

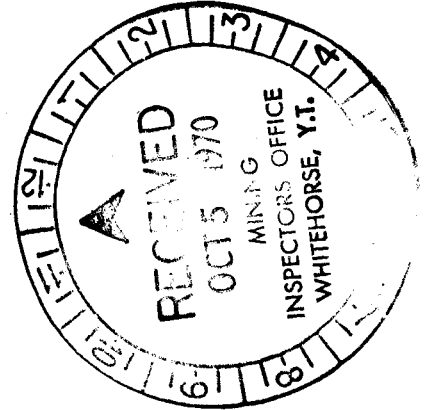
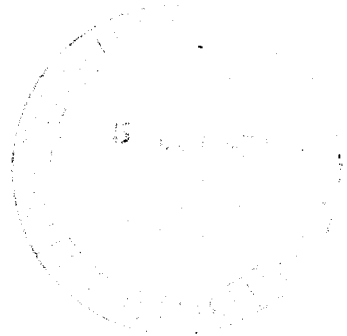
GEOCHEMICAL REPORT

ON THE VINA GROUP

DAWSON RANGE, YUKON TERRITORY

Longitude: 139°45'W  
Latitude : 62°46'N

Claim Sheet - 115-J-13



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 \$115,206.3

*D. P. Craig*  
Resident Geologist  
Resident Mining Engineer

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

By: *[Signature]*  
D. BRABEC Commissioner of Yukon Territory

ATLAS EXPLORATIONS LIMITED

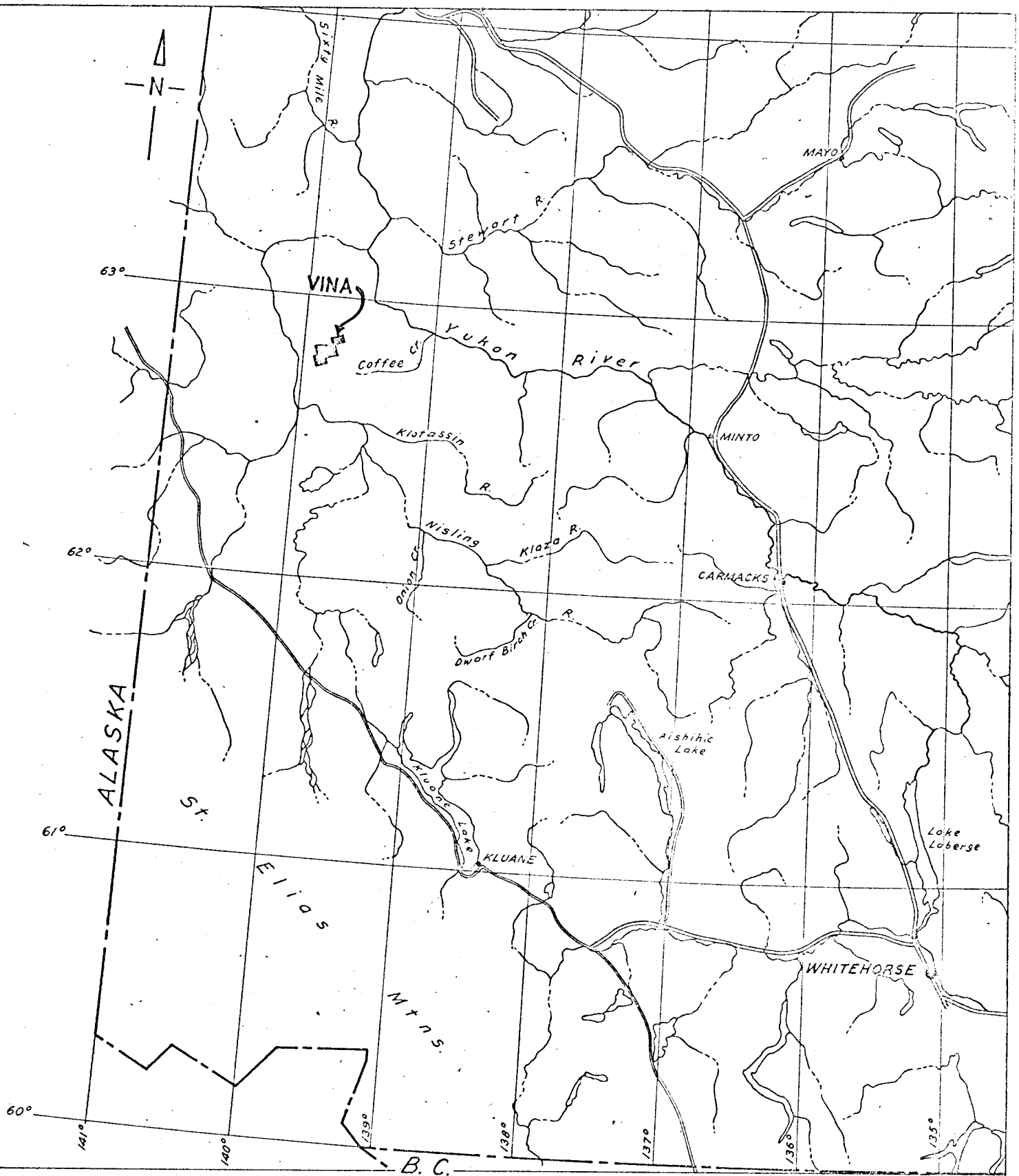
August, 1970

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LIST OF CLAIMS

<u>CLAIMS</u>	<u>GRANT NUMBER</u>	<u>RECORDING DATE</u>
VINA 1-8	Y3861-Y38368	Oct. 2, 1969
9-16	Y38369-Y38376	Oct. 2, 1969
17-24	Y38377-Y38384	Oct. 2, 1969
25-32	Y38385-Y38392	Oct. 2, 1969
33-40	Y38393-Y38400	Oct. 2, 1969
41-48	T38401-Y38408	Oct. 2, 1969
49-56	Y38409-Y38416	Oct. 2, 1969
57-64	Y38417-Y38424	Oct. 2, 1969
65-72	Y38999-Y39006	Oct. 27, 1969
73-80	Y39007-Y39014	Oct. 27, 1969
81-88	Y39015-Y39022	Oct. 27, 1969
89-96	Y39023-Y39030	Oct. 27, 1969
97-104	Y39031-Y39038	Oct. 27, 1969
105-112	Y39039-Y39046	Oct. 27, 1969
113-120	Y39047-Y39054	Oct. 27, 1969
121-128	Y39055-Y39062	Oct. 27, 1969
129-136	Y39063-Y39070	Oct. 27, 1969
137-144	Y39071-Y39078	Oct. 27, 1969
145-148	Y39079-Y39082	Oct. 27, 1969
149-156	Y50392-Y50399	Feb. 20, 1970
157-164	Y50400-Y50407	Feb. 20, 1970
165-172	Y50408-Y50415	Feb. 20, 1970
173-180	Y50416-Y50423	Feb. 20, 1970
181-188	Y50424-Y50431	Feb. 20, 1970
189-196	Y50432-Y50439	Feb. 20, 1970
197-204	Y50440-Y50447	Feb. 20, 1970
205-212	Y50448-Y50455	Feb. 20, 1970
213-220	Y50456-Y50463	Feb. 20, 1970
221-228	Y50464-Y50471	Feb. 20, 1970
229-236	Y50472-Y50479	Feb. 20, 1970
237-241	Y50480-Y50484	Feb. 20, 1970



Scale: 1" = 32 miles

**KEY MAP SHOWING  
VINA CLAIM GROUP  
DAWSON RANGE - YUKON TERRITORY**



KEY MAP  
 VINA CLAIM GROUP  
 SCALE: 1" = 1/2 MILE  
 N.T.S. 115-J-13

# ATLAS EXPLORATIONS LIMITED

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

## GEOCHEMICAL REPORT ON THE VINA GROUP

### INTRODUCTION

The Home Creek area was examined by Atlas geologists Kenneth Dawson and Colin Godwin in the course of a reconnaissance of the Dawson Range in July, 1969. In the area, granite stocks were observed that intrude the granodiorite batholith. The granites showed fine-grained, porphyritic and leucocratic phases,miarolitic cavities, and limonitic stains. Granite and granodiorite were intruded by abundant rhyolite, dacite and other porphyry dykes, and also overlain by small rhyolitic flows.

