

A Geophysical Report

on

An Induced Polarization Survey

on

The Irma Claims
(62° 36' N., 133° 24' W.)
N.T.S. 105-K-11

by

Peter E. Walcott, P.Eng.

Claims Surveyed: IRMA 8, 9, 17, 24, 25

Survey Dates: August 10th & 11th, 1977

This report has been examined by the Geological Evaluation Committee and recommended to the Council of the Territory as representation work under Section 53 (4) of the Yukon Quartz Mining Act.

\$ 2200.00

D.B. Craig

Resident Geologist or
Resident Mining Engineer

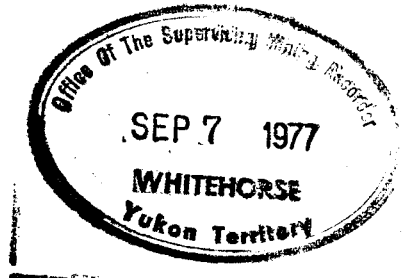
Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B.R. Baxter

B. R. BAXTER
Supervising Mining Recorder

P.C. Commissioner of Yukon Territory

A REPORT

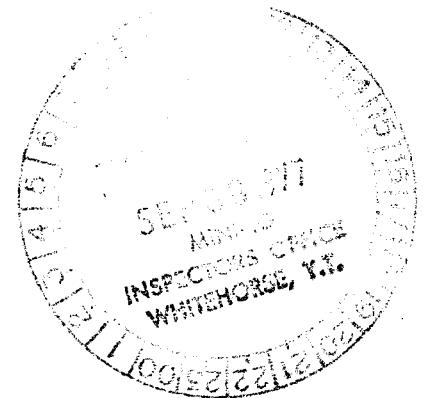


ON

AN INDUCED POLARIZATION SURVEY

Anvil Area, Whitehorse M.D.

Yukon Territory



FOR

CYPRUS ANVIL MINING CORPORATION

Vancouver, British Columbia

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

090205

AUGUST 1977

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INTRODUCTION

On August 10th and 11th, 1977, Peter E. Walcott & Associates Limited carried out a small induced polarization survey over two lines on the Irma claims for Cyprus Anvil Mining Corporation.

Measurements (first to fourth separation) of apparent resistivity and frequency effect (the I.P. response parameter) were made using the "dipole-dipole" method of surveying with a 200 foot dipole and frequencies of 0.3 & 5 Hz.

The data are presented in contour form on individual line profiles contained in this report.

PROPERTY, LOCATION AND ACCESS

The property is located in the Whitehorse Mining District of the Yukon Territory, and consists of the following claims:

| <u>Claim Name</u> | <u>Record Number</u> |
|-------------------|----------------------|
| IRMA 1 to 31 | YA 3250 - 3280 |

The claims are situated in a swampy valley about three miles north of Caribou Lake.

Access is obtained by means of helicopter from the Anvil minesite some 15 miles to the south.

PREVIOUS WORK.

Previous work on the property consisted of airborne magnetic and electromagnetic surveying, and ground magnetic, Turam electromagnetic and gravity surveying, the results of which are documented in reports held by Cyprus Anvil Mining Corporation.

PURPOSE.

The purpose of the survey was to determine the I.P. response over a gravimetric feature obtained on a previously done survey.

GEOLOGY

No rock exposure can be observed on the property, it being completely overburden covered. However for a review of the geology of the adjoining Hal and Dana claims and the general area the reader is referred to reports held by Cyprus Anvil Mining Corporation.

SURVEY SPECIFICATIONS

The induced polarization (I.P.) survey was carried out using a system manufactured by McPhar Geophysics Limited of Don Mills, Ontario. Measurements with this system are made in the frequency domain.

The system basically consists of three units; a receiver, a transmitter and a motor generator. The transmitter, which obtains its power from the 2.5 kw 400 cycle generator driven by a gasoline engine, injects current into the ground at two electrodes, C₁ and C₂, at two preselected frequencies, while the receiver, a very stable and sensitive potentiometer tuned to the frequency selected, makes measurements of observed voltages across the potential electrodes P₁ and P₂.

