

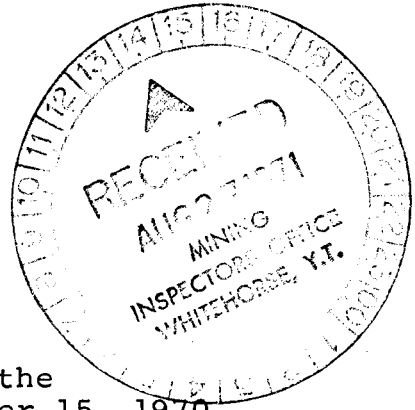
GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL  
INVESTIGATION OF THE GRAN GROUP  
TINTINA PROJECT

Anvil District  
Yukon Territory

Longitude: 133°48'W.  
Latitude : 62°27'N

N.T.S. - 105-K-5

Field work done during the  
period August 1-September 15, 1970



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 6215.15

By:  
WAYNE J. ROBERTS

DYNASTY EXPLORATIONS LIMITED

[Signature]  
Resident Geologist or  
Resident Mining Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act, February, 1971

[Signature]  
Commissioner of Yukon Territory

I hereby certify that the within instrument is a true and correct copy of the instrument of which it purports to be a copy a which was registered in the Office of the Mining Recorder at Whitehorse, Y.T.

this ..... day of .....

19..... under number .....

Dated at Whitehorse, Y.T. this .....

day of ..... 19.....

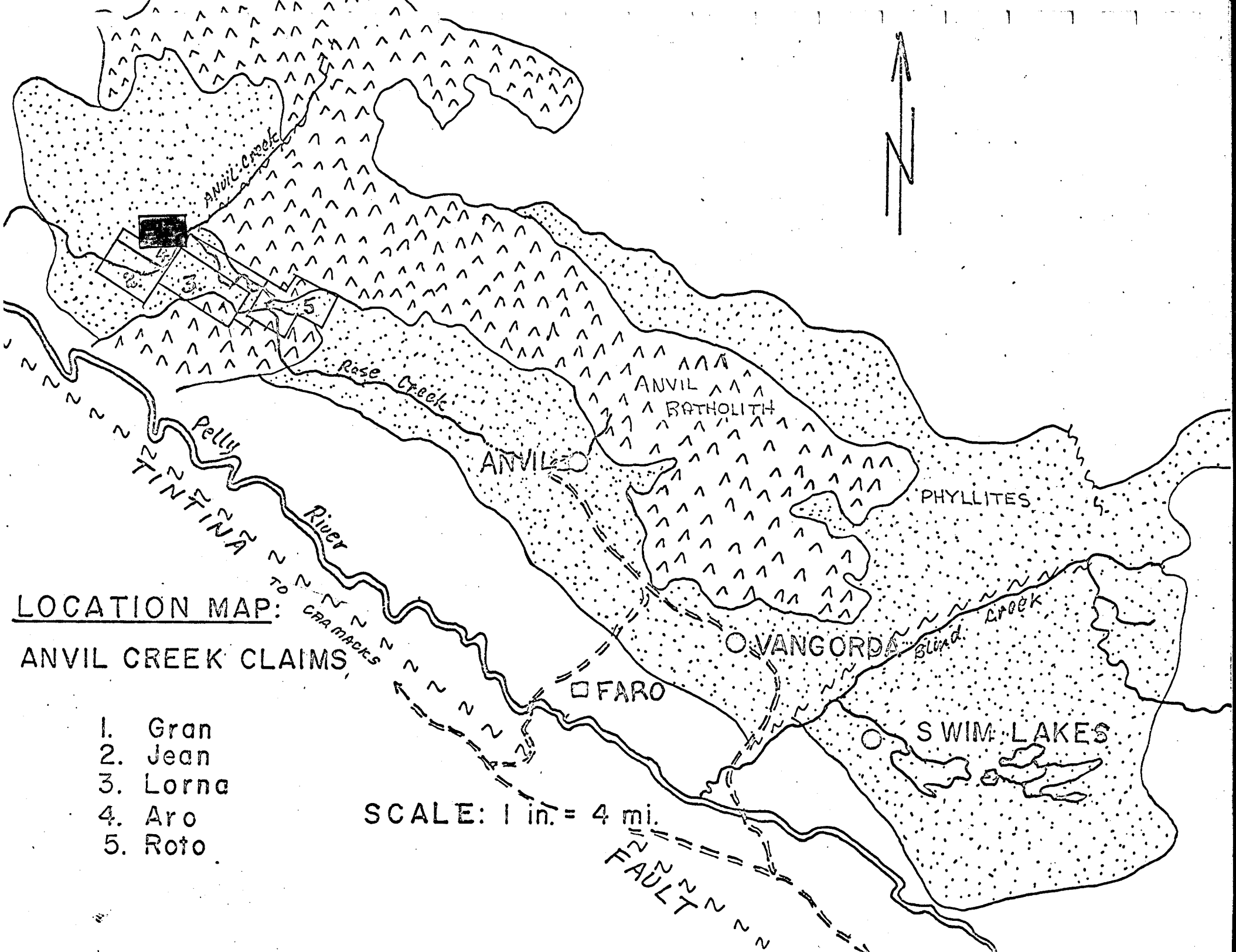
.....  
Mining Recorder,  
Whitehorse Mining District

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LIST OF CLAIMS

<u>Claim</u>	<u>Grant No.</u>	<u>Recording Date</u>
GRAN 1-8	Y58253-Y58260	Sept. 2, 1970
9-16	Y58261-Y58268	Sept. 3, 1970
17-24	Y58135-Y58142	Aug. 31, 1970



LOCATION MAP:

ANVIL CREEK CLAIMS

- 1. Gran
- 2. Jean
- 3. Lorna
- 4. Aro
- 5. Roto

GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL  
INVESTIGATION OF THE GRAN GROUP  
TINTINA PROJECT

INTRODUCTION

Dynasty Explorations Limited undertook a program of outlining and delineating airborne magnetic and electromagnetic anomalies in the northwestern portion of the Anvil phyllite belt which contains three known replacement lead-zinc deposits. Several anomalies similar to ones caused by known deposits occur in an area of favourable stratigraphy and nearby granitic intrusives and were thought to warrant further investigation. A total of 208 claims were staked in five groups covering prominent anomalies.

