A Geophysical Report
on
Turam Electromagnetic Surveys
Sun, Gal, Tie & Crown Claims
by
Peter E. Walcott, P.Eng.
December 1972

Crown File 105K-5

81/480

A REPORT

ON

TURAM ELECTROMAGNETIC SURVEYS

Anvil Area, Yukon Territory

FOR

ANVIL MINING CORPORATION LIMITED

Faro, Yukon Territory

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

DECEMBER 1972

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INTRODUCTION.

Between August 29th and October 6th, 1972, Peter E. Walcott & Associates Limited carried out Turam surveys over parts of two propert namely the Sun, Gal & Tie claims and the Crown claims, held by Anvil Mining Corporation Limited.

The survey over the former was carried out on approximately N 10° E handcut lines 800 feet apart that were turned off from a N 80° baseline, while that over the latter was conducted over similar N 35° lines.

Measurements of field strength and phase difference were made every 100 feet along the lines with a S.E. 700 electromagnetic unit operating at a frequency of 400 Hz. and using a coil separation of 100 feet.

The data are presented in profile form on Maps W-160-1 and 2 that accompany this report.

PURPOSE

The purpose of the survey was to locate the presence of electromagnetic conductors, the causative sources of some of which could be attributable to economic sulphide mineralization, and could be screened on the basis of gravity and geological investigations.

PREVIOUS WORK

Previous work done in the area includes airborne magnetic and electromagnetic surveys.

In addition geology, geochemistry, gravity surveying and drilling were undertaken on the Sun, Gal and Tie claims, whereas no additional work except perhaps reconnaissance geochemistry was carried out on the Crown claims.

The results of the above are well documented in reports by the staff of Anvil Mining Corporation Limited.

SURVEY SPECIFICATIONS

The basic principle of any electromagnetic survey is that when conductors are subjected to primary alternating fields secondary magnetic fields are induced in them. Measurements of these secondary fields give indications as to the size, shape and conductivity of conductors. In the absence of conductors no secondary fields are obtained.

The electromagnetic survey was carried out using a Scintrex S.E. 700 electromagnetic unit. The primary field was set up by closed inductive loops laid on the ground. Two receiver coils connected by a lightweight shielded cable to a compensator amplifier are used to measure the distortions in the electromagnetic field. The quantities measured are:

1. the ratio of the field strengths at each coil and

2. the phase difference in the fields at the two coils.

Large rectangular loops of varying size (3200 to 4800', 2500 to 3000' deep) were used on the survey with the loops always to the north of the area surveyed.

Readings were taken every 100 feet along the picket lines perpendicular to the long side of the loops with a 100 foot coil separation and using a frequency of 400 Hz.

DISCUSSION OF RESULTS

Sun, Gal & Tie claims.

The reader should study the data in conjunction with the geology, soil sampling and gravity maps of Anvil Mining Corporation Limited.

The Turam survey indicated the presence of a number of conductors of moderate to poor conductivity as can be seen from Map W-160-1.

Most of these conductors seem to have considerable strike length, appear to be formational, and are most probably related to graphic phases in the underlying biotite and/or chlorite phyllites.

Four conductors, namely conductors A, B, C & D, appear to be non-formational conductors. All of these exhibit depth to conductor axes of between 100 and 200 feet based on assuming dyke like shapes and using halfwidth methods.

Conductor A is encompassed within a broad lead soil anomaly, and appears to be closely associated with a larger 0.5 milligal gravit anomaly, part of which is probably attributable to underlying amphibolites. The conductor itself lies to the north of the mapped amphibolite contact and could possibly have sulphide mineralization as its causative source.

Conductor B is generally associated with a smaller 0.5 milligal gravity high to the north of the mapped amphibolite but has no geochemical correlation.

Conductor D has no accompanying geochemical or gravity high but is located in underlying biotite phyllite and is probably related to graphitic phases in the underlying rock.

Two north northwesterly trending faults appear to offset conductors A and D respectively.

Crown claims.

The result of the survey showed the Turam response to be relatively smooth over the area surveyed, as different from the Ski Hill area and the Sun, Gal and Tie claims, seemingly indicating the absence of underlying phyllites (the writer is not familiar with the geology of the area).

DISCUSSION OF RESULTS cont'd

Five conductors are shown on Map W-160-2, the axes of which are either not completely delineated or poorly defined.

Conductor A is located in the south corner of the claim group, exhibits moderate conductivity and is open to the southeast.

Conductor B is located in the middle of the grid, is open to the southeast, and exhibits poor to moderate conductivity. Its response is not unlike that obtained on Lines 52 and 56 W over the Faro #3 body.

Conductor C is poorly defined due to the creek and is open to the northwest.

Conductor D is poorly defined as it was located at the ends of traverses from our loop and under the source of the other. It is also open to the northwest.

