

GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE WILL CLAIMS



Mayo Mining District
Mayo, Y.T.



N.T.S. 106-D-7

Latitude: 64°24' N
Longitude: 134°42' W



By:

W. Roberts
P. Dean

CYPRUS ANVIL MINING CORPORATION

December, 1975

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

\$4,500.00

A handwritten signature in dark ink, appearing to be "R. B. Craig".

Resident Geologist or
Resident Mining Engineer

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

A handwritten signature in dark ink, appearing to be "R. B. Baxter".
R. B. BAXTER

Supervising Mining Recorder

Commissioner of Yukon Territory

Figure 1

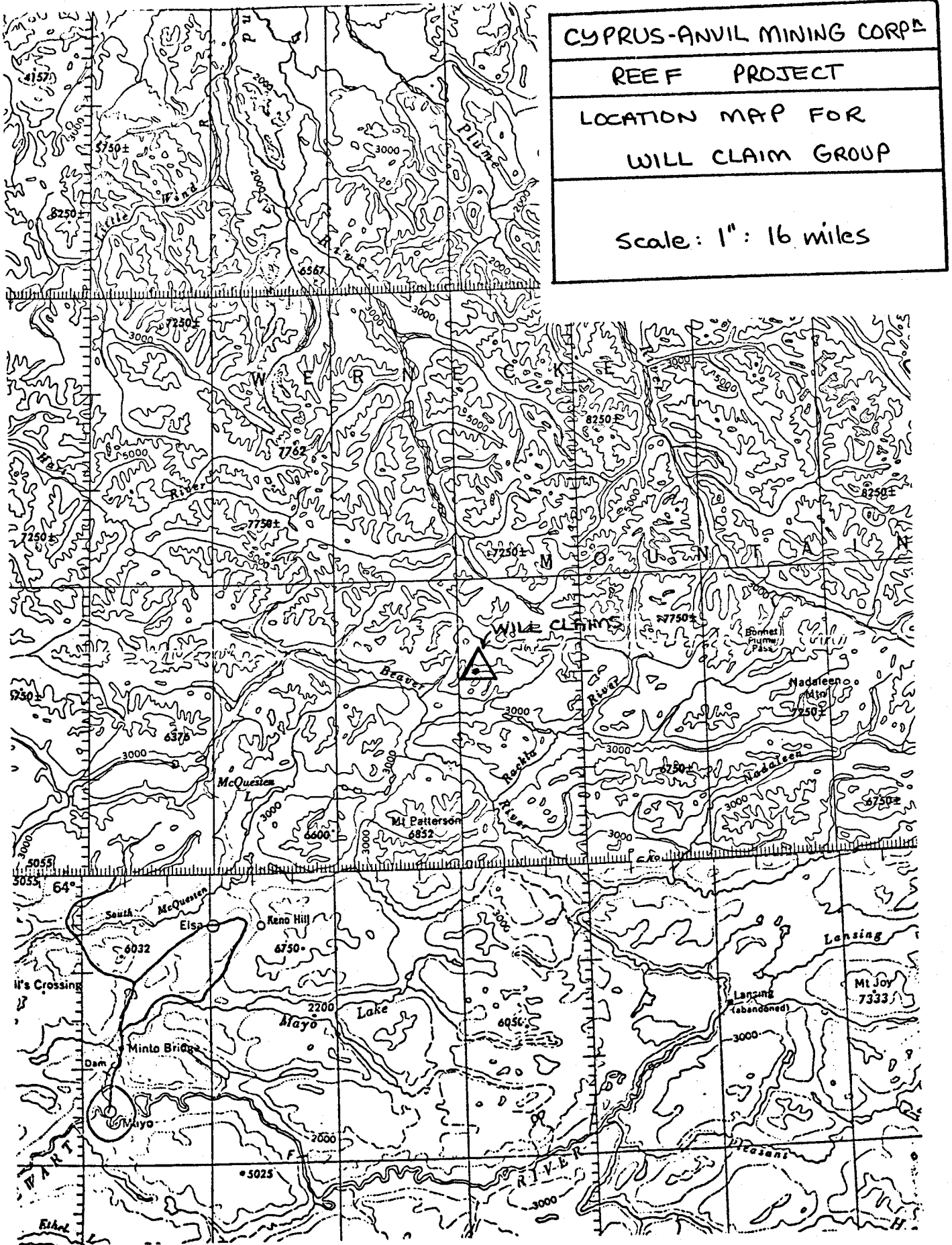


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LIST OF CLAIMS

<u>Claim Nos.</u>	<u>Grant Nos.</u>	<u>Recording Dates</u>
WILL 1 - 60	Y97990 - Y98049	July 28, 1975

