

ASSESSMENT REPORTS

MAP No. 105-K-5 TYPE OF WORK: Geological, Geophysical,

REPORT FILED UNDER	Dynasty Explorations Limited	Geochemical
DATE PERFORMED	Summer 1970	DATE FILED: February 1971
LOCATION - LAT.	62° 26' N	Anvil District, Y.T.
LONG.	133° 43' W	
CLAIM Nos.	Roto 1-50	Y58143-Y58192
	51-58	Y58788-Y58790
WORK DONE BY	W.J. Roberts	
WORK DONE FOR	Dynasty Explorations Limited	
REMARKS	No drilling target outlined from surveys. Greenstone unit may be possible. Overburden not applied to underlying bedrock. Ground electro-magnetic survey recommended over grid area and to west. Geochemical survey for copper, lead, and zinc.	

GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL

INVESTIGATION OF THE ROTO GROUP

TINTINA PROJECT

Anvil District
Yukon Territory

Longitude: 133°43' W

Latitude : 62°26' N

N.T.S. 105-K-5

By

WAYNE J. ROBERTS

DYNASTY EXPLORATIONS LIMITED

February, 1971

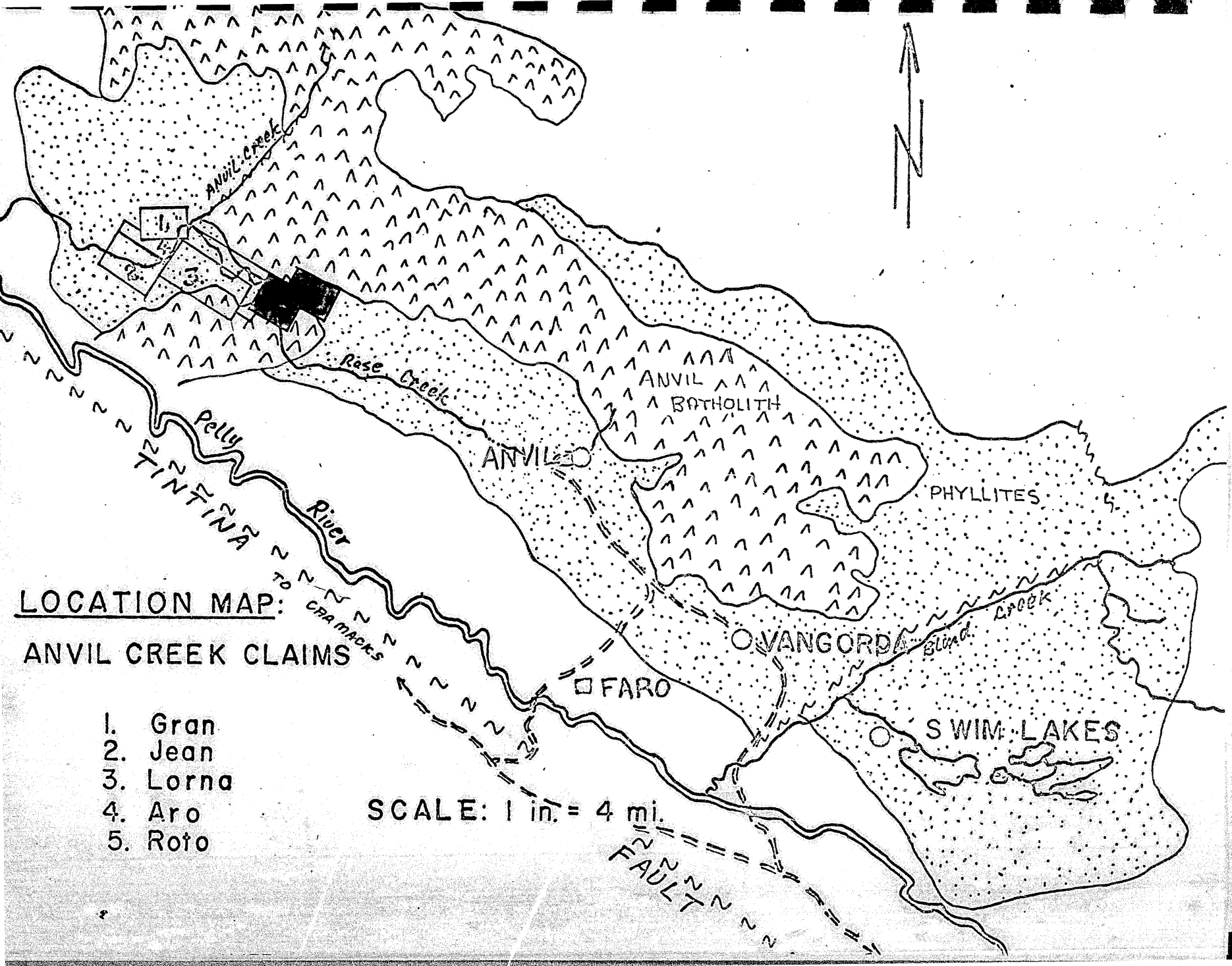
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LIST OF CLAIMS

<u>Claim</u>	<u>Grant Number</u>	<u>Recording Date</u>
ROTO 1-50	Y58143-Y58192	Aug. 31, 1970
51-53	Y58788-Y58790	Sept. 11, 1970



LOCATION MAP:

ANVIL CREEK CLAIMS

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

SCALE: 1 in. = 4 mi.

FAULT



GEOLOGIC, GEOPHYSICAL, GEOCHEMICAL
INVESTIGATION OF THE ROTO 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 Roto 1-53 claims were staked to cover two aeromagnetic anomalies of which the main one is three-quarters of a mile long and one-half mile wide elongated in a northerly direction. An electromagnetic anomaly also occurs to the west of the aeromagnetic features. Ground follow-up consisted of magnetometer, gravity, soil sampling and geologic surveys.

