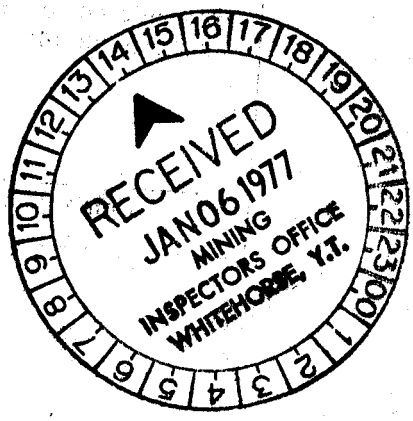
1976 EXPLORATION REPORT

GREMLIN MINERAL CLAIM GROUP

Mayo Mining District

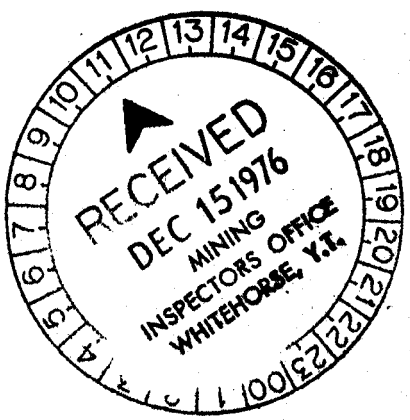
Yukon Territory



N.T.S. 106-E-2

Latitude: 65° 11' N

Longitude: 134° 38' W



By:

P. Dean

CYPRUS ANVIL MINING CORPORATION

November, 1976.

090162

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 $ 4800.00

4800

W D Sinclair

Resident Geologist or
~~Resident Mining Engineer~~

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

B.R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

TABLE OF CONTENTS

FIGURES

APPENDICES

LIST OF CLAIMS

Claims	Grant Nos.	Recording Dates
Gremlin 1 - 12	YA1144 - YA1155	August 29, 1975.