The map displays a grid of mining claims overlaid on a topographic map. Contour lines are labeled with elevations of 4500 and 5000 feet. A 'WILL CLAIM GROUP' is indicated in the center of the grid. The grid cells are numbered 1 through 60, and each cell contains a claim number. The claim numbers are: Row 1: Y97990, Y97992, Y97994, Y97996, Y97998, Y97999, Y97000, Y97001, Y97002, Y97003, Y97004, Y97006, Y97008; Row 2: Y97991, Y97993, Y97995, Y97997, Y97999, Y97000, Y97003, Y97005, Y97007, Y97009; Row 3: Y97010, Y97012, Y97014, Y97016, Y97018, Y97020, Y97022, Y97024, Y97026, Y97028; Row 4: Y97011, Y97013, Y97015, Y97017, Y97019, Y97021, Y97023, Y97025, Y97027, Y97029; Row 5: Y97030, Y97032, Y97034, Y97036, Y97038, Y97040, Y97042, Y97044, Y97046, Y97048; Row 6: Y97031, Y97033, Y97035, Y97037, Y97039, Y97041, Y97043, Y97045, Y97047, Y97049.

1	3	5	7	9	11	13	15	17	19			
Y97990	Y97992	Y97994	Y97996	Y97998	Y97999	Y97000	Y97001	Y97002	Y97003	Y97004	Y97006	Y97008
2	4	6	8	10	12	14	16	18	20			
Y97991	Y97993	Y97995	Y97997	Y97999	Y97000	Y97003	Y97005	Y97007	Y97009			
21	23	25	27	29	31	33	35	37	39			
Y97010	Y97012	Y97014	Y97016	Y97018	Y97020	Y97022	Y97024	Y97026	Y97028			
21	23	25	27	29	31	33	35	37	39			
Y97011	Y97013	Y97015	Y97017	Y97019	Y97021	Y97023	Y97025	Y97027	Y97029			
41	43	45	47	49	51	53	55	57	59			
Y97030	Y97032	Y97034	Y97036	Y97038	Y97040	Y97042	Y97044	Y97046	Y97048			
42	44	46	48	50	52	54	56	58	60			
Y97031	Y97033	Y97035	Y97037	Y97039	Y97041	Y97043	Y97045	Y97047	Y97049			

Fig. 2

CYPRUS ANVIL MINING CORPORATION
REEF PROJECT
WILL CLAIM GROUP
CLAIM MAP
Scale: 1" = 1/2 mi

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GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE WILL CLAIMS

INTRODUCTION

The Will claims were staked during July, 1975 when several geochemical anomalies, some with associated lead and zinc showings, were discovered near Mt. Williams during regional geochemical surveys. The claims are located at 134°42' W x 64°24' N, six miles north of the Beaver River, and about 68 air miles northeast of Mayo. Access to the claims is only possible by helicopter at present. The Wind River winter road passes six miles west of the claim group.

The property was explored during the season with detailed silt and soil sampling, geologic mapping, and prospecting.

SUMMARY AND CONCLUSIONS

The best mineralization discovered on the Will claims occurs in a breccia zone about 20 feet wide, which has been traced for a strike length of 2,000 feet and over a vertical range of 400 feet. These dimensions suggest a minimum size of 3/4 to 1 million tons of ore grading about 10% combined lead and zinc. The possibility of finding down-dip or on-strike extensions to this zone, which would increase the potential tonnage, are good.

A limited program of chip sampling along the exposed portions of this

... 2

CYPRUS ANVIL

zone is proposed for 1976, to more accurately determine the average grade of the mineralization and to determine how grades and widths change with depth.

GEOCHEMISTRY

Locations and analytical values of the 110 geochemical samples taken on the Will claims area are shown on Figure 3. Samples were analysed for copper, lead and zinc by Acme Analytical Laboratories Ltd. at Dawson City. The analytical procedure used a nitric perchloric extraction on the -80 mesh fraction of the samples, followed by analysis on an atomic absorption instrument.

