

REPORT ON

A MAGNETIC AND ELECTROMAGNETIC SURVEY

AT SWIM LAKE, YUKON

(62° 12' N 133° 5' W)

FOR

ANVIL MINING CORPORATION LIMITED

BY

EXPLORATION GEOPHYSICS (YUKON) LTD.

WHITEHORSE, YUKON

APRIL 1966

Report by: R.S. Adamson, B.A.Sc., P.Eng.,
Chief of Exploration for
Anvil Mining Corporation Limited.



April 15th to 17th and April 25th
to 27th 1966.

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

RESIDENT GEOLOGIST

Approved as to cost in the amount
of: \$

RESIDENT MINING ENGINEER

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

COMMISSIONER OF YUKON

GROUND GEOPHYSICAL INVESTIGATIONS

DEA CLAIM GROUP

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GROUND GEOPHYSICAL INVESTIGATIONS

DEA CLAIM GROUP

INTRODUCTION

Between April 13th and April 27th, 1966, a combined magnetic and electromagnetic geophysical survey was carried out by Exploration Geophysics (Yukon) Limited, for Anvil Mining Corporation Limited. The survey area was covered by 15 mineral claims (DEA 30-39 inclusive, 44, 46, 48, 50, and KAY 34 mineral claims) located in the Swim Lake area in the Whitehorse Mining District of the Yukon Territory. ($62^{\circ} 12' N$, $133^{\circ} 5' W$).

The geophysical crew was supervised by Mr. Robert Chaplin of Exploration Geophysics (Yukon) Limited. Survey decisions were made in consultation with Mr. Robert S. Adamson. The geophysical crew consisted of Mr. G. Cannon, Mr. A. Rolston, and Mr. G. Grady. Draughting and typing were done in the Whitehorse office of Anvil Mining Corporation Limited.

Preparatory linecutting, controlled by chain and compass methods, totalled 50,800 feet. The geophysical survey consisted of 39,100 feet of electromagnetics and 32,300 feet of magnetics.

All geophysical data is presented in the form of profiles, using a distance scale of 1 inch to 400 feet. Vertical scales are 1 inch to 20 degrees and 1 inch to 333 gammas for electromagnetics and magnetics respectively.

The only available published data of the Swim Lakes area is a preliminary 4 mile to the inch map of the regional geology of the TAY RIVER map sheet done by Mr. J.A. Roddick and Mr. L. H. Green.

SURVEY SPECIFICATIONS

Grid System

A baseline was cut and chained with compass control for 6,000 feet. Picket lines were turned off the baseline at 400 foot intervals essentially parallel to each other with stations established at 100 foot intervals. Later the picket lines were tied in more accurately to a surveyed claim location line which crossed them. Picket and baseline cutting and chaining totalled 50,800 feet.

Magnetometer Survey

A Sharpe's MF-1 Fluxgate type vertical component magnetometer was used during the entire magnetic survey. This instrument is hand held and needs only coarse levelling and no orientation. The magnetometer has a maximum sensitivity of 20 gammas per scale division on 1,000 gamma range and a readability of 5 gammas per scale division.

Readings were taken at 400 foot intervals along the base line and 100 foot intervals along picket lines. Prior to the actual survey, readings were taken at the intersection points of each picket line with the base line. These stations were looped and re-read every hour as a means of controlling drift and diurnal variations. A total of 32,300 of magnetics was run.

Electromagnetic Survey

For the electromagnetic survey a CRONE JEM unit (18 volt) was employed. The instrument is a modification of the original JEM unit designed by CRONE in 1963; the power supply has been increased thus increasing effective depth penetration to approximately 300 feet under normal operating conditions using the horizontal loop method. The CRONE measures resultant dip angles of the primary and secondary field, is dual frequency (480 and 1,800 cps.) and may be used either as a vertical or horizontal loop system.

In contrast to the magnetometer survey which was run along the baseline as well as the picket lines, only the picket lines were run with the EM. A 400 foot separation of the coils was used and readings were taken at 100 foot station intervals.

RESULTS AND INTERPRETATION

Magnetometer Survey

After each gamma value was corrected for diurnal variation, they were plotted on a plan of the survey grid (1 inch = 400 feet). Profiles of each line were drawn to a standard scale (see map in folder).