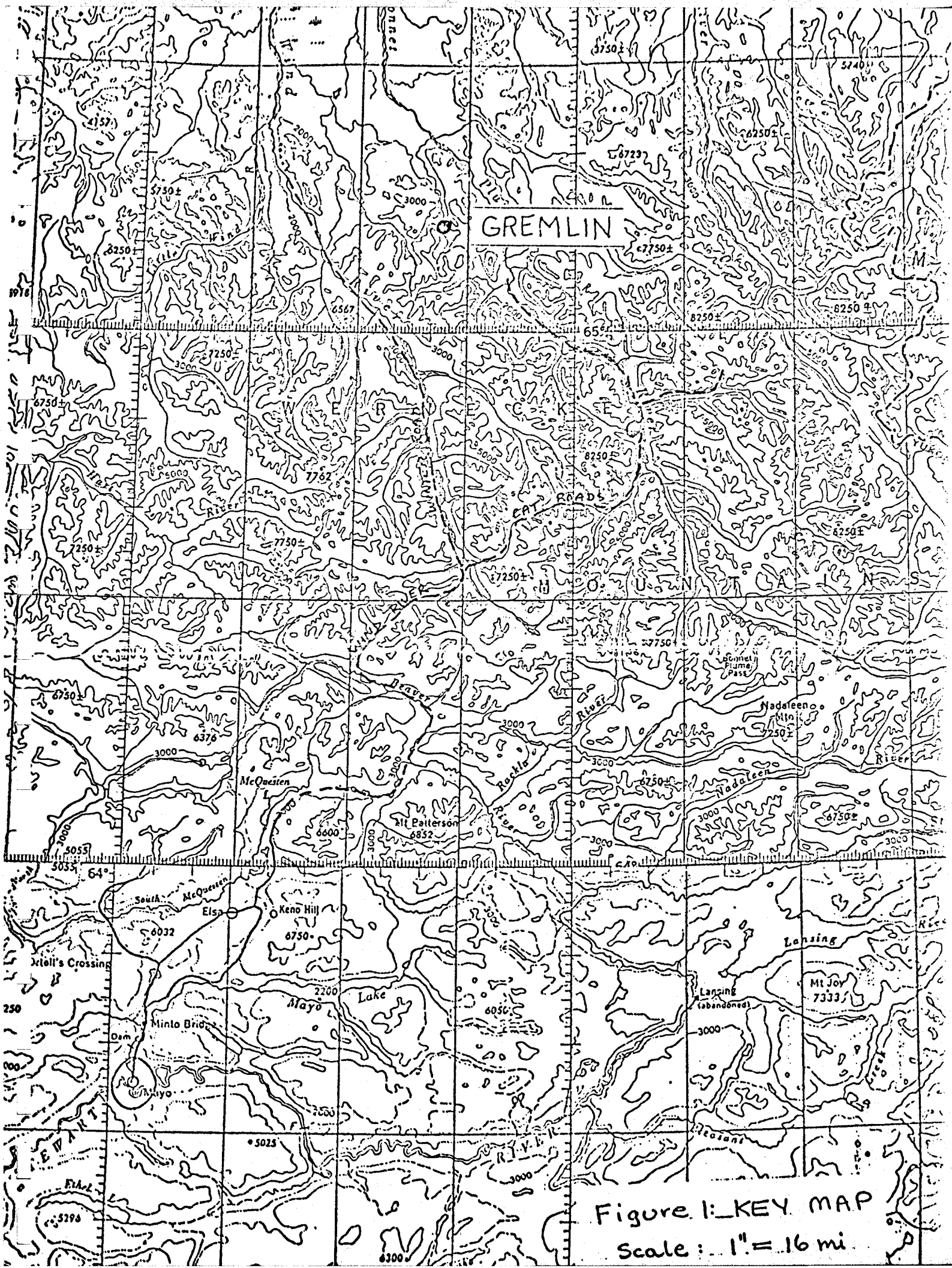


Figure 1: KEY MAP

Scale: 1" = 16 mi

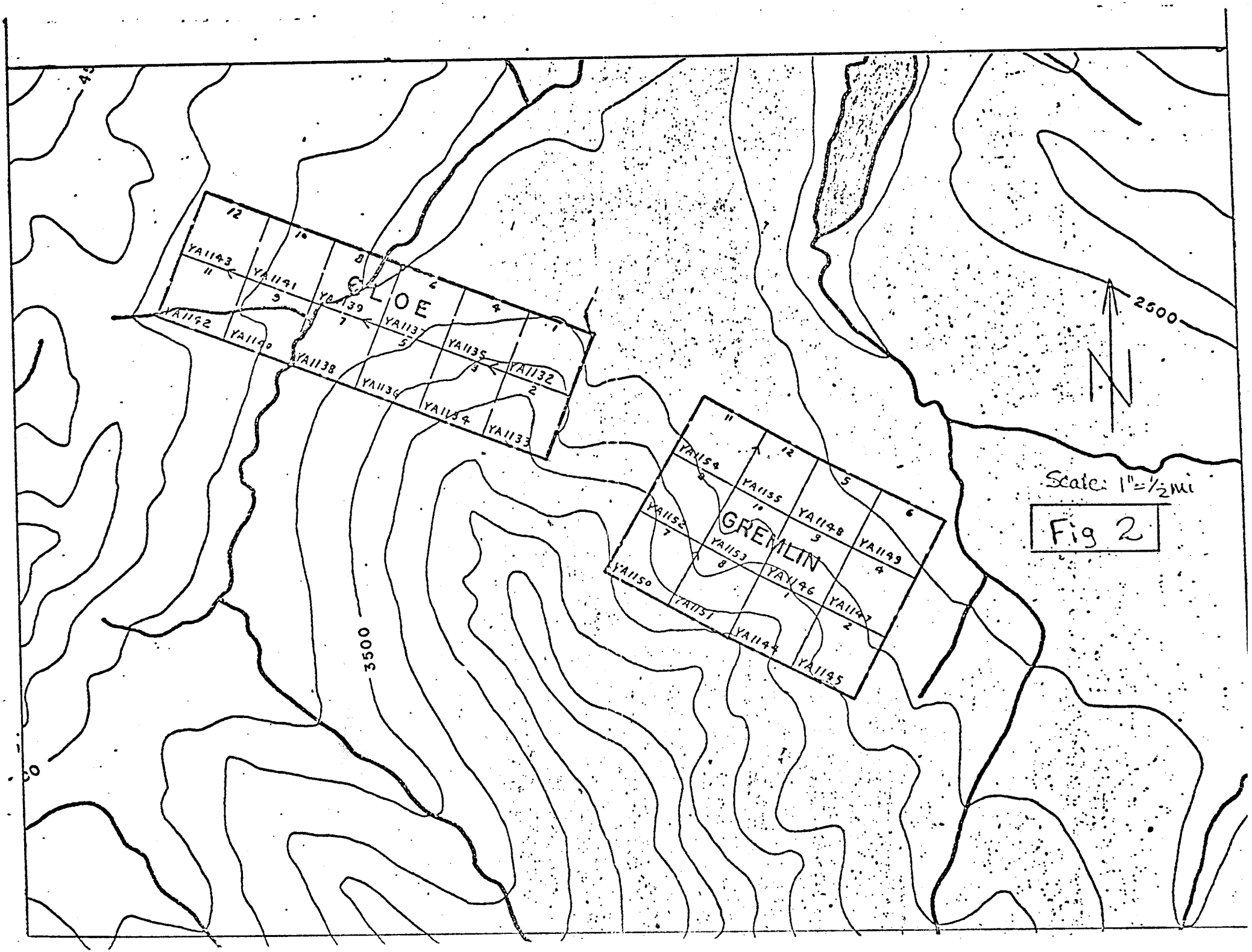

CLOE
GREMLIN
YA1143
YA1141
YA1139
YA1137
YA1135
YA1132
YA1142
YA1140
YA1138
YA1136
YA1134
YA1133
YA1154
YA1155
YA1148
YA1149
YA1152
YA1153
YA1146
YA1147
YA1150
YA1151
YA1144
YA1145
2500
3500
N
Scale: 1" = ½ mi

Fig 2

Cyprus Anvil Mining Corporation

330, 355 Burrard Street
Vancouver, British Columbia
V6C 2G8
Telephone (604) 687-2586

Telex 04508594

1976 EXPLORATION REPORT

GREMLIN MINERAL CLAIM GROUP

INTRODUCTION

The Gremlin Claims, located west of the Bonnet Plume River at 65° 11' N x 134° 38' W, were staked during August, 1975, after a regional silt sampling program lead to the discovery of an intense copper geochemical anomaly in stream sediments. Several showings of chalcopyrite mineralization were discovered in Helikian sedimentary rocks when the silt anomaly was prospected.

During the 1975 exploration season a small program of prospecting and very limited geochemical sampling was carried out. During 1976, geological mapping and additional geochemical sampling was completed on the claim group, in conjunction with more detailed regional mapping of the same geologic formations. This exploration program took place between June 6 and June 13, with some days in that period spent on the claim group and some spent on the regional work outside the claim boundaries.