The data recorded in the field consists of careful measurements of the current (I) flowing through electrodes C₁ and C₂, the voltage (V) appearing between the potential electrodes P₁ and P₂ on the low frequency, and the "percentage apparent frequency effect" appearing between P₁ and P₂ (the receiver is designed to measure directly:

$$\text{the \%age F.E.} = \frac{(P_a \text{ low} - P_a \text{ high}) \times 100}{P_a \text{ high}}$$

The apparent resistivity (P_a) in ohm-feet is proportional to the ratio of the measured voltage and current, the proportionality factor depending on the geometry of the array used. In practise $\frac{P_a}{2 \pi}$ is plotted.

A third parameter termed the "metal factor" is also calculated by dividing the apparent frequency effect by $\frac{P_a}{2 \pi}$ and multiplying by 1,000.

The survey was carried out using the "dipole - dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or "n".

In practise, the equipment is set up at a particular station of the line to be surveyed: three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e. n = 4; the equipment is then moved 3 "a" feet along the line to the next set-up.

SURVEY SPECIFICATIONS cont'd.

A 200 foot dipole was used on this survey.

DISCUSSION OF RESULTS.

The I.P. survey showed the presence of a large anomalous zone in the middle portion of the lines surveyed as can be seen on the accompanying profiles.

The location of this zone showed good correlation with the previously obtained gravimetric anomaly.

No low resistivity responses were associated with these high frequency responses hence the lack of Turam E.M. response on the previous survey.

The previously obtained E.M. responses correlate with the lower resistivity values obtained at the northern extremities of the profiles.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between August 10th and 11th, 1977, Peter E. Walcott & Associates Limited carried out a limited I.P. survey to test the response of a gravimetric anomaly on the Irma property of Cyprus Anvil Mining Corporation.

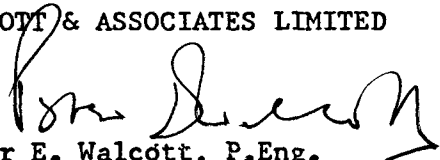
The property, i.e. the Irma claim group, is located in the Anvil area of the Yukon Territory.

The I.P. survey indicated the presence of a strong anomalous zone, the location of which corresponds well with that of the gravimetric anomaly.

As a result the writer recommends that although the gravity anomaly appears to have a deeper seated causative source than that of the frequency effect anomaly further work be done to model the gravity response to parameters that fit the I.P. causative source before further physical work is carried out.