LOCATION AND ACCESS

The Roto Group is located at the junction of Rose and Anvil Creeks, approximately 18 miles northwest of Faro. Access is by road to the Anvil mine, then by helicopter to the campsite on Anvil Creek.

REGIONAL GEOLOGY

The Anvil District lies along the northeast side of the Tintina Trench, a zone of major northwest transcurrent faulting, and occurs as a belt of metasediments of probable Paleozoic age

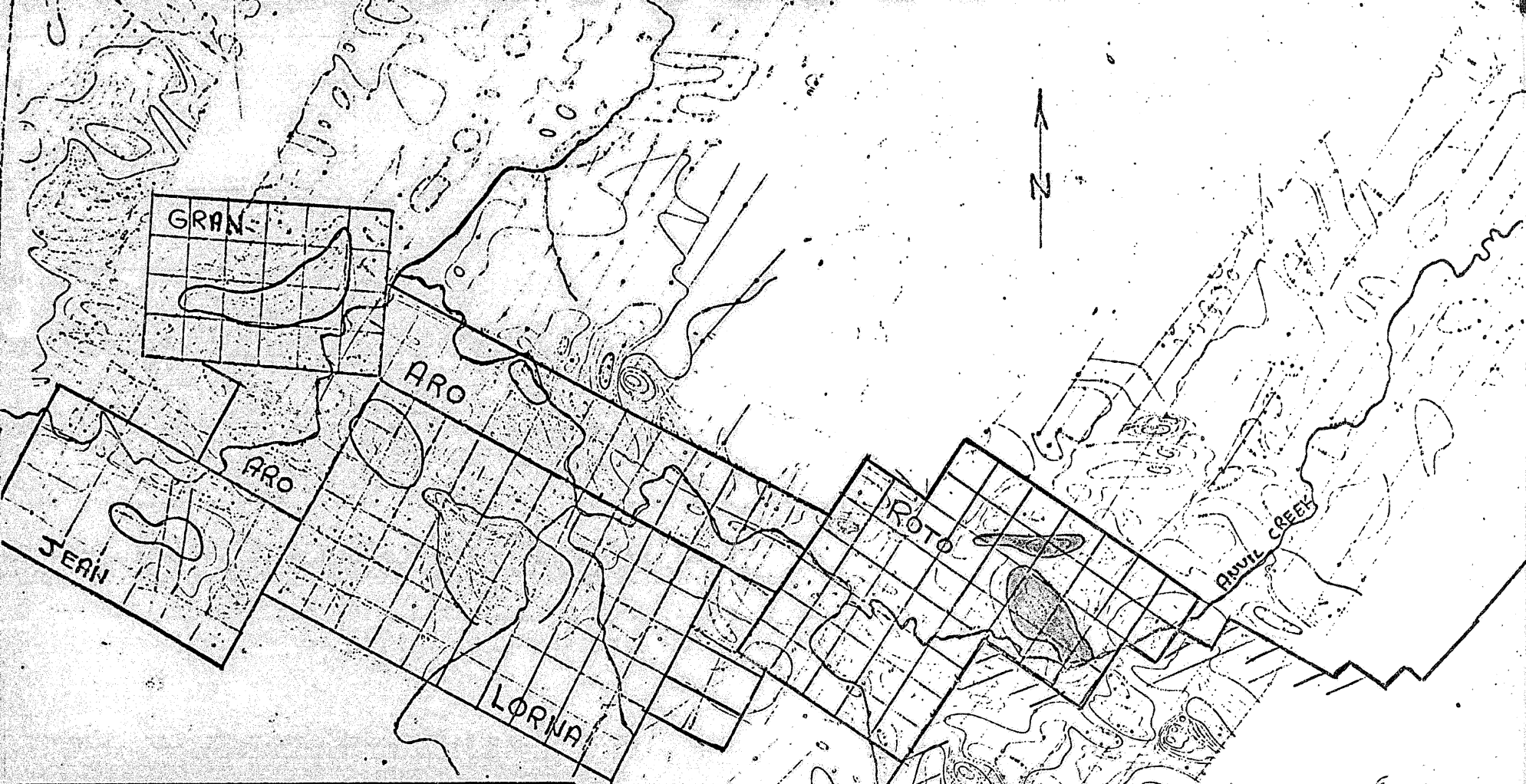
arched over a central core of Cretaceous granodiorite, the Anvil batholith. The structure being a double plunging anticline with a northwest trending fold axis slightly arched plunging both to the northwest and southeast. The phyllite belt, noted on the accompanying Location Map, consisting of quartz-mica 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