This favourable geology led to reconnaissance mapping and geochemical sampling of the Home Creek area in the latter part of August, 1969. Encouraging geochemical results led to routine geochemical sampling of the Home Creek area in September and October, 1969. The first block of 148 VINA mineral claims were staked at this time, and 93 VINA mineral claims were staked in February, 1970, bringing the total group to 241 claims.

Three grid areas were located on the basis of reconnaissance mapping and geochemical sampling in 1969. Detailed work on the three VINA grids, including linecutting, geochemical sampling, magnetometer surveys, and geological mapping was done in the period April 15 - July 4, 1970. Geologic mapping and prospecting of the claim area outside the grids and adjacent ground was done by Atlas personnel in the period May - July, 1970.

#### LOCATION AND ACCESS

The VINA claims are in the Dawson Range in western Yukon, 12 miles northeast of the abandoned settlement of Donjek on the White River. Location of the claim group is given on Location Map. The claims are situated mainly in the headwaters of Home Creek, but also occupy headwaters of Moose Creek, Carlisle Creek and Independence Creek. The claims fall entirely within claim sheet 115-J-13. The claim group is depicted on Key Map.

Access to the claims was attained by helicopter during 1969 and 1970. Men and supplies were flown by fixed-wing aircraft to the Yukon River, Uranus, Polaris and Casino airstrips, and then to the property by helicopter. An access road connecting Uranus and Polaris strips to Casino was used for servicing the airstrips.

REGIONAL GEOLOGY

The VINA claims are located in the western Dawson Range, a northwest-trending belt of mountains 6000 ft. or more high, standing above the undulating surface of the Yukon Plateau. Rocks underlying the claims include Yukon Group metasedimentary rocks in the north, Klotassin granodiorite in the south, Home Granite sills and stocks, and related Tertiary flows and dykes.

Yukon Group gneiss of probable Precambrian age forms the roof pendants and walls of the granitic to granodioritic Klotassin batholith that constitutes the core of the Dawson Range.

Large areas of these Cretaceous and older intrusive rocks are covered by intermediate to basic flows of the Early Tertiary Carmacks Volcanics. Tertiary intrusive bodies, including Home granite, occur as small stocks, sills and dykes flanking and intruding the Klotassin batholith. Younger related rhyolitic flows cap the older units in small disconnected patches.

Copper, molybdenum, lead and zinc mineralization is associated mainly with the Tertiary intrusions, and to a lesser degree with Cretaceous intrusives.

Regional geologic data is drawn, in part, from Geological Survey of Canada Preliminary Map 44-34 and Map 340A. A geological map of VINA claims is given in Figure 2.

GEOCHEMICAL SURVEY

(a) Sampling Techniques

Samples collected during the geochemical survey comprised the following:

- (1) 1167 soil samples collected from the B-horizon every 200 ft. along west-oriented lines spaced at 400 ft. Soil survey was carried out in 2 selected areas designated as Grid 1 and Grid 2.
- (2) 54 silt samples collected wherever the soil sampling lines intersected the creeks.
- (3) 323 rock chip samples taken along most of the grid lines wherever rock exposures, talus or frost heave were available.
- (4) Several water samples collected from streams that were found anomalous in Mo during a reconnaissance geochemical survey of the area in 1969. Water samples were acidified to prevent the precipitation of iron hydroxide which might scavenge some heavy metals from solution.

(b) Analytical Methods

After drying, all silt and soil samples were sieved to -80 mesh and the fines retained for analysis. Rock samples were crushed in a jaw crusher and then pulverized in a grinder with steel plates. The resulting powder was reduced by quartering to a 20-30 g. working sample.

0.5 g. of each sample was digested with aqua regia, diluted and allowed to settle. The concentrations of Cu, Pb and Zn in the solutions were determined with a Perkin-Elmer 303 AA spectrophotometer. Mo content was determined colorimetrically by the thiocyanate-stannous chloride method using the isopropyl ether to extract the colored Mo complex. The same reagents were used for Mo determination in water, performing the extraction on 200 ml samples. Interferences were often present in this test, particularly in soil analysis, caused by the presence of organic matter extracted by the solvent along with the molybdenum complex.

Analytical precision in most batches was controlled by including a soil sample selected as standard with every 20 or 40 samples to be analyzed. Average precision derived from these replicates is given in Table 1.

TABLE 1

Average Analytical Precision for Selected Elements

		<u>No. of Replicates</u>	<u>Concentration Level (ppm)</u>	<u>Precision (%)</u>
Standard #1	Cu	21	15	+ 30
	Pb	21	10	+ 70
	Zn	21	70	+ 25
Standard CW	Cu	12	100	+ 20
	Pb	12	30	+ 30
	Zn	10	200	+ 10
	Mo	9	35	+ 30

Data in Table 1 show that Pb precision at lower concentration level is poor. This is probably due to strong noise present in AA determination of this metal. At 30 ppm level, however, precision is greatly improved.

Mo precision at lower levels is unknown due to the lack of suitable standard. However, due to the interferences in colorimetric determination, it would appear that considerable errors can be expected at concentrations below 8 ppm. It was also found that intensity of shaking in Mo extraction had a marked effect on results causing some batches of samples to give relatively higher Mo readings. Lower detection limit for all elements sought was 2 ppm.

(c) Previous Geochemical Work

Geochemical prospecting carried out over the claim group and adjoining areas in 1969 included a rather dense stream sediment coverage and soil sampling along ridge crests. Several water samples were also collected. Analytical results are plotted on a ½ mile to the inch map accompanying

the Geological and Geochemical Report for 1969. Areas of Cu and Mo anomalies have been investigated in detail this year by soil grids 1 and 2 (Figure 7 and Figure 8).

(d) Presentation of Data

Cumulative frequency plots used for estimating the anomaly thresholds for different elements in soil and rock are shown in Figures 3-6. All analytical results are plotted on a scale of 400 ft. to the inch (Figure 7 and 9) and distribution of values shown by contouring or symbols (Figures 8 and 10).

INTERPRETATION OF RESULTS

(a) Copper

Copper values for soils range from less than 2 to 172 ppm, and probably belong to two normally distributed populations separated by a break in slope of the cumulative frequency curve (Fig. 1). The breaking point corresponds to about 50 ppm which was taken as threshold for Cu.

The cumulative frequency plot for Cu in rocks indicates the presence of two partly overlapping lognormally distributed populations. Limit between them lies between 40 and 50 ppm Cu. Thus, it would appear that the same threshold value can be taken for both rocks and soils. The number of silts collected being insufficient for statistical

treatment, 50 ppm was taken as anomaly threshold in this material too.

Soils from Grid 1 (Fig. 7) have very few isolated sample sites with copper slightly over threshold. One rock chip sample was found to contain 320 ppm Cu. Distribution of values often show a marked contrast of Cu content in rock and soil collected at the same site. Soils are usually enriched relative to rock, in places by as much as a factor of 4.

Soils from Grid 2 are Cu anomalous in several zones. One situated in the northern part of the area extends for more than 1000 ft. along two soil lines. Concentration level, however, is only slightly anomalous. The highest Cu value recorded (172 ppm) was found within another, smaller anomalous zone in the southwest corner of the area (See Figures 9 and 10).

(b) Lead

Lead content of soil was between less than 2 and 290 ppm with 85% of values below 20 ppm. The cumulative frequency plot, which shows tendency toward lognormal distribution, indicates the presence of two populations separated by a break in slope at 30 ppm (Fig. 2). This value was adopted

as anomaly threshold for all materials analyzed.