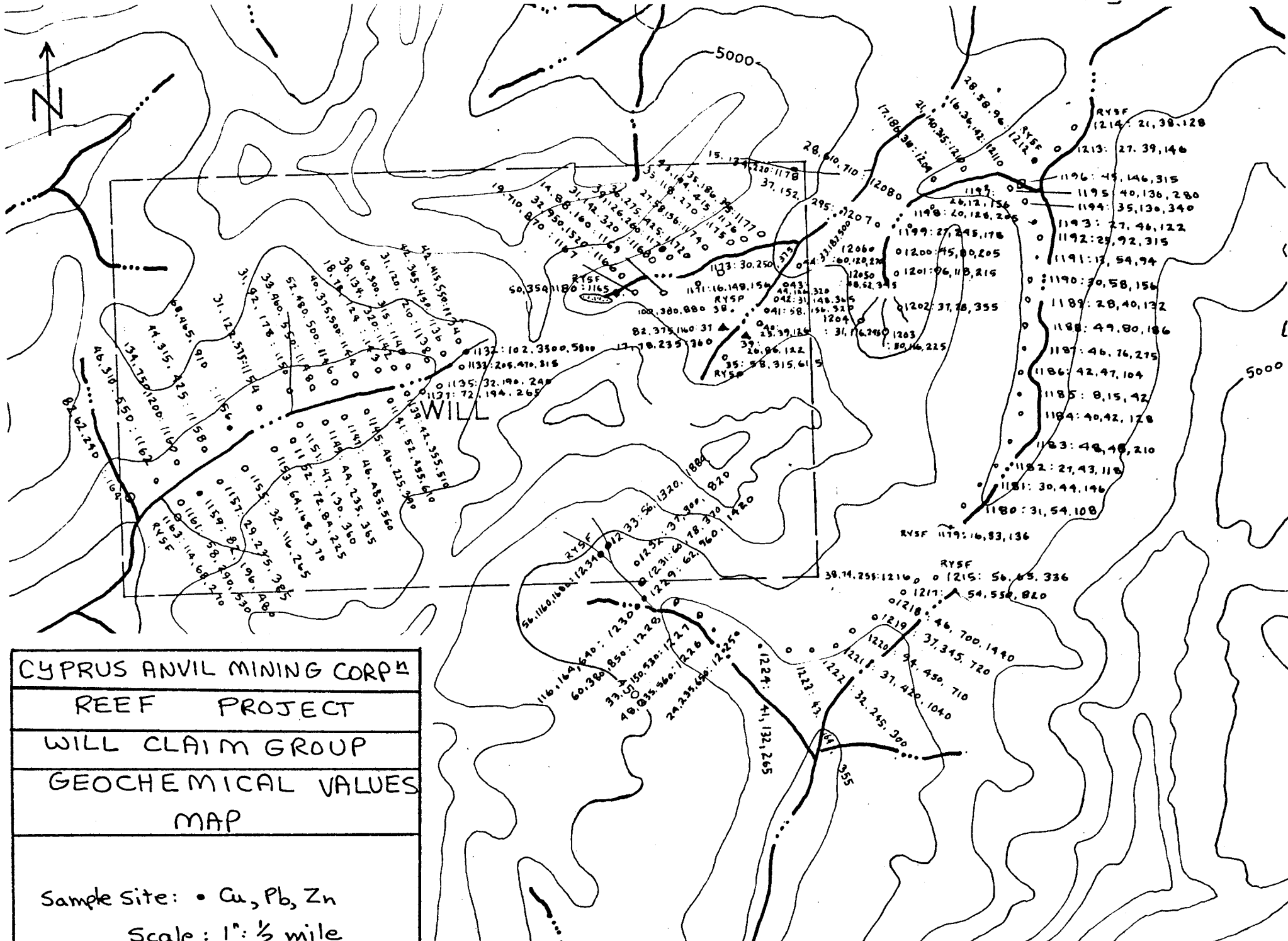
Values in copper are generally low, with a few weakly anomalous values in the areas of the lead and zinc showings. These anomalies reflect sparse chalcopyrite mineralization which is associated with the sphalerite and galena.