SUMMARY AND CONCLUSIONS

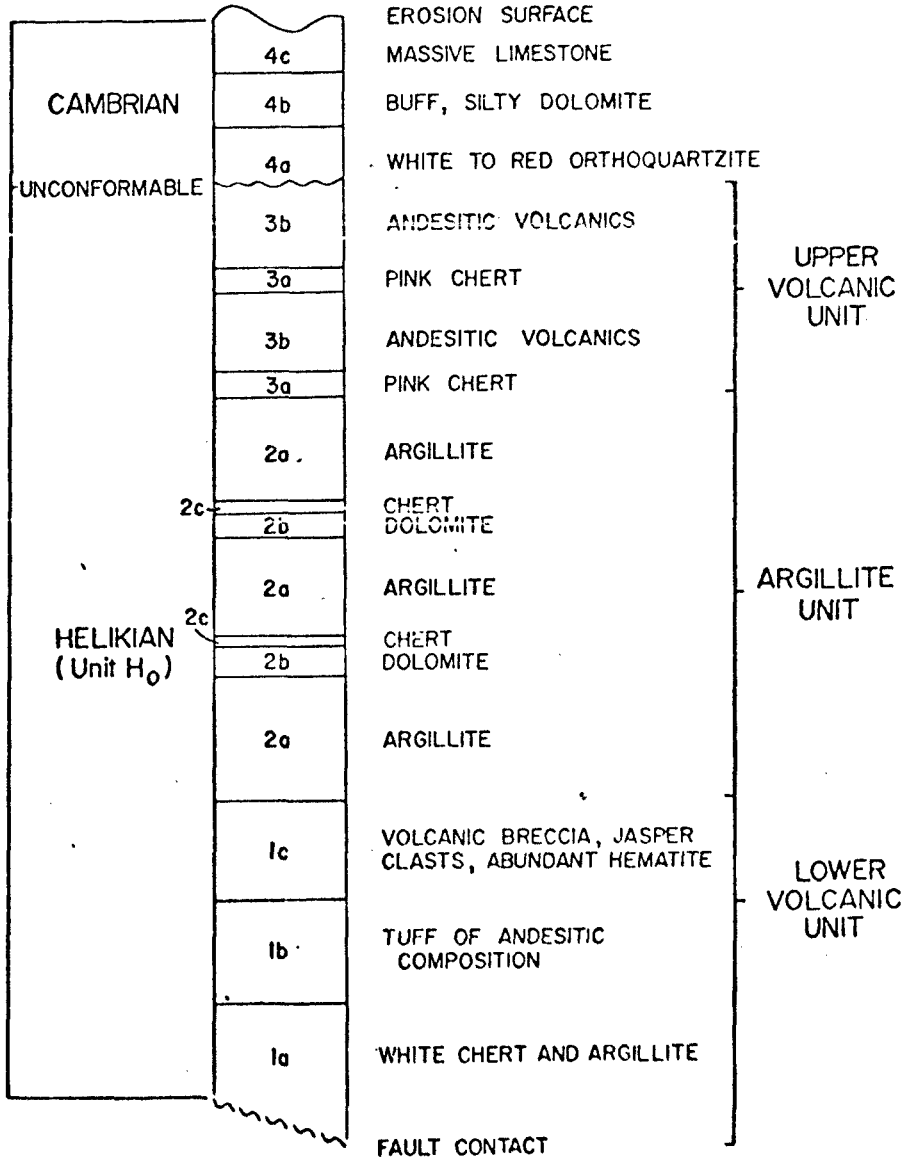
The work carried out this year helped to delineate the regional extent of the chert-shale formation which hosts the massive pyrite formation on the Gremlin Claims. No new significant showings were located on the claim group or in the surrounding area. The general structure on the Gremlin Claims has been partly elucidated by the 1"=400 ft scale mapping but the origin, extent, and interrelationships of the various types of mineralization on the claim block remain unresolved.

... 2

GEOLOGY

According to the Geological Survey of Canada mapping on the 106-E map sheet, the Gremlin claim group and most of the surrounding area is underlain by map unit Ho, which is an undivided formation consisting of a variety of sedimentary rocks of probable Helikian age. Unit Ho is overlain unconformably by Paleozoic sedimentary formations at the western extremity of the area covered by our regional mapping. The Gremlin mineralization occurs within Unit Ho, and it was this unit which we were interested in mapping in detail.

STRATIGRAPHIC COLUMN



Discussion of Geologic Formations

The GSC Unit Ho was subdivided into three subunits in the vicinity of the Gremlin Claims. The oldest of these, the "Lower Volcanic Unit," includes a small wedge of white, bedded chert and argillite, which is cut off by a fault only a few 10's of feet below the base of the lowest volcanic member. The Lower Volcanic Unit consists of several hundred feet of sheared, slatey, grey-green tuff, probably of intermediate composition. Occasional sections contain chloritoid porphyroblasts which show up prominantly on weathered surfaces. This tuff unit is overlain by approximately 400 feet of unusual volcanic breccia with red jasper clasts and abundant hematite. This Unit is a volcanic agglomerate, probably of felsic composition.

The "Lower Volcanic Unit" is overlain conformably by the "Argillite Unit", which consists predominantly of dark brown to black shale. Within this Unit there are two thin beds (~50 feet) of dark grey, chocolate brown weathering dolomite, each capped by a few feet of light grey, pyritic chert. These dolomite-chert cuplets are most important, since they host a portion of the massive pyrite-chalcopyrite mineralization on the Gremlin Claims. The total argillite unit is approximately 1500' to 2500' thick in the vicinity of the Gremlin Claims.

Overlying the "Argillite Unit" are several hundred fee' of medium green chlorite-sericite schist called the "Upper Volcanic" unit. The contact between this unit and the last is marked by a 100 foot thick bed of pale pink chert, which outcrops well and provides a useful marker bed. A second pink chert marker occurs 400 feet above the first. This Upper Volcanic Unit is overlain unconformably by Paleozoic miogeoclinal rocks at the western extremity of our map area.

