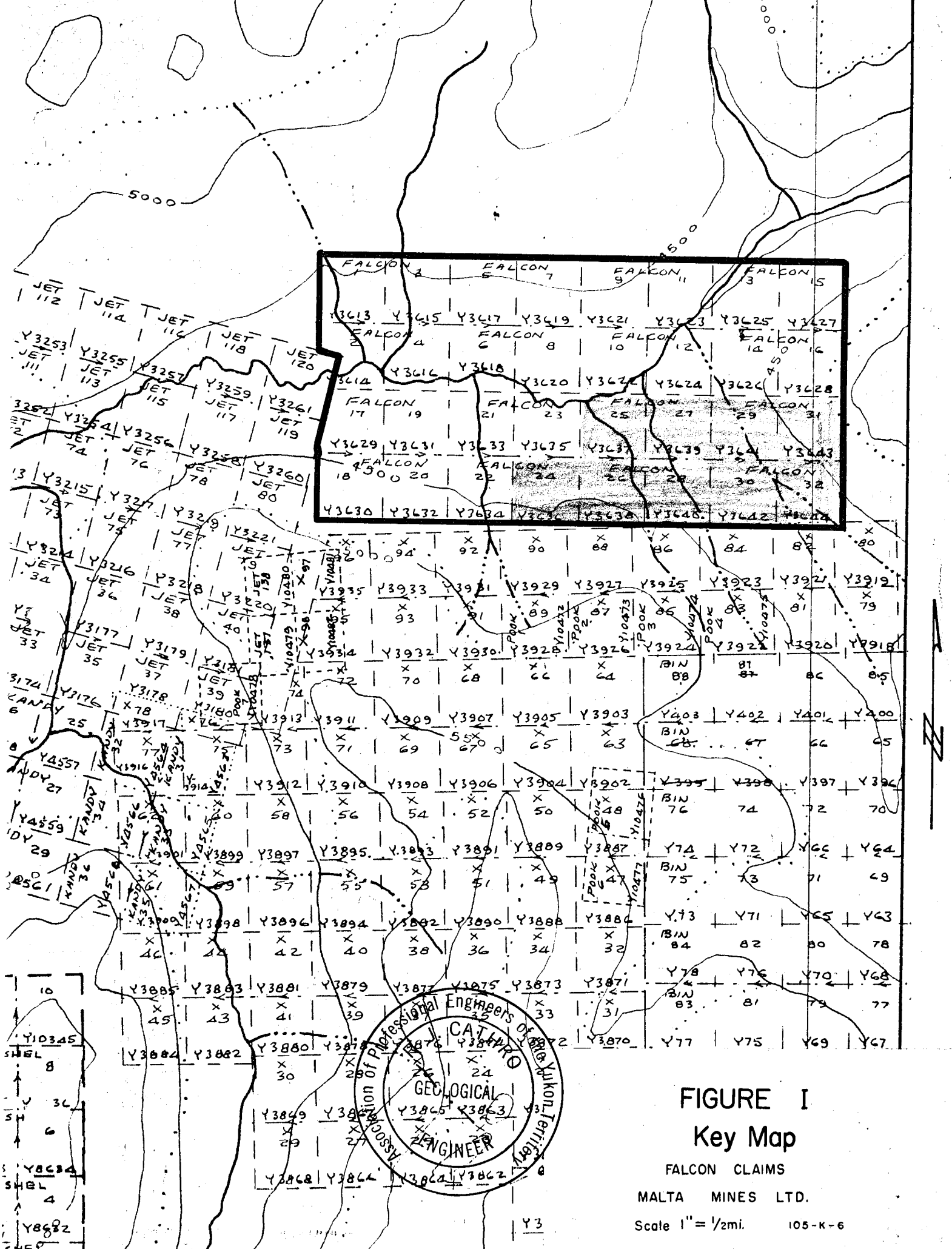
1. Helicopter rental and fuel . . . . .	\$590.00
2. Crew accomodation @ avg. cost/LM . . . . .	45.00
3. Preliminary plotting and interp. @ \$3.00/LM plus drafting supplies . . . . .	63.00
4. Airphotos, mosaic preparation . . . . .	20.00
5. Management fees @ \$3.00/claim . . . . .	96.00
6. " expenses- office, travel . . . . .	43.00
7. Equipment and operator rental- Lockwood . . . . .	225.00
8. Data reduction- Lockwood . . . . .	<u>620.00</u>
Total . . . . .	\$1702.00

Appendix III

PERSONNEL ENGAGED IN 1966 FIELD WORK

Geophysical Survey

T.R. Gurr	pilot	Okanagan Helicopters, Vancouver
H. Sandau	operator	Lockwood Survey, Corp. Toronto.
D. Gamble	technician	Exploration Geophysics (Yukon) Ltd. Whitehorse.
D. Smellie	geophysicist	Exploration Geophysics (Yukon) Ltd. Whitehorse.
R. Cathro	geological engineer	Archer, Cathro & Assoc. Ltd. Whitehorse.