Single magnetically anomalous readings were recorded at station 2,700 South on lines 44, 48, and 52 West. On line 40 at station 2,400 South another higher anomalous reading occurs. This area of higher readings (140 gammas to 510 gammas) can probably be considered one zone. It is essentially sharp and linear and is strongly suggestive of a basic dyke or steep volcanic horizon; striking northwesterly.

A single anomalous reading occurs at 2,600 South, on line 24 West. Until this anomaly has been further defined by additional magnetic surveying in this area no attempt can be made to ascertain the nature of this anomaly.

Electromagnetic Survey

Two electromagnetically anomalous zones have been developed on the surveyed area; one lying to the east on lines 4, 8, 12, 16 and 20, the other on two lines only to the west, 40 and 44.

The eastern zone is the most interesting and could possibly reflect flat lying sulphides.

The western zone although decidedly anomalous is of considerably less interest. It is indicative of a graphitic structure striking northeasterly.

1964-7-15-64

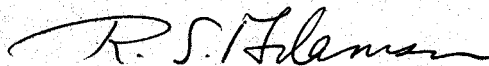
CONCLUSIONS AND RECOMMENDATIONS

The magnetic survey has not been done as yet on the eastern portion of the grid. Therefore, it is not known at this time whether any positive magnetism is coincident with the most favourable eastern EM anomaly. In that known deposits in the Anvil district with their pyrrhotite content have a positive magnetic reflection, ideally electromagnetic anomalies should have a positive magnetic response; however, it may be that ore bodies do occur in the district with pyrite rather than pyrrhotite so that a favourable appearing electromagnetic anomaly cannot be totally negated on this basis.

What magnetic anomalies have been located on this claim group to date are totally divorced from the EM anomalies, yet are in relatively close proximity.

In view of the apparent favourable reconnaissance geochemistry (zinc) located a few hundred feet to the southeast of the grid area in 1964, further definition of the western electromagnetically anomalous area is in order, initially with a continuation of the ground magnetic survey followed by diamond drilling.

In addition, the EM anomaly remains open and is stronger on the southeast. Therefore, extension of the electromagnetic survey to the southeast is strongly recommended.



Robert S. Adamson, B.A.Sc., P.Eng.
Chief of Exploration for
Anvil Mining Corporation Limited.

APPENDIX I (i)

STATEMENT OF COSTS:-

Ground Geophysical Surveys
DEA Claims

(A)	Linecutting:		
	50,800 feet at \$77.50 per line mile	\$	745.00
(B)	Contract Geophysics:		
	Magnetics and electromagnetics Invoice submitted	\$	595.58
(C)	Geophysical Crew Maintenance:		
	4 men for 8 days at \$8.00 per day	\$	256.00
(D)	Reduction of Data and Preparation of Report	\$	200.00
(E)	Camp Erection	\$	300.00
(F)	Transportation:		
	Helicopter, bombardier, truck	\$	300.00
			<hr/>
	T O T A L	\$	<u>2,396.58</u>

APPENDIX I (ii)

PERSONNEL

(A) Linecutting:

L. Bill	- Linecutter,	Box 1188, Whitehorse, Yukon
J. Suits	- "	" " "
C. Ollie	- "	" " "
B. Etzel	- "	" " "

(B) Geophysical Contract - Exploration Geophysics (Yukon) Limited:

R. Chaplin	- Supervisor,	Box 1188, Whitehorse, Yukon
G. Cannon	- E.M. Operator,	" " "
A. Rolston	- E.M. Operator,	" " "
G. Grady	- Magnetometer,	" " "

(C) G. Gray - Cook, Box 2470, Whitehorse, Yukon

(D) R. S. Adamson	- Chief of Exploration	" " "
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(E) F. Foran	- Field Expeditor,	" " "
N. McCreesh	- Labourer,	" " "

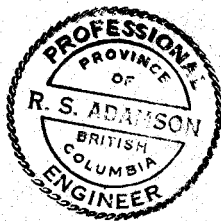
APPENDIX (iii) I

A F F I D A V I T

Supporting Statement of Costs
Geophysical Survey
April 13th to 17th and
25th to 27th 1966

I, ROBERT S. ADAMSON, Chief of Exploration for ANVIL MINING CORPORATION LIMITED, have compiled the statement of costs as presented in this report "Magnetic and Electromagnetic Surveys of the DEA Mineral Claims", DO MAKE OATH AND SAY AS FOLLOWS:

That to the best of my knowledge and belief, the statement of costs as presented, is true and an accurate representation of expenditures to be applied as representation work on the DEA 29 to 39 inclusive, 41, 43, 44, 46, 48, 50, 52, to 55 inclusive, and KAY 34, mineral claims.