On the Gremlin Claims, only the upper part of the Argillite Unit is exposed, along with the uppermost dolomite-chert cuplet. The mineralization, which is discussed in more detail later, occurs within and below the dolomite-chert sequence, but does not occur above it.

... 4

Structural Geology

Structurally, the regional geology around the Gremlin property looks deceptively simple, with uniform westerly dips in the western most part of the map area, and occasional faults with minor displacement. A major thrust fault occurs south of the claim group and marks the limit of mapping in that direction. Within the claims and on the adjacent ridges the structure becomes more complex and variable. The valley in which the Gremlin showings occur is the core of a major anticlinal structure, in which numerous minor fold complexities, faults, and areas of brecciation occur. Because of this complex fold core environment, only a generalized geologic map can be plotted at the 1":400 ft scale. While only this major fold episode is evident on a regional scale, the internal fabric of the shales on the claim group suggest that at least two previous periods of deformation have occured. Mapping at a very detailed scale will be required to unravel the geometry of the showings in this complex area.

Mineral Deposits

Chalcopyrite mineralization occurs on the claim group in four distinct environments as follows:

1) It occurs with abundant pyrite in the finely layered chert horizon. The sulfides in this horizon show a cruder banding parallel to bedding in the cherts, suggesting that this type of mineral deposit may be syngenetic, coeval with, and related to the enclosing chert unit.

2) The highest grade chalcopyrite mineralization occurs in large siderite-quartz-pyrite veins which occur commonly in the dolomite and occasionally in the underlying shale, but which do not occur above the chert horizon. These veins very rarely contain cobaltite, which is the only other sulfide seen on the property. The veins show no preferred orientation.

3) Azurite and malachite stains occur within black shales which may be either above or below the chert horizon. No primary sulfides were seen in these shales, which assayed from 1,000 parts per million to 2.2% copper in selected grab samples. The relationship of these cupriferous

shales to the rest of the Gremlin geology is unknown.

4) Pyrite and occasionally chalcopyrite occur within intrusive breccias of probable volcanic origin. Within these breccias angular volcanic clasts make up 50 to 80% of the volume. The matrix is variable in colour, and is made up of white plagioclase phenocrysts in a darker background. Sulfides occur in the matrix and within clasts.

Of these various types of mineralization, the first type probably has the best chance of proving economic, because it has lateral continuity and could potentially contain reasonable tonnages of ore.

The mineralization on the Gremlin can perhaps best be interpreted according to a massive sulfide model, although it should be realized that this interpretation is purely hypothetical and may be far from the truth. Under this hypothesis, the vein and breccia occurrences become an underlying stockwork zone and the massive sulfide and chert become a syngenetic sulfide deposit and associated exhalite deposited on the sea floor. The high carbonate content in the stockwork zone may be explained by the fact that these veins occur within an iron rich carbonate unit. The intrusive sub-volcanic breccias may be the source of the mineralizing solutions which produced the vein zones and the massive pyrite body.

GEOCHEMISTRY

Geochemical samples were taken in the field from the B and C soil horizons, which at these high elevations are generally indistinguishable. Analysis was carried out by Acme Analytical Laboratories Ltd., at Ross River, using standard atomic absorption methods. The samples were screened to -80 mesh and then subjected to a total extraction leach using $HClO_4$.

Regional and claim group geochemical results are plotted on Figures 5 and 6. No new anomalies of great significance were discovered by the geochemical surveys, but some minor anomalies will require prospecting next year.

... 6

PROPOSED EXPLORATION

The following work should be carried out on the Gremlin Claims during the 1977 season:

1) Mapping of the mineral showings on the claim group at a scale of about 1" to 50ft.

2) Magnetic survey to trace the massive sulfide bed under talus.

3) Hand trenching to clear one or two cross sections across the massive sulfide zone.

4) Prospecting of geochemical anomalies not on the claims. The mapping at such a detailed scale would be greatly assisted by producing a small "homemade" series of air photographs of the canyon in which the showings occur. This could easily be done from a helicopter, using a series of accurately located targets for scale.

Respectfully submitted,

P. Dean

P. Dean.

November, 1976.

