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REPORT ON THE

MAGNETOMETER SURVEY

VANANDA AREA, TEXADA ISLAND

NANAIMO MINING DIVISION, B. C.

FOR

BACON AND CROWHURST, LTD.

1. INTRODUCTION

A magnetometer survey has been carried out near Vananda on Texada Island. This work was initiated by Dr. W. R. Bacon, Consultant with Bacon and Crowhurst Ltd.

The survey grid is located about 1 Km south of the town of Vananda. The Gillies Bay paved highway bounds the grid to the west.

The purpose of this ground magnetometer survey was to investigate and evaluate previously located aeromagnetic anomaly # 2220. This aeromagnetic anomaly was located in 1975 by Aerial Surveys Ltd.

The ground magnetometer survey was carried out by Mr. J. Paul Stevenson assisted by M. Douglas. Phoenix Geophysics Ltd. has provided field supervision, map preparation and reporting.

A McPhar M700 vertical force fluxgate magnetometer was used for the survey. The maximum sensitivity of this instrument is 20 gammas per scale division.

Field work was carried out in November, 1976.

2. DESCRIPTION OF GEOLOGY

A description of the regional geology is contained in Bulletin #23, B. C. Department of Mines, 1947. Further information is included in Bulletin #40, B. C. Department of Mines, 1957.

The Texada Formation consisting of lava flows, breccia and tuff outcrops in the vicinity of the magnetometer grid according to the geological map contained in Bulletin #23. Basic intrusives are shown near the west side of this grid. Limestones of the Marble Bay Formation cover the north portion of the survey grid.

3. DISCUSSION OF SURVEY RESULTS

A detailed study of the magnetometer survey results using computer analysis or curve matching techniques has not been carried due to time limitations. The following discussion is based primarily on the experience of the interpreter with similar magnetic environments.

The local magnetic relief recorded on the property is about 4500 gammas. An east-west trending band of low magnitude relatively uniform magnetic values covers the north 20% of the grid area. This area is believed to outline the flat-lying limestones of the Marble Bay Formation. An enbayment of uniform low magnitude readings extends west from 59E to 57E along the base line. This area is probably underlain by similar limestones.

The remainder of the property displays generally higher and quite variable magnetic values. A profile of the magnetometer readings (Figure # 2) shows the typical variable nature of the magnetic readings over the south 80% of the property with the uniform low readings to the north.

Within the higher magnetic environment, local position changes of 1 - 3 feet can result in magnitude changes of up to 1000 gammas. These changes are believed to be due to local variations in magnetite content of the bedrock and possibly to the magnetic dipole effect in some cases. In either case, changes of this magnitude are indicitive of shallow overburden and a relatively shallow origin of the magnetic material.

General trends can be seen in the magnetic contour pattern. An east-west trend is evident north of the baseline. It probably relates to the limestone contact. A NW trend occurs within the higher magnitude environment to the south. A NW trending linear magnetic low extends from about 425 M south of the baseline on 59E to 125M north of the baseline on 52E. It could reflect a fault, or a contact zone.

A large area of higher magnetic levels in the SW quadrant of the grid probably reflects basic intrusives similar to those mapped in this vicinity.

An east-west striking band of moderate magnetic values extends west from 75 M north on line 59E to 250M north on line 52E. It could reflect either Texada volcanics or a skarn zone.

4. SUMMARY AND CONCLUSIONS

The magnetometer survey has outlined uniform low magnitude magnetic levels along the north portion of the grid. This probably reflects limestone. South of this area, higher magnitude locally variable magnetic values are believed to outline basic intrusives, volcanics and possibly altered limestone skarn zones.

Copper-gold deposits have been mined in the general vicinity of the survey grid. These deposits characteristically display a short strike length but persist down dip. They usually are associated with skarn zones close to basic intrusives. An attempt was made to investigate the grid with an electromagnetic survey. However the multiplicity of power lines with a resulting high electrical noise background prevented any useful application of the EM method.

It is understood that a soil geochemical survey has been completed over the survey grid. The soils will be analysed for copper. If the

source of any soil anomalies cannot be accurately defined, an induced polarization and resistivity survey should be considered. The IP system should be equipped with 60 cycle filters to remove the electrical power-line noise.

A. W. Mullen

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. W. MULLAN

52E 53E 54E 55E 56E 57E 58E 59E

Department of Highways

54.5 N

50 N

45.5 N

Cemetary

swamp

swamp

swamp

swamp

GROUND MAGNETOMETER SURVEY

OF AEROMAGNETIC ANOMALY NO. 2220

VANANDA AREA, TEXADA ISLAND

NANAIMO MINING DIVISION, B. C.