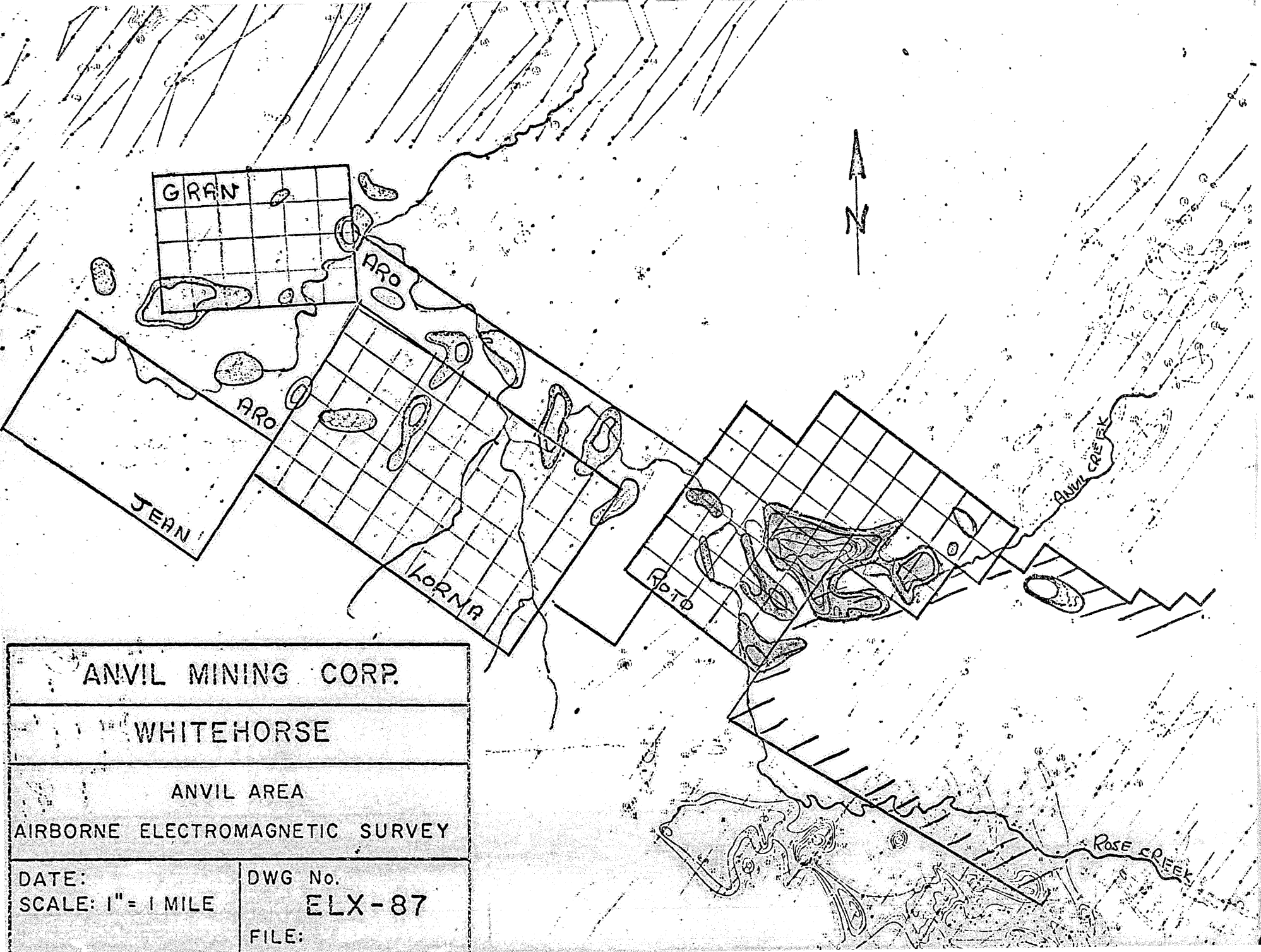
(a) Ground Magnetometer Survey

The magnetic survey was conducted over the grid area to outline the large elongate 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.

A 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 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



ANVIL MINING CORP.	
LOCKWOOD	
ANVIL AREA AIRBORNE MAGNETOMETER SURVEY	
DATE: SCALE: 1" = 1 MILE	DWG No. ELX-86 FILE:



ANVIL MINING CORP.

WHITEHORSE

ANVIL AREA

AIRBORNE ELECTROMAGNETIC SURVEY

DATE:
SCALE: 1" = 1 MILE

DWG No.
ELX-87

FILE:

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 map included in this report.

Magnetic relief throughout the grid area generally was low with a maximum difference of approximately 500 gammas. Much of the western grid area contained little magnetic variation, while weak irregular anomalies occur in the eastern portion in the Anvil Creek valley. The ground magnetometer 1000 gamma contours correspond closely to the aeromagnetic anomalies outlined on the Airborne Magnetometer Survey Map. No outcrop exists in the Anvil Creek valley but geologic interpretation from nearby ridges suggests that the magnetic features are caused by a northwest trending belt of greenstone, Unit Number 8 on the accompanying Geology Map, which generally contains disseminated pyrrhotite or magnetite.

(b) Gravity Survey

The gravity survey, contracted by Overland Exploration Services, was conducted over the magnetic anomalous area on the eastern portion of the 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 has 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 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 low or mass deficient area trending southwest to northeast through the centre of the grid area. Flanking this low area there is a steady rise in the gravity gradient to the southeast and northwest. These major gravity "high" areas occur on the Residual Gravity map found in Appendix V. One appears on Line 32 east, 2000 ft. south with a high of over 0.90 milligals but with very limited extent. The largest gravity anomaly occurring on Line 48 east, 700 ft. north has a peak value of over 0.60 milligals but does not appear to attain a magnitude necessary to equate it to the gravity reflection of a massive lead-zinc sulphide body. A smaller anomaly on the baseline at Line 64 east is only partially formed and if further gravity was done further north on Line 64E, the anomaly could attain a greater magnitude although it is limited by little response on Line 72 east.

Residual Gravity anomalies lie in an area of generally "high" magnetics but only in one locality, Line 48E, 700 ft. north, do both the gravity and magnetic peaks co-exist.

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 then contoured 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 in soils range from 8 to 66 ppm with a threshold of approximately 50 ppm. Lead content of soil was between 2 and 36 ppm with approximately 80% of the values below the estimated threshold of 20 ppm. Zinc values range from 2 to 165 ppm. Visual estimates indicate 100 ppm zinc as a realistic threshold value for the grid soils. As may be noted on the accompanying "Geochemical Values and Contour Map", concentrations

of the three metals in individual samples has formed coincident anomalies. There is a general northerly trend of the anomalous area existing to the east and partially down-slope from the magnetic anomalies. Since there is overburden cover in the valley, soils and metal content may originate from either causative structures producing the geophysical anomalies or from a source up Anvil Creek.