KIWI LAKE

CLDE CLAIM GROUP

GREMLIN CLAIM GROUP

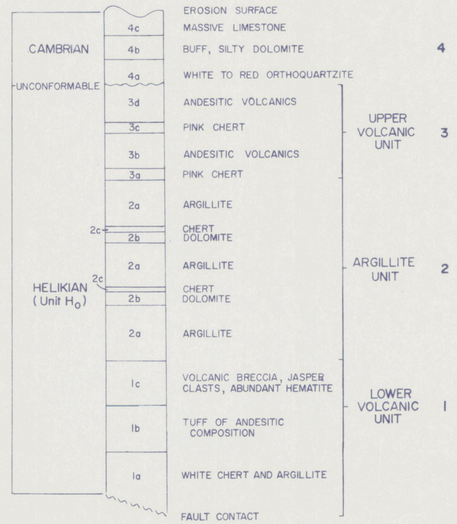
ARGILLITE

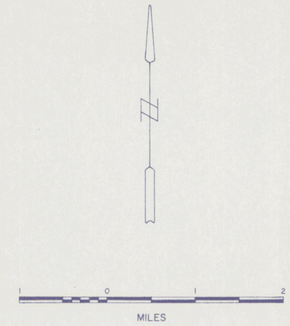
BLK. ARGILLITE

YOGI CLAIM GROUP

5859

STRATIGRAPHIC COLUMN





CYPRUS ANVIL MINING CORPORATION

GREMLIN CLAIM GROUP

REGIONAL GEOLOGY

NTS 106 E 2	SCALE: 1 INCH : 1/2 MILE	DATE: NOV 25, 1976	DRAWN BY: R.D.H.

STRATIGRAPHIC COLUMN

		EROSION SURFACE	
CAMBRIAN	4c	MASSIVE LIMESTONE	
	4b	BUFF, SILTY DOLOMITE	
	4a	WHITE TO RED ORTHOQUARTZITE	
UNCONFORMABLE			
	3d	ANDESITIC VOLCANICS	UPPER VOLCANIC UNIT
	3c	PINK CHERT	
	3b	ANDESITIC VOLCANICS	
	3a	PINK CHERT	
	2a	ARGILLITE	ARGILLITE UNIT
	2c	CHERT DOLOMITE	
	2b		
	2a	ARGILLITE	
HELIKIAN (Unit H_0)	2c	CHERT	
	2b	DOLOMITE	
	2a	ARGILLITE	
	1c	VOLCANIC BRECCIA, JASPER CLASTS, ABUNDANT HEMATITE	LOWER VOLCANIC UNIT
	1b	TUFF OF ANDESITIC COMPOSITION	
	1a	WHITE CHERT AND ARGILLITE	
		FAULT CONTACT	

N (APPROX)

NTS 106 E 2

Scale and elevation datum based on limited ground control resulting in good relative, but uncertain absolute map accuracy.
Compiled from aerial photography at an approximate scale of 1 inch equals 3,200 feet flown in 1949

