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NORTH ANVIL RANGE
PROPOSED 1978 EXPLORATION PROGRAM

for
Cyprus Anvil Mining Corporation
and
Metallgesellschaft Canada Limited

by:
D. S. Jennings, Ph.D.
31 March, 1978

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INTRODUCTION

At the conclusion of the 1977 field season, four potential diamond drill targets had been isolated in the North Anvil Range joint venture area (Franzen, 1977). These targets are listed below in order of decreasing importance:

1. AM claims - coincident Turam and Pb-Zn geochemical anomalies at the 3G/5B contact.

2. LISA claims - Ace Canyon massive sulphide lenses.

3. ROG claims - stratigraphic test of 3G/5B contact.

4. FIN claims - weak Turam anomaly in Unit 1C.

Since early 1978, terrain-corrected gravity refinements over North Anvil mineral claims have been conducted by P. E. Walcott and Assoc. Ltd. The initial results of this study are included as Appendix I. Inspection of these preliminary gravity results, in conjunction with the above drill targets, has led to a proposed 1978 program detailed below.

PROPOSED 1978 PROGRAM

Mye-Sark Area

Scrutiny of gravity anomalies "A" and "B" on the Mye-Sark claim groups (map area E-5, Franzen, 1977), shown on Figure 1, indicates the following:

1. Anomaly "A" appears, in profile, to be a manufactured anomaly produced entirely by the terrain correction procedure in an area containing no "uncorrected" anomalous response. Because of this, further investigation of the anomaly by drilling is considered

unwarranted by the joint venture partners.

2. Anomaly "B", with coincident ground magnetic response, is thought caused by subsurface extensions of meta-basite (Unit 5C) exposed to the east. Consequently, this residual anomaly is dropped from immediate consideration.

The coincident turam and geochemical response contered on the boundary of claims AM 1 and AM 2 (Franzen, 1977) remains the most attractive drill target on the Mye-Sark block. Similar exploration situations on South Anvil Range are related to known sulphide deposits at the unit-3 unit 5 contact.

One diamond drill hole totalling 750 feet is recommended to test this contact with coincident turam and geochemical response. The proposed, vertical (-90^{o}) hole will be located at L204W, 45+00N on the E-5 turam grid (Figure 1).

Fat-Fin Area

Inspection of residual gravity anomalies "A" and "B" in this area (Figure 2) shows both terrain-corrected anomalies are associated with anomalous, uncorrected responses suggesting the anomalies are real. Since "A" is coincident with graphitic phyllites of unit 3E and associated with graphitic phyllites of unit 5A, it warrants drill testing. A vertical (-90^{o}) hole 750 feet in length, located at L192W, 43+00N on the Fin grid, is recommended.

Anomaly "B" is coincident with a moderate to weak turam anomaly in unit 1C. Since unit 1 hosts the Faro deposit on South Anvil Range, drill testing of this target is justified. A vertical (-90^{o}) hole 750 feet in length, located at L176W, 0+00B/L on the Fin grid, is recommended.

Timing and Budget

It is anticipated drilling will commence on the North Anvil Range Joint Venture in mid-June. Arctic Diamond Drilling will be the drilling contractor using a Longyear Model 38 diamond drill with helicopter support provided by 206B Jet Ranger on contract from Trans North Turbo Air. The DY drill camp will serve as operational base.

A budget proposal is included as Appendix II. Inspection of this proposal shows a total of 3,000 feet of budgeted drilling. The three drill holes discussed above total 2,250 feet. The remaining footage is proposed as a contingency, pending results of the first three holes.

Assessment

Completion of the proposed three drill holes as outlined above would hold the entire joint venture land package for a minimum of two additional years.

SUMMARY AND CONCLUSIONS

Three drill holes are proposed for the North Anvil Range Joint Venture. Particulars of these holes are summarized below:

CLAIMS	Location	Projected Length m	Inclination	Target
FIM 28	~~L~~204W, 45+00N	~~750'~~ 300	-90°	Unit 5A at unit 3/5 contact; coincident turam and geochemical anomalies.
FAT 9	~~L~~192W, 43+00N	~~750'~~ 300	-90°	Unit 3E, residual gravity and turam anomalies.
AM2	~~L~~176W, 0+00B/L	~~750'~~ 300	-90°	Unit 1C, residual gravity and turam anomalies.
IRMA 9		150		

Respectfully submitted,

D. S. Jennings

D. S. Jennings, Ph.D.

IRMA 9 8E 7+50N 150 m -90 Coincident I.P. - and magnetic bouguer - gravity anomaly.