The Gran Group of 24 claims covers a moderate aeromagnetic anomaly approximately one and one-half miles long by one-quarter mile wide near the granitic contact just west of the junction of Anvil and Rose Creeks. A small aero-electromagnetic response occurs to the east of the magnetic anomaly. Ground follow-up consisted of establishment of a grid accompanied by geochemical soil sampling, magnetometer, gravity and geologic surveys.

LOCATION AND ACCESS

The Gran Group of claims is located west of the junction of Rose and Anvil Creek, approximately 22 miles northwest of Faro and 10 miles northwest of Rose Mountain. Access is by road to the Anvil mine, then by a 15 mile helicopter trip down Rose Creek.

## REGIONAL GEOLOGY

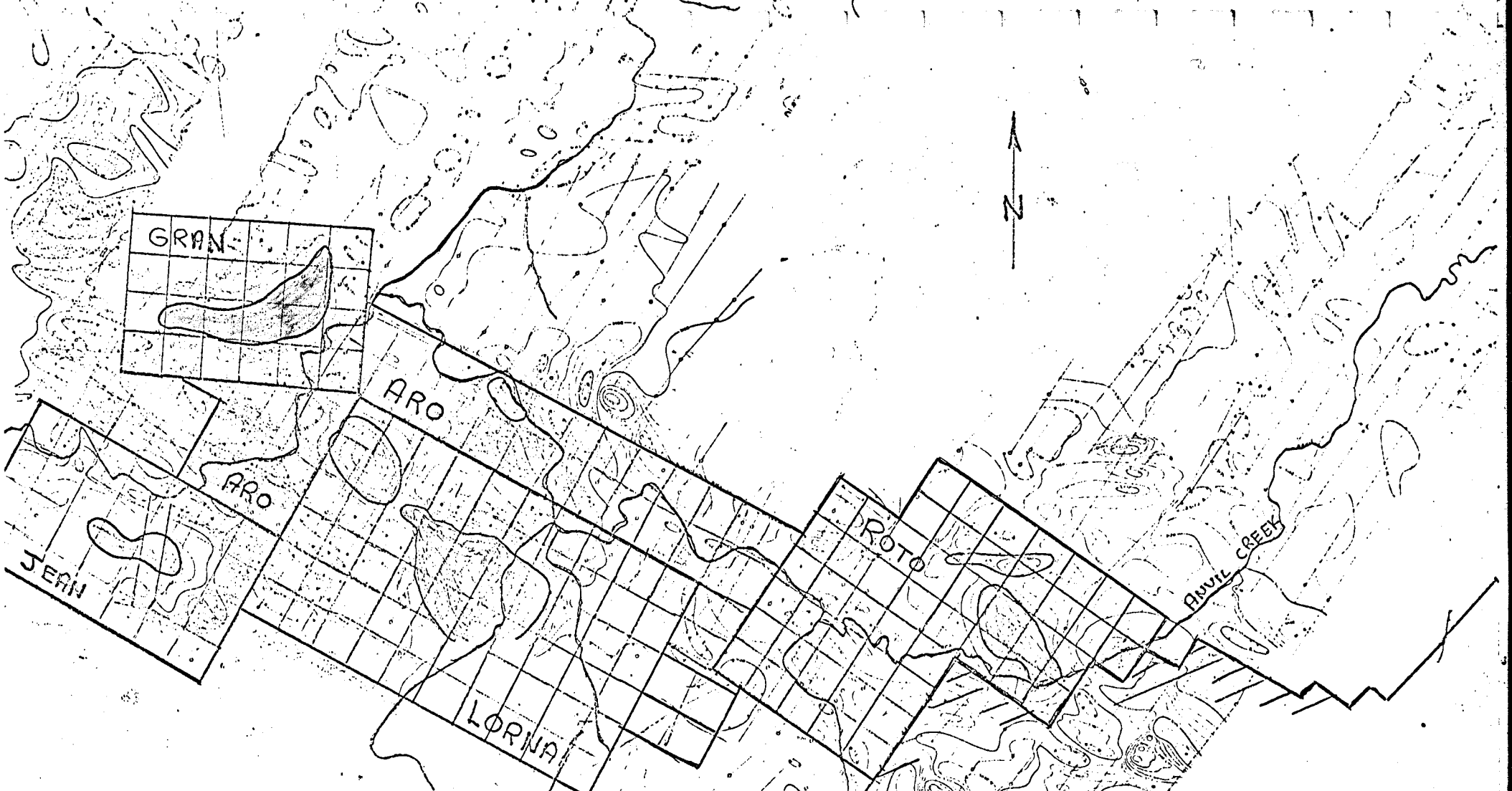
The Anvil District lies along the northeast side of the Tintina Trench, a zone of major northwest transcurrent faultings, and occurs as a belt of metasediments of probable early Paleozoic age arched over a central core of Cretaceous granodiorite, the Anvil batholith. The structure being a double plunging anticline with a northwest trending fold axis slightly arched plunging both to the northwest and southeast. The phyllite belt, noted on the accompanying Location Map, consisting of quartz-mica schists, sericite schists, sericitic to graphitic phyllites, and greenstone lenses is the host for the massive stratiform replacement sulphide deposits in the area. The degree of metamorphism tends to increase from the Swim Lakes area northwest to Anvil which may be noted both in the change in metamorphic facies and variability of sulphide grain size within the deposits.