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

Four separate and distinct units were mapped in the Anvil Creek area. Designation of rock units is similar to those on the G.S.C. Map "Tay River Geology Map" by Roddick and Green.

The oldest rock unit in the area appears to be the quartz-mica schists in which sericite schist predominates. The schist is very thinly foliated, soft, fissile, and quartz content generally exceeds 40 percent. Greenish tints vary due to 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 phyllite 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 hypidomorphic quartz monzonite in this area. It is locally porphyritic.

Much of the Roto Group encloses the overburden covered valleys of Rose and Anvil Creeks, with the only outcrop found along the northern boundary as can be noted on the accompanying Geology Map in Appendix II. It is proposed that the claim group covers a down-dropped block of light grey to black graphitic phyllite with concordant lenses of greenstone. The phyllitic unit strikes northwest and dips 10-20 degrees to the southwest. Using a dip of roughly 20 degrees, the greenstone unit projects under the geophysical anomalies at a depth of approximately 300 to 400 ft. Depth calculations on the gravity anomalies estimate the causative mass to be at a depth of 400 ft. below the surface. The favourable quartz-mica schists likely occur at greater depths.

CONCLUSIONS AND RECOMMENDATIONS

Present geological, geophysical and geochemical surveys have not outlined a possible drilling target. Ground magnetic and gravity anomalies appear to indicate a possible greenstone unit. Due to the thickness of overburden in the Anvil Creek valley, the lack of geochemical response cannot be directly applied to the underlying bedrock. Since massive sulphide deposits in this belt are conductive as well as magnetic, it is recommended that further assessment consist of a ground electromagnetic survey over the grid area and to the west where a prominent airborne electromagnetic exists.