INTERPRETATION OF GRAVITY ANOMALIES

MYE-SARK A

The residual anomaly has a maximum amplitude of 0.6 mgal and a width of roughly 600 ft. The main part of the anomaly is 2,000 ft. long, extending from Lines 84W to 108W. An extension to the south at Line 124W could add an additional 1,000 ft. of strike length. The anomaly has lobes on its east side, suggesting possible extensions in this direction.

The excess mass of the body causing the main anomaly is about 0.9 million tons per 1,000 ft. of strike length. This works out to 2.5 million tons of actual mass over a strike length of 2,000 ft., assuming a density of 4 g/cc. The extension to the south could bring the total tonnage to about 3.5 million tons.

The mass falls in geological unit 3G, described as "non-calcareous, muscovite-chlorite ± biotite phyllite schist, undifferentiated". It is adjacent to the contact with unit 3E (a graphitic phyllite/schist), which separates unit 3G from unit 3B (a calc-silicate phyllite/schist).

Moderate to strong TURAM EM conductors coincide with or straddle the graphitic zone throughout the area. In the vicinity of the gravities anomaly the conductors are banded over a width of about 600 ft. and are displaced from the centre of the interpreted mass, a distance of approximately 800 ft. The nature of the conductors is consistent with banded graphitic metasediments but local improvements in anomaly strength could be the result of massive sulphides. A magnetic anomaly of approximately 300 gamma flanks the gravity anomaly on its east side, a distance of only 300 ft. from the centre of the interpreted mass.

Faulting is interpreted in a roughly east-west direction, between the two segments of the anomaly.

Topographically the anomaly falls on the east side of a ridge whose axis is marked by a residual gravity low. This low is thought to be partly the result of lithologic changes and partly under-compensation for terrain effect. A portion of the flanking gravity high might also be attributable to these causes.

MYE-SARK B

This anomaly lies in geologic unit 3D, a calc-silicate phyllite/schist, presumably older than unit 3G. It is located some 3,000 ft. east of the contact with the former unit.

The residual anomaly has a maximum amplitude of 0.5 mgal and a width of approximately 600 ft. Its strike length is approximately 2500 ft.

Excess mass is approximately the same as that of anomaly A, namely 0.9 million tons per 1,000 ft. of strike length. Actual tonnage, based on a strike length of 2500 ft. and a density of 4 g/cc, works out to about 3.2 million tons.

Anomaly B is flanked on its eastern side at a distance of only 200 ft. by a weak TURAM EM conductor. The length of the conductor corresponds roughly with that of the gravity anomaly.

Vertical magnetic data in the vicinity suggests a double anomaly of less than 100 gamma amplitude, the western band of which falls very close to the axis of the gravity high.

Faulting in an east-west direction is interpreted at both the north and south ends of the anomaly.

Topographically the anomaly falls in a flat area in a saddle between two ridges. There is little likelihood that the anomaly is a result of terrain effects.

FAT-FINN A

This residual anomaly has an amplitude of approximately 0.6 mgal and a width of roughly 400 ft. Its shape is relatively simple and its strike length is 2,000 ft.

The excess mass of the body is calculated to be 1.65 million tons per 1000 ft. of strike length. Assuming a density of 4 g/cc we obtain an actual tonnage of 4.8 million tons over a strike length of 2000 ft.

The anomaly occurs in unit 3G (as in the case of Mye-Sark A), adjacent to the contact with unit 3E, the graphitic phyllite/schist. The anomaly parallels the major contact with unit 5B which occurs less than 200 ft. further to the west.

The country rocks contain abundant conductive bands in the vicinity of the anomaly. The strongest of these is centered over unit 3E, but other bands occur within unit 5A, a variably calcareous, graphitic phyllite, and unit 5B. Approximately 1,000 ft. southeast of the anomaly a double conductive band occurs within unit 3G. One of the principal conductor axes, the one associated with unit 3E, falls along the edge of the interpreted mass. The characteristics of the conductor are typical of graphitic metasediments, but locally anomalous amplitudes and/or widths may be representative of massive sulphides.

A magnetic anomaly of 400-500 gamma is almost coincident with the gravity anomaly but continues north of the anomaly for several thousand feet. A second magnetic anomaly occurs south of the first and is displaced by what appears to be a cross-fault which also interrupts the EM conductors. The mapping shows a fold in this vicinity. Another fault is interpreted about 2,000 feet further south at a similar dislocation of magnetic and EM axes.