## GEOPHYSICAL SURVEYS

### (a) Ground Magnetometer Survey

The magnetic survey was conducted over the grid area to outline the large low intensity aeromagnetic anomaly (obtained from a previous airborne survey conducted by Anvil Mining Corporation). The magnetic survey was carried out over 800 ft. spaced cut lines, readings were taken every 100 ft. All lines were established by compass and chain methods and were cut approximately 2 to 3 ft. wide. Grid control was checked by survey of base and tie lines during the gravity survey.

The Sharpe MF-1 magnetometer was used, the instrument is hand held and measures the vertical magnetic component by use of an oil-dampered fluxgate which automatically levels itself in the vertical direction. Gamma values can be directly read from the instrument. Prior to



ANVIL MINING CORP.

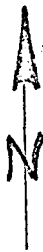
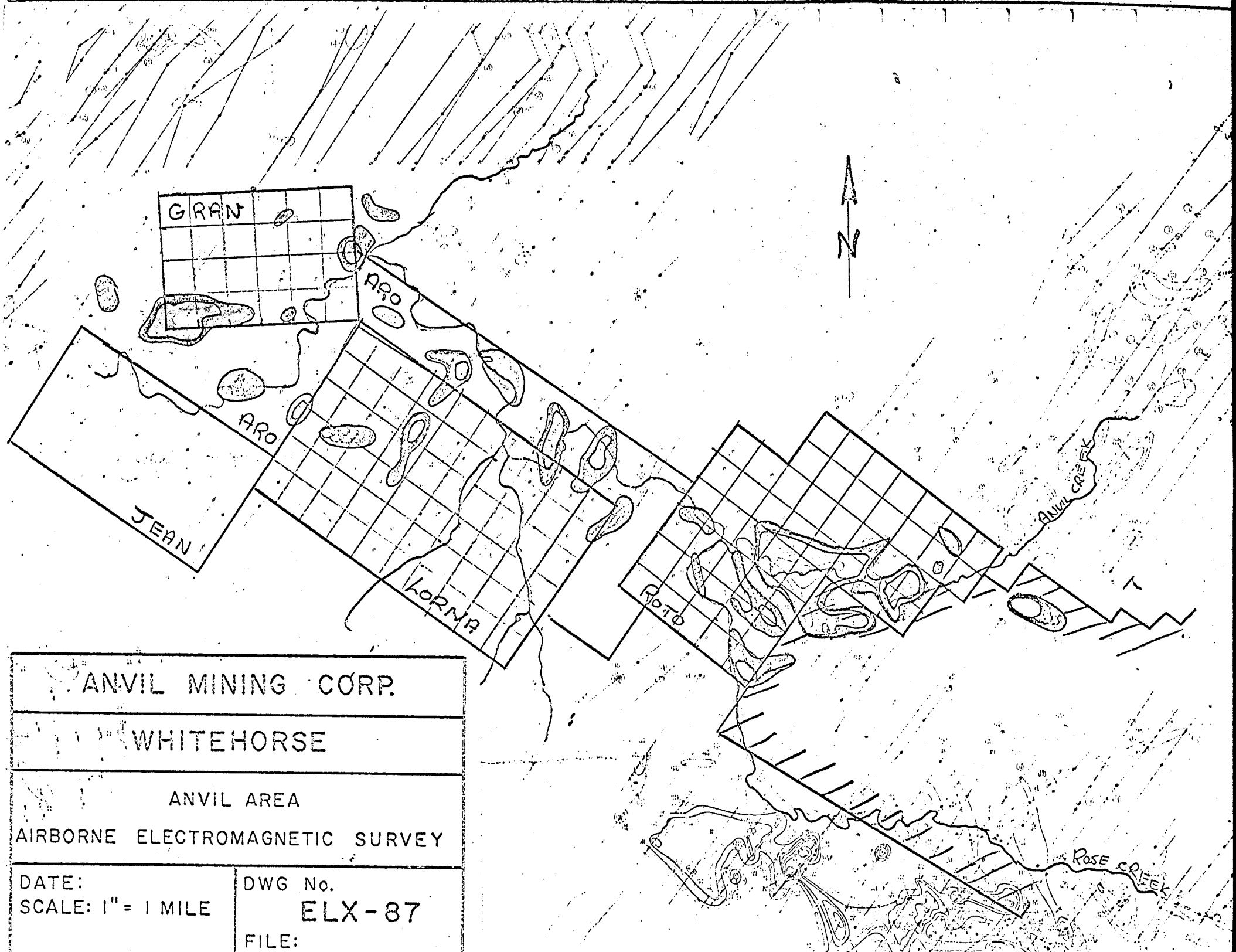
LOCKWOOD

ANVIL AREA  
AIRBORNE MAGNETOMETER SURVEY

DATE:  
SCALE: 1" = 1 MILE

DWG No.  
ELX-86

FILE:



GRAN

ARO

ARO

JEAN

LORNA

ROTO

ANVIL CREEK

ROSE CREEK

ANVIL MINING CORP.