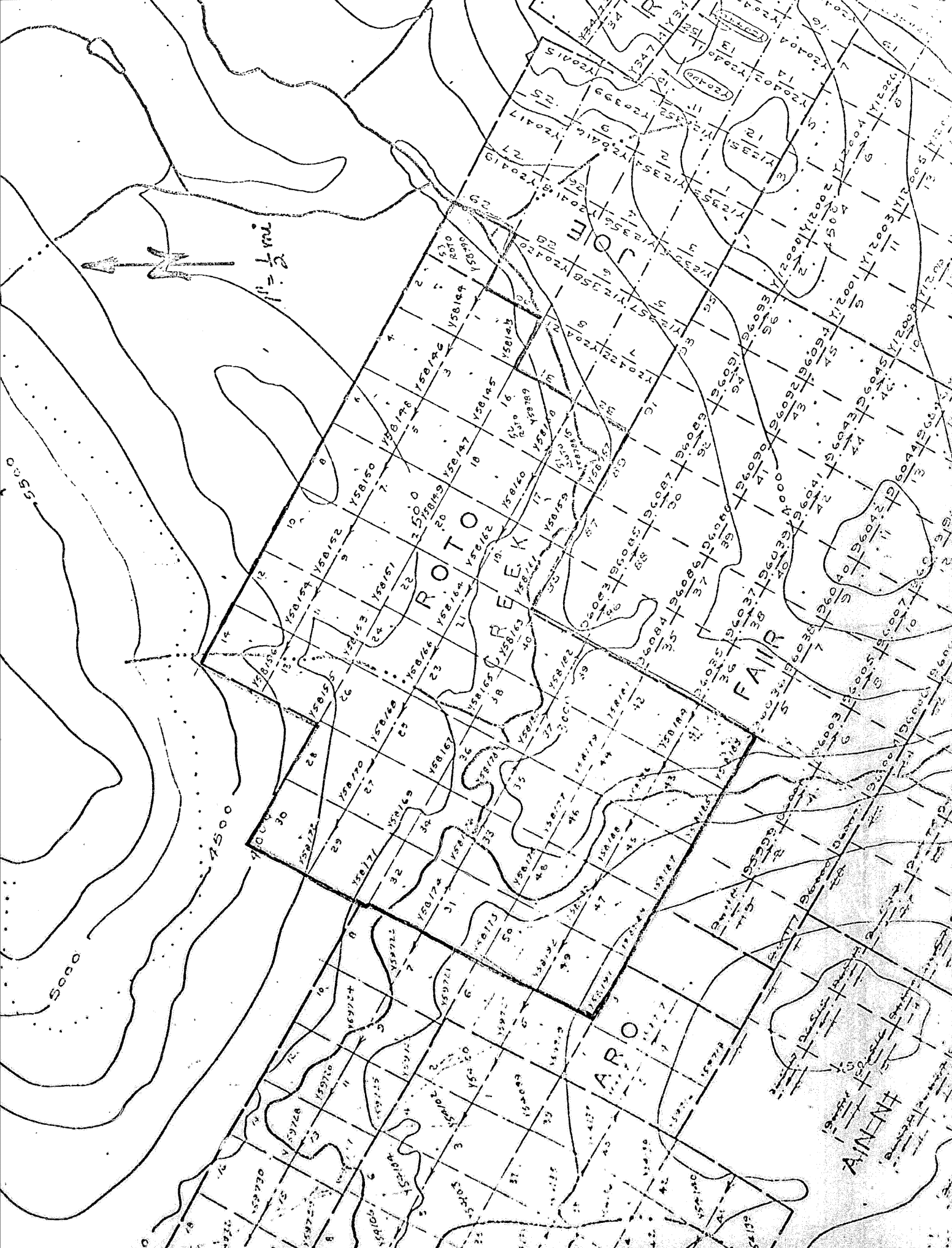
Respectfully submitted,

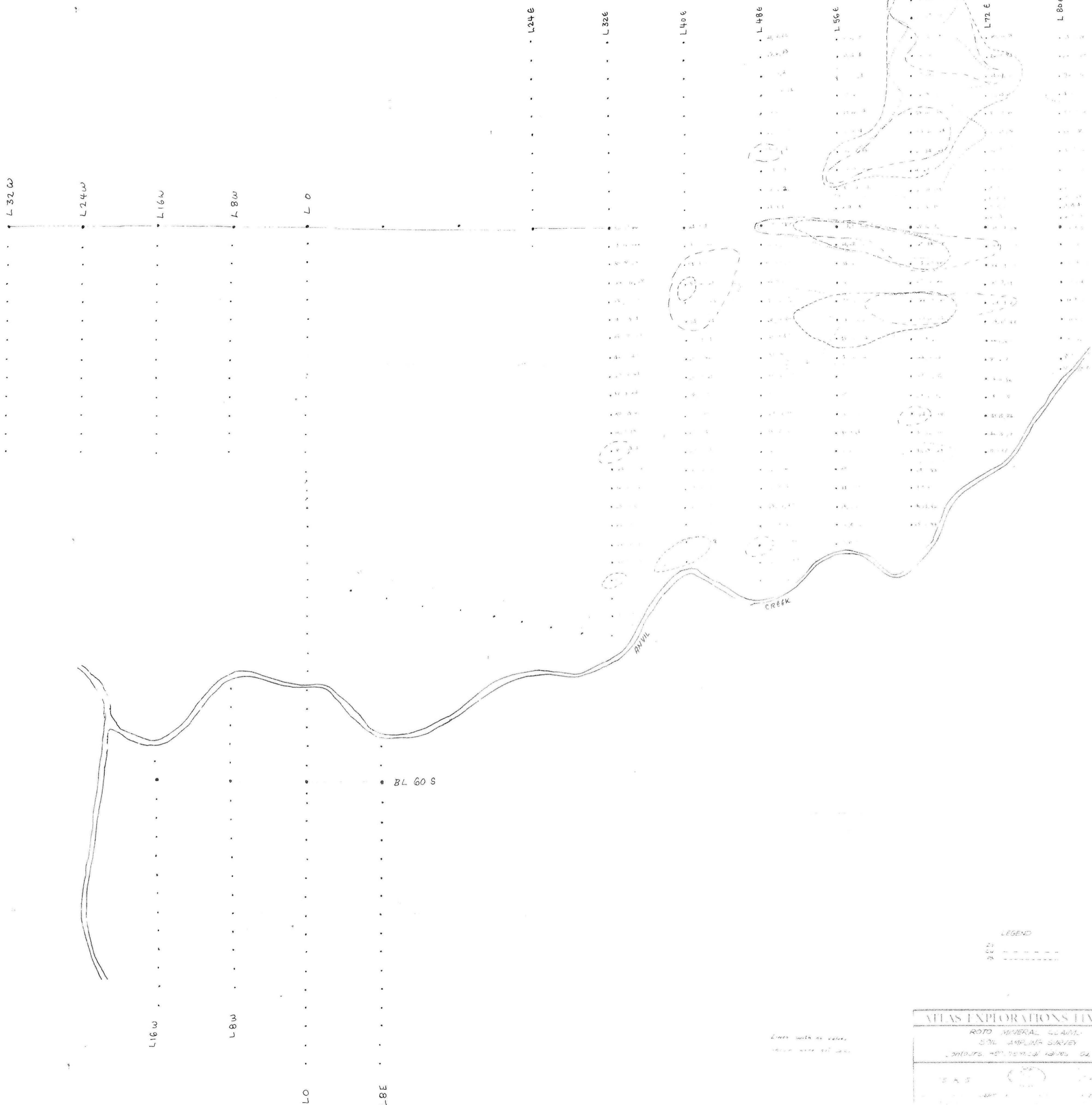


W. J. Roberts,
Geologist

February, 1971,








LEGEND
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Lines with no values
 indicate areas not surveyed




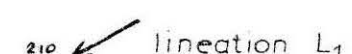
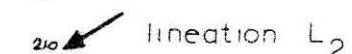

ATLAS EXPLORATIONS LIMITED	
ROD MINERAL CLAIM - SOIL SAMPLING SURVEY	
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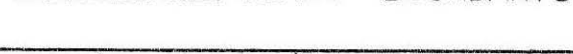
ATLAS EXPLORATIONS LIMITED