Lead highs on the northern part of Grid 1 may be related to the rusty slightly mineralized volcanics outcropping in the middle of the grid. A few Pb anomalous values in the southwest part of Grid 2 may be explained in the similar way (compare the Fig. 8 and Fig. 10 with geologic map, Fig. 2).

(c) Zinc

Values for Zn range from 2-580 ppm with 90% of them being below 100 ppm. The cumulative frequency curve on log probability paper shows a prominent change of slope at 100 ppm. This feature, however, is not expressed when the rock values are plotted. 100 ppm Zn was taken as a general threshold value. Anomalous values seldom exceed two times threshold and on Grid 1 - North appear to correlate with Mo rather than Pb. Zn anomalies in this area occur mostly on southern slopes and may be displaced from source in the direction of ground water flow.

Zn anomalies occurring near a hill top on Grid 2 coincide with Cu highs (Fig. 10).

(d) Molybdenum

Mo values range from less than 2 ppm to 30 ppm. In view of the analytical limitations at low concentration levels,

it is considered that only values higher than 8 ppm can be considered as anomalous.

Water analysis included only two samples taken to check on some water anomalies found in 1969. It is not certain, however, if exactly the same drainages were resampled. Nevertheless, contents of 15 ppm found in both samples are anomalous if the background of 2-4 ppb Mo in water recommended by other investigators is adopted.

Mo highs in both soil and stream sediments are clustered in the southern part of Grid 1 outlining a 2000 ft. long anomalous zone of roughly northerly direction. It should be noted that some molybdenite mineralized float was found in this area during geological mapping.

(e) Comparison with Previous Results

Present results generally confirm previously found anomalies (See the geochemical map accompanying Geologic and Geochemical Report for 1969).

CONCLUSIONS AND RECOMMENDATIONS

Anomalies found appear to be related to the areas of Tertiary volcanics and are, with exception of Mo, rather low in contrast. Mo anomalies lack homogeneity and are more likely to be caused by molybdenite in veins than by disseminated mineralization of economic extent. However, in view of the

presence of favorable structures and magnetic anomalies (Cu highs on Grid 2 appear to occur over magnetic lows), it is advisable to continue geochemical work along following lines:

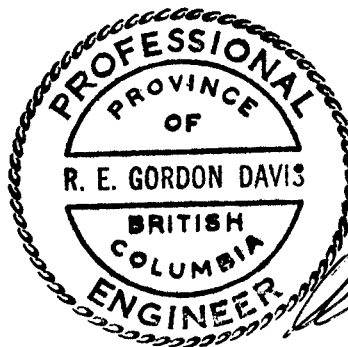
1. Additional soil sampling at close intervals around Mo-anomalous sites on Grid 1 (northern part) to check continuity of anomalies, and pitting to bedrock at several anomaly peaks.
2. Soil sampling in Cu anomalous zones of Grid 2 along additional lines to obtain a 500 x 200 grid. Several soil profiles should be sampled to investigate the depth variations in copper.

Respectfully submitted,

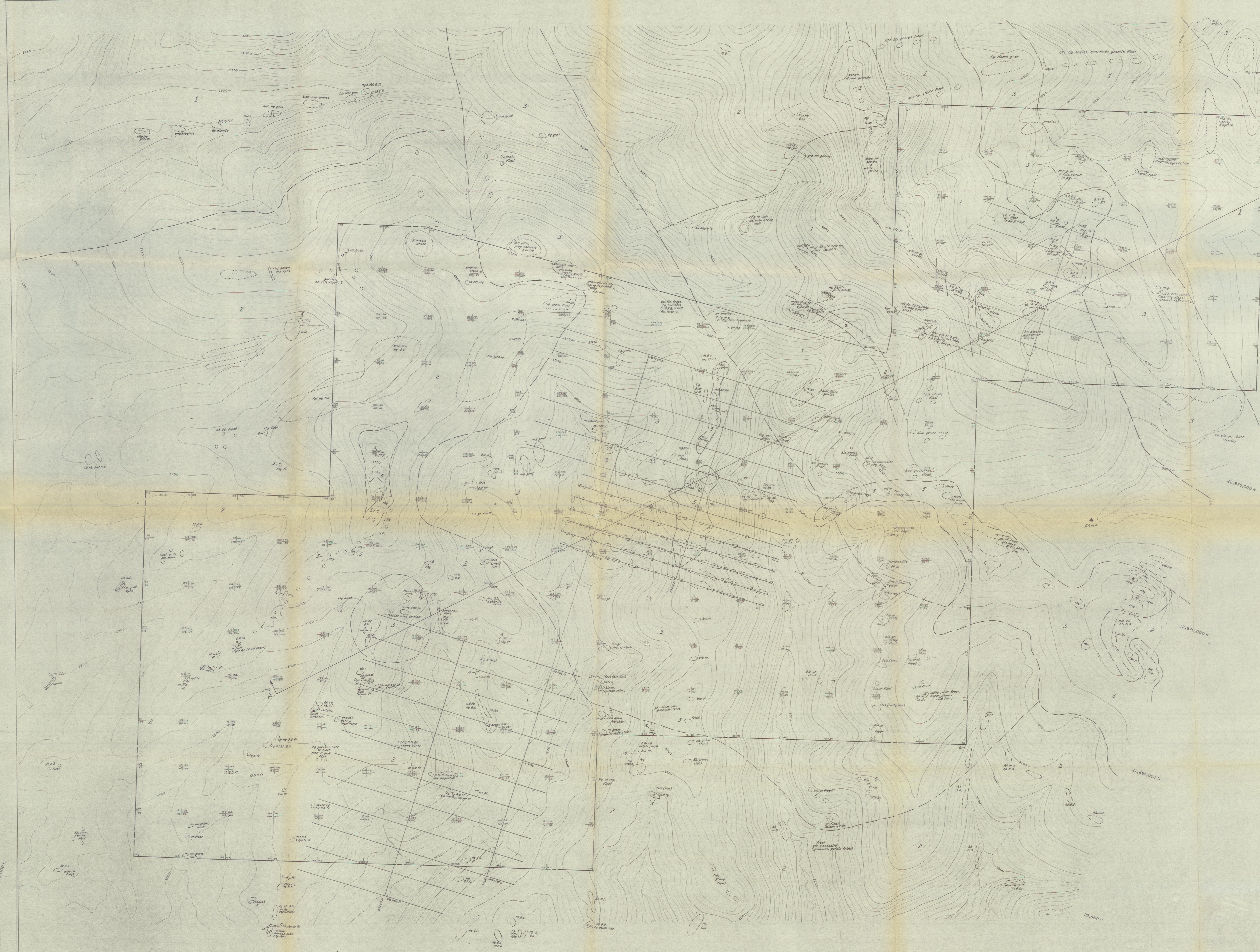
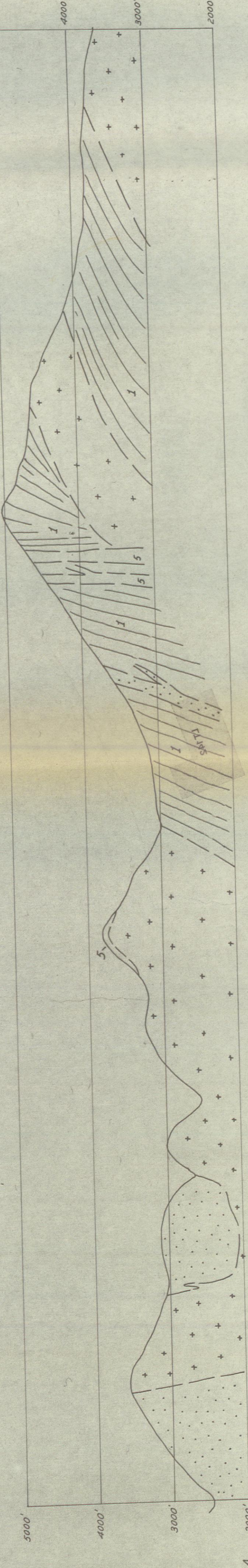