WHITEHORSE

ANVIL AREA

AIRBORNE ELECTROMAGNETIC SURVEY

DATE:  
SCALE: 1" = 1 MILE

DWG No.  
ELX-87

FILE:

the actual magnetometer survey, readings were taken along the base lines at cross line intersection points. These stations were looped and re-read every hour as a means of controlling drift and diurnal variations. With established base stations, a rapid and precise check was kept on a relative basis during day to day operation. All cross lines were read and re-checked at base stations within every hour as a means of checking magnetic variations.

Magnetic results were corrected for both diurnal changes and drift then plotted on a grid plan with a scale of 400 ft. to 1 inch. The data was then contoured with the resulting maps included in this report.

There appears to be little magnetic relief throughout the grid area with a maximum difference of 300 gammas. A northeast trending elongate moderate to weak anomaly, shown on the accompanying "Magnetometer Contour Map, outlines the previous aeromagnetic anomaly but due to great thicknesses of overburden, little geologic interpretation can be made.

(b) Gravity Survey

The gravity survey contracted by Overland Exploration Services, was conducted over the magnetic anomaly using the previously established grid. The horizontal and vertical survey was conducted with a T-1A Theodolite to establish elevations and grid closure. The gravity readings were taken with a Worden Master meter at every 100 ft. station along the individual lines with two and a half hour loop closures from base stations for controlling diurnal drift. Each loop had several repeat stations from preceding loops to ensure accuracy of the gravity meter.

All field results were sent to the Calgary head office for corrections and initial interpretation. All readings were corrected for diurnal tidal drift, Bouguer Free-Air-Correction, latitude correction and terrain correction. All resulting maps were then sent back to the field for further interpretation.

The Bouguer map shows a high area elongate in a northeast-southwest direction coincident with the weak magnetic anomaly. The Residual Gravity Map indicates an isolated gravith "high" with a magnitude of 0.70 milligals between line 0 and line 8 east. The small subrounded feature occurs at the northeastern end of both the Bouguer and magnetic anomalies and is thought to represent a shallower portion of a denser mass trending northeast-southwest. The density contrast does not appear great enough to have been caused by massive sulphides.

#### GEOCHEMICAL SURVEYS

##### (a) Survey Techniques

The entire grid area was soil sampled at 200 ft. stations on 800 ft. spaced picket lines. All samples were taken from the B-horizon which generally consisted of a rusty to grey clay textured soil. All samples were placed in kraft paper bags and subsequently sent to the Atlas Explorations laboratory in Whitehorse for analysis.

##### (b) Analytical Methods

All soil samples were dried and sieved to -80 mesh and the fines were retained for analysis. 0.5 grams of each sample was digested in aqua regia, diluted, and allowed to settle. Concentrations of copper, lead and zinc in solution were determined with a Perkin-Elmer 303AA

spectrophotometer. The analytical technique was controlled by selected standardized samples.

(c) Presentation of Data

All analytical results were plotted on a grid plan to a scale of 1 inch equals 400 ft., which may be found in the accompanying Appendix.

(d) Interpretation of Results

Copper values range between 10 and 80 parts per million with the majority below the threshold of 40 ppm.

Anomalous copper values occur scattered throughout the grid with no major zones present. Values obtained for lead content generally range between 2 and 20 ppm, with a maximum value of 31 ppm. Concentrations of lead in the grid area were not considered as anomalous. Zinc values generally range between 30 and 180 ppm, with a threshold of 100 ppm. Slightly anomalous values in zinc occur in the thick overburden region of Anvil Creek. A high variability exists between the three metals in individual samples.

TABLE OF GEOLOGIC FORMATIONS

CRETACEOUS

10

Medium grained biotite granite to biotite hornblende quartz Monzonite (locally) porphyritic.

8

"Greenstone" includes schistose meta-basalt, chlorite-talc-amphibole schist, amphibolite, meta-ultramafic units, and Gabbro

CAMBRIAN OR EARLIER

3

Mica-quartz phyllite, dark grey to black graphitic phyllite, black slate, phyllitic quartzite and chlorite phyllite.

1

Mica-quartz schist, biotite-garnet schist and sericite schist.

## GEOLOGY

The Gran Group is totally covered by overburden with outcrop to the north which may be noted on the accompanying "Geology Map of the Anvil Creek Area" by W. Karvinen. Although no surface evidence exists, it is thought that the quartz-mica schist unit, the favourable host to massive lead-zinc deposits in the area, continues westward from the Anvil Creek fault underlying the Gran claims. It is also suggested that the contact between the quartz-mica schist unit and the biotite quartz monzonite may be represented by the magnetic anomaly present due to pyrrhotite impregnation at the contact. No mineralization or alteration was noted within the Gran claims.

The oldest rock unit in the area appears to be the quartz-mica schist in which sericite schist predominates. The schist is very thinly foliated, soft, fissile and quartz content generally exceeds 40 percent. Greenish tints appear to depend on chlorite content. Graphitic and carbonate percentages are generally low. Degree of metamorphism may be noted by different facies including minerals such as garnet, staurolite and biotite.

Unit Number 3 consists of phyllites with a grey to black sericitic-quartz phyllite predominating. The graphite content varies with a distinct stratigraphic black graphitic horizon occurring within the unit. The phyllites are very fissile, often show bedding, contain good boudinage structures, and include numerous quartz lenses, pods, and stringers which often are rusty and contain pyrite.

Unit Number 8, "Greenstone" includes schistose meta-basalt amphibolite, chlorite-talc-amphibolite schist, chlorite schist and other basic intrusives and extrusives. Foliation is present in the schistose members while intrusive members are generally massive and blocky.