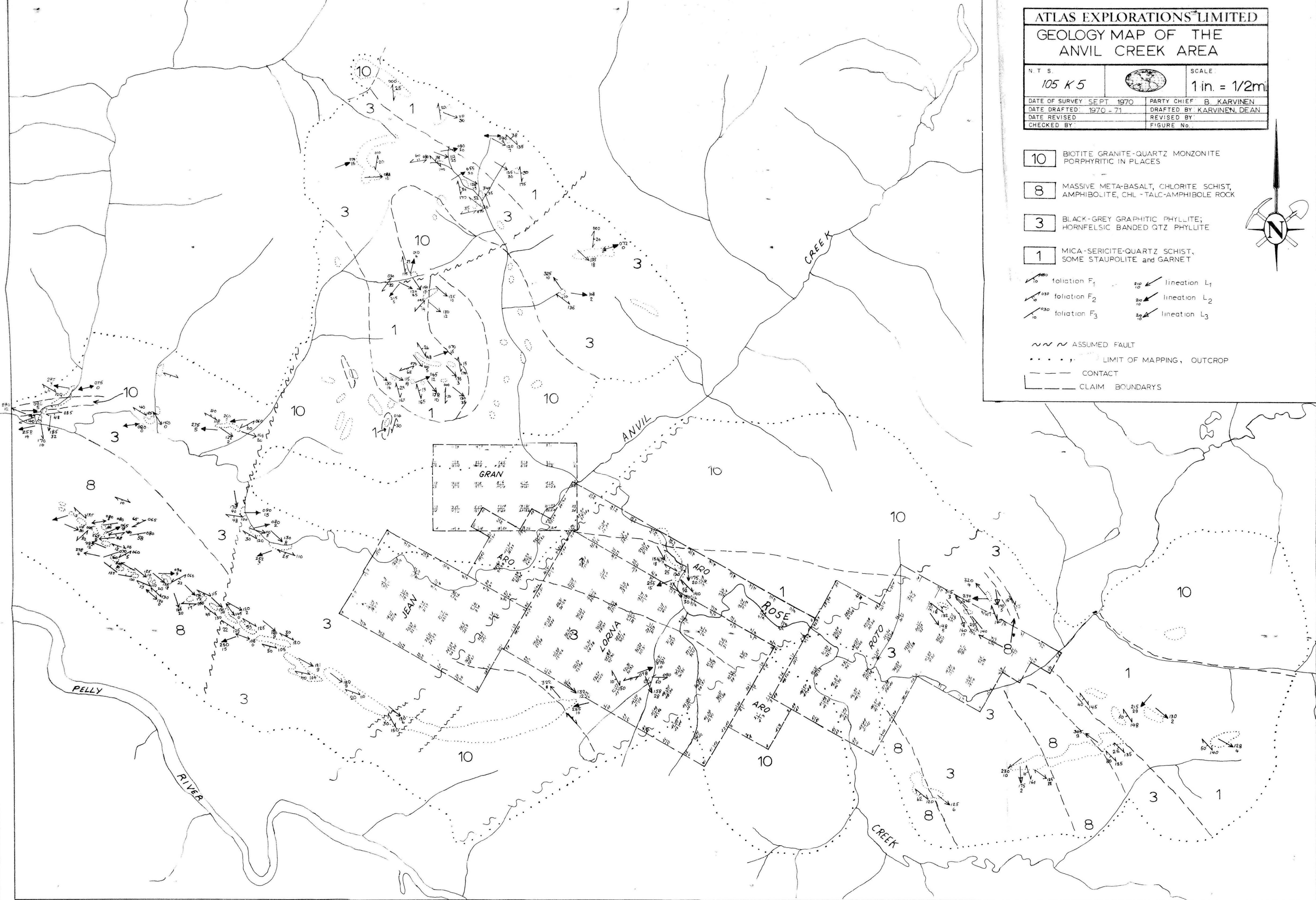
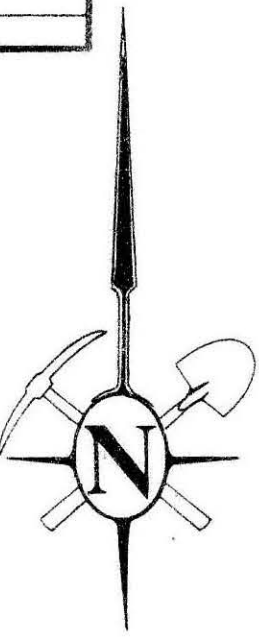
GEOLOGY MAP OF THE ANVIL CREEK AREA

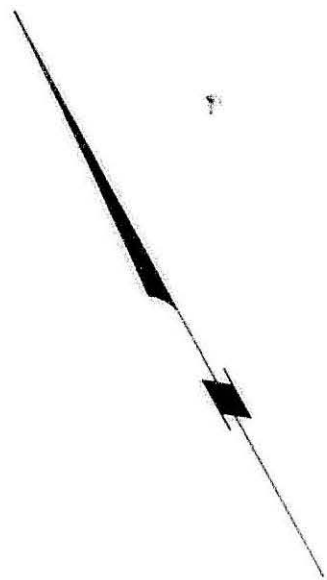
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DATE REVISED		REVISED BY	
CHECKED BY		FIGURE No.	