D. Brabec  
Geochemist

September, 1970

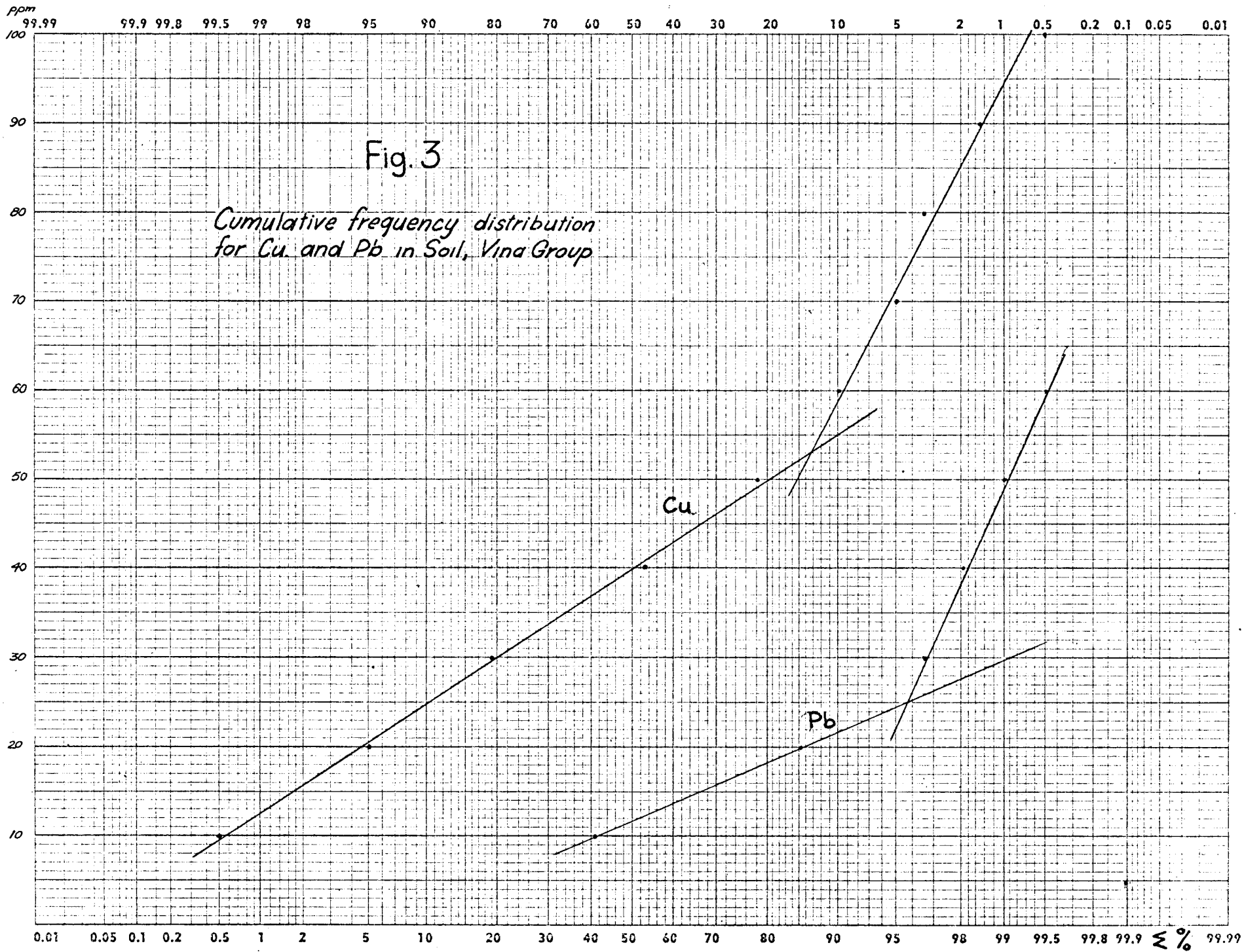


Cross Section A-A'  
 Horiz. Scale 1" = 2000'  
 Vertical Scale 1" = 1000'



- GEOLOGICAL LEGEND**
- 5 TERTIARY (?)  
Buff, pink or brown rhyolite and felsite flows and related porphyry and fine grained granite dykes. Flow and dyke features may be aphanitic, porphyritic, banded and/or spherulitic.
  - 4 TERTIARY (?)  
Basic and ultrabasic dykes - latite and dacite porphyry, diabase, serpentinite.
  - 3 TERTIARY (?)  
Home Granite  
Fine to medium grained equigranular pink biotite granite, biotite quartz monzonite and alkali. Commonly porphyritic and/or magmatic. Minor propylitic alteration. Sills, stocks, plugs and dykes.
  - 2 LATE CRETACEOUS (?)  
Klutasan granodiorite  
Medium to coarse grained hypidiomorphic and/or porphyritic grey hornblende (minor biotite) granodiorite, quartz diorite and quartz monzonite. Weak propylitic alteration developed locally. Foliated and gneissic, in part. Related diorite dyke.
  - 1 PRE-CAMBRIAN  
Yukon Group  
High-grade metamorphic assemblage including granitic and dioritic gneiss, quartz hornblende gneiss, grey to blue quartzite, and amphibolite. Foliation trends northwest to west and dips southward.

ATLAS EXPLORATIONS LIMITED		
GEOLOGY OF VINA CLAIMS Dawson Range - Yukon		
N. T. S.:	115-J-13	SCALE: 1" = 1000'
DATE OF SURVEY: July 1970	PARTY CHIEF: K.M. DAWSON	
DATE DRAFTED: SEPT 14, 1970	DRAFTED BY: G.T.	
DATE REVISED:	REVISED BY:	
CHECKED BY:	FIGURE No. 1	