The Anvil batholith is composed of a medium grained hypid-  
iomorphic quartz monzonite in this area. It is locally  
porphyritic. Designation of rock units is similar to the  
G.S.C. map "Tay River Geology Map" by Roddick and Green.

CONCLUSIONS AND RECOMMENDATIONS

Results from geologic, geochemical and geophysical surveys  
so far have not outlined a possible drilling target. Weak  
magnetic and gravity anomalies indicate a northeast-southwest  
trending mass slightly more dense and magnetic than the  
surrounding rock. The magnitude of the density contrast  
appears to be lower than necessary to be equivalent to  
massive sulphides. Little geochemical response was due to  
the thickness of overburden in the Anvil Creek valley.  
Since the Gran claims appear to cover the geologically  
favourable quartz-sericite schists, it is thought that they  
should be kept in good standing for the 1971 field season  
to enable further geologic interpretation of the Anvil Creek  
area.

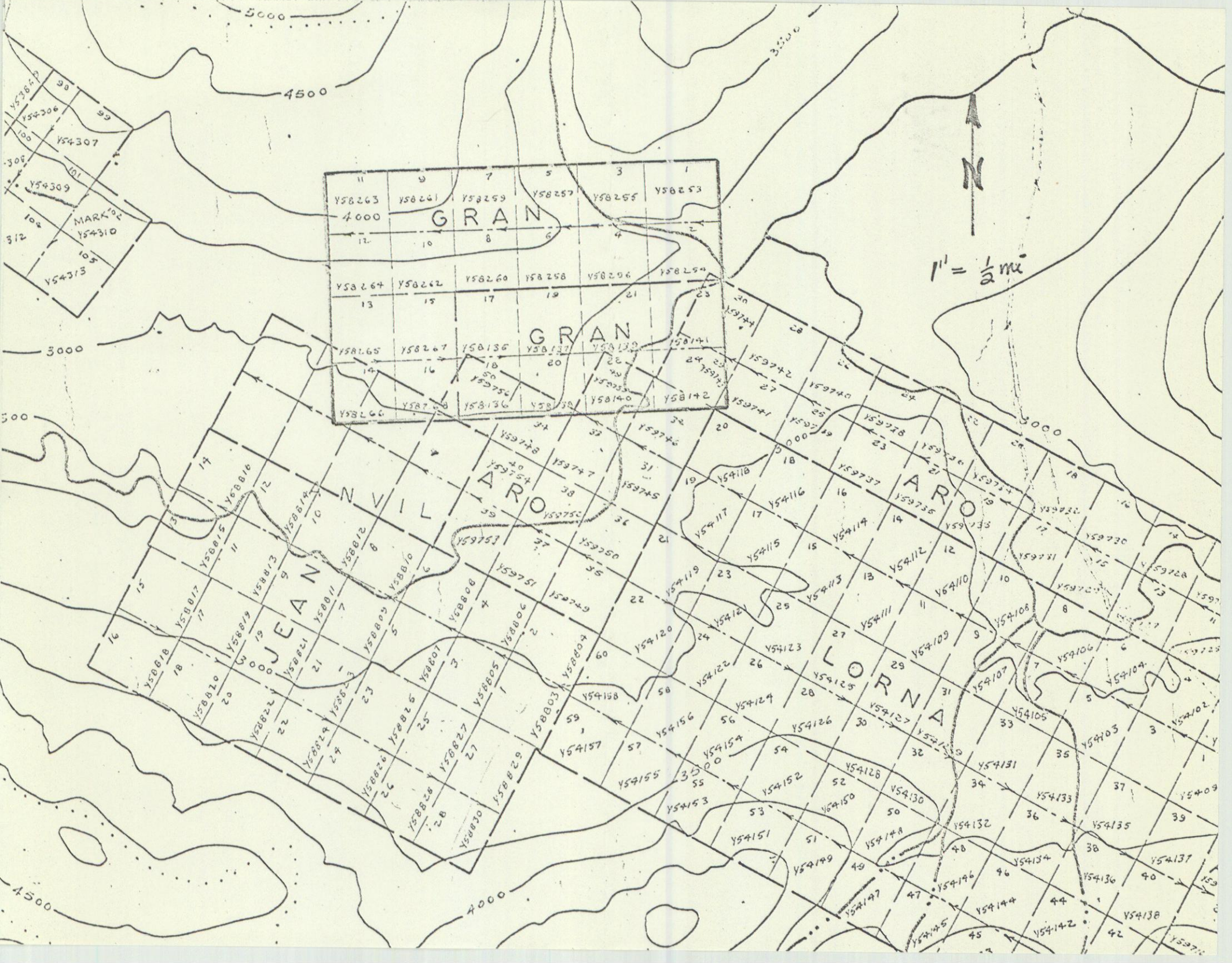