**FIGURE I**  
**Key Map**

FALCON CLAIMS

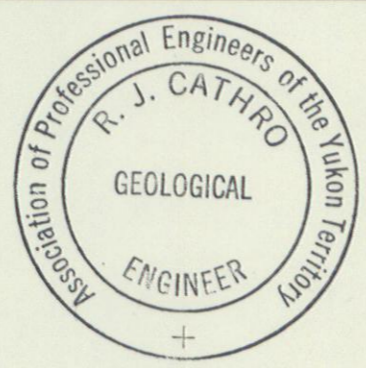
MALTA MINES LTD.

Scale 1" = 1/2mi. 105-K-6

# MALTA MINES LIMITED AIRBORNE GEOPHYSICAL SURVEY

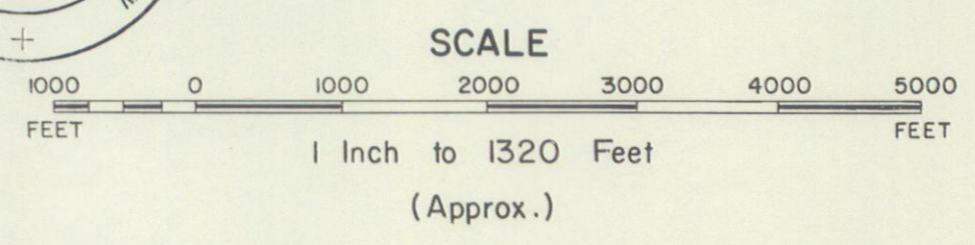


- CONTOUR INTERVAL ..... 20 GAMMA
- MEAN FLIGHT LINE SPACING ..... 1000 FEET
- MEAN TERRAIN CLEARANCE ..... 200 FEET
- 500 GAMMA CONTOUR .....
- 100 GAMMA CONTOUR .....
- 20 GAMMA CONTOUR .....
- MAGNETIC LOW .....
- FIDUCIAL POINTS ..... O3690
- FLIGHT LINES .....



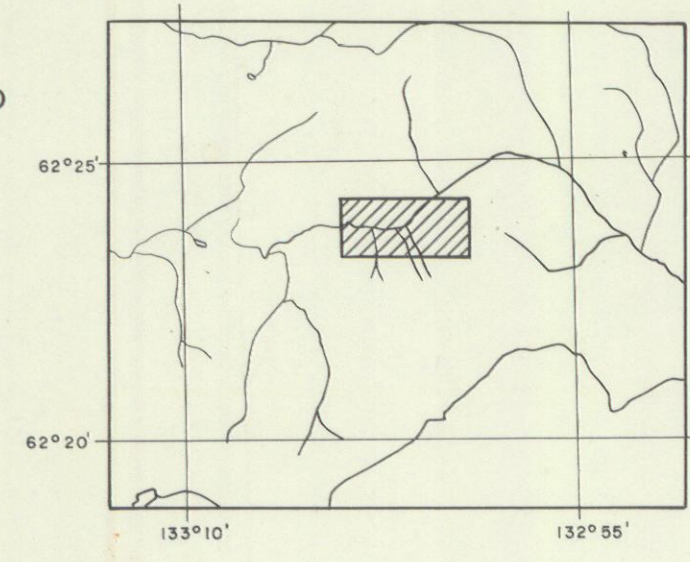
**FALCON GROUP  
YUKON TERRITORY**

Flown and Compiled by  
**LOCKWOOD SURVEY CORPORATION LIMITED**  
TORONTO, CANADA  
1966

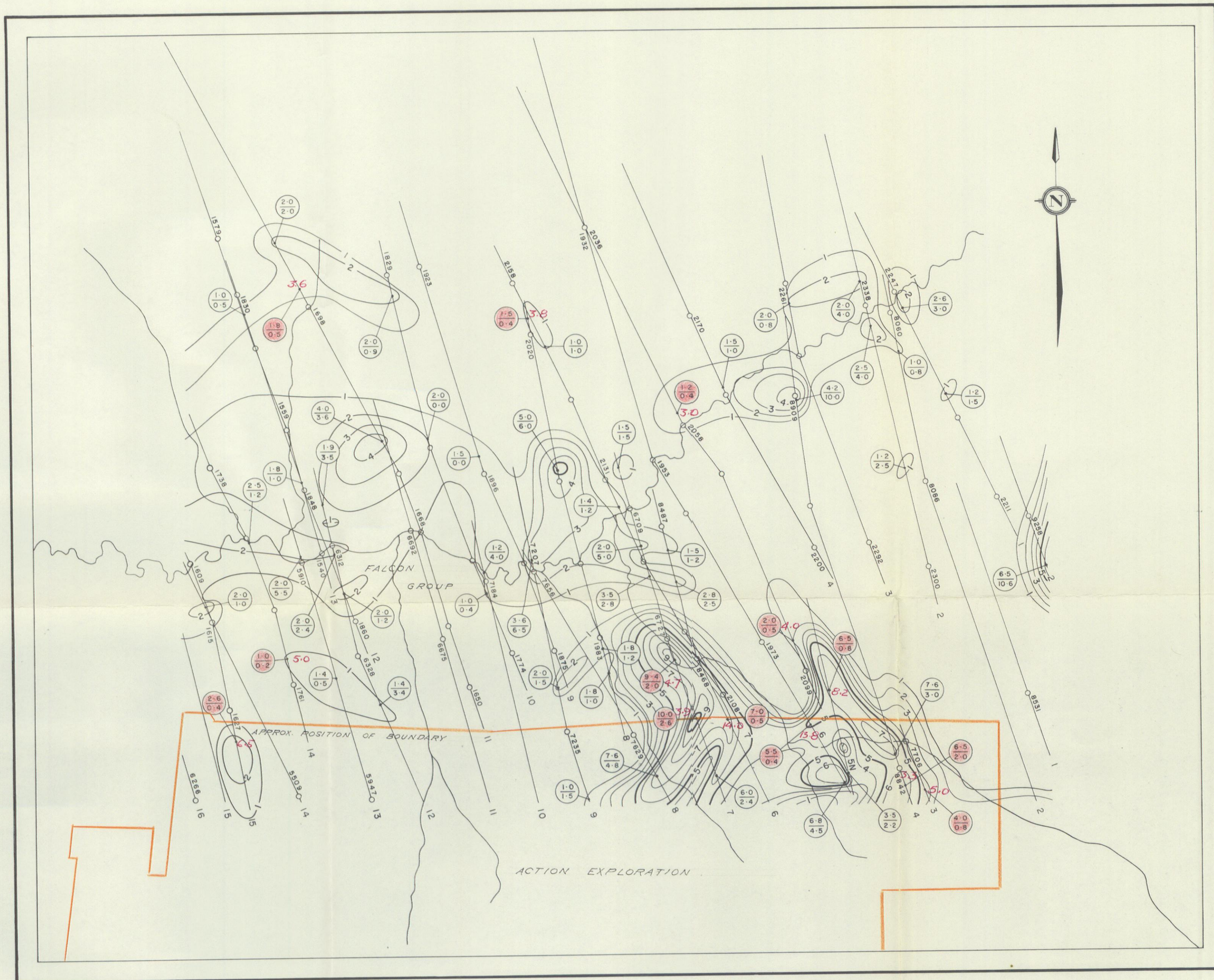


**AEROMAGNETIC MAP**

**Fig. 2**

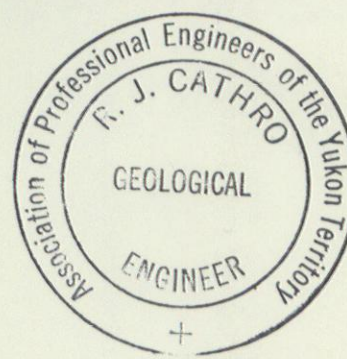


# MALTA MINES LIMITED AIRBORNE GEOPHYSICAL SURVEY



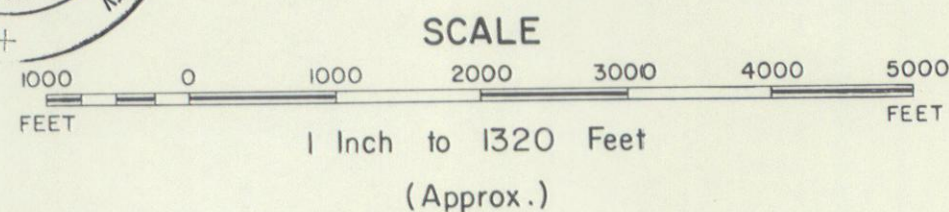
MEAN FLIGHT LINE SPACING ..... 1000 FEET  
 MEAN TERRAIN CLEARANCE ..... 200 FEET  
 ELECTROMAGNETIC CONTOURS 5, 10, 15 etc. .....  
 1, 2, 3, 4 etc. ....  
 NEGATIVE CONTOURS -5, -10 etc. ....  
 -1, -2, -3, -4 etc. ....  
 FIDUCIAL POINTS ..... O 3690  
 FLIGHT LINES ..... O

The contours represent amplitude of in phase response of the resultant field expressed in parts per million of the primary. The figures  $\frac{2.3}{0.2}$  represent amplitude in phase component quadrature component. The frequency of the primary current is 4000 cycles per second.



FALCON GROUP  
YUKON TERRITORY

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ELECTROMAGNETIC MAP

Fig. 3