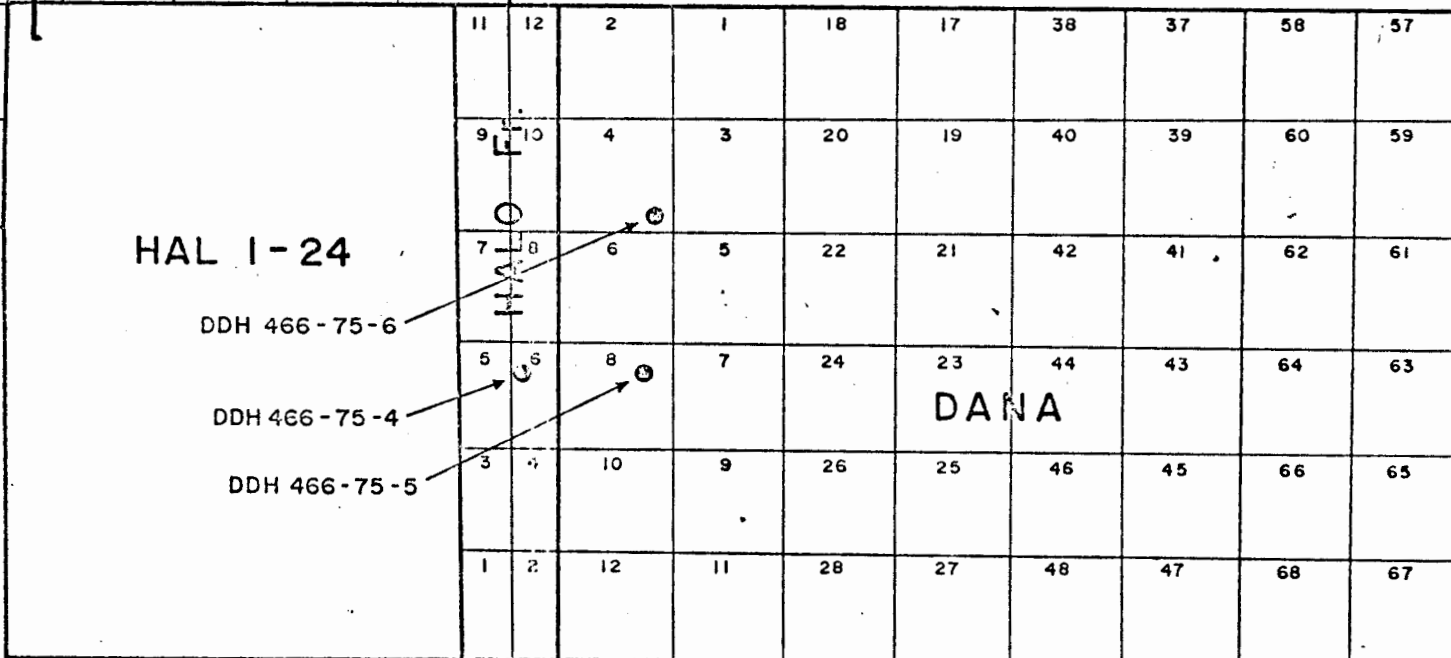
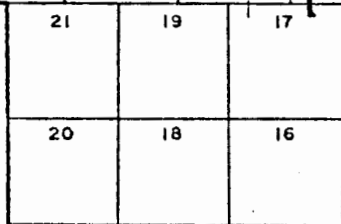
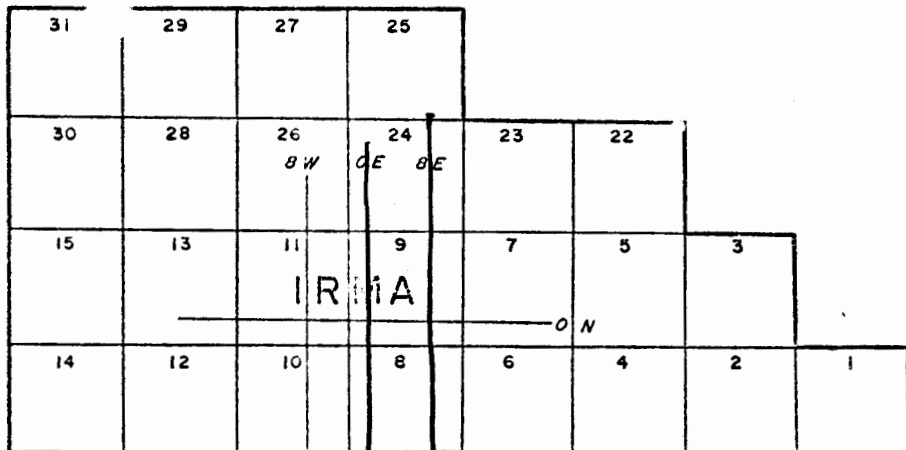
Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED


Peter E. Walcott, P.Eng.
Geophysicist

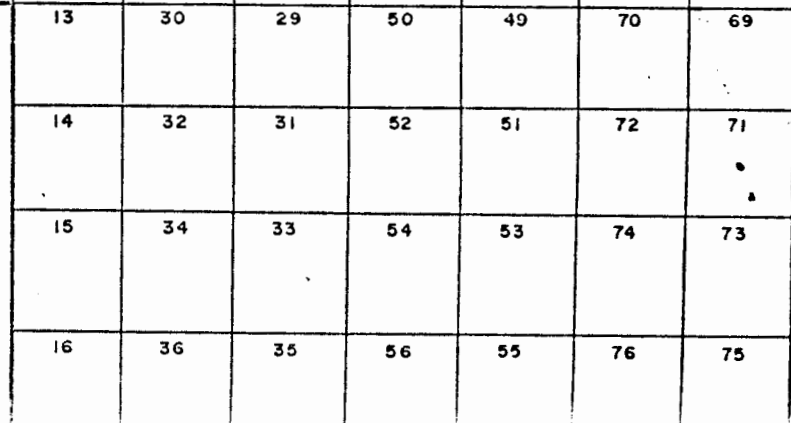
Vancouver, B.C.

August 1977

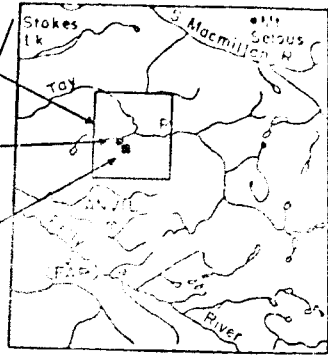


CYPRUS ANVIL MINING CORPORATION
DANA HALO & IRMA CLAIMS

105/K/11
 Scale: 1" = 1/2 Mile



LOCATION MAP
IRMA CLAIMS



105-K-11

IRMA
1-31

DANA & HALO
CLAIMS

134° 132° 63° 62°

NORTHWEST

FORT GOOD HOPE

Great Bear Lake

NORMAN
OWELLS

FORT
NORMAN

TERRITORIES

HESS MTNS.

PELLY
MOUNTAINS

KEELIA
MOUNTAINS

LOGAN
MTNS

PELLY
MTNS

BRITISH COLUMBIA

ARCTIC OCEAN

BRITISH MTNS.

RICHARDSON

AKLAVIK

INUVIK

OLD
CROW

OGILVIE
MOUNTAINS

Peel

WIDE R.

Sumner Plume R.

Soke R.

Stewart R.

Stewart R.

Stewart R.

Stewart R.

Stewart R.

Stewart R.

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Stewart R.

Stewart R.

Stewart R.

Stewart R.

ALASKA

CLINTON CREEK

DAWSON

STEWART RIVER

STEWART CROSSING

BEAVER CREEK

SNAP

MINTO

PELLY CROSSING

CARMACKS

PELLY

ROSS RIVER

ROSS RIVER

ROSS RIVER

ROSS RIVER

ROSS RIVER

ROSS RIVER

ROSS RIVER

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ROSS RIVER

AISHIHIK

BURWASH LANDING

ST. ELIAS MTNS.

HAINES JCT.