99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01

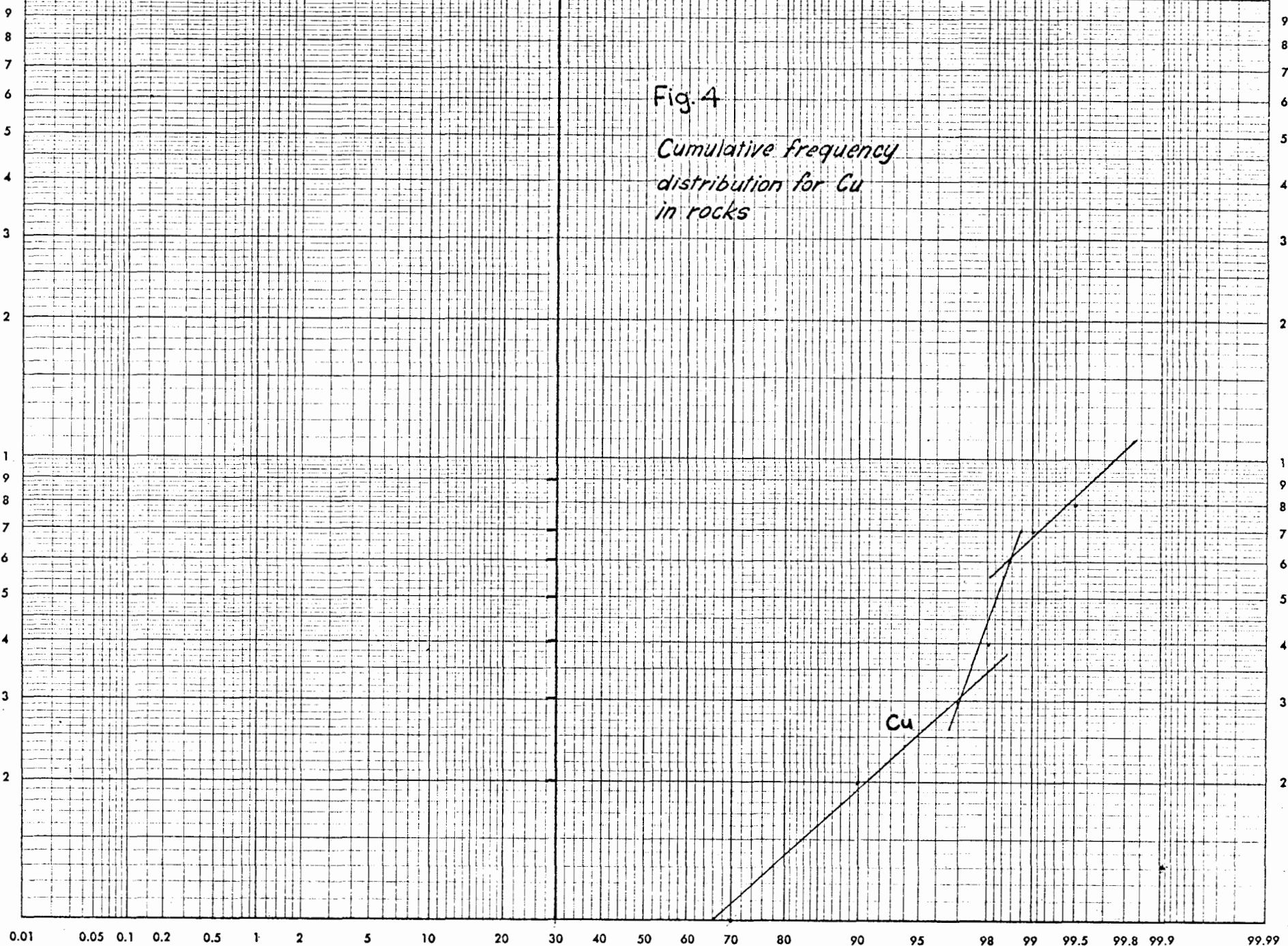


Fig. 4  
 Cumulative frequency  
 distribution for Cu  
 in rocks



99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01

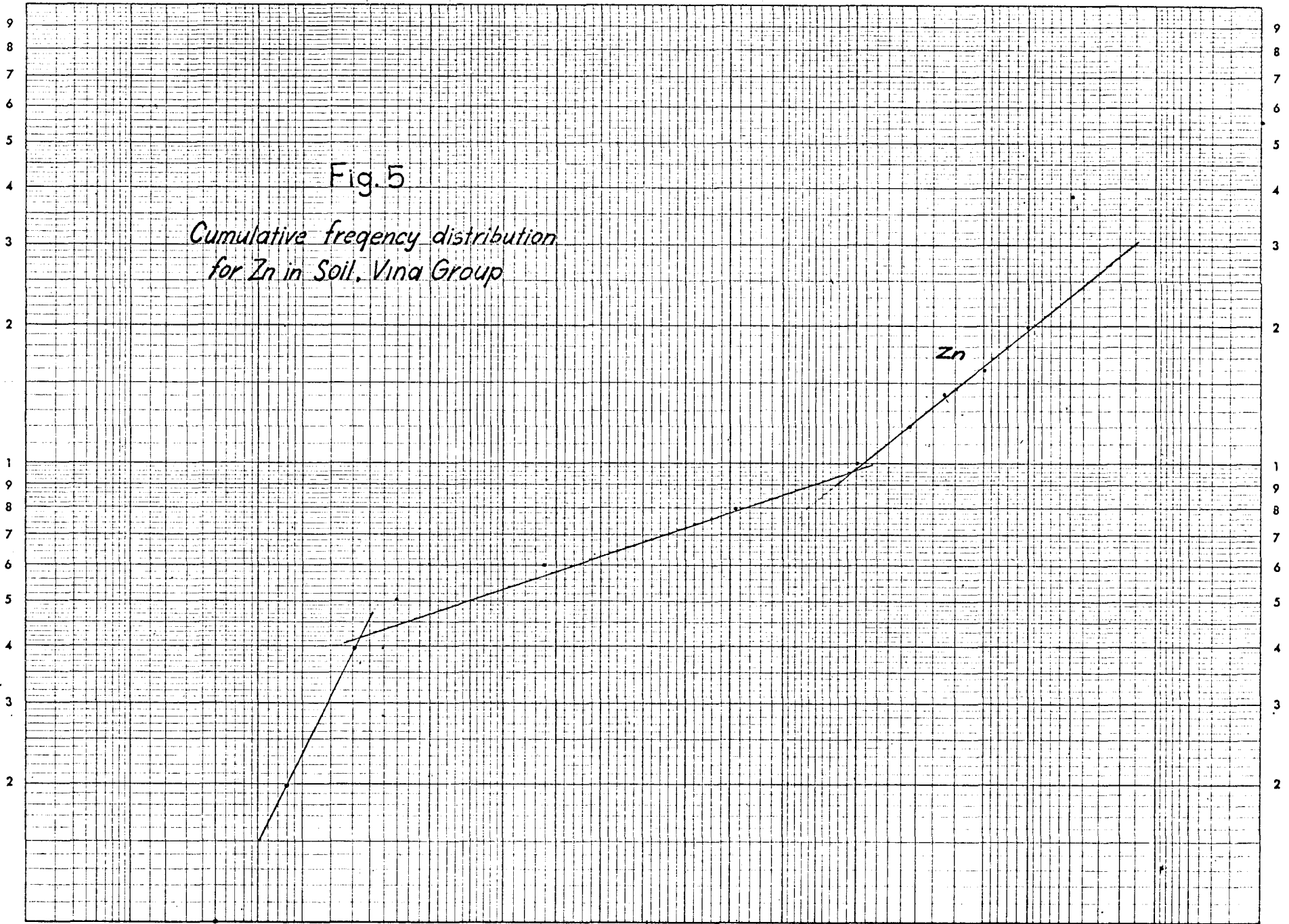


Fig.5

*Cumulative frequency distribution  
for Zn in Soil, Vina Group*

Zn

0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99

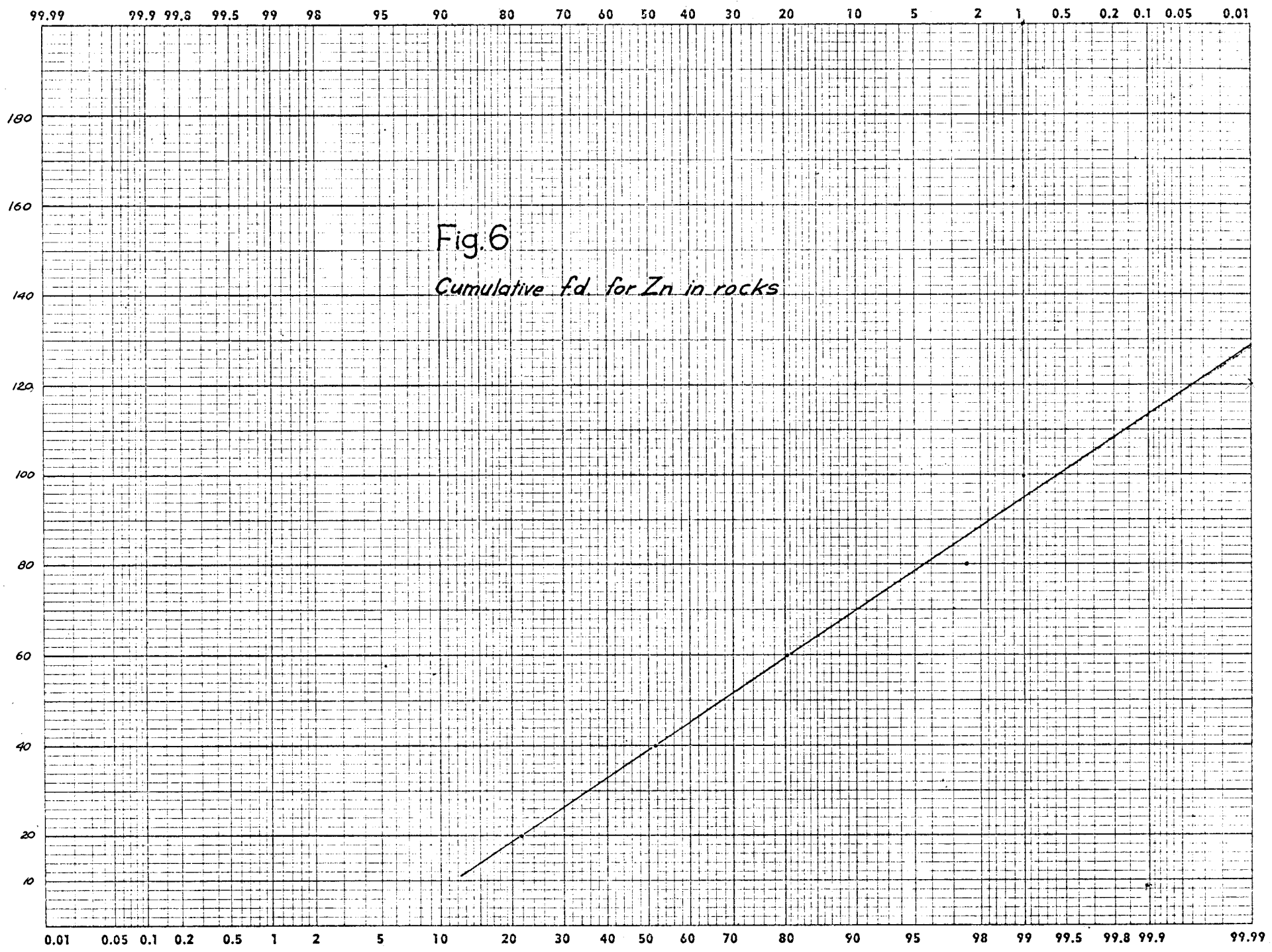
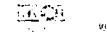