Respectfully submitted,



W. J. Roberts,  
Geologist

February, 1971



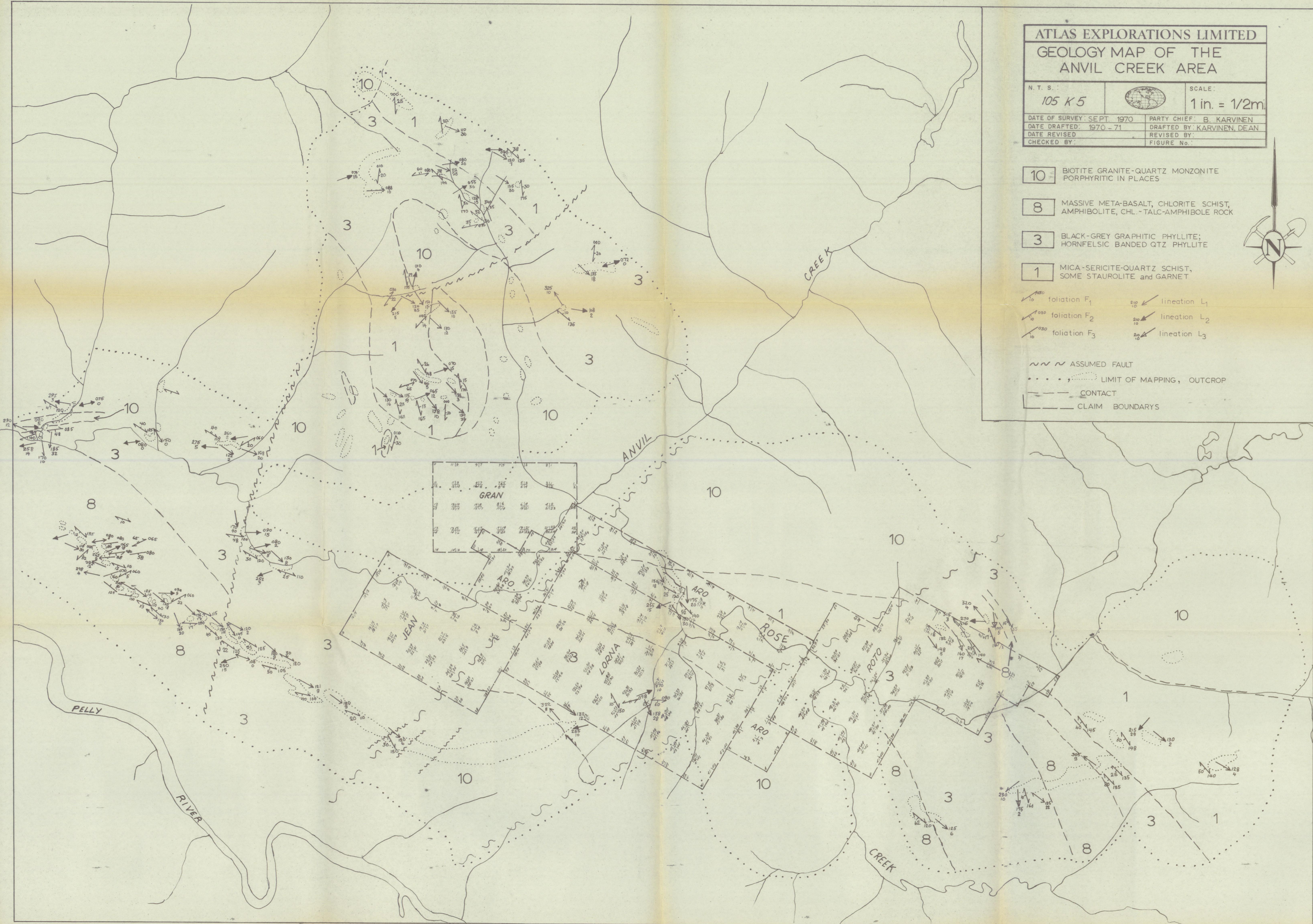
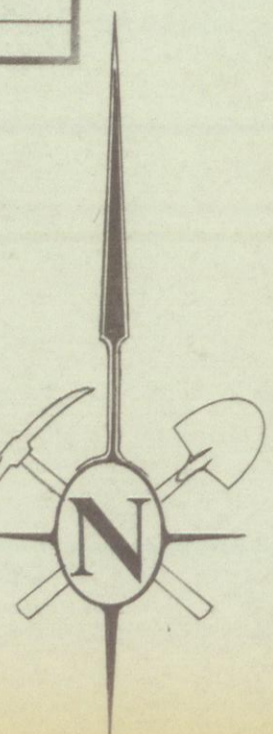


ATLAS EXPLORATIONS LIMITED  
 GEOLOGY MAP OF THE  
 ANVIL CREEK AREA

N. T. S.:	105 K 5	SCALE:	1 in. = 1/2m
DATE OF SURVEY:	SEPT. 1970	PARTY CHIEF:	B. KARVINEN
DATE DRAFTED:	1970-71	DRAFTED BY:	KARVINEN, DEAN
DATE REVISED:		REVISED BY:	
CHECKED BY:		FIGURE No.:	

- 10** BIOTITE GRANITE-QUARTZ MONZONITE  
PORPHYRITIC IN PLACES
- 8** MASSIVE META-BASALT, CHLORITE SCHIST,  
AMPHIBOLITE, CHL. - TALC-AMPHIBOLE ROCK
- 3** BLACK-GREY GRAPHITIC PHYLLITE;  
HORNFELSIC BANDED QTZ PHYLLITE
- 1** MICA-SERICITE-QUARTZ SCHIST,  
SOME STAUROLITE and GARNET

- foliation F<sub>1</sub>
- foliation F<sub>2</sub>
- foliation F<sub>3</sub>
- lineation L<sub>1</sub>
- lineation L<sub>2</sub>
- lineation L<sub>3</sub>
- ASSUMED FAULT
- LIMIT OF MAPPING, OUTCROP
- CONTACT
- CLAIM BOUNDARIES



# ATLAS EXPLORATIONS LIMITED

## GRAN CLAIMS GEOCHEMICAL VALUES

N. T. S. :

105K5



SCALE:

1" : 400'