Topographically the anomaly falls in a northerly trending valley with only moderately sloping sides. It would not appear to be the result of a terrain effect.

FAT-FINN B

The anomaly lies in unit 1C, probably fairly close to a granite contact and about 2500 ft. east of the contact with unit 3G.

The anomaly has a maximum amplitude of 0.6 mgal, a width of about 400 ft. and a strike length of not more than 1,000 ft.

Excess mass of the causative body is calculated to be 1.0 million tons per 1,000 ft. strike length. Actual tonnage, assuming a density of 4 g/cc is 1.4 million tons over a strike length of 1,000 ft.

A weak TURAM EM anomaly, indicating a poor conductor, coincides with the anomaly over part of its length but continues several thousand feet to the north.

There is no obvious magnetic correlation, but weak (less than 100 gamma) magnetic anomalies occur within a few hundred feet to the west and to the north of the anomaly.

Topographically the anomaly falls on the side of the nose of a northwesterly trending ridge. The ground slope is relatively uniform in its vicinity. The anomaly is flanked by sharp residual lows which may be partly topographically influenced.

PATERSON, GRANT & WATSON LIMITED

MARCH 28, 1978

CYPRUS ANVIL MINING CORPORATION

A.F.E. 78-2200
(Exploration)

TITLE: North Anvil Range Joint Venture

ESTIMATED COST:

01	Salaries and Wages	$ 12,000
03	Consulting Fees	3,500
06	Surveys - Geophysical	16,000
08	Drilling	60,000
11	Assays and Geochemical Analysis	500
13	Camp Maintenance	1,000
14	Fuel	2,000
15	Rotary Wing	18,000
17	Miscellaneous Transportation	1,000
33	Property Maintenance	4,000
		118,000
	Administration - 10%	11,800
		$129,800

Metallgesellschaft	(40%)	51,920
Cyprus Anvil	(60%)	77,880

PROJECT DESCRIPTION: The area of interest is covered by an 18-mile belt of 310 claims comprising, from west to east, the SARK, MYE, ROG, FAT, FIN and LISA claim blocks delineated by favourable geological horizons and airborne magnetic and electromagnetic anomalies (Figure 1).

The stratigraphic sequence from Anvil Batholith northward is generally a mirror image of the Faro area sequence. Faro Formation quartzo-feldspathic schist (1C) forms the base of the sequence. The more pelitic andalusite-bearing schist (1D), host to the Faro deposit, is not known in the joint venture area. The Faro Formation is overlain by calc-silicates (3D) and non-calcareous phyllites (3G) of Mt. Mye Formation. This is, in turn, overlain by calcareous phyllites (5B) and amygdaloidal volcanics (5H) of Vangorda Formation. Possibly allochthonous KD Group volcanics form the top of the sequence.

Graphitic horizons and zones are found within units 3 and 5 in the joint venture area. The main graphitic horizon (3E) lies within the non-calcareous phyllites; a largely unknown but potentially more important graphitic horizon (5A) occurs sporadically at the unit 3-5 contact. This 5A horizon hosts sulphide deposits elsewhere in the district.

WORK PROGRESS: Turam and magnetic data were re-plotted on orthophoto-adjusted grids. Computer-assisted gravity terrain corrections and contouring were completed. Ten additional FIN claims were staked over a probable Turam anomaly extension. Preliminary terrain corrected gravity data indicates that previous residual gravity anomalies can be downgraded or discounted.

Geology of the joint venture area was capably mapped by Lewis in 1973. Since that time, a better understanding of the structural-stratigraphic framework of Anvil Belt rocks and their contained sulphide deposits has emerged. In particular, these geological relationships are best understood in the vicinity of the known deposits in the Faro, Vangorda and Swim areas. For obvious reasons, it was felt that the joint venture area should be re-examined and integrated into this updated geological picture. To this end, the writer and P. Levine, Metallgesellschaft-Frankfurt, spent three weeks in North Anvil Range. The area was not re-mapped in detail but rather selected traverses were made and numerous boreholes re-logged. Twenty-five ROG claims were staked over a stratigraphic contact known to be mineralized on Vangorda Plateau and Swim Basin.