Fig. 6  
*Cumulative f.d. for Zn in rocks*

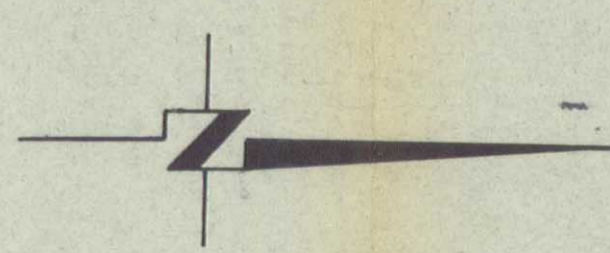
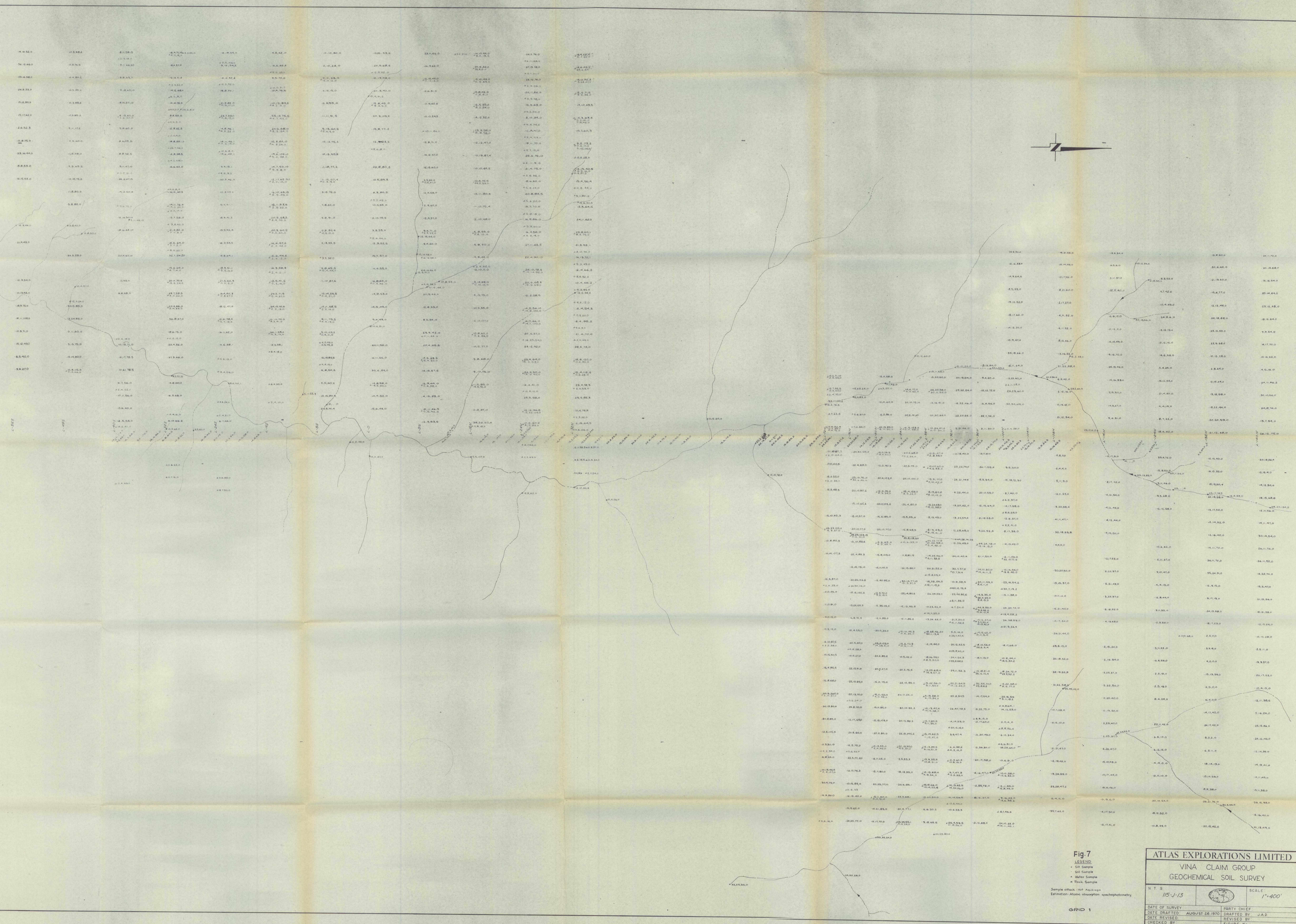


Fig. 7

Legend  
 • Soil Sample  
 • Soil Sample  
 • Water Sample  
 • Rock Sample

Scale: 1" = 400'

GRID 1

ATLAS EXPLORATIONS LIMITED	
VINA CLAIM GROUP	
GEOCHEMICAL SOIL SURVEY	
N.T.S.	SCALE 1" = 400'
DATE SURVEYED: 1/5-1/3	PARTY CHIEF
DATE DRAFTED: AUGUST 26, 1970	DRAFTED BY: J.A.D.
DATE REVISED:	REVISED BY:
CHECKED BY:	FIGURE NO.