Values in lead range from background to 3,300 ppm, with the peak values in talus material downslope from the best showings. Highest zinc values range up to 5,800 ppm, and also are related to the known showings.

Somewhat weaker, but still significantly anomalous, values in lead and zinc occur on the north half of the claim group, where no showings have been found by the work completed to date.

REGIONAL GEOLOGY

A northwest trending linear belt of Helikian shale and dolomite, located between Elliot and Kathleen Lakes, probably results from an uplifted series of northwest trending anticlines and synclines. The Helikian



CYPRUS ANVIL MINING CORP ^M
REEF PROJECT
WILL CLAIM GROUP
GEOCHEMICAL VALUES
MAP
Sample Site: • Cu, Pb, Zn
Scale: 1" = 1/2 mile

Figure 3

units are unconformably overlain by Ordovician dolomite to the north and south. Major fracture directions, as outlined by large diorite to gabbro dykes, also trend northwest. Fault breccia zones containing sphalerite, galena and chalcopyrite mineralization, discovered on Mount Williams and staked as the Will Group, also have a northwesterly trend. The major regional thrust of Precambrian to Cambrian unit, faults and folds in Helikian to Ordovician sediments, all with a northwesterly trend, indicate a major northeast-southwest compression in post-Ordovician time.

GEOLOGY (Figure 4)

The Will Group is predominantly underlain by orange weathering, light and dark grey interbedded argillaceous dolomite, Unit 5, trending northwest and dipping gently to moderately to the northeast. In the northwestern portion of the claims, beds of buff weathering, light to medium grey, massive bedded dolomite, Unit 1, overlie the orange weathering dolomite. Units 5 and 7 are unconformably overlain by light grey to white weathering, light grey massive bedded limestone to dolomite, Unit 13. The northern contact of a large dioritic to gabbroic dyke, Unit 14, occurs in the southwestern corner of the claim group.

Brown to black, thin bedded shales with thicknesses of less than 300 feet occur throughout Unit 5 and are predominant in the northwestern portion of the Will Group. Massive bedded orange weathering dolomite is commonly brecciated as may be observed in the eastern area of the claims.

At least two periods of deformation appear to have affected bedding in Unit 5. Small northeast plunging folds of minor importance are superimposed

on the 125 degree trending anticlines and faults noted on the accompanying "Preliminary Geology Map".

TABLE 1

TABLE OF GEOLOGICAL FORMATIONS

<u>Age</u>	<u>Unit</u>
HELIKIAN -	14 - Orange to brown weathering diorite and gabbro dykes.
	13 - Light grey to white weathering, light grey massive to thick bedded dolomite and limestone.
	7 - Buff weathering, light grey to tan, massive bedded to crystalline dolomite with minor arenaceous and stromatolitic beds.
	6 - Light orange-maroon-green weathering, interbedded maroon and green shale with white to tan dolomite.
	5 - Orange weathering, grey to interbedded light grey and black argillaceous dolomite with minor chert interbeds.
	5a - interbedded black argillite, shale and chert.

ECONOMIC GEOLOGY

All mineralization discovered to date occurs in tectonic breccias within Unit 5. Mineralization is predominantly light brown to yellow sphalerite with minor galena. Chalcopyrite was only found in the western end of Showing No. 5. The following paragraphs summarize mode and occurrence of mineralized showings found to date.

Showing No. 1 - Multiple number of 2' to 3' near-vertical, wide faults trending 100 degrees across the top of Mount Williams. Fault zones consist of breccia zones with matrix of secondary dolomite, limonite, galena and minor sphalerite. All weathered fractures in zones contain hydrozincite. Minor mineralization in tight fractures outside fault zones. Showing is of minor importance.

Showing No. 2 - Fault zone, approximately 5 feet wide, highly brecciated with limonite, galena and minor sphalerite. Zone trends roughly east-west sub-parallel to Showing No. 7 to the north and is probably related to faults outlined in Showing No. 1. A small hand trench dug across the zone yielded largely limonite to a depth of 3 feet.

Showing No. 3 - Zone of fracturing and some brecciation paralleling sub-vertical joints trending 080 degrees in massive dolomite. Zone traced for 200 - 300 feet along strike. First two zones 1 to 3 feet wide, each with estimated 5 to 10 percent combined lead and zinc. Individual fractures are less than 2 inches wide with fillings of reddish brown to yellow sphalerite, galena and secondary dolomite.