PROPOSED PROGRAM: Two diamond drill holes, totalling 3,000 feet, are proposed. One hole would test for possible extensions of the LISA claims - Ace Canyon massive sulphides; the other would test a coincident Turam-geochemical anomaly at the 3/5 contact on the AM claims. Superseded By This Report

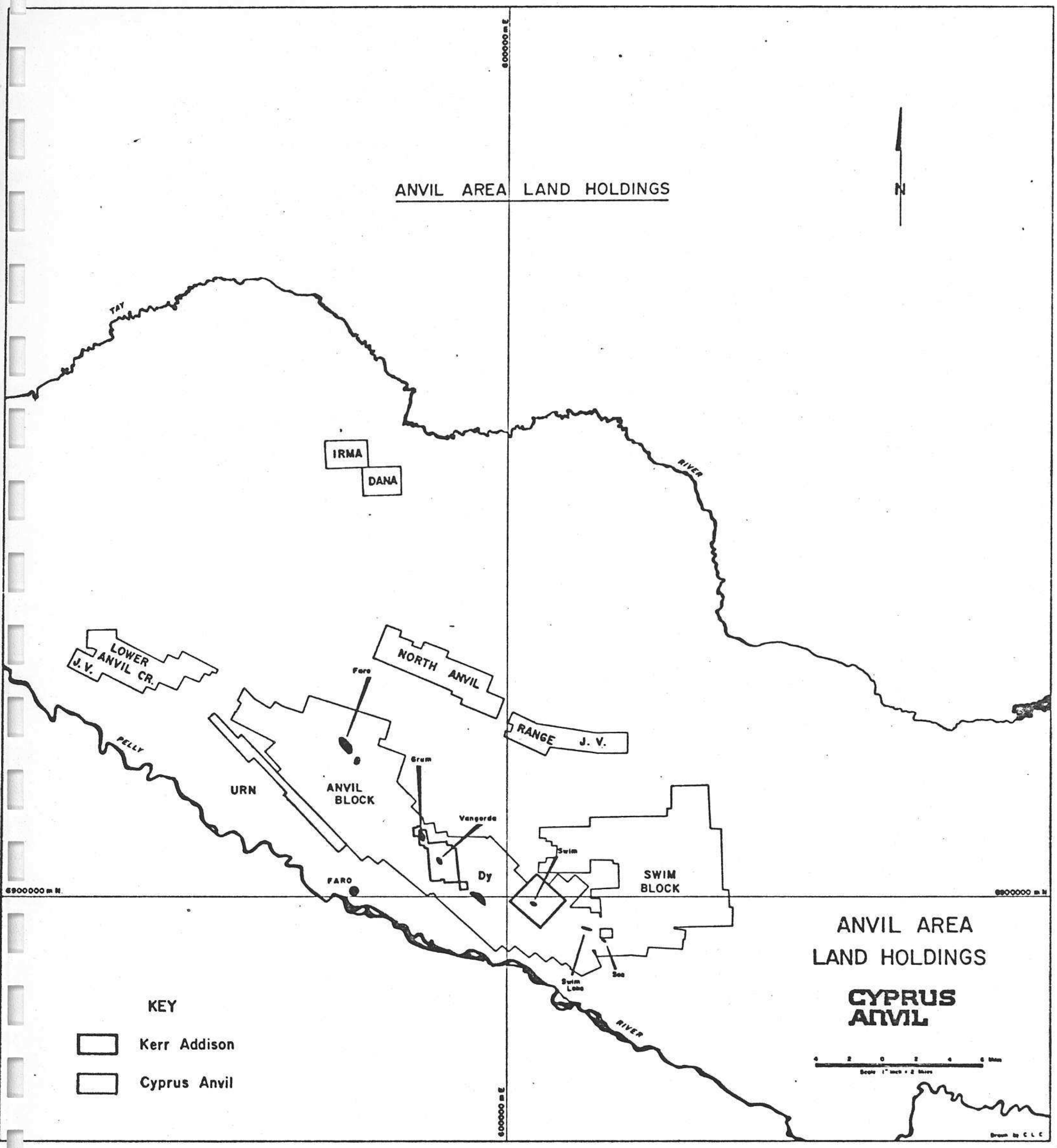
JUSTIFICATION: Considerable time, money and effort has been expended to assemble the present land package. Geophysical and geological data indicates the presence of two possible conductor zones within the Vangorda-Swim equivalent sequence. The proposed diamond drill holes would test a geochemical anomaly that overlies the most favourable conductor zone and definitively test the Ace Canyon massive sulphides.