FOR

BACON AND CROWHURST LTD.

1- LINE CUTTING & MAGNETOMETER SURVEY
BY: FAR OUT ENTERPRISES
- INSTRUMENT: McPHAR M-700
VERTICAL FIELD MAGNETOMETER
- INSTRUMENT OPERATOR: J. PAUL STEVENSON
- FIELD SUPERVISION AND CONTOURING
BY: PHOENIX GEOPHYSICS LTD

SCALE - 1:2500 (METRIC)

NOV. 30, 1976

SCALE: 1 CM. = 25 METERS

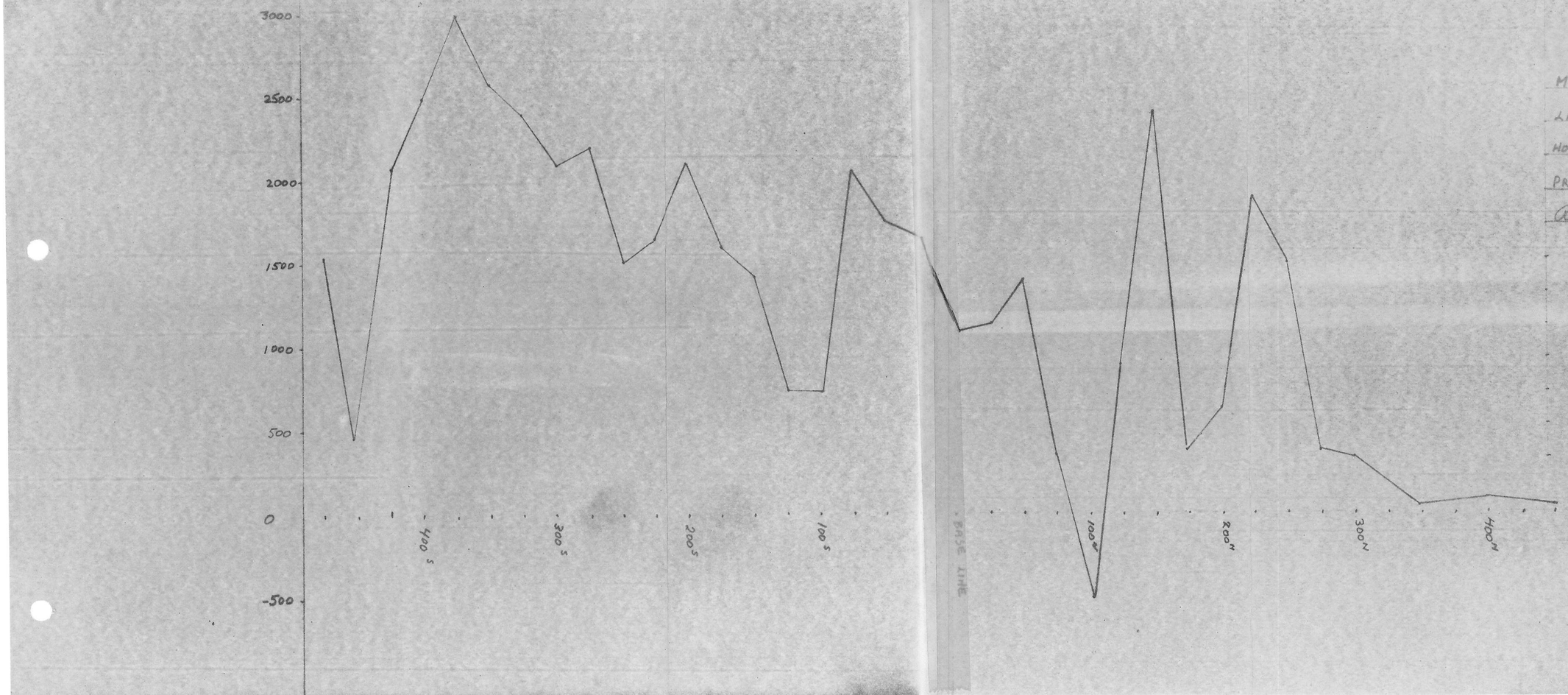
inches 0 1 2
0 1 2 3 4 5 centimetres

BRITISH COLUMBIA GEOLOGICAL SURVEY

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.

FAR OUT ENTERPRISES

JPS Nov. 1976



MAGNETIC PROFILE

LINE 54 EAST

HORIZONTAL SCALE 1:2500 METRE

PROFILE SCALE - 200 GAMMAS = 1 CM

inches
0 1
0 1 2
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.

FIGURE #2