DATE OF SURVEY: SEPT 170 PARTY CHIEF: DEAN

DATE DRAFTED: DRAFTED BY:

DATE REVISED: REVISED BY:

CHECKED BY: FIGURE No.:

• Cu, Pb, Zn



11 9  
12 10

9 7  
10 8

7 5  
8 6

0 7

L 8 E

L 16 E

L 24 E

L 32 E

L 40 W

L 32 W

L 24 W

L 16 W

L 8 W

- 26, 12, 50
- 35, 6, 46
- 18, 8, 49
- 14, 8, 44
- 36, 12, 80
- 80, 16, 69
- 54, 8, 62
- 18, 5, 46
- 20, 8, 58
- 24, 6, 72
- 24, 11, 68

- 19, 6, 59
- 13, 7, 40
- 23, 4, 35
- 14, 8, 37
- 10, 6, 41
- 12, 9, 41
- 42, 10, 92
- 13, 8, 40
- 28, 6, 62
- 24, 16, 84
- 20, 8, 58
- 24, 6, 72
- 24, 11, 68

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- 21, 6, 59
- 26, 14, 70
- 15, 8, 68
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- 52, 17, 100

- 13, 15, 50
- 10, 8, 37
- 21, 11, 69
- 21, 11, 78
- 29, 12, 104
- 24, 7, 72
- 23, 10, 72
- 23, 15, 59
- 20, 19, 70
- 57, 20, 124
- 45, 13, 114
- 42, 16, 98

- 21, 11, 78
- 29, 12, 104
- 24, 7, 72
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- 23, 15, 59
- 20, 19, 70
- 57, 20, 124
- 45, 13, 114
- 42, 16, 98