WHITEHORSE

JOHNSON'S CROSSING

TESLIN

CARCROSS

SAKWAY

ATLIN

CASSIAR

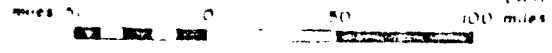
WATSON LAKE

LOWER POST

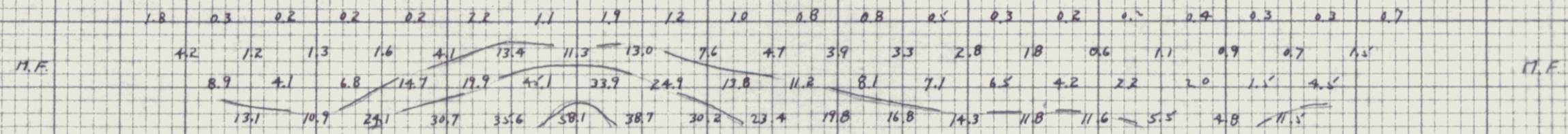
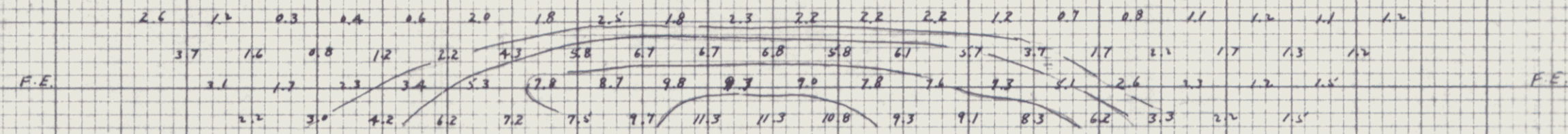
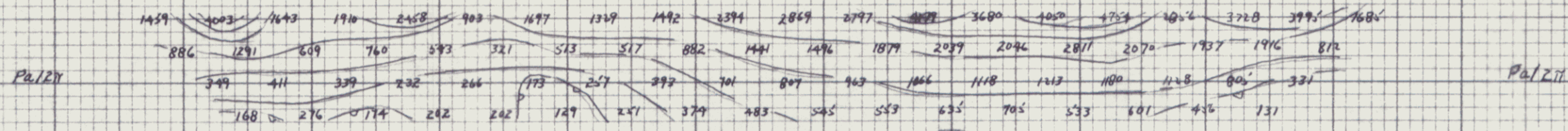
COAL RIVER

PACIFIC OCEAN

SUMMIT LAKE
100 miles



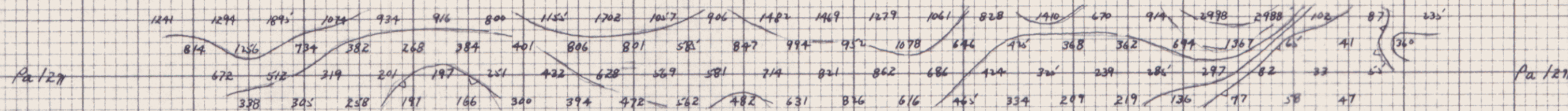
20-S 16-S 12-S 8-S 4-S 0+00 4-N 0-N 12-N 16-N 20-N



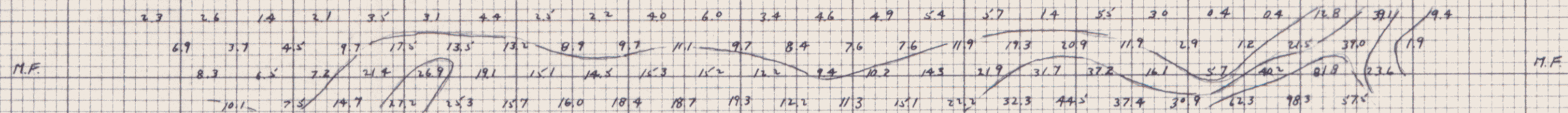
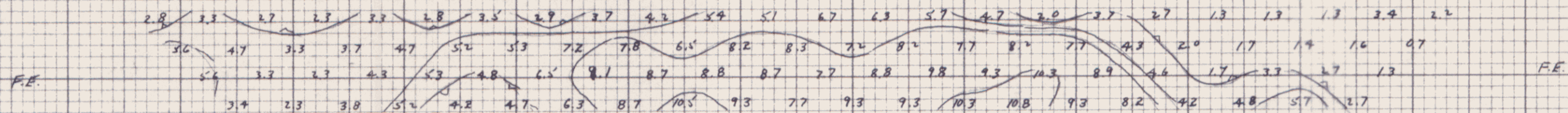
CYPRUS ANVIL MINING CORP
IRMA CLAIMS
LINE 0+00
FRER - 0.3 & 5.0 C.A.S
SCALE 1" = 400'

PETER E. WALCOTT & ASSOC. LTD
AUGUST - 1977

24-S 20-S 16-S 12-S 8-S 4-S 0+00 4-N 8-N 12-N 16-N 20-N 24-N 28-N



CYPRUS ANVIL MINING CORP
IRMA GRID
FREQ. 0.3 & 5.0 CPS.
SCALE 1"=400'
LINE 8E



PETER E. WAKOTT & Assoc. Ltd.
AUGUST 11977