Showing No. 4 - Two fault zones, roughly 20 feet apart, trending 100 degrees and dipping 70 degrees to the south, with widths from a few inches to 3 feet. Dolomite in zones is brecciated with matrix of secondary dolomite, galena and

sphalerite. Fractures containing mineralization are roughly parallel to main fracture zone.

Showing No. 5 - The largest and most prominent mineralized structure discovered to date on the Will claims. Mineralization was found over a strike length of roughly 2,000 feet and widths up to 50 feet. Between locations B and A (noted in the sketch on the accompanying "Preliminary Geology Map"), there is an estimated vertical distance of 400 feet. Using an average thickness of 20 feet, the total tonnage indicated above level A is roughly 3/4 to 1 million tons.

A definite metal zoning pattern exists with depth. At location B, mineralization is predominantly "honey yellow" sphalerite with minor galena which becomes more lead-rich with depth. Approaching level A, sphalerite diminishes and chalcopyrite becomes prominent.

Mineralization is predominantly fine-grained anhedral sphalerite, galena and chalcopyrite, accompanied by secondary white dolomite as a matrix in brecciated dolomite. At location A, massive zones of mineralization trending $125^{\circ}/70^{\circ}\text{S}$ occur along the boundaries of the fault zone.

The grade of mineralization is irregular and dependent on the amount of brecciation. Where open spaces do exist, grades of over 30 percent combined lead/zinc are common.

Average grades of 10 percent combined copper, lead and zinc are visually estimated for the 20 foot width throughout the zone. Amount of metal also increases with depth. Drilling below level A may yield good grade mineralization and greatly enhance tonnage.

Showing No. 6 - A zone traced for approximately 150 feet along strike contains two parallel fault zones 1 - 3 feet thick, roughly 30 feet apart. These contain limonite, secondary dolomite, subhedral to euhedral galena and minor sphalerite. Dolomite between the fault zones is fractured with minor PbS and ZnS fillings. Weathered surfaces are coated with hydrozincite. The mineralized zone appears to be in a structure sub-parallel to the No. 5 showing fault zone.

Showing No. 7 - This is a narrow fracture containing limonite and minor galena and appears insignificant.

Showing No. 8 - A fracture zone trending $065^{\circ}/65^{\circ}N$ was traced for 50 feet along strike with thickness varying from a few inches to 3 feet. The showing generally consists of a few fractures < 1 " thick, containing yellow-brown sphalerite, galena and minor pyrite with little or no secondary dolomite. The best zone found contained a 6" width of breccia with estimated 15 percent sphalerite over a length of a few feet. This is not a significant showing.

PROPOSED EXPLORATION


Most of the mineralization found to date on the Will claims occurs in west to northwest trending brecciated fault zones in a narrow belt that trends over the peak of Mount Williams. Excluding Showing No. 5, all mineralization found is of minor importance. Above level A, Showing No. 5 appears to contain 3/4 to 1 million tons of vertically zoned 10 percent combined copper, lead and zinc. Further mapping, sampling, and possibly diamond drilling, is warranted.

As a first step toward evaluation of Showing No. 5, a program of careful sampling is recommended for the 1976 season. Chip samples for assay should be taken on cross sections over the zone at a number of locations along the 2,000 foot strike length, at points of best exposure. Some hand clearing of talus will undoubtedly be necessary. The unexplained geochemical anomalies on the north half of the claim group should also be prospected at this time.