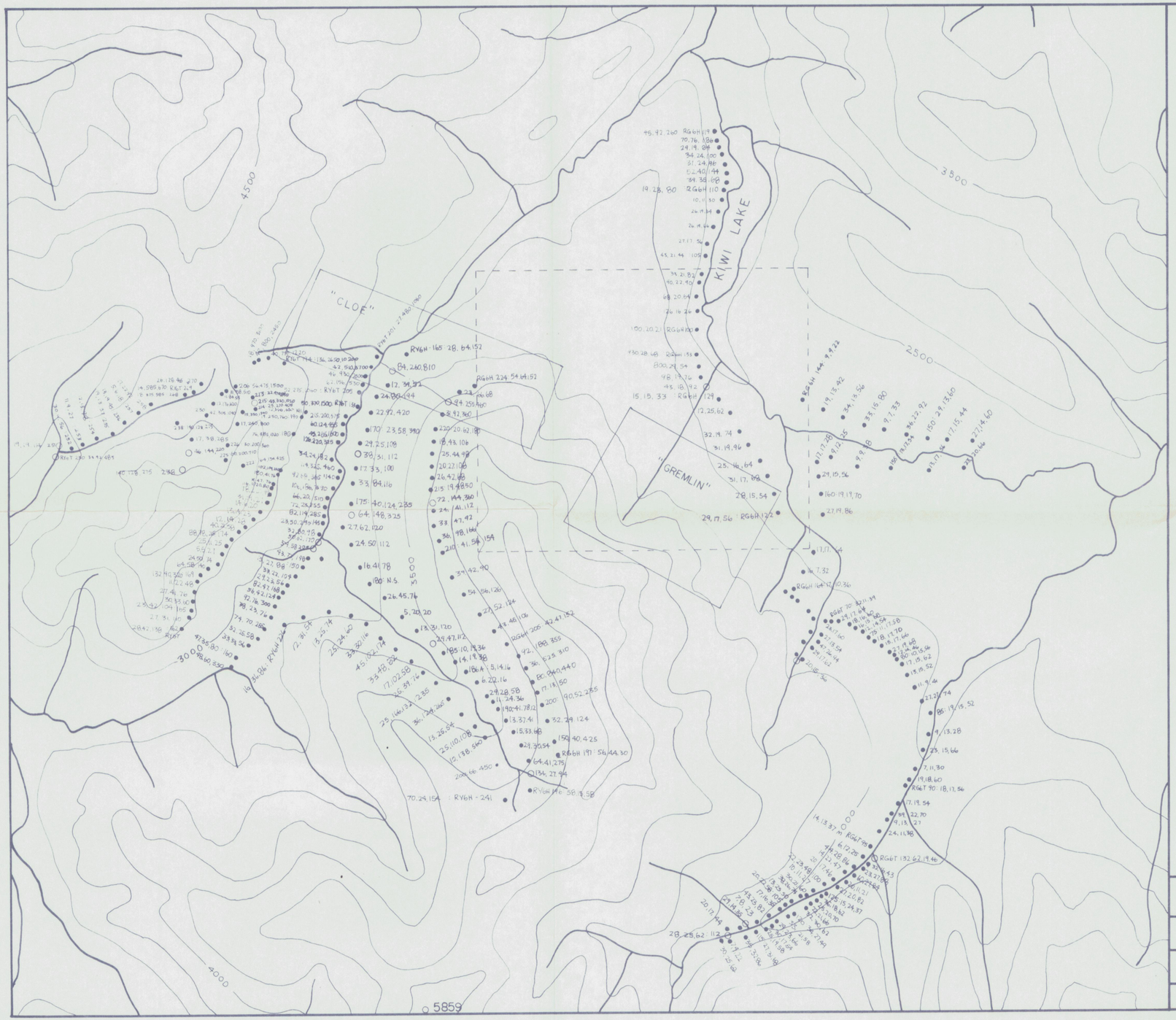
CYPRUS ANVIL MINING CORP.

GREMLIN CLAIM GROUP

DETAILED GEOLOGY

McElhanney Surveying & Engineering Ltd.
1200 West Pender Street, Vancouver B.C. Canada

Scale	1" = 400'
Contour Interval	25'
Date	APRIL 1976
Job No.	06261-0
Sheet No.	1 OF 1



LEGEND

GEOCHEMICAL SAMPLES

- ● SOIL
- ○ SILT

ANALYSIS IN PPM

56, 89, 79
Cu , Pb , Zn

▭ CLAIM BOUNDARY

⬚ AREA COVERED BY 1" : 400' ORTHOPHOTO

N

1 0 1 2
MILES

CYPRUS ANVIL MINING CORPORATION

GREMLIN CLAIM GROUP

GEOCHEMICAL RESULTS

NTS 106 E 2	SCALE: 1 INCH : 1/2 MILE	DATE: NOV 26, 1976	DRAWN BY: R.D.H.

Scale and elevation datum based on limited ground control resulting in good relative, but uncertain absolute map accuracy
Compiled from aerial photography at an approximate scale of 1 inch equals 3,200 feet flown in 1949

CYPRUS ANVIL MINING CORP.

GREMLIN CLAIM GROUP

DETAILED GEOCHEMICAL RESULTS

NTS 106 E 2

GEOCHEMICAL SAMPLES
- SOIL
- SILT

ANALYSIS IN PPM
34, 20, 56
Cu, Pb, Zn

McElhanney Surveying & Engineering Ltd.
1200 West Pender Street, Vancouver B.C. Canada

Scale	1" = 400'
Contour Interval	25'
Date	APRIL 1976
Job No.	06261-0
Sheet No.	1 OF 1

(APPROX.)