PREPARED AND SUBMITTED BY:

J. P. Franzen	Date

APPROVALS:

D. S. Jennings	Date
J. G. Simpson	Date
R. E. G. Davis	Date
J. Bruk	Date



ANVIL AREA LAND HOLDINGS
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PELLY
RIVER
Swim Lake
Sea
6900000 m N.
600000 m E.
ANVIL AREA LAND HOLDINGS
CYPRUS ANVIL
KEY
Kerr Addison
Cyprus Anvil

Figure 1

Residual Gravity

Turam

GMAG

1978 DDH

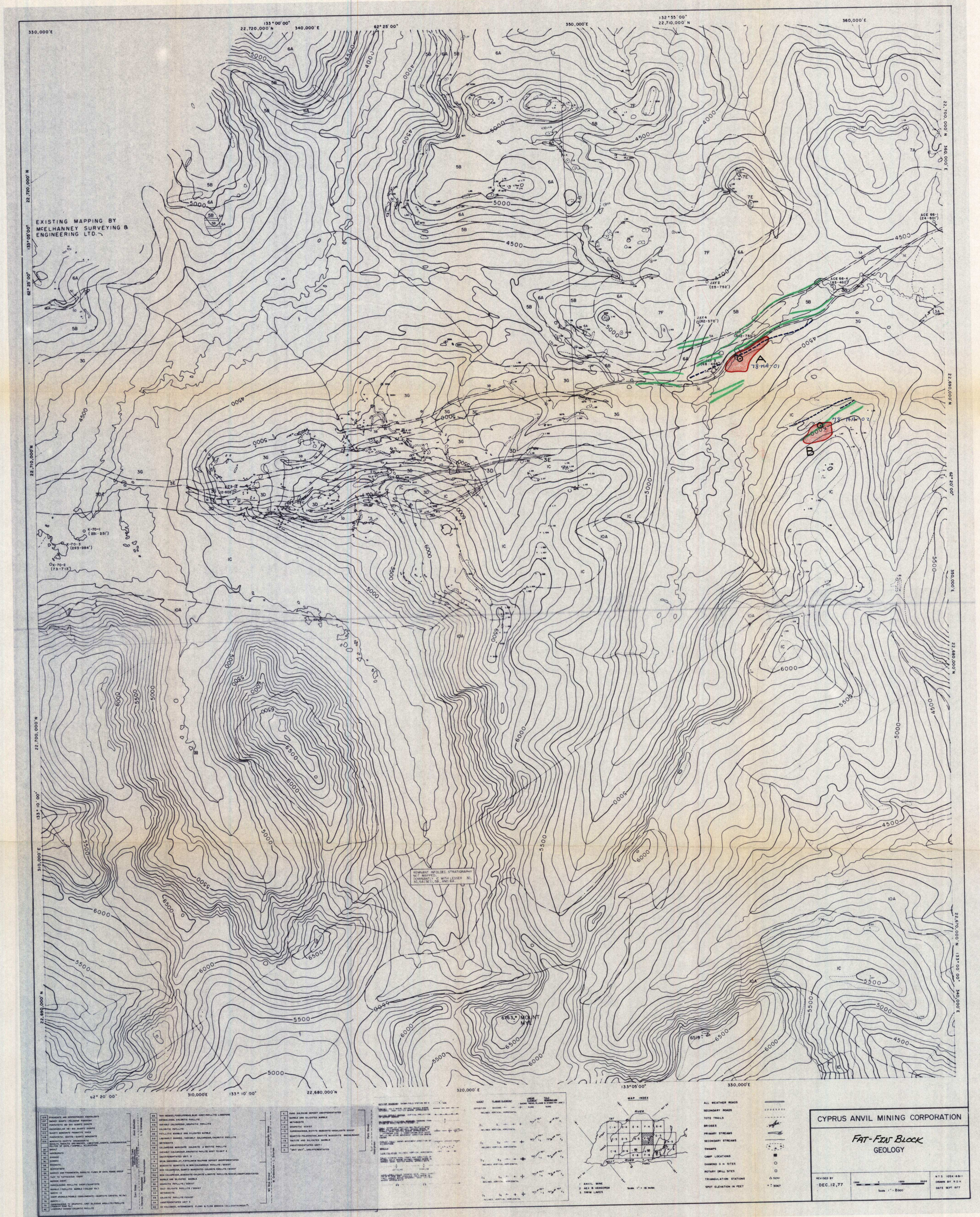
inches

centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

Figure 1



LEGEND

Residual Gravity Anomaly

Axis of Turam EM Anomaly

Axis of Vertical Magnetic Anomaly

Proposed 1978 DDH

Figure 2

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

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