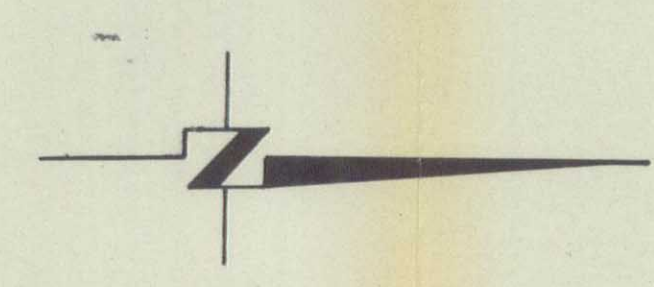
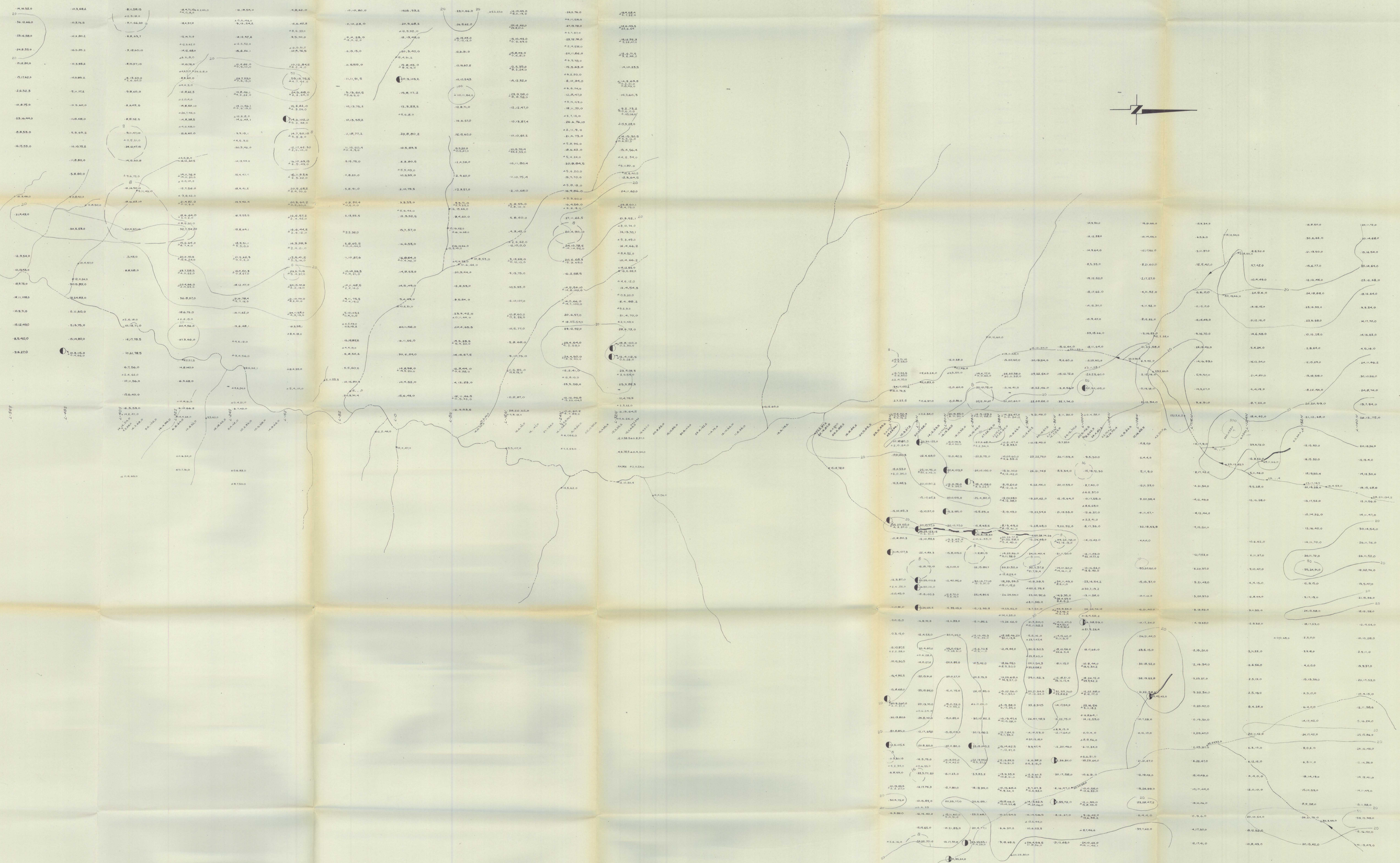


Fig. 8

- LEGEND**
- Soil Sample
  - Soil Sample
  - Water Sample
  - Rock Sample
  - Cu Anomalous
  - Cu Contour
- Scale: 1" = 400'

<b>ATLAS EXPLORATIONS LIMITED</b>	
VINA CLAIM GROUP	
GEOCHEMICAL SOIL SURVEY	
N. T. S.	SCALE 1" = 400'
DATE OF SURVEY	PARTY CHIEF
DATE DRAFTED	DRAFTED BY
DATE REVISED	REVISED BY
CHECKED BY	FIGURE No

GRID 1

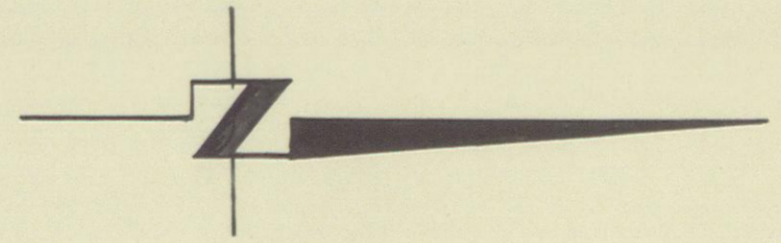
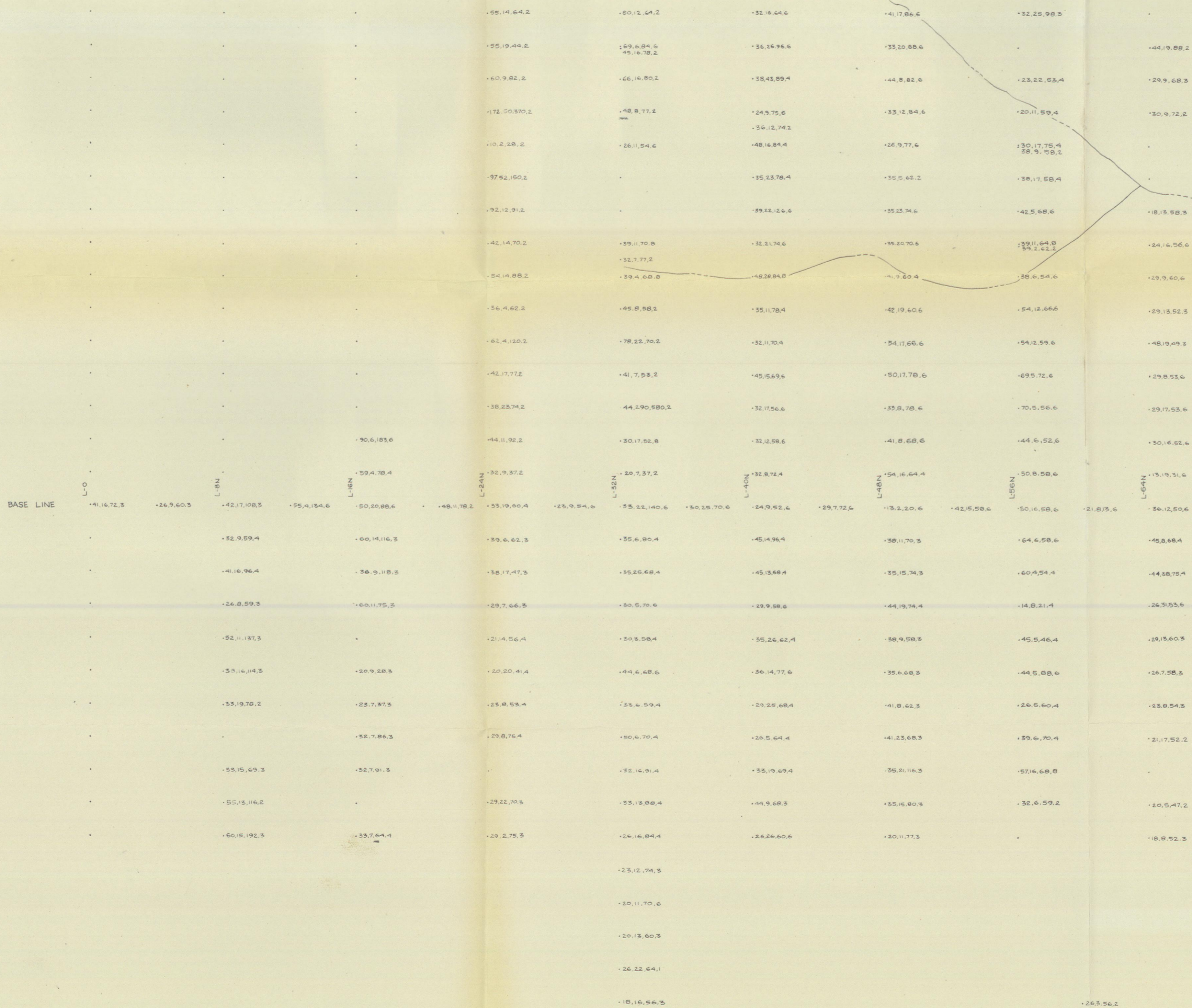