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14 16

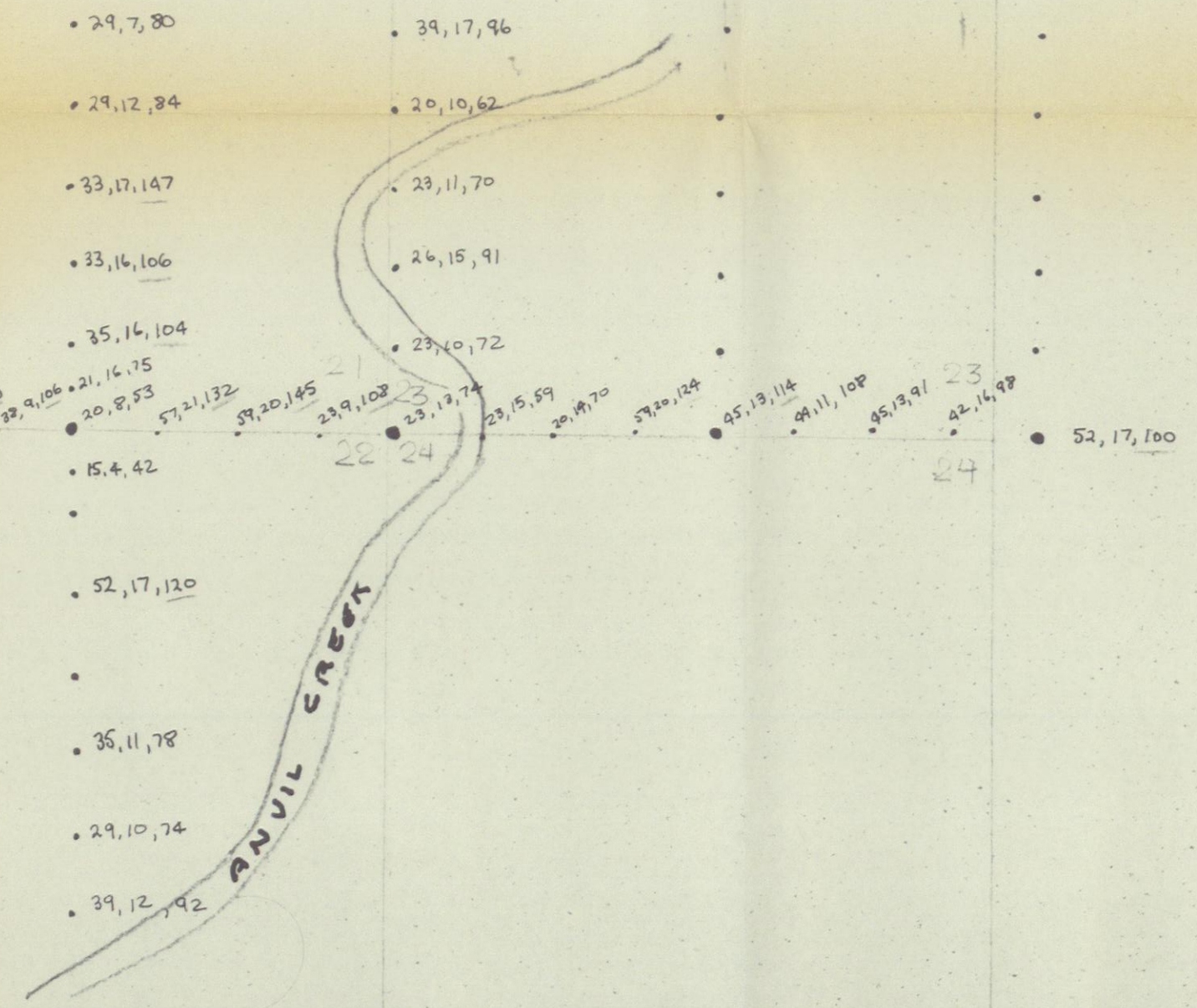
15 17  
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23 25  
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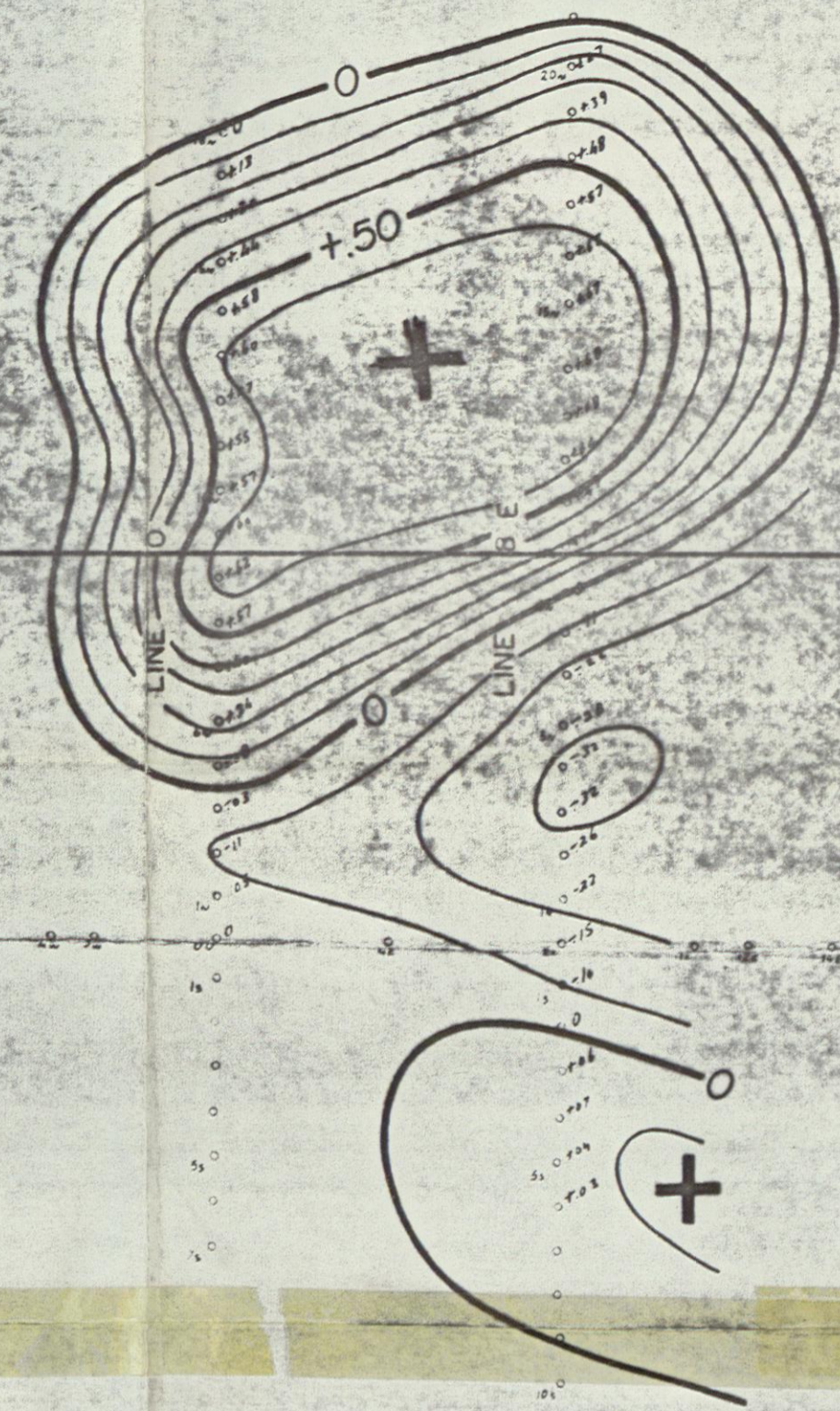


<b>ATLAS EXPLORATIONS LIMITED</b>	
GRAN CLAIMS MAGNETOMETER SURVEY CONTOUR MAP	
N. T. S.:	SCALE:
105 K 5	1" TO 400'
DATE OF SURVEY: Aug / 70	PARTY CHIEF: DEAN
DATE DRAFTED:	DRAFTED BY:
DATE REVISED:	REVISED BY:
CHECKED BY:	FIGURE No.:

LINE 24 W

LINE 16 W

LINE 24 E



BASE LINE



OVERLAND  
EXPLORATION SERVICES LTD.

FOR  
ATLAS EXPLORATIONS LIMITED  
GRAN CLAIM BLOCK

RESIDUAL GRAVITY MAP

SCALE : 1" = 400'

C.L. : 0.10 MGLS

LIST OF PERSONNEL

<u>Name</u>	<u>Position</u>	<u>Residence</u>
John S. Brock	Vice-President Expl. Geophysicist	Vancouver, B.C.
W. J. Roberts	Geologist	Vancouver, B.C.
W. O. Karvinen	Geologist	Vancouver, B.C.
P. Dean	Party Chief	Vancouver, B.C.
J. Britton	Mag. operator	Vancouver, B.C.
L. Carlick	Linecutter	Whitehorse, Y.T.
S. McLeod	Linecutter	Ross River, Y.T.
A. McLeod	Soil Sampler	Ross River, Y.T.
J. Etzel	Soil Sampler	Ross River, Y.T.
G. Gray	Cook	Ross River, Y.T.

Contractors

Overland Exploration Services  
Trans North Turbo Air

Calgary, Alberta  
Whitehorse, Y.T.