Conductor E is located at the western edge of the property and grid, is poorly defined, and exhibits poor to moderate conductivit

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between August 29th and October 6th, 1972, Peter E. Walcott Associates Limited carried out Turam surveys over parts of two propert for Anvil Mining Corporation Limited.

The properties, namely the Sun, Gal and Tie claims and the Crown claims, are located in the Anvil area of the Yukon Territory.

The survey on the former indicated the presence of a number of anomalies, most of which occured in underlying phyllites and were thought to be due to formational graphitic phases.

Sun Gal Tie: However four individual conductors were located, two of whic appeared to have bona fide gravity associations. The former of these two was also associated with a broad lead soil anomaly.

Crown: The survey on the latter indicated a relatively low Turam response above which five conductors were clearly discernible. Most of these occurred near the edges of the grid and/or property and their axes were not completely defined. NO CORRELATION BETWEEN E-M & PREVIOUS SOIL GEOCHEM ANOMALIES.

As a result the writer concludes that

1. on the first survey Conductors A – DRILLED GRAPHITE and possibly B could have economic sulphide mineralization as their or part of their causative sources, whereas the remainder of the conductors are most probably due to graphite as shown by their lack of gravity association, and

2. the conductors of the second survey are either due to graphite and/or sulphide mineralization.

He therefore recommends that

1. Conductors A @ 300' Drill Graphites and B be tested by diamond drilling.

2. The geological environment of the conductors on the second survey be studied, and should it prove favourable then gravity profiles be run over the anomalies.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng.
Geophysicist

Vancouver, B.C.

December, 1972

L 0

L 8+00 E

L 16+00 E

L 24+00 E

L 32+00 E

L 40+00 E

L 48+00 E

L 56+00 E

48+00 N

T.L. 45+00 S

44+00 N

40+00 N

36+00 N

32+00 N

28+00 N

24+00 N

L 64+00 E

L 72+00 E

L 80+00 E

L 88+00 E

L 96+00 E

16+00 N

12+00 N

8+00 N

4+00 N

BASE LINE

4+00 S

8+00 S

12+00 S

16+00 S

20+00 S

B

?

D

C

E

?

?

A

?

20+00 S

24+00 S

28+00 S

32+00 S

36+00 S

40+00 S

44+00 S

T.L. 45+00 S

48+00 S

LEGEND

MODERATE CONDUCTOR

POOR CONDUCTOR

CONDUCTOR AXIS

0.60 1.00 1.40

FIELD STRENGTH

PHASE DIFFERENCE

-20° 0° +20°

inches

centimetres

This reference scale for the original maps. If not scale at the same ratio before it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

ANVIL MINING CORP. LTD.

CROWN CLAIMS, ANVIL AREA, WHITEHORSE M.D., Y.T.

105K-5

TURAM ELECTROMAGNETIC SURVEY

PROFILES OF FIELD STRENGTH & PHASE DIFFERENCE

f = 400 Hz

SCALE : 1 INCH = 400 FEET

400 200 0 400 800 1200

FEET FEET

MAP No. W - 160 - 2

TO ACCOMPANY A REPORT BY

PETER E. WALCOTT P. Eng.

DATED NOVEMBER 1972

PETER E. WALCOTT & ASSOC. LTD.

SEPTEMBER - OCTOBER 1972

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA PETER E. WALCOTT

L 200 W
L 192 W
L 184 W
L 176 W
L 168 W
L 160 W
L 152 W
L 144 W
L 136 W
L 128 W
L 120 W
L 112 W
L 104 W
L 96 W
L 88 W
L 80 W
L 72 W
L 64 W
L 56 W
L 48 W

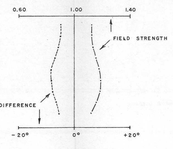
POWER LINE

A
B
C
D

78 N
74 N
70 N
66 N
62 N
58 N
54 N
50 N
46 N
42 N
38 N
34 N
30 N

BASE LINE

LEGEND



MODERATE CONDUCTOR

POOR CONDUCTOR

CONDUCTOR AXIS

INTERPRETED FAULT

ANVIL MINING CORP. LTD.

SUN, GAL & TIE CLAIMS, ANVIL AREA, WHITEHORSE M.D., Y.T.

TURAM ELECTROMAGNETIC SURVEY

PROFILES OF FIELD STRENGTH & PHASE DIFFERENCE

f = 400 Hz

SCALE : 1 INCH = 400 FEET

400 200 0 400 800 1200
FEET FEET

MAP No. W - 160 - 1
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Inches
centimetres
This reference scale has been checked against the original image and found to be correct for the image, therefore it is correct for the reduction of the original size.
YUKON GEOLOGICAL SURVEY

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