- 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 STAUPOLITE and GARNET

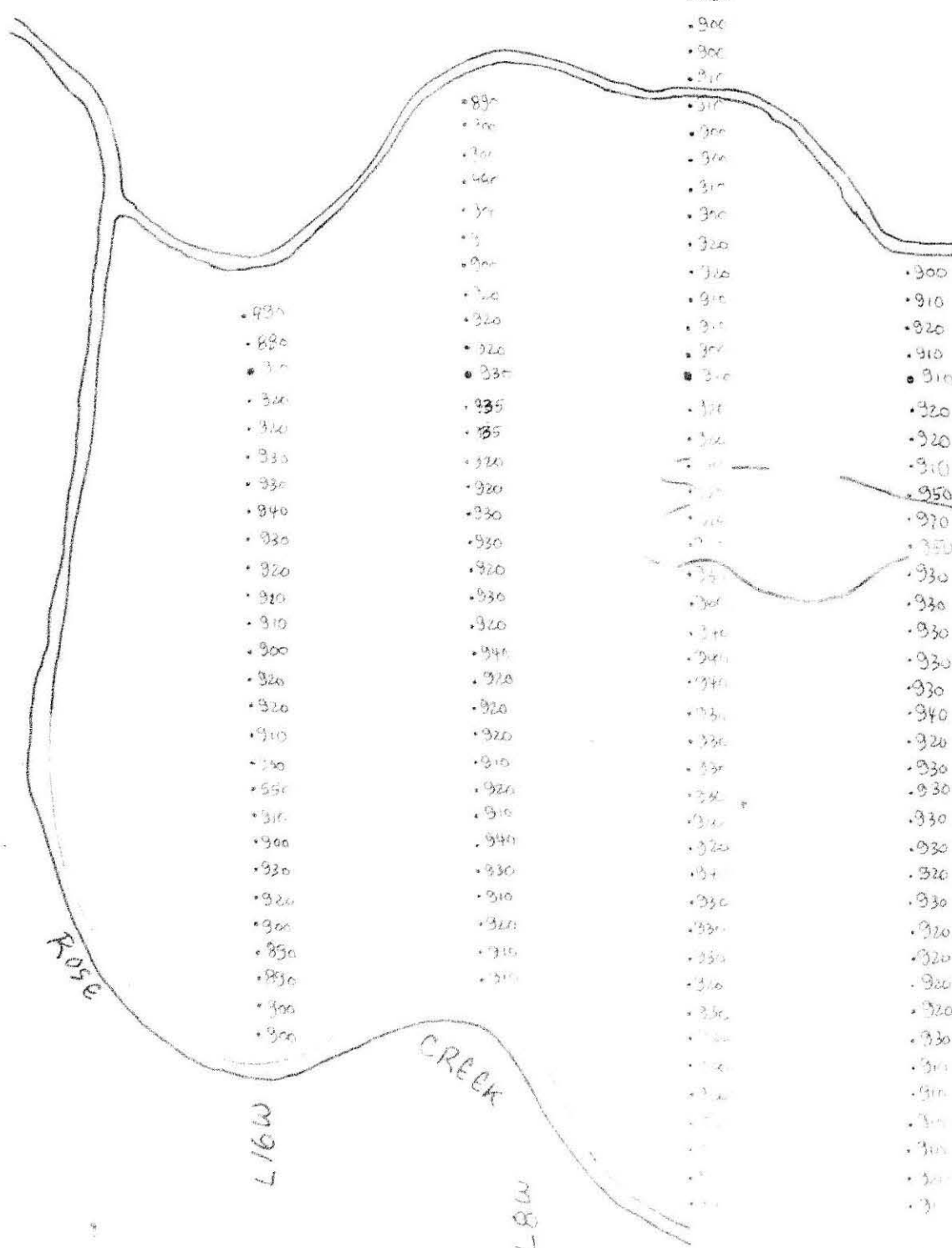
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-  ASSUMED FAULT
-  LIMIT OF MAPPING, OUTCROP
-  CONTACT
-  CLAIM BOUNDARYS