Fig. 9

**LEGEND** GRID 2  
 • Silt Sample  
 • Soil Sample  
 x Water Sample  
 ▲ Rock Sample  
 Sample attack: Hot Aquaregia  
 Estimation: Atomic absorption spectrophotometry

<b>ATLAS EXPLORATIONS LIMITED</b>		
<b>VINA CLAIM GROUP GEOCHEMICAL SOIL SURVEY</b>		
N. T. S. : <b>115-J-13</b>		SCALE : <b>1" = 400'</b>
DATE OF SURVEY :	PARTY CHIEF :	
DATE DRAFTED : <b>SEPT. 2, 1970</b>	DRAFTED BY : <b>J.A.D.</b>	
DATE REVISED :	REVISED BY :	
CHECKED BY :	FIGURE No. :	

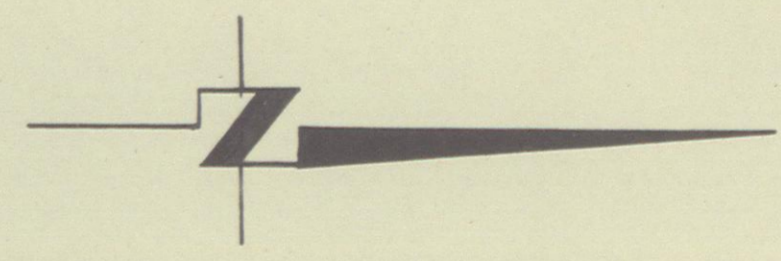
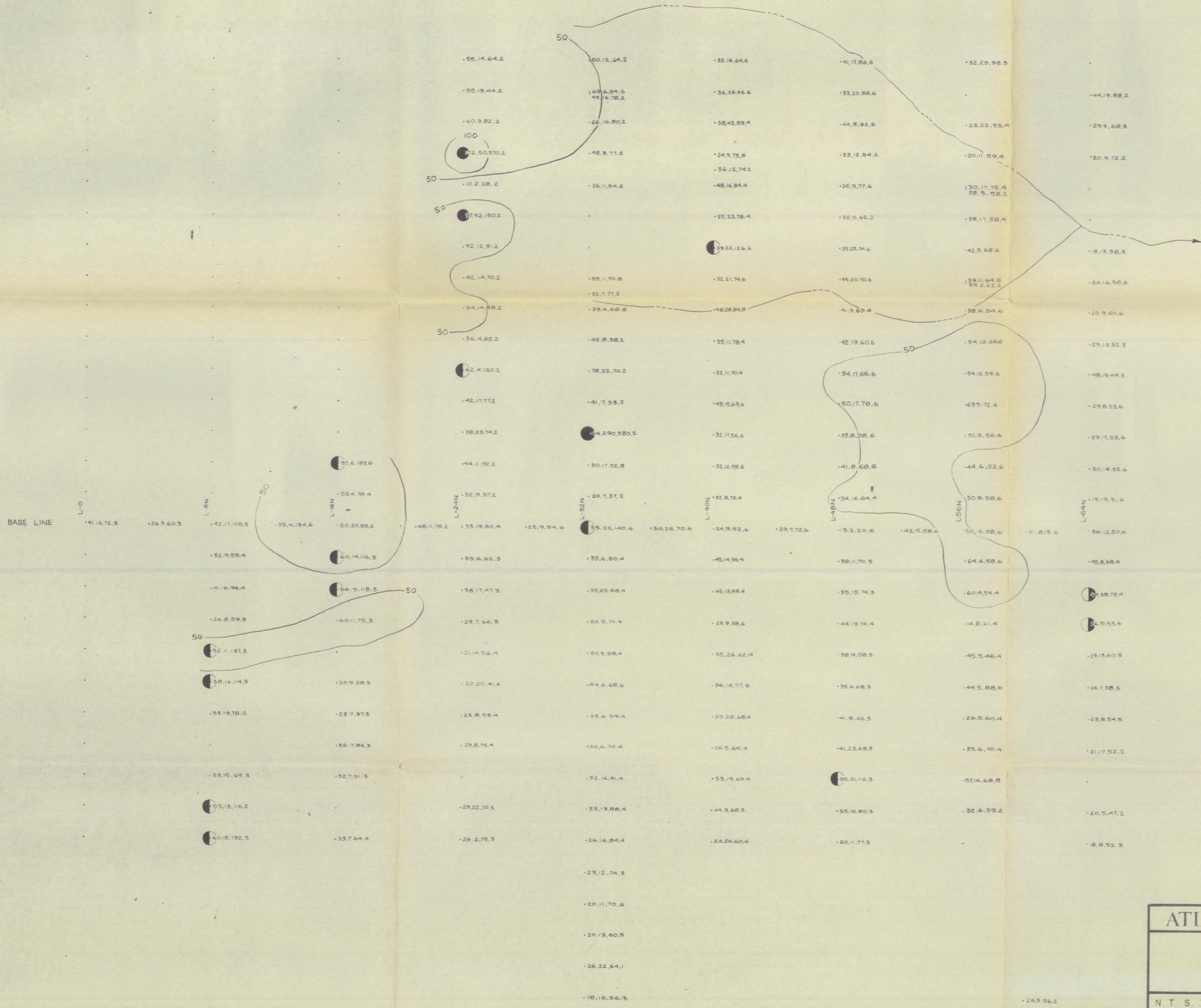



Fig. 10

**LEGEND**

- Silt Sample
- Soil Sample
- x Water Sample
- △ Rock Sample
- Cu contour
- Zn > 100 ppm
- Pb > 30 ppm

Sample attack: Hot Aquaregia  
 Estimation: Atomic absorption spectrophotometry

<b>ATLAS EXPLORATIONS LIMITED</b>		
<b>VINA CLAIM GROUP GEOCHEMICAL SOIL SURVEY</b>		
N. T. S. 115-J-13		SCALE 1" = 400'
DATE OF SURVEY:	PARTY CHIEF:	
DATE DRAFTED: SEPT. 2, 1970	DRAFTED BY: J.A.D.	
DATE REVISED:	REVISED BY:	
CHECKED BY:	FIGURE No.:	

LIST OF PERSONNEL

D. Brabec	Geochemist	Vancouver, B.C.
J. S. Brock	Geophysicist-Vice-Pres.	Vancouver, B.C.
J. Britton	Field Assistant	Vancouver, B.C.
P. Dean	Party Chief	Vancouver, B.C.
P. James	Field Assistant	Whitehorse, Y.T.
T. Skonseng	Prospector-Field Asst.	Ross River, Y.T.
J. Dennison	Draftsman	Vancouver, B.C.
H. G. Templeman	Draftsman	Vancouver, B.C.

SUMMARY OF COSTS  
VINA CLAIM GROUP GEOCHEMICAL SURVEY

Wages	(Schedule "E")	\$ 1,600.84
Report Preparation	(Schedule "G")	138.33
Drafting	(Schedule "G")	641.59
Expediting	(Schedule "A")	320.17
Camp Support	(Schedule "B")	1,150.34
Supplies	(Schedule "D")	178.08
	(Schedule "F")	892.12
Helicopter Support	(Schedule "D")	1,898.13
Fixed-Wing	(Schedule "D")	309.74
Assays	(Schedule "C")	<u>3,407.60</u>
		\$ 10,536.94
Head Office Administration 10%		<u>1,053.69</u>
	GRAND TOTAL	\$ 11,590.63

Total cost of geochemical survey to be applied as representation work is \$ 11,590.63.

Supporting vouchers are given in Appendix IV of accompanying "Vina Mineral Claims Group - Report on Geological Mapping".