Respectfully submitted,

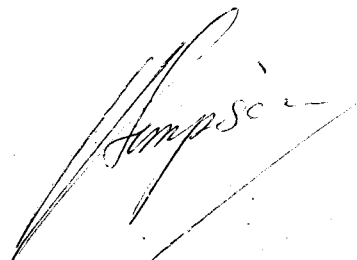


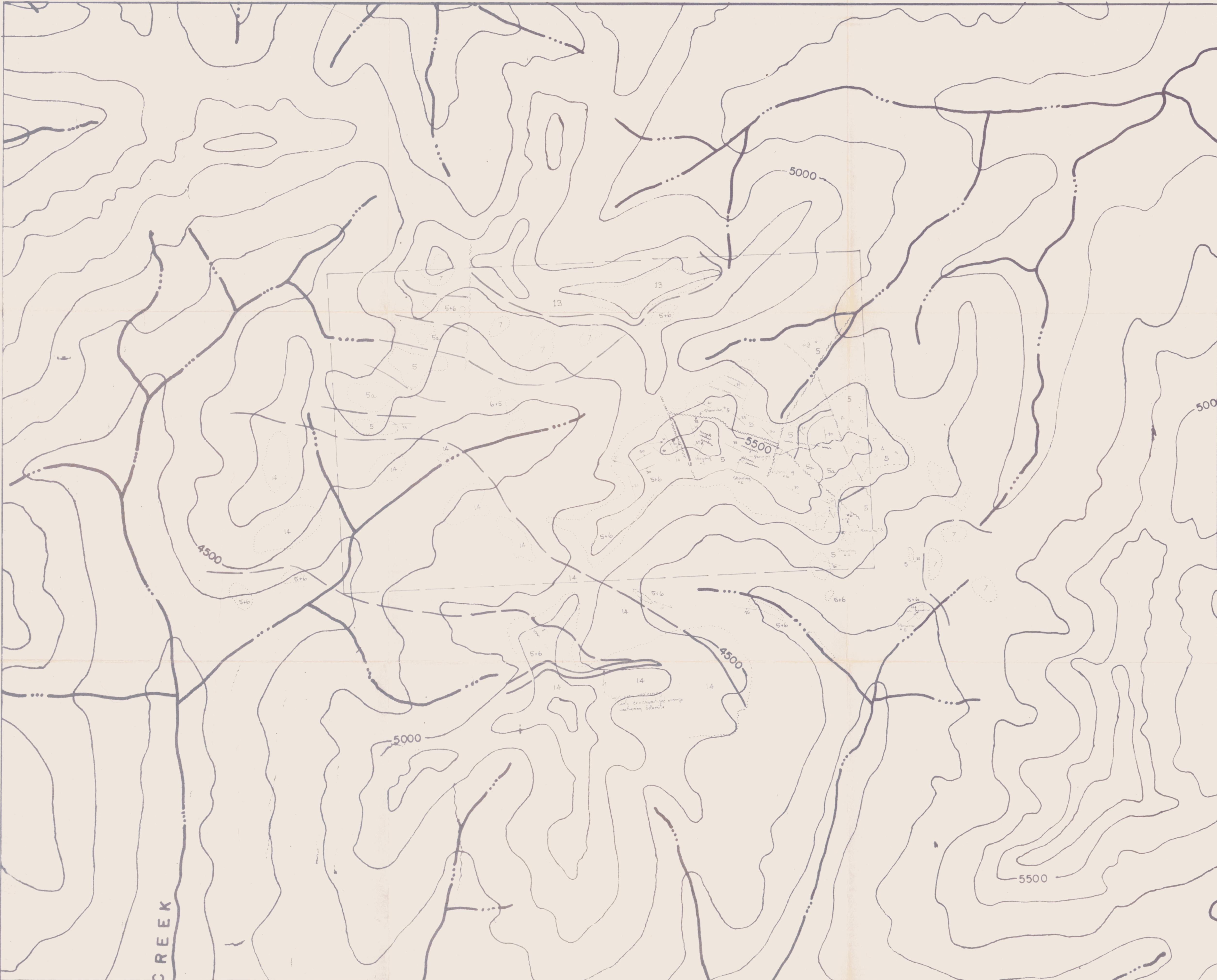
W. ROBERTS



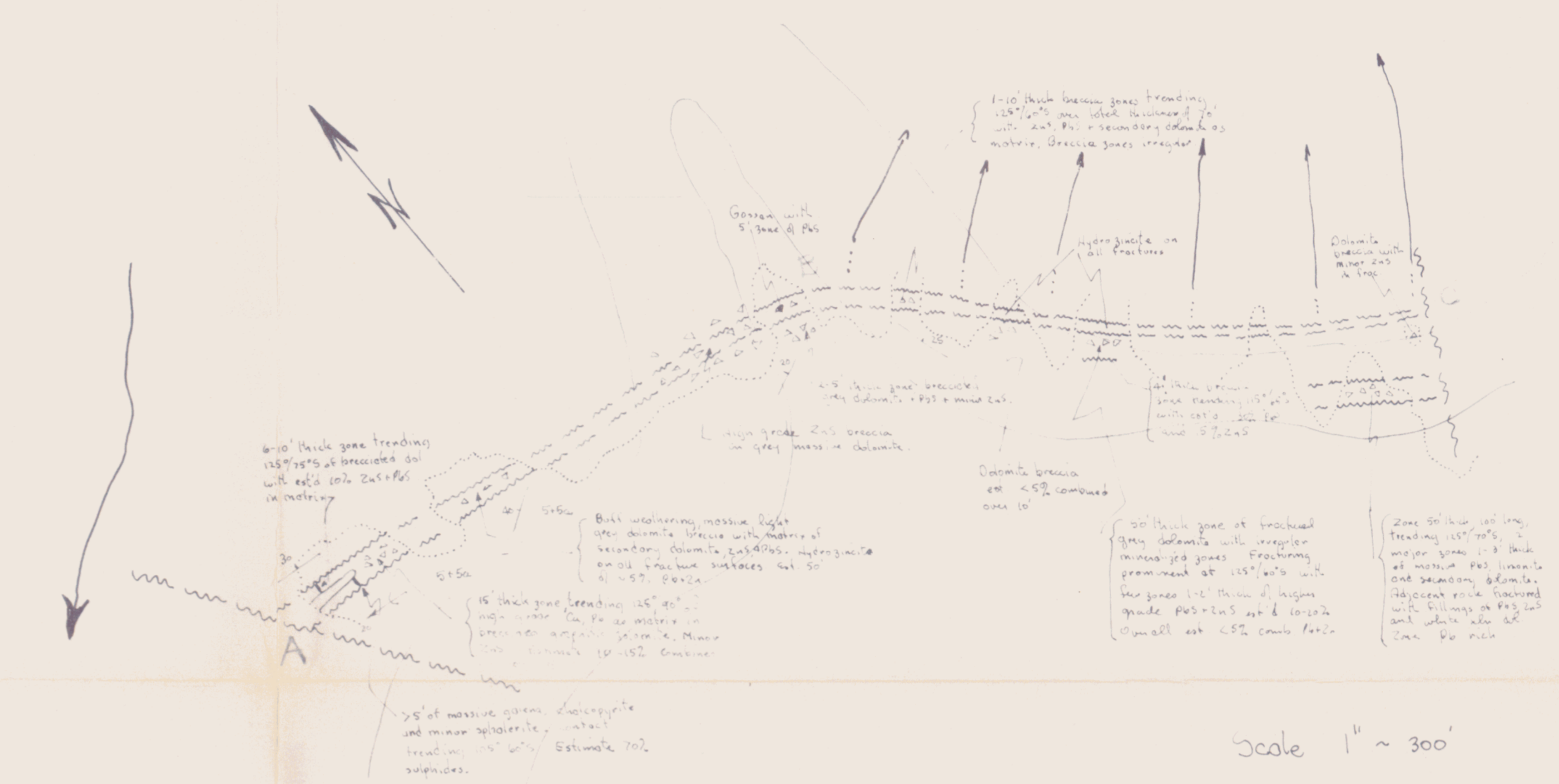
P. DEAN

December, 1975





Sketch of Showing No. 5



Legend

- 14 - Orange to brown weathering, dikes and gabbro dykes
- 13 - Light grey to white weathering, light grey massive to block bedded dolomite and limestone
- 7 - Buff weathering, light grey to tan massive bedded to crystalline dolomite with minor sericitous and stromatolite beds
- 6 - Light orange to brown, green weathering, interbedded massive and green shale with white to tan dolomite
- 5 - Orange weathering, grey to interbedded light grey and black argillaceous dolomite with minor chert inclusions. Also interbedded black argillaceous shale and chert
- (Dotted line) - Limit of outcrop
- (Dashed line) - Geological contact, defined, assumed
- (Wavy line) - Faults, defined, assumed
- (Zigzag line) - Bedding
- (L-shaped symbol) - Outline of tail dam
- (Arrow) - Ebb flow

Figure 4

CYPRUS ANVIL MINING CORP.
REEF PROJECT
 WILL GROUP
 PRELIMINARY GEOLOGY MAP
 NTS 106 D-7 GEOLOGY: W. ROBERTS
 NOVEMBER 24, 1975 SCALE: 1" = 1320'