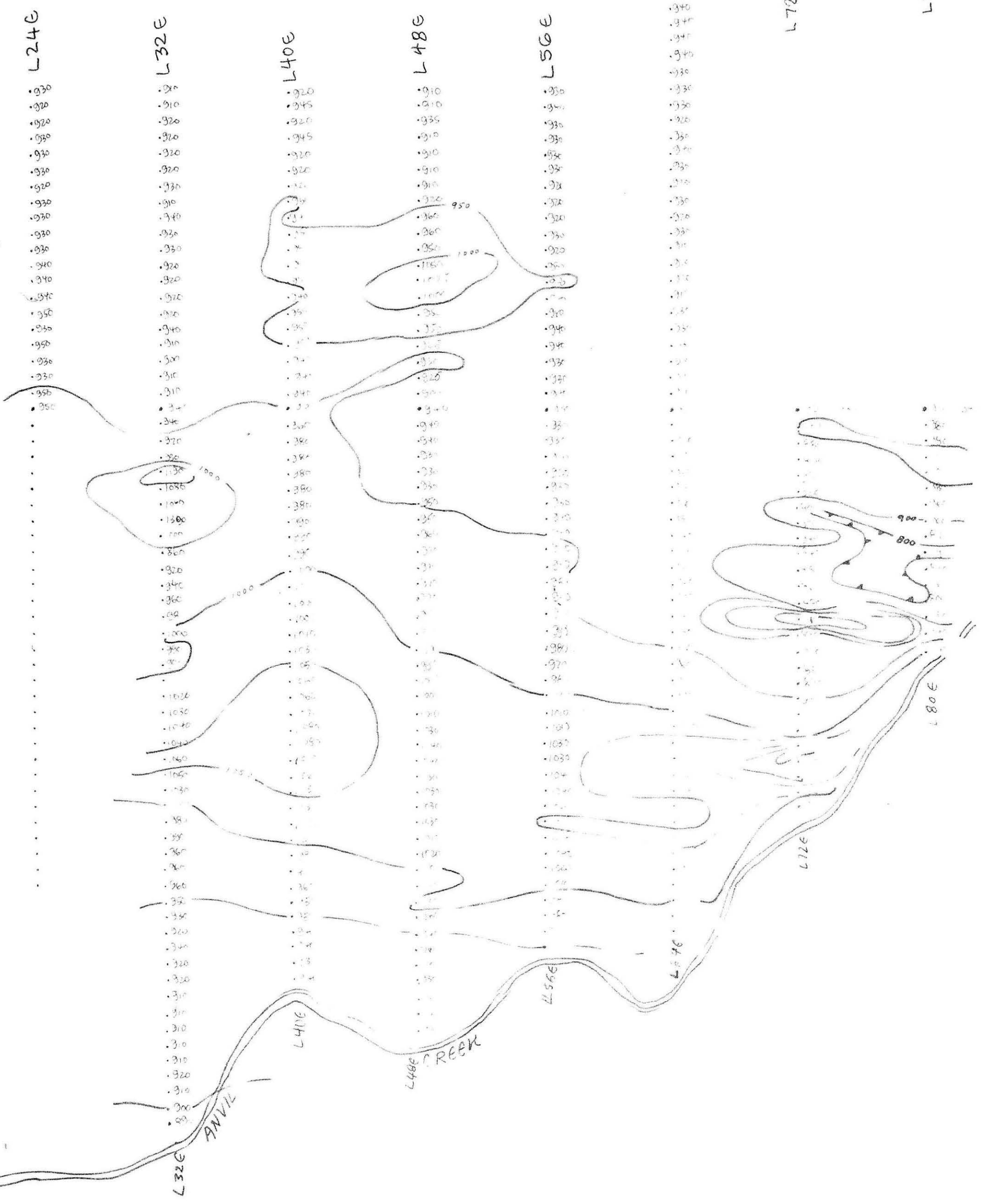




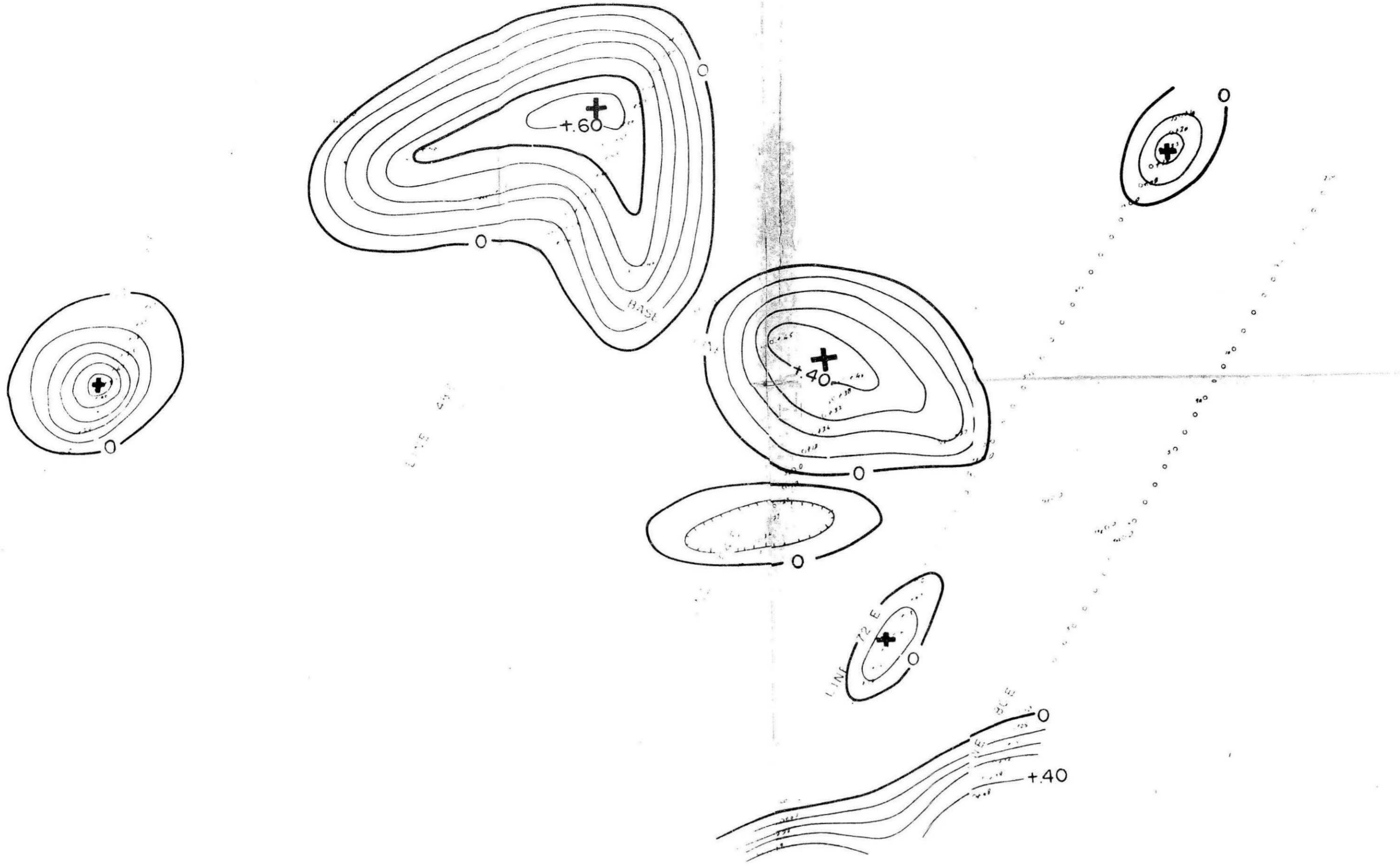
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ALTA EXPLORATIONS LIMITED
ROTO MINERAL CLAIMS
INVEST. DIVISION
QUINJA AND SANJA TALS
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OVERLAND
EXPLORATION SERVICES (1969) LTD.

FOR
ATLAS EXPLORATIONS LIMITED
ROTO CLAIM BLOCK
RESIDUAL GRAVITY MAP
Scale 1:50,000 0.10 mgl

LIST OF PERSONNEL

<u>Name</u>	<u>Position</u>	<u>Address</u>
J. S. Brock	Vice-Pres. Exploration Geophysicist	Vancouver, B.C.
W. J. Roberts	Geologist	Vancouver, B.C.
W. Karvinen	Geologist	Vancouver, B.C.
P. Dean	Party Chief	Vancouver, B.C.
J. Britton	Mag. Operator	Vancouver, B.C.
S. McLeod	Soil Sampler	Ross River, Y.T.
L. Carlick	Soil Sampler	Ross River, Y.T.
J. Jackson	Linecutter	Ross River, Y.T.
G. Schakoon	Linecutter	Ross River, Y.T.
T. Skonseng	Prospector	Ross River, Y.T.
G. Gray	Cook	Ross River, Y.T.

Contractors

Trans North Turbo Air	Whitehorse, Y.T.
Overland Exploration Services	Calgary, Alberta.