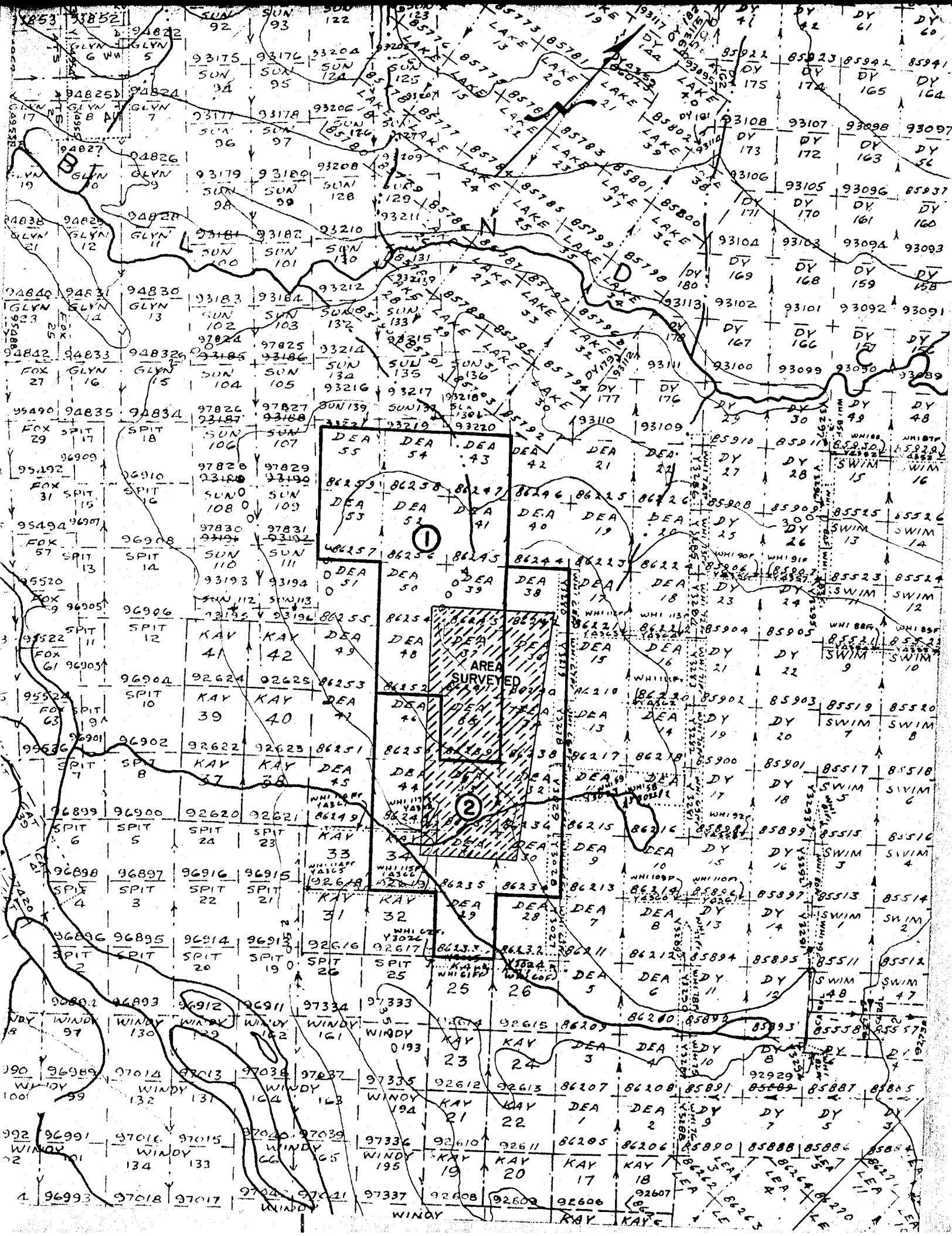
R. S. Adamson
.....

Robert S. Adamson, B.A.Sc., P.Eng.,
Chief of Exploration for
Anvil Mining Corporation Limited.

SWORN BEFORE ME:

~~DATE~~ this ... 2 ... day of JUNE, 1966, in the City of Whitehorse
in the Yukon Territory.

[Signature]
A Commissioner for taking Affidavits
in and for the Yukon Territory.



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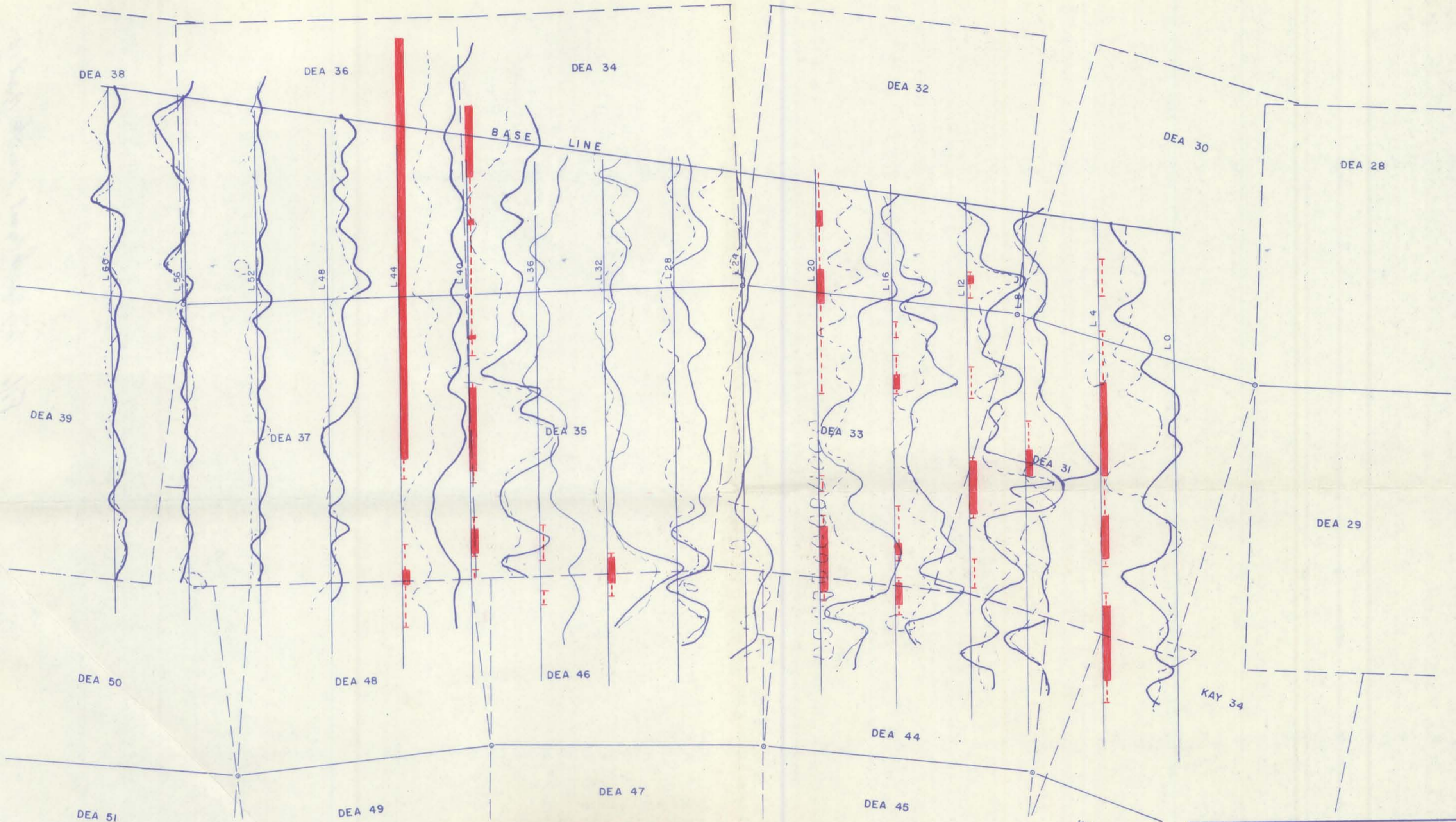
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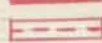
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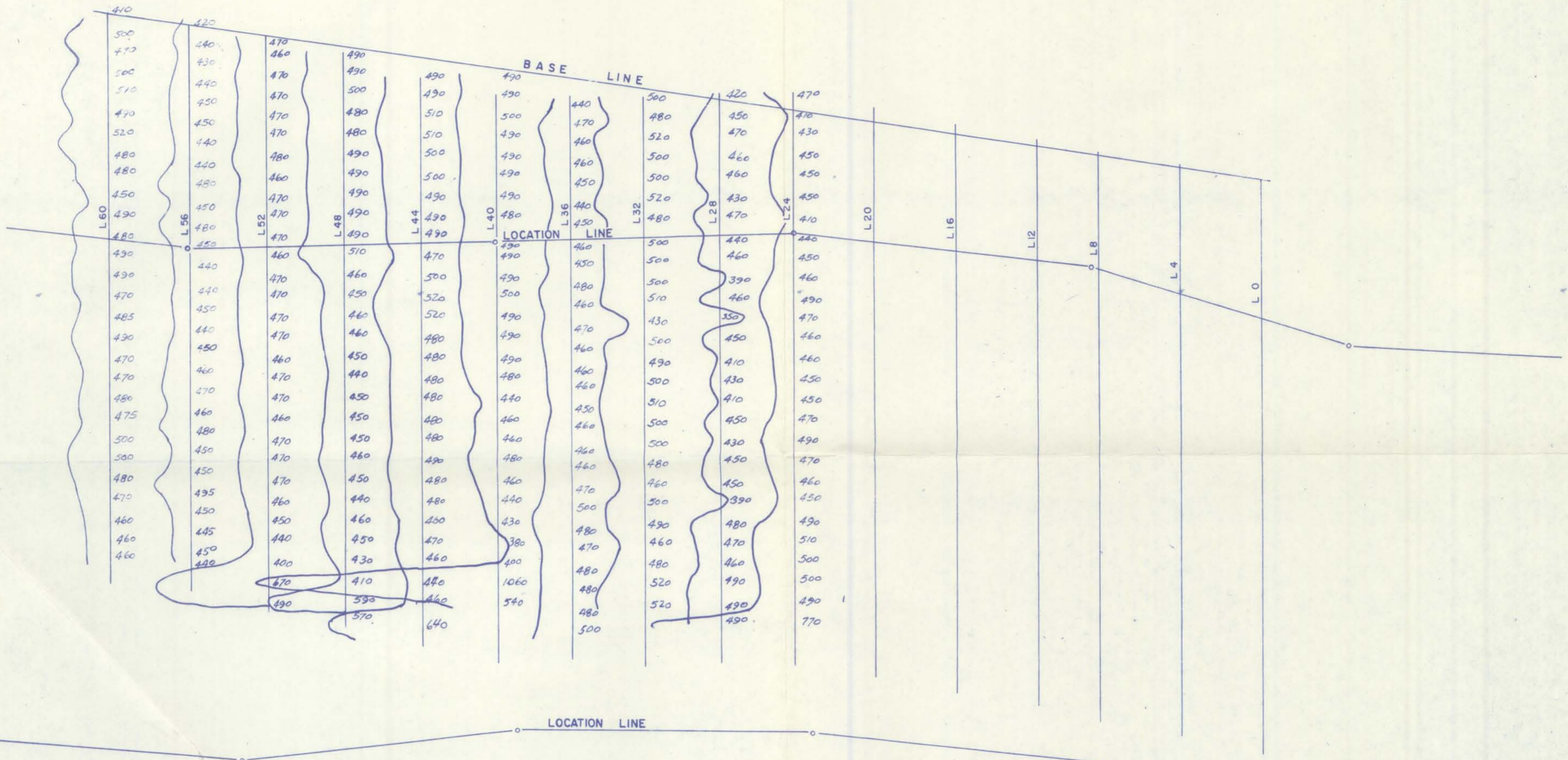


LEGEND
 STRONG ANOMALY 15+°
 MODERATE ANOMALY 10-15°

JEM HORIZONTAL LOOP E.M. SURVEY by Exploration Geophysics (Nikon) Ltd.
 APRIL 13-27, 1966 Scale: 400' = 1 inch
 High Freq. (1800 cps)  1 inch = 20° RES. DIP
 Low. freq. (480 cps)

ANVIL MINING CORP.	
WHITEHORSE	
ZONE-A GEOPHYSICAL DEA CLAIMS	
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SCALE: 1" = 400'	WC-4
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ANVIL MINING CORP.	
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ZONE - A GEOPHYSICAL DEA CLAIMS	
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MAGNETOMETER SURVEY
 APRIL 13-27, 1966 Scale: 1" = 400'
 Vert. scale: 3/10" = 100 ft
 Background Datum = 500 g
 By: Exploration Geophysics (Yukon) Ltd.

DATE PRINTED: